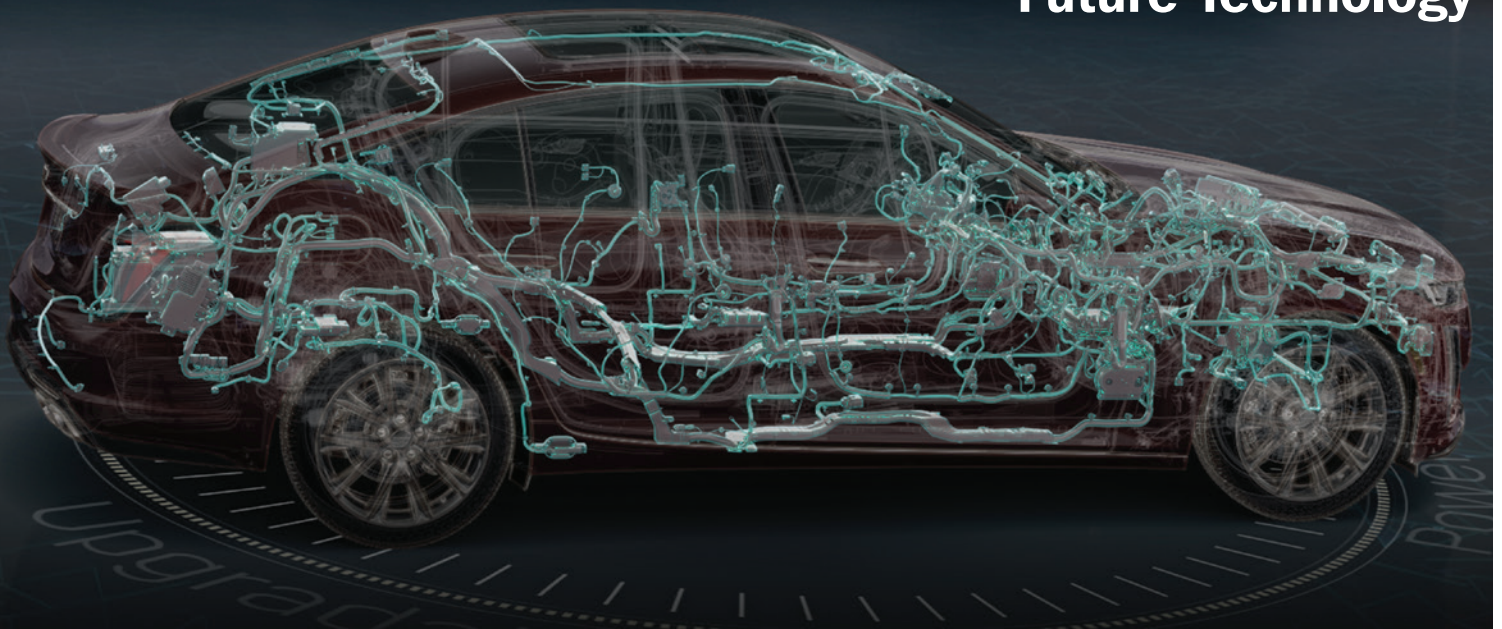


# Next Generation Digital Vehicle Platform

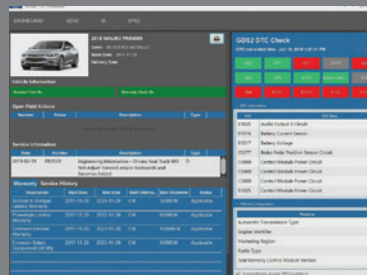
Provides Foundation for  
Future Technology



**EL-52545 TPMS and RF  
Tool**

**New EL-52545 TPMS  
and RF Tool Makes  
TPMS Sensor Relearn  
Easy**

see page 6



**Getting Ready for  
Techline Connect**

see page 8

*Next Generation Digital Vehicle  
Platform Provides Foundation for  
Future Technology . . . . .2*

*Diesel Fuel Additives . . . . .4*

*Whistle Sound from the Engine . . .5*

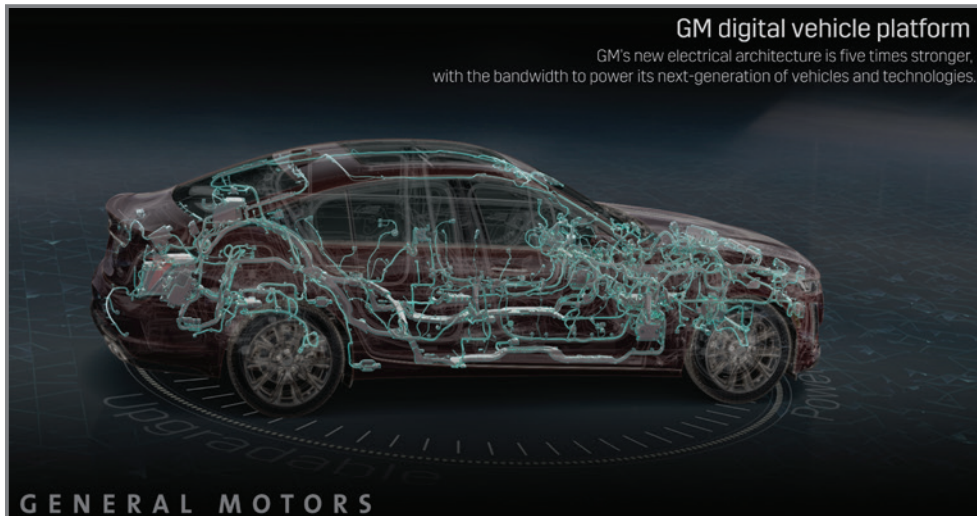
*Intermittent Shift to  
Park Message . . . . .11*

*Transmission Control Module  
Connector . . . . .13*

# Next Generation Digital Vehicle Platform

## Provides Foundation for Future Technology

As the technology in new vehicles continues to evolve and expand, more electrical bandwidth and connectivity has become necessary to ensure all the data-driven features can operate efficiently together within the overall vehicle network. The Next Generation Digital Vehicle Platform, GM's all-new electronic platform, will be used to help power the next generation of GM models and systems, including electric vehicles, active safety systems, infotainment systems, and a variety of connectivity features. The new platform will go into production later this year with the debuts of the new 2020 Chevrolet Corvette and Cadillac CT5 and CT4.



The Next Generation Digital Vehicle Platform powers a new electronic system that is capable of managing up to 4.5 terabytes of data processing power per hour, which is a fivefold increase in capability over the current Global A electrical architecture. The new architecture provides more rapid communications within the vehicle itself as well as to outside sources with Ethernet connections of 100Mbps, 1Gbps and 10Gbps.

The system features the Controller Area Network with Flexible Data-Rate (CAN FD) protocol, which supports improved data communication and faster programming by transmitting and receiving data at a higher maximum bit rate. A faster bit-rate allows more data to fit into a single message, reducing the need for more networks (and additional wiring) in a vehicle, which also reduces weight and increases performance.

## CAN COMMUNICATION

The Next Generation Digital Vehicle Platform can incorporate up to nine high-speed CAN buses. Low-speed GMLAN and MOST are not used.

Programming and scan tool data information is provided using CAN buses 6 and 7, which only run between the DLC and the Serial Data Gateway Module, and are used by GDS 2 to provide system data from the other CAN networks. This design isolates the remaining buses to secure those networks and provide en-

hanced intrusion detection incorporated at the architectural level.

The powertrain CAN bus communicates over a dedicated circuit but the other CAN buses use a wake-up message from the Serial Data Gateway Module, which can be tailored to wake up individual modules when needed. The Serial Data Gateway Module is updated first during programming and then any other modules are programmed through the Serial Data Gateway Module.

**TIP:** Programming is now done with all doors closed and the ignition off. With this new process, the Serial Data Gateway Module can wake up a specific module for

programming with no other information on the bus, which also promotes faster programming.

In addition, there are several Diagnostic Trouble Codes (DTC) that have changed from the previous Global Architecture (Global A) to the new Next Generation Digital Vehicle Platform.

## GDS2 SUPPORT

The GDS2 Core 21.1.07400 software update added Next Generation Digital Vehicle Platform capability.

For communication diagnostics, the Serial Data Gateway Module will periodically poll for module communication across all sub-networks. When a non-communication event is detected, the information is recorded and presented in a table under Vehicle

## Diagnostics > Vehicle Communication Diagnostics > Network Communication Event Results.

The event results include up to 50 records (up to 9 records per CAN1 or CAN2 and up to 8 records per CAN3, CAN4, CAN5, or CAN8). Select the CAN Bus Records tab to view the recorded data. It shows the CAN bus that encountered an event and the number of times the fault occurred (up to a maximum of 255). In addition, the timestamps list the time of the first failure — the larger the number, the more recent the event — and the last failure, which is displayed when the event is no longer present. The Delta column shows the difference between current time and the first failure, with a smaller number indicating a more recent event.

**Network Communication Event Results**

**CAN Bus Records**

CAN Bus	Record	CAN Bus Number	Number of Times the Fault Occurred	Timestamp at Last Failure	Timestamp at First Failure	Delta
CAN Bus 01	Record 1	01	20	192,472,400	192,468,300	130,734,800
CAN Bus 02	Record 1	02	21	Not Resolved	192,473,400	130,729,700
CAN Bus 04	Record 1	04	1	315,493,500	26,440,600	296,762,300

• Last Timestamp Failure is "Not Resolved" (This event has not been corrected)  
• First Timestamp Failure is the Largest Number & Delta is the Smallest Number = (Most recent event Record)

**Control Module Communication Status**

Control Module Name	Communication Detected
Parking Assist Control Module	Communication Detected
Body Control Module	Communication Detected
Brake System Control Module	Communication Detected
Engine Control Module	Communication Detected
Lighting Control Module	Communication Detected
Image Processing Module	No Communication Detected
Transmission Control Module	Communication Detected

• Image Processing Module is not communicating  
• Review Schematics to determine Module order.

First Timestamp Failure is the largest number & Delta is the smallest number = Most recent event Record

Under the record data, defined control modules are listed by name while undefined modules will display their diagnostic ID. Communication status will be listed as Communication Detected or No Communication Detected. Additional status information will be added in future model years.

**Network Communication Event Results**

**CAN Bus Records**

CAN Bus	Record	CAN Bus Number	Number of Times the Fault Occurred	Timestamp at Last Failure	Timestamp at First Failure	Delta
CAN Bus 01	Record 1	01	20	Not Resolved	192,473,400	130,729,700
CAN Bus 04	Record 1	04	1	315,493,500	26,440,600	296,762,300

**Control Module Communication Status**

Control Module Name	Communication Detected
Restraints Occupant Classification System Module	Communication Detected
Brake System Control Module	Communication Detected
Image Processing Module	Communication Detected
Power Steering Control Module	Communication Detected
Front Seat Belt Retractor Motor - Left	Communication Detected
Front Seat Belt Retractor Motor - Right	Communication Detected
Column Lock Module	Communication Detected
Restraints Control Module	Communication Detected
Image Processing Module	Communication Detected

Network Communication Event Results

The "Refresh" button at the bottom of the table can be used to request new data on demand. When events are no longer occurring, the event records can be cleared by selecting the "Clear Bus Records" button.

Under the Modules Supported on Vehicle tab, the control modules for the vehicle are identified along with the CAN bus number connected to each module. Modules connected to more than one bus will be listed in multiple rows.

**Modules Supported on Vehicle**

Control Module Name	CAN Bus Number
Image Processing Module	1
Power Steering Control Module	1
Front Seat Belt Retractor Motor - Left	1
Front Seat Belt Retractor Motor - Right	1
Body Control Module	2
Brake System Control Module	2
Engine Control Module	2
Lighting Control Module	2
Image Processing Module	2
Transmission Control Module	2
Engine Control Module	3
Gear Shift Control Module	3
Driver Seat Adjuster Memory Module	4
Side Obstacle Detection Control Module - Left	4

• Undefined Modules Display Diagnostic ID  
• Defined Modules Display Service Names

• Displays CAN Bus connected to the Module  
• Modules connected to more than one bus will be listed in multiple rows

CAN Bus Number

The network communication status of the control modules on each bus also can be viewed by selecting Vehicle Diagnostics > Vehicle Communication Diagnostics > Network Communication Status. When checking status, a request is sent to all modules on a targeted sub-network. Select the Refresh button at the top of the table to run the status procedure additional times.

**Network Communication Status**

**CAN Bus 1**

Control Module Name	Control Module Communication Status	CAN Bus Number
Power Steering Control Module	Communicating	1
Restraints Control Module	Communicating	1
Restraints Occupant Classification System Module	Communicating	1
Front Seat Belt Retractor Motor - Left	Communicating	1
Front Seat Belt Retractor Motor - Right	Communicating	1
Image Processing Module	Communicating	1
Column Lock Module	Communicating	1
Parking Assist Control Module	Communicating	1
Brake System Control Module	Communicating	1
Image Processing Module	No Communication	1

Note: The procedure will always run against the first tab upon entry.

Control Module Name  
• List of Modules equipped on the selected CAN Bus Tab

Network Communication Status for each bus

The GDS2 software update is available by selecting the GDS2 icon in TIS2Web. For assistance, contact the Techline Customer Support Center (TCSC) at 1-800-828-6860 (English) or 1-800-503-3222 (French).

► Thanks to Chris Henley



# Diesel Fuel Additives

As colder winter weather rolls in, GM recommends using TOP TIER Detergent Diesel fuel in 2014-2020 GM models equipped with a diesel engine in order to maintain optimal engine performance. TOP TIER fuel can help diminish injector deposits while offering enhanced lubricity and fuel stability — key requirements for modern diesel engines.

If TOP TIER Detergent Diesel fuel is not available locally, GM recommends the use of ACDelco Diesel Fuel Conditioner. It is a multifunctional additive that helps clean engine deposits, improves lubricity and cold temperature fuel flow, reduces fuel filter plugging, enhances corrosion protection and fuel stability, and boosts cetane. And if low-quality fuel has already been used, GM recommends adding ACDelco Fuel System Treatment Plus – Diesel to help clean engine deposits.

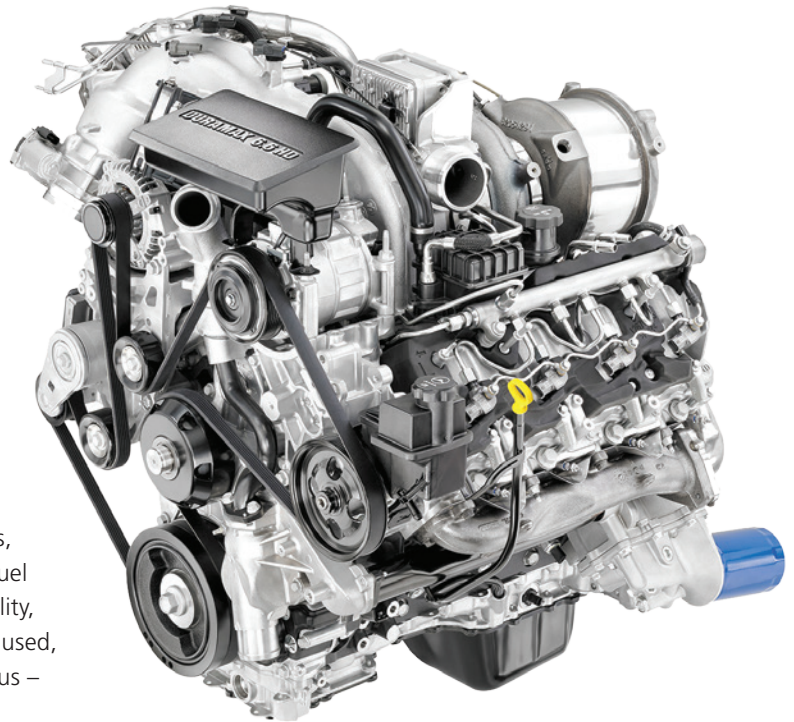
**TIP:** Only use Ultra-Low Sulfur Diesel Fuel (ULSD) from pumps with the ULSD label.

If a vehicle is properly maintained but has fuel contamination issues, consider obtaining fuel from a different source. Purchasing fuel from a high volume fuel retailer increases the chance that the fuel is fresh and of good quality.

## COMMON DIESEL FUEL CONCERNS

**Fuel Waxing/Icing** – A winter fuel additive may be desired to prevent fuel waxing or icing during extreme cold snaps.

**Fuel Cleanliness** – Water in the vehicle's fuel system can lead to corrosion, increased metal wear, ice during cold weather, plugged filters or screens, increased degradation of fuel, partial



hydrolysis of biodiesel (FAME) in diesel/FAME blends and micro-biological growth. Water is also a good solvent for inorganic salts and can contain dissolved acids or other contaminants that can harm the engine. Free water in storage or vehicle tanks can accumulate salts and polar compounds over time and severely impact fuel injection and engine operation. Elimination of water and microbial growth, along with the use of corrosion inhibitor additives, will significantly reduce the amount of corrosion and particulate generation throughout the distribution system. Diesel fuel contaminated with abrasive inorganic particles can cause abrasive wear of the fuel system and the piston rings. Fuel injectors and fuel injection pumps are particularly susceptible to wear because the high liquid pressures they generate require extremely close tolerances between parts moving relative to one another. If

cleanliness concerns with diesel fuel are suspected, a sample from the fuel dispenser or fuel from the tank (1 quart or a liter) should be visually observed in a transparent container. Good fuel samples should appear to be bright and clear.

**Fungi Growth** – Bacteria and fungi growth can occur in diesel fuel when there is water present, especially during warmer weather. The best prevention against bacteria and fungi growth is to use clean fuel that is free of water. There are diesel fuel



CONTINUED ON PAGE 5



biocides available that are designed to kill bacterial growth in the fuel system. However, the dead bacteria can still cause blockages throughout the fuel system. If bacterial growth is found in the fuel system, the proper method of removal is to flush the fuel system using the appropriate Service Information procedures, replace the fuel filter element and refill the tank with clean diesel fuel.

**Low Cetane Number** – The cetane number is one indicator of a diesel fuel's ability to ignite. There are many indicators of overall fuel quality, such as cleanliness, specific gravity, volatility, viscosity, detergency, corrosion inhibiting abilities, and lubricity. Increasing the cetane number alone is not a fix for poor quality fuel and will not increase engine performance.

**Poor Lubricity** – The 2.0L diesel engine and the 6.6L Duramax diesel engines are designed to operate on today's low sulfur fuel without the use of additives. A fuel additive designed to increase lubricity is not a fix for poor quality or contaminated fuel.

**Fuel Stability** – Fuel Stability and degradation may be a concern for diesel fuels, especially for diesel fuel containing biodiesel. The use of aftermarket stability additives to improve the quality of a degraded fuel is not a fix and use of such aftermarket stability additives is discouraged due to concerns of proper mixing and fuel compatibility.

**TIP:** Any fuel additives used must not contain any metal-based additives, alcohol or other water emulsifiers that may compromise the water removal effectiveness of the fuel filtering system.

For more information about TOP TIER Detergent Diesel fuel as well as a list of TOP TIER diesel fuel retailers, visit [toptiergas.com](http://toptiergas.com).

► Thanks to Larry Yaw and Shailesh Lopes

# Whistle Sound from the Engine

There may be a whistle or squeak sound heard coming from the engine area on some 2019-2020 Blazer models equipped with the 3.6L 6-cylinder engine (RPO LGX). The sound may be more noticeable after driving the vehicle for a while.

The sound may be caused by plastic flashing restricting the clean air port on the air cleaner duct on top of the engine.



Clean air port

It will appear that the restriction or flashing is partially blocking the hole inside the air tube, about 2 inches (5 cm) inside the tube.



Restriction inside the air tube

To correct the condition, replace the air cleaner duct. After installing the new air cleaner duct, run the engine long enough to build up crankcase pressure and check for any noise conditions.

► Thanks to Aron Wilson



# New EL-52545 TPMS & RF Tool

## MAKES TPMS SENSOR RELEARN EASY

System (TPMS) was federally mandated (U.S.) in 2008, radio frequencies have been used on GM models to communicate with the system and to determine the location of each TPMS sensor on the vehicle. Today, there are three radio frequencies used in production of GM vehicles.

The new EL-52545 TPMS and RF tool, which will be shipped as an essential tool to all GM dealerships in the 4th quarter of 2019, fea-

tures a new communication protocol for TPM systems and Remote Keyless Entry systems. It's designed to take advantage of the new Next Generation Digital Vehicle Platform electrical architecture coming on the 2020 Corvette, CT5 and CT4 as well as future models. It's also backward compatible to 2008 and later GM models.

The EL-52545 TPMS and RF tool package includes:

- TPMS Module
- OBD II Module
- USB Cable
- Hand Strap
- RJ45 Cable
- Storage Case
- Power Adapter

The EL-52545 tool features a QR code reader to help identify the make and model of a vehicle. It also uses an internal database to determine the proper sensor transmit frequency for a vehicle.

## ROTATE, DIAGNOSE, RELEARN

A recent GM study of 2018 model year vehicle has shown that TPM DTCs C0750, C0755, C0760, C0765 (Tire Pressure Sensor Low Voltage, Too Few Pulses, and Internal Malfunction codes) combined to account for more than 20% of all codes set, most of which set after a maintenance event (tire rotation) or dealer installation of accessory wheels. The EL-52545 tool changes TPMS relearn communication from radio frequency to writing

IDs directly via the Diagnostic Link Connector (DLC), which is expected to increase the success and quality of relearn procedures to 100%, without any time penalty when doing a normal tire rotation. As long as the tool is placed by the proper tire, an incorrect sensor cannot be learned, which will greatly reduce the common issue off learning a stray sensor on a near-by vehicle.

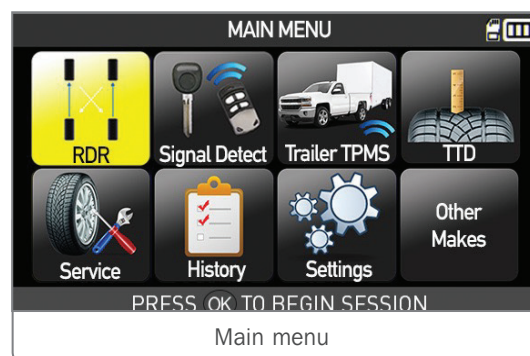
The Rotate-Diagnose-Relearn (RDR) function of the EL-52545 tool can be used anytime the TPMS or tires are serviced on a vehicle, such as a tire rotation or if the TPMS warning lamp is illuminated. All TPMS data is available on the tool. For example, the tool will highlight a

wrong frequency that is deployed in a wheel. And by connecting via DLC, TPMS DTCs that are set can be identified with the TPM IDs learned to the vehicle vs. what is present on the vehicle.

## SENSOR RELEARN

Using the tool is easy. Here's how to quickly relearn the TPMS sensors after a tire rotation. The procedure is a simple process of collecting the sensor data and then providing that data to the BCM.

Begin by selecting the RDR function using the tool controls. The vehicle should have the ignition off or in service mode. The VIN screen on the tool will prompt you to scan the vehicle's QR code, typically found on the Tire and Loading Information label, in order to identify the



Use the tool's QR code reader to identify the vehicle.

CONTINUED ON PAGE 7

vehicle. Aim the top of the tool at the code. The tool will beep when it has read the code. If the vehicle does not have a QR code, use the tool menu to select the vehicle by make, model and year.

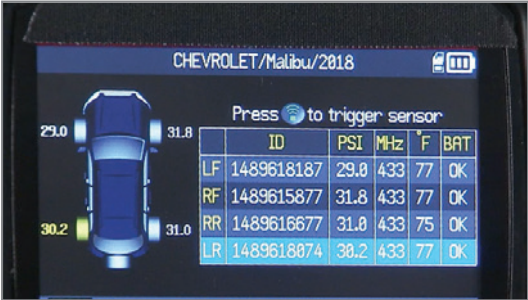
Move to the left front tire and place the front edge of the tool against the tire at the valve stem. Press the green button on the tool to activate the sensor. The tool will beep once it has the data and will display the sensor information. Repeat the procedure on the right front tire, followed by the right rear tire and left rear tire.



Place the front edge of the tool against the tire at the valve stem to relearn the sensor.

With all four sensors activated, the screen will show the data for each sensor. If the data shown is in white, the tool does not see any frequency concerns with the sensors. Any concerns are highlighted in red. Directions for the next step are shown on the screen.

Next, connect the OBD II module cable to the tool and



Data is shown for each sensor.

to the DLC in the vehicle. With the vehicle ignition on, engine off, press the OK button and the tool will begin communicating with the BCM and the screen will show a status update. The relearn is complete if the screen displays “No additional action required.”

The RDR function ensures that the TPMS sensors are functioning properly as the tool is able to evaluate IDs bolted to the vehicle vs. BCM IDs and malfunction codes. The prescriptive repair direction or clear indication messages (“No additional action required”) on the screen provide concise information on system status as well as next steps.

### TOOL UPDATES

The EL-52545 tool software can be updated to ensure the latest information is being used. As with other tools, the software

updates will be available through the [gmtoolsandequipment.com](http://gmtoolsandequipment.com) website.

Future software releases will add more functionality to the tool, including a new Trailer TPMS feature that can be used to check the Trailer TPM System available on new Silverado and Sierra models.

In addition, the EL-52545 tool has the ability to service non-GM vehicles, supporting the dealership’s used vehicle department.

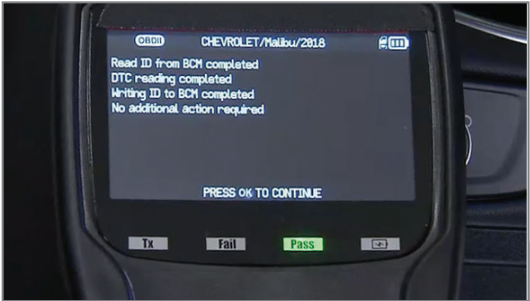
To see the EL-52545 tool in the service bay, check out the July 2019 edition of the

GM Service Know-How Emerging Issues seminar, 10219.07V, on the GM Center of Learning website. In Canada, review the August 2019 TAC Talk program. The video covers four typical TPMS situations, including a normal sensor relearn after a tire rotation, a vehicle with the wrong frequency sensor installed on one wheel, a vehicle that learned a stray sensor on a close-by vehicle, and a vehicle with a malfunctioning TPMS sensor.

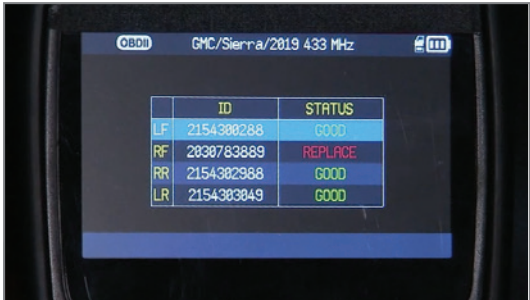
Look for more details about the EL-52545 TPMS and RF tool coming soon in TechLink, including a review of the radio frequency functions of the tool.

For more information about the new EL-52545 TPMS and RF tool package, visit [gmtoolsandequipment.com](http://gmtoolsandequipment.com).

► Thanks to Bob Wittmann



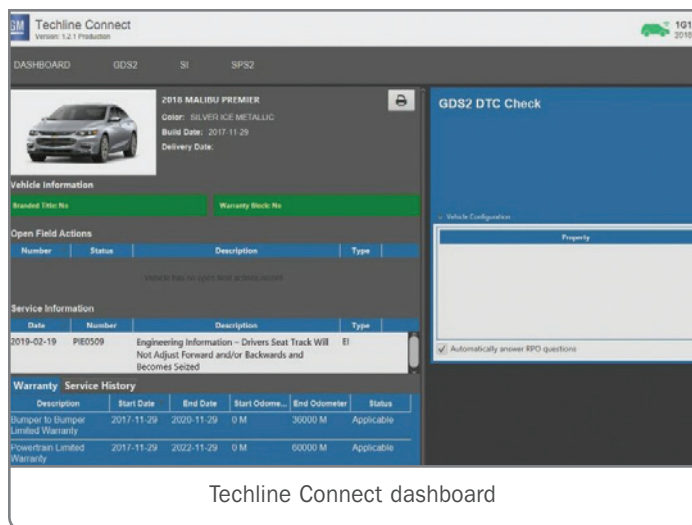
When complete, the tool displays a “No additional action required” message.



ID information and repair direction is provided on the screen.

# GETTING READY FOR Techline Connect

Currently being rolled out to select dealerships in the U.S., Techline Connect brings together all the common resources technicians use every day for diagnosis and repairs in one simple application. The all-new application has a single sign-on for access to nine applications — integrating Service Information, reprogramming, diagnostics, vehicle information and other features — to help technicians efficiently and accurately manage the information available to them in the service department.



Techline Connect dashboard

To help technicians get up and running quickly with Techline Connect (TLC), here are a few tips about some of the key features of the application.

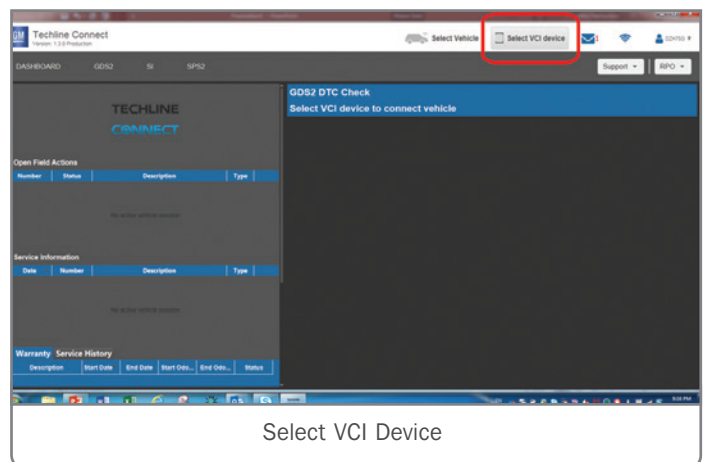
## TECHLINE CONNECT ICON

Once Techline Connect has been installed on the PC, a Techline Connect icon will be placed on the desktop that will allow direct access to the application without having to log in to GlobalConnect.

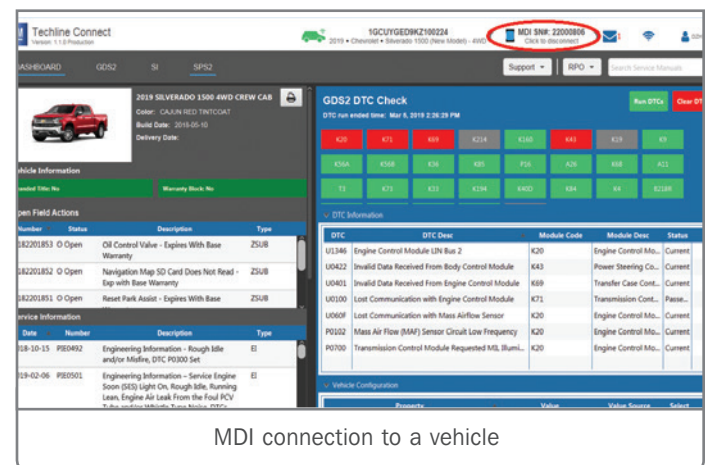
## SELECT VCI DEVICE

Choosing Select VCI Device at the top of the dashboard screen will display any connected MDI tools (USB connection) or MDI tools that are wirelessly connected and active.

Selecting an MDI tool will establish the MDI connection and attempt to establish a vehicle connection, retrieving the VIN.



Select VCI Device



MDI connection to a vehicle

## STARTING A SEARCH

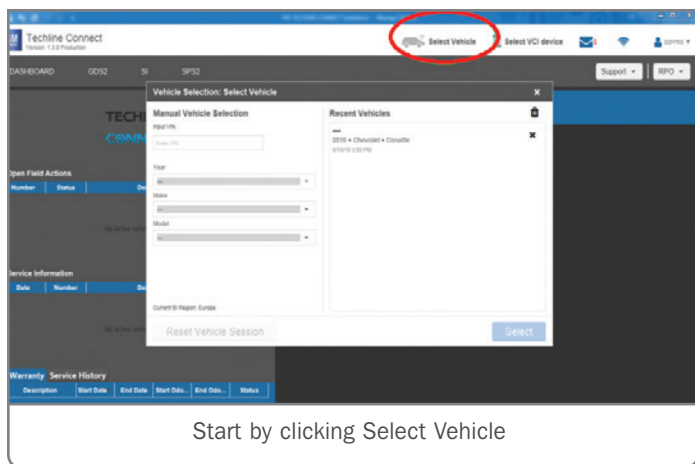
Always start by clicking Select Vehicle at the top of the dashboard screen. From here, you can:

- Enter a VIN by typing or copy and paste
- Select a Year/Make/Model
- Select a previous search from history

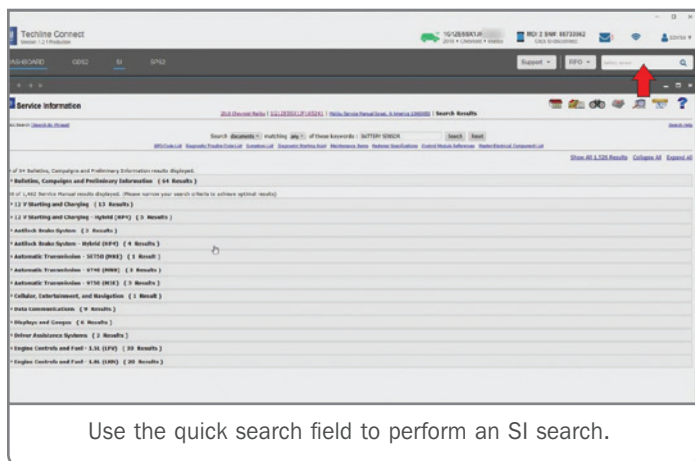
## SEARCH SI

After entering a VIN or selecting Year/Make/Model from the Select Vehicle function, select the Service Information (SI) application at the top of the dashboard to begin using the Service Information. The VIN and year/make/model will be populated automatically.



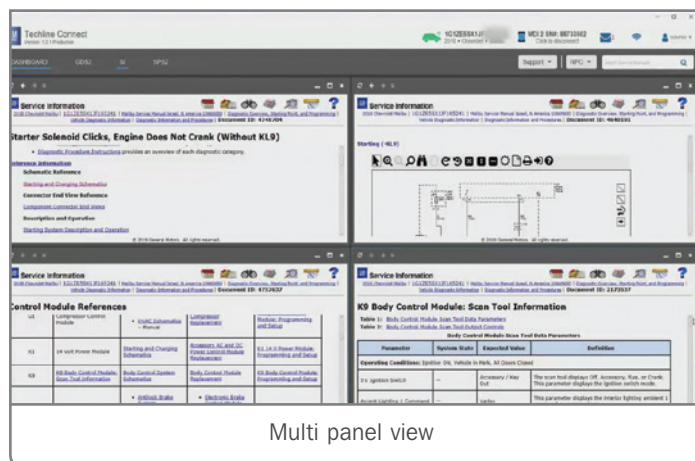


Enter a keyword or phrase in the quick search field at the top of the dashboard and Techline Connect automatically performs an SI search for the connected vehicle.

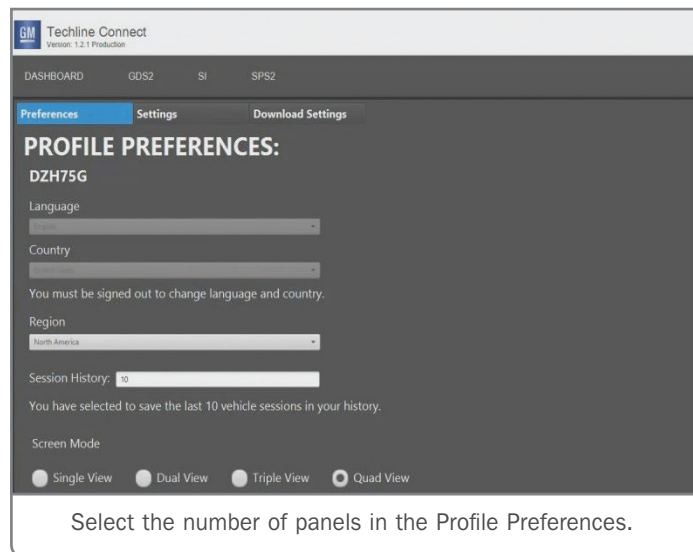


If you'd like to perform another SI search not related to the connected vehicle while still maintaining the connection on the dashboard, select the Search Another Vehicle option under the SI menu.

## PANEL MANAGEMENT

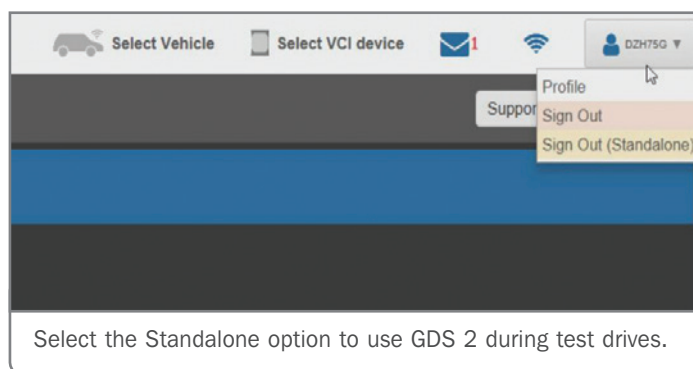


The multi panel view function allows up to four panels to be shown on the screen at one time, which can be helpful, for example, when using GDS 2 while viewing diagnostic information and a schematic in SI. Right-click on a link and select Open in a New Page to open it in a new panel. Click and drag the top of the panel to move its location or grab the border to resize the window.



To enable the multi panel view function, go to the Profile section under the User I.D. menu at the top right of the dashboard and select the desired screen mode. If the maximum number of panels are currently in use when opening a new panel or application, Techline Connect will ask which panel to replace with the new panel or app. Also, any panel can be selected to be viewed full screen. Click the X at the top of each panel to close it.

## SIGN OUT (STANDALONE)



The standalone sign out option under the Profile menu allows you to log out of Techline Connect (no connection to the Service Information and SPS) but still use GDS 2 diagnostics during a test drive.

# Getting Ready for Techline Connect cont.

## PRINTING

To view the printing options, right-click in any panel to access the print dialog box. The Service Information (SI) page will open in the default browser to print. If viewing an image in SI, use the Print button available in the image viewer. Plug-ins are no longer needed when viewing SI using Techline Connect.

## SCREEN RESOLUTION

Change the screen resolution based on the size of the monitor being used to make it easier to view and use the apps. The resolution can be changed on the PC under the display settings. Right click on the desktop to access the settings.

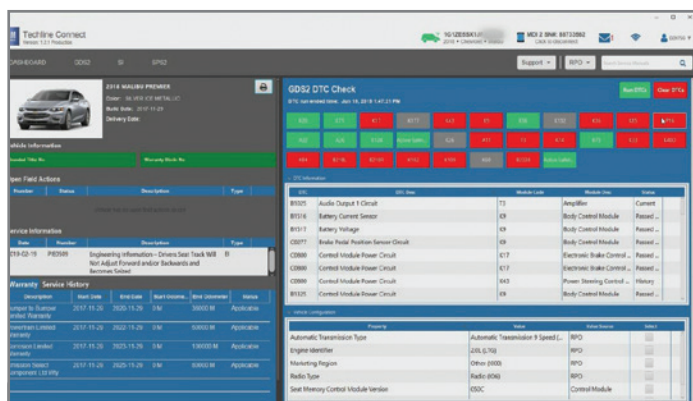
## DTC CHECK

Use the GDS 2 app to perform a vehicle-wide DTC scan from the Techline Connect dashboard. This feature is only available to use on vehicles with a global electrical architecture (Global A and Next Generation Digital Vehicle Platform vehicles). Vehicles that use all other protocols (GMLAN, Class II) require the Tech 2.

In order to use the GDS 2 DTC check, an active MDI/VCI and vehicle connection is required.

The DTC check will report communication with vehicle control modules and any DTCs detected.

- A green box indicates successful communication with the module but no DTCs.
- A red box indicates successful communication with the module and that DTCs were detected. Select each red box to view the related DTCs.



Use the GDS 2 app to perform a vehicle-wide DTC scan

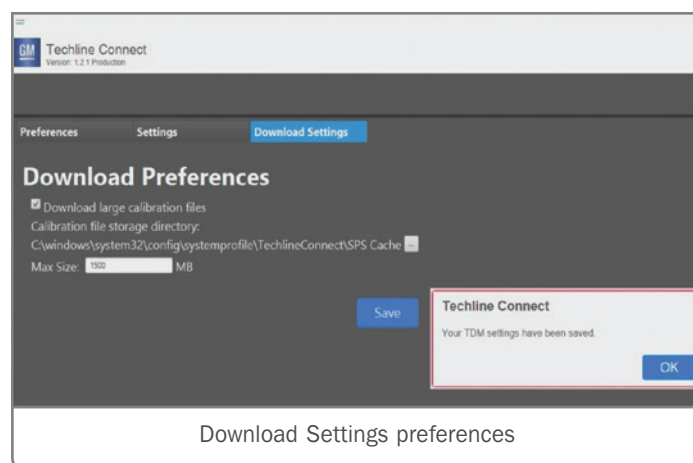
- A grey box indicates no communication with the module, which can mean that the module does not exist on the vehicle or that the module is not responding.

## CLEARING ALL DTCs

After programming using the SPS application, go to the Techline Connect dashboard and use GDS 2 to clear all DTCs vehicle-wide. When using GDS 2, it clears all DTCs, while using SPS does not.

## APPLICATION UPDATES

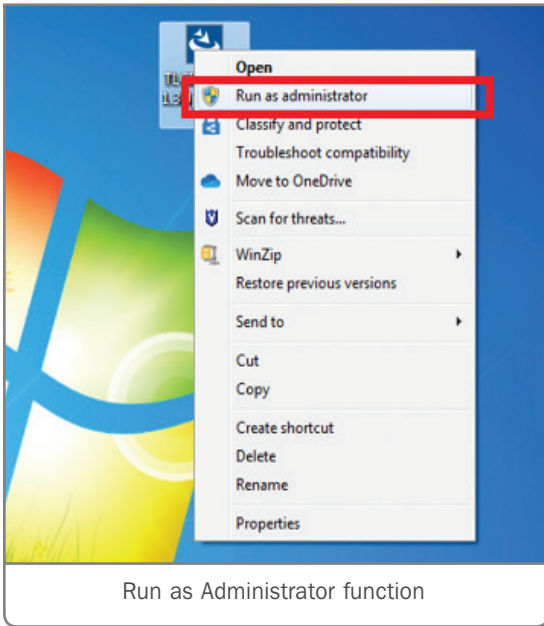
The new Update Manager that is part of Techline Connect will perform all updates needed to keep the applications up to date when logging in to Techline Connect, including GDS 2 and MDI updates and large calibration files (if configured in the Profile Preferences). To ensure all updates are downloaded properly, make sure your dealership's IT department correctly configures all of the Techline PC's security settings.



If the PC's security settings do not allow updates to occur or be seen by the user, Techline Connect will continue the log in process. As a result, the app may not be up to date at all times. If a core update for Techline Connect is not made, it will affect all of the component apps.

**TIP:** Many dealership networks have elevated administrative rights. If Techline Connect on your PC is not getting updates, try to run as admin. Right-click the Techline Connect icon, and then select Run as Administrator.

Updates for Techline Connect are typically released on weekends. If an app works on Friday, but does not on Monday, it may be due to the PC security settings not allowing the update.



Check the Messages box at the top of the Techline Connect dashboard to see if an update has been released and should have been downloaded. A message will be sent out when all updates are released. If the download did not occur, it may be necessary to contact your dealership's IT department or the Techline Customer Support Center.

## MAIL ICON

The mail icon at the top of the Techline Connect dashboard can be used to send an email to the Techline Customer Support Center (TCSC) with any questions about an application. For troubleshooting-related questions, it's recommended to contact TCSC directly. For vehicle-related issues, contact the Technical Assistance Center (TAC).

## QUESTIONS?

If you have any questions on Techline Connect, contact the Techline Customer Support Center at 1-800-828-6860 (English) or 1-800-503-3222 (French).

► Thanks to Mike Waszczenko

# Intermittent Shift to Park Message

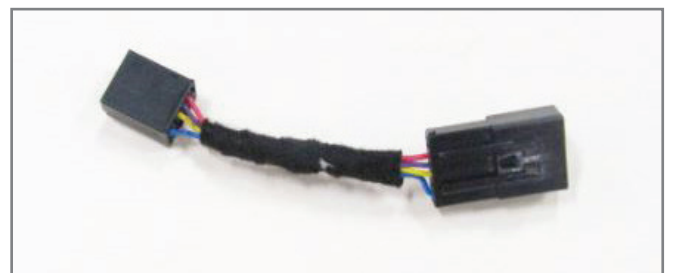
There may be an intermittent Shift to Park message displayed on the Driver Information Center (DIC) when the vehicle has been shifted to Park and the ignition has been turned to the Off position on some 2016-2019 Malibu, Volt; 2017-2019 Acadia; 2018-2019 Traverse; and 2019 Blazer models. The Shift to Park message may be the result of a build-up of material on the contacts of the Park switch when it is activated in the transmission control (shifter) assembly. The excessive material may cause a higher than expected resistance in the

signal circuit to the Body Control Module (BCM), and not allow the BCM to electronically see that the vehicle is in Park, even though the vehicle transmission is in the Park position.

If this condition is present, the BCM will turn on the Shift to Park message and not allow the ignition to turn off, leaving the ignition in Accessory mode. To reduce the inrush of current that causes the excessive build-up on the contacts, install an in-line shifter wiring harness jumper between the shifter base connector and the console harness connector.



Shift lever in Park



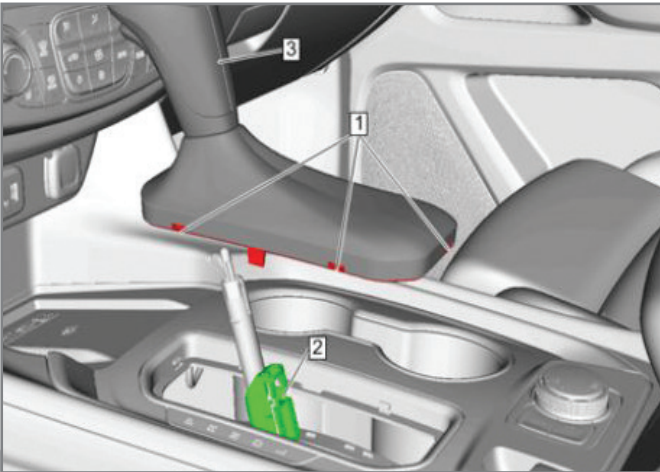
Shifter wiring harness jumper

CONTINUED ON PAGE 12



## CLEAN THE ELECTRICAL CONTACTS

With the vehicle in Park and the ignition off, remove the transmission control (shifter) lever knob and boot assembly.



Remove the transmission control lever knob and boot assembly.

Next, clean the Park Switch electrical contacts by depressing the actuation rod fully and then releasing the rod. Use the flat side of a trim stick or your thumb and allow the rod to “snap” back to the full up position. Repeat the cleaning procedure 50 times. It's critical to clean the electrical contacts to ensure a proper repair.



Clean the Park Switch electrical contacts by depressing the actuation rod 50 times.

After completing the cleaning procedure, start the vehicle and verify that the Shift to Park message is not displayed on the DIC. If the Shift to Park message is still displayed, replace the transmission control (shifter) assembly. A newly design transmission control assembly is now available.

## INSTALL JUMPER HARNESS

If the Shift to Park message is not displayed, install the jumper harness. Remove the front floor console trim plate and disconnect the body harness from the transmission control assembly.

**TIP:** To gain access to the shift control wiring connector, it will be necessary to remove only the front floor console trim plate. However, on some models, it may be necessary to remove the front floor console trim plate and reposition the console assembly



Remove the front floor console trim plate.

Install the in-line shifter wiring harness jumper between the shifter base connector and the console harness connector. The jumper harness should not be twisted or kinked in a 90 degree position.



Install the in-line Shifter Wire Harness Jumper

Start the vehicle and verify that the Shift to Park message is not displayed. Reinstall the front floor console trim plate and any other trim panels as well as the transmission control lever knob and boot assembly.

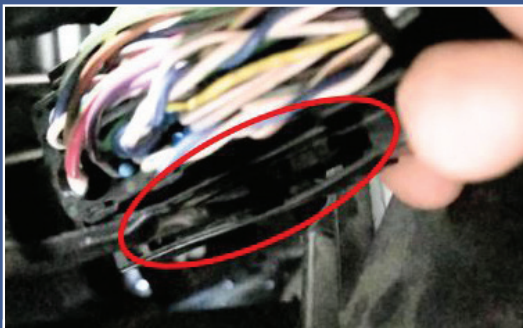
Refer to Bulletin #19-NA-206 for additional information and part numbers.

► Thanks to Tom Burlingame

# Transmission Control Module Connector

Some 2019 Silverado 1500, Sierra 1500; and 2020 Silverado and Sierra models may have a discharged battery, the ignition may not turn off, a Shift to Park message may display on the Driver Information Center and the Check Engine light is illuminated. There also may be a lack of communication with the K71 Transmission Control Module (TCM) and E20 Engine Control Module (ECM) along with one or more of the following DTCs set in the TCM: U007B, U0100, U0101, P0658, P0707, P2803, P0712, P07BF, P0722, P077C, P0960, P0962, P0964, P0966, P0968, P0970, P176C, P17CC, P2670, P2718, P2720, P2727, P2729, P2736, P2738, P2812, P2814, P281B, P281D, P2824, and/or P2826.

These conditions may be caused by the TCM connector not being seated and latched properly, resulting in poor terminal



Inspect TCM connector

connection from the TCM to the engine harness. The TCM connector is a multi-wire electrical connector, which can set a variety of DTCs. Different conditions and driver notifications may be caused by one of the terminals in the electrical connector not coming into contact with the pins in the module. Components on different lines are in different circuits. Due to the cause of the condition, and the positions of the wires in the connector, it

is unlikely that more than one circuit will be affected by the condition.

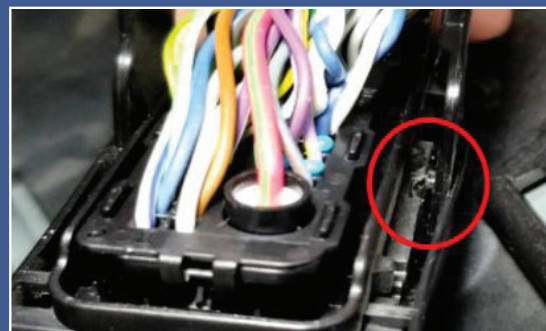
Inspect the K71 TCM connector for proper seating. An

initial inspection may show that the connector is cocked or high on one side of the connector body.

One of the lever lugs on the TCM connector may be coming out of position on the horizontal sliding lock bar, which may cause the drive lug to slide along the outside of the locking bar. Operating the lock lever may show that the lock is not moving properly.

To correctly install the TCM connector, place the connector onto the TCM and squeeze the connector lever lock housing to ensure the lock bars are moving into the proper position on the TCM connector body.

► Thanks to Kevin Minor



Lever lug out of position



Lock bars in the proper position

## TECH LINK

GM TechLink is published for all GM retail technicians and service consultants to provide timely information to help increase knowledge about GM products and improve the performance of the service department.

**Publisher:**  
John Meade  
GM Customer Care and Aftersales

**Editor:**  
Lisa G. Scott  
GM Customer Care and Aftersales

**Technical Editor:**  
Mark Spencer  
mspencer@gpstrategies.com

**Production Manager:**  
Marie Meredith

**Creative Design:**  
5by5 Design LLC  
dkelly@5by5dzn.com

**Write to:**  
TechLink  
PO Box 500, Troy, MI 48007-0500

**GM TechLink on the Web:**  
GM GlobalConnect

General Motors service tips are intended for use by professional technicians, not a "do-it-yourselfer." They are written to inform those technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. 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 information applies to your vehicle or that your vehicle will have that condition. See a General Motors dealer servicing your brand of General Motors vehicle for information on whether your vehicle may benefit from the information. Inclusion in this publication is not necessarily an endorsement of the individual or the company.

Copyright© 2019 General Motors. All rights reserved.