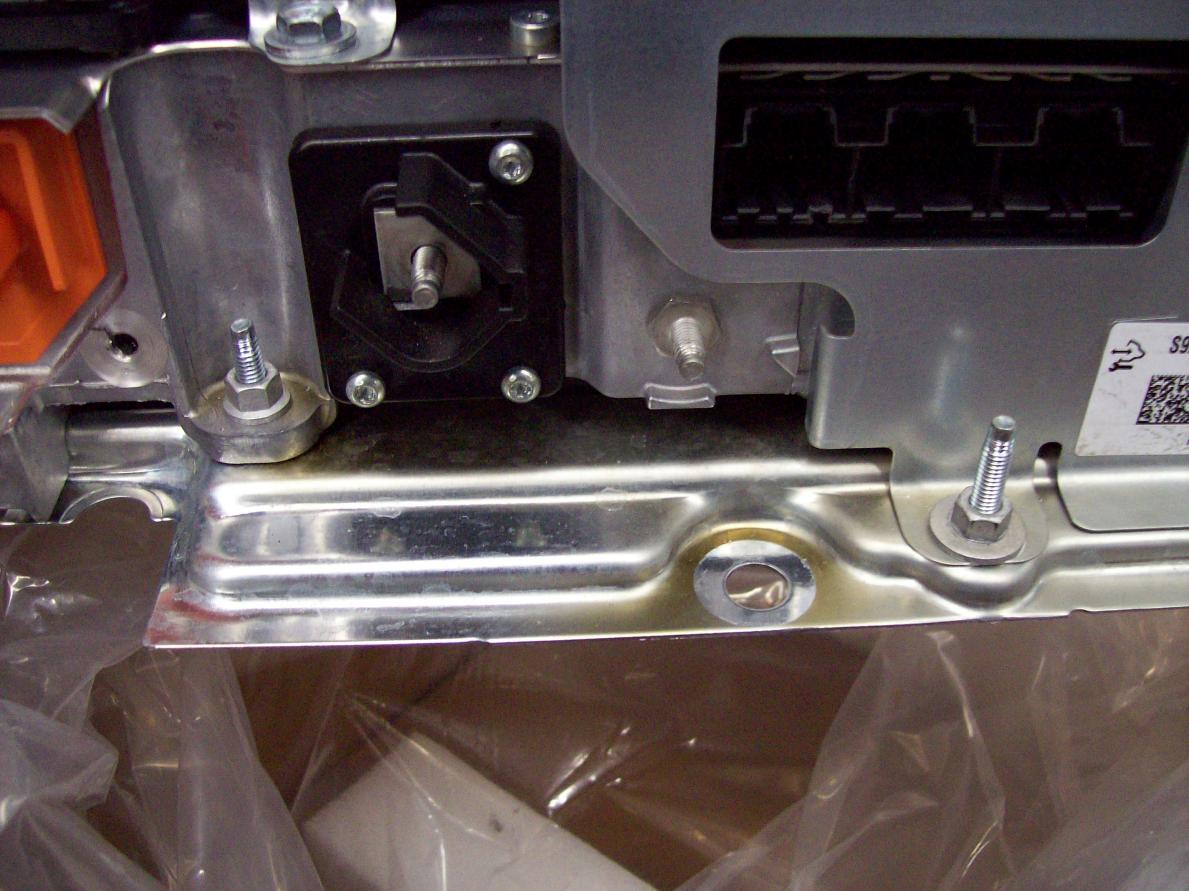
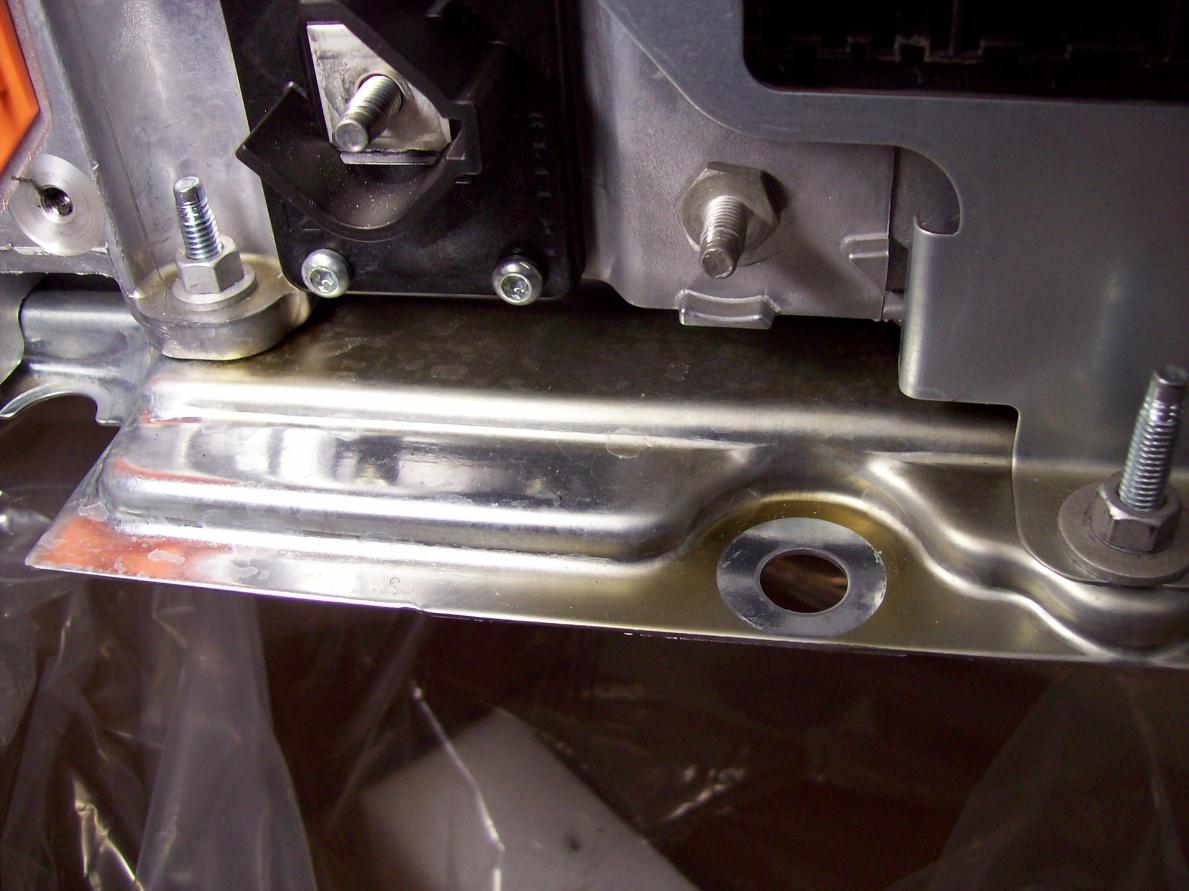
RQ13-003 GM 10/7/2013 Q 07 C DOCS, BPIM Pictures Q_07c_docs PAGE 25 Q_07c_email PAGE 167

RQ13-003 GM 10/7/2013 Q 07 C DOCS BPIM Picturesbroken















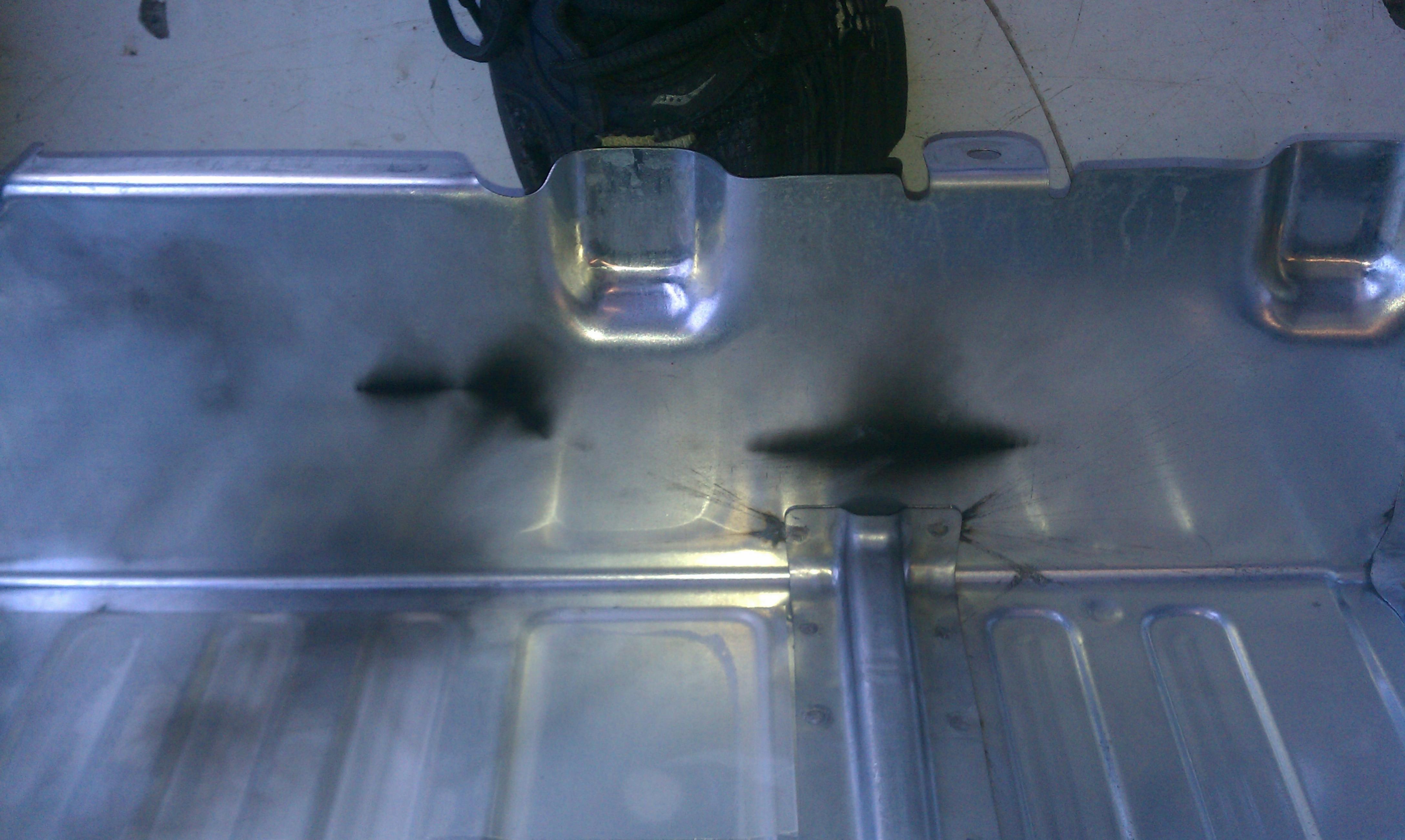


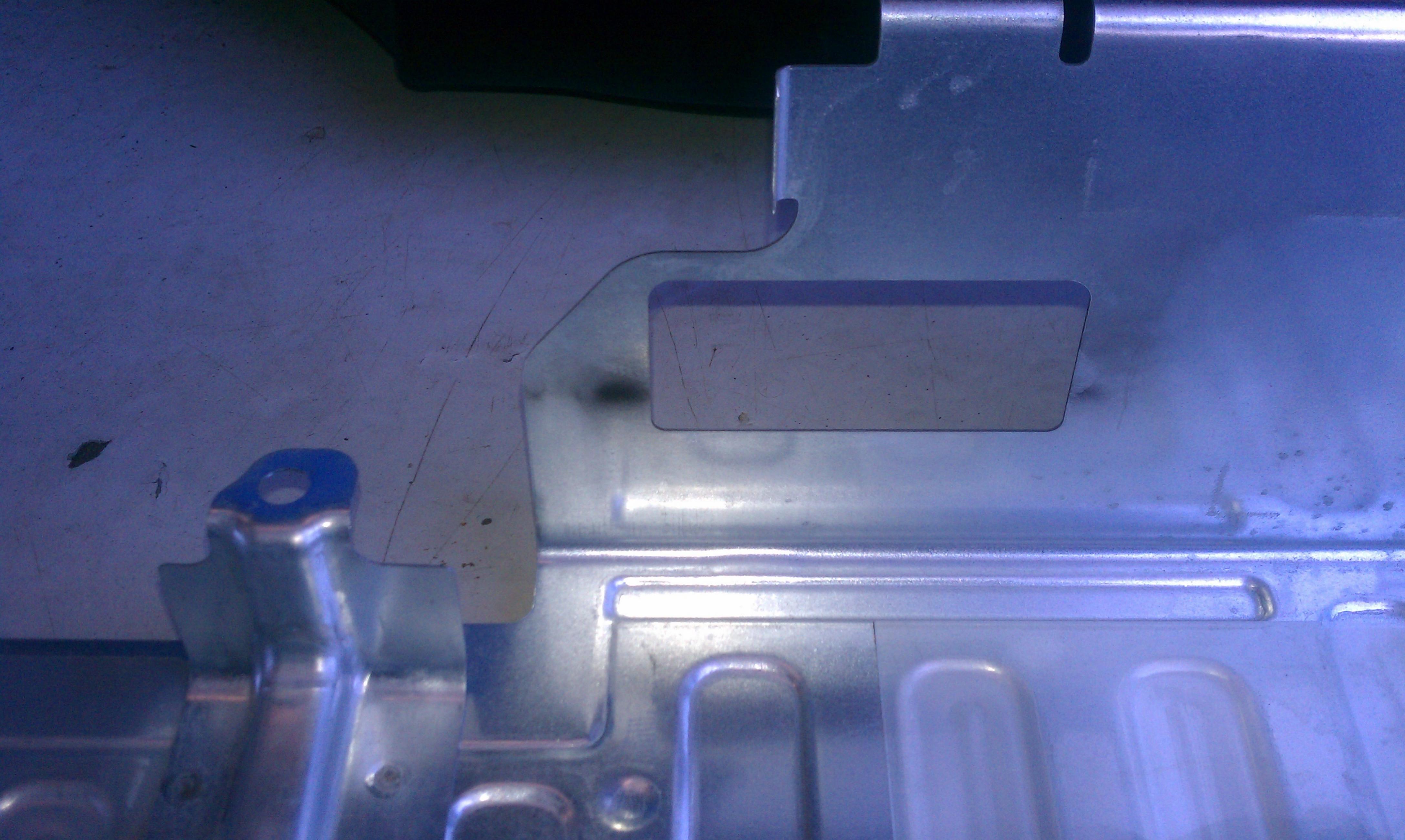
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Made in USA





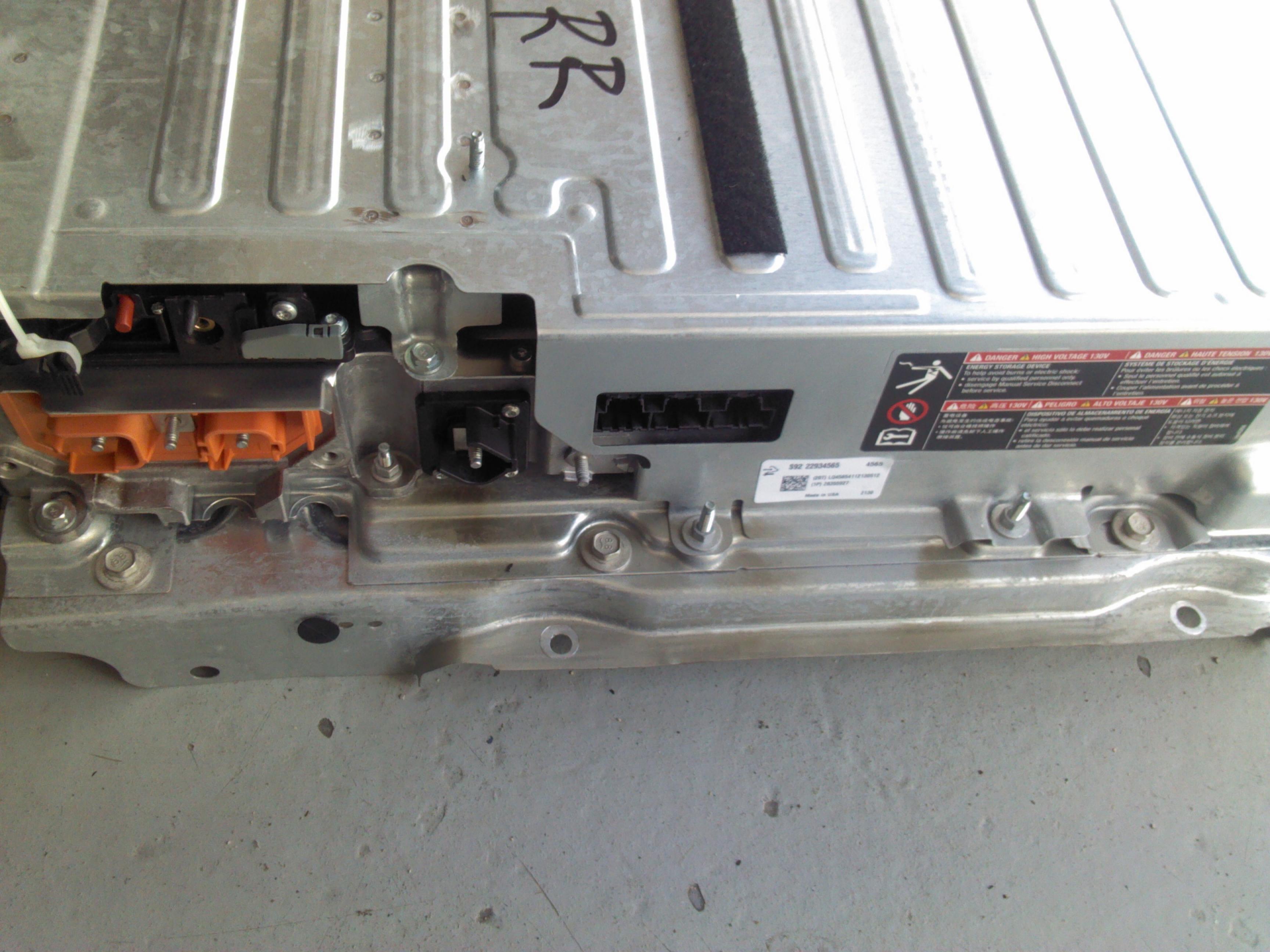


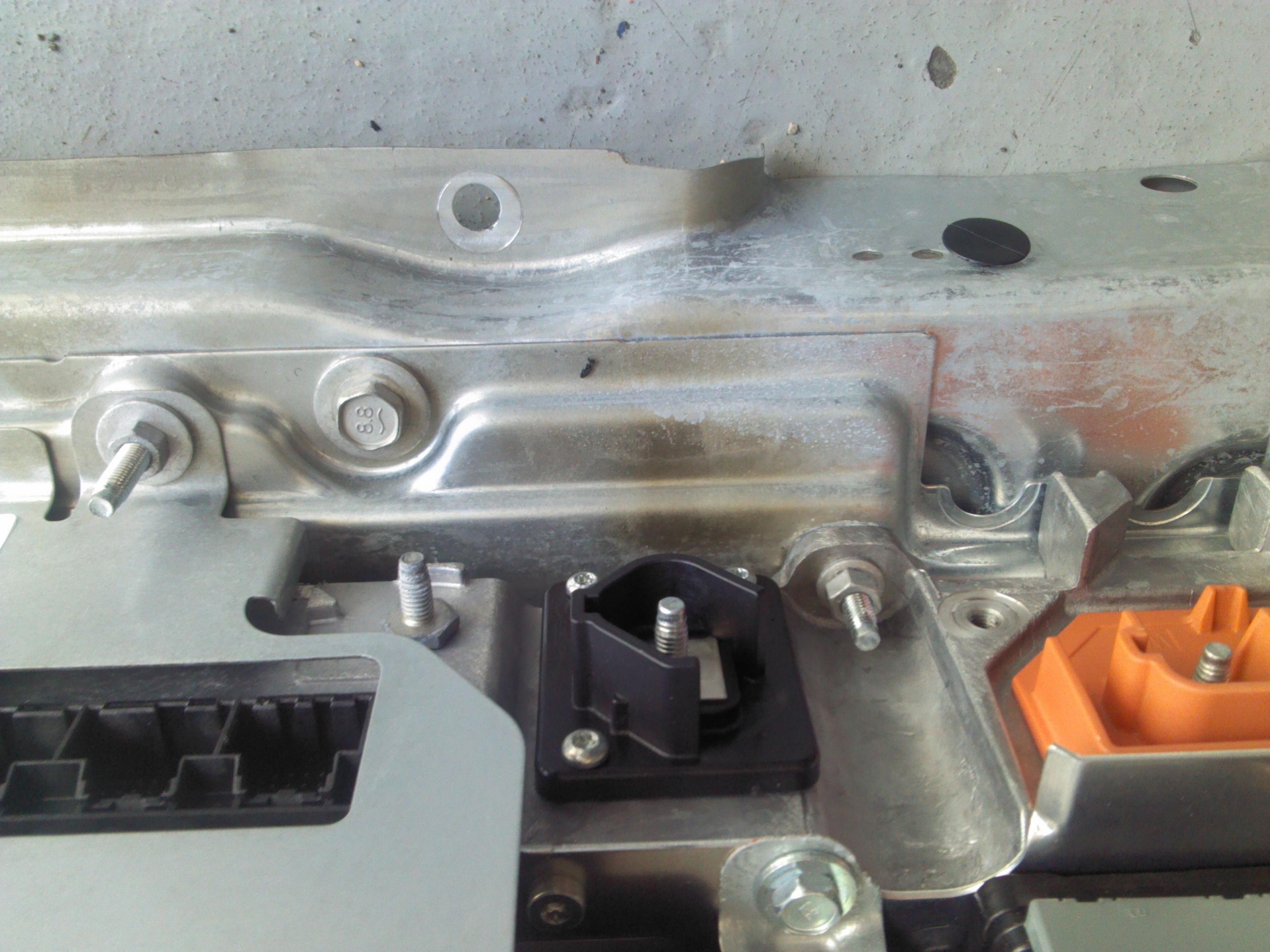








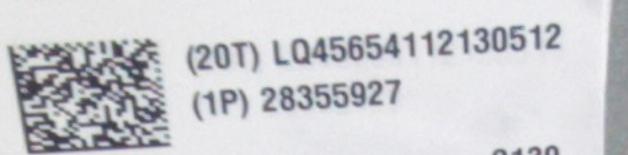








4565



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2130

为避免发生灼伤或电击事故:

Para ayudar a evilar quemaduras o eneque eléctrico: • el servicio sólo lo debe realizar personal calificado. • retire la desconexión manual de servicio antes de dar servicio.

















RQ13-003 GM 10/7/2013 Q 07 C DOCS

(
SR No.	71-1057	120754	Ref No.		Goodwill			BRC Type	N/A
Account	Gilleland	d Chevrolet Cadillac, Inc.	Site	111492	GW SubType)		Bus. Unit	TAC US
_ast Name			First Name		Approval	Not Initiated	Ł	Area	Hybrid Power Electronics
Daytime #	(Evening #		UCC			Sub-Area	Charging System
Address			City	Saint Cloud	Involved Dir			Safety	No
State	MN	Postal Cd	Con. Acct.	Gilleland Chevrolet	Source	Phone		Updated	4/13/2012 05:10:08 PM
Serial #/VIN	1G11F5	RR7DF	Model Year	2013	Priority	Field	License #	Owner	GOSEWIRE
/lake	Chevrol	et	Warr. Start	03/30/2012	Status	Open		Opened	4/11/2012 09:56:41 AM
Nodel	Malibu		Mileage	7	Sub-Status	Active		Closed	
Abstract	charging	g system malfunction							
Customer Description	P1A6F I	ECO JUMP STARTED BACKW	/ARDS 175A FL	ISE OPEN 7.5A TO THE HCP	P06B1 P0A8D	P0AC4 P0A3	F P0C0B P0C52 P1/	A72 P0C78 P1ADE	

GMPP Details								
GMPP Term		GMPP Mil	eage	GMPP Retail Co	st			
Component Cov	erage							
Component Coverage	Ŭ			E	xpiration Mileage	Expirat	tion Date	
Certificate Detail	S							
Certificate Number		Amount		Expiration Date				
Pre-Authorization	n Basics							
Service Dealer			BAC Code		Div. Dealer Code	Re	epair Order #	
						2	77575	
Activities								
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description	
4/13/2012 05:10:10 PM	GOSEWIRE	GOSEWIRE	TAC Update		Done	4/13/2012 05:10:48 PM		
Contact Last Name		Contact Firs	t Name	Account		BAC Code		
				Gilleland Chevrolet C	adillac, Inc.	111492		

Comments Scheduled on-site contact for 04/17/12

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/13/2012 05:10:08 PM	GOSEWIRE	GOSEWIRE	Ownership Changed		Done	4/13/2012 05:10:08 PM	Service Request Ownership has
Contact Last Name		Contact Firs	t Name	Account		BAC Code	changed FROM: CIAVERBR TO:
				Gilleland Chevrolet Ca	dillac, Inc.	111492	GOSEWIRE
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/13/2012 03:44:03 PM	FSENDCC	GOSEWIRE	,	North Central	In Progress		Lack of Progress
			Reqd				
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
				Gilleland Chevrolet Cad	dillac, Inc.	111492	
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/13/2012 12:52:53 PM	CIAVERBR	FSENDCC	TAC Escalation	Field Service Engineer	Done	4/13/2012 03:45:35 PM	Lack of Progress
Contact Last Name		Contact Firs	st Name	Account		BAC Code	Carrie Harvey- Hybrid PT BQM
				Gilleland Chevrolet Cadilla	c, Inc.	111492	
Comments							

Tech did not follow TACs instructions of testing wiring before installing Powerpack and installed Fuses with old Pack installed. Needs guidance from FSE and training

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/13/2012 10:06:56 AM	CIAVERBR	CIAVERBR	TAC Outbound Call	Dealer	Done	4/13/2012 01:52:52 PM	Spoke Doug - tech
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
				Gilleland Chevrolet Ca	dillac, Inc.	111492	
Comments							

Originally there was no communication due to an open F23 7.5A fuse. He replaced the fuse. The 175A fuse was also open so he swapped one from another car. P06B1 P0A8D were current and reset after being cleared and replacement of the fuses but the original pack was installed. If the vehicle was left running other DTCs set afterwards. States Blower Fan works. The resolver and motor temp ckts Document ID: 2728484 were not checked per TAC's recommendations and the new Pack was installed. Tech claims P1A6F reset on the 1st drive cycle. The vehicle was test driven, it went into auto-stop and lurched forward, then would not go into auto-stop again.

Doug was advised again to check the Fuses and their ckts 239 and 840 to the Pack and all of the shielded resolver & motor temp ckts with the MGU and Powerpack disconnected. Case is being escalated to FSE to assist in clear direction in repair or further direction from Engineering.

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/13/2012 09:39:27 AM	CIAVERBR	CIAVERBR	TAC Review	Brand Quality Review	In Progress		Reviewed with BQM Carrie Harvey
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Christensen		Doug		Gilleland Chevrolet Cadill	ac, Inc.	111492	
Comments							
reviewed details with Car	rrie. Will pick up	case and call te	ech. Case may be escalat	ed to FSE.			
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description

4/13/2012 09:20:48 AM	CIAVERBR	CIAVERBR	Ownership Changed	Done	4/13/2012 09:20:49 AM	Service Request Ownership has
Contact Last Name		Contact Fire	st Name	Account	BAC Code	changed FROM: ROWLEYDO TO:
Christensen		Doug		Gilleland Chevrolet Cadillac, Inc.	111492	CIAVERBR
Comments						

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/13/2012 09:16:04 AM	ROWLEYDO	ROWLEYDO	TAC Outbound Call	Dealer	Done	4/13/2012 09:25:54 AM	
Contact Last Name		Contact First	Name	Account		BAC Code	
Christensen		Doug		Gilleland Chevrolet C	adillac, Inc.	111492	
Comments							

Called and spoke with Doug Christensen, Tech

Asked that the Motor Resolver, MGU Temp ckts and all shielded harnesses are checked for a short before installing the Powerpack. Tech will need to wiggle test harness while checking for a short with the harness disconnected from the PowerPack and HV system powered down. The MGU may also need to be checked making certain sure there was no coolant seeping into the MGU connector.

If all above tests good It may be necessary to run the car through another drive cycle or two with the scan tool installed in order to capture the fault.

Info will be forwarded to the eAssist Engineering team for review.

If the Parts dept does not know the 175 A Fuse the part number is 19119015. Also find out if this car is a sold unit and get pictures of any root cause found before making repairs.

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/12/2012 06:51:51 PM	CIAVERBR	CIAVERBR	TAC Inbound Email	Diagnostics	Done	4/12/2012 07:30:24 PM	Received email from Don Rowley and
Contact Last Name		Contact Firs	t Name	Account		BAC Code	BQM Carrie Harvey
Christensen		Doug		Gilleland Chevrolet Ca	dillac, Inc.	111492	
Comments							

I received session logs and a note from Don stating there were DTCs setting after the first drive cycle with the vehicle. They are being reviewed.

I have again asked that the Motor Resolver, MGU Temp ckts and all shielded harnesses are checked for a short before installing the Powerpack. Tech will need to wiggle test harness while checking for a short with the harness disconnected from the PowerPack and HV system powered down. The MGU may also need to be checked making certain sure there was no coolant seeping into the MGU connector.

If all above tests good It may be necessary to run the car through another drive cycle or two with the scan tool installed in order to capture the fault.

Info will be forwarded to the eAssist Engineering team for review.

If the Parts dept does not know the 175 A Fuse the part number is 19119015. Also find out if this car is a sold unit and get pictures of any root cause found before making repairs.

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Des
4/12/2012 04:55:32 PM	ROWLEYDO	ROWLEYDO	TAC Inbound Call	Diagnostics	Done	4/12/2012 05:03:23 PM	
Contact Last Name		Contact First	Name	Account		BAC Code	
Christensen		Doug		Gilleland Chevrolet C	adillac, Inc.	111492	
Comments							

Doug Christensen, Tech

Doug states has driven the vehicle and during the first drive cycle the vehicle went to auto stop and felt a jerk during the auto start. Doug states has codes P1A6F, U0140, U0128, U0422 71 and U0121.

Doug states will send session logs of the recent codes.

Doug states the battery pack fan does work.

Doug states was contacted by a person named Carrie that requested he send other information to her.

Advise dealer that engineering will review this information and the dealer will be contacted tomorrow.

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/12/2012 04:24:06 PM	CIAVERBR	CIAVERBR	TAC Review	Escalation Team Review	Done	4/12/2012 04:26:10 PM	Spoke to Don Rowley
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Christensen		Doug		Gilleland Chevrolet Cadillac,	Inc.	111492	
Comments							

Advised to have the tech check the Powerpack Fan operation, drive for 3 drive cycles and excess of 30 miles to test charging system and

overall performance.

Engineering will be requesting the Pack back for analysis

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/12/2012 04:14:56 PM	ROWLEYDO	ROWLEYDO	TAC Inbound Call	Diagnostics	Done	4/12/2012 04:18:38 PM	
Contact Last Name	Contact First Name			Account	Account		
Christensen	Doug			Gilleland Chevrolet Ca	Gilleland Chevrolet Cadillac, Inc.		
Comments							

Doug Christensen, Tech called and has installed the Generator Control and Battery Module.

Doug states has not commanded the battery pack fan on.

Advise dealer to command the battery pack fan on and if is inoperative replace the battery pack fan.

Advise dealer to drive the vehicle through three drive cycles accumulating about 30 miles of driving.

Advise dealer to call back with udpate.

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/11/2012 01:05:14 PM	CIAVERBR	CIAVERBR	TAC Review	Escalation Team Review	In Progress		Reviewed case with Don Rowley
Contact Last Name		Contact First	t Name	Account		BAC Code	
Christensen		Doug		Gilleland Chevrolet Cadillad	c, Inc.	111492	
Comments							
Sent Session Logs to Ma Advising to replace Powe			со				
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/11/2012 10:45:04 AM	ROWLEYDO	ROWLEYDO	TAC Alarm	24 Hour	Done	4/13/2012 11:11:25 AM	MN, BC, Battery Pack
Contact Last Name		Contact First	t Name	Account		BAC Code	
Christensen		Doug		Gilleland Chevrolet Cadillad	c, Inc.	111492	
Comments							1
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/11/2012 10:15:13 AM	ROWLEYDO	ROWLEYDO	TAC Part Authorized	eAssist PowerPack	Done	4/12/2012 04:20:12 PM	Generator Control and Battery Module,
Contact Last Name		Contact First	t Name	Account		BAC Code	24259770, (Qty 1), OVN
Christensen		Doug		Gilleland Chevrolet Cadillad	c, Inc.	111492	
Comments							

BIN LQ68414112087659

Doug states he removed the cover off the battery assembly and there are a lot of black components as if they got very hot.

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
4/11/2012 10:04:51 AM	ROWLEYDO	ROWLEYDO	TAC Inbound Call	Diagnostics	Done	4/11/2012 10:45:01 AM	
Contact Last Name	Contact First Name			Account		BAC Code	
Christensen	Doug			Gilleland Chevrolet Ca	Gilleland Chevrolet Cadillac, Inc.		
Comments							

_1__Number of times in for the same concern?

_1__Number of days down as provided by the caller?

_N__Does the vehicle have any aftermarket accessories or modifications?

_Y__Has the concern been duplicated?

_Y__Have any SI document been utilized (Capture Doc ID)? 2596046

_N__Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position): Doug Christensen, Tech

Customer Concern: Charging system malfunction.

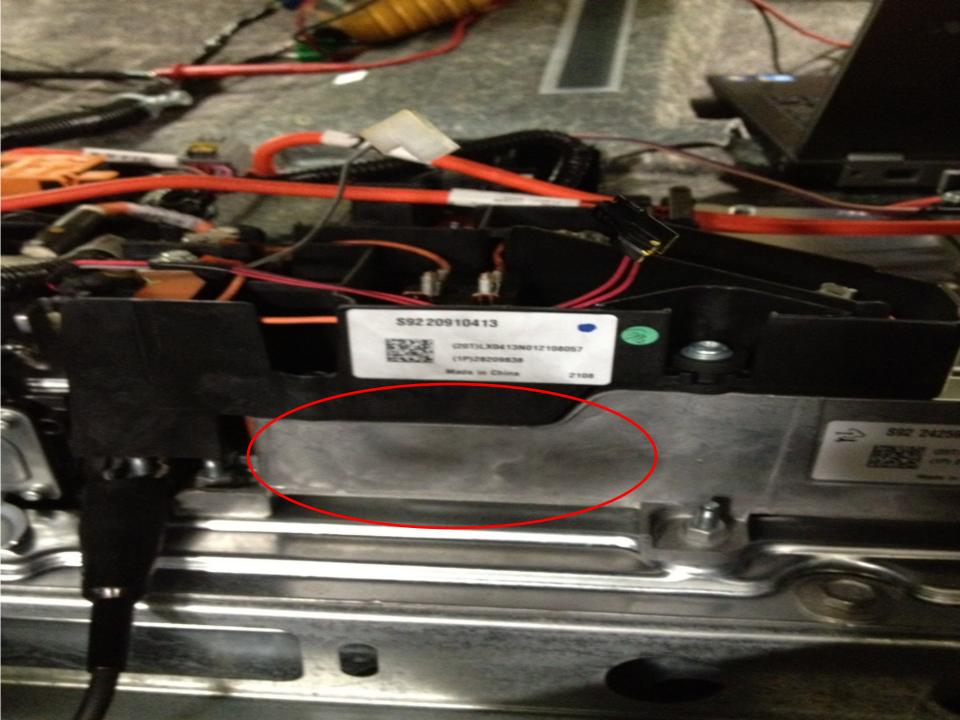
Dealer Comments/Diagnosis (DTC's, What's Been Done): Dealer states has charging system malfunction message. Dealer states the vehicle came off the transport like this and had codes P06B1 P0A8D P0AC4 P0A3F P0C0B P0C52 P1A72 P0C78 P1ADE, the 175a fuse was open and the 7.5a F23UA fuse was also open. Dealer had a like vehicle and swapped the 175a fuse and replaced the 7.5a fuse and gets the above codes again after key up and then starting but the fuses do not open. Dealer states he notices a bad odor once the truck is opened. TAC Recommendations: Advise dealer to disconnect the resolver connectors at the SGCM and the MGU and test for continuity to from the resolver circuits to the shielding circuits. Advise dealer to send the session logs per PIP4902C to donald_rowley@gmexpert.com along with the TACSNAPSHOT@GM.COM. Advise dealer that TAC will authorize the dealer to order the Generator Control and Battery Module per PIC5520D. Advise dealer to call back with the BIN once it is exposed during the repair.

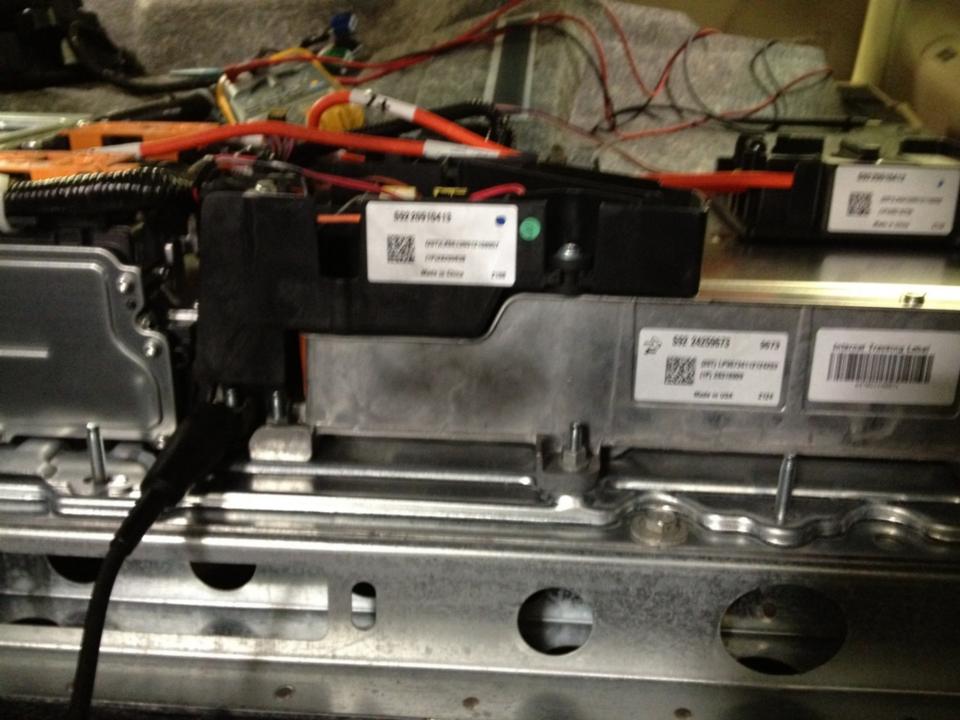
2012 Buick Lacrosse e-Assist VIN (All 17 Digits): 1G4GD5ER8CF Mileage: 41 <u>Condition:</u> Service engine light and service battery message.

<u>Cause:</u> Found trouble code ECM: P0AC4 Sym 00; HPCM: P0C78 Sym 00; PBCM: C0561 Sym 00, found burnt marking on battery case and cover.

<u>Correction:</u> Replace e-Assist battery assembly. .

Dealer BAC Code: 119048 Dealer Name: Williamson Cadillac. Dealer Contact Name: Mike Ilerandi Dealer Email Address: mikel@williamsoncadillac.com Dealer Phone: (305)-807-3836











{In Archive} 2Ply prepreg cap and control verification testing review meeting notes Stephen Farris

to:

Stephen Poulos, Bob Agresta, Daniel D. Cottrell, Frederick Billotto, Kevin Diviney, Mehrdad Teimor, Michael E. Polom, Reena Datta, Rick H Schroeder, Roger Rademacher, Sean E Gleason, Shinichiro Taki, Todd M York, Tony J. Saliga, gary.backs, DAVID P TASKY, hossein.lotfalian, james.fortune 12/10/2012 12:30 PM Hide Details

From: Stephen Farris/US/GM/GMC Sort List ...

To: Stephen Poulos/US/GM/GMC@GM, Bob Agresta/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, Michael E. Polom/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, Rick H Schroeder/US/GM/GMC@GM, Roger Rademacher/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Shinichiro Taki/US/GM/GMC@GM, Todd M York/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, gary.backs@gmch.com, DAVID P TASKY/US/GM/GMC@GM, hossein.lotfalian@gmch.com, james.fortune@gmch.com

Security:

To ensure privacy, images from remote sites were prevented from downloading. Show Images

Archive: This message is being viewed in an archive.

54	Attach	ments
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Image.1355160600044.gif Image.1355160600045.gif Image.1355160600046.gif Image.1355160600048.gif 2Ply cap and control PCBs verfication test results 10DEC12.pptx

All,

Verification testing results presentation reviewed at 11:30 meeting attached and will be presented at CAB at 4:00 today for final approval.

Summary:

- All verification testing complete with no issues/failures (with exception to PMD vehicle testing, ongoing, no issues to date)

- PV3 testing ongoing no issues to date

- BPIM/APM PDT recommendation: Approve change

- eAssist HPIT recommendation: Approve change

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----Stephen Poulos/US/GM/GMC wrote: -----

To: Stephen Farris/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Michael E. Polom/US/GM/GMC@GM, Todd M York/US/GM/GMC@GM, Shinichiro Taki/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, Rick H Schroeder/US/GM/GMC@GM, Roger Rademacher/US/GM/GMC@GM, Gary Backs <gary.backs@gmch.com> From: Stephen Poulos/US/GM/GMC

Date: 12/09/2012 10:25PM

Cc: Bob Agresta/US/GM/GMC@GM, Alicia Pitcher/C/US/GM/GMC@GM Subject: Fw: BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 12/07/12

Steve, all,

I can be available between 11 am and 4 pm Monday to review the validation status of the BAS+ BPIM to support a restart of production in January. Steve, sounds like you will be scheduling the review. Please be prepared to walk through the validation story in detail. This is a very big decision so we need to discuss candidly ANY questions or remaining concerns about the completed validation testing.

Requesting that everyone on the To list please try to join. Also, please invite appropriate quality, design and validation folks for this change from GMCH / Delphi too, as appropriate. Please review the attached testing summary if you haven't already and come prepared with questions and suggestions for additional verification before we restart vehicle production, assuming we agree to validation sign off Monday. My initial thoughts there are that I would like to run more parts through multiple consecutive dealer screens (at MPG), but open to other ideas.

Thanks,

Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 12/09/2012 09:55 PM -----

From: Bob Agresta/US/GM/GMC To: Stephen Poulos/US/GM/GMC@GM Cc: "Cottrell, Daniel" <daniel.d.cottrell@gm.com>, Kevin Diviney/US/GM/GMC@GM, "Backs, Gary" <gary.backs@gmch.com> Date: 12/07/2012 05:21 PM Subject: Fw: BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 12/07/12

Good review of the plan toward implementation.

Seems like an overall Power Quad concurrence that our verification is complete and successful is needed. I suggested a review by you and the PE team and then an Emergency Change Board shortly thereafter.

Folks felt they'd be ready for you on Monday. I will gather the CRB at the start of the 4pm meeting. Let me know if there is an advantage to doing it sooner.

Tue review with the vehicle team planned. Biggest sticking point is getting the PTR run.

Sounds like Oshawa is running the week of the 17th, but needed to have the stop order lifted earlier this week to initiate scheduling. Fairfax is down the week of the 17th.

So we won't get a PTR run until the first week back in January, and likely won't be able to reschedule the line with BAS+ mix until 2 weeks after that. Puts restart of production at about 22Jan even if we successfully lift the Stop Order next Tuesday.

Unless the vehicle team is motivated to accelerate the plan, we are looking towards another 6 weeks before BAS+ is back into production.

- Can use the time to build quantities to refill the pipeline

- Can clear out / exchange the Service Inventory

- Can get parts ready for China and Korea shipped

Bob

Bob Agresta Director - Global Program Execution Global Electrification E-mail: Bob.Agresta@gm.com Mobile: 248-330-6295 Office: 248-857-0933 Admin: 248-857-8317 (Marcia Jackson)

Frederick Billotto

----- Original Message -----

From: Frederick Billotto Sent: 12/07/2012 04:39 PM EST

To: Mark Zerbini; Kris Sevel; Mustafa Dakroub; cole.buttry@gmch.com; Roger Rademacher; gary.backs@gmch.com;

hossein.lotfalian@gmch.com; Steven Wybo; james.fortune@gmch.com; Christopher Janik; Christopher Winegarden; Mehrdad Teimor; Milton Martinez; Reena Datta; Richard Ye; Rick Schroeder; Sean Gleason; Stephen Farris; Stephen Poulos; Tony Saliga; David Worthington <david.worthington@gmch.com>; Kristin Curran; Shinichiro Taki; Gary Insana; Bob Agresta; DAVID P TASKY; Calvin Goodman; Jacob Bylsma; Daniel Cottrell; STEVE BUNCE; Paul Zombory; Len Chalawa Cc: Ronn Jamieson

Subject: Fw: BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 12/07/12

AII,

Meeting Topics and Notes 12/07/12 4PM:

Pre-preg Layer Change Implementation:

12/7 Status of production part availability:Boards passed verification testing.

- GM APM/BPIM PDT will review test results on Friday and sign-off on GM3660 (Farris). Steve will sign-off on 12/10/12.
- PET Approval plan next steps:
 - Need Stephen Poulos approval then proceed to PET. Steve Farris will arrange for that review.
 - Emergency CRB review at 4pm Monday 12/10
- Write Lift Order Monday. Dan C discussed readiness status with John Ball...expect to meet on Tuesday with vehicle team.
- New powerpacks will be ready for pick up at GMCH dock beginning 12/17/12.

(See attached file: 2PLY Cap_control boards verification plan12-07-12.pptx)

Status of APM/BPIM Testing at GM:

- Vehicle was just put on PMD (program mileage dyno) today. Plan to run over the weekend.
- Lab test: Ongoing. No issues reported. Steve will compile data and review on Monday.

5th CAP board failure:

• Third return from CAP board lot 101-211

Action I tem:

GMCH will provide a data dump to Rick Schroeder. Data was not sent.

Can the SUB 12238 be modified to allow for a data dump before pulling the 12V battery? Review again on Friday. 12/7 Update: Team reviewed Tony's response

Next step: Review with Stephen P. on Monday.

TAC Cases vs build week: (See attached file: BPIM week of build chart only.pptx)

GM Diagnostic/Controls Solution: Rick plans to provide an update on Monday regarding planned direction.

Round Table:

Next Meeting: Monday December 10th at 4pm

Regards,



Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 12/05/12 4PM:

Pre-preg Layer Change Implementation:

- 12/5 Status of production part availability:
 - Board verification testing will complete on Friday
 - GM APM/BPIM PDT will review test results on Friday
 If test results are favorable request PET approval late Monday. (Investigate obtaining PET approval Friday)
 - Write Lift Order Monday.

Open Issues:

• PPAP Readiness: Submit to Steve Farris when verification testing is complete. (GM3660 sign-off)

- PTRs: Need lift order to begin PTR process.
- Part markings...what is the proposal? GA Plants and CCA needs to review the plan. 12/5 Update: Jim Fortune has a plan and is reviewing with the GM customers.

PTR material can be in Oshawa by 12/17. When can GMCH be ready to build at rate? Gary will provide a build plan for Friday's meeting. 1000 parts for CCA will begin production the week of 12/17.

5th CAP board failure:

• Third return from CAP board lot 101-211

Action I tem:

GMCH will provide a data dump to Rick Schroeder. Can the SUB 12238 be modified to allow for a data dump before pulling the 12V battery? Review again on Friday.

Status of new BPIM in vehicle and lab testing: 1 new BPIM is running in a vehicle as of 12/5.

Lab test: Steve will follow-up. Sean reported the sample is ready to test.

Status of PRR: No PRR is issued. GMCH was asked to pick up the charges for the vehicle screen.

GM Diagnostic/Controls Solution:

Round Table:

Status of the "buy back' vehicle. Kristin is following...the process is slow. Ultimately the vehicle will go to Kokomo. What is the scope of the screening activity? 14,000 VINs were added. Total number of VINs = 21k Only cars in dealer stock. (most likely covers all unsold stock).

Next Meeting: Dec 7th at 4pm



From: Frederick Billotto/US/GM/GMC

To: mark.zerbini@gm.com, kris.sevel@gm.com, mustafa.dakroub@gm.com, cole.buttry@gmch.com, roger.rademacher@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, steven.wybo@gm.com, james.fortune@gmch.com, christopher.janik@gm.com, christopher.winegarden@gm.com, mehrdad.teimor@gm.com, milton.martinez@gm.com, reena.datta@gm.com, richard.ye@gm.com, rick.schroeder@gm.com, sean.gleason@gm.com, stephen.farris@gm.com, stephen.poulos@gm.com, tony.j.saliga@gm.com, David Worthington <david.worthington@gmch.com, kristin L Curran/US/GM/GMC@GM, shinichiro.taki@gm.com, gary.m.insana@gm.com, Bob Agresta/US/GM/GMC@GM, DAVID P TASKY/US/GM/GMC@GM, Calvin A. Goodman/US/GM/GMC@GM, Jacob D Bylsma/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, STEVE J BUNCE/US/GM/GMC@GM, Paul S Zombory/US/GM/GMC@GM, Len Chalawa/US/GM/CMC@GM Cc: Ronn E. Jamieson/US/GM/GMC@GM Date: 11/30/2012 05:01 PM Subject: BAS + Powerpack Field Return Root Cause Investigation Meeting Notes 11/30/12

All,

Meeting Topics and Notes 11/30/12 4PM:

Pre-preg Layer Change Implementation:

- 11/30 Status of production part availability.
 - 11/29 Update: Sample boards have arrived at GMCH. Verification test set-up is underway (100 of each PCB). CAP boards will complete assy today. Control board should complete by COB 11/29. BPIMs complete as early as 11/29. Status 11/30: BPIMs were built, verification testing is underway.
 - Production PCBs scheduled to arrive early next week. Status 11/30: No update...no reports of delay.
 - Potential to build to production orders by 12/10. Status 11/30: GMCH build plan accounts for 1000 powerpacks available by the end of December. (can build 220 packs per day). Verification testing will complete on 12/5. Need to determine at that time when to lift stop order. Also need to consider the results to date of the option 3 PV testing. GMCH will make a build plan so that GM can understand build ramp up restrictions. Once engineering buys off on validation results the PET will decide on lifting the SWO.
- $\bullet\,$ Part markings...what is the proposal? GA Plants and CCA needs to review the plan
- Inventory from FFX should arrive at GMCH today.

CCA Supply Chain Discussion on 11/30: Main take-away. CCA will monitor stock levels closely and will order only if current inventory depletes to levels that jeopardize ability to meet customer needs. GMCH must be ready to respond to a call for parts.

CAP PCB Verification Plan: See attachment

• 2 BPIMs were planned to ship 11/30 Status: Gary submitted the parts for shipment.

Status of PRR: In progress. Jim Fortune will follow-up next week.

GM Diagnostic/Controls Solution:

• Data dumps: Rick sent them to Mark Zerbini for analysis. No results yet. 11/30 Update: All had isolation faults. No learnings that are helpful in resolving the issue. WAR 361 and 365 had P1B11 DTC that should have shut the hybrid system down. WAR361/365 BPIMs had significant board damage. P1B11 performs remedial action in 133ms...opens 3 phase inverter but does not open contactors. Consider changing the remedial action.

Warranty Return Inspection: GMCH inspected 522 BPIMs only 1 CAP PCB. 400 powerpacks inspected 3 defective CAP PCBs found...this is not new news.... we've been tracking 4 CAP PCB failures.

Round Table: GMCH has a powerpack rework plan developed and are reintroducing salvaged parts to the production assembly line.

Next Meeting: Tentatively Wednesday Dec 5th.

Regards,

GM	ybrid
Fred Billotto Senior Project Engineer	Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

AII,

Meeting Topics and Notes 11/28/12 4PM:

TWOs Were issued to all affected GA plants The TWO states: "All MY13 eAssist Vehicles Must Pass Vehicle Screen Test Prior to Shipping" FFX: 1824908 (Draft waiting for CML to approve) Oshawa: 1825076 (Edit at CML) SGM: 1825082 (Edit 10 CML) GMDAT: 1825096 (Edit 10 GMK PEM)

Pre-preg Layer Change Implementation:

GMCH expects a production quantity delivery of both PCBs next week. A plan to verify new part quality is in progress at GMCH. Expect to have a test plan presented to GM on 11/27. Possible to build production qty powerpacks by 12/10....date must be confirmed. GMCH is working on the timing plan.
 11/29 Update: Sample boards have arrived at GMCH. Verification test set-up is underway (100 of each PCB). CAP boards will complete assy today. Control board should complete by COB 11/29. BPIMs complete as early as 11/29

Status of option 3 testing: Highlights...

- 1 month on HTD
- 300 PTCs complete
- EMC testing complete, waiting for report.
- 150 cycles of thermal schock testing is complete
- No issues reported

CAP PCB Verification Plan:

- How long to run leg 1? Complete 12/5 Leg 2? 12/11.
 - 2 units available for GM testing. GMCH will run 1 unit thru SUB 12238 in a vehicle. Tony Saliga will run the other unit thru SUB 12238 and look for a vehicle to run additional drive cycles (PMD applications). The remaining unit will undergo lab testing. Parts will ship on Friday.

Retrieval of suspect material: GMCH scheduled trucks to retrieve material from FFX and Oshawa. Jim Fortune is working with Scott Wilson to determine a plan for SGM and GMK

Cap Board Hi-pot testing, 11/15 Update: Clarified that this test will not be used on new production material. 11/26 Update: All verification testing is complete. A summary of that testing will be available tomorrow. 11/28 Update: Test plan executed, no failures. 6 aged PCBs and 6 unaged PCBs. No significant differences were noted.

Cap Board Cycling test, 11/15 Update: On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test. 11/26 Update: Debug and qualification testing is delayed, will complete 11/28. 11/28 Update: 3 of 5 panels wired. Remaining panels will complete on Friday afternoon.

GM Diagnostic/Controls Solution: Option 5, magnitude of change and timing to implement: BCP cal change at a minimum, possibly will include a SW change. Timing 3 months to get into the plant. Opportunity to combine with the Option 3 release. Characterization test strategy determined. Testing will begin 12/6-12/7.

Potential Design changes to mitigate the failure: No update. Vehicle procurement is in process.

Recent field returns

3 parts failed after SUB 12238. GMCH inspected those parts concluding NTF. Vehicles were not returned for isolation faults.

Data dumps: Rick sent them to Mark Zerbini for analysis. No results yet.

PR&R: Dan C. asked for GMCH to help with this activity.

Round Table:

Next Meeting: Friday Nov 30th 4pm

Regards,

GM Fred Billotto

Hybrid Energy Storage

Senior Project Engineer Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue

file:///C:/Users/rzxllh/AppData/Local/Temp/notes413C1D/~web0472.htm

Warren, Michigan 48090 VEC 4AV23

Meeting Topics and Notes 11/26/12 4PM:

GM Diagnostic/Controls Solution: Rick is writing a CR to get a new diagnostic started. Primary path (Option 5) reads the battery current sensor looking for a current spike and adds a remedial action to open contactors immediately.

- How to proceed with SW characterization testing? Run an auto-code test. Reena will pull together a work group to focus on a detailed plan. Is support in Kokomo required? answer is TBD.
- · SW analysis and validation plans will be completed once the change is fully determined.

Pre-preg Layer Change Implementation:

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. 11/26 Update: F.Billotto went to CAB today with WO 1814838 but could not get approval because coordinated WO 1814377 is not at Edit 50. John Ball asked us to get remaining sign-offs on WO 1814377 and he will approve offline. WO 1814377 cannot go to Edit 50 until the APM/BPIM drawing is released. Status and next steps (Steve Farris): Dwg PDF file was approved by Steve Farris additional systemic approvals are required. Bob Agresta was able to expedite the process during our meeting today. Both WOs are now CAB ready.
- GMCH expects a production quantity delivery of both PCBs next week. A plan to verify new part quality is in progress at GMCH. Expect to have a test
- plan presented to GM on 11/27. Possible to build production qty powerpacks by 12/10....date must be confirmed. GMCH is working on the timing plan. • Per GMCH, FFX last day of production is 11/30/12.
- Open Issues:
 - Determine new stock designation strategy i.e; apply green sticker to Powerpacks/BPIMs with new material. Next step: 11/26 Update: Jim Fortune agreed to submit a proposal to the GM assy plants.

Meeting with the Program Team on 11/27: What information is required? Dan Cottrell. 11/26 Update: Discussion will focus on vehicle screening strategy. Team recommends using the SUB 12238 test procedure. Oshawa has 150 vehicles, FFX has approximately 300.

Recent field returns:

New Incident: 71-1129555175 McMurray Chevrolet, Inc. PA 2013 Malibu 1G11F5RR3DF thermal event. The vehicle was about to go through the SUB 12238 test but failed *before* the test initiated. Pack will be expedited to GMCH and trim will go to Kristin Curran. Only DTC that set was P062F. This code sets when a 12v battery goes low. Request that GMCH pull a memory dump when the pack arrives. The powerpack built into this vehicle was on the original suspect list. The Tech stated that the vehicle was in the showroom and the battery went dead. The sales team jumped the vehicle and left it run. The tech states that the vehicle ran for approx. 10 minutes in his stall and he noticed the interior was full of smoke and he shut the vehicle down.

3rd field (WAR 361) return with failed CAP board:

• Action item: Can GMCH pull codes from the BPIM? Joe Thompson will try to retrieve the data. 11/19: No update today. 11/26 Update: Data dump was successful. Data was retrieved from 3 out of 4 failed parts. GMCH will send to GM for analysis.

4th field (WAR 365) return with a failed CAP board:

- Received at GMCH 11/13/12
- May 15th 2012 BPIM build date. Vehicle build date 5/18/12
- Unit is from CAP board lot #101211. This is the 2nd failure same lot #101211.
- Vehicle failed at the dealer. SUB 12238 was performed on this vehicle and Kristin confirmed on 11/26 that the failure occurred during the test, but we do not know which step.
- Codes set: P0562,P0ABC,P0AFA,P0CA2,P1A0C,P1ADE,P1AE8,P1AF4,P1B0B,P1E11
- Action Item: Joe Thompson will try to do a data dump. 11/26 Update: Data dump was successful.
- Update 11/19: Rick Schroeder reported that some of the DTCs noted in WAR 365 TAC report are not valid for our vehicle P0800, P1AC? P1BAA. Need to confirm against actual TAC documents. (Reena)

11/19 Update: 3 out of the 4 failed cap PCBs were most likely from the same lot, 2 are confirmed the 3rd fell within the build window but the lot code cannot be read. All of the failed cap boards fall with-in the power board suspect window.

• Question to consider. Can we subject a statistically relevant sample of vehicles that fall outside the suspect window to SUB 12238? If all samples pass perhaps we could reduce the scope of SUB 12238? Partial answer....we did test 496 non suspect vehicles at FFX and zero failures were found.

Cap Board Hi-pot testing, 11/15 Update: Clarified that this test will not be used on new production material. Only used on current material. 11/26 Update: All verification testing is complete a summary of that testing will be available tomorrow.

Cap Board Cycling test, 11/15 Update: On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test. 11/26 Update: Debug and qualification testing is delayed, will complete 11/28.

Design changes to mitigate the failure: Update

- GMCH to develop test procedure that could validate the effectiveness of a barrier material. 11/15 Update: Dan C. identified a material that has potential. 11/26 Update: Fred Billotto obtained a sample of the material.
- Kristin will investigate the availability of a warranty buy back vehicle. 11/15 Update: Kristin worked the issue today. 11/19 Update: No update, 11/26 Update: The credit and re-bill request was sent today. Timing to obtain the vehicle is TBD.

Round Table:

Next Meeting: Wednesday Nov 28th.

Regards,



Hybrid

Hybrid Energy Storage

Senior Project Engineer Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

AII,

Meeting Topics and Notes 11/19/12 4PM:

5 Phase:



Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. Asked PEMs to help fast track to CAB.
 - Powerpack and BPIM Stock disposition: Plan to purge stock for service and production. Prefer to return the parts to GMCH. Need to provide instructions to plants and ESCs/CCA on how to handle the "disposal".
 - What should the plant do with vehicles in lots? Engineering recommendation: Screen and ship.
 - 11/15 Update: Fred will investigate process to determine "dispose" costs and will schedule special meeting to resolve.
 - 11/19 Update: Open issue: How to determine "dispose" costs?
 - 11/19 Update: GMCH working to pull ahead PCB delivery from Nanya 1000 PCBs could arrive by 12/8. GMCH will confirm.

Service Stock Strategy:

- Goal is to continue to service vehicles while minimizing excess stock. Team met today, GMCH is now working directly with the correct GM contacts.
 CCA seems to be tracking only PN 12635717 which is MY12 and MY13 Malibu. Service must also stock 12650851 for MY13 Lacrosse, Regal, E11, and Vs300.
- CCA expressed a desire to order 1600 BPIMs. Team decided to monitor any orders closely in an effort to minimize excess stock.

New Service Bulletin in process: Chris Janik was informed that the MY13 Lacrosse, Regal, E11 and Vs300 BPIM PN should be included in the SUB 12238 page 2

The following service BPIM PNs should be added to the document:

• 12650851 MY13 Lacrosse, Regal, E11, Vs300

Why does the service bulletin only mention BPIM PNs? Service replaced the entire powerpack in a large percentage of these cases. Fred B. will follow-up with Service.

Recent field returns: 3rd field return with failed CAP board:

• Action item: Can GMCH pull codes from the BPIM? Joe Thompson will try to retrieve the data. 11/19: No update today.

4th field return with a failed CAP board:

- Received at GMCH 11/13/12
- May 15th 2012 BPIM build date. Vehicle build date 5/18/12
- Unit is from CAP board lot #101211. This is the 2nd failure same lot #101211.
- Vehicle failed at the dealer. SUB 12238 was performed on this vehicle but it is not clear if the part failed during the test. Kristin will follow-up with dealer to get more details.
- Action I tem: Joe Thompson will try to do a data dump. 11/19: No update today.
- Action I tems: GMCH will investigate removing the micro, send to the supplier to extract the data. 11/19: No update today.
- Update 11/19: Rick Schroeder reported that some of the DTCs noted in WAR 365 TAC report are not valid for our vehicle P0800, P1AC? P1BAA. Need to confirm against actual TAC documents. (Reena)

11/19 Update: New learnings, 3 out of the 4 failed cap PCBs were most likely from the same lot. 2 are confirmed the 3rd fell within the build window but the lot code cannot be read. All of the failed cap boards fall with-in the power board suspect window.

• Question to considerCan subject a statistically relevant sample of vehicles that fall outside the suspect window to SUB 12238. If all samples pass perhaps we could reduce the scope of SUB 12238? Partial answer....we did test 496 non suspect vehicles at FFX and zero failures were found.

Cap Board Hi-pot testing, 11/15 Update: Clarified that this test will not be used on new production material. Only used on current material. 11/19: No update.

Cap Board Cycling test, 11/15 Update: On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test. 11/19: No update.

Design changes to mitigate the failure: Update

- GMCH to develop test procedure that could validate the effectiveness of a barrier material. 11/15 Update: Dan C. identified a material that has potential. 11/19 Update: Fred B. will meet with at the CWT in Warren tomorrow to review options.
- Kristin will investigate the availability of a warranty buy back vehicle. 11/15 Update: Kristin worked the issue today. 11/19 Update: No update
 - What is anticipated use and duration of use? Estimate 3 weeks.

GM Diagnostic/Controls Solution: GMCH and Reena did some powerpack level testing. Data capture will be sent to Milton and Rick after this meeting. If data capture is sufficient GMCH will proceed with powerpack level bench testing.

11/19 Update: Rick thinks the data is useable. Reena needs to confirm if any readings from the VITM current sensor are contained .

Round Table

Next Meeting: Monday November 26th at 4pm.

Regards,

GM



Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com

Warren Technical Cente 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

AII,

Meeting Topics and Notes 11/15/12 4PM:

Stop Work Order 1819298:

- Requires stop build on all MY13 vehicles with eAssist. PNs 22967220, 22975013, 23102215 until Jan 21st.
- · SWO is at IMPL.

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. Asked PEMs to help fast track to CAB.
 - Powerpack and BPIM Stock disposition: Plan to purge stock for service and production. Prefer to return the parts to GMCH. Need to provide instructions to plants and ESCs/CCA on how to handle the "disposal".
 - What should the plant do with vehicles in lots? Engineering recommendation: Screen and ship.
 - 11/15 Update: Fred will investigate process to determine "dispose" costs and will schedule special meeting to resolve.

Service Stock Strategy:

- Goal is to continue to service vehicles while minimizing excess stock. Team met today, GMCH is now working directly with the correct GM contacts.
 - BPIMs at CCA warehouses: 900 PN 12635717 MY12 (MY13 Malibu) and 59 MY13 12650851 as of Nov 5th.
 - Powerpack numbers are TBD

Distribution of Powperpack and BPIM orders. This data includes TAC orders between Oct. 19th and Nov. 9th (Oct. 19th was the day SUB 12238 was released.) The below data includes all TAC orders, not just those related to 12238.

Part Name	PN	Product	Qty	%
BPIM	12635717	'12 Lacrosse, Regal / '13 Malibu	228	79%
BPIM	12650851	'13 LaCrosse, Regal	5	2%
Powerpack	24259770	'12 Lacrosse, Regal / '13 Malibu	53	18%
Powerpack	22948845	'13 LaCrosse, Regal	0	0%
				100%

Recent field returns:

3rd field return with failed CAP board:

- Kristin will try to get more information wrt actions taken when issue was discovered.
 - Kristin learned the tech heard a noise just after battery indicator reached full (step 5). Just after the noise, smoke was observed. Tech keyed off as soon as he heard the noise.
 - · Did techs pull codes before the pack was removed? Kristin will investigate
 - Can GMCH pull codes from the BPIM? Joe Thompson will try to retrieve the data.

4th field return with a failed CAP board:

- Received at GMCH 11/13/12
- May 15th 2012 BPIM build date. Vehicle build date 5/18/12
- Unit is from CAP board lot #101211. This is the 2nd failure same lot #101211.
- Vehicle failed at the dealer. SUB 12238 was performed on this vehicle but it is not clear if the part failed during the test. Kristin will follow-up with dealer to get more details.
 - · Joe Thompson will try to do a data dump.
 - · GMCH will investigate removing the micro, send to the supplier to extract the data.

Cap Board Hi-pot testing, 11/15 Update: Clarified that this test will not be used on new production material. Only used on current material.

Cap Board Cycling test, 11/15 Update: On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test.

Design changes to mitigate the failure: Update

- GMCH to develop test procedure that could validate the effectiveness of a barrier material. 11/15 Update: Dan C. identified a material that has potential.
- Kristin will investigate the availability of a warranty buy back vehicle. 11/15 Update: Kristin worked the issue today.
 - What is anticipated use and duration of use? Estimate 3 weeks.

New Service Bulletin in process: Update was posted at 3pm today.

GM Diagnostic/Controls Solution: GMCH and Reena did some powerpack level testing. Data capture will be sent to Milton and Rick after this meeting. If data capture is sufficient GMCH will proceed with powerpack level bench testing.

Round Table: Nanya may be able to improve PCB delivery. Gary will assess the information and update the timing plan.

Next Meeting: Monday Nov 19th 4pm

Regards,



AII,

Meeting Topics and Notes 11/14/12 4PM:

GM Diagnostic/Controls Solution:

- Update from Rick Schroeder:
 - 4 potential solutions. Rick is assessing effectiveness and risk. Also working on a timeline for each option.
 - Powerpack level test monitoring CAN data to the VITM and BPIM is underway.

Stop Work Order: 1819298

- Requires stop build on all MY13 vehicles with eAssist. PNs 22967220, 22975013, 23102215.
- Stop order duration estimated to end on Jan 21st. Team considers this date conservative.

MY14/15 Builds not included in SWO:

MY14 PPV builds:

- E16- 4 pieces (already shipped new HW MY14 parts)
- GMX353- 1 piece for 11/15/12 MRD (will be a re-flashed MY13 part), 2 Pieces for 1/11/13 MRD GMX351- 1 piece for 1/13 MRD
- GMX351- 1 piece for 1/13 MRD GMX350- 1 Piece for 3/13 MRD

MY14 MVBNs: GMX353- 6 pieces first MRD is Mid- February GMX351- 1 piece

Team agrees to allow non-saleable builds to proceed. Assess options to retrofit if determined necessary.

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. Asked PEMs to help fast track to CAB.
- EWO 1814838 effects MY13 part numbers 23111190 and 22975013 (Malibu only).
 - 23111190 has not shipped to production.
 - Powerpack and BPIM Stock disposition: Plan to purge stock for service and production. Prefer to return the parts to GMCH. Need to provide instructions to plants and ESCs/CCA on how to handle the "disposal".
 - What should the plant do with vehicles in lots? Engineering recommendation: Screen and ship.

Recent field return with damaged cap board (3rd field return):

- Cap board failure is consistent with previous failed boards. Damage foot print similar to previous field failure and lab induced failures.
- Kristin will try to get more information wrt actions taken when issue was discovered.

Cap Board Hi-pot testing:

How does this implementation plan since stop build issue? Plan to continue this activity to learn if faulty boards can be detected.
Plan to audit new boards through this process.

Design changes to mitigate the failure: No update today. GMCH to develop test procedure that could validate the effectiveness of a barrier material. Kristin will investigate the availability of a warranty buy back vehicle

New Service Bulletin in process: Cannot sell eAssist cars with-out vehicle screen. Not posted as of the time of this meeting.

Misc:

CCA ordered 1600 service BPIMs. We need to continue servicing vehicles but should limit stock on hand. Fred and Gary will discuss with CCA tomorrow.

Round Table:

What is the disposition of parts used in root cause testing? Hold until further notice.

Next Meeting: Thursday 4pm.

Regards,

Fre Senio Mobi Mail

M	Hyarid
d Billotto ior Project Engineer	Hybrid Energy Storage
ile Ph: (248) 904-9949 Code: 480-210-411 il: <u>frederick.billotto</u> @gm.com	General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/13/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. 11/12 Status: On track with board procurement. Previously reported part availability is on schedule.
 - What GM parts were part of Delph's PPAP? Hos will find out. Expect to get PNs on 11/13.
 GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at
 - GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at Wednesday's PET. On target
- PPAP plan: GMCH will try to PPAP the parts before the end of the year. Gary will share the latest schedule.
- GM Diagnostic/Controls Solution: GMCH shared a scope trace of the current. Unlikely that the diagnostic could consistently detect the event. Investigate if VITM could read the current spikes: Rick Schroeder will begin working with Milton to assess feasibility. 11/13 Status: Andrew Baughman is investigating what could be done wrt battery current detection.
 - Rick asked for a better requirement to work with. Can a lower current short create the same failure? i.e 40 amps. Answer yes current can be lower and still cause damage. Difficult to assess if damage is equivalent to higher current shorts.
 - · Reena will provide test data for Rick to analyze.
- GMCH Hi-pot Testing:

GMCH will need an email response from GM Engineering approving a variation to perform HIPOT testing on Bare Capacitor boards on the BAS+ APM/BPIM. Specifics of this test as well as operator work instructions are attached.

- Email response from S.Farris or D. Tasky will satisfy GMCH requirements. Jim will issue an SPCR and Steve Farris will champion the change through the GM approval process.
- Sean G. asked that Delphi review this plan. GMCH confirmed Delphi is working with them to develop and validate testing.
- Steve Farris will host a meeting to get all parties on board before testing is implemented in production.
- GMCH testing that mimics vehicle test (Cap board cycling): Status: Test equipment is in process. SPCR is also required as is GM internal review.
- Design changes to mitigate the failure:
- Suggestion: Can a barrier material be added to the interior trim? Dan Cottrell will follow-up. 11/13 Status: Dan C discussed feasibility with interior trim
- BFO. Options for both a field application and future production are under consideration.

• Design studies are underway to find a solution that could restrict venting around the 48 way connector.

Round table:

Next meeting: Wednesday at 4pm

Regards,



Hyarid

Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

AII,

Meeting Topics and Notes 11/12/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. 11/12 Status: On track with board procurement. Previously reported part availability is on schedule.
 What GM parts were part of Delphi's PPAP? Hos will find out. Expect to get PNs on 11/13.
 - What quality improvements can we expect with switch to inside HASL process? From Jim Fortune's email on 11/12/12:
 - Bullets for the main improvements are:
 - 100% Conveyerized line:
 - o Our in house LF HASL equipment is a continuous line: pre clean -> pre Heat -> Flux -> HASL -> Cool down -> Pot Wash

o Subcon is not continuous: Pre Clean_> Pre Heat -> MANUAL HANDLE to place in vertical leveler -> Manual Handle to remove from leveler -> Cool Down Post Wash.

• The advantage of the continuous line is no timing variation from pre heat to the leveler resulting in better distribution of HASL thickness

- Horizontal Leveler (Nan Ya in House) Vs Vertical Leveler (Subcon):
 - o The horizontal leveler produces a flatter final surface finish.

o The horizontal leveler exposes the PCB panel to less thermal shock (less time in the solder pot). This is better for long term reliability.

- DI water post clean at an elevated temperature (Nan Ya in House Leveler) City water Subcon Leveler
 - o DI post clean at an elevated temperature results in cleaner PCB's (Less free Ion's)
- Having LF HASL process in house at Nan Ya gives us better control over the process (Vs managing the subcon)
 - No transportation time- packaging and shipping the panels to the subcon (about a 20 minute drive from Nan Ya's factory)
 GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at Wednesday's PET.
- GMCH Hi-pot Testing:

GMCH will need an email response from GM Engineering approving a variation to perform HIPOT testing on Bare Capacitor boards on the BAS+ APM/BPIM. Specifics of this test as well as operator work instructions are attached.

- Email response from S.Farris or D. Tasky will satisfy GMCH requirements. Jim will issue an SPCR and Steve Farris will champion the change through the GM approval process.
- Status: Parts are in the thermal chamber will complete cycle on Wednesday. Test implementation 11/20/12.
- GMCH testing that mimics vehicle test (Cap board cycling): Status: Test equipment is in process. SPCR is also required as is GM internal review.
- Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday. Status: Testing indicated that the design change under consideration does not mitigate the effect of the failure. Suggestion: Can a barrier material be added to the interior trim? Dan Cottrell will follow-up.

- GM Diagnostic/Controls Solution: GMCH shared a scope trace of the current. Unlikely that the diagnostic could consistently detect the event. Investigate if VITM could read the current spikes: Rick Schroeder will begin working with Milton to assess feasibility.
- How does HTD validation test compare with the vehicle test? Steve Farris: No update today.

Round table:

Next meeting: Tuesday at 4pm

Regards,



Hybrid

Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

AII,

Meeting Topics and Notes 11/9/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. What GM parts were part of Delphi's PPAP? Hos will find out. What quality improvements can we expect with switch to inside HASL process? Jim Fortune will follow-up

How does HTD validation test compare with the vehicle test? Steve Farris

• Action: Plot HTD validation test data to learn what peak temperatures and power were recorded at each thermistor. Hos will help Steve help to make contact with the appropriate Delphi engineers.

GM Diagnostic/Controls Solution: Rick Schroeder:

- Current production SW will set a DTC if a rapid increase in current is detected but will not take remedial action. Possible to change cals to enable opening contactors as a remedial action.
- Opening contactors immediately is feasible but that will require a software change. Calvin Goodman objects to this option using a diagnostic to detect a short.

Next steps:

- Primary path: SW change to open contactor immediately. Includes additional rationality feature to prevent false fails (walk home condition).
- Cal change only. Secondary parallel path
- What about using thermistor delta T readings to open contactor? Feasibility of this option is under consideration.

GM Testing:

Vehicle test with thermo-coupled caps. Tony Saliga: Test complete. Data was sent to Reena today and will be used to determine test profiles.

GMCH testing that mimics vehicle test (Cap board cycling): No new updates.

Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday. Plan is on track.

Round table: FPE will review issue on Tuesday.

Next meeting: Monday at 4pm

Regards,

GM



Hybrid Energy Storage

Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

Meeting Topics and Notes 11/8/12 4PM:

Pre-preg Layer Change Implementation

• EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are in draft status

- How to handle service and production stock?
 - Service/Dealer/Production: Plan to use existing stock if it can be screened. Everything must be screened not just the suspect lots.
 How can we screen packs and BPIMs in service stock? Could test after installation in a vehicle.
 - Production stock at the vehicle asy plants cannot be screened. Implementation of the option 1 change required returning suspect powerpacks to

GMCH. Plants will need to screen at the vehicle level. What to do with stock at the vehicle plants? Build and screen after. EWO direction is USE but somewhere in the process a screen must occur.

- Dan C. met with John Ball and he agreed that we can proceed with-out changing the pack PN providing we can trace the new stock.
- Last summer Nanya asked GMCH to change the HASL supplier. GMCH rejected the request. Nanya now refuses to quote without the HASL supplier change. GMCH produces other products with boards that use the new HASL supplier without issue. Team asked GMCH to request Nanya quote both options i.e, new vs current HASL supplier. GMCH will put together a qualification plan for the new HASL.
- Provide details behind EWO BPs. for John Ball (Fred Billotto)

Cap Board Hipot Screening at GMCH: On track to begin test verification over the weekend. The testing will take approx 4.5 days. Testing in production is planned to begin on 11/19/12

GMCH testing that mimics vehicle test (Cap board cycling): Apply 120v DC bias between HV+ and HV-.

GM Testing:

Vehicle test with thermocoupled caps. Tony Saliga: Test is underway should have ETAS profile in the morning.

Investigation of packs returned for the POBFD DTC:

Dan Weaver reported: "....5 of them have been confirmed to have isolation shorts. I will have the CPE look at the WAR 161 and 293 to see if we can get those closed as well. Will also verify that WAR 206 and 228 were looked at and not just classified as isolation faults because of the P1B0B DTC."

Design changes to mitigate the failure: BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday.

GM Diagnostic/Controls Solution: Rick Schroeder:

• Rick is working on this as a potential solution. Will ask for an update tomorrow at 4pm

Round Table:

Next meeting: Friday 4pm

Meeting Topics and Notes 11/7/12 4PM:

Pre-preg Layer Change Implementation

- Artwork complete and made available to Nanya yesterday
- Awaiting response from Nanya on quote, expect response tomorrow (Thu Nov 8th)
- GMCH to prepare updated timing for distribution to team this week.

Cap Board Hipot Screening at GMCH

- Two fixtures developed, to be completed this week (Fri Nov 9th).
- Hipot screening will be operated by engineering personal in the production environment.
- Cycle time 2 min including load and unload of parts, 170 parts a day to meet current production levels.
- 100 boards requested were made available for qualification 50 boards will tested through each fixture.
- Qualification includes measuring impedance before and after 2000V hipot, thermal cycling and humidity to ensure test does not create defects.
- Hipot breakpoint currently Nov 19th.

GM Diagnostic Testing

- POBFD "Drive Motor Current" setting in field with 8 vehicles setting the code thus far (based on when QIS2 captured data)
- When POBFD sets in field, other codes set including loss of isolation and precharge time too long faults
- TCed BPIMs were installed in vehicles but cannot be flashed with production code; GMCH onsite support was contacted and hopefully can unlock the units tomorrow (Thu Nov 8th).

GMCH Test Status and Learnings

- Temperature bare board testing modeled after vehicle screening to be reviewed and discussed tomorrow (Thu Nov 8th)
- · Additional autocode BPIM testing may be needed and will be discussed with Diagnostic team,
- TC and scope data will be reviewed and sent to Diagnostic team.

Design changes to mitigate the failure

· Small work group will be formed to discuss this topic.

Next meeting: Thursday at 4PM



All,

Sorry for the delayed distribution...was out of the office for a few days.

Meeting Topics and Notes 11/5/12 4PM:

Pre-preg Layer Change Implementation:

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are in draft status
- Open Issues:
 - Need to determine production and service stock disposition. (Use, Rework, Dispose,): BPIMs at CCA warehouses: 792 MY12 (MY13 Malibu) PN 12635717 and 59 MY13 12650851.
 - Validation plan: GMCH working to get "pull ahead" boards several weeks before production qty boards arrive. Also some option 3 material may be available. GMCH presented a plan to test those boards. Additional confidence will be gained because Option 3 validation will be near completion at the time this change breaks to production.
 - Ability of service technicians to read the BPIM build date from SW. Not possible using standard service tools. (DPS can extract the data but that SW is not used at dealership)

CAP Board Screening at Nanya and GMCH:

One hi-pot fixture is assembled at the lab in GMCH. Verification test plan is under development. Estimated availability for production use? Dependant upon qualification test plan which is TBD. Estimate early next week as a possibility.

Ability to use Diagnostics to Detect a HV Short:

Rick and Milton ran a simulation at MPG to test for the capability of POBFD to detect a High Voltage short.

GMCH asked to receive SW patch to support testing that validates the SW calibration would catch the failure. Investigate occurrence of POBFD in warranty returns. R. Schroeder Next steps: Set-up focused work to group to assess feasibility. (F.Billotto)

Round table:

Examine component level validation plan and compare against dealership testing. How does high temperature durability testing compare to SUB 12238? Steve Farris will investigate.

Can low mileage customer vehicles that have not failed be removed from the suspect lot? Example if a vehicle has >15k miles is can it be removed from the suspect list

Does pre-preg degrade overtime? Steve Farris will investigate.

Next Meeting: Wednesday Nov 7th at 4pm.



AII,

Meeting Topics and Notes 11/2/12 4PM:

GMCH Test Status and Learnings:

- A shorted cap board without the bulk capacitors populated creates the same magnitude event as a board with caps populated.
- Event occurs almost instantaneously.
- We learned from UCC that the cap on the field return did not vent due to internal failure. It was damaged from the outside.
- Failure occurs very rapidly.
- BPIM components monitored by thermistors do experience a rapid rise in temperature. Perhaps controls could react to that data.

- Rick Schroeder asked for current and temperature data to react to....temperature readings have a slower reaction time. Reacting to temp may still be beneficial
- · All data captured will be sent to Rick so he can assess our options.
- Rick and Milton will attempt to simulate the failure (non-destructive test) on a vehicle on Monday.

CAP Board Screening at Nanya and GMCH: GMCH presented a cap board screen proposal. GMCH presented a proposal for a test that mimics in vehicle test.

- · Many unresolved issues. New equipment purchase would be required.
- The team wants to thermocouple a cap board and run in the vehicle to acquire correct temp profile.
- Plan to test 40 boards at a time. 8 boards per rack, 5 racks in thermal chamber
- Estimate 2-3 weeks to implement.

Pre-preg Layer Change Implementation:

• This topic was discussed and will proceed according to plan. Detailed timing is provided in the attachment.

Notes: Dan Cottrell suggests we explore design change that could seal pack to prevent propagation.

Next meeting: Monday at 4pm

Regards,

GM



Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/1/12 4PM:

Plan to implement changes: Additional pre-preg layers:

- GMCH will hold an emergency change meeting with the hopes of getting Delphi to begin the design changes by Monday. G.Backs working to get the CN issued. Team decided to get just the pre-preg change in as fast as possible.
- · Plan is to proceed without PN changes: DRE's need to put a plan together. (Fred, Reena, Steve)

CAP Board Screening at Nanya and GMCH:

- GMCH working on a fixture to do on-site hi-pot testing on the cap board. Should have a sample fixture ready to test bare PCBs by Friday (11/2). Test details are TBD. Goal is to implement 100% screen.
- GMCH asked Nanya to implement a board screen at their facility. Awaiting a response from Nanya
- GMCH test to mimic vehicle screen: Analyze vehicle test data to determine appropriate time, temp, and energy parameters. (This test was identified as critical path)

GMCH Test Status and Learnings

- GMCH will run a test without the bulk caps to understand if energy escapes the APM/BPIM unit without the electrolytic acting as a catalyst. Important to know if the caps are contributors
- High temp delta was observed on several PCB components with-in a very short time span when a short is induced. Can this phenomenon be detected and acted upon by hybrid controls?
- MCP and BCP survive the event. GMCH was able to capture data

Regards,



Frederick Billotto---10/30/2012 05:23:25 PM---All, Meeting Topics and Notes 10/30/12:

From: Frederick Billotto/US/GM/GMC

To: frederick.billotto@gm.com, mark.zerbini@gm.com, kris.sevel@gm.com, mustafa.dakroub@gm.com, cole.buttry@gmch.com, roger.rademacher@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, steven.wybo@gm.com, james.fortune@gmch.com, john.j.lee@gm.com, christopher.janik@gm.com, christopher.janik@gm.com sean.gleason@gm.com, stephen.farris@gm.com, stephen.poulos@gm.com, tony.j.saliga@gm.com, David Worthington <david.worthington@gmch.com>, Kristin L Curran/US/GM/GMC@GM

Cc: shinichiro.taki@gm.com, gary.m.insana@gm.com

Date: 10/30/2012 05:23 PM

Subject: BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 10/30/12

AII,

Meeting Topics and Notes 10/30/12:

- 1 Testing at GMCH: Status of test plan and testing activities: Gary Backs reviewed next steps. Plan to start testing on 10/31/12.
- 3. What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony Saliga sent test data (V,T,I etc..) to GMCH. The profile is currently under review at GMCH. Δ
- 5. Mfg process data. GMCH sent a list of questions to Nanya. Jim Fortune presented production process data from Nanya indicating a low fall-out rate across the lots that the failed control boards came from.
- Confirm via physical inspection that the improved pre-preg layer meets expectations: The dielectric thickness (pre-preg layer) on the cap board meets industry standard thickness (currently at approximately 123 microns or greater). Option 3 changes will increase the pre-preg layer to 180 microns. 7. Note industry standard also requires 2 layers.
- 9. Summarize the validation plan for a pre-preg only change: If kick-off is 11/9/12 pipeline fill is 2/8/13.

Notes

8

Kevin Diviney reported on 3 additional powerpacks that failed and deposited excessive soot/smoke or smell in the vehicle during SUB 12238 testing at a dealership. Those packs will be expedited to GMCH.

Action Items:

- GMCH to complete inspection of all "isolation fault" (P1B0B dtc) warranty returns to check for any cap board failures. 17 units were inspected today, 1 cap board was found suspect. 100 BPIMs and 25 packs are left to check. Direction to GMCH is to continue checking stock before going back to root cause the suspect cap boards. Direction may change if a significant number of cap board failures are discovered.
- GMCH to work on developing a screen that mimics the SUB 12238.
- · Complete change implementation trade study:
 - Pre-preg change only.
 - Wait for option 3 changes to complete validation and implement as planned in April 2013
 - Pull ahead option 3 implementation accepting less validation but continue running testing in parallel until complete.

Open Issues:

Can the BPIM potentially detect a HV+ to HV- resistive short? Need to know what current level we see in the short before a determination can be made. Next step: review test results

Round Table: Next meeting: Thursday morning at 10am.

Regards



AII,

Meeting Topics and Notes 10/29/12:

1.) Timing to implement pre-preg layer change into the CAP and Control PCBs.

- · 5-6 weeks to produce PCBs in production quantities
- 2 weeks for GMCH internal drawing release.
- · Testing and pull ahead material requirements are not included in the timing estimate.
- Approximately 2 weeks after the PCBs are received powerpacks will be available to ship.
- Can we abbreviate the option 3 change validation testing and pull ahead implementation? How much option 3 testing will complete 8 weeks from now? 75% HTD, TS complete, 50% of PTC, EMC testing complete, LV transient complete.

Options to implement a countermeasure:

- Rely upon option 3 testing that is complete at the time when the new PCBs with increased pre-preg layer become available to validate this change. (Under review. PDT prefers no part number changes)
- Release option 3 change to production approximately 8 weeks from now accepting validation complete at that time. Validation testing will continue until complete. (Rejected)

2.) GMCH test plan

- Reviewed GMCH presentation.
- Desired learnings: How long after the short initiates can we diagnose a failure? What can we do with that diagnosis? How long after a board shorts does the cap fail?
- If it becomes necessary to run the test with application SW outside the vehicle a plan will need to be developed. We don't know how to do that efficiently.

3.) Can the BPIM potentially detect a HV+ to HV- resistive short? Need to know what current level we see in the short before a determination can be made.

4.) Mfg process data.

• GMCH provided a list of questions to Nanya. Expect a response tomorrow.

5.) GMCH was asked to inspect BPIMs returned for iso faults that have yet to be visually inspected to confirm that the CAP board wasn't root cause.

• GMCH inspected 15 of approximately 100 parts. No cap board failures were found.

Notes:

Zero BPIMs have been returned for ISO faults since option 1 was implemented in August 2012.

Action items:

- Confirm via physical inspection that the improved pre-preg layer meets expectations. (GMCH)
- Summarize the validation plan for a pre-preg only change. (Reena and Gary)
- What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony will provide a trace of the duty cycle. (GMCH and Tony)
- Review GMCH test plan with ESS safety engineering. (Fred and Galen)
- What kind of screens can Nanya perform? Ask Nanya to perform hi pot testing on cap board.

Regards,

Fred Billotto Senior Project Engineer

GM

Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

[attachment "2PLY Cap_control boards verification plan12-07-12.pptx" removed by Stephen Farris/US/GM/GMC] [attachment "BPIM week of build chart only.pptx" removed by Stephen Farris/US/GM/GMC]

Daytime # Recom Bulletin # Pic5520D Open Concern DC12 - SBD Used No SVc Man Sub Charging System Veh Family 1B Mileage Type M Symptom Desc Performance Performance Status Open Concern DC12 - SBD Used No SVc Man Sub Charging System Repair Order 561713 Restricted Part # 24259770 Status Open Sub Status Active Serial #/VIN 1611F5RR2DF Mileage 605 Ven Yere Sub Status Active Model Maibu Warranty Start Ven Yere Priority Consultant Closed Ven Yere Year 2013 Weh Series F F F F F		-	-						
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	Year	2013	Warranty Status						
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Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
2/29/2012 04:03:59 PM	COONJA1	COONJA1	TAC Outbound Call	Dealer	Done	2/29/2012 04:11:21 PM
Last Name		First Name		Priority	Sta	rt Date
Viger		Jon			2/2	9/2012 04:03:59 PM
Times In		Days Down				
1		1				
Description						
(20T)LQ68414112011144	4					
Template Text						

Activities

Called the dealer To advise that we have oked the replacement of the HV battery and to follow bulletin PIC5520D for the ordering of the battery pack assembly. The dealer to call back if any further help is needed.....jc

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
2/29/2012 03:53:30 PM	COONJA1	COONJA1	TAC Part Authorized	eAssist PowerPack	Done	2/29/2012 03:59:15 PM
Last Name		First Name		Priority		Start Date
Viger		Jon				2/29/2012 03:53:30 PM
Times In		Days Down				
1		1				
Description						
(1) OVN 24259770						
HV battery						
Template Text						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
2/29/2012 02:39:21 PM	COONJA1	COONJA1	TAC Inbound Call	Diagnostics	Done	2/29/2012 02:40:36 PM
Last Name		First Name		Priority	Sta	art Date
Viger		Jon			2/2	29/2012 02:39:21 PM
Times In		Days Down				
1		1				
Description						
Jon Viger Tech						
Template Text						

The dealer called back in for direction on how to get the connector end view and tools for testing location in SI.

Activities

TAC was able to advise the tech were to find all the information and how to get to it. The dealer is going to test and call back with findings...jc

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
2/29/2012 02:05:04 PM	COONJA1	COONJA1	TAC Alarm	24 Hour	Scheduled A	larm
Last Name		First Name		Priority	Sta	art Date
Viger		Jon			2/2	29/2012 02:05:04 PM
Times In		Days Down				
1		1				
Description						
Open Fuse.						
Template Text						
2732532						
2593799						
2745102						
2745102						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion		
2/29/2012 01:55:00 PM	COONJA1	COONJA1	TAC Inbound Call	Diagnostics	Done	2/29/2012 02:05:01 PM		
Last Name		First Name		Priority	Sta	rt Date		
Viger		Jon			2/2	9/2012 01:55:00 PM		
Times In		Days Down						
1		1						
Description								
Jon Viger Tech								
Template Text								
The dealer called back in to advise that he has 2 fuses in the UBEC that are open.								

fuse 23 EV battery pack

Fuse 27 Electronic Parking Brake

Activities

During the call the dealer had the X3 connector at the SGCM and hooked in the amp meter at fuse 23 there were sparks and then no amp draw.

The dealer advised that at the Fuse 23 their is battery + on one side. The dealer hooked in the amp meter and found that their is not any B+ at the battery pack connector X3.

The dealer to inspect for short on CKT 840 and call back with pictures and location of the short....jc ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
2/29/2012 11:24:54 AM	RIKERJO	RIKERJO	TAC Alarm	24 Hour	Scheduled Al	arm
Last Name		First Name		Priority	Sta	rt Date
Viger		Jon			3/1	/2012 11:24:54 AM
Times In		Days Down				
Description						
FL, eassist						
Template Text						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
2/29/2012 11:24:04 AM	RIKERJO	RIKERJO	TAC Inbound Call	Diagnostics	Done	2/29/2012 11:27:20 AM
Last Name		First Name		Priority	Sta	art Date
Viger		Jon			2/2	29/2012 11:24:04 AM
Times In		Days Down				
1		1				
Description						
<u>.</u>						
Template Text						
Number of days dowr	as provided	by the caller?				

Number of times in for the same concern? 1

Has the concern been duplicated? Yes

Activities

Does the vehicle have any aftermarket accessories or modifications? No Have any SI document been utilized (Capture Doc ID)?

Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position):

Jon Viger Tech

Customer Concern:

No Crank on start.

Dealer Comments/Diagnosis (DTC's, What's Been Done):

Dealer states that he has no communation.

Dealer states that the 12 volt battery is dead will not charge

TAC Recommendations:

Advise the dealer to check the battery fan operation.

Advise the dealer to replace the battery and test the charging system.

ExtendedTemplateText

SR #	71-1048351735	Account Phone #	(580) 795-3	3337	Cust Concern	Battery light on, 12V batte	ry went dead	
Account	Madill Chevrolet-Buick,	Site/BAC	173040		Keyword 1	EASSIST	Business Unit	TAC US
Address	Inc. PO Box 458				Keyword 2	CHARGE	Keyword 3	
City	Madill	State OK	Zip	734460458	Keyword 4			
Last Name		First Name			Non Keyword	BATTERY LIGHT ON, NO	CODES	
		Recom Bulletin #	PIC5520D		Comp type		Svc Man Sec	Hybrid Energy Storage
Daytime #					Open Concern	DC10 - SBD performed	SVc Man Sub	Charging System
Veh Family	GB	Mileage Type	Μ		Symptom Desc	Inoperative		
Repair Order	48112	Restricted Part #			Status	Open	Sub Status	Active
Serial #/VIN	1G4GC5ER5CF						Onened	03/14/2012 09:41:04
Make	Buick	Mileage 986			Owner	SLEEMASC	Opened	05/14/2012 09.41.04
Model	LaCrosse	Warranty Start			Priority	Consultant	Closed	
Year	2012	Warranty Status						
Veh Line	GC	Veh Series	С					
Plant	F	Body ^{5E} Er	ngine R					

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
3/14/2012 09:42:01 AM	SLEEMASC	SLEEMASC	TAC Inbound Call	Diagnostics	Done	3/14/2012 10:10:38 AM	
Last Name		First Name		Priority	Sta	art Date	
					3/1	4/2012 09:42:01 AM	
Times In		Days Down					
1		2					
Description							
Spoke to technician Robe SI doc 2596074 No modifications, condition		plicated					
Template Text							
Robert states the battery light is on. He states the 12V battery was dead and the vehicle had multiple low voltage codes set.							

He states he cleared the codes and no codes have reset.

He states the 14V power module status with the vehicle running toggles between unknown and fault. He states the state of charge of the high voltage battery is 62% with 115V. The low voltage circuit is reading 11.8V and dropping slowly.

Activities

Advised that I will authorize the battery replacement for the vehicle. Advised from the local ESC. ExtendedTemplateText that the battery will need to be ordered

Status Created **Created By** Assigned To Activity Type Sub-Type **Actual Completion** SLEEMASC 3/14/2012 10:11:38 AM SLEEMASC In Progress TAC Part Authorized eAssist PowerPack Start Date Last Name First Name Priority 3/14/2012 10:11:38 AM Days Down Times Description Battery 24259770 (QTY: 1) Template Text ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
3/14/2012 10:12:18 AM	SLEEMASC	SLEEMASC	TAC Alarm	24 Hour	Scheduled Al	arm
Last Name		First Name		Priority	Sta	rt Date
					3/1	6/2012 10:12:18 AM
Times In		Days Down				
Description						
eAssist battery						
Template Text						
ExtendedTemplateText						

SR #	71-1070023803	Account Phone #	(410) 931-8600	Cust Concern	ses light charge light on		
Account	Koons Chevrolet, Inc.	Site/BAC	113645	Keyword 1	CHARGE	Business Unit	TAC US
Address	10207 Philadelphia Rd			Keyword 2	LIGHT	Keyword 3	SES
City	White Marsh	State MD	Zip 211623401	Keyword 4			
Last Name		First Name		Non Keyword	P0700 U0293 U1817		
				Comp type		Svc Man Sec	Body and Accessories
Daytime #		Recom Bulletin #	PIP4992 PIC5520D	Open Concern	DC10 - SBD performed	SVc Man Sub	Body Control System
Veh Family	1B	Mileage Type	Μ	Symptom Desc	Performance		
Repair Order	1393139	Restricted Part #	24259770		Open	Sub Status	Active
Serial #/VIN	1G11D5RR1DF			Status	Open		
Make	Chevrolet	Mileage 128		Owner	COONJA1	Opened	05/23/2012 09:50:45
Model	Malibu	Warranty Start	3/27/2012 12:00:00 AM	Priority	Consultant	Closed	
Year	2013	Warranty Status					
Veh Line	1D	Veh Series	D				
Plant	F	Body ^{5R} Er	ngine R				

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
5/29/2012 02:59:13 PM	COONJA1	COONJA1	TAC Outbound Call	Dealer	Done	5/29/2012 03:02:00 PM	
Last Name		First Name		Priority	Sta	art Date	
Biles	Justin 3-Medium			3-Medium	5/29/2012 02:59:13 PM		
Times In		Days Down					
1		7					
Description							

Template Text

Called the dealer for an update and clarifying the pictures that he sent.

The dealer advised that al he has is the black areas on the battery case and also the battery cover.

The dealer advised that he has ordered the battery pack assembly and is waiting for the pack to come in.

Activities

The dealer to advise.....jc ExtendedTemplateText

Created **Created By** Assigned To Activity Type Sub-Type Status **Actual Completion** 5/29/2012 02:53:15 PM COONJA1 COONJA1 Ownership Changed Done 5/29/2012 02:53:15 PM Last Name First Name Priority Start Date Biles 5/29/2012 02:53:15 PM Justin 3-Medium Times In Days Down

Description

Service Request Ownership has changed FROM: ROWLEYDO TO: COONJA1 Template Text

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/29/2012 02:24:54 PM	SCHMITSH	SCHMITSH	TAC Inbound Call	Diagnostics	Done	5/29/2012 02:28:34 PM
Last Name		First Name		Priority	Sta	art Date
Biles		Justin		3-Medium	5/2	29/2012 02:24:54 PM
Times In		Days Down				
1		7				
Description						
,						

Template Text

Tech called back with the information for the PIC5520D.

Parts Dept. Manager is Cathy Hall

Fax#- 1-410-931-7889

Activities

Battery Serial Number- LQ68414112081058

Advised tech that I would update the case and that he could order the replacement pack from his ESC. ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/29/2012 01:46:29 PM	GETTELMA	GETTELMA	TAC Alarm	2 Hour	Done	5/29/2012 03:02:09 PM
Last Name		First Name		Priority	Sta	art Date
Biles		Justin		3-Medium	5/2	29/2012 03:46:29 PM
Times In		Days Down				
Description						
review and call dealer if r	necessary					
Template Text						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/29/2012 01:45:24 PM	GETTELMA	GETTELMA	TAC Inbound Call	Diagnostics	Done	5/29/2012 01:45:53 PM
Last Name		First Name		Priority	Sta	art Date
Biles		Justin		3-Medium	5/2	29/2012 01:45:24 PM
Times In		Days Down				
1		7				
Description						

Template Text

1____Number of times in for the same concern?

7____Number of days down as provided by the caller?

n___Does the vehicle have any aftermarket accessories or modifications?

Activities

- y____Has the concern been duplicated?
- n____Have any SI document been utilized (Capture Doc ID)?
- n____Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position): john wyant, service manager

Customer Concern: ses light charge light on

Dealer Comments/Diagnosis (DTC's, What's Been Done): service manager was calling to see if the photos were received that was emailed. sm was seeing if able to send photos directly during phone conversation to view.

TAC Recommendations: Advise service manager to send email to mark_gettel@gmexpert.com

Advise the email was received. Advise would forward to tacsnapshot@gm.com also for review. Advise dealer of PIC5520D to go to vehicle and get info for this pi and to call back in with all info needed for battery pack ordering. ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/29/2012 12:00:52 PM	COONJA1	COONJA1	TAC Outbound Call	Dealer	Done	5/29/2012 12:03:28 PM
Last Name		First Name		Priority	Sta	rt Date
Biles		Justin		3-Medium	5/2	9/2012 12:00:52 PM
Times In		Days Down				
1		7				
Description						

Template Text

Called the dealer looking for an update for the pictures that were requested last week.

The dealer advised that the pictures were taken and given to the SVM to send them over.

Activities

TAC advised that we will wait until they show for further direction.....jc

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/25/2012 02:41:51 PM	COONJA1	COONJA1	TAC Part Authorized	eAssist PowerPack	Done	5/25/2012 02:42:26 PM
Last Name		First Name		Priority		Start Date
Biles		Justin		3-Medium		5/25/2012 02:41:51 PM
Times In		Days Down				
1		3				
Description						
(1) OVN 24259770						
Eassist battery pack.						

Template Text		
ExtendedTemplateText		

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/25/2012 02:41:00 PM	COONJA1	COONJA1	TAC Alarm	24 Hour	Scheduled Al	arm
Last Name		First Name		Priority	Start Date	
Biles		Justin		3-Medium	5/30/2012 02:41:00 PM	
Times In		Days Down				
1		3				
Description						
Battery charring.						
Template Text						
ExtendedTemplateText						

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/25/2012 02:37:32 PM	COONJA1	COONJA1	TAC Inbound Call	Diagnostics	Done	5/25/2012 02:40:53 PM
Last Name	First Name			Priority	Start Date	
Biles	Justin			3-Medium	5/25/2012 02:37:32 PM	
Times In		Days Down				
1		3				
Description						

Template Text

The dealer called in to advise that he has the HV battery cover off the battery modules and has found charring of some wires and a wiring odor.

The dealer looking for direction.

TAC advised the dealer to take pictures of the concern area and then to send them in to tacsnapshot@gm.com and also copy to me at jason.coon@gmexpert.com

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/25/2012 01:02:34 PM	GARBUTWI	GARBUTWI	TAC Inbound Call	Diagnostics	Done	5/25/2012 01:04:55 PM
Last Name	First Name		Priority	Start Date		
Biles	Justin		3-Medium	5/25/2012 01:02:34 PM		
Times In		Days Down				

Description

Template Text

states that he has no communication with the BECM or HPCM. He has communication with the FPFCM and PBCM. I advised to check the communication enable circuit to those modules, check connections in the battery pack and the data lines to the BECM. If all ok replace the HPCM and reevaluate. There is the possibility that the BECM will need replaced also. ExtendedTemplateText

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
5/25/2012 10:50:31 AM	SLEEMASC	SLEEMASC	TAC Inbound Call	Diagnostics	Done	5/25/2012 10:52:50 AM	
Last Name		First Name		Priority	Start Date		
Biles	Justin		3-Medium	5/25/2012 10:50:31 AM			
Times In	Days Down						
Description							
Description							
Spoke to Jason Biles							

Template Text

Advised Jason per Don Rowleys entry to check for communication with the BECM and if it is present replace the HPCM/SGCM/GCM.

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/25/2012 10:34:47 AM	ROWLEYDO	ROWLEYDO	TAC Outbound Call	Dealer	Done	5/25/2012 10:43:03 AM
Last Name	First Name		Priority	Start Date		
Biles	Justin		3-Medium	5/25/2012 10:34:47 AM		
Times In		Days Down				

Description

Template Text

Called and spoke with Service and asked that Justin Biles, Tech calls TAC as soon as possible.

Need to follow up on possible no communication with the GCM and check for communication with the BECM and suspect the GCM part number 12635717 needing to be replaced if the power and ground circuits are complete to the GCM. ExtendedTemplateText

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
5/24/2012 11:24:48 AM	SCHMITSH	SCHMITSH	TAC Inbound Call	Diagnostics	Done	5/24/2012 11:33:06 AM	
Last Name		First Name		Priority	Start Date		
Osborn	Robert 3-Medium				5/2	24/2012 11:24:48 AM	
Times In		Days Down					
1		3					
Description							
MD, Justin Biles Tech							
Cell #							

Change of dealer from 188691 to 113645

Templa	te Text
1	NUMBER OF TIMES IN FOR CONCERN?

- 3 NUMBER OF DAYS DOWN TOTAL?
- n ANY MODIFICATIONS/ AFTERMARKET?:
- y HAS THE CONCERN BEEN DUPLICATED?
- ANY SI DOCUMENTS BEEN USED?
- n

ARE KEYWORDS FRA, ADR, DMA, PRC, TIDD, OR PEREQ PRESENT IN THE CASE?

Ν

CALLERS NAME?:

Justin Biles Tech

CUSTOMER CONCERN?:

CEL lamp on, 12 volt battery dead

DEALER COMMENTS/DIAGNOSIS?:

Tech states that he has codes of P0700, U0293 and U1817 in the ECM and no other vehicle codes. He cannot communicate with the HPCM.

TAC RECOMMENDATIONS?:

Advised tech of the previous case entry recommendations. Advised tech to check the power, ground, and data line to the HPCM and advise.

Activities

SS

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/23/2012 10:22:29 AM	ROWLEYDO	ROWLEYDO	TAC Alarm	24 Hour	Done	5/25/2012 02:40:57 PM
Last Name		First Name		Priority	Sta	art Date
Biles		Justin		3-Medium	5/2	25/2012 02:45:00 PM
Times In		Days Down				
Description						
MD, SES light and charge	e light on					
Template Text						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/23/2012 10:09:51 AM	ROWLEYDO	ROWLEYDO	Ownership Changed		Done	5/23/2012 10:09:51 AM
Last Name	First Name		Priority	Start Date		
Osborn	Robert		3-Medium	5/23/2012 10:09:51 AM		
Times In		Days Down				

Description

Service Request Ownership has changed FROM: LAWSONMI TO: ROWLEYDO Template Text

Activities

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/23/2012 10:09:33 AM	ROWLEYDO	ROWLEYDO	TAC Inbound Call	Diagnostics	Done	5/23/2012 10:23:21 AM
Last Name		First Name		Priority	Sta	art Date
Osborn		Robert		3-Medium	5/2	23/2012 10:09:33 AM
Times In		Days Down				
1		2				
Description						

Template Text

- _1__Number of times in for the same concern?
- _2__Number of days down as provided by the caller?
- _N__Does the vehicle have any aftermarket accessories or modifications?
- _Y__Has the concern been duplicated?
- _N_Have any SI document been utilized (Capture Doc ID)?
- _N_Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position): Robert Osborn, Tech

Customer Concern: SES light charge light on.

Dealer Comments/Diagnosis (DTC's, What's Been Done): Dealer states has concern of SES light on and has a low 12v battery. Dealer states after jump start to the 12v battery the vehicle started, ran fow a while and then the vehicle shut off and will not restart as the 12v battery is low again. Dealer states has codes P0700, U0293 and U1817 in the ECM and no other vehicle codes.

TAC Recommendations: Advise dealer to charge and test the 12v battery, command the battery pack fan on through output controls in the GCM, check all modules for DTC's individually especially the TCM, verify communication will all modules especially the BECM and the HPCM and Drive Motor Control Module. Advise dealer to send the GDS2 information to me at

Activities

donald_rowley@gmexpert.com and TACSNAPSHOT@GM.COM and call back with update as available to me at 866-790-4600, Ext. 20668.

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/23/2012 09:55:17 AM	LAWSONMI	LAWSONMI	TAC Inbound Call	Diagnostics	Done	5/23/2012 09:55:31 AM
Last Name		First Name		Priority	Sta	art Date
Osborn		Robert		3-Medium	5/2	23/2012 09:55:17 AM
Times In		Days Down				
1		2				
Description						
. Transferred to Hybrid						
Template Text						

- _1__Number of times in for the same concern?
- _2__Number of days down as provided by the caller?
- _ n__Does the vehicle have any aftermarket accessories or modifications?
- _y__Has the concern been duplicated?
- _y__Have any SI document been utilized (Capture Doc ID)?
- _n_Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position):

Customer Concern: Battery light is on ses light on

Dealer Comments/Diagnosis (DTC's, What's Been Done): p0700 u0293 u1817

Activities

TAC Recommendations:

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
5/23/2012 09:53:18 AM	LAWSONMI	LAWSONMI	TAC Inbound Call	Diagnostics	Done	5/23/2012 09:53:54 AM
Last Name		First Name		Priority	Sta	art Date
Osborn		Robert		3-Medium	5/2	23/2012 09:53:18 AM
Times In		Days Down				
1		2				
Description						
. Transferred to Hybrid						
Template Text						
ExtendedTemplateText						

SR No.	71-1083094575	Ref No.		Goodwill				BRC Type	N/A
Account	Abraham Chevrolet-Miami, Inc.	Site	114774	GW SubType	•			Bus. Unit	TAC US
Last Name	Morales	First Name	Raul	Approval	Not Initiated			Area	Engine
Daytime #	(305) 720-1202	Evening #		UCC				Sub-Area	Electrical*
Address		City		Involved Dir				Safety	No
State	Postal Cd	Con. Acct.	Abraham Chevrolet-Miami,	Source	Phone			Updated	7/5/2012 03:57:37 PM
Serial #/VIN	1G11F5RR6DF	Model Year	2013	Priority	Consultant	License # 0	CHEVROL	Owner	ROBBINJO
Make	Chevrolet	Warr. Start	05/13/2012	Status	Open			Opened	7/2/2012 11:51:59 AM
Model	Malibu	Mileage	410	Sub-Status	Active			Closed	
Abstract	Ses								
Customer Description	P0563 P0562 P0C78								

GMPP Details								
GMPP Term		GMPP Mi	leage	GMPP Retail Co	ost			
Component Cov	/erage							
Component Coverage	-			E	xpiration Mileage		Expiration Date	
Certificate Detai	ils							
Certificate Number		Amount		Expiration Date				
Pre-Authorizatio	on Basics							
Service Dealer			BAC Code		Div. Dealer Code		Repair Order #	
							647339	
Activities								
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description	
7/5/2012 03:57:43 PM	ROBBIN.IO	TACHYBD1	TAC Escalation	Hybrid Platform	In Progress		Days down	

7/5/2012 03:57:43 PM	ROBBINJO	TACHYBD1	TAC Escalation	Hybrid Platform	In Progress		Days down
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Morales		Raul		Abraham Chevrolet-Miam	i, Inc.	114774	
Comments							

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/5/2012 03:56:26 PM	ROBBINJO	ROBBINJO	TAC Alarm	24 Hour	Scheduled Ala	rm	FL Eassist
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Morales		Raul		Abraham Chevrolet-Miami,	Inc.	114774	
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/5/2012 03:50:28 PM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/5/2012 03:56:01 PM	Called the dealer talked to Raul
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Morales		Raul		Abraham Chevrolet-Mi	ami, Inc.	114774	
Comments							

I asked about the part number he states it is 20910413

I looked it up in the parts catalog advised it was on restriction I advised that Tac suggests replacing the battery and reviewed PIC5520D lq 68414112080502

Parts manager Alex Alonso

Parts fax number 305 448 2670

At this time he states he has arching in the battery lq 68414112080502 Advised of and reviewed PIC5626

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/5/2012 03:46:19 PM	ROBBINJO	ROBBINJO	TAC Part Authorized	eAssist PowerPack	In Progress		24259770 QTY. (1) OVN
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Morales		Raul		Abraham Chevrolet-Miar	ni, Inc.	114774	
Comments							

Created	Created By	Assigned to	Activity Type	Activity SubType	Status	Completed	Description
7/5/2012 02:31:21 PM	ROBBINJO	ROBBINJO	TAC Inbound Call	Diagnostics	Done	7/5/2012 03:50:25 PM	Raul Called and states the harness has
Contact Last Name		Contact Fire	st Name	Account		BAC Code	the relay on it and the 21910413
Morales		Raul		Abraham Chevrolet-Mia	ami, Inc.	114774	
Comments							

He states parts ordered one

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/5/2012 02:23:17 PM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/5/2012 02:31:18 PM	Called the dealer talked to Raul
Contact Last Name		Contact Firs	t Name	Account		BAC Code	Morales
Vorales		Raul		Abraham Chevrolet-Mi	ami, Inc.	114774	_
Comments							
He states he has 32 ohn Advised Tac would conta		relay. He states t	the wiring to the pre charge	e relay ohmed out okay.			
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/5/2012 01:02:59 PM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/5/2012 01:06:31 PM	Called the dealer talked to Raul
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Norales		Raul		Abraham Chevrolet-Mi	ami, Inc.	114774	_
Comments							
Advised to measure the		resistance for co	omparison				
Advised to measure the He states he would and		resistance for co	omparison Activity Type	Activity SubType	Status	Completed	Description
dvised to measure the le states he would and Created	call back		•				Description Left a message for Raul to call
Comments Advised to measure the He states he would and Created 7/5/2012 11:50:41 AM Contact Last Name	call back Created By	Assigned To	Activity Type TAC Outbound Call	Activity SubType	Status	Completed	
Advised to measure the He states he would and Created 7/5/2012 11:50:41 AM	call back Created By	Assigned To ROBBINJO	Activity Type TAC Outbound Call	Activity SubType Dealer	Status Done	Completed 7/5/2012 11:51:00 AM	
Advised to measure the He states he would and Created 7/5/2012 11:50:41 AM Contact Last Name	call back Created By	Assigned To ROBBINJO Contact Firs	Activity Type TAC Outbound Call	Activity SubType Dealer Account	Status Done	Completed 7/5/2012 11:51:00 AM BAC Code	
Advised to measure the He states he would and Created 7/5/2012 11:50:41 AM Contact Last Name Morales	call back Created By	Assigned To ROBBINJO Contact Firs	Activity Type TAC Outbound Call	Activity SubType Dealer Account	Status Done	Completed 7/5/2012 11:51:00 AM BAC Code	
Advised to measure the He states he would and Created 7/5/2012 11:50:41 AM Contact Last Name Morales	call back Created By	Assigned To ROBBINJO Contact Firs	Activity Type TAC Outbound Call	Activity SubType Dealer Account	Status Done	Completed 7/5/2012 11:51:00 AM BAC Code	

7/5/2012 11:02:50 AM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/5/2012 11:40:34 AM	Called the dealer talked to Raul
Contact Last Name		Contact Fire	t Name	Account		BAC Code	Morales
Morales		Raul		Abraham Chevro	let-Miami, Inc.	114774	
Comments							
He measured step 12 w	ith everv thina u	nplugged and h	as OL				

ng unplugge He measured step 12 with every He states 7.2 ohms for step 13 Step 14 is .2

He states step 10 there was no way he measured 20 to 40 ohms, I called he back at 305 720 1202 I had him check both directions and he has 110 ohms.

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description			
7/5/2012 09:17:27 AM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/5/2012 09:26:46 AM	Called the dealer talked to Raul.			
Contact Last Name		Contact Firs	t Name	Account		BAC Code				
Morales	Raul			Abraham Chevrolet-Mi	ami, Inc.	114774				
Comments										
He states he has no other vehicle to check at the dealer. Advised Tac would research										

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/3/2012 01:42:46 PM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/3/2012 01:51:05 PM	Called the dealer left a message for
Contact Last Name	Contact First Name			Account		BAC Code	Raul Morales to call
Morales	Raul			Abraham Chevrolet-N	liami, Inc.	114774	
Comments							

			· · · · · ·		O (1)	0 1 1 1	
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/2/2012 04:32:38 PM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/2/2012 04:48:27 PM	
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Morales		Raul		Abraham Chevrolet-Mia	imi, Inc.	114774	
Comments							
step 6 yes could hear cli step 7 .2 ohms step 9 ol step 10 110 ohms ? step 12 11.55 mega ohm step 13 7.2 step 14.3 Advised to try and comp	ns Replace the P pare to a like veh	nicle to clarify ste					
Advised Tac would resear			act technical assistance as	needed			
Advised Tac would resear No other recommendation			act technical assistance as Activity Type	needed Activity SubType	Status	Completed	Description

7/2/2012 12:04:50 PM	ROBBINJO	ROBBINJO	TAC Alarm	24 Hour	Done	7/5/2012 03:56:21 PM	FL Eassist
Contact Last Name		Contact Fire	st Name	Account		BAC Code	
Morales		Raul		Abraham Chevrol	et-Miami, Inc.	114774	
Comments							

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/2/2012 12:01:52 PM	ROBBINJO	ROBBINJO	TAC Inbound Call	Diagnostics	Done	7/2/2012 12:04:47 PM	
Contact Last Name		Contact Firs	st Name	Account		BAC Code	
Morales		Raul		Abraham Chevrolet-Mia	ami, Inc.	114774	_
Comments							
_2Number of times in							
_6Number of days dov _nDoes the vehicle ha			s or modifications?				
_yHas the concern be							
			ID)? 2587766 2728411 2				
_nAre keywords FRA,	ADR, DMA, PF	C, HDD, or PE	REQ present in the case	?			
Caller's Name (First Nam	ne, Last Name	& Position):					
Raul Morales Tech		,					
Customer Concern: No b	attory power						
Sustomer Concern. No b	allery power						
Dealer Comments/Diagn							
Tech states he charges t			ittery dtc				
Tech states he has code:			when back probed and u	included zoro			
			nector with terminal 7 is g				
			- 0				
TAC Recommendations:			adiana maatili.alu (kasa				
Reviewed step 5 advisec request	to go to step 6	and note the re	eadings most likely there	is a SGCM concern, call Tac so	o we could place th	пе рап	
No other recommendatio		advised to cont	act toobaical assistance	an nandad			
JR	ins were given.	advised to cont.	au ieunniuai assisianue a	as neeueu			

SR No.	71-1083446358	Ref No.		Goodwill			BRC Type	N/A
Account	Randall Oldsmobile-Cadillac-GMC	Site	115836	GW SubType	•		Bus. Unit	TAC US
Last Name	Edwards	First Name	Keaton	Approval	Not Initiated		Area	Hybrid Energy Storage
Daytime #		Evening #		UCC			Sub-Area	Battery Pack
Address		City		Involved Dir			Safety	No
State	Postal Cd	Con. Acct.	Randall Oldsmobile-	Source	Phone		Updated	7/3/2012 11:26:46 AM
Serial #/VIN	2G4GR5ER2C9	Model Year	2012	Priority	Consultant Li	icense #	Owner	SCHMITSH
Make	Buick	Warr. Start	05/04/2012	Status	Open		Opened	7/3/2012 09:29:59 AM
Model	Regal	Mileage	157	Sub-Status	Active		Closed	
Abstract	Battery lamp on nocharge							
Customer Description	U0293 U1817 B1517							

GMPP Details							
GMPP Term		GMPP Mi	leage	GMPP Retail Co	st		
Component Cov	/erage						
Component Coverage	-			Ex	xpiration Mileage	Expira	tion Date
Certificate Detai	ils						
Certificate Number		Amount		Expiration Date			
Pre-Authorizatic	on Basics						
Service Dealer			BAC Code		Div. Dealer Code	R	epair Order #
						2	49534
Activities							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/3/2012 11:20:16 AM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/3/2012 11:24:54 AM	Called the dealer talked to Greg
-							Eddinger CM

7/3/2012 11:20:16 AM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	7/3/2012 11:24:54 AM	Called the dealer talked to Greg
Contact Last Name		Contact Fire	st Name	Account		BAC Code	Eddinger SM
Edwards		Keaton		Randall Oldsmob	ile-Cadillac-GMC Truck,	115836	
				Inc.			
Comments							
Advised to have parts re Advised to keep Tac upo		ry Per PIC5520I	D				

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/3/2012 11:18:49 AM	ROBBINJO	ROBBINJO	TAC Part Authorized	eAssist PowerPack	In Progress		24259770 QTY. (1) OVN
Contact Last Name		Contact Firs	st Name	Account		BAC Code	
Edwards		Keaton		Randall Oldsmobile-Cad	illac-GMC Truck,	115836	
				Inc.			
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	[
7/3/2012 11:00:43 AM	ROBBINJO	ROBBINJO	TAC Inbound Call	Diagnostics	Done	7/3/2012 11:18:45 AM	
Contact Last Name		Contact Fire	st Name	Account		BAC Code	
Edwards		Keaton		Randall Oldsmobile-Ca	dillac-GMC Truck,	115836	
				Inc.			

Comments

- _1__Number of times in for the same concern?
- _1__Number of days down as provided by the caller?
- _n__Does the vehicle have any aftermarket accessories or modifications?
- _y__Has the concern been duplicated?
- _y__Have any SI document been utilized (Capture Doc ID)?
- _n_Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position): Keaton Edwards Tech Greg Eddinger SM

Customer Concern: Backing up noise and lights

Dealer Comments/Diagnosis (DTC's, What's Been Done): Tech states he has soot in the battery case and smoke in the connectors Dave Gorden parts manager parts department fax number 585 394 6406 lq45654112117031

TAC Recommendations:

Advised to check to see if the fuses are open he went and checked the 175 amp is not the 7.5 amp fuse 7 is open PIC5520D BAS (HYBRID) eAssist Generator Control And Battery Module Exchange Process And Order Instructions Agreed he should check the operation of the Cooling Fan PIE0220 Engineering Information is no longer in si2000 I left a message with Mark Wright for PIE0220 advising of the concern and that Tac was approving a battery No other recommendations were given, advised to contact technical assistance as needed JR

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/3/2012 09:54:00 AM	SCHMITSH	SCHMITSH	TAC Alarm	24 Hour	Scheduled Alarn		NY, Keaton Edwards Tech
Contact Last Name		Contact Firs	t Name	Account		BAC Code	No charge eassist
Edwards		Keaton		Randall Oldsmobile-Ca	dillac-GMC Truck,	115836	
				Inc.			
Comments							4
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
7/3/2012 09:48:25 AM	SCHMITSH	SCHMITSH	TAC Inbound Call	Diagnostics	Done	7/3/2012 09:53:57 AM	
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Edwards		Keaton	(Numb	Randall Oldsmobile-Ca	dillac-GMC Truck	115836	•
Editardo		riouton		Inc.		110000	
Comments				-			
1 NUMBER OF TIMES	IN FOR CONC	ERN?					•
1 NUMBER OF DAYS							
n ANY MODIFICATION	S/AFTERMAR	KET?:					
y HAS THE CONCERN		CATED?					
ANY SI DOCUMENTS E 2777703	BEEN USED?						
			EREQ PRESENT IN THE C	ASE2			
N							
CALLERS NAME?:							
Keaton Edwards Tech							
CUSTOMER CONCERN							
Service charging system							
DEALER COMMENTS/			T he second second states the st	ha haandaa II T taatu'aalii aa'a			
TAC RECOMMENDATIO		, U1817, B1517	The customer states that	he heard an "Electrical" nois	se prior to the concern.		
		er and inspect fo	r odor or signs of arcing If	any is found, take photos ar	nd send to TACSNAPS	HOT as	
			amp and 7.5 amp fuse and				

SS

SR #	71-1084220212	Account Phone #	(402) 572-8	3080	Cust Concern	ses light is on		
Account	Gregg Young Chevrolet,	Site/BAC	171635		Keyword 1	EASSIST	Business Unit	TAC US
Address	Inc. 17750 Burt St				Keyword 2	SES	Keyword 3	LIGHT
City	Omaha	State NE	Zip	681183311	Keyword 4			
Last Name	Walker	First Name	Josh		Non Keyword	P0C78		
	(402) 572-8080		PIC5520D		Comp type		Svc Man Sec	Hybrid Energy Storage
Daytime #		Recom Bulletin #			Open Concern	DC10 - SBD performed	SVc Man Sub	Battery Pack
Veh Family	1B	Mileage Type	М		Symptom Desc	MIL / DTC		
Repair Order	305890	Restricted Part #	24259770		Status	Open	Sub Status	Active
Serial #/VIN	1G11F5RR5DF						Onened	07/05/2012 17:11:08
Make	Chevrolet	Mileage 415			Owner	RIKERJO	Opened	07/05/2012 17:11:00
Model	Malibu	Warranty Start			Priority	Consultant	Closed	
Year	2013	Warranty Status						
Veh Line	1F	Veh Series	F					
Plant	F	Body ^{5R} E	ngine R					

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
7/6/2012 05:54:10 PM	RIKERJO	RIKERJO	TAC Outbound Call	Dealer	In Progress	
Last Name		First Name		Priority	Sta	art Date
Walker		Josh		3-Medium	7/6	6/2012 05:54:10 PM
Times In		Days Down				
Description						
Josh Walker Tech						
Template Text						
0 11 1 1 1 1		1				

Called the dealer to check on the status of the car.

Josh states that has the battery installed and the car is down the road.

Activities

Advise josh to call me back with the serial numbers.

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
7/5/2012 06:59:24 PM		RIKERJO	Email - Inbound		Done	7/5/2012 07:55:01 PM
Last Name		First Name		Priority	Start Date	
Shopper		Barbra			7/5	5/2012 06:59:10 PM
Times In		Days Down				
Description						
eAssist						

eAssist Template Text

TAC# 71-1084220212

Part# 24259770

Fedex tracking# 413234289141

Barbara Schopper

GM Account & Logistics Mgr

AJR International, Inc.

Activities

300 Regency Drive

Glendale Heights, IL 60139

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ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
7/5/2012 05:20:46 PM	RIKERJO	RIKERJO	TAC Alarm	24 Hour	Scheduled A	larm
Last Name		First Name		Priority	Sta	art Date
Walker	Josh			3-Medium	7/6/2012 05:20:46 PM	
Times In		Days Down				
1		1				
Description						
NE P0c78 josh						
Template Text						

Activities

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
7/5/2012 05:17:33 PM	RIKERJO	RIKERJO	TAC Part Authorized	Continental	Done	7/5/2012 05:21:13 PM
Last Name		First Name		Priority	Sta	art Date
Walker		Josh		3-Medium	7/5	5/2012 05:17:33 PM
Times In		Days Down				
1		1				
Description						
24259770 QTY 1 OVN						
Template Text						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
7/5/2012 05:17:22 PM	RIKERJO	RIKERJO	TAC Inbound Call	Diagnostics	Done	7/5/2012 05:21:10 PM
Last Name		First Name		Priority	Sta	art Date
Walker		Josh		3-Medium	7/5	5/2012 05:17:22 PM
Times In		Days Down				
1		1				
Description						
Template Text						

Number of days down as provided by the caller? 1

Number of times in for the same concern? 1

Has the concern been duplicated? Yes

Does the vehicle have any aftermarket accessories or modifications? Radio and neon lights, been disconnected

Have any SI document been utilized (Capture Doc ID)? 2587766

Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Activities

Caller's Name (First Name, Last Name & Position): Josh Walker Tech Customer Concern: Servcie Charging system Dealer Comments/Diagnosis (DTC's, What's Been Done): Dealer states that he has P0C78 setting. Dealer states that he has the battery cover off. Dealer states that he has the battery cover off. Dealer states that there are black marks on the cover from the Hybrid Battery System Precharge that is damaged. Dealer states that he has good 12 volts TAC Recommendations: Advise the dealer to follow PIC5520Dand order a battery pack. Advise the dealer to send in a picture of the battery.

SR #	71-1093772436	Account Phone #	(678) 957-5400	Cust Concern	cel lamp on		
Account	Hendrick Chevrolet, L.L.C.	Site/BAC	173929	Keyword 1	EASSIST	Business Unit	TAC US
Address	3277 Satellite Blvd			Keyword 2	CEL	Keyword 3	LAMP
City	Duluth	State GA	Zip 300969094	Keyword 4			
Last Name	Walker	First Name	David	Non Keyword	P0A3F P0A8D P0C0B P0	0C52 P0C5C P1A72	
Daytime #	(404) 663-4433	Recom Bulletin #	PIC5520D	Comp type		Svc Man Sec	Hybrid Energy Storage
•	· ,			Open Concern	DC10 - SBD performed	SVc Man Sub	Battery Pack
Veh Family	1B	Mileage Type	Μ	Symptom Desc	MIL / DTC		
Repair Order	591220	Restricted Part #	24259770	Status	Open	Sub Status	
Serial #/VIN	1G11F5RR8DF					Onened	08/03/2012 09:54:49
Make	Chevrolet	Mileage ¹³		Owner	SCHMITSH	Opened	00/03/2012 09:54:49
Model	Malibu	Warranty Start	5/4/2012 12:00:00 AM	Priority	Consultant	Closed	
Year	2013	Warranty Status					
Veh Line	1F	Veh Series	F				
Plant	F	Body ^{5R} E	ngine R				

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
8/3/2012 10:19:47 AM	SCHMITSH	SCHMITSH	TAC Alarm	24 Hour	Scheduled Alarm	
Last Name		First Name		Priority	Start Date	
Walker		David		3-Medium	8/6/2012 11:30:00 AM	
Times In		Days Down				
Description						
GA, David Walker Tech						
PowerPack						
Template Text						

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
8/3/2012 10:18:44 AM	SCHMITSH	SCHMITSH	TAC Inbound Call	Diagnostics	Done	8/3/2012 10:19:08 AM
Last Name		First Name		Priority	Start Date	
Walker		David		3-Medium	8/3	3/2012 10:18:44 AM
Times In		Days Down				
1		1				
Description						
, Template Text						
	OF TIMES IN	FOR CONCE	RN?			
1 NUMBER C	OF DAYS DO	WN TOTAL?				
n ANY MODI	FICATIONS/	AFTERMAR	KET?:			
y HAS THE C	ONCERN BE	EEN DUPLICA	ATED?			
ANY SI DOCUMEN	TS BEEN US	ED?				
2596040						

Activities

ARE KEYWORDS FRA, ADR, DMA, PRC, TIDD, OR PEREQ PRESENT IN THE CASE?

Ν

CALLERS NAME?:

CUSTOMER CONCERN?:

Battery lamp on, CEL lamp on

DEALER COMMENTS/DIAGNOSIS?:

Tech states that he has codes of P0A3F, P0A8D, P0C0B, P0C52, P0C5C, and P1A72. He was going through the flow chart for the P0A3F DTC and the 7.5 amp and 175 amp fuses are open. He has soot in the battery case and is looking for information.

TAC RECOMMENDATIONS ?:

Advised tech that a battery pack would be authorized for the car. Part Manager- Rusty Thigpen, Fax- 678-957-5305, Serial Number-20T LQ54654112122680

SS <u>Exten</u>dedTemplateText

SR #	71-1096098327	Account Phone #	(954) 943-2200	Cust Concern	battery dead and CEL and	battery light	
Account	Sheehan Buick GMC, Inc.	Site/BAC	116333	Keyword 1	EASSIST	Business Unit	TAC US
Address	2800 N Federal Hwy			Keyword 2	BATTERY	Keyword 3	CEL
City	Lighthouse Point	State FL	Zip 330646849	Keyword 4			
Last Name	Henderson	First Name	Joel	Non Keyword	EASSIST BATTER DEAD	CEL MIL P0C78 P0AC4	
Daytime #	(954) 943-2200	Recom Bulletin #	PIC5520D	Comp type		Svc Man Sec	Hybrid Energy Storage
•				Open Concern	DC10 - SBD performed	SVc Man Sub	Charging System
Veh Family	GB	Mileage Type	Μ	Symptom Desc	MIL / DTC		
Repair Order	342156	Restricted Part #	24259770	Status	Open	Sub Status	Active
Serial #/VIN	1G4GD5ERXCF					Onened	08/10/2012 11:25:44
Make	Buick	Mileage ²³⁹		Owner	ROWLEYDO	Opened	06/10/2012 11.25.44
Model	LaCrosse	Warranty Start	8/5/2012 12:00:00 AM	Priority	Consultant	Closed	
Year	2012	Warranty Status					
Veh Line	GD	Veh Series	D				
Plant	F	Body ^{5E} E	ngine R				

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
8/10/2012 11:34:48 AM	ROWLEYDO	ROWLEYDO	TAC Alarm	24 Hour	Scheduled A	larm
Last Name		First Name		Priority	Sta	art Date
Henderson		Joel		3-Medium	8/1	3/2012 03:30:00 PM
Times In		Days Down				
Description						
L, eAssist, Pack						
emplate Text						
xtendedTemplateText						

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
8/10/2012 11:33:23 AM	ROWLEYDO	ROWLEYDO	TAC Part Authorized	eAssist PowerPack	In Progress	
Last Name		First Name		Priority	Sta	rt Date
Henderson		Joel		3-Medium	8/1	0/2012 11:33:23 AM
Times In		Days Down				
1		2				
Description						
wAssist PowerPack, 242	59770, (QTy 1),	OVN				
Template Text						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
8/10/2012 11:28:13 AM	ROWLEYDO	ROWLEYDO	TAC Inbound Call	Diagnostics	Done	8/10/2012 11:41:50 AM	
Last Name		First Name		Priority	Sta	art Date	
Henderson	Joel			3-Medium	8/10/2012 11:28:13 AM		
Times In		Days Down					
1		2					
Description							

Template Text

- _1__Number of times in for the same concern?
- _2__Number of days down as provided by the caller?
- _N_Does the vehicle have any aftermarket accessories or modifications?
- _Y__Has the concern been duplicated?
- _Y__Have any SI document been utilized (Capture Doc ID)?
- _N_Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position): Joel Henderson, Tech

Customer Concern: Battery dead and CEL and battery light.

Activities

Dealer Comments/Diagnosis (DTC's, What's Been Done): Dealer states the vehicle was delivered yesterday, the vehicle came back late yesterday and the 12v battery was dead and finds codes P0C78 and P0AC4. Dealer states has found arching inside the battery pack cover. Dealer states the 12v battery was low.

TAC Recommendations: Advise dealer to check the F23UA 7.5a and F73UA 175a fuses in the UBEC as they will likely be open if arching is present and to check the circuits to the fuses for shorts. Advise dealer to have the parts department order the battery pack assembly per PIC5520D from the local ESC. Advise dealer to also check and charge the 12v battery, once the new battery assembly is installed then command the battery pack fan on as it could be damaged if the 12v battery goes low and replace as necessary. ExtendedTemplateText

SR #	71-1120445488	Account Phone #	(716) 662-9775	Cust Concern	update 12238 CEL on		
Account	West-Herr Chevrolet, Inc.	Site/BAC	115360	Keyword 1	EASSIST	Business Unit	TAC US
Address	3575 Southwestern Blvd			Keyword 2	CEL	Keyword 3	BATTERY
City	Orchard Park	State NY	Zip 141271706	Keyword 4			
Last Name	Moeller	First Name	Eric	Non Keyword	U0293 U1817 EASSIST	BATTERY	
			12238,PIC5520E	Comp type		Svc Man Sec	Hybrid Energy Storage
Daytime #		Recom Bulletin #	·	Open Concern		SVc Man Sub	Charging System
Veh Family	1B	Mileage Type	Μ	Symptom Desc	;		
Repair Order	224790	Restricted Part #	24259770	Status	Open	Sub Status	Active
Serial #/VIN	1G11F5RR3DF						
Make	Chevrolet	Mileage 20		Owner	ROWLEYDO	Opened	10/24/2012 15:20:22
Model	Malibu	Warranty Start	5/18/2012 12:00:00 AM	Priority	Consultant	Closed	
Year	2013	Warranty Status					
Veh Line	1F	Veh Series	F				
Plant	F	Body ^{5R} E	ngine R				

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
10/24/2012 03:35:37 PM	ROWLEYDO	ROWLEYDO	TAC Alarm	24 Hour	Scheduled A	arm
Last Name		First Name		Priority	Sta	art Date
Moeller	Eric			3-Medium 10/26/2012 03:30:0		
Times In		Days Down				
Description						
NY, eAssist PowerPack						
Template Text						

Activities

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
10/24/2012 03:33:46 PM	ROWLEYDO	ROWLEYDO	TAC Part Authorized	eAssist PowerPack	Done	10/24/2012 03:35:35 PM
Last Name		First Name		Priority	St	art Date
Moeller		Eric		3-Medium	10)/24/2012 03:33:46 PM
Times In		Days Down				
1		1				
Description						
eAssist PowerPack, 242	259770, (Qty 1), (NVC				
Template Text						
BIN 20TLQ4565411	2137512					
Part Contact: Dale G						
I art Contact. Dale O	lassilausei					
Part Fax: 716-667-74	199					
ExtendedTemplateTex	t					

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
10/24/2012 03:26:00 PM	ROWLEYDO	ROWLEYDO	TAC Inbound Call	Part Restriction	Done	10/24/2012 03:36:38 PM
Last Name		First Name		Priority	Sta	art Date
Moeller		Eric		3-Medium	10	/24/2012 03:26:00 PM
Times In		Days Down				
1		1				
Description						
Template Text						
1 N	· · · · · · · · · · · · · · · · · · ·					

_1__Number of times in for the same concern?

_1__Number of days down as provided by the caller?

_N__Does the vehicle have any aftermarket accessories or modifications?

Activities

- _Y__Has the concern been duplicated?
- _Y __Have any SI document been utilized (Capture Doc ID)? 2965455
- _N_Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?
- _N__ Does the vehicle belongs to a rental company?

If YES, record the Technicians and Shop Foreman or Service Manager's Full Name, Phone Numbers, and the physical location/address of the rental company's repair shop.

Caller's Name (First Name, Last Name & Position): Eric Moeller, Tech

Customer Concern: Update 12238 and CEL on.

Dealer Comments/Diagnosis (DTC's, What's Been Done): Dealer states was performing update 12238, after idling smoke started coming from the trunk area and there is an electrical odor. Dealer states the 175a and 7.5a fuses are open. Dealer states has BIN 20TLQ45654112137512, Part Contact: Dale Glasshauser, Part Fax: 716-667-7499.

TAC Recommendations: Advise dealer that I would send a request to have the eAssist PowerPack assembly sent to the dealer per PIC5520E.

ExtendedTemplateText

SR #	71-1120729665	Account Phone #	(847) 882-2200	Cust Concern	campaign 12238		
Account	Zeigler Chevrolet -	Site/BAC	264946	Keyword 1	EASSIST	Business Unit	TAC US
Address	Schaumburg, L.L.C. 1230 E Golf Rd			Keyword 2	CEL	Keyword 3	BATTERY
City	Schaumburg	State IL	Zip 601734802	Keyword 4	CAMPAIGN		
Last Name	Kitowski	First Name	Greg	Non Keyword	U0293 U1817		
	(847) 882-2200		12238	Comp type		Svc Man Sec	Hybrid Energy Storage
Daytime #	· · ·	Recom Bulletin #		Open Concern	DC10 - SBD performed	SVc Man Sub	Battery Pack
Veh Family	1B	Mileage Type	Μ	Symptom Desc	MIL / DTC		
Repair Order	928729	Restricted Part #	24259770	Status	Open	Sub Status	Active
Serial #/VIN	1G11D5RR7DF						10/25/2012 12:08:20
Make	Chevrolet	Mileage ²⁰		Owner	SCHMITSH	Opened	10/25/2012 12:08:20
Model	Malibu	Warranty Start	5/10/2012 12:00:00 AM	Priority	Consultant	Closed	
Year	2013	Warranty Status					
Veh Line	1D	Veh Series	D				
Plant	F	Body ^{5R} Ei	ngine R				

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
10/25/2012 12:21:43 PM	SCHMITSH	SCHMITSH	Email - Outbound		Done	10/25/2012 12:23:47 PM
Last Name		First Name		Priority	Sta	rt Date
					10/	25/2012 12:23:39 PM
Times In		Days Down				
Description						
71-1120729665 Part #	24259770					
Template Text						
BAC - 264946						

VIN - 1G11D5RR7DF

Activities

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
10/25/2012 12:20:37 PM	SCHMITSH	SCHMITSH	TAC Alarm	24 Hour	Scheduled A	larm
Last Name		First Name		Priority	Sta	art Date
Kitowski		Greg		3-Medium	10	/26/2012 12:20:37 PM
Times In		Days Down				
Description						
IL, Greg Kitowski Tech						
Battery eassist						
Template Text						
ExtendedTemplateTex	t					

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
10/25/2012 12:19:09 PM	SCHMITSH	SCHMITSH	TAC Part Authorized	eAssist PowerPack	Done	10/25/2012 12:20:30 PM
Last Name		First Name		Priority	St	art Date
Kitowski		Greg		3-Medium	10)/25/2012 12:19:09 PM
Times In		Days Down				
Description						
Battery, 24259770, Qty	(1), Ovn					
Template Text						
ExtendedTemplateTex	t					

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
10/25/2012 12:16:51 PM	SCHMITSH	SCHMITSH	TAC Inbound Call	Diagnostics	Done	10/25/2012 12:19:08 PM	
Last Name		First Name		Priority	Sta	art Date	
Kitowski		Greg		3-Medium	10/25/2012 12:16:51 PM		
Times In		Days Down					
1		1					
Description							

Template Text

- 1 NUMBER OF TIMES IN FOR CONCERN?
- 1 NUMBER OF DAYS DOWN TOTAL?
- n ANY MODIFICATIONS/ AFTERMARKET?:

y HAS THE CONCERN BEEN DUPLICATED?

ANY SI DOCUMENTS BEEN USED?

12238

ARE KEYWORDS FRA, ADR, DMA, PRC, TIDD, OR PEREQ PRESENT IN THE CASE?

Ν

CALLERS NAME?:

Greg Kitowski Tech

CUSTOMER CONCERN?:

Campaign 12238

DEALER COMMENTS/DIAGNOSIS?:

Tech states that during the 15 minute test, the CEL lamp on turned on. He has codes of U0293 and U1817 and there is a strong odor from the battery.

TAC RECOMMENDATIONS?:

Advised tech to ensure the battery pack cooling fan works by commanding it on to 90%. Advised tech that the battery pack would be authorized.

SS

Activities

ExtendedTemplateText

SR No.	71-1122	2815750		Ref No.		Goodwill			BRC Type	N/A
Account	W. Hare	and Son, Inc.		Site	112940	GW SubType			Bus. Unit	TAC US
Last Name	Dudley			First Name	Raymond	Approval	Not Initiated		Area	Hybrid Energy Storage
Daytime #	(317) 77	73-1090		Evening #		UCC			Sub-Area	Battery Pack
Address	2001 St	oney Creek Ro	d	City	Noblesville	Involved Dir			Safety	No
State	IN	Postal Cd	46060-3933	Con. Acct.	W. Hare and Son, Inc.	Source	Phone		Updated	11/2/2012 02:48:53 PM
Serial #/VIN	1G11D5	5RR4DF		Model Year	2013	Priority	Consultant	License #	Owner	SHOOKJA
Make	Chevrol	et		Warr. Start	05/25/2012	Status	Open		Opened	11/1/2012 12:07:52 PM
Model	Malibu			Mileage	7	Sub-Status	Active		Closed	
Abstract	12238a	1 1/2 hours ru	unning time							
Customer Description	P0700 F	20700 P0AC4 U0293 U1817 P0562 P155A U1510 B1517 03 B1325 03 C0800 03 U0121								

GMPP Details							
GMPP Term	GMPP Mileage			GMPP Retail Cos	st		
Component Cov	erage						
Component Coverage	_			Ex	piration Mileage	Expirat	ion Date
Certificate Detail	S						
Certificate Number		Amount		Expiration Date			
Pre-Authorizatio	n Basics						
Service Dealer			BAC Code		Div. Dealer Code	Re	epair Order #
						5	12548
Activities							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
1/2/2012 02:42:03 PM	ROBBINJO	ROBBINJO	Email - Outbound		Done	11/2/2012 02:43:32 PM	Case 71-1122815750 Part Number
Contact Last Name		Contact Firs	st Name	Account		BAC Code	24259770 (QTY 1) OVN
				W. Hare and Son, Inc.		112940	
Comments							
The dealer will be contac	ting the ESC to	order					

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description	
11/2/2012 02:37:02 PM	I ROBBINJO ROBBINJO TAC Outbound Call		Dealer	Done	11/2/2012 02:48:37 PM	Called the dealer talked to Raymond		
Contact Last Name	Contact Last Name Contact First Name			Account		BAC Code	Dudley	
Dudley	Raymond			W. Hare and Son, Inc.		112940	Parts department manager Jeff Rush	
Comments							Parts Fax 317 770 2123	

Advised to have parts contact the ESC to order the battery

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/2/2012 02:36:12 PM	ROBBINJO	ROBBINJO	TAC Update	Other	Done	11/2/2012 02:36:49 PM	Tech sent a email with the battery
Contact Last Name	Contact First Name		Account	Account		number (20t)lq45654112128559	
Dudley		Raymond		W. Hare and Son, Inc.		112940	
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description	
11/2/2012 01:13:47 PM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	11/2/2012 01:18:55 PM	Called the dealer talked to Raymond	
Contact Last Name	Contact First Name			Account		BAC Code	Dudley	
Dudley	Raymond			W. Hare and Son, Inc.	W. Hare and Son, Inc.			
Comments								

He sent a email with the battery number of 24259673

He states performing 12238 About 1.5 in the 2 run time had a concern

Advised to review step 7 and 8 of PIC5520E

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/2/2012 11:59:42 AM	ROBBINJO	ROBBINJO	TAC Outbound Call	Dealer	Done	11/2/2012 12:08:29 PM	Called the dealer talked to Raymond
Contact Last Name	e Contact First Name		Account	Account			
Dudley		Raymond		W. Hare and Son, Inc.		112940	
Comments							

Advised the case was reviewed and was advised to replace the power pack. Advised to review PIC5520E: BAS+ (HYBRID) eAssist Generator Control And Battery Module Exchange Process And Order Instructions and call back with the information

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/2/2012 11:58:33 AM	CIAVERBR	CIAVERBR	TAC Review	Escalation Team Review	Done	11/2/2012 12:00:21 PM	Reviewed case
Contact Last Name	Contact First Name			Account	Account		
Dudley	Raymond			W. Hare and Son, Inc.	W. Hare and Son, Inc.		
Comments							

Advised to replace entire Powerpack and note in case what step he was at in 12238 when it failed. Pictures indicated that there was arcing at the BDU but the F23UA fuse opened also.

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed
11/2/2012 08:50:16 AM	ROBBINJO	ROBBINJO	TAC Inbound Call	Diagnostics	Done	11/2/2012 09:00:29 AM
Contact Last Name		Contact Firs	t Name	Account		BAC Code
Dudley		Raymond		W. Hare and Son, Inc.		112940
Comments						

_1__Number of times in for the same concern?

_2__Number of days down as provided by the caller?

_n__Does the vehicle have any aftermarket accessories or modifications?

_y__Has the concern been duplicated?

_y__Have any SI document been utilized (Capture Doc ID)?

_n_Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position): Raymond Dudley Tech

Customer Concern: 12238a

Dealer Comments/Diagnosis (DTC's, What's Been Done):

Tech states that fuse 23 and the 175 amp fuse were inspected. Tech states fuse 23 is open, the 175 amp is okay. Tech states he inspected the wiring to the battery and no concerns.

TAC Recommendations:

Advised to remove the battery cover and take pictures of any concerns found and send a email to brian.1.ciaverella@gm.com,

tacsnapshot@gm.com and joseph.robbins@expert.com

Advised Brian at the team meeting 11/1/12, if there is only a slight amount of arching marks in the sgcm area to replace the sgcm

Advised the pictures would be researched and he would be contacted

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description				
11/1/2012 12:19:44 PM	SHOOKJA	SHOOKJA	TAC Alarm	36 Hour	In Progress		IN powerpack				
Contact Last Name	itact Last Name Contact First Name			Account	Account						
Dudley	Raymond			W. Hare and Son, Inc.		112940					
Comments	Comments										
TAC will need Parts Man	ager name nho	ne and fay num	ore 20T serial num	har if Pack Ordered							

TAC will need Parts Manager name phone and fax numbers, 201 serial number if Pack Ordered.

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed
11/1/2012 12:08:45 PM	SHOOKJA	SHOOKJA	TAC Inbound Call	Diagnostics	Done	11/1/2012 12:21:09 PM
Contact Last Name		Contact Firs	t Name	Account		BAC Code
Dudley		Raymond		W. Hare and Son, Inc.		112940
Comments						
Concern:						

12238

Dealer diagnosis:

Tech states P0700 P0AC4 U0293 U1817 P0562 P155A U1510 B1517 03 B1325 03 C0800 03 U0121, engine is LUK in GDS, no smoke from battery pack.

Recommend: Tech to check fuse 175A F73UA 7.5A F23UA, check for short, disconnect circuits at powerpack after HV disable procedure.

SR #	71-1122960359	Account Phone #	(641) 437-4040	Cust Concern	Smoke		
Account	Pete Harkness Chevrolet- Buick-Pontiac, Inc.	Site/BAC	210101	Keyword 1	EASSIST	Business Unit	TAC US
Address	1003 N 18th			Keyword 2	SMOKE	Keyword 3	HYBRID
City	Centerville	State IA	Zip 525441117	Keyword 4			
Last Name	Webster	First Name	Ryan	Non Keyword	CAMPAIGN 12238A		
	(641) 437-4040		12238A	Comp type		Svc Man Sec	Hybrid Power Electronics
Daytime #		Recom Bulletin #		Open Concern	DC10 - SBD performed	SVc Man Sub	Charging System
Veh Family	GB	Mileage Type	Μ	Symptom Desc	Performance		
Repair Order	47262	Restricted Part #	24259770	Status	Open	Sub Status	Active
Serial #/VIN	2G4GS5ER8C9				SLEEMASC	Omened	11/01/2012 16:00:57
Make	Buick	Mileage 426		Owner		Opened	11/01/2012 10:00:07
Model	Regal	Warranty Start	5/22/2012 12:00:00 AM	Priority	Consultant	Closed	
Year	2012	Warranty Status					
Veh Line	GS	Veh Series	S				
Plant	9	Body ^{5E} Ei	ngine R				

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
11/2/2012 05:25:47 PM	GETTELMA	GETTELMA	TAC Part Authorized	eAssist PowerPack	In Progress	
Last Name		First Name		Priority	Star	t Date
Webster		Ryan		3-Medium	11/2	2/2012 05:25:47 PM
Times In		Days Down				
Description						
24259770 powerpack (C	QTY1)					
(OVN)						
Template Text						

Activities

ExtendedTemplateText						
Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
11/2/2012 05:21:44 PM	GETTELMA	GETTELMA	Email - Outbound		Done	11/2/2012 05:24:09 PM
Last Name		First Name		Priority	Star	t Date
					11/2	2/2012 05:24:02 PM
Times In		Days Down				
Description						
71-1122960359 part	24259770					
Template Text						
BAC 210101						
VIN 2G4GS5ER8C	9					
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
11/2/2012 05:12:38 PM	GETTELMA	GETTELMA	TAC Outbound Call	Dealer	Done	11/2/2012 05:24:50 PM	
Last Name		First Name		Priority	Start Date		
Webster		Ryan		3-Medium	11/2	2/2012 05:12:38 PM	
Times In		Days Down					
Description							
Ryan Webster, tech							
Template Text							
A 1 ' D '11 1	1 1 1	1 1					

Advise Ryan will be replacing the hv battery pack.

Tech stated the BIN is LQ45654112132586

Part dept contact is: Larry Long

Activities

Parts fax number is: 641-437-4050

Advise tech of pic5520e for ordering instructions.

Advise after pack installation to double check all vehicle fuses.

Advise to fully charge and test 12v battery.

Advise to operate hv battery pack fan for operation and to replace if inop.

Advise to program the modules required per si and sps for battery replacement.

Advise the SGCM and pack fan harness will be sent to dealer.

ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
11/2/2012 04:58:16 PM	GETTELMA	GETTELMA	TAC Alarm	24 Hour	Scheduled Alarm	
Last Name		First Name		Priority	Start Date	
Webster	Ryan		3-Medium	11/5/2012 08:58:17 AM		
Times In		Days Down				
Description						
review						
Template Text						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
11/2/2012 11:33:58 AM	GETTELMA	GETTELMA	TAC Outbound Call	Dealer	Done	11/2/2012 11:43:26 AM	
Last Name	First Name			Priority	Start Date		
Webster	Ryan			3-Medium	11/2/2012 11:33:58 AM		
Times In		Days Down					
1		2					
Description							
Ryan Webster, tech							

Activities

Template Text

Ryan stated when asked if customer owned.

It was a dealer trade and that's why it has mileage on car. Car is currently dealer owned.

Ryan stated when asked which step he was on when smoke ocurred.

The two hour idle test step 12 and was 30-40 minutes into it.

Ryan stated the SGCM x1x2x3 wiring has heat stress and melting on them.

Ryan stated when asked if there was interior trim damage.

There is some film on the Right Rear area by the RR seatbelt but thinks it can be cleaned off.

Ryan stated when asked if there was arcing inside of pack.

Hard to tell with all the soot but there appears to be some heat stress terminals and possible melting of the wiring. ExtendedTemplateText

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
11/2/2012 11:23:21 AM	CIAVERBR	CIAVERBR	TAC Review	Escalation Team Review	Done	11/2/2012 11:34:02 AM
Last Name		First Name		Priority		Start Date
Webster		Ryan		3-Medium		11/2/2012 11:23:21 AM
Times In		Days Down				
Description						
Reviewed with Mark Get	tel					
Template Text						
What step was the tec	h in when per	forming 12238	\$?			
Was there any soot ou	tside the Pack	c or on the trim	?			
Is there smoke damag	to the vehic	le?				
Is it customer owned?	Is there dama	age to trim cov	ers?			

Activities

And find out what step he was on when it failed?

I can have a repair harness or connectors are melted we have a repair harness to splice in and have one sent to the dealer from BQ

If there is arcing in the BDU and GCM then we want the entire Pack replaced. ExtendedTemplateText

Created **Created By** Assigned To Activity Type Sub-Type Status Actual Completion 11/1/2012 04:55:14 PM GETTELMA GETTELMA TAC Inbound Call Diagnostics Done 11/1/2012 05:00:07 PM First Name Priority Start Date Last Name 11/1/2012 04:55:14 PM Webster Ryan 3-Medium Times In Days Down 1 1 Description

Template Text

Ryan stated has removed the battery pack cover and has a lot of soot and odors inside of pack.

Ryan stated also has the 3 connectors to the SGCM x1 x2 x3, the blue, green, and black, have melted insulation on these connectors.

Advise Ryan to take pictures of the damage and send into TAC.

Advise will send info to escalation for further evaluation.

Advise TAC will call back at 641-455-9794 with further instruction.

ExtendedTemplateText

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
11/1/2012 04:10:30 PM	SLEEMASC	SLEEMASC	TAC Alarm	24 Hour	Scheduled Al	arm
Last Name		First Name		Priority	Sta	rt Date
Webster		Ryan		3-Medium	11/	6/2012 04:10:30 PM
Times In		Days Down				
Description						
eAssist smoke						
Template Text						
ExtendedTemplateText						

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
11/1/2012 04:01:44 PM	SLEEMASC	SLEEMASC	TAC Inbound Call	Diagnostics	Done	11/1/2012 04:10:29 PM
Last Name		First Name		Priority	Sta	art Date
Webster		Ryan		3-Medium	11,	/1/2012 04:01:44 PM
Times In		Days Down				
1		1				
Description						
Spoke to technician Ryan	n Webster					
SI doc 12238A						
No modifications, condition	on has been du	plicated.				
Template Text						

Ryan states he is performing campaign 12238 and he started to smell smoke. He states he disconnected the 12V battery. He states he checked the fuses F23UA and F73UA and they are not open.

Advised Ryan to remove the battery pack from the vehicle, open the pack and inspect for signs of arcing or soot, if found take pictures and call back.

Advised Ryan that we will arrange the appropriate part for the vehicle.

ExtendedTemplateText

	9555175		Ref No.						
			Rei NO.		Goodwill			BRC Type	N/A
McMur	ray Chevrolet, I	nc.	Site	165295	GW SubType)		Bus. Unit	TAC US
Bonner	•		First Name	Don	Approval	Not Initiate	d	Area	Hybrid Energy Storage
			Evening #		UCC			Sub-Area	Battery Pack
PO Bo	x 1919		City	Mc Murray	Involved Dir			Safety	No
PA	Postal Cd	15317-1919	Con. Acct.	McMurray Chevrolet, Inc.	Source	Phone		Updated	11/26/2012 09:52:38 AM
1G11F	5RR3DF	I	Model Year	2013	Priority	Field	License #	Owner	CIAVERBR
Chevro	let		Warr. Start	06/05/2012	Status	Open		Opened	11/23/2012 04:07:48 PM
Malibu			Mileage	17	Sub-Status	Active		Closed	
12238	thermal event								
	PO Box PA 1G11F3 Chevro Malibu	Bonner PO Box 1919	PO Box 1919 PA Postal Cd 15317-1919 1G11F5RR3DF Chevrolet Malibu	Bonner First Name Evening # Evening # PO Box 1919 City PA Postal Cd 15317-1919 Con. Acct. 1G11F5RR3DF Model Year Model Year Chevrolet Varr. Start Mileage	Bonner First Name Don Evening # Evening # PO Box 1919 City Mc Murray PA Postal Cd 15317-1919 Con. Acct. McMurray Chevrolet, Inc. 1G11F5RR3DF Model Year 2013 Chevrolet Varr. Start 06/05/2012 Malibu In 17	Bonner First Name Don Approval Evening # UCC PO Box 1919 City Mc Murray Involved Dlr PA Postal Cd 15317-1919 Con. Acct. McMurray Chevrolet, Inc. Source 1G11F5RR3DF Model Year 2013 Priority Chevrolet Warr. Start 06/05/2012 Status Malibu Mileage 17 Sub-Status	Bonner First Name Don Approval Not Initiate Evening # UCC UCC <tdu< td=""><td>BonnerFirst Name Evening #DonApproval VCCNot InitiatedPO Box 1919CityMc MurrayUCC</td><td>BonnerFirst NameDonApprovalNot InitiatedAreaBonnerEvening #UCCSub-AreaPO Box 1919CityMc MurrayInvolved DIrSafetyPAPostal Cd15317-1919Con. Acct.McMurray Chevrolet, Inc.SourcePhoneUpdated1G11F5R3DFModel Year2013PriorityFieldLicense #OwnerChevroletWarr. Start06/05/2012StatusOpenCopendDenedMalibuMileage17Sub-StatusActiveClosed</td></tdu<>	BonnerFirst Name Evening #DonApproval VCCNot InitiatedPO Box 1919CityMc MurrayUCC	BonnerFirst NameDonApprovalNot InitiatedAreaBonnerEvening #UCCSub-AreaPO Box 1919CityMc MurrayInvolved DIrSafetyPAPostal Cd15317-1919Con. Acct.McMurray Chevrolet, Inc.SourcePhoneUpdated1G11F5R3DFModel Year2013PriorityFieldLicense #OwnerChevroletWarr. Start06/05/2012StatusOpenCopendDenedMalibuMileage17Sub-StatusActiveClosed

Description

GMPP Details						
GMPP Term	GMPP Mi	leage	GMPP Retail Cos	t		
Component Coverage						
Component Coverage			Ex	piration Mileage		Expiration Date
Certificate Details						
Certificate Number	Amount		Expiration Date			
Pre-Authorization Basics						
Service Dealer		BAC Code		Div. Dealer Code		Repair Order #
						50189
Activities						
Created Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/26/2012 10:05:15 AM FSENDCC	REISSRO	NDCC Notify - FSE Action Reqd	North East	In Progress		Lack of Progress
Contact Last Name	Contact Firs	t Name	Account		BAC Code	
Bonner	Don		McMurray Chevrolet, I	nc.	165295	
Comments						

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/26/2012 09:59:43 AM	CIAVERBR	FSENDCC	TAC Escalation	Field Service Engineer	In Progress		FPR required
Contact Last Name		Contact Firs	t Name	Account		BAC Code	Kristin Curran- BQM Advanced
Bonner		Don		McMurray Chevrolet, Inc.		165295	Propulsion Ryan Brown - Malibu BQM
Comments							Ryan Brown - Malibu BQM

SM - Rob Klowdowski

FPR request to gauge extent of thermal event for repair or repurchase

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/26/2012 09:46:21 AM	CIAVERBR	FSENDCC	TAC Escalation	Field Service Engineer	Done	11/26/2012 09:58:01 AM	FPR required
Contact Last Name		Contact Firs	t Name	Account		BAC Code	Kristin Curran- BQM Advanced
Bonner		Don		McMurray Chevrolet, Inc.		165295	Propulsion
Comments							Ryan Brown - Malibu BQM

SM - Rob Klowdowski

FPR request to gauge extent of thermal event for repair or repurchase

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/26/2012 09:39:14 AM	CIAVERBR	CIAVERBR	TAC Inbound Call	Diagnostics	In Progress		Received call from Rob and Don
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Bonner		Don		McMurray Chevrolet, Inc.		165295	
Comments							

Tech claims that the trim covering the Powerpack, the trim on the rear seat, the SGCM connectors and body harness shows signs of thermal event. There is an odor of smoke in the vehicle. This occurred prior to running 12238B.

Advised I will escalate to an FSE to gets pics and FPR documented. They have been advised to stop work on the vehicle. Pics to be forwarded to engineering and BQ.

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/26/2012 09:20:47 AM	CIAVERBR	CIAVERBR	TAC Outbound Call	Dealer	Done	11/26/2012 09:24:51 AM	Called and left VME for SM Rob to call
Contact Last Name		Contact Firs	t Name	Account		BAC Code	me back
Bonner		Don		McMurray Chevrolet,	Inc.	165295	
Comments							
AM - 10 - and the state of a state		and the second sec	was all as so the solution of a first solution of the	بالمالية والمستحد والمس		-	

Waiting on photos and call from SM to get details on thermal event and at what point the concern occurred during the 12238 testing.

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/26/2012 09:17:55 AM	CIAVERBR	CIAVERBR	Ownership Changed		Done	11/26/2012 09:17:55 AM	Service Request Ownership has
Contact Last Name		Contact Firs	t Name	Account		BAC Code	changed FROM: SCHMITSH TO:
Bonner		Don		McMurray Chevrolet, Inc.		165295	CIAVERBR
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/23/2012 04:22:38 PM	SCHMITSH	TACHYBD1	TAC Escalation	Hybrid Platform	In Progress		PA - SM Rob Unwanted thermal event
Contact Last Name		Contact First	Name	Account		BAC Code	
Bonner		Don		McMurray Chevrolet, Inc.		165295	
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/23/2012 04:22:08 PM	SCHMITSH	SCHMITSH	TAC Alarm	24 Hour	Scheduled Alarn	า	PA, Don Bonner Tech
Contact Last Name		Contact Firs	t Name	Account		BAC Code	Thermal Event
Bonner		Don		McMurray Chevrolet, Inc.		165295	
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
11/23/2012 04:21:50 PM	SCHMITSH	SCHMITSH	TAC Inbound Call	Diagnostics	Done	11/23/2012 04:22:00 PM	,
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Bonner		Don		McMurray Chevrolet, Inc).	165295	
Comments							
1 NUMBER OF TIMES I		ERN?					
1 NUMBER OF DAYS D n ANY MODIFICATIONS							
IT ANT WODIFICATIONS		\LI!.					
y HAS THE CONCERN	BEEN DUPLIC	ATED?					
ANY SI DOCUMENTS BE	EN USED?						
12238							
ARE KEYWORDS FRA, A	ADR, DIMA, PR	C, TIDD, OR PE	REQ PRESENT IN THE	CASE?			
CALLERS NAME?:							
Don Bonner Tech							
CUSTOMER CONCERN	?:						
12238 DEALER COMMENTS/D							
		perform the test	and the car had a code	of P062F. There is Extensive	hermal damage i	n the rear of	
the car. Tech is wanting t					normal damage i		
TAC RECOMMENDATIO		•					
Advised tech to send in p	hotos of the da	mage and to no	t perform any work on the	e car until further notice.			
SS							
33							

SR No.	71-1157313296	Ref No.		Goodwill			BRC Type	N/A
Account	Henry Brown Buick GMC, L.L.C.	Site	210275	GW SubType	•		Bus. Unit	TAC US
_ast Name	Hancock	First Name	Tim	Approval	Not Initiated		Area	Hybrid Power Electronics
Daytime #	(480) 722-7110	Evening #		UCC			Sub-Area	Charging System
Address		City		Involved Dir			Safety	No
State	Postal Cd	Con. Acct.	Henry Brown Buick GMC,	Source	Phone		Updated	2/27/2013 08:40:11 AM
Serial #/VIN	1G4GC5ER1DF	Model Year	2013	Priority	Consultant	License #	Owner	SHOOKJA
Make	Buick	Warr. Start	02/18/2013	Status	Closed		Opened	2/21/2013 04:14:41 PM
Model	LaCrosse	Mileage	171	Sub-Status	Unlinked		Closed	2/22/2013 09:25:41 AM
Abstract	MIL							
Customer Description	P1A6F							

GMPP Details			
GMPP Term	GMPP Mileage	GMPP Retail Cost	
Component Coverage			
Component Coverage		Expiration Mileage	Expiration Date
Certificate Details			
ertificate Number	Amount	Expiration Date	
Pre-Authorization Basics			
Service Dealer	BAC Code	Div. Dealer Code	Repair Order #
			217119
Activities			

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
2/22/2013 09:25:41 AM	SHOOKJA	SHOOKJA	SR Closed - Unlinked		Done	2/22/2013 09:25:41 AM	Service Request has been Closed
Contact Last Name		Contact Firs	t Name	Account		BAC Code	Unlinked.
Hancock		Tim		Henry Brown Buick G	MC, L.L.C.	210275	
Comments							

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
2/21/2013 04:31:57 PM	SHOOKJA	SHOOKJA	Ownership Changed		Done	2/21/2013 04:31:57 PM	Service Request Ownership has
Contact Last Name		Contact Firs	t Name	Account		BAC Code	changed FROM: GUTEIRSO TO:
Hancock		Tim		Henry Brown Buick GM	1C, L.L.C.	210275	SHOOKJA
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
2/21/2013 04:31:12 PM	SHOOKJA	SHOOKJA	TAC Alarm	36 Hour	Done	2/22/2013 09:25:31 AM	GCM
Contact Last Name	Contact First Name			Account	Account		
Hancock		Tim		Henry Brown Buick GM	C, L.L.C.	210275	
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
2/21/2013 04:29:41 PM	SHOOKJA	RESTPART	TAC Part Request	CCA	Done	2/21/2013 04:44:34 PM	Description GCM
Contact Last Name		Contact Firs	st Name	Account		BAC Code	Part # 24267941
Hancock		Tim		Henry Brown Buick GM	1C, L.L.C.	210275	Qty 1 Ctrl # DF244751
Comments							OVN # YES
SPAC Sr 71-1157387615	5						SVIN# 120
Order placed 02/21/13 a	s an Ovn						
Part # 24267941							
0							

Qty 1 Ctrl # DF244751

FACY > 092 ORDER # > 7950500

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
2/21/2013 04:25:48 PM	SHOOKJA	SHOOKJA	TAC Inbound Call	Diagnostics	Done	2/21/2013 04:29:35 PM	CED transfer
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Hancock		Tim		Henry Brown Buick GM	1C, L.L.C.	210275	
Comments							
Concern:							

MIL

Dealer diagnosis:

Tech states dtc P1A6F set after auto start, followed diagnostic, checked belt and tensioner operation with no fault found, no slip, belt clean and dry.

Recommend

TAC sent request for GCM , tech to program and evaluate, 12238 does not have to be performed, check fan operation, charge and test 12V battery. 24267941

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
2/21/2013 04:16:54 PM	GUTEIRSO	GUTEIRSO	TAC Inbound Call	CED	Done	2/21/2013 04:18:12 PM	AZ
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Hancock		Tim		Henry Brown Buick G	MC, L.L.C.	210275	
Comments							

Caller's Name (First Name, Last Name & Position & Phone number): Tim Hancock, Service Tech (480) 722-7110

Customer Concern on the RO: SES light P1A6F

SR #	71-1168130379	Account Phone #	(956) 581-	1111	Cust Concern	Heard loud pop in rear an	d ses light is on	
Account	Bert Ogden Chevrolet,	Site/BAC	114889		Keyword 1	EASSIST	Business Unit	TAC US
Address	Inc. 1400 E Expy 83				Keyword 2	NOISE	Keyword 3	SES
City	Mission	State TX	Zip	785726611	Keyword 4	LIGHT		
Last Name	Hanvey	First Name	Stan		Non Keyword	P0AC4 P0C78		
	hanvöy		PIC5520F		Comp type		Svc Man Sec	Hybrid Power Electronics
Daytime #	0.5	Recom Bulletin #			Open Concern	DC10 - SBD performed	SVc Man Sub	Charging System
Veh Family	GB	Mileage Type	Μ		Symptom Desc	MIL / DTC		
Repair Order	577223	Restricted Part #	22948845		Status	Open	Sub Status	Active
Serial #/VIN	1G4GD5GR3CF					RIKERJO	Onened	03/27/2013 10:56:17
Make	Buick	Mileage 9996			Owner		Opened	03/21/2013 10:30:17
Model	LaCrosse	Warranty Start			Priority	Consultant	Closed	
Year	2012	Warranty Status						
Veh Line	GD	Veh Series	D					
Plant	F	Body ^{5G} Ei	n gine R					

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion
3/27/2013 11:12:37 AM	RIKERJO	RIKERJO	TAC Alarm	24 Hour	Scheduled A	arm
Last Name		First Name		Priority	Sta	art Date
Hanvey		Stan		3-Medium	3/2	28/2013 11:12:37 AM
Times In		Days Down				
1		1				
Description						
Stan P0c78						
Template Text						
ExtendedTemplateText						

Activities

Created	Created By	Assigned To	Activity Type	Sub-Type	Status	Actual Completion	
3/27/2013 11:10:42 AM	RIKERJO	RIKERJO	TAC Inbound Call	Diagnostics	In Progress		
Last Name		First Name		Priority	Sta	rt Date	
Hanvey		Stan		3-Medium	3/27/2013 11:10:42 AM		
Times In		Days Down					
1		1					
Description							

Template Text

Number of days down as provided by the caller? 1

Number of times in for the same concern? 1

Has the concern been duplicated? Yes

Does the vehicle have any aftermarket accessories or modifications? No

Have any SI document been utilized (Capture Doc ID)?

Are keywords FRA, ADR, DMA, PRC, TIDD, or PEREQ present in the case?

Caller's Name (First Name, Last Name & Position):

Stan Hanvey Tech

Customer Concern:

Heard loud pop in rear and ses light is on

Dealer Comments/Diagnosis (DTC's, What's Been Done):

Dealer states that he has a P0c78 setting after clearing all the low voltage codes

Dealer states that he has the battery cover off and the inside is melted.

Dealer states that he has wiring harness metal, section of the battery is damaged.

Dealer states that he needs that the 3 wire harness going into the battery.

TAC Recommendations:

Advise the dealer to send in pictures of the battery. To tacsanpshot.com

Activities

Advise the dealer to have parts call there ESE

ExtendedTemplateText

3/27/2013 11:09:18 AM RIKERJO RIKERJO Email - Outbound Done 3/27 Last Name First Name Priority Start Date 3/27/2013 11 Times In Days Down	/2013 11:10:34 AM
3/27/2013 1	
Times In Days Down	:10:29 AM
Description	
Case # 71-1168130379 Part # 22948845	
Template Text	

Agenda

- Quick design review of diagnostic and new remedial actions.
 - (to be schedule at a later meeting)
- All testing conducted to date at GM and GMCH/Delphi
 - Reviewed the Validation Plan
 - Testing completed
 - Testing remaining
 - Added Task for a System DFMEA review
- Mileage accumulation
 - (to be schedule at a later meeting)
- DFMEA
 - GMCH will work on the DFMEA from a powerpack perspective.
 - Stephen to determine a System DFMEA leader
 - Will use the DFMEA information to guide further testing
- How long would it take to get production software on 12a and 12b builds, revalidated and released to service?
 - Waiting on Decision to go forward with MY12/13 service release.
- What testing would need to be redone on production software
 - (to be schedule at a later meeting)
- Plan for MY12/13
 - On hold pending direction from Stephen
- Plan for MY 15, 11.12c go ahead with production intent.
 - Target 80% release.

Action Items:

Rick Schroeder to set up daily meeting 3:30 to 4:00 to track progress.

Stephen Poulos to assign System DFMEA leader

GMCH to determine failure modes of the Powerpack - BPIM/Wires/Contactor/

Field Product Report

VIN (All 17 Digits): 1G4GD5ER8CF

Mileage: 41

Condition:

Service engine light and service battery message.

Cause:

Found trouble code ECM: POAC4 Sym 00; HPCM: POC78 Sym 00; PBCM: C0561 Sym 00, found burnt marking on battery case and cover.

Correction:

Replace e-Assist battery assembly.

Dealer BAC Code: 119048

Dealer Name: Williamson Cadillac

Dealer Contact Name: Mike Herandi

Dealer Email Address: mikel@williamsoncadillac.com

RO#: 21439

If available, TAC Case #: 71-1073599298

If available, Part Number:

Digital Photos Available?	∶x Yes	🗌 No
Parts Available?:	x 🗌 Yes	No

Email All Product Reports to: electronicproductreport@gm.com

Include Photos, Videos or Sound if Applicable

SR No.	71-1180793018	Ref No.		Goodwill	No Goodwi	ll Offered		BRC Type	N/A
Account		Site		GW SubType	e			Bus. Unit	BRC
Last Name	Herald	First Name	Deborah	Approval	Not Initiate	d		Area	PAR
Daytime #	(240) 643-3139	Evening #		UCC	Non Comp	onent GM		Sub-Area	Initiate PAR- Other
Address		City		Involved Dir				Safety	No
State	Postal Cd	Con. Acct.		Source	Phone			Updated	5/7/2013 10:17:00 AM
Serial #/VIN	1G4GA5ER4DF	Model Year	2013	Priority	Medium	License #	BUICK	Owner	SANCHERI
Make	Buick	Warr. Start	10/20/2012	Status	Open			Opened	5/6/2013 07:05:58 PM
Model	LaCrosse	Mileage		Sub-Status				Closed	
Abstract	PAC rear end thermal event								
Customer									

Description

Expiration Date	
Repair Order #	
	Repair Order #

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:17:00 AM	RAUSCHBE	SANCHERI	Ownership Changed		Done	5/7/2013 10:17:00 AM	Service Request Ownership has
Contact Last Name	Contact First Name			Account		BAC Code	changed FROM: HERNANVA TO:
Herald		Deborah					SANCHERI
Comments							

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:16:02 AM	RAUSCHBE	SANCHERI	BRC PAR	Initial Contact- Dealer	In Progress	Completed	Called
Contact Last Name		Contact Firs	-	Account	- 3	BAC Code	
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:15:57 AM	RAUSCHBE	SANCHERI	BRC PAR	Initial Contact - Field	In Progress		Called
Contact Last Name		Contact Firs	t Name	Account	5	BAC Code	
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:15:50 AM	RAUSCHBE	SANCHERI	BRC PAR	Initial Contact- Phone	In Progress		Called
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:15:41 AM	RAUSCHBE	SANCHERI	BRC PAR	Acknowledgement	In Progress		Called
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:15:33 AM	RAUSCHBE	SANCHERI	Research		In Progress		Research VIN
Contact Last Name		Contact Fire	t Name	Account		BAC Code	
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:15:19 AM	RAUSCHBE	SANCHERI	Notify CRM	Activity Odb Type	In Progress	completed	File Assigned
Contact Last Name		Contact Firs		Account		BAC Code	
Herald		Deborah					
Comments							

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:14:51 AM	RAUSCHBE	SANCHERI	BRC PAR	Case Assigned	In Progress		Assigned to SANCHERI x 41345
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:14:38 AM	RAUSCHBE	HERNANVA	SR Opened		Done	5/7/2013 10:14:39 AM	SR in Status of Closed has been Re-
Contact Last Name		Contact Firs	t Name	Account		BAC Code	Opened by RAUSCHBE
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 10:14:36 AM	RAUSCHBE	HERNANVA	SR Closed - Dissatisfied		Done	5/7/2013 10:14:37 AM	Service Request has been Closed
Contact Last Name		Contact Firs	t Name	Account		BAC Code	Dissatisfied.
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/6/2013 07:13:07 PM	HERNANVA	BRCPARQ	Notify CRM		Done	5/7/2013 10:14:26 AM	thermal event
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Herald		Deborah					
Comments							
Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/6/2013 07:06:35 PM	HERNANVA	HERNANVA	Inbound Call Customer	Complex Request	Done	5/6/2013 07:13:05 PM	rear end fire
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Herald		Deborah					
Comments							
			e my vehicle caught on fire a		o gather some inform	ation so i	
am calling becasue there	e was a recall/se	ervice bulliten ar	nd the fire was a rear end veh	licle			
cust sks: help							
cust sks. Help							

crs adv:there are no open recalls on this vehicle. i am going to send you case to a different department

Valarie hernandez.cac.atx.t1.lvl0

UCC Codes

UCC Code S96

UCC Symptom Buick

UCC Description Non Component GM

SR No.	71-118	0473975		Ref No.		Goodwill	No Goodwil	ll Offered		BRC Type	N/A
Account				Site		GW SubType	;			Bus. Unit	CAC
Last Name	Herald			First Name	Elliott	Approval	Not Initiated	k		Area	RFI Vehicle
Daytime #	(301) 2	06-3775		Evening #	(301) 868-3894	UCC	Non Compo	onent GM		Sub-Area	Parts & Accessories
Address	5806 J	ackies Way		City	Clinton	Involved Dir	Brandywine	Pontiac-Buick	-GMC, Inc.	Safety	No
State	MD	Postal Cd	20735-4819	Con. Acct.		Source	Phone			Updated	5/6/2013 12:31:37 PM
Serial #/VIN	1G4GA	5ER4DF		Model Year	2013	Priority	Medium	License #	BUICK	Owner	ALARINAL
Make	Buick			Warr. Start	10/20/2012	Status	Open			Opened	5/6/2013 09:11:18 AM
Model	LaCros	se		Mileage		Sub-Status				Closed	
Abstract	chassis	s harness									
Customer											

Description

GMPP Details				
GMPP Term	GMPP Mileage		GMPP Retail Cost	
Component Coverage				
Component Coverage			Expiration Mileage	Expiration Date
Certificate Details				
Certificate Number	Amount		Expiration Date	
Pre-Authorization Basics				
Service Dealer		BAC Code	Div. Dealer Code	Repair Order #

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/7/2013 09:47:15 AM	ALARINAL	ALARINAL	Outbound Call Dealer	Made Contact	Done	5/7/2013 09:50:44 AM	spoke with Justin Strother - parts
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Herald	WINEGARDNER BUICK-GMC OF BRANDYWINE						
Comments							15113 CRAIN HWY
DLR STS: -no she never came in, s	he called me sh	ne said she was	coming in but she didn't				BRANDYWINE MD 20613-8022 3013728900

Crs thanked dealer

Aleana | Mla | CAC T1 | L1

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/6/2013 12:30:41 PM	ALARINAL	ALARINAL	Scheduled Outbound Call Cust	Initial Attempt	Scheduled Alarm		Ms Deborah Herald -ffup with cust after speaking with
Contact Last Name		Contact Firs	t Name	Account		BAC Code	dealer
Herald		Elliott					
Comments							
SOCC 5/7/2013 Tuesday 11-1pm	у						

Aleana | Mla | CAC T1 | L1

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/6/2013 12:29:55 PM	ALARINAL	ALARINAL	Scheduled Outbound Call Dlr		Done	5/7/2013 09:47:13 AM	check if cust had initiated to place an order for the part
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Herald		Elliott					
Comments							
SOCD 5/7/2013 Tuesday	у						
10-12nn							
Aleana Mla CAC T1	L1						

Activities

Created	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
5/6/2013 09:12:50 AM	ALARINAL	ALARINAL	Outbound Call Dealer	Made Contact	Done	5/6/2013 12:29:39 PM	spoke with Justin Strother - parts
Contact Last Name		Contact Firs	t Name	Account		BAC Code	
Herald		Elliott					WINEGARDNER BUICK-GMC OF
Comments							BRANDYWINE 15113 CRAIN HWY
CRS STS: -calling to check if a part was placed on order -gave cust info						BRANDYWINE MD 20613-8022 3013728900	

DLR STS:

-we called GM, this is not available yet bec it is a future part, it has to be ordered, it could be 2 weeks or 6 months, no one in GM could tell me -We didn't say we won't sell it to them, we can't give them any ETA -Alternate Part? only one part. No alternate part, no one in GM could tell me, not in stock yet -part name? i don't have the ticket here but I think it was the chassis harness

-Part #? Don't have ticket in front me

-They had to initiate or authorize order first

-why is part called future part? Bec it's a 2013 veh, it's a future part

Crs thanked dealer

Aleana | Mla | CAC T1 | L1

	Created By	Assigned To	Activity Type	Activity SubType	Status	Completed	Description
/6/2013 09:12:10 AM	ALARINAL	ALARINAL	Inbound Call Customer	Complex Request	Done	5/6/2013 12:29:53 PM	chassis harness
Contact Last Name		Contact Firs Elliott	t Name	Account		BAC Code	I
comments							
UST STS:							
Phone # 2406433139							
ave a 2013 Buick LaC		it's with incurrence	a company and they need to	act a wiring hornoop and (CM is south a that t	hav dan't agli	
as a part	a lear enu me,	it's with insurance	e company and they need to	get a winng harness and t	Sivi is saying that t	ney don't sen	
Car was sitting in the dr			the end and set it to fire				
Car was set on fire, enti /IN df166312	re rear end bu	rnt up, battery, ha	rness, and they need full rep	blacement			
2,000 miles							
dealer said that it is not			o purchase a part from cust				
	K-GMC OF BR	ANDYWINE					
5113 CRAIN HWY RANDYWINE MD 200	613-8022						
013728900							
UST SKS:							
ind/order part for her ve	eh						
·							
RS ADVSD: 'll need to get in touch v	with dealer: the	w have direct acc	ess to parts catalogue				
in need to get in touch t	with dealer, the	sy have unect acc	ess to parts catalogue				
put cust on hold to call	dealer**						
RS STS:							
	coordinated wi	th GM parts sour	ce team and this is actually r	ot an available part yet bec	it is a FUTURE P	ART, but	
ney could always place	an order for yo	ou, not that they c	ould not sell it to you				
and at this point, we do nonths	n't have any sp	ecific timeframe	on when the part would becc	ome available; it could be in	2 weeks, or could	be in 6	
	rd with it, we n	eed to initiate or v	ou authorize the order to the	e dealer			
	·						
UST STS: /es I want to order it							
RS STS:			0				
alright then, the person	I talked to in pa	arts dept is Justin	Strother				
UST STS:							
okay thank you so much	า						
leana Mla CAC T1	1 1						

UCC Codes

UCC Code S96

UCC Symptom Buick

UCC Description Non Component GM



{In Archive} Nan ya on-site process audit

Stephen Poulos to: Mehrdad Teimor

DAVID P TASKY, Sean E Gleason, Mark Selogie, Glenn C. Griner, Cc: Timothy M. Grewe, Daniel D. Cottrell, Kevin Diviney, Bob Agresta, Gary Backs 01/08/2012 10:43 AM

 From:
 Stephen Poulos/US/GM/GMC

 To:
 Mehrdad Teimor/US/GM/GMC@GM

 Cc:
 DAVID P TASKY/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Mark Selogie/US/GM/GMC@GM, Glenn C. Griner/US/GM/GMC@GM, Timothy M. Grewe/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Kevin

 Archive:
 This message is being viewed in an archive.

Mehrdad,

I just wanted to follow up on a comment that you made on our 1 pm call Saturday regarding the option to have a specialist in circuit board manufacturing from Torrance go to Nan Ya and review their process controls in detail as a follow up to the contamination that was found on the Malibu CTF BPIM control board. Sorry that we closed out the call without addressing that constructive offer from the Torrance team.

I would certainly feel more comfortable if this happened. However, as we are dealing with a tier-2 process issue at a supplier with which my team has little or no direct experience, I would like to defer to Tim, Bob, and Gary to determine the best additional due diligence with Nan Ya in regard to contamination and general process control.

Stephen



{In Archive} Fw: Nanya Plant Quality Review w/ Scott Wilson

Stephen Poulos to: Bob Agresta

05/24/2013 03:05 PM

Archive:

This message is being viewed in an archive.

Bob,

Per your request. Didn't have much luck getting the true circuit board experts to join, so questions are still too high level. Gary is making some phone calls this afternoon to see if he can find anyone at Delphi to help and I will try to talk live with Alan Barry in Torrance. Will do the best we can.

Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 05/24/2013 03:03 PM -----

From: To:	Sean E Gleason/US/GM/GMC Gary Backs <gary.backs@gmch.com></gary.backs@gmch.com>
Cc:	Stephen Poulos/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, "Varnau, Michael J"
	- Michael.J.Varnau@delphi.com>, Mehrdad Teimor/US/GM/GMC@GM, Alan Barry/US/GM/GMC
	James.A.Wood@delphi.com
Date:	05/24/2013 02:16 PM
Subject:	Nanya Plant Quality Review w/ Scott Wilson
Sent by:	Sean E Gleason

All,

Scott Wilson is will represent GM interests during a plant visit to Nanya on 5/27 to investigate what quality improvements have been made to their operations. We need to support Scott with good questions to start the discussion. Any help to refine and add specificity to these questions would be very helpful.

Gary,

Here is a list of the questions generated to start discussion with Nanya. This is intended to help the investigation into what they have implemented to ensure high quality bare boards are being produced today.

- 1. Review PPAP Package
- 2. What specifics standards do you follow to assure the quality of the isolation layers
- 3. What are standards for high quality boards, and show your compliance to them
- 4. Review inspections and coupon data

Please refine this list as much as possible and send to Scott Wilson on Sunday.

Sean Gleason Senior Manager - Global Electrification Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083



History:This message has been replied to.Archive:This message is being viewed in an archive.

Bob,

Kevin was advised by legal not to share the attached data with Nanya. The text from his last note follows:

"Sean Gleason and I were on a call this morning with GM Legal. The short answer is not to share any of our analysis data with Nanya, other than a verbal description of which Nanya lots of material are suspect. When Purchasing/SQ (Dan Stec) goes after Nanya for cost recovery, some information may need to be shared, but anything should be approved by legal/FPE first."

I was pinged today by Jim Fortune, indicating that he is running into resistance from Nanya to doing any further root cause if we cannot share some data. They are back to insisting that we damaged the parts by hi pot. Also, they don't want to compare / address ECM isolation issues with BPIM isolation issues. So, he is asking to share these charts again. What I think we really wants is to share failure rates by lot. Perhaps we could strip them down some, but we probably can't back out much.

I cannot go against the advice of our legal team, but we need to find some way to appropriately communicate with the supplier and have the right GM people involved if we want to find root cause. So, I don't know if we need a conference with the right purchasing folks to understand what they need so we don't damage our cost recovery efforts or...

Do you have any guidance? I expect that we will need to go back to Legal / FPE, but we probably need a strategy first.

Dan Cottrell Global Vehicle System Engineer, Electrification GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

----- Forwarded by Daniel D. Cottrell/US/GM/GMC on 05/23/2013 03:53 PM -----

From:	Kevin Diviney/US/GM/GMC
To:	James Fortune < james.fortune@gmch.com>, William J. Kemp/US/GM/GMC@GM
Cc:	daniel.d.cottrell@gm.com
Date:	05/17/2013 03:33 PM
Subject:	Re: Fw: Nanya request for information

Jim,

Under the circumstances, we better run this by legal.

Bill,

Do you see any problem with us sharing failure rate information with the supplier of the printed circuit boards involved with our BPIM field action?



Kevin Diviney

Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>



Global Electrification - Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

From:James Fortune <james.fortune@gmch.com>To:kevin.diviney@gm.comCc:daniel.d.cottrell@gm.comDate:05/17/2013 03:13 PMSubject:Fw: Nanya request for information

Kevin,

Attached is some information that we would like to provide Nanya, but first wanted to know what you think. Please take a look and get back to Dan and I.

Thanks Jim

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC <u>http://kokomogmch.com</u> Phone: (765) 451-9558 Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of

this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or

any of its affiliates.

"Go Boilers"

-----Forwarded by James Fortune/GMch on 05/17/2013 03:11PM -----

To: James Fortune/GMch@GMch From: Daniel Weaver/GMch Date: 05/15/2013 10:40AM Cc: Joe Gust/GMch@GMch Subject: Nanya request for information

(See attached file: Nanya lots revised confirmed cases only.pptx) (See attached file: Nanya charts.pptx)

As we discussed this AM Nanya is asking questions about the scope of the warranty issues we have seen regarding the isolation issue related to the single pre preg design of the circuit boards. The following 2 charts would satisfy their request. However, prior to giving them copies I wanted to make sure we had approval to do so.

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone :	(765) 451-8243	
Fax:	(765)451-7156	
Personal cell:		
Email: P) Nanya charts.p	daniel.weaver@gmch.com	Nanya lots revised confirmed cases only.pptx



{In Archive} Re: Nanya request for information 🗎

Kevin Diviney to: Bob AgrestaCc: Daniel D. Cottrell, Stephen Poulos, Daniel R. StecThis message is being viewed in an archive.

05/23/2013 09:09 PM

Archive:

Bob,

Dan Stec will be leading the cost recovery effort. He has been in communication with Jim Fortune.





Kevin Diviney

Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com

Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

Bob Agre	Dan, Clearly should not share information base	05/23/2013 04:53:32 PM		
From:	Bob Agresta/US/GM/GMC			
To:	Daniel D. Cottrell/US/GM/GMC@GM			
Cc:	Stephen Poulos/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM			
Date:	05/23/2013 04:53 PM			
Subject:	Re: Nanya request for information			

Dan,

Clearly should not share information based on the advice of counsel.

How close do you think we are in pursuing this Cost Recovery? Is it imminent, or targeted for months ahead?

I am concerned that SGM wants to get some clarity about what happened at Nanya, and any changes they made, and are planning on a SQ visit on Tuesday next week.

We have a conference call with Scott Wilson and David Wright this evening to discuss this, but I am tempted to ask Larry to intervene with the VLE or higher to scuttle the trip and prevent any confusion of the situation.

Stephen - would you concur with this? Our call yesterday concluded that it was unlikely that any data we would share with SGM would be sufficient to call off SGM SQ.

Bob

Bob Agresta Director - Global Program Execution Global Electrification E-mail: Bob.Agresta@gm.com Mobile: 248-330-6295 Office: 248-857-0933 Admin: 248-857-8317 (Marcia Jackson)

Daniel D. Cottrell Bob, Kevin was advised by legal not to share... 05/23/2013 04:17 PM EDT

UCC meeting 03AUG11

- Need to know more about belt tensioner issue at SGM. Could belt slip cause voltage transient? If so, what is the peak of that transient?
- 2) Harness grounding for SGM and Fairfax are different. Explore the grounding of cables, could this contribute to these failure(s).
- 3) PP parts built a month apart, BPIM/APM built 15 days apart.
- 4) If PP not grounded could we see this type of bulk cap failure?
- 5) UCC only has 1 amp PS for running testing.
- 6) Range in order of 230-320 volts, how quickly applied will determine if vent or short, quickly applied, short before vent. Slowly applied vent before short.
- 7) DC leakage current, cap will draw high levels of current in the mid to high voltage range exceeding dielectric, part will quickly short.
- 8) UCC: Multiple short sites very rare, obliteration of cathode tab never seen before, tab between winding and connection to cover, 10mm long.
- 9) Exceed voltage capability of electrolyte minute arching, if it goes long enough or enough current, will see multiple shorts, pitting on edge of foil.



{In Archive} Update to GMCH Mfg Planning

Gary Backs to: bob.agresta Cc: Steve Hartwig, Julie Rethlake, Gail Bowers, Cole Buttry This message has been replied to.

History:This message has been replied to.Archive:This message is being viewed in an archive.

Please see the attached. Call me with any questions.

I am trying to be clear in that this represents our ability to manufacture components IF the supply base can get material to us. The supply chain status is on page 2.

The machine balance chart you requested is included as well. We are going to pull ahead as much as we can and start in May absent schedule from CCA. Also, as a reminder, CCA currently has 3000 BPIM's in inventory. We don't know what they consume on a weekly basis, but it is likely that is a start to our short term need.

I am not sure where the communication comes from, but we update vendor forecasts Monday afternoon. If we have a signal, we can dump in higher volume requirements to the vendors and make that a reality. It will facilitate conversation with those vendors who will have real leadtime issues to contend with.

Also, we are being asked to do some weekend testing on a software solution for opening contactors as we had discussed some months ago. That will be conveyed to us at 1pm..

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

P

gary.backs@gmch.comGMCH eAssist Service Update3MY13.pptx



 {In Archive} Re: Fw: Need for information on BAS+ Incidents for Exponent

 Analysis

 Stephen Poulos
 to: Sheri Hickok

 Cc:
 Mark W. Wright, Sean E Gleason, Tony J. Saliga, Daniel D. Cottrell,

 Michael E. Polom

Archive:

This message is being viewed in an archive.

Sheri,

I think our plan is that you are handling the CTF car for California and Mark Wright is pursuing an additional development vehicle available for any testing that may be required in Milford.

Anybody sees it differently, please advise right away so we avoid any confusion, per Sheri's note. Thanks,

Stephen

Sheri HickokSean - based on our conversation late Friday a...08/13/2011 12:08:24 PM

{In Archive} Fw: Need for information on BAS+ Incidents for Exponent Analysis

Sheri Hickok to: Sean E Gleason

08/13/2011 12:08 PM

Cc: Stephen Poulos, Mark W. Wright, Tony J. Saliga

From: Sheri Hickok/US/GM/GMC

To: Sean E Gleason/US/GM/GMC@GM

Cc: Stephen Poulos/US/GM/GMC@GM, Mark W. Wright/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM

Archive: This message is being viewed in an archive.

Sean - based on our conversation late Friday afternoon, I am obtaining a car and getting it shipped Monday. The note below asks Mark Wright to look at doing this. I don't want two cars to end up in California... so who has the ball here. I have a car and plan to ship Monday.... has something been done on your side already?

Thanks, Sheri ----- Forwarded by Sheri Hickok/US/GM/GMC on 08/13/2011 12:08 PM -----

From:	Stephen Poulos/US/GM/GMC
To:	Mark W. Wright/US/GM/GMC@GM
Cc:	David W Wright/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Sheri
	Hickok/US/GM/GMC@GM
Date:	08/12/2011 04:05 PM
Subject:	Fw: Need for information on BAS+ Incidents for Exponent Analysis

Mark,

I think this note was intended for you, not for Dave Wright. FYI,

Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 08/12/2011 04:04 PM -----

{In Archive} Need for information on BAS+ Incidents for Exponent Analysis

Sean E Gleason	to: cole.buttry, Tony J. Saliga, David W Wright	08/12/2011 03:47 PM
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Cc: Mehrdad Teimor, Stephen Poulos, Timothy M. Grewe, Ronn E. Jamieson, Stephen Farris, Kris Sevel, Richard Ye, DAVID P TASKY

From: Sean E Gleason/US/GM/GMC

To: cole.buttry@gmch.com, Tony J. Saliga/US/GM/GMC@GM, David W Wright/US/GM/GMC@GM

Cc: Mehrdad Teimor/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, Timothy M. Grewe/US/GM/GMC@GM, Ronn E. Jamieson/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Kris Sevel/US/GM/GMC@GM, Richard Ye/US/GM/GMC@GM, DAVID P TASKY/US/GM/GMC@GM

Archive: This message is being viewed in an archive.

Cole,

We need complete design information download on powerpack provided to Subbaiah as described below. Please help me with pulling this information together.

Tony, Dave,

Steven Poulos and Sheri Hickok want to send a vehicle to the address below for Subbaiah to review. Can you help me with the coordination of this.

I have to get the PO in place for exponent, I would assume we will have kick off / deep dive meeting with Subbaiah next week some time.

Sean Gleason

Senior Manager - Hybrid / Electric Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083

650 862 9400 Subbaiah

----- Forwarded by Sheri Hickok/US/GM/GMC on 08/12/2011 03:00 PM -----

From:	"Subbaiah V. Malladi" <subbaiah@exponent.com></subbaiah@exponent.com>
To:	<sheri.hickok@gm.com>, <ronn.jamieson@gm.com></ronn.jamieson@gm.com></sheri.hickok@gm.com>
Cc:	 <bill.kemp@gm.com></bill.kemp@gm.com>

Sheri and Ronn:

My mailing address: Subbaiah Malladi CTO Exponent 149 Commonwealth Drive Menlo Park, CA 94025 650 688 7272

Secure FTA instructions:

You can upload large files to Exponent via our secure file transfer appliance at <u>https://fta1.exponent.com</u>. The system provides secure encrypted storage for all documents and encrypts all data transfers via SSL.

If you haven't used the system before, you need to create a user account. Here's how:

- 1. Click on the "New User?" link.
- 2. Enter your email address and click the "Register" button. Two things will now happen:
- a. You will be taken to a page that asks for a verification code

b. The system will send you an email that contains the verification code. Enter this code in the page. If you don't get the email within a few minutes, check any spam quarantine for an email from SETAdmin@exponent.com

SFTAdmin@exponent.com.

3. You will now be prompted to set up a password for your account.

4. Once you have set up the password, you will be returned to the login page where you can log in with your email address and new password.

Once you log into the system, you'll find that file transfers work very much like sending email:

1. From the 'Send File' tab, enter the email addresses <u>Subbaiah@exponent.com</u> in the 'To:' field.

2. Attach the files you wish to upload by hitting the 'Browse' button in the Attachments section and selecting the files. You may attach a maximum of 10 files per transfer.

3. Enter a subject and body text for the file-transfer email if you wish. This is optional.

4. Hit the 'Send' button.

Your files will then be uploaded to the system and Subbaiah will be notified by email. You will also receive an email notification when Subbaiah has picked up your files. Files will be available on the system for 14 days.



{In Archive} Fw: BAS+ Exponent Analysis Action Items

Stephen Poulos to: Julie M. Wilson Cc: Karen L. Bland, Daniel D. Cottrell, Sean E Gleason This message is being viewed in an archive. 08/17/2011 09:13 AM

Archive:

Julie,

Per my earlier voice mail and email. Can we do an emppr for test units or what else will get this processes and approved ASAP. Still would like the budget hit to go against the same account for field issues that we are using for the exponent consulting fees. Please advise. Thanks,

Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 08/17/2011 09:10 AM -----

{In Archive} Fw: Re: BAS+ Exponent Analysis Action Items

Gary Backs to: stephen.poulos

08/17/2011 08:02 AM

Cc: frederick.billotto, sean.gleason, Cole Buttry

From:	Gary Backs <gary.backs@gmch.com></gary.backs@gmch.com>
To:	stephen.poulos@gm.com
Cc: Archive:	frederick.billotto@gm.com, sean.gleason@gm.com, Cole Buttry <cole.buttry@gmch.com> This message is being viewed in an archive.</cole.buttry@gmch.com>

Stephen,

Note the following request from Exponent. We are pursuing getting this request satisfied today with the shipment of 10 packs.

The first pack requested was delivered Monday.

Will there be a purchase order issued to cover the second grouping of ten?

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 08/17/2011 07:52AM -----To: "Cole Buttry" <cole.buttry@gmch.com> From: sean.gleason@gm.com Date: 08/17/2011 04:28AM Cc: "Gary Backs" <Gary.Backs@gmch.com>, "Mehrdad Teimor" <mehrdad.teimor@gm.com>, "Stephen Poulos" <stephen.poulos@gm.com>, "Daniel Cottrell" <daniel.d.cottrell@gm.com> Subject: Re: BAS+ Exponent Analysis Action Items

Exponent is requesting we send 10 power packs out to california for reproducing footprint. How can we make this happen?

Sent from my iPad

On Aug 16, 2011, at 9:29 PM, "Cole Buttry" <cole.buttry@gmch.com> wrote:

Sean, we will jump on early in the AM, I will call PCL around 5:30 AM to get them primed,

From: sean.gleason

To: cole.buttry@gmch.com; gary.backs@gmch.com

Cc: mehrdad.teimor@gm.com; davidp.1.tasky@gm.com; stephen.farris@gm.com;

stephen.poulos@gm.com; daniel.d.cottrell@gm.com

Subject: BAS+ Exponent Analysis Action Items

Cole, Gary,

Need your help with these Exponent action items.

They want the two china incident units (apm fuse, bpim isolation) sent to california. Please expedite shipping ASAP, and ship with the fastest speed possible. Please take the utmost care in protecting the subcomponents for shipping. Is re-assembly feasible?
 Are there any more X-rays pictures that were taken, that weren't included in the pix set 2.zip file?

Ship Units to:

My mailing address: Subbaiah Malladi CTO Exponent 149 Commonwealth Drive Menlo Park, CA 94025 650 688 7272

Sean Gleason Senior Manager - Hybrid / Electric Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21

Sent: 08/16/2011 09:23 PM AST

cell:

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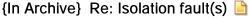
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Stephen Poulos to: Daniel D. Cottrell Shinichiro Taki, Mehrdad Teimor, Sean E Gleason, Frederick

Bob Agresta

08/21/2011 09:13 PM

Archive:

This message is being viewed in an archive.

Cc: Billotto, Gary M. Insana, Gary Backs, Brian Hayes, Kevin Diviney,

Dan,

Thanks for the update. We are going to need to communicate this situation to the vehicle team and to other leadership Monday morning, so it is important to obtain some very basic and definitive facts. I know that you are already pursuing these questions with the right contacts in Fairfax and Kokomo, but just to be sure, I will list some of the answers I think we will be expected to provide and confirm right away:

- 1. How many packs were found to have the issue? One, two, more?
- 2. Were the packs inside or outside the vehicles? (see below)
- 3. Who at Fairfax was responsible for this 100% audit and what directions did they provide to those performing the audit for dealing with any material out of compliance? Hold? Where? Send to? Contact ...? etc.
- 4. What are the serial numbers of these packs and where are they now?
- 5. How was the test performed? Which instruments and settings? Who provided the test procedure? Was anyone from engineering aware of this testing?
- 6. As soon as the packs are found, can the test be repeated and does it produce the same "hot" result?
- 7. Given that the U V W posts are inverter AC output, what type of failure(s) in the battery / BDU / BPIM would be required to produce high DC voltage on all three outputs?
- 8. What other voltage checks were performed in addition to U V W?
- 9. Is there any past history of this problem at Fairfax or anywhere else?
- 10. Are we recommending special testing or containment of any material in other plants?
- 11. If a pack had this issue, would it have been caught in a vehicle build before or during DVT, even if the operator ignored any sparking during cable assembly, and if so, where?
- 12. Could a pack that behaved the way this one is being described (all three phases somehow shorted to high-voltage battery DC) produce a result like what we observed in China with the burnt output stage of the APM?

Also, I am having trouble reconciling Bryan's understanding that the packs were being checked outside of vehicles with the description from Shin's report, which clearly states that there were sparks observed upon installation of the 3-phase cable (why use a cable for a VOM check of a loose pack?):

Battery Voltage Leak Concern (X353 Current Production)

- This may be a critical concern. (I already reported to Brian Hays and Fred Billoto)
- 1st shift operator on the line reported to 2nd shift operator that they saw 1 or 2 powerpack that did not have isolation protection (battery voltage leak). While they assembled 3phase cable to BPIM connection on Powerpack, they saw arching when cable hit to BIPM stud (spark).
- Operator checked the Powerpack and they confirmed voltage on all UVW stud and chassis ground was over 105V.
- This report arrived Friday and was performed by 2nd shift assembly operator, but not 1st shift. (I did not have a chance to talk directly with 1st shift operator.)
- Brian Hays is currently working on this with Fairfax quality team and also this concern

will be raised to Powerpack PDT meeting.

I am copying Kevin and Bob as they should be in the loop even as the somewhat confusing early assessment is still coming together. Thanks for jumping in on this,

Stephen

Daniel D. Cottrell	Stephen, I have been in contact with several p	08/21/2011 07:30:29 PM
--------------------	--	------------------------

Daniel D. Cottrel	to: Stephen Poulos
-------------------	--------------------

08/21/2011 07:30 PM

From:Daniel D. Cottrell/US/GM/GMCTo:Stephen Poulos/US/GM/GMCArchive:This message is being viewed in an archive.

Stephen,

I have been in contact with several people on the issue. Short answer is that we will not know much more until AM. Brian Hayes indicates that his understanding is that the packs were not in a car, but that the plant was doing a 100pct check of stock in shipping racks as a redundant due care measure using a VOM. He was trying to ask as many of the people in the plant as he could, but info is 2nd hand so far. He is trying to locate the packs, but said they are not set aside anywhere that he could find. He has a call in to the plant electrical coordinator, so far no answer-likely by AM. He is also looking for procedure used for screening.

Gleason and Mehrdad engaged - I talked to Mehrdad and explained the above.

Gary Backs replied that he has contacted Jim Fortune (GMCH Quality) who will institute containment check in Kokomo immediately to check for voltage leaks. Gary has also contacted Dave Sharp (Delphi) who will engage the correct engineer to review circuit diagrams first thing in the AM. He was unable to reach him this afternoon.

That is all for now. Can talk if you want, but wheels are in motion-need plant to explain their findings. Dan



{In Archive} Re: Fw: Request for Help - Printed Circuit Board Quality Issue from Nanya (a Tier 2 Supplier to GM) for eAssist Program 🗎 Stephen Poulos to: Bob Agresta 08/12/2012 08:52 PM Sean E Gleason, Kevin Diviney, Daniel D. Cottrell, Phil L. Sorrell, Cc: Ronn E. Jamieson, Larry T. Nitz

Archive:

This message is being viewed in an archive.

Bob,

Sounds great.

GMCH has identified two suspect lots based on field issues, but is unable to confirm subsequent lots were back to normal levels until those parts make it into the field, so they are still suspect. Any indication from the Nanya visit of some type of quality spill, shift, etc. could give us a clue on how to treat the newest parts. Otherwise we have to assume they are suspect too. Big number of cars any way you slice it, though.

BTW, good progress this weekend here on sorting known bad lots to VIN's (Steve Cichy doing super job) will need help from FPE to determine which are sold/unsold/plant. Requests in process. And will have our second call on the vehicle burn in cycle at 9:00 pm tonight. First draft exists, will tweak and pilot tomorrow in Milford. Tony Saliga leading, with support from Mehrdad and Sean, peer review from Cottrell and me.

New parts being built in Kokomo as we speak and so far no issues with component level burn-in or any other quality checks. Green dot / TWO moving too for parts at Fairfax Tuesday - nice work by Fred Billotto.

Lots more to do, but all swim lanes moving. FYI,

Stephen

Bob Agresta	FYI - our work to get boots on the ground at Na	08/12/2012 08:10:43 PM
To:StepheCc:Larry TDate:08/12/2Subject:Fw: Re	resta/US/GM/GMC n Poulos/US/GM/GMC@GM Nitz/US/GM/GMC@GM 012 08:10 PM quest for Help - Printed Circuit Board Quality Issue from N sist Program	anya (a Tier 2 Supplier to GM)

FYI - our work to get boots on the ground at Nanya should come together soon.

Phil Sorrel has good contacts to make this happen, and I cleared the way in SGM & GM China SQ do they knew it was coming.

Phil's initial impressions are below as background.

Bob

Bob Agresta Director - Global Program Execution Global Electrification E-mail: Bob.Agresta@gm.com Mobile:

Office: 248-857-0933
Admin: 248-857-8317 (Marcia Jackson)
 Phil L. Sorrell
 ----- Original Message ---- From: Phil L. Sorrell
 Sent: 08/11/2012 08:58 AM EDT
 To: Bob Agresta
 Cc: "Backs, Gary" <gary.backs@gmch.com>; Jeffrey Tymitz; Scott Wilson;
Sean Gleason; Tony Marsala
 Subject: Re: Request for Help - Printed Circuit Board Quality Issue from
Nanya (a Tier 2 Supplier to GM) for eAssist Program
Bob,

I added Tony Marsala to the cc distribution so he is abreast of the info since Tom McMillan is hot on this issue.

Your statements below are almost verbatim to what Jim Fortune indicated during my multiple times conversations with him yesterday.

Since Nanya is supplying Kokomo with many of the boards they use in other ECM and TCM applications, and for the most part, there aren't any issues with those parts, Nanya is viewed as a very good supplier.

What we *think* is occurring in this information stream is Kokomo talks to the Nanya rep in New York, and this gentleman has multiple roles - VP of NA Sales; technical expert on PCB's. The US-based rep talks to Nanya's plant in China and then cleans up / "sanitizes" the reply back to Kokomo. Since Delphi's SQE in China is also supporting Kokomo's activities as an in-country "representative," we *think, but we have no specific proof*, that Delphi may be "sanitizing" some of the information they are providing so their previous decisions in '09 to reduce the number of protective layers don't look like a bad choice in retrospect. Again, nobody has specific proof that anyone is hiding anything, it's just a feeling based on the answers coming back to the questions asked.

I'll make sure that our folks that visit Nanya DO NOT hammer Nanya, but go in on fact finding only so we get a clear picture and confirmation of answers / information provided to Kokomo. For ref., when Wendy Wu was in Nanya in the Jan / Feb timeframe this year, she found Nanya to be very cooperative and open; very willing to address the issues found and provide follow-up. (Signs of a very good supplier.)

I'll keep everyone updated as I get more info.



6PSC - Supplier Quality M/C 483-720-320 777 Joslyn Avenue. Pontiac, MI 48340-2925 248-672-9209 Fax: 248-857-0074 Phil.L.Sorrell@gm.com

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Bob Agresta		Phil, I significantly red	uced the distributio	n list	08/10/2012 08:30:04 PM
From:	0	sta/US/GM/GMC			
To: Cc:	Phil L. Sorrell/US/GM/GMC@GM Sean E Gleason/US/GM/GMC@GM, "Backs, Gary" <gary.backs@gmch.com>, Jeffrey A. Tymitz/US/GM/GMC@GM, Scott Wilson/CN/GM/GMC@GM</gary.backs@gmch.com>		.com>, Jeffrey A.		
Date:	08/10/20	2 08:30 PM			
Subject:		est for Help - Printed Circi st Program	uit Board Quality Issu	ue from Nanya (a	Tier 2 Supplier to GM)

Phil,

I significantly reduced the distribution list on this. I am operating with limited information so these statements need to be verified with the team before sharing them elsewhere.

I think there is a general belief that something did change in the process that either resulted in an increase in voids or some form of conductive contamination.

I also think the team recognizes that the single layer may contribute to some lack of robustness.

As much as there is a desire to find the root cause for these boards there is an equal desire to assure that good methods are being applied to the new board processing which doubles the number of layers between the conductive vias.

Please assure these impressions are correct and then apply that in a common sense way to balance the purpose of the trip.

Thanks.

Bob

Bob Agresta Director - Global Program Execution Global Electrification E-mail: Bob.Agresta@gm.com Mobile: Office: 248-857-0933 Admin: 248-857-8317 (Marcia Jackson)

Phil L. Sor	rrell	Good morning Felix, I need some help.	08/10/2012 07:44 PM EDT
From:	Phil L. Sc	prrell	
To:	Felix Jin		
Cc:	Bob Agresta; Guy Lynch; Tony Marsala; Sean Gleason; thomas.cavaliere@gmch.com; Kurt Hamilton; james.for		nas.cavaliere@gmch.com; Kurt Hamilton; james.fortune
		P/SGM@SGM; Wilbert Brenner; Mike Haddad	.
Date:	08/10/20	12 07:44 PM EDT	
Subject:	Request	for Help - Printed Circuit Board Quality Issue from N	lanya (a Tier 2 Supplier to GM) for eAssist Program

Good morning Felix,

I need some help.

As you have seen from some of the previous e-mails, the eAssist Program is having issues with a tiered supplier part, a circuit board, supplied by Nanya out of China.

I participated in a call on Friday afternoon with some of our North American SQ colleagues as well as the Quality Group from the GMCH Plant in Kokomo that actually builds the eAssist Power Invertor Module and then the Power Pack.

Background:

- Kokomo has been having discussions with Nanya's US representative, who is located in New York, for a few weeks.
- There are 2 PCB lots of material involved: Lot #'s 36/209, 86/210
- Kokomo's analysis of returned material indicates that there are voids in the insulation layer between the power layer and the ground layer of the boards.
 - I have attached copies of the Kokomo analysis below for reference.
- Kokomo has evidence that there are voids / empty spots in the protective layer of the circuit boards
- Nanya's responses to Kokomo's questions seem to be very clean or sanitized with no real information provided that would indicate if there were processing issues during the manufacturing of the boards
 - Nanya says the current quality / warranty issue is not from a Nanya manufacturing issue
 - Nanya says that it is due to an electrical overstress probably caused by Kokomo
- Kokomo has run boards from material mots before these 2 lots and 1 lot of boards in between these 2 lots without any issues so something is different with these 2 lots of boards
- One of Delphi's Chinese SQE's was in Nanya within the last 2 4 weeks and found nothing

The type of help being requested is as follows:

- Have one of the Electrical SQE's go into Nanya as soon as possible and talk to the operators and quality group about the manufacturing of the two lots of circuit boards and look at Nanya's quality data
 - Get the real information about what occurred during the manufacture of these lots of material
- 2. Perform a process-specific PCB CP audit at Nanya for our information and records

I am also attaching a list of questions, Jim Fortune, who is the Quality Manager for the eAssist Invertor

Module and Power Pack area would like answered.

Jim is trying to forecast the overall warranty risk for the units in the field and based on the information received to date from Nanya.

Failure Analysis Reports (these have also been supplied to Nanya)

[attachment "BAS-Plus War80.ppt" deleted by Bob Agresta/US/GM/GMC] [attachment "BAS-Plus War104.ppt" deleted by Bob Agresta/US/GM/GMC] [attachment "FA WAR 63 P0CA2.pptx" deleted by Bob Agresta/US/GM/GMC] [attachment "Nanya Failure Analysis update WAR 79.ppt" deleted by Bob Agresta/US/GM/GMC]

Questions to get answers to

[attachment "Nanya Questions.ppt" deleted by Bob Agresta/US/GM/GMC]

Thank you for the help. If you have any questions, please feel free to call me at any time.



Philip L. Sorrell

6PSC - Supplier Quality M/C 483-720-320 777 Joslyn Avenue. Pontiac, MI 48340-2925 248-672-9209 Fax: 248-857-0074 Phil.L.Sorrell@gm.com

Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

Confidentiality Note: This message is intended only for the person or entity to which it is addressed. It may contain confidential and/or privileged material. Any review, transmission, dissemination or other use, or taking of any action in reliance upon this message by persons or entities other than the intended recipient is prohibited and may be unlawful. If you received this message in error, please contact the sender and delete it from your computer.



{In Archive} BPIM isolation fault timeline

	Stephen Poulos, James Fortune, Daniel D.Kevin Divineyto: Cottrell, Bob Agresta, Kristin L Curran, Tony J.Saliga, Stephen Farris, Gary Backs	04/10/2013 03:35 PM
History:	This message has been replied to.	

Archive: This message is being viewed in an archive.

Stephen,

Per your request, I created a rough draft of some key dates related to the BPIM isolation fault issue. I am sending this to a few key people to review and provide specific dates or additional key dates. I will collect the feedback and send out a revision tomorrow morning.

Kristin and I are both working on data to support Chris Janik. Based on our call this morning, we agreed to provide the following:

Assessment of effectiveness of the vehicle screen based on field data (Kristin)
 Detail on the 53 TAC cases that Chris is investigating that contained key words (smell, smoke, thermal...). I will work with GMCH for the part return data and Kristin will get the detail from TAC.



eAssist BPIM Isolation Fault Timeline.pptx





Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: kevin.diviney@gm.com General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

Global Electrification -

Engineering Quality



{In Archive} BAS+ APM/BPIM Update 7/27/2011 White, David E to:

'sean.gleason@gm.com', 'richard.ye@GM.COM', 'stephen.farris@GM.COM', Jones, Barry W, Pensyl, Dennis J , Peelman, Steven R. , Sharp, David, Varnau, Michael J, Chen, Yansong , Wood, James A, Buehler, David P, Turner, Steven R , Backs, Gary L, Weaver, Daniel J, Thompson, Joseph E , 'kris.sevel@GM.COM', Nichols, Mark A, 'frederick.billotto@GM.COM', Zhao, Judong, Tallant, J C, Forehand, Mike , Tallant, J C, Teimor, Mehrdad (GM), Lasley, A. J , Saliga, Tony (GM), Danescu, Andrea, daniel.d.cottrell@gm.com, len.chalawa@gm.com 07/27/2011 08:15 PM Cc: "Sharp, David", "Tallant, J C" , "Sharp, David", "Tallant, J C"

Archive: This message is being viewed in an archive.

2 Attachments



 $ProblemSolving_BASPlusPowerPack_BlownFuseLQ5812411144002_Summary_20110727-V1.pdf$



SGM Vehicle Isolation Issue 20110727.pdf

Please find reports on the 2 SGM Fails returned to GMCH-Kokomo.

Attachments are embedded in PDF file. Check the Adobe PaperClip.

David E. White	Senior Project Engineer
Delphi Electronics & S	Safety Systems
Kokomo, IN USA	
Mail Stop	D35
Phone	(765) 451-3798
Fax	(765) 451-0317
Internet:	david.e.white @ delphi.com



{In Archive} Status Update: SGM E11 eAssist Powerpack Issues

Scott Wilson, Thomas Zhu, Shinichiro Taki, Frederick Billotto to: Kanghua Chen, Jibing Fei, Huijie Qian, MARTIN MURRAY, Shu Chung, Chihang This message is being viewed in an archive.

07/28/2011 03:02 PM

Archive:

All,

Update as of COB 7/27/11:

Powerpack with HV isolation fault :

Summary: Detailed inspection of the powerpack by supplier GMCH and GMNA DREs determined root cause as a **damaged bulk capacitor** located on the capacitor board inside the APM/BPIM asy. The team is working to determine why the capacitor failed.

Next steps:

7/28/11: GMCH will examine the failed capacitor including x-raying the cap to look for internal defects. 8/1/11: Send defective cap to supplier United Chemi-con for anlaysis. (Note: We are working to pull ahead this date.)



eAssist Powerpack HV Isolation Fault at SGM Dingyuan PG 5 Phase 072711 .pptx

Powerpack with damaged APM/BPIM:

Root cause is unknown. Team continues to work through the DFMEA and fault tree analysis to identify all possible failure modes. Vehicle level jump start characterization testing completed on 7/26/11. No anomalies were observed.

Next steps: Reverse voltage is one of the potential failure modes. Efforts to create a reverse voltage failure on the bench will complete on 7/28/11.



ProblemSolving_BASPlusPowerPack_BlownFuseLQ5812411144002_Summary_20110727-V1.pdf

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Update as of COB 7/25/11:

Powerpack with HV isolation fault:

The suspect powerpack and HV access covers were received at GMCH Kokomo. The HVIL switches on the covers were x-rayed. The xrays for both switches show the parts are good, circuit boards were not bent or stressed and the electrical connections are normal. The power pack unit was received today. Analysis on the bench and tear down of the pack are underway. Initial feedback indicates the HV battery is ok. Focus of the root cause investigation is on the APM BPIM unit.

Powerpack with damaged APM/BPIM:

See attachment, most updates are in red font.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

The attachments provide a status update of the E11 suspect powerpacks under root cause investigation. Please review.

Note: We expect to receive the HV Isolaton fault at GMCH Kokomo today.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23 All,

The attachments provide a status update of the E11 suspect powerpacks under root cause investigation. Please review.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com Hybrid

Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23



{In Archive} BAS+ APM/BPIM Update 7/29/2011 White, David E to:

'sean.gleason@gm.com', 'richard.ye@GM.COM', 'stephen.farris@GM.COM', Jones, Barry W, Pensyl, Dennis J , Peelman, Steven R. , Sharp, David, Varnau, Michael J, Chen, Yansong , Wood, James A, Buehler, David P, Turner, Steven R , Backs, Gary L, Weaver, Daniel J, Thompson, Joseph E , 'kris.sevel@GM.COM', Nichols, Mark A, 'frederick.billotto@GM.COM', Zhao, Judong, Tallant, J C, Forehand, Mike , Tallant, J C, Teimor, Mehrdad (GM), Lasley, A. J , Saliga, Tony (GM), Danescu, Andrea, daniel.d.cottrell@gm.com, len.chalawa@gm.com 07/29/2011 05:17 PM Cc: "Sharp, David", "Tallant, J C" , "Sharp, David", "Tallant, J C", "Sharp, David", "Tallant, J C", "Sharp, David", "Tallant, J C"

Archive: This message is being viewed in an archive.

2 Attachments



SGM Vehicle Isolation Issue 20110729.pdf



ProblemSolving_BASPlusPowerPack_BlownFuseLQ5812411144002_Summary_20110729-V1.pdf

Please find reports on the 2 SGM Fails returned to GMCH-Kokomo.

Attachments are embedded in PDF file. Check the Adobe PaperClip.

David E. WhiteSenior Project EngineerDelphi Electronics & Safety SystemsKokomo, INUSAMail StopD35Phone(765) 451-3798Fax(765) 451-0317Internet:david.e.white @ delphi.com



{In Archive} RE: SGM Returned Powerpacks: HV Isolation Detection Fault, Failed Bulk Capacitor [ATTACHMENT REMOVED]

'frederick.billotto@gm.com', Fortune, James L, Sharp, David to: Backs, Gary L, White, David E, Miller, David E , mehrdad.teimor@gm.com, This message is being viewed in an archive.

07/30/2011 09:39 AM

Archive:

I thought I had sent this earlier and found it in my drafts folder just now, sorry.

There have been 1 failure of the caps throughout the life of the program and it was not due to quality defect – it was due to operator error (HV above 300V) where the cap blew. There have also been assembly issues on the line with bent leads, but nothing that came to any failures.

Let me know if you need additional information. Thanks.

David Sharp

Project Manager, Delphi E&S Phone: (765) 451-3170 Fax: (765) 451-3780 email: david.sharp@delphi.com From: frederick.billotto@gm.com [mailto:frederick.billotto@gm.com] Sent: Friday, July 29, 2011 9:16 AM To: Fortune, James L; Backs, Gary L; White, David E; Sharp, David; Miller, David E; mehrdad.teimor@gm.com; gary.m.insana@gm.com; stephen.farris@gm.com; kris.sevel@gm.com; richard.ye@gm.com; Chen, Yansong; Nichols, Mark A Subject: SGM Returned Powerpacks: HV Isolation Detection Fault, Failed Bulk Capacitor

Team,

We've been asked to provide a response regarding root cause of the bulk capacitor failure to the vehicle team by 8/3/11. The following information will help the vehicle team assess risk and determine

Estimate failure rate of the bulk capacitor:

- How many powerpacks have been built over the life of the program? Yansong and Gary can you provide an accurate estimate?
- How many times did we find a defect in a bulk capacitor? Dave Sharp.
- Ask capacitor supplier to share field failure rate data. I realize UCC may consider this info proprietary but I've been able to obtain similar info in the past from other suppliers. Jim Fortune

•

Failure Analysis Timing:

As I understand it the defective cap will ship to UCC today. When will UCC complete the failure analysis of the capacitor. We must push hard for immediate attention. Who has the lead?

Bulk Capacitor Supplier Change Timing.

• Provide timeline for bulk capacitor supplier change. Steve Farris.

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

General Motors Corp. Mobile Ph: Warren Technical Mail Code: 480-210-411 Center email: frederick.billotto@gm.com 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

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This attachment was removed from this location in this message.

Name: image001.gif Type: image/gif Size: 2391

This attachment was removed from this location in this message.

Name: image002.gif Type: image/gif Size: 2979

This attachment was removed from this location in this message.

Name: image003.gif Type: image/gif Size: 1568



{In Archive} BAS+ APM/BPIM Update 8/02/2011 White, David E to:

'sean.gleason@gm.com', 'richard.ye@GM.COM', 'stephen.farris@GM.COM', Jones, Barry W, Pensyl, Dennis J , Peelman, Steven R. , Sharp, David, Varnau, Michael J, Chen, Yansong , Wood, James A, Buehler, David P, Turner, Steven R , Backs, Gary L, Weaver, Daniel J, Thompson, Joseph E , 'kris.sevel@GM.COM', Nichols, Mark A, 'frederick.billotto@GM.COM', Zhao, Judong, Tallant, J C, Forehand, Mike , Tallant, J C, Teimor, Mehrdad (GM), Lasley, A. J , Saliga, Tony (GM), Danescu, Andrea, daniel.d.cottrell@gm.com, len.chalawa@gm.com 08/02/2011 05:26 PM Cc: "Sharp, David", "Tallant, J C"

Archive: This message is being viewed in an archive.

2 Attachments



 $ProblemSolving_BASPlusPowerPack_BlownFuseLQ5812411144002_Summary_20110802-V1.ppt$



SGM Vehicle Isolation Issue 20110802a.pptx

Please find reports on the 2 SGM Fails returned to GMCH-Kokomo.

Attachments are embedded

David E. White	Senior Project Engineer
Delphi Electronics &	Safety Systems
Kokomo, IN USA	
Mail Stop	D35
Phone	(765) 451-3798
Fax	(765) 451-0317
Internet:	david.e.white @ delphi.com



From:

URGENT: GMX353 BAS+ stop-order issue call - TODAY 8/4 4:30 pm MML: 866 297-2155 PC: 3748439 Mehrdad Teimor, Richard Ye, Daniel D. Stephen Poulos to: Cottrell, Cathy W. Turzewski, Sheri Hickok, Frederick Billotto, Gary M. Insana, Stephen Cc: Roger Rademacher, Tony J. Saliga, Michael E. Polom, Lyle Hamilton, Glenn C. Griner, Timothy M. Grewe Stephen Poulos/US/GM/GMC

 To:
 Mehrdad Teimor/US/GM/GMC@GM, Richard Ye/US/GM/GMC@GM, Daniel D.

 Cottrell/US/GM/GMC@GM, Cathy W. Turzewski/US/GM/GMC@GM, Sheri
 Hickok/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Gary M.

 Cc:
 Roger Rademacher/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Michael E.

Polom/US/GM/GMC@GM, Lyle Hamilton/US/GM/GMC@GM, Glenn C. Griner/US/GM/GMC@GM, Timothy M. Grewe/US/GM/GMC@GM

All,

Please join and be prepared with updates on the 4 BAS+ stop-order issues marked with a red X on the attached (2 pages). Thanks,

Stephen

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2012 GMX353 BAS+ Open CTF Drive Quality Issues_Vs10.4_02Aug11.pptx



{In Archive} SGM APM Fail Information (1 of 2) White, David E to: sean.gleason@gm.com, Buttry, Cole R , Backs, Gary L, Wood, James A 08/12/2011 09:30 PM Cc: "Jones, Barry W", "Farris, Stephen (GM)", "Ye, Richard (GM)", "Teimor, Mehrdad (GM)", "Sharp, David", "Tallant, J C" Show Details

Archive: This message is being viewed in an archive.

1 Attachment



SGM APM Output Fail.piz

Sirs,

Please find attached an archive of the data gathered during the analysis of SGM APM failure on vehicle. I am working on a second archive that includes all the pictures that were taken and/or made available to us.

David E. White	Senior Project Engineer
Delphi Electronics & S	afety Systems
Kokomo, IN USA	
Mail Stop	CLLE
Phone	(765) 451-3798
Fax	(765) 451-0137
Internet:	david.e.white @ delphi.com



{In Archive} SGM APM Fail Information (2 of 2) (resend) White, David E to: sean.gleason@gm.com, Buttry, Cole R, Backs, Gary L, Wood, James A 08/12/2011 11:13 PM Cc: "Jones, Barry W", "Farris, Stephen (GM)", "Ye, Richard (GM)", "Teimor, Mehrdad (GM)", "Sharp, David", "Tallant, J C", "Sharp, David", "Tallant, J C", "Sharp, David", "Tallant, J C"

Archive: This message is being viewed in an archive.

2 Attachments



pix set1.piz pix set 2.piz

Sirs,

Please find attached an archive of the data gathered during the analysis of SGM APM failure on vehicle. This is second archive that includes pictures that were taken and/or made available to us. In order to ensure files size gets past the firewall, some pictures were removed.

I just learned the GM firewall limit is 20MB. I will have to work on another send for additional pictures.

David E. WhiteSenior Project EngineerDelphi Electronics & Safety SystemsKokomo, INUSAMail StopCLLEPhone(765) 451-3798Fax(765) 451-0137Internet:david.e.white @ delphi.com



{In Archive} RE: SGM APM Fail Information Sharp, David to: sean.gleason@gm.com, Buttry, Cole R , Backs, Gary L, Wood, James A 08/13/2011 11:47 AM Cc: "Jones, Barry W", "Farris, Stephen (GM)", "Ye, Richard (GM)", "Teimor, Mehrdad (GM)", "Tallant, J C", "Tallant, J C", "Tallant, J C", "White, David E"

Archive: This message is being viewed in an archive.

1 Attachment



Drawings.piz

Attached is the drawing package – it is a zip file but firewalls block those files so the extension was changed to .piz in order to make it through (it needs to be changed back to .zip before you are able to access it). I did not include all drawings, but those I thought would be most or partly essential with the issue. If more are requested/desired, please let me know.

Thanks.

David Sharp

Project Manager, Delphi E&S Phone: (765) 451-3170 Fax: (765) 451-3780 email: <u>david.sharp@delphi.com</u>

From: White, David E
Sent: Friday, August 12, 2011 11:11 PM
To: sean.gleason@gm.com; Buttry, Cole R; Backs, Gary L; Wood, James A
Cc: Jones, Barry W; Farris, Stephen (GM); Ye, Richard (GM); Teimor, Mehrdad (GM); Sharp, David; Tallant, J C; Sharp, David; Tallant, J C
Subject: SGM APM Fail Information (2 of 2) (resend)

Sirs,

Please find attached an archive of the data gathered during the analysis of SGM APM failure on vehicle. This is second archive that includes pictures that were taken and/or made available to us. In order to ensure files size gets past the firewall, some pictures were removed.

I just learned the GM firewall limit is 20MB. I will have to work on another send for additional pictures.

<< File: pix set1.piz >> << File: pix set 2.piz >>

David E. White Senior Project Engineer Delphi Electronics & Safety Systems Kokomo, IN USA

Mail Stop	CLLE
Phone	(765) 451-3798
Fax	(765) 451-0137
Internet:	david.e.white @ delphi.com



{In Archive} SGM BAS+ APM Failure Vehicle Test Plan 20110817.pptx
White, David E
to:
Zhao, Judong, Turner, Steven R, Nichols, Mark A, Ye, Richard (GM), Farris, Stephen (GM), Teimor, Mehrdad (GM), Buehler, David P, Thompson, Joseph E
08/16/2011 05:01 PM
Cc:
"Fortune, James L", "Weaver, Daniel J", "Backs, Gary L", "Sharp, David", "Tallant, J C"
Show Details

Archive: This message is being viewed in an archive.

1 Attachment



SGM BAS+ APM Failure Vehicle Test Plan 20110817.pptx

Based on the Action Item List of 14Aug11, I have tried to flesh out the test plan provided.

What I have not included was a reverse battery test with a 'Bad' Vehicle Battery. I will add that by tomorrow.



{In Archive} BAS+ Vehicle Testing 20110817.pptx
White, David E
to:
Backs, Gary L, Sharp, David
08/17/2011 02:40 PM
Cc:
"Teimor, Mehrdad (GM)", "Farris, Stephen (GM)", "Ye, Richard (GM)", "Sharp, David",
"Tallant, J C"
Show Details

Archive: This message is being viewed in an archive.

1 Attachment



BAS+ Vehicle Testing 20110817.pptx



{In Archive} BAS+ Testing 20110818.pptx White, David E to: Teimor, Mehrdad (GM), Ye, Richard (GM), Farris, Stephen (GM), Backs, Gary L 08/18/2011 03:34 PM Cc: "Zhao, Judong", "Nichols, Mark A", "Jones, Barry W", "Wood, James A", "Sharp, David", "Tallant, J C" Show Details

Archive: This message is being viewed in an archive.

1 Attachment

BAS+ Testing 20110818.pptx



{In Archive} Fw: Leakage Test
Gary Backs
to:
richard.ye
08/26/2011 04:42 PM
Cc:
mark.a.nichols, mehrdad.teimor, Joseph Thompson, Hossein Lotfalian
Show Details

Archive: This message is being viewed in an archive.

1 Attachment



Microsoft PowerPoint - BAS+ Power Pack- LeakageCurrent Measurement.pdf

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 08/26/2011 04:40PM -----To: "Backs, Gary L" <gary.backs@gmch.com> From: "Nichols, Mark A" <mark.a.nichols@delphi.com> Date: 08/26/2011 04:10PM Subject: Leakage Test

(See attached file: Microsoft PowerPoint - BAS+ Power Pack- LeakageCurrent Measurement.pdf)

Mark Nichols

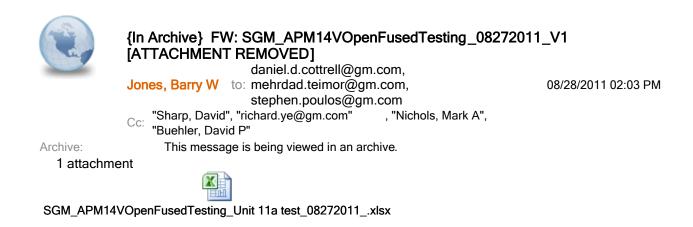
Systems Engineer- Hybrid Vehicle Electronics Systems Delphi Electronics & Safety Systems 2151 E Lincoln Road

Kokomo, IN USA

Mail Stop: D35

Kokomo, IN USA Email: <u>mark.a.nichols@delphi.com</u> Office: 765.451.3280 FAX: 765.451.3780

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Dan,

Attached is a trace showing the current recorded yesterday.

The trace is made using a shunt in series with the 175 A fuse. The scale on the recording is 200 amps per division. The diagram below shows the test setup with the exception of an oscilloscope in place of the voltmeter.

Barry W. Jones Delphi (°`´'-ßłı&'Safety Systems EGM, Power Electronics Kokomo, CTC-LL Desk: 765.451.5977

EMail: <<mailto:Barry.W.Jones@Delphi.com>>

~~~~~~~

From: Nichols, Mark A Sent: Sunday, August 28, 2011 1:44 PM To: Jones, Barry W Subject: FW: PowerPack-SGM\_APM14VOpenFusedTesting\_08272011\_V1.xlsx From: Nichols, Mark A Sent: Saturday, August 27, 2011 10:45 AM To: Sharp, David; Backs, Gary L; White, David E Subject: PowerPack-SGM\_APM14VOpenFusedTesting\_08272011\_V1.xlsx

\*\*\*\*\*\*\*\* Note: If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by replying to the message and deleting it from your computer. Thank you.

This attachment was removed from this location in this message.

Name: image003.png Type: image/png Size: 37391



10/27/2012 04:46

To: Frederick Billotto/US/GM/GMC@GM

Bryan M Ludwig/US/GM/GMC@GM, cole.buttry@gmch.com, Daniel D. Cottrell/US/GM/GMC@GM, hossein.lotfalian@gmch.com, Jacob D Bylsma/US/GM/GMC@GM, james.fortune@gmch.com, John J Lee/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, Sean E

Subject: TAC 71-1089702345 - BPIM/APM 279 - Cap PCB return 🗎



CapPCB\_TAC\_71-1089702345.xlsx

| ţ.       |                                         |
|----------|-----------------------------------------|
| 222      | Kristin L Curran<br>11/01/2012 02:53 PM |
| <u>E</u> |                                         |

To: daniel.weaver@gmch.com, james.fortune@gmch.com, Reena Datta/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM

cc: Kevin Diviney/US/GM/GMC@GM

Subject: Re: Fw: spreadsheet w/NTF pivots 🗎

All,

FYI - Attached is the latest BPIM/Powerpack TAC Case tracking. It includes data from 27Jun12 to 30Oct12. I'm still working on filling in the Julian date codes. It's a manual process....



30Oct12 BPIM Powerpack TAC CASES FROM 27Jun12.xls

#### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell Email kristin.curran@gm.com

Kevin Diviney

11/01/2012 01:44:16 PM

| From:    | Kevin Diviney/US/GM/GMC          |
|----------|----------------------------------|
| To:      | Kristin L Curran/US/GM/GMC@GM    |
| Date:    | 11/01/2012 01:44 PM              |
| Subject: | Re: Fw: spreadsheet w/NTF pivots |

[attachment "BAS War APR Current Send Rev. 19Oct12.xlsx" deleted by Kristin L Curran/US/GM/GMC]



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| /2012 01:34:41 PM |
|-------------------|
|                   |
|                   |
| /2012 01:12:56 PM |
| /2012 01:01:59 PM |
|                   |



Daniel Weaver <daniel.weaver@gmch.com> on 11/01/2012 02:07:07 PM

To:daniel.d.cottrell@gm.com, kevin.diviney@gm.com, reena.datta@gm.comcc:len.chalawa@gm.com, James Fortune <james.fortune@gmch.com>Subject:Milage chart for isolation failures

Here is the frequency milage chart that Len pulled together from the data we have in our warranty data base.

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell:

Email: <u>daniel.weaver@gmch.com</u> Freq Miles Isolation 1Nov12(1).xlsx

| ø   |                                           |
|-----|-------------------------------------------|
| 222 | Frederick Billotto<br>11/14/2012 09:27 AM |
| je  |                                           |

To: John A Ball/US/GM/GMC@GM, Diane Midkiff/US/GM/GMC@GM, Gary M. Insana/US/GM/GMC@GM cc: Ronn E. Jamieson/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, Gary Backs <gary.backs@gmch.com>, Jacob D Bylsma/US/GM/GMC@GM, Nancy Huber/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, DAVID P

Subject: Stop Order 1819298 Issued on All MY13 eAssist Vehicle Builds Due to Powerpack Quality Concern

# John, Diane, Gary,

You are all next up to buy-in on SWO 1819298 which stops production on all MY13 vehicles using the eAssist powerpack. Please review and sign-off ASAP. If you have any questions please call.

Regards,





# Fred Billotto Senior Project Engineer

Mobile Ph: Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

Hybrid Energy Storage



11/29/2012 09:54

To: Frederick Billotto/US/GM/GMC@GM

cc: mark.zerbini@gm.com, kris.sevel@gm.com, mustafa.dakroub@gm.com, cole.buttry@gmch.com, roger.rademacher@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, steven.wybo@gm.com, james.fortune@gmch.com, christopher.janik@gm.com,

Subject: eAssist - Summary of Cap Board Returns

All,

Please see the attached spreadsheet for a summary of the cap board returns. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



eAssist\_Cap-PCB-Returns\_29Nov2012.xlsx

From: Sean E Gleason on 08/10/2012 11:45 PM

Sent by: Sean E Gleason

 To:
 Cole Buttry <cole.buttry@gmch.com>, james.fortune@gmch.com, Gary Backs

 <gary.backs@gmch.com>, Stephen Cichy/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM

 cc:
 Stephen Poulos/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM

Subject: Action Items from executive review on 8/10

Cole, Jim, Gary, Steve, and Kevin,

Action Items from Executive Review:

1.) Complete Nanya board lot break down for all applicable cases

2.) Need to back extract VIN's from suspected lots. Please provide Powerpack serial numbers to Kevin and Steve. We should be able to go to VIN from here.

Regards,

-----

Sean Gleason Senior Manager - Global Electrification Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083



James Fortune <james.fortune@gmch.com> on 08/10/2012 03:53:45 PM

To: daniel.d.cottrell@gm.com

Subject: GMCH Slide for Nanya Board Lot Verses

Dan,

At this time the attached slide only shows Nanya lot verse TAC case returns. No correlation to vehicle build date. But Mar-May would be dates affected as seen in warranty increase.

Jim

Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: 5 Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of

this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

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| - |   |   |   |   |
|   |   | - | - | - |
|   |   |   |   |   |

"Go Boilers" Dan C Lot Fail Info verse GMCH Build Dates.ppt

| Ŕ              |                                    |
|----------------|------------------------------------|
| 20<br>20<br>20 | Umar Corion<br>08/14/2012 11:19 AM |
| 6              |                                    |

To: Kevin Diviney/US/GM/GMC@GM

cc: Reena Datta/US/GM/GMC@GM, Brian Hayes/US/GM/GMC@GM, Carrie Harvey/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, James Fortune <james.fortune@gmch.com>, Keith Sampson/C/US/GM/GMC@GM, Stephen Cichy/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM,

Subject: Re: data files 📔

Kevin,

The data is in the Oshawa TINs worksheet in the attached file. Only 70 of those 315 VINs are Buick Regal BAS+ - the remainder are Cadillacs, Impalas & Equinox.

.

- eAssist\_LookupCompareFairfax&Oshawa\_VIN\_List\_14Aug2012.xlsx

Umar Corion GMPT Regional Manager GM Oshawa & CAMI 905-744-4540 905\*102\*4540

| Kevin D  | iviney   | Brian/Umar, The team in Michigan received R                                                                | 08/14/2012 10:47:01 AM |
|----------|----------|------------------------------------------------------------------------------------------------------------|------------------------|
| <b>F</b> | Kaula Di |                                                                                                            |                        |
| From:    |          | viney/US/GM/GMC                                                                                            |                        |
| To:      | Reena D  | atta/US/GM/GMC@GM                                                                                          |                        |
| Cc:      | Brian Ha | yes/US/GM/GMC@GM, Carrie Harvey/US/GM/GMC@GM                                                               | I, Daniel D.           |
|          |          | JS/GM/GMC@GM, James Fortune <james.fortune@gmch< td=""><td></td></james.fortune@gmch<>                     |                        |
|          |          | n/C/US/GM/GMC@GM, Stephen Cichy/US/GM/GMC@GN                                                               |                        |
|          |          | JS/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Um                                                              |                        |
|          |          |                                                                                                            |                        |
|          |          | C/CA/GM/GMC@GM, Jason K Garrison/US/GM/GMC@GN                                                              |                        |
|          | Draper/C | CA/GM/GMC@GM, Daniel Weaver <daniel.weaver@gmch.< td=""><td>.com&gt;, David B.</td></daniel.weaver@gmch.<> | .com>, David B.        |
|          | Whitake  | r/US/GM/GMC@GM                                                                                             |                        |
| Date:    | 08/14/20 | 12 10:47 AM                                                                                                |                        |
| Subject: | Re: data | files                                                                                                      |                        |

# Brian/Umar,

The team in Michigan received RPM data late last week which helped them to match suspect powerpacks to VINs. Since many of the vehicles which are on the ground at the plants right now were in process at that time, they were not included in the RPM data. Please take a look at the attached file. Can you provide the Powerpack trace data for each VIN of the vehicles on the list that you recently provided. These VINs are listed in column A (Fairfax) and column D (Oshawa). There are 236 VINs for Fairfax and 315 VINs for Oshawa. Based on the powerpack dates we will estimate which vehicles have packs that are in the suspect range.

Call if you have any questions.





Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com

# **Global Electrification -Engineering Quality**

# **General Motors Corp.**

Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| Reena Datta   | Hi Kevin, Per our conversation, I update the sp | 08/14/2012 10:25:18 AM |
|---------------|-------------------------------------------------|------------------------|
| Kevin Diviney | Reena, I added the Oshawa data to the file you  | 08/14/2012 09:04:14 AM |

| R            |                                      |
|--------------|--------------------------------------|
| 9.94<br>9.94 | Kevin Diviney<br>08/14/2012 09:04 AM |
| <u>6</u>     |                                      |

To: Reena Datta/US/GM/GMC@GM, Stephen Cichy/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Carrie Harvey/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, James Fortune <james.fortune@gmch.com>, Stephen Poulos/US/GM/GMC@GM, Umar

Subject: data files

Reena,

I added the Oshawa data to the file you created to compare the VINs of the vehicles on the ground at the plants to the master list of suspect parts. No matches showed up. Can you double check this. We were hoping that Oshawa had 'suspect' vehicles on the ground to verify our vehicle test. You may want to paste the vehicle build date and powerpack build dates in the reference tab so that they can be listed for the Fairfax and Oshawa vehicles on the ground. Based on the fact that the material on hand at Oshawa has julian dates of 2205, 2213, 2214, and 2216, we thought that some of the vehicles in the yard would be from material built before the stated breakpoint of 2224.

Team,

Any thoughts on where to find 'suspect' vehicles for our testing?

eAssist\_Fairfax\_VIN\_List\_13Aug2012 lookup compare including Oshawa.xlsx



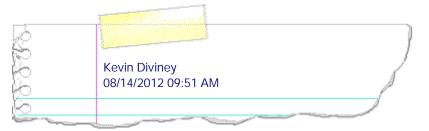
Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>



Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



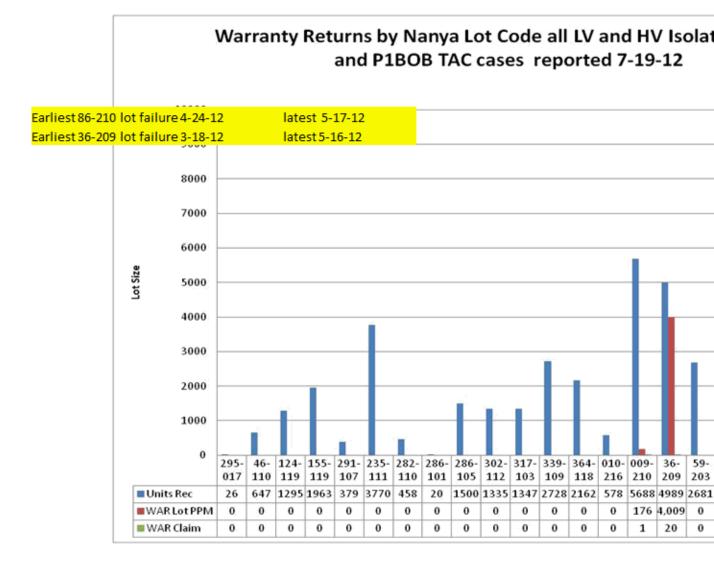
To: Carrie Harvey/US/GM/GMC@GM, James Fortune <james.fortune@gmch.com>, Daniel Weaver <daniel.weaver@gmch.com>, Daniel D. Cottrell/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM

cc: Subject: failure rate

Jim/Carrie,

Can we have this data updated for today's 4:00 meeting? The data was for TAC cases through 7/19. It shows a failure rate of 1% for the 86-210 lot. If the recent data shows more failures from this lot, then the sample size of vehicles we need to test will go down. A 1% failure rate will require us to test 300 cars. If we can show with data that the rate is 3% we would only need 100 cars.

# Field Returns by Board Lot – All TAC cases





Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: ( Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>

VBRID

# Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Kristin L Curran/US/GM/GMC

01/02/2013 01:43 PM

To daniel.weaver@gmch.com

cc Frederick Billotto/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM bcc

Subject Fw: Special Request EX0060258 Notification

Hi Dan,

FYI....See below.

GMCH should have received the powerpack from the fist (McMurray) PA smoker on 12/21. TAC #71-1129555175.

# Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com ----- Forwarded by Kristin L Curran/US/GM/GMC on 01/02/2013 01:28 PM -----

| From:    | Julie Cumo/C/US/GM/GMC                     |
|----------|--------------------------------------------|
| To:      | Kristin L Curran/US/GM/GMC@GM              |
| Date:    | 12/24/2012 10:48 AM                        |
| Subject: | Re: Special Request EX0060258 Notification |

Hi,

Yes this was shipped on Central - # 414-5325512-1.

Thank you!

Julie Cumo WPC- Special Parts Spherion (248) 371-9939

| Kristin L Curran | Hi Julie, Did this one leave for GMCH | 12/21/2012 10:26:39 AM |
|------------------|---------------------------------------|------------------------|
|------------------|---------------------------------------|------------------------|

| From:    | Kristin L Curran/US/GM/GMC                 |
|----------|--------------------------------------------|
| To:      | Julie Cumo/C/US/GM/GMC@GM                  |
| Date:    | 12/21/2012 10:26 AM                        |
| Subject: | Re: Special Request EX0060258 Notification |

# Hi Julie,

Did this one leave for GMCH yet? Do you have a tracking number?

Thanks!

# Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

#### INFORMATION E-MAIL ONLY. Plea... 12/18/2012 01:15:31 PM

| From:    | <warrantypartscenterusa@ups.com></warrantypartscenterusa@ups.com>                                                                                                     |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To:      | <pre><kristin.curran@gm.com>, <julie.cumo@gm.com>, <warrantypartscenterusa@gm.com>,</warrantypartscenterusa@gm.com></julie.cumo@gm.com></kristin.curran@gm.com></pre> |
|          | <warrantypartscenterusa@ups.com></warrantypartscenterusa@ups.com>                                                                                                     |
| Date:    | 12/18/2012 01:15 PM                                                                                                                                                   |
| Subject: | Special Request EX0060258 Notification                                                                                                                                |

INFORMATION E-MAIL ONLY. Please do not reply to this message.

Special Request EX0060258 has been received in the GM Warranty Parts Center and is available for on-site inspection.

Received at WPC: 12-18-2012 Repair Order#: 050189 Dealer: SUN CHEVROLET Labor Code: N5866 Generator Control and Battery Module Replace and ship prepar Part Number: VIN: 1G11F5RR3DF Comments: HYBRID BATTERY, PLEASE USE THE ATTACHED SHIPPER TO RETURN, DO NOT USE CENTRAL. PLEASE E-MAIL THE TRACKING # TO JULIE.CUMO@GM.COM. THANK YOU!

Request Type:

OnSite

Julie Cumo GM WPC Administrator 248-371-9939



# Fw: Circuit Board Defect

Stephen Poulos to: Larry T. Nitz, Michael J Bly Cc: Daniel D. Cottrell

01/06/2012 06:19 PM

Larry, Micky,

GMCH has found the hardware defect that caused the CTF walk-home. It is a copper contaminant that landed in the wrong place during original circuit board construction at their supplier Nan Ya, in China. The copper contaminant created a near short that did not manifest during their testing when the Powerpack was built but that went to a full short at around 1200 miles in the car. Fairfax will make build decision Sunday night - Jesse and I will be on the 8 pm call to support. GMCH and supplier working through the weekend to assess current board quality (100 parts here and 100 at supplier) with detailed inspection. Will also be asking for cleanliness measurements to identify any past questionable periods where contamination potential might have been higher. The rest of the batch of parts that this board came from did not have any unusual quality fall-out at GMCH. See attached photos. I'll call you both for any questions. Excellent support from all involved.

# Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 01/06/2012 06:08 PM -----

| From:    | Daniel D. Cottrell/US/GM/GMC                                    |
|----------|-----------------------------------------------------------------|
| To:      | Jesse A Ortega/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, Kevin |
|          | Diviney/US/GM/GMC@GM, Roger Rademacher/US/GM/GMC@GM, Mehrdad    |
|          | Teimor/US/GM/GMC@GM                                             |
| Date:    | 01/06/2012 05:41 PM                                             |
| Subject: | Fw: Circuit Board Defect                                        |

# ----- Forwarded by Daniel D. Cottrell/US/GM/GMC on 01/06/2012 05:40 PM -----

From:James Fortune <james.fortune@gmch.com>To:daniel.d.cottrell@gm.comDate:01/06/2012 05:08 PMSubject:Circuit Board Defect

Dan,

Here is the presentation.

# Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC <u>http://kokomogmch.com</u> Phone: (765) 451-9558 Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1150-0M11-00P6 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of

this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.



"Go Boilers" Control Board Defect.ppt



# Fw: U0293 TAC cases

Stephen Poulos to: Daniel D. Cottrell, Frederick Billotto

01/08/2012 09:24 PM

Dan, Fred,

FYI, as we discussed tonight, if anybody needs to go to Kokomo to help figure this one out, please make the request by Monday morning. You will get the help you need.

Thanks,

# Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 01/08/2012 09:20 PM -----

| From:    | Larry T. Nitz/US/GM/GMC                                          |
|----------|------------------------------------------------------------------|
| To:      | "Stephen Poulos" <stephen.poulos@gm.com></stephen.poulos@gm.com> |
| Cc:      | "Bob Agresta" <bob.agresta@gm.com></bob.agresta@gm.com>          |
| Date:    | 01/08/2012 09:04 PM                                              |
| Subject: | Re: U0293 TAC cases                                              |

Please keep me informed. Any help you need, just ask. Clearly this is very concerning and agree needs stop order level of attention.

Larry

Sent from my iPad

On Jan 8, 2012, at 8:27 PM, "Stephen Poulos" <stephen.poulos@gm.com> wrote:

> Tim Campbell, Jesse, Sheri,

>

> Wanted to make sure this recent batch of TAC cases involving Powerpack swaps on Regals and LaCrosses was on your radar in case you had not seen it through the CPIT or other channels. Jesse, we discussed this briefly Friday and yesterday during the wrap-up when you emphasized needed urgency at GMCH, but did not have a chance to go into details - see attached for TAC case information. Looks like a quality spill somewhere that is manifested in just a few miles - results in potential walk home.

> Fred Billotto is the technical lead at this point. Fred and I spoke tonight and I let hin know that I have asked Dan Cottrell to collaborate with him in leading the root cause work for GM going forward. I am also copying a fairly wide distribution of technical folks so they are ready to support root cause and are aware of the sense of urgency required. Fred/Dan, please set up a call some time between 12:00 and 2 pm Monday to level set everyone and to line up any additional help needed. Same distribution as above plus anybody else you think makes sense to invite.

>

> Gary Backs,

>

> Now that replaced packs have reached GMCH, would expect same level of intensity we had over the last week in your shop on our Malibu CTF walk-home issue, with daily calls aimed at root cause and containment prior to Malibu STC gate on the 19th. The trend for failures would indicate a problem in November builds. Since December vehicle builds are just arriving at dealers, we could well see the issue on those cars shortly too. Malibu builds have to be considered at risk as well.

> > Stephen > > ----- Forwarded by Stephen Poulos/US/GM/GMC on 01/08/2012 05:36 PM -----> > From: Kevin Diviney/US/GM/GMC > To: Stephen Poulos/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, James Fortune <james.fortune@gmch.com>, Stephen Farris/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Mark W. Wright/US/GM/GMC@GM > Date: 01/06/2012 11:58 AM > Subject: U0293 TAC cases > > > Stephen, > Attached is the list of TAC cases related to the U0293 BPIM communication code. There are a total of 8 cases, 6 of which have had powerpack replacements. All are extremely low mileage. We reviewed these at the daily TAC meeting, and the weekly pre-pit meeting. Fred Billotto also discussed them at his Powerpack PDT and GMCH is anxiously awaiting the returned units for analysis. As of yesterday we were still waiting for these units to arrive at GMCH. > > > > > > > > Kevin Diviney > Global Program Quality Manager - BAS/BAS+/BAS3 (E-Assist) > Mobile Ph: (248) 343-9311 > Mail Code: 483-710-201 > email: kevin.diviney@gm.com > Global Electrification - Engineering Quality > > General Motors Corp. > Pontiac North CET > 895 Joslyn Avenue > Pontiac, Michigan 48340 > Cube 2K08 > > <2012 eAssist TAC Action Center Log IV.xlsx>



reena.datta@gm.com 01/08/2013 01:09 PM To daniel.weaver@gmch.com, David Deal/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, gary.backs@gmch.com, Jacob D cc rick.schroeder@gm.com

bcc

Subject eAssit - NTF Meeting Agenda Jan 9, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Thank you,

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

Wednesday, January 9, 2013 3:00 PM - 4:00 PM EST

# Invitees (Attendees in Bold):

Daniel Weaver, David Deal, Frederick Billotto, Gary Backs, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Len Chalawa, Mark W. Wright, Rick H Schroeder, Stephen Farris, Tony J. Saliga

# Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

# Webex Meeting Information:

Meeting Link: https://gm.webex.com/gm/j.php?ED=199511712&UID=492344932&PW=NOGJkNmUzYjc2&RT=MiMxMQ%3D%3D

Meeting Number: 960 445 572 Meeting Password: 1234

# **MEETING AGENDA**

| A  | enda Item                                               | Presenter | Time   |
|----|---------------------------------------------------------|-----------|--------|
| 1. | Review NTF returns with P0CA2                           | All       | 25 min |
|    | (P0CA2 - DC/DC Converter Step Down Voltage Performance) |           |        |
| •  | Review 25 returns as of 08Jan2013                       |           |        |
|    | <ul> <li>Review Warranty Spreadsheet</li> </ul>         |           |        |
|    | o Review TAC Data                                       |           |        |
|    | o Discuss Next Steps                                    |           |        |

|       | 2. | Round Table                                         | All | 5 min |
|-------|----|-----------------------------------------------------|-----|-------|
| -   • | •  | Prioritize returns for future meetings / discussion |     |       |
| •     | •  | Next Meeting:                                       |     |       |
|       |    | o Wednesday, January 23 <sup>rd</sup> at 3PM EST    |     |       |



# Kevin Diviney/US/GM/GMC

01/09/2013 03:51 PM

To Reena Datta/US/GM/GMC@GM, Gary Backs <gary.backs@gmch.com> cc

bcc

Subject charts

FYI



BPIM campaign update 9Jan13.pptx





Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Frederick Billotto/US/GM/GMC 01/16/2013 09:40 AM

| То      | Gail Bowers <gail.bowers@gmch.com>, James Fortune<br/><james.fortune@gmch.com>, Gary Backs<br/><gary.backs@gmch.com></gary.backs@gmch.com></james.fortune@gmch.com></gail.bowers@gmch.com> |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CC      | Daniel D. Cottrell/US/GM/GMC@GM, John A<br>Ball/US/GM/GMC@GM, Jacob D<br>Bylsma/US/GM/GMC@GM, Gary M.                                                                                      |
| bcc     |                                                                                                                                                                                            |
| Subject | Stop/Lift Order 1832392 (OK to Build with eAssist Powerpacks) is now at Implement Status                                                                                                   |

History: Phis message has been replied to.

All,

FYI. Stop/Lift Order 1832392 is now at "Implement" status



Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



# Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23



Re: Updated BAS+ Optical Images of unit 77 June built Stephen Poulos to: James Fortune

01/18/2012 08:25 AM

Jim,

Thanks. That's good news.

Could I please ask you to send me the latest draft of the summary Excel file - doesn't have to be perfect - just the latest. By 9:30 am latest, if at all possible. Thanks,

#### Stephen

| James F                                                                                                                                                                                                                       | ortune    | Attached you will find the updated ppt with addi         | 01/18/2012 08:18:25 AM |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------|------------------------|
| From:                                                                                                                                                                                                                         | James Fo  | vrtune <james.fortune@gmch.com></james.fortune@gmch.com> |                        |
| To: Gary Backs <gary.backs@gmch.com>, stephen.poulos@gm.com, daniel.d.cottrell@gm<br/>kevin.diviney@gm.com, davidp.1.tasky@gm.com</gary.backs@gmch.com>                                                                       |           | daniel.d.cottrell@gm.com,                                |                        |
| Cc: "Stephen Farris" <stephen.farris@gm.com>, "Frederick Billotto" <frederick.billotto@gm.com>,<br/>Joseph Thompson <joseph.thompson@gmch.com></joseph.thompson@gmch.com></frederick.billotto@gm.com></stephen.farris@gm.com> |           | ederick.billotto@gm.com>,                                |                        |
| Date:                                                                                                                                                                                                                         | 01/18/201 | 2 08:18 AM                                               |                        |
| Subject:                                                                                                                                                                                                                      | Updated   | BAS+ Optical Images of unit 77 June built                |                        |

Attached you will find the updated ppt with additional images of unit #77. From the pictures, unit 77 does not exhibit the tearing that was seen in the failed units from November. The only observation is a small flake on the bottom side which appears to have been caused by resting on the pedestal and the applied 4.5 Nm torque. There was no internal short short observed in this unit and it was only pulled due being a unit produced in early 2011.

Jim

Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1150-0M11-00P6 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6,

2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of

this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

#### -----Gary Backs/GMch wrote: -----

To: Gary Backs/GMch@GMch, bob.agresta@gm.com, charlotte.wallace@gm.com, christopher.winegarden@gm.com, Cole Buttry/GMch@GMch, Daniel Weaver/GMch@GMch, David E. Miller/GMch@GMch, David Worthington/GMch@GMch, Hossein Lotfalian/GMch@GMch, James Fortune/GMch@GMch, Joseph Thompson/GMch@GMch, Robert Wray/GMch@GMch, Stephen Rouch/GMch@GMch, daniel.d.cottrell@gm.com, david.motzny@gm.com, "Sharp David" <david.sharp@delphi.com>, davidp.1.tasky@gm.com, frederick.billotto@gm.com, gary.m.insana@gm.com, glenn.griner@gm.com, jacob.d.bylsma@gm.com, jesse.a.ortega@gm.com, john.a.ball@gm.com, john.haraf@gm.com, kevin.diviney@gm.com, margaret.richards@gm.com, mark.w.wright@gm.com, mehrdad.teimor@gm.com, melani.thomas@gm.com, steve.bunce@gm.com, Timothy.r.funk@delphi.com From: Gary Backs/GMch Date: 01/17/2012 05:38PM Subject: Re: GMCH/Delphi Notes for eAssist Conference Call Fastener Joints

Material Reviewed at 4pm call.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com

[attachment "BAS%20Hole%2027%20Crush-Short%20Contrast%20Comparison%20Table(2).xlsx" removed by James Fortune/GMch] [attachment "Poulos RYG Sheet.xls" removed by James Fortune/GMch] [attachment "Hole 26 photos Updated 1\_17-1.ppt" removed by James Fortune/GMch] [attachment "Dimensional measurements housing.xls" removed by James Fortune/GMch][attachment "Hole 26 photos Updated 1\_17.ppt" deleted by Stephen Poulos/US/GM/GMC]



Reena Datta/US/GM/GMC 01/22/2013 10:11 AM To daniel.weaver@gmch.com, david.deal@gm.com, frederick.billotto@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, jacob.d.bylsma@gm.com, cc

bcc

Subject eAssist - NTF Meeting Agenda, Jan 23, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

# Wednesday, January 23, 2013

3:00 PM - 4:00 PM EST

# Invitees (Attendees in Bold):

Daniel Weaver, David Deal, Frederick Billotto, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga

# **Call-in Information:**

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

Webex Meeting Information: Meeting Link: https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMxMQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

# **MEETING AGENDA**

| Ag | enda Item                                              | Presenter | Time   |
|----|--------------------------------------------------------|-----------|--------|
| 1. | Review P0CA2 Returns                                   | All       | 10 min |
|    | (28 total returns [1 Post-Option 1] as of 15Jan2013)   |           |        |
| •  | Review Warranty Spreadsheet                            |           |        |
| •  | Review TAC Data of Post-Option 1 Return                |           |        |
| •  | Discuss Next Steps                                     |           |        |
| 2. | Review P1A6F Returns                                   | All       | 20 min |
|    | (P1A6F - Starter/Generator System No Crank at Restart) |           |        |
|    |                                                        |           |        |

| <ul> <li>(5 total returns [1 PP/4 BPIM] as of 15Jan2013)</li> <li>Summarize status of P1A6F investigation - Salig</li> <li>Review Warranty Spreadsheet</li> <li>Discuss Next Steps</li> </ul> | ja  |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|
| 3. Discuss Post-Option 1, No DTCs Returns<br>(22 total returns [3 PP/19 BPIM] as of 15Jan201                                                                                                  | All | 20 min |
| Review Warranty Spreadsheet                                                                                                                                                                   |     |        |
| Discuss Next Steps                                                                                                                                                                            |     |        |
| 4. Round Table                                                                                                                                                                                | All | 10 min |
| Prioritize returns for next meetings                                                                                                                                                          |     |        |
| Next Meeting:                                                                                                                                                                                 |     |        |
| <ul> <li>Wednesday, February 6<sup>th</sup> at 3PM EST</li> </ul>                                                                                                                             |     |        |



eAssist\_NTF\_MeetingAgenda\_23Jan2013.docx



Reena Datta/US/GM/GMC 02/08/2013 02:46 PM To Gary Backs <gary.backs@gmch.com>, James Fortune <james.fortune@gmch.com>, Stephen Farris/US/GM/GMC@GM, Jacob D cc

bcc

Subject eAssist - VAP Production with Option 1 Cap and Control PCB Change

Hi Everyone,

I received a message from Kevin Diviney. Last week, he was in Fairfax and Shin was in Oshawa. He said that as of late January, both Fairfax and Oshawa are back in production with the new material, and thus far no problems relative to the change have been reported. He said that everything built in January is with the new material.

Please let me know if you have any questions.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



Reena Datta/US/GM/GMC 02/08/2013 01:52 PM To Tony J. Saliga/US/GM/GMC@GM

cc Stephen Farris/US/GM/GMC@GM, Gary Backs
<gary.backs@gmch.com>
bcc

Subject Re: Fw: Temperature data analysis

Hi Tony,

Regarding the TCed BPIMs, Gary Backs sent the message below late last year indicating that the caps were tested within the capability of the parts.

Please let us know if you need additional information.

Reena

If this is the thermo coupled cap BPIM's provided, we responded in the 4pm call already. I think the answer is they were well within the capability of the parts.

With this testing going on in ambient below 60F, that should not be surprising.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

# -----reena.datta@gm.com wrote: -----

To: hossein.lotfalian@gmch.com, joseph.thompson@gmch.com, gary.backs@gmch.com From: reena.datta@gm.com Date: 11/15/2012 08:42AM Subject: Fw: Temperature data analysis

FYI - perhaps we can discuss later today and provide a response to Tony's questions.

-----Forwarded by Reena Datta/US/GM/GMC on 11/15/2012 08:40AM -----

To: Reena Datta/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM From: Tony J. Saliga/US/GM/GMC Date: 11/15/2012 08:07AM Cc: Daniel D. Cottrell/US/GM/GMC@GM Subject: Temperature data analysis

Has there been an analysis of the temperature data that we provided? Are the temperatures measured

on the cap board within design specifications? Are the temperatures measured by the controller monitored sensors the same as what was measured during component validation testing?

Thanks Anthony Saliga DVE eAssist Programs Pontiac North Powertrain Campus Building B Powertrain Global 823 Joslyn Road Pontiac, MI, 48340 MC 438-730-472 Ph: 248.670.8088

Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

Confidentiality Note: This message is intended only for the person or entity to which it is addressed. It may contain confidential and/or privileged material. Any review, transmission, dissemination or other use, or taking of any action in reliance upon this message by persons or entities other than the intended recipient is prohibited and may be unlawful. If you received this message in error, please contact the sender and delete it from your computer.



Reena Datta/US/GM/GMC 02/12/2013 02:40 PM To daniel.weaver@gmch.com, david.deal@gm.com, frederick.billotto@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, jacob.d.bylsma@gm.com, cc

bcc

Subject eAssist - NTF Meeting Agenda, Feb 13, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

# Wednesday, February 13, 2013

3:00 PM - 4:00 PM EST

# Invitees (Attendees in Bold):

Daniel Weaver, David Deal, Frederick Billotto, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga, William L Aldrich

# Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

# Webex Meeting Information:

Meeting Link:

https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMx MQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

# MEETING AGENDA

| Agenda Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Presenter | Time   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|
| 1. Discuss Post-Option 1 Returns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | All       | 30 min |
| Review Warranty Spreadsheet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |        |
| Discuss Next Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |        |
| 2. P0CA2 Returns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | All       | 10 min |
| Update post-option 1 returns: BPIM 534 and any newly received a | ved       |        |
| units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |        |
| Review data Melani sent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |        |
| Discuss Next Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |        |
| 3. Review P1A6F Returns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | All       | 10 min |
| (P1A6F - Starter/Generator System No Crank at Restart)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |        |

| •  | Review Warranty Spreadsheet<br>Discuss Next Steps                  |     |        |
|----|--------------------------------------------------------------------|-----|--------|
| 4. | Round Table                                                        | All | 10 min |
| •  | Prioritize returns for next meeting                                |     |        |
| •  | Next Meeting:                                                      |     |        |
|    | <ul> <li>Wednesday, February 20<sup>th</sup> at 3PM EST</li> </ul> |     |        |



eAssist\_NTF\_MeetingAgenda\_13Feb2013.docx



Gary Backs <gary.backs@gmch.com> 02/13/2013 07:21 AM

- To margaret.siegrist@gm.com
- cc jacob.d.bylsma@gm.com, "'stephen.farris@gm.com' (stephen.farris@gm.com)" <stephen.farris@gm.com>, reena.datta@gm.com

bcc

Subject PET Update 13FE

1 attachment



eAssist PET Functional Self-Assessments 13FE13 GLB.pptx

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com



**Stephen Farris/US/GM/GMC** 02/14/2013 01:53 PM To gary.backs@gmch.com

cc Reena Datta/US/GM/GMC@GM

bcc

Subject PV testing update this week

Gary,

I need the PV timing update for this week to send out the meeting minutes. When do you think they will be sent out?

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell:



Reena Datta/US/GM/GMC 02/15/2013 03:58 PM

- To Joseph Thompson <joseph.thompson@gmch.com>, Daniel Weaver <daniel.weaver@gmch.com>, Len Chalawa/US/GM/GMC@GM
- CC Gary Backs <gary.backs@gmch.com>, james.fortune@gmch.com, Rick H Schroeder/US/GM/GMC@GM

bcc

Subject eAssist - Shipping BPIM/APMs to MPG

Hi again,

Please also send BPIM/APM 349 to Rick, list updated below.

Thank you,

Reena

Hi Joe, Dan, Len,

Could you please ship the following BPIM/APM units to MPG, attention Rick? His address is below.

\*BPIM/APM 349 BPIM/APM 537 BPIM/APM 543 BPIM/APM 560

\*newly added

Thank you,

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

-----

Attn: Rick Schroeder MPG - Building 16 3300 General Motors Rd Milford, MI 48380 MC: 483 316 100



Stephen Farris/US/GM/GMC

To Tony J. Saliga/US/GM/GMC@GM

cc Reena Datta/US/GM/GMC@GM, james.fortune@gmch.com bcc

02/19/2013 04:08 PM

Subject 5 Phase Late PV testing

1 attachment



S92 BPIM\_APM late PV testing 5 phase 19FEB13.pptx

Tony,

Attached is 5-Phase we just did.

Reena and Jim - Please review.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell:



Reena Datta/US/GM/GMC 02/26/2013 02:29 PM To daniel.weaver@gmch.com, david.deal@gm.com, frederick.billotto@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, jacob.d.bylsma@gm.com, cc

bcc

Subject eAssist - NTF Meeting Agenda, Feb 27, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

# Wednesday, February 27, 2013

3:00 PM - 4:00 PM EST

# Invitees (Attendees in Bold):

Daniel Weaver, David Deal, David J. Martin, Frank Schauerte, Frederick Billotto, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Kristin L Curran, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga, William L Aldrich

# Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

# Webex Meeting Information:

Meeting Link:

https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMx MQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

# MEETING AGENDA

| Ag | enda Item                                              | Presenter | Time   |
|----|--------------------------------------------------------|-----------|--------|
| 1. | Review Post-Option 1 Returns                           | All       | 30 min |
| •  | Review Warranty Spreadsheet                            |           |        |
| •  | Discuss Next Steps                                     |           |        |
| 2. | Review P0CA2 Returns                                   | All       | 10 min |
| •  | Review Warranty Spreadsheet                            |           |        |
| •  | Review 5-phase                                         |           |        |
| •  | Discuss Next Steps                                     |           |        |
| 3. | Review P1A6F Returns                                   | All       | 10 min |
|    | (P1A6F - Starter/Generator System No Crank at Restart) |           |        |
| •  | Review Warranty Spreadsheet                            |           |        |

| •  | Discuss Next Steps                                      |  |  |  |  |
|----|---------------------------------------------------------|--|--|--|--|
| 4. | 4. Round Table All 10 min                               |  |  |  |  |
| •  | <ul> <li>Prioritize returns for next meeting</li> </ul> |  |  |  |  |
| •  | Next Meeting:                                           |  |  |  |  |
|    | o Wednesday, March 6 <sup>th</sup> at 3PM EST           |  |  |  |  |



Reena Datta/US/GM/GMC

02/27/2013 02:34 PM

To Joseph Thompson <joseph.thompson@gmch.com>, Gary Backs <gary.backs@gmch.com> cc

bcc

Subject Fw: recent tac case

# FYI

----- Forwarded by Reena Datta/US/GM/GMC on 02/27/2013 02:34 PM -----

From:Kevin Diviney/US/GM/GMCTo:Reena Datta/US/GM/GMC@GM, Len Chalawa/US/GM/GMC@GMDate:02/27/2013 02:33 PMSubject:recent tac case

| 2/21/13 TAC case 71-1157313296, VIN             |        |                |  |
|-------------------------------------------------|--------|----------------|--|
| 1G4GC5ER1DF, 171 miles, P1A6F,                  |        |                |  |
| customer vehicle, replacing BPIM after checking |        |                |  |
| belt and tensioner.                             | 27-Feb | Kristin Curran |  |



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



# Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



reena.datta@gm.com 03/06/2013 08:07 AM

| То | Daniel Weaver <daniel.weaver@gmch.com>, David</daniel.weaver@gmch.com> |
|----|------------------------------------------------------------------------|
|    | Deal/US/GM/GMC@GM, David J.                                            |
|    | Martin/US/GM/GMC@GM, Frank                                             |
| CC |                                                                        |

bcc

Subject eAssist - NTF Meeting Agenda, Mar 6, 2013

Hi Everyone,

Please see the NTF meeting agenda below for today's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

# Wednesday, March 6, 2013

3:00 PM - 4:00 PM EST

# Invitees (Attendees in Bold):

Daniel Weaver, David Deal, David J. Martin, Frank Schauerte, Frederick Billotto, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Kristin L Curran, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga, William L Aldrich

# Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

# Webex Meeting Information:

Meeting Link:

https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMx MQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

# **MEETING AGENDA**

| Ag | enda Item                                              | Presenter | Time   |
|----|--------------------------------------------------------|-----------|--------|
| 1. | Review Post-Option 1 Returns                           | All       | 30 min |
| •  | Review Warranty Spreadsheet                            |           |        |
| •  | Discuss Next Steps                                     |           |        |
| 2. | Review P0CA2 Returns                                   | All       | 10 min |
| •  | Review Warranty Spreadsheet                            |           |        |
| •  | Review 5-phase                                         |           |        |
| •  | Discuss Next Steps                                     |           |        |
| 3. | Review P1A6F Returns                                   | All       | 10 min |
|    | (P1A6F - Starter/Generator System No Crank at Restart) |           |        |
| •  | Review Warranty Spreadsheet                            |           |        |

| •  | Discuss Next Steps                             |  |  |  |
|----|------------------------------------------------|--|--|--|
| 4. | 4. Round Table All 10 min                      |  |  |  |
| •  | Prioritize returns for next meeting            |  |  |  |
| •  | Next Meeting:                                  |  |  |  |
|    | o Wednesday, March 20 <sup>th</sup> at 3PM EDT |  |  |  |



Reena Datta/US/GM/GMC

03/12/2013 11:12 AM

To joseph.thompson@gmch.com, gary.backs@gmch.com

cc bcc

Subject BPIM\_breakout\_signals\_W\_Mapping\_to\_BOB\_v1

1 attachment



BPIM\_breakout\_signals\_W\_Mapping\_to\_BOB\_v1.xls



Brian 1 Ciaverella/C/US/GM/GMC 03/15/2013 03:48 PM

- To Kevin Diviney/US/GM/GMC
- cc Daniel Weaver <daniel.weaver@gmch.com>, Kristin L Curran/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, Tony J.

bcc

Subject Re: First BPIM warranty claim for vehicles built in 2013 1G4GC5ER1DF

Kevin,

See case attached. There are not currently any session logs available for review but we have asked for them. Below is a screen print from QIS2.



Regards, **Brian Ciaverella Hybrid Platform Escalation Team GM Technical Assistance Center** An Associate of Morley Companies Desk 989-249-6538 Fax 866-842-9445 brian.1.ciaverella@gm.com

| Ċ        | 04 GTP 2G2W                                                                                           | R52424115640          | 07 DTC Det         | ail. MicroStr  | ategy 9 - Win     | dov  | ws Internet E                  | xplore | r                |                                                                            |                   |              |
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|          | 🚖 Favorites 🛛 👍 🖉 httpsac.morleyweb.com 🚸 Global Warranty Manage 🛛 Google 🚸 GLobal connect VSP Logo 🜌 |                       |                    |                |                   |      |                                |        |                  |                                                                            |                   |              |
|          | 🖲 04 GTP 2G2V                                                                                         | WR524241              | DTC Det            | ail. Micro     |                   |      |                                |        |                  |                                                                            |                   |              |
|          |                                                                                                       |                       |                    | Search         |                   | Q    | Help                           | Log    | out              |                                                                            |                   |              |
|          |                                                                                                       |                       |                    |                |                   |      |                                |        |                  |                                                                            |                   |              |
|          | _                                                                                                     | _                     | _                  |                | Last              | t up | date: 3/15/13                  | 3:40:  | 37 PM            |                                                                            |                   |              |
|          |                                                                                                       |                       |                    |                |                   |      |                                |        |                  |                                                                            |                   |              |
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| 51"      | ) And {03 Sub R                                                                                       | eport Filter}         |                    |                |                   |      |                                |        |                  |                                                                            |                   |              |
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|          |                                                                                                       |                       |                    |                |                   |      |                                |        |                  |                                                                            |                   |              |
|          |                                                                                                       |                       |                    |                |                   |      |                                |        |                  |                                                                            |                   |              |
|          | Scan                                                                                                  | Scan                  |                    | DTC            |                   |      |                                |        |                  |                                                                            |                   |              |
| <b>^</b> | Record<br>Protocol A                                                                                  | Source                | DTC Read<br>Date △ | Read<br>Time ▲ | Frame<br>Number ▲ | Mo   | odule 🛆                        |        | Diagno<br>Code 4 | ostic Trouble                                                              | Symptom<br>Byte 스 | OnSt<br>Seve |
|          | G                                                                                                     | Dealer<br>Diagnostics | 2/21/2013          | 01:50:PM       | 0                 | 17   | Hybrid<br>Control<br>Processor |        | P1A6F            | Starter/Generator<br>System Failed to<br>Restart Engine                    | 0                 | 0            |
|          |                                                                                                       |                       |                    |                | 1                 | 11   | Engine<br>Control<br>Module    | ЕСМ    | P0AC4            | Hybrid/EV<br>Powertrain<br>Control Module<br>Requested MIL<br>Illumination | 0                 | 0            |
|          |                                                                                                       |                       |                    |                |                   | 17   | Hybrid<br>Control<br>Processor |        | P1A6F            | Starter/Generator<br>System Failed to<br>Restart Engine                    | 0                 | 0            |
|          |                                                                                                       |                       | 2/22/2013          | 04:52:PM       | 1                 | 11   | Engine<br>Control<br>Module    | ECM    | P0AC4            | Hybrid/EV<br>Powertrain<br>Control Module<br>Requested MIL<br>Illumination | 0                 | 0            |
| •        |                                                                                                       |                       |                    |                |                   |      |                                |        |                  |                                                                            |                   |              |

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Kevin Diviney/US/GM/GMC 03/15/2013 01:51 PM To Brian 1 Ciaverella/C/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM, Reena cc

bcc

Subject First BPIM warranty claim for vehicles built in 2013

Brian,

We have had our BPIM warranty claim for vehicles built in 2013. Here are the details:

First N5875 claim for vehicles built in 2013: 1G4GC5ER1DF 2, 2/21/13 repair date, 171 miles, client states when pressing pedal to accell from a stop = vehicle seems to shut off for several seconds before turning back On &going forward = radio shuts off & IPC quits = ck eng Lt now stays on = ; 6573 INCORRECT COMMUNICATION. HAD CODE P1A6F STARTER/ GENERATOR SYSTEM NO CRANK AT RESTART. NO OTHER CODES SET. NO NOISE HEARD FROMBELT. TENSIONERS LOOK O.K. TRIED TO REPROGRAM GENERATOR CONTROL MODULE. HAS LATEST PROGRAM IN IT. CALLED TECHNICAL ASSISTANCE CASE#71-1157313296. WAS TOLD TO REPLACE GCM; REPLACED GCM. PROGRAMMED MODULE CODE S210F. TEST DROVE VEHICLE. CODE DID NOT RESET. O.K. AT THIS TIME.;

Can you send me the TAC case on this one?

Kristin,

Can you check on the status of the BPIM return?



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.divinev@gm.com</u> ybrid

Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Stephen Farris/US/GM/GMC

03/18/2013 12:26 PM

- To gary.backs@gmch.com
- cc Reena Datta/US/GM/GMC@GM

bcc

Subject Re: did anyone notice this? from GM Overdrive

I was sent this today. Not sure how many others seen it. Not sure we have all the details. We will likely hear more about this!

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----Gary Backs <gary.backs@gmch.com> wrote: -----

To: stephen.farris@gm.com From: Gary Backs <gary.backs@gmch.com> Date: 03/18/2013 12:24PM Subject: did anyone notice this? from GM Overdrive

Write a comment... Flag▼

Follow Kelly Powell•Ask and Answer

I recently bought a new ECO Malibu. WIthin the first week I was leaving a Dunkin Donuts when all the power shut off in the middle of the road. The vehicle tried to start up a couple times, without me doing anything, and then when it did start it took off as if I had my foot on the gas. I took it to the dealership and they stated that they could not re-create the problem and hopefully it was a fluke. Has anyone ever heard of this happening?

LikeAnswer 8:52 am from web

Katrina Schultz

I bought a Malibu ECO last April. What you describe has never happened to me.

8:56 am Like

Kelly Powell

Ok thanks. I know it scared me pretty good. Other than that, I love this car.

8:58 am Like

#### Rob Dallas

Did you experience missing time?

9:00 am Like1 person likes this

### Jamie Dornan

Wow, thats scary....I would think that would ned to be investigated more. A car starting itself and then taking off would seem to be a safety issue...

9:02 am Like1 person likes this

### Kelly Powell

I was pulling out of the parking lot. Since I was stopped, the car went into the Auto Stop. I had a break in traffic, pressed the accelerator and everything died. The car went black. Then the lights came on and off several times as well as the motor, then it lurched forward. For the rest of the drive to work, the auto stop no longer worked. I was able to get it to the dealership after work, where they gave me a horrible rental. I was called the next day and they said they could not re-create the problem. So, now I am very cautious when driving. I noticed yesterday that the auto start doesn't always work so I will be calling the dealership

again.

9 :12 am Like

#### Maureen Niemiec

I'm sure Engineering - <u>#QRD</u> will want to look at it - and since this is a semi public forum (not just blue badged), given the nature of your concern it may be prudent to take this conversation off line. <u>#DriveByWire</u>

9:13 am Like

#### Bill Treib

If it happens again take it to the dealer sooner (dont wait more than a few days) or take it to a parts store like Autozone. they will scan your trouble codes for free. Maybe any codes that were set during your event may have cleared from history before you got it to the dealer.

about 3 hours ago Like

#### Robert Huber

Kelly, did you contact OnStar when this happened? If it happens again contact OnStar right away and ask them to do a vehicle diagnostic check. I would drive straight to a dealer, (if open) or if you get a contact here contact them right away. do not shut off the vehicle as some information may be stored in the controllers that will be useful in understanding what is happening. about 2 hours ago Like

Gary Smith

<u>@KellyPowell</u> I suggest you reach out to the customer call center: 1-855-HelpAtGM (1-855-435-7284)

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com



Reena Datta/US/GM/GMC 03/19/2013 07:39 PM

| То | Daniel Weaver <daniel.weaver@gmch.com>, David</daniel.weaver@gmch.com> |
|----|------------------------------------------------------------------------|
|    | Deal/US/GM/GMC@GM, David J.                                            |
|    | Martin/US/GM/GMC@GM, Frank                                             |
| CC |                                                                        |

bcc

Subject eAssist - NTF Meeting Agenda, Mar 6, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

# Wednesday, March 20, 2013

3:00 PM - 4:00 PM EDT

# Invitees (Attendees in Bold):

Daniel Weaver, David Deal, David J. Martin, Frank Schauerte, Frederick Billotto, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Kristin L Curran, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga, William L Aldrich

# Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

# Webex Meeting Information:

Meeting Link:

https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMx MQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

#### MEETING AGENDA

| Ag | enda Item                                                                      | Presenter | Time   |
|----|--------------------------------------------------------------------------------|-----------|--------|
| 1. | Review Post-Option 1 Returns                                                   | All       | 30 min |
| •  | Review Warranty Spreadsheet                                                    |           |        |
| •  | Discuss Next Steps                                                             |           |        |
| 2. | Review P1A6F Returns<br>(P1A6F - Starter/Generator System No Crank at Restart) | All       | 10 min |
| •  | Review Warranty Spreadsheet                                                    |           |        |
| •  | Discuss Next Steps                                                             |           |        |
| 3. | Review P0CA2 Returns                                                           | All       | 10 min |
| •  | Review Warranty Spreadsheet                                                    |           |        |
| •  | Review 5-phase                                                                 |           |        |

| •  | Discuss Next Steps                            |  |  |  |  |
|----|-----------------------------------------------|--|--|--|--|
| 4. | . Round Table All 10 min                      |  |  |  |  |
| •  | Prioritize returns for next meeting           |  |  |  |  |
| •  | Next Meeting:                                 |  |  |  |  |
|    | o Wednesday, April 3 <sup>rd</sup> at 3PM EDT |  |  |  |  |



Zachary J Pieri/US/GM/GMC

03/20/2013 01:42 PM

To Reena Datta/US/GM/GMC@GM

cc bcc

Subject Re: Fw: bpim apm test data for BPIM #349

Friday works for me.

# Zack Pieri (248) 343-8164

| Reena D  | Datta Hi Zack, Thank you for the update. R 03/19/2013 09:1                               | 0:31 AM |
|----------|------------------------------------------------------------------------------------------|---------|
| From:    | Reena Datta/US/GM/GMC                                                                    |         |
| То:      | Zachary J Pieri/US/GM/GMC@GM                                                             |         |
| Cc:      | Joseph Thompson <joseph.thompson@gmch.com>, "David E. Miller"</joseph.thompson@gmch.com> |         |
|          | <david.e.miller@gmch.com></david.e.miller@gmch.com>                                      |         |
| Date:    | 03/19/2013 09:10 AM                                                                      |         |
| Subject: | Re: Fw: bpim apm test data for BPIM #349                                                 |         |

# Hi Zack,

Thank you for the update. Regarding a conf. call to discuss the test setups, later in the week would work better for me. How does Fri sound to everyone?

# Reena

Zachary J Pieri Hey Joe et al., Apologies for not updat... 03/19/2013 08:41:19 AM



# **{In Archive} Re: APM TAC cases Tony J. Saliga** to: Reena Datta, Brian 1 Ciaverella, Frederick Billotto Cc: Richard Ye, Stephen Farris, Len Chalawa

03/20/2012 07:55 AM

Archive:

This message is being viewed in an archive.

the two VINs you call out are the power packs that let the smoke out. We may have another case to add to the 4 that we are tracking. Do you have the status of this pack, May be of interest, looks like it had an open F23. Brian did they find some other reason for F23 to be open or was it the power pack?

71-10439584331\_101053.pdf Thanks Anthony Saliga DVE eAssist Programs Pontiac North Powertrain Campus Building B Powertrain Global 823 Joslyn Road Pontiac, MI, 48340 MC 438-730-472 Ph: 248.670.8088

PDF

| Reena E  | Hi Tony, I'm still getting caught up on things after being out of the office for a | 03/19/2012 05:08:49 PM |  |  |
|----------|------------------------------------------------------------------------------------|------------------------|--|--|
| From:    | Reena Datta/US/GM/GMC                                                              |                        |  |  |
| To:      | Tony J. Saliga/US/GM/GMC@GM                                                        |                        |  |  |
| Cc:      | Richard Ye/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM     |                        |  |  |
| Date:    | 03/19/2012 05:08 PM                                                                |                        |  |  |
| Subject: | Re: APM TAC cases                                                                  |                        |  |  |

# Hi Tony,

I'm still getting caught up on things after being out of the office for a while. I don't have TAC case numbers but I do know that Delphi / GMCH has received the PP from 1G11F5RR4DF but they have not received the PP from LSGGF53G1BH266512.

Len, do you have the TAC case numbers associated with those VINs? Do they correspond with the case numbers Tony lists below?

Thank you,

Reena

Tony J. SaligaThe first case below was from awhile ago, the other is fairly recent. Has GM...03/19/2012 01:43:32 PM



Zachary J Pieri/US/GM/GMC

03/21/2013 10:07 AM

To Reena Datta/US/GM/GMC@GM, Joseph Thompson <joseph.thompson@gmch.com>, Robert Souder <robert.souder@gmch.com>, david.e.miller@gmch.com

СС

bcc

Subject BPIM Presentation

As promised...



P0CA2 Warranty Return BPIMs 20Mar13.pdf

Zack Pieri (248) 343-8164



Reena Datta/US/GM/GMC

03/22/2013 12:12 PM

- To Kristin L Curran/US/GM/GMC@GM
- cc Daniel Weaver <daniel.weaver@gmch.com>, Joseph Thompson <joseph.thompson@gmch.com>

bcc

Subject Fw: L5 Hubbard OH 71-1142153998 2013 MALIBU SES/No Crank. 1G11D5RR9DF

Hi Kristin,

Can this unit be expedited to GMCH?

I heard that there was a second return that also had System High Voltage behavior. Have you heard about that unit? Is there a TAC case or VIN? Please let me know.

Thank you, Reena

----- Forwarded by Reena Datta/US/GM/GMC on 03/22/2013 12:09 PM -----

| From:<br>To: | Rick H Schroeder/US/GM/GMC<br>Brian 1 Ciaverella/C/US/GM/GMC@GM                          |
|--------------|------------------------------------------------------------------------------------------|
| Cc:          | Tony J. Saliga/US/GM/GMC, Milton Martinez/US/GM/GMC, Kristin L Curran/US/GM/GMC@GM,      |
|              | Richard Ye/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, Robert                                |
|              | Reiss/C/US/GM/GMC@GM                                                                     |
| Date:        | 03/21/2013 03:38 PM                                                                      |
| Subject:     | Re: Fw: L5 Hubbard OH 71-1142153998 2013 MALIBU SES/No Crank. 1G11D5RR9DF119300<br>P0563 |

Brian,

the System voltage is > 18V This will cause the DIC and the Radio screen to go blank. I would replace the BPIM.

Regards,

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com

| Brian 1 Ci | iaverella | Tony, Milton or Rick Please review      | 03/21/2013 02:32:48 PM            |
|------------|-----------|-----------------------------------------|-----------------------------------|
| From:      |           | Ciaverella/C/US/GM/GMC                  |                                   |
| To:        |           | Saliga/US/GM/GMC, Rick H Schroeder/US/G |                                   |
| Cc:        |           | Curran/US/GM/GMC, Richard Ye/US/GM/GM   | MC@GM, Reena Datta/US/GM/GMC@GM,  |
| 5          |           | Reiss/C/US/GM/GMC                       |                                   |
| Date:      |           | 013 02:32 PM                            |                                   |
| Subject:   | Re: Fw:   | L5 Hubbard OH 71-1142153998 2013 MALIB  | U SES/No Crank. 1G11D5RR9DF119300 |
|            | P0563     |                                         |                                   |

# Tony, Milton or Rick

Please review Data dumps from vehicle. . I am assuming that the voltage is high causing the radio display and sound to drop out. The BPIM is being replaced on this vehicle.

[attachment "1g11d5rr9df119300 ,2.prn" deleted by Reena Datta/US/GM/GMC] [attachment "1g11d5rr9df1\_\_\_\_\_\_.prn" deleted by Reena Datta/US/GM/GMC]

Brian,

This is the data dumps @ the time we arrived. We started the vehicle and lost all dash lights and radio.

We will install the module and take another data dump.

Thanks, Bob

Robert Reiss HP Enterprise Services Representing GM Customer Care & Aftersales Field Service Engineering (FSE)

Mobile: (412) 235-8231 robert.reiss@gm.com

| Tony J. Saliga   | The case information indicated the 12 | 03/19/2013 04:22:42 PM |
|------------------|---------------------------------------|------------------------|
| Kristin L Curran | FYI Kristin L. Curran   Brand Qualit  | 03/19/2013 03:50:18 PM |



**(In Archive) 5 Phase and Failure Analysis Timeline for FFX Return Frederick Billotto** to: Gary Backs

03/26/2012 09:35 AM

Archive:

This message is being viewed in an archive.

Cc: Reena Datta, Stephen Farris

# Gary,

We need to prepare a 5 phase or similar document addressing the recent powerpack returned from Fairfax. In addition we need to manage the failure analysis. Can you provide timeline detailing testing completed to date and future tasks. Some of the action items and decision points discussed at our last meeting are noted below:

- 1. Should we send GMCH/Delphi to FFX to observe asy process? Merhdad suggested Mark Nichols or Dave Buehler. Suggestion is under consideration
- 2. Some plants conduct a "drop down test". GMCH (Hos) will find out if FFX runs that test. If so we need to ask if SGM runs it as well.
- 3. Run ESD on one the high leak units.
- 4. Send damaged PCB to board supplier? Or other experts? (Under consideration)
- 5. Examine PCB level components for failures.....compare findings across all failed samples.

| Regards, |
|----------|
|----------|



Fred Billotto Senior Project Engineer

Mobile Ph: Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23



03/26/2012 07:53 AM

Fred/Stephen,

I would like to have this matrix updated after this afternoon's call. Hopefully, GMCH will have some information to share on the units they have in their possession. We should also have a short presentation that can be used in the PET this week to facilitate the discussion on how to best communicate the status of this issue to the vehicle teams.

Regards,



Powerpack Comparison Matrix v3 KD.xlsx



ybrid

Kevin Diviney Global Program Quality Manager -BAS/BAS+/BAS3 (E-Assist)

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.divinev@gm.com</u> Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Reena Datta/US/GM/GMC 03/27/2013 03:08 PM To Daniel Weaver <daniel.weaver@gmch.com>, Joseph Thompson <joseph.thompson@gmch.com> cc bcc Subject eAssist - Pre-Option 1 Pack Return

FYI

Pre-option 1 pack repair. The tech took photos if you would like to review.

Steve Bunce wanted to see if you had a suggestion as to how to clean off the soot - ex disconnect pack, remove HV cables from RESS, use wet cleaning wipes to clean off soot. Please let me know if you have any recommended procedure.





Reena Datta/US/GM/GMC 04/02/2013 11:38 AM

| То | Brian 1 Ciaverella/C/US/GM/GMC@GM, Daniel Weaver         |
|----|----------------------------------------------------------|
|    | <daniel.weaver@gmch.com>, David</daniel.weaver@gmch.com> |
|    | Deal/US/GM/GMC@GM, David J.                              |
| СС |                                                          |

bcc

Subject eAssist - NTF Meeting Agenda, Apr 3, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

# Wednesday, April 03, 2013

3:00 PM - 4:00 PM EDT

# Invitees (Attendees in Bold):

Brian Ciaverella, Daniel Weaver, David Deal, David J. Martin, Frank Schauerte, Frederick Billotto, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Kristin L Curran, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga, William L Aldrich, William Whitlock, Zachary Pieri

#### Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

# Webex Meeting Information:

Meeting Link: https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMx MQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

### **MEETING AGENDA**

| Ag | enda Item                                            | Presenter | Time   |
|----|------------------------------------------------------|-----------|--------|
| 1. | Review Post-Option 1 Returns                         | All       | 55 min |
| •  | Review Warranty Spreadsheet (including P1A6F, P0CA2) |           |        |
| •  | Review TAC and QIS2 History                          |           |        |
| •  | Review QIS2 PID data                                 |           |        |
| •  | Discuss Next Steps                                   |           |        |
| 2. | Round Table                                          | All       | 5 min  |
| •  | Prioritize returns for next meeting                  |           |        |
| •  | Next Meeting:                                        |           |        |
|    | -                                                    |           |        |

| 1 | 0        | Wednesday, April 17 <sup>th</sup> at 3PM EDT |  |
|---|----------|----------------------------------------------|--|
|   | <u> </u> |                                              |  |



{In Archive} RE: Invitation: eAssist Fairfax Powerpack Return Failure Analysis (Conference Call: 866-297-2155 Code 6866187, Webex link provided below) (Apr 3 03:00 PM EDT)
Sharp, David to:
Frederick Billotto/US/GM/GMC, Carrie Harvey/US/GM/GMC, White, David E, Buehler, David P, Backs, Gary L, Jacob D Bylsma/US/GM/GMC, Fortune, James L, Thompson, Joseph E, Kevin Diviney/US/GM/GMC, Mehrdad Teimor/US/GM/GMC, Melani Thomas/US/GM/GMC, Reena

Datta/US/GM/GMC, Richard Ye/US/GM/GMC, Shinichiro Taki/US/GM/GMC, Stephen Farris/US/GM/GMC, Tony J. Saliga/US/GM/GMC 04/03/2012 04:19 PM

Show Details

Archive: This message is being viewed in an archive.

1 Attachment



BAS plus fail\_evidence number 67959.ppt

Attached is the presentation that was shared today...

David Sharp Project Manager, Delphi E&S Phone: (765) 451-3170 Fax: (765) 451-3780 email: <u>david.sharp@delphi.com</u>

----Original Appointment----From: Frederick Billotto/US/GM/GMC [mailto:frederick.billotto@gm.com]
Sent: Monday, April 02, 2012 10:41 AM
To: Carrie Harvey/US/GM/GMC; White, David E; Buehler, David P; Sharp, David; Backs, Gary L; Jacob D Bylsma/US/GM/GMC; Fortune, James L; Thompson, Joseph E; Kevin Diviney/US/GM/GMC; Mehrdad Teimor/US/GM/GMC; Melani
Thomas/US/GM/GMC; Reena Datta/US/GM/GMC; Richard Ye/US/GM/GMC; Shinichiro Taki/US/GM/GMC; Stephen
Farris/US/GM/GMC; Tony J. Saliga/US/GM/GMC
Subject: Invitation: eAssist Fairfax Powerpack Return Failure Analysis (Conference Call: 866-297-2155 Code 6866187, Webex link provided below) (Apr 3 03:00 PM EDT)
When: Tuesday, April 03, 2012 3:00 PM-4:00 PM Eastern.

Agenda:

1.) Review Delphi failure analysis report. Including the findings from the x-ray and cross-section analysis.

2.) FL pack preliminary FA results.

Meeting information

Topic: FFX Return APM/BPIM FA

Date: Tuesday, April 3, 2012 Time: 3:00 pm, Eastern Daylight Time (New York, GMT-04:00) Meeting Number: 969 259 294 Meeting Password: 6866187

\_\_\_\_\_

To start or join the online meeting

Go to https://gm.webex.com/gm/j.php?ED=192425367&UID=490912533&PW=NOGE0ZGY0ZTA2&RT=MiMxMQ%3D%3D

Teleconference information

Provide your phone number when you join the meeting to receive a call back. Alternatively, you can call: Call-in toll-free number (ATT Audio Conference): 1-8662972155 (US) Show global numbers: <u>https://www.teleconference.att.com/servlet/glbAccess?</u> <u>process=1&accessNumber=8662972155&accessCode=6866187&accessNumber2=</u> Host access code: 3375 Attendee access code: 686 618 7

For assistance

-----

\_\_\_\_\_

1. Go to <u>https://gm.webex.com/gm/mc</u>

2. On the left navigation bar, click "Support".

To add this meeting to your calendar program (for example Microsoft Outlook), click this link: <u>https://gm.webex.com/gm/j.php?</u>

 $\underline{ED}=192425367\&UID=490912533\&ICS=MS\&LD=1\&RD=2\&ST=1\&SHA2=DrLf5H9I88142LxgNdxKnmAmPakuY92iYhSpDXWwwes=182425367\&UID=490912533\&ICS=MS\&LD=1&RD=2\&ST=1&SHA2=DrLf5H9I88142LxgNdxKnmAmPakuY92iYhSpDXWwwes=182425367\&UID=490912533&ICS=MS&LD=1&RD=2&ST=1&SHA2=DrLf5H9I88142LxgNdxKnmAmPakuY92iYhSpDXWwwes=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=182425367&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=1824257&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=182457&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=18257&ICS=1825$ 

To check whether you have the appropriate players installed for UCF (Universal Communications Format) rich media files, go to <a href="https://gm.webex.com/gm/systemdiagnosis.php">https://gm.webex.com/gm/systemdiagnosis.php</a>

http://www.webex.com

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# {In Archive} Re: Warranty Return from Florida 🗎

This message is being viewed in an archive.

Len Chalawa to: White, David E

X

Cc: "Sharp, David", "Billotto, Fred (GM)", "Lotfalian, Hossein T", "Johnson, Jerry A", "Thompson, Joseph E", "Chalawa, Len", "Datta, Reena (GM)"

Archive:

3 attachments





2013 Malibu TAC Cases P-Pack 30Mar12.xlsx 71-1043958431 BAS DF101053.pdf 71-1048351735 BAS CF159328.pdf

# Items coming in -

Log -

|            | TAC CASE      | STATUS                                                                                                                                          | DEALER                             | LOCATION              | PHONE          | RO     |           |
|------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------|----------------|--------|-----------|
| 1G11F5RR7D | 71-1050237582 | 3/30/12 REQUEST SUBMITTED TO DEALER                                                                                                             | Spitzer Chevrolet, Inc.            | Northfield, OH        | (330) 467-4141 | 165568 | P1EAB MP  |
| 1G4GD5ER7C | 71-1049662192 | 3/30/12 REQUEST SUBMITTED TO DEALER                                                                                                             | Serra Buick-Pontiac-<br>GMC L.L.C. | Washington Twp, MI    | (586) 281-2800 | 251751 | P1EAB MPC |
| 1G4GD5ER8C | 71-1052621171 | 3/30/12 REQUEST SUBMITTED TO DEALER                                                                                                             | Liberty GMC Truck,<br>L.L.C.       | East Independence, NC | (704) 708-8000 | 190663 |           |
| 2G4GR5ER7C | 71-1032105571 | 3/30/12 ARRIVED AT WPC SHIPPED TO KOKOMO<br>3/28/12 ARRIVED AT WPC SHIPPED TO KOKOMO<br>3/20/12 REQUEST SUBMITTED TO DEALER                     | West Metro Buick                   | Monticello , MN       | (763) 271-7800 | 40932  |           |
| 1G11D5RROD | 71-1046979015 | 3/30/12 ARRIVED AT WPC SHIPPED TO KOKOMO<br>3/26/12 REQUEST SUBMITTED TO DEALER                                                                 | MTN. VIEW CHEVROLET                | CHATTANOOGA, TN       | 423-266-0181   | 325570 |           |
| 1G4GC5ER5C | 71-1048351735 | 3/28/12 ARRIVED AT WPC SHIPPED TO KOKOMO<br>3/20/12 REQUEST SUBMITTED TO DEALER                                                                 | Madill Chevrolet-<br>Buick,        | Madill, OK            | (580) 795-3337 | 48112  | F23       |
| 1G11F5RR2D | 71-1043958431 | 3/30/12 ARRIVED AT WPC SHIPPED TO KOKOMO<br>3/21 DEALER DID NOT HAVE PROPER TAPE, WILL SHIP PART<br>TOMORROW<br>3/5 REQUEST SUBMITTED TO DEALER | Maroone Chevrolet                  | Pembroke Pines, FL    | (954) 433-3300 | 561713 |           |

The 2013 Malibu: Florida / 58431 case, 79015 case - coming in / we already have the first 2013 Malibu Pack: see column B full TAC narative. Here is a seperate TAC Case for the Florida - it contains the same

04/03/2012 10:15 AM

here is also 51735

If yo ureceive the packs - please inform me what TAC case & date received. I will then log the case and detai Ifrom the TAC information in the tracking spreadsheet.

Thanks

Len Chalawa Sr. Reliability Engineer GM Milford Proving Grounds 248-928-6411 len.chalawa@gm.com

From: "White, David E" <David.E.White@delphi.com>

To: "Chalawa, Len" <len.chalawa@gmch.com>, "len.chalawa@gm.com" <len.chalawa@gm.com>, "Datta, Reena (GM)" <reena.datta@gm.com>, "Billotto, Fred (GM)"

<frederick.billotto@gm.com>

Cc: "Nichols, Mark A" <mark.a.nichols@delphi.com>, "Thompson, Joseph E" <joseph.thompson@gmch.com>, "Lotfalian, Hossein T" <hossein.lotfalian@gmch.com>, "Johnson, Jerry A" <jerry.johnson@gmch.com>, "Sharp, David" <david.sharp@delphi.com>, "Tallant, J C" <J.C.Tallant@delphi.com>

Date: 04/03/2012 09:31 AM

Subject: Warranty Return from Florida

Can anyone provide advance info on BPIM being returned to GMCH-Kokomo from Florida today?

Perhaps we already have this, but Joe Thompson is out this week and he may have the info, but I do not.

Thanks in Advance,

David E. WhiteSenior Project EngineerDelphi Electronics & Safety SystemsKokomo, INUSAMail StopCLLEPhone(765) 451-3798Fax(765) 451-0137Internet:david.e.white @ delphi.com



(In Archive) RE: Warranty Return from Florida [ATTACHMENT REMOVED]
White, David E to: len.chalawa@gm.com
Cc: "Sharp, David", "Billotto, Fred (GM)", "Lotfalian, Hossein T", "Johnson, Jerry A", "Thompson, Joseph E", "Chalawa, Len", "Datta, Reena (GM)", "Nichols, Mark A", "Sharp, David", "Tallant, J C"
This message is being viewed in an archive.

04/04/2012 09:03 AM

Archive:

Received in BAS+ CPE Lab

TAC 71-1043958431 PACK P/N 22916841 S/N LQ68414112011144

From FIS Records, BPIM= LP96734112011046 From FIS Records, no rework reported at Pack or BPIM levels.

From: len.chalawa@gm.com [mailto:len.chalawa@gm.com] Sent: Tuesday, April 03, 2012 10:15 AM To: White, David E Cc: Sharp, David; Billotto, Fred (GM); Lotfalian, Hossein T; Johnson, Jerry A; Thompson, Joseph E; Chalawa, Len; Datta, Reena (GM) Subject: Re: Warranty Return from Florida

Items coming in -

Log -

The 2013 Malibu: Florida / 58431 case, 79015 case - coming in / we already have the first 2013 Malibu Pack: see column B full TAC narative. Here is a seperate TAC Case for the Florida - it contains the same

here is also 51735

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Thanks

Len Chalawa Sr. Reliability Engineer GM Milford Proving Grounds 248-928-6411 len.chalawa@gm.com

\_\_\_\_\_

 From:
 "White, David E" <David.E.White@delphi.com>

 To:
 "Chalawa, Len" <len.chalawa@gmch.com>, "len.chalawa@gm.com" <len.chalawa@gm.com>, "Datta, Reena (GM)" <reena.datta@gm.com>, "Billotto, Fred (GM)" <</td>

 frederick.billotto@gm.com>
 "Nichols, Mark A" <mark.a.nichols@delphi.com>, "Thompson, Joseph E" <joseph.thompson@gmch.com>, "Lotfalian, Hossein T" <hossein.lotfalian@gmch.com>, "Johnson, Jerry A" <jerry.johnson@gmch.com>, "Sharp, David" <david.sharp@delphi.com>, "Tallant, J C" <J.C.Tallant@delphi.com>

 Date:
 04/03/2012 09:31 AM

 Subject:
 Warranty Return from Florida

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Perhaps we already have this, but Joe Thompson is out this week and he may have the info, but I do not.

Thanks in Advance,

David E. White Senior Project Engineer

Delphi Electronics & Safety Systems Kokomo, IN USA Mail Stop CLLE Phone (765) 451-3798 Fax (765) 451-0137 Internet: david.e.white @ delphi.com

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Name: image001.gif Type: image/gif Size: 31125



Reena Datta/US/GM/GMC

04/04/2012 10:17 AM

To "Sharp, David" <david.sharp@delphi.com>

cc bcc

Subject APM return summary



eAssist\_APM\_Returns\_Summary\_04Apr2012.xlsx



Frederick Billotto/US/GM/GMC 04/05/2012 03:16 PM

- To "Sharp, David" <david.sharp@delphi.com>
- cc "White, David E" <David.E.White@delphi.com>, "Buehler, David P" <david.p.buehler@delphi.com>, "Tallant, J C" <J.C.Tallant@delphi.com>, "reena.datta@gm.com"

bcc

Subject Re: Meeting today

Dave,

I'll schedule a meeting for Monday at 1pm.

Regards,



Hybrid

# Hybrid Energy Storage

Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

From: "Sharp, David" <david.sharp@delphi.com>

To: "frederick.billotto@gm.com" <frederick.billotto@gm.com>, "stephen.farris@gm.com" <stephen.farris@gm.com>,

"reena.datta@gm.com" <reena.datta@gm.com>

Cc: "Evarian, Thomas Andrew" <Thomas.Andrew.Evarian@delphi.com>, "Buehler, David P" <david.p.buehler@delphi.com>, "Tallant, J C" <J.C.Tallant@delphi.com>, "White, David E" <David.E.White@delphi.com>, "Townsend, Terry A"

<terry.a.townsend@delphi.com>, "Turner, Steven R" <steven.r.turner@delphi.com>

Date: 04/05/2012 01:54 PM

Subject: Meeting today

#### Fred-

I just talked with Tom - while he has been working on the unit, he will likely not be finished by 4PM for a call.

I would recommend a call for 1PM on Monday as was discussed yesterday.

Please let me know if there is a problem with that. Thanks.

# **David Sharp**

Project Manager, Delphi E&S Phone: (765) 451-3170 Fax: (765) 451-3780 email: <u>david.sharp@delphi.com</u>

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04/05/2013 02:48 PM

To dan.schroeder@gmch.com, larry.burkholder@gmch.com

cc bcc

Subject Fw: Emailing: eAssist Summary of Approved Design Changes 23Apr2012.pptx

1 attachment



eAssist Summary of Approved Design Changes 23Apr2012.pptx

FYI - Supporting info on PV3 changes.

-----Forwarded by Reena Datta/US/GM/GMC on 04/05/2013 02:46PM -----(See attached file: eAssist Summary of Approved Design Changes 23Apr2012.pptx)



Kevin Diviney/US/GM/GMC 04/08/2013 07:52 AM To Daniel D. Cottrell/US/GM/GMC@GM, Gary Backs <gary.backs@gmch.com>, Daniel Weaver <daniel.weaver@gmch.com>, Reena cc

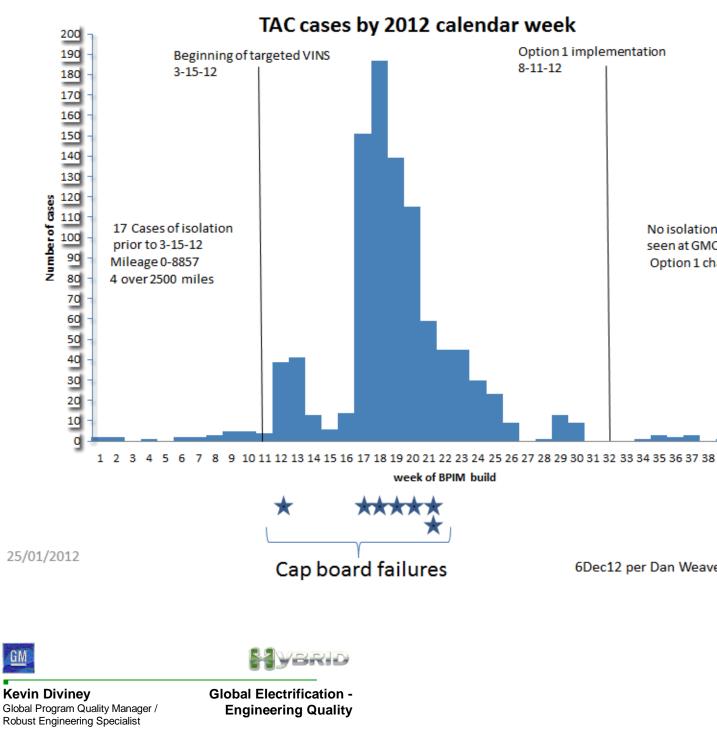
bcc

Subject Re: Data analysis definition for BPIM field issue.

Dan W,

This was another chart that was useful in understanding the issue. The thermal failures are a subset of the cap board failures. Is that still true?

# TAC cases by week of BPIM bu



**General Motors Corp.** 

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>

Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| Daniel D. ( | Cottrell                                                   | Doug, Below is the matrix of informa                               | 04/05/2013 06:01:34 PM |  |  |
|-------------|------------------------------------------------------------|--------------------------------------------------------------------|------------------------|--|--|
| From        | Dapiel                                                     |                                                                    |                        |  |  |
| From:       |                                                            | D. Cottrell/US/GM/GMC                                              |                        |  |  |
| To:         |                                                            | /achtel/US/GM/GMC@GM, gary.backs@gmch.c                            |                        |  |  |
| Cc:         | Stepher                                                    | Stephen Poulos/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM, Carmen |                        |  |  |
|             | Benavides/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Kevin |                                                                    |                        |  |  |
|             |                                                            | /US/GM/GMC@GM, William J. Kemp/US/GM/GMC@GM                        |                        |  |  |
|             |                                                            |                                                                    |                        |  |  |
| Date:       | 04/05/2                                                    | 013 06:01 PM                                                       |                        |  |  |
| Subject:    | Data an                                                    | alysis definition for BPIM field issue.                            |                        |  |  |



Contraction of the second statement of the second stat

Doug,

Below is the matrix of information that we would recommend to use to analyze the latest BPIM data. Please recognize that most board failures do not result in any perceptible thermal behavior, so that you may wish to develop a subcategory of board failures that do so.

Gary,

Doug's team may need your help on Monday to connect the warranty data to individual board failures. You have provided some of this information before, but we will need to have updates for the latest field issues.

[attachment "Data buckets required.xlsx" deleted by Kevin Diviney/US/GM/GMC]

|                                                                            |                                            |                                                                                                                    |                                            |                                                                                                                                                    | Data required to analyze field performance |                                     |                                            |                                      |                                            |                                      |                                           |
|----------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------------|--------------------------------------|--------------------------------------------|--------------------------------------|-------------------------------------------|
|                                                                            |                                            |                                                                                                                    |                                            |                                                                                                                                                    |                                            |                                     |                                            |                                      |                                            |                                      |                                           |
| SORP to Feb 2012<br>VINS covered by expanded SUB 12238<br>prior to red box |                                            | March to August 2012<br>(March to May GMCH build quality<br>issue)<br>VINs covered by initial October SUB<br>12238 |                                            | August - December 2012<br>(implement 2 layer power board)<br>vehicle built after ~August 15<br>VINs covered by expanded SUB 122<br>(after red box) |                                            | board)<br>st 15                     |                                            |                                      |                                            |                                      |                                           |
| Unscre                                                                     | eened                                      | Scre                                                                                                               | ened                                       | Unscreened Screened                                                                                                                                |                                            | Unscreened Screened                 |                                            |                                      |                                            |                                      |                                           |
| <b>Board Fail</b>                                                          | Still OK                                   | Board Fail                                                                                                         | Still OK                                   | Board Fail                                                                                                                                         | Still OK                                   | Board Fail                          | Still OK                                   | Board Fail                           | Still OK                                   | Board Fail                           | Still O                                   |
| #vehicles                                                                  | # vehicles                                 | # vehicles                                                                                                         | # vehicles                                 | # vehicles                                                                                                                                         | # vehicles                                 | #vehicles                           | # vehicles                                 | # vehicles                           | #vehicles                                  | # vehicles                           | #vehic                                    |
| mileage<br>distribution<br>@ failure                                       | current<br>average<br>mileage<br>estimate? | mileage<br>distribution<br>@ failure                                                                               | current<br>average<br>mileage<br>estimate? | mileage<br>distribution<br>@failure                                                                                                                | current<br>average<br>mileage<br>estimate? | mileage<br>distribution<br>@failure | current<br>average<br>mileage<br>estimate? | mileage<br>distribution<br>@ failure | current<br>average<br>mileage<br>estimate? | mileage<br>distribution<br>@ failure | current<br>average<br>mileage<br>estimate |
|                                                                            |                                            | mileage @<br>screen<br>rescreened                                                                                  |                                            |                                                                                                                                                    |                                            | mileage @<br>screen<br>rescreened   |                                            |                                      |                                            | mileage @<br>screen<br>rescreened    |                                           |
|                                                                            |                                            | after part<br>replace?                                                                                             |                                            |                                                                                                                                                    |                                            | after part<br>replace?              |                                            |                                      |                                            | after part<br>replace?               |                                           |

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771



Stephen Farris/US/GM/GMC

04/09/2012 10:56 AM

- To gary.backs@gmch.com, david.sharp@delphi.com
- cc Reena Datta/US/GM/GMC@GM, Brian T Marusak/US/GM/GMC@GM, DAVID P TASKY/US/GM/GMC@GM, Mehrdad

bcc

Subject Mounting boss desing reveiw

Gary, Dave,

Are we still having the mounting boss design review tomorrow.

Let me know if you need to use my call-in number and need me to set up a webex.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Hybrid Powertrain Engineering Cell: 248.515.2572



**{In Archive} Fw: Saint Cloud, MN 71-1057120754 FSE Meeting - MML 866-340-2763 access code 4703103. Frederick Billotto** to: david.sharp, Gary Backs, David.E.White 04/16/2012 05:00 PM C: Mehrdad Teimor, Reena Datta, Stephen Farris, Kevin Diviney, joseph.thompson, mark.a.nichols, David E. Miller,

Archive:

This message is being viewed in an archive.

# Dave and Gary,

We have an opportunity to talk directly with the Field Service Engineer investigating the Powerpack in MN that exhibits the same failure mode as the units currently undergoing failure analysis at Delphi. Please make sure that your key team members attend this meeting at noon tomorrow, are prepared with questions, and have reviewed the TAC report thoroughly. I've attached it here for your reference. We need to make the most of this opportunity. Thank you in advance for your support.



Carrie Harvey

16APR 12 71-1057120754 Gilleland Chevorlet.pdf

Regards,



Hybrid

Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

----- Forwarded by Frederick Billotto/US/GM/GMC on 04/16/2012 04:48 PM -----



# Saint Cloud, MN 71-1057120754 FSE Meeting - MML 866-340-2763 access code 4703103.

Tue 04/17/2012 12:00 PM - 1:00 PM

Attendance is for Frederick Billotto

Chair: Carrie Harvey/US/GM/GMC No Location Information

| Required: | Frederick Billotto/US/GM/GMC@GM, Mark W. Wright/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, Tony J.<br>Saliga/US/GM/GMC@GM |
|-----------|------------------------------------------------------------------------------------------------------------------------|
| Optional: | Kevin Diviney/US/GM/GMC@GM, Milton Martinez/US/GM/GMC@GM                                                               |

Description

Г

Meet with the FSE Reuben Gosewisch about TAC Case 71-1057120754.

The call-in number is 866-340-2763 with access code 4703103.

Personal Notes



Reena Datta/US/GM/GMC 04/16/2013 09:50 AM

| То | Brian 1 Ciaverella/C/US/GM/GMC@GM, Daniel Weaver         |
|----|----------------------------------------------------------|
|    | <daniel.weaver@gmch.com>, David</daniel.weaver@gmch.com> |
|    | Deal/US/GM/GMC@GM, David J.                              |
| CC |                                                          |

bcc

Subject eAssist - NTF Meeting Agenda, Apr 17, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

# Wednesday, April 17, 2013

3:00 PM - 4:00 PM EDT

#### Invitees (Attendees in Bold):

Brian Ciaverella, Daniel Weaver, David Deal, David J. Martin, Frank Schauerte, Frederick Billotto, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Kristin L Curran, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga, William L Aldrich, William Whitlock, Zachary Pieri

#### Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

#### Webex Meeting Information:

Meeting Link: https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMx MQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

#### **MEETING AGENDA**

| Ag | enda Item                                                      | Presenter | Time   |
|----|----------------------------------------------------------------|-----------|--------|
| 1. | Review Post-Option 1 Returns                                   | All       | 55 min |
| •  | Review Warranty Spreadsheet (including P1A6F, P0CA2) including |           |        |
|    | TAC and QIS2 history                                           |           |        |
|    | o Review Post-Option 1 returns including                       |           |        |
|    | BPIM#537 (1G4GC5ER7DF158635) and                               |           |        |
|    | BPIM#569 (1G11F5SR5DF149964)                                   |           |        |
| •  | Milford Activities                                             |           |        |
|    | • Update on P0CA2 and P1A6F Testing.                           |           |        |
| •  | Discuss Next Steps                                             |           |        |

| 2. | Round Table                                 | All | 5 min |  |  |
|----|---------------------------------------------|-----|-------|--|--|
| •  | Round Table Items                           |     |       |  |  |
| •  | Prioritize returns for next meeting         |     |       |  |  |
| •  | Next Meeting:                               |     |       |  |  |
|    | o Wednesday, May 1 <sup>st</sup> at 3PM EDT |     |       |  |  |



{In Archive} Fw: 2013 Malibu VIN # 1G11F5RR7DF 71-1057120754

Carrie Harvey to: Tony J. Saliga, Frederick Billotto, Reena Datta, Mark W. Wright, james.fortune Cc: Reuben Gosewisch, Brian 1 Ciaverella

04/17/2012 04:43 PM

Archive:

Forwarding Reuben's timeline. Please forward as required.

## Thanks again Reuben for all of your help!

Carrie

----- Forwarded by Carrie Harvey/US/GM/GMC on 04/17/2012 04:40 PM -----

| From:    | Reuben Gosewisch/C/US/GM/GMC                                   |
|----------|----------------------------------------------------------------|
| To:      | Carrie Harvey/US/GM/GMC@GM                                     |
| Cc:      | Brian 1 Ciaverella/C/US/GM/GMC@GM, Jeffrey Lobb/C/US/GM/GMC@GM |
| Date:    | 04/17/2012 04:14 PM                                            |
| Subject: | Re: Fw: 2013 Malibu VIN # 1G11F5RR7DF110296 71-1057120754      |

This message is being viewed in an archive.

Carrie,

Attached is a write up of the timeline from the dealership's perspective as requested from the conference call with engineering. I also got a copy of the delivery ticket for the vehicle and included the transport company information. I have photo copies of that, the RO and session logs if needed. The battery power pack was picked up by the shipper as well.

We test drove the vehicle again after lunch and it did not set any codes and the autostop/start functioned properly. The dealer will be releasing the vehicle to the new dealer through a trade.

Hope this information helps,

**Reuben Gosewisch** 

HP Enterprise Services Representing GM Customer Care & Aftersales Field Service Engineer (FSE) 24032 119th St. NW Elk River, MN 55330 Cell: (651) 295-4908 <u>Reuben.1.Gosewisch@GM.com</u> To learn more about how you can support the American automotive industry visit <u>www.GMFactsAndFiction.com</u>. GM...the global company that's proud to be American.



71-1057120754 DF110296 Timeline.docx



Stephen Farris/US/GM/GMC

04/17/2012 09:42 AM

- To Frederick Billotto/US/GM/GMC@GM
- cc David.E.White@delphi.com, david.sharp@delphi.com, gary.backs@gmch.com, Reena Datta/US/GM/GMC@GM, steven.r.turner@delphi.com

bcc

Subject Re: Tom Evarian information

Yes we can do review in PDT. I will put on agenda as first item.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Hybrid Powertrain Engineering Cell: 248.515.2572

#### -----Frederick Billotto/US/GM/GMC wrote: -----

To: "Sharp, David" <david.sharp@delphi.com>, Stephen Farris/US/GM/GMC@GM From: Frederick Billotto/US/GM/GMC Date: 04/17/2012 09:08AM Cc: "White, David E" <David.E.White@delphi.com>, "Backs, Gary L" <gary.backs@gmch.com>, "reena.datta@gm.com" <reena.datta@gm.com>, "stephen.farris@gm.com" <stephen.farris@gm.com>, "Turner, Steven R" <steven.r.turner@delphi.com> Subject: Re: Tom Evarian information

Steve,

Can we plan to do this review as part of the BPIM PDT?

Regards,





Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u> @gm.com

# Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

"Sharp, David" ---04/16/2012 05:26:28 PM---Fred- I just got done talking with Tom. He should have more information to present on Wednesday. I

From: "Sharp, David" <david.sharp@delphi.com> To: "frederick.billotto@gm.com" <frederick.billotto@gm.com> Cc: "stephen.farris@gm.com" <stephen.farris@gm.com>, "reena.datta@gm.com" <reena.datta@gm.com>, "White, David E" <David.E.White@delphi.com>, "Turner, Steven R" <steven.r.turner@delphi.com>, "Backs, Gary L" <gary.backs@gmch.com> Fred-

I just got done talking with Tom. He should have more information to present on Wednesday. It can be part of the APMBPIM PDT or a separate 4PM meeting.

Thanks.

# David Sharp

Project Manager, Delphi E&S Phone: (765) 451-3170 Fax: (765) 451-3780 email: david.sharp@delphi.com

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04/17/2013 08:56 AM

To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject BPIM#537

Hi Joe,

I suspect BPIM#537 may not have been shipped to Kokomo yet. I sent a note to Rick yesterday and he forwarded it to another one of our colleagues who would have shipped the unit. I have not seen a response from that colleague yet. I will let you know when I do.

Thank you for looking for the unit. If it was shipped, I would guess it probably would have been shipped within the last week or so. But please don't look any more until we know for sure it was sent.

Reena



04/17/2013 04:20 PM

To Len Chalawa/US/GM/GMC@GM

cc bcc

Subject Fw: BPIM #626 - P1B40

Hi - sorry. Meant to add you but hit send too quickly.

----- Forwarded by Reena Datta/US/GM/GMC on 04/17/2013 04:20 PM -----

From:Reena Datta/US/GM/GMCTo:Joseph Thompson <joseph.thompson@gmch.com>Date:04/17/2013 04:17 PMSubject:BPIM #626 - P1B40

Hi Joe,

Below is the TAC history on BPIM #626. Also attached is the SI procedure. Let me know if you'd like to discuss.

Reena

| Service Request Number | BPIM     | VIN         | Activity Created Date Time        | Activity Type                 | A        |
|------------------------|----------|-------------|-----------------------------------|-------------------------------|----------|
| 71-1145260398          | BPIM#626 | 1G4GA5ER8DF | 1/15/2013 17:24                   | TAC Inbound Call              | Di       |
|                        |          |             | 1/15/2013 17:34<br>1/16/2013 9:29 | TAC Alarm<br>TAC Inbound Call | 24<br>Di |
|                        |          |             | 1/16/2013 9:39                    | TAC Part Request              | co       |
|                        |          |             | 1/18/2013 11:28                   | TAC Outbound Call             | De       |
|                        |          |             | 1/22/2013 16:22                   | TAC Inbound Call              | Ca       |
|                        |          |             | 1/22/2013 16:23                   | SR Closed - Unlinked          | Ur       |

SI\_Procedure\_P1B40.pdf



04/23/2013 02:23 PM

- To Daniel Weaver <daniel.weaver@gmch.com>
- cc James Fortune <james.fortune@gmch.com> bcc

Subject Re: eAssist - return from 1G11D5RR8DF

Hi Dan,

Thank you for the update. No, no need to evaluate yet. I will let you know. For now, I will count this return as a PDT Hold and see what the guys up North say.

Thank you.

Reena

| Daniel Weaver                      | Yes we received that unit. It was plac                                                                                                                                                           | . 04/23/2013 02:10:50 PM |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| To:reena.daCc:James FDate:04/23/20 | Veaver <daniel.weaver@gmch.com><br/>atta@gm.com<br/>Fortune <james.fortune@gmch.com><br/>013 02:10 PM<br/>sist - return from 1G11D5RR8DF110569</james.fortune@gmch.com></daniel.weaver@gmch.com> |                          |
|                                    |                                                                                                                                                                                                  |                          |

Yes we received that unit. It was placed directly into warranty storage, no CPE analysis done, since it had 54miles on vehicle and was pre option 1. LQ68414112088604 pack identification. Day 88 was end of March 2012 build.

Do you need this unit evaluated?

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell: (765) 438-3281

Email: <u>daniel.weaver@gmch.com</u>

-----reena.datta@gm.com wrote: -----

To: Daniel Weaver <daniel.weaver@gmch.com> From: reena.datta@gm.com Date: 04/23/2013 10:59AM Subject: eAssist - return from 1G11D5RR8DF

Hi Dan,

Do you know if a return was received from VIN 1G11D5RR8DF ? If so, do you know what the state of its analysis is?

Thank you,

Reena

Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

Confidentiality Note: This message is intended only for the person or entity to which it is addressed. It may contain confidential and/or privileged material. Any review, transmission, dissemination or other use, or taking of any action in reliance upon this message by persons or entities other than the intended recipient is prohibited and may be unlawful. If you received this message in error, please contact the sender and delete it from your computer.

=



04/23/2013 03:58 PM

- To Kevin Diviney/US/GM/GMC@GM
- cc Daniel Weaver <daniel.weaver@gmch.com>, Gary Backs <gary.backs@gmch.com>, James Fortune <james.fortune@gmch.com>, len.chalawa@gm.com,

bcc

Subject Re: returns [ATTACHMENT REMOVED] [ATTACHMENT REMOVED]

Hi Kevin,

We do not have an NTF meeting scheduled for tomorrow. We can review those units during tomorrow's PDT warranty review, and then decide what next actions are needed.

Reena

| Kevin Diviney |        | Reena/Steve, Can you discuss these                               | 04/23/2013 03:56:02 PM                               |
|---------------|--------|------------------------------------------------------------------|------------------------------------------------------|
|               |        |                                                                  |                                                      |
| From:         | Kevin  | Diviney/US/GM/GMC                                                |                                                      |
| To:           | Danie  | el Weaver <daniel.weaver@gmch.com></daniel.weaver@gmch.com>      |                                                      |
| Cc:           | Gary   | Backs <gary.backs@gmch.com>, James Fortune</gary.backs@gmch.com> | e <james.fortune@gmch.com>,</james.fortune@gmch.com> |
|               |        | nalawa@gm.com, Reena Datta/US/GM/GMC@G                           |                                                      |
| Date:         | 04/23  | /2013 03:56 PM                                                   |                                                      |
| Subject:      | Re: re | eturns [ATTACHMENT REMOVED] [ATTACHMEI                           | NT REMOVED]                                          |

Reena/Steve,

Can you discuss these at your next PDT/NTF meeting? We need to determine the next steps to determine what was wrong with these vehicles. These are on FPE's radar.



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com

| Hybri | - |
|-------|---|
|       |   |
|       |   |

Global Electrification -Engineering Quality

#### General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

Daniel Weaver All three of the units you asked about,...

04/23/2013 03:29:54 PM



Stephen Farris/US/GM/GMC

04/24/2013 10:16 AM

To james.fortune@gmch.com

cc Reena Datta/US/GM/GMC@GM, DAVID P TASKY/US/GM/GMC@GM, Shinichiro Taki/US/GM/GMC@GM, Todd M York/US/GM/GMC@GM,

bcc

Subject Re: Updates as to SPCR 0043 HV\_Standby\_Current BPIM test limit update

Jim,

This change was approved in HPIT today 24APR13. Please let me know if you need any thing more to execute change.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----James Fortune <james.fortune@gmch.com> wrote: -----

To: "Stephen Farris" <stephen.farris@gm.com>, "reena datta" <reena.datta@gm.com> From: James Fortune <james.fortune@gmch.com> Date: 04/18/2013 02:32PM Subject: Updates as to SPCR 0043 HV\_Standby\_Current BPIM test limit update

Steve, Reena,

Per our discussion in the PDT yesterday, I made some updates based on Dan Schroeder and Dave Buehler's comments.

Jim

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC <u>http://kokomogmch.com</u> Phone: (765) 451-9558 Cell: (765) 451-9578 Cell: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of

this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

=

[attachment "SPCR 0043 BAS+ APM\_BPIM Functional Test 50030 HV\_Standby\_Current Limit Change.xls" removed by Stephen Farris/US/GM/GMC]



04/25/2012 09:24 AM

To "Nichols, Mark A" <mark.a.nichols@delphi.com>

cc "Thompson, Joseph E" <joseph.thompson@gmch.com>, "len.chalawa@gm.com" <len.chalawa@gm.com> bcc

Subject Re: eAssist\_APM\_Returns\_Summary\_25Apr2012.xlsx

Thank you, Mark, for your feedback. I have included your updates in the master spreadsheet.

Have a good afternoon,

Reena

| "Nichols, | Mark A"  | Updates in Yellow and Red *****                                                                | ***         | 04/25/2012 09:08:20 AM        |
|-----------|----------|------------------------------------------------------------------------------------------------|-------------|-------------------------------|
| _         |          |                                                                                                |             |                               |
| From:     | "Nichols | , Mark A" <mark.a.nichols@delphi.co< td=""><td>m&gt;</td><td></td></mark.a.nichols@delphi.co<> | m>          |                               |
| To:       |          | lawa@gm.com" <len.chalawa@gm.c<br>datta@gm.com&gt;</len.chalawa@gm.c<br>                       | om>, "Reena | L Datta (reena.datta@gm.com)" |
| Cc:       | "Thomp   | son, Joseph E" <joseph.thompson@g< td=""><td>mch.com&gt;</td><td></td></joseph.thompson@g<>    | mch.com>    |                               |
| Date:     |          | 012 09:08 AM                                                                                   |             |                               |
| Subject:  | eAssist_ | APM_Returns_Summary_25Apr2012                                                                  | 2.xlsx      |                               |

Updates in Yellow and Red

[attachment "eAssist\_APM\_Returns\_Summary\_25Apr2012.xlsx" deleted by Reena Datta/US/GM/GMC]



#### **{In Archive} Fw: Minnesota Warranty 43 initial pictures Frederick Billotto** to: Gary M. Insana, Jacob D Bylsma This message is being viewed in an archive.

04/25/2012 02:56 PM

Archive:

# Gary and Jake,

Attached are pictures of the Minnesota unit. We already knew this was suspect based on discussions with the Field Service Engineer. Pics confirm our suspicion.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

#### ----- Forwarded by Frederick Billotto/US/GM/GMC on 04/25/2012 02:51 PM -----

| From:    | Joseph Thompson <joseph.thompson@gmch.com></joseph.thompson@gmch.com>                                                                                                                                         |  |  |  |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| To:      | Hossein Lotfalian <hossein.lotfalian@gmch.com>, Gary Backs <gary.backs@gmch.com>, James Fortune <james.fortune@gmch.com>,</james.fortune@gmch.com></gary.backs@gmch.com></hossein.lotfalian@gmch.com>         |  |  |  |
|          | Daniel Weaver <daniel.weaver@gmch.com>, "Dave Sharp" <david.sharp@delphi.com>, "David E White" <david.e.white@delphi.com>,</david.e.white@delphi.com></david.sharp@delphi.com></daniel.weaver@gmch.com>       |  |  |  |
|          | "frederick billotto" <frederick.billotto@gm.com>, "reena datta" <reena.datta@gm.com>, "stephen farris" <stephen.farris@gm.com>, "len</stephen.farris@gm.com></reena.datta@gm.com></frederick.billotto@gm.com> |  |  |  |
|          | chalawa" <len.chalawa@gm.com>, "Teimor Mehrdad (GM)" <mehrdad.teimor@gm.com></mehrdad.teimor@gm.com></len.chalawa@gm.com>                                                                                     |  |  |  |
| Date:    | 04/25/2012 01:40 PM                                                                                                                                                                                           |  |  |  |
| Subject: | Minnesota Warranty 43 initial pictures                                                                                                                                                                        |  |  |  |

Attached are initial pictures of the Minnesota return (warranty 43) TAC 71-1057120754. The control board has not been removed at this time.

Joe Thompson Current Product Engineer Power Electronics GMCH Kokomo IN 765-451-7065 phone 317-670-1204 Cell



765-451-1667 Lab War43 025rs.jpg War43 022rs.jpg War43 024rs.jpg



Reena Datta/US/GM/GMC 04/25/2013 04:09 PM To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject Re: Fw: eAssist - P1B40

# FYI

Rick H Schroeder P1B40 is the Motor HVIL circuit. Ri... 04/25/2013 04:04:12 PM

From:Rick H Schroeder/US/GM/GMCTo:Tony J. Saliga/US/GM/GMCCc:Reena Datta/US/GM/GMC@GM, TONY H HOANG/US/GM/GMC@GMDate:04/25/2013 04:04 PMSubject:Re: Fw: eAssist - P1B40

P1B40 is the Motor HVIL circuit.

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com



Reena Datta/US/GM/GMC 04/25/2012 08:39 AM

| То | Mehrdad Teimor/US/GM/GMC@GM, Stephen |
|----|--------------------------------------|
|    | Farris/US/GM/GMC@GM, Frederick       |
|    | Billotto/US/GM/GMC@GM, Shinichiro    |
| СС |                                      |

bcc

Subject eAssist - Updated APM Return Summary

All,

Please see the updated summary of the recent APM returns attached below. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



eAssist\_APM\_Returns\_Summary\_25Apr2012.xlsx



## Kevin Diviney/US/GM/GMC

04/26/2013 11:23 AM

- To Len Chalawa/US/GM/GMC@GM
- cc Daniel Weaver <daniel.weaver@gmch.com>, Gary Backs <gary.backs@gmch.com>, James Fortune <james.fortune@gmch.com>, Reena

bcc

Subject Re: BPIMs of interest

Thanks Len. We need to do whatever investigation is necessary to confirm or eliminate board isolation as a root cause for these units.





Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

**Engineering Quality** 

**Global Electrification -**

| Len Chalawa |                                                  | BPIM # 544                                                                                                                              | - GMCH Buil  | d 7/23/12,  | Pr           | 04/26/2013 09:02:32 AM      |
|-------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|--------------|-----------------------------|
|             |                                                  |                                                                                                                                         |              |             |              |                             |
| From:       | Len Cł                                           | nalawa/US/GN                                                                                                                            | I/GMC        |             |              |                             |
| To:         | Kevin Diviney/US/GM/GMC@GM                       |                                                                                                                                         |              |             |              |                             |
| Cc:         | Daniel                                           | Weaver <dani< th=""><th>el.weaver@gr</th><th>nch.com&gt;, (</th><th>Gary Backs &lt;</th><th>gary.backs@gmch.com&gt;, James</th></dani<> | el.weaver@gr | nch.com>, ( | Gary Backs < | gary.backs@gmch.com>, James |
|             |                                                  |                                                                                                                                         |              |             |              | 1/GMC@GM, Stephen           |
|             | Poulos/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM |                                                                                                                                         |              |             |              |                             |
| Date:       |                                                  | 2013 09:02 AN                                                                                                                           | 2            | 5           |              |                             |
| Subject:    | Re: BF                                           | PIMs of interes                                                                                                                         | t            |             |              |                             |

BPIM # 544 - GMCH Build 7/23/12, Pre-option 1, low miles, campaign-12238, PDT Hold BPIM # 589 - GMCH Build 9/27/12, Post opt-1, P1A6F, Sys DTC, NTF

-----

Len Chalawa Sr. Reliability Engineer GM Milford Proving Grounds 248-928-6411 len.chalawa@gm.com

-----

Kevin Diviney Jim, Can you find out the results of th... 04/26/2013 08:51:51 AM

#### Len Chalawa/US/GM/GMC

To Kevin Diviney/US/GM/GMC@GM

04/26/2013 09:01 AM

cc Daniel Weaver <daniel.weaver@gmch.com>, Gary Backs <gary.backs@gmch.com>, James Fortune <james.fortune@gmch.com>, Reena

bcc

Subject Re: BPIMs of interest

BPIM # 544 - GMCH Build 7/23/12, Pre-option 1, low miles, campaign-12238, PDT Hold BPIM # 589 - GMCH Build 9/27/12, Post opt-1, P1A6F, Sys DTC, NTF

Len Chalawa

Sr. Reliability Engineer GM Milford Proving Grounds 248-928-6411 Ien.chalawa@gm.com

| Kevin Divi | Jim, Can you find out the results of th                                                                                                                                                   | 04/26/2013 08:51:51 AM |  |  |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--|--|
| From:      | Kevin Diviney/US/GM/GMC                                                                                                                                                                   |                        |  |  |
| То:        | James Fortune <james.fortune@gmch.com></james.fortune@gmch.com>                                                                                                                           |                        |  |  |
| Cc:        | Gary Backs <gary.backs@gmch.com>, Stephen Poulos/US/GM/GMC@GM, Daniel Weaver<br/><daniel.weaver@gmch.com>, Len Chalawa/US/GM/GMC@GM, Reena</daniel.weaver@gmch.com></gary.backs@gmch.com> |                        |  |  |
|            | Datta/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@G                                                                                                                                            | GM                     |  |  |
| Date:      | 04/26/2013 08:51 AM                                                                                                                                                                       |                        |  |  |
| Subject:   | BPIMs of interest                                                                                                                                                                         |                        |  |  |

Jim,

Can you find out the results of the analysis for BPIMs #589 and 544. If the analysis is not done we need to do it. I need to at least verify if these are isolation issues or not.



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>



Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Stephen Farris/US/GM/GMC

- 04/26/2013 10:28 AM
- To Tony J. Saliga/US/GM/GMC@GM
- cc gary.backs@gmch.com, Reena Datta/US/GM/GMC@GM bcc

. \_ \_ \_ .

Subject Re: Fw: BAS+ vehicles for Hot trip

Tony,

I spoke to Gary about this today. He will let us know when we can expect delivery of these instrumented units.

We need to know if you want all 5 of them instrumented or just 3. Also what is the last possible date for delivery to meeting the testing timing?

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----Tony J. Saliga/US/GM/GMC wrote: -----

To: Stephen Farris/US/GM/GMC@GM From: Tony J. Saliga/US/GM/GMC Date: 04/26/2013 07:47AM Subject: Fw: BAS+ vehicles for Hot trip

The PV4 BPIMs should be instrumented, at least 3 of them.

Thanks Anthony Saliga Lead Propulsion Development Engineer FWD eAssist Programs Pontiac North Powertrain Campus Building B Powertrain Global 823 Joslyn Road Pontiac, MI, 48340 MC 438-730-472 Ph: 248.670.8088

----- Forwarded by Tony J. Saliga/US/GM/GMC on 04/26/2013 07:45 AM -----

From: WILLIAM L ALDRICH/US/GM/GMC To: Tony J. Saliga/US/GM/GMC@GM Cc: Philip Brodzik/US/GM/GMC@GM, Roger Rademacher/US/GM/GMC@GM Date: 04/26/2013 07:42 AM Subject: Re: BAS+ vehicles for Hot trip Sent by: William L Aldrich

BAS+ vehicles for hot trip .... EW14IV27 - MY14 LaCrosse -- this is my first choice ES14IV61 - MY 14 E16 -- this is my 2nd choice both are fully instrumented.

Total # of BAS+ cars to include on Yuma only trip still TBD; but would be hard to justify more than 2.

Regards,

William L. Aldrich GMPT - Hybrid Powertrain Engineering Global Lead Hybrid Cal - BAS+ & BAS3 Hybrid Loc. MPG, Bld 16, 16A-1014 Milford Ph. (248) 431-9893 M/C 483-316-150 e-mail william.l.aldrich@gm.com

Tony J. Saliga---04/25/2013 03:34:32 PM---What BAS+ vehicles are going on the hot trip? I will be sending Phil a MGU that has the special wo

# {In Archive} BAS+ vehicles for Hot trip

| Tony J. Saliga | to: | WILLIAM L ALDRICH | 04/25/2013 03:34 PM |
|----------------|-----|-------------------|---------------------|
|                |     |                   |                     |

Cc: Philip Brodzik

Archive:

This message is being viewed in an archive.

What BAS+ vehicles are going on the hot trip? I will be sending Phil a MGU that has the special worst case rotor shaft interference. Please identify a vehicle that will be getting a lot of miles and will be going on the hot trip.

Thanks Anthony Saliga Lead Propulsion Development Engineer FWD eAssist Programs Pontiac North Powertrain Campus Building B Powertrain Global 823 Joslyn Road Pontiac, MI, 48340 MC 438-730-472 Ph: 248.670.8088



**Reena Datta/US/GM/GMC** 04/26/2013 09:54 AM To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject eAssist - P1B40 and P1AF0

Additional information:

P1B40 is the Motor HVIL circuit and HWIO is GetHWIO\_Pct\_HVIL2.. P1AF0 is also Motor (MGU) HVIL and HWIO is GetHWIO\_R\_HV\_BusPassIsoResist.



04/26/2013 04:14 PM

To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject Fw: 1G11D58R6DF TAC history

----- Forwarded by Reena Datta/US/GM/GMC on 04/26/2013 04:14 PM -----

| From:    | Reena Datta/US/GM/GMC         |
|----------|-------------------------------|
| To:      | Len Chalawa/US/GM/GMC@GM      |
| Date:    | 04/26/2013 09:42 AM           |
| Subject: | 1G11D58R6DF133391 TAC history |



Kevin Diviney/US/GM/GMC

04/27/2013 10:11 AM

To Reena Datta/US/GM/GMC@GM, James Fortune <james.fortune@gmch.com>, Len Chalawa/US/GM/GMC@GM, Gary Backs cc

bcc

Subject shipping info

Jim,

This version of the file has a column added to show the status of the part return. See column B. I am working on the master file to add a column to sort by the 88 NTSHA verbatims (used to be 53). I will send something later this morning.



12238 Analysis\_26APR13 - 11PM.xlsx



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



## Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

|              | Stephen<br>Poulos/US/GM/GMC<br>04/27/2013 10:16 AM                 |                            | Reena Datta/US/GM/GMC@GM, Sean E<br>Gleason/US/GM/GMC@GM, Mehrdad<br>Teimor/US/GM/GMC@GM<br>Kevin Diviney/US/GM/GMC@GM, Kristin L<br>Curran/US/GM/GMC@GM, Christopher<br>Janik/US/GM/GMC@GM, Bob Agresta/US/GM/GMC@GM, |
|--------------|--------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                                                    | Subject                    | Latest reference files, to help with this weekend's BPIM work                                                                                                                                                          |
|              | nannar far fan                 | Solodie verde Salada Barda | statestatestate "Annual of the contraction of the second second second second second second second second second                                                                                                       |
|              | M pictures.pptxeAssist_BPIM_risk<br>ded by Stephen Poulos/US/GM/GI |                            | xGMCH eAssist Service Update 27AP13.pptx<br>27/2013 10:09 AM                                                                                                                                                           |
| From:<br>To: | Kevin Diviney/US/GM/GMC<br>Stephen Poulos/US/GM/GM                 |                            |                                                                                                                                                                                                                        |

| To:      | Stephen Poulos/US/GM/GMC@ |
|----------|---------------------------|
| Date:    | 04/26/2013 03:39 PM       |
| Subject: | File                      |
|          |                           |

Stephen,

I just finished with this file. I have not had the chance to go over it with the fine tooth comb yet.



Population Risk Analysis\_26APR13 KD.xlsx



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Stephen Poulos/US/GM/GMC 04/27/2013 07:56 PM

| То | Bob Agresta/US/GM/GMC@GM, Christopher |
|----|---------------------------------------|
|    | Janik/ŬS/GM/GMC@GM, Daniel D.         |
|    | Cottrell/US/GM/GMC@GM, Doug           |
| СС |                                       |

bcc

s standard and see and

Subject Saturday evening draft - BPIM pitch



All,

Needs more work, but this version includes some of the changes we discussed tonight and wanted to get it to you so you can soak on the options.

Stephen

P

eAssist\_BPIM\_background\_and\_proposal.pptx



All,

OK, this version should include all updates we discussed yesterday, except for latest risk profiles which Kevin and Kristin are still working through. Please review all slides carefully to catch any errors or omissions so that we are ready to saw off on the draft at 4pm. Thanks again for everyone's continued efforts over the weekend.

Stephen



eAssist\_BPIM\_background\_and\_proposal.pptx



Stephen Poulos/US/GM/GMC 04/28/2013 06:50 PM To Bob Agresta/US/GM/GMC@GM, Christopher Janik/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Doug

bcc

ele texte le develope de la constance de la cons

Subject Final deck for 7 pm Sunday BPIM call





eAssist\_BPIM\_background\_and\_proposal.pptx



Reena Datta/US/GM/GMC 04/28/2013 09:03 PM

- To Sean E Gleason/US/GM/GMC@GM
- cc Gary Backs <gary.backs@gmch.com>, Mehrdad Teimor/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM

bcc

Subject Re: Lot Sizes

Hi Sean,

I had a very old slide from Jim Fortune, shown below. He highlights two suspect lots that had about 5000 boards each. There may be other board lots that Jim has identified since this slide was created.

In the presentation that Stephen Poulos just sent, he shows 36,331 vehicles in Bucket B (sold and unsold).

Reena

# **Board Lot Timeline**

- 09/210 5669 boards
  - 1 Failure
- 10/216 578 boards
   0 Failures
- 36/209 4982 boards
  - Board lot process through GMCH in March into early April
  - 4 Failures
- 59/209 2640 boards
  - 0 Failures
- ◆ 86/210 (5000+) boards
  - Board Lot process through GMCH May
  - 13 Failures



GM Components Holdings, LLC

4

Kol

Reena Datta DRE - GEN 1 APM, eAssist APM Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

| Sean E Gleason       | Reena, Gary, Can you provide data                                                                                          | 04/28/2013 08:39:19 PM |
|----------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------|
| To: Reen<br>Cc: Mehr | E Gleason/US/GM/GMC<br>a Datta/US/GM/GMC@GM, Gary Backs <gary.l<br>dad Teimor/US/GM/GMC@GM<br/>8/2013 08:39 PM</gary.l<br> | backs@gmch.com>        |

Reena, Gary,

Lot Sizes Sent by: Sean E Gleason

Subject:

Can you provide data on the size of circuit cards lots compared to the buckets?

\_\_\_\_\_

Sean Gleason Senior Manager - Global Electrification Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083



Reena Datta/US/GM/GMC 04/30/2013 09:40 AM

| То | Brian 1 Ciaverella/C/US/GM/GMC@GM, Daniel Weaver         |
|----|----------------------------------------------------------|
|    | <daniel.weaver@gmch.com>, David</daniel.weaver@gmch.com> |
|    | Deal/US/GM/GMC@GM, David J.                              |
| СС |                                                          |

bcc

Subject eAssist - NTF Meeting Agenda, May 01, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

# eAssist No Trouble Found Meeting

# Wednesday, May 01, 2013

3:00 PM - 4:00 PM EDT

#### Invitees (Attendees in Bold):

Brian Ciaverella, Daniel Weaver, David Deal, David J. Martin, Frank Schauerte, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Kristin L Curran, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga, William L Aldrich, William Whitlock, Zachary Pieri

#### Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

#### Webex Meeting Information:

Meeting Link: https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMx MQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

#### **MEETING AGENDA**

| Ag | enda Item                                                       | Presenter | Time   |
|----|-----------------------------------------------------------------|-----------|--------|
| 1. | Review Post-Option 1 Returns                                    | All       | 55 min |
| •  | Review Warranty Spreadsheet (including P1A6F, P0CA2) plus TAC   |           |        |
|    | and QIS2 history                                                |           |        |
| •  | Milford Activities                                              |           |        |
|    | o P0CA2 Testing - Last update: Waiting for bench time to retest |           |        |
|    | BPIM#349 and BPIM#560 with a functional CAN log file.           |           |        |
|    | o P1A6F Testing - Last update: Not started yet due to P0CA2     |           |        |
|    | testing.                                                        |           |        |
| •  | Discuss Next Steps                                              |           |        |

| 2. | Round Table                                  | All | 5 min |
|----|----------------------------------------------|-----|-------|
| •  | Round Table Items                            |     |       |
| •  | Prioritize returns for next meeting          |     |       |
| •  | Next Meeting:                                |     |       |
|    | o Wednesday, May 15 <sup>th</sup> at 3PM EDT |     |       |



#### {In Archive} Re: Fw: Transport of e-assist Malibu from South Carolina to MPG 🗎

Archive:

**Stephen Poulos** to: Gary Backs Cc: Tony J. Saliga, Kevin Diviney, Christopher Janik, Sean E Gleason 04/30/2013 08:32 AM

This message is being viewed in an archive.

Gary,

Sounds good. Thanks,

Stephen

| Gary Backs                        | Frank resides at Milford, After cover is remove                                                                                                                              | 04/30/2013 08:28:52 AM |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:<br>To:<br>Date:<br>Subject: | Gary Backs <gary.backs@gmch.com><br/>stephen.poulos@gm.com<br/>04/30/2013 08:28 AM<br/>Re: Fw: Transport of e-assist Malibu from South Carolina to MPG</gary.backs@gmch.com> |                        |

Frank resides at Milford, After cover is removed initial assessment can be made.

### Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

-----stephen.poulos@gm.com wrote: -----To: Gary Backs <gary.backs@gmch.com> From: stephen.poulos@gm.com Date: 04/30/2013 08:17AM Cc: carmen.benavides@gm.com, christopher.janik@gm.com, doug.wachtel@gm.com, frank.schauerte@gm.com, Joseph Thompson <joseph.thompson@gmch.com>, kevin.diviney@gm.com, kristin.curran@gm.com, mehrdad.teimor@gm.com, sean.gleason@gm.com, tony.j.saliga@gm.com, William Whitlock <william.whitlock@gmch.com>, louis.carlin@gm.com Subject: Re: Fw: Transport of e-assist Malibu from South Carolina to MPG

Gary,

I think it will be important to assess on the spot in Milford which board failed or if a totally different cause was involved. If you need Frank to be present and to help perform the examination, then he should plan to be in Milford early Wed. Further root cause can happen in Kokomo, but we need the basic assessment done Wed, please. Thanks,

This all assumes that release signatures were in fact obtained Monday evening and that the vehicle will

arrive in Milford during the day Wed. Lou Carlin, can you please confirm status?

Thanks,

Stephen

 From:
 Gary Backs <gary.backs@gmch.com>

 To:
 stephen.poulos@gm.com

 Cc:
 carmen.benavides@gm.com, christopher.janik@gm.com, doug.wachtel@gm.com, kevin.diviney@gm.com,

 Kristin.curran@gm.com, mehrdad.teimor@gm.com, sean.gleason@gm.com, tony.j.saliga@gm.com, frank.schauerte@gm.com,

 Joseph Thompson <joseph.thompson@gmch.com>, William Whitlock <william.whitlock@gmch.com>

 Date:
 04/30/2013 07:58 AM

 Subject:
 Re: Fw: Transport of e-assist Malibu from South Carolina to MPG

Stephen,

Frank Schauerte, copied on this email, will contact Tony to support initial analysis of vehicle and arrange logistics of PP to Kokomo.

Please copy him on correspondence regarding this issue.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

-----stephen.poulos@gm.com wrote: -----To: carmen.benavides@gm.com From: stephen.poulos@gm.com Date: 04/29/2013 04:07PM Cc: christopher.janik@gm.com, doug.wachtel@gm.com, kevin.diviney@gm.com, kristin.curran@gm.com, tony.j.saliga@gm.com, mehrdad.teimor@gm.com, sean.gleason@gm.com, Gary Backs <gary.backs@gmch.com> Subject: Fw: Transport of e-assist Malibu from South Carolina to MPG

Carmen,

Just spoke with Tony. Looks like they are expecting papers signed this evening, allowing vehicle to be here some time Wed. Unless plan for signature falls apart, we should probably proceed with shipment, as by the time we send someone to NC it will be end of day Tuesday, dealer closing, and maybe no real work til Wed anyway. Roughly an 11 hour drive. We can do much more with it here. May need GMCH folks to meet us in Milford for part pickup after basic check at MPG. Latest ...

Advise if these plans won't work for your dialogue with NHTSA. Thanks,

#### Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 04/29/2013 03:56 PM -----

 From:
 Tony J. Saliga/US/GM/GMC

 To:
 Stephen Farris/US/GM/GMC@GM, gary.backs@gmch.com, Stephen Poulos/US/GM/GMC@GM, Reena

 Datta/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, Daniel D.

 Cotrell/US/GM/GMC@GM, Philip Brodzik/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, BRUCE B

 WILLIS/US/GM/GMC@GM, Kelli Mandeville/US/GM/GMC@GM, Karen L. Stewart/US/GM/GMC@GM

 Cc:
 Glenn A. Jackson/US/GM/GMC@GM, Louis Carlin/US/GM/GMC@GM, Kelly Kufel/C/US/GM/GMC@GM, Chris

 Roffey/C/US/GM/GMC@GM, Ryan Brown/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM

 Date:
 04/29/2013 03:00 PM

 Subject:
 Fw: Transport of e-assist Malibu from South Carolina to MPG

We are expecting the vehicle to arrive at MPG on Wednesday May 1. We would like to have a look inside the BPIM before Friday so as to draw some conclusions about the failure. Stephen would like to have this information for a meeting on Fri. We know this pack set a POCA2 3 months prior to incident. Gary, can you please make arrangements to have someone at MPG on Wednesday through Thursday to help gain as much information as possible. This person can then hand carry the power pack to GMCH for further analysis.

Kelly Kufel please keep this distribution up to date if deliver details change.

The vehicle will be in a special garage in building 16 per Kelli Mandeville.

Thanks Anthony Saliga Lead Propulsion Development Engineer FWD eAssist Programs Pontiac North Powertrain Campus Building B Powertrain Global 823 Joslyn Road Pontiac, MI, 48340 MC 438-730-472 Ph: 248.670.8088

----- Forwarded by Tony J. Saliga/US/GM/GMC on 04/29/2013 02:39 PM -----

 From:
 Glenn A. Jackson/US/GM/GMC

 To:
 Tony J. Saliga/US/GM/GMC@GM

 Cc:
 Louis Carlin/US/GM/GMC@GM

 Date:
 04/29/2013 02:31 PM

 Subject:
 Re: Transport of e-assist Malibu from South Carolina to MPG

Checking on status of transaction for us to get vehicle and transport. We need the owner (and owner attorney) to complete some steps before we can take possession and get it on the road to MPG.

Because of that, if we can't complete the transaction to get it on the road by end of day tomorrow - it may make more sense to hold it there until you can send someone to take a look.

Will follow up when there is more info.

Glenn A. Jackson Attorney **GM Legal Staff** Ph: 313-665-7518 Email: glenn.jackson@gm.com 400 Renaissance Center, P.O. Box 400, Detroit, MI 48265-4000 M.C. 482-026-601

 From:
 Tony J. Saliga/US/GM/GMC

 To:
 Glenn A. Jackson/US/GM/GMC@GM

 Cc:
 Louis Carlin/US/GM/GMC@GM

 Date:
 04/29/2013 01:42 PM

 Subject:
 Re: Transport of e-assist Malibu from South Carolina to MPG

We need to look at this vehicle before Fri. Can you tell me when it will arrive at MPG. If shipping is delayed we may elect to send someone to the dealer.

Thanks Anthony Saliga Lead Propulsion Development Engineer FWD eAssist Programs Pontiac North Powertrain Campus Building B Powertrain Global 823 Joslyn Road Pontiac, MI, 48340 MC 438-730-472 Ph: 248.670.8088

 From:
 Glenn A. Jackson/US/GM/GMC

 To:
 Tony J. Saliga/US/GM/GMC@GM

 Cc:
 Louis Carlin/US/GM/GMC@GM

 Date:
 04/29/2013 12:14 PM

 Subject:
 Transport of e-assist Malibu from South Carolina to MPG

We can arrange covered transport in one of 2 ways: 1) Tarp covering during transport (which includes taping over all vehicle/mfg logos on the exterior of the vehicle under the tarp); or, 2) Transport in an enclosed carrier. Enclosed carrier transport will cost an additional \$1000.

Please advise if necessary to use enclosed carrier transport.

Glenn A. Jackson

Attorney GM Legal Staff Ph: 313-665-7518 Email: glenn.jackson@gm.com 400 Renaissance Center, P.O. Box 400, Detroit, MI 48265-4000 M.C. 482-026-601 Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

Confidentiality Note: This message is intended only for the person or entity to which it is addressed. It may contain confidential and/or privileged material. Any review, transmission, dissemination or other use, or taking of any action in reliance upon this message by persons or entities other than the intended recipient is prohibited and may be unlawful. If you received this message in error, please contact the sender and delete it from your computer.

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=

=



04/30/2013 02:41 PM

To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject eAssist - units Kevin requested

Hi Joe,

These are the units Kevin was investigating:

Powerpack 408 - P1AF0 BPIM #560 - in Milford BPIM #626 - P1B40 BPIM #589 - P1A6F BPIM #544 - MOSFET Driver

Reena



Karen L. Stewart/US/GM/GMC 05/01/2013 01:13 PM

- To Tony J. Saliga/US/GM/GMC@GM
- cc BRUCE B WILLIS/US/GM/GMC@GM, Chris Roffey/C/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, gary.backs@gmch.com, Glenn bcc

Subject Re: Fw: Transport of e-assist Malibu from South Carolina to MPG 🗎

ETA is today between 3 - 4 p.m.

#### KAREN L. STEWART // PROGRAM RESOURCE MANAGER General Motors Milford Proving Ground 3300 General Motors Road Milford, MI 48380 CELL: 248 953-7356

| Tony J. Sal | iga V     | Ve are expecting the     | vehicle to arrive     | . (       | 04/29/2013 03:0 | 00:24 PM       |
|-------------|-----------|--------------------------|-----------------------|-----------|-----------------|----------------|
|             |           |                          |                       |           |                 |                |
| From:       | Tony J. S | Saliga/US/GM/GMC         |                       |           |                 |                |
| To:         | Stephen   | Farris/US/GM/GMC@        | GM, gary.backs@g      | mch.com,  | Stephen Poulos/ | /US/GM/GMC@GM, |
|             | Reena D   | atta/US/GM/GMC@GN        | M, Sean E Gleason/    | /US/GM/G  | MC@GM, Mehro    | lad            |
|             | Teimor/L  | JS/GM/GMC@GM, Da         | niel D. Cottrell/US/0 | GM/GMC@   | ₽GM, Philip     |                |
|             | Brodzik/l | US/GM/GMC@GM, Ke         | vin Diviney/US/GM     | /GMC@G    | M, BRUCE B      |                |
|             | WILLIS/U  | JS/GM/GMC@GM, Ke         | lli Mandeville/US/G   | M/GMC@    | GM, Karen L.    |                |
|             | Stewart/I | US/GM/GMC@GM             |                       |           |                 |                |
| Cc:         | Glenn A.  | Jackson/US/GM/GMC        | @GM, Louis Carlin     | n/US/GM/G | GMC@GM, Kelly   |                |
|             |           | JS/GM/GMC@GM, Ch         |                       |           |                 |                |
|             | Kristin L | Curran/US/GM/GMC@        | PGM                   |           | ·               |                |
| Date:       | 04/29/20  | 13 03:00 PM              |                       |           |                 |                |
| Subject:    | Fw: Tran  | sport of e-assist Malibu | u from South Caroli   | na to MPG |                 |                |

We are expecting the vehicle to arrive at MPG on Wednesday May 1. We would like to have a look inside the BPIM before Friday so as to draw some conclusions about the failure. Stephen would like to have this information for a meeting on Fri. We know this pack set a POCA2 3 months prior to incident. Gary, can you please make arrangements to have someone at MPG on Wednesday through Thursday to help gain as much information as possible. This person can then hand carry the power pack to GMCH for further analysis.

Kelly Kufel please keep this distribution up to date if deliver details change. The vehicle will be in a special garage in building 16 per Kelli Mandeville.

Thanks Anthony Saliga Lead Propulsion Development Engineer FWD eAssist Programs Pontiac North Powertrain Campus Building B Powertrain Global 823 Joslyn Road Pontiac, MI, 48340 MC 438-730-472 Ph: 248.670.8088

----- Forwarded by Tony J. Saliga/US/GM/GMC on 04/29/2013 02:39 PM -----

| From:    | Glenn A. Jackson/US/GM/GMC                                  |
|----------|-------------------------------------------------------------|
| To:      | Tony J. Saliga/US/GM/GMC@GM                                 |
| Cc:      | Louis Carlin/US/GM/GMC@GM                                   |
| Date:    | 04/29/2013 02:31 PM                                         |
| Subject: | Re: Transport of e-assist Malibu from South Carolina to MPG |

Checking on status of transaction for us to get vehicle and transport. We need the owner (and owner attorney) to complete some steps before we can take possession and get it on the road to MPG.

Because of that, if we can't complete the transaction to get it on the road by end of day tomorrow - it may make more sense to hold it there until you can send someone to take a look.

Will follow up when there is more info.

Glenn A. Jackson

Attorney GM Legal Staff Ph: 313-665-7518 Email: glenn.jackson@gm.com 400 Renaissance Center, P.O. Box 400, Detroit, MI 48265-4000 M.C. 482-026-601

| Tony J. Saliga   | We need to look at this vehicle before | 04/29/2013 01:42:09 PM |
|------------------|----------------------------------------|------------------------|
| Glenn A. Jackson | We can arrange covered transport i     | 04/29/2013 12:14:30 PM |



#### {In Archive} Fw: eAssist - Updated APM Return Summary

Frederick Billotto to: Gary Backs, Hossein Lotfalian, Stephen Farris, Reena Datta, Mehrdad Teimor This message is being viewed in an archive.

#### Team,

Archive:

Following up on an action item from our last FA meeting.....The document attached in the email below lists the RPOs for each of the effected VINs. Please review.

Regards,

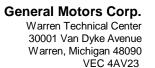


WVBRID

Hybrid Energy Storage

**Fred Billotto** Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com



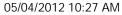
----- Forwarded by Frederick Billotto/US/GM/GMC on 05/04/2012 10:21 AM -----

| From:    | David Motzny/US/GM/GMC                       |
|----------|----------------------------------------------|
| To:      | Frederick Billotto/US/GM/GMC@GM              |
| Cc:      | Jacob D Bylsma/US/GM/GMC@GM                  |
| Date:    | 05/04/2012 08:52 AM                          |
| Subject: | Re: Fw: eAssist - Updated APM Return Summary |

Attached file with worksheets added for each VIN -



eAssist\_APM\_Returns\_Summary\_20Apr2012.xlsx



David Motzny Product Development Quality Program Quality Engineer GMX 353

- 🖀 Tel: 248-978-4475
- Fax: 586-492-2564
- Mail: <u>david.motzny@gm.com</u>
- 😥 Mail code: 480-210-G18

| Frederick Billotto           |                                                                                        | Dave, We are trying to root cause a series of auxiliary power module (APM) f | 05/03/2012 05:58:03 PM |
|------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------|
| From:<br>To:<br>Cc:<br>Date: | Frederick Billotto/US<br>David Motzny/US/G<br>Jacob D Bylsma/US<br>05/03/2012 05:58 Pl | M/GMC@GM<br>/GM/GMC@GM                                                       |                        |
| Subject:                     | Fw: eAssist - Update                                                                   | ed APM Return Summary                                                        |                        |

#### Dave,

We are trying to root cause a series of auxiliary power module (APM) failures. Our team would like to know what options are on each of the affected vehicles. The attachment contains 6 VIN numbers. Can you provide the options codes applied to each vehicle?

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

#### ----- Forwarded by Frederick Billotto/US/GM/GMC on 05/03/2012 05:53 PM -----

| From:    | Reena Datta/US/GM/GMC                                                                                 |
|----------|-------------------------------------------------------------------------------------------------------|
| To:      | Mehrdad Teimor/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Shinichiro |
|          | Taki/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, Carrie Harvey/US/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM   |
| Date:    | 04/20/2012 01:08 PM                                                                                   |
| Subject: | eAssist - Updated APM Return Summary                                                                  |

#### All,

Please see the summary spreadsheet of the recent APM returns, updated with the most recent TAC case from Jackson, MS. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137

[attachment "eAssist\_APM\_Returns\_Summary\_20Apr2012.xlsx" deleted by David Motzny/US/GM/GMC]



05/04/2013 04:50 PM

- To "Gary Backs/GMch" <gary.backs@gmch.com>
- cc Bob Agresta/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, Sean E

bcc

Subject Re: eAssist: Contacter Test Results & Analysis (866-226-3606 / 4515278)



eAssist\_Contactor\_Testing\_04May2013.pptx



05/07/2013 12:32 PM

To Dan Schroeder <dan.schroeder@gmch.com>

cc bcc

Subject presentation



eAssist\_Contactor\_Testing\_04May2013.pptx



05/07/2013 03:21 PM

To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject Scope Data from this Weekend's Testing

Hi Joe,

Rick Schroeder asked for the scope data from this weekend's testing. Would you be able to zip it and send it to me?

Thank you,

Reena



05/07/2013 11:52 AM

- To Sean E Gleason/US/GM/GMC@GM
- cc Cole Buttry <cole.buttry@gmch.com>, Gary Backs <gary.backs@gmch.com>, Sean E Gleason/US/GM/GMC@GM

bcc

Subject Re: Fw: Today's VOQ & VIN

Here is the PP SN:

LQ72204112250517

Could you please info on the build including build date and Nanya lot numbers?

Thank you, Reena

| Sean E Gleason Need to deep dive this VIN asap 05/07/2013 11:14:03 AM |
|-----------------------------------------------------------------------|
|-----------------------------------------------------------------------|

| From:    | Sean E Gleason/US/GM/GMC                                                                      |
|----------|-----------------------------------------------------------------------------------------------|
| To:      | Reena Datta/US/GM/GMC@GM, Gary Backs <gary.backs@gmch.com>, Cole Buttry</gary.backs@gmch.com> |
|          | <cole.buttry@gmch.com></cole.buttry@gmch.com>                                                 |
| Date:    | 05/07/2013 11:14 AM                                                                           |
| Subject: | Fw: Today's VOQ & VIN                                                                         |
| Sent by: | Sean E Gleason                                                                                |

#### Need to deep dive this VIN asap.

Sean Gleason Senior Manager - Global Electrification Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083

----- Forwarded by Sean E Gleason/US/ATD/GMC on 05/07/2013 11:13 AM -----



Carmen Benavides/US/GM/GMC 05/07/2013 11:08 AM

- To Sean E Gleason/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM cc Christopher Janik/US/GM/GMC

Subject Today's VOQ & VIN

Hi All, The VIN and other detail:

1G4GA5ER4DF

WINEGARDNER BUICK-GMC OF

BRANDYWINE 15113 CRAIN HWY BRANDYWINE MD 20613-8022 3013728900

Date Complaint Filed: 05/06/2013 Component(s): ELECTRICAL SYSTEM , UNKNOWN OR OTHER Date of Incident: 04/06/2013 NHTSA ID Number: 10510864

#### Vehicle MakeModelModel Year(s)

BUICK LACROSSE 2013 Crash:No Fire:Yes Number of Injuries:0 Number of Deaths:0 Manufacturer: General Motors LLC Vehicle Identification No. (VIN): 1G4GA5ER4DF...

#### SUMMARY:

4/6/2013 MY 2013 BUICK LACROSSE 4CYCL EASSIST MODEL WAS PARKED IN DRIVEWAY. AT 9PM MY HUSBANI FROM THE CAR AND SAW THE CAR ON FIRE WITH FLAMES COMING FROM THE BACKEND REAR BUMPER. BY PUT OUT THE FIRE, THE BACK BUMPER, THE REAR SIDE ON THE PASSENGER SIDE AND THE REAR TAIL LIGH THE CAR HAS BEEN IN THE BODY SHOP SINCE 4/8/2013 AND NO WORK CAN BE DONE BECAUSE THE SHOP CA GM. THE PART IS THE WIRING HARNESS FOR THE EASSIST AND GM DOES NOT HAVE THIS PART IN THEIR PA CONTACTED GM CUSTOMER SERVICE AND WAS TOLD THAT THE DEALER CAN ORDER THE PART ONLY NO O WILL BE AVAILABLE. I WAS TOLD IT COULD BE TWO WEEKS OR 6 MONTHS. THE WIRING HARNESS IS WIRED STOCK ON HAND FOR THEIR ASSEMBLY LINE. UNTIL I SAW THE 5/6/2013 ARTICLE ON THE FIRE RISK ASSOCIA THOUGHT THAT THIS WAS ARSON. I NOW BELIEVE THAT I AM DEALING WITH A DEFECTIVE CAR AND NO ONE FOUND THE ARTICLE AS A RESULT OF A WEB SEARCH. I HAVE BEEN WITHOUT MY CAR FOR ONE MONTH ANI TRIED TO WORK WITH THE DEALER TO GET DEFINITIVE INFORMATION ON WHEN PART CAN BE AVAILABLE. T WIRING HARNESS PRIOR TO THE BODY SHOP DOING ANY WORK. NOW BASED ON TIS RECALL, I SUSPECT TH TOO COINCIDENTAL!

Dwayne Davidson GM Product Investigations TREAD Act Reporting Phone/Cell: (586) 596-2062 email: dwayne.davidson@gm.com

Best Regards,

M. Carmen Benavides Director- Product Investigations, Safety Regulations & Certification, Field Performance cell 248-535-5302



Reena Datta/US/GM/GMC 05/08/2013 09:35 AM To James Fortune <james.fortune@gmch.com>, Daniel Weaver <daniel.weaver@gmch.com>, Len Chalawa/US/GM/GMC@GM

CC

bcc

Subject eAssist TAC 71-1142153998 / VIN 1G11D5RR9DF

Hi Guys,

There is a BPIM that is at the WPC right now and will be en route to Kokomo. (TAC 71-1142153998 / VIN 1G11D5RR9DF

The vehicle it came from had a system voltage of >18V. Could you please let me know when it is received and what the rootcause is? If possible, please include Tony Saliga in your update.

Thank you, Reena



05/09/2013 08:40 AM

To Dan Schroeder <dan.schroeder@gmch.com>

cc bcc

Subject Re: new data

Hi Dan,

Thank you for sending the data and the presentation with email description in your separate email. I was not invited to the 4PM call that you mention below and wanted to hear how that discussion went. Do you have time today to discuss? Please let me know.

Thank you, Reena

| Dan Schroeder | Attached is a revised presentation of                                     | 05/08/2013 02:44:54 PM |
|---------------|---------------------------------------------------------------------------|------------------------|
|               | nroeder <dan.schroeder@gmch.com><br/>atta@gm_com</dan.schroeder@gmch.com> |                        |

To:reena.datta@gm.comDate:05/08/2013 02:44 PMSubject:new data

Attached is a revised presentation of our studies. Especially look at page 7. Call me on my cell phone when you are ready to talk about it. I do not want you to get too far into it before I walk you through the fine points. We may use for today's 4PM discussion.

Daniel Schroeder Electrical Engineer <u>dan.schroeder@gmch.com</u> 765-451-4617 cell: 765-432-5437[attachment "eAssist HV Capability.xlsx" deleted by Reena Datta/US/GM/GMC]



Reena Datta/US/GM/GMC 05/09/2012 08:44 AM

| То | Mehrdad Teimor/US/GM/GMC@GM, Stephen |
|----|--------------------------------------|
|    | Farris/US/GM/GMC@GM, Frederick       |
|    | Billotto/US/GM/GMC@GM, Shinichiro    |
| СС |                                      |

bcc

Subject eAssist - Updated APM Return Summary

All,

Please see the updated summary of the APM related returns attached below. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



eAssist\_APM\_Returns\_Summary\_09May2012.xlsx



**Reena Datta/US/GM/GMC** 05/23/2013 08:24 AM To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject Test Summary

Hi Joe,

Let me know if you have time later today to fill in yesterday's testing details.

Reena



eAssist\_P0BFD\_Test-Summary\_22May2013.pptx



05/24/2013 08:14 AM

To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject Re: New code confirmation

Hi Joe,

I don't have a way to compare the software. Hopefully Rick or someone he knows can get that done.

Perhaps we can talk around 9AM.

Reena

| Joseph Th | nompson   | Rick, Reena, during our testing to                                                    | 05/23/2013 08:06:23 PM                                         |
|-----------|-----------|---------------------------------------------------------------------------------------|----------------------------------------------------------------|
| From:     |           | nompson <joseph.thompson@gmch.com></joseph.thompson@gmch.com>                         |                                                                |
| To:       |           | ey <ernie.fraley@gmch.com>, "reena datta<br/>oeder@GM.COM&gt;</ernie.fraley@gmch.com> | a" <reena.datta@gm.com>, "rick schroeder"</reena.datta@gm.com> |
| Date:     | 05/23/201 | 3 08:06 PM                                                                            |                                                                |
| Subject:  | New code  | confirmation                                                                          |                                                                |

Rick, Reena, during our testing today we had failures and we would like to confirm the attached PTP files that we used. I pulled the code from a unit Ernie had programmed on the car. We then used this for the rest of the units we ran. If you have some time can you confirm if it is correct.

Reena, I will try to get with you in the morning.

Thanks Joe Thompson Current Product Engineer Power Electronics GMCH Kokomo IN 765-451-7065 phone 317-670-1204 Cell[attachment "Rick Schroeder PTP.piz" deleted by Reena Datta/US/GM/GMC]



05/24/2013 11:35 AM

To Rick H Schroeder/US/GM/GMC@GM, Joseph Thompson <joseph.thompson@gmch.com>, William Whitlock <william.whitlock@gmch.com>, Ernie Fraley сс

bcc

Subject Test Summary

eAssist\_P0BFD\_Test-Summary\_24May2013.pptx



Rick H Schroeder/US/GM/GMC 05/28/2013 04:35 PM

- To Ernie Fraley <ernie.fraley@gmch.com>
- cc Joseph Thompson <joseph.thompson@gmch.com>, "reena datta" <reena.datta@gm.com>, William Whitlock <william.whitlock@gmch.com>

bcc

Subject Re: New code confirmation

Thanks! that should make it easier for me to understand the GDS2 data

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com

 From:
 Ernie Fraley <ernie.fraley@gmch.com>

 To:
 Joseph Thompson <joseph.thompson@gmch.com>, William Whitlock <william.whitlock@gmch.com>, "reena datta"

 <reena.datta@gm.com>, rick.schroeder@gm.com

 Date:
 05/28/2013 03:30 PM

 Subject:
 Re: New code confirmation

I added the times to each test below so you can correlate the test runs to the data.

Ernie Fraley Sr. System Engineer General Motors, GMCH-Kokomo 765-451-4614 ernie.fraley@gmch.com

#### -----Ernie Fraley/GMch wrote: -----

To: rick.schroeder@gm.com From: Ernie Fraley/GMch Date: 05/28/2013 01:39PM Cc: Joseph Thompson/GMch@GMch, "reena datta" <reena.datta@gm.com>, William Whitlock/GMch@GMch Subject: Re: New code confirmation

Rick,

See attached file. Also the below notes correspond to the data capture:

| 12:57pm Test 7 | Data Captured    |
|----------------|------------------|
| 1:52pm Test 8  | No Data Captured |
| 2:56pm Test 9  | No Data Captured |
| n/a Test 10    | No Data Captured |
| 3:28pm Test 11 | Data Captured    |
| 3:49pm Test 12 | Data Captured    |
| 4:30pm Test 13 | Data Captured    |

POBFD

P0C78 No Codes Set P0C76, P0C0B

Regards,

Ernie Fraley Sr. System Engineer General Motors, GMCH-Kokomo 765-451-4614 ernie.fraley@gmch.com

-----rick.schroeder@gm.com wrote: -----

To: Ernie Fraley <ernie.fraley@gmch.com> From: rick.schroeder@gm.com Date: 05/28/2013 01:11PM Cc: Joseph Thompson <joseph.thompson@gmch.com>, "reena datta" <reena.datta@gm.com>, William Whitlock <william.whitlock@gmch.com> Subject: Re: New code confirmation

Ernie, can you send me the GDS2 data from your Friday testing?

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com

 From:
 Ernie Fraley <ernie.fraley@gmch.com>

 To:
 Joseph Thompson <joseph.thompson@gmch.com>, "reena datta" <reena.datta@gm.com>, rick.schroeder@gm.com

 Cc:
 William Whitlock <william.whitlock@gmch.com>

 Date:
 05/28/2013 10:26 AM

 Subject:
 Re: New code confirmation

I went back and checked/compared the files and the boot was flashed correctly, so I am in agreement with Rick that the software was programmed correctly.

Thanks,

Ernie Fraley Sr. System Engineer General Motors, GMCH-Kokomo 765-451-4614 ernie.fraley@gmch.com

-----Ernie Fraley/GMch wrote: -----

To: rick.schroeder@gm.com From: Ernie Fraley/GMch Date: 05/24/2013 10:51AM Cc: Joseph Thompson/GMch@GMch, "reena datta" <reena.datta@gm.com> Subject: Re: New code confirmation

Rick,

Even the boot? It appears that I may have flashed the boot incorrectly.

Ernie Fraley Sr. System Engineer General Motors, GMCH-Kokomo 765-451-4614 ernie.fraley@gmch.com

#### -----rick.schroeder@gm.com wrote: -----

To: Joseph Thompson <joseph.thompson@gmch.com> From: rick.schroeder@gm.com Date: 05/24/2013 10:37AM Cc: Ernie Fraley <ernie.fraley@gmch.com>, "reena datta" <reena.datta@gm.com> Subject: Re: New code confirmation

All,

I have compared the files you sent against the original files and they seem to be fine.

Regards,

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com

 From:
 Joseph Thompson < joseph.thompson@gmch.com>

 To:
 Ernie Fraley < ernie.fraley@gmch.com>, "reena datta" <reena.datta@gm.com>, "rick schroeder" <rick.schroeder@gm.com>

 Date:
 05/23/2013 08:06 PM

 Subject:
 New code confirmation

Rick, Reena, during our testing today we had failures and we would like to confirm the attached PTP files that we used. I pulled the code from a unit Ernie had programmed on the car. We then used this for the

rest of the units we ran. If you have some time can you confirm if it is correct.

Reena, I will try to get with you in the morning.

Thanks Joe Thompson Current Product Engineer Power Electronics GMCH Kokomo IN 765-451-7065 phone 317-670-1204 Cell[attachment "Rick Schroeder PTP.piz" deleted by Rick H Schroeder/US/GM/GMC]

Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

Confidentiality Note: This message is intended only for the person or entity to which it is addressed. It may contain confidential and/or privileged material. Any review, transmission, dissemination or other use, or taking of any action in reliance upon this message by persons or entities other than the intended recipient is prohibited and may be unlawful. If you received this message in error, please contact the sender and delete it from your computer.

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=

[attachment "BasPlus Vehicle Testing 23May2013.piz" removed by Ernie Fraley/GMch]



reena.datta@gm.com 05/28/2013 03:51 PM To ernie.fraley@gmch.com, joseph.thompson@gmch.com, michael.thompson@gmch.com, Rick H Schroeder/US/GM/GMC@GM, Stephen cc

bcc

Subject eAssist - Review Testing from Last Week



eAssist\_P0BFD\_Test-Summary\_28May2013.pptx



Reena Datta/US/GM/GMC 05/28/2013 04:02 PM To ernie.fraley@gmch.com, joseph.thompson@gmch.com, michael.thompson@gmch.com, rick.schroeder@gm.com, stephen.farris@gm.com, William.Whitlock@gmch.com, cc

bcc

Subject eAssist - Review Testing from Last Week

eAssist\_P0BFD\_Test-Summary\_28May2013\_v2.pptx

{In Archive} Re: Status of White Marsh Pack, MD Pack analysis TAC 71-1070023803 Stephen Farris to: Reena Datta 06/05/2012 01:30 PM Cc: Len Chalawa, joseph.thompson, gary.backs, Frederick Billotto, DAVID P TASKY, Mehrdad Teimor Show Details

Security:

To ensure privacy, images from remote sites were prevented from downloading. Show Images

Archive: This message is being viewed in an archive. Len, Reena,

Thanks for update.

Len - Please make root causing this pack #1 priority. We need to know if this is a new failure mode.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----Reena Datta/US/GM/GMC wrote: -----

To: Len Chalawa/US/GM/GMC@GM From: Reena Datta/US/GM/GMC Date: 06/05/2012 01:16PM Cc: Stephen Farris/US/GM/GMC@GM Subject: Re: Status of White Marsh Pack, MD Pack analysis TAC 71-1070023803

Hi Len,

Thanks for the update.

Steve,

I should have searched my sheet - I remember this one now - it's the one we discussed last week at the PDT with the burns on the other side of the LV outlet. Apologies - My mistake. Glad it will be at Kokomo soon so the team there can get a look at it.

Reena

Len Chalawa---06/05/2012 01:13:25 PM---Not received yet - Was delivered to the WPC

file://C:\Users\fzngnw\AppData\Local\Temp\notes8F23A6\~web2090.htm

yesterday. Will be in Kokomo a few days.

From: Len Chalawa/US/GM/GMC To: Reena Datta/US/GM/GMC@GM Cc: Stephen Farris/US/GM/GMC@GM Date: 06/05/2012 01:13 PM Subject: Re: Status of White Marsh Pack, MD Pack analysis TAC 71-1070023803

Not received yet -Was delivered to the WPC yesterday. Will be in Kokomo a few days.

Len Chalawa Sr. Reliability Engineer GM Milford Proving Grounds 248-928-6411 Ien.chalawa@gm.com

Reena Datta---06/05/2012 01:10:34 PM---HI Steve, Carrie's note was the first time that I've heard about this case. Her note does say that

From: Reena Datta/US/GM/GMC To: Stephen Farris/US/GM/GMC@GM Cc: Len Chalawa/US/GM/GMC@GM Date: 06/05/2012 01:10 PM Subject: Re: Status of White Marsh Pack, MD Pack analysis TAC 71-1070023803

HI Steve,

Carrie's note was the first time that I've heard about this case. Her note does say that this pack was part of today's TAC cases, so I would suspect that it's still at the dealership. Len, do you know anything additional about this unit?

Reena

Stephen Farris---06/05/2012 12:49:21 PM---Reena, Len,

From: Stephen Farris/US/GM/GMC To: Reena Datta/US/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM Date: 06/05/2012 12:49 PM Subject: Status of White Marsh Pack, MD Pack analysis TAC 71-1070023803

Reena, Len,

Do we know the status of root cause on the White Marsh, MD pack TAC 71-1070023803.

file://C:\Users\fzngnw\AppData\Local\Temp\notes8F23A6\~web2090.htm

Got a new warranty return today and the burn marks are identical. Need to get on this because it could be a new failure mode due to the differnt location of the burn marks compared to the APM failures.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell:

Kevin Diviney/US/GM/GMC

06/05/2013 02:24 PM

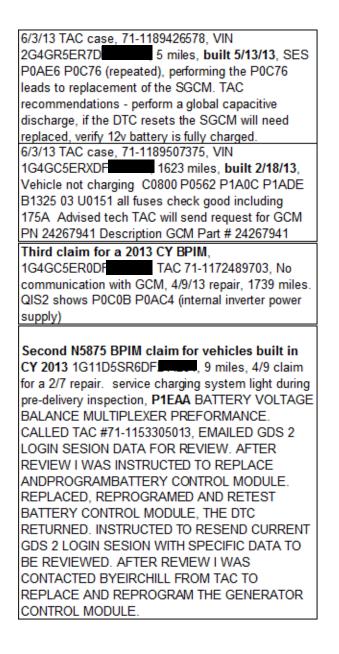
To Daniel Weaver <daniel.weaver@gmch.com>, Len Chalawa/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM, Reena cc

bcc

Subject BPIM returns from 2013 CY built vehicles

Dan,

Here are the four BPIM replace cases that we are still looking for the BPIM. The first two are too new to be at the WPC yet. The second two should be in the shipment they will send to GMCH on Friday.







**Kevin Diviney** Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com

**Global Electrification -Engineering Quality** 

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Kristin L Curran/US/GM/GMC

06/05/2013 11:46 AM

- To Daniel Weaver <daniel.weaver@gmch.com>
- cc James Fortune <james.fortune@gmch.com>, kevin.diviney@gm.com, reena.datta@gm.com bcc

Subject Re: warranty returns to GMCH

They're there. You need to search by VIN. See below.

Kristin L. Curran | Brand Quality Manager, Advanced Propulsion General Motors Company

30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

From: Daniel Weaver <daniel.weaver@gmch.com> kevin.diviney@gm.com, kristin.curran@gm.com, reena.datta@gm.com To: James Fortune <james.fortune@gmch.com> Cc: Date: 06/05/2013 11:04 AM Subject: Re: warranty returns to GMCH

Today we are being sent 147pcs of warranty returns that the warehouse has sat on for awhile. In checking the list I did not see either of the 2 units we have been looking for. However, the list does include the 2013 built BPIM and another that you asked us to be on the lookout for. In addition it included 2 more 2013 built units. These 4 will get a priority once we get the shipment and analysis will be forwarded to you.

71-1153305013 -> 1G11D5SR6DF 71-1167569383 -> 1G11D5RR2DF

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell: (765) 438-3281 Email: <u>daniel.weaver@gmch.com</u>

-----Daniel Weaver/GMch wrote: -----To: kevin.diviney@GM.COM, reena.datta@gm.com From: Daniel Weaver/GMch Date: 05/21/2013 12:52PM Cc: James Fortune/GMch@GMch Subject: another unit from NHTSA 13 units of interest

BPIM 657 1G11D5RRXDF was received with in the last few days. Analysis is complete here is the updated powerpoint presentation with pictures. As you can see

we are still waiting on 2 units.

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell: (765) 438-3281

Email: <u>daniel.weaver@gmch.com</u>

[attachment "Diviney request NHTSA 13.pptx" removed by Daniel Weaver/GMch][attachment "186905(1).xlsx" deleted by Kristin L Curran/US/GM/GMC]



Reena Datta/US/GM/GMC 06/18/2013 04:52 PM To Brian 1 Ciaverella/C/US/GM/GMC@GM, Daniel Weaver <daniel.weaver@gmch.com>, David Deal/US/GM/GMC@GM, David J. cc

bcc

Subject eAssist - NTF Meeting Agenda, Jun 19, 2013

Hi Everyone,

Please see the NTF meeting agenda below for tomorrow's meeting. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



eAssist\_NTF\_Agenda\_19Jun2013.docx

# eAssist No Trouble Found Meeting

Wednesday, June 19, 2013 3:00 PM - 4:00 PM EDT

# Invitees (Attendees in Bold):

Brian Ciaverella, Daniel Weaver, David Deal, David J. Martin, Frank Schauerte, Gary Backs, Hossein Lotfalian, Jacob D Bylsma, James Fortune, Joseph Thompson, Kevin Diviney, Kristin L Curran, Len Chalawa, Reena Datta, Rick H Schroeder, Stephen Farris, Tony J. Saliga, William L Aldrich, William Whitlock, Zachary Pieri

# Call-in Information:

MML: (866) 226-3606 / (678) 466-7834 Code: 646 2538

Webex Meeting Information:

Meeting Link: https://gm.webex.com/gm/j.php?ED=194335218&UID=492344932&PW=NMzU1MjM5MDQx&RT=MiMx MQ%3D%3D

Meeting Number: 268 583 684 Meeting Password: 1234

# **MEETING AGENDA**

| Ag | enda Item                                                          | Presenter | Time   |
|----|--------------------------------------------------------------------|-----------|--------|
| 1. | Review Post-Option 1 Returns                                       | All       | 55 min |
| •  | Review Warranty Spreadsheet (including P1A6F, P0CA2) plus TAC and  |           |        |
|    | QIS2 history                                                       |           |        |
|    | o Brian Ciaverella said he was not able to locate GDS2 data on the |           |        |
|    | following VINs.                                                    |           |        |
|    |                                                                    |           |        |

|    | 1G11D5SR6DF<br>1G11D5SR3DF<br>1G4GC5ER5DF<br>1G11D5SR0DF       | BPIM606 - set P1A6F twice)<br>BPIM591 - set P1A6F twice)<br>BPIM589 - TAC case mentions session logs)<br>BPIM584 - TAC case mentions session logs) | 1G11D5SR6DF<br>1G11D5SR3DF<br>1G4GC5ER5DF<br>1G11D5SR0DF | None Found<br>None Found<br>None Found<br>None Found |  |  |
|----|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|--|--|
| 2. | 2. Round Table                                                 |                                                                                                                                                    | All                                                      | 5 min                                                |  |  |
| •  | Round Table Items                                              |                                                                                                                                                    |                                                          |                                                      |  |  |
| •  | Prioritize returns for next meeting                            |                                                                                                                                                    |                                                          |                                                      |  |  |
| •  | Next Meeting:                                                  |                                                                                                                                                    |                                                          |                                                      |  |  |
|    | <ul> <li>Wednesday, July 18<sup>th</sup> at 3PM EDT</li> </ul> |                                                                                                                                                    |                                                          |                                                      |  |  |



Reena Datta/US/GM/GMC

06/18/2012 04:05 PM

To Daniel Weaver <daniel.weaver@gmch.com>

cc bcc

Subject Re: Thermal unit spreadsheet

Hi Dan,

I just did some quick clean up, but admittedly, I haven't look at the spreadsheet closely for a few days. Please let me know if updates are needed or if you have any question or feedback.

Thank you,

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



eAssist\_APM\_Returns\_Summary\_18Jun2012.xlsx

| Daniel Weaver        | Can you send me the latest spreadsh                                                                                                | 06/18/2012 03:59:38 PM |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| To: ree<br>Date: 06/ | niel Weaver <daniel.weaver@gmch.com><br/>ena.datta@GM.COM<br/>18/2012 03:59 PM<br/>ermal unit spreadsheet</daniel.weaver@gmch.com> |                        |

Can you send me the latest spreadsheet you have for all the Thermal units we are tracking?

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell: (765) 438-3281

Email: <u>daniel.weaver@gmch.com</u>



Frederick Billotto/US/GM/GMC 06/21/2012 04:35 PM

- To Reena Datta/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM
- cc Len Chalawa/US/GM/GMC@GM
- bcc

Subject Fw: eAssist Powerpack replacement TAC case 71-1076878843, VIN 1G4GD5ER7CF

FYI.

Perhaps another power board issue. See attached.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



# Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

#### ----- Forwarded by Frederick Billotto/US/GM/GMC on 06/21/2012 04:32 PM -----

| From:<br>To:<br>Date: | donald_rowley@gmexpert.com<br>tina.jennings@gm.com, elizabeth.norwood@gm.com, michael.t.farwig@gm.com,<br>jeanette.dunn@gm.com, kirk.d.brasher@gm.com, dennis.m.brown@gm.com,<br>carlene.sienkiewicz@gm.com, keith.buford@gm.com, kathleen.gillespie@gm.com,<br>matthew.mcclurejr@gm.com, vukasin.denic@gm.com, melani.thomas@gm.com,<br>kevin.diviney@gm.com, tony.j.saliga@gm.com, mark.w.wright@gm.com,<br>frederick.billotto@gm.com, jacob.d.bylsma@gm.com, milton.martinez@gm.com,<br>david.j.martin@gm.com, rick.schroeder@gm.com, len.chalawa@gm.com,<br>joseph.thompson@gmch.com, jeanette.kurnik@gm.com, margaret.richards@gm.com,<br>roger.rademacher@gm.com, william.l.aldrich@gm.com, al.j.houtman@gm.com,<br>steve.bunce@gm.com, saqib.masood@gm.com, paul.f.ghanam@gm.com,<br>george.baczewski@gm.com, carrie.harvey@gm.com |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Subject:              | eAssist Powerpack replacement TAC case 71-1076878843, VIN 1G4GD5ER7CF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

eAssist Powerpack replacement TAC case 71-1076878843, VIN 1G4GD5ER7CF

Respectfully,

Don Rowley Volt/Hybrid Consultant GM Technical Assistance An Associate of Morley Companies Ph 866-790-4600 Ext. 20668 Fax 866-842-9460

PDF

Email - donald\_rowley@gmexpert.com 71-1076878843.pdf



Reena Datta/US/GM/GMC

06/22/2012 04:00 PM

To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject Re: eAssist Warranty Analysis Review

Hi Gary,

I am available 10AM-1PM on Thu, July 12th.

Have a good weekend,

Reena

| Gary Backs        | Find attached notes from the meeting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 06/22/2012 03:20:36 PM                                                                                                            |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| From:<br>To:      | Gary Backs <gary.backs@gmch.com><br/>Cole Buttry <cole.buttry@gmch.com>, "David E. Miller" <d<br>Worthington <david.worthington@gmch.com>, David.E.W<br/>david.sharp@delphi.com, frederick.billotto@gm.com, Hos<br/><hossein.lotfalian@gmch.com>, James Fortune <james.fo<br>James.A.Wood@delphi.com, Joseph Thompson <joseph.t<br>len.chalawa@gm.com, mehrdad.teimor@gm.com, reena.<br/><robert.wray@gmch.com>, sean.gleason@gm.com, steph<br/>Steven.R.Peelman@delphi.com, steven.r.turner@delphi.com</robert.wray@gmch.com></joseph.t<br></james.fo<br></hossein.lotfalian@gmch.com></david.worthington@gmch.com></d<br></cole.buttry@gmch.com></gary.backs@gmch.com> | hite@delphi.com,<br>sein Lotfalian<br>ortune@gmch.com>,<br>thompson@gmch.com>,<br>datta@gm.com, Robert Wray<br>nen.farris@gm.com, |
| Date:<br>Subject: | jacob.d.bylsma@gm.com<br>06/22/2012 03:20 PM<br>eAssist Warranty Analysis Review                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ,                                                                                                                                 |

Find attached notes from the meeting.

A tentative follow-up date has been established for July 12.

Please confirm your availability for that day. We will target the same time slot 10-1 with the target of completing by noon.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com[attachment "eAssist Warranty Review 19JN12.pptx" deleted by Reena\_ Datta/US/GM/GMC]\_



Reena Datta/US/GM/GMC

06/29/2012 10:54 AM

To gary.backs@gmch.com

СС bcc

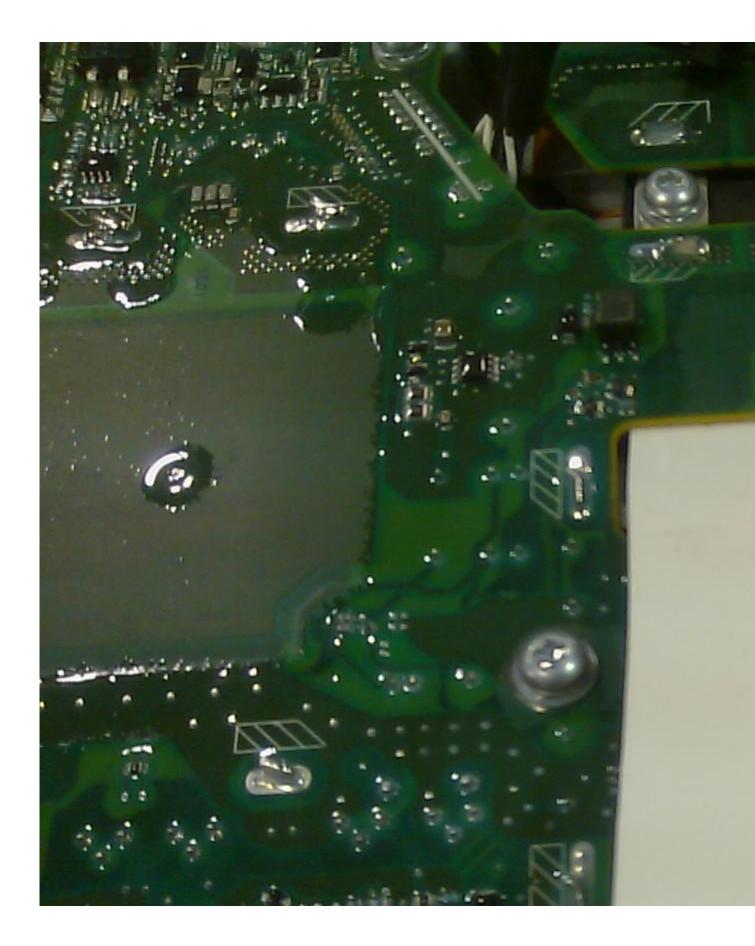
Subject Fw: FWD:

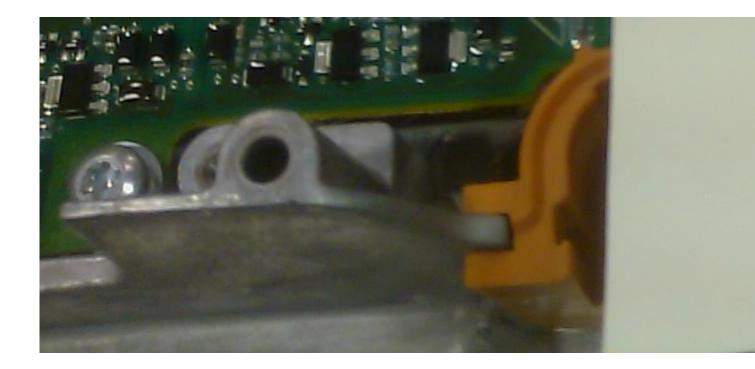
1 attachment



-----Forwarded by Reena Datta/US/GM/GMC on 06/29/2012 10:53AM -----To: Reena.datta@gm.com From: 2487528137@vzwpix.com

Date: 06/28/2012 10:35AM Subject: FWD:





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|-------------|---|
|             | 0 |
|             |   |
|             |   |

Reena Datta/US/GM/GMC 06/29/2012 01:05 PM To gary.backs@gmch.com

cc bcc

Subject Fw: Pictures of inductor almost touching board

3 attachments



100\_2722.jpg 100\_2723.jpg 100\_2725.jpg

-----Forwarded by Reena Datta/US/GM/GMC on 06/29/2012 01:04PM -----



Reena Datta/US/GM/GMC

07/02/2012 07:31 AM

To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject Fw: Inductor-board short pictures

#### ----- Forwarded by Reena Datta/US/GM/GMC on 07/02/2012 07:31 AM -----

| From:    | Michael Thompson < michael.thompson@gmch.com> |
|----------|-----------------------------------------------|
| To:      | reena.datta@gm.com                            |
| Date:    | 06/29/2012 01:40 PM                           |
| Subject: | Fw: Inductor-board short pictures             |

# Michael A. Thompson Current Product Engineer for Safety (SDMs) and Body and Security (BCMs) Tel: +1-765-451-9004 Fax +1-765-451-7772

# Address for letters only:

General Motors Components Holdings, LLC 2100 E Lincoln Road MS 6044 Kokomo, IN 46902 USA

# Address for packages:

General Motors Components Holdings, LLC 2033 E. Boulevard POU # MEZ1-00N8-00P6 Kokomo, IN 46904 USA

michael.thompson@gmch.com

# -----Forwarded by Michael Thompson/GMch on 06/29/2012 01:39PM -----

To: john.meyerIII@gm.com From: Michael Thompson/GMch Date: 06/27/2012 03:04PM Cc: Hossein Lotfalian/GMch@GMch, Joseph Thompson/GMch@GMch Subject: Inductor-board short pictures

(See attached file: 100\_2714.jpg) (See attached file: 100\_2715.jpg) (See attached file: 100\_2716.jpg) (See attached file: 100\_2717.jpg) (See attached file: 100\_2718.jpg) (See attached file: 100\_2719.jpg)

John

Here are the pictures you requested of the inductor/board short.

Michael A. Thompson Current Product Engineer for Safety (SDMs) and Body and Security (BCMs) Tel: +1-765-451-9004 Fax +1-765-451-7772

# Address for letters only:

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# Address for packages:

General Motors Components Holdings, LLC 2033 E. Boulevard POU # MEZ1-00N8-00P6 Kokomo, IN 46904 USA

michael.thompson@gmch.com 100\_2714.jpg 100\_2715.jpg 100\_2716.jpg 100\_2717.jpg 100\_2718.jpg

2715 ing 10



2719 ing





Stephen Farris/US/GM/GMC

07/02/2012 12:43 PM

- To gary.backs@gmch.com
- cc Reena Datta/US/GM/GMC@GM

bcc

Subject Re: Fw: Inductor-board short pictures

Gary,

Unless there is new information or you need me on a call a text message is fine.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----Gary Backs <gary.backs@gmch.com> wrote: -----To: reena.datta@gm.com, stephen.farris@gm.com From: Gary Backs <gary.backs@gmch.com> Date: 07/02/2012 08:53AM Subject: Re: Fw: Inductor-board short pictures

Sure, I will send a note. I believe we have already demonstrated this, so I will send a text to let Stephen and you with the result and will put a summary together by tuesday in email.

Steve, if you still want a conf call let me know, else, I will send you and Reena a TXT this afternoon.

# Best Regards,

# Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

-----reena.datta@gm.com wrote: -----To: Gary Backs <gary.backs@gmch.com> From: reena.datta@gm.com Date: 07/02/2012 08:43AM Subject: Re: Fw: Inductor-board short pictures

Hi Gary,

Unfortunately, I won't be able to participate in an afternoon call today (vacation plans). Would you be able to provide a quick email summary on the discussion's outcome? Hope all goes well.

# Reena

 From:
 Gary Backs <gary.backs@gmch.com>

 To:
 reena.datta@gm.com

 Date:
 07/02/2012 08:06 AM

 Subject:
 Re: Fw: Inductor-board short pictures

Reena,

I just returned from the floor., they are suggesting 2pm this afternoon for call in. I will send a text to Steve as well.

# Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

-----reena.datta@GM.COM wrote: -----To: Gary Backs <gary.backs@gmch.com> From: reena.datta@GM.COM Date: 07/02/2012 07:31AM Subject: Fw: Inductor-board short pictures

----- Forwarded by Reena Datta/US/GM/GMC on 07/02/2012 07:31 AM -----

 From:
 Michael Thompson <<u>michael.thompson@gmch.com></u>

 To:
 reena.datta@gm.com

 Date:
 06/29/2012 01:40 PM

 Subject:
 Fw: Inductor-board short pictures

Michael A. Thompson Current Product Engineer for Safety (SDMs) and Body and Security (BCMs) Tel: +1-765-451-9004 Fax +1-765-451-7772

Address for letters only:

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Address for packages: General Motors Components Holdings, LLC 2033 E. Boulevard POU # MEZ1-00N8-00P6 Kokomo, IN 46904 USA

michael.thompson@gmch.com

-----Forwarded by Michael Thompson/GMch on 06/29/2012 01:39PM -----To: john.meyerIII@gm.com From: Michael Thompson/GMch Date: 06/27/2012 03:04PM Cc: Hossein Lotfalian/GMch@GMch, Joseph Thompson/GMch@GMch Subject: Inductor-board short pictures

(See attached file: 100\_2714.jpg) (See attached file: 100\_2715.jpg) (See attached file: 100\_2716.jpg) (See attached file: 100\_2717.jpg) (See attached file: 100\_2718.jpg) (See attached file: 100\_2719.jpg)

John

Here are the pictures you requested of the inductor/board short.

Michael A. Thompson Current Product Engineer for Safety (SDMs) and Body and Security (BCMs) Tel: +1-765-451-9004 Fax +1-765-451-7772

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# Address for packages:

General Motors Components Holdings, LLC 2033 E. Boulevard POU # MEZ1-00N8-00P6 Kokomo, IN 46904 USA

#### michael.thompson@gmch.com

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[attachment "100\_2714.jpg" removed by Gary Backs/GMch] [attachment "100\_2715.jpg" removed by Gary Backs/GMch] [attachment "100\_2716.jpg" removed by Gary Backs/GMch] [attachment "100\_2717.jpg" removed by Gary Backs/GMch] [attachment "100\_2718.jpg" removed by Gary Backs/GMch] [attachment "100\_2719.jpg" removed by Gary Backs/GMch]

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Reena Datta/US/GM/GMC 07/10/2012 04:12 PM To Mehrdad Teimor/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, John Meyer III/US/GM/GMC@GM, Frederick cc

bcc

Subject eAssist - Updated P0CA2 Summary

All,

Please see the updated summary attached below of POCA2 returns.

Please let me know which units have been received in Kokomo and their FIS data. Please let me know if you have any questions or comments.

Thank you,

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



eAssist\_P0CA2\_Summary\_10Jul2012.xlsx

|          | {In Archive} Presentation for meeting tomorrowStephen Farristo:DAVID P TASKY, Mehrdad Teimor, Sean E<br>Gleason08/06/2012 04:58 PMCc:Reena Datta, Frederick Billotto, Jacob D Bylsma, gary.backs,<br>james.fortune |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| From:    | Stephen Farris/US/GM/GMC                                                                                                                                                                                           |
| To:      | DAVID P TASKY/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, Sean E<br>Gleason/US/GM/GMC@GM                                                                                                                            |
| Cc:      | Reena Datta/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Jacob D<br>Bylsma/US/GM/GMC@GM, gary.backs@gmch.com, james.fortune@gmch.com                                                                             |
| Archive: | This message is being viewed in an archive.                                                                                                                                                                        |

All,

Attached is the presentation we plan to show tomorrow at the meeting to discuss BPIM/APM warranty returns. Please review and let us know if there is any feedback.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center



Cell: 248.515.2572 Warranty review BPIM APM 07AUG12.pptx



- To Reena Datta/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Gary Backs <gary.backs@gmch.com>
- cc Sean E Gleason/US/GM/GMC@GM
- bcc

Subject Burn in meeting, 11:00AM tomorrow?

Let's have a quick one hour meeting tomorrow to discuss burn in plan. I suggest 11:00. We can set the ground work then we can discuss it in detail during PDT. Given the Thursday morning deadline, we can not wait till 2:30 PDT meeting time.

We just need to come up with a preliminary plan first.

Gary Please invite GMCH and Delphi key people.

Reena Please, kindly arrange this meeting.

Mehrdad

Mehrdad Teimor Power Electronics GM Hybrid Systems Cell Phone 248 515 4662



Reena Datta/US/GM/GMC 08/08/2012 09:34 AM To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject Fw: eAssist Burn In Follow-up Discussion

----- Forwarded by Reena Datta/US/GM/GMC on 08/08/2012 09:34 AM -----

# eAssist Burn In Follow-up Discussion

Wed 08/08/2012 11:00 AM - 12:00 PM Location: Call-in: 1-(866) 226-3606 (US) / Code: 646 2538

David.E.White@delphi.com, david.p.buehler@delphi.com, david.sharp@delphi.com,Required:gary.backs@gmch.com, james.fortune@gmch.com, joseph.thompson@gmch.com, MehrdadTeimor/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, steven.r.turner@delphi.com

Description

Follow-up discussion to last night's meeting with Poulos.

Please forward to appropriate team members as needed.

-----

Meeting information

Topic: eAssist Burn In Discussion Date: Wednesday, August 8, 2012 Time: 11:00 am, Eastern Daylight Time (New York, GMT-04:00) Meeting Number: 960 554 530 Meeting Password: 1234

To start or join the online meeting

-----

Go to

https://gm.webex.com/gm/j.php?ED=196619822&UID=492344932&PW=NNTMyYjMyMzM2&RT=MiMx MQ%3D%3D

\_\_\_\_\_

Teleconference information

Provide your phone number when you join the meeting to receive a call back. Alternatively, you can call:

Call-in toll-free number: 1-(866) 226-3606 (US) Call-in number: 1-(678) 466-7834 (US) Conference Code: 646 2538



Reena Datta/US/GM/GMC

08/08/2012 10:19 AM

To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject burn in template



eAssist\_Burn-in\_Options\_08Aug2012.pptx



Carrie Harvey/US/GM/GMC 08/09/2012 07:42 PM To Reena Datta/US/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, Frederick cc

bcc

Subject eAssist Batterypack Spreadsheet

Hi Reena-

Attached is my latest tracking sheet for the battery packs. I don't have a spreadsheet tracking all of the TAC cases.

The rows in green are in route or at GMCH and the yellow rows are still being repaired at the dealer. There are two tabs to the spreadsheet.



Battery Return Status.xlsx

Carrie Harvey Brand Quality Manager - Advanced Propulsion

☎ cell:

⊠ mail: carrie.harvey@gm.com



# {In Archive} Fw: RE: New eAssist Board Samples

Stephen Farris, reena datta, kevin.diviney, James Fortune jacob.d.bylsma

08/13/2012 07:38 AM

Cc: daniel.d.cottrell

| From:    | James Fortune <james.fortune@gmch.com></james.fortune@gmch.com>                                                                                                            |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To:      | "Stephen Farris" <stephen.farris@gm.com>, "reena datta" <reena.datta@gm.com>,<br/>kevin.diviney@gm.com, jacob.d.bylsma@gm.com</reena.datta@gm.com></stephen.farris@gm.com> |
| Cc:      | daniel.d.cottrell@gm.com                                                                                                                                                   |
| History: | This message has been forwarded.                                                                                                                                           |

Archive: This message is being viewed in an archive.

# Steve,

Attached are cross sections performed this weekend to confirm desired 2 layer construction of the new Power board broke in over the weekend.

Jim

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC http://kokomogmch.com

Phone: (765) 451-9558

Cell: (765) 451-9973 Fax: M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of

this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates. "Go Boilers"

-----Forwarded by James Fortune/GMch on 08/13/2012 07:35AM -----To: "Gust, Joe F<sup>"</sup> <joe.gust@gmch.com> From: "Frantz, Rodney P" <Rodney.P.Frantz@delphi.com> Date: 08/12/2012 03:18PM Cc: David Worthington <david.worthington@gmch.com>, "Fortune, James L" <james.fortune@gmch.com>
Subject: RE: New eAssist Board Samples

(See attached file: BAS-Plus dielectric thickness increase Sections 8-12-12.ppt)

Joe,

Here is the data on the 4 sections from the 2 boards that you brought over late Fri. night. Call me on my cell if any questions.

Thanks, Rod

From: Joe Gust [mailto:joe.gust@gmch.com] Sent: Friday, August 10, 2012 8:17 PM To: Frantz, Rodney P Cc: David Worthington; Fortune, James L Subject: New eAssist Board Samples Importance: High

Rod,

The two new sample eAssist power boards arrived and are now in the suppler/customer drop box in the CTC Lobby, as requested. Thank you for doing them this weekend. We look forward to the results by Sunday night.

We would like two cross sections from each board, in the same general areas as the 15 piece sample you did earlier. Please take the same photos and measurements as last time for direct comparison. Please "copy all" with your findings.

Thanks again.

Joe F. Gust Sr. Supplier Quality Engineer Shainin Red X Master / 6 Sigma Black Belt General Motors Components Holdings, LLC Point Of Use: 0993-0R10-2FP7 2603 S. Goyer Rd. Mail Station 6038 Kokomo, IN USA 46904-9004 Phone: (765) 451-7907 Email: joe.gust@gmch.com http://kokomogmch.com



BAS-Plus dielectric thickness increase Sections 8-12-12.ppt



Update on Oshawa cars - Larry please read Stephen Poulos to: Larry T. Nitz

08/14/2012 09:51 AM

#### Larry,

New news came in during our staff meeting. Oshawa cars checked VIN by VIN and not matching up with suspect board lots. Build dates suggested initially they would be. We will have to look for another "suspect" sample. FYI so you didn't communicate incorrectly today up the ladder. Dynamic situation. FYI,

#### Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 08/14/2012 09:47 AM -----

| From:    | Kevin Diviney/US/GM/GMC                                                                       |
|----------|-----------------------------------------------------------------------------------------------|
| To:      | Reena Datta/US/GM/GMC@GM, Stephen Cichy/US/GM/GMC@GM, Daniel D.                               |
|          | Cottrell/US/GM/GMC@GM, Carrie Harvey/US/GM/GMC@GM, Tony J.                                    |
|          | Saliga/US/GM/GMC@GM, James Fortune <james.fortune@gmch.com>, Stephen</james.fortune@gmch.com> |
|          | Poulos/US/GM/GMC@GM, Umar Corion/C/CA/GM/GMC@GM, Brian Hayes/US/GM/GMC@GM,                    |
|          | Keith Sampson/C/US/GM/GMC@GM                                                                  |
| Date:    | 08/14/2012 09:04 AM                                                                           |
| Subject: | data files                                                                                    |

# Reena,

I added the Oshawa data to the file you created to compare the VINs of the vehicles on the ground at the plants to the master list of suspect parts. No matches showed up. Can you double check this. We were hoping that Oshawa had 'suspect' vehicles on the ground to verify our vehicle test. You may want to paste the vehicle build date and powerpack build dates in the reference tab so that they can be listed for the Fairfax and Oshawa vehicles on the ground. Based on the fact that the material on hand at Oshawa has julian dates of 2205, 2213, 2214, and 2216, we thought that some of the vehicles in the yard would be from material built before the stated breakpoint of 2224.

# Team,

Any thoughts on where to find 'suspect' vehicles for our testing? [attachment "eAssist\_Fairfax\_VIN\_List\_13Aug2012 lookup compare including Oshawa.xlsx" deleted by Stephen Poulos/US/GM/GMC]



Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u> Engineering Quality General Motors Corp.

Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



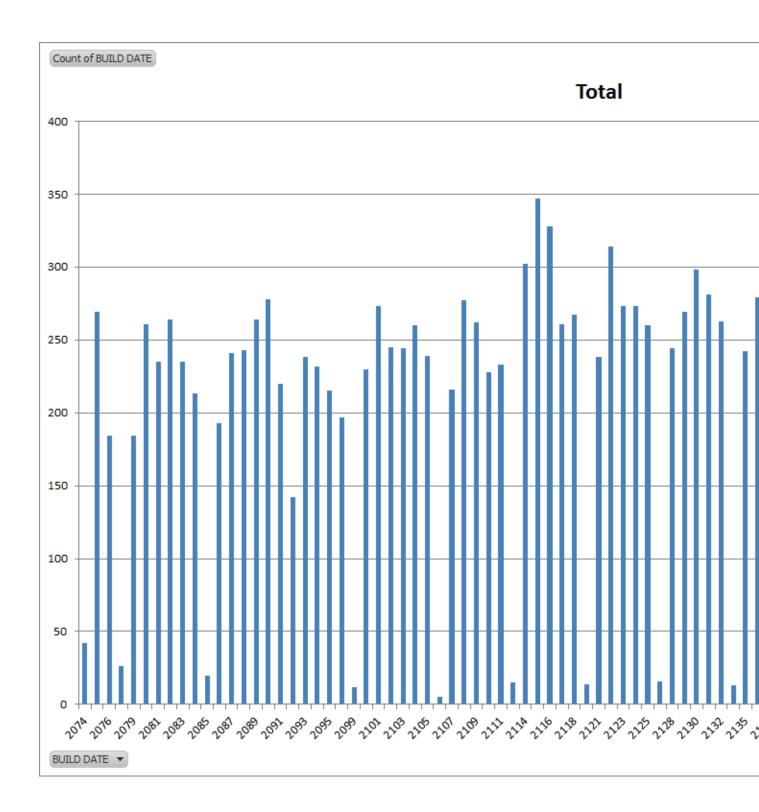
Stephen Cichy/US/GM/GMC

| Та | Coop E Closesp/UC/CM/CMC@CM Deeps        |
|----|------------------------------------------|
| 10 | Sean E Gleason/US/GM/GMC@GM, Reena       |
|    | Datta/US/GM/GMC@GM, Stephen              |
|    | Farris/US/GM/GMC@GM, gary.backs@gmch.com |
| CC |                                          |

bcc

Subject DATA by build date

Are the build dates that are low due to days where many PP's weren't produced?





{In Archive} Re: Fw:Fairfax Update -8/18/12 Re: Emerging Issue Update -E-Assist Applications- Spike in Powerpack/BPIM TAC cases 🗎 Stephen Poulos to: Larry T. Nitz 08/19/2012 09:38 PM Cc: Daniel D. Cottrell, Kevin Diviney, Sean E Gleason, Bob Agresta This message is being viewed in an archive.

Archive:

#### Larry,

My understanding is that "no failure" means the car passed Tony Saliga's burn-in test without any BPIM board-related issues.

For the 180 pre-break-point cars, which were all built with BPIM's from after the two suspect lots, it clears those cars for shipment. It also gives us a more complete statistical picture of that population, which looked equally affected based on Oshawa results, appeared to be less affected (or potentially unaffected) based on initial TAC rate, and so far looks unaffected based on Fairfax. The FPE guys (Janik, Wachtel) will be putting all the data together and should be able to consider whether the field concern can be narrowed based on these various sources of data.

For the 36 post-break-point cars, this is just a confidence building exercise for the plant. Those cars are shipping with or without the burn-in. Good to see 100% pass so far. Any board-related failure there or any high-pot fall-out at GMCH on the new material will get lots of attention.

Those on cc, pipe in if you have other insight. Thanks,

#### Stephen

| Larry T. Nitz            | Fairfax Update: 8/19/12                                                                                                                                             | 08/19/2012 08:49:51 PM          |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| To:<br>Date:<br>Subject: | Larry T. Nitz/US/GM/GMC<br>Stephen Poulos/US/GM/GMC@GM<br>08/19/2012 08:49 PM<br>Fw:Fairfax Update -8/18/12 Re: Emerging Issue Update -<br>Powerpack/BPIM TAC cases | E-Assist Applications- Spike in |

#### What does no failure mean?

#### Sent from Lotus Traveler

#### Brian Hayes --- Fairfax Update -8/18/12 Re: Emerging Issue Update - E-Assist Applications-Spike in Powerpack/BPIM TAC cases ----

#### From: "Brian Hayes" <brian.hayes@gm.com>

"Kevin Diviney" <kevin.diviney@gm.com> То

"Al Manduzzi" <al.manduzzi@gm.com>, "Bin Zhu" <bin.zhu@gm.com>, "Bob Agresta" Cc <bob.agresta@gm.com>, "Carrie Harvey" <carrie.harvey@gm.com>, "Charles R Baker" <charles.baker@gm.com>, " Chuck McElyea" < Chuck McElyea/DE/GM/GMC@GME>, "Daniel D. Cottrell" <daniel.d.cottrell@gm.com>, "Darwin Rodriguez" <darwin.rodriguez@gm.com>, "Dave G. Robinson" <dave.g.robinson@gm.com>, "David Motzny" <david.motzny@gm.com>, "David Wright" <David Wright@patac.com.cn>, dennis.m.otoole@gm.com, "Edson Monteforte" <edson.1.monteforte@gm.com>, "Frederick Billotto" <frederick.billotto@gm.com>, "Gary L West" <gary.l.west@gm.com>, "Gary M. Insana" <gary.m.insana@gm.com>, "Gary Backs" <gary.backs@gmch.com>, "Hongbin Son" <hongbin.son@gm.com>, "huaping Yang"

<huaping\_yang@shanghaigm.com>, "Ingo Scholten" <Ingo\_Scholten@patac.com.cn>, "Jacob D Bylsma" <jacob.d.bylsma@gm.com>, "James Fortune" <james.fortune@gmch.com>, "Jeff Wrona" <jeff.wrona@gm.com>, "Jeremy Short" <jeremy.short@gm.com>, "John A Ball" <john.a.ball@gm.com>, "Kenneth L. Kelzer" <kenneth.l.kelzer@gm.com>, kevin.2.darnall@gm.com, "Kush Shah" <kush.shah@gm.com>, "Kyoungha Kim" <kyoungha.kim@gm.com>, "Larry T. Nitz" <larry.nitz@gm.com>, "Lisa Pickering" <lisa.pickering@gm.com>, "Lucky Sagong" <lucky.sagong@gm.com>, "Mark D. Bande" <mark.d.bande@gm.com>, "Mehrdad Teimor" <mehrdad.teimor@gm.com>, "Melani Thomas" <melani.thomas@gm.com>, "Mike Jirasek" <mike.jirasek@gm.com>, "Mirza A Baig" <mirza.baig@gm.com>, "Mitchell E. Thomas" <mitchell.thomas@gm.com>, "Nancy Huber" <nancy.huber@gm.com>, "Nichole Dean" <nichole.dean@gm.com>, "Reena Datta" <reena.datta@gm.com>, "Rick H Schroeder" <rick.schroeder@gm.com>, "Roger Rademacher" <roger.rademacher@gm.com>, "Ronn E. Jamieson" <ronn.jamieson@gm.com>, "Rudolf Kowallik" <rudolf\_kowallik@shanghaigm.com>, "Scott Wilson" <scott.wilson@gm.com>, "Sean E Gleason" <sean.gleason@gm.com>, "Seungheon Yoo" <seungheon.yoo@gm.com>, "Seunghwan Oh" <seunghwan.oh@gm.com>, "Shinichiro Taki" <shinichiro.taki@gm.com>, "Srihari Rao" <srihari.rao@gm.com>, "Stephen Farris" <stephen.farris@gm.com>, "Stephen Poulos" <stephen.poulos@gm.com>, "Steven Vance" <steven.vance@gm.com>, "Tony J. Saliga" <tony.j.saliga@gm.com>, "Troy Comiskey" <troy.comiskey@gm.com>, "Umar Corion" <umar.corion@gm.com>, "Damian Smith" <damian.smith@gm.com>, "Dave W. Carter" <dave.w.carter@gm.com>, "Mike Thomas" <mike.thomas@gm.com>, "William Kulhanek" <william.kulhanek@gm.com>, "Steven A. Ramirez" <steven.a.ramirez@gm.com>

Date: Sun, Aug 19, 2012 3:06 PM

Subject Fairfax Update -8/18/12 Re: Emerging Issue Update - E-Assist Applications- Spike in Powerpack/BPIM TAC cases

#### Fairfax Update: 8/19/12

#### 495 Pre break point LUK vehicles have been delivered to the Woodlands

180 have completed all testing - No failures

315 vehicles - testing on these vehicles will start 6:00am Monday 8/20

#### 36 Post break point vehicles have been delieverd to the Woodlands (New Powerpack)

36 have completed all testing - No failures

Expect delivery of 18 more vehicles on Monday 8/20



# {In Archive} Re: Fw: (초긴급) Fw: eAssist - Suspect Powerpacks Shipped to GMK 🗎

Stephen Poulos to: Lucky Sagong

08/19/2012 10:44 PM

Cc: Bob Agresta, Brian Hayes, Daniel D. Cottrell, Daniel Weaver, Kevin Diviney, Reena Datta, Tony J. Saliga, Scott Wilson, Shinichiro Taki

This message is being viewed in an archive.

#### Hi Lucky,

Archive:

May I please ask you to provide an email update on the eAssist cars being tested in Korea through Tony's cycle. We have a leadership / plant meeting Monday at 4:30 pm. I did not expect you to participate, but an email summary will work fine in you absence. Thanks in advance,

#### Stephen

| Lucky Sagong      |                       | Kevin, Please refer to attached file for the pack                                                                                                                         | 08/16/2012 11:30:11 PM |
|-------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:             |                       | gong/KR/GM/GMC                                                                                                                                                            |                        |
| To:<br>Cc:        | Brian Hay<br>Datta/US | iney/US/GM/GMC@GM<br>res/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM<br>GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, Tony<br>5/GM/GMC@GM, Bob Agresta/US/GM/GMC@GM, Daniel W | J.                     |
| Date:<br>Subject: | 08/16/20              | eaver@gmch.com><br>2 11:30 PM<br>급) Fw: eAssist - Suspect Powerpacks Shipped to GMK                                                                                       |                        |

Kevin,

Please refer to attached file for the pack stocks in GMK

The Column "E" has "YES" mean GMK have pack in warehouse but TBD is not in plant (need to find out the pack position)

I add 3 pack which are the last 3 packs which are in GMK (it's not the list)

[attachment "eAssist\_GMK\_Suspect-PP-SN\_16Aug2012.xlsx" deleted by Stephen Poulos/US/GM/GMC]

Thanks, Lucky.

+공일 Lucky (IL) Sagong, Director for Electrification Division Office : +82-32-520-0972 , Mobile : +82-10-9256-5435 E-mail : lucky.sagong@gm.com

Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

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or taking of any action in reliance upon this message by persons or entities other than the intended recipient is prohibited and may be unlawful. If you received this message in error, please contact the sender and delete it from your computer.

----- Forwarded by Lucky Sagong/KR/GM/GMC on 2012-08-17 오후 12:20 -----

| From:    | Junhee B Lee/KR/GM/GMC                                          |
|----------|-----------------------------------------------------------------|
| To:      | Sangkyoo Seo/KR/GM/GMC@GM, Dongkyu C Kim/KR/GM/GMC@GM           |
| Cc:      | Hongseok B Kim/KR/GM/GMC@GM, Lucky Sagong/KR/GM/GMC@GM, Hongbin |
|          | Son/KR/GM/GMC@GM                                                |
| Date:    | 2012-08-17 오후 12:06                                             |
| Subject: | Fw: (초긴급) Fw: eAssist - Suspect Powerpacks Shipped to GMK       |

재고여부란에 "1"이라고 표시된 부품이 현재 보유하고 있다는 의미입니다. 첨부파일 참조바랍니다.

음영처리된 부분은 리스트상에는 없으나 재고보유하고 있어서 추가하였다고 합니다.

----- Forwarded by Junhee B Lee/KR/GM/GMC on 2012-08-17 오후 12:02 -----

| From:    | Nuri Ha/KR/GM/GMC                                             |
|----------|---------------------------------------------------------------|
| To:      | Junhee B Lee/KR/GM/GMC@GM                                     |
| Cc:      | Bumsoo Seo/KR/GM/GMC@GM, Sukhyune Kong/KR/GM/GMC@GM, Jaewon B |
|          | Jung/KR/GM/GMC@GM, 도입LOC-도입2팀, LLP납입관리부                       |
| Date:    | 2012-08-17 오후 12:00                                           |
| Subject: | Re: Fw: (초긴급) Fw: eAssist - Suspect Powerpacks Shipped to GMK |

- 안녕하세요! 부평도입자재관리팀 하누리입니다.

이준희대리님,

현재 라인장착되어 있는 MY12 파워팩까지 포함하여 전체 보유중인 재고까지 Serial Number 확인완료하였습니다. (총 54개)

첨부의 음영처리된 건은 PN. 22934565 MY12 파워팩이나 보내주신 자료에 없어서 추가로 기입하였으며, 2건은 마지막 Serial Number가 찢겨서 보이지 않는다고 하십니다.

감사합니다.

Best Regards,

Nuri Ha 하누리 BP Import Parts Control Team Overseas Supply Operation Div. GPSC GM Korea Company

TEL : +82 (0)32 520 3889 Mobile : +82 (0)10 9217 4486 Email : nuri.ha@gm.com

Junhee B Lee 하누리사우님, 첨부리스트는 GMCH에서 GM... 2012-08-17 오전 08:24:06



Fw: Fairfax Update - 8/21/12 Re: Emerging Issue Update - E-AssistApplications- Spike in Powerpack/BPIM TAC casesStephen Poulosto: Christopher JanikCc: Melani Thomas, Daniel D. Cottrell

08/22/2012 09:08 AM

#### FYI

----- Forwarded by Stephen Poulos/US/GM/GMC on 08/22/2012 09:07 AM -----

| From:<br>To:<br>Cc:<br>Date: | Brian Hayes/US/GM/GMC<br>Kevin Diviney/US/GM/GMC@GM, Bin Zhu/CN/GM/GMC@GM, Bob Agresta/US/GM/GMC@GM,<br>Carrie Harvey/US/GM/GMC@GM, Charles R Baker/US/GM/GMC@GM, Chuck<br>McElyea/DE/GM/GMC@GME, Daniel D. Cottrell/US/GM/GMC@GM, Darwin<br>Rodriguez/US/GM/GMC@GM, Dave G. Robinson/US/GM/GMC@GM, David<br>Motzny/US/GM/GMC@GM, David Wright/powertrain/PATAC/SGM@SGM,<br>dennis.m.otoole@gm.com, Edson Monteforte/KR/GM/GMC@GM, Gary M. Insana/US/GM/GMC@GM,<br>Gary Backs <gary.backs@gmch.com>, Hongbin Son/KR/GM/GMC@GM, huaping<br/>Yang/qd/SGM@SGM, Ingo Scholten/ec/PATAC/SGM@SGM, Jacob D<br/>Bylsma/US/GM/GMC@GM, Jares Fortune <james.fortune@gmch.com>, Jeff<br/>Wrona/US/GM/GMC@GM, Larry T. Nitz/US/GM/GMC@GM, Lisa<br/>Pickering/US/GM/GMC@GM, Lucky Sagong/KR/GM/GMC@GM, Melani<br/>Thomas/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, Melani<br/>Thomas/US/GM/GMC@GM, Reger Rademacher/US/GM/GMC@GM, Nichole<br/>Dean/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, Rotn E.<br/>Jamieson/US/GM/GMC@GM, Reger Rademacher/US/GM/GMC@GM, Ronn E.<br/>Jamieson/US/GM/GMC@GM, Sean E Gleason/US/ATD/GMC@GM, Seungheon<br/>Yoo/KR/GM/GMC@GM, Sean E Gleason/US/ATD/GMC@GM, Seungheon<br/>Yoo/KR/GM/GMC@GM, Steven Vance/US/GM/GMC@GM, Sent<br/>Wilson/CN/GM/GMC@GM, Steven Parris/US/GM/GMC@GM, Tony J.<br/>Saliga/US/GM/GMC@GM, Troy Comiskey/US/GM/GMC@GM, Tony J.<br/>Saliga/US/GM/GMC@GM, Maina Smith/US/GM/GMC@GM, Tony J.<br/>Saliga/US/GM/GMC@GM, Maina Smith/US/GM/GMC@GM, Jave W.<br/>Carter/US/GM/GMC@GM, Mike Thomas/CA/GM/GMC@GM, William<br/>Kuhnanek/CA/GM/GMC@GM, Steven A. Ramirez/US/GM/GMC@GM, William</james.fortune@gmch.com></james.fortune@gmch.com></james.fortune@gmch.com></james.fortune@gmch.com></james.fortune@gmch.com></james.fortune@gmch.com></gary.backs@gmch.com> |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Subject:                     | Fairfax Update -8/21/12 Re: Emerging Issue Update - E-Assist Applications- Spike in<br>Powerpack/BPIM TAC cases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

Fairfax Update: 8/20/12

#### 496 Pre break point LUK vehicles have been delivered to the Woodlands

357 have completed all testing - No failures

54 vehicles in various stages of testing - No failures (original failures below have been fixed - not BPIM

#### issues)

1 failure died during final 2 hour idle - no crank/no start - P0513 code in vehicle (vehicle was jump started - 12 volt battery is charging and codes have cleared from vehicle)

1 failure died during final 2 hour idle - no crank/no start - no codes in vehicle - (vehicle was jump started - 12 volt battery is charging)

85 vehicles - testing on these vehicles will start 6:00am Wednesday 8/22

#### 54 Post break point vehicles have been deliverd to the Woodlands (New Powerpack)

All 54 have completed all testing - No failures

#### Testing of post break point vehicles is complete



**Reena Datta/US/GM/GMC** 08/29/2012 01:43 PM To Daniel Weaver <daniel.weaver@gmch.com>

cc bcc

Subject Oshawa Vehicles Contact

Hi Dan,

The contact Tony provided for the failed units at Oshawa is Mike Jarisek at 248 830 8811.

Reena



Reena Datta/US/GM/GMC 08/29/2012 03:38 PM

- To "White, David E" <David.E.White@delphi.com>, "Thompson, Joseph E" <joseph.thompson@gmch.com>, Hossein Lotfalian <hossein.lotfalian@gmch.com>
- cc Tony J. Saliga/US/GM/GMC@GM

bcc

Subject eAssist - APMs entering "Unknown" status / Not charging

Hi Everyone,

Please review the Excel version of the powerpoint reviewed at today's PDT. Please let me know if you have any questions.

Reena



eAssist\_APM-Not-Charging\_29Aug2012.xlsx



# {In Archive} Re: GMCH Request for Decision on Pre-Breakpoint BAS+ Power Packs

Kevin Diviney to: James Fortune

09/10/2012 02:00 PM

Cc: Billotto", Gary Backs, kush.shah, "Stephen Farris", Steven Schaub, Bob Agresta, Stephen Poulos, Daniel D. Cottrell

This message is being viewed in an archive.

Jim,

Archive:

Ultimately the vehicle team will probably need to make the decision. However, we need to provide the data to help them make an educated decision. I am not aware of any engineering testing being conducted to determine the expected failure rate of these units over time. The best we can do with field data would be to take all of the confirmed cases in this range and plot the mileage. We should have enough returned powerpacks at this point to create that plot.

Initial dialog on this subject could take place at the eAssist PET. We should formulate a proposal to present to the vehicle team.

Daniel Weaver, "David E. Miller", David Worthington, "Frederick

Regards,



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com

## Hybrid

#### Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| James Fo          | ortune                                                                                                                                                                                                                                                                                                                                                                                                        | Kevin,                                                                                                                                                                                                                                                 | 09/10/2012 01:34:28 PM                                                     |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| From:<br>To:      | kevin.div                                                                                                                                                                                                                                                                                                                                                                                                     | ortune <james.fortune@gmch.com><br/>viney@gm.com</james.fortune@gmch.com>                                                                                                                                                                              |                                                                            |
| Cc:               | <gary.ba<br><david.e< td=""><td>ck Billotto" <frederick.billotto@gm.com>, kus<br/>acks@gmch.com&gt;, Steven Schaub <steven.s<br>e.miller@gmch.com&gt;, Daniel Weaver <daniel<br>vorthington@gmch.com&gt;, "Stephen Farris" &lt;:</daniel<br></steven.s<br></frederick.billotto@gm.com></td><td>chaub@gmch.com&gt;, "David E. Miller"<br/>.weaver@gmch.com&gt;, David Worthington</td></david.e<></gary.ba<br> | ck Billotto" <frederick.billotto@gm.com>, kus<br/>acks@gmch.com&gt;, Steven Schaub <steven.s<br>e.miller@gmch.com&gt;, Daniel Weaver <daniel<br>vorthington@gmch.com&gt;, "Stephen Farris" &lt;:</daniel<br></steven.s<br></frederick.billotto@gm.com> | chaub@gmch.com>, "David E. Miller"<br>.weaver@gmch.com>, David Worthington |
| Date:<br>Subject: |                                                                                                                                                                                                                                                                                                                                                                                                               | 012 01:34 PM<br>Request for Decision on Pre-Breakpoint BAS+                                                                                                                                                                                            | Power Packs                                                                |

#### Kevin,

I know that neither you nor I will be able to answer this on our own, but we need to address the elephant in the room with respect to pre-option 1 material on hold at GMCH. We have around 1,000 power packs on hold from the stop build activity in August. These packs were almost all build in July outside the suspect window of March 15 through June 15. Packs of this very same vintage were subjected to the vehicle screen at Fairfax with no reported failures. It would be nice to start some dialog to determine who the

team is that will make the final decision on this material so that we can move on either way.

Thanks Jim

#### Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC <u>http://kokomogmch.com</u> Phone: (765) 451-9558 Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of

this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"



#### Kevin Diviney/US/GM/GMC

09/26/2012 12:53 PM

To Stephen Poulos/US/GM/GMC@GM, Barbara J. Radziewicz/US/GM/GMC@GM, Melani Thomas/US/GM/GMC@GM, Shinichiro

bcc

Subject Fw: FPET Meeting 9-27-2012 - eAssist Issue

FYI. We are finally on the agenda.





#### Global Electrification -Engineering Quality

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>

Robust Engineering Specialist

Global Program Quality Manager /

**Kevin Diviney** 

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

----- Forwarded by Kevin Diviney/US/GM/GMC on 09/26/2012 12:51 PM -----

| From:    | Christopher Janik/US/GM/GMC                                                 |
|----------|-----------------------------------------------------------------------------|
| To:      | Stephen Cichy/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Kevin          |
|          | Diviney/US/GM/GMC@GM, Carrie Harvey/US/GM/GMC@GM, Nancy Huber/US/GM/GMC@GM, |
|          | ROBERT C WITTMANN/US/GM/GMC@GM                                              |
| Date:    | 09/26/2012 12:15 PM                                                         |
| Subject: | FPET Meeting 9-27-2012 - eAssist Issue                                      |

Your attendance to support the discussion of the eAssist issue is appreciated. Please forward to others that you think would be helpful to attend.

#### Christopher Janik Phone: 586-907-5098 VEC Podium: 2K2-12

From:

To:

----- Forwarded by Christopher Janik/US/GM/GMC on 09/26/2012 11:56 AM -----

Jeff Ewing/US/GM/GMC Alan Adler/US/GM/GMC@GM, Beth Doxtader/US/GM/GMC@GM, Brian Stouffer/US/GM/GMC@GM, Carmen Benavides/US/GM/GMC@GM, Carolyn Markey/US/GM/GMC@GM, Charlotte Hinojos/US/GM/GMC@GM, Christine M. Witt/US/GM/GMC@GM, Christopher Janik/US/GM/GMC@GM, Cindy Hassien/US/GM/GMC@GM, Dale A. Furney/US/GM/GMC@GM, Daniel Daley/US/GM/GMC@GM, Daniel Dowling/US/GM/GMC@GM, Daniel R. Stec/US/GM/GMC@GM, DAVE REEK/US/GM/GMC@GM, David P. Garrett/US/GM/GMC@GM, David W. Schrumpf/US/GM/GMC@GM, Derek Marshall/US/GM/GMC@GM, Doug Wachtel/US/GM/GMC@GM, Edgar A. Pearce/US/GM/GMC@GM, Elizabeth A. Zatina/US/GM/GMC@GM, Eric A. Buddrius/US/GM/GMC@GM, Felicia Tugman/US/GM/GMC@GM, Gary Smits/US/GM/GMC@GM, Gil Oswaldo Aguado Guerrero/MX/GM/GMC@GM, Jeff Ewing/US/GM/GMC@GM, Jerry Hendler/US/GM/GMC@GM, Jim O'Donnell/CA/GM/GMC@GM, Joe Voyt/US/GM/GMC@GM,

John Murawa/US/GM/GMC@GM, Jon C. Northrup/US/GM/GMC@GM, Joy Hotchkiss/US/GM/GMC@GM, Kate Callahan/C/US/GM/GMC, Kim Starling/CA/GM/GMC@GM, Kimi Herriman/US/GM/GMC@GM, Bradley Ross/US/GM/GMC@GM, Lance Zimmerman/US/GM/GMC@GM, Laura L. Romeo/US/GM/GMC@GM, Laura M Slowiczek/C/US/GM/GMC@GM, Loren Rusk/US/GM/GMC@GM, Marc Wisniewski/US/GM/GMC@GM, Marilyn Steele/US/GM/GMC@GM, Mark Bainter/US/GM/GMC@GM, Maureen Foley-Gardner/US/GM/GMC@GM, Michelle Kendrick/C/US/GM/GMC@GM, Neil C. Skaar/US/GM/GMC@GM, Pamela Richards/C/US/GM/GMC@GM, Pat Hewitt/US/GM/GMC@GM, Patrick T. Macaluso/US/GM/GMC@GM, Phil Kling/CA/GM/GMC, Phillip E Thor/US/GM/GMC@GM, Phyllis Dufty/CA/GM/GMC@GM, Randall C. Harvey/US/GM/GMC@GM, Ranjini Sharma/US/GM/GMC@GM, Ricardo A Rodriguez/MX/GM/GMC@GM, RICHARD NUNEZ/US/GM/GMC@GM, Rick A. Czajkowski/US/GM/GMC@GM, Robert E. Schrock/US/GM/GMC@GM, Robert Szabo/US/GM/GMC@GM, Scott A Hans/US/GM/GMC@GM, Scott O. Trantham/US/GM/GMC@GM, Stephen G Gehring/US/GM/GMC@GM, William J. Kemp/US/GM/GMC@GM, William J. Kremer/US/GM/GMC@GM, Andrew Segovia/US/GM/GMC@GM Paul Zayan/US/GM/GMC@GM 09/26/2012 11:37 AM FPET Meeting 9-27-2012

#### Agenda

Subject:

Cc:

Date:

8:00 BPIM -- 2012-13 Regal, Lacrosse, Malibu w/ eAssist (Janik)

- 8:15 XTS CODE RED update
- 8:30 Status review

[attachment "~FPE Status.xlsx" deleted by Christopher Janik/US/GM/GMC]

FPET Conference Call/Meeting information Conference Room 1G16-05 Blue - VEC Podium (1st Floor)

To start or join the online meeting go to https://gm.webex.com/gm/j.php?ED=189283752&UID=492283552&PW=NZDRjN2YxNDBh&RT=MiMxMQ%3D%3D

Audio conference information

Meet Me Line: North America (866) 226-3606 / International (678) 466-7834 Access Code: 4746124



10/11/2012 10:23 AM

To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject Re: BPIM Bulk Cap PV test plan [ATTACHMENT REMOVED]

Hi Gary,

The attachment did not arrive with your email. Could you please resend?

Thank you,

Reena

| Gary Backs            | Next week we will be reviewing in the                                                                                              | 10/11/2012 10:09:56 AM |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:<br>To:<br>Date: | Gary Backs <gary.backs@gmch.com><br/>stephen.farris@gm.com, reena.datta@gm.com, rona<br/>10/11/2012 10:09 AM</gary.backs@gmch.com> | lld.d.weiss@gm.com     |
| Subject:              | BPIM Bulk Cap PV test plan [ATTACHMENT REMOV                                                                                       | 'ED]                   |

Next week we will be reviewing in the PET the forecast completion date for the bulk cap PV. This date violates the 2014 VTC/VDC milestones.

I anticipate questions around early sign-off or test re-arrangement to support an earlier completion date.

Please review the approved test plan attached. I will have the detailed schedule from Delphi on Monday.

### Are there opportunities to remove time from the long leg? What kind of risk assessment would be performed to support an early buyoff on testing while still in progress?

The VTC date we are trying to hit is 2/11. As of today's schedule, we expect to complete testing on 3/28.

If you could respond by Monday, I would appreciate it. I will schedule a meeting Monday if this group requires discussion of the issue.

#### Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

Nothing in this message is intended to constitute an electronic signature unless a specific statement to

the contrary is included in this message.

Confidentiality Note: This message is intended only for the person or entity to which it is addressed. It may contain confidential and/or privileged material. Any review, transmission, dissemination or other use, or taking of any action in reliance upon this message by persons or entities other than the intended recipient is prohibited and may be unlawful. If you received this message in error, please contact the sender and delete it from your computer.

This attachment was removed from this location in this message.

```
Name: APM-BPIM PV3 Test Plan 3-30-12.zip
Type: application/zip
Size: 10483930
```



#### {In Archive} Re: Decision - BAS+ BPIM Running Change

Stephen Farris to: Daniel D. Cottrell

Cc: Bob Agresta, DAVID P TASKY, Frederick Billotto, Reena Datta, Stephen Poulos, gary.backs This message is being viewed in an archive. 10/24/2012 10:43 AM

Archive:

Dan,

The EWO numbers for the BPIM/APM HW changes are below in sequence:

# 1) 1622067 – Bulk Cap & IC (changes PN) 2) 1724654 – Option 3 Robustness Improvements (no PN change)

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

#### -----Daniel D. Cottrell/US/GM/GMC wrote: -----

To: Stephen Poulos/US/GM/GMC@GM, Bob Agresta/US/GM/GMC@GM, gary.backs@gmch.com, DAVID P TASKY/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM From: Daniel D. Cottrell/US/GM/GMC Date: 10/24/2012 08:45AM Subject: Decision - BAS+ BPIM Running Change

I met with John Ball and Srihari Rao yesterday regarding the BPIM running change plans for 2013 / 2014. We went through both the technical detail and the timing issues that we have. They understand the reasoning behind the changes, and we have support to implement them.

John's decision is that we should target to provide validated / PPAPed material for the 2014 MVBs build bucket the week of April 15. That is the second build bucket. John's intent is to work with the plant launch team to be sure that no LUK BAS+ builds are scheduled in the first bucket. The plan would then be to allow the running change into the 2013 shortly thereafter (exact timing TBD). Recognize that we will be out of process and highly visible as we will not be meeting the MRD, but we will be operating with permission.

We should continue to schedule the new parts for PPV with the appropriate PPAP level for non-validated parts.

Followup required:

- I need the EWO numbers required to make these changes, so that the vehicle team can review and approve.
- I need to confirm the part logistics in plain language. Do we have a new 2014 SW set that drives a different PP for 2014 than 2013 running change or are the packs the same? How many packs will the plant need to manage to make the change for 2013 Malibu / Lacrosse plus 2014, plus the running change?
- Confirmation that we can meet the timing for April 15.
- Based on the above logistics question, we will need to negotiate the 2013 running change timing and any required PTRs.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771



{In Archive} Fw: BAS+ Powerpack Field Return Root Cause Investigation

Archive:

Daniel D. Cottrell to: Stephen Poulos This message is being viewed in an archive. 10/26/2012 03:16 PM

FYI

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

----- Forwarded by Daniel D. Cottrell/US/GM/GMC on 10/26/2012 03:15 PM -----

#### **BAS+** Powerpack Field Return Root Cause Investigation

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Fri 10/26/2012 4:00 PM - 5:00 PM

Attendance is for Daniel D. Cottrell

Chair: Frederick Billotto/US/GM/GMC

No Location Information

|           | cole.buttry@gmch.com, Daniel D. Cottrell/US/GM/GMC@GM, hossein.lotfalian@gmch.com, Jacob D Bylsma |
|-----------|---------------------------------------------------------------------------------------------------|
| Required: | GM, Mehrdad Teimor/US/GM/GMC@GM, Reena                                                            |
|           | Datta/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Stephen                                          |
|           | Farris/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM                                                  |
| Optional: | DAVID P TASKY/US/GM/GMC@GM, Gary M. Insana/US/GM/GMC@GM, Kris<br>Sevel/US/GM/GMC@GM               |

Description

To invite others to join, copy and paste everything below into your invitation.

\_\_\_\_\_

Meeting information

Topic: BAS+ Powerpack Root Cause Status Date: Friday, October 26, 2012 Time: 4:00 pm, Eastern Daylight Time (New York, GMT-04:00) Meeting Number: 962 533 248 Meeting Password: 6866187

-----

To start or join the online meeting

-----

Go to

https://gm.webex.com/gm/j.php?ED=199667587&UID=490912533&PW=NNDEwNjEzMTdk&RT=MiMx MQ%3D%3D

-----

Teleconference information

-----

Provide your phone number when you join the meeting to receive a call back. Alternatively, you can call: Call-in toll-free number: 1-8662263606 (US) Call-in number: 1-6784667834 (US) Show global numbers: <u>https://www.tcconline.com/offSite/OffSiteController.jpf?cc=6866187</u> Leader PIN: 3375

Conference Code: 686 618 7

For assistance

-----

\_\_\_\_\_

1. Go to https://gm.webex.com/gm/mc

2. On the left navigation bar, click "Support".

To add this meeting to your calendar program (for example Microsoft Outlook), click this link: <u>https://gm.webex.com/gm/j.php?ED=199667587&UID=490912533&ICS=MS&LD=1&RD=2&ST=1&SH</u> <u>A2=65MbIV/AfBsBh9d2AT89yQ/-XI3JwnQGH5YPxt-OvJY=</u>

To check whether you have the appropriate players installed for UCF (Universal Communications Format) rich media files, go to <u>https://gm.webex.com/gm/systemdiagnosis.php</u>.

http://www.webex.com

CCM: +16784667834x3375#

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Personal Notes



Tony (or Reena),

Can you confirm if the BPIM in the car that failed the CAP board a week ago (referenced below) was built with parts from the Nania suspect lot (I realize we are talking different boards)? If so, was the car screened prior to being delivered? Or was it already in customer hands before it could be screened?

Kevin,

Also, can you find out via TAC if any cars that have been screened and delivered have subsequently come back for a BPIM replacement?

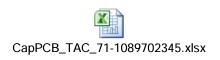
Just trying to gather as much information as we can from every clue.

Thanks,

Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 10/28/2012 02:00 PM -----

| From:<br>To:<br>Cc: | Reena Datta/US/GM/GMC<br>Frederick Billotto/US/GM/GMC@GM<br>Bryan M Ludwig/US/GM/GMC@GM, cole.buttry@gmch.com, Daniel D.<br>Cottrell/US/GM/GMC@GM, hossein.lotfalian@gmch.com, Jacob D Bylsma/US/GM/GMC@GM,<br>james.fortune@gmch.com, John J Lee/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM,<br>Mehrdad Teimor/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Stephen<br>Farris/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Stephen<br>Poulos/US/GM/GMC@GM, robert.wray@gmch.com, DAVID P TASKY/US/GM/GMC@GM, Gary |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | M. Insana/US/GM/GMC@GM, Kris Sevel/US/GM/GMC@GM                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Date:               | 10/27/2012 04:46 PM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Subject:            | TAC 71-1089702345 - BPIM/APM 279 - Cap PCB return                                                                                                                                                                                                                                                                                                                                                                                                                                                            |





# {In Archive} Re: Fw: TAC 71-1089702345 - BPIM/APM 279 - Cap PCB return Reena Datta to: Stephen Poulos 10/28/2012 02:22 PM Cc: Daniel D. Cottrell, Kevin Diviney, Tony J. Saliga This message is digitally signed.

History:This message has been replied to.Archive:This message is being viewed in an archive.

#### Hi Stephen,

The VIN referenced in this TAC case is 1G4GC5ER0CF . I searched for this VIN in the suspect powerpack and vehicle list and found the information below. This powerpack was built with parts from the suspect lots, as evidenced by the powerpack build date. I do not see this VIN on the list of vehicles tested at Fairfax and Oshawa. Based on the information below, the vehicle was sold on 21Jul2012, before vehicle testing at the plant began.

Please let me know if you have any questions or would like any additional information.

Reena

| 10 |                  |         |              |             |        |             |            |
|----|------------------|---------|--------------|-------------|--------|-------------|------------|
|    |                  |         |              |             |        |             |            |
|    |                  |         |              |             |        |             |            |
|    | Powerpack Serial | Part    | Powerpack    |             | Model  | Vehicle     | Delivery t |
|    | Number           | Number  | Build Date 🖃 | VIN _t      | Year 🔹 | Build Dat 👻 | Dealer Da  |
|    | LQ45654112146525 | 2.3E+07 | 5/25/2012    | 1G4GC5ER0CF | 2012   | 5/30/2012   | 6/14/20    |

| Stephen F | Poulos    | Tony (or Reena), Can you confirm if the BPIM i                   | 10/28/2012 02:11:18 PM |  |  |
|-----------|-----------|------------------------------------------------------------------|------------------------|--|--|
| From:     | Stephen   | Poulos/US/GM/GMC                                                 |                        |  |  |
| To:       |           | Saliga/US/GM/GMC@GM                                              |                        |  |  |
| Cc:       | Reena D   | Reena Datta/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Kevin |                        |  |  |
|           | Diviney/l | JS/GM/GMC@GM                                                     |                        |  |  |
| Date:     | 10/28/20  | 12 02:11 PM                                                      |                        |  |  |
| Subject:  | Fw: TAC   | 71-1089702345 - BPIM/APM 279 - Cap PCB return                    |                        |  |  |

#### Tony (or Reena),

Can you confirm if the BPIM in the car that failed the CAP board a week ago (referenced below) was built with parts from the Nania suspect lot (I realize we are talking different boards)? If so, was the car screened prior to being delivered? Or was it already in customer hands before it could be screened?

#### Kevin,

Also, can you find out via TAC if any cars that have been screened and delivered have subsequently come back for a BPIM replacement?

Just trying to gather as much information as we can from every clue.

Thanks,

#### Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 10/28/2012 02:00 PM -----

| From:    | Reena Datta/US/GM/GMC                                                           |
|----------|---------------------------------------------------------------------------------|
| To:      | Frederick Billotto/US/GM/GMC@GM                                                 |
| Cc:      | Bryan M Ludwig/US/GM/GMC@GM, cole.buttry@gmch.com, Daniel D.                    |
|          | Cottrell/US/GM/GMC@GM, hossein.lotfalian@gmch.com, Jacob D Bylsma/US/GM/GMC@GM, |
|          | james.fortune@gmch.com, John J Lee/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM,    |
|          | Mehrdad Teimor/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Stephen               |
|          | Farris/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Stephen                       |
|          | Poulos/US/GM/GMC@GM, robert.wray@gmch.com, DAVID P TASKY/US/GM/GMC@GM, Gary     |
|          | M. Insana/US/GM/GMC@GM, Kris Sevel/US/GM/GMC@GM                                 |
| Date:    | 10/27/2012 04:46 PM                                                             |
| Subject: | TAC 71-1089702345 - BPIM/APM 279 - Cap PCB return                               |

[attachment "CapPCB\_TAC\_71-1089702345.xlsx" deleted by Reena Datta/US/GM/GMC]



#### {In Archive} Fw: BAS+ field concern

Rick H Schroeder to: Frederick Billotto

10/29/2012 02:04 PM

Cc: Tony J. Saliga, Gary Backs, Hossein Lotfalian, Mark A Zerbini, Mehrdad Teimor, Milton Martinez, Reena Datta, Stephen Farris This message is being viewed in an archive.

Archive:

Fred here a list of MCP parameters from INCA.

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com ----- Forwarded by Rick H Schroeder/US/GM/GMC on 10/29/2012 01:56 PM -----

 From:
 Christopher Morgan/US/GM/GMC

 To:
 Aaron C Bowles/US/GM/GMC@GM

 Cc:
 Rick H Schroeder/US/GM/GMC@GM, Abbas Raftari/US/GM/GMC@GM, Bonho Bae/US/GM/GMC@GM, Mengwei<br/>Campbell/US/GM/GMC@GM, Roger Rademacher/US/GM/GMC@GM

 Date:
 10/29/2012 11:08 AM

 Subject:
 Re: Fw: BAS+ field concern

All,

Here's a quick list of everything MCP HW Diag related (and a few system level variables) that can help us diagnose our SW response to a resistive Pos/Neg short.

MCP\_BASp\_20121029\_Morgan\_INCLValuestocatchCurrentLeakfromPostoNeg.ee

Let me know if you have any issues.

Thanks, Chris

Regards,

Christopher J. Morgan

| Aaron C Bowles |                               | Rick, P1E0A is the only TS diag that could possible see something like this, b | 10/29/2012 10:46:41 AM |  |
|----------------|-------------------------------|--------------------------------------------------------------------------------|------------------------|--|
| From:          | Aaron C Bowles/US             | /GM/GMC                                                                        |                        |  |
| To:            | Rick H Schroeder/US/GM/GMC@GM |                                                                                |                        |  |
| Cc:            | Abbas Raftari/US/G            | <i>v</i> ei                                                                    |                        |  |
|                |                               | MC@GM, Roger Rademacher/US/GM/GMC@GM                                           |                        |  |
| Date:          | 10/29/2012 10:46 A            | •                                                                              |                        |  |
| Subject:       | Re: Fw: BAS+ field            | concern                                                                        |                        |  |

Rick,

P1E0A is the only TS diag that could possible see something like this, but I don't think it would because it is a rationality for the torque calculation. It may not catch failures in the hardware such as this.

Either way, here is two lab files with a list of signals (one for Fault Active flags and fault counters and one for the signals used in the diagnostic) At a minimum they can record the FA flags and Counters.

[attachment "P1E0A\_Signals.lab" deleted by Christopher Morgan/US/GM/GMC] [attachment "P1E0A\_FAflagsCounters.lab" deleted by Christopher Morgan/US/GM/GMC]

Thank You,

Aaron Bowles GM Electrification Propulsion Calibration Specialist Torque Security Diagnostics

-----

Milford Proving Grounds 3300 General Motors Rd Milford, MI 48380 Bldg. 16 1st floor, 16A-1029 Mail Code: 483-316-270 Phone: 248-807-8301 aaron.bowles@gm.com Roger RademacherHello, Besides the normal diagnostics would there be any control or TS strate...10/29/2012 09:15:20 AM



#### {In Archive} Re: Control board isolation failure

Stephen Farristo: Daniel D. CottrellDAVID P TASKY, Frederick Billotto, Jacob D Bylsma, Kevin Diviney,Cc:Reena Datta, Sean E Gleason, Shinichiro Taki, Stephen Poulos,<br/>Tony J. Saliga, gary.backs

10/30/2012 01:10 PM

Archive:

This message is being viewed in an archive.

Dan,

GMCH is looking into the history of this board. This failure was not a result of the field testing. It was a normal warranty return.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----Daniel D. Cottrell/US/GM/GMC wrote: -----

To: Stephen Farris/US/GM/GMC@GM From: Daniel D. Cottrell/US/GM/GMC Date: 10/30/2012 12:04PM Cc: DAVID P TASKY/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Jacob D Bylsma/US/GM/GMC@GM, Reena Datta/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Shinichiro Taki/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, gary.backs@gmch.com, Kevin Diviney/US/GM/GMC@GM Subject: Re: Control board isolation failure

Steve,

Can you please track down the age of this board and any other history? Is it roughly from the same time frame as the power boards that we are screening, or not? Was it discovered though our screening process or normal usage.

Since we are working to understand the cap board situation, this part could provide some significant clues, since you have never had one of these (control board isolation faults) before either.

Thank you, Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

Stephen Farris---10/17/2012 04:28:34 PM---From: Stephen Farris/US/GM/GMC To: DAVID P TASKY/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Sh

From: Stephen Farris/US/GM/GMC To: DAVID P TASKY/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, Shinichiro Taki/US/GM/GMC@GM Cc: Reena Datta/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Jacob D Bylsma/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM Date: 10/17/2012 04:28 PM Subject: Control board isolation failure

All,

Today in PDT it was communicated that we have our first control board isolation failure (vehicle had 31 miles). This failure has been confirmed with the same method used on the power board. GMCH removed components and still measured 170K ohm between failure site (HV+) and GND. GMCH then used IR camera to identify hot spot (after thermal imaging the resistance value reduced to about 1 ohm). The next step is to perform FA by x-sectioning board to confirm short between copper layers.

History: Originally the PDT and PE PMT recommended Option 1 which included adding two sheet of pre-preg on all PCBs in BPIM/APM (power, control and cap). However, the program team only approved the power board for Option 1, which is now in production. As a result, the control board and cap board will be updated with two sheet of pre-preg with the Option 3 changes, scheduled for production breakpoint mid April 2013.

The Option 3 design is complete and PV testing has started. Currently the estimated completion date for PV is 05APR13, with PPAP 09APR13.

Below is summary of failure. Attached is the presentation detailing this failure and detailed up to date timing for PV testing.

## Warranty Pack 219

Pack ID - LQ45654112164630 Tac - 71-1070023803 Check Engine light On

2013 Chevrolet Malibu 31 Miles Ramey Chevrolet Tazewell, VA

## Vehicle DTC

P1AF0 Drive Motor A Control Module Hybrid Battery Voltage System Isolation Fault

#### Initial Lab Findings

HV isolation leakage found from HV+ to ground. The issue was determined to be on the control board from the IGBT HV+ to ground. The issue was isolated to the high voltage discharge resistor network. The leakage site was further isolated to three resistor pads connected to HV+ (R803 R800 R798). The pads were completely isolated and a measurable leakage of 170K to ground was still present. The thermal camera did show an active site closest to R800 HV+ solder pad. After thermal imaging the resistance value reduced to about 1 Ohm.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

(See attached file: PV3 Timing Update 10-16-12.xls) (See attached file: War Pack 219 Ctrl PCB Summary.pptm)

[attachment "PV3 Timing Update 10-16-12.xls" removed by Stephen Farris/US/GM/GMC] [attachment "War Pack 219 Ctrl PCB Summary.pptm" removed by Stephen Farris/US/GM/GMC]



10/30/2012 09:25 AM

To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject Test Plan 30Oct2012



eAssist\_GMCH-Test-Procedure\_30Oct2012.pptx



10/30/2012 01:12 PM

To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject Re: Fw: please review ASAP and call my mobile



eAssist\_PrepregCap&CntrlPCB\_30Oct2012.pptx



To gary.backs@gmch.com

10/30/2012 04:01 PM

cc bcc

Subject files

2 attachments





eAssist\_PrepregCap&CntrlPCB\_30Oct2012.pptx eAssist\_GMCH-Test-Procedure\_30Oct2012.pptx

#### {In Archive} 2 Pre-preg Layer Cap Board and Control Board for eAssist

 Sean E Gleason
 to: Cole Buttry

 Sent by:
 Sean E Gleason

 Stephen Poulos, Daniel D. Cottrell, Mehrdad Teimor, Bob Agresta,

 Cc:
 Frederick Billotto, Gary Backs, DAVID P TASKY, Stephen Farris, Reena

 Datta

 Archive:
 This message is being viewed in an archive.

Cole,

I think we need to kick Delphi off to do any required design work on the 2 pre-preg layers board is critical path. Please tell Jim Wood we want this work started asap as we continue to study our choices for cutting into production.

10/31/2012 02:03 PM

Regards.

Sean Gleason Senior Manager - Global Electrification Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083



**Reena Datta/US/GM/GMC** 10/31/2012 08:53 AM To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject Fw: Documents for SUB 12238A Revision

Service Update 12238A - Inventory Vehicles Only - Loss of Battery Charge - Inspect Generator Control Module

The attached revised bulletin will be sent to dealers today.





10/31/2012 09:02 AM

To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject Print please



BAS+ Test Software Parameter List\_formatted.xlsx



10/31/2012 04:18 PM

To Gary Backs <gary.backs@gmch.com>

cc bcc

Subject files



eAssist\_GMCH-Test-Procedure\_31Oct2012.pptx



## {In Archive} November 1 eAssist Capacitor Board Update

11/01/2012 08:11 AM

Gary Backs to: sean.gleason, stephen.poulos This message is being viewed in an archive.

Archive: 1 attachment

**P** 

eAssist\_Cap Board Dealer Return Investigation\_1NOV2012[1].pptx

I will have to have photographs taken of a "new" capboard and will include in future update.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com



Kristin L Curran/US/GM/GMC

11/01/2012 08:08 AM

- To daniel.weaver@gmch.com
- cc Reena Datta/US/GM/GMC@GM

bcc

Subject Expedited eAssist Packs

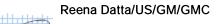
Hi Dan,

I understand that you are looking for tracking on the 2 dealer packs I requested to be expedited. The dealers will be sending them to the WPC and they will be expedited from there. (My request to have them expedited directly from the dealer was denied.) I requested notification of when they arrive at WPC and tracking numbers when they leave. When I get that info I will be sure to pass it along.

Please let me know if there is anything else you need.

Thanks.

Kristin L. Curran | *Brand Quality Manager, Advanced Propulsion* General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com



To gary.backs@gmch.com

11/01/2012 04:05 PM

cc bcc

Subject file

1 attachment



eAssist\_GMCH-Test-Procedure\_01Nov2012.pptx

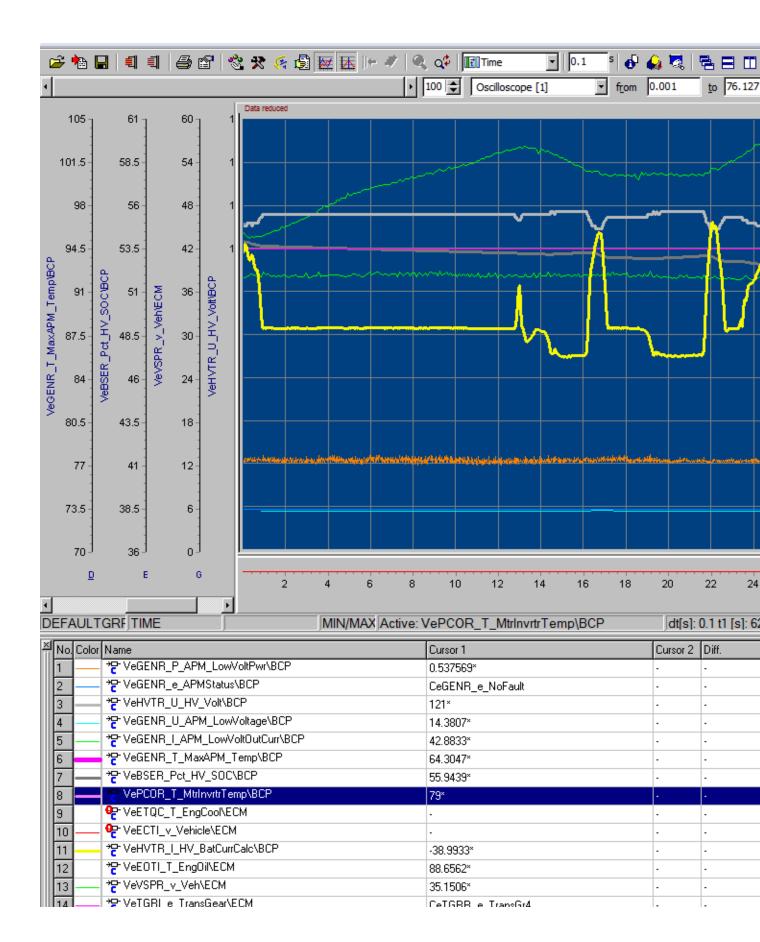


Tony J. Saliga/US/GM/GMC 11/02/2012 10:52 AM

- To Reena Datta/US/GM/GMC@GM
- cc david.e.miller@gmch.com, michael.fox@gmch.com bcc

Subject Re: Contacts at GMCH

This is an example of one 35 MPH acceleration / deceleration.



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| ш  |    |     |              |        |          |         |                   |          |    |          |         |          |       |   |  |  |
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| Шî |    | I   | ÷            | Analog | +0- r    | المنتصل | * Commente        | _ ۸ I    | рΙ | c L      | ы       | сI       | сL    | c |  |  |
| Ш  | 招  | All | C            | Analog | <u> </u> | /igitar | <u>s</u> comments | <u> </u> |    | <u> </u> |         |          |       |   |  |  |

This is a break down of the test that Phil ran

**X** 

Drive cycle data breakdown.xlsx

Let me know if you need anything else.

Thanks Anthony Saliga DVE eAssist Programs Pontiac North Powertrain Campus Building B Powertrain Global 823 Joslyn Road Pontiac, MI, 48340 MC 438-730-472 Ph: 248.670.8088

| Reena Datta                 | Hi Tony, Please see the vehicle test                                                                                                       | 11/02/2012 09:33:27 AM |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| To: To<br>Cc: m<br>Date: 11 | eena Datta/US/GM/GMC<br>ony J. Saliga/US/GM/GMC@GM<br>ichael.fox@gmch.com, david.e.miller@gmch.com<br>/02/2012 09:33 AM<br>ontacts at GMCH |                        |

Hi Tony,

Please see the vehicle test spreadsheet to Mike and David, cc'ed above. Thank you,

Reena



{In Archive} November 2 Cap Board Update Gary Backs to: frederick.billotto 11/02/2012 05:59 PM Show Details

Archive: This message is being viewed in an archive.

1 Attachment



eAssist\_Cap Board Dealer Return Investigation\_2NOV2012[1].pptx

## Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

To david.e.miller@gmch.com, michael.fox@gmch.com

11/02/2012 09:41 AM

cc bcc

Subject files

2 attachments





12238A bulletin.pdf 4DGP4600 Option 3 BPIM Test\_12238.pptx



11/02/2012 12:18 PM

- To david.e.miller@gmch.com, michael.fox@gmch.com
- cc gary.backs@gmch.com, hossein.lotfalian@gmch.com, cole.buttry@gmch.com

bcc

Subject eAssist Test Options

1 attachment



eAssist\_CapBoardScreening\_02Nov2012.pptx

All,

Please review and send feedback to David and Mike. We plan to discuss the options again today at 2PM in the conference room.

Reena



11/02/2012 02:56 PM

To gary.backs@gmch.com

cc bcc

Subject files 02Nov2012

2 attachments





eAssist\_CapBoardScreening\_02Nov2012.pptx eAssist\_TestingNotes\_02Nov2012.pptx



## {In Archive} Fw: eAssist TAC Cases from 02NOV12

Kevin Diviney to: Daniel D. Cottrell, DAVID P TASKY, Frederick Billotto, Stephen Poulos, Brian 1 Ciaverella, Kristin L Curran, Stephen Farris, Mehrdad

11/05/2012 11:09 AM

 From:
 Kevin Diviney/US/GM/GMC

 To:
 Daniel D. Cottrell/US/GM/GMC@GM, DAVID P TASKY/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, Brian 1 Ciaverella/C/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM, Stephen

 Archive:
 This message is being viewed in an archive.

FYI. Take a look at this case. This is the first case I have heard of where it failed after the test.

11/2/12 TAC case 71-1123278701, VIN 1G11F5RR5DF 3, 341 miles, service update 12238A was performed and passed the service update. the vehicle was being driven by the customer and the vehicle shut down, 12v battery was low, the dealer jumped the 12v battery and now has no communication with the hybrid control module or the motor control module. Advise dealer to make sure the vehicle is build with an LUK engine on GDS2, get any vehicle codes, check the F23UA 7.5a and F73UA 175a fuses to be open and call back with update.

Brian/Kristin,

Can you confirm that this is the first case of a Powerpack failure after passing this test in the field?

VBRID



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com Engineering Quality General Motors Corp.

**Global Electrification -**

Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

#### ----- Forwarded by Kevin Diviney/US/GM/GMC on 11/05/2012 11:04 AM -----

| From:    | Kristin L Curran/US/GM/GMC                                                |
|----------|---------------------------------------------------------------------------|
| To:      | eAssist Daily TAC Case                                                    |
| Cc:      | james.fortune@gmch.com, daniel.weaver@gmch.com, Reena Datta/US/GM/GMC@GM, |
|          | Elizabeth A. Norwood/US/GM/GMC@GM                                         |
| Date:    | 11/05/2012 08:53 AM                                                       |
| Subject: | eAssist TAC Cases from 02NOV12                                            |

### Summary of TAC Cases from November 2nd:

### Cases related to SUB 12238:

2 - 12238 (P0C0B) -> BPIM

2 - 12238 (P0CA2) -> BPIM 1 - 12238 (P1AF0) -> BPIM 1 - 12238 (U0293 U1817) -> Powerpack 1 - 12238 (?) -> BPIM *<- Had previously passed 12238* 

Cases unrelated to SUB 12238:

- 2 Discharged 12v, NTF at dealer
- 1 Vehicle will not go into gear
- 1 P1AF0/P1B0B
- 1 P0CA2 -> BPIM
- 1 Harsh shifts
- 1 P0A3F, P1B03 -> MGU

Thank you,

### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com



TAC\_Cases\_Nov02\_2012.xls



{In Archive} Re: Fw: eAssist TAC Cases from 02NOV12 Stephen Poulos to: Kristin L Curran Kevin Diviney, Bob Agresta, Brian 1 Ciaverella, Daniel D. Cottrell, Cc: DAVID P TASKY, Frederick Billotto, Mehrdad Teimor, Stephen Farris, Gary Backs, Sean E Gleason This message is being viewed in an archive.

11/07/2012 08:09 AM

Archive:

### Kristin, Kevin,

What can we do to expedite returning the "secondary failure" cases to GMCH for root cause. Need to know quickly for all three cases if these are failed power boards post break point that are being picked up by the screen, cap boards in the replacement post break point parts, or something else. Please advise. Thanks,

### Stephen

| Kristin L Curran |                                                                        | Kevin, No it is not the first case.              | There have b | 11/07/2012 07:38:48 AM |  |  |  |  |
|------------------|------------------------------------------------------------------------|--------------------------------------------------|--------------|------------------------|--|--|--|--|
| <b>F</b>         |                                                                        |                                                  |              |                        |  |  |  |  |
| From:            |                                                                        | Curran/US/GM/GMC                                 |              |                        |  |  |  |  |
| To:              | Kevin Div                                                              | iney/US/GM/GMC@GM                                |              |                        |  |  |  |  |
| Cc:              | Bob Agresta/US/GM/GMC@GM, Brian 1 Ciaverella/C/US/GM/GMC@GM, Daniel D. |                                                  |              |                        |  |  |  |  |
|                  |                                                                        | IS/GM/GMC@GM, DAVID P TASKY/                     |              |                        |  |  |  |  |
|                  |                                                                        | S/GM/GMC@GM, Mehrdad Teimor/                     |              |                        |  |  |  |  |
|                  |                                                                        | Farris/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM |              |                        |  |  |  |  |
| Date:            | ·                                                                      |                                                  |              |                        |  |  |  |  |
| Subject:         | Re: Fw: e                                                              | Assist TAC Cases from 02NOV12                    |              |                        |  |  |  |  |

Kevin,

No it is not the first case. There have been 2 others to my knowledge. One each included on the 31Oct12 and 01Nov12 summaries.

Thank you.

### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

| Kevin Diviney                |           | FYI. Take a look at this case.                                                             | This is the first                             | 11/05/2012 11:09:19 AM |
|------------------------------|-----------|--------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------|
| From:                        | Kevin Div | iney/US/GM/GMC                                                                             |                                               |                        |
| To: Daniel D.<br>Billotto/US |           | Cottrell/US/GM/GMC@GM, DAV<br>S/GM/GMC@GM, Stephen Poulo:<br>a/C/US/GM/GMC@GM, Kristin L ( | s/US/GM/GMC@GM, Brian<br>Curran/US/GM/GMC@GM, | 1<br>Stephen           |
| Date:<br>Subject:            | 11/05/201 | /GM/GMC@GM, Mehrdad Teimo<br>2 11:09 AM<br>ist TAC Cases from 02NOV12                      | r/US/GM/GMC@GM, Bob A                         | Agresta/US/GM/GMC@GM   |

FYI. Take a look at this case. This is the first case I have heard of where it failed after the test.

11/2/12 TAC case 71-1123278701, VIN 1G11F5RR5DF , 341 miles, service update 12238A was performed and passed the service update. the vehicle was being driven by the customer and the vehicle shut down, 12v battery was low, the dealer jumped the 12v battery and now has no communication with the hybrid control module or the motor control module. Advise dealer to make sure the vehicle is build with an LUK engine on GDS2, get any vehicle codes, check the F23UA 7.5a and F73UA 175a fuses to be open and call back with update.

Brian/Kristin,

Can you confirm that this is the first case of a Powerpack failure after passing this test in the field?





Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u> General Motors Corp. Pontiac North CET 895 Joslyn Avenue

**Global Electrification -**

**Engineering Quality** 

Pontiac, Michigan 48340 Cube 2K08

#### ----- Forwarded by Kevin Diviney/US/GM/GMC on 11/05/2012 11:04 AM -----

| From:    | Kristin L Curran/US/GM/GMC                                                |
|----------|---------------------------------------------------------------------------|
| To:      | eAssist Daily TAC Case                                                    |
| Cc:      | james.fortune@gmch.com, daniel.weaver@gmch.com, Reena Datta/US/GM/GMC@GM, |
|          | Elizabeth A. Norwood/US/GM/GMC@GM                                         |
| Date:    | 11/05/2012 08:53 AM                                                       |
| Subject: | eAssist TAC Cases from 02NOV12                                            |

### Summary of TAC Cases from November 2nd:

Cases related to SUB 12238:

- 2 12238 (P0C0B) -> BPIM
- 2 12238 (P0CA2) -> BPIM
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- 1 12238 (?) -> BPIM <- Had previously passed 12238

### Cases unrelated to SUB 12238:

- 2 Discharged 12v, NTF at dealer
- 1 Vehicle will not go into gear
- 1 P1AF0/P1B0B
- 1 P0CA2 -> BPIM
- 1 Harsh shifts
- 1 P0A3F, P1B03 -> MGU

Thank you,

Kristin L. Curran | *Brand Quality Manager, Advanced Propulsion* General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email <u>kristin.curran@gm.com</u> [attachment "TAC\_Cases\_Nov02\_2012.xls" deleted by Kristin L Curran/US/GM/GMC]

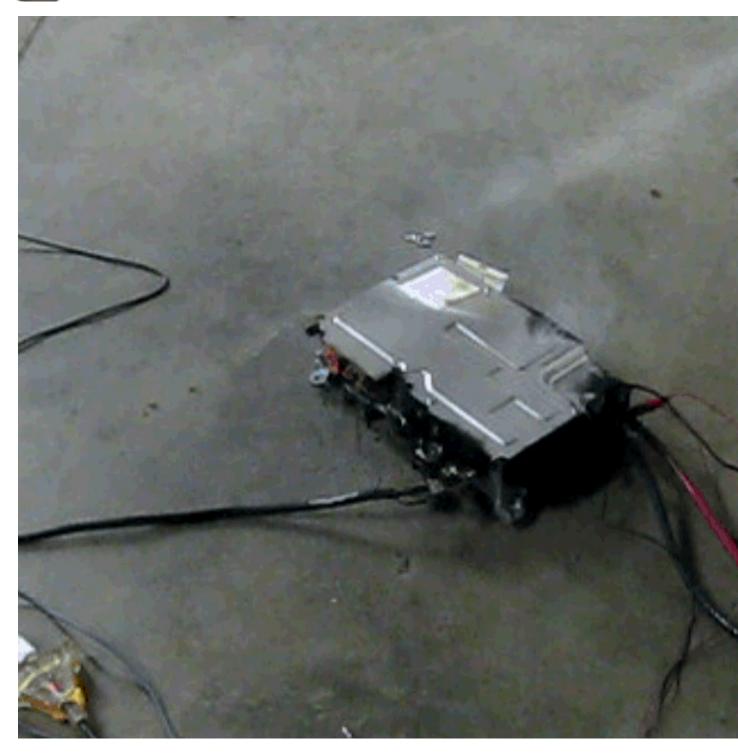


11/07/2012 10:04 AM

To Joseph Thompson <joseph.thompson@gmch.com>

cc bcc

Subject



| Sull                                    | Reena Datta/US/GM/GMC | То      | joseph.thompson@gmch.com |
|-----------------------------------------|-----------------------|---------|--------------------------|
|                                         | 11/12/2012 09:33 AM   | CC      |                          |
|                                         |                       | bcc     |                          |
| +++++++++++++++++++++++++++++++++++++++ |                       | Subject | Files                    |

3 attachments



W

To do list 12Nov2012.docx eAssist\_BPIM-Testing\_CheckList\_09Nov2012.docx

eAssist\_BPIM-Suppression-Testing-Notes\_12Nov2012.docx



# {In Archive} Re: BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 11/13/12 [ATTACHMENT REMOVED]

Gary Backs to: frederick.billotto

This message is being viewed in an archive.

11/13/2012 04:48 PM

Archive:

1 attachment



eAssist\_Cap Board Dealer Return Investigation\_13NOV2012[1].pptx

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

### -----frederick.billotto@gm.com wrote: -----

To: mark.zerbini@gm.com, kris.sevel@gm.com, mustafa.dakroub@gm.com, cole.buttry@gmch.com, roger.rademacher@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, steven.wybo@gm.com, james.fortune@gmch.com, christopher.janik@gm.com, christopher.winegarden@gm.com, mehrdad.teimor@gm.com, milton.martinez@gm.com, reena.datta@gm.com, richard.ye@gm.com, rick.schroeder@gm.com, sean.gleason@gm.com, stephen.farris@gm.com, stephen.poulos@gm.com, tony.j.saliga@gm.com, David Worthington <david.worthington@gmch.com>, kristin.curran@gm.com, shinichiro.taki@gm.com, gary.m.insana@gm.com, bob.agresta@gm.com, davidp.1.tasky@gm.com, calvin.a.goodman@gm.com From: frederick.billotto@gm.com Date: 11/13/2012 04:43PM Cc: ronn.jamieson@gm.com Subject: BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 11/13/12 Meeting Topics and Notes 11/13/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. 11/12 Status: On track with board procurement. Previously reported part availability is on schedule.
  - What GM parts were part of Delphi's PPAP? Hos will find out. Expect to get PNs on 11/13.
  - GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at Wednesday's PET. On target
- PPAP plan: GMCH will try to PPAP the parts before the end of the year. Gary will share the latest schedule.
- GM Diagnostic/Controls Solution: GMCH shared a scope trace of the current. Unlikely that the diagnostic could consistently detect the event. Investigate if VITM could read the current spikes: Rick Schroeder will begin working with Milton to assess feasibility. 11/13 Status: Andrew Baughman is investigating what could be done wrt battery current detection.
  - Rick asked for a better requirement to work with. Can a lower current short create the same failure? i.e 40 amps. Answer yes current can be lower and still cause damage. Difficult to assess if damage is equivalent to higher current shorts.
  - Reena will provide test data for Rick to analyze.
- GMCH Hi-pot Testing:

GMCH will need an email response from GM Engineering approving a variation to perform HIPOT testing on Bare Capacitor boards on the BAS+ APM/BPIM. Specifics of this test as well as operator work instructions are attached.

- Email response from S.Farris or D. Tasky will satisfy GMCH requirements. Jim will issue an SPCR and Steve Farris will champion the change through the GM approval process.
- Sean G. asked that Delphi review this plan. GMCH confirmed Delphi is working with them to develop and validate testing.
- Steve Farris will host a meeting to get all parties on board before testing is implemented in production.
- GMCH testing that mimics vehicle test (Cap board cycling): Status: Test equipment is in process. SPCR is also required as is GM internal review.
- Design changes to mitigate the failure:
- Suggestion: Can a barrier material be added to the interior trim? Dan Cottrell will follow-up. 11/13 Status: Dan C discussed feasibility with interior trim BFO. Options for both a field application and future production are under consideration.
- Design studies are underway to find a solution that could restrict venting around the 48 way connector.

Round table:

Next meeting: Wednesday at 4pm

All,

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto @gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/12/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. 11/12 Status:On track with board procurement. Previously reported part availability is on schedule.
  - What GM parts were part of Delphi's PPAP? Hos will find out. Expect to get PNs on 11/13.
  - What quality improvements can we expect with switch to inside HASL process? From Jim Fortune's email on 11/12/12:
  - Bullets for the main improvements are:
    - 100% Conveyerized line:
      - o Our in house LF HASL equipment is a continuous line: pre clean -> pre Heat -> Flux -> HASL -> Cool down -> Pot Wash

o Subcon is not continuous: Pre Clean\_> Pre Heat -> MANUAL HANDLE to place in vertical leveler -> Manual Handle to remove from leveler -> Cool Down Post Wash.

• The advantage of the continuous line is no timing variation from pre heat to the leveler resulting in better distribution of HASL thickness

- Horizontal Leveler (Nan Ya in House) Vs Vertical Leveler (Subcon):
- o The horizontal leveler produces a flatter final surface finish.
- o The horizontal leveler exposes the PCB panel to less thermal shock (less time in the solder pot). This is better for long term reliability.
- DI water post clean at an elevated temperature (Nan Ya in House Leveler) City water Subcon Leveler
- o DI post clean at an elevated temperature results in cleaner PCB's (Less free Ion's)
- Having LF HASL process in house at Nan Ya gives us better control over the process (Vs managing the subcon)
- No transportation time- packaging and shipping the panels to the subcon (about a 20 minute drive from Nan Ya's factory)
  - GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at Wednesday's PET.
- GMCH Hi-pot Testing:

GMCH will need an email response from GM Engineering approving a variation to perform HIPOT testing on Bare Capacitor boards on the BAS+ APM/BPIM. Specifics of this test as well as operator work instructions are attached.

- Email response from S.Farris or D. Tasky will satisfy GMCH requirements. Jim will issue an SPCR and Steve Farris will champion the change through the GM approval process.
- Status: Parts are in the thermal chamber will complete cycle on Wednesday. Test implementation 11/20/12.
- GMCH testing that mimics vehicle test (Cap board cycling): Status: Test equipment is in process. SPCR is also required as is GM internal review.
- Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday. Status: Testing indicated that the design change under consideration does not mitigate the effect of the failure. Suggestion: Can a barrier material be added to the interior trim? Dan Cottrell will follow-up.

- GM Diagnostic/Controls Solution: GMCH shared a scope trace of the current. Unlikely that the diagnostic could consistently detect the event. Investigate if VITM could read the current spikes: Rick Schroeder will begin working with Milton to assess feasibility.
- How does HTD validation test compare with the vehicle test? Steve Farris: No update today.

Round table:

Next meeting: Tuesday at 4pm

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto @gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/9/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. What GM parts were part of Delphi's PPAP? Hos will find out. What quality improvements can we expect with switch to inside HASL process? Jim Fortune will follow-up

How does HTD validation test compare with the vehicle test? Steve Farris

• Action: Plot HTD validation test data to learn what peak temperatures and power were recorded at each thermistor. Hos will help Steve help to make contact with the appropriate Delphi engineers.

GM Diagnostic/Controls Solution: Rick Schroeder:

• Current production SW will set a DTC if a rapid increase in current is detected but will not take remedial action. Possible to change cals to

enable opening contactors as a remedial action.

- Opening contactors immediately is feasible but that will require a software change. Calvin Goodman objects to this option using a diagnostic to detect a short.
- Next steps:
  - Primary path: SW change to open contactor immediately. Includes additional rationality feature to prevent false fails (walk home condition).
  - Cal change only. Secondary parallel path
  - What about using thermistor delta T readings to open contactor? Feasibility of this option is under consideration.

GM Testing:

Vehicle test with thermo-coupled caps. Tony Saliga: Test complete. Data was sent to Reena today and will be used to determine test profiles.

GMCH testing that mimics vehicle test (Cap board cycling): No new updates.

Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday. Plan is on track.

Round table: FPE will review issue on Tuesday.

Next meeting: Monday at 4pm

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto @gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

Meeting Topics and Notes 11/8/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are in draft status
- How to handle service and production stock?
  - Service/Dealer/Production: Plan to use existing stock if it can be screened. Everything must be screened not just the suspect lots.
    - How can we screen packs and BPIMs in service stock? Could test after installation in a vehicle.
  - Production stock at the vehicle asy plants cannot be screened. Implementation of the option 1 change required returning suspect powerpacks to GMCH. Plants will need to screen at the vehicle level. What to do with stock at the vehicle plants? Build and screen after. EWO direction is USE but somewhere in the process a screen must occur.
- Dan C. met with John Ball and he agreed that we can proceed with-out changing the pack PN providing we can trace the new stock.
- Last summer Nanya asked GMCH to change the HASL supplier. GMCH rejected the request. Nanya now refuses to quote without the HASL supplier change. GMCH produces other products with boards that use the new HASL supplier without issue. Team asked GMCH to request Nanya quote both options i.e, new vs current HASL supplier. GMCH will put together a qualification plan for the new HASL.
- Provide details behind EWO BPs. for John Ball (Fred Billotto)

Cap Board Hipot Screening at GMCH: On track to begin test verification over the weekend. The testing will take approx 4.5 days. Testing in production is planned to begin on 11/19/12

GMCH testing that mimics vehicle test (Cap board cycling): Apply 120v DC bias between HV+ and HV-.

GM Testing:

Vehicle test with thermocoupled caps. Tony Saliga: Test is underway should have ETAS profile in the morning.

Investigation of packs returned for the POBFD DTC:

Dan Weaver reported: "....5 of them have been confirmed to have isolation shorts. I will have the CPE look at the WAR 161 and 293 to see if we can get those closed as well.

Will also verify that WAR 206 and 228 were looked at and not just classified as isolation faults because of the P1B0B DTC."

Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday.

GM Diagnostic/Controls Solution: Rick Schroeder:

• Rick is working on this as a potential solution. Will ask for an update tomorrow at 4pm

Round Table:

Next meeting: Friday 4pm

Meeting Topics and Notes 11/7/12 4PM:

Pre-preg Layer Change Implementation

- Artwork complete and made available to Nanya yesterday
- Awaiting response from Nanya on quote, expect response tomorrow (Thu Nov 8th)
- GMCH to prepare updated timing for distribution to team this week.

Cap Board Hipot Screening at GMCH

- Two fixtures developed, to be completed this week (Fri Nov 9th).
- Hipot screening will be operated by engineering personal in the production environment.
- Cycle time 2 min including load and unload of parts, 170 parts a day to meet current production levels.
- 100 boards requested were made available for qualification 50 boards will tested through each fixture.
- Qualification includes measuring impedance before and after 2000V hipot, thermal cycling and humidity to ensure test does not create defects.
- Hipot breakpoint currently Nov 19th.

GM Diagnostic Testing

- POBFD "Drive Motor Current" setting in field with 8 vehicles setting the code thus far (based on when QIS2 captured data)
- When POBFD sets in field, other codes set including loss of isolation and precharge time too long faults

• TCed BPIMs were installed in vehicles but cannot be flashed with production code; GMCH onsite support was contacted and hopefully can unlock the units tomorrow (Thu Nov 8th).

GMCH Test Status and Learnings

- Temperature bare board testing modeled after vehicle screening to be reviewed and discussed tomorrow (Thu Nov 8th)
- Additional autocode BPIM testing may be needed and will be discussed with Diagnostic team,
- TC and scope data will be reviewed and sent to Diagnostic team.

Design changes to mitigate the failure

• Small work group will be formed to discuss this topic.

Next meeting: Thursday at 4PM

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto @gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Sorry for the delayed distribution...was out of the office for a few days.

Meeting Topics and Notes 11/5/12 4PM:

Pre-preg Layer Change Implementation:

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are in draft status
- Open Issues:
  - Need to determine production and service stock disposition. (Use, Rework, Dispose,): BPIMs at CCA warehouses: 792 MY12 (MY13 Malibu) PN 12635717 and 59 MY13 12650851.
  - Validation plan: GMCH working to get "pull ahead" boards several weeks before production qty boards arrive. Also some option 3 material may be available. GMCH presented a plan to test those boards. Additional confidence will be gained because Option 3 validation will be near completion at the time this change breaks to production.
  - Ability of service technicians to read the BPIM build date from SW. Not possible using standard service tools. (DPS can extract the data but that SW is not used at dealership)

CAP Board Screening at Nanya and GMCH:

One hi-pot fixture is assembled at the lab in GMCH. Verification test plan is under development. Estimated availability for production use? Dependent upon qualification test plan which is TBD. Estimate early next week as a possibility.

Ability to use Diagnostics to Detect a HV Short:

Rick and Milton ran a simulation at MPG to test for the capability of P0BFD to detect a High Voltage short.

GMCH asked to receive SW patch to support testing that validates the SW calibration would catch the failure. Investigate occurrence of POBFD in warranty returns. R. Schroeder Next steps: Set-up focused work to group to assess feasibility. (F.Billotto)

Round table:

Examine component level validation plan and compare against dealership testing. How does high temperature durability testing compare to SUB 12238? Steve Farris will investigate.

Can low mileage customer vehicles that have not failed be removed from the suspect lot? Example if a vehicle has >15k miles is can it be removed from the suspect list

Does pre-preg degrade overtime? Steve Farris will investigate.

Next Meeting: Wednesday Nov 7th at 4pm.

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto @gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/2/12 4PM:

GMCH Test Status and Learnings:

- A shorted cap board without the bulk capacitors populated creates the same magnitude event as a board with caps populated.
- Event occurs almost instantaneously.
- We learned from UCC that the cap on the field return did not vent due to internal failure. It was damaged from the outside.
- Failure occurs very rapidly.
- BPIM components monitored by thermistors do experience a rapid rise in temperature. Perhaps controls could react to that data.
- Rick Schroeder asked for current and temperature data to react to....temperature readings have a slower reaction time. Reacting to temp may still be beneficial.
- All data captured will be sent to Rick so he can assess our options.
- Rick and Milton will attempt to simulate the failure (non-destructive test) on a vehicle on Monday.

CAP Board Screening at Nanya and GMCH:

GMCH presented a cap board screen proposal.

GMCH presented a proposal for a test that mimics in vehicle test.

- Many unresolved issues. New equipment purchase would be required.
- The team wants to thermocouple a cap board and run in the vehicle to acquire correct temp profile.
- Plan to test 40 boards at a time. 8 boards per rack, 5 racks in thermal chamber
- Estimate 2-3 weeks to implement.

Pre-preg Layer Change Implementation:

• This topic was discussed and will proceed according to plan. Detailed timing is provided in the attachment.

Notes: Dan Cottrell suggests we explore design change that could seal pack to prevent propagation.

Next meeting: Monday at 4pm

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto @gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/1/12 4PM:

Plan to implement changes:

Additional pre-preg layers:

- GMCH will hold an emergency change meeting with the hopes of getting Delphi to begin the design changes by Monday. G.Backs working to get the CN issued. Team decided to get just the pre-preg change in as fast as possible.
- Plan is to proceed without PN changes: DRE's need to put a plan together. (Fred, Reena, Steve)

CAP Board Screening at Nanya and GMCH:

• GMCH working on a fixture to do on-site hi-pot testing on the cap board. Should have a sample fixture ready to test bare PCBs by Friday

(11/2). Test details are TBD. Goal is to implement 100% screen.

• GMCH asked Nanya to implement a board screen at their facility. Awaiting a response from Nanya

VĔC 4AV23

• GMCH test to mimic vehicle screen: Analyze vehicle test data to determine appropriate time, temp, and energy parameters. (This test was identified as critical path)

GMCH Test Status and Learnings

- GMCH will run a test without the bulk caps to understand if energy escapes the APM/BPIM unit without the electrolytic acting as a catalyst. Important to know if the caps are contributors.
- High temp delta was observed on several PCB components with-in a very short time span when a short is induced. Can this phenomenon be detected and acted upon by hybrid controls?
- MCP and BCP survive the event. GMCH was able to capture data.

Regards,

| Fred Billotto             | Hybrid Energy Storage  |
|---------------------------|------------------------|
| Senior Project Engineer   |                        |
|                           | General Motors Corp.   |
| Mobile Ph: (248) 904-9949 | Warren Technical       |
| Mail Code: 480-210-411    | Center                 |
| email: frederick.billotto | 30001 Van Dyke Avenue  |
| @gm.com                   | Warren, Michigan 48090 |

### From: Frederick Billotto/US/GM/GMC

To: frederick.billotto@gm.com, mark.zerbini@gm.com, kris.sevel@gm.com, mustafa.dakroub@gm.com, cole.buttry@gmch.com, roger.rademacher@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, steven.wybo@gm.com, james.fortune@gmch.com, john.j.lee@gm.com, christopher.janik@gm.com, christopher.winegarden@gm.com, mehrdad.teimor@gm.com, milton.martinez@gm.com, reena.datta@gm.com, richard.ye@gm.com, rick.schroeder@gm.com, sean.gleason@gm.com, stephen.farris@gm.com, stephen.farris@gm.com, stephen.poulos@gm.com, tony.j.saliga@gm.com, David Worthington <david.worthington@gmch.com>, Kristin L Curran/US/GM/GMC@GM Cc: shinichiro.taki@gm.com, gary.m.insana@gm.com

Date: 10/30/2012 05:23 PM

## All,

Meeting Topics and Notes 10/30/12:

- 1. Testing at GMCH: Status of test plan and testing activities: Gary Backs reviewed next steps. Plan to start testing on 10/31/12.
- 2.
- 2. What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony Saliga sent test data (V,T,I etc..) to GMCH. The profile is currently under review at GMCH.
- 3.
- 3. Mfg process data. GMCH sent a list of questions to Nanya. Jim Fortune presented production process data from Nanya indicating a low fall-out rate across the lots that the failed control boards came from.

4.

4. Confirm via physical inspection that the improved pre-preg layer meets expectations: The dielectric thickness (pre-preg layer) on the cap board meets industry standard thickness (currently at approximately 123 microns or greater). Option 3 changes will increase the pre-preg layer to 180 microns. Note industry standard also requires 2 layers.

5.

5. Summarize the validation plan for a pre-preg only change: If kick-off is 11/9/12 pipeline fill is 2/8/13.

## Notes:

Kevin Diviney reported on 3 additional powerpacks that failed and deposited excessive soot/smoke or smell in the vehicle during SUB 12238 testing at a dealership. Those packs will be expedited to GMCH.

Action Items:

- GMCH to complete inspection of all "isolation fault" (P1B0B dtc) warranty returns to check for any cap board failures. 17 units were
  inspected today, 1 cap board was found suspect. 100 BPIMs and 25 packs are left to check. Direction to GMCH is to continue checking
  stock before going back to root cause the suspect cap boards. Direction may change if a significant number of cap board failures are
  discovered.
- GMCH to work on developing a screen that mimics the SUB 12238.
- Complete change implementation trade study:
  - Pre-preg change only.
  - Wait for option 3 changes to complete validation and implement as planned in April 2013
  - Pull ahead option 3 implementation accepting less validation but continue running testing in parallel until complete.

## Open Issues:

Can the BPIM potentially detect a HV+ to HV- resistive short? Need to know what current level we see in the short before a determination can be made. Next step: review test results

Round Table:

Next meeting: Thursday morning at 10am.

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto @gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 10/29/12:

1.) Timing to implement pre-preg layer change into the CAP and Control PCBs.

- 5-6 weeks to produce PCBs in production quantities
- 2 weeks for GMCH internal drawing release.
- Testing and pull ahead material requirements are not included in the timing estimate.
- Approximately 2 weeks after the PCBs are received powerpacks will be available to ship. Can we abbreviate the option 3 change validation testing and pull ahead implementation? How much option 3 testing will complete 8 weeks from now? 75% HTD, TS complete, 50% of PTC, EMC testing complete, LV transient complete.

Options to implement a countermeasure:

- Rely upon option 3 testing that is complete at the time when the new PCBs with increased pre-preg layer become available to validate this change. (Under review. PDT prefers no part number changes)
- Release option 3 change to production approximately 8 weeks from now accepting validation complete at that time. Validation testing will continue until complete. (Rejected)

2.) GMCH test plan

- Reviewed GMCH presentation.
- Desired learnings: How long after the short initiates can we diagnose a failure? What can we do with that diagnosis? How long after a board shorts does the cap fail?
- If it becomes necessary to run the test with application SW outside the vehicle a plan will need to be developed. We don't know how to do that efficiently.

3.) Can the BPIM potentially detect a HV+ to HV- resistive short? Need to know what current level we see in the short before a determination can be made.

4.) Mfg process data.

• GMCH provided a list of questions to Nanya. Expect a response tomorrow.

5.) GMCH was asked to inspect BPIMs returned for iso faults that have yet to be visually inspected to confirm that the CAP board wasn't root cause.

• GMCH inspected 15 of approximately 100 parts. No cap board failures were found.

Notes:

Zero BPIMs have been returned for ISO faults since option 1 was implemented in August 2012.

Action items:

- Confirm via physical inspection that the improved pre-preg layer meets expectations. (GMCH)
- Summarize the validation plan for a pre-preg only change. (Reena and Gary)
- What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony will provide a trace of the duty cycle. (GMCH and Tony)
- Review GMCH test plan with ESS safety engineering. (Fred and Galen)
- What kind of screens can Nanya perform? Ask Nanya to perform hi pot testing on cap board.

Regards,

Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto @gm.com General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23 Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

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{In Archive} Your Request

Gary Backs to: stephen.poulos This message is being viewed in an archive. 11/14/2012 08:56 AM

The 3rd fail: Warranty 361, was received in kok on Monday morning (10am hour), analyzed and reported internally at 3:54 PM Monday. It was part of a group of 5 packs from the field service update testing that Kristen Curran had identified as suspicious and was expediting to Kokomo. It was reported back to Kristen at close of business the same day (Monday). The second part of her group was a "typical" power board failure. The 3 other parts from this group have yet to be received in Kokomo. The photo's of the incident have been reported to Kevin D., Fred B. and Steve F. in the last 30 minutes.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com



## {In Archive} Fw: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure Frederick Billotto to: Stephen Poulos 11/14/2012 0

11/14/2012 08:26 AM

FYI....See email below. I seems the part just came on 11/15.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com Hybrid Energy Storage General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

VERID

----- Forwarded by Frederick Billotto/US/GM/GMC on 11/14/2012 08:23 AM -----

From:Stephen Farris/US/GM/GMCTo:Frederick Billotto/US/GM/GMC@GMCc:Reena Datta/US/GM/GMC@GMDate:11/14/2012 08:13 AMSubject:Fw: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----Forwarded by Stephen Farris/US/GM/GMC on 11/14/2012 08:13AM -----

To: "Stephen Farris" <stephen.farris@gm.com> From: Daniel Weaver <daniel.weaver@gmch.com> Date: 11/14/2012 08:09AM Subject: Fw: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure

Here are the pictures of the Part from the Ohio dealer that we wanted to expedite to GMCH since it had excessive soot. We have confirmed it is a Capacitor board failure and appears to be due to single layer of pre preg.

#### Dan Weaver

Sr. Quality/Reliability Engineer

#### GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell: (765) 438-3281

Email: <u>daniel.weaver@gmch.com</u>

#### -----Forwarded by Daniel Weaver/GMch on 11/14/2012 08:05AM -----

To: Joseph Thompson/GMch@GMch, Hossein Lotfalian/GMch@GMch, Gary Backs/GMch@GMch, Daniel Weaver/GMch@GMch From: Michael Thompson/GMch Date: 11/12/2012 03:54PM Subject: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure

(See attached file: Warranty 361 Pictures.pptx)

To all:

Here are pictures of the warranty return 361 that was received today. It does appear to be a HV isolation capacitor board failure.

Michael A. Thompson Current Product Engineer for Safety (SDMs) and Body and Security (BCMs) Tel: +1-765-451-9004 Fax +1-765-451-7772

#### Address for letters only:

General Motors Components Holdings, LLC 2100 E Lincoln Road MS 6044 Kokomo, IN 46902 USA

#### Address for packages:

General Motors Components Holdings, LLC 2033 E. Boulevard POU # MEZ1-00N8-00P6 Kokomo, IN 46904 USA

michael.thompson@gmch.com



= Warranty 361 Pictures.pptx



#### Fw: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure Stephen Poulos to: Gary Backs

Cc: Frederick Billotto, Daniel D. Cottrell, Kevin Diviney, Sean E Gleason

11/14/2012 08:53 AM

#### Gary,

FYI, per my call. Sounds like diagnosis at GMCH was completed Monday just before 4 pm. I was not able to join the last two daily 4 pm calls, so not sure when GM was first informed. Need to know so I can respond to FPE appropriately.

#### Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 11/14/2012 08:44 AM -----

| From:    | Frederick Billotto/US/GM/GMC                                                            |
|----------|-----------------------------------------------------------------------------------------|
| To:      | Stephen Poulos/US/GM/GMC@GM                                                             |
| Date:    | 11/14/2012 08:26 AM                                                                     |
| Subject: | Fw: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure |

FYI....See email below. I seems the part just came on 11/15.

#### Regards,



**Fred Billotto** Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com **General Motors Corp.** Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

Hybrid Energy Storage

VERD

#### ----- Forwarded by Frederick Billotto/US/GM/GMC on 11/14/2012 08:23 AM -----

| From:    | Stephen Farris/US/GM/GMC                                                                |
|----------|-----------------------------------------------------------------------------------------|
| To:      | Frederick Billotto/US/GM/GMC@GM                                                         |
| Cc:      | Reena Datta/US/GM/GMC@GM                                                                |
| Date:    | 11/14/2012 08:13 AM                                                                     |
| Subject: | Fw: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure |

**STEPHEN L. FARRIS** Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center **GM Vehicle Engineering Center** Cell: 248.515.2572

-----Forwarded by Stephen Farris/US/GM/GMC on 11/14/2012 08:13AM -----

To: "Stephen Farris" <stephen.farris@gm.com> From: Daniel Weaver <daniel.weaver@gmch.com> Date: 11/14/2012 08:09AM Subject: Fw: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure

Here are the pictures of the Part from the Ohio dealer that we wanted to expedite to GMCH since it had excessive soot. We have confirmed it is a Capacitor board failure and appears to be due to single layer of pre preg.

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell: (765) 438-3281

Email: <u>daniel.weaver@gmch.com</u>

-----Forwarded by Daniel Weaver/GMch on 11/14/2012 08:05AM -----

To: Joseph Thompson/GMch@GMch, Hossein Lotfalian/GMch@GMch, Gary Backs/GMch@GMch, Daniel Weaver/GMch@GMch From: Michael Thompson/GMch Date: 11/12/2012 03:54PM Subject: Pictures for WARRANTY 361 that was received today. Suspect second Cap board failure

(See attached file: Warranty 361 Pictures.pptx)

To all:

Here are pictures of the warranty return 361 that was received today. It does appear to be a HV isolation capacitor board failure.

Michael A. Thompson Current Product Engineer for Safety (SDMs) and Body and Security (BCMs) Tel: +1-765-451-9004 Fax +1-765-451-7772

#### Address for letters only:

General Motors Components Holdings, LLC 2100 E Lincoln Road

MS 6044 Kokomo, IN 46902 USA

<u>Address for packages:</u> General Motors Components Holdings, LLC 2033 E. Boulevard POU # MEZ1-00N8-00P6 Kokomo, IN 46904 USA

michael.thompson@gmch.com



= Warranty 361 Pictures.pptx



#### {In Archive} BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 11/15/12

Frederick Billotto to: cole.buttry, roger.rademacher, gary.backs, hossein.lotfalian, steven.wybo, Cc: Ronn E. Jamieson

11/15/2012 05:19 PM

Archive:

This message is being viewed in an archive.

All,

Meeting Topics and Notes 11/15/12 4PM:

Stop Work Order 1819298:

- Requires stop build on all MY13 vehicles with eAssist. PNs 22967220, 22975013, 23102215 until Jan 21st.
- SWO is at IMPL.

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. Asked PEMs to help fast track to CAB.
  - Powerpack and BPIM Stock disposition: Plan to purge stock for service and production. Prefer to return the parts to GMCH. Need to provide instructions to plants and ESCs/CCA on how to handle the "disposal".
  - What should the plant do with vehicles in lots? Engineering recommendation: Screen and ship.
  - 11/15 Update: Fred will investigate process to determine "dispose" costs and will schedule special meeting to resolve.

Service Stock Strategy:

- Goal is to continue to service vehicles while minimizing excess stock. Team met today, GMCH is now working directly with the correct GM contacts.
  - BPIMs at CCA warehouses: 900 PN 12635717 MY12 (MY13 Malibu) and 59 MY13 12650851 as of Nov 5th.
  - Powerpack numbers are TBD

Distribution of Powperpack and BPIM orders. This data includes TAC orders between Oct. 19th and Nov. 9th (Oct. 19th was the day SUB 12238 was released.) The below data includes all TAC orders, not just those related to 12238.

| Part Name | PN       | Product                          | Qty | %    |
|-----------|----------|----------------------------------|-----|------|
| BPIM      | 12635717 | '12 Lacrosse, Regal / '13 Malibu | 228 | 79%  |
| BPIM      | 12650851 | '13 LaCrosse, Regal              | 5   | 2%   |
| Powerpack | 24259770 | '12 Lacrosse, Regal / '13 Malibu | 53  | 18%  |
| Powerpack | 22948845 | '13 LaCrosse, Regal              | 0   | 0%   |
|           |          |                                  |     | 100% |

Recent field returns:

3rd field return with failed CAP board:

- Kristin will try to get more information wrt actions taken when issue was discovered.
  - Kristin learned the tech heard a noise just after battery indicator reached full (step 5). Just after the noise, smoke was observed. Tech keyed off as soon as he heard the noise.
  - Did techs pull codes before the pack was removed? Kristin will investigate
- Can GMCH pull codes from the BPIM? Joe Thompson will try to retrieve the data.

4th field return with a failed CAP board:

- Received at GMCH 11/13/12
- May 15th 2012 BPIM build date. Vehicle build date 5/18/12
- Unit is from CAP board lot #101211. This is the 2nd failure same lot #101211.
- Vehicle failed at the dealer. SUB 12238 was performed on this vehicle but it is not clear if the part failed during the test. Kristin will follow-up with dealer to get more details.
- Joe Thompson will try to do a data dump.
- GMCH will investigate removing the micro, send to the supplier to extract the data.

Cap Board Hi-pot testing, 11/15 Update: Clarified that this test will not be used on new production material. Only used on current material.

Cap Board Cycling test, 11/15 Update: On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test.

Design changes to mitigate the failure: Update

- GMCH to develop test procedure that could validate the effectiveness of a barrier material. 11/15 Update: Dan C. identified a material that has potential.
- Kristin will investigate the availability of a warranty buy back vehicle. 11/15 Update: Kristin worked the issue today.
  - What is anticipated use and duration of use? Estimate 3 weeks.

New Service Bulletin in process: Update was posted at 3pm today.

GM Diagnostic/Controls Solution: GMCH and Reena did some powerpack level testing. Data capture will be sent to Milton and Rick after this meeting. If data capture is sufficient GMCH will proceed with powerpack level bench testing.

Round Table: Nanya may be able to improve PCB delivery. Gary will assess the information and update the timing plan.

Next Meeting: Monday Nov 19th 4pm

Regards,





Fred Billotto Senior Project Engineer Hybrid Energy Storage

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com 30001 Van Dyke Avenue

General Motors Corp. Warren Technical Center Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/14/12 4PM:

GM Diagnostic/Controls Solution:

- Update from Rick Schroeder:
  - 4 potential solutions. Rick is assessing effectiveness and risk. Also working on a timeline for each option.
  - Powerpack level test monitoring CAN data to the VITM and BPIM is underway.

Stop Work Order: 1819298

- Requires stop build on all MY13 vehicles with eAssist. PNs 22967220, 22975013, 23102215.
- Stop order duration estimated to end on Jan 21st. Team considers this date conservative.

MY14/15 Builds not included in SWO:

MY14 PPV builds: E16- 4 pieces (already shipped new HW MY14 parts) GMX353-1 piece for 11/15/12 MRD (will be a re-flashed MY13 part), 2 Pieces for 1/11/13 MRD GMX351-1 piece for 1/13 MRD GMX350-1 Piece for 3/13 MRD

MY14 MVBNs: GMX353- 6 pieces first MRD is Mid- February GMX351-1 piece

Team agrees to allow non-saleable builds to proceed. Assess options to retrofit if determined necessary.

Pre-preg Laver Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. Asked PEMs to help fast track to CAB.
- EWO 1814838 effects MY13 part numbers 23111190 and 22975013 (Malibu only).
  - 23111190 has not shipped to production.
  - Powerpack and BPIM Stock disposition: Plan to purge stock for service and production. • Prefer to return the parts to GMCH. Need to provide instructions to plants and ESCs/CCA on how to handle the "disposal".
  - What should the plant do with vehicles in lots? Engineering recommendation: Screen and ship.

Recent field return with damaged cap board (3rd field return):

- Cap board failure is consistent with previous failed boards. Damage foot print similar to previous field failure and lab induced failures.
- Kristin will try to get more information wrt actions taken when issue was discovered.

Cap Board Hi-pot testing:

- How does this implementation plan since stop build issue? Plan to continue this activity to learn if faulty boards can be detected.
- Plan to audit new boards through this process.

Design changes to mitigate the failure: No update today. GMCH to develop test procedure that could validate the effectiveness of a barrier material. Kristin will investigate the availability of a warranty buy back vehicle

New Service Bulletin in process: Cannot sell eAssist cars with-out vehicle screen. Not posted as of the time of this meeting.

Misc:

CCA ordered 1600 service BPIMs. We need to continue servicing vehicles but should limit stock on hand. Fred and Gary will discuss with CCA tomorrow.

Round Table:

What is the disposition of parts used in root cause testing? Hold until further notice.

Next Meeting: Thursday 4pm.

Regards,





Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com 30001 Van Dyke Avenue

Hybrid Energy Storage

General Motors Corp. Warren Technical Center Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/13/12 4PM:

Pre-preg Layer Change Implementation

EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. •

- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. 11/12 Status: On track with board procurement. Previously reported part availability is on schedule.
  - What GM parts were part of Delphi's PPAP? Hos will find out. Expect to get PNs on 11/13.
  - GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at Wednesday's PET. On target
- PPAP plan: GMCH will try to PPAP the parts before the end of the year. Gary will share the latest schedule.
- GM Diagnostic/Controls Solution: GMCH shared a scope trace of the current. Unlikely that the diagnostic could consistently detect the event. Investigate if VITM could read the current spikes: Rick Schroeder will begin working with Milton to assess feasibility. 11/13 Status: Andrew Baughman is investigating what could be done wrt battery current detection.
  - Rick asked for a better requirement to work with. Can a lower current short create the same failure? i.e 40 amps. Answer yes current can be lower and still cause damage. Difficult to assess if damage is equivalent to higher current shorts.
  - Reena will provide test data for Rick to analyze.
  - GMCH Hi-pot Testing:

GMCH will need an email response from GM Engineering approving a variation to perform HIPOT testing on Bare Capacitor boards on the BAS+ APM/BPIM. Specifics of this test as well as operator work instructions are attached.

- Email response from S.Farris or D. Tasky will satisfy GMCH requirements. Jim will issue an SPCR and Steve Farris will champion the change through the GM approval process.
- Sean G. asked that Delphi review this plan. GMCH confirmed Delphi is working with them to develop and validate testing.
- Steve Farris will host a meeting to get all parties on board before testing is implemented in production.
- GMCH testing that mimics vehicle test (Cap board cycling): Status: Test equipment is in process. SPCR is also required as is GM internal review.
- Design changes to mitigate the failure:
- Suggestion: Can a barrier material be added to the interior trim? Dan Cottrell will follow-up. 11/13 Status: Dan C discussed feasibility with interior trim BFO. Options for both a field application and future production are under consideration.
- Design studies are underway to find a solution that could restrict venting around the 48 way connector.

Round table:

Next meeting: Wednesday at 4pm

Regards,





Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com 30001 Van Dyke Avenue

Hybrid Energy Storage

General Motors Corp. Warren Technical Center Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/12/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. 11/12 Status: On track with board procurement. Previously reported part availability is on schedule.
  - What GM parts were part of Delphi's PPAP? Hos will find out. Expect to get PNs on 11/13.
  - What quality improvements can we expect with switch to inside HASL process? From Jim Fortune's email on 11/12/12:

Bullets for the main improvements are:

100% Conveyerized line:

o Our in house LF HASL equipment is a continuous line: pre clean -> pre Heat -> Flux -> HASL -> Cool down -> Pot Wash

o Subcon is not continuous: Pre Clean\_> Pre Heat -> MANUAL HANDLE to place in vertical leveler -> Manual Handle to remove from leveler -> Cool Down Post Wash.

• The advantage of the continuous line is no timing variation from pre heat to the leveler resulting in better distribution of HASL thickness

- Horizontal Leveler (Nan Ya in House) Vs Vertical Leveler (Subcon):

o The horizontal leveler produces a flatter final surface finish.

o The horizontal leveler exposes the PCB panel to less thermal shock (less time in the solder pot). This is better for long term reliability.

- DI water post clean at an elevated temperature (Nan Ya in House Leveler) - City water Subcon Leveler

o DI post clean at an elevated temperature results in cleaner PCB's (Less free Ion's)

- Having LF HASL process in house at Nan Ya gives us better control over the process (Vs managing the subcon)

- No transportation time- packaging and shipping the panels to the subcon (about a 20 minute drive from Nan Ya's factory)

- GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at Wednesday's PET.
- GMCH Hi-pot Testing:

GMCH will need an email response from GM Engineering approving a variation to perform HIPOT testing on Bare Capacitor boards on the BAS+ APM/BPIM. Specifics of this test as well as operator work instructions are attached.

• Email response from S.Farris or D. Tasky will satisfy GMCH requirements. Jim will issue an SPCR and Steve Farris will champion the change through the GM approval process.

- Status: Parts are in the thermal chamber will complete cycle on Wednesday. Test implementation 11/20/12.
- GMCH testing that mimics vehicle test (Cap board cycling): Status: Test equipment is in process. SPCR is also required as is GM internal review.
- Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday. Status: Testing indicated that the design change under consideration does not mitigate the effect of the failure.

Suggestion: Can a barrier material be added to the interior trim? Dan Cottrell will follow-up.

- GM Diagnostic/Controls Solution: GMCH shared a scope trace of the current. Unlikely that the diagnostic could consistently detect the event. Investigate if VITM could read the current spikes: Rick Schroeder will begin working with Milton to assess feasibility.
- How does HTD validation test compare with the vehicle test? Steve Farris: No update today.

Round table:

Next meeting: Tuesday at 4pm

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com 30001 Van Dyke Avenue



Hybrid Energy Storage

General Motors Corp. Warren Technical Center Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/9/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. What GM parts were part of Delphi's PPAP? Hos will find out. What guality improvements can we expect with switch to inside HASL process? Jim Fortune will follow-up

How does HTD validation test compare with the vehicle test? Steve Farris

Action: Plot HTD validation test data to learn what peak temperatures and power were recorded at each thermistor. Hos will help Steve help to make contact with the appropriate Delphi engineers.

GM Diagnostic/Controls Solution: Rick Schroeder:

- Current production SW will set a DTC if a rapid increase in current is detected but will not take remedial action. Possible to change cals to enable opening contactors as a remedial action.
- Opening contactors immediately is feasible but that will require a software change. Calvin • Goodman objects to this option using a diagnostic to detect a short.
- Next steps:
  - Primary path: SW change to open contactor immediately. Includes additional rationality feature to prevent false fails (walk home condition).
  - Cal change only. Secondary parallel path •
  - What about using thermistor delta T readings to open contactor? Feasibility of this option is under consideration.

#### GM Testing:

Vehicle test with thermo-coupled caps. Tony Saliga: Test complete. Data was sent to Reena today and will be used to determine test profiles.

GMCH testing that mimics vehicle test (Cap board cycling): No new updates.

Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday. Plan is on track.

Round table: FPE will review issue on Tuesday.

Next meeting: Monday at 4pm

Regards,



Fred Billotto Senior Project Engineer Hybrid Energy Storage

VBRID

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com 30001 Van Dyke Avenue

General Motors Corp. Warren Technical Center Warren, Michigan 48090 VEC 4AV23

Meeting Topics and Notes 11/8/12 4PM:

Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are in draft status
- How to handle service and production stock?
  - Service/Dealer/Production: Plan to use existing stock if it can be screened. Everything must be screened not just the suspect lots.
    - How can we screen packs and BPIMs in service stock? Could test after installation in a vehicle.
  - Production stock at the vehicle asy plants cannot be screened. Implementation of the option 1 change required returning suspect powerpacks to GMCH. Plants will need to screen at the vehicle level. What to do with stock at the vehicle plants? Build and screen after. EWO direction is USE but somewhere in the process a screen must occur.
- Dan C. met with John Ball and he agreed that we can proceed with-out changing the pack PN providing we can trace the new stock.
- Last summer Nanya asked GMCH to change the HASL supplier. GMCH rejected the request. Nanya now refuses to quote without the HASL supplier change. GMCH produces other products with boards that use the new HASL supplier without issue. Team asked GMCH to request Nanya quote both options i.e, new vs current HASL supplier. GMCH will put together a qualification plan for the new HASL.
- Provide details behind EWO BPs. for John Ball (Fred Billotto)

Cap Board Hipot Screening at GMCH: On track to begin test verification over the weekend. The testing will take approx 4.5 days. Testing in production is planned to begin on 11/19/12

GMCH testing that mimics vehicle test (Cap board cycling): Apply 120v DC bias between HV+ and HV-.

#### GM Testing:

Vehicle test with thermocoupled caps. Tony Saliga: Test is underway should have ETAS profile in the morning.

Investigation of packs returned for the P0BFD DTC:

Dan Weaver reported: "....5 of them have been confirmed to have isolation shorts. I will have the CPE look at the WAR 161 and 293 to see if we can get those closed as well. Will also verify that WAR 206 and 228 were looked at and not just classified as isolation faults because of the P1B0B DTC."

Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday.

GM Diagnostic/Controls Solution: Rick Schroeder:

• Rick is working on this as a potential solution. Will ask for an update tomorrow at 4pm

Round Table:

Next meeting: Friday 4pm

Meeting Topics and Notes 11/7/12 4PM:

Pre-preg Layer Change Implementation

- Artwork complete and made available to Nanya yesterday
- Awaiting response from Nanya on quote, expect response tomorrow (Thu Nov 8th)
- GMCH to prepare updated timing for distribution to team this week.

Cap Board Hipot Screening at GMCH

- Two fixtures developed, to be completed this week (Fri Nov 9th).
- Hipot screening will be operated by engineering personal in the production environment.
- Cycle time 2 min including load and unload of parts, 170 parts a day to meet current production levels.
- 100 boards requested were made available for qualification 50 boards will tested through each fixture.
- Qualification includes measuring impedance before and after 2000V hipot, thermal cycling and humidity to ensure test does not create defects.
- Hipot breakpoint currently Nov 19th.

GM Diagnostic Testing

- POBFD "Drive Motor Current" setting in field with 8 vehicles setting the code thus far (based on when QIS2 captured data)
- When P0BFD sets in field, other codes set including loss of isolation and precharge time too long faults
- TCed BPIMs were installed in vehicles but cannot be flashed with production code; GMCH onsite support was contacted and hopefully can unlock the units tomorrow (Thu Nov 8th).

GMCH Test Status and Learnings

- Temperature bare board testing modeled after vehicle screening to be reviewed and discussed tomorrow (Thu Nov 8th)
- Additional autocode BPIM testing may be needed and will be discussed with Diagnostic team,
- TC and scope data will be reviewed and sent to Diagnostic team.

Design changes to mitigate the failure

• Small work group will be formed to discuss this topic.

Next meeting: Thursday at 4PM

Regards,

GΜ



Fred Billotto Senior Project Engineer Hybrid Energy Storage

General Motors Corp. Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com Warren, Michigan 48090 VEC 4AV23

All,

Sorry for the delayed distribution...was out of the office for a few days.

Meeting Topics and Notes 11/5/12 4PM:

Pre-preg Layer Change Implementation:

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are in draft status
- Open Issues:
  - Need to determine production and service stock disposition. (Use, Rework, Dispose,): BPIMs at CCA warehouses: 792 MY12 (MY13 Malibu) PN 12635717 and 59 MY13 12650851.
  - Validation plan: GMCH working to get "pull ahead" boards several weeks before production qty boards arrive. Also some option 3 material may be available. GMCH presented a plan to test those boards. Additional confidence will be gained because Option 3 validation will be near completion at the time this change breaks to production.
  - Ability of service technicians to read the BPIM build date from SW. Not possible using standard service tools. (DPS can extract the data but that SW is not used at dealership)

CAP Board Screening at Nanya and GMCH:

One hi-pot fixture is assembled at the lab in GMCH. Verification test plan is under development. Estimated availability for production use? Dependant upon qualification test plan which is TBD. Estimate early next week as a possibility.

Ability to use Diagnostics to Detect a HV Short: Rick and Milton ran a simulation at MPG to test for the capability of P0BFD to detect a High Voltage short.

GMCH asked to receive SW patch to support testing that validates the SW calibration would catch the failure.

Investigate occurrence of POBFD in warranty returns. R. Schroeder

Next steps: Set-up focused work to group to assess feasibility. (F.Billotto)

Round table:

Examine component level validation plan and compare against dealership testing. How does high temperature durability testing compare to SUB 12238? Steve Farris will investigate. Can low mileage customer vehicles that have not failed be removed from the suspect lot? Example if a vehicle has >15k miles is can it be removed from the suspect list Does pre-preg degrade overtime? Steve Farris will investigate.

Next Meeting: Wednesday Nov 7th at 4pm.

Regards,





Fred Billotto Senior Project Engineer Hybrid Energy Storage

General Motors Corp. Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/2/12 4PM:

GMCH Test Status and Learnings:

- A shorted cap board without the bulk capacitors populated creates the same magnitude event as a board with caps populated.
- Event occurs almost instantaneously.
- We learned from UCC that the cap on the field return did not vent due to internal failure. It was damaged from the outside.
- Failure occurs very rapidly.
- BPIM components monitored by thermistors do experience a rapid rise in temperature. Perhaps controls could react to that data.
- Rick Schroeder asked for current and temperature data to react to....temperature readings have a slower reaction time. Reacting to temp may still be beneficial.
- All data captured will be sent to Rick so he can assess our options.
- Rick and Milton will attempt to simulate the failure (non-destructive test) on a vehicle on Monday.

CAP Board Screening at Nanya and GMCH:

GMCH presented a cap board screen proposal.

GMCH presented a proposal for a test that mimics in vehicle test.

- Many unresolved issues. New equipment purchase would be required.
- The team wants to thermocouple a cap board and run in the vehicle to acquire correct temp profile.
- Plan to test 40 boards at a time. 8 boards per rack, 5 racks in thermal chamber
- Estimate 2-3 weeks to implement.

Pre-preg Layer Change Implementation:

• This topic was discussed and will proceed according to plan. Detailed timing is provided in the attachment.

Notes: Dan Cottrell suggests we explore design change that could seal pack to prevent propagation.

Next meeting: Monday at 4pm

Regards,

GM



-Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949Warren TechnicalMail Code: 480-210-411Centeremail: frederick.billotto@gm.com30001 Van Dyke Avenue

Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/1/12 4PM:

Plan to implement changes:

Additional pre-preg layers:

- GMCH will hold an emergency change meeting with the hopes of getting Delphi to begin the design changes by Monday. G.Backs working to get the CN issued. Team decided to get just the pre-preg change in as fast as possible.
- Plan is to proceed without PN changes: DRE's need to put a plan together. (Fred, Reena, Steve)

CAP Board Screening at Nanya and GMCH:

- GMCH working on a fixture to do on-site hi-pot testing on the cap board. Should have a sample fixture ready to test bare PCBs by Friday (11/2). Test details are TBD. Goal is to implement 100% screen.
- GMCH asked Nanya to implement a board screen at their facility. Awaiting a response from Nanya
- GMCH test to mimic vehicle screen: Analyze vehicle test data to determine appropriate time, temp, and energy parameters. (This test was identified as critical path)

GMCH Test Status and Learnings

- GMCH will run a test without the bulk caps to understand if energy escapes the APM/BPIM unit without the electrolytic acting as a catalyst. Important to know if the caps are contributors.
- High temp delta was observed on several PCB components with-in a very short time span when a short is induced. Can this phenomenon be detected and acted upon by hybrid controls?
- MCP and BCP survive the event. GMCH was able to capture data.

Regards,

GM



Fred Billotto Senior Project Engineer Hybrid Energy Storage General Motors Corp. Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com Warren, Michigan 48090 VEC 4AV23

#### From: Frederick Billotto/US/GM/GMC

To: frederick.billotto@gm.com, mark.zerbini@gm.com, kris.sevel@gm.com, mustafa.dakroub@gm.com, cole.buttry@gmch.com, roger.rademacher@gm.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, steven.wybo@gm.com, james.fortune@gmch.com, john.j.lee@gm.com, christopher.janik@gm.com, christopher.winegarden@gm.com, mehrdad.teimor@gm.com, milton.martinez@gm.com, reena.datta@gm.com, richard.ye@gm.com, rick.schroeder@gm.com, sean.gleason@gm.com, stephen.farris@gm.com, stephen.poulos@gm.com, tony.j.saliga@gm.com, David Worthington <david.worthington@gmch.com>, Kristin L Curran/US/GM/GMC@GM Cc: shinichiro.taki@gm.com, gary.m.insana@gm.com Date: 10/30/2012 05:23 PM Subject: BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 10/30/12

#### All,

Meeting Topics and Notes 10/30/12:

- 1. Testing at GMCH: Status of test plan and testing activities: Gary Backs reviewed next steps. Plan to start testing on 10/31/12.
- 2. What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony Saliga sent test data (V,T,I etc..) to GMCH. The profile is currently under review at GMCH.
- 3. Mfg process data. GMCH sent a list of questions to Nanya. Jim Fortune presented production process data from Nanya indicating a low fall-out rate across the lots that the failed control boards came from.
- 4. Confirm via physical inspection that the improved pre-preg layer meets expectations: The dielectric thickness (pre-preg layer) on the cap board meets industry standard thickness (currently at approximately 123 microns or greater). Option 3 changes will increase the pre-preg layer to 180 microns. Note industry standard also requires 2 layers.
- 5. Summarize the validation plan for a pre-preg only change: If kick-off is 11/9/12 pipeline fill is 2/8/13.

#### Notes:

Kevin Diviney reported on 3 additional powerpacks that failed and deposited excessive soot/smoke or smell in the vehicle during SUB 12238 testing at a dealership. Those packs will be expedited to GMCH.

#### Action Items:

- GMCH to complete inspection of all "isolation fault" (P1B0B dtc) warranty returns to check for any cap board failures. 17 units were inspected today, 1 cap board was found suspect. 100 BPIMs and 25 packs are left to check. Direction to GMCH is to continue checking stock before going back to root cause the suspect cap boards. Direction may change if a significant number of cap board failures are discovered.
- GMCH to work on developing a screen that mimics the SUB 12238.
  - Complete change implementation trade study:
    - Pre-preg change only.
    - Wait for option 3 changes to complete validation and implement as planned in April 2013

Pull ahead option 3 implementation accepting less validation but continue running testing in parallel until complete.

**Open Issues:** 

Can the BPIM potentially detect a HV+ to HV- resistive short? Need to know what current level we see in the short before a determination can be made. Next step: review test results

Round Table: Next meeting: Thursday morning at 10am.

Regards,





Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411

Hybrid Energy Storage

General Motors Corp. Warren Technical Center email: frederick.billotto@gm.com 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 10/29/12:

1.) Timing to implement pre-preg layer change into the CAP and Control PCBs.

- 5-6 weeks to produce PCBs in production quantities
- 2 weeks for GMCH internal drawing release.
- Testing and pull ahead material requirements are not included in the timing estimate.
- Approximately 2 weeks after the PCBs are received powerpacks will be available to ship. Can we abbreviate the option 3 change validation testing and pull ahead implementation? How much option 3 testing will complete 8 weeks from now? 75% HTD, TS complete, 50% of PTC, EMC testing complete, LV transient complete.

Options to implement a countermeasure:

- Rely upon option 3 testing that is complete at the time when the new PCBs with increased pre-preg layer become available to validate this change. (Under review. PDT prefers no part number changes)
- Release option 3 change to production approximately 8 weeks from now accepting validation complete at that time. Validation testing will continue until complete. (Rejected)

2.) GMCH test plan

- Reviewed GMCH presentation.
- Desired learnings: How long after the short initiates can we diagnose a failure? What can we do with that diagnosis? How long after a board shorts does the cap fail?
- If it becomes necessary to run the test with application SW outside the vehicle a plan will need to • be developed. We don't know how to do that efficiently.

3.) Can the BPIM potentially detect a HV+ to HV- resistive short? Need to know what current level we see

in the short before a determination can be made.

4.) Mfg process data.

GMCH provided a list of questions to Nanya. Expect a response tomorrow.

5.) GMCH was asked to inspect BPIMs returned for iso faults that have yet to be visually inspected to confirm that the CAP board wasn't root cause.

GMCH inspected 15 of approximately 100 parts. No cap board failures were found. • Notes:

Zero BPIMs have been returned for ISO faults since option 1 was implemented in August 2012.

Action items:

- Confirm via physical inspection that the improved pre-preg layer meets expectations. (GMCH) •
- Summarize the validation plan for a pre-preg only change. (Reena and Gary) •
- What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony will • provide a trace of the duty cycle. (GMCH and Tony)
- Review GMCH test plan with ESS safety engineering. (Fred and Galen)
- What kind of screens can Nanya perform? Ask Nanya to perform hi pot testing on cap board.

Regards,





Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411

Hybrid Energy Storage

General Motors Corp. Warren Technical Center email: frederick.billotto@gm.com 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23



History:

# {In Archive}Fw: Proposed Revisions - eAssist Service Update Bulletin<br/>Stephen Poulos, Bob Agresta, Daniel D.Kevin Divineyto: Cottrell, Frederick Billotto, DAVID P TASKY,<br/>Sean E Gleason, Gary Backs, James Fortune,11/15/2012 07:37 AMThis message has been replied to.This message has been replied to.11/15/2012 07:37 AM

Archive: This message is being viewed in an archive.

Here is a draft of the new BPIM bulletin. Please direct any comments of suggestions to Chris.





Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com General Motors Corp. Pontiac North CET 895 Joslyn Avenue

**Global Electrification -**

**Engineering Quality** 

Pontiac, Michigan 48340 Cube 2K08

----- Forwarded by Kevin Diviney/US/GM/GMC on 11/15/2012 07:33 AM -----

| From:    | Christopher Janik/US/GM/GMC                                   |
|----------|---------------------------------------------------------------|
| To:      | Charlotte Hinojos/US/GM/GMC@GM, Gary Smits/US/GM/GMC@GM, Doug |
|          | Wachtel/US/GM/GMC@GM                                          |
| Cc:      | Kevin Diviney/US/GM/GMC@GM                                    |
| Date:    | 11/15/2012 06:37 AM                                           |
| Subject: | Proposed Revisions - eAssist Service Update Bulletin          |

Proposed revisions are shown.



12238B Draft - Janik.doc

Christopher Janik Phone: 586-907-5098 VEC Podium: 2K2-12



#### {In Archive} Re: Fw: Proposed Revisions - eAssist Service Update Bulletin

11/15/2012 08:50 AM

 Kevin Diviney to: Stephen Poulos Bob Agresta, Daniel D. Cottrell, DAVID P TASKY, Frederick Billotto,
 Cc: Gary Backs, James Fortune, Kristin L Curran, Mehrdad Teimor, Sean E Gleason, Tony J. Saliga

Archive:

This message is being viewed in an archive.

Stephen,

It was probably worded this way because we will exclude any vehicles that have already been tested by the assembly plants. We have many vehicles that were tested when we initiated the first BPIM field action and we may have more depending on what we decide to do with vehicles at the assembly plants right now.



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u> General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340

**Global Electrification -**

**Engineering Quality** 

| Stephen Poulos |                                                                    | Kevin, Chris, Does this language ensure that A                                              | 11/15/2012 07:57:18 AM |  |
|----------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------|--|
| <b>F</b>       |                                                                    |                                                                                             |                        |  |
| From:          |                                                                    | Poulos/US/GM/GMC                                                                            |                        |  |
| To:            | Kevin Diviney/US/GM/GMC@GM                                         |                                                                                             |                        |  |
| Cc:            | Bob Agresta/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM, DAVID P |                                                                                             |                        |  |
|                | TASKY/L                                                            | JS/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, G                                            | Garv Backs             |  |
|                |                                                                    | cks@gmch.com>, James Fortune <james.fortune@gmch.c< td=""><td></td></james.fortune@gmch.c<> |                        |  |
|                |                                                                    | S/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, S                                                 |                        |  |
|                |                                                                    | US/ATD/GMC@GM, Tony J. Saliga/US/GM/GMC@GM                                                  |                        |  |
| Date:          |                                                                    | 12 07:57 AM                                                                                 |                        |  |
| Subject:       | Re: Fw: F                                                          | Proposed Revisions - eAssist Service Update Bulletin                                        |                        |  |

Cube 2K08

Kevin, Chris,

Does this language ensure that ALL cars will get the screen prior to sale? Sounds like it technically says that, but wonder if all dealers will read it that way.

Stephen

| Kevin Diviney | Here is a draft of the new BPIM bulletin. | Pleas | 11/15/2012 07:37:01 AM |
|---------------|-------------------------------------------|-------|------------------------|
|               |                                           |       |                        |



#### {In Archive} 4th Cap Board Failure

Stephen Poulos, Bob Agresta, Daniel D.

 
 Kevin Diviney
 to:
 Cottrell, DAVID P TASKY, Sean E Gleason, Reena Datta, James Fortune, Gary Backs,
 11/15/2012 05:32 PM

 History:
 This message has been forwarded.
 11/15/2012 05:32 PM

Archive: This message is being viewed in an archive.

FYI. There has been a 4th confirmed cap board failure. High level information on these 4 incidents is attached. Although there are only 4 failures at this time, some patterns in the data are developing.

| <u>#</u> | <u>State</u> | <u>TAC</u>    | VIN         | <b>Mileage</b> | Sold?  | Vehicle Bld | PP bld | Cap lot   | <u>Return #</u> |
|----------|--------------|---------------|-------------|----------------|--------|-------------|--------|-----------|-----------------|
| 1        | MI           | None          | 1G11F5RR0DF | 5              | Unsold | 7-Jun       |        | destroyed | PP              |
| 2        | LA           | 71-1089702345 | 1G4GC5ER0CF | 175            | Sold   | 30-May      |        | 101211    | 279             |
| 3        | ОН           | 71-1120403034 | 1G11D5RR9DF | 13             | Unsold | 23-Mar      |        | destroyed | PP361           |
| 4        | СТ           | 71-119599889  | 1G11F5RR8DF | 91             | Unsold | 18-May      | 15-May | 101211    | PP365           |

#### **Notes**

Failed during campaign due to thermal event, cap board significantly burnt.

CEL and codes P1AF0, P1B0B, P1E0C, and P1E12. There was no report of smoke or smell. Cap board had a small burn spot. Failed during campaign due to loud noise and thermal, soot outside of the pack, cap board significantly burnt.

Failed during campaign due to burnt smell in step 5, minor soot outside of the pack, cap board significantly burnt



cap board failures.xlsx

Dan W/Kristin,

Let me know if you have any other relevant information to add to the summary.

Regards,



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



{In Archive} Warranty 365 Gary Backs to: frederick.billotto 11/15/2012 04:49 PM Show Details

Archive: This message is being viewed in an archive.

1 Attachment



#### Best Regards,

#### Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com



{In Archive} FA on Cap Board from todays Call Gary Backs to: frederick.billotto 11/15/2012 05:26 PM Show Details

Archive: This message is being viewed in an archive.

1 Attachment



eAssist Warranty Cap Board Failure FA .pdf

Fred, I don't have specific tracking on this part except that it was a bpim failed in warranty which had a cap board fail. It was the part which did not have a catastrophic failure of the board.

Best Regards,

#### Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com



Reena Datta/US/GM/GMC

11/19/2012 05:08 PM

- To Frederick Billotto/US/GM/GMC@GM
- cc James Fortune <james.fortune@gmch.com>, Stephen Farris/US/GM/GMC@GM

bcc

Subject Updated 5 phase



eAssist\_5PhaseSummary\_Cap-PCB\_19Nov2012.pptx



Reena Datta/US/GM/GMC 11/19/2012 05:29 PM

- To Roger Rademacher/US/GM/GMC@GM, Milton Martinez/US/GM/GMC@GM, Rick H Schroeder/US/GM/GMC@GM
- cc Frederick Billotto/US/GM/GMC@GM, James Fortune <james.fortune@gmch.com>, Daniel Weaver <daniel.weaver@gmch.com>, Joseph Thompson

bcc

Subject TAC case 71-1119599889 (PP warranty #365: 4th cap board return)

FYI



TAC-case\_71-1119599889.xlsx

|          | {In Archive} Fw: 71-1129555175 McMurray Chevrolet, Inc.PA 2013 Malibu1G11F5RR3DFthermal event photo's<br>Reena Datta, Stephen Farris, MehrdadFrederick Billottoto: Teimor, DAVID P TASKY, Sean E<br>Gleason, Tony J. Saliga, Daniel D. Cottrell,Cc: Kristin L Curran, Gary M. Insana, Jacob D Bylsma |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| From:    | Frederick Billotto/US/GM/GMC                                                                                                                                                                                                                                                                         |
| То:      | Reena Datta/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Mehrdad<br>Teimor/US/GM/GMC@GM, DAVID P TASKY/US/GM/GMC@GM, Sean E<br>Gleason/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Daniel D.                                                                                                            |
| Cc:      | Kristin L Curran/US/GM/GMC@GM, Gary M. Insana/US/GM/GMC@GM, Jacob D<br>Bylsma/US/GM/GMC@GM                                                                                                                                                                                                           |
| Archive: | This message is being viewed in an archive.                                                                                                                                                                                                                                                          |

### FYI,

This incident is noteworthy because the trim experienced some damage. FSE will be on site at the dealership this afternoon to assess the damage. Please review TAC case and pictures attached to this email. The vehicle was about to go through the SUB 12238 test but failed *before* the test initiated. Reena Datta confirmed that the VIN is included in the suspect window.

We will discuss at the 4pm meeting today.

Regards,



#### ----- Forwarded by Frederick Billotto/US/GM/GMC on 11/26/2012 12:34 PM -----

| From:    | Robert Reiss/C/US/GM/GMC                                                       |
|----------|--------------------------------------------------------------------------------|
| To:      | Kristin L Curran/US/GM/GMC@GM                                                  |
| Cc:      | Brian 1 Ciaverella/C/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Gary       |
|          | Smits/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, Ryan Brown/US/GM/GMC@GM        |
| Date:    | 11/26/2012 10:33 AM                                                            |
| Subject: | Re: Fw: 71-1129555175 McMurray Chevrolet, Inc.PA 2013 Malibu 1G11F5RR3DF118363 |
| -        | thermal event photo's                                                          |

#### Kristin,

I will be on site this afternoon the dealer is not to far from me. I will get the pictures and send the report today.

If you need anything else feel free to call.

Thank you, Bob

Robert Reiss HP Enterprise Services Representing GM Customer Care & Aftersales Field Service Engineering (FSE)

Mobile: (412) 235-8231 robert.reiss@gm.com

| Kristin L Cu | Irran FYI See pictures below. Bob, please let Bria 11/                                   | /26/2012 10:27:32 AM |
|--------------|------------------------------------------------------------------------------------------|----------------------|
| From:        | Kristin L Curran/US/GM/GMC                                                               |                      |
| To:          | Kevin Diviney/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM, Rol<br>Reiss/C/US/GM/GMC@GM | pert                 |
| Cc:          | Brian 1 Ciaverella/C/US/GM/GMC@GM, Ryan Brown/US/GM/GMC@GM, G<br>Smits/US/GM/GMC@GM      | ary                  |
| Date:        | 11/26/2012 10:27 AM                                                                      |                      |
| Subject:     | Fw: 71-1129555175 McMurray Chevrolet, Inc.PA 2013 Malibu 1G11F5RR3 event photo's         | DF118363 thermal     |

FYI... See pictures below.

Bob, please let Brian and I know when you'll be headed out to the dealer. It will be important to determine quickly if this vehicle is recoverable as we need to get the power pack to the supplier ASAP.

Thank you.

#### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email <u>kristin.curran@gm.com</u> ----- Forwarded by Kristin L Curran/US/GM/GMC on 11/26/2012 10:20 AM -----

| From:    | Brian 1 Ciaverella/C/US/GM/GMC                                                     |
|----------|------------------------------------------------------------------------------------|
| To:      | Kristin L Curran/US/GM/GMC                                                         |
| Date:    | 11/26/2012 10:11 AM                                                                |
| Subject: | Fw: 71-1129555175 McMurray Chevrolet, Inc.PA 2013 Malibu 1G11F5RR3DF118363 thermal |
| -        | event photo's                                                                      |

#### Kristin

Here are the photos we requested from this case but they are not that clear. I felt it was better to send an FSE out to document a FPR and gauge the extent of the damage. The vehicle is from dealer inventory and this occurred prior to bringing the vehicle in for 12238. If you need anything else from me just give me a shout.



71-1129555175 McMurray Chevrolet, Inc.PA 2013 Malibu 1G11F5RR3DF118363.pdf

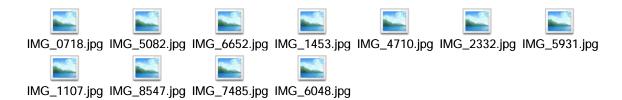
Regards, Brian Ciaverella Hybrid Platform Escalation Team

### **GM** Technical Assistance Center

An Associate of Morley Companies Desk 989-249-6538 Fax 866-842-9445 brian.1.ciaverella@gm.com

4126064319@vzwpix.com

11/23/2012 04:25 PM





{In Archive} Cap board units data dump files
Joseph Thompson
to:
frederick billotto, rick schroeder, reena datta
11/26/2012 07:28 PM
Cc:
Gary Backs, Hossein Lotfalian
Show Details

Archive: This message is being viewed in an archive.

3 Attachments



WAR361CapBoard.piz War365CapBoard.piz BPIM279 09\_28\_2012.piz

Attached are the data dump zip files from three of the cap board units. Please let me know if you have any questions.

Thanks

Joe Thompson Current Product Engineer Power Electronics GMCH Kokomo IN 765-451-7065 phone 317-670-1204 Cell



# {In Archive} BPIM cap board PRR

Daniel D. Cottrell to: James Fortune Cc: Stephen Poulos, gary backs, Bob Agresta, Frederick Billotto This message is being viewed in an archive.

11/27/2012 09:58 AM

Archive:

# Jim,

John Ball (PEM for GMX353) has requested that we create a PRR to collect the costs for the plant screening process for the finished vehicles. The request is that it be categorized as an engineering supplier issue due to our assessment that the single layer board is a design error. I don't know whether that gets written against GMCH or Delphi.

Can you create the PRR for this issue? We need to generate this today so that we can attach it to the TWO for the screening process.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771



{In Archive} GMCH Request for Information on Power Pack Inventories
James Fortune
to:
scott.wilson
11/27/2012 01:57 PM
Cc:
"Frederick Billotto", kevin.diviney, Daniel Weaver
Show Details

Archive: This message is being viewed in an archive.

Scott,

Due to stop order 1819298, GMCH has stopped production on all eAssist power pack production until new circuit boards arrive at GMCH Kokomo in mid December. Can you confirm that SGM and GMK will be sending Power Packs back to GMCH Kokomo along with the quantities by part number. We have also been asked to ship 5 power packs for service I want to confirm the need before shipping. All vehicles built with power packs before the stop build that are unsold are being run through an abbreviated vehicle screen in North America.

SWO 1819298 which stops production on all MY13 vehicles using the eAssist power pack

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC http://kokomogmch.com

Phone: (765) 451-9558 Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6,

2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of this email and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"



# {In Archive} Re: BPIM cap board PRR 🗎

Daniel D. Cottrell to: James Fortune Cole Buttry, David Worthington, Gary Backs, Bob Agresta, Stephen 11/28/2012 01:20 PM

Archive:

This message is being viewed in an archive.

Jim, Thanks for the reply.

Cc:

Poulos

If we cannot issue a PRR to Delphi, then perhaps it needs to be issued to GM / GMCH. The assembly plants need a place to collect charges.

As far as I am concerned, this issue relates to an original design error by Delphi. That is the root of the problem. In hindsight, we can debate the time schedule required to implement corrections to *all* of the design errors discovered in the last year, but that does not excuse the root cause. If the original design was correct, we would not have needed remediation.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

| James Fortune |                       | Dan,                                                     | 11/28/2012 12:40:44 PM                                                |
|---------------|-----------------------|----------------------------------------------------------|-----------------------------------------------------------------------|
| From:         | lamos Fr              | ortune <james.fortune@gmch.com></james.fortune@gmch.com> |                                                                       |
| То:           |                       | cottrell@gm.com                                          |                                                                       |
| Cc:           |                       | 5                                                        | orthington <david.worthington@gmch.com>,</david.worthington@gmch.com> |
|               | Cole Butt             | ry <cole.buttry@gmch.com></cole.buttry@gmch.com>         |                                                                       |
| Date:         | 11/28/20 <sup>-</sup> | 12 12:40 PM                                              |                                                                       |
| Subject:      | Re: BPIN              | I cap board PRR                                          |                                                                       |

Dan,

Sorry, I've been somewhat overwhelmed by emails lately. In speaking with our leadership, our contractual agreements with Delphi are written such that they are not held responsible for design related issues. All associated costs for this campaign are going to rest solely within GM. From our perspective, had the original option 1 change been allowed to include the 2 layer change to the control and cap board we would not be re-visiting this issue at the assembly plant level.

# Jim

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# Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com Phone: (765) 451-9558 Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

# -----daniel.d.cottrell@gm.com wrote: -----To: James Fortune <james.fortune@gmch.com> From: daniel.d.cottrell@gm.com

Date: 11/28/2012 12:21PM Cc: gary.backs@gmch.com Subject: BPIM cap board PRR

Jim, I haven't heard back yet. Can you do this?

I will be asked the status at my next call at 2PM today.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771 Jim,

John Ball (PEM for GMX353) has requested that we create a PRR to collect the costs for the plant screening process for the finished vehicles. The request is that it be categorized as an engineering supplier issue due to our assessment that the single layer board is a design error. I don't know whether that gets written against GMCH or Delphi.

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Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

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reena.datta@gm.com 11/28/2012 09:27 AM To david.e.miller@gmch.com, david.p.buehler@delphi.com, gary.backs@gmch.com, hossein.lotfalian@gmch.com, jack.shadday@gmch.com, joseph.thompson@gmch.com, cc

bcc

Subject eAssist Autocode Testing - Meeting Notes

Hi Everyone,

Please review the notes attached and let me know if you have any feeback.

Thank you,

Reena



eAssist\_BPIM-Autocode-Testing-Notes\_28Nov2012.docx



{In Archive} eAssist - Summary of Cap Board Returns label{eq: Reena Datta to: Frederick Billotto

mark.zerbini, kris.sevel, mustafa.dakroub, cole.buttry, Cc: roger.rademacher, gary.backs, hossein.lotfalian, steven.wybo, james.fortune, christopher.janik, christopher.winegarden, This message is being viewed in an archive.

11/29/2012 09:54 AM

Archive:

1 attachment



eAssist\_Cap-PCB-Returns\_29Nov2012.xlsx

All,

Please see the attached spreadsheet for a summary of the cap board returns. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



{In Archive} Re: BPIM cap board PRR 🗎

Bob Agresta to: Daniel D. Cottrell, Gary Backs Cc: James Fortune, Cole Buttry, David Worthington, Stephen Poulos This message is being viewed in an archive. 11/30/2012 11:57 AM

Dan,

Agree. Your comments are spot on.

Gary Backs

Can you confirm that there is no Design Liability in our agreements with Delphi. I dislike having GMCH take the "hit" of the PRR and the costs on this one given they have the Manufacturing responsibilities, and contract their Product Engineering through Delphi. Don't know how they can escape liability, but I suppose it is possible.

Bob

# **Bob** Agresta

Director - Electrification Program Execution



E-mail: <u>bob.agresta@gm.com</u>

Phone: +1 248 857 0933 Fax:+1 248 857 4756 International Mobile: +1 248 330 6295 Administrative Assistant – Marcia Jackson +1 248 857 8317

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| Daniel D. ( | Cottrell                                                                             | Jim, Thanks for the reply.                               | 11/28/2012 01:20:23 PM                                                 |
|-------------|--------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------|
| From:       | Daniel D.                                                                            | Cottrell/US/GM/GMC                                       |                                                                        |
| To:         | James Fo                                                                             | ortune <james.fortune@gmch.com></james.fortune@gmch.com> |                                                                        |
| Cc:         |                                                                                      |                                                          | ington <david.worthington@gmch.com>, Gary</david.worthington@gmch.com> |
|             | Backs <gary.backs@gmch.com>, Bob Agresta/US/GM/GMC@GM, Stephen</gary.backs@gmch.com> |                                                          |                                                                        |
|             | Poulos/U                                                                             | S/GM/GMC@GM                                              |                                                                        |
| Date:       | 11/28/201                                                                            | 12 01:20 PM                                              |                                                                        |
| Subject:    | Re: BPIM                                                                             | I cap board PRR                                          |                                                                        |

# Jim,

Thanks for the reply.

If we cannot issue a PRR to Delphi, then perhaps it needs to be issued to GM / GMCH. The assembly plants need a place to collect charges.

As far as I am concerned, this issue relates to an original design error by Delphi. That is the root of the

problem. In hindsight, we can debate the time schedule required to implement corrections to *all* of the design errors discovered in the last year, but that does not excuse the root cause. If the original design was correct, we would not have needed remediation.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

James Fortune Dan,

11/28/2012 12:40:44 PM



Archive:

# {In Archive} Re: BPIM cap board PRR 🗎

Bob Agrestato: Backs, Gary, Cottrell, DanielCc:"Cole Buttry", "David Worthington", "James Fortune", Stephen<br/>Poulos, "Lafayette, Marty", Thomas Kern<br/>This message is being viewed in an archive.

11/30/2012 03:46 PM

Ok, folks. I spoke with Ron Mills. He has confirmed that the statement below is true. Delphi is indemnified from liability for any engineering they provide under the TSA (Technical Service Agreement.)

The PRR will be written to GMCH Kokomo, GM will incur the costs, and we'll use this as an opportunity to discuss this arrangement with Delphi in GMCH.

Ironically, if the new design is flawed, Delphi (who is getting paid to fix the original flaw) is still not liable for mistakes, errors, omissions, etc.

Bob

Bob Agresta Director - Global Program Execution Global Electrification E-mail: Bob.Agresta@gm.com Mobile: 248-330-6295 Office: 248-857-0933 Admin: 248-857-8317 (Marcia Jackson)

From: Gary Backs [gary.backs@gmch.com] Sent: 11/30/2012 06:25 PM GMT To: Bob Agresta Cc: Cole Buttry <cole.buttry@gmch.com>; Daniel Cottrell; David Worthington <david.worthington@gmch.com>; James Fortune <james.fortune@gmch.com>; Stephen Poulos Subject: Re: BPIM cap board PRR

Bob,

Ron Mills might be the best person if you want to review the contract language in the master agreement that Delphi negotiated with GM. I do not have a copy of the contract.

Leadership in Kokomo has confirmed to me that Delphi has no liability for the design under the contract terms. We are assessing responsibility with the PCB vendor. But they also appear to be protected under Delphi's umbrella.

Best Regards,

Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278

#### MOB: 317-517-9211

gary.backs@gmch.com

-----bob.agresta@gm.com wrote: -----To: daniel.d.cottrell@gm.com, Gary Backs <gary.backs@gmch.com> From: bob.agresta@gm.com Date: 11/30/2012 11:57AM Cc: James Fortune <james.fortune@gmch.com>, Cole Buttry <cole.buttry@gmch.com>, David Worthington <david.worthington@gmch.com>, stephen.poulos@gm.com Subject: Re: BPIM cap board PRR

Dan,

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Gary Backs

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Bob Agresta

Director - Electrification Program Execution



E-mail: bob.agresta@gm.com

Phone: +1 248 857 0933 Fax:+1 248 857 4756 International Mobile: +1 248 330 6295 Administrative Assistant – Marcia Jackson +1 248 857 8317

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 From:
 Daniel D. Cottrell/US/GM/GMC

 To:
 James Fortune <james.fortune@gmch.com>

 Cc:
 Cole Buttry <cole.buttry@gmch.com>, David Worthington <david.worthington@gmch.com>, Gary Backs

 <gary.backs@gmch.com>, Bob Agresta/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM

 Date:
 11/28/2012 01:20 PM

 Subject:
 Re: BPIM cap board PRR

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Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

 From:
 James Fortune <james.fortune@gmch.com>

 To:
 daniel.d.cottrell@gm.com

 Cc:
 Gary Backs <gary.backs@gmch.com>, David Worthington <david.worthington@gmch.com>, Cole Buttry

 <cole.buttry@gmch.com>

 Date:
 11/28/2012 12:40 PM

 Subject:
 Re: BPIM cap board PRR

Dan,

Sorry, I've been somewhat overwhelmed by emails lately. In speaking with our leadership, our contractual agreements with Delphi are written such that they are not held responsible for design related issues. All associated costs for this campaign are going to rest solely within GM. From our perspective, had the original option 1 change been allowed to include the 2 layer change to the control and cap board we would not be re-visiting this issue at the assembly plant level.

#### Jim

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Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC http://kokomogmch.com

Phone: (765) 451-9558

Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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"Go Boilers"

#### -----daniel.d.cottrell@gm.com wrote: -----

To: James Fortune <james.fortune@gmch.com> From: daniel.d.cottrell@gm.com Date: 11/28/2012 12:21PM Cc: gary.backs@gmch.com Subject: BPIM cap board PRR

Jim, I haven't heard back yet. Can you do this?

I will be asked the status at my next call at 2PM today.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

Jim,

Can you create the PRR for this issue? We need to generate this today so that we can attach it to the

John Ball (PEM for GMX353) has requested that we create a PRR to collect the costs for the plant screening process for the finished vehicles. The request is that it be categorized as an engineering supplier issue due to our assessment that the single layer board is a design error. I don't know whether that gets written against GMCH or Delphi.

TWO for the screening process.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

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# {In Archive} Re: BPIM cap board PRR

Gary Backs to: bob.agresta Cc: Cole Buttry, daniel.d.cottrell, David Worthington, James Fortune, stephen.poulos This message is being viewed in an archive. 11/30/2012 01:26 PM

Archive:

Bob,

Ron Mills might be the best person if you want to review the contract language in the master agreement that Delphi negotiated with GM. I do not have a copy of the contract.

Leadership in Kokomo has confirmed to me that Delphi has no liability for the design under the contract terms. We are assessing responsibility with the PCB vendor. But they also appear to be protected under Delphi's umbrella.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

-----bob.agresta@gm.com wrote: -----

To: daniel.d.cottrell@gm.com, Gary Backs <gary.backs@gmch.com> From: bob.agresta@gm.com Date: 11/30/2012 11:57AM Cc: James Fortune <james.fortune@gmch.com>, Cole Buttry <cole.buttry@gmch.com>, David Worthington <david.worthington@gmch.com>, stephen.poulos@gm.com Subject: Re: BPIM cap board PRR

Dan,

Agree. Your comments are spot on.

Gary Backs

Can you confirm that there is no Design Liability in our agreements with Delphi. I dislike having GMCH take the "hit" of the PRR and the costs on this one given they have the Manufacturing responsibilities, and contract their Product Engineering through Delphi. Don't know how they can escape liability, but I suppose it is possible.

Bob

Bob Agresta Director - Electrification



E-mail: bob.agresta@gm.com

Phone: +1 248 857 0933 Fax:+1 248 857 4756 International Mobile: +1 248 330 6295 Administrative Assistant – Marcia Jackson +1 248 857 8317

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 From:
 Daniel D. Cottrell/US/GM/GMC

 To:
 James Fortune <james.fortune@gmch.com>

 Cc:
 Cole Buttry <cole.buttry@gmch.com>, David Worthington <david.worthington@gmch.com>, Gary Backs

 <gary.backs@gmch.com>, Bob Agresta/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM

 Date:
 11/28/2012 01:20 PM

 Subject:
 Re: BPIM cap board PRR

Jim, Thanks for the reply.

If we cannot issue a PRR to Delphi, then perhaps it needs to be issued to GM / GMCH. The assembly plants need a place to collect charges.

As far as I am concerned, this issue relates to an original design error by Delphi. That is the root of the problem. In hindsight, we can debate the time schedule required to implement corrections to all of the design errors discovered in the last year, but that does not excuse the root cause. If the original design was correct, we would not have needed remediation.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

 From:
 James Fortune <james.fortune@gmch.com>

 To:
 daniel.d.cottrell@gm.com

 Cc:
 Gary Backs <gary.backs@gmch.com>, David Worthington <david.worthington@gmch.com>, Cole Buttry

 <cole.buttry@gmch.com>

 Date:
 11/28/2012 12:40 PM

 Subject:
 Re: BPIM cap board PRR

Dan,

Sorry, I've been somewhat overwhelmed by emails lately. In speaking with our leadership, our contractual agreements with Delphi are written such that they are not held responsible for design related issues. All associated costs for this campaign are going to rest solely within GM. From our perspective, had the original option 1 change been allowed to include the 2 layer change to the control and cap board we would not be re-visiting this issue at the assembly plant level.

#### Jim

John Ball (PEM for GMX353) has requested that we create a PRR to collect the costs for the plant screening process for the finished vehicles. The request is that it be categorized as an engineering supplier issue due to our assessment that the single layer board is a design error. I don't know whether that gets written against GMCH or Delphi.

Can you create the PRR for this issue? We need to generate this today so that we can attach it to the TWO for the screening process.

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC http://kokomogmch.com

http://kokomogmch.com

Phone: (765) 451-9558 Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of thise-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

-----daniel.d.cottrell@gm.com wrote: -----To: James Fortune <james.fortune@gmch.com> From: daniel.d.cottrell@gm.com Date: 11/28/2012 12:21PM Cc: gary.backs@gmch.com Subject: BPIM cap board PRR Jim, I haven't heard back yet. Can you do this?

I will be asked the status at my next call at 2PM today.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

Jim,

Can you create the PRR for this issue? We need to generate this today so that we can attach it to the TWO for the screening process.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

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{In Archive} another CAP bd unit Daniel Weaver to: kevin.diviney, kristin.curran, Frederick Billotto, reena.datta 12/04/2012 03:24 PM Cc: James Fortune, Gary Backs, Joseph Thompson Show Details

History: This message has been forwarded. Archive: This message is being viewed in an archive.

# 3 Attachments



War 405.JPG 71-1122960359 BAS C9206993.pdf eAssist\_Cap-PCB-Returns\_28Nov2012(1)(1).xlsx

This is a unit we were told to be looking for since it was reported to have excessive soot. It was on a list sent from Kristin on 11-7-12.

I added the information to a spread sheet Reena has been keeping for CAP bd units. Am also sending a picture of the CAP bd and the TAC case.

This unit was built in the same time frame as the other units and had a CAP bd from the same circuit lot as 2 of the other CAP bd failures. Lot number was 101-211.

We still have not seen the unit from Kristin 11-7-12 email from Canada, 71-1122389601, as well as the PA 71-1129555175 unit discussed on 11-26-12.

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell: (765) 438-3281

Email: <u>daniel.weaver@gmch.com</u>



{In Archive} Update on GMCH Activities Gary Backs to: frederick.billotto, reena.datta, stephen.farris 12/04/2012 10:59 AM Show Details

Archive: This message is being viewed in an archive.

1 Attachment



eAssist\_Cap Board Dealer Return Investigation\_3DEC2012[1].pptx

Fred, I have updated the schedule to reflect the following details:

# Qualification Testing

• The humidity chamber failed over the weekend and restarted did not provide moisture correctly. Two new parts were started Monday morning. Finish date of this test is Friday. All other testing on schedule for Wednesday completion

# Material Orders

• GMCCA deposited an order for 2600 BPIM's due January 4. We continue to work with them to assure what is being requested is reasonable and does not impact customers nor the VAP startups.

# GMCH PPAP

• PPAP schedule revised to start 12/11. Build quantities and Models are not confirmed since there is no interface with the vehicle plant schedules due to the stop order.

Bottom Line:

- <u>GMCH timing to restart production is as early as December 12 for service (requirement is completion of testing and confirmed orders).</u>
- Jim Fortune has been trying to discuss with the plants using the Flash cycle time reduction release at restart. I recommend the EWO lifting the stop order direct the PN's the plants should re-start production with.
- Vehicle Assembly plants will require a PTR or a PTR waiver for the new models. GMCH is recommending that Oshawa perform the PTR and Fairfax waive the requirement based on Oshawa success. If this can be accomplished the week of December 17, then GM has the opportunity to start building early in the new year because GMCH will have the opportunity to build a buffer for early January orders.
- If GM cannot facilitate PTR's or PTR waivers in December, re-starting production prior to your original date diminishes.
- GMCH must know what Part Number to build prior to proceeding. This requires scheduling

from the vehicle plants.

Best Regards,

# Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com



Reena Datta/US/GM/GMC

12/05/2012 11:14 AM

- To Kristin L Curran/US/GM/GMC@GM
- cc Daniel Weaver <daniel.weaver@gmch.com>

bcc

Subject Re: Fw: eAssist - Updated list of returns with Option 1, Pwr PCB change

Hi Kristin,

Thank you for the summary. I agree - based on your findings, your list is comprehensive and will be the list we rely upon.

#### Reena

| Kristin L Curran |                          | Reena/Dan, I took a look at the 13 VI                    | 12/05/2012 11:10:31 AM |
|------------------|--------------------------|----------------------------------------------------------|------------------------|
|                  |                          |                                                          |                        |
| From:            | Kristin                  | L Curran/US/GM/GMC                                       |                        |
| To:              | Reena Datta/US/GM/GMC@GM |                                                          |                        |
| Cc:              | Daniel                   | Weaver <daniel.weaver@gmch.com></daniel.weaver@gmch.com> |                        |
| Date:            | 12/05/                   | 2012 11:10 AM                                            |                        |
| Subject:         | Re: Fv                   | v: eAssist - Updated list of returns with Option 1,      | Pwr PCB change         |

Reena/Dan,

LSGGF53G6BH

I took a look at the 13 VINs on Reena's list. The following were not on mine:

1G11F5SR0DF -> No TAC Case; Looks like they charged incorrect Labor Op; N5875 instead of the V2675; No part replaced

-> Same as above; Same Dealer (BAC 132372) 1G11F5SR7DF 1G4GA5GR8DF

-> Had a BECM replacement on 10/4; No PP level or BPIM work

-> Powerpack replacement in China; I only track GMNA

With that said I think my list is comprehensive and we should use that moving forward.

If you have any additional questions, let me know!

Thanks!

# Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

| Reena Datta      | Hi Kristin, Sounds good. We can try t     | 12/04/2012 07:13:38 PM |
|------------------|-------------------------------------------|------------------------|
| Kristin L Curran | Hi Reena, I have Kevin Diviney's eAs      | 12/04/2012 04:16:11 PM |
| Reena Datta      | Hi Kristin, It sounds like returns with t | 12/04/2012 04:04:03 PM |



# {In Archive} Fw: BAS+ Powerpack Field Return Root Cause Investigation Meeting Notes 12/07/12 Bob Agresta to: Stephen Poulos

Cc: "Cottrell, Daniel", Kevin Diviney, "Backs, Gary"

12/07/2012 05:21 PM

History: This message has been forwarded. Archive: This message is being viewed in an archive.

Good review of the plan toward implementation.

Seems like an overall Power Quad concurrence that our verification is complete and successful is needed. I suggested a review by you and the PE team and then an Emergency Change Board shortly thereafter.

Folks felt they'd be ready for you on Monday. I will gather the CRB at the start of the 4pm meeting. Let me know if there is an advantage to doing it sooner.

Tue review with the vehicle team planned. Biggest sticking point is getting the PTR run.

Sounds like Oshawa is running the week of the 17th, but needed to have the stop order lifted earlier this week to initiate scheduling. Fairfax is down the week of the 17th.

So we won't get a PTR run until the first week back in January, and likely won't be able to reschedule the line with BAS+ mix until 2 weeks after that. Puts restart of production at about 22Jan even if we successfully lift the Stop Order next Tuesday.

Unless the vehicle team is motivated to accelerate the plan, we are looking towards another 6 weeks before BAS+ is back into production.

- Can use the time to build quantities to refill the pipeline

- Can clear out / exchange the Service Inventory

- Can get parts ready for China and Korea shipped

Bob

Bob Agresta **Director - Global Program Execution Global Electrification** E-mail: Bob.Agresta@gm.com Mobile: 248-330-6295 Office: 248-857-0933 Admin: 248-857-8317 (Marcia Jackson) Frederick Billotto

----- Original Message -----From: Frederick Billotto Sent: 12/07/2012 04:39 PM EST

To: Mark Zerbini; Kris Sevel; Mustafa Dakroub; cole.buttry@qmch.com; Roger Rademacher; gary.backs@gmch.com; hossein.lotfalian@gmch.com; Steven Wybo; james.fortune@gmch.com; Christopher Janik; Christopher Winegarden; Mehrdad Teimor; Milton Martinez; Reena Datta; Richard Ye; Rick Schroeder; Sean Gleason; Stephen Farris; Stephen Poulos; Tony Saliga; David Worthington <david.worthington@gmch.com>; Kristin Curran; Shinichiro Taki; Gary Insana; Bob Agresta; DAVID P TASKY; Calvin Goodman; Jacob Bylsma; Daniel Cottrell;

STEVE BUNCE; Paul Zombory; Len Chalawa
 Cc: Ronn Jamieson
 subject: Fw: BAS+ Powerpack Field Return Root Cause Investigation Meeting
Notes 12/07/12

All,

### Meeting Topics and Notes 12/07/12 4PM:

#### Pre-preg Layer Change Implementation:

12/7 Status of production part availability:

- Boards passed verification testing.
- GM APM/BPIM PDT will review test results on Friday and sign-off on GM3660 (Farris). Steve will sign-off on 12/10/12.
- PET Approval plan next steps:
  - Need Stephen Poulos approval then proceed to PET. Steve Farris will arrange for that review.
  - Emergency CRB review at 4pm Monday 12/10
- Write Lift Order Monday. Dan C discussed readiness status with John Ball...expect to meet on Tuesday with vehicle team.
- New powerpacks will be ready for pick up at GMCH dock beginning 12/17/12.



2PLY Cap\_control boards verification plan12-07-12.pptx

### Status of APM/BPIM Testing at GM:

- Vehicle was just put on PMD (program mileage dyno) today. Plan to run over the weekend.
- Lab test: Ongoing. No issues reported. Steve will compile data and review on Monday.

# 5th CAP board failure:

• Third return from CAP board lot 101-211

#### Action Item:

GMCH will provide a data dump to Rick Schroeder. **Data was not sent.** Can the SUB 12238 be modified to allow for a data dump before pulling the 12V battery? Review again on Friday. **12/7 Update: Team reviewed Tony's response Next step: Review with Stephen P. on Monday.** 

TAC Cases vs build week:

R

BPIM week of build chart only.pptx

**GM Diagnostic/Controls Solution:** Rick plans to provide an update on Monday regarding planned direction.

Round Table:

Next Meeting: Monday December 10th at 4pm

Regards,





Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com

# Hybrid Energy Storage

**General Motors Corp.** Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

### Meeting Topics and Notes 12/05/12 4PM:

#### Pre-preg Layer Change Implementation:

12/5 Status of production part availability:

- Board verification testing will complete on Friday
- GM APM/BPIM PDT will review test results on Friday •
- If test results are favorable request PET approval late Monday. (Investigate obtaining PET • approval Friday)
- Write Lift Order Monday.

#### **Open Issues:**

- PPAP Readiness: Submit to Steve Farris when verification testing is complete. (GM3660 sign-off)
- PTRs: Need lift order to begin PTR process.
- Part markings...what is the proposal? GA Plants and CCA needs to review the plan. 12/5 Update: Jim Fortune has a plan and is reviewing with the GM customers.

PTR material can be in Oshawa by 12/17. When can GMCH be ready to build at rate? Gary will provide a build plan for Friday's meeting. 1000 parts for CCA will begin production the week of 12/17.

#### 5th CAP board failure:

Third return from CAP board lot 101-211

#### Action Item:

GMCH will provide a data dump to Rick Schroeder. Can the SUB 12238 be modified to allow for a data dump before pulling the 12V battery? Review again on Friday.

#### Status of new BPIM in vehicle and lab testing:

1 new BPIM is running in a vehicle as of 12/5. Lab test: Steve will follow-up. Sean reported the sample is ready to test.

Status of PRR: No PRR is issued. GMCH was asked to pick up the charges for the vehicle screen.



# GM Diagnostic/Controls Solution:

### Round Table:

Status of the "buy back' vehicle. Kristin is following...the process is slow. Ultimately the vehicle will go to Kokomo.

What is the scope of the screening activity? 14,000 VINs were added. Total number of VINs = 21k Only cars in dealer stock. (most likely covers all unsold stock).

#### Next Meeting: Dec 7th at 4pm

Regards,

| GM                             |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Fred Billo<br>Senior Project   |                                                                                                                                                                                                  | Hybrid Energy Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |
| Mobile Ph: (2<br>Mail Code: 48 | 48) 904-9949                                                                                                                                                                                     | General Motors Corp.<br>Warren Technical Center<br>30001 Van Dyke Avenue<br>Warren, Michigan 48090<br>VEC 4AV23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |
| From:<br>To:<br>Cc:            | cole.buttry@gmc<br>hossein.lotfalian@<br>christopher.janik@<br>milton.martinez@<br>sean.gleason@g<br>tony.j.saliga@gm<br>Curran/US/GM/G<br>Agresta/US/GM/G<br>Goodman/US/GM/G<br>Zombory/US/GM/G | US/GM/GMC<br>a.com, kris.sevel@gm.com, mustafa.dakroub@gm.com,<br>n.com, roger.rademacher@gm.com, gary.backs@gmch.com,<br>@gmch.com, steven.wybo@gm.com, james.fortune@gmch.com,<br>@gm.com, christopher.winegarden@gm.com, mehrdad.teimor@gm.com,<br>gm.com, creena.datta@gm.com, richard.ye@gm.com, rick.schroeder@gm.com,<br>room, stephen.farris@gm.com, stephen.poulos@gm.com,<br>.com, David Worthington <david.worthington@gmch.com>, Kristin L<br/>MC@GM, shinichiro.taki@gm.com, gary.m.insana@gm.com, Bob<br/>GMC@GM, DAVID P TASKY/US/GM/GMC@GM, Calvin A.<br/>1/GMC@GM, Jacob D ByIsma/US/GM/GMC@GM, Daniel D.<br/>MC@GM, STEVE J BUNCE/US/GM/GMC@GM, Paul S<br/>GMC@GM, Len Chalawa/US/GM/GMC@GM<br/>h/US/GM/GMC@GM</david.worthington@gmch.com> | om, |
| Date:<br>Subject:              | 11/30/2012 05:01<br>BAS+ Powerpack                                                                                                                                                               | PM<br>Field Return Root Cause Investigation Meeting Notes 11/30/12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |

# All,

#### Meeting Topics and Notes 11/30/12 4PM:

#### Pre-preg Layer Change Implementation:

- 11/30 Status of production part availability.
  - 11/29 Update: Sample boards have arrived at GMCH. Verification test set-up is underway (100 of each PCB). CAP boards will complete assy today. Control board should complete by COB 11/29. BPIMs complete as early as 11/29. **Status 11/30:** BPIMs were built, verification testing is underway.
  - Production PCBs scheduled to arrive early next week. Status 11/30: No update...no reports of delay.
  - Potential to build to production orders by 12/10. Status 11/30: GMCH build plan accounts for

1000 powerpacks available by the end of December. (can build 220 packs per day). Verification testing will complete on 12/5. Need to determine at that time when to lift stop order. Also need to consider the results to date of the option 3 PV testing. GMCH will make a build plan so that GM can understand build ramp up restrictions. Once engineering buys off on validation results the PET will decide on lifting the SWO.

- Part markings...what is the proposal? GA Plants and CCA needs to review the plan
- Inventory from FFX should arrive at GMCH today.

CCA Supply Chain Discussion on 11/30: Main take-away. CCA will monitor stock levels closely and will order only if current inventory depletes to levels that jeopardize ability to meet customer needs. GMCH must be ready to respond to a call for parts.

### CAP PCB Verification Plan: See attachment

• 2 BPIMs were planned to ship **11/30 Status**: Gary submitted the parts for shipment.

Status of PRR: In progress. Jim Fortune will follow-up next week.

### GM Diagnostic/Controls Solution:

Data dumps: Rick sent them to Mark Zerbini for analysis. No results yet. 11/30 Update: All had isolation faults. No learnings that are helpful in resolving the issue. WAR 361 and 365 had P1B11 DTC that should have shut the hybrid system down. WAR361/365 BPIMs had significant board damage. P1B11 performs remedial action in 133ms...opens 3 phase inverter but does not open contactors. Consider changing the remedial action.

**Warranty Return Inspection:** GMCH inspected 522 BPIMs only 1 CAP PCB. 400 powerpacks inspected 3 defective CAP PCBs found...this is not new news.... we've been tracking 4 CAP PCB failures.

**Round Table:** GMCH has a powerpack rework plan developed and are reintroducing salvaged parts to the production assembly line.

Next Meeting: Tentatively Wednesday Dec 5th.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



# Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23 All,

### Meeting Topics and Notes 11/28/12 4PM:

### TWOs Were issued to all affected GA plants

The TWO states: "All MY13 eAssist Vehicles Must Pass Vehicle Screen Test Prior to Shipping"FFX:1824908 (Draft waiting for CML to approve)Oshawa:1825076 (Edit at CML)

SGM: 1825082 (Edit 10 CML)

GMDAT: 1825096 (Edit 10 GMK PEM)

### Pre-preg Layer Change Implementation:

- GMCH expects a production quantity delivery of both PCBs next week. A plan to verify new part quality is in progress at GMCH. Expect to have a test plan presented to GM on 11/27. Possible to build production qty powerpacks by 12/10....date must be confirmed. GMCH is working on the timing plan.
  - **11/29 Update:** Sample boards have arrived at GMCH. Verification test set-up is underway (100 of each PCB). CAP boards will complete assy today. Control board should complete by COB 11/29. BPIMs complete as early as 11/29

### Status of option 3 testing: Highlights...

- 1 month on HTD
- 300 PTCs complete
- EMC testing complete, waiting for report.
- 150 cycles of thermal schock testing is complete
- No issues reported

### CAP PCB Verification Plan:

- How long to run leg 1? Complete 12/5 Leg 2 ? 12/11.
- 2 units available for GM testing. GMCH will run 1 unit thru SUB 12238 in a vehicle. Tony Saliga will run the other unit thru SUB 12238 and look for a vehicle to run additional drive cycles (PMD applications). The remaining unit will undergo lab testing. Parts will ship on Friday.

**Retrieval of suspect material:** GMCH scheduled trucks to retrieve material from FFX and Oshawa. Jim Fortune is working with Scott Wilson to determine a plan for SGM and GMK

**Cap Board Hi-pot testing**, 11/15 Update: Clarified that this test will not be used on new production material. 11/26 Update: All verification testing is complete. A summary of that testing will be available tomorrow. **11/28 Update:** Test plan executed, no failures. 6 aged PCBs and 6 unaged PCBs. No significant differences were noted.

**Cap Board Cycling test**, 11/15 Update: On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test. 11/26 Update: Debug and qualification testing is delayed, will complete 11/28. **11/28 Update:** 3 of 5 panels wired. Remaining panels will complete on Friday afternoon.

**GM Diagnostic/Controls Solution:** Option 5, magnitude of change and timing to implement: BCP cal change at a minimum, possibly will include a SW change. Timing 3 months to get into the plant. Opportunity to combine with the Option 3 release. Characterization test strategy determined. Testing will begin 12/6-12/7.

Potential Design changes to mitigate the failure: No update. Vehicle procurement is in process.

#### Recent field returns:

3 parts failed after SUB 12238. GMCH inspected those parts concluding NTF. Vehicles were not returned for isolation faults.

Data dumps: Rick sent them to Mark Zerbini for analysis. No results yet.

PR&R: Dan C. asked for GMCH to help with this activity.

**Round Table:** 

Next Meeting: Friday Nov 30th 4pm

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com



# Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

#### Meeting Topics and Notes 11/26/12 4PM:

**GM Diagnostic/Controls Solution:** Rick is writing a CR to get a new diagnostic started. Primary path (Option 5) reads the battery current sensor looking for a current spike and adds a remedial action to open contactors immediately.

- How to proceed with SW characterization testing? Run an auto-code test. Reena will pull together a
  work group to focus on a detailed plan. Is support in Kokomo required? answer is TBD.
- SW analysis and validation plans will be completed once the change is fully determined.

#### Pre-preg Layer Change Implementation:

 EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. 11/26 Update: F.Billotto went to CAB today with WO 1814838 but could not get approval because coordinated WO 1814377 is not at Edit 50. John Ball asked us to get remaining sign-offs on WO 1814377 and he will approve offline. WO 1814377 cannot go to Edit 50 until the APM/BPIM drawing is released. Status and next steps (Steve Farris): Dwg PDF file was approved by Steve Farris additional systemic approvals are required. Bob Agresta was able to expedite the process during our meeting today. Both WOs are now CAB ready.

- GMCH expects a production quantity delivery of both PCBs next week. A plan to verify new part quality is in progress at GMCH. Expect to have a test plan presented to GM on 11/27. Possible to build production qty powerpacks by 12/10....date must be confirmed. GMCH is working on the timing plan.
- Per GMCH, FFX last day of production is 11/30/12.
- Open Issues:
  - Determine new stock designation strategy i.e; apply green sticker to Powerpacks/BPIMs with new material. Next step: **11/26 Update:** Jim Fortune agreed to submit a proposal to the GM assy plants.

**Meeting with the Program Team on 11/27:** What information is required? Dan Cottrell. **11/26 Update:** Discussion will focus on vehicle screening strategy. Team recommends using the SUB 12238 test procedure. Oshawa has 150 vehicles, FFX has approximately 300.

# Recent field returns:

**New Incident:** 71-1129555175 McMurray Chevrolet, Inc. PA 2013 Malibu 1G11F5RR3DF thermal event. The vehicle was about to go through the SUB 12238 test but failed *before* the test initiated. Pack will be expedited to GMCH and trim will go to Kristin Curran. Only DTC that set was P062F. This code sets when a 12v battery goes low. Request that GMCH pull a memory dump when the pack arrives. The powerpack built into this vehicle was on the original suspect list. The Tech stated that the vehicle was in the showroom and the battery went dead. The sales team jumped the vehicle and left it run. The tech states that the vehicle ran for approx. 10 minutes in his stall and he noticed the interior was full of smoke and he shut the vehicle down.

3rd field (WAR 361) return with failed CAP board:

• Action item: Can GMCH pull codes from the BPIM? Joe Thompson will try to retrieve the data. 11/19: No update today. **11/26 Update:** Data dump was successful. Data was retrieved from 3 out of 4 failed parts. GMCH will send to GM for analysis.

4th field (WAR 365) return with a failed CAP board:

- Received at GMCH 11/13/12
- May 15th 2012 BPIM build date. Vehicle build date 5/18/12
- Unit is from CAP board lot #101211. This is the 2nd failure same lot #101211.
- Vehicle failed at the dealer. SUB 12238 was performed on this vehicle and Kristin confirmed on 11/26 that the failure occurred during the test, but we do not know which step.
- Codes set: P0562,P0ABC,P0AFA,P0CA2,P1A0C,P1ADE,P1AE8,P1AF4,P1B0B,P1E11
- Action Item: Joe Thompson will try to do a data dump. **11/26 Update:** Data dump was successful.
- Update 11/19: Rick Schroeder reported that some of the DTCs noted in WAR 365 TAC report are not valid for our vehicle P0800, P1AC? P1BAA. Need to confirm against actual TAC documents. (Reena)

11/19 Update: 3 out of the 4 failed cap PCBs were most likely from the same lot, 2 are confirmed the 3rd fell within the build window but the lot code cannot be read. All of the failed cap boards fall with-in the power board suspect window.

• Question to consider. Can we subject a statistically relevant sample of vehicles that fall outside the suspect window to SUB 12238? If all samples pass perhaps we could reduce the scope of SUB 12238? Partial answer....we did test 496 non suspect vehicles at FFX and zero failures were found.

**Cap Board Hi-pot testing**, 11/15 Update: Clarified that this test will not be used on new production material. Only used on current material. **11/26 Update:** All verification testing is complete a summary of that testing will be available tomorrow.

**Cap Board Cycling test,** 11/15 Update: On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test. **11/26 Update:** Debug and qualification testing is delayed, will complete 11/28.

### Design changes to mitigate the failure: Update

- GMCH to develop test procedure that could validate the effectiveness of a barrier material. 11/15
  Update: Dan C. identified a material that has potential. 11/26 Update: Fred Billotto obtained a sample
  of the material.
- Kristin will investigate the availability of a warranty buy back vehicle. 11/15 Update: Kristin worked the issue today. 11/19 Update: No update, **11/26 Update:** The credit and re-bill request was sent today. Timing to obtain the vehicle is TBD.

Round Table:

Next Meeting: Wednesday Nov 28th.

Regards,





#### Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com

# Hybrid Energy Storage

#### General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 11/19/12 4PM:

5 Phase:



eAssist\_5PhaseSummary\_Cap-PCB\_19Nov2012.pptx

# Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. Asked PEMs to help fast track to CAB.
  - Powerpack and BPIM Stock disposition: Plan to purge stock for service and production. Prefer to return the parts to GMCH. Need to provide instructions to plants and ESCs/CCA on how to handle the "disposal".

- What should the plant do with vehicles in lots? Engineering recommendation: Screen and ship.
- 11/15 Update: Fred will investigate process to determine "dispose" costs and will schedule special meeting to resolve.
- 11/19 Update: Open issue: How to determine "dispose" costs?
- **11/19 Update:** GMCH working to pull ahead PCB delivery from Nanya.1000 PCBs could arrive by 12/8. GMCH will confirm.

# Service Stock Strategy:

- Goal is to continue to service vehicles while minimizing excess stock. Team met today, GMCH is now working directly with the correct GM contacts.
- CCA seems to be tracking only PN 12635717 which is MY12 and MY13 Malibu. Service must also stock 12650851 for MY13 Lacrosse, Regal, E11, and Vs300.
- CCA expressed a desire to order 1600 BPIMs. Team decided to monitor any orders closely in an effort to minimize excess stock.

**New Service Bulletin in process:** Chris Janik was informed that the MY13 Lacrosse, Regal, E11 and Vs300 BPIM PN should be included in the SUB 12238 page 2

The following service BPIM PNs should be added to the document:

• 12650851 MY13 Lacrosse, Regal, E11, Vs300

Why does the service bulletin only mention BPIM PNs? Service replaced the entire powerpack in a large percentage of these cases. **Fred B.** will follow-up with Service.

# Recent field returns:

3rd field return with failed CAP board:

• Action item: Can GMCH pull codes from the BPIM? **Joe Thompson** will try to retrieve the data. **11/19: No update today.** 

4th field return with a failed CAP board:

- Received at GMCH 11/13/12
- May 15th 2012 BPIM build date. Vehicle build date 5/18/12
- Unit is from CAP board lot #101211. This is the 2nd failure same lot #101211.
- Vehicle failed at the dealer. SUB 12238 was performed on this vehicle but it is not clear if the part failed during the test. Kristin will follow-up with dealer to get more details.
- Action Item: Joe Thompson will try to do a data dump. 11/19: No update today.
- Action Items: GMCH will investigate removing the micro, send to the supplier to extract the data. 11/19: No update today.
- Update 11/19: Rick Schroeder reported that some of the DTCs noted in WAR 365 TAC report are not valid for our vehicle P0800, P1AC? P1BAA. Need to confirm against actual TAC documents. (Reena)

**11/19 Update: New learnings, 3 out of the 4 failed cap PCBs were most likely from the same lot.** 2 are confirmed the 3rd fell within the build window but the lot code cannot be read. All of the failed cap boards fall with-in the power board suspect window.

• Question to considerCan subject a statistically relevant sample of vehicles that fall outside the suspect window to SUB 12238. If all samples pass perhaps we could reduce the scope of SUB 12238? Partial answer....we did test 496 non suspect vehicles at FFX and zero failures were found.

**Cap Board Hi-pot testing**, 11/15 Update: Clarified that this test will not be used on new production material. Only used on current material. **11/19: No update**.

**Cap Board Cycling test**, 11/15 Update: On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test. **11/19: No update**.

### Design changes to mitigate the failure: Update

- GMCH to develop test procedure that could validate the effectiveness of a barrier material. 11/15
  Update: Dan C. identified a material that has potential. 11/19 Update: Fred B. will meet with at the
  CWT in Warren tomorrow to review options.
- Kristin will investigate the availability of a warranty buy back vehicle. 11/15 Update: Kristin worked the issue today. 11/19 Update: No update
  - What is anticipated use and duration of use? Estimate 3 weeks.

**GM Diagnostic/Controls Solution:** GMCH and Reena did some powerpack level testing. Data capture will be sent to Milton and Rick after this meeting. If data capture is sufficient GMCH will proceed with powerpack level bench testing.

**11/19 Update:** Rick thinks the data is useable. Reena needs to confirm if any readings from the VITM current sensor are contained .

Round Table:

#### Next Meeting: Monday November 26th at 4pm.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto@gm.com</u> Hybrid

## Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

#### Meeting Topics and Notes 11/15/12 4PM:

#### Stop Work Order 1819298:

- Requires stop build on all MY13 vehicles with eAssist. PNs 22967220, 22975013, 23102215 until Jan 21st.
- SWO is at IMPL.

## Pre-preg Layer Change Implementation

• EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. Asked PEMs to help fast

track to CAB.

- Powerpack and BPIM Stock disposition: Plan to purge stock for service and production. Prefer to
  return the parts to GMCH. Need to provide instructions to plants and ESCs/CCA on how to handle
  the "disposal".
- What should the plant do with vehicles in lots? Engineering recommendation: Screen and ship.
- **11/15 Update:** Fred will investigate process to determine "dispose" costs and will schedule special meeting to resolve.

### Service Stock Strategy:

- Goal is to continue to service vehicles while minimizing excess stock. Team met today, GMCH is now working directly with the correct GM contacts.
  - BPIMs at CCA warehouses: 900 PN 12635717 MY12 (MY13 Malibu) and 59 MY13 12650851 as of Nov 5th.
  - Powerpack numbers are TBD

Distribution of Powperpack and BPIM orders. This data includes TAC orders between Oct. 19th and Nov. 9th (Oct. 19th was the day SUB 12238 was released.) The below data includes all TAC orders, not just those related to 12238.

| Part Name | PN       | Product                          | Qty | %    |
|-----------|----------|----------------------------------|-----|------|
| BPIM      | 12635717 | '12 Lacrosse, Regal / '13 Malibu | 228 | 79%  |
| BPIM      | 12650851 | '13 LaCrosse, Regal              | 5   | 2%   |
| Powerpack | 24259770 | '12 Lacrosse, Regal / '13 Malibu | 53  | 18%  |
| Powerpack | 22948845 | '13 LaCrosse, Regal              | 0   | 0%   |
|           |          |                                  |     | 100% |

## Recent field returns:

3rd field return with failed CAP board:

- Kristin will try to get more information wrt actions taken when issue was discovered.
  - Kristin learned the tech heard a noise just after battery indicator reached full (step 5). Just after the noise, smoke was observed. Tech keyed off as soon as he heard the noise.
  - Did techs pull codes before the pack was removed? Kristin will investigate
  - Can GMCH pull codes from the BPIM? Joe Thompson will try to retrieve the data.

4th field return with a failed CAP board:

- Received at GMCH 11/13/12
- May 15th 2012 BPIM build date. Vehicle build date 5/18/12
- Unit is from CAP board lot #101211. This is the 2nd failure same lot #101211.
- Vehicle failed at the dealer. SUB 12238 was performed on this vehicle but it is not clear if the part failed during the test. Kristin will follow-up with dealer to get more details.
- Joe Thompson will try to do a data dump.
- GMCH will investigate removing the micro, send to the supplier to extract the data.

Cap Board Hi-pot testing, 11/15 Update: Clarified that this test will not be used on new production material. Only used on current material.

**Cap Board Cycling test**, **11/15 Update:** On target. Device will be ready for debug and qualification testing on 11/26. New boards will not be subjected to this test.

#### Design changes to mitigate the failure: Update

• GMCH to develop test procedure that could validate the effectiveness of a barrier material. **11/15** Update: Dan C. identified a material that has potential.

- Kristin will investigate the availability of a warranty buy back vehicle. **11/15 Update:** Kristin worked the issue today.
  - What is anticipated use and duration of use? Estimate 3 weeks.

New Service Bulletin in process: Update was posted at 3pm today.

**GM Diagnostic/Controls Solution:** GMCH and Reena did some powerpack level testing. Data capture will be sent to Milton and Rick after this meeting. If data capture is sufficient GMCH will proceed with powerpack level bench testing.

**Round Table:** Nanya may be able to improve PCB delivery. Gary will assess the information and update the timing plan.

#### Next Meeting: Monday Nov 19th 4pm

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com Hybrid

## Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

#### All,

#### Meeting Topics and Notes 11/14/12 4PM:

#### GM Diagnostic/Controls Solution:

- Update from Rick Schroeder:
  - 4 potential solutions. Rick is assessing effectiveness and risk. Also working on a timeline for each option.
  - Powerpack level test monitoring CAN data to the VITM and BPIM is underway.

#### Stop Work Order: 1819298

- Requires stop build on all MY13 vehicles with eAssist. PNs 22967220, 22975013, 23102215.
- Stop order duration estimated to end on Jan 21st. Team considers this date conservative.

#### MY14/15 Builds not included in SWO:

#### MY14 PPV builds:

E16- 4 pieces (already shipped new HW MY14 parts) GMX353- 1 piece for 11/15/12 MRD (will be a re-flashed MY13 part), 2 Pieces for 1/11/13 MRD GMX351- 1 piece for 1/13 MRD GMX350- 1 Piece for 3/13 MRD <u>MY14 MVBNs:</u> GMX353- 6 pieces first MRD is Mid- February GMX351- 1 piece

Team agrees to allow non-saleable builds to proceed. Assess options to retrofit if determined necessary.

## Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status. Asked PEMs to help fast track to CAB.
- EWO 1814838 effects MY13 part numbers 23111190 and 22975013 (Malibu only).
  - 23111190 has not shipped to production.
  - Powerpack and BPIM Stock disposition: Plan to purge stock for service and production. Prefer to
    return the parts to GMCH. Need to provide instructions to plants and ESCs/CCA on how to handle
    the "disposal".
  - What should the plant do with vehicles in lots? Engineering recommendation: Screen and ship.

## Recent field return with damaged cap board (3rd field return):

- Cap board failure is consistent with previous failed boards. Damage foot print similar to previous field failure and lab induced failures.
- Kristin will try to get more information wrt actions taken when issue was discovered.

## Cap Board Hi-pot testing:

- How does this implementation plan since stop build issue? Plan to continue this activity to learn if faulty boards can be detected.
- Plan to audit new boards through this process.

## Design changes to mitigate the failure: No update today.

GMCH to develop test procedure that could validate the effectiveness of a barrier material. Kristin will investigate the availability of a warranty buy back vehicle

**New Service Bulletin in process:** Cannot sell eAssist cars with-out vehicle screen. Not posted as of the time of this meeting.

#### Misc:

CCA ordered 1600 service BPIMs. We need to continue servicing vehicles but should limit stock on hand. **Fred and Gary** will discuss with CCA tomorrow.

## Round Table:

What is the disposition of parts used in root cause testing? Hold until further notice.

## Next Meeting: Thursday 4pm.

Regards,





**Fred Billotto** 

Hybrid Energy Storage

Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com

#### General Motors Corp.

Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

## Meeting Topics and Notes 11/13/12 4PM:

## Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. 11/12 Status: On track with board procurement. Previously reported part availability is on schedule.
  - What GM parts were part of Delphi's PPAP? Hos will find out. Expect to get PNs on 11/13.
  - GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at Wednesday's PET. On target
- PPAP plan: GMCH will try to PPAP the parts before the end of the year. Gary will share the latest schedule.
- GM Diagnostic/Controls Solution: GMCH shared a scope trace of the current. Unlikely that the diagnostic could consistently detect the event. Investigate if VITM could read the current spikes: Rick Schroeder will begin working with Milton to assess feasibility. 11/13 Status: Andrew Baughman is investigating what could be done wrt battery current detection.
  - Rick asked for a better requirement to work with. Can a lower current short create the same failure? i.e 40 amps. Answer yes current can be lower and still cause damage. Difficult to assess if damage is equivalent to higher current shorts.
  - Reena will provide test data for Rick to analyze.

## • GMCH Hi-pot Testing:

GMCH will need an email response from GM Engineering approving a variation to perform HIPOT testing on Bare Capacitor boards on the BAS+ APM/BPIM. Specifics of this test as well as operator work instructions are attached.

- Email response from S.Farris or D. Tasky will satisfy GMCH requirements. Jim will issue an SPCR and Steve Farris will champion the change through the GM approval process.
- Sean G. asked that Delphi review this plan. GMCH confirmed Delphi is working with them to develop and validate testing.
- Steve Farris will host a meeting to get all parties on board before testing is implemented in production.
- **GMCH testing that mimics vehicle test (Cap board cycling): Status:** Test equipment is in process. SPCR is also required as is GM internal review.
- Design changes to mitigate the failure:
- Suggestion: Can a barrier material be added to the interior trim? Dan Cottrell will follow-up. 11/13

Status: Dan C discussed feasibility with interior trim BFO. Options for both a field application and future production are under consideration.

• Design studies are underway to find a solution that could restrict venting around the 48 way connector.

Round table:

## Next meeting: Wednesday at 4pm

Regards,





Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com

# Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

## Meeting Topics and Notes 11/12/12 4PM:

## Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. 11/12 Status: On track with board procurement. Previously reported part availability is on schedule.
  - What GM parts were part of Delphi's PPAP? Hos will find out. Expect to get PNs on 11/13.
  - What quality improvements can we expect with switch to inside HASL process? From Jim Fortune's email on 11/12/12:

Bullets for the main improvements are:

- 100% Conveyerized line:

o Our in house LF HASL equipment is a continuous line: pre clean -> pre Heat -> Flux -> HASL -> Cool down -> Pot Wash

o Subcon is not continuous: Pre Clean\_> Pre Heat -> MANUAL HANDLE to place in vertical leveler -> Manual Handle to remove from leveler -> Cool Down Post Wash.

• The advantage of the continuous line is no timing variation from pre heat to the leveler resulting in better distribution of HASL thickness

- Horizontal Leveler (Nan Ya in House) Vs Vertical Leveler (Subcon):
  - o The horizontal leveler produces a flatter final surface finish.

o The horizontal leveler exposes the PCB panel to less thermal shock (less time in the solder pot). This is better for long term reliability.

- DI water post clean at an elevated temperature (Nan Ya in House Leveler) - City water Subcon Leveler

o DI post clean at an elevated temperature results in cleaner PCB's (Less free Ion's)

- Having LF HASL process in house at Nan Ya gives us better control over the process (Vs managing the subcon)

- No transportation time- packaging and shipping the panels to the subcon (about a 20 minute drive from Nan Ya's factory)

• GMCH internal testing will complete on 11/26/12. Jim Fortune will write an SPCR for review at the PT PET. Steve Farris will present at Wednesday's PET.

## • GMCH Hi-pot Testing:

GMCH will need an email response from GM Engineering approving a variation to perform HIPOT testing on Bare Capacitor boards on the BAS+ APM/BPIM. Specifics of this test as well as operator work instructions are attached.

- Email response from S.Farris or D. Tasky will satisfy GMCH requirements. Jim will issue an SPCR and Steve Farris will champion the change through the GM approval process.
- Status: Parts are in the thermal chamber will complete cycle on Wednesday. Test implementation 11/20/12.
- **GMCH testing that mimics vehicle test (Cap board cycling): Status:** Test equipment is in process. SPCR is also required as is GM internal review.

#### • Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday. Status: Testing indicated that the design change under consideration does not mitigate the effect of the failure.

Suggestion: Can a barrier material be added to the interior trim? Dan Cottrell will follow-up.

- **GM Diagnostic/Controls Solution:** GMCH shared a scope trace of the current. Unlikely that the diagnostic could consistently detect the event. Investigate if VITM could read the current spikes: Rick Schroeder will begin working with Milton to assess feasibility.
- How does HTD validation test compare with the vehicle test? Steve Farris: No update today.

Round table:

Next meeting: Tuesday at 4pm

#### Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



## Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

#### Meeting Topics and Notes 11/9/12 4PM:

#### Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are at Edit status.
- Nanya will not quote outsourced HASL process. GMCH moving forward by issuing a PO. GMCH and will receive sample boards with the new HASL in 3 weeks. Production timing must be confirmed. GMCH developed a site qualification plan to validate the HASL change. Delphi has already agreed to allow the change on all Nanya boards. What GM parts were part of Delphi's PPAP? Hos will find out. What quality improvements can we expect with switch to inside HASL process? Jim Fortune will follow-up

#### How does HTD validation test compare with the vehicle test? Steve Farris

• Action: Plot HTD validation test data to learn what peak temperatures and power were recorded at each thermistor. Hos will help Steve help to make contact with the appropriate Delphi engineers.

## GM Diagnostic/Controls Solution: Rick Schroeder:

- Current production SW will set a DTC if a rapid increase in current is detected but will not take remedial action. Possible to change cals to enable opening contactors as a remedial action.
- Opening contactors immediately is feasible but that will require a software change. Calvin Goodman
  objects to this option using a diagnostic to detect a short.
- Next steps:
  - Primary path: SW change to open contactor immediately. Includes additional rationality feature to prevent false fails (walk home condition).
  - Cal change only. Secondary parallel path
  - What about using thermistor delta T readings to open contactor? Feasibility of this option is under consideration.

#### GM Testing:

Vehicle test with thermo-coupled caps. Tony Saliga: Test complete. Data was sent to Reena today and will be used to determine test profiles.

GMCH testing that mimics vehicle test (Cap board cycling): No new updates.

#### Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday. Plan is on track.

Round table: FPE will review issue on Tuesday.

## Next meeting: Monday at 4pm

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com



Hybrid Energy Storage General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

### Meeting Topics and Notes 11/8/12 4PM:

## Pre-preg Layer Change Implementation

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are in draft status
- How to handle service and production stock?
  - Service/Dealer/Production: Plan to use existing stock if it can be screened. Everything must be screened not just the suspect lots.
    - How can we screen packs and BPIMs in service stock? Could test after installation in a vehicle.
  - Production stock at the vehicle asy plants cannot be screened. Implementation of the option 1 change required returning suspect powerpacks to GMCH. Plants will need to screen at the vehicle level. What to do with stock at the vehicle plants? Build and screen after. EWO direction is USE but somewhere in the process a screen must occur.
- Dan C. met with John Ball and he agreed that we can proceed with-out changing the pack PN providing we can trace the new stock.
- Last summer Nanya asked GMCH to change the HASL supplier. GMCH rejected the request. Nanya now refuses to quote without the HASL supplier change. GMCH produces other products with boards that use the new HASL supplier without issue. Team asked GMCH to request Nanya quote both options i.e, new vs current HASL supplier. GMCH will put together a qualification plan for the new HASL.
- Provide details behind EWO BPs. for John Ball (Fred Billotto)

**Cap Board Hipot Screening at GMCH:** On track to begin test verification over the weekend. The testing will take approx 4.5 days. Testing in production is planned to begin on 11/19/12

**GMCH testing that mimics vehicle test (Cap board cycling):** Apply 120v DC bias between HV+ and HV-.

#### GM Testing:

Vehicle test with thermocoupled caps. Tony Saliga: Test is underway should have ETAS profile in the morning.

## Investigation of packs returned for the P0BFD DTC:

Dan Weaver reported: "....5 of them have been confirmed to have isolation shorts. I will have the CPE look at the WAR 161 and 293 to see if we can get those closed as well. Will also verify that WAR 206 and 228 were looked at and not just classified as isolation faults because of the P1B0B DTC."

## Design changes to mitigate the failure:

BPIM PDT worked on brainstorming design change ideas to mitigate. Team is working on a design to mock-up and test on Monday.

#### GM Diagnostic/Controls Solution: Rick Schroeder:

• Rick is working on this as a potential solution. Will ask for an update tomorrow at 4pm

Round Table:

Next meeting: Friday 4pm

## Meeting Topics and Notes 11/7/12 4PM:

## Pre-preg Layer Change Implementation

- Artwork complete and made available to Nanya yesterday
- Awaiting response from Nanya on quote, expect response tomorrow (Thu Nov 8th)
- GMCH to prepare updated timing for distribution to team this week.

## Cap Board Hipot Screening at GMCH

- Two fixtures developed, to be completed this week (Fri Nov 9th).
- Hipot screening will be operated by engineering personal in the production environment.
- Cycle time 2 min including load and unload of parts, 170 parts a day to meet current production levels.
- 100 boards requested were made available for qualification 50 boards will tested through each fixture.
- Qualification includes measuring impedance before and after 2000V hipot, thermal cycling and humidity to ensure test does not create defects.
- Hipot breakpoint currently Nov 19th.

## **GM Diagnostic Testing**

- POBFD "Drive Motor Current" setting in field with 8 vehicles setting the code thus far (based on when QIS2 captured data)
- When POBFD sets in field, other codes set including loss of isolation and precharge time too long faults
- TCed BPIMs were installed in vehicles but cannot be flashed with production code; GMCH onsite support was contacted and hopefully can unlock the units tomorrow (Thu Nov 8th).

#### **GMCH Test Status and Learnings**

- Temperature bare board testing modeled after vehicle screening to be reviewed and discussed tomorrow (Thu Nov 8th)
- Additional autocode BPIM testing may be needed and will be discussed with Diagnostic team,
- TC and scope data will be reviewed and sent to Diagnostic team.

#### Design changes to mitigate the failure

Small work group will be formed to discuss this topic.

## Next meeting: Thursday at 4PM

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



## Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Sorry for the delayed distribution...was out of the office for a few days.

#### Meeting Topics and Notes 11/5/12 4PM:

#### Pre-preg Layer Change Implementation:

- EWOs 1814838 (Powerpack) and 1814377 (APM/BPIM) are in draft status
- Open Issues:
  - Need to determine production and service stock disposition. (Use, Rework, Dispose,): BPIMs at CCA warehouses: 792 MY12 (MY13 Malibu) PN 12635717 and 59 MY13 12650851.
  - Validation plan: GMCH working to get "pull ahead" boards several weeks before production qty boards arrive. Also some option 3 material may be available. GMCH presented a plan to test those boards. Additional confidence will be gained because Option 3 validation will be near completion at the time this change breaks to production.

• Ability of service technicians to read the BPIM build date from SW. Not possible using standard service tools. (DPS can extract the data but that SW is not used at dealership)

## CAP Board Screening at Nanya and GMCH:

One hi-pot fixture is assembled at the lab in GMCH. Verification test plan is under development. Estimated availability for production use? Dependant upon qualification test plan which is TBD. Estimate early next week as a possibility.

## Ability to use Diagnostics to Detect a HV Short:

Rick and Milton ran a simulation at MPG to test for the capability of POBFD to detect a High Voltage short.

GMCH asked to receive SW patch to support testing that validates the SW calibration would catch the failure.

Investigate occurrence of POBFD in warranty returns. **R. Schroeder** Next steps: Set-up focused work to group to assess feasibility. (**F.Billotto**)

#### Round table:

Examine component level validation plan and compare against dealership testing. How does high temperature durability testing compare to SUB 12238? **Steve Farris** will investigate. Can low mileage customer vehicles that have not failed be removed from the suspect lot? Example if a vehicle has >15k miles is can it be removed from the suspect list Does pre-preg degrade overtime? **Steve Farris** will investigate.

## Next Meeting: Wednesday Nov 7th at 4pm.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



## Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

## Meeting Topics and Notes 11/2/12 4PM:

## GMCH Test Status and Learnings:

- A shorted cap board without the bulk capacitors populated creates the same magnitude event as a board with caps populated.
- Event occurs almost instantaneously.
- We learned from UCC that the cap on the field return did not vent due to internal failure. It was damaged from the outside.

- Failure occurs very rapidly.
- BPIM components monitored by thermistors do experience a rapid rise in temperature. Perhaps controls could react to that data.
- Rick Schroeder asked for current and temperature data to react to....temperature readings have a slower reaction time. Reacting to temp may still be beneficial.
- All data captured will be sent to Rick so he can assess our options.
- Rick and Milton will attempt to simulate the failure (non-destructive test) on a vehicle on Monday.

### CAP Board Screening at Nanya and GMCH:

GMCH presented a cap board screen proposal.

GMCH presented a proposal for a test that mimics in vehicle test.

- Many unresolved issues. New equipment purchase would be required.
- The team wants to thermocouple a cap board and run in the vehicle to acquire correct temp profile.
- Plan to test 40 boards at a time. 8 boards per rack, 5 racks in thermal chamber
- Estimate 2-3 weeks to implement.

#### Pre-preg Layer Change Implementation:

 This topic was discussed and will proceed according to plan. Detailed timing is provided in the attachment.

Notes: Dan Cottrell suggests we explore design change that could seal pack to prevent propagation.

#### Next meeting: Monday at 4pm

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com Hybrid

## Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

#### Meeting Topics and Notes 11/1/12 4PM:

#### Plan to implement changes: Additional pre-preg layers:

- GMCH will hold an emergency change meeting with the hopes of getting Delphi to begin the design changes by Monday. G.Backs working to get the CN issued. Team decided to get just the pre-preg change in as fast as possible.
- Plan is to proceed without PN changes: DRE's need to put a plan together. (Fred, Reena, Steve)

## CAP Board Screening at Nanya and GMCH:

• GMCH working on a fixture to do on-site hi-pot testing on the cap board. Should have a sample fixture

ready to test bare PCBs by Friday (11/2). Test details are TBD. Goal is to implement 100% screen. GMCH asked Nanva to implement a board screen at their facility. Awaiting a response from Nanva

GMCH asked Nariya to implement a board screen at their facility. Awaiting a response norm variya
 GMCH test to mimic vehicle screen: Analyze vehicle test data to determine appropriate time, temp, and energy parameters. (This test was identified as critical path)

## **GMCH Test Status and Learnings**

- GMCH will run a test without the bulk caps to understand if energy escapes the APM/BPIM unit without the electrolytic acting as a catalyst. Important to know if the caps are contributors.
- High temp delta was observed on several PCB components with-in a very short time span when a short is induced. Can this phenomenon be detected and acted upon by hybrid controls?
- MCP and BCP survive the event. GMCH was able to capture data.

Regards,

| GM                                                                                              | Hybrid                                                                                                          |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Fred Billotto<br>Senior Project Engineer                                                        | Hybrid Energy Storage                                                                                           |
| Mobile Ph: (248) 904-9949<br>Mail Code: 480-210-411<br>email: <u>frederick.billotto</u> @gm.com | General Motors Corp.<br>Warren Technical Center<br>30001 Van Dyke Avenue<br>Warren, Michigan 48090<br>VEC 4AV23 |

| Frederic | k Billotto          | All, Meeting Topics and Notes 10/30/12:                                                                   | 10/30/2012 05:23:25 PM |  |  |  |  |
|----------|---------------------|-----------------------------------------------------------------------------------------------------------|------------------------|--|--|--|--|
| From:    | Frederic            | k Billotto/US/GM/GMC                                                                                      |                        |  |  |  |  |
| То:      |                     | k.billotto@gm.com, mark.zerbini@gm.com, kris.sevel@gm.com,                                                |                        |  |  |  |  |
|          |                     | .dakroub@gm.com, cole.buttry@gmch.com, roger.raden                                                        |                        |  |  |  |  |
|          |                     | cks@gmch.com, hossein.lotfalian@gmch.com, steven.wy                                                       |                        |  |  |  |  |
|          | k@gm.com,           |                                                                                                           |                        |  |  |  |  |
|          |                     | her.winegarden@gm.com, mehrdad.teimor@gm.com, m                                                           |                        |  |  |  |  |
|          |                     | atta@gm.com, richard.ye@gm.com, rick.schroeder@gm<br>.farris@gm.com, stephen.poulos@gm.com, tony.j.saliga |                        |  |  |  |  |
|          |                     | vorthington@gmch.com>, Kristin L Curran/US/GM/GMC@                                                        |                        |  |  |  |  |
|          |                     | o.taki@gm.com, gary.m.insana@gm.com                                                                       |                        |  |  |  |  |
| Date:    | 10/30/2012 05:23 PM |                                                                                                           |                        |  |  |  |  |
| Subject: | BAS+ P              | owerpack Field Return Root Cause Investigation Meeting                                                    | Notes 10/30/12         |  |  |  |  |

## All,

## Meeting Topics and Notes 10/30/12:

- 1. Testing at GMCH: Status of test plan and testing activities: Gary Backs reviewed next steps. Plan to start testing on 10/31/12.
- 2. What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony Saliga sent test data (V,T,I etc..) to GMCH. The profile is currently under review at GMCH.
- **3.** Mfg process data. GMCH sent a list of questions to Nanya. Jim Fortune presented production process data from Nanya indicating a low fall-out rate across the lots that the failed control boards came from.

- 4. Confirm via physical inspection that the improved pre-preg layer meets expectations: The dielectric thickness (pre-preg layer) on the cap board meets industry standard thickness (currently at approximately 123 microns or greater). Option 3 changes will increase the pre-preg layer to 180 microns. Note industry standard also requires 2 layers.
- 5. Summarize the validation plan for a pre-preg only change: If kick-off is 11/9/12 pipeline fill is 2/8/13.

#### Notes:

Kevin Diviney reported on 3 additional powerpacks that failed and deposited excessive soot/smoke or smell in the vehicle during SUB 12238 testing at a dealership. Those packs will be expedited to GMCH.

#### Action Items:

- GMCH to complete inspection of all "isolation fault" (P1B0B dtc) warranty returns to check for any cap board failures. 17 units were inspected today, 1 cap board was found suspect. 100 BPIMs and 25 packs are left to check. Direction to GMCH is to continue checking stock before going back to root cause the suspect cap boards. Direction may change if a significant number of cap board failures are discovered.
- GMCH to work on developing a screen that mimics the SUB 12238.
- Complete change implementation trade study:
  - Pre-preg change only.
  - Wait for option 3 changes to complete validation and implement as planned in April 2013
  - Pull ahead option 3 implementation accepting less validation but continue running testing in parallel until complete.

## **Open Issues:**

Can the BPIM potentially detect a HV+ to HV- resistive short? Need to know what current level we see in the short before a determination can be made. Next step: review test results

#### Round Table:

Next meeting: Thursday morning at 10am.

Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



## Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

All,

Meeting Topics and Notes 10/29/12:

## 1.) Timing to implement pre-preg layer change into the CAP and Control PCBs.

- 5-6 weeks to produce PCBs in production quantities
- 2 weeks for GMCH internal drawing release.
- Testing and pull ahead material requirements are not included in the timing estimate.
- Approximately 2 weeks after the PCBs are received powerpacks will be available to ship. Can we abbreviate the option 3 change validation testing and pull ahead implementation? How much option 3 testing will complete 8 weeks from now? 75% HTD, TS complete, 50% of PTC, EMC testing complete, LV transient complete.

Options to implement a countermeasure:

- Rely upon option 3 testing that is complete at the time when the new PCBs with increased pre-preg layer become available to validate this change. (Under review. PDT prefers no part number changes)
- Release option 3 change to production approximately 8 weeks from now accepting validation complete at that time. Validation testing will continue until complete. (Rejected)

#### 2.) GMCH test plan

- Reviewed GMCH presentation.
- Desired learnings: How long after the short initiates can we diagnose a failure? What can we do with that diagnosis? How long after a board shorts does the cap fail?
- If it becomes necessary to run the test with application SW outside the vehicle a plan will need to be developed. We don't know how to do that efficiently.

3.) Can the BPIM potentially detect a HV+ to HV- resistive short? Need to know what current level we see in the short before a determination can be made.

#### 4.) Mfg process data.

GMCH provided a list of questions to Nanya. Expect a response tomorrow.

#### 5.) GMCH was asked to inspect BPIMs returned for iso faults that have yet to be visually inspected to confirm that the CAP board wasn't root cause.

GMCH inspected 15 of approximately 100 parts. No cap board failures were found.

#### Notes:

Zero BPIMs have been returned for ISO faults since option 1 was implemented in August 2012.

#### Action items:

- Confirm via physical inspection that the improved pre-preg layer meets expectations. (GMCH)
- Summarize the validation plan for a pre-preg only change. (Reena and Gary)
- What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony will provide a trace of the duty cycle. (GMCH and Tony)
- Review GMCH test plan with ESS safety engineering. (Fred and Galen)
- What kind of screens can Nanya perform? Ask Nanya to perform hi pot testing on cap board.

#### Regards,



VBRD

**Fred Billotto** Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: frederick.billotto@gm.com

## Hybrid Energy Storage

#### **General Motors Corp.** Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23



Reena Datta/US/GM/GMC 12/10/2012 04:39 PM To Daniel Weaver <daniel.weaver@gmch.com>, James Fortune <james.fortune@gmch.com>, Gary Backs <gary.backs@gmch.com>, Joseph Thompson cc

bcc

Subject eAssist - Cap Board Return Summary

Updated with most recent PA failure



eAssist\_Cap-PCB-Returns\_10Dec2012.xlsx



## {In Archive} URGENT: Repetitive Dealer Cap Board Cycle Testing

Stephen Farristo:Stephen PoulosCc:Tony J. Saliga, Reena Datta, Frederick BillottoThis message is being viewed in an archive.

12/13/2012 10:41 AM

Archive: Stephen,

In the meetings we had Monday, it was not fully understood that your request for vehicle testing on ten units 3x each, was to be complete prior to start of production. In order to accomplish this task GMCH has their proposal in email below. Please let me know if we can test 5 parts (including the 1 already in PMD vehicle) at Milford next week. GMCH can only complete testing on 5 units by next Thursday. If we want GMCH to run all the testing it will not be complete until January 6-7. Please advise.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

----- Forwarded by Stephen Farris/US/GM/GMC on 12/13/2012 10:28 AM -----

| From:    | Gary Backs <gary.backs@gmch.com></gary.backs@gmch.com>                                                                           |
|----------|----------------------------------------------------------------------------------------------------------------------------------|
| To:      | stephen.farris@gm.com, reena.datta@gm.com, frederick.billotto@gm.com                                                             |
| Cc:      | Joseph Thompson <joseph.thompson@gmch.com>, Hossein Lotfalian</joseph.thompson@gmch.com>                                         |
|          | <hossein.lotfalian@gmch.com>, "David E. Miller" <david.e.miller@gmch.com></david.e.miller@gmch.com></hossein.lotfalian@gmch.com> |
| Date:    | 12/12/2012 04:29 PM                                                                                                              |
| Subject: | Repetitive Dealer Cap Board Cycle Testing                                                                                        |

I was told that the deadline for the repetitve cycling 10 BPIM's x 3 Cycles each has been revised to be prior to SOP.

It is not clear if that is prior to approval of the EWO lifting the stop order / production at GMCH or production at the vehicle plants.

Assuming the target is prior to December 21, following is our intent.

GMCH will start flashing BPIMs with the software we have available for the Lacrosse. We currently have 8 test BPIM's available for this purpose. GM has 1 BPIM that has completed a single test cycle.

We can introduce 1 BPIM per day to the single vehicle at GMCH.

By Thursday of next week, we should have 5 parts complete through the triple cycle Dealer screen.

To finish prior to the holiday, we will need to take advantage of Stephen's offer to test the 6th part in Milfords hands 2 more times (part 6) plus send 4 additional BPIM's to Milford.

If all the testing is to complete in Kokomo, I would estimate a completion date of January 6-7.

Please provide a shipping address for the pieces going to Milford so I can get these out of the plant tomorrow.

Of if the team agrees with the timing in January, please confirm that back to me. We would still request the one part currently at MPG that has 1 test cycle be completed for the remaining two cycles.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com



# {In Archive} Re: Fw: Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941 James Fortune to: kristin.curran 12/20/2012

Cc: "Frederick Billotto", steve.bunce

12/20/2012 12:15 PM

Archive:

This message is being viewed in an archive.

Kristin,

Yes we were able to make a clean break with service models going to CCA. We have full PPAP approval on the new 2012, 2013 BPIMs and the 2012 power pack. We had a little hang-up on the 2013 power pack (23102217) while we worked out a software question on the APIVER. We are shipping as required to CCA for these new parts.

Jim

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity - General Motors Components Holding (GMCH). The sender of

this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

-----kristin.curran@gm.com wrote: ----To: James Fortune <james.fortune@gmch.com> From: kristin.curran@gm.com Date: 12/20/2012 11:56AM Cc: frederick.billotto@gm.com Subject: Fw: Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

Hi Jim,

I just wanted to check in on this. Were we able to make a clean break for service parts? What about the

new powerpack level part numbers?

Has GMCH started shipping these to CCA yet?

Thanks.

Kristin L. Curran Brand Quality Manager, Advanced Propulsion General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com ----- Forwarded by Kristin L Curran/US/GM/GMC on 12/20/2012 11:52 AM -----

 From:
 Dave Cham/US/GM/GMC

 To:
 Kristin L Curran/US/GM/GMC@GM

 Cc:
 Keith Newbury/US/GM/GMC@GM

 Date:
 12/19/2012 01:36 PM

 Subject:
 Re: Fw: Hot:
 Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

Sorry. I do not own the powerpack. Barb's people does.

CCA has contract w/ supplier on the new modules since 12-11-12.

Thanks,

Dave Cham Service Parts Engineer Customer Care & Aftersales (248) 410-2890

 From:
 Kristin L Curran/US/GM/GMC

 To:
 Keith Newbury/US/GM/GMC@GM

 Cc:
 Dave Cham/US/GM/GMC@GM

 Date:
 12/19/2012 11:34 AM

 Subject:
 Re: Fw: Hot:

 Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

#### Hi Keith,

Yes, FPE is engaged. These parts are for SUB 12238. The one that started in mid-October. The part changes address the root cause of the thermal event concerns.

In late November there was discussion at the FPET about ensuring we had enough old stock to cover us until the new stock was available. I had asked then if a SPA/SPEW was required and it was determined it was not as FPE was already engaged with GMCH.

#### Dave,

There should be powerpack level part numbers in addition to the APM/BPIM numbers listed below. What's the status of those? We're going to need to get part restriction and SUB communications updated with the new numbers.

Thanks.

Kristin L. Curran Brand Quality Manager, Advanced Propulsion General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

 From:
 Keith Newbury/US/GM/GMC

 To:
 Kristin L Curran/US/GM/GMC@GM

 Date:
 12/19/2012 10:30 AM

 Subject:
 Fw: Hot:
 Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

#### Kristin,

Please review this eAssist part status. Is FPE already engaged? We may need to do something on the parts side.

Keith Newbury Group Manager Brand Quality - Advanced Propulsion Volt, FWD Two-mode Hybrid, Fuel Cell (586) 947-3496 ----- Forwarded by Keith Newbury/US/GM/GMC on 12/19/2012 10:29 AM -----

 From:
 Dave Cham/US/GM/GMC

 To:
 Linda Reigle/C/US/GM/GMC@GM

 Cc:
 Jeffrey T McFarland/US/GM/GMC@GM, Jackie Hebekeuser/US/GM/GMC@GM, Michael Banar/US/GM/GMC@GM, Keith

 Newbury/US/GM/GMC@GM
 12/10/2012 09:38 AM

 Subject:
 Re: Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

Hi Linda,

My USEM is just to make sure we have parts for customers until the new parts show up. We really need to move to the new parts ASAP. GMCH is telling Engineering that they would have quoted sooner if we got the RFQs to them. So we will see. :)

Keith Newbury: Is there going to be a Parts Alert for these parts because I am hearing a possible campaign? GMCH is saying they are ready to build.

Thanks,

Dave Cham Service Parts Engineer Customer Care & Aftersales (248) 410-2890 From:Linda Reigle/C/US/GM/GMCTo:Jeffrey T McFarland/US/GM/GMC@GMCc:Jackie Hebekeuser/US/GM/GMC@GM, Michael Banar/US/GM/GMC@GM, Dave Cham/US/GM/GMC@GMDate:12/10/2012 09:27 AMSubject:Re: Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

I have urgent request into GMCH to respond. Please note engineering note showing previous part can be used USEM until new part is available.

- 24267940 REPLS 12635717 ASAP USEM ECA P2H00348 EWO 1773702; 12/3/12 JAF
- 24267941 REPLS 12650851 ASAP USEM ECA P2H00348 EWO 1773702; 12/3/12 JAF

Linda Reigle IO Buyer Chassis Customer Care and Aftersales 6200 Grand Pointe Drive M/C 484.391.112 Grand Blanc, MI 48439 810.606.4903

Confidentiality Note : This message is intended only for the person or entity to which it is addressed. It may contain confidential and/or privileged material. Any review, transmission, dissemination or other use, or taking of any action in reliance upon this message by persons or entities other than the intended recipient is prohibited and may be unlawful. If you received this message in error, please contact the sender and delete it from your computer.

 From:
 Jeffrey T McFarland/US/GM/GMC

 To:
 Jackie Hebekeuser/US/GM/GMC@GM, Linda Reigle/C/US/GM/GMC@GM

 Cc:
 Michael Banar/US/GM/GMC@GM, Dave Cham/US/GM/GMC@GM

 Date:
 12/07/2012 09:08 AM

 Subject:
 Re: Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

Linda - can you please advise to all the status of contracting these two HOT parts. Thanks.

 From:
 Jackie Hebekeuser/US/GM/GMC

 To:
 Michael Banar/US/GM/GMC@GM

 Cc:
 Dave Cham/US/GM/GMC@GM, Jeffrey T McFarland/US/GM/GMC@GM

 Date:
 12/06/2012 04:39 PM

 Subject:
 Re: Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

Jeff: Can you answer Mike's eta question?

Jackie

#### 810-606-3908

 From:
 Michael Banar/US/GM/GMC

 To:
 Jackie Hebekeuser/US/GM/GMC@GM

 Cc:
 Dave Cham/US/GM/GMC@GM, Jeffrey T McFarland/US/GM/GMC@GM

 Date:
 12/06/2012 04:28 PM

 Subject:
 Re: Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

Awesome!!!

Thanks for the help. I need to report back on an ETA. Can we get an idea on when this will be complete?

Thanks again, Mike



## Mike Banar

Customer Care & Aftersales

Team Leader Alternative Energy Center Emission Building 30003 Van Dyke Warren, Mi 48090

Phone: 586-675-2627 Email: michael.banar@gm.com

 From:
 Jackie Hebekeuser/US/GM/GMC

 To:
 Dave Cham/US/GM/GMC@GM

 Cc:
 Michael Banar/US/GM/GMC@GM, Jeffrey T McFarland/US/GM/GMC@GM

 Date:
 12/06/2012 04:24 PM

 Subject:
 Re: Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

Hi Dave!!

Expedite indicators have been added and all prcs station owners advised to push thru.

Jackie 810-606-3908

From:Dave Cham/US/GM/GMCTo:Jackie Hebekeuser/US/GM/GMC@GMCc:Michael Banar/US/GM/GMC@GMDate:12/06/2012 03:41 PMSubject:Hot: Fw: GMCH Support Request for APM/BPIM; 24267940 and 24267941

Hi Jackie,

There are the same parts I referred to earlier as being campaign parts.

Pls see the last emails at the bottom. The parts are pending packaging and buyer. GMCH (old Delphi) has habit of .... Please alert PRCS team we do not want to appear as the bottleneck. Thx.

note: not sure the part about getting on contract ASAP in order to have a clean break is all about.

Thanks,

Dave Cham Service Parts Engineer Customer Care & Aftersales (248) 410-2890

----- Forwarded by Dave Cham/US/GM/GMC on 12/06/2012 03:36 PM -----

 From:
 Michael Banar/US/GM/GMC

 To:
 Dave Cham/US/GM/GMC@GM

 Date:
 12/06/2012 03:09 PM

 Subject:
 Fw: GMCH Support Request for APM/BPIM



**Customer Care & Aftersales** 

Team Leader Alternative Energy Center Emission Building 30003 Van Dyke Warren, Mi 48090

Phone: 586-675-2627 Email: michael.banar@gm.com

----- Forwarded by Michael Banar/US/GM/GMC on 12/06/2012 03:09 PM -----

 From:
 Bob Agresta/US/GM/GMC

 To:
 Sean E Gleason/US/GM/GMC@GM

 Cc:
 "Michael Banar" <michael.banar@gm.com>, Kevin Diviney/US/GM/GMC@GM

 Date:
 12/06/2012 02:56 PM

 Subject:
 Re: GMCH Support Request for APM/BPIM

Mike Banar

Try Mike Banar, and keep Kevin Diviney (Quality) involved. Mike should be able to point us to the right persons.

Bob

Bob Agresta Director - Global Program Execution Global Electrification E-mail: Bob.Agresta@gm.com Mobile: 248-330-6295 Office: 248-857-0933 Admin: 248-857-8317 (Marcia Jackson) From:Sean E GleasonTo:Bob AgrestaCc:Date:12/06/2012 01:20 PM ESTSubject:Fw: GMCH Support Request for APM/BPIM

Need your guidance.

Sean Gleason Senior Manager - Global Electrification Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083

#### ----- Forwarded by Sean E Gleason/US/ATD/GMC on 12/06/2012 01:20 PM -----

Stephen Farris/US/GM/GM C

12/06/2012 11:31 AM To DAVID P TASKY/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Mehrdad Teimor/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM cc Reena Datta/US/GM/GMC@GM, Frederick Billotto/US/GM/GMC@GM Subject Fw: GMCH Support Request for APM/BPIM

See message from Jim Fortune (GMCH) below. He is requesting support to get the service units for 2012 and 2013 under contract with CCA, to have a clean break once stop-order is lifted. I'm not sure where to go with this, please advise.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell: 248.515.2572

-----Forwarded by Stephen Farris/US/GM/GMC on 12/06/2012 11:22AM -----

To: "Stephen Farris" <stephen.farris@gm.com> From: James Fortune <james.fortune@gmch.com> Date: 12/06/2012 11:01AM Cc: steve.bunce@gm.com, Gary Backs <gary.backs@gmch.com>, susan.marsh@gm.com Subject: GMCH Support Request for APM/BPIM

Steve,

We are having a little trouble getting two new service ABM/BMIPs (GCMs) on contract. We are working hard to get 2012 24267940 and 2013 24267941 placed on contract and PPAP approved by the middle of

next week to allow a clean break of BAS+ hardware going to CCA once the stop build has been lifted. We want to do everything in our power to keep from recycling the existing part number once the stop order is lifted. I send you this to see if you know of any way to insure this activity is being given the highest priority? I have copies Steve Bunce who is working to help us along with what appears to be a difficult issue.

Jim

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC http://kokomogmch.com Phone: (765) 451-9558 Cell: (765) 451-9558 Cell: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

Delphi's manufacturing locations at Rochester NY, Wyoming MI, Lockport NY, and Kokomo IN, have been sold effective October 6, 2009. Under the new owners, the business operates as the legal entity -General Motors Components Holding (GMCH). The sender of thise-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

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## {In Archive} eAssist - Updated APM LV Short (Red X Thermal) Summary

Mehrdad Teimor, Stephen Farris, John Meyer III, Frederick Billotto, Jacob D Bylsma, Reena Datta to: Shinichiro Taki, Tony J. Saliga, Kevin Diviney, Carrie Harvey, STEVE J BUNCE, Len Chalawa, Frank Schauerte, David.E.White, david.sharp, gary.backs, james.fortune, This message is digitally signed.

07/10/2012 03:42 PM

Archive:

This message is being viewed in an archive.

All,

Please see the updated summary attached for APM returns with a LV power board short (Red X Thermal).

Currently, there are 8 confirmed failures and a long list of suspect units. Please let me know if the suspect units have been received in Kokomo and if they have been confirmed as LV power board failures. Please let me know if you have any questions or comments.

Thank you,

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



eAssist\_APM-LV-Short\_Summary\_10Jul2012.xlsx

## {In Archive} BAS + HV Short Testing

Rick H Schroeder to: cole.buttry, dan.schroeder, gary.backs, James E. Tarchinski, joseph.thompson, Me J. Saliga, william.whitlock

From: Rick H Schroeder/US/GM/GMC

To: cole.buttry@gmch.com, dan.schroeder@gmch.com, gary.backs@gmch.com, James E. Tarchinski/US/GM/GMC@GM, Rademacher/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, Tony J. Sa

Archive:

This message is being viewed in an archive.

All,

I have attached the data from the HV short testing.

I did not see anything that I could not explain, and the changes we made to the remedial actions for P0BFD are working as expected.

Regards,

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com

## Fw: P0C76 DTCs

Rick H Schroeder to: William Whitlock

Cc: cole.buttry, gary.backs, dan.schroeder

From: Rick H Schroeder/US/GM/GMC

To: William Whitlock <william.whitlock@gmch.com>

Cc: cole.buttry@gmch.com, gary.backs@gmch.com, dan.schroeder@gmch.com

#### Bill,

Here is the information from the two powerpacks that set P0C76 - Discharge time too long. These are suspect for having welded contactors. Please inspect the contactors and the BPIM for a shorted board.

.

Thanks,

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com ----- Forwarded by Rick H Schroeder/US/GM/GMC on 07/15/2013 10:53 AM -----

| From:    | Reena Datta/US/GM/GMC         |
|----------|-------------------------------|
| To:      | Rick H Schroeder/US/GM/GMC@GM |
| Date:    | 07/15/2013 10:20 AM           |
| Subject: | Re: P0C76 DTCs                |

Hi Rick,

The packs should be at GMCH.

Reena

|     | Case #        | TAC Case#     | P-Pack-Scan Code | P-Pack  | Vehicle | VIN               | Miles | Customer             | ×                                                          | Dat        |
|-----|---------------|---------------|------------------|---------|---------|-------------------|-------|----------------------|------------------------------------------------------------|------------|
|     | 1 <b>T</b>    | -             | -                | Build D | MY 🔽    | <b>•</b>          | -     | Complai-*<br>[Brief] | <b>•</b>                                                   | Mem<br>Dum |
| 1   | 2 - Pack War  | 71-997916289  | LQ16984111201034 | 7/20/11 | 2012    | 1G4GD5ER9CF164612 | 235   | MIL Light-           | 1G4GD5ER9CF164612, MIL Light-On, mi-235, p/n-              | POC        |
|     |               |               |                  |         |         |                   |       | On                   | 24259770, P0C05, P0C76, P1A56, P1AF0, P1B0B,               | P0C        |
|     |               |               |                  |         |         |                   |       |                      | P1E0C, P1E12: Tac #71-997916289, LQ16984111201034.         | P1A        |
| - 1 | 30 - Pack War | 71-1037359975 | LQ68414112019508 | 1/19/12 | 2013    | 1G11D5RR7DF101846 |       | Service              | Service Battery /Charging System Lamp-On, dtc POADB in     | P0A        |
|     |               |               |                  |         |         |                   |       | Battery /            | History, tech clear, code has not reset. Cannot Duplicate. | P0C        |
|     |               |               |                  |         |         |                   |       | Charging             | POADB set when vehicle received from transport, tech       |            |

From:Rick H Schroeder/US/GM/GMCTo:Reena Datta/US/GM/GMC@GMDate:07/15/2013 10:16 AMSubject:Re: P0C76 DTCs

#### Reena,

where are the powerpacks and was there an issue found?

Thanks,

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com

## Assistance in getting hardware for HV short test.

Rick H Schroeder to: william.whitlock

Cc: cole.buttry, gary.backs, dan.schroeder

From: Rick H Schroeder/US/GM/GMC

To: william.whitlock@gmch.com

Cc: cole.buttry@gmch.com, gary.backs@gmch.com, dan.schroeder@gmch.com

Bill,

we have designed a test setup to validate the HV short software will detect a fault during a high current drive maneuver, but we need a 50amp resistor to use as the short. I thought I remember someone from Kokomo saying that there may be such a resistor in Kokomo.

Can you help with this?

Thanks,

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com

## Re: Assistance in getting hardware for HV short test.

Rick H Schroeder to: William Whitlock

Cc: Cole Buttry, Dan Schroeder, Gary Backs, Tony J. Saliga

From: Rick H Schroeder/US/GM/GMC

- To: William Whitlock <william.whitlock@gmch.com>
- Cc: Cole Buttry <cole.buttry@gmch.com>, Dan Schroeder <dan.schroeder@gmch.com>, Gary Backs <gary.backs@gmch.

#### Bill,

Sorry I have been out of the office for the past two days. (apparently the out of office did not take)

I will discuss this with Tony Saliga and see what he suggests.

Thanks,

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com

| From:    | William Whitlock <william.whitlock@gmch.com></william.whitlock@gmch.com>                                           |
|----------|--------------------------------------------------------------------------------------------------------------------|
| To:      | Dan Schroeder <dan.schroeder@gmch.com></dan.schroeder@gmch.com>                                                    |
| Cc:      | Cole Buttry <cole.buttry@gmch.com>, Gary Backs <gary.backs@gmch.com>,</gary.backs@gmch.com></cole.buttry@gmch.com> |
|          | rick.schroeder@gm.com                                                                                              |
| Date:    | 07/28/2013 09:41 PM                                                                                                |
| Subject: | Re: Assistance in getting hardware for HV short test.                                                              |

Dan,

We can calculate a wire to give us this 50 ohms. On Monday morning we can do this then let Rick know and he can decide if we want to do this testing in Kokomo or up in Michigan.

#### **Bill Whitlock**

Electronic Assembly Product Engineering Manager (765) 451-4612 : office (765) 437-8746 : mobile

#### -----Dan Schroeder/GMch wrote: -----

To: rick.schroeder@gm.com From: Dan Schroeder/GMch Date: 07/26/2013 03:40PM Cc: Cole Buttry/GMch@GMch, Gary Backs/GMch@GMch, William Whitlock/GMch@GMch Subject: Re: Assistance in getting hardware for HV short test.

Rick, then only thing we found to work well at these currents was a large spool of wire.

Best Regards,

Daniel Schroeder Electrical Engineer dan.schroeder@gmch.com 765-451-4617 cell: 765-432-5437

-----rick.schroeder@gm.com wrote: -----

To: william.whitlock@gmch.com From: rick.schroeder@gm.com Date: 07/26/2013 01:47PM Cc: cole.buttry@gmch.com, gary.backs@gmch.com, dan.schroeder@gmch.com Subject: Assistance in getting hardware for HV short test.

Bill,

we have designed a test setup to validate the HV short software will detect a fault during a high current drive maneuver, but we need a 50amp resistor to use as the short. I thought I remember someone from Kokomo saying that there may be such a resistor in Kokomo.

Can you help with this?

Thanks,

Rick Schroeder BAS Plus Diagnostics 248-930-8392 rick.schroeder@gm.com Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

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| Ş              |                     |
|----------------|---------------------|
| Ś              |                     |
| 160 - C        | Kevin Diviney       |
| 16<br>16       | 04/10/2013 03:35 PM |
| 6              |                     |
| Con the second |                     |

To: Stephen Poulos/US/GM/GMC@GM, James Fortune <james.fortune@gmch.com>, Daniel D. Cottrell/US/GM/GMC@GM, Bob Agresta/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Stephen Farris/US/GM/GMC@GM, Gary Backs <gary.backs@gmch.com>

CC:

Subject: BPIM isolation fault timeline

Stephen,

Per your request, I created a rough draft of some key dates related to the BPIM isolation fault issue. I am sending this to a few key people to review and provide specific dates or additional key dates. I will collect the feedback and send out a revision tomorrow morning.

Kristin and I are both working on data to support Chris Janik. Based on our call this morning, we agreed to provide the following:

1) Assessment of effectiveness of the vehicle screen based on field data (Kristin)

2) Detail on the 53 TAC cases that Chris is investigating that contained key words (smell, smoke,

thermal...). I will work with GMCH for the part return data and Kristin will get the detail from TAC.



eAssist BPIM Isolation Fault Timeline.pptx



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>



Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



To: daniel.d.cottrell@gm.com cc: Gary Backs <gary.backs@gmc

cc: Gary Backs <gary.backs@gmch.com>

Subject: Re: High mileage BPIM warranty unit question [ATTACHMENT REMOVED]

Dan,

I'll get you some better information when Dan Weaver gets back on Monday.

Our failure analysis has been completed through the initial bench verification on all four of these units with no indication of Isolation issues. I have asked Dan to insure what I have looked up is correct. Unit 668 shows 25K miles, but the unit we received back from WPC was a part that was the wrong part number for that vehicle. Dan will need to search for more info on the unit that actually came off of that vehicle.

Jim

#### Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: (765) 480-0385 Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

-----daniel.d.cottrell@gm.com wrote: -----

To: gary.backs@gmch.com, James Fortune <james.fortune@gmch.com> From: daniel.d.cottrell@gm.com Date: 07/12/2013 10:42AM Subject: High mileage BPIM warranty unit question

Gary, Jim,

I don't know who is managing the teardown / inspection of the warranty returns. Can you help me to get some additional data?

I need to have verification that the 4 units mentioned by Reena are or are not isolation related. It would be nice to know the full root cause, but it isn't necessary if we can at least understand if there is any evidence of an isolation problem.

Can we get a quick assessment? You may already understand it, but I can't tell from the spreadsheet comments.

Thank you, Dan Cottrell Global Vehicle System Engineer, Electrification GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

----- Forwarded by Daniel D. Cottrell/US/GM/GMC on 07/12/2013 10:29 AM -----

 From:
 Reena Datta/US/GM/GMC

 To:
 Daniel D. Cottrell/US/GM/GMC@GM

 Date:
 07/12/2013 10:13 AM

 Subject:
 high mileage

Hi Dan,

Below is a slightly expanded listing of returns >10,000 miles (vs 15,000 in the previous list).

There are four cases that are not resolved:

| BPIM 201 from 1G4GA5ER0CF | - PDT-Hold    |
|---------------------------|---------------|
| BPIM 536 from 1G11F5RR6DF | - PDT-Hold    |
| BPIM 664 from 1G11F5RR3DF | - In-Analysis |
| BPIM 668 from 1G11F5RRXDF | - In-Analysis |

Reena

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This attachment was removed from this location in this message.

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Name: Image._1_0C5A3B1C0C5A38B00050B7D885257BA6.gif
Type: image/gif
```

Size: 55566



William Whitlock <william.whitlock@gmch.com> on 07/12/2013 04:53:18 PM

To:aaron.bowles@gm.com, andrew.baughman@gm.com, bonho.bae@gm.com, daniel.d.cottrell@gm.com,<br/>daniel.grenn@gm.com, david.wang@gm.com, jerome.peariso@gm.com, lisa.m.angus@gm.com,<br/>michael.lerman@gm.com, roger.rademacher@gm.com, silva.hiti@gm.com, stephen.poulos@gm.com,<br/>Cole Buttry <cole.buttry@gmch.com>, reena.datta@gm.com

Subject: BAS+ APM/BPIM system DFMEA subset focussing on circuit board shorts in the HV plane

All,

Here is a copy of what we have put together as a starting point for the BAS+ electronics in the event we have a circuit board inner layer metal short. Updates were made to the file based on today's discussion. Please review and feel free to send me suggestions if items should be modified. Thanks and have a good weekend,

Bill Whitlock

Electronic Assembly Product Engineering Manager (765) 451-4612 : office



(765) 437-8746 : mobile Bas+ APMBPIM CB DFMEA.xlsx



{In Archive} Re: Fw: Special Request EX0060258 Notification Daniel Weaver to: Joseph Thompson 01/02/2013 03:35 PM Cc: Gary Backs, Hossein Lotfalian, James Fortune, Michael Thompson, "frederick billotto", kevin.diviney, kristin.curran, "len chalawa", "reena datta" Show Details

Archive: This message is being viewed in an archive.

1 Attachment



eAssist\_Cap-PCB-Returns\_10Dec2012(2).xlsx

I updated the spread sheet Rena was keeping to include this unit. Still showing the York PA unit as a possible Cap Board failure but we have not seen this unit in Kokomo yet.

Dan Weaver

Sr. Quality/Reliability Engineer

GMCH

Point Of Use: 0874-W18E-00P7 eAssist

2603 S. Goyer Rd. Plant 7, Mail Stop 6038

Kokomo, IN USA 46904-9005

Phone : (765) 451-8243

Fax: (765)451-7156

Personal cell: (765) 438-3281

Email: <u>daniel.weaver@gmch.com</u>

To: Daniel Weaver/GMch wrote: -----To: Daniel Weaver/GMch@GMch From: Joseph Thompson/GMch Date: 01/02/2013 03:30PM

| Page  | 2 | of         | 4 |
|-------|---|------------|---|
| I ugo | _ | <b>U</b> 1 |   |

| Cc: Michael Thompson/GMch@GMch, kristin.curran@gm.com, "len chalawa"<br><len.chalawa@gm.com>, "frederick billotto" <frederick.billotto@gm.com>, "reena datta"<br/><reena.datta@gm.com>, kevin.diviney@gm.com, Gary Backs/GMch@GMch, Hossein<br/>Lotfalian/GMch@GMch, James Fortune/GMch@GMch<br/>Subject: Re: Fw: Special Request EX0060258 Notification</reena.datta@gm.com></frederick.billotto@gm.com></len.chalawa@gm.com> |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Dan, Mike's initial inspection has confirmed this unit is a cap board failure. Cap board lot 101 2<br>and pack build date 2152.                                                                                                                                                                                                                                                                                                | 211 |
| Joe Thompson<br>Current Product Engineer<br>Power Electronics GMCH Kokomo IN<br>765-451-7065 phone<br>317-670-1204 Cell                                                                                                                                                                                                                                                                                                        |     |
| Daniel Weaver/GMch wrote:<br>To: kristin.curran@gm.com<br>From: Daniel Weaver/GMch<br>Date: 01/02/2013 01:55PM<br>Cc: Joseph Thompson/GMch@GMch, Michael Thompson/GMch@GMch, len.chalawa@gm.com<br>Subject: Re: Fw: Special Request EX0060258 Notification                                                                                                                                                                     |     |
| Unpacked it this AM having CPE look at it. Will let you know when I hear something. War 42 is our tracking number.                                                                                                                                                                                                                                                                                                             | 25  |
| Dan Weaver                                                                                                                                                                                                                                                                                                                                                                                                                     |     |
| Sr. Quality/Reliability Engineer                                                                                                                                                                                                                                                                                                                                                                                               |     |
| GMCH                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
| Point Of Use: 0874-W18E-00P7 eAssist                                                                                                                                                                                                                                                                                                                                                                                           |     |
| 2603 S. Goyer Rd. Plant 7, Mail Stop 6038                                                                                                                                                                                                                                                                                                                                                                                      |     |
| Kokomo, IN USA 46904-9005                                                                                                                                                                                                                                                                                                                                                                                                      |     |
| Phone : (765) 451-8243                                                                                                                                                                                                                                                                                                                                                                                                         |     |
| Fax: (765)451-7156                                                                                                                                                                                                                                                                                                                                                                                                             |     |
| Personal cell:                                                                                                                                                                                                                                                                                                                                                                                                                 |     |
| Email: <u>daniel.weaver@gmch.com</u>                                                                                                                                                                                                                                                                                                                                                                                           |     |
| kristin.curran@gm.com wrote:<br>To: daniel.weaver@gmch.com<br>From: kristin.curran@gm.com<br>Date: 01/02/2013 01:43PM<br>Cc: frederick.billotto@gm.com, reena.datta@gm.com, kevin.diviney@gm.com<br>Subject: Fw: Special Request EX0060258 Notification                                                                                                                                                                        |     |

Hi Dan,

FYI....See below.

GMCH should have received the powerpack from the fist (McMurray) PA smoker on 12/21. TAC #71-1129555175.

#### Kristin L. Curran Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email <u>kristin.curran@gm.com</u> ----- Forwarded by Kristin L Curran/US/GM/GMC on 01/02/2013 01:28 PM -----

 From:
 Julie Cumo/C/US/GM/GMC

 To:
 Kristin L Curran/US/GM/GMC@GM

 Date:
 12/24/2012 10:48 AM

 Subject:
 Re: Special Request EX0060258 Notification

Hi,

Yes this was shipped on Central - # 414-5325512-1.

Thank you!

Julie Cumo WPC- Special Parts Spherion (248) 371-9939

 From:
 Kristin L Curran/US/GM/GMC

 To:
 Julie Cumo/C/US/GM/GMC@GM

 Date:
 12/21/2012 10:26 AM

 Subject:
 Re: Special Request EX0060258 Notification

Hi Julie,

Did this one leave for GMCH yet? Do you have a tracking number?

Thanks!

Kristin L. Curran Brand Quality Manager, Advanced Propulsion General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com From: <warrantypartscenterusa@ups.com> To: <kristin.curran@gm.com>, <julie.cumo@gm.com>, <warrantypartscenterusa@gm.com>, <warrantypartscenterusa@ups.com> Date: 12/18/2012 01:15 PM Subject: Special Request EX0060258 Notification

INFORMATION E-MAIL ONLY. Please do not reply to this message. Special Request EX0060258 has been received in the GM Warranty Parts Center and is available for on-site inspection. Received at WPC: 12-18-2012 Repair Order#: 050189 Dealer: SUN CHEVROLET Labor Code: N5866 Generator Control and Battery Module Replace and ship prepar Part Number: VTN: 1G11F5RR3DF118363 Comments: HYBRID BATTERY, PLEASE USE THE ATTACHED SHIPPER TO RETURN, DO NOT USE CENTRAL. PLEASE E-MAIL THE TRACKING # TO JULIE.CUMO@GM.COM. THANK YOU! Request Type: OnSite Julie Cumo GM WPC Administrator

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248-371-9939

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# {In Archive} Stop/Lift Order 1832392 (OK to Build with eAssist Powerpacks) is now at Implement Status

 Frederick Billotto to: Gail Bowers, James Fortune, Gary Backs Daniel D. Cottrell, John A Ball, Jacob D Bylsma, Gary M. Insana,
 Cc: Nancy Huber, Stephen Farris, Reena Datta, Paul S Zombory, 01/16/2013 09:40 AM

Archive:

Mehrdad Teimor, DAVID P TASKY, Sean E Gleason, Stephen This message is being viewed in an archive.

All,

FYI. Stop/Lift Order 1832392 is now at "Implement" status



Regards,



Fred Billotto Senior Project Engineer

Mobile Ph: (248) 904-9949 Mail Code: 480-210-411 email: <u>frederick.billotto</u>@gm.com



# Hybrid Energy Storage

General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23



{In Archive} E-Assist Fairfax Return initial pictures
Joseph Thompson
to:
Gary Backs, Hossein Lotfalian, James Fortune, David E. Miller, Daniel Weaver, Dave
Sharp, David E White, Mark A Nichols, Barry W Jones, Steven R Peelman, stephen.farris,
frederick billotto, Teimor, Mehrdad (GM)

frederick billotto, Teimor, Mehrdad (GM) 03/14/2012 04:23 PM Show Details

Archive: This message is being viewed in an archive.

1 Attachment



Fairfax Return 3-14-12.pptm

During the PDT I reported that the Fairfax unit had arrived in the lab. Per the discussion I have disassembled the unit down to the removal of the BPIM cover. The unit had visual signs of over heating similar to what was seen before. Attached is a file with a few of the initial pictures. Additional pictures will be available.

Joe Thompson Current Product Engineer Power Electronics GMCH Kokomo IN 765-451-7065 phone 317-670-1204 Cell 765-451-1667 Lab



# {In Archive} BPIM data

|          | Kevin Diviney to: Gary Backs, James Fortune, Kristin L Curran,<br>Len Chalawa, Daniel Weaver | 04/10/2013 05:50 PM |
|----------|----------------------------------------------------------------------------------------------|---------------------|
|          | Cc: Stephen Poulos                                                                           |                     |
| History: | This message has been replied to.                                                            |                     |
|          |                                                                                              |                     |

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#### Kristin,

I added the part return data to the list of 53 TAC cases that Chris needs investigated. Add what you can from the TAC detail.

#### Jim or Len,

I compared the list to Len's latest warranty return file. Let me know if any of the other VINs have a return part in process that is not captured.



eAssist VINs of Interest for Kristin and Kevin - TEMP FILE KD.xlsx





**Kevin Diviney** Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com Global Electrification -Engineering Quality General Motors Corp.

Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



# {In Archive} Re: BPIM isolation fault timeline 🗎

Stephen Poulos to: Kevin Diviney

04/10/2013 11:42 PM

Cc: Bob Agresta, Daniel D. Cottrell, Gary Backs, James Fortune, Kristin L Curran, Stephen Farris, Tony J. Saliga

Archive:

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Kevin, Kristin, all,

Thanks for jumping in to help gather and analyze this key data. Please treat this work as very high priority - we need to work through the analysis methodically but quickly and draw statistically meaningful conclusions.

Stephen

| Kevin Diviney |            | Stephen, Per your request, I created a rough dr                                              | . 04/10/2013 03:35:52 PM |
|---------------|------------|----------------------------------------------------------------------------------------------|--------------------------|
| From:         |            | viney/US/GM/GMC                                                                              | tupo@gmab.com. Daniel D  |
| To:           | Cottrell/L | Poulos/US/GM/GMC@GM, James Fortune < james.for<br>JS/GM/GMC@GM, Bob Agresta/US/GM/GMC@GM, Ki | ristin L                 |
|               |            | IS/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM,                                                   |                          |
| Data          |            | S/GM/GMC@GM, Gary Backs <gary.backs@gmch.com< th=""><th>1&gt;</th></gary.backs@gmch.com<>    | 1>                       |
| Date:         |            | 13 03:35 PM                                                                                  |                          |
| Subject:      | BPIM iso   | lation fault timeline                                                                        |                          |

#### Stephen,

Per your request, I created a rough draft of some key dates related to the BPIM isolation fault issue. I am sending this to a few key people to review and provide specific dates or additional key dates. I will collect the feedback and send out a revision tomorrow morning.

Kristin and I are both working on data to support Chris Janik. Based on our call this morning, we agreed to provide the following:

Assessment of effectiveness of the vehicle screen based on field data (Kristin)
 Detail on the 53 TAC cases that Chris is investigating that contained key words (smell, smoke, thermal...). I will work with GMCH for the part return data and Kristin will get the detail from TAC.

[attachment "eAssist BPIM Isolation Fault Timeline.pptx" deleted by Stephen Poulos/US/GM/GMC]



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



Global Electrification -Engineering Quality

General Motors Corp.

Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Cc:

Poulos

### {In Archive} Re: BPIM investigation 🗎

Kristin L Curran to: Kevin Diviney

04/11/2013 09:56 AM

Archive:

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Kevin,

Attached are TAC case summaries for 52 of the 53 VINs. (1G11D5RRXDF is the funeral home vehicle and does not have a TAC case.)

Gary Backs, James Fortune, Jeff Weaver, Len Chalawa, Stephen

Note that I can rerun this again to include additional information so if you see something missing let me know and I can see if that data is available.

Also, I sent a note to Brian from TAC to check on the availability of pictures for the 21 cases GMCH has not received parts for so more to come on that.

Thanks.

### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 **Cell** 586.206.0611 **Email** kristin.curran@gm.com



2012 2013 BAS+ NHTSA Thermal Cases 11APR13.xlsx

| Kevin Diviney |           | Jim, Attached is a spreadsheet of the 53 VINs                                                                                                   | 04/11/2013 09:05:48 AM |
|---------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:<br>To:  | James Fo  | iney/US/GM/GMC<br>rtune <james.fortune@gmch.com>, Gary Backs <gary.b< th=""><th>acks@gmch.com&gt;, Jeff</th></gary.b<></james.fortune@gmch.com> | acks@gmch.com>, Jeff   |
| Cc:           |           | S/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM<br>Poulos/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC                                                        | C@GM                   |
| Date:         |           | 3 09:05 AM                                                                                                                                      |                        |
| Subject:      | BPIM inve | stigation                                                                                                                                       |                        |

#### Jim,

Attached is a spreadsheet of the 53 VINs of interest. I merged in the data from the GMCH warranty analysis file. Approximately 3/5 of these cases had parts returned and analyzed. Can you insert a picture of the damage for each case where they exist. For example, if it was torn down to the board level, a picture of the board showing the extent of the damage.

#### Kristin,

For the cases without a retuned part, can you check to see if there are any photos of the vehicle showing the extent of the damage. Brian may have some.

[attachment "eAssist VINs of Interest for Kristin and Kevin - TEMP FILE KD2.xlsx" deleted by Kristin L Curran/US/GM/GMC]





#### Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u> Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



# {In Archive} Re: BPIM investigation 🗎

Kristin L Curran to: Kevin Diviney

04/11/2013 11:45 AM

Cc: Gary Backs, James Fortune, Jeff Weaver, Len Chalawa, Stephen Poulos

Archive:

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#### Kevin,

- 1. 1G11D5RRXDF Funeral Home vehicle, does not have a TAC case. No service has been performed on that vehicle so no parts in the pipeline to GMCH.
- 2. 1G11D5RR2DF BPIM changed under V2675; Should have been charged under normal warranty N5875; No part return requested for V2675; 12238 was performed AFTER the the vehicle was delivered to customer; No indication as to why the customer brought the vehicle back to dealer; Appears the failure happened during the procedure.
- 3. 1G11F5RR7DF Customer Concern: Service Battery Message on; Not a 12238 VIN; Powerpack replaced; No Special Parts Request made
- 4. 1G4GD5ERXCF Customer Concern: Stopped charging. Smoke coming out of the trunk area; Not a 12238 VIN; BPIM shipped from WPC to GMCH on 3/29/13

Thanks,

#### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email <u>kristin.curran@gm.com</u>

| Kevin Diviney       |                                  | Thanks Kristin, Here are the five cases (of the                                                                                                                       | 04/11/2013 10:41:36 AM |
|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:<br>To:<br>Cc: | Kristin L                        | riney/US/GM/GMC<br>Curran/US/GM/GMC@GM<br>ks <gary.backs@gmch.com>, James Fortune <james.fo< th=""><th>rtuno@amch.com&gt;_loff</th></james.fo<></gary.backs@gmch.com> | rtuno@amch.com>_loff   |
| Date:<br>Subject:   | Weaver/L<br>Poulos/U<br>04/11/20 | JS/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM, St<br>S/GM/GMC@GM<br>13 10:41 AM<br>I investigation                                                                           |                        |

Thanks Kristin,

Here are the five cases (of the 53) that are over 1000 miles. Only one of these is included in the GMCH warranty return data. Can you check to see if a part should have been returned? Also, try to verify from the TAC detail if

exactly what symptoms the vehicle was brought in for and if the incident occurred before during or after the screening procedure. One case does not have a TAC case in your file. Is there anything on this one? Any detail on these cases is appreciated.

|                                                                                       |        | Cas       | se #         | TAC Ca                                | ise#   | P-Pack Build<br>Date | P-Pack<br>Primary<br>Cause             | Vehicle<br>Build Date   |                |                                                    |
|---------------------------------------------------------------------------------------|--------|-----------|--------------|---------------------------------------|--------|----------------------|----------------------------------------|-------------------------|----------------|----------------------------------------------------|
| VIN                                                                                   |        |           |              |                                       |        |                      |                                        |                         |                |                                                    |
| 10115500000                                                                           |        | 188 - Pac | :k War       | 71-109904                             | 8324   | 4/27/12              | APM/BPIN<br>(Pwr PCB<br>LV             |                         |                |                                                    |
| 1G11F5RR8DF<br>1G11D5RRXD                                                             |        |           |              |                                       |        | 15-May               | Isolation)                             | ) 5/3/2012<br>21-May-12 |                |                                                    |
| 1G11D5RR2D                                                                            |        |           |              | 71-11481                              | 170580 | 10-MIG <sup>1</sup>  |                                        | 25-May-12               |                |                                                    |
| 1G11F5RR7DF                                                                           |        |           |              | 71-10885                              | 94928  |                      |                                        | 31-May-12               | 2              |                                                    |
| 1G4GD5ERXC                                                                            |        |           |              | 71-115608                             | 8370   |                      |                                        | 3/29/2012               | 2              |                                                    |
| Service<br>Update<br>Status<br>(N/A = SU<br>not shown)<br>Status as of<br>Apr 10 2013 | SU Dat | e         | SU W<br>iles | U After<br>Varranty<br>Start<br>Date? |        |                      | Incident<br>Occurred<br>During<br>S.U. | Miles at<br>Incident    | Evaluatio<br>n |                                                    |
| N/A                                                                                   |        |           |              |                                       | 21     | l-Aug-12             | N                                      | <b>2700 (1</b> 300)     | E              | Customer reported smoke<br>smell                   |
| Completed                                                                             | 18-Dec | -12 9     | 46           | Yes                                   | 23     | 3-Mar-13             | N                                      | 2000                    | CE             |                                                    |
| Completed                                                                             | 23-Jan | -13 19    | 900          | Yes                                   | 24     | 4-Jan-13             | Y                                      | 1900                    | CE             | Came in for codes, deale<br>reported smell         |
| N/A                                                                                   |        |           |              |                                       | 1      | L9-Jul-12            | Y                                      | 1073                    | E              | Came in for message/cod<br>dealer reported soot/sm |
|                                                                                       | N/A    |           |              |                                       | 2/     | /18/2013             |                                        | 6067                    | E              | Customer reported smoke<br>loss of charge          |





Kevin Diviney

Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>

#### Global Electrification -Engineering Quality

General Motors Corp.

Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| Kristin L | Curran      | Kevin, Attached are TAC case summaries for 5                                                         | 04/11/2013 09:56:32 AM |
|-----------|-------------|------------------------------------------------------------------------------------------------------|------------------------|
| From:     | Kristin L C | Curran/US/GM/GMC                                                                                     |                        |
| To:       | Kevin Divi  | ney/US/GM/GMC@GM                                                                                     |                        |
| Cc:       |             | ks <gary.backs@gmch.com>, James Fortune <james.fe< td=""><td></td></james.fe<></gary.backs@gmch.com> |                        |
|           | Weaver/U    | S/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM, S                                                             | Stephen                |
|           | Poulos/US   | S/GM/GMC@GM                                                                                          |                        |
| Date:     | 04/11/201   | 3 09:56 AM                                                                                           |                        |
| Subject:  | Re: BPIM    | investigation                                                                                        |                        |

Kevin,

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Thanks.

#### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email <u>kristin.curran@gm.com</u>

[attachment "2012 2013 BAS+ NHTSA Thermal Cases 11APR13.xlsx" deleted by Kevin Diviney/US/GM/GMC]

| Kevin Diviney            |                     | Jim, Attached is a spreadsheet of the 53 VINs                                                                                                         | 04/11/2013 09:05:48 AM |
|--------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:<br>To:             | James F             | viney/US/GM/GMC<br>ortune <james.fortune@gmch.com>, Gary Backs <gary.b<br>US/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM</gary.b<br></james.fortune@gmch.com> | acks@gmch.com>, Jeff   |
| Cc:<br>Date:<br>Subject: | Stephen<br>04/11/20 | Poulos/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC<br>13 09:05 AM<br>restigation                                                                         | C@GM                   |

Jim,

Attached is a spreadsheet of the 53 VINs of interest. I merged in the data from the GMCH warranty analysis file. Approximately 3/5 of these cases had parts returned and analyzed. Can you insert a picture of the damage for each case where they exist. For example, if it was torn down to the board level, a picture of the board showing the extent of the damage.

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For the cases without a retuned part, can you check to see if there are any photos of the vehicle showing the extent of the damage. Brian may have some.

[attachment "eAssist VINs of Interest for Kristin and Kevin - TEMP FILE KD2.xlsx" deleted by Kristin L Curran/US/GM/GMC]



Global Electrification -

Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: (248) 343-9311 Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u> General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340

Cube 2K08

**Engineering Quality** 



# {In Archive} BPIM investigation

Kevin Diviney to: James Fortune, Gary Backs, Jeff Weaver, Len Chalawa
 Cc: Stephen Poulos, Kristin L Curran This message is being viewed in an archive.

04/11/2013 09:05 AM

Archive:

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eAssist VINs of Interest for Kristin and Kevin - TEMP FILE KD2.xlsx



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General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



# {In Archive} Re: BPIM investigation 🗎

Kevin Diviney to: Kristin L Curran

04/11/2013 10:41 AM

Gary Backs, James Fortune, Jeff Weaver, Len Chalawa, Stephen Cc: Poulos

Archive:

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Thanks Kristin,

Here are the five cases (of the 53) that are over 1000 miles. Only one of these is included in the GMCH warranty return data. Can you check to see if a part should have been returned? Also, try to verify from the TAC detail if

exactly what symptoms the vehicle was brought in for and if the incident occurred before during or after the screening procedure. One case does not have a TAC case in your file. Is there anything on this one? Any detail on these cases is appreciated.

| VIN         | Case #         | TAC Case#     | P-Pack Build<br>Date | P-Pack<br>Primary<br>Cause | Vehicle<br>Build Date |
|-------------|----------------|---------------|----------------------|----------------------------|-----------------------|
|             | 188 - Pack War | 71-1099048324 | 4/27/12              | APM/BPIM<br>(Pwr PCB<br>LV |                       |
| 1G11F5RR8DF |                |               |                      | Isolation)                 | 5/3/2012              |
| 1G11D5RRXDF |                |               | 15-May               |                            | 21-May-12             |
| 1G11D5RR2DF |                | 71-1148170580 |                      |                            | 25-May-12             |
| 1G11F5RR7DF |                | 71-1088594928 |                      |                            | 31-May-12             |
| 1G4GD5ERXCF |                | 71-1156088370 |                      |                            | 3/29/2012             |

| Service<br>Update<br>Status<br>(N/A = SU<br>not shown)<br>Status as of<br>Apr 10 2013 | SU Date   | SU<br>Miles | SU After<br>Warranty<br>Start<br>Date? | Report Date | Incident<br>Occurred<br>During<br>S.U. | Miles at<br>Incident | Evaluatio<br>n |                                                    |
|---------------------------------------------------------------------------------------|-----------|-------------|----------------------------------------|-------------|----------------------------------------|----------------------|----------------|----------------------------------------------------|
| N/A                                                                                   |           |             |                                        | 21-Aug-12   | N                                      | <b>2700</b> (1300)   | E              | Customer reported smoke<br>smell                   |
| Completed                                                                             | 18-Dec-12 | 946         | Yes                                    | 23-Mar-13   | N                                      | 2000                 | CE             |                                                    |
| Completed                                                                             | 23-Jan-13 | 1900        | Yes                                    | 24-Jan-13   | Y                                      | 1900                 | CE             | Came in for codes, deale<br>reported smell         |
| N/A                                                                                   |           |             |                                        | 19-Jul-12   | Y                                      | 1073                 | E              | Came in for message/cod<br>dealer reported soot/sm |
|                                                                                       | N/A       |             |                                        | 2/18/2013   |                                        | 6067                 | E              | Customer reported smoke<br>loss of charge          |





**Kevin Diviney** Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: ( Mail Code: 483-710-201 email: kevin.diviney@gm.com

**Engineering Quality General Motors Corp.** Pontiac North CET

**Global Electrification -**

895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| Kristin L                                              | Curran    | Kevin, Attached are TAC case summaries for 5                                                                                    | 04/11/2013 09:56:32 AM |
|--------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:                                                  | Kristin L | Curran/US/GM/GMC                                                                                                                |                        |
| To:                                                    | Kevin Di  | viney/US/GM/GMC@GM                                                                                                              |                        |
| Cc:                                                    |           | cks <gary.backs@gmch.com>, James Fortune <james.fort< td=""><td>une@gmch.com&gt;, Jeff</td></james.fort<></gary.backs@gmch.com> | une@gmch.com>, Jeff    |
| Weaver/US/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM, Stephen |           |                                                                                                                                 | phen                   |
| Poulos/U                                               |           | JS/GM/GMC@GM                                                                                                                    |                        |
| Date:                                                  | 04/11/20  | 13 09:56 AM                                                                                                                     |                        |
| Subject:                                               | Re: BPI   | A investigation                                                                                                                 |                        |

#### Kevin,

Attached are TAC case summaries for 52 of the 53 VINs. (1G11D5RRXDF is the funeral home vehicle and does not have a TAC case.)

Note that I can rerun this again to include additional information so if you see something missing let me know and I can see if that data is available.

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Kristin L. Curran | *Brand Quality Manager, Advanced Propulsion* General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

[attachment "2012 2013 BAS+ NHTSA Thermal Cases 11APR13.xlsx" deleted by Kevin Diviney/US/GM/GMC]

Kevin Diviney Jim, Attached is a spreadsheet of the 53 VINs... 04/11/2013 09:05:48 AM

| Kevin Di      | ive) BPIM investigation<br>kristin L Curran, Gary Backs, James Fortune,<br>Daniel Weaver, Len Chalawa, Stephen Poulos<br>s message is being viewed in an archive. | 04/11/2013 12:41 PM    |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Kevin Diviney | Thanks Kristin, Here are the five cases (of t                                                                                                                     | 04/11/2013 10:41:36 AM |

Thanks Kristin,

Here are the five cases (of the 53) that fall outside of the campaign window (3/15/12 - 8/11/12). Only two of these are included in the GMCH warranty return data. Can you check to see if a part should have been returned?

|            | Case #         | TAC Case#         | P-Pack Build<br>Date | P-Pack<br>Primary<br>Cause               | Vehicle<br>Build Date | Service<br>Update<br>Status<br>(N/A = SU<br>not shown) |
|------------|----------------|-------------------|----------------------|------------------------------------------|-----------------------|--------------------------------------------------------|
| 1G11D5RR5D | 156 - Pack War | 71-<br>1097060580 | 2/16/12              | APM/BPIM<br>(Pwr PCB<br>HV<br>Isolation) | 23-Feb-12             | Open                                                   |
| 1G11D5RR6D | n              |                   |                      |                                          | 3/1/2012              |                                                        |
| 1G4GA5ER7C | n              |                   |                      |                                          | 12/16/2011            |                                                        |
| 1G4GC5ER5D | 589 - BPIM     | 71-<br>1149619420 |                      |                                          | 10/4/2012             |                                                        |
| 2G4GR5ER7C | n              |                   |                      |                                          | 9/21/2011             |                                                        |

| SU Date   | SU Miles | SU After<br>Warranty<br>Start<br>Date? | Report<br>Date | Incident<br>Occurred<br>During<br>S.U. | Miles at<br>Incident | Evaluatio<br>n |                                                                         |
|-----------|----------|----------------------------------------|----------------|----------------------------------------|----------------------|----------------|-------------------------------------------------------------------------|
|           |          |                                        | 14-Aug-12      | N                                      | 324                  | D              | Customer reported popping noise and odor.                               |
| 21-Dec-12 | 174      |                                        | 1/3/2013       |                                        | 174                  | BD             | Dealer reported<br>poppping noise and<br>smoke during the<br>procedure. |
| 14-Feb-13 | 8        |                                        | 1/11/2013      |                                        | 8                    | BD             | Dealer reported<br>smoke during the<br>procedure.                       |
| 18-Jan-13 | 9        |                                        | 1/29/2013      |                                        | 9                    | BD             | Dealer reported<br>smokeand smell<br>during the<br>procedure.           |
| 1-Feb-13  | 50       |                                        | 2/1/2013       |                                        | 50                   | BD             | Dealer reported<br>smokeand smell<br>during the<br>procedure.           |



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: ( Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



### Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| Kristin L Curran | Kevin, Attached are TAC case summaries for 5  | 04/11/2013 09:56:32 AM |
|------------------|-----------------------------------------------|------------------------|
| Kevin Diviney    | Jim, Attached is a spreadsheet of the 53 VINs | 04/11/2013 09:05:48 AM |



# {In Archive} Re: BPIM investigation 🗎

Kristin L Curran to: Kevin Diviney

04/12/2013 11:13 AM

Cc: Daniel Weaver, Gary Backs, James Fortune, Len Chalawa, Stephen Poulos

Archive:

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Kevin,

- 1. 1G11D5RR6DF BPIM changed under V2675; Should have been charged under normal warranty N5875; No part return requested for V2675;
- 2. 1G4GA5ER7CF BPIM changed under V2675; Should have been charged under normal warranty N5875; No part return requested for V2675;
- 3. 2G4GR5ER7C91 Part not requested; Should have come back per Len Chalawa's project 53939.004.

Thanks,

### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 **Cell** 586.206.0611 **Email** <u>kristin.curran@gm.com</u>

| Kevin Diviney |             | Thanks Kristin, Here are the five cases (of the                                                                                                                                  | 04/11/2013 12:41:48 PM |
|---------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:<br>To:  | Kristin L ( | iney/US/GM/GMC<br>Curran/US/GM/GMC@GM, Gary Backs <gary.backs@gr<br>ortune@gmch.com&gt;, Daniel Weaver <daniel.weaver@gr< td=""><td></td></daniel.weaver@gr<></gary.backs@gr<br> |                        |
|               |             | US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM<br>13 12:41 PM                                                                                                                         |                        |

| Kevin Diviney | Thanks Kristin, Here are the five cases (of t | 04/11/2013 10:41:36 AM |
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|            | Case #         | TAC Case#         | P-Pack Build<br>Date | P-Pack<br>Primary<br>Cause               | Vehicle<br>Build Date | Service<br>Update<br>Status<br>(N/A = SU<br>not shown) |
|------------|----------------|-------------------|----------------------|------------------------------------------|-----------------------|--------------------------------------------------------|
| 1G11D5RR5D | 156 - Pack War | 71-<br>1097060580 | 2/16/12              | APM/BPIM<br>(Pwr PCB<br>HV<br>Isolation) | 23-Feb-12             | Open                                                   |
| 1G11D5RR6D | n              |                   |                      |                                          | 3/1/2012              |                                                        |
| 1G4GA5ER7C | n              |                   |                      |                                          | 12/16/2011            |                                                        |
| 1G4GC5ER5D | 589 - BPIM     | 71-<br>1149619420 |                      |                                          | 10/4/2012             |                                                        |
| 2G4GR5ER7C | n              | 11                |                      |                                          | 9/21/2011             |                                                        |

| SU Date   | SU Miles | SU After<br>Warranty<br>Start<br>Date? | Report<br>Date | Incident<br>Occurred<br>During<br>S.U. | Miles at<br>Incident | Evaluatio<br>n |                                                                         |
|-----------|----------|----------------------------------------|----------------|----------------------------------------|----------------------|----------------|-------------------------------------------------------------------------|
|           |          |                                        | 14-Aug-12      | N                                      | 324                  | D              | Customer reported popping noise and odor.                               |
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Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

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### Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| Kristin L | Curran      | Kevin, Attached are TAC case summaries for 5                                                                                     | 04/11/2013 09:56:32 AM |
|-----------|-------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------|
| From:     | Kristin L ( | Curran/US/GM/GMC                                                                                                                 |                        |
| To:       |             | iney/US/GM/GMC@GM                                                                                                                |                        |
| Cc:       |             | ks <gary.backs@gmch.com>, James Fortune <james.fortun< th=""><th>e@gmch.com&gt;, Jeff</th></james.fortun<></gary.backs@gmch.com> | e@gmch.com>, Jeff      |

|          | Weaver/US/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM, Stephen |  |
|----------|--------------------------------------------------------|--|
|          | Poulos/US/GM/GMC@GM                                    |  |
| Date:    | 04/11/2013 09:56 AM                                    |  |
| Subject: | Re: BPIM investigation                                 |  |

Kevin,

Attached are TAC case summaries for 52 of the 53 VINs. (1G11D5RRXDF is the funeral home vehicle and does not have a TAC case.)

Note that I can rerun this again to include additional information so if you see something missing let me know and I can see if that data is available.

Also, I sent a note to Brian from TAC to check on the availability of pictures for the 21 cases GMCH has not received parts for so more to come on that.

Thanks.

#### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

[attachment "2012 2013 BAS+ NHTSA Thermal Cases 11APR13.xlsx" deleted by Kevin Diviney/US/GM/GMC]

| Kevin Diviney                                                  |          | Jim, Attached is a spreadsheet of the 53 VINs                                                                                                         | 04/11/2013 09:05:48 AM |
|----------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| To: James Fortune < ja                                         |          | viney/US/GM/GMC<br>ortune <james.fortune@gmch.com>, Gary Backs <gary.b<br>JS/GM/GMC@GM, Len Chalawa/US/GM/GMC@GM</gary.b<br></james.fortune@gmch.com> | acks@gmch.com>, Jeff   |
| Cc: Stephen Poulos/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM |          | C@GM                                                                                                                                                  |                        |
| Date: 04/11/2013 09:05 AM                                      |          |                                                                                                                                                       |                        |
| Subject:                                                       | BPIM inv | estigation                                                                                                                                            |                        |

#### Jim,

Attached is a spreadsheet of the 53 VINs of interest. I merged in the data from the GMCH warranty analysis file. Approximately 3/5 of these cases had parts returned and analyzed. Can you insert a picture of the damage for each case where they exist. For example, if it was torn down to the board level, a picture of the board showing the extent of the damage.

Kristin,

For the cases without a retuned part, can you check to see if there are any photos of the vehicle showing the extent of the damage. Brian may have some.

[attachment "eAssist VINs of Interest for Kristin and Kevin - TEMP FILE KD2.xlsx" deleted by Kristin L Curran/US/GM/GMC]



Kevin Diviney Global Program Quality Manager / Robust Engineering

Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com

#### **Global Electrification -Engineering Quality**

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Archive:

Gary,

Thanks. Makes perfect sense. As you get your sense check back from the supply base we can adjust accordingly or dispatch help to break the bottlenecks.

Demonstrates how we can take advantage of the down weeks coming up and any other downtime.

Bob

Bob Agresta Director - Global Program Execution Global Electrification E-mail: Bob.Agresta@gm.com Mobile: Office: 248-857-0933 Admin: 248-857-8317 (Marcia Jackson)

From: Gary Backs [gary.backs@gmch.com] Sent: 04/26/2013 05:40 PM GMT To: Bob Agresta Cc: Gail Bowers <gail.bowers@gmch.com>; Julie Rethlake <julie.rethlake@gmch.com> Subject: eAssist: Preliminary Manufacturing Planning

Bob,

Please review the attached per your request for a starting point on eAssist BPIM manufacturing to support any planned service update.

If you have any questions, please call my mobile.

#### Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com =



{In Archive} Nanya Summary of Root Cause for Inner Layer Resistive Shorts
James Fortune
to:
sean.gleason, kevin.diviney, Stephen Farris
05/01/2013 11:23 AM
Cc:
Gary Backs, "reena datta", William Whitlock
Show Details

Archive: This message is being viewed in an archive.

1 Attachment



Nanya Layer to Layer Short Issues Summary.ppt

Sean,

Attached you will find a "Summary" of the Nanya root cause investigation summary that our supplier Quality team has been working through. The highlights are the cross sections of the ECMs including Delphi's Cat program. The middle has some process descriptions. I took out the DOE they performed to isolate and identify the type of particulates causing the inner layer breakdown. The last part describes the particulate type for which we are still looking for them to tell us how they are being deposited onto the PCB.

Jim

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC <u>http://kokomogmch.com</u> Phone: (765) 451-9558 Cell: (1997) Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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"Go Boilers"



05/08/2013 08:25 AM

History:This message has been replied to and forwarded.Archive:This message is being viewed in an archive.

Steve,

Per your request attached you will find all serial numbers shipped to SGM from SOP through 12/31/12 when we implemented all 2 layer PCBs. The buckets can be manipulated if the dates change.

Jim

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell:

Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

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"Go Boilers" eAssist serial numbers by bucket to SGM 5\_8\_13.xls



# {In Archive} Re: Fw: Nanya PCB performance-before and after changes

James Fortune to: philip.g.vorgias 05/22/2013 11:04 AM Cc: "Stephen Farris"

This message is being viewed in an archive.

Phil,

We do not have an 8D from Nanya. At this point they have not yet claimed responsibility for this issue. We are close to tying defects from our ECM to BAS+ but due to the scale of the eAssist issue they are treading lightly. We can say that adding the additional layer of pre-preg insulation is the design fix which eliminates particulates from causing a migration path between board layers. The two layers of pre-preg is an industry standard for high voltage/power applications and increases the gap between layers to meed IPC standards.

Jim Fortune 吉姆時運 **Product Quality Manager** Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC http://kokomogmch.com

Phone: (765) 451-9558

Cell:

M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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-----philip.g.vorgias@gm.com wrote: -----

To: stephen.farris@gm.com From: philip.g.vorgias@gm.com Date: 05/22/2013 09:55AM Cc: james.fortune@gmch.com Subject: Re: Fw: Nanya PCB performance-before and after changes

Guys,

I also need your 8D describing this problem. Need by COB today, so I can forward to the SQE Manager in

SGM. He's looking for confidence this issue has been 'put to bed'. Any bullets you can provide to that effect would be ideal.

Philip G. Vorgias

Global Purchasing-Powertrain Advanced Supplier Quality Engineer Hybrid Powertrain Applications

Phone: 248-321-5473 email: philip.g.vorgias@gm.com

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 From:
 Stephen Farris/US/GM/GMC

 To:
 james.fortune@gmch.com

 Cc:
 Philip G. Vorgias/US/GM/GMC@GM

 Date:
 05/22/2013 09:51 AM

 Subject:
 Fw: Nanya PCB performance-before and after changes

Jim,

Please provide the information requested below.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Vehicle Engineering Center Cell:

-----Forwarded by Stephen Farris/US/GM/GMC on 05/22/2013 09:49AM -----To: Stephen Farris/US/GM/GMC@GM, james.fortune@gmch.com From: Philip G. Vorgias/US/GM/GMC Date: 05/22/2013 08:17AM Subject: Nanya PCB performance-before and after changes

Hi Stephen/Jim,

We (SQE) received a request for information on the Nanya PCB failures in the BAS + BPIM, from our Chinese colleagues at SGM. They wanted to know two items:

1. What is the contamination control standard of Kunshan Nanya?

2. What is the difference between the performance before and after Kunshan Nanya

improved their contamination control (production data, test data, screening testing data, whatever)?

Can you provide information on the above? Thanks. Philip G. Vorgias

Global Purchasing-Powertrain Advanced Supplier Quality Engineer Hybrid Powertrain Applications

Phone: 248-321-5473 email: philip.g.vorgias@gm.com

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=



{In Archive} Fw: Final Sections from PV3 Cap Board and Yellow Bird ICs Gary Backs to: stephen.farris 05/29/2013 02:01 PM Show Details

Archive: This message is being viewed in an archive.

1 Attachment



Cap board sections BAS+ Validation EWR 4002.pptx

# Best Regards,

# Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 05/29/2013 02:00PM -----

To: "Stephen Farris" <stephen.farris@gm.com>, "reena datta" <reena.datta@gm.com> From: James Fortune/GMch Date: 04/05/2013 10:49AM Cc: William Whitlock/GMch@GMch, Gary Backs/GMch@GMch Subject: Final Sections from PV3 Cap Board and Yellow Bird ICs

(See attached file: Cap board sections BAS+ Validation EWR 4002.pptx)

Steve,

Attached are the cross sections from the cap board and yellow bird ICs. This concludes the teardown analysis on PV3.

Jim

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: (765) 451-9573 Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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"Go Boilers"



{In Archive} Fw: Option 3 Teardown Analysis Gary Backs to: stephen.farris 05/29/2013 02:02 PM Show Details

Archive: This message is being viewed in an archive.

3 Attachments



PCB Chages for Option 3.pptx

Analysis of Infineon HPM Attachment Solder Joints on BAS+ Modules with Interlayer Non-functional Pads (EWR #40021).pptx



Unit Hardware Tear down.pptx

Best Regards,

Gary L.Backs Program Management

General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 05/29/2013 02:00PM -----

To: "Stephen Farris" <stephen.farris@gm.com>, "reena datta" <reena.datta@gm.com> From: James Fortune/GMch Date: 04/05/2013 08:56AM Cc: "CN=Timothy R." <Timothy.R.Funk@delphi.com/O=>, William Whitlock/GMch@GMch, Gary Backs/GMch@GMch Subject: Option 3 Teardown Analysis

(See attached file: PCB Chages for Option 3.pptx) (See attached file: Analysis of Infineon HPM Attachment Solder Joints on BAS+ Modules with Interlayer Non-functional Pads (EWR #40021).pptx) (See attached file: Unit Hardware Tear down.pptx)

Steve,

Attached you will find the teardown reports for the Option 3 changes validated in Bulk Cap PV3.

- Optical images of control board changes for positions #26 and #27 to eliminate board shearing, teardown torque, cap board adhesive sections

- Cross sections of IGBT through holes with non-functional pads
- (In-process) Cross sections from new cap board capacitor terminations expected completion 4/5/13.

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC <u>http://kokomogmch.com</u> Phone: (765) 451-9558 Cell: Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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"Go Boilers"



**{In Archive} Fw: RE: Updated BAS+ PV3 Validation Summary Report Gary Backs** to: stephen.farris 05/29/2013 02:00 PM This message is being viewed in an archive.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: <u>765-451-5278</u>

MOB:

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 05/29/2013 01:59PM -----

To: "stephen.farris@gm.com' (stephen.farris@gm.com)" <stephen.farris@gm.com>, "Backs, Gary L" <gary.backs@gmch.com> From: "Spitznagle, Brad W" <brad.w.spitznagle@delphi.com> Date: 04/08/2013 07:54AM Cc: "dan.schroeder@gmch.com" <dan.schroeder@gmch.com>, "larry.burkholder@gmch.com" <larry.burkholder@gmch.com>, "reena.datta@gm.com" <reena.datta@gm.com>, "William Whitlock (william.whitlock@gmch.com)" <william.whitlock@gmch.com> Subject: RE: Updated BAS+ PV3 Validation Summary Report

(See attached file: PV3 APM-BPIM Summary Report 4-08-13.doc)

Steve,

Please find attached the updated BAS+ PV3 Bulk Cap validation summary report. The report has been updated to include all the completed transient tests. Please review and let me know if you have questions.

Please forward as needed.

Regards,

Brad Spitznagle

Validation Engineer, Power Electronics

Delphi E&S, Kokomo

Phone: 765-451-2929

brad.w.spitznagle@delphi.com

W

PV3 APM-BPIM Summary Report 4-08-13.doc



05/29/2013 09:41 AM

Jim,

Here are some questions from SGM that I need to discuss with you:

The following concerns from the SGM Quality Manager need to be confirmed:

--What is the root cause for powerboard failure -- GMCH

- --What is the intent for design change(from 1 layer to 2 layers) -- GMCH
- --GMCH to provide the validation data of design change. -- GMCH

SGM is NOT confident to move forward with their E16 MY14 eAssist program and is asking for additional clarification on the following points:

- 1) Who is driving the 2ply insulation layer change to the BPIM PCBs?
- 2) What is the design intent for this change? reason for the change?
- 3) Please provide the validation data for 1ply and 2ply for comparison. (difference in data?)
- 4) PPAP status for all boards with 2ply?
- 5) NanYa problem investigation not thorough. Was this reviewed with GMCH SQ?

# **RECOMMENDATION:**

- put together data in one file showing Buckets A/B/C/D and GMCH EOL HiPot test data; provide to SGM (evidence that isolation faults 'turned off')

PPAP information 1ply and 2ply (I think this was already provided but may need a 'resend')
 clear action statement from GMCH; that is, NanYa investigation (1 week indepth investigation)

into problem solving and value stream)



**Global Electrification -**

## **Kevin Diviney**

GM

Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

**Engineering Quality** 



## file for SGM review

Kevin Diviney to: Gary Backs, James Fortune, Sean E Gleason, Stephen Poulos, Bob Agresta, Scott Wilson 05/30/2013 04:39 PM

Here is the latest file that we are proposing that Scott Wilson use for the review with SGM. Bob Agresta is checking with Carmen to ensure that we are ok to share this information. He is also directing that Scott show the information but not provide a copy to SGM.



### BPIM presentation for SGM rev4.pptx



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08



Reena Datta/US/GM/GMC

06/24/2013 10:30 AM

To Daniel Weaver <daniel.weaver@gmch.com>

cc bcc

Subject Fw: 71-1195265407 Steve Rayman Chevrolet, Smyrna GA - 1G11D5RRXDF P0A8D

Hi Dan,

I heard about this post-option 1 unit replaced at a dealership last week. It is an APM in unknown state, which we have not seen since the power board fix. I asked for it to be shipped directly to you all, with the hope that we can figure out what's going on with this unit more quickly. Could you please keep an eye out for it?

Thank you, Reena

----- Forwarded by Reena Datta/US/GM/GMC on 06/24/2013 10:29 AM -----

| From:    | Kristin L Curran/US/GM/GMC                                            |
|----------|-----------------------------------------------------------------------|
| To:      | Brian 1 Ciaverella/C/US/GM/GMC@GM                                     |
| Cc:      | Reena Datta/US/GM/GMC@GM                                              |
| Date:    | 06/24/2013 09:52 AM                                                   |
| Subject: | Re: Fw: 71-1195265407 Steve Rayman Chevrolet, Smyrna GA - 1G11D5RRXDF |

All set, request ID S63950.001. Should be sent directly to GMCH.

## Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell Email <u>kristin.curran@gm.com</u>

| Brian 1 Ciaverella | Hi Kristin, Reena is asking that this | 06/21/2013 11:16:22 AM |
|--------------------|---------------------------------------|------------------------|
|                    |                                       |                        |

| From:    | Brian 1 Ciaverella/C/US/GM/GMC                                          |
|----------|-------------------------------------------------------------------------|
| To:      | Kristin L Curran/US/GM/GMC                                              |
| Date:    | 06/21/2013 11:16 AM                                                     |
| Subject: | Fw: 71-1195265407 Steve Rayman Chevrolet, Smyrna GA - 1G11D5RRXDF P0A8D |

## Hi Kristin,

Reena is asking that this BPIM is expedited back to GMCH. Can you please help with that?

Part 24267940 Mike Stewart PM Fax number (770) 951-1526

Sincerely, Brian Ciaverella Spark EV Action Center Facilitator

*GM* Technical Assistance Center - Milford Proving Grounds Hybrid Platform/Advanced Propulsion Escalation Team

### ----- Forwarded by Brian 1 Ciaverella/C/US/GM/GMC on 06/21/2013 11:15 AM -----

| From:    | Brian 1 Ciaverella/C/US/GM/GMC                                                  |  |  |  |
|----------|---------------------------------------------------------------------------------|--|--|--|
| To:      | James_Shook@gmexpert.com, Kristin L Curran/US/GM/GMC                            |  |  |  |
| Cc:      | Rick H Schroeder/US/GM/GMC, Reena Datta/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC, |  |  |  |
|          | Milton Martinez/US/GM/GMC                                                       |  |  |  |
| Date:    | 06/21/2013 11:09 AM                                                             |  |  |  |
| Subject: | Re: Fw: 71-1195265407 Steve Rayman Chevrolet, Smyrna GA - 1G11D5RRXDF           |  |  |  |
| -        | P0A8D                                                                           |  |  |  |

#### Jim

Please order another SGCM 24267940.

The session log is attached in case anyone is interested. The Low Voltage ckt Voltage is 0V. P0A8D setting. Tech has checked the voltage at APM output and 175 amp fuse @ 12.5V. Connections all were rechecked.

Hi Kristin,

Reena is asking that this BPIM is expedited back to GMCH. Can you please help with that?

Thanks. Brian Ciaverella Spark EV Action Center Facilitator

**GM** Technical Assistance Center - Milford Proving Grounds Hybrid Platform/Advanced Propulsion Escalation Team Bldg. 16 2nd Floor, 16B-2114 Cell Phone (989) 392-6091 brian.1.ciaverella@gm.com

[attachment "1G11D5RRXDF .zip" deleted by Kristin L Curran/US/GM/GMC]

James\_Shook P0A8D After GCM replacement 06/20/2013 08:21:54 AM



Fw: eAssist - QIS2 Data for A&C Units Replaced During Campaign

Kevin Diviney to: Len Chalawa

07/09/2013 05:21 PM

FYI. Please check your return request to ensure that you include 9100018. This is the code being used for BPIMs replaced for a failed screening.



----- Forwarded by Kevin Diviney/US/GM/GMC on 07/09/2013 05:20 PM -----

| From:    | Kristin L Curran/US/GM/GMC                                                                        |
|----------|---------------------------------------------------------------------------------------------------|
| To:      | Reena Datta/US/GM/GMC@GM                                                                          |
| Cc:      | Daniel D. Cottrell/US/GM/GMC@GM, Kevin Diviney/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Stephen |
|          | Poulos/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Tony P. Tata/US/GM/GMC@GM                       |
| Date:    | 07/09/2013 03:26 PM                                                                               |
| Subject: | Re: eAssist - QIS2 Data for A&C Units Replaced During Campaign                                    |

Reena, the part for VIN below (1G11D5RR6DF107170) had not been requested. I issued a special parts request (ID #S64884.001) just now. I'll let you know when it arrives at the WPS.

You may want to verify with Len that is part return projects include the 9100018 labor code in addition to the normal warranty labor code 5031440.

Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 **Cell** 586.206.0611 **Email** <u>kristin.curran@gm.com</u>

Reena Datta Hi Dan, You are correct. The only VIN below that is Bucket C is 1G11D5SR9... 07/09/2013 01:45:08 PM

| From:    | Reena Datta/US/GM/GMC                                                                           |
|----------|-------------------------------------------------------------------------------------------------|
| To:      | Daniel D. Cottrell/US/GM/GMC@GM                                                                 |
| Cc:      | Kevin Diviney/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Stephen |
|          | Poulos/US/GM/GMC@GM, Tony J. Saliga/US/GM/GMC@GM, Tony P. Tata/US/GM/GMC@GM                     |
| Date:    | 07/09/2013 01:45 PM                                                                             |
| Subject: | Re: eAssist - QIS2 Data for A&C Units Replaced During Campaign                                  |

## Hi Dan,

You are correct. The only VIN below that is Bucket C is 1G11D5SR9DF

I added a row specifying vehicle build date and bucket.

Reena

| Daniel D. Cottrell | Reena, If I ready the VINs correctly, only one is a bucket C part (1G11D5SR9 | 07/09/2013 01:31:40 PM |
|--------------------|------------------------------------------------------------------------------|------------------------|
| Reena Datta        | Hi Everyone, Of the 123 Bucket A and C BPIM/APM replaced during the cam      | 07/09/2013 01:08:15 PM |



Re: Fw: BPIM 677 - 71-1195265407 Steve Rayman Chevrolet, Smyrna GA - 1G11D5RRXDF P0A8D Brian 1 Ciaverella to: Reena Datta 07/12/2013 03:13 PM Cc: Kristin L Curran, Daniel Weaver, Joseph Thompson, Len Chalawa

Reena,

One other DTC to note. P062F was read on 6/19/13 per QIS2 which was probably the 2nd BPIM that was replaced

Regards, Brian Ciaverella Spark EV Action Center Facilitator

*GM Technical Assistance Center - Milford Proving Grounds Hybrid Platform/Advanced Propulsion Escalation Team* Bldg. 16 2nd Floor, 16B-2114 Cell Phone (989) 392-6091 brian.1.ciaverella@gm.com

| Kristin L                                                                                | Curran                                                                                                     | Hi Reena, Yo    | ou're correc | ct, 2 BPIMs v              | vere replac   | 07/12/2013 02:32:04 PM |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------|--------------|----------------------------|---------------|------------------------|
| Enome.                                                                                   | Kristin I                                                                                                  |                 |              |                            |               |                        |
| From:                                                                                    | Kristin L                                                                                                  | Curran/US/GM/   | GIVIC        |                            |               |                        |
| To:                                                                                      | Reena Datta/US/GM/GMC@GM                                                                                   |                 |              |                            |               |                        |
| Cc:                                                                                      | Brian 1 Ciaverella/C/US/GM/GMC@GM, Daniel Weaver <daniel.weaver@gmch.com>, Joseph</daniel.weaver@gmch.com> |                 |              | l.weaver@gmch.com>, Joseph |               |                        |
| Thompson <joseph.thompson@gmch.com>, Len Chalawa/US/GM/GMC@GM</joseph.thompson@gmch.com> |                                                                                                            |                 |              |                            |               |                        |
| Date:                                                                                    | 07/12/20                                                                                                   | 013 02:32 PM    |              |                            |               |                        |
| Subject:                                                                                 | Re: Fw:                                                                                                    | BPIM 677 - 71-1 | 195265407    | Steve Raym                 | an Chevrolet, | Smyrna GA -            |
| -                                                                                        | 1G11D5                                                                                                     | RRXDF           | P0A8D        | -                          |               | -                      |

Hi Reena,

You're correct, 2 BPIMs were replaced. I requested both back, but that obviously didn't happen. Doesn't sound like the dealer has the original part.

### Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

| Reena Datta | Hi Kristin, I was IMing with Brian about an eAs | 07/12/2013 12:06:53 PM |
|-------------|-------------------------------------------------|------------------------|
|-------------|-------------------------------------------------|------------------------|



speadsheet Reena Datta to: Len Chalawa

07/15/2013 11:27 AM



eAssist\_IsolationReturns\_12Jul2013.xlsx



Re: 1G11F5RR4DF101037 Reena Datta to: James Fortune Cc: Daniel Weaver, len.chalawa

07/16/2013 01:28 PM

Hi Jim,

Thank you for this information. I didn't look up repair history after the BPIM was replaced - great information that the fan was changed 350 miles later.

Which over temp DTC were you referring to? I will do a more detailed DTC investigation to see how often that code set relative to the BPIM replacement.

Reena

| James Fortune |                                                                                                                          | Reena,                                                  | 07/16/2013 01:24:05 PM |
|---------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------|
|               |                                                                                                                          |                                                         |                        |
| From:         | James Fo                                                                                                                 | rtune <james.fortune@gmch.com></james.fortune@gmch.com> |                        |
| To:           | len.chalawa@gm.com                                                                                                       |                                                         |                        |
| Cc:           | "reena datta" <reena.datta@gm.com>, Daniel Weaver <daniel.weaver@gmch.com></daniel.weaver@gmch.com></reena.datta@gm.com> |                                                         |                        |
| Date:         | 07/16/201                                                                                                                | 3 01:24 PM                                              |                        |
| Subject:      | Re: 1G11                                                                                                                 | F5RR4DF                                                 |                        |

Reena,

Unit had over-temp DTC and the fan was changed 350 miles after the BPIM. Aren't we thinking the fan was the cause?

CUST\_COMP\_COMM:CUST STATES RED BATTERY LIGHT CAME ON AGAIN,SRC\_ PROB\_CAUSE\_COMM:GENERATOR OVER TEMP 2.2 BASE, .3 DIAG,CORR\_ACT\_COMM:REPLACED GENERATOR CONTROL MODULE, PROGRAMMED AND TESTED CASE #71-1195 766026

| Transaction H    | listory            |                                    | View Details              |                                                   |
|------------------|--------------------|------------------------------------|---------------------------|---------------------------------------------------|
| Job Card<br>Date | Job Card<br>Number | Transaction Type                   | Transaction<br>Adjustment | Labour Operat                                     |
| 06/21/2013       | 294195             | ZREGRegular Vehicle<br>Transaction |                           | 5020870 - Drive Motor Batte<br>Blower Replacement |
| 06/20/2013       | 440858             | ZREGRegular Vehicle<br>Transaction | Add Credit                | 5031440 - Generator Control<br>Replacement        |
| 06/20/2013       | 440858             | ZREGRegular Vehicle<br>Transaction | Full Debit - Reversal     | 5031440 - Generator Control<br>Replacement        |
| 06/20/2013       | 440858             | ZREGRegular Vehicle<br>Transaction |                           | 5031440 - Generator Control<br>Replacement        |
| 06/20/2013       | 440846             | ZREGRegular Vehicle<br>Transaction |                           | 5031440 - Generator Control<br>Replacement        |

| 06/20/2013 | 440846 | ZREGRegular Vehicle<br>Transaction | 4062710 - Drive Belt Replace                         |
|------------|--------|------------------------------------|------------------------------------------------------|
| 06/18/2013 | 703256 | ZFATField Action Recall            | 9100017 - N130136 - Inspect<br>Further Action Req';d |
| 10/05/2012 | 612091 | ZFATField Action Recall            | V2585 - 12102 - Reprogram                            |
| 02/08/2012 | 599893 | ZPDIPre-Delivery<br>Inspection     | Z6999 - PDI Related Fluid A                          |
| 01/26/2012 | A01037 | ZPDIPre-Delivery<br>Inspection     | Z7000 - Pre-Delivery Inspect                         |

Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

-----len.chalawa@gm.com wrote: -----To: reena.datta@gm.com From: len.chalawa@gm.com Date: 07/16/2013 11:49AM Subject: Re: 1G11F5RR4DF101037

Yes. Thanks

-----

Len Chalawa Sr. Reliability Engineer GM Milford Proving Grounds 248-928-6411 len.chalawa@gm.com

From:Reena Datta/US/GM/GMCTo:Len Chalawa/US/GM/GMC@GMDate:07/16/2013 11:42 AMSubject:Re: 1G11F5RR4DF

Hi Len,

This return will be shipped to GMCH with estimated arrival on Friday. Kristin is requesting a tracking number which we will forward when received.

Do you think we can ask the team in Kokomo to look at this unit and confirm it's not a PCB failure right away?

Reena

From:Len Chalawa/US/GM/GMCTo:Reena Datta/US/GM/GMC@GMDate:07/15/2013 11:41 AMSubject:Re: 1G11F5RR4DF101037

So, Is this a hot one to pick up -? or just let in come in shipped to Kokomo?

Len Chalawa Sr. Reliability Engineer GM Milford Proving Grounds 248-928-6411 Ien.chalawa@gm.com

 From:
 Reena Datta/US/GM/GMC

 To:
 Len Chalawa/US/GM/GMC@GM

 Date:
 07/15/2013 11:37 AM

 Subject:
 1G11F5RR4DF

Hi Len,

Found it. This is a return that went through the screening but then came back for repair. Bucket A vehicle.

Reena

-----

Claim Comments from Repair on 6/20/2013: CUST\_COMP\_COMM:CUST STATES RED BATTERY LIGHT CAME ON AGAIN,SRC\_PROB\_CAUSE\_COMM:GENERATOR OVER TEMP 2.2 BASE, .3 DIAG,CORR\_ACT\_COMM:REPLACED GENERATOR CONTROL MODULE, PROGRAMMED AND TESTED CASE #71-1195 766026

### 1G11F5RR4DF Set on 6/20/2013 and 6/21/2013 Screen date 6/18/2013

Repair date 6/20/2013

| Enter<br>DTCs | Description of Fault                                           | Тур<br>е | DTC Identifier           |
|---------------|----------------------------------------------------------------|----------|--------------------------|
| P0A90         | Drive Motor A Performance                                      | В        | HB_DrvMtrAPerf           |
| P0562         | System Voltage Low                                             | С        | SysVoltLo                |
| P1A0C         | Battery Energy Control Module System Voltage Low               | С        | BECM_SysVoltLo           |
| P0826         | Up and Down Shift Switch Circuit                               | С        | UpDwnShfSwCkt            |
| P155A         | Cruise Control Switch State Undetermined                       | С        | CruzSwStUndetermine<br>d |
| P0101         | Mass Air Flow (MAF) Sensor Performance                         | В        | MAF_SnsrPerf             |
| P1ADE         | Drive Motor A Control Module System Voltage Low                | С        | DMCM_A_SysVoltLo         |
| P0AC4         | Hybrid Powertrain Control Module Requested MIL<br>Illumination | A        | HPCM_MIL_Req             |
| P0C32         | Hybrid Battery Cooling System Performance                      | В        | HB_CoolSysPerf           |

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GM

## Re: TREAD case updates 🗎

Kevin Diviney to: Kristin L Curran

CC: Len Chalawa, Daniel D. Cottrell, Reena Datta, Ryan Brown, Stephen Poulos

**Global Electrification -**

**Engineering Quality** 

07/18/2013 03:56 PM

Good point Kristin. We are supposed to have everything except bucket B on return.



# Kevin Diviney

Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: ( Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

| Kristin L Curran |           | Hi Len, I am hoping now that the GLC 9100018      | 07/18/2013 03:39:54 PM |
|------------------|-----------|---------------------------------------------------|------------------------|
| From:            | Kristin L | Curran/US/GM/GMC                                  |                        |
| То:              |           | awa/US/GM/GMC@GM                                  |                        |
| Cc:              |           | riney/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@ | GM, Reena              |
|                  |           | /GM/GMC@GM, Ryan Brown/US/GM/GMC@GM, Stepher      |                        |
| Date:            | 07/18/20  | 13 03:39 PM                                       |                        |
| Subject:         | Re: TRE   | AD case updates                                   |                        |

Hi Len,

I am hoping now that the GLC 9100018 has been added to the part return project that I won't have to submit many more Special Parts Request. I will be sure to let you know when I do, however.

Also, I did notice that your project is only grabbing bucket C parts (i.e. build dates between 8/11/12 and 12/1/13). This means we're not requesting any bucket D parts, which we probably should. Also is there a way to get bucket A parts as well? I don't know if you can do multiple build date grouping?

Thanks,

## Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 **Cell** 586.206.0611 **Email** kristin.curran@gm.com

| Len Chalawa      | Kristin, If possible, can we (the GMCH team) r | 07/18/2013 03:02:06 PM |
|------------------|------------------------------------------------|------------------------|
| Kristin L Curran | Kevin, Parts for 1G11D5RR1DF104922 & 1G1       | 07/18/2013 09:30:32 AM |
| Kevin Diviney    | Len, There are 8 TREAD case BPIM returns lis   | 07/17/2013 08:25:16 AM |

## Re: TREAD case updates 🗎

Len Chalawa to: Kristin L Curran Cc: Kevin Diviney, Daniel D. Cottrell, Reena Datta, Ryan Brown, Stephen Poulos, Stephen Farris, "Fortune, James L"

Kristin,

Bucket-D is > than 1/13 to 7/1/13, so yes we are, we are extended to 12/1/13 build. Bucket-E is 2014MY I have added. 7/1/13 and >

Bucket-C is 8/11/12 to 12/12, so is included.

No Bucket A are not being requested. Unless, as we stated are of special interest - where we would have to make a request for them individually.

Cannot do multiple date ranges per request.

Len Chalawa Sr. Reliability Engineer GM Milford Proving Grounds 248-928-6411 Ien.chalawa@gm.com

| Kristin L Curran |                | Hi Len, I am hoping now that the GLC 9100018        | 07/18/2013 03:39:54 PM |
|------------------|----------------|-----------------------------------------------------|------------------------|
| From:            | <b>Kristin</b> | Curran/US/GM/GMC                                    |                        |
|                  |                |                                                     |                        |
| To:              | Len Cha        | lawa/US/GM/GMC@GM                                   |                        |
| Cc:              | Kevin Di       | viney/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GI | M. Reena               |
|                  |                | S/GM/GMC@GM, Ryan Brown/US/GM/GMC@GM, Stephen P     |                        |
| Date:            | 07/18/20       | 13 03:39 PM                                         |                        |
| Subject:         | Re: TRE        | AD case updates                                     |                        |

### Hi Len,

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Also, I did notice that your project is only grabbing bucket C parts (i.e. build dates between 8/11/12 and 12/1/13). This means we're not requesting any bucket D parts, which we probably should. Also is there a way to get bucket A parts as well? I don't know if you can do multiple build date grouping?

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Kristin L. Curran | Brand Quality Manager, Advanced Propulsion

General Motors Company 30501 Van Dyke, Warren, MI 48090 Cell 586.206.0611 Email kristin.curran@gm.com

| Len Chalawa      | Kristin, If possible, can we (the GMCH team) r | 07/18/2013 03:02:06 PM |
|------------------|------------------------------------------------|------------------------|
| Kristin L Curran | Kevin, Parts for 1G11D5RR1DF104922 & 1G1       | 07/18/2013 09:30:32 AM |

07/18/2013 03:49 PM

Kevin Diviney Len, There are 8 TREAD case BPIM returns lis... 07/17/2013 08:25:16 AM



SPCR's your requested. Gary Backs to: stephen.farris 08/01/2013 09:28 AM Cc: James Fortune Show Details

3 Attachments





CN 0040 - 2 layer pre-preg control and cap board.doc SPCR BAS APM BPIM Option 1 Robustness.xls



SPCR BAS APM BPIM Test Enhancements 8AU11 Farris Approval.xls

Best Regards,

## Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com



Fw: Opt 1.5 Test Plan Gary Backs to: stephen.farris 08/01/2013 09:39 AM Show Details

1 Attachment



Opt 1.5 2 Layer Control and Cap Board Test Plan with Results.pptx

Steve, recall that option 1.5 was actually validated on PV3. The data Jim reports below was a verificaiton of what was received.

You have the PV3 test report.

Best Regards,

## Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 08/01/2013 09:37AM -----To: "Stephen Farris" <stephen.farris@gm.com> From: James Fortune/GMch Date: 08/01/2013 09:34AM Cc: Gary Backs/GMch@GMch Subject: Opt 1.5 Test Plan

(See attached file: Opt 1.5 2 Layer Control and Cap Board Test Plan with Results.pptx)

The Opt 1.5 Test plan is attached

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC http://kokomogmch.com Phone: (765) 451-9558 Cell: (765) 451-9973 Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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"Go Boilers"



Validation Reports Option 1 James Fortune to: Stephen Farris, Gary Backs 08/01/2013 09:28 AM Show Details

2 Attachments



Opt 1 Control brd EP-BPIM Summary Report rev 10-9-12.doc



Opt 1 Power brd PTC APM-BPIM Summary Report rev 10-9-12.doc

Attached are the validation reports for Opt 1.

Jim Fortune 吉姆時運 Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC <u>http://kokomogmch.com</u> Phone: (765) 451-9558 Cell:

Fax: (765) 451-9973 M.S. 7109 e-mail james.fortune@gmch.com

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### From: Sean E Gleason on 08/16/2011 09:23 PM

To: cole.buttry@gmch.com, gary.backs@gmch.com

cc: Mehrdad Teimor/US/GM/GMC@GM, DAVID P TASKY/US/GM/GMC@GM, Stephen

Farris/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, Daniel D. Cottrell/US/GM/GMC@GM Subject: BAS+ Exponent Analysis Action Items

Cole, Gary,

Need your help with these Exponent action items.

1.) They want the two china incident units (apm fuse, bpim isolation) sent to california. Please expedite shipping ASAP, and ship with the fastest speed possible. Please take the utmost care in protecting the subcomponents for shipping. Is re-assembly feasible?

2.) Are there any more X-rays pictures that were taken, that weren't included in the pix set 2.zip file?

Ship Units to:

My mailing address: Subbaiah Malladi CTO Exponent 149 Commonwealth Drive Menlo Park, CA 94025 650 688 7272

```
_____
```

Sean Gleason Senior Manager - Hybrid / Electric Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083



Gary Backs <gary.backs@gmch.com> on 08/17/2011 08:32:57 AM

To: sean.gleason@gm.com

cc: Cole Buttry <cole.buttry@gmch.com>, daniel.d.cottrell@gm.com, davidp.1.tasky@gm.com, mehrdad.teimor@gm.com, stephen.farris@gm.com, stephen.poulos@gm.com

Subject: Re: BAS+ Exponent Analysis Action Items

Sean,

To two china incidents can be shipped. The units are in pieces, the entire pack was not returned from China.

Elements of the assembly, which you will see this afternoon are glued in place. To enable analysis, the housing is sectioned a band saw

## Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

-----sean.gleason@gm.com wrote: -----To: <u>cole.buttry@gmch.com</u>, <u>gary.backs@gmch.com</u> From: <u>sean.gleason@gm.com</u> Date: 08/16/2011 09:24PM Cc: <u>mehrdad.teimor@gm.com</u>, <u>davidp.1.tasky@gm.com</u>, <u>stephen.farris@gm.com</u>, <u>stephen.poulos@gm.com</u>, <u>daniel.d.cottrell@gm.com</u> Subject: BAS+ Exponent Analysis Action Items

Cole, Gary,

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My mailing address: Subbaiah Malladi CTO Exponent 149 Commonwealth Drive Menlo Park, CA 94025 650 688 7272

\_\_\_\_\_

Sean Gleason Senior Manager - Hybrid / Electric Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell: (248) 670-8083

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Gary Backs <gary.backs@gmch.com> on 08/25/2011 03:59:18 PM

To: Cole Buttry <cole.buttry@gmch.com>, Daniel Weaver <daniel.weaver@gmch.com>, daniel.d.cottrell@GM.COM, "David E. Miller" <david.e.miller@gmch.com>, David Worthington <david.worthington@gmch.com>, david.p.buehler@delphi.com, david.sharp@delphi.com, cc:

Subject: File for 4pm Call

Call in: 866-297-2155 cd: 4515278

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com



SGM FA Analysis 25AU.xlsx



Gary Backs <gary.backs@gmch.com> on 08/25/2011 04:04:36 PM

To: Cole Buttry <cole.buttry@gmch.com>, Daniel Weaver <daniel.weaver@gmch.com>, daniel.d.cottrell@gm.com, "David E. Miller" <david.e.miller@gmch.com>, David Worthington <david.worthington@gmch.com>, david.p.buehler@delphi.com, david.sharp@delphi.com, cc:

Subject: Fw: Test Matrix and Current Measurement.pptx

Nichols Updated file

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 08/25/2011 04:04PM -----To: "Backs, Gary L" <gary.backs@gmch.com> From: "Nichols, Mark A" <mark.a.nichols@delphi.com> Date: 08/25/2011 04:03PM Subject: Test Matrix and Current Measurement.pptx

(See attached file: Test Matrix and Current Measurement.pptx)



Test Matrix and Current Measurement.pptx



To: stephen.farris@gm.com, stephen.poulos@gm.com, daniel.d.cottrell@gm.com, mehrdad.teimor@gm.com, sean.gleason@gm.com, Cole Buttry <cole.buttry@gmch.com>, jameas.A.awood@delphi.com, David Worthington <david.worthington@gmch.com>, cc:

Subject: Notes and Actions from 8/26 4PM Call

Following are dates for closure of each activity currently in process.

Functional test modification is to some degree discovery and may not represent a firm date. A commitment is not yet available for when Delphi and GM SQE's will visit the board supplier but that activity is being escalated.

Engr. testing agreed to today is set up and scheduled to be performed by Delphi with the intent of delivering results for the 6:30 PQRR

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com



SGM FA Analysis 25AU.xlsx



James Fortune <james.fortune@gmch.com> on 08/25/2011 12:29:10 PM

To: daniel.d.cottrell@gm.com

cc: mehrdad.temor@gm.com

Subject: Delphi GMCH Visit history to NanYa circuit board manufacturing facility

Dan,

Per your request I have attached a one pager detailing our last visit to Nan Ya in March of this year. We have made contact with both Nan Ya factory contacts and GM Regional SQE to schedule a visit. It appears that the most likely fate of this visit will me Monday 8/29/11. We are working to supply the GM SQE a resource from Delphi to assist in this visit. In the meantime, we are working with Nan Ya to collect specific lot information ahead of this visit.

Regards Jim

## Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1150-0M11-00P6 2603 S. Goyer Road Kokomo, IN 46902

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"Go Boilers" Delphi visit to Nanya.ppt



James Fortune <james.fortune@gmch.com> on 08/25/2011 03:43:30 PM

To: daniel.d.cottrell@gm.com

Subject: Re: Delphi GMCH Visit history to NanYa circuit board manufacturing facility

Dan,

To answer your question. The circuit board lot is 046. We have requested specific data from this lot. I have confirmed that GMCH had no Power Board fall-out in this lot.

Jim

Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1150-0M11-00P6 2603 S. Goyer Road Kokomo, IN 46902

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"Go Boilers"

-----daniel.d.cottrell@gm.com wrote: -----

To: James Fortune <james.fortune@gmch.com> From: daniel.d.cottrell@gm.com Date: 08/25/2011 03:11PM Cc: mehrdad.teimor@gm.com Subject: Re: Delphi GMCH Visit history to NanYa circuit board manufacturing facility

try this one

Dan Cottrell Assistant Chief Engineer, BAS+ Hybrid Powertrain GM Milford Proving Grounds 3300 GM Road Bldg 3, 2nd floor, 3300-C83 Milford, Michigan 48380 Phone 248 563 3771

James Fortune <james.fortune@gmch.com>

08/25/2011 12:29 PM

To daniel.d.cottrell@gm.com
 <sup>CC</sup> mehrdad.temor@gm.com
 Subject Delphi GMCH Visit history to NanYa circuit board manufacturing facility

Dan,

Per your request I have attached a one pager detailing our last visit to Nan Ya in March of this year. We have made contact with both Nan Ya factory contacts and GM Regional SQE to schedule a visit. It appears that the most likely fate of this visit will me Monday 8/29/11. We are working to supply the GM SQE a resource from Delphi to assist in this visit. In the meantime, we are working with Nan Ya to collect specific lot information ahead of this visit.

Regards Jim

### Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC http://kokomogmch.com

Phone: (765) 451-9558

Cell: Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1150-0M11-00P6 2603 S. Goyer Road Kokomo, IN 46902

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"Go Boilers"

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=

[attachment "Delphi visit to Nanya.ppt" removed by James Fortune/GMch]



"Sharp, David" <david.sharp@delphi.com> on 08/26/2011 10:11:18 AM

To: "sean.gleason@gm.com" <sean.gleason@gm.com>, "daniel.d.cottrell@gm.com" <daniel.d.cottrell@gm.com>, "mehrdad.teimor@gm.com" <mehrdad.teimor@gm.com> cc: "Backs, Gary L" <gary.backs@gmch.com> Subject: FW: PowerPack-SGM\_APM14VOpenFusedTesting\_08262011\_V2.xlsx

# Updated matrix

# **David Sharp**

Project Manager, Delphi E&S Phone: (765) 451-3170 Fax: (765) 451-3780 email: <u>david.sharp@delphi.com</u> From: Nichols, Mark A Sent: Friday, August 26, 2011 9:47 AM To: Sharp, David; Buehler, David P Subject: PowerPack-SGM\_APM14VOpenFusedTesting\_08262011\_V2.xlsx Importance: High

### 

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\*\*\*\*\*\* PowerPack-SGM\_APM14VOpenFusedTesting\_08262011\_V2.xlsx



# {In Archive} Fw: BPIM - Summary of Field Case Review - NHTSA Questions

Stephen Poulos to: Tony J. Saliga, Sean E Gleason, Bob Agresta, Daniel D. Cottrell

04/30/2013 01:56 PM

History:This message has been replied to and forwarded.Archive:This message is being viewed in an archive.

fyi

----- Forwarded by Stephen Poulos/US/GM/GMC on 04/30/2013 01:55 PM -----

# **BPIM - Summary of Field Case Review - NHTSA Questions**



Tue 04/30/2013 4:00 PM - 5:00 PM

Attendance is for Stephen Poulos

Chair: Christopher Janik/US/GM/GMC Location: 2M6-10

|           | Carmen Benavides/US/GM/GMC@GM, Doug Wachtel/US/GM/GMC@GM, Kevin<br>Diviney/US/GM/GMC@GM, Kristin L Curran/US/GM/GMC@GM, Ryan |
|-----------|------------------------------------------------------------------------------------------------------------------------------|
| Required: | Brown/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, William J.                                                                  |
|           | Kemp/US/GM/GMC@GM                                                                                                            |

Description

MML (866) 226-3606 pc 6086315

**Personal Notes** 



# {In Archive} Re: BPIM cap board PRR 🗎

Daniel D. Cottrell to: James Fortune Cole Buttry, David Worthington, Gary Backs, Bob Agresta, Stephen 11/28/2012 01:20 PM

Archive:

This message is being viewed in an archive.

Jim, Thanks for the reply.

Cc:

Poulos

If we cannot issue a PRR to Delphi, then perhaps it needs to be issued to GM / GMCH. The assembly plants need a place to collect charges.

As far as I am concerned, this issue relates to an original design error by Delphi. That is the root of the problem. In hindsight, we can debate the time schedule required to implement corrections to *all* of the design errors discovered in the last year, but that does not excuse the root cause. If the original design was correct, we would not have needed remediation.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

| James Fortune   |           | Dan,                                                     | 11/28/2012 12:40:44 PM                                                |
|-----------------|-----------|----------------------------------------------------------|-----------------------------------------------------------------------|
| From:           | lamos Fr  | ortune <james.fortune@gmch.com></james.fortune@gmch.com> |                                                                       |
| To:             |           | cottrell@gm.com                                          |                                                                       |
|                 |           | 5                                                        | orthington <david.worthington@gmch.com>,</david.worthington@gmch.com> |
|                 | Cole Butt | ry <cole.buttry@gmch.com></cole.buttry@gmch.com>         |                                                                       |
| Date: 11/28/201 |           | 12 12:40 PM                                              |                                                                       |
| Subject:        | Re: BPIN  | I cap board PRR                                          |                                                                       |

Dan,

Sorry, I've been somewhat overwhelmed by emails lately. In speaking with our leadership, our contractual agreements with Delphi are written such that they are not held responsible for design related issues. All associated costs for this campaign are going to rest solely within GM. From our perspective, had the original option 1 change been allowed to include the 2 layer change to the control and cap board we would not be re-visiting this issue at the assembly plant level.

# Jim

John Ball (PEM for GMX353) has requested that we create a PRR to collect the costs for the plant screening process for the finished vehicles. The request is that it be categorized as an engineering supplier issue due to our assessment that the single layer board is a design error. I don't know whether that gets written against GMCH or Delphi.

Can you create the PRR for this issue? We need to generate this today so that we can attach it to the TWO for the screening process.

# Jim Fortune 吉姆時運

Product Quality Manager Power Electronics / T42 Hybrid Controllers / Sensors / Thick Film Printing General Motors Components Holdings, LLC

http://kokomogmch.com

Phone: (765) 451-9558 Cell: Fax: (765) 451-9973 M.S. 6060 e-mail james.fortune@gmch.com

Parcel Delivery: General Motors Components Holdings, LLC POU 1572-0U25-00P7 2603 S. Goyer Road Kokomo, IN 46902

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this e-mail and other employees of the GMCH business are not employed by, acting on behalf of, or affiliated with Delphi Automotive or any of its affiliates.

"Go Boilers"

## -----daniel.d.cottrell@gm.com wrote: -----To: James Fortune <james.fortune@gmch.com> From: daniel.d.cottrell@gm.com Date: 11/28/2012 12:21PM

Cc: gary.backs@gmch.com Subject: BPIM cap board PRR

Jim, I haven't heard back yet. Can you do this?

I will be asked the status at my next call at 2PM today.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771 Jim,

John Ball (PEM for GMX353) has requested that we create a PRR to collect the costs for the plant screening process for the finished vehicles. The request is that it be categorized as an engineering supplier issue due to our assessment that the single layer board is a design error. I don't know whether that gets written against GMCH or Delphi.

Can you create the PRR for this issue? We need to generate this today so that we can attach it to the TWO for the screening process.

Dan Cottrell Electrification Vehicle System Engineer, eAssist Propulsion System GM Milford Proving Grounds 3300 GM Road Bldg 16, 1st floor, 16A-1038A Milford, Michigan 48380 Phone 248 563 3771

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# {In Archive} Fw: BPIM NHTSA Review MML 1-866-226-3606 pc# 2354619 conf rm 2G16-05

Stephen PoulosBob Agresta, Kevin Diviney, Kristin LStephen Poulosto: Curran, Jeff Wrona, Daniel D. Cottrell, Peter04/28/2013 08:38 PMJ. Savagian, Sean E Gleason, Ronald P.04/28/2013 08:38 PM

History:This message has been replied to.Archive:This message is being viewed in an archive.

FYI,

I will be joining by phone due to raging cold.

Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 04/28/2013 08:31 PM -----



# BPIM NHTSA Review MML 1-866-226-3606 pc# 2354619 conf rm 2G16-05

Mon 04/29/2013 6:00 AM - 6:45 AM

Attendance is for Stephen Poulos

Chair: Carmen Benavides/US/GM/GMC No Location Information

| Required: |  |
|-----------|--|

Alicia S Boler Davis/US/GM/GMC@GM, Christopher Janik/US/GM/GMC, Doug Wachtel/US/GM/GMC@GM, Gay P Kent/US/GM/GMC@GM, John A. Calabrese/US/GM/GMC@GM, Kenneth L. Kelzer/US/GM/GMC@GM, Larry T. Nitz/US/GM/GMC@GM, Maureen Foley-Gardner/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM, William J. Kemp/US/GM/GMC@GM

Description

Personal Notes



# {In Archive} cap board failures Kevin Diviney to: Bob Agresta

This message has been replied to. History: Archive:

This message is being viewed in an archive.

# Bob,

Six confirmed cap board failures to date. Four are confirmed from the same lot of material. Only one was built in a different time frame (March vs May/June).



cap board failures.xlsx



# **Kevin Diviney**

Global Program Quality Manager / Robust Engineering Specialist

Mobile Ph: Mail Code: 483-710-201 email: <u>kevin.diviney</u>@gm.com



# **Global Electrification -Engineering Quality**

**General Motors Corp.** Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

01/03/2013 02:15 PM



# **(In Archive) Fw: Circuit Board Quality Requirements Stephen Poulos** to: Bob Agresta

05/24/2013 01:08 PM

History:This message has been replied to.Archive:This message is being viewed in an archive.

Cc: Daniel D. Cottrell

Bob,

You are welcome to join too. Technical discussion around requirements and performance to requirements on current product being produced at Nan Ya. Trying to help prep Scott Wilson for his visit with organized set of technical questions. FYI,

### Stephen

----- Forwarded by Stephen Poulos/US/GM/GMC on 05/24/2013 01:03 PM -----



# **Circuit Board Quality Requirements**

Fri 05/24/2013 1:30 PM - 2:00 PM

Attendance is for Stephen Poulos

Chair: Daniel D. Cottrell/US/GM/GMC Location: conference call number below

| Required: | Alan Barry/US/GM/GMC@GM, gary.backs@gmch.com, james.fortune@gmch.com, Mehrdad<br>Teimor/US/GM/GMC@GM, Sean E Gleason/US/GM/GMC@GM, Stephen<br>Poulos/US/GM/GMC@GM |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Description

The intent of this meeting is to discuss / verify the quality requirements for our BAS+ BPIM circuit boards manufactured by Nanya. We will have GM reps in the plant on Monday. We want to be able to prime them with the right questions to ask to insure that our 2014 parts will meet the quality specs.

Dan

Hello,

Daniel Cottrell V invites you to attend this online meeting.

Topic: Circuit board quality Date: Friday, May 24, 2013 Time: 1:30 pm, Eastern Daylight Time (New York, GMT-04:00) Meeting Number: 963 359 480 Meeting Password: board1 -----

To join the online meeting (Now from mobile devices!)

-----

1. Go to

https://gm.webex.com/gm/j.php?ED=206846507&UID=0&PW=NNjMzZmU1YWQ1&RT=MiMxMQ%3D %3D

2. If requested, enter your name and email address.

3. If a password is required, enter the meeting password: board1

4. Click "Join".

To view in other time zones or languages, please click the link: <u>https://gm.webex.com/gm/j.php?ED=206846507&UID=0&PW=NNjMzZmU1YWQ1&ORT=MiMxMQ%3</u> <u>D%3D</u>

-----

To join the teleconference only

-----

Provide your phone number when you join the meeting to receive a call back. Alternatively, you can call:

Call-in toll-free number: 1-8662263606 (US) Call-in number: 1-6784667834 (US) Show global numbers: <u>https://www.tcconline.com/offSite/OffSiteController.jpf?cc=6605732</u> Conference Code: 660 573 2

-----

For assistance

-----

1. Go to <u>https://gm.webex.com/gm/mc</u>

2. On the left navigation bar, click "Support".

You can contact me at: daniel.d.cottrell@gm.com

To add this meeting to your calendar program (for example Microsoft Outlook), click this link: <u>https://gm.webex.com/gm/j.php?ED=206846507&UID=0&ICS=MI&LD=1&RD=2&ST=1&SHA2=2F4cR</u> <u>FWPHpOji3Z-MeyGxAprtenRgYIX5GiexE0/lb8=&RT=MiMxMQ%3D%3D</u>

The playback of UCF (Universal Communications Format) rich media files requires appropriate players. To view this type of rich media files in the meeting, please check whether you have the players installed on your computer by going to <u>https://gm.webex.com/gm/systemdiagnosis.php</u>.

http://www.webex.com

CCP: +16784667834x6605732#

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Personal Notes



# {In Archive} eAssist - Summary of Cap Board Returns label{eq: Reena Datta to: Frederick Billotto

mark.zerbini, kris.sevel, mustafa.dakroub, cole.buttry, Cc: roger.rademacher, gary.backs, hossein.lotfalian, steven.wybo, james.fortune, christopher.janik, christopher.winegarden, This message is digitally signed.

11/29/2012 09:54 AM

Archive:

This message is being viewed in an archive.

All,

Please see the attached spreadsheet for a summary of the cap board returns. Please let me know if you have any feedback.

Reena Datta Design Release Engineer General Motors Hybrid Systems Work: 248-752-8137



eAssist\_Cap-PCB-Returns\_29Nov2012.xlsx



# {In Archive} Re: Fw: eAssist BPIM final review prior to John C/Alicia B-D meeting Monday 6 am Stephen Poulos to: Bob Agresta

Archive:

This message is being viewed in an archive.

04/28/2013 05:42 PM

Bob,

I sent Ron the invite. FYI,

Stephen

| Bob Agresta                 | Ron - There is a 7pm preview of the BPIM situ 04/28/2013 05:19:38 PM                                                                                                                                                          |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To:RonalCc:"GaryDate:04/28/ | gresta/US/GM/GMC<br>d P. Mills/US/GM/GMC@GM<br>Backs" <gary.backs@gmch.com>, Stephen Poulos/US/GM/GMC@GM<br/>/2013 05:19 PM<br/>Assist BPIM final review prior to John C/Alicia B-D meeting Monday 6 am</gary.backs@gmch.com> |

Ron - There is a 7pm preview of the BPIM situation with Leadership.

You should get a meeting invitation but this is a copy of my calendar entry.

Bob

# -----Forwarded by Bob Agresta/US/GM/GMC on 04/28/2013 05:17PM -----

| Calendar I<br>Meeting                                                    |                                   |                                                                                      |                           |
|--------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------|---------------------------|
|                                                                          | Meeting Invitatio<br>Reservations | <u>ns &amp;</u>                                                                      | <u>Option</u><br><u>s</u> |
| Subject:<br>eAssist B<br>Start Dat<br>04/28/201<br>End Date<br>04/28/201 | 13<br>e:                          | ior to John C/Alic<br><b>Start Time:</b><br>07:00 PM<br><b>End Time:</b><br>08:00 PM | tia B-D meet<br>Er<br>Me  |
| C <b>hair:</b><br>tephen F                                               | Poulos/US/GM/GM(                  | 2                                                                                    |                           |

### Description:

Stephen Poulos invites you to an online meeting using WebEx.

Meeting Number: 960 905 066 Meeting Password: bpimfield

To join this meeting (Now from mobile devices!)

-----

\_\_\_\_\_

1. Go to <a href="https://gm.webex.com/gm/j.php?J=960905066&PW=NZjM0MDE3NTlk">https://gm.webex.com/gm/j.php?J=960905066&PW=NZjM0MDE3NTlk</a>

- 2. If requested, enter your name and email address.
- 3. If a password is required, enter the meeting password: bpimfield
- 4. Click "Join".
- 5. Follow the instructions that appear on your screen.

-----

Teleconference information

Provide your phone number when you join the meeting to receive a call back. Alternatively, you can call: Call-in toll-free number: 1-8662263606 (US) Call-in number: 1-6784667834 (US) Show global numbers: <u>https://www.tcconline.com/offSite/OffSiteController.jpf?cc=4141543</u> Conference Code: 414 154 3

http://www.webex.com

CCP:+16784667834x4141543#

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Your Notes:



{In Archive} eAssist: Preliminary Manufacturing Planning Gary Backs to: bob.agresta 04/26/2013 01:41 PM Cc: Gail Bowers, Julie Rethlake Hide Details From: Gary Backs <gary.backs@gmch.com>

To: bob.agresta@gm.com

Cc: Gail Bowers <gail.bowers@gmch.com>, Julie Rethlake <julie.rethlake@gmch.com>

History: This message has been replied to and forwarded. Archive: This message is being viewed in an archive.

1 Attachment



eAssist Service Update 26AP13.pptx

Bob,

Please review the attached per your request for a starting point on eAssist BPIM manufacturing to support any planned service update.

If you have any questions, please call my mobile.

Best Regards,

# **Gary L.Backs**

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB: 317-517-9211

gary.backs@gmch.com

| From:    | Gary Backs/GMch                                                |
|----------|----------------------------------------------------------------|
| To:      | stephen.farris@gm.com                                          |
| Date:    | Thursday, August 01, 2013 09:11AM                              |
| Subject: | Fw: Re: SPCR: eAssist APM/BPIM Option 1 Robustness Improvement |

Best Regards,

# **Gary L.Backs**

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 08/01/2013 09:11AM -----To: Gary Backs <gary.backs@gmch.com> From: stephen.farris@gm.com Date: 03/13/2012 03:09PM Cc: "Sharp David" <david.sharp@delphi.com>, laurie.longueway@gm.com, davidp.1.tasky@gm.com, mehrdad.teimor@gm.com, reena.datta@gm.com, richard.ye@gm.com Subject: Re: SPCR: eAssist APM/BPIM Option 1 Robustness Improvement

(See attached file: SPCR BAS APM BPIM Option 1 Robustness Farris approval.xls)

Gary,

Here is my approval of the SPCR for review in PET tomorrow.

STEPHEN L. FARRIS Design Release Engineer (DRE) Hybrid Power Electronic Hardware Release Center GM Hybrid Powertrain Engineering Cell: 248.515.2572

From: Gary Backs <gary.backs@gmch.com> To: stephen.farris@GM.COM, "Sharp David" <david.sharp@delphi.com> Cc: laurie.longueway@GM.COM Date: 03/13/2012 02:58 PM Subject: SPCR: eAssist APM/BPIM Option 1 Robustness Improvement

Steve,

Please review and approve this SPCR. This was verbally approved in an emergency PET last week. The following document is to obtain formal approval and is intended for review at the eAssist PET on 3/14.

One item of note; The interpretation of the PET approval last week is that it was only tentative and that the PET wanted to review and give final approval of the change. The consequence of this interpretation is: in a normal change process, if the validation passes a GM3660 would be requested after validation is successfully completed and PPAP would proceed. For this change, we will need to go back to the PET and obtain formal approval, then the design can be updated. This will add 4-5 additional weeks to implementation for drawing release(which would normally happen immediately after approval).

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com[attachment "SPCR BAS APM BPIM Option 1 Robustness.xls" deleted by Stephen Farris/US/GM/GMC]

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Attachments:

SPCR BAS APM BPIM Option 1 Robustness Farris approval.xls



# Invitation: DRBFM reivew for control and cap board update w/ 2 sheets of prepreg

Wed 11/14/2012 10:00 AM - 10:30 AM Attendance is required for Mehrdad Teimor

Chair: Stephen Farris/US/GM/GMC

Location: 866-226-3606 x8290665

Stephen Farris has invited you to a meeting. You have not yet responded.

| Required: | Brian T Marusak/US/GM/GMC@GM, Bryan M Ludwig/US/GM/GMC@GM, DAVID P<br>TASKY/US/GM/GMC@GM, david.p.buehler@delphi.com, gary.backs@gmch.com, |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------|
|           | hossein.lotfalian@gmch.com, james.fortune@gmch.com, Kris Sevel/US/GM/GMC@GM,                                                               |

### Description

Review DRBFM and make any updates.

Conference Call and Web meeting number

Toll Free 866-226-3606 (guideline is to use from hotels or home)

International Access 678-466-7834 (use this number from GM phones / cell phones) Access Code: 8290665



Copy of BAS+ DRBFM Cap and Control Bd Change Update 13NOV12.xlsx



{In Archive} GMCH Graph of Special Service Build Capability
Gary Backs
to:
stephen.poulos, bob.agresta
04/26/2013 09:23 PM
Cc:
Julie Rethlake, Gail Bowers
Hide Details
From: Gary Backs <gary.backs@gmch.com>

To: stephen.poulos@gm.com, bob.agresta@gm.com

Cc: Julie Rethlake <julie.rethlake@gmch.com>, Gail Bowers <gail.bowers@gmch.com>

History: This message has been replied to. Archive: This message is being viewed in an archive.

1 Attachment



GMCH eAssist Service Update 27AP13.pptx

Please find attached per your request.

It is important to note; this represents <u>GMCH full output capability</u> beyond vehicle assembly plant and normal service requirements.

The <u>ability of suppliers to meet our need for materials per our requested start date and rate is not</u> <u>yet confirmed</u>.

Best Regards,

file:///C:/Users/rzxllh/AppData/Local/Temp/notes413C1D/~web3531.htm

# Gary L.Backs

Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com

| SR #         | 71-1122960359                                   | Account Phone #       | (641) 437-4040        | Cust Concern | Smoke                |                      |                          |
|--------------|-------------------------------------------------|-----------------------|-----------------------|--------------|----------------------|----------------------|--------------------------|
| Account      | Pete Harkness Chevrolet-<br>Buick-Pontiac, Inc. | Site/BAC              | 210101                | Keyword 1    | EASSIST              | <b>Business Unit</b> | TAC US                   |
| Address      | 1003 N 18th                                     |                       |                       | Keyword 2    | SMOKE                | Keyword 3            | HYBRID                   |
| City         | Centerville                                     | State IA              | <b>Zip</b> 525441117  | Keyword 4    |                      |                      |                          |
| Last Name    | Webster                                         | First Name            | Ryan                  | Non Keyword  | CAMPAIGN 12238A      |                      |                          |
|              | (641) 437-4040                                  |                       | 12238A                | Comp type    |                      | Svc Man Sec          | Hybrid Power Electronics |
| Daytime #    |                                                 | Recom Bulletin #      |                       | Open Concern | DC10 - SBD performed | SVc Man Sub          | Charging System          |
| Veh Family   | GB                                              | Mileage Type          | Μ                     | Symptom Desc | Performance          |                      |                          |
| Repair Order | 47262                                           | Restricted Part #     | 24259770              | Status       | Open                 | Sub Status           | Active                   |
| Serial #/VIN | 2G4GS5ER8C9                                     |                       |                       |              | SLEEMASC             | Omened               | 11/01/2012 16:00:57      |
| Make         | Buick                                           | Mileage 426           |                       | Owner        |                      | Opened               | 11/01/2012 10:00:07      |
| Model        | Regal                                           | Warranty Start        | 5/22/2012 12:00:00 AM | Priority     | Consultant           | Closed               |                          |
| Year         | 2012                                            | Warranty Status       |                       |              |                      |                      |                          |
| Veh Line     | GS                                              | Veh Series            | S                     |              |                      |                      |                          |
| Plant        | 9                                               | Body <sup>5E</sup> Ei | ngine R               |              |                      |                      |                          |

# Activities

| Created               | Created By | Assigned To | Activity Type       | Sub-Type          | Status      | Actual Completion  |
|-----------------------|------------|-------------|---------------------|-------------------|-------------|--------------------|
| 11/2/2012 05:25:47 PM | GETTELMA   | GETTELMA    | TAC Part Authorized | eAssist PowerPack | In Progress |                    |
| Last Name             |            | First Name  |                     | Priority          | Star        | t Date             |
| Webster               |            | Ryan        |                     | 3-Medium          | 11/2        | 2/2012 05:25:47 PM |
| Times In              |            | Days Down   |                     |                   |             |                    |
|                       |            |             |                     |                   |             |                    |
| Description           |            |             |                     |                   |             |                    |
| 24259770 powerpack (C | QTY1)      |             |                     |                   |             |                    |
| (OVN)                 |            |             |                     |                   |             |                    |
| Template Text         |            |             |                     |                   |             |                    |

# **Activities**

| ExtendedTemplateText  |            |             |                  |          |        |                       |
|-----------------------|------------|-------------|------------------|----------|--------|-----------------------|
|                       |            |             |                  |          |        |                       |
|                       |            |             |                  |          |        |                       |
|                       |            |             |                  |          |        |                       |
|                       |            |             |                  |          |        |                       |
| Created               | Created By | Assigned To | Activity Type    | Sub-Type | Status | Actual Completion     |
| 11/2/2012 05:21:44 PM | GETTELMA   | GETTELMA    | Email - Outbound |          | Done   | 11/2/2012 05:24:09 PM |
| Last Name             |            | First Name  |                  | Priority | Star   | t Date                |
|                       |            |             |                  |          | 11/2   | 2/2012 05:24:02 PM    |
| Times In              |            | Days Down   |                  |          |        |                       |
|                       |            |             |                  |          |        |                       |
| Description           |            |             |                  |          |        |                       |
| 71-1122960359 part    | 24259770   |             |                  |          |        |                       |
| Template Text         |            |             |                  |          |        |                       |
| BAC 210101            |            |             |                  |          |        |                       |
| VIN 2G4GS5ER8C        | 9          |             |                  |          |        |                       |
| ExtendedTemplateText  |            |             |                  |          |        |                       |

| Created               | Created By | Assigned To | Activity Type     | Sub-Type | Status     | Actual Completion     |  |
|-----------------------|------------|-------------|-------------------|----------|------------|-----------------------|--|
| 11/2/2012 05:12:38 PM | GETTELMA   | GETTELMA    | TAC Outbound Call | Dealer   | Done       | 11/2/2012 05:24:50 PM |  |
| Last Name             |            | First Name  |                   | Priority | Start Date |                       |  |
| Webster               |            | Ryan        |                   | 3-Medium | 11/2       | 2/2012 05:12:38 PM    |  |
| Times In              |            | Days Down   |                   |          |            |                       |  |
|                       |            |             |                   |          |            |                       |  |
| Description           |            |             |                   |          |            |                       |  |
| Ryan Webster, tech    |            |             |                   |          |            |                       |  |
| Template Text         |            |             |                   |          |            |                       |  |
| A 1 ' D '11 1         | 1 1 1      | 1 1         |                   |          |            |                       |  |

Advise Ryan will be replacing the hv battery pack.

Tech stated the BIN is LQ45654112132586

Part dept contact is: Larry Long

# **Activities**

Parts fax number is: 641-437-4050

Advise tech of pic5520e for ordering instructions.

Advise after pack installation to double check all vehicle fuses.

Advise to fully charge and test 12v battery.

Advise to operate hv battery pack fan for operation and to replace if inop.

Advise to program the modules required per si and sps for battery replacement.

Advise the SGCM and pack fan harness will be sent to dealer.

ExtendedTemplateText

| Created               | Created By | Assigned To | Activity Type | Sub-Type | Status      | Actual Completion  |
|-----------------------|------------|-------------|---------------|----------|-------------|--------------------|
| 11/2/2012 04:58:16 PM | GETTELMA   | GETTELMA    | TAC Alarm     | 24 Hour  | Scheduled A | arm                |
| Last Name             |            | First Name  |               | Priority | Sta         | rt Date            |
| Webster               |            | Ryan        |               | 3-Medium | 11/         | 5/2012 08:58:17 AM |
| Times In              |            | Days Down   |               |          |             |                    |
|                       |            |             |               |          |             |                    |
| Description           |            |             |               |          |             |                    |
| review                |            |             |               |          |             |                    |
| Template Text         |            |             |               |          |             |                    |
|                       |            |             |               |          |             |                    |
| ExtendedTemplateText  |            |             |               |          |             |                    |

| Created               | Created By | Assigned To | Activity Type     | Sub-Type | Status | Actual Completion     |
|-----------------------|------------|-------------|-------------------|----------|--------|-----------------------|
| 11/2/2012 11:33:58 AM | GETTELMA   | GETTELMA    | TAC Outbound Call | Dealer   | Done   | 11/2/2012 11:43:26 AM |
| Last Name             |            | First Name  |                   | Priority | Sta    | art Date              |
| Webster               |            | Ryan        |                   | 3-Medium | 11/    | /2/2012 11:33:58 AM   |
| Times In              |            | Days Down   |                   |          |        |                       |
| 1                     |            | 2           |                   |          |        |                       |
| Description           |            |             |                   |          |        |                       |
| Ryan Webster, tech    |            |             |                   |          |        |                       |

# **Activities**

## Template Text

Ryan stated when asked if customer owned.

It was a dealer trade and that's why it has mileage on car. Car is currently dealer owned.

Ryan stated when asked which step he was on when smoke ocurred.

The two hour idle test step 12 and was 30-40 minutes into it.

Ryan stated the SGCM x1x2x3 wiring has heat stress and melting on them.

Ryan stated when asked if there was interior trim damage.

There is some film on the Right Rear area by the RR seatbelt but thinks it can be cleaned off.

Ryan stated when asked if there was arcing inside of pack.

Hard to tell with all the soot but there appears to be some heat stress terminals and possible melting of the wiring. ExtendedTemplateText

| Created                                               | Created By | Assigned To | Activity Type | Sub-Type               | Status | Actual Completion     |
|-------------------------------------------------------|------------|-------------|---------------|------------------------|--------|-----------------------|
| 11/2/2012 11:23:21 AM                                 | CIAVERBR   | CIAVERBR    | TAC Review    | Escalation Team Review | Done   | 11/2/2012 11:34:02 AM |
| Last Name                                             |            | First Name  |               | Priority               |        | Start Date            |
| Webster                                               |            | Ryan        |               | 3-Medium               |        | 11/2/2012 11:23:21 AM |
| Times In                                              |            | Days Down   |               |                        |        |                       |
|                                                       |            |             |               |                        |        |                       |
| Description                                           |            |             |               |                        |        |                       |
| Reviewed with Mark Gettel                             |            |             |               |                        |        |                       |
| Template Text                                         |            |             |               |                        |        |                       |
| What step was the tech in when performing 12238?      |            |             |               |                        |        |                       |
| Was there any soot outside the Pack or on the trim?   |            |             |               |                        |        |                       |
| Is there smoke damage to the vehicle?                 |            |             |               |                        |        |                       |
| Is it customer owned? Is there damage to trim covers? |            |             |               |                        |        |                       |
|                                                       |            |             |               |                        |        |                       |

# **Activities**

And find out what step he was on when it failed?

I can have a repair harness or connectors are melted we have a repair harness to splice in and have one sent to the dealer from BQ

If there is arcing in the BDU and GCM then we want the entire Pack replaced. ExtendedTemplateText

Created **Created By** Assigned To Activity Type Sub-Type Status Actual Completion 11/1/2012 04:55:14 PM GETTELMA GETTELMA TAC Inbound Call Diagnostics Done 11/1/2012 05:00:07 PM First Name Priority Start Date Last Name 11/1/2012 04:55:14 PM Webster Ryan 3-Medium Times In Days Down 1 1 Description

### Template Text

Ryan stated has removed the battery pack cover and has a lot of soot and odors inside of pack.

Ryan stated also has the 3 connectors to the SGCM x1 x2 x3, the blue, green, and black, have melted insulation on these connectors.

Advise Ryan to take pictures of the damage and send into TAC.

Advise will send info to escalation for further evaluation.

Advise TAC will call back at 641-455-9794 with further instruction.

ExtendedTemplateText

# **Activities**

| Created               | Created By | Assigned To | Activity Type | Sub-Type | Status      | Actual Completion  |
|-----------------------|------------|-------------|---------------|----------|-------------|--------------------|
| 11/1/2012 04:10:30 PM | SLEEMASC   | SLEEMASC    | TAC Alarm     | 24 Hour  | Scheduled A | arm                |
| Last Name             |            | First Name  |               | Priority | Sta         | art Date           |
| Webster               |            | Ryan        |               | 3-Medium | 11/         | 6/2012 04:10:30 PM |
| Times In              |            | Days Down   |               |          |             |                    |
|                       |            |             |               |          |             |                    |
| Description           |            |             |               |          |             |                    |
| eAssist smoke         |            |             |               |          |             |                    |
| Template Text         |            |             |               |          |             |                    |
|                       |            |             |               |          |             |                    |
| ExtendedTemplateText  |            |             |               |          |             |                    |

| Created                     | Created By     | Assigned To | Activity Type    | Sub-Type    | Status | Actual Completion     |
|-----------------------------|----------------|-------------|------------------|-------------|--------|-----------------------|
| 11/1/2012 04:01:44 PM       | SLEEMASC       | SLEEMASC    | TAC Inbound Call | Diagnostics | Done   | 11/1/2012 04:10:29 PM |
| Last Name                   |                | First Name  |                  | Priority    | Sta    | art Date              |
| Webster                     |                | Ryan        |                  | 3-Medium    | 11/    | /1/2012 04:01:44 PM   |
| Times In                    |                | Days Down   |                  |             |        |                       |
| 1                           |                | 1           |                  |             |        |                       |
| Description                 |                |             |                  |             |        |                       |
| Spoke to technician Ryan    | n Webster      |             |                  |             |        |                       |
| SI doc 12238A               |                |             |                  |             |        |                       |
| No modifications, condition | on has been du | plicated.   |                  |             |        |                       |
| Template Text               |                |             |                  |             |        |                       |

Ryan states he is performing campaign 12238 and he started to smell smoke. He states he disconnected the 12V battery. He states he checked the fuses F23UA and F73UA and they are not open.

Advised Ryan to remove the battery pack from the vehicle, open the pack and inspect for signs of arcing or soot, if found take pictures and call back.

Advised Ryan that we will arrange the appropriate part for the vehicle.

ExtendedTemplateText

I

Activities



# **(In Archive)** Re:Hypothetical Situation Gary Backs to: bob.agresta

History: Archive:

y: This message has been replied to. (e: This message is being viewed in an archive.

# I am with our supply chain mgr. Would u like an internal assessment or one based on supplier contact

# bob.agresta@gm.com --- Hypothetical Situation ---

| From:   | "" <bob.agresta@gm.com></bob.agresta@gm.com>              |
|---------|-----------------------------------------------------------|
| То      | "Backs, Gary" <gary.backs@gmch.com></gary.backs@gmch.com> |
| Date:   | Fri, Apr 12, 2013 1:26 PM                                 |
| Subject | Hypothetical Situation                                    |

# Gary,

There is some speculation going on that we might have to replace some quantity of BPIMs in the field. It is strictly speculation, so I want to keep this as informal and high level as possible.

If you needed to build BPIMs for field service in addition to your current Assembly plant demand, what is the upside ability to do that?

What kind of lead time would it take to ramp up to a reasonable rate considering the need to order parts, fill the pipeline, etc.

How long from the time we say go for you to build ~10000 BPIMs, and then how many a month could you build after that?

If there is a better way to frame this then let's talk.

Bob

Bob Agresta Director - Global Program Execution Global Electrification E-mail: Bob.Agresta@gm.com Mobile: 248-330-6295 Office: 248-857-0933 Admin: 248-857-8317 (Marcia Jackson) { \* } Indicates GM Confidential Business Information Redacted

# { \* }





### Fred Billotto Senior Project Engineer

Mobile Ph: Mail Code: 480-210-411 email: <u>frederick.billotto@gm.com</u>

# Hybrid Energy Storage

### General Motors Corp. Warren Technical Center 30001 Van Dyke Avenue

Warren, Michigan 48090 VEC 4AV23 { \* } Indicates GM Confidential Business Information Redacted

# { \* }

{ \* } Indicates GM Confidential Business Information Redacted

# { \* }

Action items:

- Confirm via physical inspection that the improved pre-preg layer meets expectations. (GMCH) •
- . Summarize the validation plan for a pre-preg only change. (Reena and Gary)
- What type of test can we do at GMCH that would mimic the testing at the dealerships? Tony will • provide a trace of the duty cycle. (GMCH and Tony)

Center

- Review GMCH test plan with ESS safety engineering. (Fred and Galen) .
- What kind of screens can Nanya perform? Ask Nanya to perform hi pot testing on cap board. .

Regards,

GM



Fred Billotto Senior Project Engineer Hybrid Energy Storage

General Motors Corp. Mobile Ph: Warren Technical Mail Code: 480-210-411 email: frederick.billotto@gm.com 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

{ \* } Indicates GM Confidential Business Information Redacted

# { \* }

Let me know if you have any other relevant information to add to the summary.

Regards,



Kevin Diviney Global Program Quality Manager / Robust Engineering Specialist

Mobile Pt Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u>



## Global Electrification -Engineering Quality

General Motors Corp. Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08





Fred Billotto Senior Project Engineer

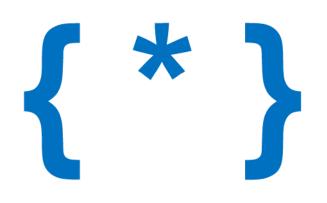
Hybrid Energy Storage

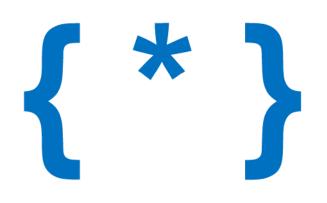
Mobile Ph: Mail Code: 480-210-411

General Motors Corp. Warren Technical Center email: frederick.billotto@gm.com 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

Mobile Ph: General Motors Corp. Mail Code: 480-210-411 Center email: frederick.billotto@gm.com 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23

email: frederick.billotto@gm.com 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23





Mail Code: 483-710-201 email: <u>kevin.diviney@gm.com</u> Pontiac North CET 895 Joslyn Avenue Pontiac, Michigan 48340 Cube 2K08

Mobile Ph Mail Code: 480-210-411 email: <u>frederick.billotto@gm.com</u>

Warren Technical Center 30001 Van Dyke Avenue Warren, Michigan 48090 VEC 4AV23



### {In Archive} \*Confidential: Re: \*\* Confidential and Priviledged \*\* - Nanya Recovery Investigation for eAssist Recall Daniel R. Stec to: Sean E Gleason 05/24/2013 08:30 AM Bob Agresta, Cole Buttry, Larry T. Nitz, Sean E Gleason, Stephen

Cc: Poulos, William J. Kemp, Carmen Benavides, Maureen Foley-Gardner, Frank Gorman, Scott O. Trantham, Sheri Hickok, This message is being viewed in an archive.

Archive:

Sean,

I can appreciate that & will convey your concerns with Carmen and the Leadership Team here at GMNA. In the meantime, I will cease and desist with any further attempts at reaching out to Nanja with regard to the BPIM Safety Recall and cost recovery. I will sit tight until GM Legal, GMNA & GMCH have all come to agreement regarding next steps. Thank you.

Best Regards, Dan

Daniel R. Stec

Global Purchasing and Supply Chain GMNA Supplier Quality Engineering Warranty / FPE / Cost Recovery Cell:

E-Mail: Daniel.r.stec@gm.com

| Sean E Gleason |                                                                                                                                                                                | Carmen, Dan, During a call last night with Gary | 05/24/2013 08:14:23 AM |  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------|--|
| From:          | Sean E (                                                                                                                                                                       | Gleason/US/GM/GMC                               |                        |  |
| To:            | Daniel R. Stec/US/GM/GMC@GM                                                                                                                                                    |                                                 |                        |  |
| Cc:            | Cole Buttry <cole.buttry@gmch.com>, Larry T. Nitz/US/GM/GMC@GM, William J.<br/>Kemp/US/GM/GMC@GM, Bob Agresta/US/GM/GMC@GM, Stephen Poulos/US/GM/GMC@GM</cole.buttry@gmch.com> |                                                 |                        |  |
| Date:          | 05/24/20                                                                                                                                                                       | 13 08:14 AM                                     |                        |  |
| Subject:       | ** Confidential and Priviledged ** - Nanya Recovery Investigation for eAssist Recall                                                                                           |                                                 |                        |  |
| Sent by:       | Sean E Gleason                                                                                                                                                                 |                                                 |                        |  |

Carmen, Dan,

During a call last night with Gary Backs from GMCH, it was indicated that Nanya provides over 60% of the bare boards for the operations at GMCH. This includes a significant amount of non-electrification content such as Engine Control Modules (ECMs). It is definitely possible that attempts at recovery with Nanya could make an impact beyond the eAssist product itself, and affect GM products on a very wide basis. I know John Calabrese indicated interest in pursuing recovery, but since Powertrain could possibly be impacted, it might be prudent to get buy-in from Powertrain leadership before we potentially impact their operations.

\_\_\_\_\_

Sean Gleason Senior Manager - Global Electrification Power Electronics 3300 General Motors Road Milford MI 48380 Bldg. 31E-LL-21 cell:



{In Archive} Re: Fw: Re: Fw: New order notice 13BHA1278 and 13BHA1279. Re: Fw: Re: inquiry of p/n 24267940 and 24267941 from GM Korea(81000) [ATTACHMENT REMOVED] [ATTACHMENT REMOVED] Bob Agresta to: Gary Backs, christopher.janik 05/16/2013 10:41 AM Cc: Maureen Foley-Gardner, Kevin Diviney, Stephen Poulos, Kush Shah

Archive:

This message is being viewed in an archive.

### Gary,

Looks like GMK wants essentially all their parts in a few weeks. If they were following our recommendation (Replace all Bucket B and screen Buckets A&C) they'd only need about 260 -300 parts total versus the 776 in their order,.

| SGM    |                       |            |
|--------|-----------------------|------------|
| Bucket | Dates                 | # Produced |
| Α      | SOP thru 3/15/12      | 224        |
| В      | 3/16/12 thru 8/11/12  | 136        |
| С      | 8/12/12 thru 12/31/12 | 71         |
|        |                       |            |
| Korea  |                       |            |
| Bucket | Dates                 | # Produced |
| Α      | SOP thru 3/15/12      | 969        |
| В      | 3/16/12 thru 8/11/12  | 247        |
| С      | 8/12/12 thru 12/31/12 | 214        |

We may need to have a more balanced Global approach ... let's let the FPE folks work this through the model that was developed as a line item pull for parts, and model what SGM might do as well, and then reply with a single voice that manages requirements for both continents. I still think we need to push for a more consistent approach between GMK and GMNA.

Bob

### **Bob** Agresta

Director - Electrification Program Execution



E-mail: <u>bob.agresta@gm.com</u> Phone: +1 248 857 0933 Fax:+1 248 857 4756 International Mobile: +1 248 330 6295 Administrative Assistant – Marcia Jackson +1 248 857 8317 ENGLISH - CONFIDENTIALITY NOTE: This communication may contain confidential and/or privileged information that is for the sole use of the intended recipient(s). Any viewing, copying, distribution of or reliance on this message by unintended recipients is strictly prohibited. If you have received this message in error, please notify me immediately by replying to this message and deleting it from your computer. Thank you

| Gary Bac                     | ks Chris, I know you are not the FPE contact for                                                                                                                                | 05/16/2013 08:21:46 AM |  |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--|
| From:<br>To:<br>Cc:<br>Date: | Gary Backs <gary.backs@gmch.com><br/>christopher.janik@gm.com<br/>bob.agresta@gm.com<br/>05/16/2013 08:21 AM</gary.backs@gmch.com>                                              |                        |  |
| Subject:                     | Fw: Re: Fw: Fw: New order notice 13BHA1278 and 13BHA1279. Re: Fw: Re: inquiry of p/n<br>24267940 and 24267941 from GM Korea(81000) [ATTACHMENT REMOVED] [ATTACHMENT<br>REMOVED] |                        |  |

Chris, I know you are not the FPE contact for GMIO. If you could forward as appropriate. Just wanted to provide this heads up on what GMK is requesting for the eAssist field action.

Best Regards,

Gary L.Backs Program Management General Motors Component Holdings

PH: 765-451-5278 MOB:

gary.backs@gmch.com

-----Forwarded by Gary Backs/GMch on 05/16/2013 08:19AM -----

To: Gail Bowers sail.bowers@gmch.com From: kyungyoung.ji@gm.com Date: 05/16/2013 04:55AM Cc: "Brenda McCain" <Brenda.McCain@onsemi.com>, christine.m.witt@gm.com, Gary Backs <gary.backs@gmch.com>, Julia Brewer <julia.brewer@gmch.com>, Julie Rethlake <julie.rethlake@gmch.com>, Mike Heilman <mike.heilman@gmch.com>, susan.marsh@gm.com Subject: Re: Fw: Fw: New order notice 13BHA1278 and 13BHA1279. Re: Fw: Re: inquiry of p/n 24267940 and 24267941 from GM Korea(81000) [ATTACHMENT REMOVED] [ATTACHMENT REMOVED]

Yes, we want 24267940 at 305 pieces and 24267941 at 23 pieces. Please proceed them to be shipped by air, when you are ready to ship on the week of June 17.

Please check an estimate ship date about the remaining quantity.

Your cooperation would be very appreciated.

| Order details. |          |          | Delivery | Schedule  |    |
|----------------|----------|----------|----------|-----------|----|
| PO date        | PO#      | part no. | PO q'ty  | 6/17 week | ?? |
| 15-May-1       | 13BHA127 | 2426794  | 400      | 305       | 95 |

| 3             | 8             | 0            |     |     |     |
|---------------|---------------|--------------|-----|-----|-----|
| 15-May-1<br>3 | 13BHA127<br>8 | 2426794<br>1 | 40  | 23  | 17  |
| 15-May-1<br>3 | 13BHA127<br>9 | 2426794<br>0 | 320 |     | 320 |
| 15-May-1<br>3 | 13BHA127<br>9 | 2426794<br>1 | 16  |     | 16  |
|               |               |              | 776 | 328 | 448 |

Thank you.

Best regards,

Kyungyoung Ji. A/S Supply Chain - Import Team(도입팀), GM KOREA COMPANY TEL : 82 32 760 3716 / Mobile : 82 10 3334 0797 / FAX : 82 32 760 3605 E-MAIL : kyungyoung.ji@gm.com

Ship to address : 199 Cheongcheon-Dong, Bupyung-Gu, Incheon 403-714, KOREA (cisco code : 81000) Office (Send to documents) : 2-293 Mansuk-Dong, Dong-Gu, Incheon 401-010, KOREA

From: Gail Bowers <gail.bowers@gmch.com>

To: Mike Heilman <mike.heilman@gmch.com>, kyungyoung.jj@gm.com, Julia Brewer <julia.brewer@gmch.com> Cc: "Brenda McCain" <Brenda.McCain@onsemi.com>, susan.marsh@gm.com, christine.m.witt@gm.com, Julie Rethlake <julie.rethlake@gmch.com>, Gary Backs <gary.backs@gmch.com>

Date: 2013-05-16 오전 02:37

Subject: Fw: Fw: New order notice 13BHA1278 and 13BHA1279. Re: Fw: Re: inquiry of p/n 24267940 and 24267941 from GM Korea(81000) [ATTACHMENT REMOVED] [ATTACHMENT REMOVED]

Ji - we will process the 328 to ship the week of June 17. Do you still want that to be 24267940 at 305 pieces and 24267941 at 23 pieces? We will then work the remaining 456 in to our manufacturing plans while awaiting the additional order for 315 units for a total of 1091 for Korea.

Julia - please add the additional 448 to the manufacturing plan - possibly spreading it over three weeks and building 30 or so daily for them after the week of June 17 (10% of of the 305 for 3 weeks).

Chris - additional for Korea, may need to decrease CCA by 30 daily mid June if that works for CCA. If you would like to prioritize that for us, we totally understand.

Take care - Gail

Gail Bowers Supply Chain General Supervisor

### gail.bowers@gmch.com

Tel: +1-765-451-6723

Cell: +765-438-7712 POU: QNPM-0Q23-00P6

-----Forwarded by Gail Bowers/GMch on 05/15/2013 01:10PM -----To: GMCHContractAdmin\_KOK@gm.com From: susan.marsh@gm.com Date: 05/15/2013 01:02PM Cc: Gail Bowers <gail.bowers@gmch.com>, Wendy McCain <wendy.mccain@gmch.com>, kyungyoung.ji@gm.com Subject: Fw: New order notice 13BHA1278 and 13BHA1279. Re: Fw: Re: inquiry of p/n 24267940 and 24267941 from GM Korea(81000) [ATTACHMENT REMOVED]

(See attached file: 20130515\_IH46(13BHA1278).pdf) (See attached file: 20130515\_IH46(13BHA1279).pdf)

Attached contracts approved. Please process.

Thank you,

Susan Hallitt Marsh Business Manager - GMCH Aftersales GM Powertrain Headquarters 777 Joslyn Avenue Pontiac, MI 48340 MC 483-720-250 2AJ01 248-285-2929

----- Forwarded by Susan H Marsh/US/GM/GMC on 05/15/2013 01:01 PM -----

 From:
 Kyungyoung Ji/KR/GM/GMC

 To:
 Gail Bowers <gail.bowers@gmch.com>, susan.marsh@gm.com, Wendy McCain <wendy.mccain@gmch.com>

 Cc:
 christine.m.witt@gm.com, Gary Backs <gary.backs@gmch.com>, Julia Brewer <julia.brewer@gmch.com>, Julie Rethlake

 vjulie.rethlake@gmch.com>, Mike Heilman <mike.heilman@gmch.com>, Ralph Showers <ralph.showers@gmch.com>, sungjun.cho@gm.com

 Date:
 05/15/2013 10:54 AM

 Subject:
 New order notice 13BHA1278 and 13BHA1279. Re: Fw: Re: inquiry of p/n 24267940 and 24267941 from GM

 Korea(81000) [ATTACHMENT REMOVED]

Hello,

Attachments are new orders for the recall parts 24267940 and 24267941. Please kindly see the new orders and give me your order acknowledgment with a shipping schedule.

| Part no. | Order Q'ty                       |
|----------|----------------------------------|
| 24267940 | 400 pieces.                      |
| 24267941 | 40 pieces.                       |
|          |                                  |
| 24267940 | 320 pieces.                      |
| 24267941 | 16 pieces.                       |
|          | 24267940<br>24267941<br>24267940 |

We are going to place an additional order sooner or later. I think the quantity will be around 315 pieces. (24267940, 300 / 24267941, 15)

If you have any questions, please let me know soon. Your cooperation would be very appreciated.

Thank you.

Best regards,

Kyungyoung Ji. A/S Supply Chain - Import Team(도입팀), GM KOREA COMPANY TEL : 82 32 760 3716 / Mobile : 82 10 3334 0797 / FAX : 82 32 760 3605 E-MAIL : kyungyoung.ji@gm.com

Ship to address : 199 Cheongcheon-Dong, Bupyung-Gu, Incheon 403-714, KOREA (cisco code : 81000) Office (Send to documents) : 2-293 Mansuk-Dong, Dong-Gu, Incheon 401-010, KOREA

From: Gail Bowers <gail.bowers@gmch.com>

To: kyungyoung.ji@gm.com

Cc: christine.m.witt@gm.com, Gary Backs <gary.backs@gmch.com>, Julia Brewer <julia.brewer@gmch.com>, Julie Rethlake <julie.rethlake@gmch.com>, Mike Heilman <mike.heilman@gmch.com>, Ralph Showers <ralph.showers@gmch.com>, sungjun.cho@gm.com, susan.marsh@gm.com, Wendy McCain <wendy.mccain@gmch.com>

Date: 2013-05-14 오후 08:03

Subject: Re: Fw: Re: inquiry of p/n 24267940 and 24267941 from GM Korea(81000) [ATTACHMENT REMOVED]

### Ji - The order sheet by the end of the week is perfect, thank you!

Gail Bowers Supply Chain General Supervisor

### gaíl.bowers@gmch.com

Tel: +1-765-451-6723 Cell: +765-438-7712 POU: QNPM-OQ23-OOP6

-----kyungyoung.ji@gm.com wrote: ----To: Gail Bowers <gail.bowers@gmch.com> From: kyungyoung.ji@gm.com

### Date: 05/14/2013 04:12AM

Cc: christine.m.witt@gm.com, Gary Backs <gary.backs@gmch.com>, Julia Brewer <julia.brewer@gmch.com>, Julie Rethlake <julie.rethlake@gmch.com>, Mike Heilman <mike.heilman@gmch.com>, Ralph Showers <ralph.showers@gmch.com>, susan.marsh@gm.com, Wendy McCain <wendy.mccain@gmch.com>, sungjun.cho@gm.com Subject: Re: Fw: Re: inquiry of p/n 24267940 and 24267941 from GM Korea(81000) [ATTACHMENT REMOVED]

As for the safety recall, our related team are now reviewing on this. 328 pieces is not confirmed quantities at this time. We can give you a confirm quantities(order sheet) by the end of this week after internal approval.

Thank you.

Best regards,

Kyungyoung Ji. A/S Supply Chain - Import Team(도입팀), GM KOREA COMPANY TEL : 82 32 760 3716 / Mobile : 82 10 3334 0797 / FAX : 82 32 760 3605 E-MAIL : kyungyoung.ji@gm.com

Ship to address : 199 Cheongcheon-Dong, Bupyung-Gu, Incheon 403-714, KOREA (cisco code : 81000) Office (Send to documents) : 2-293 Mansuk-Dong, Dong-Gu, Incheon 401-010, KOREA

From: Gail Bowers <gail.bowers@gmch.com>

To: susan.marsh@gm.com

Cc: christine.m.witt@gm.com, kyungyoung.ji@gm.com, Julia Brewer <julia.brewer@gmch.com>, Gary Backs <gary.backs@gmch.com>, Julie Rethlake <julie.rethlake@gmch.com>, Wendy McCain <wendy.mccain@gmch.com>, Mike Heilman

<mike.heilman@gmch.com>, Ralph Showers <ralph.showers@gmch.com>

Date: 2013-05-14 오전 02:01

Subject: Fw: Re: inquiry of p/n 24267940 and 24267941 from GM Korea(81000) [ATTACHMENT REMOVED]

Susan - We will ship these 328 units the week of June 17, 2013. We are filling the value stream for CCA and can work these in for that shipment. I did speak with Chris (copied) so she would know this shipment would cause a delay of the 328 for CCA but she understands the issue and the need. By the way, Mike Heilman is now the COP for GM Korea.

Ji - will you be needing additional units after these 328 or does this take care of the safety recall for Korea?

Julia Brewer - please add these 328 (see mix below) to the build plan in order to ship the week of 6/17 - will need to move same amount of CCA delivery out to compensate. Order to follow from Korea.

Thank you!

Gail Bowers Supply Chain General Supervisor

gail.bowers@gmch.com

Tel: +1-765-451-6723 Cell: +765-438-7712 POU: QNPM-OQ23-OOP6

-----Forwarded by Gail Bowers/GMch on 05/13/2013 12:53PM -----To: wendy.mccain@gmch.com, Gail Bowers <gail.bowers@gmch.com> From: susan.marsh@gm.com Date: 05/13/2013 12:36PM Cc: kyungyoung.ji@gm.com Subject: Re: inquiry of p/n 24267940 and 24267941 from GM Korea(81000)

Wendy/Gail,

What would the lead time be from Kokomo for Ji's question below?

Thank you,

Susan Hallitt Marsh Business Manager - GMCH Aftersales GM Powertrain Headquarters 777 Joslyn Avenue Pontiac, MI 48340 MC 483-720-250 2AJ01 248-285-2929

 From:
 Kyungyoung Ji/KR/GM/GMC

 To:
 Susan H Marsh/US/GM/GMC@GM

 Cc:
 wendy.mccain@gmch.com

 Date:
 05/13/2013 12:10 PM

 Subject:
 inquiry of p/n 24267940 and 24267941 from GM Korea(81000)

Dear Ms. Susan Marsh,

We are planing to conduct a safety recall for Vs300 Battery Pack. The related recall parts are 24267940 and 24267941. In advance, I would like to know how long it takes to supply. We are going to place an order as below.

Please advise.

24267940, 305 pieces. 24267941, 23 pieces.

Thank you.

Best Regards,

Kyungyoung Ji. A/S Supply Chain - Import Team(도입팀), GM KOREA COMPANY TEL : 82 32 760 3716 / Mobile : 82 10 3334 0797 / FAX : 82 32 760 3706 E-MAIL : kyungyoung.ji@gm.com

Ship to address : 199 Cheongcheon-Dong, Bupyung-Gu, Incheon 403-714, KOREA (cisco code : 81000) Office (Send to documents) : 2-293 Mansuk-Dong, Dong-Gu, Incheon 401-010, KOREA

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[attachment "20130515_IH46(13BHA1278).pdf" deleted by Kyungyoung Ji/KR/GM/GMC]
[attachment "20130515_IH46(13BHA1279).pdf" deleted by Kyungyoung Ji/KR/GM/GMC]
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