

**3211**

# **QUICKLINK™**

## **OWNER'S MANUAL**

**The Easiest  
And Best Way  
To Troubleshoot  
1996 and  
Newer OBD2  
Vehicles!**



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## ABOUT QUICKLINK™



QUICKLINK™ is a “wireless” system that lets you connect to your vehicle’s on-board computer using your favorite “smart” device (phone or tablet). You can use QUICKLINK™ to help in diagnosing CHECK ENGINE problems, check for road trip readiness, verify mechanic estimates, find ways to improve your fuel economy, and much more. The QUICKLINK™ system consists of the QUICKLINK™ Device and the associated QUICKLINK™ App (available for both iOS and Android devices). The QUICKLINK™ system is designed to work on all OBD2 compliant vehicles. All 1996 and newer vehicles (cars and light trucks) sold in the United States are OBD2 compliant.

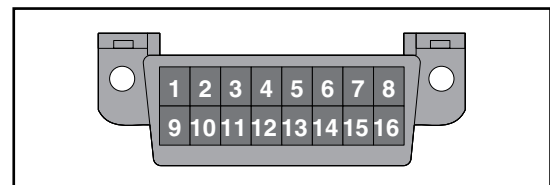
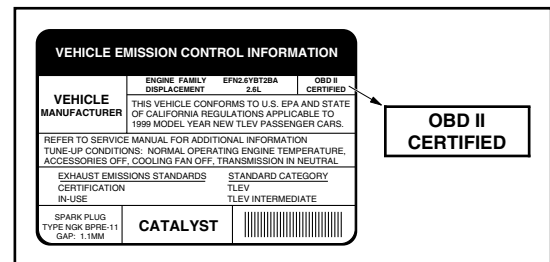


*Federal law requires that all 1996 and newer cars and light trucks sold in the United States must be OBD2 compliant; this includes all Domestic, Asian and European vehicles.*

## Vehicles Covered

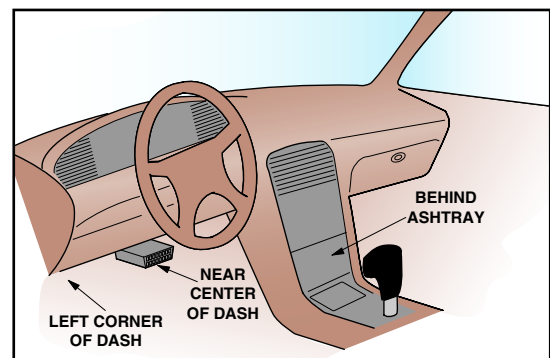
Some 1994 and 1995 vehicles are OBD2 compliant. To find out if a 1994 or 1995 vehicle is OBD2 compliant, check the following:

1. **The Vehicle Emissions Control Information (VECI) Label.** This label is located under the hood or by the radiator of most vehicles. If the vehicle is OBD2 compliant, the label will state “**OBD II Certified.**”
2. Government Regulations require that all OBD2 compliant vehicles have a “common” sixteen-pin **Data Link Connector (DLC).**



## Data Link Connector (DLC) Location

The 16-pin DLC is usually located under the instrument panel (dash), within 12 inches (300 mm) of center of the panel, on the driver’s side of most vehicles. It should be easily accessible and visible from a kneeling position outside the vehicle with the door open.

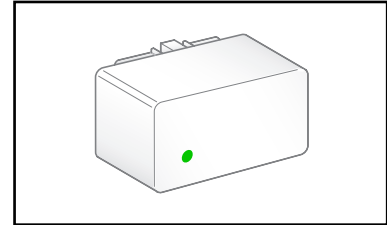




*On some Asian and European vehicles the DLC is located behind the “ashtray” (the ashtray must be removed to access it) or on the far left corner of the dash. If the DLC cannot be located, consult the vehicle’s service manual for the location.*

### The QUICKLINK™ Device

The QUICKLINK™ Device provides the link between your vehicle’s computer and the QUICKLINK™ App on your “smart” phone or table. The QUICKLINK™ Device connects to your vehicle’s Data Link Connector (DLC).



### The QUICKLINK™ App

The QUICKLINK™ App connects to the QUICKLINK™ Device wirelessly, through Bluetooth. The App provides you with the tools you need to add vehicles to your account, generate diagnostic reports for your vehicle, and view Live Data using the QUICKLINK™ Command Centers.

The QUICKLINK™ App is available for both iOS and Android devices.



*You **must** have an active Wi-Fi connection to use the QUICKLINK™ system.*

## COMPUTER ENGINE CONTROLS

### The Introduction of Electronic Engine Controls

**Electronic Computer Control Systems make it possible for vehicle manufacturers to comply with the tougher emissions and fuel efficiency standards mandated by State and Federal Governments.**

As a result of increased air pollution (smog) in large cities, such as Los Angeles, the California Air Resources Board (**CARB**) and the Environmental Protection Agency (**EPA**) set new regulations and air pollution standards to deal with the problem. To further complicate matters, the energy crisis of the early 1970s caused a sharp increase in fuel prices over a short period. As a result, vehicle manufacturers were not only required to comply with the new emissions standards, they also had to make their vehicles more fuel-efficient. Most vehicles were required to meet a miles-per-gallon (MPG) standard set by the U.S. Federal Government.

Precise fuel delivery and spark timing are needed to reduce vehicle emissions. Mechanical engine controls in use at the time (such as ignition points, mechanical spark advance and the carburetor) responded too slowly to driving conditions to properly control fuel delivery and spark timing. This made it difficult for vehicle manufacturers to meet the new standards.

A new Engine Control System had to be designed and integrated with the engine controls to meet the stricter standards. The new system had to:

- Respond instantly to supply the proper mixture of air and fuel for any driving condition (idle, cruising, low-speed driving, high-speed driving, etc.).
- Calculate instantly the best time to “ignite” the air/fuel mixture for maximum engine efficiency.
- Perform both these tasks without affecting vehicle performance or fuel economy.

Vehicle Computer Control Systems can perform millions of calculations each second. This makes them an ideal substitute for the slower mechanical engine controls. By switching from mechanical to electronic engine controls, vehicle manufacturers are able to control fuel delivery and spark timing more precisely. Some newer Computer Control Systems also provide control over other vehicle functions, such as transmission, brakes, charging, body, and suspension systems.

## The Basic Engine Computer Control System

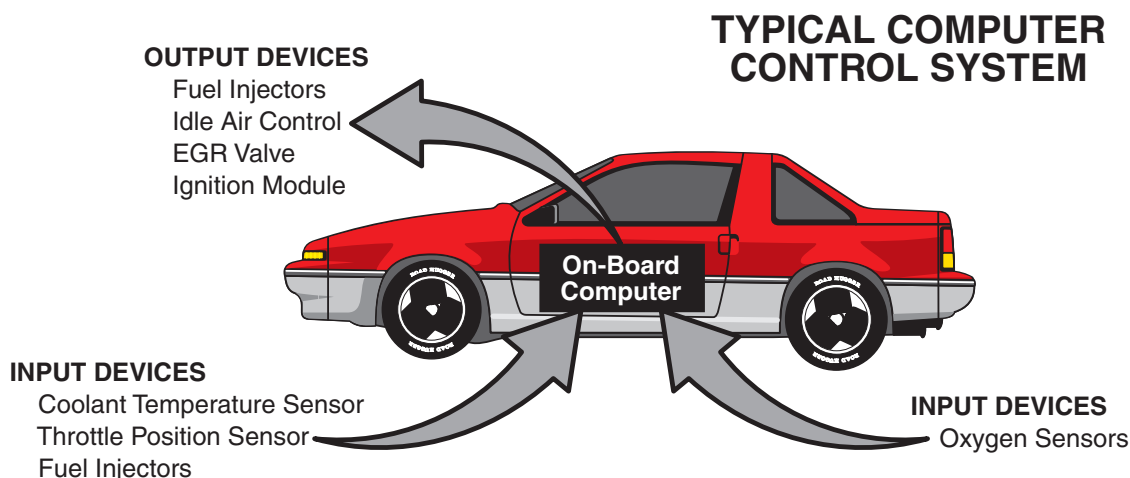
**The Computer Control System consists of an on-board computer and several related control devices (sensors, switches, and actuators).**

The on-board computer is the heart of the Computer Control System. The computer contains several programs with preset reference values for air/fuel ratio, spark or ignition timing, injector pulse width, engine speed, etc. Separate values are provided for various driving conditions, such as idle, low speed driving, high-speed driving, low load, or high load. The preset reference values represent the ideal air/fuel mixture, spark timing, transmission gear selection, etc., for any driving condition. These values are programmed by the vehicle manufacturer, and are specific to each vehicle model.

Most on-board computers are located inside the vehicle behind the dashboard, under the passenger’s or driver’s seat, or behind the right kick panel. However, some manufacturers may still position it in the engine compartment.

Vehicle sensors, switches, and actuators are located throughout the engine, and are connected by electrical wiring to the on-board computer. These devices include oxygen sensors, coolant temperature sensors, throttle position sensors, fuel injectors, etc. Sensors and switches are **input devices**. They provide signals representing current engine operating conditions to the computer. Actuators are **output devices**. They perform actions in response to commands received from the computer.





The on-board computer receives information inputs from sensors and switches located throughout the engine. These devices monitor critical engine conditions such as coolant temperature, engine speed, engine load, throttle position, air/fuel ratio etc.

The computer compares the values received from these sensors with its preset reference values, and makes corrective actions as needed so that the sensor values always match the preset reference values for the current driving condition. The computer makes adjustments by commanding other devices such as the fuel injectors, idle air control, EGR valve or Ignition Module to perform these actions.

Vehicle operating conditions are constantly changing. The computer continuously makes adjustments or corrections (especially to the air/fuel mixture and spark timing) to keep all the engine systems operating within the preset reference values.

## On-Board Diagnostics - First Generation (OBD1)

**With the exception of some 1994 and 1995 vehicles, most vehicles from 1982 to 1995 are equipped with some type of first generation On-Board Diagnostics.**

Beginning in 1988, California's Air Resources Board (**CARB**), and later the Environmental Protection Agency (**EPA**) required vehicle manufacturers to include a self-diagnostic program in their on-board computers. The program would be capable of identifying emissions-related faults in a system. The first generation of Onboard Diagnostics came to be known as **OBD1**.

OBD1 is a set of self-testing and diagnostic instructions programmed into the vehicle's on-board computer. The programs are specifically designed to detect failures in the sensors, actuators, switches and wiring of the various vehicle emissions-related systems. If the computer detects a failure in any of these components or systems, it lights an indicator on the dashboard to alert the driver. The indicator lights **only** when an emissions-related problem is detected.

The computer also assigns a numeric code for each specific problem that it detects, and stores these codes in its memory for later retrieval. These codes can be retrieved from the computer's memory with the use of a "Code Reader" or a "Diagnostic Tool."

## **On-Board Diagnostics - Second Generation (OBD2)**

### **The OBD2 System is an enhancement of the OBD1 System.**

In addition to performing all the functions of the OBD1 System, the OBD2 System has been enhanced with new Diagnostic Programs. These programs closely monitor the functions of various emissions-related components and systems (as well as other systems) and make this information readily available (with the proper equipment) to the technician for evaluation.

The California Air Resources Board (**CARB**) conducted studies on OBD1 equipped vehicles. The information that was gathered from these studies showed the following:

- A large number of vehicles had deteriorating or degraded emissions-related components. These components were causing an increase in emissions.
- Because OBD1 systems only detect failed components, the degraded components were not setting codes.
- Some emissions problems related to degraded components only occur when the vehicle is being driven under a load. The emission checks being conducted at the time were not performed under simulated driving conditions. As a result, a significant number of vehicles with degraded components were passing Emissions Tests.
- Codes, code definitions, diagnostic connectors, communication protocols and emissions terminology were different for each manufacturer. This caused confusion for the technicians working on different make and model vehicles.

To address the problems made evident by this study, CARB and the EPA passed new laws and standardization requirements. These laws required that vehicle manufacturers to equip their new vehicles with devices capable of meeting all of the new emissions standards and regulations. It was also decided that an enhanced on-board diagnostic system, capable of addressing all of these problems, was needed. This new system is known as "**On-Board Diagnostics Generation Two (OBD2)**." The primary objective of the OBD2 system is to comply with the latest regulations and emissions standards established by CARB and the EPA.

The Main Objectives of the OBD2 System are:

- To detect degraded and/or failed emissions-related components or systems that could cause tailpipe emissions to exceed by 1.5 times the Federal Test Procedure (FTP) standard.

- To expand emissions-related system monitoring. This includes a set of computer run diagnostics called Monitors. Monitors perform diagnostics and testing to verify that all emissions-related components and/or systems are operating correctly and within the manufacturer's specifications.
- To use a standardized Diagnostic Link Connector (DLC) in all vehicles. (Before OBD2, DLCs were of different shapes and sizes.)
- To standardize the code numbers, code definitions and language used to describe faults. (Before OBD2, each vehicle manufacturer used their own code numbers, code definitions and language to describe the same faults.)
- To expand the operation of the Malfunction Indicator Lamp (MIL).
- To standardize communication procedures and protocols between the diagnostic equipment (Diagnostic Tools, Code Readers, etc.) and the vehicle's on-board computer.

## OBD2 Terminology

The following terms and their definitions are related to OBD2 systems. Read and reference this list as needed to aid in the understanding of OBD2 systems.

- **Powertrain Control Module (PCM)** - The PCM is the OBD2 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 the 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's manufacturer specifications. Currently, up to fifteen Monitors are used in OBD2 systems. Additional Monitors will be added as the OBD2 system is further developed.



*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.

- **Monitor Has/Has Not Run** - The terms “Monitor has run” or “Monitor has not run” are used throughout this manual. “**Monitor has run**” 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 “**Monitor has not run**” 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.
- **OBD2 Drive Cycle** - An OBD2 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 OBD2 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 OBD2 Drive Cycle. OBD2 Drive Cycle requirements vary from one model of vehicle to another. Vehicle manufacturers set these procedures. Consult your vehicle’s service manual for OBD2 Drive Cycle procedures.



*Do not confuse a “Trip” Drive Cycle with an OBD2 Drive Cycle. A “Trip” Drive Cycle provides the “Enabling Criteria” for one specific Monitor to run and complete its diagnostic testing. An OBD2 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.

## DIAGNOSTIC TROUBLE CODES (DTCs)

**Diagnostic Trouble Codes (DTCs) are codes that identify a specific problem area.**

Diagnostic Trouble Codes (DTCs) are meant to guide you to the proper service procedure in the vehicle’s service manual. **DO NOT** replace parts based only on DTCs without first consulting the vehicle’s service manual for proper testing procedures for that particular system, circuit or component.

# Introduction

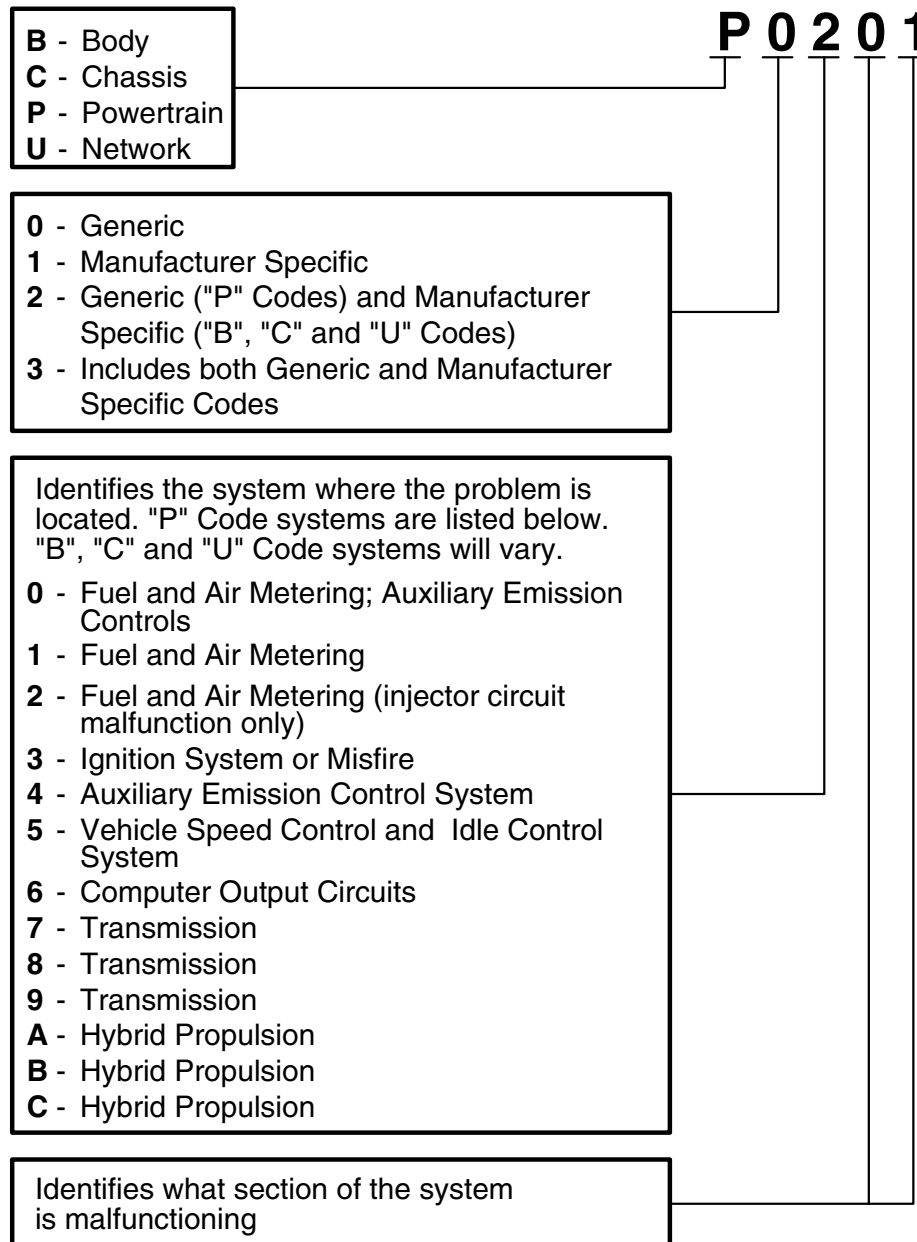
## DIAGNOSTIC TROUBLE CODES (DTCs)

DTCs are alphanumeric codes that are used to identify a problem that is present in any of the systems that are monitored by the on-board computer (PCM). Each trouble code has an assigned message that identifies the circuit, component or system area where the problem was found.

OBD2 diagnostic trouble codes are made up of five characters.

### OBD2 DTC EXAMPLE

P0201 - Injector Circuit Malfunction, Cylinder 1



- The 1st character is a **letter** (B, C, P or U). It identifies the “main system” where the fault occurred (Body, Chassis, Powertrain, or Network).
- The 2nd character is a **numeric digit** (0 thru 3). It identifies the “type” of code (Generic or Manufacturer-Specific).



**Generic DTCs** are codes that are used by all vehicle manufacturers. The standards for generic DTCs, as well as their definitions, are set by the Society of Automotive Engineers (SAE).



**Manufacturer-Specific DTCs** are codes that are controlled by the vehicle manufacturers. The Federal Government does not require vehicle manufacturers to go beyond the standardized generic DTCs in order to comply with the new OBD2 emissions standards. However, manufacturers are free to expand beyond the standardized codes to make their systems easier to diagnose.

- The 3rd character is a **letter** or a **numeric digit** (0 thru 9, A thru F). It identifies the specific system or sub-system where the problem is located.
- The 4th and 5th characters are **letters** or **numeric digits** (0 thru 9, A thru F). They identify the section of the system that is malfunctioning.

## DTCs and MIL Status

When the vehicle’s on-board computer detects a failure in an emissions-related component or system, the computer’s internal diagnostic program assigns a diagnostic trouble code (DTC) that points to the system (and subsystem) where the fault was found. The diagnostic program saves the code in the computer’s memory. It records a “Freeze Frame” of conditions present when the fault was found, and lights the Malfunction Indicator Lamp (MIL). Some faults require detection for two trips in a row before the MIL is turned on.



The “Malfunction Indicator Lamp” (MIL) is the accepted term used to describe the lamp on the dashboard that lights to warn the driver that an emissions-related fault has been found. Some manufacturers may still call this lamp a “Check Engine” or “Service Engine Soon” light.

There are two types of DTCs used for emissions-related faults: Type “A” and Type “B.” Type “A” codes are “One-Trip” codes; Type “B” DTCs are usually Two-Trip DTCs.

When a **Type “A”** DTC is found on the First Trip, the following events take place:

- The computer commands the MIL “On” when the failure is first found.

- If the failure causes a severe misfire that may cause damage to the catalytic converter, the MIL “flashes” **once per second**. The MIL continues to flash as long as the condition exists. If the condition that caused the MIL to flash is no longer present, the MIL will light “steady” On.
- A DTC is saved in the computer’s memory for later retrieval.
- A “Freeze Frame” of the conditions present in the engine or emissions system when the MIL was ordered “On” is saved in the computer’s memory for later retrieval. This information shows fuel system status (closed loop or open loop), engine load, coolant temperature, fuel trim value, MAP vacuum, engine RPM and DTC priority.

When a **Type “B”** DTC is found on the First Trip, the following events take place:

- The computer sets a Pending DTC, but the MIL is not ordered “On.” “Freeze Frame” data may or may not be saved at this time depending on manufacturer. The Pending DTC is saved in the computer’s memory for later retrieval.
- If the failure **is found** on the second consecutive trip, the MIL is ordered “On.” “Freeze Frame” data is saved in the computer’s memory.
- If the failure **is not found** on the second Trip, the Pending DTC is erased from the computer’s memory.

The MIL will stay lit for both Type “A” and Type “B” codes until one of the following conditions occurs:

- If the conditions that caused the MIL to light are no longer present for the next three trips in a row, the computer automatically turns the MIL “Off” if no other emissions-related faults are present. However, the DTCs remain in the computer’s memory as a history code for 40 warm-up cycles (80 warm-up cycles for fuel and misfire faults). The DTCs are automatically erased if the fault that caused them to be set is not detected again during that period.
- Misfire and fuel system faults require three trips with “similar conditions” before the MIL is turned “Off.” These are trips where the engine load, RPM and temperature are similar to the conditions present when the fault was first found.



*After the MIL has been turned off, DTCs and Freeze Frame data stay in the computer’s memory.*

- Erasing the DTCs from the computer’s memory can also turn off the MIL. If a Diagnostic Tool or Scan Tool is used to erase the codes, Freeze Frame data will also be erased.

## OBD2 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 OBD2 systems, these procedures and diagnostic strategies are called "Monitors."

Currently, fifteen Monitors are supported by OBD2 systems. Additional monitors may be added as a result of Government regulations as the OBD2 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. The Continuous Monitors are:

- Comprehensive Component Monitor (CCM)
- Misfire Monitor
- 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. The "non-continuous" Monitors are:

- Oxygen Sensor Monitor
- Oxygen Sensor Heater Monitor
- Catalyst Monitor
- Heated Catalyst Monitor
- EGR System Monitor
- EVAP System Monitor
- Secondary Air System Monitor



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

- NMHC Monitor



- NOx Adsorber Monitor
- Boost Pressure System Monitor
- Exhaust Gas Sensor Monitor
- PM Filter Monitor

The following provides a brief explanation of the function of each Monitor:

**Comprehensive Component Monitor (CCM)** - This Monitor continuously checks all inputs and outputs from sensors, actuators, switches and other devices that provide a signal to the computer. The Monitor checks for shorts, opens, out of range value, functionality and “rationality.”



*Rationality: Each input signal is compared against all other inputs and against information in the computer's memory to see if it makes sense under the current operating conditions. Example: The signal from the throttle position sensor indicates the vehicle is in a wide-open throttle condition, but the vehicle is really at idle, and the idle condition is confirmed by the signals from all other sensors. Based on the input data, the computer determines that the signal from the throttle position sensor is not rational (does not make sense when compared to the other inputs). In this case, the signal would fail the rationality test.*

The CCM is supported by both “spark ignition” vehicles and “compression ignition” vehicles. The CCM may be either a “One-Trip” or a “Two-Trip” Monitor, depending on the component.

**Fuel System Monitor** - This Monitor uses a Fuel System Correction program, called Fuel Trim, inside the on-board computer. Fuel Trim is a set of positive and negative values that represent adding or subtracting fuel from the engine. This program is used to correct for a lean (too much air/not enough fuel) or rich (too much fuel/not enough air) air-fuel mixture. The program is designed to add or subtract fuel, as needed, up to a certain percent. If the correction needed is too large and exceeds the time and percent allowed by the program, a fault is indicated by the computer.

The Fuel System Monitor is supported by both “spark ignition” vehicles and “compression ignition” vehicles. The Fuel System Monitor may be a “One-Trip” or “Two-Trip” Monitor, depending on the severity of the problem.

**Misfire Monitor** - This Monitor continuously checks for engine misfires. A misfire occurs when the air-fuel mixture in the cylinder does not ignite. The misfire Monitor uses changes in crankshaft speed to sense an engine misfire. When a cylinder misfires, it no longer contributes to the speed of the engine, and engine speed decreases each time the affected cylinder(s) misfire. The misfire Monitor is designed to sense engine speed fluctuations and determine from which cylinder(s) the misfire is coming, as well as how bad the misfire is. There are three types of engine misfires, Types 1, 2, and 3.

- Type 1 and Type 3 misfires are two-trip monitor faults. If a fault is sensed on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The MIL is not commanded on at this time. If the fault is found again on the second trip, under similar conditions of engine speed, load and temperature, the computer commands the MIL “On,” and the code is saved in its long term memory.
- Type 2 misfires are the most severe type of misfire. When a Type 2 misfire is sensed on the first trip, the computer commands the MIL to light when the misfire is sensed. If the computer determines that a Type 2 misfire is severe , and may cause catalytic converter damage, it commands the MIL to “flash” once per second as soon as the misfire is sensed. When the misfire is no longer present, the MIL reverts to steady “On” condition.

The Misfire Monitor is supported by both “spark ignition” vehicles and “compression ignition” vehicles.

**Catalyst Monitor** - The catalytic converter is a device that is installed downstream of the exhaust manifold. It helps to oxidize (burn) the unburned fuel (hydrocarbons) and partially burned fuel (carbon monoxide) left over from the combustion process. To accomplish this, heat and catalyst materials inside the converter react with the exhaust gases to burn the remaining fuel. Some materials inside the catalytic converter also have the ability to store oxygen, and release it as needed to oxidize hydrocarbons and carbon monoxide. In the process, it reduces vehicle emissions by converting the polluting gases into carbon dioxide and water.

The computer checks the efficiency of the catalytic converter by monitoring the oxygen sensors used by the system. One sensor is located before (upstream of) the converter; the other is located after (downstream of) the converter. If the catalytic converter loses its ability to store oxygen, the downstream sensor signal voltage becomes almost the same as the upstream sensor signal. In this case, the monitor fails the test.

The Catalyst Monitor is supported by “spark ignition” vehicles only. The Catalyst Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On” and saves the code in its long-term memory.

**Heated Catalyst Monitor** - Operation of the “heated” catalytic converter is similar to the catalytic converter. The main difference is that a heater is added to bring the catalytic converter to its operating temperature more quickly. This helps reduce emissions by reducing the converter’s down time when the engine is cold. The Heated Catalyst Monitor performs the same diagnostic tests as the catalyst Monitor, and also tests the catalytic converter’s heater for proper operation.

The Heated Catalyst Monitor is supported by “spark ignition” vehicles only. This Monitor is also a “Two-Trip” Monitor.

**Exhaust Gas Recirculation (EGR) Monitor** - The Exhaust Gas Recirculation (EGR) system helps reduce the formation of Oxides of Nitrogen during combustion. Temperatures above 2500°F cause nitrogen and oxygen to combine and form Oxides of Nitrogen in the combustion chamber. To reduce the formation of Oxides of Nitrogen, combustion temperatures must be kept below 2500°F. The EGR system recirculates small amounts of exhaust gas back into the intake manifold, where it is mixed with the incoming air/fuel mixture. This reduces combustion temperatures by up to 500°F. The computer determines when, for how long, and how much exhaust gas is recirculated back to the intake manifold. The EGR Monitor performs EGR system function tests at preset times during vehicle operation.

The EGR Monitor is supported by both “spark ignition” vehicles and “compression ignition” vehicles. The EGR Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

**Evaporative System (EVAP) Monitor** - OBD2 vehicles are equipped with a fuel Evaporative system (EVAP) that helps prevent fuel vapors from evaporating into the air. The EVAP system carries fumes from the fuel tank to the engine where they are burned during combustion. The EVAP system may consist of a charcoal canister, fuel tank cap, purge solenoid, vent solenoid, flow monitor, leak detector and connecting tubes, lines and hoses.

Fumes are carried from the fuel tank to the charcoal canister by hoses or tubes. The fumes are stored in the charcoal canister. The computer controls the flow of fuel vapors from the charcoal canister to the engine via a purge solenoid. The computer energizes or de-energizes the purge solenoid (depending on solenoid design). The purge solenoid opens a valve to allow engine vacuum to draw the fuel vapors from the canister into the engine where the vapors are burned. The EVAP Monitor checks for proper fuel vapor flow to the engine, and pressurizes the system to test for leaks. The computer runs this Monitor once per trip.

The EVAP Monitor is supported by “spark ignition” vehicles only. The EVAP Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the PCM commands the MIL “On,” and saves the code in its long-term memory.

**Oxygen Sensor Heater Monitor** - The Oxygen Sensor Heater Monitor tests the operation of the oxygen sensor’s heater. There are two modes of operation on a computer-controlled vehicle: “open-loop” and “closed-loop.” The vehicle operates in open-loop when the engine is cold, before it reaches normal operating temperature. The vehicle also goes to open-loop mode at other times, such as heavy load and full throttle conditions. When the vehicle is running in open-loop, the oxygen sensor signal is ignored by the computer for air/fuel mixture corrections. Engine efficiency during open-loop operation is very low, and results in the production of more vehicle emissions.

Closed-loop operation is the best condition for both vehicle emissions and vehicle operation. When the vehicle is operating in closed-loop, the computer uses the oxygen sensor signal for air/fuel mixture corrections.

In order for the computer to enter closed-loop operation, the oxygen sensor must reach a temperature of at least 600°F. The oxygen sensor heater helps the oxygen sensor reach and maintain its minimum operating temperature (600°F) more quickly, to bring the vehicle into closed-loop operation as soon as possible.

The Oxygen Sensor Heater Monitor is supported by “spark ignition” vehicles only. The Oxygen Sensor Heater Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

**Oxygen Sensor Monitor** - The Oxygen Sensor monitors how much oxygen is in the vehicle’s exhaust. It generates a varying voltage of up to one volt, based on how much oxygen is in the exhaust gas, and sends the signal to the computer. The computer uses this signal to make corrections to the air/fuel mixture. If the exhaust gas has a large amount of oxygen (a lean air/fuel mixture), the oxygen sensor generates a “low” voltage signal. If the exhaust gas has very little oxygen (a rich mixture condition), the oxygen sensor generates a “high” voltage signal. A 450mV signal indicates the most efficient, and least polluting, air/fuel ratio of 14.7 parts of air to one part of fuel.

The oxygen sensor must reach a temperature of at least 600-650°F, and the engine must reach normal operating temperature, for the computer to enter into closed-loop operation. The oxygen sensor only functions when the computer is in closed-loop. A properly operating oxygen sensor reacts quickly to any change in oxygen content in the exhaust stream. A faulty oxygen sensor reacts slowly, or its voltage signal is weak or missing.

The Oxygen Sensor Monitor is supported by “spark ignition” vehicles only. The Oxygen Sensor Monitor is a “Two-Trip” monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

**Secondary Air System Monitor** - When a cold engine is first started, it runs in open-loop mode. During open-loop operation, the engine usually runs rich. A vehicle running rich wastes fuel and creates increased emissions, such as carbon monoxide and some hydrocarbons. A Secondary Air System injects air into the exhaust stream to aid catalytic converter operation:

- It supplies the catalytic converter with the oxygen it needs to oxidize the carbon monoxide and hydrocarbons left over from the combustion process during engine warm-up.

- The extra oxygen injected into the exhaust stream also helps the catalytic converter reach operating temperature more quickly during warm-up periods. The catalytic converter must heat to operating temperature to work properly.

The Secondary Air System Monitor checks for component integrity and system operation, and tests for faults in the system. The computer runs this Monitor once per trip.

The Secondary Air System Monitor is a “Two-Trip” monitor. If a fault is found on the first trip, the computer temporarily saves this fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

**Non-Methane Hydrocarbon Catalyst (NMHC) Monitor** - The non-methane hydrocarbon catalyst is a type of catalytic converter. It helps to remove non-methane hydrocarbons (NMH) left over from the combustion process from the exhaust stream. To accomplish this, heat and catalyst materials react with the exhaust gases to convert NMH to less harmful compounds. The computer checks the efficiency of the catalyst by monitoring the quantity of NMH in the exhaust stream. The monitor also verifies that sufficient temperature is present to aid in particulate matter (PM) filter regeneration.

The NMHC Monitor is supported by “compression ignition” vehicles only. The NMHC Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

**NOx Aftertreatment Monitor** - NOx aftertreatment is based on a catalytic converter support that has been coated with a special washcoat containing zeolites. NOx Aftertreatment is designed to reduce oxides of nitrogen emitted in the exhaust stream. The zeolite acts as a molecular “sponge” to trap the NO and NO<sub>2</sub> molecules in the exhaust stream. In some implementations, injection of a reactant before the aftertreatment purges it. NO<sub>2</sub> in particular is unstable, and will join with hydrocarbons to produce H<sub>2</sub>O and N<sub>2</sub>. The NOx Aftertreatment Monitor monitors the function of the NOx aftertreatment to ensure that tailpipe emissions remain within acceptable limits.

The NOx Aftertreatment Monitor is supported by “compression ignition” vehicles only. The NOx Aftertreatment Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

**Boost Pressure System Monitor** - The boost pressure system serves to increase the pressure produced inside the intake manifold to a level greater than atmospheric pressure. This increase in pressure helps to ensure complete combustion of the air-fuel mixture. The Boost Pressure System Monitor checks for component integrity and system operation, and tests for faults in the system. The computer runs this Monitor once per trip.

The Boost Pressure System Monitor is supported by “compression ignition” vehicles only. The Boost Pressure System Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

**Exhaust Gas Sensor Monitor** - The exhaust gas sensor is used by a number of systems/monitors to determine the content of the exhaust stream. The computer checks for component integrity, system operation, and tests for faults in the system, as well as feedback faults that may affect other emission control systems.

The Exhaust Gas Sensor Monitor is supported by “compression ignition” vehicles only. The Exhaust Gas Sensor Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

**PM Filter Monitor** - The particulate matter (PM) filter removes particulate matter from the exhaust stream by filtration. The filter has a honeycomb structure similar to a catalyst substrate, but with the channels blocked at alternate ends. This forces the exhaust gas to flow through the walls between the channels, filtering the particulate matter out. The filters are self-cleaning by periodic modification of the exhaust gas concentration in order to burn off the trapped particles (oxidizing the particles to form CO<sub>2</sub> and water). The computer monitors the efficiency of the filter in trapping particulate matter, as well as the ability of the filter to regenerate (self-clean).

The PM Filter Monitor is supported by “compression ignition” vehicles only. The PM Filter Monitor is a “Two-Trip” Monitor. If a fault is found on the first trip, the computer temporarily saves the fault in its memory as a Pending Code. The computer does not command the MIL on at this time. If the fault is sensed again on the second trip, the computer commands the MIL “On,” and saves the code in its long-term memory.

### OBD2 Reference Table

The table below lists current OBD2 Monitors, and indicates the following for each Monitor:

- A. Monitor Type (how often does the Monitor run; Continuous or Once per trip)
- B. Number of trips needed, with a fault present, to set a pending DTC
- C. Number of consecutive trips needed, with a fault present, to command the MIL “On” and store a DTC
- D. Number of trips needed, with no faults present, to erase a Pending DTC
- E. Number and type of trips or drive cycles needed, with no faults present, to turn off the MIL
- F. Number of warm-up periods needed to erase the DTC from the computer’s memory after the MIL is turned off

Name of Monitor	A	B	C	D	E	F
Comprehensive Component Monitor	Continuous	1	2	1	3	40
Misfire Monitor (Type 1 and 3)	Continuous	1	2	1	3 - similar conditions	80
Misfire Monitor (Type 2)	Continuous		1		3 - similar conditions	80
Fuel System Monitor	Continuous	1	1 or 2	1	3 - similar conditions	80
Catalytic Converter Monitor	Once per trip	1	2	1	3 trips	40
Oxygen Sensor Monitor	Once per trip	1	2	1	3 trips	40
Oxygen Sensor Heater Monitor	Once per trip	1	2	1	3 trips	40
Exhaust Gas Recirculation (EGR) Monitor	Once per trip	1	2	1	3 trips	40
Evaporative Emissions Controls Monitor	Once per trip	1	2	1	3 trips	40
Secondary Air System (AIR) Monitor	Once per trip	1	2	1	3 trips	40
NMHC Monitor	Once per trip	1	2	1	3 trips	40
Nox Adsorber Monitor	Once per trip	1	2	1	3 trips	40
Boost Pressure System Monitor	Once per trip	1	2	1	3 trips	40
Exhaust Gas Sensor Monitor	Once per trip	1	2	1	3 trips	40
PM Filter Monitor	Once per trip	1	2	1	3 trips	40



## BEFORE YOU BEGIN

Mechanical problems such as low oil level or damaged hoses, wiring or electrical connectors can cause poor engine performance and may also cause a fault code to set. Fix any known mechanical problems before performing any test. See your vehicle's service manual or a mechanic for more information. Check the following areas before starting any test:

- Check the engine oil, power steering fluid, transmission fluid (if applicable), engine coolant and other fluids for proper levels. Top off low fluid levels if needed.
- Make sure the air filter is clean and in good condition. Make sure all air filter ducts are properly connected. Check the air filter ducts for holes, rips or cracks.
- Make sure all engine belts are in good condition. Check for cracked, torn, brittle, loose or missing belts.
- Make sure mechanical linkages to engine sensors (throttle, gearshift position, transmission, etc.) are secure and properly connected. See your vehicle's service manual for locations.
- Check all rubber hoses (radiator) and steel hoses (vacuum/fuel) for leaks, cracks, blockage or other damage. Make sure all hoses are routed and connected properly.
- Make sure all spark plugs are clean and in good condition. Check for damaged, loose, disconnected or missing spark plug wires.
- Make sure the battery terminals are clean and tight. Check for corrosion or broken connections. Check for proper battery and charging system voltages.
- Check all electrical wiring and harnesses for proper connection. Make sure wire insulation is in good condition, and there are no bare wires.
- Make sure the engine is mechanically sound. If needed, perform a compression check, engine vacuum check, timing check (if applicable), etc.

## VEHICLE SERVICE MANUALS

Always refer to the manufacturer's service manual for your vehicle before performing any test or repair procedures. Contact your local car dealership, auto parts store or bookstore for availability of these manuals. The following companies publish valuable repair manuals:

- **Haynes Publications**, 861 Lawrence Drive, Newbury Park, California 91320, Phone: 800-442-9637, Web: [www.haynes.com](http://www.haynes.com)
- **Mitchell 1**, 14145 Danielson Street, Poway, California 92064, Phone: 888-724-6742, Web: [www.m1products.com](http://www.m1products.com)
- **Motor Publications**, 5600 Crooks Road, Suite 200, Troy, Michigan 48098, Phone: 800-426-6867, Web: [www.motor.com](http://www.motor.com)



### FACTORY SOURCES

Ford, GM, Chrysler, Honda, Isuzu, Hyundai and Subaru Service Manuals

- **Helm Inc.**, 14310 Hamilton Avenue, Highland Park, Michigan 48203, Phone: 800-782-4356, Web: [www.helminc.com](http://www.helminc.com)

## ABOUT REPAIRSOLUTIONS®

RepairSolutions® is a web-based service that provides you with the tools and information you need to quickly and accurately diagnose and repair today's vehicles. At the core of RepairSolutions® is an extensive knowledge database, developed by compiling and analyzing years worth of "real world" vehicle service data. RepairSolutions® builds on manufacturer-recommended diagnostic and repair information by providing verified, vehicle-specific fixes supplied by ASE technicians across the country. QUICKLINK™ uses the RepairSolutions database to generate diagnostic reports for your vehicle. The basic RepairSolutions® account is free, and is available immediately upon purchase of the QUICKLINK™ system. Certain "value added" premium information is available on demand at nominal charge or through "premium" subscription.

### The RepairSolutions® Diagnostic Report

The RepairSolutions® Diagnostic Report provides you with detailed information for diagnosing and repairing vehicle issues. The Diagnostic Report gives you the following information:



*Some features are available only with a "premium" subscription to RepairSolutions®.*

- **Summary** – The **Summary** page shows the current status of your vehicle's emissions, engine/transmission, supplemental restraint (airbag) and anti-lock brake systems, and provides a summary of the issues associated with your vehicle.
- **Verified Fixes** – The **Verified Fixes** page lists the most likely repair(s) needed by your vehicle based on the DTCs retrieved. It includes cost estimates for the repair(s) based on your geographic location, provides access to detailed instructions for performing the repair(s), and includes links to supplemental information (including articles and videos) related to the affected component or system.
- **Diagnostic Data** – The **Diagnostic Data** page provides detailed information related to the DTCs retrieved from your vehicle's computer. It includes descriptions of the retrieved DTCs including the conditions under which each DTC was set, the probable causes for the issue and recommendations for verifying the problem. You can also view Freeze Frame data for the "priority" DTC (the DTC that caused the MIL to illuminate) and current I/M Monitor status.

- **TSBs / Recalls** - Even with the exhaustive testing a vehicle undergoes before being made available to the public, some issues are discovered only under “real world” driving conditions. Depending on the severity of the problem, the vehicle manufacturer may issue a Technical Service Bulletin describing the problem, and providing the procedures necessary to correct it. For safety related problems, vehicle manufacturers are required to issue vehicle recalls to correct the problem. The **TSBs / Recalls** page lists three main categories for issues related to your vehicle: Factory Technical Service Bulletins (TSBs), Factory Recalls, and Government-mandated NHTSA Safety Recalls. This information can help you identify a problem before it occurs, and ensure your vehicle meets Federal safety standards.
- **Maintenance** - The **Maintenance** page provides information to help keep your vehicle in top running condition. The page uses your vehicle’s year, make, model and current mileage to provide a list of manufacturer-recommended periodic maintenance procedures that should be performed during its next scheduled service. These maintenance items are highly recommended and should be performed to best protect against premature failure. The page also includes additional recommended service procedures based on analysis of component failures reported by the RepairSolutions® network of technicians for vehicles of your make, model and mileage. All procedures include estimates of cost and level of difficulty.
- **Warranty** – Warranties are the vehicle manufacturer's promise to cover certain repair/replacement costs for a specific amount of time or until the vehicle has been driven for a specific number of miles. The **Warranty** page provides an estimation of the current state of your vehicle’s warranties (whether they are active, expired, and/or transferable). This information is intended for reference only. It is based on manufacturer published data available at the time the data was gathered and may not fully reflect your actual warranty coverage.
- **Predicted Repairs** – Solving a problem before it becomes a problem can reduce out-of-pocket cost and minimize personal inconvenience. Through detailed analysis of historical repair information supplied by technician across the country, RepairSolutions® is able to provide highly accurate predictions of potential service and repair requirements based on your vehicle’s year, make, model and mileage. The **Predicted Repairs** page provides a list of predicted repairs for your vehicle over the next 12 months. The predicted repairs are weighted by probability (high, moderate or low) and include cost estimates.
- **Vehicle History Reports** – Thinking of buying a vehicle? RepairSolutions® provides “one click” access for the purchase of a vehicle history report.

## The Portal Page

The **Portal** page gives you an overview of your RepairSolutions® account. It shows your Account Status and provides access to the reports you have most recently generated using a registered Innova tool.

### Innova Account

The **Innova Account** section lets you manage the vehicles and tools you've registered with your account and manage your personal information.

- **My Garage** – Your RepairSolutions® account can be used for multiple vehicles. The **My Garage** page you add, view and edit vehicles for your account.
- **Report History** – Each report you create through RepairSolutions® is retained through the lifetime of your membership, giving you an overview of the health of your vehicles. The **Report History** page lets you browse a list of all reports created through RepairSolutions® for all vehicles registered to your account, and view any report listed. You can also search the list based on the criteria (report #, VIN, etc.) you specify.
- **Registered Devices** – You can register all of your Innova tools with your RepairSolutions® account. The **Registered Devices** page shows all the tools registered to your account along with the date on which the device was activated.
- **Order History** – You can purchase “premium” access to RepairSolutions® on a monthly or annual basis. The **Order History** page lists all subscriptions you've purchased for your account.
- **Profile and Reset Password** – These pages let you update and maintain your personal account information and change the password you use to log in to RepairSolutions®.

### Tools

The RepairSolutions® Tools section provides access to several databases offering maintenance and repair instruction, “tech tips,” safety information and general reference data.

- **How-To Videos** – With the complexity of today's vehicles, repair tasks can seem daunting even to the seasoned do-it-yourselfer. RepairSolutions® offers a rich selection of How-To Videos that provide step-by-step instruction for a variety of tasks, including general maintenance, diagnosis and troubleshooting, and detailed repair information. The “basic” membership provides access to a selection of available videos, while the “premium” subscription allows access to the complete video library.
- **Recalls** – Even with the exhaustive testing a vehicle undergoes before being made available to the public, some issues are discovered only under “real world” driving conditions. When an issue that affects personal safety is found, or if a vehicle does not meet Federal safety standards, the Government mandates that the vehicle manufacturer issue a “safety recall.” Safety recalls are official notices that describe known vehicle issues as well as the related safety concerns. Repairs performed to address a safety recall are provided free of cost by the vehicle manufacturer's dealership. The **Recalls** database helps you ensure the safety of your vehicle. You can search for safety recalls by entering a vehicle's year, make and model.

- **DTC Library** – Diagnostic Trouble Codes (DTCs) are the starting point for identifying, troubleshooting and repairing vehicle issues. The **DTC Library** contains definitions for “generic” and “manufacturer-specific” OBD2 DTCs as well as OBD1 codes. Currently, the database provides code definitions for 43 different vehicle makes. Select the desired make and enter the DTC to retrieve the specific definition for your vehicle. Because OBD2 is an evolving system, the **DTC Library** is continuously updated to include additional “manufacturer-specific” definitions as the system matures.
- **DLC Locator** – The key to unlocking the wealth of information available through OBD2 is the Data Link Connector (DLC), the doorway to your vehicle’s computer. The **DLC Locator** is a comprehensive database of DLC locations for all OBD2-certified vehicles. Simply enter a Vehicle Identification Number (VIN), or select the desired year, make and model, and the DLC Locator will return a description and photo illustration of the DLC location.
- **Tech Tips** – Updated quarterly, RepairSolutions® **Tech Tips** are designed to provide basic solutions to everyday vehicle issues, explain how to perform much needed maintenance, and provide basic information on how to take care of your vehicle. All Tech Tips are prepared, reviewed and approved with the support of ASE Certified Technicians.
- **Shop Locator** – Whether you want to purchase parts to make a repair yourself or find a local repair shop, the **Shop Locator** will return a list facilities near your location based on the Zip Code you provide.

### PRELIMINARY VEHICLE DIAGNOSTIC WORKSHEET

The purpose of this form is to help you gather preliminary information on your vehicle before you retrieve codes. By having a complete account of your vehicle's current problem(s), you will be able to systematically pinpoint the problem(s) by comparing your answers to the fault codes you retrieve. You can also provide this information to your mechanic to assist in diagnosis and help avoid costly and unnecessary repairs. It is important for you to complete this form to help you and/or your mechanic have a clear understanding of your vehicle's problems.

---

**NAME:**

**DATE:**

**VIN\*:**

**YEAR:**

**MAKE:**

**MODEL:**

**ENGINE SIZE:**

**VEHICLE MILEAGE:**

\*VIN: Vehicle Identification Number, found at the base of the windshield on a metallic plate, or at the driver door latch area (consult your vehicle owner's manual for location).

**TRANSMISSION:**

- Automatic
- Manual

**Please check all applicable items in each category.**

**DESCRIBE THE PROBLEM:**


### WHEN DID YOU FIRST NOTICE THE PROBLEM:

- Just Started
- Started Last Week
- Started Last Month
- Other:

### LIST ANY REPAIRS DONE IN THE PAST SIX MONTHS:


### PROBLEMS STARTING

- No symptoms
- Will not crank
- Cranks, but will not start
- Starts, but takes a long time

### ENGINE QUITS OR STALLS

- No symptoms
- Right after starting
- When shifting into gear
- During steady-speed driving
- Right after vehicle comes to a stop
- While idling
- During acceleration
- When parking

### IDLING CONDITIONS

- No symptoms
- Is too slow at all times
- Is too fast
- Is sometimes too fast or too slow
- Is rough or uneven
- Fluctuates up and down

### RUNNING CONDITIONS

- No symptoms
- Runs rough
- Lacks power
- Bucks and jerks
- Poor fuel economy
- Hesitates or stumbles on accelerations
- Backfires
- Misfires or cuts out
- Engine knocks, pings or rattles
- Surges
- Dieseling or run-on

### AUTOMATIC TRANSMISSION PROBLEMS (if applicable)

- No symptoms
- Shifts too early or too late
- Changes gear incorrectly
- Vehicle does not move when in gear
- Jerks or bucks

### PROBLEM OCCURS

- Morning  Afternoon  Anytime

### ENGINE TEMPERATURE WHEN PROBLEM OCCURS

- Cold  Warm  Hot

### DRIVING CONDITIONS WHEN PROBLEM OCCURS

- Short - less than 2 miles  With headlights on  
 2 - 10 miles  During acceleration  
 Long - more than 10 miles  Mostly driving downhill  
 Stop and go  Mostly driving uphill  
 While turning  Mostly driving level  
 While braking  Mostly driving curvy roads  
 At gear engagement  Mostly driving rough roads  
 With A/C operating

### DRIVING HABITS

- Mostly city driving  Drive less than 10 miles per day  
 Highway  Drive 10 to 50 miles per day  
 Park vehicle inside  Drive more than 50 miles per day  
 Park vehicle outside

### GASOLINE USED

- 87 Octane  91 Octane  
 89 Octane  More than 91 Octane

### WEATHER CONDITIONS WHEN PROBLEM OCCURS

- 32 - 55° F (0 - 13° C)  Above 55° F (13° C)  
 Below freezing (32° F / 0° C)

### CHECK ENGINE LIGHT / DASH WARNING LIGHT

- Sometimes ON  Always ON  Never ON

### PECULIAR SMELLS


- "Hot"  Gasoline  
 Sulfur ("rotten egg")  Burning oil  
 Burning rubber  Electrical

### STRANGE NOISES

- Rattle  Squeak  
 Knock  Other

## DOWNLOADING THE QUICKLINK™ APP

The QUICKLINK™ App is available for free download from the App Store. You **MUST** have an iTunes account to download the QUICKLINK™ App from the App Store.

1. Tap the **App Store** icon to access the App Store.
2. Enter “QUICKLINK” in the search box, then tap the  icon to locate the QUICKLINK™ App.
3. Tap the **FREE** button to download the QUICKLINK™ App to your tablet or phone.
  - When the download is complete, the **INSTALL** button displays.
4. Tap the **INSTALL** button to install the QUICKLINK™ App on your phone or tablet.
  - When the installation is complete, the **OPEN** button displays.
5. Tap the **OPEN** button to launch the QUICKLINK™ App (see **LAUNCHING THE QUICKLINK™ APP** on page 27 for details).
  - If you do not wish to launch the QUICKLINK™ App at this time, exit the App Store. You can launch QUICKLINK™ at any time by tapping the QUICKLINK™ icon or your phone or tablet.



When you open the QUICKLINK™ App, the “Innova Account” page displays. You **MUST** have an account on Innova.com to use the QUICKLINK™ system to obtain diagnostic information for your vehicle. The account is **FREE** of charge.

## LAUNCHING THE QUICKLINK™ APP



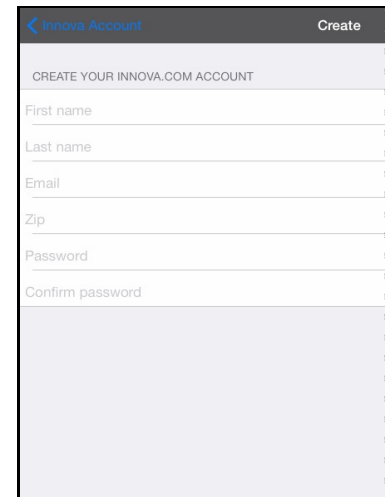
*The first time you access the **Innova Account** page, the “Use Current Location” popup displays. Tap **OK** to allow QUICKLINK™ to use your current location. If you do not wish QUICKLINK™ to use your current location, tap **Don't Allow**.*

- If you already have an account on Innova.com, tap **Login** to log into QUICKLINK (see **Logging In** on page 28 for details).
- If you don't have an account on Innova.com, tap **Create account** to create a free account (see **Creating an Account** on page 28 for details).



## Creating an Account

1. From the Innova Account page, tap **Create account**.
  - The “Create account” page displays.
2. Enter your name in the **First name** and **Last name** fields.
3. Enter your email address in the **Email** field.
4. Enter your home Zip Code in the **Zip** field. *This information is optional.*
5. Enter a password for your account in the **Password** and **Confirm password** fields.
  - Enter the password in *exactly* the same way in both the **Password** and **Confirm password** fields.
6. When all required information has been entered, tap **Submit**.



*If you omit a required field or do not enter your password the same way in both the **Password** and **Confirm password** fields, an “Error” message displays. Tap **OK** to close the message and return to the “Create account” page. Enter the required information then resubmit the form.*

- The Terms and Conditions popup displays.
7. Review the Terms and Conditions then tap **Next** to continue.
    - The End User License Agreement (EULA) popup displays.
  8. Review the End User License Agreement then tap **Yes**.
    - The QUICKLINK “Menu” page displays.

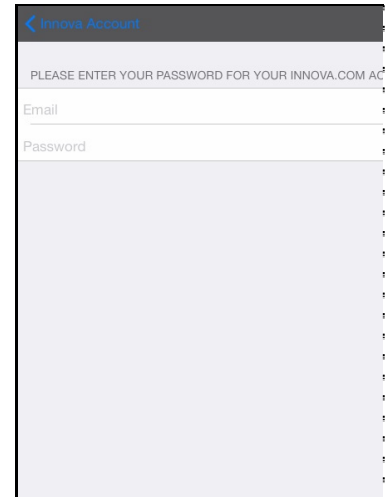
## Confirming Your Account

When you register you Innova.com account, the system auto-generates an email to the email address you provided during registration. **BE SURE** to confirm your account using the instructions provided in the confirmation email *before* using the QUICKLINK™ system.

## Logging In

Following your account registration, and each time you launch the QUICKLINK™ App, the QUICKLINK™ “Welcome” page displays. You must log into your Innova.com account before you can use the QUICKLINK™ system.

1. From the “Welcome” page, tap **Login**.
  - The “Login” page displays.
2. Use the keyboard to enter your **Email** address and **Password**, then tap **Login** to submit your login request.
3. If your login is *unsuccessful*:
  - A “Login failed” message displays.
  - Tap **OK** to close the message and return to the “Login” page.
  - Re-enter your **Email** address and **Password**, then tap **Login** to resubmit your login request.



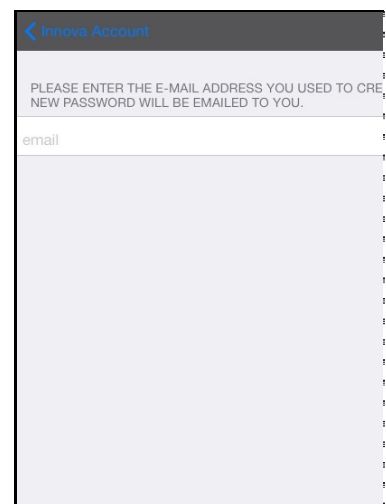
*If you forget your password, you can use the **Forgot password** feature to obtain a new password.*

4. If your login is *successful*:
  - The QUICKLINK™ “Menu” page displays (see **USING THE “MENU” PAGE** on page 30 for details).

## Forgot Your Password?

If you forget your password, you can use the **Forgot password** feature to obtain a new password.

1. On the “Welcome” screen, tap **Forgot password**.
  - The “Forgot Password” page displays.
2. Enter the email address you used when creating your Innova.com account in the **email** text box, then tap **Submit**.
  - An “Email Sent” message displays.
3. Tap **OK** to close the message then tap **Innova Account** to return to the “Welcome” page.
4. Follow the instructions in the email message to reset the password for your account.



## USING THE “MENU” PAGE

When you log into QUICKLINK™ (see [Logging In](#) on page 28 for details), the “Menu” page displays. The “Menu” page gives you access to all the features and functions available through the QUICKLINK™ App. The following options are available from the “Menu” page:

- **DIAGNOSTICS / SOLUTIONS** - lets you generate a diagnostic report for your vehicle (see [Generating Diagnostic Reports](#) on page 20 for details)
- **COMMAND CENTERS** - let you view “real time” Live Data for your vehicle (see [Working with the Command Centers](#) on page 48 for details). The following options are available:
  - **PERFORMANCE COMMAND CENTER** - monitors eleven preset parameters related to overall vehicle performance.
  - **FUEL ECONOMY COMMAND CENTER** - monitors four preset parameters related to fuel usage and economy.
  - **ENGINE COMMAND CENTER** - monitors thirteen preset parameters related to engine operation.
  - **TOWING COMMAND CENTER** - monitors fifteen preset parameters related to vehicle performance when towing.
- **CONNECT QUICKLINK™ DEVICE** - connects the QUICKLINK™ App to the QUICKLINK™ Device (see [INSTALLING AND PAIRING THE QUICKLINK™ DEVICE](#) on page 43 for details).
- **VEHICLE MANAGER** - lets you manage vehicles associated with the QUICKLINK™ App (see [Managing Vehicles](#) on page 31 for details).
- **SETTINGS** - lets you configure the QUICKLINK™ App to suit your personal preferences, view reference information, access online help and report problems to Innova Technical Services (see [ADJUSTMENTS AND SETTINGS](#) on page 54 for details).





The Vehicle Manager lets you add *one or more* vehicles to the QUICKLINK™ App, edit vehicle information and settings, and retrieve and view previously generated diagnostic reports and Command Center recordings. To access the Vehicle Manager, tap **VEHICLE MANAGER** from the QUICKLINK™ “Menu” page (see **USING THE “MENU” PAGE** on page 30 for details).

## SETTING UP YOUR VEHICLE

Before you use the QUICKLINK™ system with your vehicle, you must enter the vehicle in the Vehicle Manager.

### Entering the Vehicle Identification Number (VIN)

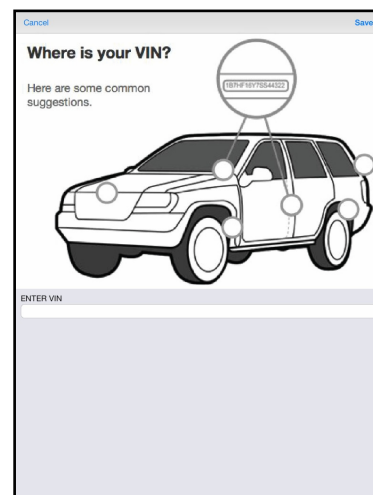
The first time you access the Vehicle Manager, the “Enter VIN” page displays. The page includes an illustration of typical locations for your vehicle’s Vehicle Identification Number (VIN).



*You can also find your vehicle’s VIN on the Vehicle Registration or “pink” slip.*

Use the keyboard to enter your vehicle’s VIN in the **ENTER VIN** field, then tap **Save** to save the vehicle to the QUICKLINK™ App. (If you do not wish to save the vehicle to QUICKLINK™, tap **Cancel** to return to the previous page.)

When you add a vehicle to the QUICKLINK™ App, the system decodes the VIN to enter general information about the vehicle (year, make, model, engine size, etc.). When the process is complete, the “Vehicles” page displays to show the added vehicle.

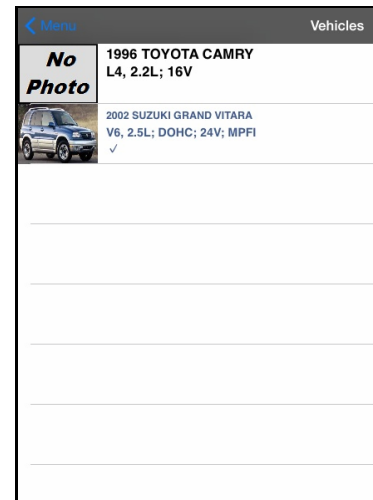


## USING THE “VEHICLES” PAGE

The “Vehicles” page shows all vehicles that have been added to the QUICKLINK™ system, and includes a brief description if each vehicle. Once you have added the first vehicle to QUICKLINK™, the “Vehicles” page displays each time you choose **VEHICLE MANAGER** from the QUICKLINK™ “Menu” page.



*To enter additional vehicles into QUICKLINK™, tap **Add Vehicle** to display the “Enter VIN” page.*



From the “Vehicles” page you can choose to:


- Select a vehicle for diagnostics or monitoring through the Command Centers (see **Selecting a Vehicle** on page 32 for details)
- Add a photo for a vehicle (see **Adding a Vehicle Photo** on page 32 for details)
- View Diagnostic Report History (see **Viewing Diagnostic Report History** on page 32 for details)
- View Command Center Recordings (see **Working with Command Center Recordings** on page 34 for details)
- 5. View and edit Vehicle Settings (see **MANAGING VEHICLE SETTINGS** on page 36 for details)
- Validate Parameter Identification Data (PIDs) supported by a vehicle (see **VALIDATING SUPPORTED PIDS** on page 41 for details)
- Delete a vehicle (see **DELETING A VEHICLE** on page 42 for details)

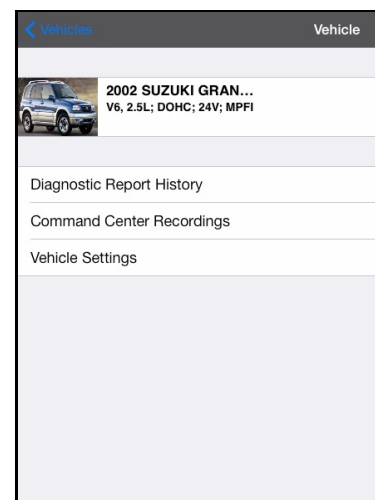
## Selecting a Vehicle

Before performing diagnostics or monitoring vehicle operation through the Command Centers, you must select the desired vehicle.

- On the “Vehicles” page, tap the desired vehicle.
  - The vehicle description is shown in **blue** type to indicate the vehicle has been selected.

## Accessing the Vehicle Information Page

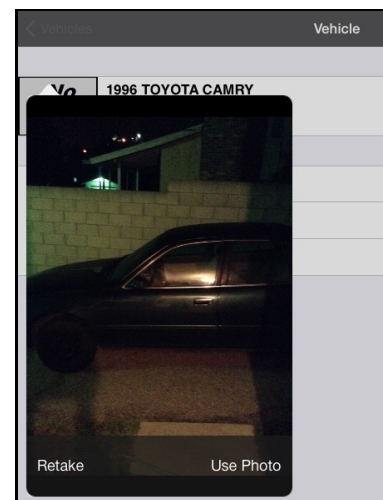
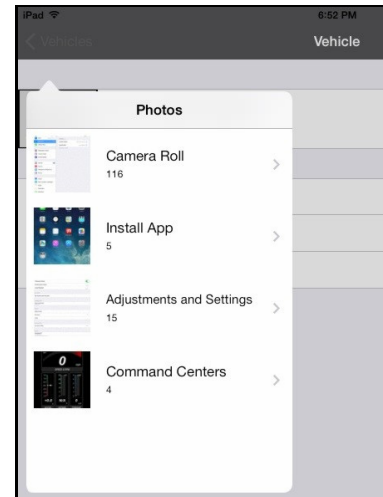
- Select the vehicle for which you wish to view vehicle information.
- Tap the  icon for the selected vehicle.
  - The “Vehicle” page for the selected vehicle displays.



## Adding a Vehicle Photo

The vehicle description includes a ‘placeholder’ (labeled **No Photo**) for a vehicle photograph. You can add a vehicle photo from your photo library or use the camera in your tablet or phone to add a photo. You can also replace an *existing* photo for a vehicle.

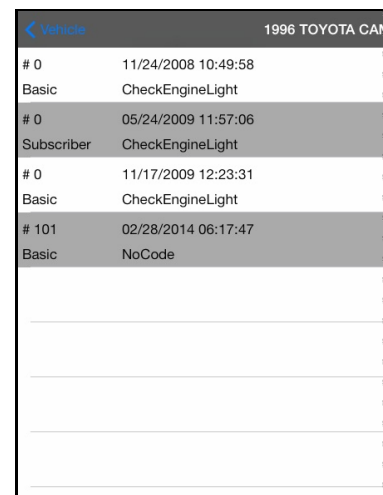
- On the “Vehicle” page for the desired vehicle, tap the **No Photo** label or the existing photo for the vehicle, as applicable.
  - The “Select Vehicle Photo” dialog displays.
- To add a photo from your photo library:
  - Tap the **Library** button on the “Select Vehicle Photo” dialog.
    - A “popup” menu shows all the photos available on your tablet or phone.
  - Locate and tap the photo you wish to use.
    - The “popup” menu closes, and the selected photo is added to the vehicle description.
- To add a photo using the camera in your tablet or phone:
  - Tap the **Camera** button on the “Select Vehicle Photo” dialog.
    - A camera “popup” opens.
  - Use the camera to take a photo of your vehicle.
    - The photo displays in the “photo” popup.
  - Tap **Use Photo** to close the camera “popup” and add the photo to the vehicle description.
    - If you wish to retake the photo, tap **Retake** to return to the camera “popup.”.



## Viewing Diagnostic Report History

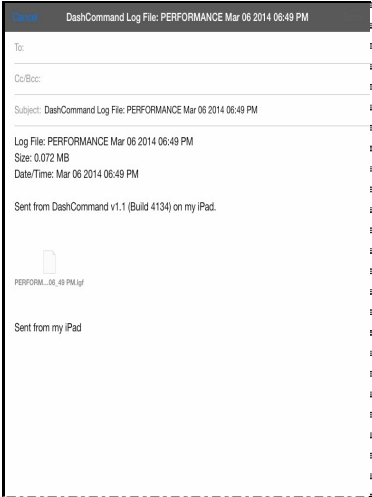
QUICKLINK™ retains a copy of all diagnostic reports you have generated for each vehicle saved in the system. You can recall and view a diagnostic report at any time.

- On the “Vehicles” page, select the vehicle for which you wish to view Diagnostic Reports, then tap the **i** icon for the selected vehicle.
  - The “Vehicle” page for the selected vehicle displays.







- Select the Command Center from which the recording was made to play back the recording (see **Data Playback** on page 53 for details).
4. To email a Command Center recording:
- Tap the recording you wish to email.
    - The Command Center Recordings “popup” menu displays.
  - Tap **Email**.
    - The “Email Logfile” page displays.
  - Enter the email address to which you wish to send the recording in the **To** field.
  - If you wish to send a copy of the email to other parties, tap the **Cc/Bcc** field and enter the desired **Cc** and **Bcc** email addresses.
  - If you wish to include a message with the email, tap the email body and enter the desired message.
  - When all desired information has been entered, tap **Send** to send the email.
    - A confirmation message displays indicating the email has been sent, and the display returns to the “Command Center Recordings” page.
- 
- The screenshot shows an email composition screen with the following details: To: (empty), Cc/Bcc: (empty), Subject: DashCommand Log File: PERFORMANCE Mar 06 2014 06:49 PM, Log File: PERFORMANCE Mar 06 2014 06:49 PM, Size: 0.072 MB, Date/Time: Mar 06 2014 06:49 PM, Sent from DashCommand v1.1 (Build 4134) on my iPad. There is a file icon labeled 'PERFORM...\_06 49 PM.jpg' and a text area with 'Sent from my iPad'.
5. To edit a Command Center recording file name:
- Tap the recording you wish to edit.
    - The Command Center Recordings “popup” menu displays.
  - Tap **Edit**.
    - The edit “popup” menu displays.
  - Tap **Rename**.
    - The “Enter Log File Name” dialog displays.
  - Edit the file name as desired, then tap **OK** to close the dialog and save your changes and return to the “Command Center Recordings” page.
    - If you *do not* wish to change the file name, tap **Cancel** to close the dialog and return to the “Command Center Recordings” page with the previous file name retained.
6. To delete a Command Center recording:



- Tap the recording you wish to delete.
    - The Command Center Recordings “popup” menu displays.
  - Tap **Edit**.
    - The edit “popup” menu displays.
  - Tap **Delete**.
    - The “Confirm Delete” dialog displays.
  - Tap **Delete** to confirm the deletion. The dialog closes and the “Command Center Recordings” page refreshes with the selected file deleted from the list.
    - If you *do not* wish to delete the recording, tap **Cancel** to close the dialog and return to the “Command Center Recordings” page with the selected file retained in the list.
7. When you have finished viewing and editing all desired recordings, tap **Vehicle** to return to the “Vehicle” page for the currently selected vehicle.

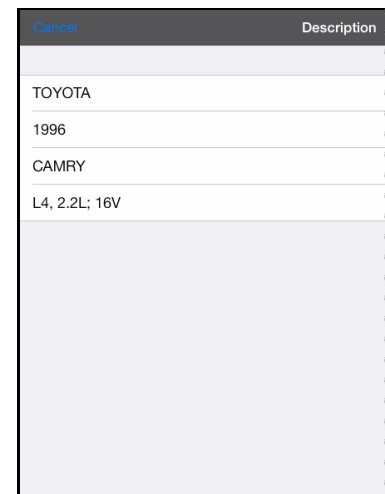
## MANAGING VEHICLE SETTINGS

The “Vehicle Settings” page lets you view and edit vehicle identification, specifications, OBD-II settings and advanced settings for a vehicle. You can also validate the Parameter Identification Data (PIDs) supported by a vehicle, or delete a vehicle from QUICKLINK™. Tap **Vehicle Settings** to edit general settings, OBD-II settings and advanced settings for your vehicle.

### Editing the Vehicle Description

When you add a vehicle to the QUICKLINK™ system, QUICKLINK™ decodes the Vehicle Identification Number (VIN) to generate the vehicle description shown in the **Vehicle Manager**. If necessary, you can edit the vehicle description.

1. On the “Vehicle Settings” page, tap the vehicle description.
  - The vehicle “Description” page displays.
2. To edit the vehicle make, year or model:
  - Tap the parameter you wish to edit to display the “Values” page for the selected parameter.
    - The left column shows a list of available values for the selected parameter. The currently selected value is indicated by a checkmark ✓ in the right column.

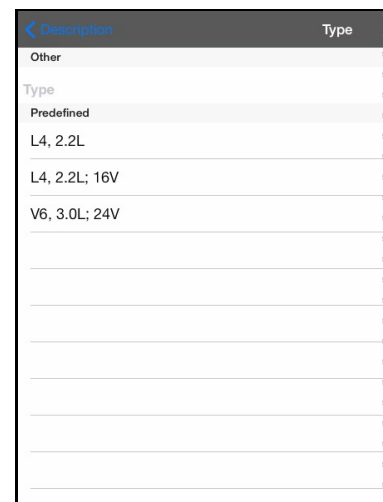


- Tap the desired value, to select it, then tap **Save** to save your changes and return to the “Description” page.
3. To edit the vehicle engine description:
- Tap the engine description parameter to display the “Values” page.
    - The **Predefined** field shows a list of available values in the left column. The currently selected value is indicated by a checkmark ✓ in the right column.



*If the correct value for your vehicle is not listed in the **Predefined** field, you can manually enter the desired value.*

- To select a **Predefined** value:
    - Tap the desired value, to select it, then tap **Save** to save your changes and return to the “Description” page.
  - To manually enter a value:
    - Tap the **Other** field. Enter the desired value, then tap **Save** to save your changes and return to the “Description” page.
4. When all desired vehicle description parameters have been edited, tap **Save** on the vehicle “Description” page to save your changes and return to the “Vehicle Settings” page.



## Viewing and Editing General Vehicle Settings

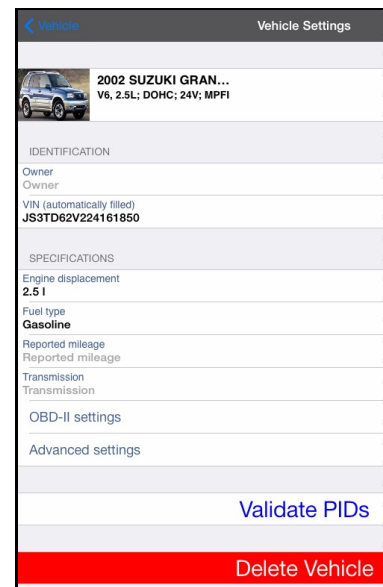


*Unless otherwise stated, all vehicle settings are edited in a similar manner. Tap the setting you wish to edit, enter and/or select the appropriate values for the setting then tap **Save** to save your changes and return to the “Vehicle Settings” page.*

The following settings (except **Owner**) are initially entered by QUICKLINK™ when the VIN for the vehicle is decoded. These settings may be edited from the “Vehicle Settings” page:

### ■ IDENTIFICATION

- **Owner:** Enter the name of the owner of the vehicle as desired.



- **VIN:** This field is automatically filled by QUICKLINK™ when a vehicle is added to the system. If you make an error when initially entering the VIN, selecting this option will display the “Enter VIN” page so that you may re-enter the VIN for the vehicle.

### ■ SPECIFICATIONS

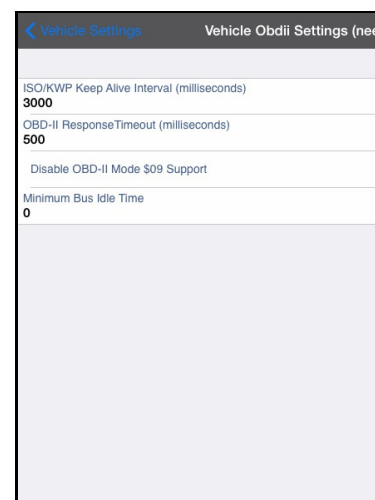
- **Engine displacement:** Engine displacement is used when calculating fuel consumption parameters. This information can usually be found in the vehicle Owner’s Manual. Enter the desired value in the text field and select the appropriate unit of measurement; cubic inches (**in<sup>3</sup>**), cubic centimeters (**cc**), liters (**l**) or milliliters (**ml**). The currently selected unit of measurement is highlighted in **blue**.
- **Fuel type:** Select the type of fuel used by the vehicle; **Gasoline**, **Diesel**, **E85** or **E100**. The currently selected fuel type is indicated by a checkmark ✓ in the right column.
- **Reported mileage:** Enter the mileage shown on the vehicle’s odometer. It is recommended that this information be updated *prior to* generating each diagnostic report for the vehicle.
- **Transmission:** Select the transmission type for the vehicle; **Automatic** or **Standard**. The currently selected transmission type is indicated by a checkmark ✓ in the right column.

## Viewing and Editing OBD-II Settings

OBD-II settings are initially entered by QUICKLINK™. These settings may be viewed and edited from the “Vehicle Obdii Settings” page. On the “Vehicle Settings” page, tap **OBD-II Settings** to display the “Vehicle Obdii Settings” page.



*The default OBD-II settings are established to ensure optimum performance of the QUICKLINK™ system. Changes to these settings can adversely affect data logging performance. **DO NOT** edit these values unless directed to do so by Innova Technical Services. When changes are made to OBD-II settings, the QUICKLINK™ device must be disconnected and reconnected to the QUICKLINK™ App for the changes to take effect (see **Connecting the App to the Device** on page 44 for details).*



When all desired changes have been made, tap **Vehicle Settings** to return to the “Vehicle Settings” page.

## Viewing and Editing Advanced Settings

Advanced settings may be viewed and edited from the “Vehicle Advanced Settings” page. On the “Vehicle Settings” page, tap **Advanced Settings** to display the “Vehicle Advanced Settings” page. Some settings may be entered once (such as **Fuel tank capacity** and **Curb weight**) while other may require periodic adjustment based on specific vehicle operating conditions (such as **Additional weight** or **Fuel type** for “flex fuel” vehicles). The following settings may be edited from the “Vehicle Advanced Settings” page:

- **Fuel tank capacity:** Fuel tank capacity is used when calculating fuel level, distance to empty and time to empty values. This information can usually be found in the vehicle Owner’s Manual. Enter the desired value in the **Fuel Tank Capacity** field and select the appropriate unit of measurement; U.S. gallons (**gal (US)**), U.K gallons (**gal (UK)**) or liters (**l**). The currently selected unit of measurement is highlighted in **blue**.
- **Brake specific fuel consumption:** This value represent the required to generate one horsepower for one hour, and is used when calculating horsepower and torque indications. Enter the desired value in the **Brake Specific Fuel Consumption** field. Recommended values are:
  - **0.35** for turbo diesel engines
  - **0.45** for naturally aspirated engines
  - **0.55** for forced induction gasoline engines
- **Volumetric efficiency:** Volumetric efficiency is used in calculating fuel consumption parameters. An initial value between 60% and 85% is recommended. Enter the desired value in the **Volumetric E** field.
- **MAF PID:** The MAF PID value is used *only* when mass air flow is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **MAF PID** field.



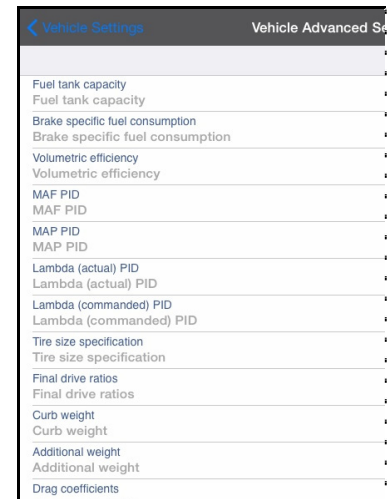
*It is recommended this field remain empty unless you are certain of the appropriate value.*

- **MAP PID:** The MAF PID value is used *only* when manifold absolute pressure is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **MAP PID** field.



*It is recommended this field remain empty unless you are certain of the appropriate value.*

- **Lambda (actual) PID:** The Lambda (actual) PID value is used *only* when lambda value is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **Lambda (actual) PID** field.



- **Lambda (actual) PID:** The Lambda (actual) PID value is used *only* when lambda value is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **Lambda (actual) PID** field.



*It is recommended this field remain empty unless you are certain of the appropriate value.*

- **Lambda (commanded) PID:** The Lambda (actual) PID value is used *only* when lambda value is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **Lambda (commanded) PID** field.



*It is recommended this field remain empty unless you are certain of the appropriate value.*

- **Tire size specification:** Tire size specification is an alternate means for determining wheel circumference. This value is used for gear calculations. Enter the desired value using width/profile/diameter(in) values (e.g. **215/45/R18**).
- **Final drive ratios:** Enter the appropriate final drive ratio for the each appropriate drive gear for the vehicle; **Axle ratio, 1st gear, 2nd gear, 3rd gear, 4th gear, 5th gear, 6th gear** or **7th gear**.
- **Curb weight:** Curb weight is used when calculating power and torque values. Enter the desired value in the **Curb Weight** field and select the appropriate unit of measurement; pounds (**lb**) or kilograms (**kg**). The currently selected unit of measurement is highlighted in **blue**.
- **Additional weight:** Additional weight is used when calculating power and torque values. This value should be the sum of the weights of the driver, all passengers, contents of the trunk, towed vehicles, etc. Enter the desired value in the **Additional Weight** field and select the appropriate unit of measurement; pounds (**lb**) or kilograms (**kg**). The currently selected unit of measurement is highlighted in **blue**.
- **Drag coefficient:** Drag coefficient (also know as air resistance coefficient) is used with **Frontal area** to compensate for wind resistance when calculating power and torque values. This value may be available from the vehicle manufacturer's website. Enter the desired value in the **Drag Coefficient** field.



*It is recommended this field remain empty unless you are certain of the appropriate value, or in cases where **Frontal area** has not been defined.*

- **Frontal area:** Frontal area is used in conjunction with **Drag Coefficient** to compensate for wind resistance when calculating power and torque values. Enter the desired value in the **Frontal Area** field and select the appropriate unit of measurement; square feet (**ft<sup>2</sup>**) or square meters (**m<sup>2</sup>**). The currently selected unit of measurement is highlighted in **blue**.



*It is recommended this field remain empty unless you are certain of the appropriate value, or in cases where **Drag coefficient** has not been defined.*

- **Maximum engine speed:** Maximum engine speed (**rpm**) is used for gear calculations. Enter the engine “redline” value in the **Maximum Engine Speed** field.

- **Minimum engine speed:** Minimum engine speed (**rpm**) is used for gear calculations. Enter the minimum allowable engine speed while in gear in the **Minimum Engine Speed** field.
- **Shift point:** Shift point (**rpm**) is used for gear calculations. Enter the shift point that results in the greatest fuel economy in the **Shift Point** field.
- **Speed correction:** Speed correction is used to compensate for an inaccurate vehicle speedometer. Enter the desired value in the **Speed Correction** field.

When all desired changes have been made, tap **Vehicle Settings** to return to the “Vehicle Settings” page.

## VALIDATING SUPPORTED PIDS

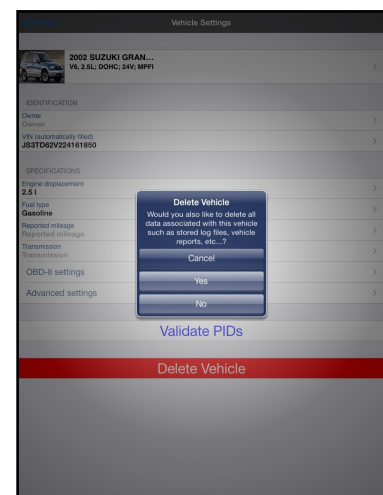
QUICKLINK™ automatically validates the Parameter Identification Data (PIDs) supported by your vehicle each time you connect the QUICKLINK™ App to the QUICKLINK™ Device (see [Connecting the App to the Device on page 44](#) for details). You can also choose to validate PIDs for a vehicle “on demand” from the “Vehicle Settings” page.

1. Select the vehicle for which you wish to validate PIDs, and access the “Vehicle” information page for the vehicle (see [Selecting a Vehicle on page 32](#) for details).
2. Tap **Vehicle Settings**.
  - The “Vehicle Settings” page displays.
3. Tap **Validate PIDs** to validate the PIDs supported by your vehicle.

## DELETING A VEHICLE

If you sell or discard a vehicle, you can remove it from the QUICKLINK system. When deleting a vehicle, you can choose to *retain* or *delete* all vehicle-specific data files stored for the vehicle.

1. Select the vehicle you wish to delete, and access the “Vehicle” information page for the vehicle (see [Selecting a Vehicle on page 32](#) for details).
2. Tap **Vehicle Settings**.
  - The “Vehicle Settings” page displays.
3. Tap **Delete Vehicle**.
  - The “Delete Vehicle” confirmation dialog displays.



4. Tap **Yes** to continue with the deletion. (Tap **No** to *cancel* the deletion and return to the “Vehicle” page with the vehicle retained in the QUICKLINK™ system.)
  - The “Delete Vehicle Data” confirmation dialog displays.
5. Tap **Yes** to *delete* the vehicle *and delete* all vehicle-specific data from the QUICKLINK™ system. (Tap **No** to *delete* the vehicle *and retain* all vehicle-specific data in the QUICKLINK™ system. Tap **Cancel** to cancel the deletion and return to the “Vehicle” page with the vehicle retained in the QUICKLINK™ system.)

## INSTALLING AND PAIRING THE QUICKLINK™ DEVICE

### Installing the QUICKLINK™ Device


1. Turn the vehicle's ignition on **DO NOT** start the engine.
2. Locate the vehicle's 16-pin Data Link Connector (DLC). [See Data Link Connector \(DLC\) Location on page 1](#) for typical connector locations.

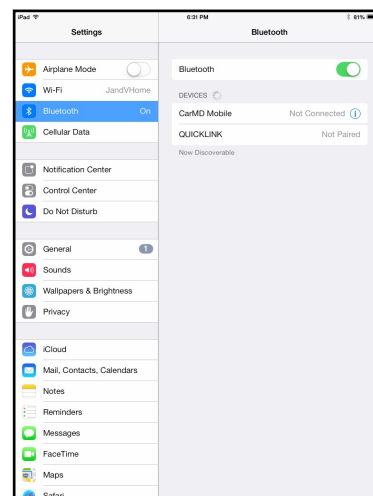


*Some DLCs have a plastic cover that must be removed before connecting the QUICKLINK™ Device.*

3. Connect the QUICKLINK™ Device to the vehicle's DLC. The cable device is keyed and will only fit one way.
  - If you have problems connecting the cable connector to the DLC, rotate the connector 180° and try again.
4. When the QUICKLINK™ Device is properly connected to the vehicle's DLC, the device powers on and a red LED lights.
  - If the unit does not power on automatically when connected to the vehicle's DLC connector, it usually indicates there is no power present at the vehicle's DLC connector. Check your fuse panel and replace any burned-out fuses.
  - If replacing the fuse(s) does not correct the problem, consult your vehicle's repair manual to identify the proper computer (PCM) fuse/circuit, and perform any necessary repairs before proceeding.

### Pairing the QUICKLINK™ Device

1. Make sure the QUICKLINK™ Device is properly connected to your vehicle's DLC ([see Installing the QUICKLINK™ Device on page 43](#) for details).
2. Sit in the driver's seat of your vehicle. Turn on your tablet or phone.
3. Tap **Settings** to display the "Settings" page, then tap **Bluetooth**.
4. Make sure that the **Bluetooth** slider is set to the "ON" .





5. When your tablet or phone recognized the QUICKLINK™ Device, **QUICKLINK** will show in the list of **DEVICES**.
  - **QUICKLINK** will display as **Not Paired**.
6. Tap **QUICKLINK** to pair the QUICKLINK™ Device with your tablet or phone.
  - When pairing is complete, **QUICKLINK** will display as **Connected**, and a green LED will light on the QUICKLINK™ Device.

## Connecting the App to the Device

1. Make sure the QUICKLINK™ Device is properly connected to your vehicle's DLC (see **Installing the QUICKLINK™ Device** on page 43 for details) and is paired with your tablet or phone (see **Pairing the QUICKLINK™ Device** on page 43 for details).
2. On the QUICKLINK™ “Menu” page, tap **CONNECT QUICKLINK DEVICE**.
  - The QUICKLINK™ App initiates an OBD-II connection with the QUICKLINK™ Device.
  - When a connection is established, App decodes the Vehicle Identification Number (VIN) for the vehicle.
  - When the VIN has been decoded, QUICKLINK™ verifies the Parameter Identification Data (PIDs) supported by the vehicle.
  - When the supported PIDs have been verified, the “Vehicles” page displays.
3. Select the vehicle in which the QUICKLINK™ Device is installed (see **Selecting a Vehicle** on page 32 for details) then tap **Done** to return to the QUICKLINK™ “Menu” page.
  - If the vehicle in which the *is not* shown on the “Vehicles” page, tap **Add Vehicle** to add the vehicle to QUICKLINK (see on page for details).

## CREATING A REPORT

1. Connect the QUICKLINK App to the QUICKLINK™ Device (see **Connecting the App to the Device** on page 44 for details).
2. On the QUICKLINK™ “Menu” page, tap **DIAGNOSTICS / SOLUTIONS**.
  - QUICKLINK™ will retrieve diagnostic data from your vehicle's computer.
3. When data retrieval is complete, the QUICKLINK™ “Diagnostic Report” displays (see **Viewing Diagnostics and Solutions** on page 45 for details).

## Viewing Diagnostics and Solutions

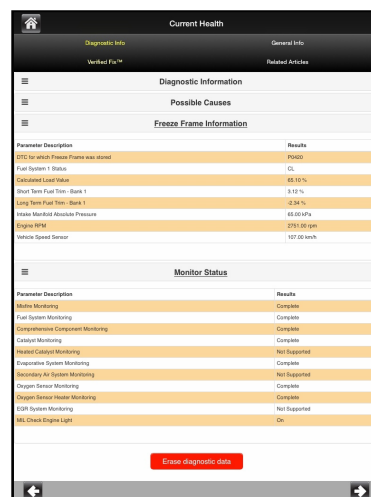
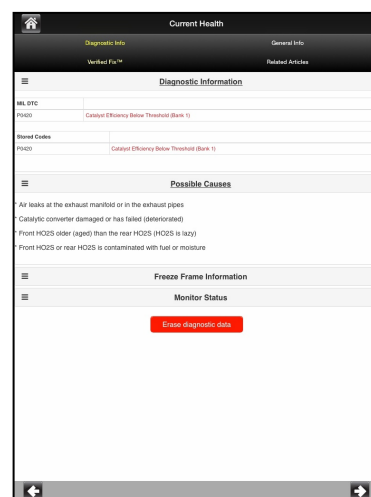
The QUICKLINK™ “Diagnostic Report” is a 4-page report that provides detailed information on the current health of your vehicle; **Diagnostic Info**, **General Info**, **Verified Fix™** and **Related Articles**.

- Tap a page name to view the associated page.
- Tap the ◀ and ▶ buttons to scroll pages of the “Diagnostic Report.”
- Tap the 🏠 button to return to the QUICKLINK™ “Menu” page.

### The Diagnostic Info Page

The “Diagnostic Info” page provides a detailed overview of the information retrieved from your vehicle’s computer. The page includes four sections:

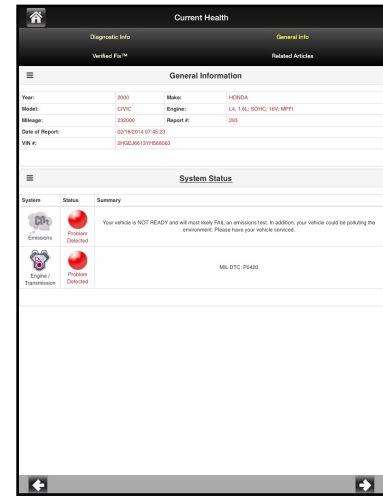
- Tap **Diagnostic Information** to view the Diagnostic Trouble Codes (DTCs) retrieved from your vehicle’s computer. The section shows the **MIL DTC** (the DTC that cause your vehicle’s Malfunction Indicator Lamp to light) as well as all other **Stored Codes**.
- Tap **Possible Causes** to view a list of probable causes of the malfunction.
- Tap **Freeze Frame Information** to view a list of vehicle operating conditions present when the **MIL DTC** was set. Each line in the list shows a **Parameter Description** and the specific **Results** (values) for each parameter. Swipe up or down to view the entire list.
- Tap **Monitor Status** to view the current status for all Monitors supported by your vehicle, and the status of the vehicle’s Malfunction Indicator Lamp (MIL). Each line in the list shows a **Parameter Description** and the specific **Results** for each parameter: **Complete**, **Not Complete** or **Not Supported** (for Monitors); **ON** or **OFF** (for the MIL).
- You can also choose to erase diagnostic data (see **ERASING DIAGNOSTIC DATA** on page 47 for details).



### The General Info Page

The “General Info” page shows general information about your vehicle, along with an indication of it’s overall health. The page includes two sections:

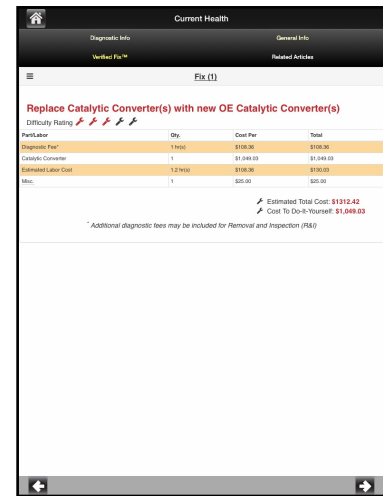
- Tap **General Information** to view general information about your vehicle, including **Year, Make, Model, Engine** size and **VIN #**; and the **Mileage** entered in “Vehicle Settings” (see **Viewing and Editing General Vehicle Settings** on page 37 for details) when the report was created. QUICKLINK™ logs the **Date of Report** (the date and time at which the report was created) and assigns a **unique Report #**.
- Tap **System Status** to see an overview of the general health of your vehicle. The section identifies each vehicle **System** for which status is provided, include a graphic indication of the current **Status** of the system, and a status **Summary**.



## The Verified Fix™ Page

The “Verified Fix™” page lists the most likely repair(s) needed by your vehicle based on the DTCs retrieved, and includes:

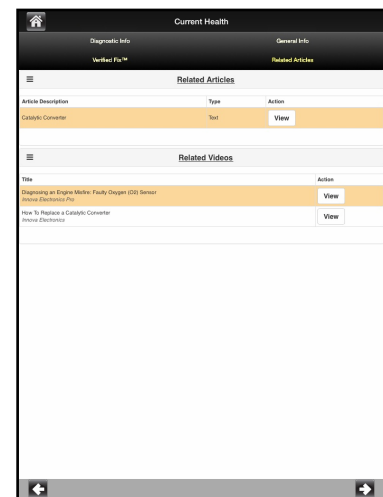
- A **Difficulty Rating** indicating the skill level needed to accomplish the repair
- A breakdown of **Part/Labor** costs
- **Estimated Total Cost** estimates for the repair(s) (based on your geographic location) when performed by a professional technician
- **Cost To Do-It-Yourself** if you choose to perform the repairs on your own



## The Related Articles Page

QUICKLINK™ provides access to a comprehensive database of maintenance and repair information. The “Related Articles” page provides access to articles and videos related to your vehicle’s current issues. The page include two sections:

- Tap **Related Articles** to view a list of articles related to your vehicle’s current issues. These may include general information about a component or system, diagnostic and troubleshooting procedures and/or repair instructions. Tap a **View** button to view the associated article.
- Tap **Related Videos** to view a list of videos related to your vehicle’s current issues. These include for a variety of tasks, including general maintenance, diagnosis and troubleshooting, and detailed repair information. Tap a **View** button to view the associated video.



### ERASING DIAGNOSTIC DATA



*When the “Erase” function is used to erase DTCs from the vehicle's on-board computer, “Freeze Frame” data is 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 data is erased, valuable information that might help the technician troubleshoot the problem will also be erased.

Erase data from the computer's memory as follows:



*When data is erased from the vehicle's computer memory, the I/M Readiness Monitor Status program resets the status of all Monitors to a “Not Completed” status. To set all of the Monitors to a “Completed” status, an OBD2 Drive Cycle must be performed. Refer to your vehicle's service manual for information on how to perform an OBD2 Drive Cycle for the vehicle under test.*

1. Perform the “Create a Report” procedure as described on [page 44](#).
  - The QUICKLINK™ “Diagnostic Report” displays.
2. Tap **Diagnostic Info** to display the “Diagnostic Info” page.
3. Tap **Erase Diagnostic Data**.
  - A confirmation dialog displays.
4. If you are sure you want to proceed, tap **Yes** to continue.
  - If you do not want to proceed, tap **No** to cancel the erase procedure.

## ABOUT THE COMMAND CENTERS

Your vehicle's on-board computer receives status information from various sensors, switches and actuators located throughout the vehicle. This information includes values (volts, rpm, temperature, speed, etc.) and system status information (open loop, closed loop, fuel system status, etc.). This real time "Live Data" from each sensor, actuator and switch, etc., is called Parameter Identification (PID) Data. Each PID has a set of operating characteristics and parameters that serve to identify it.

The Command Centers display a preset selection of PIDs that help you monitor your vehicle's operation for four specific categories: Performance, Fuel Economy, Engine and Towing. Additionally, QUICKLINK™ lets you view, record and play back Live Data for each Command Center. In effect, QUICKLINK™ lets you view, in "real time", the same signal values used by your vehicle's computer when calculating and conducting system adjustments and corrections.



*The units in which PID parameters are displayed depend on the current **Units** selections in QUICKLINK™ **SETTINGS** (see **Setting Units of Measurement Options** on page 57 for details).*



### Performance Command Center

The Performance Command Center monitors eleven preset parameters related to overall vehicle performance. Monitored parameters for the Performance Command Center are as follows:

#### SPEED & RPM

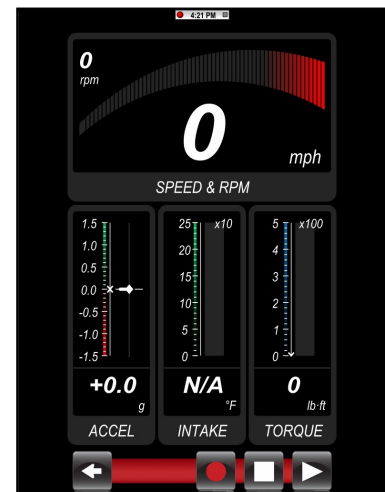
- Shows engine speed in revolutions-per-minute (**rpm** or **r/min**) and vehicle speed in miles-per-hour (**mph**) or kilometers-per-hour (**km/h**).

#### TIMING | ACCEL | BST/VAC

- **TIMING** - Shows ignition timing in degrees (°)
- **ACCEL** - Shows vehicle acceleration in g-force (**g**)
- **BST/VAC** - Shows boost/vacuum pressure in pounds-per-square-inch (**psi**), bars (**bar**) or kilogram-force-per-square-centimeter (**kg-f/cm<sup>2</sup>**)

#### POWER | INST | INTAKE

- **POWER** - Shows engine power in horsepower (**hp**), kilowatts (**kW**) or metric horsepower (**ps**)
- **INST** - Shows current fuel consumption in miles-per-gallon (**mpg**) or liter-per-100-kilometers (**l/100km**)



- **INTAKE** - Shows intake air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)

### AVG | COOLANT | TORQUE

- **AVG** - Shows average fuel consumption in miles-per-gallon (**mpg**) or liter-per-100-kilometers (**l/100km**)
- **COOLANT** - Shows engine coolant temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **TORQUE** - Shows engine torque in foot-pounds (**lb-ft**), Newton-meters (**N-m**) or kilogram meters (**kg-m**)



## Fuel Economy Command Center

The Fuel Economy Command Center monitors four preset parameters related to fuel usage and economy. Monitored parameters for the Fuel Economy Command Center are as follows:

### AVERAGE FUEL ECONOMY

- Shows current (**Inst**) and average (**Avg**) fuel economy in miles-per-gallon (**mpg**) or liter-per-100-kilometers (**l/100km**), and average fuel economy for engine operating time of **0-5 min.**, **0-30 min.** and **0-3 hours**

### FUEL LEVEL

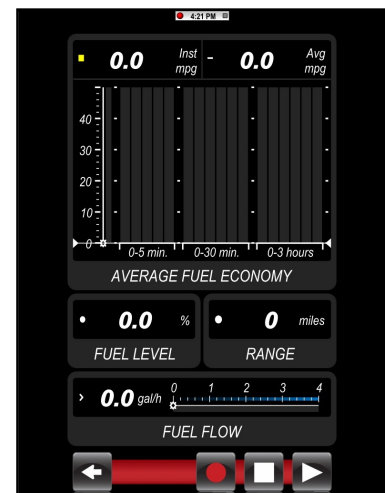
- Shows the current fuel tank level as a percentage (%) of total tank capacity

### RANGE

- Shows estimated vehicle range in **miles** or kilometers (**km**) based on **AVERAGE FUEL ECONOMY** and current **FUEL LEVEL**

### FUEL FLOW

- Shows average fuel flow in gallons-per-hour (**gal/h**) or liters-per-hour (**l/h**)



## Engine Command Center

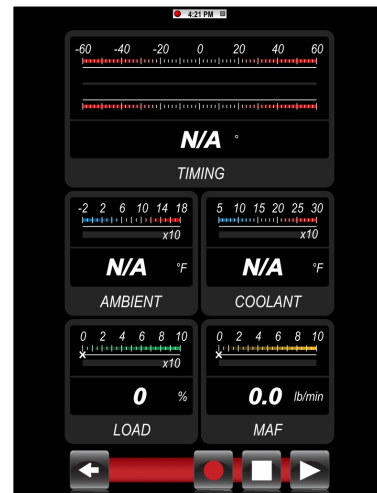
The Engine Command Center monitors thirteen preset parameters related to engine operation. Monitored parameters for the Engine Command Center are as follows:

### TIMING | FUEL TRIMS

- **TIMING** - Shows ignition timing in degrees (°)
- **FUEL TRIMS** - Shows short term (**ST**) and long term (**LT**) fuel trim as a percentage (%)

### INTAKE | AMBIENT | CATALYST

- **INTAKE** - Shows intake air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **AMBIENT** - Shows ambient air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **CATALYST** - Shows catalytic converter temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)



### COOLANT | LAMBDA | AFR | O2 SENSOR

- **COOLANT** - Shows engine coolant temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **LAMBDA** - Shows the oxygen sensor **LAMBDA** calculation from **lean** to **rich**
- **AFR** - Shows the air/fuel ratio
- **O2 SENSOR** - Shows the oxygen sensor output signal level in volts (V)

### MAP | LOAD

- **MAP** - Shows manifold absolute pressure in kiloPascals (kPa) or inches of Mercury (inHg)
- **LOAD** - Shows engine load as a percentage (%) of maximum capacity

### MAF | FRP

- **MAF** - Shows mass air flow in pounds-per-minute (lb/min.) or grams-per-second (g/s)
- **FRP** - Shows fuel rail pressure in pounds-per-square-inch (psi) or kiloPascals (kPa)



## Towing Command Center

The Towing Command Center monitors fifteen preset parameters related to vehicle performance when towing. Monitored parameters for the Towing Command Center are as follows:

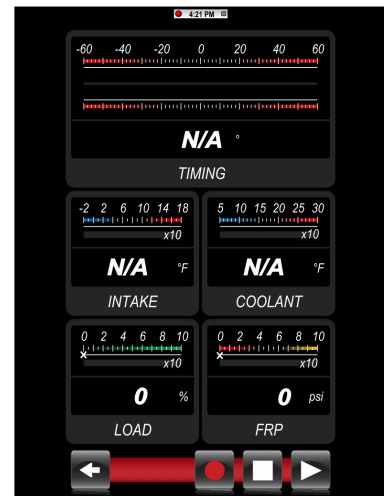


### TIMING | FUEL TRIMS

- **TIMING** - Shows ignition timing in degrees (°)
- **FUEL TRIMS** - Shows short term (ST) and long term (LT) fuel trim as a percentage (%)

### CATALYST / EOT / INTAKE / AMBIENT

- **CATALYST** - Shows catalytic converter temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **EOT** - Shows engine oil temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **INTAKE** - Shows intake air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **AMBIENT** - Shows ambient air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)



### COOLANT | LAMBDA | AFR | O2 SENSOR

- **COOLANT** - Shows engine coolant temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **LAMBDA** - Shows the oxygen sensor **LAMBDA** calculation from **lean** to **rich**
- **AFR** - Shows the air/fuel ratio
- **O2 SENSOR** - Shows the oxygen sensor output signal level in volts (V)

### BOOST / MAP / LOAD

- **BOOST** - Shows boost pressure in pounds-per-square-inch (**psi**), bars (**bar**) or kilogram-force-per-square-centimeter (**kg-f/cm<sup>2</sup>**)
- **MAP** - Shows manifold absolute pressure in kiloPascals (**kPa**) or inches of Mercury (**inHg**)
- **LOAD** - Shows engine load as a percentage (%) of maximum capacity


### MAF / FRP

- **MAF** - Shows mass air flow in pounds-per-minute (**lb/min.**) or grams-per-second (**g/s**)
- Shows fuel rail pressure in pounds-per-square-inch (**psi**) or kiloPascals (**kPa**)

## Using the Command Centers

1. Connect the QUICKLINK App to the QUICKLINK™ Device (see [Connecting the App to the Device](#) on page 44 for details).







2. Start the engine.
3. From the QUICKLINK™ “Menu” page, tap the Command Center you wish to view.
  - The selected “Command Center” page displays.
4. The “Command Center” display fields continuously update to reflect changes in vehicle operating conditions.
  - Swipe left or right to view other “Command Center” pages.
  - Tap a display field to scroll the available parameters for the field.
  - Tap the  button to return to the QUICKLINK™ :Menu” page.

## DATA RECORD AND PLAYBACK

### The Command Center Toolbar





A toolbar is located at the bottom of each Command Center page. The toolbar provides the tools to record and play back Live Data (see **DATA RECORD AND PLAYBACK** on page 52 for details), and to return to the QUICKLINK™ “Menu” page.

-  **BACK button** - Tap to return to the QUICKLINK™ “Menu” page.
-  **STOP RECORD button** - Tap to stop a recording in progress.
-  **START RECORD button** - Tap to start recording Live Data.
-  **PLAYBACK button** - Tap to play back recorded Live Data.


### Recording Data

You can record and save Live Data for each QUICKLINK™ Command Center. Recorded Live Data can serve as valuable information to help you in troubleshooting and diagnosing vehicle problems. The Record Data option lets you select the precise time at which the Live Data recording will occur. This is particularly helpful when troubleshooting intermittent problems that may only manifest themselves briefly, for a few fractions of a second and/or only at certain vehicle speeds or vehicle operating conditions.

- Access the “Command Center” for which you wish to record data.
- Put the engine in the desired operating condition for which you wish to record data.

- If necessary, drive the vehicle until you reach the vehicle speed at which the problem you wish to record occurs.
- Tap the  button to begin recording data.
  - When the desired data has been recorded, tap the  button to stop recording data.

## Data Playback

Once “Command Center” data has been recorded, it is saved in memory. You can view recorded data immediately after recording by tapping the  button, or you can view it later by selecting the desired data file from memory (see [Working with Command Center Recordings](#) on page 34 for details).





The “Settings” page lets you configure the QUICKLINK™ QUICKLINK™ App to suit your personal preferences, view reference information, access online help and report problems to Innova Technical Services. To display the “Settings” page, tap **SETTINGS** from the QUICKLINK™ “Menu” page (see **USING THE “MENU” PAGE** on page 30 for details).

## ADJUSTMENTS AND SETTINGS

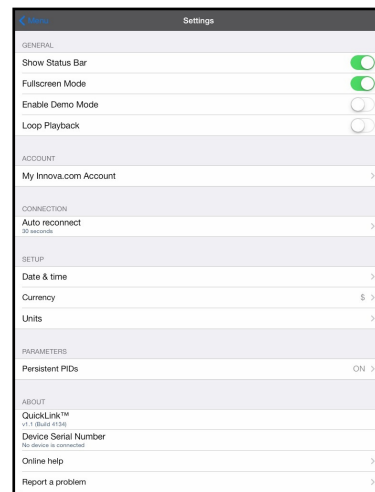
### Setting General Options

The **GENERAL** options let you configure how the QUICKLINK™ App displays on your device, enable and disable the “Demo” mode, and configure recorded data for “looped” playback. On the “Settings” page under **GENERAL**, use the sliders to *enable* or *disable* general options as follows:



Set the slider to the “ON” position  to **enable** the associated option. Set the slider to the “OFF” position  to **disable** the associated option.

- **Show Status Bar** – *Enables* and *disables* display of the status bar at the top of the “Menu” page.
- **Fullscreen Mode** – *Enables* and *disables* the full screen display mode.
- **Enable Demo Mode** – *Enables* and *disables* “demo mode” for the Command Centers.
- **Loop Playback** – *Enables* and *disables* “looped playback” of data recorded through the Command Centers.



### Viewing Account Options

The **ACCOUNT** options show the account under which you are logged in, and let you log out of the QUICKLINK™ system.

1. On the “Settings” page under **ACCOUNT**, tap **My Innova.com Account**.
  - The “Innova Account” page displays.
  - The **LOGGED IN AS** field shows the email address for the account under which you are logged in.
2. To log out of the QUICKLINK™ system, tap **Logout**.
  - The “Innova Account” page displays.



## Configuring Connection Options

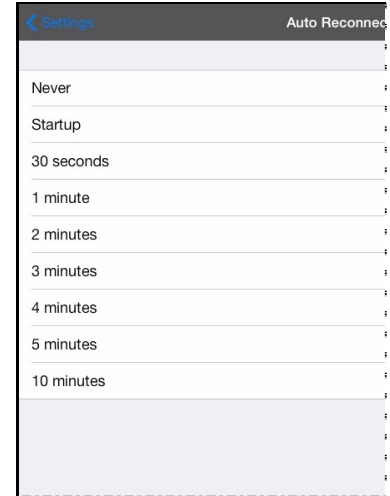
When you scroll through various function available through the QUICKLINK™ App, the App may lose connection with the QUICKLINK™ device. The **CONNECTION** options let you set the frequency with which the QUICKLINK™ App automatically reestablishes communication with the QUICKLINK™ Device.

1. On the “Settings” page under **CONNECTION**, tap **Auto reconnect**.

- The “Auto Reconnect” page displays.
- Available intervals for the auto reconnect function are listed in the left column. The currently selected interval is indicated by a checkmark ✓ in the right column.

2. Tap the desired option. Once selected, the QUICKLINK™ App will automatically attempt to reconnect to the QUICKLINK™ Device according to the selected interval.

- If **Never** is selected, you will need to *manually* connect to the QUICKLINK™ Device using the **CONNECT QUICKLINK DEVICE** option from the “Menu” page (see **INSTALLING AND PAIRING THE QUICKLINK™ DEVICE** on page 43 for details).



3. Tap **Settings** to return to the “Settings” page.

## Configuring Setup Options

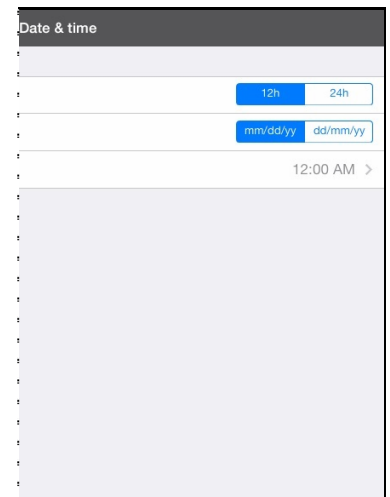
The **SETUP** options let you select the *default* values used by QUICKLINK™ for **Date & time**, **Currency** and **Units** of measurement.

### Setting Date & Time Options

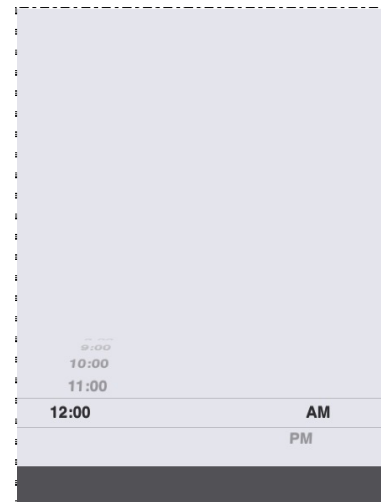
You can set the format for time and date displays throughout QUICKLINK™, and specify the hour used to trigger the start of the day.

1. On the “Settings” page under **SETUP** tap **Date & time**.

- The “Date & time” page displays.
- The left column shows a list of date and time parameters. The right column shows the available values for **Time format** and **Date format**, with the currently selected value highlighted in **blue**, and the currently specified **Start of day**, based on the current **Time format** selection.



2. To set **Time format** and **Date format**, tap the desired value.
3. To set the “start of day” time:
  - Tap **Start of day**; the “Start of Day” page displays. The page shows the currently specified “start of day” time based on the current **Time format** selection.
  - For **Time format = 12h**, swipe up or down to scroll the “hours” list. Tap the desired hour (from **1:00** to **12:00**) and **AM** or **PM**, as appropriate.
  - For **Time format = 24h**, swipe up or down to scroll the “hours” list. Tap the desired hour (from **1:00** to **24:00**).



4. When the desired “start of day” has been set, tap **Date & time** to return to the “Date & time” page then tap **Settings** to return to the “Settings” page.

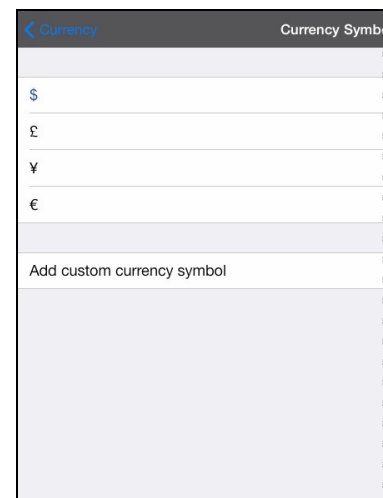
### Setting Currency Options

You can set the currency symbol used in QUICKLINK when displaying repair and maintenance cost estimates. You can select a preset currency symbol or specify a “custom” currency symbol.



*When a preset currency symbol is selected, cost estimates are displayed using the selected currency. When a “custom” currency symbol is used and the symbol is recognized by the QUICKLINK™ App, cost estimates are displayed using the selected currency. If the “custom” symbol is not recognized by the QUICKLINK™ App, the “custom” symbol is displayed, but cost estimates are shown in U.S. dollars.*

1. On the “Settings” page under **SETUP**, tap **Currency**.
  - The “Currency” page displays.
  - The **Currency symbol** field shows the currently selected currency symbol.
2. Tap the **Currency symbol** field.
  - The “Currency Symbol” page displays.
  - The left column shows a list of *default* currency symbols. The currently selected currency symbol is indicated by a checkmark ✓ in the right column.
3. To select a *default* currency symbol, tap the desired symbol.

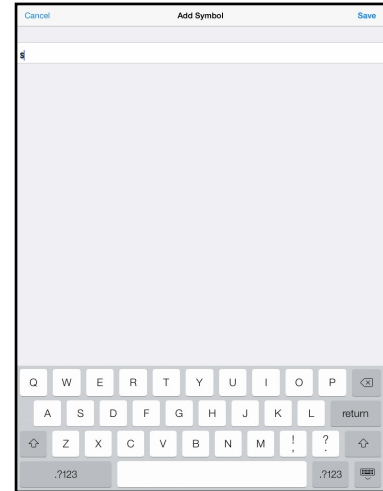


### 4. To specify a *custom* currency symbol:

- Tap **Add custom currency symbol**; the “Add Symbol” page displays with the currently selected currency symbol shown in the data entry field.
- Use the keyboard to enter the desired currency symbol.
- When the desired custom currency symbol has been entered, tap **Save** to save your changes and return to the “Currency Symbol” page. The custom currency symbol is selected automatically.



*If you **do not** want to add the custom currency symbol, tap **Cancel** to return to the “Currency Symbol” page **without** saving the custom currency symbol.*



5. When the desired currency symbol has been selected, tap **Currency** to return to the “Currency” page then tap **Settings** to return to the “Settings” page.

## Setting Units of Measurement Options

You can set the units of measurement used on QUICKLINK displays to U.S. values, metric values, or a combination of the two.

1. On the “Settings” page under **SETUP**, tap **Units**.

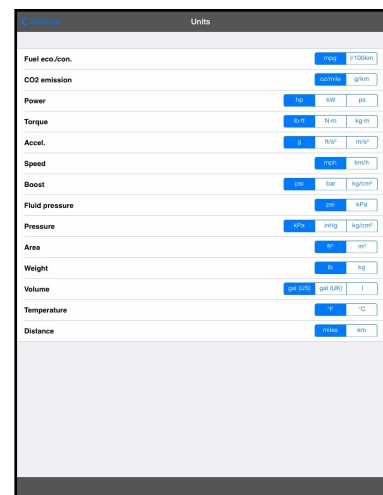
- The “Units” page displays.
- The left column shows a list of values used by various QUICKLINK™ displays. The right column shows the available units of measurement for each value. The currently selected units of measurement are highlighted in **blue**.

2. Tap the desired units value for each listed parameter.

- You can select all U.S./standard units, all metric/European units, or a *combination* of both.

3. When units have been selected for all values as desired, tap **Settings** to return to the settings page.

- Displays throughout the QUICKLINK™ App will display values in the units selected.





### Configuring Parameters

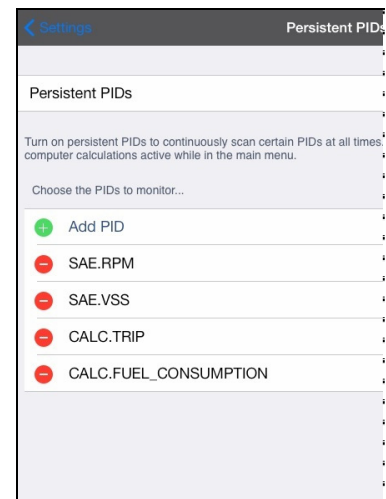
The **PARAMETERS** options let you enable or disable “persistent PIDs,” and select the specific PIDs to monitor. The QUICKLINK™ App is configured with a *default* selection of persistent PIDs.




*When **Persistent PIDs** are enabled, the QUICKLINK™ system will monitor the specified PIDs continuously. This function is useful, for example, to keep the Command Center calculations active while viewing other pages in the QUICKLINK™ App.*

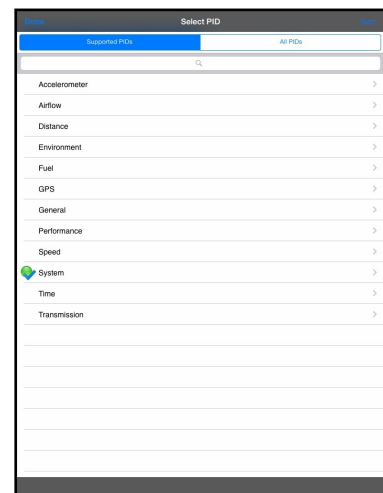
### Enabling and Disabling Persistent PIDs

1. On the “Settings” page under **PARAMETERS**, tap **Persistent PIDs**.
  - The “Persistent PIDs” page displays.
  - The **Choose the PIDs to monitor** list shows the currently selected persistent PIDs.
2. Use the **Persistent PIDs** slider to *enable* or *disable* persistent PIDs.
  - Set the slider to the “ON” position  to *enable* persistent PIDs.
  - Set the slider to the “OFF” position  to *disable* persistent PIDs.
3. Tap **Settings** to return to the “Settings” page.






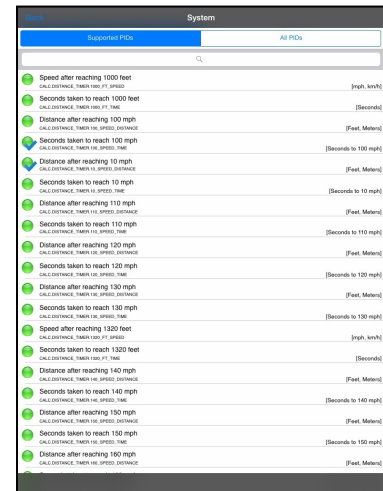
### Adding a Persistent PID

1. On the “Settings” page under **PARAMETERS**, tap **Persistent PIDs**.
  - The “Persistent PIDs” page displays.
2. Tap **Add PID**.
  - The “Select PID” page displays.
  - The “Select PID” page shows separate tabs for **Supported PIDs** and **All PIDs**. Each tab shows a list of systems for which PIDs are available. A  icon next to a system name indicates that *one or more* PIDs for the system are currently selected as persistent PIDs.




3. Tap the **Supported PIDs** and **All PIDs** tab, as desired, to display the available systems list then tap a system name to select a persistent PID for the system.



- The “System” page displays for the selected system.
- The “System” page shows separate tabs for **Supported PIDs** and **All PIDs**. Each tab shows a list of available PIDs. A  icon next to a PID name indicates the associated PID *is supported*. A  icon next to a PID name indicates the associated PID *is not supported*. A  icon next to a PID name indicates the PID is currently selected as a persistent PID.



4. Swipe up or down to view the entire PID list.

- If desired, you can search for a PID name in *all systems*. Tap the  icon in the search field, then use the keyboard to enter the PID name. A PID list displays and refreshes as you enter characters to locate PIDs that match your search criteria.

5. Tap the PID you wish to select as a persistent PID.

- A  icon displays next to the PID name to indicate it has been selected as a persistent PID. If you *do not* wish to select the PID as a persistent PID, tap it again. The  icon is removed.

6. Repeat steps 4 and 5 to select *additional* PIDs from the current PID list.

7. When all desired PIDs have been selected from the current list, tap **Back** to return to the “Select PID” page.


8. Repeat steps 3 through 7 to select PIDs for *additional* systems.

9. When all desired persistent PIDs have been selected, tap **Done** on the “Select PID” page to return to the “Persistent PIDs” page, then tap **Settings** to return to the “Settings” page.

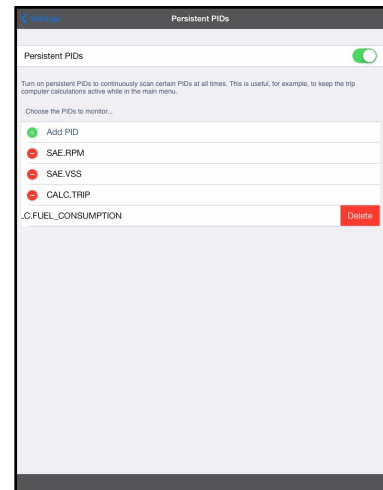
## Removing a Persistent PID

1. On the “Settings” page under **PARAMETERS**, tap **Persistent PIDs**.


- The “Persistent PIDs” page displays.
- The **Choose the PIDs to monitor** list shows the currently selected persistent PIDs.

2. In the **Choose the PIDs to monitor** list, tap the  icon for the PID you wish to remove.

- A  button displays for the selected PID.



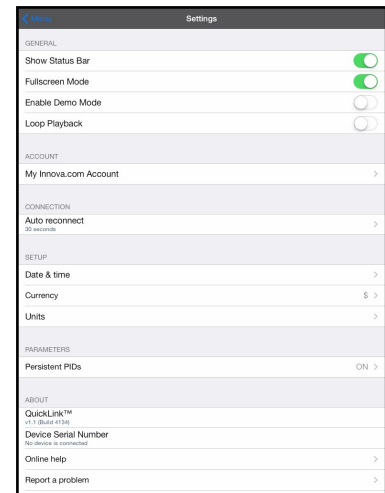


3. Tap the  button to remove the selected PID from the list.
  - If you *do not* wish to remove the selected PID, tap anywhere on the page to cancel the request and retain the selected PID in the list.
4. Repeat steps 2 and 3 to remove *additional* PIDs from the list.
5. When all desired PIDs have been removed from the **Choose the PIDs to monitor** list, tap **Settings** to return to the “Settings” page.

## Using About Options

The **ABOUT** options provide reference information about the QUICKLINK™ system:

- **QuickLink™** – shows the version and build numbers for the QUICKLINK™ App. *This field is a “read only” field.*
- **Device Serial Number** – shows the serial number for the QUICKLINK™ device. *This field is a “read only” field.*
- **Online help** – tap to open the online help file for the QUICKLINK™ system.
- **Report a problem** – tap to access the Innova “Support” form to report a problem or submit a question to Innova Technical Support. **See Reporting a Problem on page 60 for details.**
- **Terms of use/privacy policy** – tap to view the Innova “Terms and Conditions” and “End User License Agreement (EULA)” pages.

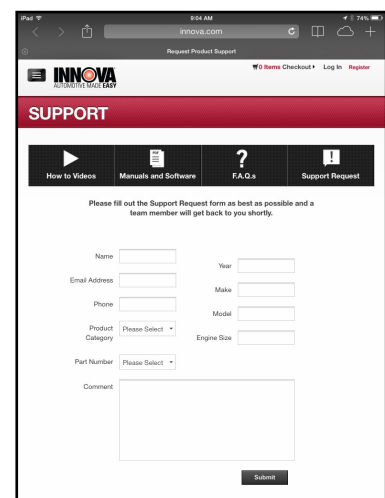


## CONTACTING TECHNICAL SERVICES

### Reporting a Problem

If you have a problem using the QUICKLINK™ system, you can submit a report to Innova Technical Services using the “Support” form.

1. On the “Settings” page under **ABOUT**, tap **Report a problem**.
  - QUICKLINK™ launches the default browser for your device and opens the Innova Technical Services “Support” form.



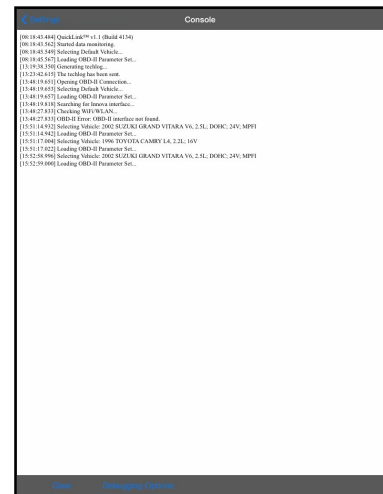
2. Enter your contact information in the **Name**, **Email Address** and **Phone** fields.
3. Select **OBD2 Diagnostic Tools** from the **Product Category** menu.
4. Select **3211 - QUICKLINK™** from the **Part Number** menu.
5. Enter reference information for the vehicle on which you were using the QUICKLINK™ system when the problem occurred in the **Year**, **Make**, **Model** and **Engine Size** fields.
6. Enter a description of the problem in the **Comment** field.
7. When all necessary information has been entered, tap **Submit** to send your problem report.

## Using Console Options

The **CONSOLE** maintains a log of actions performed by the QUICKLINK™ system. This log is intended primarily for use by Innova Technical Services when resolving problem reports.

### Viewing the Console Log File

1. On the “Settings” page under **CONSOLE**, tap **Console**.
  - The “Console” page displays.
  - The page shows a listing of actions performed by the QUICKLINK™ system, and the time at which each action occurred.
2. Swipe up or down to view the entire log file.
3. When you have finished viewing the log file, tap **Settings** to return to the “Settings” page.



### Clearing the Console Log File



*The console log file contains valuable reference information intended for use by Innova Technical Services in the event there is a problem with your QUICKLINK™ system. It is recommended that you **do not** clear the console log file unless directed to do so by a Technical Services representative.*

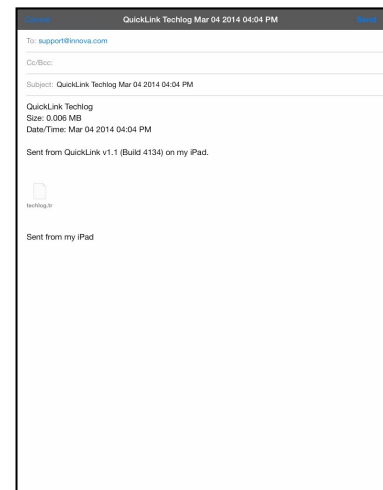
1. On the “Settings” page under **CONSOLE**, tap **Console**.
  - The “Console” page displays.
  - The page shows a listing of actions performed by the QUICKLINK™ system, and the time at which each action occurred.

2. Tap **Clear** to clear the log file.
  - The “Console” page refreshes with the contents of the log file cleared from memory.
3. Tap **Settings** to return to the “Settings” page. The log file will begin to record actions the next time you use QUICKLINK™.

### Emailing the Console Log File


In some cases, a Technical Services representative may request that you email the console log file to aid in diagnosing a problem you reported.

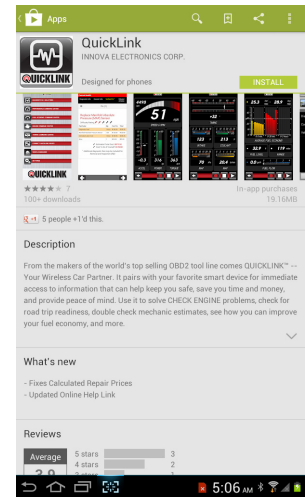
1. On the “Settings” page under **CONSOLE**, tap **Console**.
  - The “Console” page displays.
  - The page shows a listing of actions performed by the QUICKLINK™ system, and the time at which each action occurred.
2. Tap Debugging Options.
  - The “Debugging Options” menu displays.
3. Tap Email Techlog.
  - The “Email Techlog” page displays.
  - The **To** field is pre-filled with the email address for Innova Technical Services.
4. If you wish to send a copy of the email to yourself or another party, tap the **Cc/Bcc** field and enter the desired **Cc** and **Bcc** email addresses.
5. If you wish to include a message to Technical Services with the email, tap the email body and enter the desired message.
6. When all desired information has been entered, tap **Send** to send the email.
  - A confirmation message displays indicating the email has been sent, and the display returns to the “Console” page.
7. Tap **Settings** to return to the “settings” page.



### DOWNLOADING THE QUICKLINK™ APP

The QUICKLINK™ App is available for free download from the Play Store. You **MUST** have a Google+ account to download the QUICKLINK™ App from the Play Store.

1. Tap the **Play Store** icon to access the Play Store.
2. Enter “INNOVA QUICKLINK” in the search box, then tap the  icon to locate the QUICKLINK™ App.
3. Tap the **FREE** button.
  - The QUICKLINK™ “Description” page displays.
4. Tap the **INSTALL** button to install the QUICKLINK™ App on your phone or tablet.
  - An App Permissions “popup” displays.
5. Tap **Accept** to continue with the installation.
  - When the installation is complete, the **OPEN** button displays.
6. Tap the **OPEN** button to launch the QUICKLINK™ App (see **LAUNCHING THE QUICKLINK™ APP** on page 63 for details).
  - If you do not wish to launch the QUICKLINK™ App at this time, exit the App Store. You can launch QUICKLINK™ at any time by tapping the QUICKLINK™ icon or your phone or tablet.



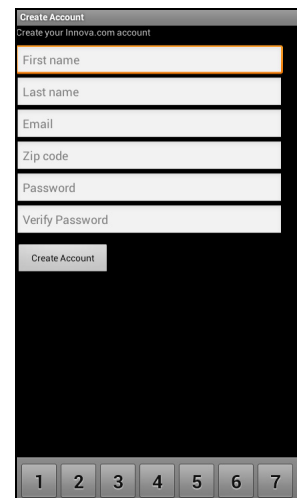
When you open the QUICKLINK™ App, the “Innova Account” page displays. You **MUST** have an account on Innova.com to use the QUICKLINK™ system to obtain diagnostic information for your vehicle.

### LAUNCHING THE QUICKLINK™ APP

- If you already have an account on Innova.com, tap **Login** to log into QUICKLINK™ (see **Logging In** on page 64 for details).
- If you don't have an account on Innova.com, tap **Create account** to create a free account (see **Creating an Account** on page 64 for details).

## Creating an Account

1. From the Innova Account page, tap **Create account**.
  - The “Create Account” page displays.
2. Enter your name in the **First name** and **Last name** fields.
3. Enter your email address in the **Email** field.
4. Enter your home Zip Code in the **Zip** field. *This information is optional.*
5. Enter a password for your account in the **Password** and **Verify Password** fields.
  - Enter the password in *exactly* the same way in both the **Password** and **Verify Password** fields.
6. When all required information has been entered, tap **Create Account**.



*If you omit a required field or do not enter your password the same way in both the **Password** and **Verify Password** fields, an “Error” message displays. Tap **OK** to close the message and return to the “Create Account” page. Enter the required information then resubmit the form.*

- The Terms and Conditions popup displays.
7. Review the Terms and Conditions then tap **Next** to continue.
    - The End User License Agreement (EULA) popup displays.
  8. Review the End User License Agreement then tap **Yes**.
    - The QUICKLINK “Menu” page displays.

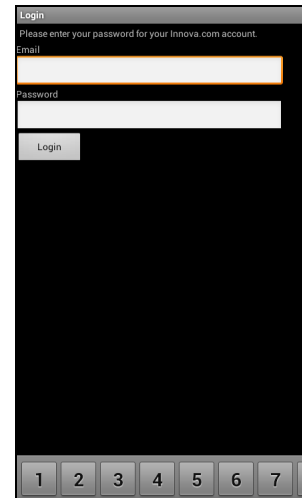
## Confirming Your Account

When you register you Innova.com account, the system auto-generates an email to the email address you provided during registration. **BE SURE** to confirm your account using the instructions provided in the confirmation email *before* using the QUICKLINK™ system.

## Logging In

Following your account registration, and each time you launch the QUICKLINK™ App, the QUICKLINK™ “Welcome” page displays. You must log into your Innova.com account before you can use the QUICKLINK™ system.

1. From the “Welcome” page, tap **Login**.
  - The “Login” page displays.
2. Use the keyboard to enter your **Email** address and **Password**, then tap **Login** to submit your login request.
3. If your login is *unsuccessful*:
  - A “Login failed” message displays.
  - Tap **OK** to close the message and return to the “Login” page.
  - Re-enter your **Email** address and **Password**, then tap **Login** to resubmit your login request.



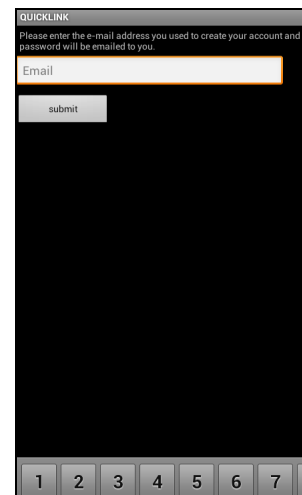
*If you forget your password, you can use the **Forgot password** feature to obtain a new password.*

4. If your login is *successful*:
  - The QUICKLINK™ “Menu” page displays (see **USING THE “MENU” PAGE** on page 66 for details).

## Forgot Your Password?

If you forget your password, you can use the **Forgot password** feature to obtain a new password.

1. On the “Welcome” screen, tap **Forgot password**.
  - The “Forgot Password” page displays.
2. Enter the email address you used when creating your Innova.com account in the **email** text box, then tap **Submit**.
  - An “Email Sent” message displays.
3. Tap **OK** to close the message then tap **Innova Account** to return to the “Welcome” page.
4. Follow the instructions in the email message to reset the password for your account.



### USING THE “MENU” PAGE

When you log into QUICKLINK™ (see **Logging In** on page 64 for details), the “Menu” page displays. The “Menu” page gives you access to all the features and functions available through the QUICKLINK™ App. The following options are available from the “Menu” page:

- **DIAGNOSTICS / SOLUTIONS** - lets you generate a diagnostic report for your vehicle (see **Generating Diagnostic Reports** on page 77 for details)
- **COMMAND CENTERS** - let you view “real time” Live Data for your vehicle (see **Working with Command Centers** on page 82 for details). The following options are available:
  - **PERFORMANCE COMMAND CENTER** - monitors eleven preset parameters related to overall vehicle performance.
  - **FUEL ECONOMY COMMAND CENTER** - monitors four preset parameters related to fuel usage and economy.
  - **ENGINE COMMAND CENTER** - monitors thirteen preset parameters related to engine operation.
  - **TOWING COMMAND CENTER** - monitors fifteen preset parameters related to vehicle performance when towing.
- **CONNECT QUICKLINK DEVICE** - connects the QUICKLINK™ App to the QUICKLINK™ Device (see **INSTALLING AND PAIRING THE QUICKLINK™ DEVICE** on page 77 for details).
- **VEHICLE MANAGER** - lets you manage vehicles associated with the QUICKLINK™ App (see **Managing Vehicles** on page 67 for details).
- **SETTINGS** - lets you configure the QUICKLINK™ App to suit your personal preferences, view reference information, access online help and report problems to Innova Technical Services (see **ADJUSTMENTS AND SETTINGS** on page 88 for details).





The Vehicle Manager lets you add *one or more* vehicles to the QUICKLINK™ App, edit vehicle information and settings, and retrieve and view previously generated diagnostic reports and Command Center recordings. To access the Vehicle Manager, tap **VEHICLE MANAGER** from the QUICKLINK™ “Menu” page (see **USING THE “MENU” PAGE** on page 66 for details).

## SETTING UP YOUR VEHICLE

Before you use the QUICKLINK™ system with your vehicle, you must enter the vehicle in the Vehicle Manager.

### Entering the Vehicle Identification Number (VIN)

The first time you access the Vehicle Manager, the “Enter VIN” page displays. The page includes an illustration of typical locations for your vehicle’s Vehicle Identification Number (VIN).



*You can also find your vehicle’s VIN on the Vehicle Registration or “pink” slip.*

Use the keyboard to enter your vehicle’s VIN in the **ENTER VIN** field, then tap **Save** to save the vehicle to the QUICKLINK™ App. (If you do not wish to save the vehicle to QUICKLINK™, tap **Cancel** to return to the previous page.)

When you add a vehicle to the QUICKLINK™ App, the system decodes the VIN to enter general information about the vehicle (year, make, model, engine size, etc.). When the process is complete, the “Vehicles” page displays to show the added vehicle.

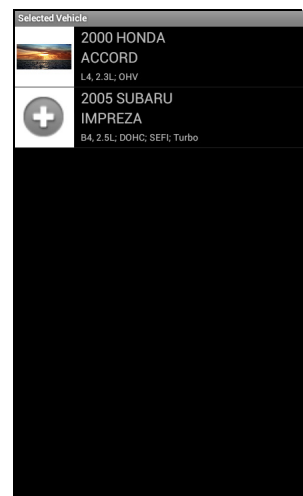


## USING THE “VEHICLES” PAGE

The “Vehicles” page shows all vehicles that have been added to the QUICKLINK™ system, and includes a brief description of each vehicle. Once you have added the first vehicle to QUICKLINK™, the “Vehicles” page displays each time you choose **VEHICLE MANAGER** from the QUICKLINK™ “Menu” page.



*To enter additional vehicles into QUICKLINK™, tap **Add Vehicle** to display the “Enter VIN” page.*






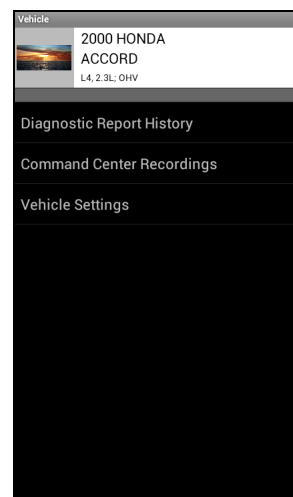
From the “Vehicles” page you can choose to:

- Select a vehicle for diagnostics or monitoring through the Command Centers (see **Selecting a Vehicle** on page 68 for details)
- Add a photo for a vehicle (see **Adding a Vehicle Photo** on page 68 for details)
- View Diagnostic Report History (see **Viewing Diagnostic Report History** on page 69 for details)
- View Command Center Recordings (see **Working with Command Center Recordings** on page 69 for details)
- 5. View and edit Vehicle Settings (see **MANAGING VEHICLE SETTINGS** on page 71 for details)
  - Validate Parameter Identification Data (PIDs) supported by a vehicle (see **VALIDATING SUPPORTED PIDS** on page 76 for details)
  - Delete a vehicle (see **DELETING A VEHICLE** on page 76 for details)

## Selecting a Vehicle

Before performing diagnostics or monitoring vehicle operation through the Command Centers, you must select the desired vehicle.

- On the “Vehicles” page, tap the desired vehicle.
  - The  icon in the left column is highlighted to indicate the vehicle has been selected.



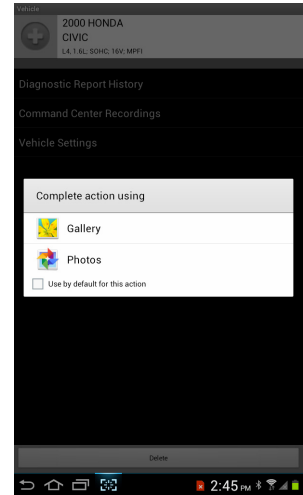
## Accessing the Vehicle Information Page

- Tap the vehicle description for the vehicle for which you wish to view vehicle information.
  - The “Vehicle” page for the selected vehicle displays.

## Adding a Vehicle Photo

The vehicle description includes a ‘placeholder’ (labeled **No Photo**) for a vehicle photograph. You can add a vehicle photo from your photo library or use the camera in your tablet or phone to add a photo. You can also replace an *existing* photo for a vehicle.

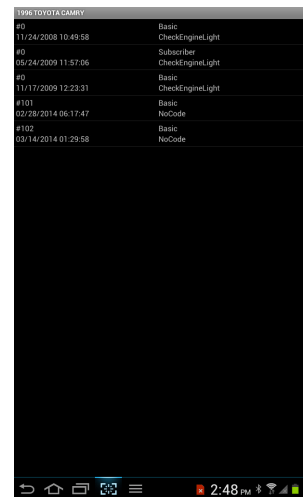
1. On the “Vehicle” page for the desired vehicle, tap the **+** button or the existing photo for the vehicle, as applicable.
  - The “Select Vehicle Photo” dialog displays.
2. Tap the location in which the desired photo is saved.
  - A “popup” menu shows all the photos available on your tablet or phone.
3. Locate and tap the photo you wish to use.
  - The “popup” menu closes, and the selected photo is added to the vehicle description.



## Viewing Diagnostic Report History

QUICKLINK™ retains a copy of all diagnostic reports you have generated for each vehicle saved in the system. You can recall and view a diagnostic report at any time.

1. On the “Vehicles” page, tap the vehicle description for the vehicle for which you wish to view Diagnostic Reports.
  - The “Vehicle” page for the selected vehicle displays.
2. Tap **Diagnostic Report History**.
  - The “Diagnostic Report History” page for the selected vehicle displays. The page shows a list of all Diagnostic Reports generated for the vehicle.
  - Each line in the list shows the date and time at which the report was created, and includes a brief summary of the report.
3. Tap the report you wish to view.
  - The “Free Report” page for the selected report displays (see [Viewing Diagnostics and Solutions](#) on page 79 for details).



## Working with Command Center Recordings

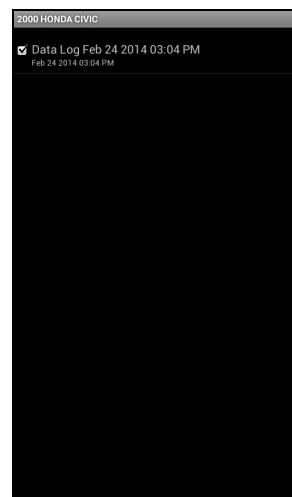
QUICKLINK™ retains a copy of all Command Center recordings you have generated for each vehicle saved in the system. You can recall and view a Command Center recording at any time. You can also edit the name for a recording, email a recording to yourself or another person, and delete a recording.

1. On the “Vehicles” page, tap the vehicle description for the vehicle for which you wish to view Command Center recordings.




- The “Vehicle” page for the selected vehicle displays.

2. Tap **Command Center Recordings**.

- The “Command Center Recordings” page for the selected vehicle displays. The page shows a list of all Command Center Recordings made for the selected vehicle.
- The left column shows the name of each recording stored in QUICKLINK™, and the date and time at which the recording was made.
- The right column shows the size of the recording.

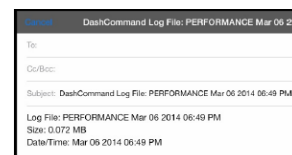


3. To select a Command Center recording for viewing:

- Tap the recording you wish to view, then tap **Load**.
  - The selected recording is loaded into the Command Center from which it was recorded.
- Tap  to return to the “Vehicle” page. Tap  to return to the “Vehicles” page. Tap  to return to the QUICKLINK™ “Menu” page.
- Select the Command Center from which the recording was made to play back the recording (see **Data Playback on page 87** for details).

4. To email a Command Center recording:

- Tap the recording you wish to email, then tap **Send**.
  - The “Email Logfile” page displays.
- Enter the email address to which you wish to send the recording in the **To** field.
- If you wish to send a copy of the email to other parties, tap the **Cc/Bcc** field and enter the desired **Cc** and **Bcc** email addresses.
- If you wish to include a message with the email, tap the email body and enter the desired message.
- When all desired information has been entered, tap **Send** to send the email.
  - A confirmation message displays indicating the email has been sent, and the display returns to the “Command Center Recordings” page.



- To delete a Command Center recording:
  - Tap the recording you wish to edit, then tap **Delete**
    - The “Confirm Delete” dialog displays.
  - Tap **Delete** to confirm the deletion. The dialog closes and the “Command Center Recordings” page refreshes with the selected file deleted from the list.
    - If you *do not* wish to delete the recording, tap **Cancel** to close the dialog and return to the “Command Center Recordings” page with the selected file retained in the list.
- When you have finished viewing and editing all desired recordings, tap **Vehicle** to return to the “Vehicle” page for the currently selected vehicle.

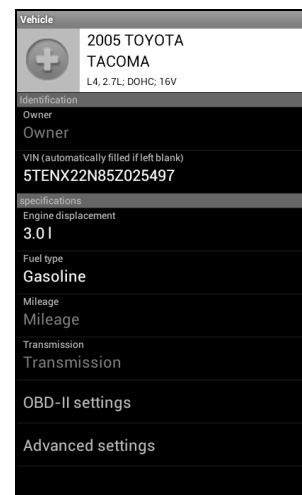
## MANAGING VEHICLE SETTINGS

The “Vehicle Settings” page lets you view and edit vehicle identification, specifications, OBD-II settings and advanced settings for a vehicle. You can also validate the Parameter Identification Data (PIDs) supported by a vehicle, or delete a vehicle from QUICKLINK™.

### Editing the Vehicle Description

When you add a vehicle to the QUICKLINK™ system, QUICKLINK™ decodes the Vehicle Identification Number (VIN) to generate the vehicle description shown in the **Vehicle Manager**. If necessary, you can edit the vehicle description.

- On the “Vehicle Settings” page, tap the vehicle description.
  - The vehicle “Description” page displays.
- To edit the vehicle make, year or model:
  - Tap the parameter you wish to edit to display the “Values” page for the selected parameter.
    - The left column shows a list of available values for the selected parameter. The currently selected value is indicated by a checkmark ✓ in the right column.
  - Tap the desired value, to select it, then tap **Save** to save your changes and return to the “Description” page.
- To edit the vehicle engine description:
  - Tap the engine description parameter to display the “Values” page.

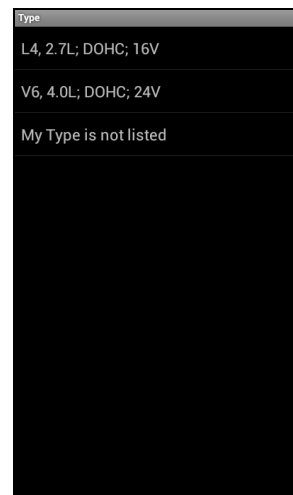


- The **Predefined** field shows a list of available values in the left column. The currently selected value is indicated by a checkmark ✓ in the right column.



*If the correct value for your vehicle is not listed in the **Predefined** field, you can manually enter the desired value.*

- To select a **Predefined** value:
  - Tap the desired value, to select it, then tap **Save** to save your changes and return to the “Description” page.
- To manually enter a value:
  - Tap the **Other** field. Enter the desired value, then tap **Save** to save your changes and return to the “Description” page.



4. When all desired vehicle description parameters have been edited, tap **Save** on the vehicle “Description” page to save your changes and return to the “Vehicle Settings” page.

## Viewing and Editing General Vehicle Settings

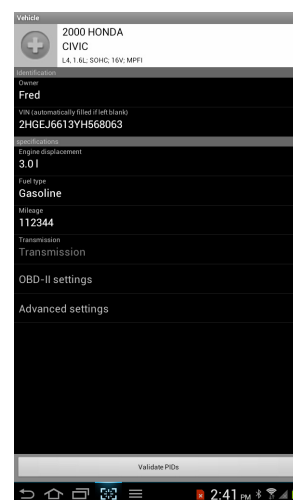


*Unless otherwise stated, all vehicle settings are edited in a similar manner. Tap the setting you wish to edit, enter and/or select the appropriate values for the setting then tap **Save** to save your changes and return to the “Vehicle Settings” page.*

The following settings (except **Owner**) are initially entered by QUICKLINK™ when the VIN for the vehicle is decoded. These settings may be edited from the “Vehicle Settings” page:

### ■ IDENTIFICATION

- **Owner:** Enter the name of the owner of the vehicle as desired.
- **VIN:** This field is automatically filled by QUICKLINK™ when a vehicle is added to the system. If you make an error when initially entering the VIN, selecting this option will display the “Enter VIN” page so that you may re-enter the VIN for the vehicle.



### ■ Specifications

- **Engine displacement:** Engine displacement is used when calculating fuel consumption parameters. This information can usually be found in the vehicle Owner’s Manual. Enter the desired value in the text field then tap the unit of measurement field and

select the appropriate unit of measurement from the “popup” menu; cubic inches (**in<sup>3</sup>**), cubic centimeters (**cc**), liters (**l**) or milliliters (**ml**). The currently selected unit of measurement is highlighted in **blue**.

- **Fuel type:** Select the type of fuel used by the vehicle; **Gasoline**, **Diesel**, **E85** or **E100**. The currently selected fuel type is indicated by a checkmark ✓ in the right column.
- **Reported mileage:** Enter the mileage shown on the vehicle’s odometer. It is recommended that this information be updated *prior to* generating each diagnostic report for the vehicle.

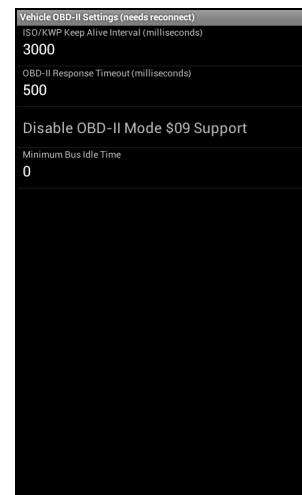
## Viewing and Editing OBD-II Settings

OBD-II settings are initially entered by QUICKLINK™. These settings may be viewed and edited from the “Vehicle Obdii Settings” page. On the “Vehicle Settings” page, tap **OBD-II Settings** to display the “Vehicle Obdii Settings” page.



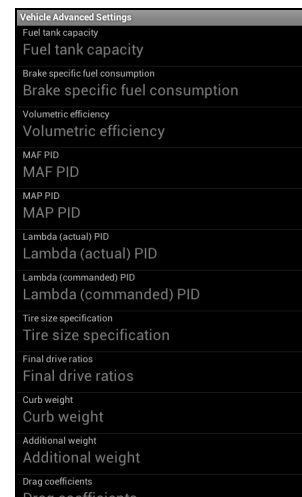
*The default OBD-II settings are established to ensure optimum performance of the QUICKLINK™ system. Changes to these settings can adversely affect data logging performance. **DO NOT** edit these values unless directed to do so by Innova Technical Services. When changes are made to OBD-II settings, the QUICKLINK™ device must be disconnected and reconnected to the QUICKLINK™ App for the changes to take effect (see **Connecting the App to the Device** on page 44 for details).*


When all desired changes have been made, tap **Vehicle Settings** to return to the “Vehicle Settings” page.



## Viewing and Editing Advanced Settings

Advanced settings may be viewed and edited from the “Vehicle Advanced Settings” page. On the “Vehicle Settings” page, tap **Advanced Settings** to display the “Vehicle Advanced Settings” page. Some settings may be entered once (such as **Fuel tank capacity** and **Curb weight**) while other may require periodic adjustment based on specific vehicle operating conditions (such as **Additional weight** or **Fuel type** for “flex fuel” vehicles). The following settings may be edited from the “Vehicle Advanced Settings” page:



- **Fuel tank capacity:** Fuel tank capacity is used when calculating fuel level, distance to empty and time to empty values. This information can usually be found in the vehicle Owner's Manual. Enter the desired value in the **Fuel Tank Capacity** field and select the appropriate unit of measurement; U.S. gallons (**gal (US)**), U.K gallons (**gal (UK)**) or liters (**l**) from the drop-down menu. The radio button for the currently selected unit of measurement is highlighted .
- **Brake specific fuel consumption:** This value represent the required to generate one horsepower for one hour, and is used when calculating horsepower and torque indications. Enter the desired value in the **Brake Specific Fuel Consumption** field. Recommended values are:
  - **0.35** for turbo diesel engines
  - **0.45** for naturally aspirated engines
  - **0.55** for forced induction gasoline engines
- **Volumetric efficiency:** Volumetric efficiency is used in calculating fuel consumption parameters. An initial value between 60% and 85% is recommended. Enter the desired value in the **Volumetric E** field.
- **MAF PID:** The MAF PID value is used *only* when mass air flow is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **MAF PID** field.



*It is recommended this field remain empty unless you are certain of the appropriate value.*

- **MAP PID:** The MAF PID value is used *only* when manifold absolute pressure is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **MAP PID** field.



*It is recommended this field remain empty unless you are certain of the appropriate value.*

- **Lambda (actual) PID:** The Lambda (actual) PID value is used *only* when lambda value is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **Lambda (actual) PID** field.
- **Lambda (actual) PID:** The Lambda (actual) PID value is used *only* when lambda value is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **Lambda (actual) PID** field.



*It is recommended this field remain empty unless you are certain of the appropriate value.*

- **Lambda (commanded) PID:** The Lambda (actual) PID value is used *only* when lambda value is derived from a source *other than* the factory-installed sensor. Enter the desired value in the **Lambda (commanded) PID** field.



*It is recommended this field remain empty unless you are certain of the appropriate value.*



- **Tire size specification:** Tire size specification is an alternate means for determining wheel circumference. This value is used for gear calculations. Enter the desired value using width/profile/diameter(in) values (e.g. **215/45/R18**).
- **Final drive ratios:** Enter the appropriate final drive ratio for the each appropriate drive gear for the vehicle; **Axle ratio, 1st gear, 2nd gear, 3rd gear, 4th gear, 5th gear, 6th gear** or **7th gear**.
- **Curb weight:** Curb weight is used when calculating power and torque values. Enter the desired value in the **Curb Weight** field and select the appropriate unit of measurement; pounds (**lb**) or kilograms (**kg**) from the drop-down menu. The radio button for the currently selected unit of measurement is highlighted .
- **Additional weight:** Additional weight is used when calculating power and torque values. This value should be the sum of the weights of the driver, all passengers, contents of the trunk, towed vehicles, etc. Enter the desired value in the **Additional Weight** field and select the appropriate unit of measurement; pounds (**lb**) or kilograms (**kg**) from the drop-down menu. The radio button for the currently selected unit of measurement is highlighted .
- **Drag coefficient:** Drag coefficient (also know as air resistance coefficient) is used with **Frontal area** to compensate for wind resistance when calculating power and torque values. This value may be available from the vehicle manufacturer's website. Enter the desired value in the **Drag Coefficient** field.



*It is recommended this field remain empty unless you are certain of the appropriate value, or in cases where **Frontal area** has not been defined.*

- **Frontal area:** Frontal area is used in conjunction with **Drag Coefficient** to compensate for wind resistance when calculating power and torque values. Enter the desired value in the **Frontal Area** field and select the appropriate unit of measurement; square feet (**ft<sup>2</sup>**) or square meters (**m<sup>2</sup>**) from the drop-down menu. The radio button for the currently selected unit of measurement is highlighted .



*It is recommended this field remain empty unless you are certain of the appropriate value, or in cases where **Drag coefficient** has not been defined.*

- **Maximum engine speed:** Maximum engine speed (**rpm**) is used for gear calculations. Enter the engine "redline" value in the **Maximum Engine Speed** field.
- **Minimum engine speed:** Minimum engine speed (**rpm**) is used for gear calculations. Enter the minimum allowable engine speed while in gear in the **Minimum Engine Speed** field.
- **Shift point:** Shift point (**rpm**) is used for gear calculations. Enter the shift point that results in the greatest fuel economy in the **Shift Point** field.
- **Speed correction:** Speed correction is used to compensate for an inaccurate vehicle speedometer. Enter the desired value in the **Speed Correction** field.



When the When all desired changes have been made, tap **Vehicle Settings** to return to the “Vehicle Settings” page.

## VALIDATING SUPPORTED PIDS

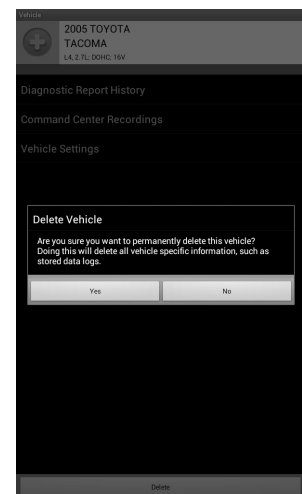
QUICKLINK™ automatically validates the Parameter Identification Data (PIDs) supported by your vehicle each time you connect the QUICKLINK™ App to the QUICKLINK™ Device (see **Connecting the App to the Device on page 78 for details**). You can also choose to validate PIDs for a vehicle “on demand” from the “Vehicle Settings” page.

1. Select the vehicle for which you wish to validate PIDs, and access the “Vehicle” information page for the vehicle (see **Selecting a Vehicle on page 68 for details**).
2. Tap **Vehicle Settings**.
  - The “Vehicle Settings” page displays.
3. Tap **Validate PIDs** to validate the PIDs supported by your vehicle.

## DELETING A VEHICLE

If you sell or discard a vehicle, you can remove it from the QUICKLINK system. When deleting a vehicle, you can choose to *retain* or *delete* all vehicle-specific data files stored for the vehicle.

1. Select the vehicle you wish to delete, and access the “Vehicle” information page for the vehicle (see **Selecting a Vehicle on page 68 for details**).
2. Tap **Vehicle Settings**.
  - The “Vehicle Settings” page displays.
3. Tap **Delete Vehicle**.
  - The “Delete Vehicle” confirmation dialog displays.
4. Tap **Yes** to continue with the deletion. (Tap **No** to *cancel* the deletion and return to the “Vehicle” page with the vehicle retained in the QUICKLINK™ system.)
  - The “Delete Vehicle Data” confirmation dialog displays.
5. Tap **Yes** to *delete* the vehicle *and delete* all vehicle-specific data from the QUICKLINK™ system. (Tap **No** to *delete* the vehicle *and retain* all vehicle-specific data in the QUICKLINK™ system. Tap **Cancel** to cancel the deletion and return to the “Vehicle” page with the vehicle retained in the QUICKLINK™ system.)



## INSTALLING AND PAIRING THE QUICKLINK™ DEVICE

### Installing the QUICKLINK™ Device


1. Turn the vehicle's ignition on **DO NOT** start the engine.
2. Locate the vehicle's 16-pin Data Link Connector (DLC). See **Data Link Connector (DLC) Location** on page 1 for typical connector locations.

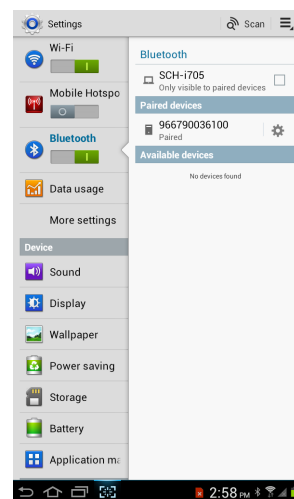


*Some DLCs have a plastic cover that must be removed before connecting the QUICKLINK™ Device.*

3. Connect the QUICKLINK™ Device to the vehicle's DLC. The cable device is keyed and will only fit one way.
  - If you have problems connecting the cable connector to the DLC, rotate the connector 180° and try again.
4. When the QUICKLINK™ Device is properly connected to the vehicle's DLC, the device powers on and a red LED lights.
  - If the unit does not power on automatically when connected to the vehicle's DLC connector, it usually indicates there is no power present at the vehicle's DLC connector. Check your fuse panel and replace any burned-out fuses.
  - If replacing the fuse(s) does not correct the problem, consult your vehicle's repair manual to identify the proper computer (PCM) fuse/circuit, and perform any necessary repairs before proceeding.

### Pairing the QUICKLINK™ Device

1. Make sure the QUICKLINK™ Device is properly connected to your vehicle's DLC (see **Installing the QUICKLINK™ Device** on page 43 for details).
2. Sit in the driver's seat of your vehicle. Turn on your tablet or phone.
3. Tap **Settings** to display the "Settings" page, then tap **Bluetooth**.
4. Make sure that the **Bluetooth** slider is set to the "ON" .



5. When your tablet or phone recognized the QUICKLINK™ Device, **QUICKLINK** will show in the list of **DEVICES**.
  - **QUICKLINK** will display as **Not Paired**.
6. Tap **QUICKLINK** to pair the QUICKLINK™ Device with your tablet or phone.
  - When pairing is complete, **QUICKLINK** will display as **Connected**, and a green LED will light on the QUICKLINK™ Device.

## Connecting the App to the Device

1. Make sure the QUICKLINK™ Device is properly connected to your vehicle's DLC (see **Installing the QUICKLINK™ Device** on page 77 for details) and is paired with your tablet or phone (see **Pairing the QUICKLINK™ Device** on page 77 for details).
2. On the QUICKLINK™ “Menu” page, tap **CONNECT QUICKLINK DEVICE**.
  - The QUICKLINK™ App initiates an OBD-II connection with the QUICKLINK™ Device.
  - When a connection is established, App decodes the Vehicle Identification Number (VIN) for the vehicle.
  - When the VIN has been decoded, QUICKLINK™ verifies the Parameter Identification Data PIDs) supported by the vehicle.
  - When the supported PIDs have been verified, the “Vehicles” page displays.
3. Select the vehicle in which the QUICKLINK™ Device is installed (see **Selecting a Vehicle** on page 68 for details) then tap **Done** to return to the QUICKLINK™ “Menu” page.
  - If the vehicle in which the *is not* shown on the “Vehicles” page, tap **Add Vehicle** to add the vehicle to QUICKLINK (see on page for details).

## CREATING A REPORT

1. Connect the QUICKLINK App to the QUICKLINK™ Device (see **Connecting the App to the Device** on page 78 for details).
2. On the QUICKLINK™ “Menu” page, tap **DIAGNOSTICS / SOLUTIONS**.
  - QUICKLINK™ will retrieve diagnostic data from your vehicle's computer.
3. When data retrieval is complete, the QUICKLINK™ “Diagnostic Report” displays (see **Viewing Diagnostics and Solutions** on page 79 for details).

## Viewing Diagnostics and Solutions

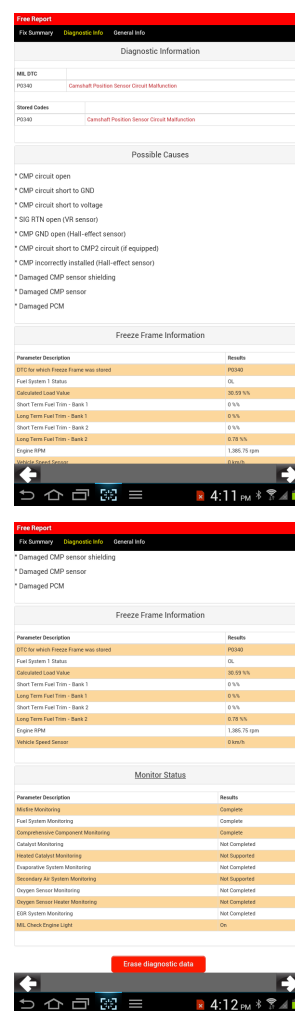
The QUICKLINK™ “Diagnostic Report” is a 4-page report that provides detailed information on the current health of your vehicle; **Diagnostic Info**, **General Info**, **Verified Fix™** and **Related Articles**.

- Tap a page name to view the associated page.
- Tap the ◀ and ▶ buttons to scroll pages of the “Diagnostic Report.”
- Tap the 🏠 button to return to the QUICKLINK™ “Menu” page.

## The Diagnostic Info Page

The “Diagnostic Info” page provides a detailed overview of the information retrieved from your vehicle’s computer. The page includes four sections:

- Tap **Diagnostic Information** to view the Diagnostic Trouble Codes (DTCs) retrieved from your vehicle’s computer. The section shows the **MIL DTC** (the DTC that cause your vehicle’s Malfunction Indicator Lamp to light) as well as all other **Stored Codes**.
- Tap **Possible Causes** to view a list of probable causes of the malfunction.
- Tap **Freeze Frame Information** to view a list of vehicle operating conditions present when the **MIL DTC** was set. Each line in the list shows a **Parameter Description** and the specific **Results** (values) for each parameter. Swipe up or down to view the entire list.
- Tap **Monitor Status** to view the current status for all Monitors supported by your vehicle, and the status of the vehicle’s Malfunction Indicator Lamp (MIL). Each line in the list shows a **Parameter Description** and the specific **Results** for each parameter: **Complete**, **Not Complete** or **Not Supported** (for Monitors); **ON** or **OFF** (for the MIL).
- You can also choose to erase diagnostic data (see **ERASING DIAGNOSTIC DATA** on page 81 for details).



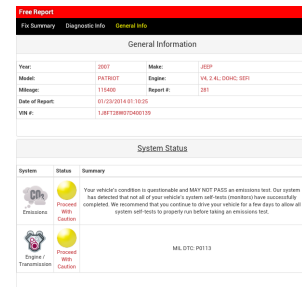
## The General Info Page

The “General Info” page shows general information about your vehicle, along with an indication of it’s overall health. The page includes two sections:

# Generating Diagnostic Reports

## CREATING A REPORT

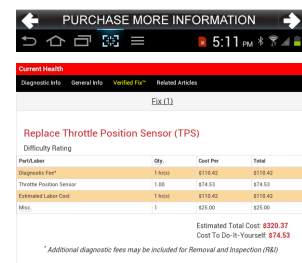
- Tap **General Information** to view general information about your vehicle, including **Year**, **Make**, **Model**, **Engine** size and **VIN #**; and the **Mileage** entered in “Vehicle Settings” (see **Viewing and Editing General Vehicle Settings** on page 72 for details) when the report was created. QUICKLINK™ logs the **Date of Report** (the date and time at which the report was created) and assigns a *unique Report #*.
- Tap **System Status** to see an overview of the general health of your vehicle. The section identifies each vehicle **System** for which status is provided, include a graphic indication of the current **Status** of the system, and a status **Summary**.



## The Verified Fix™ Page

The “Verified Fix™” page lists the most likely repair(s) needed by your vehicle based on the DTCs retrieved, and includes:

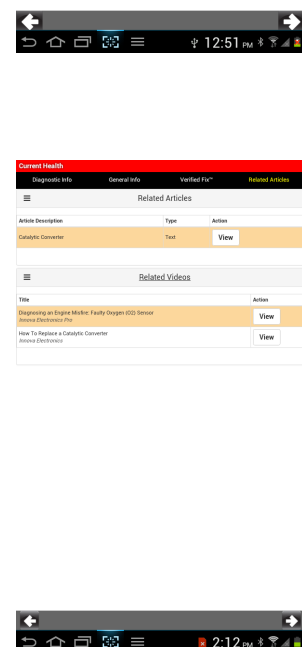
- A **Difficulty Rating** indicating the skill level needed to accomplish the repair
- A breakdown of **Part/Labor** costs
- **Estimated Total Cost** estimates for the repair(s) (based on your geographic location) when performed by a professional technician
- **Cost To Do-It-Yourself** if you choose to perform the repairs on your own



## The Related Articles Page

QUICKLINK™ provides access to a comprehensive database of maintenance and repair information. The “Related Articles” page provides access to articles and videos related to your vehicle’s current issues. The page include two sections:

- Tap **Related Articles** to view a list of articles related to your vehicle’s current issues. These may include general information about a component or system, diagnostic and troubleshooting procedures and/or repair instructions. Tap a **View** button to view the associated article.
- Tap **Related Videos** to view a list of videos related to your vehicle’s current issues. These include for a variety of tasks, including general maintenance, diagnosis and troubleshooting, and detailed repair information. Tap a **View** button to view the associated video.



## ERASING DIAGNOSTIC DATA



*When the “Erase” function is used to erase DTCs from the vehicle's on-board computer, “Freeze Frame” data is 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 data is erased, valuable information that might help the technician troubleshoot the problem will also be erased.

Erase data from the computer's memory as follows:



*When data is erased from the vehicle's computer memory, the I/M Readiness Monitor Status program resets the status of all Monitors to a “Not Completed” status. To set all of the Monitors to a “Completed” status, an OBD2 Drive Cycle must be performed. Refer to your vehicle's service manual for information on how to perform an OBD2 Drive Cycle for the vehicle under test.*

1. Perform the “Create a Report” procedure as described on [page 78](#).
  - The QUICKLINK™ “Diagnostic Report” displays.
2. Tap **Diagnostic Info** to display the “Diagnostic Info” page.
3. Tap **Erase Diagnostic Data**.
  - A confirmation dialog displays.
4. If you are sure you want to proceed, tap **Yes** to continue.
  - If you do not want to proceed, tap **No** to cancel the erase procedure.

## ABOUT THE COMMAND CENTERS

Your vehicle's on-board computer receives status information from various sensors, switches and actuators located throughout the vehicle. This information includes values (volts, rpm, temperature, speed, etc.) and system status information (open loop, closed loop, fuel system status, etc.). This real time "Live Data" from each sensor, actuator and switch, etc., is called Parameter Identification (PID) Data. Each PID has a set of operating characteristics and parameters that serve to identify it.

The Command Centers display a preset selection of PIDs that help you monitor your vehicle's operation for four specific categories: Performance, Fuel Economy, Engine and Towing. Additionally, QUICKLINK™ lets you view, record and play back Live Data for each Command Center. In effect, QUICKLINK™ lets you view, in "real time", the same signal values used by your vehicle's computer when calculating and conducting system adjustments and corrections.



*The units in which PID parameters are displayed depend on the current **Units** selections in QUICKLINK™ **SETTINGS** (see **Setting Units of Measurement Options** on page 91 for details).*



### Performance Command Center

The Performance Command Center monitors eleven preset parameters related to overall vehicle performance. Monitored parameters for the Performance Command Center are as follows:

#### SPEED & RPM

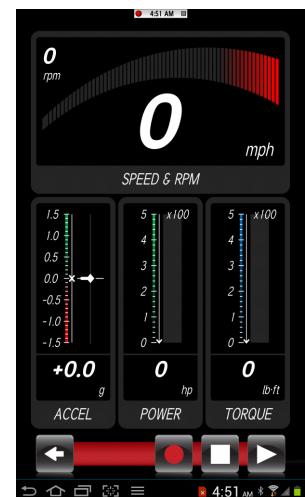
- Shows engine speed in revolutions-per-minute (**rpm** or **r/min**) and vehicle speed in miles-per-hour (**mph**) or kilometers-per-hour (**km/h**).

#### TIMING | ACCEL | BST/VAC

- **TIMING** - Shows ignition timing in degrees (°)
- **ACCEL** - Shows vehicle acceleration in g-force (**g**)
- **BST/VAC** - Shows boost/vacuum pressure in pounds-per-square-inch (**psi**), bars (**bar**) or kilogram-force-per-square-centimeter (**kg-f/cm<sup>2</sup>**)

#### POWER | INST | INTAKE

- **POWER** - Shows engine power in horsepower (**hp**), kilowatts (**kW**) or metric horsepower (**ps**)
- **INST** - Shows current fuel consumption in miles-per-gallon (**mpg**) or liter-per-100-kilometers (**l/100km**)



- **INTAKE** - Shows intake air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)

### AVG | COOLANT | TORQUE

- **AVG** - Shows average fuel consumption in miles-per-gallon (**mpg**) or liter-per-100-kilometers (**l/100km**)
- **COOLANT** - Shows engine coolant temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **TORQUE** - Shows engine torque in foot-pounds (**lb-ft**), Newton-meters (**N-m**) or kilogram meters (**kg-m**)



## Fuel Economy Command Center

The Fuel Economy Command Center monitors four preset parameters related to fuel usage and economy. Monitored parameters for the Fuel Economy Command Center are as follows:

### AVERAGE FUEL ECONOMY

- Shows current (**Inst**) and average (**Avg**) fuel economy in miles-per-gallon (**mpg**) or liter-per-100-kilometers (**l/100km**), and average fuel economy for engine operating time of **0-5 min.**, **0-30 min.** and **0-3 hours**

### FUEL LEVEL

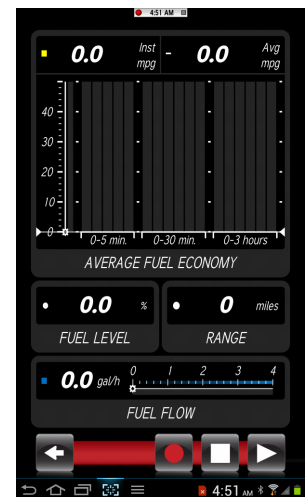
- Shows the current fuel tank level as a percentage (%) of total tank capacity

### RANGE

- Shows estimated vehicle range in **miles** or kilometers (**km**) based on **AVERAGE FUEL ECONOMY** and current **FUEL LEVEL**

### FUEL FLOW

- Shows average fuel flow in gallons-per-hour (**gal/h**) or liters-per-hour (**l/h**)



## Engine Command Center

The Engine Command Center monitors thirteen preset parameters related to engine operation. Monitored parameters for the Engine Command Center are as follows:

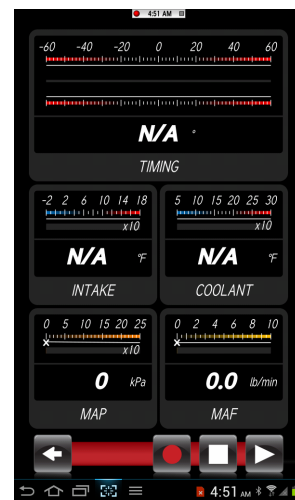


### TIMING | FUEL TRIMS

- **TIMING** - Shows ignition timing in degrees (°)
- **FUEL TRIMS** - Shows short term (**ST**) and long term (**LT**) fuel trim as a percentage (%)

### INTAKE | AMBIENT | CATALYST

- **INTAKE** - Shows intake air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **AMBIENT** - Shows ambient air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **CATALYST** - Shows catalytic converter temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)



### COOLANT | LAMBDA | AFR | O2 SENSOR

- **COOLANT** - Shows engine coolant temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **LAMBDA** - Shows the oxygen sensor **LAMBDA** calculation from **lean** to **rich**
- **AFR** - Shows the air/fuel ratio
- **O2 SENSOR** - Shows the oxygen sensor output signal level in volts (V)

### MAP | LOAD

- **MAP** - Shows manifold absolute pressure in kiloPascals (**kPa**) or inches of Mercury (**inHg**)
- **LOAD** - Shows engine load as a percentage (%) of maximum capacity

### MAF | FRP

- **MAF** - Shows mass air flow in pounds-per-minute (**lb/min.**) or grams-per-second (**g/s**)
- **FRP** - Shows fuel rail pressure in pounds-per-square-inch (**psi**) or kiloPascals (**kPa**)



## Towing Command Center

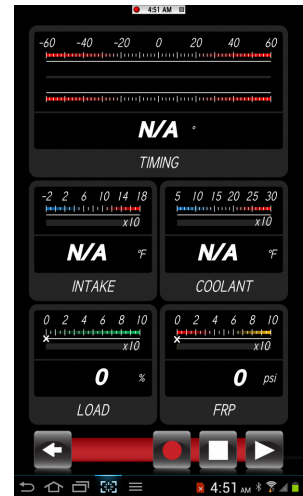
The Towing Command Center monitors fifteen preset parameters related to vehicle performance when towing. Monitored parameters for the Towing Command Center are as follows:

### TIMING | FUEL TRIMS

- **TIMING** - Shows ignition timing in degrees (°)
- **FUEL TRIMS** - Shows short term (**ST**) and long term (**LT**) fuel trim as a percentage (%)

### CATALYST / EOT / INTAKE / AMBIENT

- **CATALYST** - Shows catalytic converter temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **EOT** - Shows engine oil temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **INTAKE** - Shows intake air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **AMBIENT** - Shows ambient air temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)



### COOLANT | LAMBDA | AFR | O2 SENSOR

- **COOLANT** - Shows engine coolant temperature in degrees Fahrenheit (°F) or degrees Celcius (°C)
- **LAMBDA** - Shows the oxygen sensor **LAMBDA** calculation from **lean** to **rich**
- **AFR** - Shows the air/fuel ratio
- **O2 SENSOR** - Shows the oxygen sensor output signal level in volts (V)

### BOOST / MAP / LOAD


- **BOOST** - Shows boost pressure in pounds-per-square-inch (**psi**), bars (**bar**) or kilogram-force-per-square-centimeter (**kg-f/cm<sup>2</sup>**)
- **MAP** - Shows manifold absolute pressure in kiloPascals (**kPa**) or inches of Mercury (**inHg**)
- **LOAD** - Shows engine load as a percentage (%) of maximum capacity

### MAF / FRP

- **MAF** - Shows mass air flow in pounds-per-minute (**lb/min.**) or grams-per-second (**g/s**)
- Shows fuel rail pressure in pounds-per-square-inch (**psi**) or kiloPascals (**kPa**)

## Using the Command Centers

1. Connect the QUICKLINK™ App to the QUICKLINK™ Device (see [Connecting the App to the Device](#) on page 78 for details).


2. Start the engine.
3. From the QUICKLINK™ “Menu” page, tap the Command Center you wish to view.
  - The selected “Command Center” page displays.
4. The “Command Center” display fields continuously update to reflect changes in vehicle operating conditions.
  - Swipe left or right to view other “Command Center” pages.
  - Tap a display field to scroll the available parameters for the field.
  - Tap the  button to return to the QUICKLINK™ :Menu” page.

## DATA RECORD AND PLAYBACK


### The Command Center Toolbar




A toolbar is located at the bottom of each Command Center page. The toolbar provides the tools to record and play back Live Data (see **DATA RECORD AND PLAYBACK** on page 86 for details), and to return to the QUICKLINK™ “Menu” page.

 **BACK button** - Tap to return to the QUICKLINK™ “Menu” page.

 **STOP RECORD button** - Tap to stop a recording in progress.



 **START RECORD button** - Tap to start recording Live Data.

 **PLAYBACK button** - Tap to play back recorded Live Data.


### Recording Data

You can record and save Live Data for each QUICKLINK™ Command Center. Recorded Live Data can serve as valuable information to help you in troubleshooting and diagnosing vehicle problems. The Record Data option lets you select the precise time at which the Live Data recording will occur. This is particularly helpful when troubleshooting intermittent problems that may only manifest themselves briefly, for a few fractions of a second and/or only at certain vehicle speeds or vehicle operating conditions.

- Access the “Command Center” for which you wish to record data.
- Put the engine in the desired operating condition for which you wish to record data.

- If necessary, drive the vehicle until you reach the vehicle speed at which the problem you wish to record occurs.
- Tap the  button to begin recording data.
  - When the desired data has been recorded, tap the  button to stop recording data.

## Data Playback

Once “Command Center” data has been recorded, it is saved in memory. You can view recorded data immediately after recording by tapping the  button, or you can view it later by selecting the desired data file from memory (see [Working with Command Center Recordings](#) on page 69 for details).



The “Settings” page lets you configure the QUICKLINK™ App to suit your personal preferences, view reference information, access online help and report problems to Innova Technical Services. To display the “Settings” page, tap **SETTINGS** from the QUICKLINK™ “Menu” page (see **USING THE “MENU” PAGE** on page 30 for details).

## ADJUSTMENTS AND SETTINGS

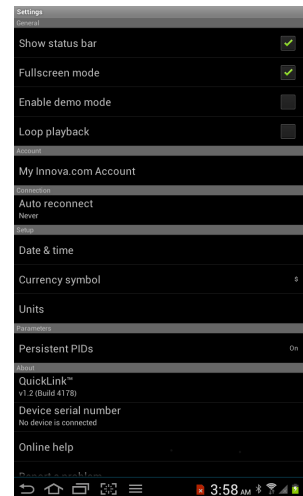
### Setting General Options

The **General** options let you configure how the QUICKLINK™ App displays on your device, enable and disable the “Demo” mode, and configure recorded data for “looped” playback. On the “Settings” page under **General**, use the checkboxes to *enable* or *disable* general options as follows:



Tap a checkbox to select or deselect. A checkmark  indicates the associated option is **enabled**. An empty checkbox  indicates the associated option is **disabled**.

- **Show status bar** – Enables and disables display of the status bar at the top of the “Menu” page.
- **Fullscreen mode** – Enables and disables the full screen display mode.
- **Enable demo mode** – Enables and disables “demo mode” for the Command Centers.
- **Loop playback** – Enables and disables “looped playback” of data recorded through the Command Centers.



### Viewing Account Options

The **Account** options show the account under which you are logged in, and let you log out of the QUICKLINK™ system.


1. On the “Settings” page under **Account**, tap **My Innova.com Account**.
  - The “Innova Account” page displays.
  - The **Logged in as** field shows the email address for the account under which you are logged in.
2. To log out of the QUICKLINK™ system, tap **Logout**.
  - The “Innova Account” page displays.



## Configuring Connection Options


When you scroll through various function available through the QUICKLINK™ App, the App may lose connection with the QUICKLINK™ device. The **Connection** options let you set the frequency with which the QUICKLINK™ App automatically reestablishes communication with the QUICKLINK™ Device.

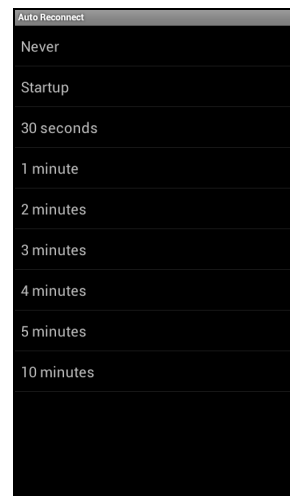
1. On the “Settings” page under **Connection**, tap **Auto reconnect**.

- The “Auto Reconnect” page displays.
- Available intervals for the auto reconnect function are listed in the left column. The radio button for the currently selected interval is highlighted .

2. Tap the desired option. Once selected, the QUICKLINK™ App will automatically attempt to reconnect to the QUICKLINK™ Device according to the selected interval.

- If **Never** is selected, you will need to *manually* connect to the QUICKLINK™ Device using the **CONNECT QUICKLINK DEVICE** option from the “Menu” page (see **INSTALLING AND PAIRING THE QUICKLINK™ DEVICE** on page 43 for details).

3. Tap  to return to the “Settings” page.



## Configuring Setup Options

The **Setup** options let you select the *default* values used by QUICKLINK™ for **Date & time**, **Currency symbol** and **Units** of measurement.

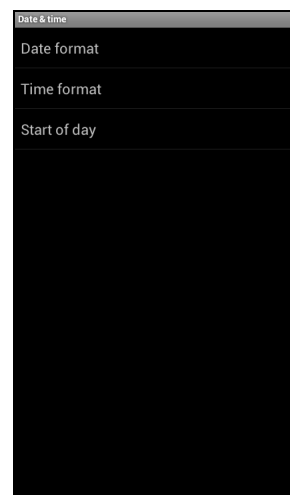
### Setting Date & Time Options



You can set the format for time and date displays throughout QUICKLINK™, and specify the hour used to trigger the start of the day.

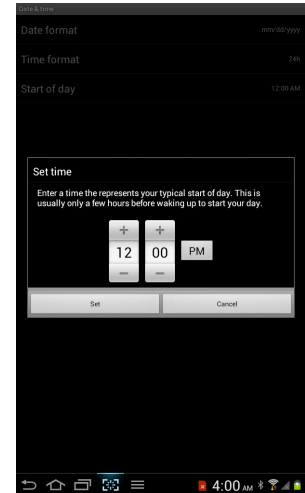
1. On the “Settings” page under **Setup** tap **Date & time**.

- The “Date & time” page displays.
- The left column shows a list of date and time parameters. The right column shows the currently selected values for each listed parameter.

2. To set Time format and Date format:



- Tap **Time format** or **Date format**, as desired.
    - A “popup” menu displays, listing the available formats. The radio button for the currently selected format is highlighted .
  - Tap the desired format.
    - The “popup” menu closes, and the selected format is shown on the “Date & time” page.
3. To set the “start of day” time:
- Tap **Start of day**; the “Start of Day” page displays. The page shows the currently specified “start of day” time.
  - Use the “hour” and “minute” menus to specify the desired “start of day” time. Tap a + button to *increase* the setting; tap a – button to *decrease* the setting.
  - Tap the **AM/PM** button to toggle the setting from **AM** to **PM**.
4. When the desired “start of day” has been specified, tap **Set** to return to the “Date & time” page then tap  to return to the “Settings” page.




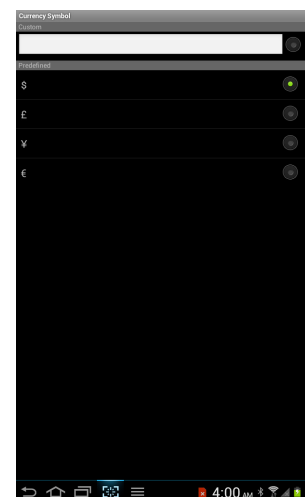
## Setting Currency Symbol Options


You can set the currency symbol used in QUICKLINK when displaying repair and maintenance cost estimates. You can select a preset currency symbol or specify a “custom” currency symbol.



*When a preset currency symbol is selected, cost estimates are displayed using the selected currency. When a “custom” currency symbol is used and the symbol is recognized by the QUICKLINK™ App, cost estimates are displayed using the selected currency. If the “custom” symbol is not recognized by the QUICKLINK™ App, the “custom” symbol is displayed, but cost estimates are shown in U.S. dollars.*



1. On the “Settings” page under **Setup**, tap **Currency symbol**.
  - The “Currency Symbol” page displays.
  - The **Predefined** field shows the *system defined* currency symbol values. The left column shows a list of currency symbols. The radio button for the currently selected interval is highlighted .
2. To select a *default* currency symbol, tap the desired symbol.

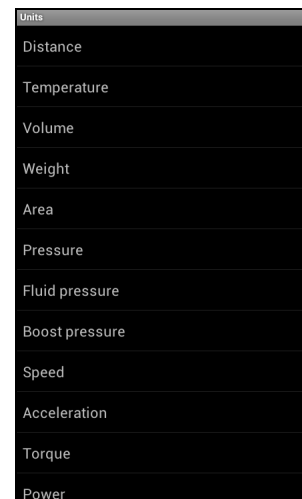


- To specify a *custom* currency symbol:
  - Tap the **Custom** field.
  - Use the keyboard to enter the desired currency symbol.
- When the desired currency symbol has been specified, tap  to return to the “Settings” page.

## Setting Units of Measurement Options

You can set the units of measurement used on QUICKLINK displays to U.S. values, metric values, or a combination of the two.

- On the “Settings” page under **Setup**, tap **Units**.
  - The “Units” page displays.
  - The left column shows a list of values used by various QUICKLINK™ displays. The right column shows the currently selected unit of measurement for each value.
- Tap a parameter for which you wish to set the unit of measurement.
  - A “popup” menu displays, listing the available formats. The radio button for the currently selected format is highlighted .
- Tap the desired format.
  - The “popup” menu closes, and the selected format is shown on the “Units” page.
- When units have been selected for all values as desired, tap  to return to the “Settings” page.
  - Displays throughout the QUICKLINK™ App will display values in the units selected.



## Configuring Parameters


The **Parameters** options let you enable or disable “persistent PIDs,” and select the specific PIDs to monitor. The QUICKLINK™ App is configured with a *default* selection of persistent PIDs.

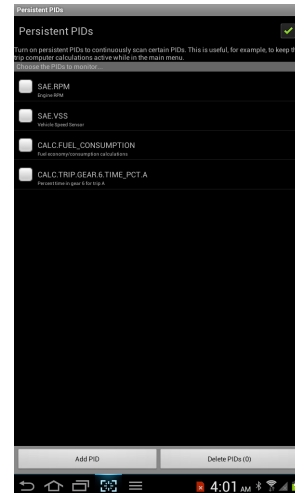


*When **Persistent PIDs** are enabled, the QUICKLINK™ system will monitor the specified PIDs continuously. This function is useful, for example, to keep the Command Center calculations active while viewing other pages in the QUICKLINK™ App.*






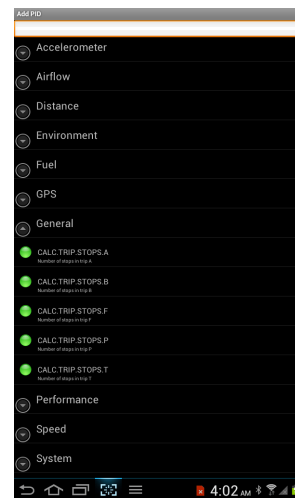
### Enabling and Disabling Persistent PIDs





1. On the “Settings” page under **Parameters**, tap **Persistent PIDs**.
  - The “Persistent PIDs” page displays.
  - The **Choose the PIDs to monitor** list shows the currently selected persistent PIDs.
2. Use the **Persistent PIDs** checkbox to *enable* or *disable* persistent PIDs (tap to select or deselect).
  - A checkmark  indicates persistent PIDs are *enabled*. An empty checkbox  indicates persistent PIDs are *disabled*.
3. Tap  to return to the “Settings” page.



### Adding a Persistent PID

1. On the “Settings” page under **Parameters**, tap **Persistent PIDs**.
  - The “Persistent PIDs” page displays.
2. Tap **Add PID**.
  - The “Add PID” page displays.
  - The “Add PID” page shows a list of systems for which PIDs are available.
3. Tap a system name to select a persistent PID for the system.
  - The “Add PID” page refreshes to display a list of available PIDs for the system.
  - A  icon next to a PID name indicates the associated PID *is supported*. A  icon next to a PID name indicates the associated PID *is not supported*. A  icon next to a PID name indicates the PID is currently selected as a persistent PID.
4. Swipe up or down to view the entire PID list.
  - If desired, you can search for a PID name in *all systems*. Tap the **Add PID** field at the top of the page, then use the keyboard to enter the PID name. A PID list displays and refreshes as you enter characters to locate PIDs that match your search criteria.
5. Tap the PID you wish to select as a persistent PID.



- A  icon displays next to the PID name to indicate it has been selected as a persistent PID. If you *do not* wish to select the PID as a persistent PID, tap it again. The  icon is removed.
6. Repeat steps 4 and 5 to select *additional* PIDs from the current PID list.
  7. When all desired PIDs have been selected from the current list, tap the system name again to close the list.
  8. Repeat steps 3 through 7 to select PIDs for *additional* systems.
  9. When all desired persistent PIDs have been selected, tap  on the “Add PID” page to return to the “Persistent PIDs” page, then tap  to return to the “Settings” page.

## Removing a Persistent PID

1. On the “Settings” page under **Parameters**, tap **Persistent PIDs**.

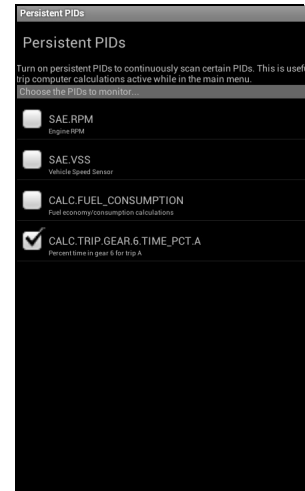
- The “Persistent PIDs” page displays.
- The **Choose the PIDs to monitor** list shows the currently selected persistent PIDs.

2. Use the PIDs checkboxes to choose the persistent PIDs you wish to remove (tap to select or deselect).


- A checkmark (**G**) indicates the PID *is selected* for removal. An empty checkbox (**G**) indicates the PID *is not selected* for removal.

3. When all desired PIDs have been selected for removal, tap **Delete PIDs**.

- A confirmation dialog displays. If you wish to continue with the deletion, tap **OK**. If you *do not* wish to delete the selected PIDs, tap **Cancel**.



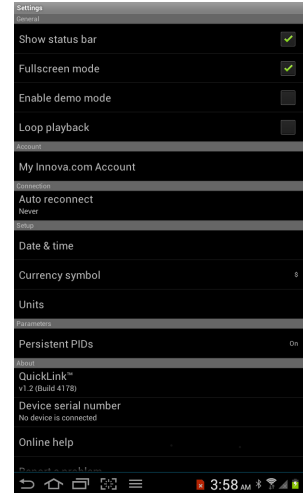
*If you tap **Delete PIDs** when no PIDs are selected, the message “Please select a pid to delete” displays. Tap **OK** to return to the “Persistent PIDs” page and select one or more PIDs for removal.*

4. When all desired PIDs have been removed from the **Choose the PIDs to monitor** list, tap  to return to the “Settings” page.

### Using About Options

The **ABOUT** options provide reference information about the QUICKLINK™ system:

- **QuickLink™** – shows the version and build numbers for the QUICKLINK™ App. *This field is a “read only” field.*
- **Device serial number** – shows the serial number for the QUICKLINK™ device. *This field is a “read only” field.*
- **Online help** – tap to open the online help file for the QUICKLINK™ system.
- **Report a problem** – tap to access the Innova “Support” form to report a problem or submit a question to Innova Technical Support. **See Reporting a Problem on page 60 for details.**
- **Terms of use/privacy policy** – tap to view the Innova “Terms and Conditions” and “End User License Agreement (EULA)” pages.

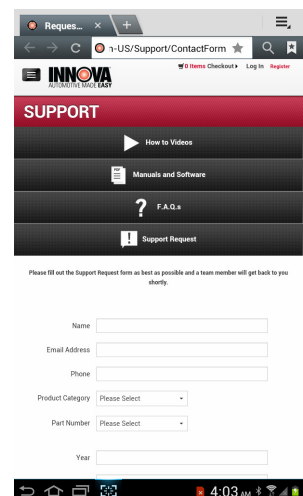


## CONTACTING TECHNICAL SERVICES

### Reporting a Problem


If you have a problem using the QUICKLINK™ system, you can submit a report to Innova Technical Services using the “Support” form.

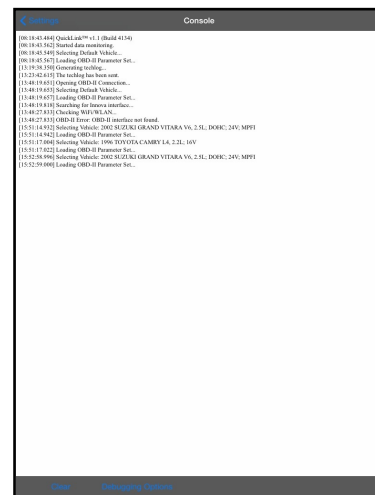
1. On the “Settings” page under **ABOUT**, tap **Report a problem**.
  - QUICKLINK™ launches the default browser for your device and opens the Innova Technical Services “Support” form.
2. Enter your contact information in the **Name**, **Email Address** and **Phone** fields.
3. Select **OBD2 Diagnostic Tools** from the **Product Category** menu.
4. Select **3211 - QUICKLINK™** from the **Part Number** menu.
5. Enter reference information for the vehicle on which you were using the QUICKLINK™ system when the problem occurred in the **Year**, **Make**, **Model** and **Engine Size** fields.
6. Enter a description of the problem in the **Comment** field.
7. When all necessary information has been entered, tap **Submit** to send your problem report.



## Viewing the Console

The **CONSOLE** maintains a log of actions performed by the QUICKLINK™ system. This log is intended primarily for use by Innova Technical Services when resolving problem reports.

1. On the “Settings” page under **Console**, tap **Console**.
  - The “Console” page displays.
  - The page shows a listing of actions performed by the QUICKLINK™ system, and the time at which each action occurred.
2. Swipe up or down to view the entire log file.
3. When you have finished viewing the log file, tap  to return to the “Settings” page.





## **LIMITED ONE YEAR 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.

## **SERVICE PROCEDURES**

If you have any questions, require technical support or information on UPDATES and OPTIONAL ACCESSORIES, please contact your local store, distributor or the Service Center.

USA & Canada:

(800) 544-4124 (6:00 AM-6:00 PM PST, Monday through Saturday)

**All others:** (714) 241-6802 (6:00 AM-6:00 PM PST, Monday through Saturday)

**FAX:** (714) 432-3979 (24 hr.)

**Web:** [www.innova.com](http://www.innova.com)



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[www.innova.com](http://www.innova.com)

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Instruction MRP #93-XXXX

