

TT7947EN
March, 2017
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SUBJECT: Calibration Support for Vehicles with Missing or Incorrect Electronic Control Module (ECU) or Transmission Control Module (TCM) Calibrations

MODELS AFFECTED: 1000/2000/3000/4000 Series™ Product Families and TC10® Transmissions

Background:

The Calibration Support Desk at Allison Transmission frequently receives requests for assistance with cases involving vehicles with missing Electronic Control Units (ECUs)/Transmission Control Modules (TCMs), ECUs/TCMs that will not communicate, or ECUs/TCMs with incorrect calibrations. Proper calibration settings are necessary for correct vehicle operation. This Tech Tip describes a set of steps that are available to the service technician to determine the correct TCM calibration settings.

Previously, the Missing CIN Form was used to request a new calibration for an existing vehicle with an unknown calibration. The Missing CIN Form will no longer be used.

Service Procedure:

A. Controls Systems Prior to Allison 5th Generation Controls:

1. Determine the most recent calibration settings loaded into the ECU or TCM as follows:
 - a. If the current TCM is available and will communicate, use Allison DOC® to retrieve the Calibration Identification Number (CIN) or "Cal ID". Proceed to **Paragraph A.2** for instructions regarding the loading of the calibration.
 - b. If the current TCM is available and will NOT communicate, enter the ECU or TCM serial number into the ECU/TCM Number field of Allison Unit History on the Allison Extranet to determine if the prior load track history is available for the ECU or TCM. Refer to [Figure 1](#) and [Figure 2](#).



NOTE: For WTEC II and WTEC III TCMs, the TCM S/N entry into Allison Unit History must be eight (8) characters in length. If the S/N on the ECU/TCM is shorter, add 0's to the beginning of the S/N until it is 8 characters in length.

- i. The ECU/TCM assembly number can be found on the ECU/TCM search results page. Refer to [Figure 2](#).
- ii. If the ECU/TCM assembly number field is not populated, combine the Manufacturer Hardware Number and Calibration Sequence Number, if available, to determine the ECU/TCM Assembly number. Refer to [Figure 2](#).
 - If the Calibration Sequence Number is available, but the Manufacturer Hardware Number is unavailable, add "TCM" before the Calibration Sequence Number to make up the

1000/2000 Series Pre-4th Generation TCM Assembly Number. Add "ECB" when using the WTEC III service ECU or "A59" when using the 4th Generation A59 service TCM.

- i. After determining the ECU/TCM assembly number, proceed to **Paragraph A.2**.
- ii. If an ECU/TCM assembly number cannot be determined, proceed to the **Support** section at the end of this Tech Tip.

The screenshot displays the 'ALLISON UNIT HISTORY' web application interface. At the top, there is a navigation bar with 'ALLISON TRANSMISSION EXTRANET' and 'ALLISON UNIT HISTORY'. Below this, a header area includes a 'Print' icon and the date 'Feb 16, 2017, 9:45 AM EST'. The main content area is divided into four sections: 'ALLISON SERIAL NUMBER DATA', 'NON FEATURE-BASED TRANSMISSIONS DATA', 'FEATURE-BASED TRANSMISSIONS DATA', and 'ECU / TCM'. The 'ECU / TCM' section is highlighted with a red rectangular box. Inside this box, the text reads: 'Enter an ECU/TCM Serial number to return PCCS load data.' Below this is a text input field labeled 'ECU/TCM Number:' and a red 'Search' button. A red arrow points from the right towards the input field. The other sections also contain search forms with various input fields and 'Search' buttons.

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Figure 1. Allison Unit History – ECU/TCM Search

Enter an *ECU/TCM Serial number* to return PCCS load data.

ECU/TCM NUMBER:

ECU/TCM SERIAL NUMBER	BK5536N00000000X
ECU/TCM Load Date	03/17/2012 08:32:28
Event Type	ASN
Manufacturer Part Number	02-17-2012
Allison Hardware Part Number	29545536
Manufacturer Hardware Model	A51
Software Level	L11_0B2
Calibration Compatibility Level	4F
Calibration Sequence Number	00XXX
Loadstation ID	XXXX00
Tracking Number	005
Previous Calibration Compatibility Level	0
Previous Calibration Sequence Number	0
Previous Tracking Number	0
Purchase Order Number	0
Calibration Load Comments	Softing AC2 (PCI);
Warranty Flag Indicator	N
Transmission Serial Number	0
Vehicle Identification Number	0
Vehicle Model Number	0
Return Authorization Number	N/A
ECU/TCM Assembly Number	A5000XXX
Build Date	02/16/2012
Return Flag Indicator	

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Figure 2. Allison Unit History – ECU/TCM Search Results

- c. If the current ECU/TCM is NOT available, use the transmission serial number to determine whether an ECU or TCM serial number has been associated with the transmission.
 - i. Enter the transmission serial number into the Allison Unit History Serial Number field. Refer to [Figure 3](#) and [Figure 4](#).
 - ii. If available, click the Related Serial Number link to determine the ECU or TCM Assembly Number, or enter the ECU/TCM serial number into the Allison Unit History ECU/TCM Number Search as described in **Paragraph A.1.b**.

ALLISON TRANSMISSION EXTRANET

ALLISON UNIT HISTORY

Print

Feb 16, 2017, 9:14 AM EST

ALLISON SERIAL NUMBER DATA

Enter the serial number of a *Allison unit* to return Build/Ship and Warranty information.

Serial Number:

Search

NON FEATURE-BASED TRANSMISSIONS DATA

Enter a *configuration number* and effectivity date to return Engineering Groups and their description, effective on that date.

Assembly/Configuration Number:

Effectivity Date: ☒ 2 16 2017 (MM/DD/YYYY)

☐ Search All Dates

Search

FEATURE-BASED TRANSMISSIONS DATA

Enter an *E Number* to return Engineering Features
Enter a *G Number* to return the Engineering Groups
Enter a *C Number* or *D Number* to return Customer Features

Part Number:

Search

ECU / TCM

Enter an *ECU/TCM Serial number* to return PCCS load data.

ECU/TCM Number:

Search

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Figure 3. Allison Unit History – Transmission Serial Number Search

Enter the serial number of an *Allison unit* to return Build/Ship and Warranty information.

Serial Number:

RELATED SERIAL NUMBERS	
Related Serial Number	BK0689A152000000

EQUIVALENT RETRAN™ PART NUMBER

Please consult the appropriate On Line Parts Catalog for Equivalent ReTran Assembly Numbers.

SHIPMENT INFORMATION - 10/08/2015	
Serial Number	6511000000
Ship Date	10/08/2015
Model Name (Ext. Base Model)	3500RDS_P
Part Number / EFCN	E000000
Name Plate Model	3500RDS
Hardware Model	MD3560
Product Code	065

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Figure 4. Allison Unit History – Transmission Serial Number Search Results



NOTE: Use the ECU/TCM Calibration Load Date field to determine the most recent calibration if more than one ECU/TCM S/N is available.

- iii. If an ECU/TCM assembly number is found, proceed to **Paragraph A.2**.
 - iv. If an ECU/TCM assembly number cannot be determined, proceed to the **Support** section at the end of this Tech Tip.
2. If the latest calibration was determined in **Paragraph A.1**, review the calibration information to determine if it is appropriate for the vehicle/transmission configuration.
 - a. Use Allison TCM Reflash™ to view the Calibration Summary Report. In Allison TCM Reflash™, select Add, enter the CIN or TCM Assembly Number, and select the View Summary Report button.
 - b. If the calibration settings are appropriate for the vehicle/transmission, load the calibration into the TCM using Allison TCM Reflash™.
 - c. If there is uncertainty that the calibration settings are appropriate for the specific vehicle or ECU/TCM, stop and proceed to the **Support** section at the end of this Tech Tip.
 - d. The CIN may require an updated version for loading into the service ECU/TCM. Use the following methods to update the CIN:
 - i. **WTEC II** – Convert a CIN beginning with 07 to an updated CIN beginning with 08 by replacing the 07 with 08 and by increasing the last digit of the CIN by 1 digit. For instance, if the current CIN is 07-00152-003-J, the J increases by 1 digit to a K. New CIN 08-00152-003-K can be used. (The letters I and O are not used in CINs, so those letters should be skipped. The order of the last digit is 0,1,2,3,4,5,6,7,8,9,A,B,C,...Y,Z,0,1,2 etc.)
 - ii. **WTEC III** – Convert ECU Assembly Number from ECA0abcd to ECB0abcd or convert the CIN from 0w0abcd0xyz to TCM Assembly Number ECB0abcd.

- iii. **4th Generation Controls** – Convert TCM Assembly Number from A41, A42, A43, A51, A52, or A530abcd to A590abcd or convert the CIN from 4w0abcd0xyz to TCM Assembly Number A590abcd.



NOTE: If an error message is received in Allison TCM Reflash™, please send the original CIN to Calibration_Support@allisontransmission.com to request assistance.

B. Allison 5th Generation Controls System:

1. Determine the most recent calibration settings loaded into the TCM.
 - a. If the current TCM is available, enter the TCM serial number into the ACCT Summary Report tool to determine if the calibration is available in the Allison calibration database. Refer to [Figure 5](#) and [Figure 6](#). The TCM serial number can be found on the label of the TCM or by connecting to the TCM with the Allison DOC®.
 - i. If a calibration summary report does not exist for the TCM serial number, enter the vehicle identification number (VIN) or transmission serial number to determine if a calibration summary report is available for the VIN or transmission.
 - ii. If the TCM, VIN, and transmission are not found in ACCT, and if communications are possible with the TCM, follow the steps in Tech Tip TT7583 to upload TCM calibration information using Allison DOC®. Then re-enter the TCM serial number into ACCT to obtain the calibration summary report.



NOTE: ACCT is located in the Engineering section of the Allison Extranet (<https://sap.allisontransmission.com/extranet/acct/app/Dashboard.action>).

If ACCT is not available in the Allison Extranet Engineering menu, contact the Calibration Support Desk (Calibration_Support@allisontransmission.com) to request access.

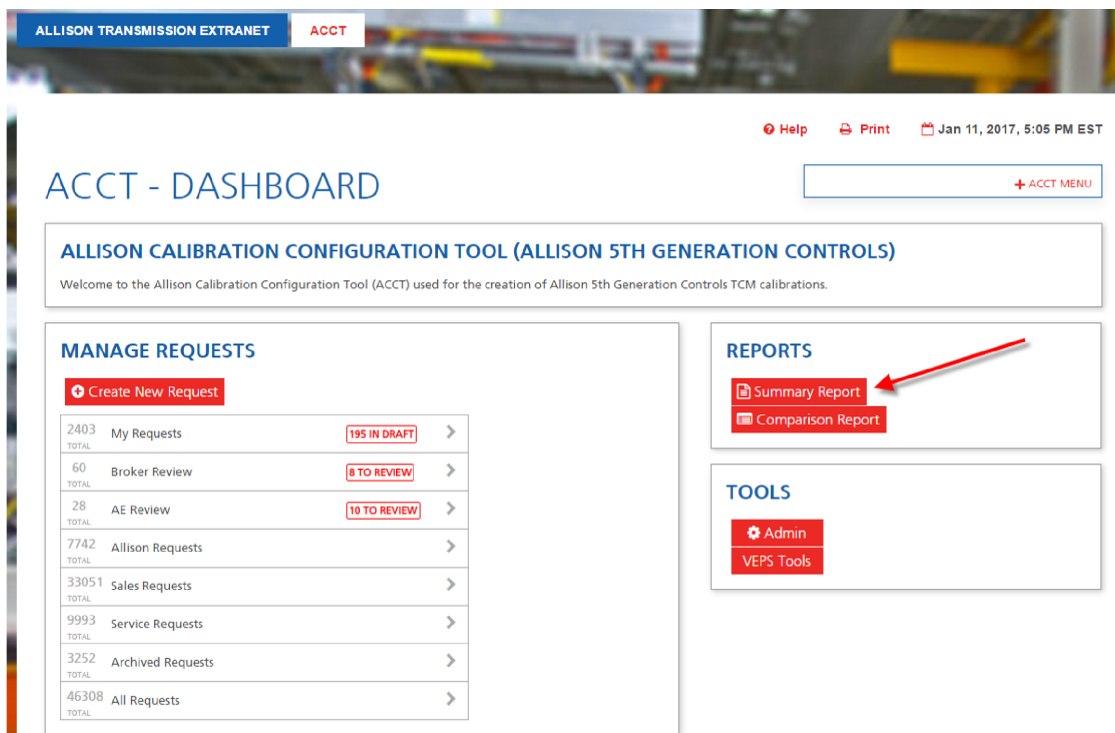


Figure 5. ACCT Dashboard

SUMMARY REPORTS

CRITERIA

SEARCH BY
TCM SN

SEARCH VALUE
BK6882A170000000

AS OF DATE
03/10/2017 14:09:24 EST

OPTIONS

☐ SHOW ADDENDUM PARAMETERS WITH DEFAULT ANSWERS

Figure 6. Summary Report Request Screen

- b. If the current TCM is unavailable, enter the vehicle identification number or transmission serial number into ACCT to determine if a calibration summary report is available as described in **Paragraph B.1.a.i.** Refer to [Figure 5](#) and [Figure 6](#).
- c. If a calibration summary report is available using one of the prior methods, proceed to **Paragraph B.2.**
- d. If a calibration is still not found, proceed to the **Support** section at the end of this Tech Tip.

2. If the latest calibration summary report is available, review all calibration settings on the report to determine if the calibration is appropriate for the vehicle and transmission configuration. Refer to [Figure 7](#).
 - a. If the calibration settings are appropriate for the vehicle and transmission, use Allison TCM Reflash™ to load the calibration using the TCM serial number.
 - b. If there is uncertainty that the calibration settings are appropriate for the specific vehicle or TCM, stop and proceed to the **Support** section at the end of this Tech Tip.



CALIBRATION SUMMARY REPORT
Allison 5th Generation Controls

10-Mar-2017
 03:07 PM

A - Addendum Parameter

TCM Serial Number BK6882A170000000 Vocational Model 2500 PTS Customer Customer P/N Description	Transmission S/N Vehicle VIN 0000000000000000 TCM Type A61 ISCAAN Number AFR Number
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Reference Data

Parameter	Setting
TRANSMISSION MODEL [85060]	2500
CIN CC LEVEL [85100]	L16BCDPC_5J6996B~~~~~
DAT COMPATIBILITY [85050]	B0C
MIN DAT VERSION NUMBER [85040]	B59
SESSION TIMESTAMP [90260]	3/10/2017 2:09:24 PM
TRANSMISSION CROSS SECTION [85030]	B
VCP VERSION REPORTED [90230]	3.3.0.0
VOCATIONAL MODEL CALIBRATION CIN [85090]	B16200030B59E
CLEAR DTC [90280]	INVOKED
UDS SYSTEM NAME [80090]	ATI_G5 [AT1_G5]

Basic

Parameter	Setting
VOCATIONAL USAGE [10010]	420000 SCHOOL BUS [16]
VOCATIONAL RATING [10020]	SCHOOL BUS: NORTH AMERICA (SC) [17]
ENGINE MAKE AND MODEL [11020]	CUMMINS ISB 6-CYLINDER 2013 AND B6.7 2017 [22]
NUMBER OF ENGINE CYLINDERS [11000]	OTHER [1]
TORQUE CONVERTER [14000]	221 [12]
ENGINE GOVERNED SPEED [11030]	2600 [18]
SPEEDOMETER PULSES PER REV [13000]	16-1000/2000 DOMESTIC [0]

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Figure 7. ACCT Calibration Summary Report

Support:

If none of the above procedures produce an ECU or TCM calibration:

- Request the original calibration for the vehicle by contacting the OEM or the Allison Calibration Support Desk (Calibration_Support@allisontransmission.com).
- Provide the VIN, OEM information, transmission serial number, and define the request as a “Missing Calibration”.



NOTE: If a calibration is provided, it will match the OEM’s original factory settings and will not include any changes made after the vehicle entered into service. Transmission and vehicle operation must be confirmed after loading the factory settings.

- If all other attempts have proven unsuccessful, a new calibration may be configured. Additional information, including engine make/model/rating, etc. may be required to properly configure the calibration.

To request a new calibration, locate the Recalibration EMAIL Request Form in the Service section of the Allison Extranet. Go to the “Forms and Guides” section of the Allison TCM Reflash™ page within the Service menu (<https://hub.allisontransmission.com/app/allison-tcm-reflash>). Complete the Recalibration EMAIL Request Form and submit to Allison Calibration Support (Calibration_Support@allisontransmission.com).

For Allison calibration support, email Calibration_Support@allisontransmission.com or contact the Technical Assistance Center (TAC) at 1-800-252-5283.