HYUNDAI
Technical Service Bulletin

GROUP **CAMPAIGN**	NUMBER **24-01-034H**
DATE **APRIL 2024**	MODEL(S) **IONIQ ELECTRIC (AE EV)**

SUBJECT: HIGH VOLTAGE BATTERY SOFTWARE UPDATES – IMPROVED LOGIC APPLICATION (SERVICE CAMPAIGN TBF)

★ IMPORTANT

Dealers must perform this service campaign on all affected vehicles prior to customer retail delivery and whenever an affected vehicle is in the shop for any maintenance or repair.

Access the "Vehicle Information" screen via WebDCS to identify open campaigns.

Description: This bulletin provides the procedure to update the BMS (Battery Management System), MCU (Motor Control Unit), VCULDC (Vehicle Control Unit / Low DC-DC Converter) and IGPM (Integrated Gateway Power Module) to enhance the battery diagnostics logic for 2020-21MY IONIQ Electric (AE EV) vehicles.

Applicable Vehicles:
- 2020 – 2021MY IONIQ Electric (AE EV) produced from 10/17/2019 – 05/17/2021.

GDS Information:

System	Event #*	Description
VCULDC	702	AE EV PE - IMPROVED MONITORING LOGIC APPLICATION (VCULDC)
MCU	703	AE EV PE - IMPROVED MONITORING LOGIC APPLICATION (MCU)
IGPM	704	AE EV PE - IMPROVED MONITORING LOGIC APPLICATION (IGPM)
BMS	1018	AE EV PE – NEW LOGIC (RDV) (BMS)

(*or use a later available event as listed in the GDS for ECM Upgrade screen if one is available.)

Warranty Information:

Model	Op. Code	Operation	Op. Time	Causal Part	Nature Code	Cause Code
IONIQ Electric (AE EV)	30D086R0	BMS, VCULDC, MCU & IGPM UPDATE	0.8 M/H	375A0-G7602	I11	ZZ3

NOTE 1: Submit claim on Claim Entry Screen as "Campaign" type.
NOTE 2: If a part is found in need of replacement while performing this campaign and the affected part is still under warranty, submit a separate claim using the same repair order. If the affected part is out of warranty, submit a Prior Approval request for goodwill consideration prior to performing the work.
NOTE 3: This TSB includes Repair validation photos. Op times include VIN, Mileage and Repair validation photos as outlined in the Digital Documentation Policy.

Circulate To: General Manager, Service Manager, Parts Manager, Warranty Manager, Service Advisors, Technicians, Body Shop Manager, Fleet Repair

Service Procedure:

> ### STUI 📷
>
> This TSB includes Repair validation photos. Refer to the latest Digital Documentation Policy for requirements.
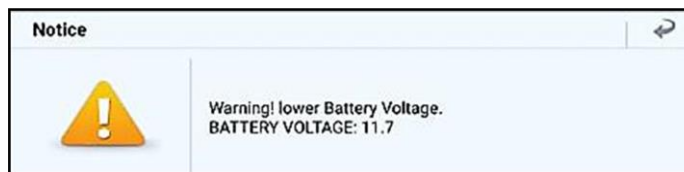

> ### NOTICE
>
> **You must initially perform the GDS ECU Update in Auto Mode.**
> - If the ECU Update starts but then fails in Auto Mode, perform the update in Manual Mode to recover.

> ### NOTICE
>
> **GDS Vehicle Battery Low Voltage Warning:**
> If voltage is below 12 volts as per the below GDS warning, then select **Back** and attach a battery charger to ensure an adequate battery state of charge for reliable update results. Turn ignition back on, and then retry the ECU update again.
>
> | Notice | ↩ |
> |---|---|
> | ⚠️ | Warning! lower Battery Voltage. BATTERY VOLTAGE: 11.7 |

> ### ℹ️ Information
>
> **THE 12V BATTERY VOLTAGE CHECK IS CRITICAL FOR THIS MULTI- ECU UPDATE AS IT COULD DEPLETE THE 12V BATTERY WHILE THE IGNITION IS ON.**
>
> **BEFORE PERFORMING THE MULTI-ECU UPDATE, CONNECT A 12V BATTERY CHARGER SUCH AS THE SST BELOW TO ENSURE ADEQUATE BATTERY STATE OF CHARGE.**
>
> - **(165-DCA8000P-KIT) MIDTRONICS DCA-8000 DIAGNOSTIC BATTERY CHARGING SYSTEM**
>   - ➢ **Additional units can be purchased at hyundaidealersolutions.com.**

> ### ℹ️ Information
>
> **Before performing the AUTO software updates, write down or take a picture of the current ROM ID in case MANUAL update is required. This information will be used to select the correct MANUAL passcode/event.**

1. Perform the following checks before performing the Multi-ECU updates.

   A. Verify Cell Voltage Deviation does not differ by more than 40mV or 0.04V. (Difference between maximum and minimum cell voltage).
   B. Insulation resistance does not exceed more than 1000kΩ.
   C. If the vehicle has any of the following DTC's:
      - P1AA700
      - P1AA800
      - P1AA900
      - P1AAA00
      - P1AAB00
      - P1AAC00
      - P1AAD00
      - P1AAE00
      - P1AAF00
      - P1AB000

   > **ℹ Information**
   >
   > The conditions can be checked by following the procedure below:
   >
   > - **Conditions A and B**: GDS Smart → Data Analysis → BMS → Battery Cell Voltage Deviation and Isolation Resistance PID'S.
   > - **Condition C**: GDS Smart → Fault Code Searching → BMS.

   If either of the above three conditions is met, MIL is ON, or vehicle does not enter Ready Mode, do not perform the updates, and follow the DTC Repair Guide to repair the concern.

2. Perform the BMS, VCULDC, MCU, & IGPM Updates separately in Auto Mode.

   Use the Auto Mode ID check to verify the ECU ROM ID before updating the software.

   > **ℹ Information**
   >
   > Refer to TSB 15-GI-001 for additional tablet-based Mobile GDS ECU update information.

   > **NOTICE**
   >
   > - Certain 21MY AE EV vehicles may not require an IGPM software update.
   >
   > - Verify if a IGPM ECU update is available by referencing the current ECU part number to the ROM ID information table on Page 5.

Auto Mode — Power Train | Chassis | Body

BMS | Battery Management System
There is no related event.
ROM ID : 6002
Scan

IGPM | Integrated Gateway Power Module
This system requires an ECU Upgrade.
Scan

704.AE EV PE - IMPROVED MONITORING LOGIC APPLICATION (IGPM)

VCI	Current ROM ID	Latest ROM ID	TSB	Update
🔋	G202	G206	📄	⬆

MCU | Motor Control System
Current system is up to date
ROM ID : EAEELDLMS0-C100
Scan

VCULDC | VCULDC
Current system is up to date
ROM ID : EAEEONM-NS3-D000
Scan

ROM ID list checked

3.

STUI 📷

Take a screenshot of all four (4) systems updated with the latest ROM ID's using your particular tablet's screenshot save method and upload to STUI.

Auto Mode | **EXAMPLE** | Power Train | Chassis | Body

BMS | Battery Management System
There is no related event.
ROM ID : 6002
Scan

IGPM | Integrated Gateway Power Module
Current system is up to date
ROM ID : G206
Scan

MCU | Motor Control System
Current system is up to date
ROM ID : EAEELDLM50-C100
Scan

VCULDC | VCULDC
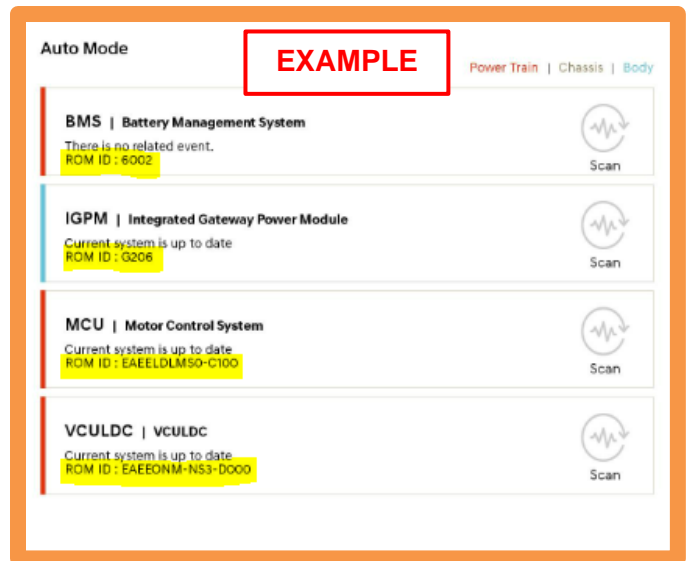Current system is up to date
ROM ID : EAEEONM-NS3-D000
Scan

4.   After the ECU Upgrade process shows 100% complete, cycle the ignition key to OFF for at least 10 seconds to reset the control units.

5.   Verify the **NEW** VCULDC, MCU, IGPM, and BMS ROM ID with the ROM ID information table on Page 5.

6.   Perform an All-Systems Fault Code search and erase the history of the DTC that had incidentally occurred from the ECU updates.

7.   Start the vehicle to confirm proper operation of the vehicle.

8.   Service Procedure is now completed.

ROM ID Information Table: Event # 702 (VCULDC)

Model	MY	VCULDC Part Number	ROM ID	
			OLD	NEW
Ioniq Electric (AE EV)	20-21MY	36601-0E155	EAEEONM-NS0-D000 EAEEONM-NS1-D000 EAEEONM-NS2-D000	EAEEONM-NS3-D000

ROM ID Information Table: Event # 703 (MCU)

Model	MY	MCU Part Number	ROM ID	
			OLD	NEW
Ioniq Electric (AE EV)	20-21MY	36601-0E155	EAEEKDL-MS1-D100	EAEELDLMS0-C100

ROM ID Information Table: Event # 704 (IGPM)

Model	MY	IGPM Part Number	ROM ID	
			OLD	NEW
Ioniq Electric (AE EV)	20-21MY*	91950-G7532	G201 G202	G206

(* Certain 21MY Ioniq AE EV models may not require an IGPM software update.)

ROM ID Information Table: Event # 1018 (BMS)

Model	MY	BMS Part Number	ROM ID	
			OLD	NEW
Ioniq Electric (AE EV)	20-21MY	375A0-G7602	5402 5502 5802 5822 5842	6002

Manual Mode Password: Event #702

ECM Menu	Password
AE EV PE VCULDC 36601-0E155	0155

Manual Mode Password: Event #703

ECM Menu	Password
AE EV PE MCU 36601-0E155	0155

Manual Mode Password: Event #704

ECM Menu	Password
AE EV PE IGPM 91950-G7532	7512

Manual Mode Password: Event #1018

ECM Menu	Password
AE EV PE BMS 375A0-G7602	7402