SUBJECT: Re-calibrating MY2016 Vehicles with TCM CAN1 Network Speed set to 500 kbps Baud Rate

MODELS AFFECTED: All 1000, 2000, 3000, 4000 Series Product Families, and TC10™ Transmissions

Introduction:

Beginning in 2016, North American Heavy Duty vehicle manufacturers will be setting primary on-vehicle communication network speeds to 500 kbps baud rate. Vehicles that operate communication networks at 500 kBaud will use a green Type 2 SAE J1939-13 diagnostic connector (refer to Figure 1). Manufacturers have the option of connecting the primary network to the Allison Transmission control module (TCM) on either CAN1 or CAN2.

In cases where TCM CAN1 is set at 500 kBaud, TCMs must be programmed on the bench instead of inside the vehicle. When in boot mode, a blank Allison 5th Generation Controls TCM will communicate at 250 kBaud on CAN1 until network speed is changed during the final steps of the programming process. Installation of a TCM communicating at 250 kBaud into a vehicle network operating at 500 kBaud will result in network communication errors or loss of CAN communications.

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Figure 1. Green SAE J1939-13 Diagnostic Connector

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Please Note: Allison Transmission Service Information Letters are intended for use by professional, trained technicians, not for the "do-it-yourselfer." They are written to inform those technicians of conditions that may occur on some transmission models (or serial numbers ranges) or to provide information that could assist in the proper servicing of a specific Allison transmission. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, do not assume that the Service information Letter applies to your transmission, or that your transmission has the condition described. Product evolution and information updates are inevitable. Please see your authorized Allison Transmission service leader or distributor to understand if your particular transmission may benefit from the information contained within the Service Information Letter.

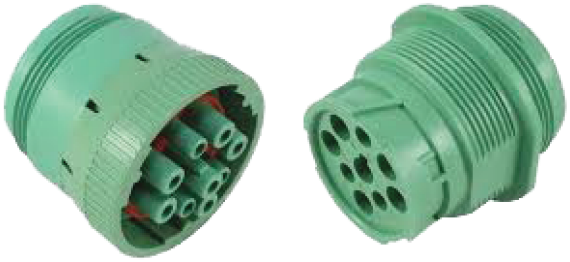

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Figure 2. Tool side and Vehicle side

Service Procedures

1. Check the calibration summary report using the Allison Calibration Configuration Tool (ACCT) to determine which CAN channel is connected to the primary on-vehicle network and the baud rate being used.
2. Reflash a blank replacement TCM on the bench when it is being installed in a vehicle that is connected to the CAN1 channel operating at 500 kBaud. Use TCM Reflash harness (J-47276) and WTEC Load box (J-42455-A) for bench re-calibration. Service trucks should be outfitted with these two essential service tools in the event that re-calibration and/or TCM replacement is necessary.
3. Some vehicle manufacturers are using the TCM CAN2 channel as the primary on-vehicle CAN network. Trucks configured for 500 kBaud on TCM CAN2 (refer to summary report in ACCT) may be flashed or receive calibration updates in the vehicle since the default TCM CAN2 network speed is 500 kBaud.

NOTE: Refer to paragraph 4 for instructions to update software or calibration in a TCM that is already programmed to 500 kBaud on CAN1.

4. Update software and calibration of a TCM already programmed to 500 kBaud on CAN1 as follows:
   a. Disconnect the TCM from the vehicle.
   b. Use TCM Reflash harness (J47276) and WTEC Load box (J42455A) for bench recalibration.
   c. Use a supported RP1210B compliant adapter such as the Noregon Wireless/USB, Nexiq USB-Link™, Nexiq USB-Link™ 2, or DG Technologies DPA 4 Plus or DPA 5 adapter.
   d. Launch Allison TCM Reflash™ and download the 5th Generation Controls calibration file.
   e. Connect to the TCM, select the desired calibration file, and click the load button.
   f. Complete the Load Report form and click OK.
   g. TCM Reflash and the Allison Read / Write application will detect the communication speed of the TCM, and the programming will occur at 500 kBaud as indicated in the lower right-hand corner of the following display.

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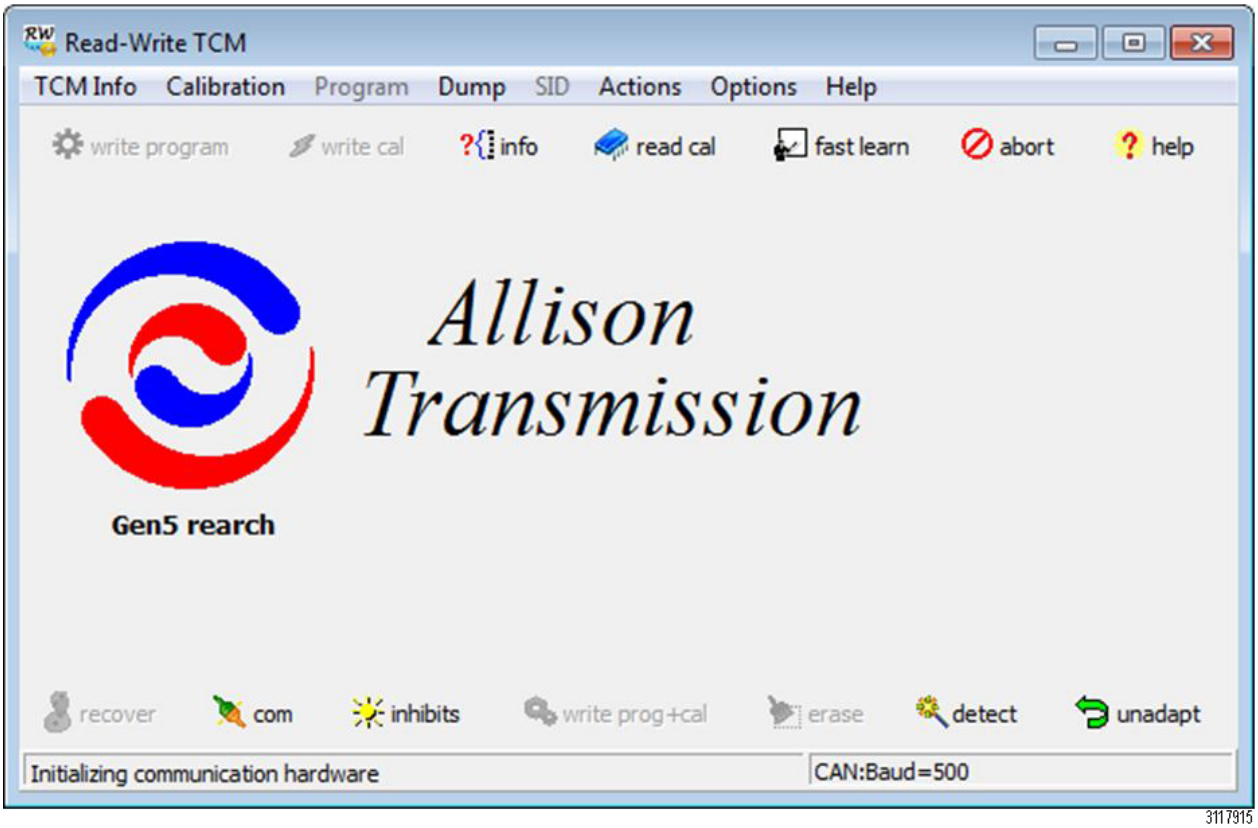

Figure 3. Read/Write Display with Network Speed

h. TCM Reflash will load the software then calibration.

i. After the calibration is loaded, the TCM will ‘wake up’ at 250 kBaud and communications with TCM Reflash will then be lost. The following error message will be displayed:

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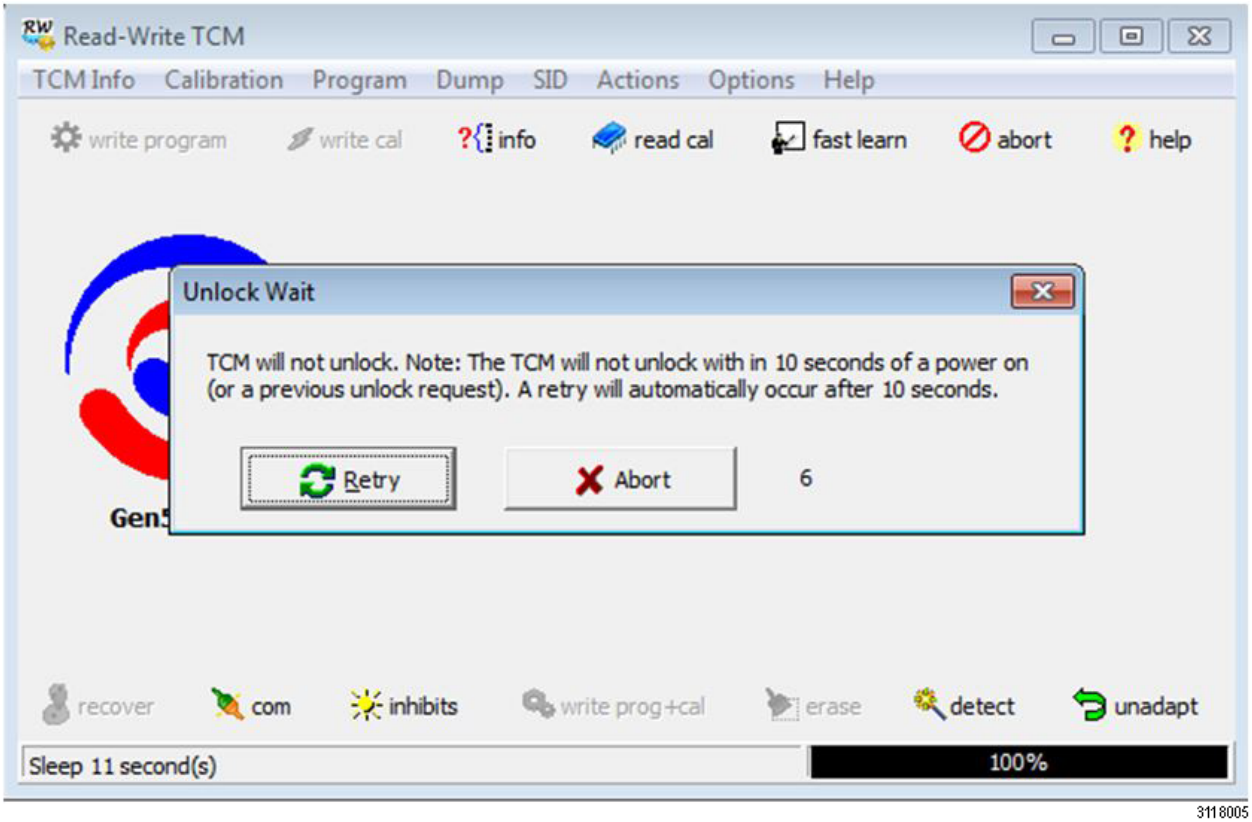

Figure 4. Unlock Error Message

j. Click the Abort button. TCM Reflash will display the following message.

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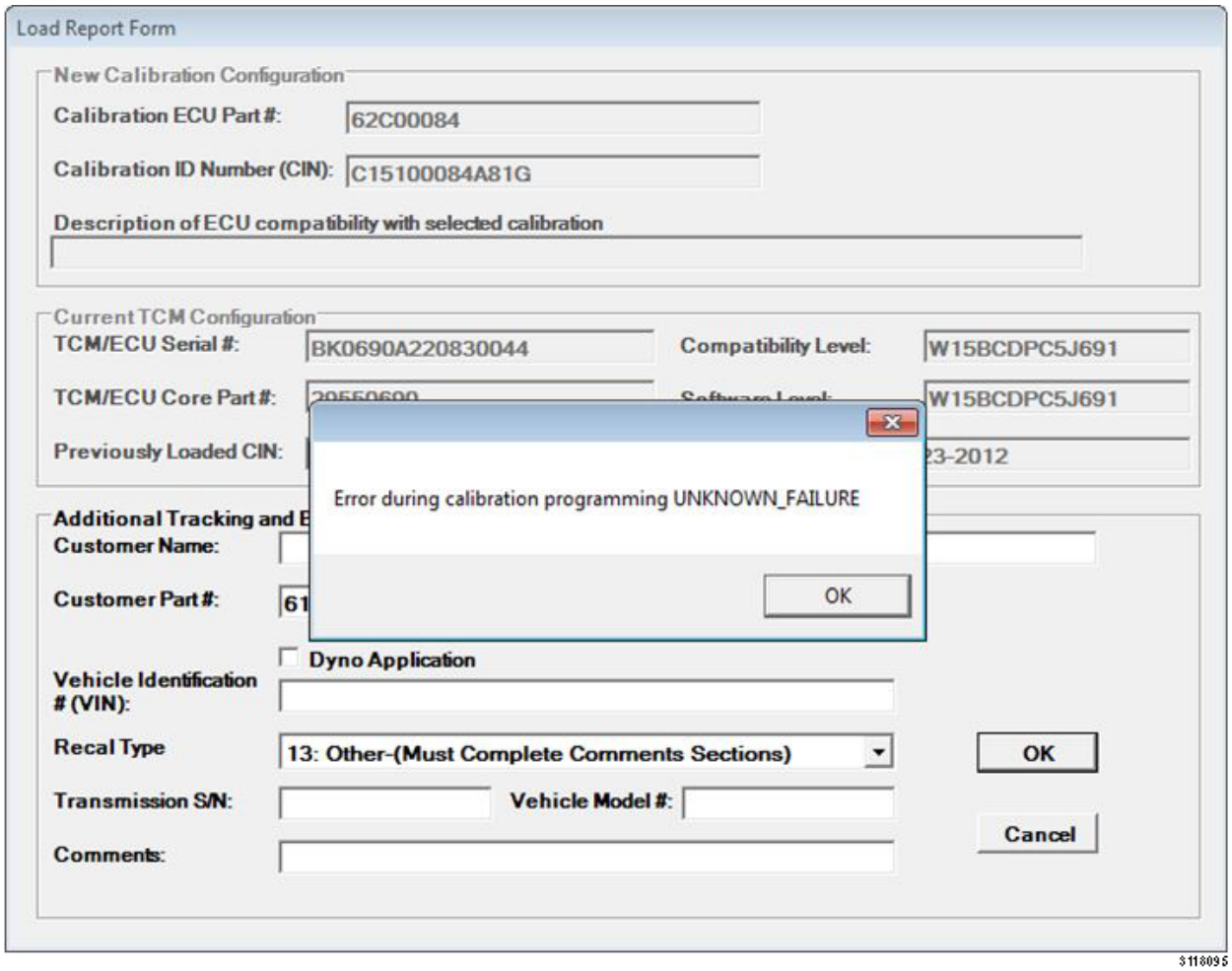

Figure 5. TCM Reflash Unknown Error Message

k. Click OK to acknowledge the message.

l. Navigate back to the load calibration page and re-load the desired calibration.

m. TCM Reflash will re-connect to the TCM and complete the load sequence at 250 kBaud.

n. When programming is complete, the TCM will be reset back to 500 kBaud.

o. Re-install the TCM into the vehicle.

5. Universal Allison DOC® Service tool reprogramming is not affected by OEM's switching to 500 kBaud on CAN1.

6. For PACCAR MY2016 vehicles sold in North America, the TCM is connected to CAN1 at 250 kBaud; however, its network is connected to pins F and G of the 9-pin green type 2 connector. PACCAR has released a pass-through cable P/N 4202848 to communicate with the TCM in MY2016 PACCAR vehicles. Additional details about the PACCAR pass-through cable are contained in TechTip TT7780EN.

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