



Scanner Demo Prop (Vehicle Simulator) User Manual

Safety

For your own safety, the safety of others, and to prevent damage to the devices used in this manual, it is important that all instructions and safety messages within this manual, your diagnostic tool user manual and the *Important Safety Instructions* manual (supplied with your diagnostic tool and this simulator) be read and understood by all persons operating, or coming into contact with this device, before operating.

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- Increases in any way the liability to the customer or to third parties.

Snap-on[®] reserves the right to make changes at any time without notice.

IMPORTANT:

Before operating or maintaining this unit, please read this manual carefully paying extra attention to the safety warnings and precautions.

Contact Information (North America)

Websites:

Snap-on Diagnostics and Information

- <http://diagnostics.snapon.com>

Training and Support (by platform) - Find product support information, and watch free instructional product videos.

- <http://diagnostics.snapon.com/FAQ.htm>

Manuals / Technical Documentation - The information in this manual is periodically revised to ensure the latest information is included. Download the latest version of this manual and other related technical documentation at:

- <http://diagnostics.snapon.com/usermanuals>

Forums and Training - Watch free instructional product videos. Connect with and share your Diagnostic Tool questions, ideas and success stories.

- <http://diagnostics.snapon.com/ForumsandTraining.htm>

Phone / E-mail - Technical Assistance

1-800-424-7226 / diagnostics_support@snapon.com

Important Information and Specifications

Approved Diagnostic Tools and Power Supplies

⚠ WARNING



Risk of electric shock and equipment or circuit damage.

This simulator is intended to only be used with the Snap-on diagnostic tools and power supplies listed below.

Diagnostic Tool / Product	AC Power Supply Part Number	Description / Specification
VERUS	2-02539A	17V Max, 60W
VERUS Edge	2-04339A	Switching 19V Max, 65W
VERUS PRO	2-02839A	Switching 19V Max, 65W
VERDICT		
MODIS Ultra	2-60666A	Switching 15.75V Max, 22.5W
SOLUS Edge		
SOLUS Ultra		
ETHOS Plus		
ETHOS Tech		
4-way (Quad) AC power supply	EAX0068L20A	17V Max, 130W

Specifications

Item	Description / Specification
DC Operating Voltage	12 to 19 VDC @ 4A Max
Fuse	4A blade type
Width	7.8 in. (198 mm)
Height	3.3 in. (83 mm)
Depth	1.5 in. (38 mm)
Weight	0.40 lb (0.18 kg)
Operating Temperature Range (ambient)	At 0 to 90% relative humidity (non-condensing) 32 to 113°F (0 to 45°C)
Storage Temperature (ambient)	At 0 to 70% relative humidity (non-condensing) -4 to 140°F (-20 to 60°C)
Environmental Conditions	This product is intended for indoor use only
	This product is rated for Pollution Degree 2 (normal conditions)

Introduction

This simulator is used to demonstrate the scanner capabilities of select Snap-on diagnostic tools.

You can:

- Perform scanner demonstrations using select Snap-on diagnostic tools, without actually connecting to a vehicle. See “*Approved Diagnostic Tools and Power Supplies*” on page 3 for a complete listing of approved diagnostic tools.
- Interactively demonstrate and navigate through:
 - connection and setup procedures
 - the capabilities of the scanner function
 - how to view diagnostic trouble codes and parameters (PIDs)
 - how to view SureTrack repair information
 - simulated PID waveform glitches using 3 manually adjustable PIDs
 - how to perform basic functional tests
 - how to view data, codes, and readiness monitors in global OBD mode



NOTE:

This simulator is intended to be used for diagnostic tool demonstration purposes only. All data displayed by this simulator is a looped playback of prerecorded data from actual vehicle control modules. The data displayed has been recorded from various vehicles in an effort to provide clear examples for demonstration purposes only and is not intended to be representative of any one vehicle.

For clarity throughout this manual the term “simulator” will be used in place of commonly associated terms for this device (e.g. “Demonstration Device”, “(Demo)nstration Board” etc.).

For abbreviation descriptions used throughout this manual, see “*General Reference*” on page 22.

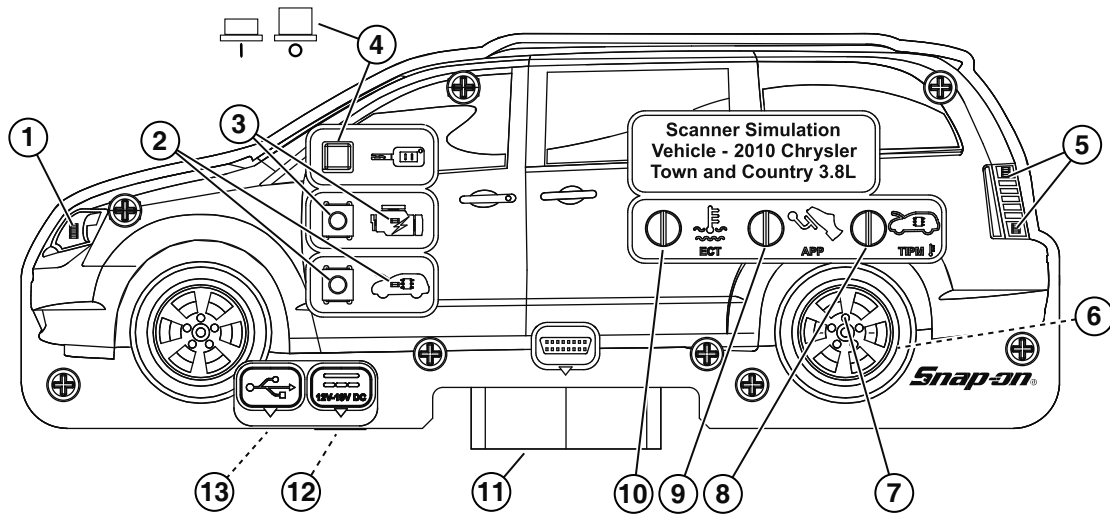
For additional information on diagnostic tool operations, refer to the latest version of the diagnostic tool user manual. User manuals are available on our website:

<http://diagnostics.snapon.com/usermanuals>

Supported Functionality (Quick Reference)

Enhanced OBD	Auto ID Code Scan Clear All Codes Read by Code Scan	OBD-II, EOBD / Global OBD	Readiness Monitors Complete Since DTC Cleared Monitors Complete this Cycle
	Engine System Engine Data O2 Sensors Throttle EVAP EGR Ignition Accessories Engine Engine Code Read Engine Code Clear		MIL Status \$01 Display Current Data \$02 Display Freeze Frame \$03 Display Trouble Codes \$04 Clear \$06 On-board Monitored System \$21 Catalyst \$3D Purge Flow \$A2 Misfire Cylinder 1 \$08 Request Control On-board system \$09 Read Vehicle Identification Vehicle Identification Number (VIN) Calibration Identification Calibration Verification Number (CVN) \$09 In-Use Performance Tracking
	Central Gateway (TIPM) System Codes Clear Codes Data Functional Test Horn Left Front Turn Lamp Tail/Park Lamp		-

Features



Item	Description	Item	Description
1	(TIPM System) Left Front (LF) Turn Lamp LED - used during functional testing to simulate testing of the turn lamp.	8	(TIPM System) AAT / Parameter Adjustment Knob - allows manual adjustment of the Ambient Air Temperature PID value.
2	Central Gateway (TIPM) DTC Activation Switch and LED - momentary push button switch, used to activate (set) a Central Gateway (TIPM) system DTC. The LED turns on (red) when pressed, indicating DTCs are active.	9	APP / Parameter Adjustment Knob - allows manual adjustment of the Accelerator Pedal Position PID value.
3	Engine System DTC Activation Switch and MIL LED - momentary push button switch, used to activate (set) an Engine system related DTC. The MIL LED turns on (amber) when pressed, indicating DTCs are active.	10	ECT / Parameter Adjustment Knob - allows manual adjustment the Engine Coolant Temperature PID value.
4	Power Switch - turns simulator power on/off.	11	DLC - the DLC is a standard female SAE J1962 / ISO 15031-3 vehicle connector.
5	(TIPM System) Tail/Park Lamp LEDs - used during functional testing to simulate testing of the tail and park lamps.	12	Power Supply Jack - (not shown) a 2.5mm power supply jack is provided to allow connection of the <u>diagnostic tool's</u> AC power supply adapter.
6	DLC power circuit fuse - pin 16 of the DLC is used to provide power to the data cable, and is protected by a 4A blade type fuse (located on the back of the simulator).	13	USB Jack - (not shown) the USB jack is for factory use only. <u>Do not</u> connect any type of USB device or any other device to the USB jack.
7	Speaker - provides audio sounds when turning on the simulator and during functional tests.		

Operation

Getting Started



Connecting the power supply and turning the simulator on:

IMPORTANT:

Only use Snap-on approved diagnostic tools and their AC power supplies to power the simulator. See “*Approved Diagnostic Tools and Power Supplies*” on page 3 for a list of the diagnostic tools and power supplies that can be used with this simulator. The simulator power switch must be in the on position to allow communication with the simulator.

1. Connect the AC power supply from your Snap-on diagnostic tool to the simulator power supply jack.
 2. Connect the AC power supply to a live suitable power supply.
-

**NOTE:**

To indicate power is being supplied to the simulator, a momentary audible tone is sounded when initially connected to the power supply. The MIL and Central Gateway (TIPM) LEDs will remain illuminated when the simulator is connected to a live power supply and the power switch is set to the off position.



Establishing Communication:

1. Set the simulator **Power** switch to the on position.
-

**NOTE:**

The MIL and Central Gateway (TIPM) LEDs will stay on for approximately 1 second, then turn off after the power switch is turned on.

2. Turn on the diagnostic tool.
3. Connect the data cable supplied with the diagnostic tool, to the diagnostic tool and simulator.

**Tech Tip* - Establishing communication with an actual vehicle requires connection of the diagnostic tool's data cable to the vehicles DLC. The vehicle DLC provides power to the diagnostic tool in most cases through the cable. As good practice, during periods of non-use always keep the diagnostic tool's battery fully charged.*

**NOTE:**

Navigation and menu choices may vary between diagnostic tools.

4. Select **Scanner** from the Home screen.

This simulator emulates vehicle data from a 2010 Chrysler Town and Country (Touring) 3.8L.

5. Select **Chrysler** from the vehicle manufactures options.
6. Select **2010** model year.

-
7. Select **Automatic ID** (Figure 2), the simulator supports vehicle Auto Identification. Manual ID can also be used to ID the vehicle.

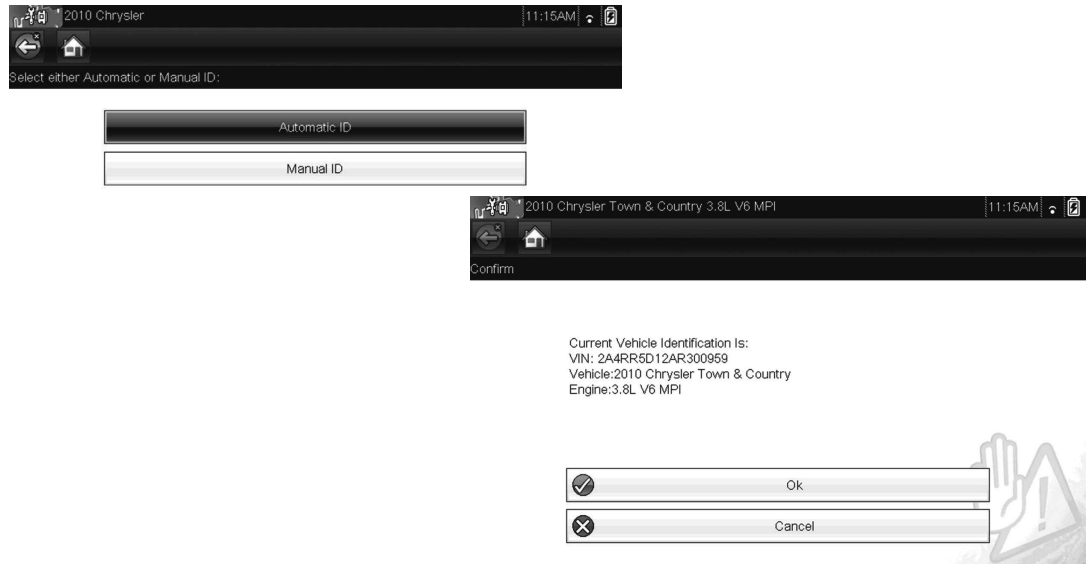


Figure 2 Typical - Vehicle ID and Vehicle Confirmation screen (Solus Edge/Modis Ultra)

After the vehicle has been identified, the vehicle confirmation screen displays (Figure 2).



NOTE:

Certain diagnostic tool functions may display confirmation screens that ask you to confirm your intended action before you proceed (e.g. clearing DTCs or performing tests). These confirmation screens often prompt you to turn the engine off or leave the engine running (e.g. KOEO-key-on-engine-off, KOER-key-on-engine-running, etc). For this simulator, when the power switch is set to the on position, it satisfies KOEO or KOER conditions for the supported functions.

8. Select **OK** to continue.

Additional menu choices are required depending on which type of demonstration you choose. Proceed to the applicable section as follows:

- **DTCs Demonstration** — manually activate DTCs on the simulator, then use your diagnostic tool to view the codes and clear them.
See, “DTCs Demonstration” on page 9.
- **Data Display Demonstration** — use your diagnostic tool to view lists and graphs of parameter data values (e.g. Engine RPM, Coolant temp., and Intake Air temp.) and manually adjust parameters to simulate possible glitches.
See, “Data Display Demonstration” on page 13.
- **Functional Tests Demonstration**—use your diagnostic tool to perform diagnostic functional tests to demonstrate basic functional testing capabilities.
See, “Functional Test Demonstration” on page 15.

**NOTE:**

Only the following **Systems** are supported (provide data) using this simulator.

- **Code Scan**
 - **Clear All Codes read by Code Scan** - *Temporarily clears codes. Codes will be redisplayed when Code Scan is selected again.*
 - **Engine**
 - **Central Gateway (TIPM)**
-

DTCs Demonstration

Engine system and Central Gateway (TIPM) system DTCs can be manually activated, to demonstrate how a diagnostic tool displays the codes and the navigation procedures to access them. Before proceeding, refer to and perform the steps in “Getting Started” on page 7 (if not already completed).

**NOTE:**

Navigation and menu choices may vary between diagnostic tools.

**To activate (set) DTCs:**

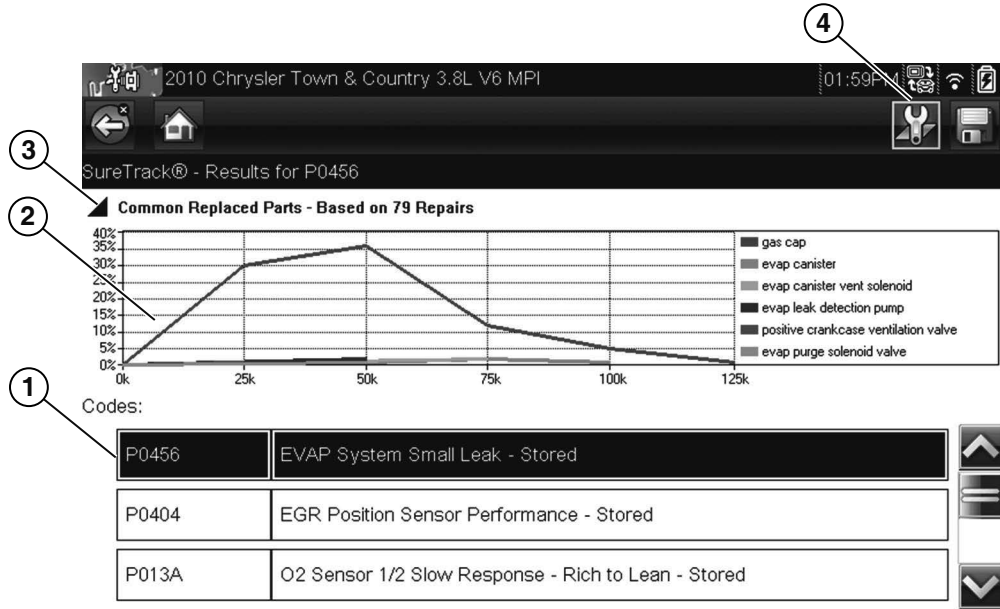
1. On the simulator, press either the **Engine System DTC** or **Central Gateway (TIPM) System DTC** activation switch to activate the predefined DTCs.
The applicable system LED indicator turns on, indicating DTCs have been set.

**To display DTCs:**

1. After the vehicle has been identified, select the applicable System from the menu, **Engine** or **Central Gateway (TIPM)**.
2. Select **Display Codes** (or similar) from the Codes menu.
3. The following DTCs will be displayed, depending on which DTC activation switch you press:
 - **Engine**
 - PO404 - EGR Position Sensor Performance
 - PO456 - EVAP System Small
 - PO13A - O2 Sensor 1/2 Slow Response (Rich to Lean)
 - PO50D - Cold Start Rough Idle
 - PO585 - Speed Control Switch 1/2 Correlation
 - **Central Gateway (TIPM)**
 - B1644 - Rear Left Turn Control Circuit High
 - B201D - Battery Voltage Low
 - B230D - Rear Wiper Park Switch Input Circuit Low (Stuck Low)
 - B16F9 - Front Left Fog Lamp Control Circuit High

**Tech Tip* - During actual vehicle testing, selecting Display Codes opens either a list of active diagnostic trouble codes (DTCs) or a submenu of DTC viewing options. The code list may include the DTC, and a brief description of the code.*

If the diagnostic tool is Wi-Fi compatible and SureTrack data is available, additional troubleshooting information from SureTrack (e.g. Common Replaced Parts, Tips, Related Tips, Real Fixes and Related Real Fixes) may be displayed.



1. **DTC List**
2. **Common Replaced Parts Graph**—shows the percentage of verified fixes (using the parts listed) derived from the total number of repairs by mileage
3. **Common Replaced Parts Graph Icon**—toggles the Common Replaced Parts graph display on/off
4. **Fix It! Icon**—displays additional menu options and DTC Tips

Figure 3 Typical - Engine System DTC Results screen, with SureTrack (Solus Edge/Modis Ultra)



NOTE:

SureTrack navigation and menu selection is slightly different depending on the diagnostic tool. For specific navigation instructions, see the SureTrack section in the latest version of the diagnostic tool user manual available on our website:

<http://diagnostics.snapon.com/usermanuals>.

If SureTrack information is available for a selected DTC, different types of information may be available. The following table shows the type of SureTrack information that was available for the listed DTCs at the time of publishing. Additional information may be available as of the current date.

DTC	Common Replacement Parts Graph	Tips	Related Tips	Real Fixes	Related Real Fixes
Engine					
P0404	X	X	X	X	X
P0456	X	X	X	X	X
P013A	-	X	X	-	-
P050D	-	X	X	-	-
P0585	-	X	X	-	-



NOTE:

If Common Replaced Parts information is not available, select the **Fix It!** icon to see if other information may be available. See example below.

In the following example, Common Replaced Parts information was not available, however other important information was. The information within Related Tips includes critical information about a flash reprogramming and the related technical service bulletin (TSB) number.

To demonstrate how to navigate SureTrack to find additional information, perform the following steps with the callout numbers in the images to navigate to the Related Tip reprogramming information shown in (Figure 5).

1. Select **DTC P013A** from the list (Figure 4 - (1)).
2. The message “Verified parts replacement data not available. Tap the wrench icon for more results” displays in the Common Replaced Parts graph area (Figure 4 - (2)).
3. Select the **Fix It!** icon (Figure 4 - (3)).
4. A Tip for P013A is displayed (Figure 4 - (4)).
5. Select the **Related Tips** icon (Figure 4 - (5)).

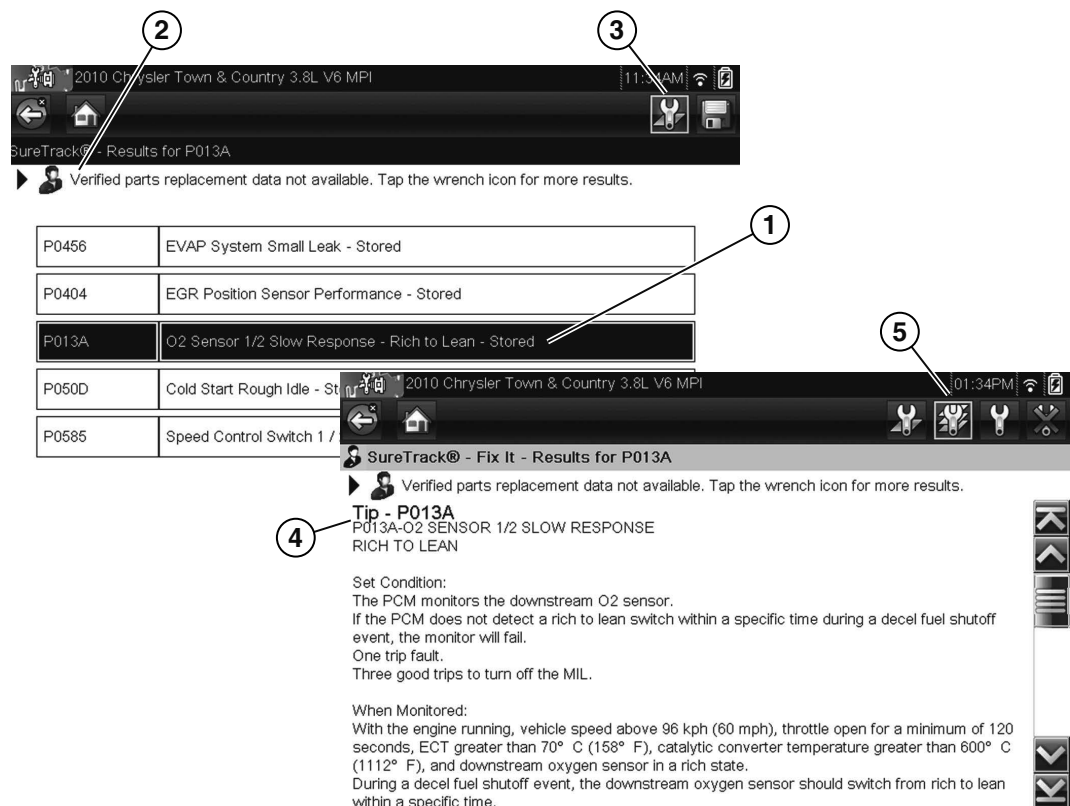


Figure 4

6. Related Tips are displayed (Figure 5 - (6)).
7. Select the **MIL** tip (Figure 5 - (7)).
8. Use the scroll bar to scroll down through the information (Figure 5 - (8)).
9. Specified information is displayed (Figure 5 - (9)).

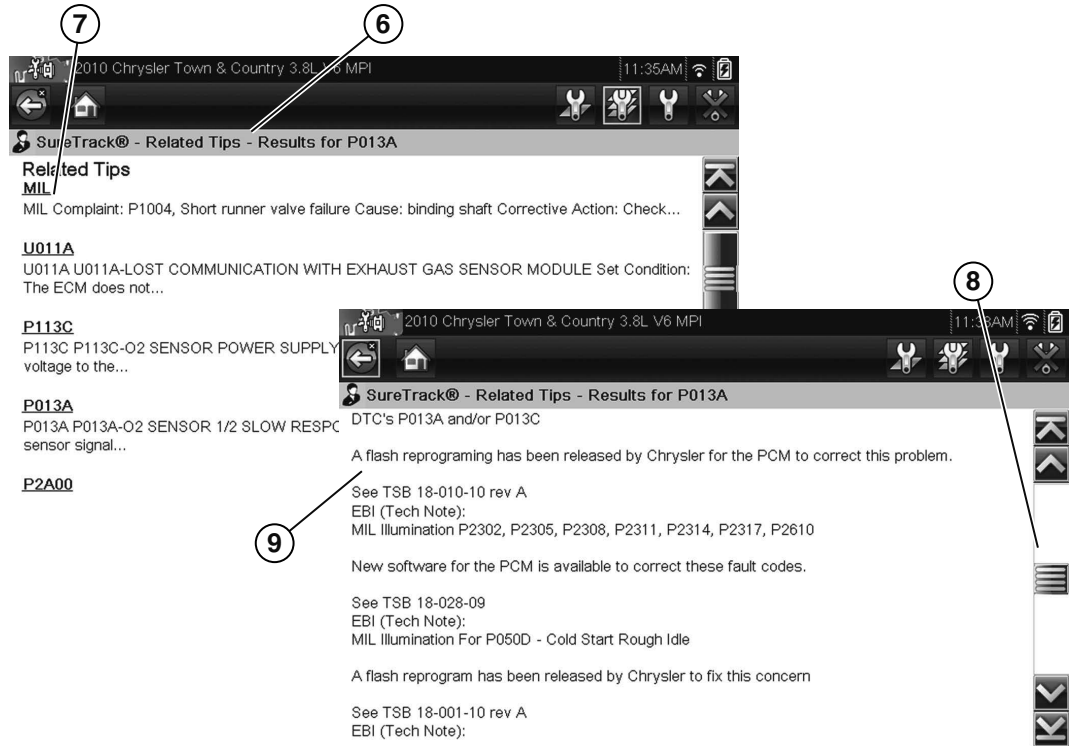


Figure 5



Clearing DTCs:



NOTE:

All DTCs are cleared when the power supply is disconnected from the simulator.

1. Select **Clear Codes** from the Codes menu (Figure 6).

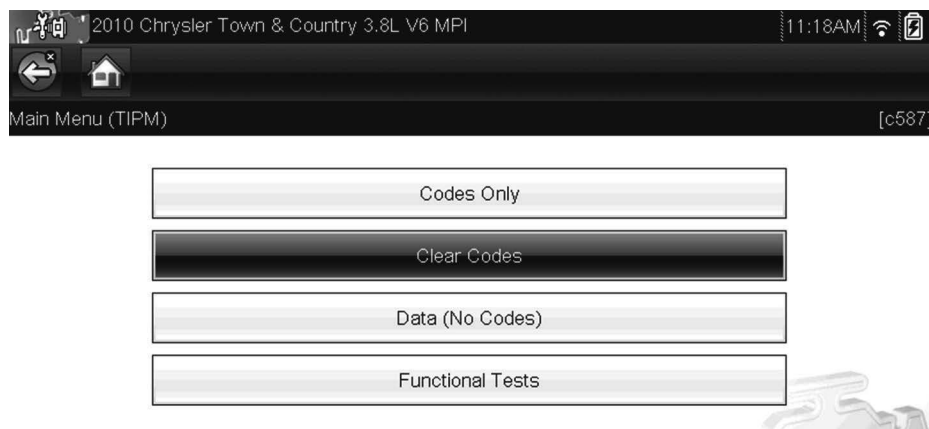


Figure 6 Typical - Clear Codes Menu Item (Solus Edge/Modis Ultra)

A confirmation message displays, asking you (e.g. “Are you sure?”).

Tech Tip - Clearing codes in an actual vehicle erases DTC records, all temporary ECM information including Freeze Frame/Failure Records. Make sure no vital diagnostic information will be lost before clearing codes. The Clear Codes function may not be available on all vehicles.

2. Select **YES** (to clear) or **NO** (to exit).

When YES is selected a “codes cleared” message displays. After the codes are cleared the activated simulator LED indicator will turn off.

For additional information on displaying and clearing codes, refer to the latest version of the diagnostic tool user manual. Diagnostic tool user manuals are available on our website: <http://diagnostics.snapon.com/usermanuals>.

Data Display Demonstration

Simulated parameter data is provided to demonstrate how a diagnostic tool displays parameters (PIDs) and the navigation procedures to access them. Select simulated PIDs are available within the Engine, and Central Gateway (TIPM) systems.

In addition, the simulator is equipped with three adjustable PIDs. These adjustable PIDs allow you to manually change the output values to visually demonstrate varied output or waveform glitches using the PID list and graph displays.

PID triggering can also be demonstrated with the adjustable PIDs. PID triggering allows you to capture data once predetermined conditions (triggers) are met.



NOTE:

All PID data displayed is for simulation purposes only. The adjustable PID knobs, control only their specific data.

Adjustable PIDs: (ranges are approximate):

- **ECT (degrees)** adjustment
 - 50 to 190 F° (10 to 88 C°)
 - **APP (percentage)** adjustment
 - 1 to 95%
 - **AAT (TIPM) (degrees)** adjustment
 - 50 to 100 F° (10 to 38 C°)
-



NOTE:

Navigation and menu choices may vary between diagnostic tools.

Before proceeding, refer to and perform the steps in “Getting Started” on page 7 (if not already completed).



To use the adjustable PID feature:

1. After the vehicle has been identified, select one of the following **Systems** from the menu:
 - **Engine** (system) for ECT
 - **Engine** (system) for APP
 - **Central Gateway (TIPM)** (system) for AAT
2. Select **Data** from the Main menu.

If Engine was selected, select **Engine** from the Data menu to continue.

3. Scroll through the PID list or graph displays to find the PID.
4. Turn the applicable adjustment knob to change the output value.

The PID graph (*Figure 7*) and list (*Figure 8*) examples below highlight the ECT(°F-°C) PID. The ECT(°F-°C) PID is adjustable using the ECT Parameter Adjustment Control Knob to demonstrate a possible glitch.

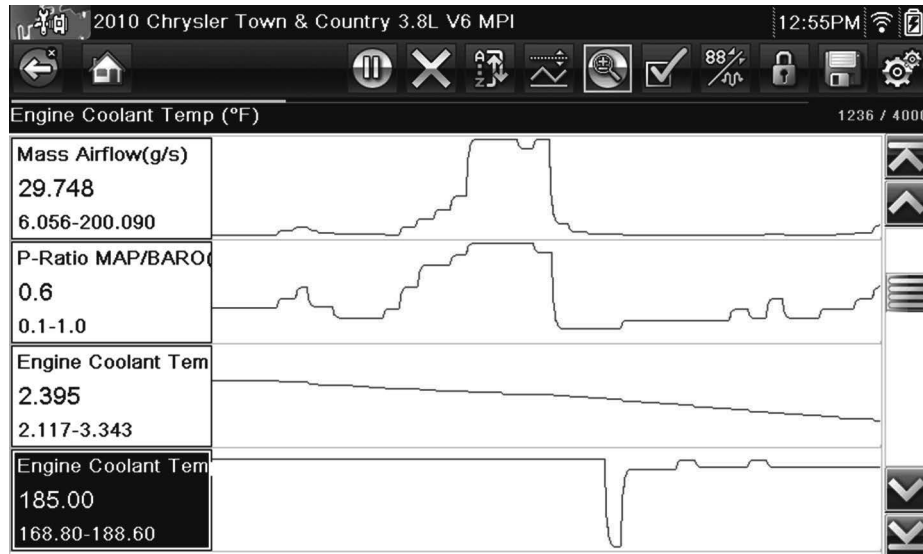


Figure 7 Typical - PID Graph Display / ECT (°F-°C) PID (Solus Edge/Modis Ultra)

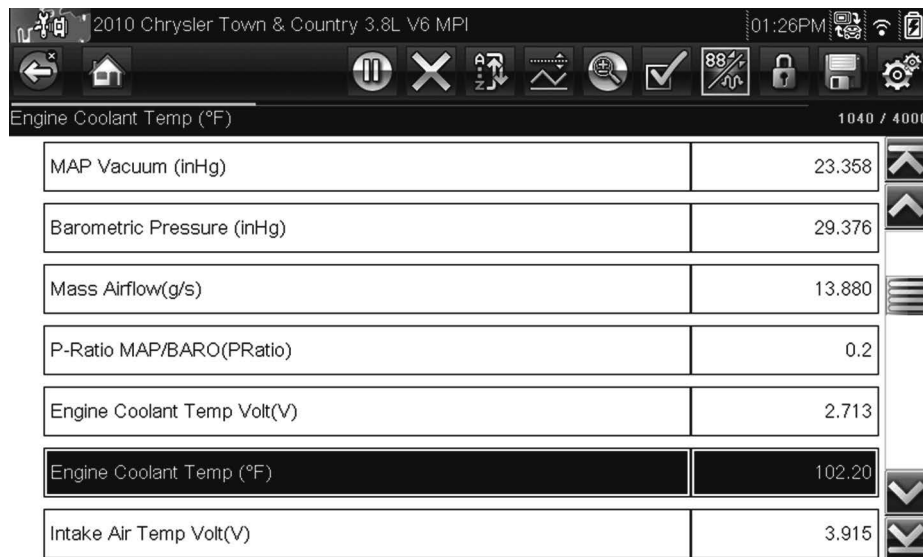


Figure 8 Typical - PID List Display / ECT (°F-°C) PID (Solus Edge/Modis Ultra)

Tech Tips - During actual vehicle testing, Data Display allows you to view parameter data values (e.g. Engine RPM, Coolant temp., Intake Air temp., TPS voltage, O2 sensor voltage etc.). The display can be viewed in list or graph form, and can be customized to include only the data you need. Data may also be paused or saved for detailed review and future reference.

Data values are buffered as they are transmitted from a vehicle ECM to the diagnostic tool. The values and graphs that are displayed are a representation of what has just occurred for each parameter.

For additional information on displaying parameter data, refer to the latest version of the diagnostic tool user manual. Diagnostic tool user manuals are available on our website: <http://diagnostics.snapon.com/usermanuals>.

Functional Test Demonstration

Select vehicle specific functional tests are supported to demonstrate how to use the diagnostic tool to test basic components. The following functional tests are provided:

- **Tail/Park Lamp** - toggle tail/park LEDs on/off
- **LF Turn Lamp** - toggle the left front turn lamp LED on/off
- **Horn** - toggle the horn on/off



NOTE:

Functional tests may not be supported by all vehicles and or diagnostic tools. Navigation and menu choices may vary.

Before proceeding, refer to and perform the steps in “Getting Started” on page 7 (if not already completed).



To perform a Functional Test:

1. Select **Central Gateway (TIPM)** from the System menu.
2. Select **Functional Tests** from the Main menu (*Figure 9*).

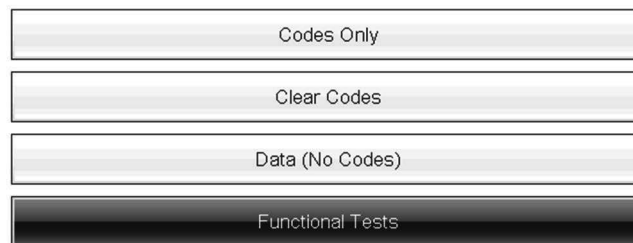


Figure 9 Typical - Main Menu - Functional Tests selected (Solus Edge/Modis Ultra)

3. Select one of the following from the Test menu:
 - **Horn, Left Front Turn Lamp or Tail/Park Lamp**

The selected functional test screen will display, showing available PIDs and the functional test button (on the upper toolbar).

4. Select the **Test** button.

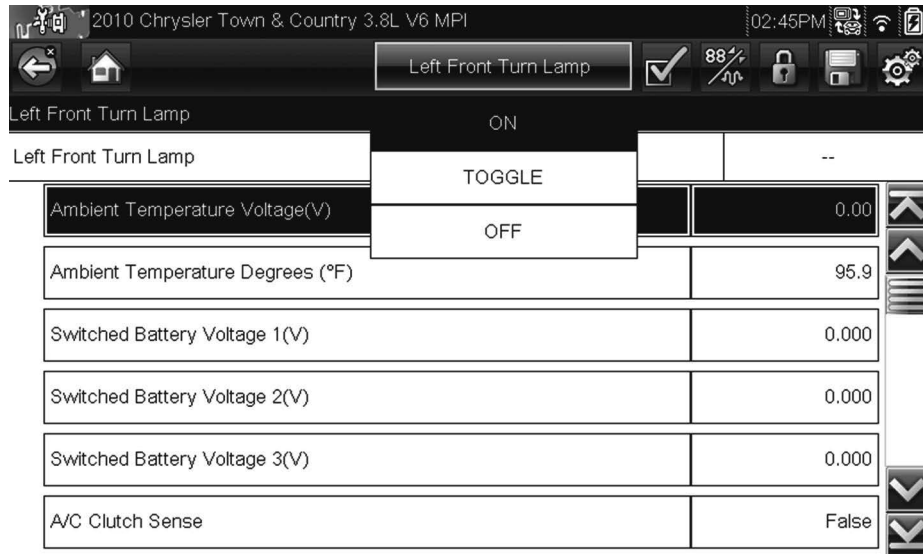


Figure 10 Typical - Functional Test Toggle Test Menu (Solus Edge/Modis Ultra)

A dropdown menu is displayed (Figure 10), with a choice of test options: on, off or toggle (turns on/off continuously).

5. Select one of the menu options to perform the test.

Tech Tips - During actual vehicle testing, Functional Tests can be used to access supported vehicle-specific subsystem tests. Tests vary by manufacturer, year, and model. Only the tests available for the identified vehicle display in the menu.

There are several types of functional tests:

- **Information Tests**—read-only tests, (e.g. selecting “VIN” from a Functional Tests menu to display the VIN of the identified vehicle)
- **Toggle Tests**—switch components, such as a solenoid, relay, or switch, between two operating states
- **Variable Control Tests**—command a certain value for a system or component (e.g. varying spark timing in 1° increments or EGR valve duty cycle in 10% increments)
- **Reset Tests**—reset the adaptive, or learned, values that are stored in the vehicle electronic control module memory
- **Scripted Tests**—software routines that place the vehicle into special operating modes for performing certain repairs, (e.g. brake bleeding with ABS)

For additional information on functional test operations, refer to the latest version of the diagnostic tool user manual. Diagnostic tool user manuals are available on our website: <http://diagnostics.snapon.com/usermanuals>.

OBD-II/EOBD Demonstration

The OBD-II/EOBD function allows you to quickly check DTCs, MIL status, monitor status, VIN and perform a number of other services that are emissions-related, without identifying the vehicle.



To display OBD-II/EOBD data:

1. Select **OBD-II/EOBD** from the Home screen.
2. Select **OBD Direct**.
3. Select **OBD Diagnose**
4. Select **Start Communication**

The “Establishing Communication” message screen displays.

The ECU/Protocol Information confirmation screen displays

5. Select **Continue**, then a menu of available tests displays (*Figure 11*).
6. Select a mode/service to continue, see “OBD-II/EOBD Modes/Services” on page 18.

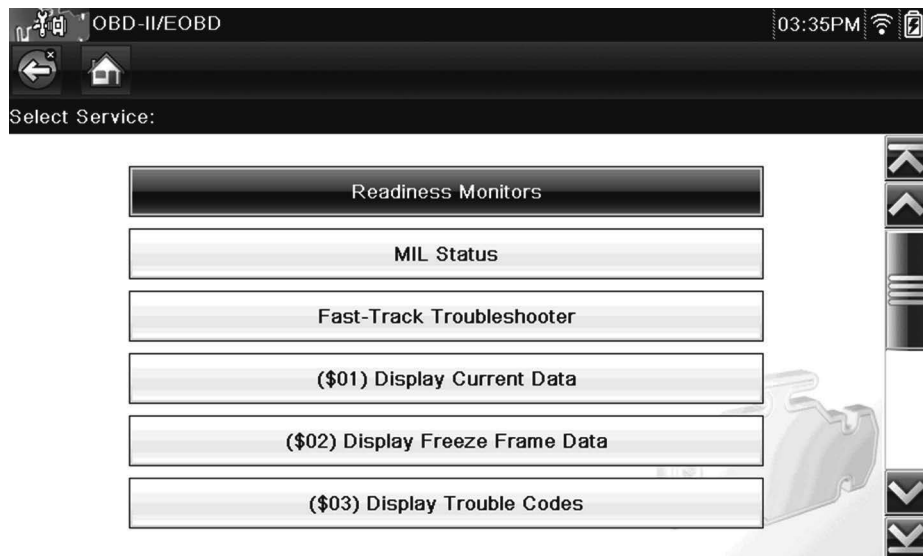


Figure 11 Typical - OBD-II/EOBD Mode/Service Menu (Solus Edge/Modis Ultra)

OBD-II/EOBD Modes/Services

This simulator provides data for the following OBD-II/EOBD modes/services to demonstrate basic OBD-II/EOBD functionality and navigation.



NOTE:

All data displayed is for demonstration purposes only.

- **Readiness Monitors** (Figure 12)
 - **Monitors complete since DTC cleared** - displays monitor test results
 - **Monitors complete this cycle** - displays monitor test results

Monitor Name	Test Status
MISFIRE	TEST COMPLETE
FUEL SYSTEM	TEST COMPLETE
COMPONENTS	TEST COMPLETE
CATALYST	NOT COMPLETE
HEATED CATALYST	NOT SUPPORTED
EVAPORATIVE SYSTEM	NOT COMPLETE

Figure 12 Typical - OBD-II/EOBD Readiness Monitors Results (Solus Edge/Modis Ultra)

- **MIL status** - displays MIL status in “OFF” state (MIL status does not change regardless of simulator MIL LED indicator status)
- **Fast-Track Troubleshooter** - provides (if available) general OBD-II/EOBD information, code tips and testing procedures

- **\$01 Display Current Data** - displays emissions related PID data (Figure 13)

ID : \$	E8
ENGINE SPEED(1/min)	1717
ABSOLUTE THROTTLE POSITION(%)	15.3
ABSOLUTE THROTTLE POSITION B(%)	15.3
RELATIVE THROTTLE POSITION(%)	5.1
COMMANDED THROTTLE ACT.CONTROL(%)	5.1
ACCELERATOR PEDAL POSITION D(%)	14.5

Figure 13 Typical - OBD-II/E OBD Current Data (Solus Edge/Modis Ultra)

- **\$02 Display Freeze Frame Data** - displays DTC P1404 and associated PIDs captured when the DTC was set (Figure 14)

ID : \$	E8
P1404 Manufacturer Specific Code	
ENGINE SPEED(1/min)	1521
ABSOLUTE THROTTLE POSITION(%)	14.5
ABSOLUTE THROTTLE POSITION B(%)	14.5
RELATIVE THROTTLE POSITION(%)	3.9
COMMANDED THROTTLE ACT.CONTROL(%)	3.9

Figure 14 Typical - OBD-II/E OBD Mode \$02 Freeze Frame Data (Solus Edge/Modis Ultra)

- **\$03 Display Trouble Codes** - displays DTCs P0115 (ECT), P0230 (Fuel Pump), P0350 (Ignition Coil), P0460 (Fuel Level Sensor)
- **\$04 Clear Emissions Related Data** - allows you to demonstrate the navigation through the normal clearing procedures, but does not clear the codes from the simulator.

- **\$06 Display Test Parameter Results (On-board Monitored Systems)** - displays the results of non-continuous monitored tests. This simulator supports data for only the following tests:
 - **\$21 - Catalyst Monitor** - detects if the catalyst is operating as required
 - **\$3D - Purge Flow Monitor** - detects if purge flow from the charcoal cannister to the engine occurs or not (*Figure 15*)
 - **\$A2 Misfire Cylinder #1 Data** - detects lack of or improper combustion

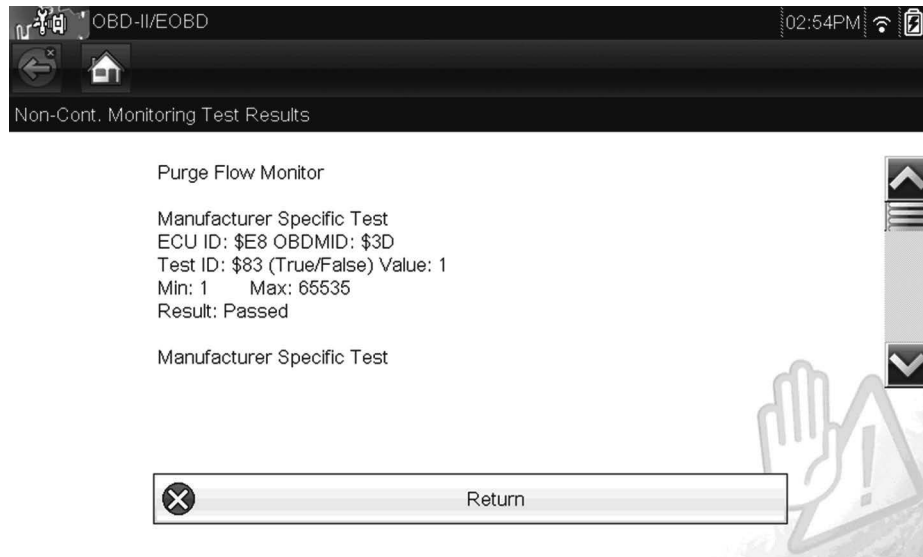


Figure 15 Typical - OBD-II/EODB Mode \$06 (\$3D) Purge Flow Monitor (Solus Edge/Modis Ultra)

- **\$08 Request Control On-board system** - displays the message "Request Control Of On-Board System", test or component is not supported by controller(s).", to simulate an actual response when testing some vehicles.
- **\$09 Read Vehicle Identification** - provides vehicle (component specific) identification information. This simulator supports data for only the following:
 - **Vehicle Identification Number (VIN)** - displays the VIN (*Figure 16*)
 - **Calibration Identification (CAL ID)** - displays the ECU ID and calibration ID numbers
 - **Calibration Verification Number (CVN)** - displays the ECU ID and calibration verification numbers

Tech Tips - Mode \$09 Read Vehicle Identification information can be used to verify OEM controller software and calibration, during inspections/certifications, and or reprogramming of controllers.

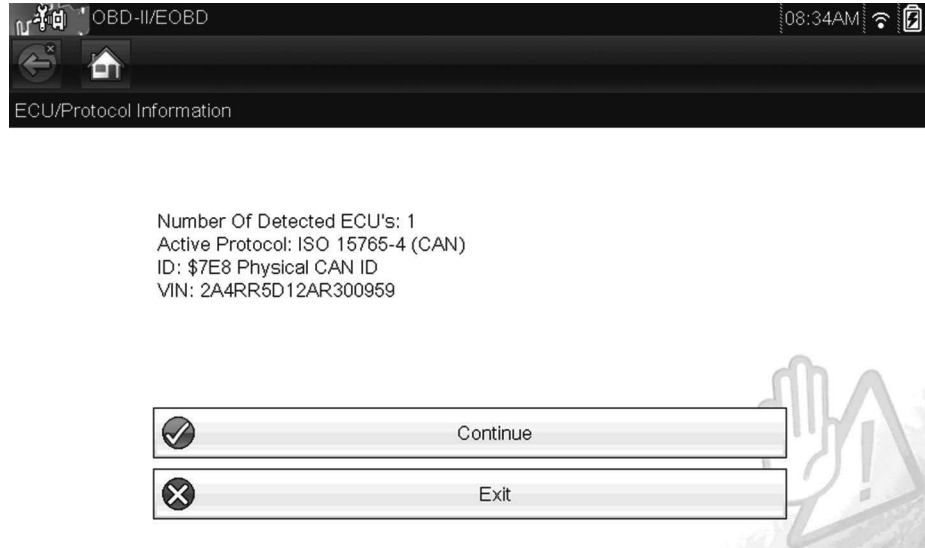


Figure 16 Typical - OBD-II/EOBD ECU/Protocol and VIN (Solus Edge/Modis Ultra)

- **\$09 In-Use Performance Tracking** - displays completion and condition values for supported monitors (Figure 17):
 - Completion value = the number of times the monitor test has found a malfunction (problem).
 - Condition value = the number of times the monitor test has completed.

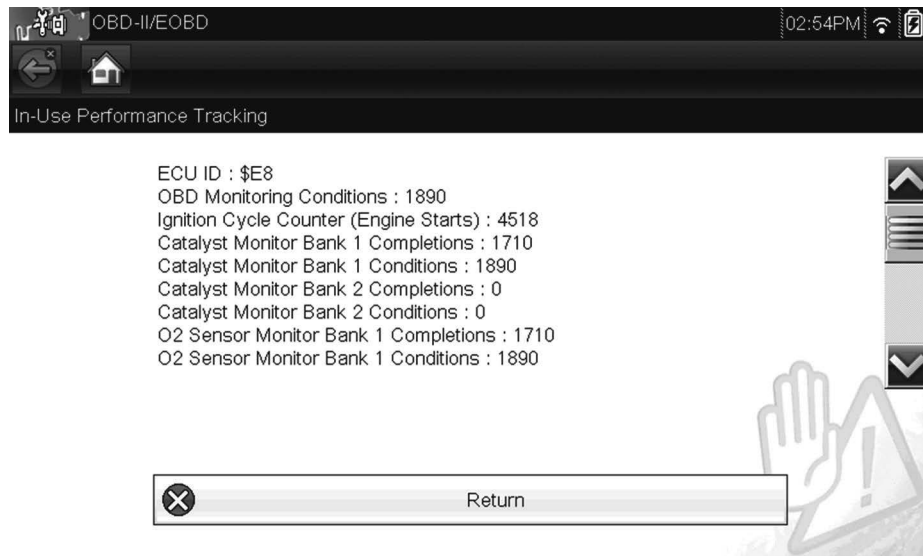


Figure 17 Typical - OBD-II/EOBD Mode \$09 In-Use Performance Tracking (Solus Edge/Modis Ultra)

For additional information on OBD-II/EOBD operations, refer to the latest version of the diagnostic tool user manual. Diagnostic tool user manuals are available on our website: <http://diagnostics.snapon.com/usermanuals>.

Troubleshooting



NOTE:

If a problem develops with the simulator, an error may be indicated by the continuous flashing of the MIL LED indicator.



To reset the simulator, due to a malfunction:

1. Set the **Power** switch to the off position.
2. Disconnect the AC power supply from the simulator.
3. Reconnect the AC power supply and set the **Power** switch to the on position.

If the problem persists after multiple attempts to reset, contact Snap-on Diagnostics Technical Assistance.

General Reference

The following descriptions are provided as reference for the abbreviations and terms used throughout this manual:

Abbreviation	Description
AAT	Ambient Air Temperature
ABS	Anti-lock Braking System
APP	Accelerator Pedal Position
CAN	Controller Area Network
CKP	Crankshaft Position
DLC	Data Link Connector
DTC	Diagnostic Trouble Code
ECM	Electronic Control Module
ECT	Engine Coolant Temperature
EGR	Exhaust Gas Recirculation
EVAP	Evaporative Emission Control System
LED	Light Emitting Diode
MIL	Malfunction Indicator Light
PID	Parameter Identification
TIPM (TIPMCGW)	<p>Total Integrated Power Module Central Gateway (commonly called Central Gateway and TIPMCGW). <i>The term "Central Gateway (TIPM)" is used throughout this manual to reference this module.</i></p> <p>Additional Information <i>The TIPMCGW is a computerized main power relay, distribution center and centralized connection point of the various CAN network communication buses. Typical CAN buses include CAN C (Engine/ABS systems), CAN B - (Body systems) and Diagnostics CAN C. As general reference, the diagnostic tool can access (if supported) the Central Gateway module and scan all the CAN networks for DTCs. For the purposes of this simulator, a DTC and parameter display for the ATT sensor are used to simulate a CAN B network associated fault.</i></p>
TPS	Throttle Position Sensor
VIN	Vehicle Identification Number