PERFORMANCE LEVEL

3130 RS

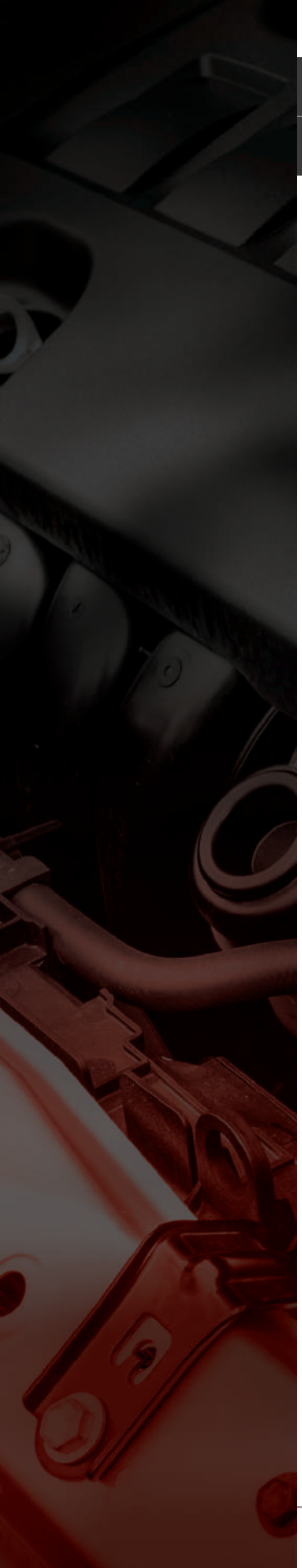
USER'S MANUAL

INNOVA®

FixAssist®



POWERED BY REPAIR SOLUTIONS 2®



HELLO...

On behalf of everyone at INNOVA, we want to welcome you and thank you for purchasing the **INNOVA® CarScan® Tool**! Every automotive diagnostic Scan Tool we make includes tons of pro-level features designed to help maximize and simplify your OBD II diagnostic routine. In this manual, we will guide you on how to access your tool's intuitive functions including:

- ☑ *Check Engine Light Diagnostics*
- ☑ *Full 10 OBD II Modes*
- ☑ *OEM Network Scans*
- ☑ *BMS / Battery Reset & Initialization*
- ☑ *Oil Maintenance Reset / Oil Level / Oil Life*
- ☑ *OBD I Diagnostics*
- ☑ *Heavy-Duty OBD Diagnostics*
- ☑ *Battery / Alternator Test*
- ☑ *Stream Live Data PIDs*
- ☑ *Smog Check / Emissions Readiness*
- ☑ *Drive Cycle Procedures*
- ☑ *And Much More...*

Plus, gain the benefit of having unlimited access to real world solutions on your mobile device:

REPAIR SOLUTIONS 2®

Download on the App Store | GET IT ON Google Play

RepairSolutions2® seamlessly pairs with your INNOVA OBD II Scan Tool to deliver the most complete automotive repair database with verified fixes from ASE Certified Master Technicians. Find the right fix and the right parts instantly on your mobile device.

Enjoy using your INNOVA diagnostic equipment!

Yours sincerely,

The Innova Technical Team

P.S: Connect with us to see what we're up to...

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LEGAL INFORMATION

FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

- The transmitters within this device must not be co-located or operating in conjunction with any other antenna or transmitter.
- This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. Please follow the operation instructions as documented in this manual to fulfill IC RF exposure compliance requirements.

TRADEMARKS

Title, ownership rights, and intellectual property rights in the Products and Services shall remain in Innova and/or its licensors and other suppliers. Licensee and End Users acknowledge such ownership, confidential information, and intellectual property rights and will not take any action to jeopardize, limit or interfere in any manner with Innova's or its licensors' or other suppliers' ownership of or rights with respect to the Products and Services. The Products and Services may be protected by Patent, Trademark, Copyright and/or other intellectual property laws and by international treaties. All trademarks used in connection with the Products and Services are owned by Innova, its affiliates or its licensors and other suppliers, and no license to use any such trademarks is provided hereunder. Licensee and End Users agree that Innova may use in any manner and without limitation all comments, suggestions, complaints and other feedback Licensee and End Users provide relating to the Products and Services. For more information and current listing of trademarks, please visit https://www.innova.com/pages/trademarks.

PATENTS

Innova Electronics Corp. protects its intellectual property with numerous U.S. patents, which were used to research, design and manufacture this product. Please visit https://www.innova.com/pages/patents for additional information.

FIRMWARE VERSION

Please note that the images and functions in this manual may differ based on the current **Firmware Version (FW)** of your Scan Tool. To check your Scan Tool's current version and to check for updates, please refer to **Viewing the Firmware Version**. [See page 48]

CALIFORNIA PRODUCT WARNINGS

⚠WARNING

This product can expose you to chemicals including DiNP, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SAFETY PRECAUTIONS

SAFETY FIRST!

It is important that every user of this product read all instructions and warnings included in this manual to ensure their safety, the safety of others, and to prevent damage to this product and the vehicle being diagnosed and repaired. This manual describes common test procedures used by experienced service technicians. It is assumed that the user has a good understanding of vehicle systems before using this product.

Many test procedures require precautions to avoid accidents that can result in personal injury, and/or damage to the vehicle or test equipment. At a minimum, the following safety standards should be followed whenever using this product, or whenever working on a vehicle.

- When an engine is running, it produces carbon monoxide, a toxic and poisonous gas. To prevent serious injury or death from carbon monoxide poisoning, **operate the vehicle ONLY in a well-ventilated area.**
- To protect your eyes from propelled objects as well as hot or caustic liquids, **always wear approved safety eye protection.**
- When an engine is running, many parts (such as the coolant fan, pulleys, fan belt, etc.) turn at high speed. To avoid serious injury, **always be aware of moving parts.** Keep a safe distance from these parts as well as other potentially moving objects.
- Engine parts become very hot when the engine is running. To prevent severe burns, **avoid contact with hot engine parts.**
- Before starting an engine for testing or troubleshooting, make sure the parking brake is engaged. **Put the transmission in park** (for automatic transmission) **or neutral** (for manual transmission). **Block the drive wheels** with suitable tire blocks.
- Connecting or disconnecting test equipment when the ignition is ON can damage test equipment and the vehicle's electronic components. **Turn the ignition OFF before connecting the Scan Tool to or disconnecting the Scan Tool from the vehicle's Data Link Connector (DLC).**
- To **prevent damage to the on-board computer** when taking vehicle electrical measurements, always use a digital multimeter with at least 10 Megohms of impedance.
- Fuel and battery vapors are highly flammable. To prevent an explosion, keep all sparks, heated items, and open flames away from the battery and fuel vapors. **DO NOT SMOKE NEAR THE VEHICLE DURING TESTING.**
- **Don't wear loose clothing or jewelry when working on an engine.** Loose clothing can become caught in the fan, pulleys, belts, etc. Jewelry is highly conductive and can cause a severe burn if it makes contact between a power source and ground.

SAFETY ALERT ICONS

Color-coded icons are used through this manual to identify safety alerts and warnings. These are provided to help prevent serious injury to you, injury to bystanders, and damage to property or equipment. The meanings of these icons are as follows:



Yellow Icon – *Indicates a "**NOTE:**" statement that offers special information or tips on what is being instructed.*



Orange Icon – *Identifies a potential hazardous situation. Provides a "**WARNING:**" statement on how to proceed to avoid serious injury to the user or bystanders, and/or damage to equipment.*



Red Icon – *Identifies an imminent hazardous situation. Provides an immediate "**DANGER:**" alert on what must be done to prevent serious injury or death to the user or bystanders.*

GLOSSARY

OBD II TERMINOLOGY

The following terms and their definitions are related to OBD II systems.

- **Powertrain Control Module (PCM)** - The PCM is the OBD II accepted term for the vehicle's "on-board computer." In addition to controlling the engine management and emissions systems, the PCM also participates in controlling powertrain (transmission) operation. Most PCMs also have the ability to communicate with other computers on the vehicle (ABS, ride control, body, etc.).
- **Monitor** - Monitors are "diagnostic routines" programmed into the PCM. The PCM utilizes these programs to run diagnostic tests, and to Monitor operation of the vehicle's emissions-related components or systems to ensure they are operating correctly and within the vehicle manufacturer's specifications. Currently, up to fifteen Monitors are used in OBD II systems. Additional Monitors will be added as the OBD II system is further developed.



NOTE: *Not all vehicles support all fifteen Monitors.*

- **Enabling Criteria** - Each Monitor is designed to test and Monitor the operation of a specific part of the vehicle's emissions system (EGR system, oxygen sensor, catalytic converter, etc.). A specific set of "conditions" or "driving procedures" must be met before the computer can command a Monitor to run tests on its related system. These "conditions" are known as "**Enabling Criteria**." The requirements and procedures vary for each Monitor. Some Monitors only require the ignition key to be turned "**On**" for them to run and complete their diagnostic testing. Others may require a set of complex procedures, such as starting the vehicle when cold, bringing it to operating temperature, and driving the vehicle under specific conditions before the Monitor can run and complete its diagnostic testing.
- **Complete / Incomplete** - The terms "**Complete**" and "**Incomplete**" are used throughout this manual. "**Complete**" means the PCM **has** commanded a particular Monitor to perform the required diagnostic testing on a system to ensure the system is operating correctly (within factory specifications). The term "**Incomplete**" means the PCM **has not** yet commanded a particular Monitor to perform diagnostic testing on its associated part of the emissions system.
- **Trip** - A Trip for a particular Monitor requires that the vehicle is being driven in such a way that all the required "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met. The "Trip Drive Cycle" for a particular Monitor begins when the ignition key is turned "**On**." It is successfully completed when all the "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met by the time the ignition key is turned "**Off**." Since each of the fifteen Monitors is designed to run diagnostics and testing on a different part of the engine or emissions system, the "Trip Drive Cycle" needed for each individual Monitor to run and complete varies.
- **OBD II Drive Cycle** - An OBD II Drive Cycle is an extended set of driving procedures that takes into consideration the various types of driving conditions encountered in real life. These conditions may include starting the vehicle when it is cold, driving the vehicle at a steady speed (cruising), accelerating, etc. An OBD II Drive Cycle begins when the ignition key is turned "**On**" (when cold) and ends when the vehicle has been driven in such a way as to have all the "Enabling Criteria" met for all its applicable Monitors. Only those trips that provide the Enabling Criteria for all Monitors applicable to the vehicle to run and complete their individual diagnostic tests qualify as an OBD II Drive Cycle. OBD II Drive Cycle

requirements vary from one model of vehicle to another. Vehicle manufacturers set these procedures. Consult the vehicle's service manual for OBD II Drive Cycle procedures.

NOTE: *Do not confuse a "Trip" Drive Cycle with an OBD II Drive Cycle. A "Trip" Drive Cycle provides the "Enabling Criteria" for one specific Monitor to run and complete its diagnostic testing. An OBD II Drive Cycle must meet the "Enabling Criteria" for all Monitors on a particular vehicle to run and complete their diagnostic testing.*

- **Warm-up Cycle** - Vehicle operation after an engine off period where engine temperature rises at least 40°F (22°C) from its temperature before starting, and reaches at least 160°F (70°C). The PCM uses warm-up cycles as a counter to automatically erase a specific code and related data from its memory. When no faults related to the original problem are detected within a specified number of warm-up cycles, the code is erased automatically.

OBD II MONITORS

To ensure the correct operation of the various emissions-related components and systems, a diagnostic program was developed and installed in the vehicle's on-board computer. The program has several procedures and diagnostic strategies. Each procedure or diagnostic strategy is made to Monitor the operation of, and run diagnostic tests on, a specific emissions-related component or system. These tests ensure the system is running correctly and is within the manufacturer's specifications. On OBD II systems, these procedures and diagnostic strategies are called "Monitors."

Currently, fifteen Monitors are supported by OBD II systems. Additional Monitors may be added as a result of Government regulations as the OBD II system grows and matures. Not all vehicles support all fifteen Monitors. Additionally, some Monitors are supported by "Spark Ignition" vehicles only, while others are supported by "Compression Ignition" vehicles only.

Monitor operation is either "**Continuous**" or "**Non-Continuous**," depending on the specific Monitor.

CONTINUOUS MONITORS

Three of these Monitors are designed to constantly Monitor their associated components and/or systems for proper operation. Continuous Monitors run constantly when the engine is running.

CCM = Comprehensive Component Monitor

MIS = Misfire Monitor

FUE = Fuel System Monitor

NON-CONTINUOUS MONITORS

The other twelve Monitors are "non-continuous" Monitors. "Non-continuous" Monitors perform and complete their testing once per trip.

O2S = Oxygen Sensor Monitor

HTR = Oxygen Sensor Heater Monitor

CAT = Catalyst Monitor

HCA = Heated Catalyst Monitor

EGR = EGR (Exhaust Gas Recirculation) System Monitor

EVA = EVAP System Monitor

AIR = Secondary Air System Monitor

NOTE: *The following Monitors became standard beginning in 2010. The majority of vehicles produced before this time will not support these Monitors.*

HCC = NMHC (Non-Methane Hydrocarbon Converting) Catalyst Monitor

NOx = NOx/SCR Aftertreatment Monitor

BPS = Boost Pressure System Monitor

EGS = Exhaust Gas Sensor Monitor

DPF = PM (Particulate Matter) Filter Monitor

ADDITIONAL TERMINOLOGY & ACRONYMS

- **ABS** = Anti-Lock Braking System
- **DLC** = Data Link Connector (vehicle's data port)
- **DTC** = Diagnostic Trouble Code
- **I/M** = INSPECTION and MAINTENANCE
- **KOEO** = Key On, Engine Off
- **KOER** = Key On, Engine Running
- **MIL** = Malfunction Indicator Light (Check Engine Light)
- **OBD** = On-Board Diagnostics
- **OBD II / OBD II** = On-Board Diagnostics, Second Generation
- **OEM** = Original Equipment Manufacturer
- **PID** = Parameter Identification Data

GLOSSARY

Additional Terminology & Acronyms

- **SDC** = Since DTCs Cleared
- **SRS** = Supplemental Restraint System
- **TDC** = This Drive Cycle
- **TPMS** = Tire Pressure Monitoring System
- **TSBs** = Technical Service Bulletins

INTRODUCTION

SCAN TOOL CONTROLS AND INDICATORS

See Figure 1 for the locations of items 1 through 14, below.



Figure 1. Controls and Indicators

1. **Display** – Color LCD display shows menus and submenus, test results, Scan Tool functions and Monitor status information. Refer to SCAN TOOL DISPLAY FUNCTIONS for more details. [See page 10]
2. **GREEN LED** – Indicates that all engine systems are running normally, and all emission Monitors are active and performing their diagnostic testing. The Malfunction Indicator Light (Check Engine Light) on the vehicle's instrument panel is off.
3. **YELLOW LED** – Indicates there is a possible problem in one or more of the vehicle's systems. Either a "Pending" DTC is present and/or one or more of the vehicle's emission Monitors have not run their diagnostic testing.
4. **RED LED** – Indicates there is a problem in one or more of the vehicle's systems. The Malfunction Indicator Light (Check Engine Light) on the vehicle's instrument panel is on.
5. ▲ **UP button** – When in MENU mode, scrolls UP through the menu options. When LINKED to a vehicle, scrolls UP through the current display screen to display additional data.
6. ↵ **ENTER button** – When in MENU mode, confirms the selected option or value.
7. ▼ **DOWN button** – When in MENU mode, scrolls DOWN through the menu options. When LINKED to a vehicle, scrolls DOWN through the current display screen to display additional data.
8. **ERASE button** – Erases Diagnostic Trouble Codes (DTCs), and Freeze Frame data from the vehicle's computer, and resets Monitor status.
9. **SYSTEM MENU button** – When pressed, displays the System Menu.
10. **FF/DTC** – Displays the DTC View screen and/or scrolls the LCD display to view DTC and Freeze Frame Data.
11. **LINK button** – When connected to a vehicle, links the Scan Tool to the vehicle's computer.
12. **M button** – When pressed, displays the Main Menu.

13. **LD button** – When pressed while linked to a vehicle, places the Scan Tool in the Live Data mode.
14. **OBD II Cable** (detachable) – Connects the Scan Tool to the vehicle's Data Link Connector (DLC) when retrieving codes from OBD II systems.

SCAN TOOL DISPLAY FUNCTIONS

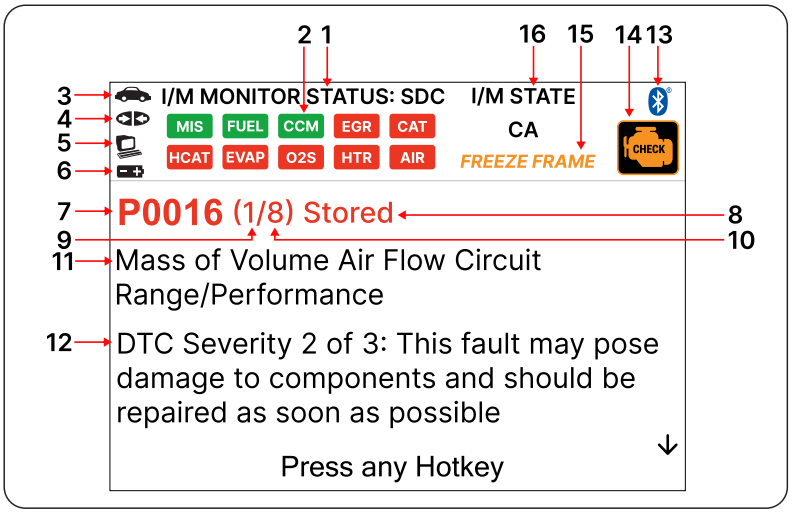


Figure 2. Scan Tool Display Functions

See Figure 2 for the locations of items 1 through 16, below.

1. **I/M MONITOR STATUS: SDC (SINCE DTCs CLEARED) or TDC (THIS DRIVE CYCLE) field** – Identifies the I/M Monitor status area.
2. **Monitor icons** – Shows the current status for all Monitors supported by the vehicle.
3. **Vehicle icon** – When visible, indicates that the Scan Tool is being powered through the vehicle's DLC connector.
4. **Link icon** – When visible, indicates the Scan Tool is communicating with the vehicle's computer.
5. **Computer icon** – When visible, indicates the Scan Tool is linked to a personal computer.
6. **Scan Tool Internal Battery icon** – When visible, indicates the Scan Tool batteries are low and should be replaced. If the batteries are not replaced when the battery icon is On, all 3 LEDs will light to warn that the batteries need replacement. No data displays on screen when all 3 LEDs are illuminated.
7. **DTC Display Area** – Displays the Diagnostic Trouble Code (DTC) number. Each fault is assigned a code number that is specific to that fault.
8. **Code Type** – Indicates the type of code being displayed: **Stored**, **Pending**, **Permanent**.
9. **Code Number Sequence** – The Scan Tool assigns a sequence number to each DTC that is present in the computer's memory, starting with "1." This number indicates which code is currently displayed. Code number "1" is always the highest priority code, and the one for which "Freeze Frame" data has been stored.

NOTE: *If "1" is a "Pending" code, there may or may not be "Freeze Frame" data stored in memory.*

10. **Code Enumerator** – Indicates the total number of codes retrieved from the vehicle's computer.
11. **Test Data Display Area** – Displays DTC definitions and other pertinent test information messages.
12. **Severity** – Indicates the level of severity for the priority code (*code number "1"*), as follows:

    [1] This fault typically does not cause damage to components and should be serviced when convenient.

    [2] This fault may pose damage to components and should be repaired as soon as possible.

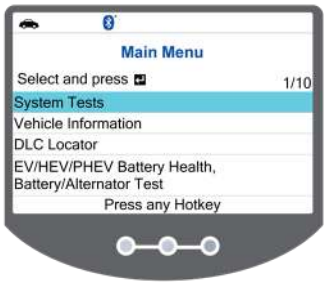
    [3] This fault will cause damage to components and should be repaired immediately.
13. **Bluetooth icon** – Indicates communication status with a compatible INNOVA® mobile application. A solid blue icon indicates an active Bluetooth connection has been established.
14. **SYSTEM icon** – Indicates the system with which the diagnostic trouble code is associated:

MIL icon **ABS icon** **SRS icon**

15. **FREEZE FRAME icon** – Indicates that there is Freeze Frame data stored in the vehicle's computer memory. (Captured when Priority Code was set / Code number 1).
16. **I/M STATE** – Displays acronym of INSPECTION and MAINTENANCE (I/M) program location.

THE MAIN MENU

You can use the Scan Tool to perform additional diagnostic tests, view diagnostic and vehicle information stored in the vehicle's on-board computer, and configure the Scan Tool for your particular needs. These functions are accessed through the Main Menu [**M**]. The following functions are available:



- **System Tests** – Displays the System Tests menu, which lets you retrieve and view results for the O2 Sensor Monitor test and OBD Monitor Test, view I/M Readiness Status and initiate a Request Control On-Board System. [See page 36]
- **Vehicle Information** – Displays the Vehicle Info menu, which lets you retrieve and view reference information for the vehicle under test. [See page 39]
- **DLC Locator** – Lets you find the location of the Data Link Connector (DLC) for a specified vehicle. [See page 41]
- **EV/HEV/PHEV Battery Health, Battery/Alternator Test** – Performs a check of the vehicle's battery and alternator system (or hybrid/EV battery system) to ensure the system is operating within acceptable limits. [See page 42]
- **Drive Cycle Procedures** – Lets you view trip cycle procedures for a selected vehicle Monitor. [See page 44]
- **Service Reset** – Lets you reset the Oil Maintenance Light [See page 45] and reset the battery Monitor system after battery replacement [See page 46].

- **Service Check** – Lets you view the current engine oil level, and oil life remaining. [See page 48]
- **Firmware Version** – Displays the Scan Tool's firmware version. [See page 48]
- **Tool Library** – Displays the Tool Library menu, which provides access to OBD I and OBD II DTC libraries and definitions for Monitor icons and LED indicators. [See page 48]
- **Tool Settings** – Displays the Tool Settings menu, which lets you make several adjustments and settings to configure the Scan Tool to your particular needs. [See page 50]

NOTE: *The* ***System Tests*** *option is shown only when the Scan Tool is in Global OBD II mode.*

THE REPAIRSOLUTIONS2® APP

Innova's RepairSolutions2® (RS2) is a web-based service created to assist Do-it-Yourselfers and Professional technicians simplify their vehicle diagnostic process. In essence, RS2 helps you decode the diagnostic data collected by your INNOVA® OBD II Scan Tool to arrive at a most likely fix. At its core, RS2 uses a database of millions of real-world verified fixes–collected over the last 25 years by ASE Master Technicians across the U.S.– that is cross-referenced to your specific vehicle's problem to instantly arrive at a verified fix. Think of RS2 as your personalized technician to help diagnose, repair, and maintain your vehicle(s).

THE RS2 APP GIVES YOU...

- **Verified Fixes** – Find the most likely fixes reported and verified by ASE Technicians for the retrieved DTCs. Plus, quickly purchase the exact parts you need right from the app.
- **Predicted Repairs** – With millions of verified repair solutions, get a statistical probability of what repairs the vehicle may need within the next 12 months.
- **TSBs & Recalls** – Learn if there are any special NHTSA safety recalls or Technical Service Bulletins (TSBs) issued by the vehicle's manufacturer.
- **Vehicle Health Reports** – Get a quick insight on how the vehicle's vitals are currently performing (e.g., oil life, brake pad life, battery status, etc.) and get alerts to potential problems.
- **Upcoming Maintenance** – View the vehicle manufacturer's recommended maintenance intervals. Plus, conveniently purchase the correct maintenance parts right from the app.
- **And much more**...

HARDWARE REQUIREMENTS

- Innova Scan Tool with Bluetooth/Wi-Fi connectivity
- Android or iOS Mobile Device

DOWNLOAD THE RS2 APP

- **Apple iOS Devices** (click the link)

  Download on the App Store

- **Android Devices** (click the link)

  GET IT ON Google Play

- **From an INNOVA Scan Tool**

  — Scan the QR Code displayed on the Scan Tool's screen when pairing with the Scan Tool.



USING THE RS2 APP

1. Retrieve the vehicle's diagnostic data. [See page 15]
2. Download and install the RepairSolutions2 app (see above).
3. Launch the **RS2 app** and log in to your account.
   - If you have not yet established an account, you must register for a FREE RS2 account before proceeding.
4. Follow the on-screen prompts to pair your INNOVA Scan Tool. Be sure your mobile device is connected to an available Wi-Fi network.
   - Begin the pairing process by selecting your tool from the list.

   NOTE: *The RS2 app can only store up to two Wi-Fi configurations.*
5. Once paired, the data from your Scan Tool is automatically transferred to the RS2 app to create a report.

   NOTE: *If the data does not automatically transfer, simply keep the app and Scan Tool paired and scan the vehicle again.*

SCAN TOOL BATTERY REPLACEMENT

Replace batteries when the battery symbol is visible on the display and/or the screen displays a warning message: "*Batteries are low, the tool will auto shut off. Please replace batteries before continuing.*"

1. Locate the battery cover on the back of the Scan Tool.
2. Use a suitable screwdriver to remove the screw securing the battery cover, then remove the cover with your fingers.
3. Replace batteries with three (3) AA-size batteries (for longer life, use Alkaline-type batteries).
4. Reinstall the battery cover on the back of the Scan Tool.

INITIAL SETUP

The first time the Scan Tool is plugged into the vehicle, it is necessary to complete your setup by performing the following steps:

1. Select the desired display **language**, then press **ENTER** ↵.
2. Select the desired **unit of measurement**, then press **ENTER** ↵.
3. Select the preferred **Smog Check or I/M Program Location** and press **ENTER** ↵.
4. The next screen displays the **Smog Check or I/M Program LED Definition**. Press **ENTER** ↵ to continue.
5. In this next screen, a QR code to RepairSolutions2® (RS2) is provided. Using any mobile device, scan the code to download and install the free RS2 app. The app offers additional information including Most Likely Component/ System Cause for DTC, Repair Tip, and much more.



6. **Enjoy your INNOVA CarScan® Tool!**

NOTE: *The initial language and unit of measurement selections, as well as other settings, can be changed as desired later in Tool Settings.* *[See page 50]*

USING THE SCAN TOOL

RETRIEVING OBD II DIAGNOSTIC TROUBLE CODES

Never replace a part based only on the DTC definition. Each DTC has a set of testing procedures, instructions, and flow charts that must be followed to confirm the location of the problem. Always refer to the vehicle's service manual for detailed testing instructions.

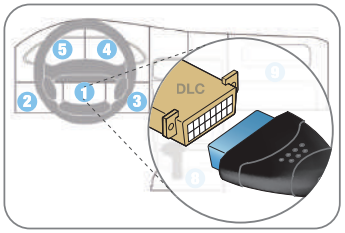
NOTE: *Check the vehicle thoroughly before performing any test.*

WARNING: *ALWAYS observe safety precautions whenever working on a vehicle.*

1. Turn the ignition **OFF**.
2. Locate the vehicle's 16-pin Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool.*

3. Connect the Scan Tool to the vehicle's DLC. The cable connector is keyed and will only fit one way.
   - If you have problems connecting the cable to the DLC, rotate the connector 180°.
   - If you still have problems, check the DLC on the vehicle and on the Scan Tool.



4. Turn the ignition on. **DO NOT** start the engine.
5. When the Scan Tool is properly connected to the vehicle's DLC, the unit automatically turns ON.
   - If the unit does not power on automatically, it may indicate there is no power present at the vehicle's DLC connector. Check the fuse panel and replace any burned-out fuses.
   - If replacing the fuse(s) does not correct the problem, consult the vehicle's repair manual to identify the proper computer (PCM) fuse/circuit, and perform any necessary repairs before proceeding.
6. The Scan Tool automatically checks the vehicle's computer to determine which communication protocol it is using.
   - Tool begins to "**AUTO-LINK**" to identify the computer's communication protocol. A progress bar displays while a communication link is established.



NOTE: *A PROTOCOL is a set of rules and procedures for regulating data transmission between computers, and between testing equipment and computers. As of this writing, five different types of protocols (ISO 9141, Keyword 2000, J1850 PWM, J1850 VPW and CAN) are in use by vehicle manufacturers.*

- If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
  - — Ensure your vehicle is OBD II compliant.
  - — Verify the connection at the DLC, and verify the ignition is ON.
  - — Turn the ignition OFF, wait 5 seconds, then turn back ON to reset the computer.
  - — Press **LINK** to try again, or press **SYSTEM MENU** to return to the System Menu.
- If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
  - — Press **SYSTEM MENU** to return to the System Menu.
  - — Turn the ignition off, and disconnect the Scan Tool.
  - — Contact Technical Support for assistance.

7. If the Scan Tool ***can*** decode the Vehicle Identification Number (VIN) for the vehicle under test, the OBD II results screen displays. Proceed to **step 9**.

8. If the Scan Tool ***cannot*** decode the Vehicle Identification Number (VIN) for the vehicle under test, one of the following will result:

- If the vehicle ***has*** stored OEM Diagnostic Trouble Codes (DTCs), the "Select Make" screen displays.
  - — Use the **UP** or **DOWN** button to select the desired vehicle, then press **ENTER** Proceed to **step 9**.
- If the vehicle ***does not*** have OEM Diagnostic Trouble Codes, the screen displays results as "Global OBD II". Proceed to **step 9**.

9. The screen displays the RS2 QR code. Using any mobile device, scan the code to download and install the free RS2 app.



- Press **ENTER** to skip. Proceed to **Step 10**.
- Press the **DOWN** button to tick the checkbox, then press **ENTER** to disable this screen in the next time. Proceed to **Step 10**.

NOTE: *Users can enable or disable this screen in the Tool Settings.* *[See page 50]*

10. After approximately 2~3 seconds, the Scan Tool will retrieve and display any Diagnostic Trouble Codes (DTCs), Monitor Status and Freeze Frame Data retrieved from the vehicle's computer memory.

- The Scan Tool will display a code only if codes are present. If no codes are present, the message "No Powertrain DTCs or Freeze Frame Data is presently stored in the vehicle's computer" displays.



11. Refer to **SCAN TOOL DISPLAY FUNCTIONS** for a description of display elements. [See page 10]

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the display area to indicate the presence of additional information.*

NOTE: *If a definition for the currently displayed code is not available, an "advisory" message displays.*

12. If more than one Diagnostic Trouble Code (DTC) was retrieved, press and release the **DOWN** ▼ button to view the next DTC in sequence until all DTCs in memory have been displayed.

13. Freeze Frame data (if available) will display after DTC #1, press **FF/DTC** to view Freeze Frame data.

- In OBD II systems, when an emissions-related engine malfunction occurs that causes a DTC to set, a record or snapshot of engine conditions at the time that the malfunction occurred is also saved in the vehicle's computer memory. The record saved is called Freeze Frame data. Saved engine conditions include, but are not limited to: ***engine speed***, ***open or closed loop operation***, ***fuel system commands***, ***coolant temperature***, ***calculated load value***, ***fuel pressure***, ***vehicle speed***, ***air flow rate***, ***intake manifold pressure***, and more.



- Press and hold **ENTER** ↵ to view the full PID name. Release to return to the Freeze Frame screen.

NOTE: *If more than one malfunction is present that causes more than one DTC to be set, only the code with the highest priority will contain Freeze Frame data. The code designated "01" on the Scan Tool display is referred to as the PRIORITY code, and Freeze Frame data always refers to this code. The priority code is also the one that has commanded the Malfunction Indicator Light (Check Engine Light) on.*

14. Determine engine system(s) condition by viewing the display for any retrieved Diagnostic Trouble Codes, code definitions and Freeze Frame data, interpreting the green, yellow, and red LEDs.

- If DTCs were retrieved and you are going to perform the repairs yourself, proceed by consulting the vehicle's service repair manual for testing instructions, testing procedures, and flow charts related to retrieved code(s).
- Reference the RS2 app for verified fixes and additional diagnostic information.

NOTE: *DTCs that start with "P0", "P2" and some "P3" are considered Generic (Universal). All Generic DTC definitions are the same on all OBD II-equipped vehicles. The Scan Tool automatically displays the code definitions (if available) for Generic DTCs.*

NOTE: *DTCs that start with "P1" and some "P3" are Manufacturer specific codes – their code definitions will vary with each vehicle manufacturer.*

LED LIGHT DEFINITION

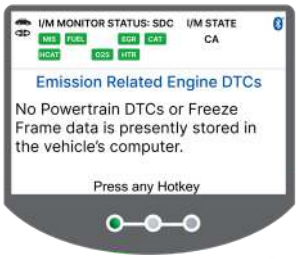
Read and interpret Diagnostic Trouble Codes/system condition using the display and the green, yellow, and red LEDs.

NOTE: *The green, yellow, and red LEDs are used (with the display) as visual aids to make it easier to determine engine system conditions.*

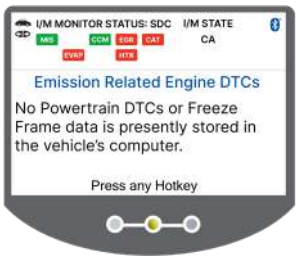
- **Green LED** – Indicates that all engine systems are "OK" and operating normally. All Monitors supported by the vehicle have run and performed their diagnostic testing, and no trouble codes are present. All Monitor icons will be solid.
- **Yellow LED** – Indicates one of the following conditions:

  [A] A PENDING CODE IS PRESENT – If the yellow LED is illuminated, it may indicate a Pending code is present. Check the display for confirmation. A Pending code is confirmed by the presence of a numeric code and the word Pending.

  [B] MONITOR NOT RUN STATUS – If the Scan Tool displays the "No Powertrain DTCs or Freeze Frame Data is presently stored in the vehicle's computer" message, but the yellow LED is illuminated, it may be an indication that some of the Monitors supported by the vehicle have not yet run and completed their diagnostic testing. Check the display for confirmation. All Monitor icons that are blinking have not yet run and completed their diagnostic testing; all Monitor icons that are solid have run and completed their diagnostic testing.
- **Red LED** – Indicates there is a problem with one or more of the vehicle's systems. The red LED is also used to indicate that DTC(s) are present. In this case, the Malfunction Indicator Light (Check Engine Light) on the vehicle's instrument panel is illuminated.









MONITOR ICON STATUS

The I/M Monitor Status icons are associated with INSPECTION and MAINTENANCE (I/M) READINESS STATUS. Some states require that all vehicle Monitors have run and completed their diagnostic testing before a vehicle can be tested for Emissions (Smog Check). A maximum of fifteen Monitors are used on OBD II systems. Not all vehicles support all fifteen Monitors. When the Scan Tool is linked to a vehicle, only the icons for Monitors that are supported by the vehicle under test are visible on the display.

Green Solid Icon = MIS

- **Description:** This icon indicates the Monitor has completed both Since DTCs Cleared (KOEO) and This Driving Cycle (KOER) testing.
- **Tips:** The Monitor has met all conditions required to complete self-diagnosis and testing of the assigned system.

Red Flashing Icon = MIS

- **Description:** This icon indicates that the Monitor has not completed testing Since DTCs Cleared (KOEO).
- **Tips:** The Monitor has not met all conditions required to complete self diagnosis and testing of the assigned system. A drive cycle may need to be performed to complete the testing.

Green/Gray Solid Icon = MIS

- **Description:** This icon indicates that the Monitor has not completed testing This Driving Cycle (KOER).
- **Tips:** The Monitor has not met all conditions required to complete self-diagnosis and testing of the assigned system. A drive cycle may need to be performed to complete the testing.

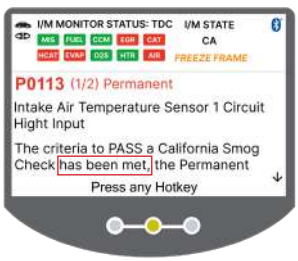
Red/Gray Solid Icon = MIS

- **Description:** This icon indicates that the Monitor has been disabled This Driving Cycle (KOER).
- **Tips:** The Monitor is unable to complete self-diagnosis and testing of the assigned system. The Monitor is disabled for this driving cycle, check for failed OBD Monitor Test and refer to the service information before continuing.

PERMANENT DIAGNOSTIC TROUBLE CODES (PDTCS)

For vehicles from 2010, meeting specific Permanent DTCs (PDTCs) criteria is a new requirement of the Smog Check program in California. PDTCs are similar to regular DTCs, but they cannot be reset by disconnecting the vehicle's battery or cleared with an On-Board Diagnostic Scan Tool. PDTCs will only be ignored if the vehicle has completed at least 15 warm-up cycles and has been driven at least 200 miles since its OBD information was last cleared.

1. If the vehicle meets the criteria to pass the Smog Check, the PDTCs will be ignored.
2. If the vehicle does not meet the criteria to pass the Smog Check, follow the Drive Cycle procedure to ensure it meets the requirements for the PDTC(s) to be ignored.





LIVE DATA MODE

The Scan Tool lets you view and/or record "real-time" Live Data. This information includes values (volts, rpm, temperature, speed, etc.) and system status information (open loop, closed loop, fuel system status, etc.) generated by the various vehicle sensors, switches, and actuators. These are the same signal values generated by the sensors, actuators, and switches, and/or vehicle system status information used by the vehicle's computer when calculating and conducting system adjustments and corrections.

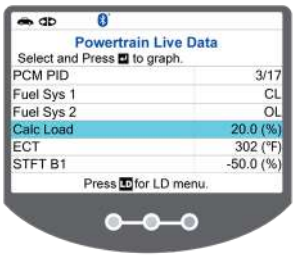
The real time (Live Data) vehicle operating information (values/status) that the computer supplies to the Scan Tool for each sensor, actuator, switch, etc. is called Parameter Identification (PID) Data.

Each PID (sensor, actuator switch, status, etc.) has a set of operating characteristics and features (parameters) that serve to identify it. The Scan Tool displays this information for each sensor, actuator, switch, or status that is supported by the vehicle under test.

DANGER: *If the vehicle must be driven in order to perform a troubleshooting procedure,* ***ALWAYS*** *have a second person help you. One person should drive the vehicle while the other person observes the Scan Tool data. Trying to drive and operate the Scan Tool at the same time is dangerous, and could cause a serious traffic accident.*

VIEWING LIVE DATA

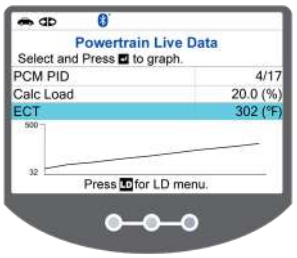
1. While linked to the vehicle, start the engine, then press **LD**.
2. A "One moment please . . ." message displays while the Scan Tool establishes communication with the vehicle.
   - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
     - Ensure the vehicle is OBD II compliant.
     - Verify the connection at the DLC, and verify the ignition is ON.
     - Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
     - Press **ENTER** ↵ to continue.
3. Real-time Live Data (PID) information supported by the vehicle under test displays.
   - If Live Data is not supported by the vehicle under test, an "advisory" message displays. Press **M** to return to the Main Menu, or press **SYSTEM MENU** Ⓢ to return to the System Menu.



NOTE: *The values for the various PIDs displayed may change as the vehicle's operating conditions change.*

4. Only a limited amount of PID data can be displayed on the screen at one time. If additional PID data is available, a small arrow is shown on the display. Press **UP** ▲ and **DOWN** ▼, as necessary, to view all available PID data.
   - If communication with the vehicle is lost while viewing Live Data, an "advisory" message displays.

5. Press and release **ENTER** ↵ to view the currently selected PID in "graph" mode. Press and release **ENTER** ↵ again to return to the PID list.
    - You can display a maximum of two PIDs in "graph" mode at any given time.
    - With two PID shown in "graph" mode, press and hold **LD** to superimpose one graph over the other.
        - Release **LD** to separate the graphs.
6. Press and hold **ENTER** ↵ to view the "expanded" definition for the currently selected PID. Press **ENTER** ↵ to return to the PID list.

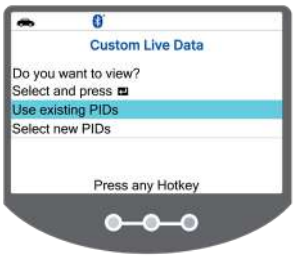


CUSTOMIZING LIVE DATA (PIDS)

You can customize the **Live Data** display by placing the Scan Tool in "**Custom Live Data**" mode and selecting only the PIDs that you wish to display.

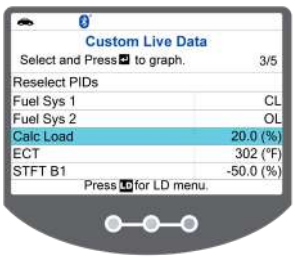
1. With the Scan Tool in Live Data mode [See page 20], press **LD** to access the Live Data Menu.
2. Select **Custom Live Data**, then press **ENTER** ↵.
    - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
        - Ensure your vehicle is OBD II compliant.
        - Verify the connection at the DLC, and verify the ignition is ON.
        - Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
        - Press **LINK** to continue.
    - If Live Data is not supported by the vehicle under test, an "advisory" message displays. Press **SYSTEM MENU** to return to the System Menu.
    - If Custom Live Data was previously configured, the Custom Live Data Menu displays.
        - To use the existing Custom Live Data selections, select **Use existing PIDs**, then press **ENTER** ↵. Proceed to **step 5**.
        - To configure new Custom Live Data, select **Select new PIDs**, then press **ENTER** ↵. The Custom Live Data screen displays. Proceed to **step 3**.
    - If Custom Live Data was not previously selected, the Custom Live Data screen displays. Proceed to **step 3**.
3. Press **UP** ▲ and **DOWN** ▼ to scroll through the available PIDs. When a PID you wish to display is highlighted, press **ENTER** ↵ (a "checkmark" shows to confirm your selection). Repeat until only the PIDs you want to display are selected.
    - To deselect a PID, highlight the PID, then press **ENTER** ↵. The checkmark is removed.







4. When you are finished making your selection(s), press **LD** to continue.
    - If no PIDs have been selected, an "advisory" message displays. Press **ENTER** ↵ to return to the Custom Live Data menu.
5. The Scan Tool is now in "Custom Live Data" mode. Only the PIDs you selected are shown.
    - To change the current custom Live Data selections, select **Reselect PIDs**, then press **ENTER** ↵ to return to the Custom Live Data menu. Repeat **step 3**.
6. To exit the "Custom Live Data" mode, press **LD** to return to the Live Data Menu.



RECORDING (CAPTURING) LIVE DATA

You can record and save several frames of Live Data information for each PID supported by the vehicle in the Scan Tool's memory.

There are two ways that the Scan Tool can record Live Data:

- Record by DTC Trigger
- Record Manually

***NOTE:** If **LINK** is pressed at any time while in Live Data mode, any recorded Live Data is erased from the Scan Tool's memory.*

Record by DTC Trigger

This function automatically records Live Data information when a DTC sets and saves it in the Scan Tool's memory. The recorded data can be a valuable troubleshooting aid, particularly if you are experiencing a fault that is causing a DTC to set. The Scan Tool can record approximately 100 frames of Live Data.

1. With the Scan Tool in Live Data mode [See page 20], press **LD** to access the Live Data Menu.
2. Select **Record Live Data**, then press **ENTER** ↵.
    - The Record Live Data Menu displays.
    - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
        - Ensure your vehicle is OBD II compliant.
        - Verify the connection at the DLC, and verify the ignition is ON.
        - Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
        - Press **LINK** to continue.
3. Select **Record by DTC Trigger**, then press **ENTER** ↵.
    - The Select PIDs to Record screen displays.

4. Press **UP** ▲ and **DOWN** ▼ to scroll through the available PIDs. When a PID you wish to record is highlighted, press **ENTER** ↵ (a "checkmark" shows to confirm your selection). Repeat until only the PIDs you want to record have all been selected.



   - To deselect a PID, highlight the PID, then press **ENTER** ↵. The checkmark is removed.

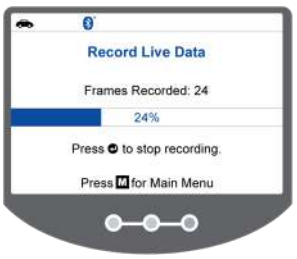
***NOTE:** To record all PIDs, select **Record All PIDs**, then press **LD** to continue.*

5. When you are finished making your selections, press **LD** to continue.
   - If DTCs are presently stored in the vehicle's computer, an "advisory" message displays. Select **Erase DTCs**, then press **ENTER** ↵. A "One moment please…" message displays while DTCs are erased from the vehicle's computer.
   - If the erase was not successful, an "advisory" message displays.
     - To retry the erase process, verify that the Scan Tool is properly connected to the vehicle's DLC and that the ignition is on. Select **Erase DTCs**, then press **ENTER** ↵.
     - To exit the record function, select **Back**, then press **ENTER** ↵ to return to the Record Live Data menu.
   - The Record Live Data screen displays.



6. Put the engine in the operating condition that causes the DTC to set.
   - If necessary, drive the vehicle until you reach the vehicle speed at which the problem occurs.

7. When the Scan Tool detects a fault that causes a DTC to set, it automatically records and saves approximately 100 frames of Live Data information in its memory for each PID selected.



   - A progress message shows on the display.
     - You can stop and save recorded Live Data at any time by pressing **ENTER** ↵.
   - When recording is complete, a "confirmation" screen displays. Select **Yes** and press **ENTER** ↵ to playback Live Data [See page 24] or select **No** and press **ENTER** ↵ to return to the Live Data menu, as desired.
   - If recording was not successful, an "advisory" message displays on the display. Press the **ENTER** ↵ button to return to the Record Live Data menu.

Record Manually

This option lets you select the precise time at which Live Data recording will occur. **Record Manually** can be a very valuable tool when troubleshooting intermittent problems that do not meet the requirements for a DTC to set. The Scan Tool can record approximately 100 frames of Live Data.

1. With the Scan Tool in Live Data mode [See page 20], press **LD** to access the Live Data Menu.

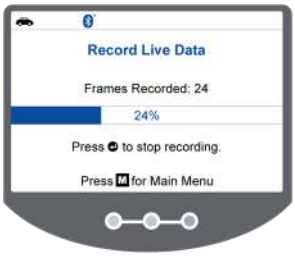
2. Select **Record Live Data**, then press **ENTER** ↵.
   - The Record Live Data Menu displays.
   - If the Scan Tool fails to establish communication with the vehicle, a "Communication Error" message displays.
     - — Ensure your vehicle is OBD II compliant.
     - — Verify the connection at the DLC, and verify the ignition is ON.
     - — Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
     - — Press **LINK** to continue.
3. Select **Record Manually**, then press **ENTER** ↵.
   - The Select PIDs to Record screen displays.



4. Press **UP** ▲ and **DOWN** ▼ to scroll through the available PIDs. When a PID you wish to record is highlighted, press **ENTER** ↵ (a "checkmark" shows to confirm your selection). Repeat until only the PIDs you want to record have all been selected.
   - To deselect a PID, highlight the PID, then press **ENTER** ↵. The checkmark is removed.

***NOTE:** To record all PIDs, select **Record All PIDs**, then press **LD** to continue.*

5. When you are finished making your selections, press **LD** to continue.
6. The Record Live Data screen displays.
   - Highlight **Start Recording**. Put the engine in the operating condition where the problem manifests itself.
     - — If necessary, drive the vehicle until you reach the vehicle speed at which the problem occurs.



7. When the problem occurs, press and release **LD**.
   - A progress message shows on the display.
     - — You can stop and save recorded Live Data at any time by pressing **ENTER** ↵.
   - When recording is complete, a "confirmation" screen displays. Select **Yes** and press **ENTER** ↵ to playback Live Data [See page 24] or select **No** and press **ENTER** ↵ to return to the Live Data menu, as desired.
   - If recording was not successful, an "advisory" message displays. Press **ENTER** ↵ to return to the Record Live Data menu.

LIVE DATA PLAYBACK

Once Live Data has been recorded, it is saved in the Scan Tool's memory. You can view recorded Live Data immediately after recording by selecting **Yes** from the Record Live Data "confirmation" screen [See page 22], or you can view it later using the "Playback" function.

1. With the Scan Tool not connected to a vehicle, press the **LINK** button.
   - The "Vehicle Selection" screen displays. Use the **UP** and **DOWN** buttons to select the desired vehicle, then press **ENTER**.
2. Select **Global OBD II** and press **ENTER**.
   - Press the **LD** button. Proceed to **step 4**.
3. With the Scan Tool connected to the vehicle and in Live Data mode [See page 20], press **LD** to access the Live Data Menu.
4. Select **Playback Live Data**, then press the **ENTER** button.
   - The Playback Live Data menu displays.

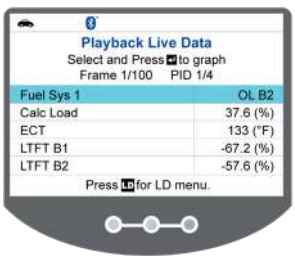
NOTE: *If there is no Live Data currently stored in the Scan Tool's memory, an "advisory" message displays.*

NOTE: *When you select **Yes** from the Record Live Data "confirmation" screen, the Scan Tool enters the "Live Data Playback" mode, and the Playback Live Data menu displays.*

5. Select **Continuous Playback** or **Frame by Frame**, as desired, then press **ENTER**.
   - The display shows the recorded Live Data, beginning with the "trigger" frame.
   - Only a limited amount of PID data can be displayed on the screen at one time. If additional PID data is available, a small arrow is shown on the display. Press **UP** or **DOWN**, as necessary, to view all available PID data.
   - When viewing recorded Live Data, look for any irregularities in any of the PID values/signal information (LTFT %, RPM, MAP, TEMP, etc.). If any PIDs are not within specification, or irregularities are detected, follow the procedures in the vehicle's service repair manual to perform additional troubleshooting and repair.



6. When you select **Continuous Playback**, the Scan Tool plays recorded data at a rate of one frame / 2 seconds.
   - To view the recorded data in graph mode, press **ENTER**.
     - Use the **UP** and **DOWN** buttons to scroll and view each available recorded PID in graph mode.
     - Press **ENTER** a second time to view **2 Graphs** on a single screen.
   - To Superimpose PID values (for comparison purposes), use the **UP** and **DOWN** buttons to scroll to the desired PID and press **ENTER** to select it. Once all PID selections are completed, press and hold the **LD** button.
   - Once the playback is finished, a "Playback Complete" message displays.
     - To play the data back again, select **Continuous Playback** or **Frame by Frame**, as desired, then press **ENTER**.



- To exit Live Data Playback mode and return to Live Data mode, select **Exit Playback**, then press **ENTER** ↵.

7. When **Frame by Frame** is selected, you must scroll the individual frames manually.
   - When you have viewed all PID information for the current frame of Live Data, select **Next Frame** or **Previous Frame**, as desired, then press **ENTER** ↵.
   - To view the recorded data in graph mode, press **ENTER** ↵.
     - Use the **UP** ▲ and **DOWN** ▼ buttons to scroll and view each available recorded PID in graph mode.
     - Press **ENTER** ↵ a second time to view **2 Graphs** on a single screen.
   - To Superimpose PID values (for comparison purposes), use the **UP** ▲ and **DOWN** ▼ buttons to scroll to the desired PID and press **ENTER** ↵ to select it. Once all PID selections are completed, press and hold the **LD** button.
   - To exit Live Data Playback mode, use the **DOWN** ▼ button to scroll and select **Exit Playback** at the bottom of the list, then press **ENTER** ↵.

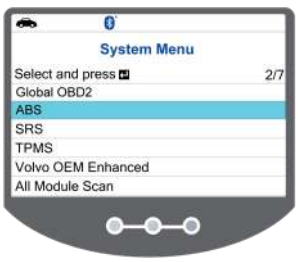
***NOTE:** If there is no Live Data currently stored in the Scan Tool's memory, an "advisory" message displays. Press **LD** to exit the "Live Data Playback" mode.*

THE SYSTEM MENU – OEM FUNCTIONS

The **System Menu** provides the ability to retrieve "enhanced" DTCs, including those for the Anti-lock Braking System (**ABS**), Supplemental Restraint System (**SRS**), and Tire Pressure Monitoring System (**TPMS**), as well as perform a full vehicle module scan. The availability of enhanced data depends on the vehicle make. Additionally, you can return to the Global OBD II mode.

***NOTE:** Depending on the vehicle under test, some features and functions may not be available.*

To access the System Menu, press **SYSTEM MENU** Ⓢ. Select the desired option, then press **ENTER** ↵ to view the selected information.



- **To view Global OBD II DTCs:** Select **Global OBD II** from the System Menu. [See page 15]
- **To view ABS DTCs**: Select **ABS** from the System Menu. [See page 27]
- **To view SRS DTCs**: Select **SRS** from the System Menu. [See page 28]
- **To view TPMS DTCs**: Select **TPMS** from the System Menu. [See page 29]
- **To view OEM Enhanced DTCs**: Select **[Make] OEM Enhanced** from the System Menu. [See page 30]
- **To perform a Network Scan**: Select **All Module Scan** or **Module Selection**, as desired. [See page 32]

VIEWING ABS DTCs

NOTE: *Refer to the manufacturer's website for vehicle makes covered.*

1. When **ABS** is chosen from the System Menu, a "One moment please" message displays while the Scan Tool retrieves the selected DTCs.
   - If ABS functionality is not supported, an "advisory" message displays. Press **SYSTEM MENU** Ⓢ to return to the System Menu.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Ensure your vehicle is OBD II compliant.
     - Verify the connection at the DLC, and verify the ignition is ON.
     - Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
     - Press **LINK** ⊂⊃ to continue.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
     - Press **SYSTEM MENU** Ⓢ to return to the System Menu.
     - Turn the ignition off, and disconnect the Scan Tool.
     - Contact Technical Support for assistance.
2. Refer to **SCAN TOOL DISPLAY FUNCTIONS** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons are not displayed when viewing ABS DTCs.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*



   - If no codes are present, the message "No ABS DTCs are presently stored in the vehicle's computer" displays. Press **SYSTEM MENU** Ⓢ to return to the System Menu.
3. If more than one code was retrieved press **FF/DTC**, or the **UP** ▲ or **DOWN** ▼ button, to display additional codes one at a time.

NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press the* ***LINK*** ⊂⊃ *button to re-establish communication.*

4. When the last retrieved DTC has been displayed and **FF/DTC** is pressed, the Scan Tool returns to the "Priority" code.

- To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu.
- Select **Global OBD II**, then press **ENTER** to return to the Global OBD II mode.

VIEWING SRS DTCs

NOTE: *Refer to the manufacturer's website for vehicle makes covered.*

1. When **SRS DTCs** is chosen from the System Menu, a "One moment please" message displays while the Scan Tool retrieves the selected DTCs.
   - If SRS functionality is not supported, an "advisory" message displays. Press **SYSTEM MENU** to return to the System Menu.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Ensure your vehicle is OBD II compliant.
     - Verify the connection at the DLC, and verify the ignition is ON.
     - Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
     - Press **LINK** to continue.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
     - Press **SYSTEM MENU** to return to the System Menu.
     - Turn the ignition off, and disconnect the Scan Tool.
     - Contact Technical Support for assistance.
2. Refer to **SCAN TOOL DISPLAY FUNCTIONS** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons are not displayed when viewing SRS DTCs.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*



   - If no codes are present, the message "No SRS DTCs are presently stored in the vehicle's computer" displays. Press **SYSTEM MENU** to return to the System Menu.
3. If more than one code was retrieved press **FF/DTC** button, or the **UP** ▲ or **DOWN** ▼ button, to display additional codes one at a time.

NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press the* ***LINK*** *button to re-establish communication.*

4. When the last retrieved DTC has been displayed and **FF/DTC** is pressed, the Scan Tool returns to the "Priority" code.
    - To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu.
    - Select **Global OBD II**, then press **ENTER** to return to the Global OBD II mode.

VIEWING TPMS DTCs

NOTE: *Refer to the manufacturer's website for vehicle makes covered.*

1. When **TPMS** is chosen from the System Menu, a "One moment please" message displays while the Scan Tool retrieves the selected DTCs.
    - If TPMS functionality is not supported, an "advisory" message displays. Press **SYSTEM MENU** to return to the System Menu.
    - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
        - Ensure your vehicle is OBD II compliant.
        - Verify the connection at the DLC, and verify the ignition is ON.
        - Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
        - Press **LINK** to continue.
    - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
        - Press **SYSTEM MENU** to return to the System Menu.
        - Turn the ignition off, and disconnect the Scan Tool.
        - Contact Technical Support for assistance.
2. Refer to **SCAN TOOL DISPLAY FUNCTIONS** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons are not displayed when viewing TPMS DTCs.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*

    - If no codes are present, the message "No TPMS DTCs are presently stored in the vehicle's computer" displays.
3. If more than one code was retrieved press **FF/DTC**, or the **UP** ▲ or **DOWN** ▼ button, to display additional codes one at a time.

NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press* ***LINK*** *to re-establish communication.*

4. When the last retrieved DTC has been displayed and **FF/DTC** is pressed, the Scan Tool returns to the "Priority" code.
   - To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu.
   - Select **Global OBD II**, then press **ENTER** to return to the Global OBD II mode.

VIEWING OEM ENHANCED DTCs (Except Ford/Mazda)

When [**Make**] **OEM Enhanced** is chosen from the System Menu, the Scan Tool retrieves OEM enhanced DTCs from the vehicle's computer.

1. A "One moment please" message displays while the Scan Tool retrieves the selected DTCs.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Ensure your vehicle is OBD II compliant.
     - Verify the connection at the DLC, and verify the ignition is ON.
     - Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
     - Press **LINK** to continue, or press **SYSTEM MENU** to return to the System Menu.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
     - Press **SYSTEM MENU** to return to the System Menu.
     - Turn the ignition off, and disconnect the Scan Tool.
     - Contact Technical Support for assistance.
2. Refer to **SCAN TOOL DISPLAY FUNCTIONS** [See page 10] for a description of LCD display elements.

   NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

   NOTE: *I/M MONITOR STATUS icons are not displayed when viewing enhanced DTCs.*

   NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*



   - If no codes are present, the message "No OEM Enhanced DTCs are presently stored in the vehicle's computer" displays. Press **SYSTEM MENU** to return to the System Menu.
3. If more than one code was retrieved press **FF/DTC**, or the **UP** or **DOWN** button, to display additional codes one at a time.

NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press* ***LINK*** *to re-establish communication.*

4. When the last retrieved DTC has been displayed and **FF/DTC** is pressed, the Scan Tool returns to the "Priority" code.
   - To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu.
   - Select **Global OBD II**, then press **ENTER** to return to the Global OBD II mode.

VIEWING OEM ENHANCED DTCs (Ford/Mazda Only)

NOTE: *Mazda Enhanced DTCs are available for Ford/Mazda branded vehicles only.*

When **Ford OEM Enhanced** is chosen from the System Menu, the Ford OEM Enhanced menu displays. You may view DTCs for either the "Continuous Memory DTCs", "KOEO (Key On Engine Off) Test" or "KOER (Key On Engine Running) Test."

1. Select the desired option, then press **ENTER**.
   - If **KOER** is selected, an "advisory" message displays.
     - Start and warm the engine to normal operating temperature, then press **ENTER**. Proceed to **step 3**.
   - If **KOEO** or **Continuous Memory** is selected, an "instructional" message displays.
     - Turn the ignition OFF, then back ON. Press **ENTER**. Proceed to **step 3**.



2. A "One moment please" message displays while the test is in progress.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Ensure your vehicle is OBD II compliant.
     - Verify the connection at the DLC, and verify the ignition is ON.
     - Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
     - Press **LINK** to continue.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.
     - Press **SYSTEM MENU** to return to the System Menu.
     - Turn the ignition off, and disconnect the Scan Tool.
     - Contact Technical Support for assistance.
   - If the **KOER** test was selected, and the vehicle's engine is not running, an "advisory" message displays.

— Start the engine and press **ENTER** ↵ to try again, or, press **SYSTEM MENU** Ⓢ to return to the System Menu.

- If the **KOEO** test was selected, and the vehicle's engine is running, an "advisory" message displays.
  - — Turn the ignition OFF then back ON and press **ENTER** ↵ to try again, or, press **SYSTEM MENU** Ⓢ to return to the System Menu.

3. If the **KOER** test was selected, an "instructional" message displays.
   - Turn the steering wheel to the left, then release.
   - Press and release the brake pedal.
   - Cycle the overdrive switch (if equipped).
   - A "One moment please" message displays while the test is in progress.
4. Refer to **SCAN TOOL DISPLAY FUNCTIONS** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons are not displayed when viewing enhanced DTCs.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/ lower right-hand corner of the code display area to indicate the presence of additional information.*



- If no codes are present, a "System Pass" message displays. Press any Hotkey.

5. If more than one code was retrieved press **FF/DTC**, or the **UP** ▲ or **DOWN** ▼ button, to display additional codes one at a time.
6. When the last retrieved DTC has been displayed and **FF/DTC** is pressed, the Scan Tool returns to the "Priority" code.
   - To exit the enhanced mode, press **SYSTEM MENU** Ⓢ to return to the System Menu.
   - Select **Global OBD II**, then press **ENTER** ↵ to return to the Global OBD II mode.

NETWORK SCAN

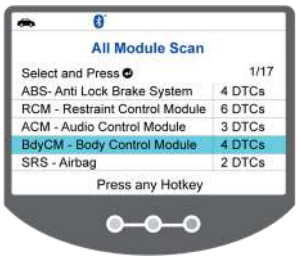
The **Network Scan** lets you perform a scan of all vehicle modules, or of a single selected module, to retrieve DTCs associated with the module(s).

ALL MODULE SCAN

1. Select **All Modules Scan** from the System Menu, then press **ENTER** ↵.
   - A "One moment please" message displays while the Scan Tool scans all available modules.

- When the scan is complete, the All Module Scan screen displays. The screen shows the number of DTCs recorded for each available module.

2. Select the module for which you wish to view DTCs, then press **ENTER** ↵. A "One moment please" message displays while the requested DTCs are retrieved.



   - If the Scan Tool fails to link to the selected module, a "Communication Error" message displays.
     - — Ensure your vehicle is OBD II compliant.
     - — Verify the connection at the DLC, and verify the ignition is ON.
     - — Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
     - — Press **LINK** to continue, or press **SYSTEM MENU** Ⓢ to return to the System Menu.
   - If the selected module does not support the "Read DTC" function, an "advisory" message displays. Press **SYSTEM MENU** Ⓢ to return to the System Menu or press **M** to access the Main Menu.

3. Refer to **SCAN TOOL DISPLAY FUNCTIONS** [See page 10] for a description of LCD display elements.

NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

NOTE: *I/M MONITOR STATUS icons are not displayed when using the Network Scan function.*

NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*

   - If no codes are present, the message "No (system name) DTCs are presently stored in the vehicle's computer" displays. Press **SYSTEM MENU** Ⓢ to return to the System Menu.

4. If more than one code was retrieved press the **FF/DTC** button, or the **UP** ▲ or **DOWN** ▼ button, to display additional codes one at a time.

NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press the* ***LINK*** *button to re-establish communication.*

5. When the last retrieved DTC has been displayed and **FF/DTC** is pressed, the Scan Tool returns to the "Priority" code.
   - To exit the enhanced mode, press **SYSTEM MENU** Ⓢ to return to the System Menu.
   - Select **Global OBD II**, then press **ENTER** ↵ to return to the Global OBD II mode.

SCAN A SELECTED MODULE

1. Choose **Select Modules** from the System Menu, then press **ENTER** ↵.
   - If the Select Group screen displays, select the group (**Powertrain**, **Chassis**, **Body**, etc.) containing the module you wish to scan, then press **ENTER** ↵. Proceed to **step 2**.
   - If the Select Group screen does not display, proceed to **step 2**.
2. The Available Systems screen displays. Select the desired module, then press **ENTER** ↵.
   - A "One moment please" message displays while the requested DTCs are retrieved.
3. Select the module for which you wish to view DTCs, then press **ENTER** ↵. A "One moment please" message displays while the requested DTCs are retrieved.
   - If the Scan Tool fails to link to the selected module, a "Communication Error" message displays.
     - — Ensure your vehicle is OBD II compliant.
     - — Verify the connection at the DLC, and verify the ignition is ON.
     - — Turn the ignition OFF, wait 5 seconds, then back ON to reset the computer.
     - — Press **LINK** to continue, or press **SYSTEM MENU** to return to the System Menu.
   - If the selected module does not support the "Read DTCs" function, an "advisory" message displays. Press **SYSTEM MENU** to return to the System Menu, or press **M** to view the Main Menu.
4. Refer to **SCAN TOOL DISPLAY FUNCTIONS** [See page 10] for a description of LCD display elements.

   NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

   NOTE: *I/M MONITOR STATUS icons are not displayed when using the Network Scan function.*

   NOTE: *In the case of long code definitions, a small arrow is shown in the upper/lower right-hand corner of the code display area to indicate the presence of additional information.*

   - If no codes are present, the message "No (system name) DTCs are presently stored in the vehicle's computer" displays. Press **SYSTEM MENU** to return to the System Menu.
5. If more than one code was retrieved press the **FF/DTC** button, or the **UP** ▲ or **DOWN** ▼ button, to display additional codes one at a time.

   NOTE: *If the Scan Tool's communication with the vehicle's computer disconnects, press **LINK** to re-establish communication.*

6. When the last retrieved DTC has been displayed and **FF/DTC** is pressed, the Scan Tool returns to the "Priority" code.
   - To exit the enhanced mode, press **SYSTEM MENU** to return to the System Menu.
   - Select **Global OBD II**, then press **ENTER** ↵ to return to the Global OBD II mode.

ERASING DIAGNOSTIC TROUBLE CODES (DTCs)

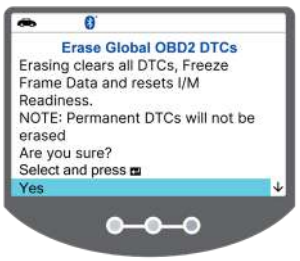
NOTE: *When the Scan Tool's ERASE function is used to erase DTCs from the vehicle's on-board computer, "Freeze Frame" data and manufacturer-specific-enhanced data are also erased. "Permanent" DTCs* ***ARE NOT*** *erased by the* ***ERASE*** *function.*

If you plan to take the vehicle to a Service Center for repair, **DO NOT** erase the codes from the vehicle's computer. If the codes are erased, valuable information that might help the technician troubleshoot the problem will also be erased.

Erase DTCs from the computer's memory as follows:

NOTE: *When DTCs are erased, the I/M Readiness Monitor Status program resets the status of all Monitors to a not run condition. To set all Monitors to a Complete status, an OBD II Drive Cycle must be performed.*

1. Perform the RETRIEVING OBD II DIAGNOSTIC TROUBLE CODES (DTCS) procedure. [See page 15]
   - **To erase OBD II DTCs:** Wait until the codes are displayed, then proceed to **step 2**.
   - **To erase OEM enhanced, ABS, SRS, TPMS or Network DTCs:** Press **SYSTEM MENU** (S) to display the System Menu. Select the desired option, then press **ENTER** ↵. Wait until the codes are displayed, then proceed to **step 2**.
2. Press and release **ERASE**. A "confirmation" message displays.
   - If you are sure you want to proceed, choose **Yes** to continue. Proceed to **step 3**.
   - If you do not want to proceed, choose **No** to cancel the erase procedure.



3. If you chose to erase DTCs, a "One moment please…" message displays while the erase function is in progress.

NOTE: *If the vehicle's engine is running, an "advisory" message displays. Turn the engine OFF, then turn the ignition back to ON.* ***DO NOT*** *start the engine. Choose* ***Erase DTCs*** *to continue.*



- If the **erase was successful**, a "confirmation" message displays. The Scan Tool automatically relinks to the vehicle's computer after 3 seconds.

NOTE: *If the erase was not successful and ECU error code $22 is present, an "advisory" message displays. Start the engine and maintain vehicle speed at 0. Choose* ***Erase DTCs*** *to try again.*

- If the erase **was not successful**, an "advisory" message displays indicating the erase request was sent to the vehicle's computer. The Scan Tool automatically relinks to the vehicle's computer after 3 seconds.

NOTE: *Please be aware that erasing DTCs will not resolve the problem(s) that caused the code(s) to be set. If proper repairs to correct the problem that caused the code(s) to be set are not made, the code(s) will appear again (and the Malfunction Indicator Light will illuminate) as soon as the vehicle is driven long enough for its Monitors to complete their testing.*

SYSTEM TESTS MENU

Additional tests are accessed through the System Tests menu. The following functions are available:



- **O2 Sensor Monitor – Mode $05** – Retrieves and displays O2 sensor monitor test results from the vehicle's on-board computer.
- **OBD Monitor Test – Mode $06** – Retrieves and displays test results for emission-related powertrain components and systems that are not continuously monitored.
- **Request Control On-Board System – Mode $08** – Performs an EVAP Test or Particulate Filter Regeneration and Inducement System Reinitialization.
- **I/M Readiness Status – PIDs $01 & $41** – View the drive cycle procedures and description of a selected Monitor.

1. While linked to the vehicle, press the **M** button.
   - The Main Menu displays.
2. Select **System Tests**, then press **ENTER** ↵.
   - The System Tests menu displays.

O2 SENSOR TEST - MODE $05

OBD II regulations require that applicable vehicles monitor and test operation of the oxygen (O2) sensors to identify problems that can affect fuel efficiency and vehicle emissions. These tests are performed automatically when engine operating conditions are within predefined limits. Results of these tests are stored in the on-board computer's memory.

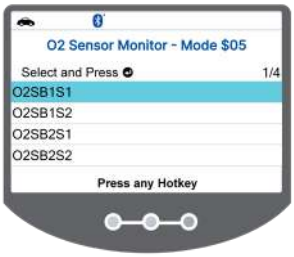
The O2 Sensor Monitor function lets you retrieve and view O2 sensor monitor test results for the most recently completed tests from the vehicle's on-board computer.

NOTE: *The Scan Tool does not perform O2 sensor tests, but retrieves results from the most recently performed O2 sensor tests from the on-board computer's memory. You may retrieve O2 sensor test results for only one test of one sensor at any given time.*

1. From the System Tests menu, select **O2 Sensor Test - Mode $05,** then press **ENTER** ↵.
2. A "One moment please..." message displays, followed by the Select Sensor screen.

NOTE: *If O2 sensor test data is not presently stored in the vehicle's computer, an "advisory" message displays. Press **M** to return to the Main Menu.*

NOTE: *If O2 sensor tests are not supported by the vehicle under test, an "advisory" message displays. Press* ***M*** *to return to the Main Menu.*



3. Select the O2 sensor for which you wish to view test results, then press **ENTER** ↵ to display the test results.
4. When test results have been retrieved, data for the selected sensor test displays.
5. When you have finished viewing the retrieved test data:
   - To view test results for the next sensor, select **Next**, then press **ENTER** ↵.
   - To return to the Select Sensor screen, select **Back**, then press **ENTER** ↵.
6. When you have finished viewing test data for all desired sensors, select **Back**, then press **ENTER** ↵ to return to the System Test menu; or, press **M** to return to the Main Menu.

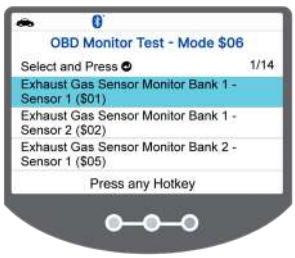
OBD MONITOR TEST - MODE $06

The OBD Monitor Test function retrieves and displays test results for emission-related powertrain components and systems that are not continuously monitored. The tests available are determined by the vehicle manufacturer.

NOTE: *The Scan Tool does not perform the OBD Monitor test, but retrieves results from the most recently performed tests from the on-board computer's memory. You may retrieve OBD Monitor test results for only one test at any given time.*

1. From the System Tests menu, select **OBD Monitor Test - Mode $06**, then press **ENTER** ↵.
2. A "One moment please. . ." message displays, followed by the Select Test screen.

NOTE: *If OBD Monitor test data is not presently stored in the vehicle's computer, an "advisory" message displays. Press* ***M*** *to return to the Main Menu.*



NOTE: *If the OBD Monitor test is not supported by the vehicle under test, an "advisory" message displays. Press* ***M*** *to return to the Main Menu.*

3. Select the desired test, then press **ENTER** ↵ to display the test results. The display shows the following information:
   - **Test ID** number
   - **Module ID** number
   - **Component ID** number
   - **Min**, **Max** test limit
   - **Test Value** and **Status**

NOTE: ***Status*** *is calculated by the Scan Tool by comparing the* ***Test Value*** *against the displayed test limit.* ***Status*** *is shown as either* ***Low***, ***High***, *or* ***OK***.

4. When you have finished viewing the retrieved test data, select **Back** on the Select Test screen, then press **ENTER** ↵ to return to the System Test menu; or, press **M** to return to the Main Menu.

REQUEST CONTROL ON-BOARD SYSTEM - MODE $08

The Request Control On-Board System - Mode $08 lets you perform an EVAP Test or Particulate Filter Regeneration and Inducement System Reinitialization.

- **EVAP Test** – lets you initiate a leak test for the vehicle's EVAP system.
- **Particulate Filter Regeneration** – this service requests the vehicle to initiate a particulate filter (PF) regeneration. The vehicle manufacturer is responsible for determining the criteria to enable, start and stop the test, such as engine running, vehicle speed, or engine rpm.
- **Inducement System Reinitialization** – this service requests the vehicle to initiate a reinitialization of the inducement system. The vehicle manufacturer is responsible for determining the criteria to enable, start and stop the test, such as engine running, vehicle speed, or engine rpm.

NOTE: *The Scan Tool does not perform the leak test, but signals to vehicle's on-board computer to initiate the test. The vehicle manufacturer determines the criteria and method for stopping the test once it has been started. Refer to the vehicle's service repair manual to determine the procedures necessary to stop the test.*

NOTE: *Some vehicle manufacturers do not allow Scan Tool or other external devices to control vehicle systems. If the Request Control On-Board System is not supported by the vehicle under test, an "advisory" message displays.*

1. From the System Tests menu, select **Request Control On-Board System – Mode $08**, then press **ENTER** ↵.
   - A Request Control On-Board System – Mode $08 screen displays.

NOTE: *The EVAP Test is used for Spark Ignition vehicles, and the Particulate Filter Regeneration and Inducement System Reinitialization are used for Compression Ignition vehicles.*

2. Select the test that displays on screen, then press **ENTER** ↵.
3. A "One moment please…" message displays while the Scan Tool performs the test.
4. When the test has been initiated by the vehicle's on-board computer, a "confirmation" message displays.



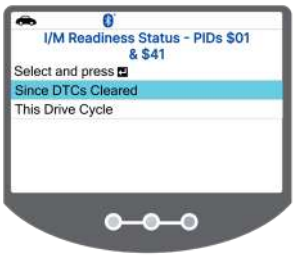
I/M READINESS STATUS - PIDS $01 & $41

The vehicle's computer stores a record of Monitor status upon completion of a full diagnostic check of all monitored components and systems since the computer's memory was last cleared.

The **I/M Readiness Status - PIDs $01 & $41** function displays which vehicle Monitors have run and completed testing, and which ones have not yet run and completed testing of their designated sections within the vehicle's emissions control system. Additionally, it provides descriptions for each Monitor.

1. From the Systems Tests menu, select **I/M Readiness Status - PIDs $01 & $41,** then press **ENTER** ↵.

2. A "One moment please. . ." message displays, followed by a selection dialog. Select **Since DTCs Cleared** or **This Drive Cycle** as desired. Press **ENTER** ↵ to continue.
   - If the vehicle under test does not support Since DTCs Cleared or This Drive Cycle, a "warning" message displays "This vehicle does not support this Monitor type." Press the **M** button to return to the previous dialog.



3. The Select Monitor screen displays listing all Monitors supported by the vehicle.
4. To view a Monitor description or Drive Cycle Procedures for a Monitor, select the desired **Monitor**, then press **ENTER** ↵.
   - A menu for the selected Monitor displays.
5. To view a Monitor description, choose **Description**.
   - A description for the selected Monitor displays.
6. To view Drive Cycle Procedures for a Monitor, choose **Drive Cycle**.

   NOTE: *If Drive Cycle Procedures are not available for the vehicle, an "advisory" message displays. Press **M** to return to the Main Menu.*

   - The Drive Cycle Procedures screen for the Monitor displays.
7. The Drive Cycle Procedure screen shows the specific set of operating procedures that ensure the vehicle is driven in such a way that all the required "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met.
8. When you have finished viewing the Drive Cycle Procedures, press the **M** button to return to the previous dialog.

VIEWING VEHICLE INFORMATION

The Vehicle Information function offers three options for retrieving reference information for the vehicle under test: **Vehicle ID**, **Available Modules** and **IPT** (In-Use Performance Tracking).

RETRIEVING VEHICLE ID INFORMATION

NOTE: *The Vehicle ID function is applicable to model year 2000 and newer OBD II-compliant vehicles.*

The Scan Tool can retrieve a list of information (provided by the vehicle manufacturer), unique to the vehicle under test, from the vehicle's onboard computer. This information may include:

- The vehicle's VIN number
- The control module identification number
- The vehicle's calibration ID(s). These IDs uniquely identify the software version(s) for the vehicle's control module(s).

- The Vehicle's Calibration Verification Number(s) (CVNs) required by ODB2 regulations. CVNs are used to determine if emission-related calibrations for the vehicle under test have been changed. One or more CVNs may be returned by the vehicle's computer.

1. With the Scan Tool in OBD II mode, press and release the **M** button.
   - The Main Menu displays.
2. Select **Vehicle Information**, then press **ENTER** ↵.
   - The Vehicle Information menu displays.
3. Select **Vehicle ID**, then press **ENTER** ↵.

   NOTE: *The first time the Vehicle ID function is used, it may take several minutes to retrieve the information from the vehicle's computer.*

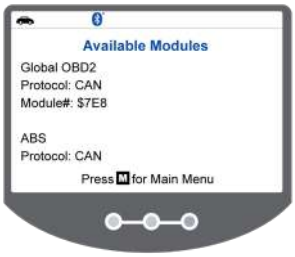


4. When the retrieval process is completed, the vehicle ID information displays.
5. When you have finished viewing the retrieved vehicle ID information, press **M** to return to the Main Menu.

VIEWING AVAILABLE MODULES

The Scan Tool can retrieve a list of modules supported by the vehicle under test.

1. With the Scan Tool in OBD II mode, press and release the **M** button.
   - The Main Menu displays.
2. Select **Vehicle Information**, then press **ENTER** ↵.
   - The Vehicle Information menu displays.
3. Select **Available Modules**, then press **ENTER** ↵.
4. When the retrieval process is completed, a complete list of modules supported by the vehicle under test displays.
5. When you have finished viewing the list of available modules, press **M** to return to the Main Menu.

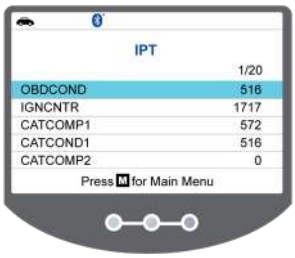


VIEWING IN-USE PERFORMANCE TRACKING (IPT)

The Scan Tool can retrieve In-use Performance Tracking (IPT) statistics for Monitors supported by the vehicle under test. Two values are returned for each Monitor; the number of times that all conditions necessary for a specific Monitor to detect a malfunction have been encountered (XXXCOND), and the number of times that the vehicle has been operated under the specific conditions for the Monitor (XXXCOMP). Statistics are also provided for the number of times the vehicle has been operated in OBD monitoring conditions (OBDCOND), and the number of times the vehicle's engine has been started (IGNCNTR).

1. With the Scan Tool in OBD II mode, press and release the **M** button.
   - The Main Menu displays.
2. Select **Vehicle Information**, then press the **ENTER** ↵ button.
   - The Vehicle Information menu displays.

3. Select **IPT**, then press **ENTER** ↵.
4. When the retrieval process is completed, the In-use Performance Tracking statistics for the vehicle under test display.
    - If In-use Performance Tracking is not available for the vehicle, an "advisory" message displays. Press **M** to return to the Main Menu.
5. When you have finished viewing the statistics, press **M** to return to the Main Menu.



DLC LOCATOR

1. Select **DLC Locator** in the Main Menu, then press **ENTER** ↵.
    - The Select Vehicle Model Year screen displays.
2. Select the desired **vehicle model year**, then press **ENTER** ↵.
    - The Select Vehicle Manufacturer screen displays.
3. Select the desired **vehicle manufacturer**, then press **ENTER** ↵.
    - The Select Vehicle Model screen displays.
4. Select the desired **model**, then press **ENTER** ↵.
    - The DLC Location screen for the selected vehicle displays.
    - The DLC Location screen displays the selected vehicle make and model, a description of the DLC location and whether the DLC is "covered" or "uncovered," and includes a picture of the DLC location.
5. When you have finished viewing the DLC location, press any Hotkey to exit the DLC Locator.



EV/HEV/PHEV BATTERY HEALTH

The Scan Tool can perform a check of the vehicle's battery and alternator system (or hybrid/EV battery system) to ensure the system is operating within acceptable limits.

1. Press **M** and release.
    - The Main Menu displays.
2. Select **EV/HEV/PHEV Battery Health, Battery/Alternator Test**, then press **ENTER** ↵.
    - If the vehicle is an electric or hybrid vehicle, the Hybrid/EV Battery Test screen shows a graphic display of the current state of charge for all cells in the battery pack displays.

NOTE: *If the Hybrid/EV Battery Test is not supported by the vehicle under test, an "advisory" message displays. Press* ***M*** *to return to the Main Menu.*

- If the vehicle is not an electric or hybrid vehicle, the Battery/Alternator Test menu displays [See page 42].

3. When you have finished viewing the retrieved information, press **M** to return to the Main Menu.

BATTERY/ALTERNATOR TEST

The Scan Tool can perform a check of the vehicle's battery and alternator system to ensure the system is operating within acceptable limits. You can perform a battery check only, or an alternator system (battery and alternator) check.

PERFORMING THE BATTERY TEST

1. Press **M** and release.
   - The Main Menu displays.
2. Select **Battery/Alternator Test**, then press **ENTER** ↵.
   - The Battery/Alternator Test Menu displays.
3. Select **Battery Test**, then press **ENTER** ↵.
   - An "instructional" message displays, showing the procedures to prepare the vehicle for the battery check.



4. Prepare the vehicle for the battery check:
   - Set the parking brake.
   - Place the transmission in PARK or NEUTRAL.
   - Inspect the battery for damage or corrosion.
   - Check the electrolyte level on maintenance-type battery.
   - Turn the ignition on. **DO NOT** start the engine.
5. Press **ENTER** ↵ to begin the battery check.

   NOTE: *If the engine is running, an "advisory" message displays. Turn the engine off, then turn the ignition on.* ***DO NOT*** *start the engine. Press* ***ENTER*** ↵ *to continue.*

   - An "instructional" message displays.
6. Turn the vehicle's headlights on, then press **ENTER** ↵ to continue.
   - A "countdown" message displays while the battery check is in process.
7. Turn the vehicle's headlights off, then press the **ENTER** ↵ to proceed.
   - An "instructional" message displays.
     - If battery voltage is **less than 11.8 volts**, an "advisory" message displays. Turn the ignition off and disconnect the Scan Tool from the vehicle. Fully charge the battery, then repeat the battery check.
     - If the battery voltage is **between 11.8 and 12.1 volts**, a "warning" message displays: "*Battery voltage is low, this may affect the accuracy of the test results.*"

— If battery voltage is **greater than 12.1 volts**, an "instructional" message displays.

8. Start the vehicle's engine.

NOTE: *If the Scan Tool did not detect the start of the vehicle's engine, an "advisory" message displays. Press **ENTER** ↵ to repeat the battery check, or, press **M** to return to the Main Menu.*

9. When the battery check is complete, a results screen displays with the battery's status.
10. Press **M** to return to the Main Menu.

VIEWING BATTERY LIVE DATA (12 VOLT)

1. Press **M** and release.
   - The Main Menu displays.
2. Select **EV/HEV/PHEV Battery Health**, or **Battery/Alternator Test**, then press **ENTER** ↵.
   - The EV/HEV/PHEV Battery Health or Battery/Alternator Test menu displays.
3. Select **Battery Live Data (12 Volt)**, then press **ENTER** ↵.
   - The Battery Live Data (12 Volt) menu displays.
4. When you have finished viewing the retrieved information, press **M** to return to the Main Menu.

PERFORMING THE ALTERNATOR TEST

1. Press **M** and release.
   - The Main Menu displays.
2. Select **Battery/Alternator Test**, then press **ENTER** ↵.
   - The Battery/Alternator Test Menu displays.



3. Select **Alternator Test**, then press **ENTER** ↵.
   - An "instructional" message displays, showing the procedures to prepare the vehicle for the charging system check.
4. Prepare the vehicle for the charging system check:
   - Set the parking brake.
   - Place the transmission in PARK or NEUTRAL.
   - Start engine and turn on headlights.
5. Once all required conditions are met, press **ENTER** ↵ to continue.
   - An "instructional" message displays.
6. Press the accelerator pedal to raise engine speed to 2000 RPM, and maintain the engine speed.
   - When engine speed is within the required range, the alternator test begins. A progress screen displays.
   - When the "countdown" timer expires, an "instructional" message displays.

7. Turn the vehicle's headlights off, and return the engine to idle speed.
   - A "One moment please…" message displays while the test results are retrieved.
8. When the alternator check is complete, a results screen shows charging system voltage and indicates whether or not the charging system is within acceptable limits. Press **M** to return to the Main Menu.

VIEWING ALTERNATOR LIVE DATA

1. Press **M** and release.
   - The Main Menu displays.
2. Select **Battery/Alternator Test**, then press **ENTER** ↵.
   - The Battery/Alternator Test Menu displays.
3. Select **Alternator Live Data**, then press **ENTER** ↵.
   - The Alternator Live Data menu displays.
4. When you have finished viewing the retrieved information, press **M** to return to the Main Menu.

VIEWING DRIVE CYCLE PROCEDURES

A Drive Cycle for a Monitor requires that the vehicle is driven in such a way that all the required "*Enabling Criteria*" for the Monitor to run and complete its diagnostic testing are met. You can use the Scan Tool to view the Drive Cycle procedures for a selected Monitor.

1. While linked to a vehicle, press **M**.
   - The Main Menu displays.
2. Select **Drive Cycle Procedures**, then press **ENTER** ↵.
   - A "One moment please…" message displays while the Scan Tool retrieves Monitor status.
3. When Monitor status has been retrieved, the Drive Cycle Procedures menu displays. Depending on Monitor status, you can view Drive Cycle procedures for Incomplete (or Enabled) Monitors, Complete Monitors or Disabled Monitors.

   NOTE: *If Drive Cycle Procedures are not available for the vehicle, an "advisory" message displays. Select* ***Back****, then press* ***ENTER*** ↵ *to return to the Main Menu.*

4. Select **Complete Monitors**, **Incomplete** (or **Enabled**) **Monitors** or **Disabled Monitors**, as desired, then press **ENTER** ↵.
   - A list of the available Monitors for the selected status displays.

   NOTE: *If no Monitors for the selected status are detected, an "advisory" message displays. Select* ***Back****, then press* ***ENTER*** ↵ *to return to the Main Menu.*



5. Select the Monitor for which you wish to view Drive Cycle Procedures, then press **ENTER** ↵.

- A "One moment please…" message displays while the Scan Tool retrieves the requested Drive Cycle Procedure. The Drive Cycle Procedures screen for the Monitor displays when the procedure has been retrieved.

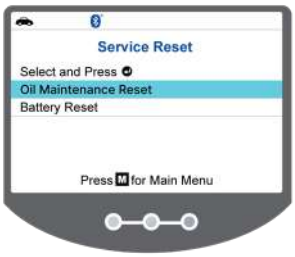
NOTE: *If a Drive Cycle Procedure for the selected Monitor is not available, an "advisory" message displays. Select* ***Back****, then press* ***ENTER*** ↵ *to return to the Main Menu.*



6. The Drive Cycle Procedure screen shows the specific set of operating procedures that ensure the vehicle is driven in such a way that all the required "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met.
7. When you are finished viewing the Drive Cycle Procedures, press **ENTER** ↵ to return to the Drive Cycle Procedures menu, or press **M** to return to the Main Menu.

OIL MAINTENANCE RESET

1. While linked to the vehicle, press the **M** button.
   - The Main Menu displays.
2. Choose **Service Reset**, then press **ENTER** ↵.
   - The Service Reset functions display.
3. Select **Oil Maintenance Reset**, then press **ENTER** ↵.
   - The Oil Maintenance Reset screen displays. Select **Yes** to continue, or **No** to cancel.



NOTE: *If the Scan Tool cannot reset the Oil Maintenance Light, an "instructional" dialog displays, showing the manual procedures for resetting the indicator light. When finished viewing the instructions, press the* ***M*** *button to return to the Main Menu.*

4. When the reset process has completed, a "confirmation" message displays. Select **Exit** to return to the Main Menu.
5. If Oil Maintenance Reset was not successful, an "advisory" message displays.
   - To perform the oil reset by procedure, select **Yes**, then press **ENTER** ↵.
     - An "instructional" message displays, showing the manual procedures for resetting the indicator light.
   - If you do not wish to perform the oil reset by procedure, select **No**, then press **ENTER** ↵ to return to the Main Menu.
6. When finished viewing the instructions, press **M** to return to the Main Menu.

BATTERY RESET

You can use the Scan Tool to view the procedures for resetting the battery monitor system following battery replacement or perform battery reset OBD service.

VIEWING BATTERY RESET PROCEDURES

1. While linked to the vehicle, press the **M** button.
   - The Main Menu displays.
2. Choose **Service Reset**, then press **ENTER** ↵.
   - The Service Reset functions display.
3. Select **Battery Reset**, then press **ENTER** ↵.
   - The Battery Reset menu displays.
4. Select **Battery Reset Procedures**, then press **ENTER** ↵.
   - The Battery Reset Procedures menu displays. The menu provides access to **General Information**, and procedures to be followed **Before Battery Disconnection**, **Before Battery Connection** and **After Battery Connection**.

   NOTE: *If battery reset procedures are not available for your vehicle, an "advisory" message displays. Press **M** to return to the Main Menu.*
5. Select the procedure you wish to view, then press **ENTER** ↵.
   - The selected procedure displays.
6. When you have finished viewing the retrieved information, press **M** to return to the Main Menu. Repeat steps **2** through **4** to view additional procedures.

PERFORMING BATTERY RESET OBD SERVICES

The following paragraphs provide procedures for performing battery reset OBD services on **BMW**, **Ford**, **Volvo**, and **Audi/Volkswagen** models.

1. While linked to the vehicle, press the **M** button.
   - The Main Menu displays.
2. Choose **Service Reset**, then press **ENTER** ↵.
   - The Service Reset functions display.
3. Select **Battery Reset**, then press **ENTER** ↵.
   - The Battery Reset menu displays.

Perform Battery Reset OBD Service (BMW/Ford/Volvo):

1. Select **Reset power supply information** (the available selection depends on the vehicle under test), then press **ENTER** ↵.
   - An "instructional" message displays.
2. Follow the instructions provided to prepare the vehicle for the test. When all necessary procedures have been performed, choose **Next** to continue.
   - A Live Data screen displays, if applicable.
3. Select **Next**, then press **ENTER** ↵ to continue.
   - A "One moment please…" message displays while battery reset is in process.
4. If the battery reset process is successful, a "Reset Complete" message displays.
   - Choose **Exit** to return to the Main Menu.
   - If the battery reset process is not successful, a "Reset Fail" message displays. Choose **Back** to return to the Battery Reset Menu.

Perform Battery Reset OBD Service (Audi/Volkswagen):

1. Select **Battery Reset Service** (the available selection depends on the vehicle under test), then press **ENTER** ↵.
   - An "informational" screen displays.
2. Select **Next**, then press **ENTER** ↵ to continue.
   - A series of "instructional" screens display, directing you to enter reference information for the battery (*part number*, *manufacturer*, *serial number*).
3. Choose **Next**, as necessary, to scroll the screen and enter the necessary information.
   - A "confirmation" screen displays.
   - The screen displays the previously entered ***part number***, ***manufacturer*** and ***serial number***.
4. Select the desired option:
   - To proceed with coding, select **Carry out coding** and press **ENTER** ↵. Proceed to **step 5**.
   - To re-enter battery reference information, select **Repeat input** and press **ENTER** ↵. Repeat **steps 2** and **3**.
   - To cancel the battery reset process, select **Cancel** and press **ENTER** ↵ to return to the Battery Reset Menu.
5. If battery coding was successful, a "confirmation" screen displays. Choose **Back** to return to the Battery Reset Menu.
   - If battery coding was not successful, an "advisory" screen displays. Choose **Exit** to return to the Main Menu.

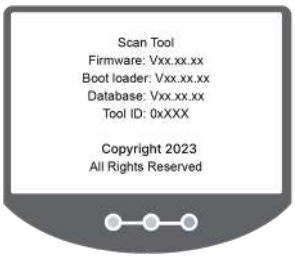
SERVICE CHECK

The Service Check function lets you check the current oil level and oil life remaining.



1. Select **Service Check** in the Main Menu, then press **ENTER** ↵.
   - The Service Check screen displays.
   - The screen displays the current ***Engine Oil Level*** and ***Oil Life Remaining***.
2. When you have finished viewing the information, press **M** to return to the Main Menu.

VIEWING THE FIRMWARE VERSION



1. Select **Firmware Version** in the Main Menu, then press **ENTER** ↵.
   - The Firmware Version screen displays.
   - The screen shows the Scan Tool's current firmware version, bootloader version, database version, and tool ID.
2. Press **M** to return to the Main Menu.

TOOL LIBRARY

Tool Library contains valuable reference information for the Scan Tool. The following functions are available:



- **Icon Definition** – Shows the full names for the I/M MONITOR STATUS icons shown and descriptions of informational icons on the Scan Tool's display.
- **DTC Library** – Provides access to libraries of OBD I and OBD II DTC definitions.
- **Smog Check or I/M Program LED Definition** – Provides descriptions of the meaning of the System Status LEDs.
- **QR RS2 App** – Provides the QR code to download RS2 app.
- **Monitor Icon Status** – Defines the Monitor icon status color coding and provides tips on how to proceed.

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Tool Library**, then press **ENTER** ↵.
   - The Tool Library menu displays.

ICON DEFINITION

The I/M MONITOR STATUS icons on the Scan Tool's LCD display provide an indication of the "Completed / Not Complete" status for all I/M Monitors supported by the vehicle under test. The Icon Definition function displays the full name for each Monitor icon, as well as descriptions of the meanings of other informational icons shown on the Scan Tool's display.

1. From the Tool Library menu, select **Icon Definition**, then press **ENTER** ↵.
   - The Icon Definition menu displays.
2. Press **UP** ▲ or **DOWN** ▼, as necessary, to select the type of icons you wish to view, **Spark Ignition Monitors**, **Compression Ignition Monitors** or **Tool Icons**, then press **ENTER** ↵.
   - The screen shows a list of icons for the selected category.
   - Press **ENTER** ↵ to return to the Icon Meaning menu. If desired, repeat **step 2** to view additional Icon Definitions.
3. When you have finished viewing the descriptions, press **M** to return to the Main Menu.



DTC LIBRARY

1. From the Tool Library menu, select **DTC Library**, then press **ENTER** ↵.
   - The Select Library screen displays.
2. Select **OBD I Library** or **OBD II Library**, as desired, then press **ENTER** ↵.
   - The Select Manufacturer screen displays.
3. Select the desired vehicle manufacturer, then press **ENTER** ↵.
   - A "confirmation" message displays.
     - If the correct manufacturer is not shown, select **No** and press **ENTER** ↵ to return to the list of vehicle manufacturers.
     - If the correct manufacturer is shown, select **Yes** and press **ENTER** ↵.
4. The Enter DTC screen displays.
   - **For OBD I DTCs**: The screen shows the code "000," with the first character highlighted. Press **UP** ▲ or **DOWN** ▼, as necessary, to scroll to the first digit of the DTC, then press **ENTER** ↵.
   - **For OBD II DTCs**: The screen shows the code "P0001," with the "P" highlighted. Press **UP** ▲ or **DOWN** ▼, as necessary, to scroll to the desired DTC type (**P**=Powertrain, **U**=Network, **B**=Body, **C**=Chassis), then press **ENTER** ↵.
   - The selected character displays solid, and the next character is highlighted.
5. Select the remaining digits in the DTC in the same way. When you have selected all the DTC digits, press **ENTER** ↵ to view the DTC definition.

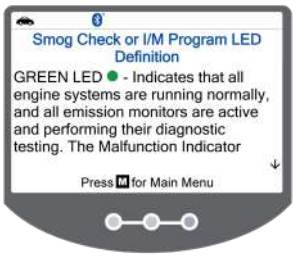


6. When you have finished viewing the DTC definition, press **M** to return to the Main Menu.

***NOTE:** If a definition for the DTC you entered is not available, an "advisory" message displays. Press **M** to return to the Main Menu.*

VIEWING SMOG CHECK OR I/M PROGRAM LED DEFINITION

The System Status LEDs on the Scan Tool provide a visual indication of the I/M Readiness status of the vehicle under test. This function provides a description of the meanings of the green, yellow, and red System Status LEDs.



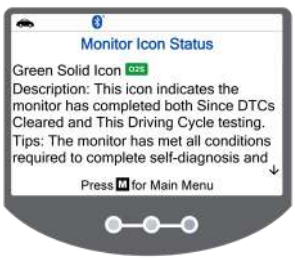
1. From the Tool Library menu, select **Smog Check or I/M Program LED Definition**, then press **ENTER** ↵.
   - The Smog Check or I/M Program LED Definition screen displays.
2. When you have finished viewing the LED definitions, press **M** to return to the Main Menu.

VIEWING THE APP QR CODE - RepairSolutions2® (RS2)



1. From the Tool Library menu, select **QR RS2 App**, then press **ENTER** ↵.
   - The QR RS2 App screen displays.
2. Press **UP** ▲ or **DOWN** ▼ to navigate through the options.
   - Scan the QR Code with a mobile device to download the RS2 app
   - To exit, press **M** to return to the Main Menu.

VIEWING THE MONITOR ICON STATUS



1. From the Tool Library menu, select **Monitor Icon Status**, then press **ENTER** ↵.
   - The Monitor Icon Status screen displays.
2. When you have finished viewing the Monitor Icon Status, press **M** to return to the Main Menu.

TOOL SETTINGS

The Scan Tool lets you make several adjustments and settings to configure the tool to your particular needs. The following functions can be performed:



- **Adjust Brightness:** Adjusts the brightness of the display screen.
- **Audible Tone:** Turns the Scan Tool's audible tone "on" and "off." When turned "on," a tone sounds each time a button is pressed.
- **Footer Messages:** Turns the navigational "footers" at the bottom of most display screens "on" and "off".

- **Hotkey Legends:** Shows functional descriptions for the Scan Tool's Hotkeys.
- **Language Selection:** Sets the display language for the Scan Tool to English, French or Spanish.
- **Unit of Measurement:** Sets the Unit of Measurement for the Scan Tool's display to USA or metric.
- **Smog Check or I/M Program Location:** Sets the Smog Check or I/M Program Location to enhance the emission readiness logic.
- **QR RS2 App Settings:** Sets the display of QR RS2 app to "Enable" or "Disable" when linking to the OBD II Scan Tool.

1. While linked to the vehicle, press **M**.
   - The Main Menu displays.
2. Select **Tool Settings**, then press **ENTER** ↵.
   - The Tool Settings menu displays.
3. Make any adjustments and settings as described below.

ADJUSTING DISPLAY BRIGHTNESS



1. Select **Adjust Brightness** in the Tool Settings menu, then press **ENTER** ↵.
   - The Adjust Brightness screen displays.
2. Press **UP** ▲ and **DOWN** ▼ to make the display lighter or darker, then press **ENTER** ↵ to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, press* ***M****.*

ENABLING/DISABLING THE AUDIBLE TONE



1. Select **Audible Tone** in the Tool Settings menu, then press **ENTER** ↵.
   - The Audible Tone screen displays.
2. Select **On** or **Off** as desired, then press **ENTER** ↵ to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, press* ***M****.*

VIEWING THE HOTKEY LEGEND



1. From the Tool Library menu, select **Hotkey Legend**, then press **ENTER** ↵.
   - The Hotkey Legend screen displays.
   - The screen shows a functional description of each of the Scan Tool's Hotkeys.
2. When you have finished viewing the Hotkey Legend, press **M** to return to the Tool Settings menu.

ENABLING/DISABLING FOOTER MESSAGES



1. Select **Footer Messages** in the Tool Settings menu, then press **ENTER** ↵.
   - The Footer Messages screen displays.
2. Select **On** or **Off** as desired, then press **ENTER** ↵ to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, press **M**.*

SELECTING THE DISPLAY LANGUAGE



1. Select **Language Selection** in the Tool Settings menu, then press **ENTER** ↵.
   - The Language Selection screen displays.
2. Select the desired display language (**English**, **Español**, **Français**) then press **ENTER** ↵ to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, press **M**.*

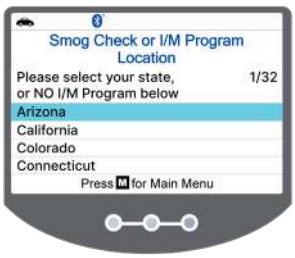
SETTING THE UNIT OF MEASUREMENT



1. Select **Unit of Measurement** in the Tool Settings menu, then press **ENTER** ↵.
   - The Unit of Measurement screen displays.
2. Select the desired unit of measurement (**U.S Standard** or **Metric**), then press **ENTER** ↵ to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, press **M**.*

SETTING THE SMOG CHECK OR I/M PROGRAM LOCATION



1. Select **Smog Check or I/M Program Location** in the Tool Settings menu, then press **ENTER** ↵.
   - The Smog Check or I/M Program Location screen displays.
2. Select the desired state, then press **ENTER** ↵ to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, press **M**.*

SETTING THE QR RS2 APP MODE



1. Select **QR RS2 App Settings** in the Tool Settings menu, then press **ENTER** ↵.
   - The QR RS2 App Settings screen displays.
2. Select **Enable** or **Disable** as desired, then press **ENTER** ↵ to save your changes.

NOTE: *To return to the Tool Settings menu without making changes, press* ***M****.*

EXITING THE MENU MODE

- From the Tool Settings Menu, press **M** to return to the Main Menu.

TOOL FIRMWARE UPDATES

The following provides detailed instructions on how to download the **INNOVA® OBD Tool Updater** application and update your INNOVA OBD II Scan Tool.

DOWNLOAD & INSTALL APPLICATION

Windows OS

1. From your Windows PC, download the software by clicking this link: DOWNLOAD
   - In the "**To update your tool:**" section, click the Windows hyperlink to download the app for Windows.
   - The application "***<File Name_Vx.x.x>.exe***" begins downloading to your Windows PC.
2. Locate the downloaded application and double click the file to begin installation.
   - If a Windows protection pop-up displays.
     - Click the "**More info**" link.
     - Click "**Run Anyway**" to proceed with the installation.
3. The InstallShield Wizard launches.
4. Follow the prompts to complete the installation.
   - See **Updating Your Scan Tool** section to proceed.

Mac OS

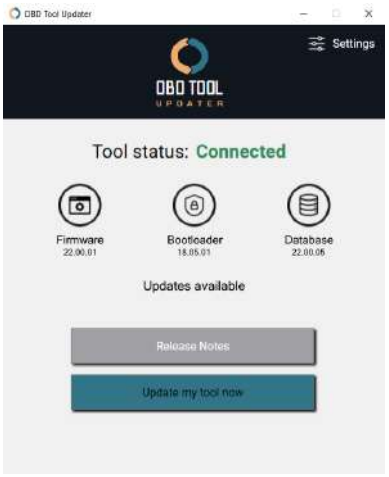
1. From your Mac, download the software by clicking this link: DOWNLOAD
   - In the "**To update your tool:**" section, click the Mac hyperlink to download the app for Mac.
   - The file "***<File Name_Vx.x.x>.zip***" begins downloading to your Mac.

2. Locate the downloaded application in your Downloads folder.
3. Unzip the file, if it is not automatically extracted to begin the installation.
4. Go to the System Settings, and then select Privacy & Security on your Mac.
   - Look for OBDUpdaterMac and click "Open Anyway"..
5. Follow the prompts to complete the installation.
   - See **Updating Your Scan Too**l section to proceed.

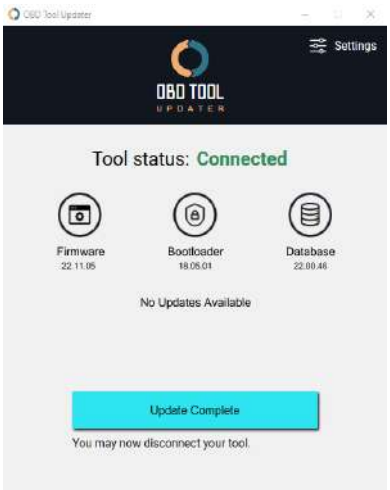
UPDATING YOUR SCAN TOOL

1. Locate and open the "**OBD Tool Updater**" application.
   - Click to launch it.
   - Once open, the software will initially display "**Disconnected**".
2. Using a standard USB cable, connect your tool to your computer.
   - Wait a few seconds for the software to detect it.

NOTE: *If using a USB charging cable, and not a USB data cable, you will get the 'Disconnected' message. Charging Cables: Can only charge devices, but cannot transfer data. These are commonly called 'Charge-only' cables. Data Cables: Does both; charges your devices and transfers data.*



3. Upon a good connection, the status changes to "**Connected**" and displays the tool's current Firmware, Bootloader, and Database versions.
   - Wait a few more seconds for the software to check for updates.
   - If an update is available, the accompanying screen displays.
   - If an update is not available, a "*No Updates Available*" message displays.
4. If an update is available, click the "**Update my tool now**" button to begin.
   - The update is divided into individual steps such as bootloader, firmware, and database. Please be aware that this ***process may take up to 25 minutes***. Do not disconnect the tool or close the app until all updates have been completed.
   - Click the "**Release Notes**" button to view what features and functions were added or corrected with the new version.
5. If the update was successful, the message "*Update Complete*" displays. At this point the tool has been updated and can be safely disconnected.
   - If an error occurred during the update, the progress bar turns red and stops with the message "Update Error". Please disconnect the tool and follow the steps indicated above to attempt the update process again.



TROUBLESHOOTING TIPS

1. Tool is connected to the computer, but the app shows a '**Disconnected**' status.
   - Make sure the USB data cable to the computer and your tool are properly seated.
   - Try switching to a different USB port.
   - Try using another USB cable.
   - Make sure you are using the right Updater. Older model tools are not compatible with the new OBD II Tool Updater.
2. Tool is connected, but do not see "**Update my tool now**" button.
   - This means your tool is up to date and there are no new updates for your tool.
3. The update is **stuck at 1% (or 5%)** and not progressing.
   - Install the latest updater for your tool. Visit Innova.com/support to get the latest software.
   - Reboot your computer.
   - Disable any Antivirus software running in the background.
   - Attempt the update again by following the steps indicated above.

OBD I DIAGNOSTICS

The Scan Tool provides diagnostic capabilities for OBD I vehicles manufactured between 1981 and 1995, including Chrysler/Jeep, Ford Cars, Trucks and Vans, Honda, GM, and Toyota.

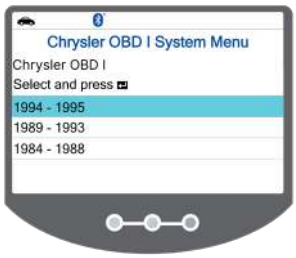
CHRYSLER/JEEP OBD I SYSTEMS

NOTE: *Please ensure that the Scan Tool has AAA batteries inserted before performing diagnostics on Chrysler/Jeep OBD I vehicles.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

2. Connect the Scan Tool (with the Chrysler Connector Cable Adaptor attached) to the vehicle's DLC.
   - Set the parking brake, and make sure all vehicle accessories are turned off.
   - Turn the ignition **ON**. **DO NOT** start the engine.
3. The Chrysler OBD I System Menu displays.



4. To retrieve codes from the vehicle's computer:
   - Press the **UP** ▲ and **DOWN** ▼ buttons, as necessary, to highlight the year of the vehicle, then press **ENTER** ↵.
5. A "One moment please…" message displays while codes are being retrieved.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" message displays.
     - Verify the ignition is ON.
     - Check the cable connections at the Scan Tool and at the vehicle's DLC.
     - Turn the ignition OFF, wait 10-12 seconds, then turn back ON to reset the computer.
     - Press the **POWER/LINK** button to continue.
   - If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.

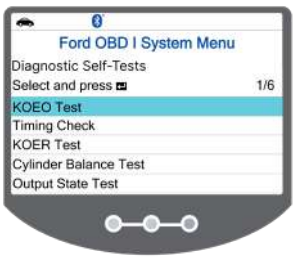


6. If the Scan Tool was able to link to the vehicle successfully, the Scan Tool displays the retrieved DTCs.
   - The Scan Tool will display a code only if codes are present. If no codes are present, the message "No DTCs are presently stored in the vehicle's computer" displays.
7. Press the **ERASE** button to erase **ALL** retrieved Diagnostic Trouble Codes (DTCs).
8. Disconnect the Scan Tool from the vehicle and turn the ignition key OFF.

9. To prolong battery life, the Scan Tool automatically shuts "Off" after approximately three minutes of no button activity. The DTCs retrieved remain in the Scan Tool's memory and may be viewed at any time. If the Scan Tool's batteries are removed, or if the Scan Tool is re-linked to a vehicle to retrieve codes, any prior codes in its memory are automatically cleared.
10. Follow the testing and repair procedures outlined in the vehicle's service repair manual to correct "hard" DTCs. Codes should be addressed and eliminated in the order they were received erasing and retesting after each repair is made to be sure the fault was eliminated.

FORD OBD I SYSTEMS

OVERVIEW OF FORD CODE RETRIEVAL PROCESS



Ford's computer self-diagnostic system is divided into four main sections:

1. "Key On Engine Off" (KOEO) Self-Test.
2. "Continuous Memory" (CM) Self-Test.
3. "Key On Engine Running" (KOER) Self-Test.
4. Other EEC-IV System tests.

These Self-Tests are designed to monitor and/or test the components and circuits that are controlled by the vehicle's computer, and to save and/or transmit test results to the Scan Tool. The "Continuous Memory" Self-Test is designed to run continuously whenever the vehicle is in normal operation. If a fault is detected by the "Continuous Memory" Self-Test, a fault code is saved in the vehicle's computer memory for later retrieval. Self-Tests are designed in such a way that to properly diagnose a problem, you must perform all the Self-Tests, in the proper sequence.

If you fail to perform a test, or you perform a test out of sequence, you may miss a problem that is only detected during that part of the test.

KEY ON ENGINE OFF (KOEO) TEST

During the KOEO Self-Test, two groups of codes are retrieved.

- The first group of codes are called "KOEO codes". A "KOEO" icon displays to indicate the code is a "KOEO" code.
- The second group of codes are called "Continuous Memory" codes. A "Continuous Memory" icon displays to indicate the code is a "Continuous Memory" code.

NOTE: *Check your vehicle thoroughly before performing any test.*

1. Locate the vehicle's Data Link Connector (DLC).

NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to **BOTH** connectors. Press the **POWER/LINK** button to turn the Scan Tool ON.
3. The Ford OBD I System Menu displays.
4. Highlight **KOEO Test**, then press the **ENTER** button.
    - The LCD display shows instructions to prepare the vehicle for the KOEO Test.
5. Start and warm the engine to normal operating temperature, then press **ENTER** to continue.
6. Turn the ignition key **OFF** and wait for the on-screen prompt.
7. Turn the ignition **ON. DO NOT** start the engine. If your vehicle is equipped with one of the following engine types, perform the added procedures described below:
    - **For 4.9L engines with standard transmission:** Press and hold the clutch until all codes are sent (**steps 7 through 9**).
    - **For 7.3L diesel engines:** Press and hold accelerator until all codes are sent (**steps 7 through 9**).
    - **For 2L turbo engines with octane switch:** Put switch in premium position.
8. Press the **ENTER** button to continue.
9. A One moment please. KOEO test is in progress…" message displays while codes are being retrieved.

NOTE: *When the ignition is turned "on", the vehicle's computer enters the Self-Test mode. Clicking sounds will be heard. This indicates the vehicle's computer is activating relays, solenoids, and other components to check their operation.*

WARNING: *On some vehicles equipped with an Electric Cooling Fan, the computer activates the cooling fan to check its operation. To avoid injury, keep your hands or any part of your body a safe distance from the engine during this test.*

- If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.
    - Verify the ignition is **ON**.
    - Check the cable connections at the Scan Tool and at the vehicle's DLC.
    - Turn the ignition **OFF**, wait 10 seconds, then turn back **ON** to reset the computer. Press the **ENTER** button to continue.
- If the Scan Tool cannot link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.

10. If the Scan Tool was able to link to the vehicle successfully a "Code retrieval was successful..." message displays temporarily, followed by any retrieved DTCs.



NOTE: *Most Ford EEC-IV vehicle computers up to 1991 use a two-digit code system. From 1991 to 1995 most use a three-digit code system.*

- If no problems are found during the KOEO Self-Test, the computer sends a "PASS" code (code 11 or 111) to the Scan Tool.

- If no Continuous Memory codes are present in the vehicle's computer memory, the Scan Tool displays a "PASS" code (code 11 or 111).
- The Scan Tool will display a code only if codes are present. If no codes are present, the message "No DTCs are presently stored in the vehicle's computer" displays.

11. Press the **ERASE** button to erase **ALL** retrieved Diagnostic Trouble Codes (DTCs).

12. Disconnect the Scan Tool from the vehicle and turn the ignition key OFF.

13. To prolong battery life, the Scan Tool automatically shuts "Off" after approximately three minutes of no button activity. The DTCs retrieved remain in the Scan Tool's memory and may be viewed at any time. If the Scan Tool's batteries are removed, or if the Scan Tool is re-linked to a vehicle to retrieve codes, any prior codes in its memory are automatically cleared.

14. Follow the testing and repair procedures outlined in the vehicle's service repair manual to correct "hard" DTCs. Codes should be addressed and eliminated in the order they were received, erasing, and retesting after each repair is done to be sure the fault was eliminated.

NOTE: *Before "Continuous Memory" codes can be serviced, both the KOEO and the KOER Self-Tests must pass (a PASS code 11 or 111 is obtained). After both of these tests have passed, erase the vehicle's computer memory, take the vehicle for a short drive, then repeat the KOEO Self-Test. If any Continuous Memory faults are present, service them all this time.*

NOTE: *Do not proceed to the ignition timing check procedure or the KOER test until a PASS code (code 11 or 111) for KOEO test is obtained.*

ENGINE TIMING CHECK

NOTE: *Before performing the KOER Self-Test, the vehicle's Ignition Base Timing and the computer's ability to electronically control timing advance must be checked for proper operation.*

NOTE: *This procedure is only applicable to 1992 and older vehicles (excluding diesel engines). For 1993 and newer vehicles, refer to the vehicle's service repair manual for procedures to check and adjust timing.*

For 1992 and older vehicles, the Scan Tool can be used in combination with a timing light to check ignition timing and the vehicle computer's ability to advance ignition timing.

NOTE: *Check your vehicle thoroughly before performing any test.*

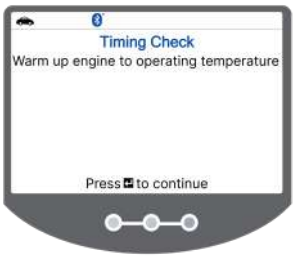
NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

- A timing light is required to perform this test.
- The vehicle must pass the KOEO Test before performing this test.

1. Locate the vehicle's Data Link Connector (DLC).

NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to BOTH connectors. Press the **POWER/LINK** button to turn the Scan Tool On, then press the **ENTER** ↵ button to continue.
3. The Ford OBD I System Menu displays.
4. Highlight **Timing Check**, then press **ENTER** ↵.
   - The Select Model Year screen displays.
5. Highlight the vehicle model year, then press **ENTER** ↵.
   - **For 1993 and newer vehicles**: The message "Follow instructions in vehicle service manual to perform timing check" displays. Press the **SYSTEM MENU** button to return to the Ford Menu. Refer to the vehicle service manual for procedures.



   - **For 1992 and older vehicles**: The message "Warm up engine to operating temperature" displays.
6. Start and warm the engine to normal operating temperature. Press **ENTER** ↵ to continue.
7. When prompted, turn off all vehicle accessories, turn the ignition key OFF and wait for the on-screen prompt. If you wish to exit the Timing Check procedure at this time, press the **SYSTEM MENU** button.
8. When instructed, start the engine, and press **ENTER** ↵.
   - A "One moment please preparation for test is in progress" message displays temporarily, followed by the message "Perform Timing Check within 2 minutes."



9. Perform the Timing Check as follows:
   - The vehicle's computer is programmed to advance ignition timing 20° (±3°) above the vehicle's "base timing" value, and to freeze this setting for two minutes from the time the "Perform Timing Check within 2 minutes" message displays.
   - Within this two-minute period, follow instructions in the vehicle's service repair manual to check the ignition timing with a timing light and ensure that it is 20° above the specified base timing value (±3°).
10. If timing light readings are within the acceptable range:
    - Base timing and the vehicle computer's ability to advance timing are working properly.
    - Proceed to the KOER Self-Test.
11. If timing light readings are not within the acceptable range:
    - Base timing may be out of adjustment, or the computer may have problems with the timing advance circuit.
    - Refer to the vehicle's service repair manual for procedures on adjusting and/or repairing ignition timing. Repairs to ignition timing must be made before proceeding to the KOER Test.

KEY ON ENGINE RUNNING (KOER) SELF-TEST

NOTE: *Check your vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

- The vehicle must pass the KOEO Test before performing this test.
- The vehicle must pass the Engine Timing Check before performing this test.

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to BOTH connectors. Press **POWER/LINK** button to turn the Scan Tool On, then press the **ENTER** button to continue.
3. The Ford OBD I System Menu displays.
4. Highlight **KOER Test**, then press the **ENTER** button.
   - The message "Make sure ignition timing is within factory specifications" displays. If necessary, press the **SYSTEM MENU** button to return to the Ford Menu and perform an Engine Timing Check. Otherwise, press the **ENTER** button to continue.
5. The message "Warm up engine to operating temperature" displays. Start and warm the engine to normal operating temperature. Press the **ENTER** button to continue.
6. When prompted, turn off all vehicle accessories, turn the ignition key OFF. If you wish to exit the KOER test currently, press the **SYSTEM MENU** button.
7. When instructed, start the engine, and press the **ENTER** button to continue. A "One moment please KOER test is in progress..." message displays temporarily.
8. The Scan Tool retrieves the Cylinder Identification (ID) Code. (Identifies the number of cylinders for the vehicle under test.)
   - If the Scan Tool cannot retrieve the Cylinder ID Code, an "advisory" message displays. Press the **SYSTEM MENU** button to exit and repeat the Key On Engine Off (KOEO) test until DTC 11 or 111 displays.



9. Perform the following procedures when prompted.
   - Turn the steering wheel 1/2 turn to right, hold for four seconds and release.
   - Press the brake pedal to the floor and then release it.
   - Cycle the Overdrive Switch (if equipped).
   - Quickly press the accelerator pedal to the floor and then release it.
10. After the above procedures are performed a "One moment please KOER test is in progress..." message displays temporarily, followed by a "Retrieving codes" message.

NOTE: *Most Ford EEC-IV vehicle computers up to 1991 use a two-digit code system. From 1991 to 1995 most use a three-digit code system.*

- If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.
  - Verify the ignition is ON.
  - Check the cable connections at the Scan Tool and at the vehicle's DLC.
  - Turn the ignition OFF, wait 10 seconds, then turn back ON to reset the computer.
  - Press **ENTER** ↵ to continue.
- The Scan Tool displays a code only if codes are present in the vehicle's computer memory. If no codes are present, a "No DTCs are presently stored in the vehicle's computer" message is displayed.

11. If no problems are found during the KOER Self-Test, the computer sends a "PASS code" (code 11 or 111) to the Scan Tool.
12. Press the **ERASE** button to erase **ALL** retrieved Diagnostic Trouble Codes (DTCs).
13. Turn the engine off and disconnect the Scan Tool from the vehicle's test connectors.

NOTE: *All etrieved DTCs remain in the Scan Tool's memory. If the KOER Test procedure is performed again, DTCs from a prior test will automatically clear and will be replaced by the most current DTCs retrieved.*



14. All KOER codes that are retrieved by the Scan Tool during the KOER Self-Test represent problems that are present now (at the time the test is performed). The related vehicle problems that caused the codes to be sent must be repaired using the procedures described in the vehicle's repair manual.
15. After all repairs have been completed, repeat the KOER Self-Test.
16. If a "pass code" (code 11 or 111) is received, it indicates that the repairs were successful, and all the related systems are working properly.
17. If a "pass code" (code 111 or 111) is not received, the repair was unsuccessful. Consult the vehicle's service manual and recheck the repair procedure.

CYLINDER BALANCE TEST

The Cylinder Balance Test assists in finding a weak or noncontributing cylinder. The computer shuts off fuel (cuts off power to injectors) to each cylinder, in sequence, and monitors for RPM changes (drop). Based on this information, the computer determines if all the cylinders are contributing power equally (for proper engine operation), or if some cylinders are only contributing partially or not contributing at all.

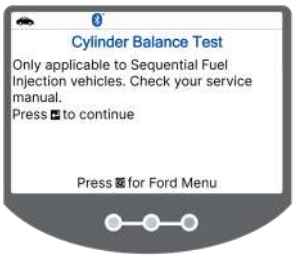
NOTE: *Check your vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   ***NOTE:** Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to BOTH connectors. Press the **POWER/LINK** button to turn the Scan Tool ON, then press **ENTER** button to continue.
3. The Ford OBD I System Menu displays.
4. Highlight **Cylinder Balance Test**, then press the **ENTER** button.
   - An "advisory" message displays. If the vehicle **is not** equipped with Sequential Electronic Fuel Injection (SEFI), press **SYSTEM MENU** to exit. Otherwise, press **ENTER** to continue.
5. An "instructional" message displays. Start and warm the engine to normal operating temperature. Press **ENTER** to continue.
6. When prompted, turn off all vehicle accessories, turn the ignition key OFF and wait for the on-screen prompt. If you wish to exit the Cylinder Balance Test at this time, press the **SYSTEM MENU** button.
7. When instructed, start the engine, and press the **ENTER** button.
   - A "One moment please preparation for test is in progress..." message displays temporarily.



8. When prompted, lightly press the accelerator pedal halfway and release to activate the cylinder balance test.

   ***NOTE: For 1986 models ONLY:** Fully press accelerator once and release.*

   - The computer is now in Cylinder Balance Test mode and will start cutting fuel to each cylinder in sequence to determine if all the cylinders are contributing equally. **It may take up to five minutes before the test results are transmitted to the Scan Tool**.
9. If the vehicle's computer fails to enter Cylinder Balance Test mode, do the following:
   - Lightly press the accelerator pedal again as described in **step 7**.
10. After the Cylinder Balance Test is completed, the test results are sent to the Scan Tool.
11. If all cylinders are contributing equally, a "System Pass" message displays.

    ***NOTE:** If the computer detects a problem with a cylinder(s) when performing the initial Cylinder Balance Test, it needs to repeat the test two more times to properly determine which cylinder or cylinders are malfunctioning.*

12. If a cylinder is not contributing at the same level as the other cylinders, the computer prompts you to repeat the test two more times by displaying the "Lightly press the accelerator halfway and release" message again. Each time the message displays, perform the procedures as instructed.
13. After the Cylinder Balance tests have completed, the computer will identify and display which cylinder (or cylinders) are not contributing equally.





- If any weak cylinders are identified, consult the vehicle service repair manual to perform further testing and/or repairs.

RELAY AND SOLENOID TEST (OUTPUT STATE CHECK)

The "Output State Check" lets you energize (turn ON) and de-energize (turn OFF), on command, most of the actuators (relays and solenoids) that are controlled by the vehicle's computer.

Use this test to check computer output voltages and relay/solenoid operation.

NOTE: *The fuel injectors and fuel pump are not energized during this test.*

NOTE: *Check your vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to BOTH connectors. Press the **POWER/LINK** button to turn the Scan Tool ON, then press **ENTER** ↵ to continue.
3. The Ford OBD I System Menu displays.
4. Highlight **Output State Test**, then press **ENTER** ↵.
5. The message "Warm up engine to operating temperature" displays. Start and warm the engine to normal operating temperature. Press **ENTER** ↵ to continue.
6. When prompted, turn the ignition key OFF and wait for the on-screen prompt. If you wish to exit the Output State Check at this time, press the **ENTER** ↵ button.
7. When prompted, turn the ignition ON. DO NOT start the engine. If your vehicle is equipped with one of the following engine types, perform the added procedures described below:
   - **For 4.9L engines with standard transmission:** Press and hold the clutch until the "Output State Check Active" screen displays.
   - **For 7.3L diesel engines:** Press and hold accelerator until the "Output State Check Active" screen displays.
   - **For 2L turbo engines with octane switch:** Put switch in premium position.
8. Press the **ENTER** ↵ button to continue.
9. A "One moment please test is in progress..." message shows.

   NOTE: *When the ignition is turned "on", the vehicle's computer enters the Self-Test mode. Clicking sounds will be heard. This is normal.*

WARNING: *On some vehicles equipped with an Electric Cooling Fan, the computer activates the cooling fan to check its operation. To avoid injury, keep your hands or any part of your body a safe distance from the engine during this test.*

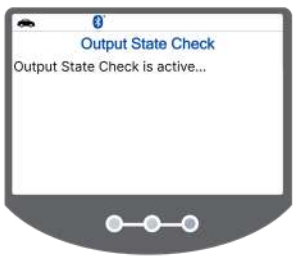
- If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.
  - — Verify the ignition is ON.
  - — Check the cable connections at the Scan Tool and at the vehicle's DLC.
  - — Turn the ignition OFF, wait 10 seconds, then turn back ON to reset the computer.

NOTE: *BE SURE to perform the added procedures in* ***step 6****, if appropriate, BEFORE turning the ignition ON.*

- — Press the **ENTER** ↵ button to continue.

- If the Scan Tool **cannot** link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.

10. If the Scan Tool was able to link to the vehicle successfully an "Output State Check active..." message dispays temporarily followed by a display that instructs you how to perform the test.

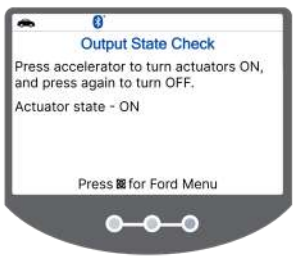


11. When prompted, press the accelerator pedal once, then release. This activates the Output State Check and energizes most of the actuators (relays and solenoids) that are controlled by the vehicle's computer.

NOTE: *If your vehicle is equipped with an Integrated Vehicle Speed Control, disconnect the vacuum supply hose from the speed control servo before pressing the accelerator. Reconnect the vacuum hose after the test.*

12. To de-energize the actuators, press the accelerator pedal again and release.

13. The procedure can be repeated as many times as desired by pressing and releasing the accelerator pedal.



14. Consult the vehicle's service repair manual for a list of actuators (solenoids and relays) controlled by the computer that apply to the vehicle under test, and which actuators should energize and de- energize when performing the Output State Check. All applicable actuators should be on when energized and off when de-energized.

15. If an actuator is not responding to the Output State Check, follow the procedures described in the vehicle's service manual to check computer actuator output circuit voltages and/or grounds.

16. To quit the Output State Check, turn the ignition OFF and disconnect the Scan Tool from the vehicle.

WIGGLE TEST

NOTE: *Since any DTCs from Wiggle Test results are saved in Continuous Memory, it is suggested that you clear any DTCs in Continuous Memory before performing the Wiggle Test.*

Use this test to check for intermittent faults in some circuits.

Circuits Tested:

1984 & Newer - Air Charge Temp Sensor (ACT), Barometer Pressure Sensor (BP), Engine Coolant Temp Sensor (ECT), Exhaust Gas Oxygen Sensor (EGO), EGR Valve Position Sensor (EVP), Manifold Absolute Pressure (MAP), Throttle Position Sensor (TP), Vane Air Temp Sensor (VAT).

1985 & Newer - Vane Air Flow Sensor (VAF).

1986 & Newer - Pressure Feedback EGR Sensor (PFE).

1990 & Newer - Exhaust Gas Oxygen Sensor (EGO), Ignition Diagnostic Monitor (IDM) (DIS or Dual Plug DIS only), Idle Tracking Switch (ITS), Mass Air Flow Sensor (MAF).

NOTE: *Check your vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool cable connector.*

2. Connect the Scan Tool (with the Ford Connector Cable Adaptor attached) to the vehicle's DLC. Connect the Scan Tool to BOTH connectors. Press the **POWER/LINK** button to turn the Scan Tool ON, then press **ENTER** ↵ to continue.
3. The Ford OBD I System Menu displays.
4. Highlight **Wiggle Test**, then press **ENTER** ↵.
5. The message "Warm up engine to operating temperature" displays. Start and warm the engine to normal operating temperature. Press **ENTER** ↵ to continue.
6. When prompted, turn the ignition key OFF and wait for the on-screen prompt. If you wish to exit the Wiggle Test at this time, press the **ENTER** ↵ button.



7. Select the desired Wiggle Test from the menu displayed.
   - To perform the KOEO Wiggle Test:
     - Highlight **KOEO Wiggle Test**.
     - Turn the ignition ON. DO NOT START THE ENGINE.
     - Press the **ENTER** ↵ button to continue.

- To perform the KOEO Wiggle Test:
  - Highlight **KOEO Wiggle Test**.
  - Turn the ignition ON and start the engine.
  - Press the **ENTER** ↵ button to continue.

8. A "One moment please test is in progress" message displays temporarily.

- If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.

For KOER Wiggle Test:

- Verify the ignition is ON.
- Turn the ignition OFF, wait 10 seconds, then turn back ON to reset the computer. Press the **ENTER** ↵ button to continue.

For KOER Wiggle Test:

- Turn the ignition OFF, wait 10 seconds, then turn back ON to reset the computer. Press the **ENTER** ↵ button to continue.

- If the Scan Tool **cannot** link to the vehicle's computer after three attempts, the message "Contact Technical Support" displays.

9. If the Scan Tool was able to link to the vehicle successfully, a "Wiggle test is active..." message displays temporarily, followed by a message instructing you how to perform the test.

- Press the **SYSTEM MENU** Ⓢ button if you wish to exit the Wiggle Test at this time.

10. Wiggle, tap and move the suspected sensor or wiring.

- If no faults are detected, a "System Pass" message displays.
- If a fault is detected, a "Circuit Fault detected" message displays.

NOTE: *If the Wiggle Test detects any problems, the related DTC will be stored by the computer in "Continuous Memory". To view any Wiggle Test DTCs you must perform the KOEO Test.*



11. Follow the procedures in the vehicle's service repair manual to perform troubleshooting and repairs for Wiggle Test results.

12. The Wiggle Test will stay active as long as desired. To quit the Wiggle Test, turn the ignition OFF and disconnect the Scan Tool.

GM OBD I SYSTEMS

This Scan Tool may be used to retrieve engine service codes from most General Motors (GM) domestic cars and trucks (EXCEPT Geo, Nova, Saturn, and Sprint).

NOTE: *Please ensure that the Scan Tool has AAA batteries inserted before performing diagnostics on GM OBD I vehicles.*

NOTE: *Check your vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting the Scan Tool.*

2. Connect the Scan Tool (with the GM Connector Cable Adaptor attached) to the vehicle's DLC. Press the **POWER/LINK** ⏻◁▷ button to turn the Scan Tool ON, then press the **ENTER** ↵ button to continue.
   - An "instructional" message displays.
3. Turn the ignition ON. Turn all vehicle accessories OFF. Select **Continue**, then press tthe **ENTER** ↵ button.
   - The Select Vehicle Year screen displays.
     - Highlight the desired year, then press **ENTER** ↵; the Enter 8th VIN menu displays.
4. Highlight the 8th digit of the vehicle's VIN, then press **ENTER** ↵.

   NOTE: *If the "Enter 4th VIN Digit" screen displays (not applicable to all vehicles), highlight the 4th digit of the vehicle's VIN, then press* ***ENTER*** ↵.

   NOTE: *If the "Truck" screen displays (not applicable to all vehicles), highlight* ***Yes*** *or* ***No****, as appropriate, then press* ***ENTER*** ↵.
5. When the Scan Tool is in the process of retrieving codes, a "One moment please..." message displays.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" screen displays.
     - Verify the ignition is ON.
     - Check the cable connections at the Scan Tool and at the vehicle's DLC.
     - Turn the ignition OFF, wait 10-12 seconds, then turn back ON to reset the computer.
     - Press the **POWER/LINK** ⏻◁▷ button.
6. If the Scan Tool was able to link to the vehicle successfully, the Scan Tool displays the retrieved DTCs.

- The Scan Tool will display a code only if codes are present in the vehicle's computer memory. If no codes are present, a "No DTCs are presently stored in the vehicle's computer" message displays.



7. Code 12 will always be present, and it has one of the following meanings.
   - If code 12 is the only DTC retrieved and your vehicle "STARTS OK" then code 12 indicates system "PASS", and all computer control systems are functioning properly.
   - If code 12 is present and your vehicle "DOES NOT START", then it may indicate a problem with the ignition control system.
8. Press the **ERASE** button to erase **ALL** retrieved Diagnostic Trouble Codes (DTCs).

HONDA OBD I SYSTEMS

NOTE: *Check your vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

   NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

2. Connect the Scan Tool (with the Honda Connector Cable Adaptor attached) to the vehicle's DLC. Press the **POWER/LINK** button to turn the Scan Tool ON, then press the **ENTER** button to continue.
   - An "instructional" message displays.
     - Turn the ignition key ON.
     - Make sure the throttle is fully closed.
     - Make sure the emergency brake is applied.
     - Place the transmission in neutral.
     - Turn all vehicle accessories "OFF".
3. Highlight **Read DTCs** and press **ENTER** to continue.
4. When the Scan Tool is in the process of retrieving codes, a "One moment please..." message displays.
   - If the Scan Tool fails to link to the vehicle's computer, a "Communication Error" screen displays.
     - Verify the ignition is ON.
     - Check the cable connections at the Scan Tool and at the vehicle's DLC.
     - Turn the ignition OFF, wait 10-12 seconds, then turn back ON to reset the computer.
     - Press the **POWER/LINK** button and repeat **step 2** as necessary.

5. If the Scan Tool was able to link to the vehicle successfully, the Scan Tool displays the retrieved DTCs.
    - The Scan Tool will display a code only if codes are present in the vehicle's computer memory. If no codes are present, a "No DTCs are presently stored in the vehicle's computer" message displays.
6. Press the **ERASE** button to erase **ALL** retrieved Diagnostic Trouble Codes (DTCs).



TOYOTA OBD I SYSTEMS

NOTE: *Check your vehicle thoroughly before performing any test.*

NOTE: ALWAYS *observe safety precautions whenever working on a vehicle.*

1. Locate the vehicle's Data Link Connector (DLC).

    NOTE: *Some DLCs have a plastic cover that must be removed before connecting to the Scan Tool.*

2. Connect the Scan Tool (with the Toyota Connector Cable Adaptor attached) to the vehicle's DLC.
    - An "instructional" message displays.
        - Turn the Ignition key "ON" and start the engine. Warm engine to operating temperature. (Shut engine off after warming up, then turn the ignition back ON).
        - Make sure the throttle is fully closed.
        - Set the gear lever in "park" (for automatic transmissions) or "neutral" for manual transmissions.
        - Turn all vehicle accessories "OFF."
3. Highlight **Read DTCs** and press **ENTER** to continue.
4. When the Scan Tool is in the process of retrieving codes, a "One moment please..." message displays.
    - If the Scan Tool fails to link to the vehicle's computer, a "Vehicle is not responding" message displays.
        - Verify the ignition is ON.
        - Check the cable connections at the Scan Tool and at the vehicle's DLC.
        - Turn the ignition OFF, wait 10-12 seconds, then turn back ON to reset the computer.
        - Press the **POWER/LINK** button and repeat **step 2** as necessary.
5. If the Scan Tool was able to link to the vehicle successfully, the Scan Tool displays the retrieved DTCs.



- The Scan Tool will display a code only if codes are present in the vehicle's computer memory. If no codes are present, a "No DTCs are presently stored in the vehicle's computer" message displays.

6. Press the **ERASE** button to erase **ALL** retrieved Diagnostic Trouble Codes (DTCs).

HEAVY-DUTY ON-BOARD DIAGNOSTICS (HD OBD)

GETTING THE CONNECTION

The Scan Tool provides diagnostic capabilities for commercial vehicles manufactured from 1985 to present, including: **International, Freightliner, Volvo, Dodge, MACK, Kenworth, Peterbilt, Western Star, Mitsubishi Fuso, Isuzu,** etc.

There are 4 types of the HD OBD connectors including 6-Pin connector, 9-Pin Black connector, 9-Pin Green connector, and 16-Pin connector (same as the diagnostic connector of cars).

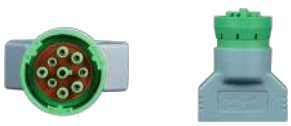
6-Pin Connector: supports SAE J1587/J1708 standard only



9-Pin Black connector: supports both SAE J1587/J1708 standard and SAE J1939 standard (with baud rate up to 250 kbps)



9-Pin Green connector: supports both SAE J1587/J1708 standard and SAE J1939 standard (with baud rate up to 500 kbps)



16-Pin connector: supports J1979 standard

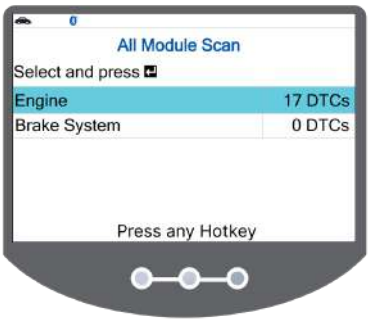


1. Locate the vehicle's Data Link Connector (DLC).
2. Connect the scan tool with the vehicle's DLC.
3. Turn the ignition on. **DO NOT** start the engine.
4. When the scan tool is properly connected to the vehicle's DLC, the unit automatic turn ON.
    - The scan tool will detect automatically and show System Menu screen.



ALL MODULE SCAN

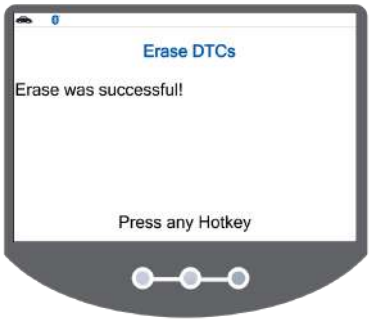
1. Select **All Module Scan** from the System Menu, then press **ENTER**↵.
    - A "One moment please..." message displays while the scan tool scans all available modules.
    - If the scan tool fails to link to the vehicle's computer, a "Communication Error" message displays.
2. When the scan is completed, the All Module Scan screen displays. The screen displays the number of DTCs recorded for each available module.



3. Press and release **ERASE** to erase all modules DTCs.
4. A "confirmation" message displays.
    - If you are sure you want to proceed, select **Yes** for a second time.
    - If you do not want to proceed, choose **No** to cancel the erase procedure.
5. A "One moment please…" message displays while the erase function is in progress.

NOTE: *Turn the ignition key **ON**. **DO NOT** start the engine.*

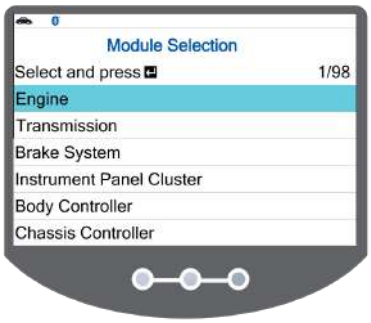
- If the **erase was successful**, a confirmation message shows. The tablet automatically relinks to the vehicle's computer after 3 seconds.



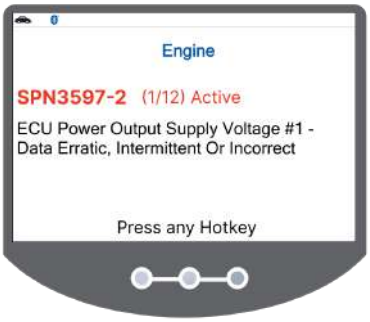
- If the erase **was not successful**, an advisory message shows indicating the erase request was sent to the vehicle's computer. The tablet automatically re links to the vehicle's computer after 3 seconds.

MODULE SELECTION

1. Select **Module Selection** from the System Menu, then press the **ENTER**↵.
   - The Available Systems screen displays.



2. Select the desired module, then press **ENTER**↵.
   - A "One moment please..." message displays while the requested DTCs are retrieved.
   - If the Scan Tool fails to connect to the selected module, a "Communication Error" message displays. Follow the on-screen instructions and attempt the process again.
   - If the selected module does not support the "Read DTC" function, an "advisory" message displays. Choose the **SYSTEM MENU** to return to the System Menu.
3. When the scan is completed, the screen displays the number of DTCs recorded for the selected module.



NOTE: *If the definition for the currently displayed code is not available, an "advisory" message displays.*

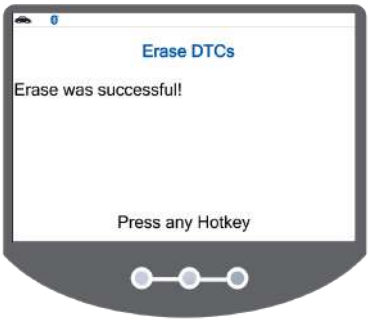
NOTE: *In the case of long code definitions, a small arrow is shown in the upper/ lower right-hand corner of the code display area to indicate the presence of additional information.*

- If no codes are present, the message "No (system name) DTCs is presently stored in the vehicle's computer" displays.

4. Press and release **ERASE**.
   - A "confirmation" message displays.
   - If you are sure you want to proceed, select **Yes** to continue.
5. A "One moment please…" message displays while the erase function is in progress.

NOTE: *Turn the ignition key **ON**. **DO NOT** start the engine.*

- If the **erase was successful**, a "confirmation" message displays. The scan tool automatically relinks to the vehicle's computer after 3 seconds.



- If the erase **was not successful**, an "advisory" message displays indicating the erase request was sent to the vehicle's computer. The scan tool automatically re links to the vehicle's computer after 3 seconds.

6. Consult the **Live Data Mode** [See page 20] for the process of viewing Heavy-Duty OBD Live Data.

FAQ

COMMON QUESTIONS

What can the Scan Tool do for my vehicle?

Please check the coverage on our Coverage Checker website. https://www.innova.com/pages/coverage?ad=aaa

What should I do if a communication error occurs?

Please follow these steps to troubleshoot the issue:

1. Check if the Scan Tool DLC cable is securely plugged into the vehicle's DLC port.
2. Turn the ignition off, then turn it on again after 10 seconds. DO NOT start the engine and proceed with the operation.
3. Check if the vehicle's control module is defective.

Can the Scan Tool be used in other countries?

The Scan Tool only supports diagnostics for vehicles sold in the U.S. and Canada. For vehicles manufactured in other countries, the Scan Tool only supports the Malfunction Indicator Light function.

How can I check if my tool is updated to the latest version?

Please visit our website to check the latest version of the product. https://innova-electronics.helpscoutdocs.com/

Why do I need to connect to the RS2 app?

The RS2 app provides a wide range of valuable information for your repair process, including the most likely component/system causing the DTC, predicted repairs, TSBs & Recalls, vehicle health reports, upcoming maintenance, and more.

WARRANTY+ CUSTOMER SERVICE

LIMITED WARRANTY

The Manufacturer warrants to the original purchaser that this unit is free of defects in materials and workmanship under normal use and maintenance for a period of one (1) year from the date of original purchase.

If the unit fails within the one (1) year period, it will be repaired or replaced, at the Manufacturer's option, at no charge, when returned prepaid to the Service Center with Proof of Purchase. The sales receipt may be used for this purpose. Installation labor is not covered under this warranty. All replacement parts, whether new or remanufactured, assume as their warranty period only the remaining time of this warranty.

This warranty does not apply to damage caused by improper use, accident, abuse, improper voltage, service, fire, flood, lightning, or other acts of God, or if the product was altered or repaired by anyone other than the Manufacturer's Service Center.

The Manufacturer, under no circumstances shall be liable for any consequential damages for breach of any written warranty of this unit. This warranty gives you specific legal rights, and you may also have rights, which vary from state to state. This manual is copyrighted with all rights reserved. No portion of this document may be copied or reproduced by any means without the express written permission of the Manufacturer. THIS WARRANTY IS NOT TRANSFERABLE. For service, send via U.P.S. (if possible) prepaid to Manufacturer. Allow 3-4 weeks for service/repair.

CUSTOMER SERVICE

Our ASE Certified technical staff is here to help if you have any questions or require service. For information on UPDATES and OPTIONAL ACCESSORIES, please contact your local store, distributor or Innova's Service Center.

USA & Canada: (800) 544-4124
Monday through Friday: 6:00 AM to 6:00 PM Pacific Time

All others: (714) 241-6802
Monday through Friday: 6:00 AM to 6:00 PM Pacific Time

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