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Disclaimer

• To take full advantage of the unit, you should be familiar with the engine.

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Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or the test equipment, please read this user's manual first carefully and observe the following safety precautions at a minimum whenever working on a vehicle:

• Always perform automotive testing in a safe environment.

• Do not attempt to operate or observe the tool while driving a vehicle. Operating or observing the tool will cause driver distraction and could cause a fatal accident.

• Wear safety eye protection that meets ANSI standards.

• Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.

• Operate the vehicle in a well-ventilated work area: Exhaust gases are poisonous.

• Put blocks in front of the drive wheels and never leave the vehicle

unattended while running tests.

• Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.

• Put the transmission in P (for A/T) or N (for M/T) and make sure the parking brake is engaged.

• Keep a fire extinguisher suitable for gasoline/chemical/ electrical fires nearby.

• Don't connect or disconnect any test equipment while the ignition is on or the engine is running.

• Keep the test equipment dry, clean, free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the test equipment, when necessary.

FCC Warning:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

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

Table of Contents

1. Introduction

Creader 529 OBD II Scanner is developed by LAUNCH, especially for the DIY users and the servicemen of small service workshop. It supports read/clear DTCs and read data stream. With built-in help menus and code definitions, diagnosing and repairing that dreaded Check Engine Light is now easier than ever!
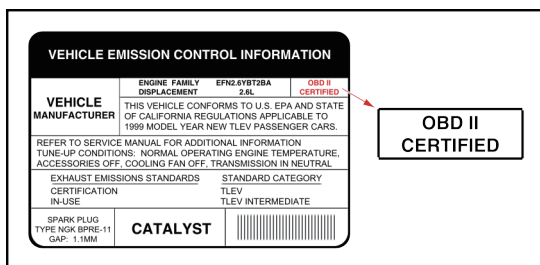
It provides the ability to print the diagnostic records through connection to PC.

Moreover, it can be connected to PC through the USB cable for upgrade to keep updated with the latest software version.

📇 Note: This scanner may automatically reset while being disturbed by strong static electricity. THIS IS A NORMAL REACTION.


This scanner is specially designed to work with all OBD II compliant vehicles, including Controller Area Network (CAN). It is required by EPA that all 1996 and newer vehicles (cars and light trucks) sold in the United States must be OBD II compliant and this includes all American, Asian and European vehicles.

A small number of 1994 and 1995 model year gasoline vehicles are OBD II compliant. To verify if a 1994 or 1995 vehicle is OBD II compliant, check the following:

1. **Vehicle Emissions Control Information (VECI) Label**. It is located under the hood or by the radiator of most vehicles. If the vehicle is OBD II compliant, the label will designate "OBD II Certified".

VEHICLE EMISSION CONTROL INFORMATION		
VEHICLE MANUFACTURER	ENGINE FAMILY EFN2.6YBT2BA DISPLACEMENT 2.6L	OBD II CERTIFIED
	THIS VEHICLE CONFORMS TO U.S. EPA AND STATE OF CALIFORNIA REGULATIONS APPLICABLE TO 1999 MODEL YEAR NEW TLEV PASSENGER CARS.	OBD II CERTIFIED
REFER TO SERVICE MANUAL FOR ADDITIONAL INFORMATION TUNE-UP CONDITIONS: NORMAL OPERATING ENGINE TEMPERATURE, ACCESSORIES OFF, COOLING FAN OFF, TRANSMISSION IN NEUTRAL		
EXHAUST EMISSIONS STANDARDS CERTIFICATION IN-USE	STANDARD CATEGORY TLEV TLEV INTERMEDIATE	
SPARK PLUG TYPE NGK BPRE-11 GAP: 1.1MM	CATALYST	‖‖‖‖‖‖‖‖‖‖‖‖‖

2. Government regulations mandate that all OBD II compliant vehicles **must** have a "common" 16-pin **Data Link Connector (DLC)**.
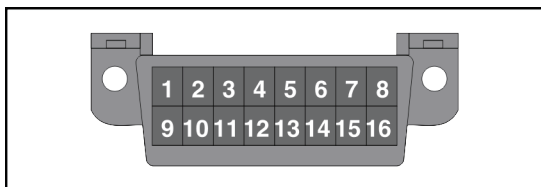
Note: Some 1994 and 1995 vehicles have 16-pin connectors but are not OBD II compliant. Only those vehicles with a Vehicle Emissions Control Label stating "OBD II Certified" are OBD II compliant.

2. General Information-About OBDII/EOBD

2.1 On-Board Diagnostics (OBD) I

Note: 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 OBD I.

OBD I is a set of self-testing and diagnostic instructions programmed into the vehicle's onboard 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."

2.2 On-Board Diagnostics (OBD) II

As technology evolved and the desire to improve the On-Board Diagnostic system increased, a new generation of On-Board Diagnostic system was developed. This second generation of On-Board Diagnostic regulations is called "OBD II".

In addition to performing all the functions of the OBD I System, the OBD II 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 OBD I 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 OBD I 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 (OBD II)." The primary objective of the OBD II system is to comply with the latest regulations and emissions standards established by CARB and the EPA.

The Main Objectives of the OBD II 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 OBD II, DLCs were of different shapes and sizes.)

- To standardize the code numbers, code definitions and language used to describe faults. (Before OBD II, 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.

2.3 Diagnostic Trouble Codes (DTCs)

OBD II Diagnostic Trouble Codes are codes that are stored by the on-board computer diagnostic system in response to a problem found in the vehicle. These codes identify a particular problem area and are intended to provide you with a guide as to where a fault might be occurring within a vehicle. **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.

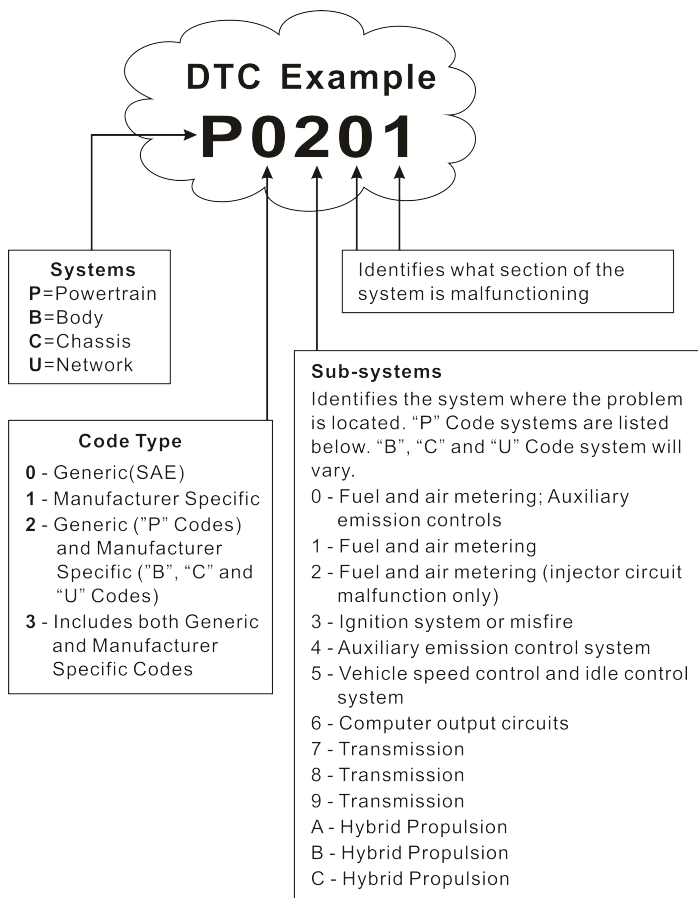OBD II Diagnostic Trouble Codes consist of a five-digit alphanumeric code.

• 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).

Note: 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 OBD II 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.

DTC Example
P0201

Systems
P=Powertrain
B=Body
C=Chassis
U=Network

Identifies what section of the system is malfunctioning

Code Type

0 - Generic(SAE)

1 - Manufacturer Specific

2 - Generic ("P" Codes) and Manufacturer Specific ("B", "C" and "U" Codes)

3 - Includes both Generic and Manufacturer Specific Codes

Sub-systems

Identifies the system where the problem is located. "P" Code systems are listed below. "B", "C" and "U" Code system will vary.

0 - Fuel and air metering; Auxiliary emission controls

1 - Fuel and air metering

2 - Fuel and air metering (injector circuit malfunction only)

3 - Ignition system or misfire

4 - Auxiliary emission control system

5 - Vehicle speed control and idle control system

6 - Computer output circuits

7 - Transmission

8 - Transmission

9 - Transmission

A - Hybrid Propulsion

B - Hybrid Propulsion

C - Hybrid Propulsion

P0201 - Injector circuit malfunction, Cylinder 1

2.4 Location of the Data Link Connector (DLC)

The DLC (Data Link Connector or Diagnostic Link Connector) is the standardized 16-cavity connector where diagnostic code readers interface with the vehicle's on-board computer. The DLC is usually located 12 inches from

the center of the instrument panel (dash), under or around the driver's side for most vehicles. If Data Link Connector is not located under dashboard, a label should be there telling location. For some Asian and European vehicles, the DLC is located behind the ashtray and the ashtray must be removed to access the connector. If the DLC cannot be found, refer to the vehicle's service manual for the location.
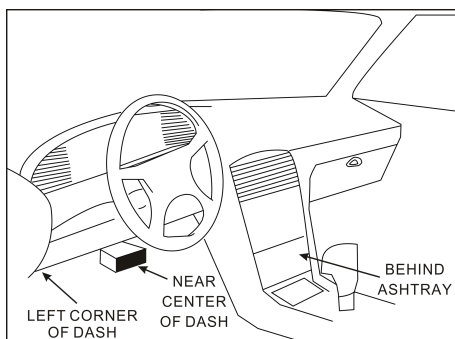
2.5 OBD II Terminology

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

Powertrain Control Module (PCM) -- The PCM is the OBD II accepted term for the vehicle's "on-board computer." In addition to controlling the engine management and emissions systems, the PCM also participates in controlling the powertrain (transmission) operation. Most PCMs also have the ability to communicate with other computers on the vehicle (ABS, ride control, body, etc.).

Monitors -- 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 OBD II systems. Additional Monitors will be added as the OBD II system is further developed.

Note: Not all vehicles support all fifteen Monitors.

Enabling Criteria -- Also termed Enabling Conditions. They are the vehicle-specific events or conditions that must occur within the engine before the various monitors will set, or run. Some monitors require the vehicle to follow a prescribed "drive cycle" routine as part of the enabling criteria. Drive cycles vary among vehicles and for each monitor in any particular vehicle. Please refer to the vehicle's factory service manual for specific enabling procedures.

Trip - A Trip for a particular Monitor requires that the vehicle is being driven in such a way that all the required "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met. The "Trip Drive Cycle" for a particular Monitor begins when the ignition key is turned "On." It is successfully completed when all the "Enabling Criteria" for the Monitor to run and complete its diagnostic testing are met by the time the ignition key is turned "Off." Since each of the fifteen monitors is designed to run diagnostics and testing on a different part of the engine or emissions system, the "Trip Drive Cycle" needed for each individual Monitor to run and complete varies.

OBD II Drive Cycle -- A specific mode of vehicle operation that provides conditions required to set all the readiness monitors applicable to the vehicle to the "ready" condition. The purpose of completing an OBD II drive cycle is to force the vehicle to run its onboard diagnostics. Some form of a drive cycle needs to be performed after DTCs have been erased from the PCM's memory or after the battery has been disconnected. Running through a vehicle's complete drive cycle will "set" the readiness monitors so that future faults can be detected. Drive cycles vary depending on the vehicle and the monitor that needs to be reset. For vehicle specific drive cycle, consult the service manual.

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

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

Fuel Trim (FT) - Feedback adjustments to the base fuel schedule. Short-term fuel trim refers to dynamic or instantaneous adjustments. Long-term fuel trim

refers to much more gradual adjustments to the fuel calibration schedule than short-term trim adjustments. These long-term adjustments compensate for vehicle differences and gradual changes that occur over time.

2.6 OBD II Monitors

An important part of a vehicle's OBD II system is the Readiness Monitors, which are indicators used to find out if all of the emissions components have been evaluated by the OBD II system. They are running periodic tests on specific systems and components to ensure that they are performing within allowable limits.

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

2.6.1 Continuous Monitors

Some of the vehicle components or systems are continuously tested by the vehicle's OBD II system, while others are tested only under specific vehicle operating conditions. The continuously monitored components listed below are always ready:

1. 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.

2. 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.

3. Comprehensive Components 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* (*See Note*)."

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.

2.6.2 Non-Continuous Monitors

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

1. O2 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.

2. O2 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.

3. 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.

4. 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.

5. EGR (Exhaust Gas Recirculation) System 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.

6. EVAP System Monitor

OBD II 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 deenergizes 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.

7. 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 warmup.

• 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.

2.6.3 OBD II Reference Table

The table below lists current OBD II 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
CCM	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	1	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
O_2 Sensor Monitor	Once per trip	1	2	1	3 trips	40
O_2 Sensor Heater Monitor	Once per trip	1	2	1	3 trips	40
EGR Monitor	Once per trip	1	2	1	3 trips	40
EVAP system Monitor	Once per trip	1	2	1	3 trips	40

Secondary Air System Monitor	Once per trip	1	2	1	3 trips	40

2.7 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.

Note: 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.

Note: 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.

3. Components & Controls

3.1 Controls
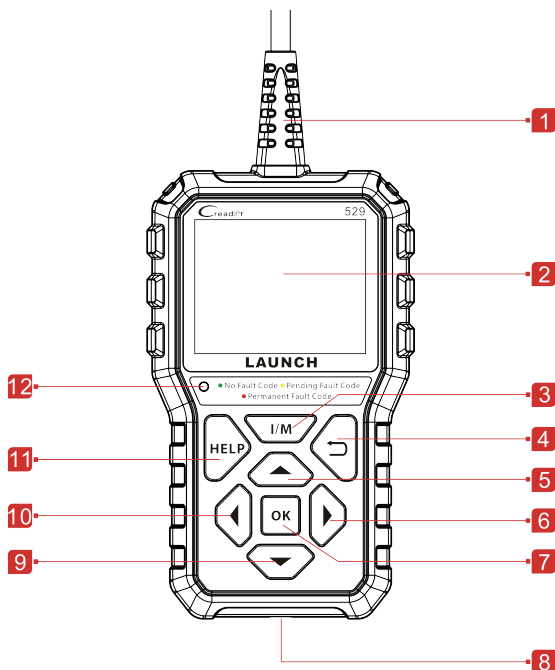
No.	Name	Notes
1	**Cable with OBD II CONNECTOR**	Connects the scanner to the vehicle's Data Link Connector (DLC).
2	**LCD SCREEN**	Shows menu and submenus and test results.

3	**I/M BUTTON*** (See Note1)	• Quick access to I/M readiness function. • Deletes the diagnostic record in the Print function module.
4	⮌ **BUTTON** (See Note2)	Returns to previous menu.
5	▲ **BUTTON** (See Note2)	When in MENU mode, scroll UP through the menu and submenu selection options.
6	▶ **BUTTON** (See Note2)	When in MENU mode, scroll RIGHT through the menu and submenu selection options. When LINKED to a vehicle, scroll through the screen data to the NEXT page.
7	**OK BUTTON** (See Note2)	Confirms a selection (or action) from a MENU list.
8	**USB PORT**	Connects the scanner to computer via USB cable for upgrade or printing.
9	▼ **BUTTON** (See Note2)	When in MENU mode, scroll DOWN through the menu and submenu selection options.
10	◀ **BUTTON** (See Note2)	When in MENU mode, scroll LEFT through the menu and submenu selection options. When LINKED to a vehicle, scroll through the screen data to the PREVIOUS page.
11	**HELP BUTTON*** (See Note1)	Provides detailed descriptions/tips for diagnostics.

| 12 | **LED for different DTC types** | The following (green, yellow and red LEDs) are used as visual aids to make it easier to determine engine system conditions.

• **GREEN LED (No Fault Code):** Indicates that all engine systems are running normally (all Monitors on the vehicle are active and performing their diagnostic testing, and no DTCs are present).

• **YELLOW LED (Pending Fault Code):** Indicates the currently displayed DTC is a Pending DTC. If there is a possible problem, a "Pending" DTC is present and/or some of the vehicle's emission monitors have not run their diagnostic testing.

• **RED LED (Permanent Fault Code):** Indicates the currently displayed DTC is a Permanent DTC. |

📑 Notes:
1. The buttons marked with * indicate the function hot keys and only apply to Diagnostics.
2. Press the button to perform the corresponding function if the available on-screen buttons appear.

3.2 Specifications

• Screen: 2.8" LCD display with a resolution of 320*240 pixels
• Input voltage range: 9 ~ 18V
• Operating temperature: 32°F~122°F / 0°C~50°C
• Storage temperature: -4°F~158°F / -20°C ~70°C @ RH60%
• Size: 97.6*30*164 mm

3.3 Accessories

1) Creader 529 OBD II Scanner

2) Quick Start Guide

3) USB cable -- Connect to a computer for upgrading online

4. Initial Use

4.1 Connection

1) Turn the ignition off.
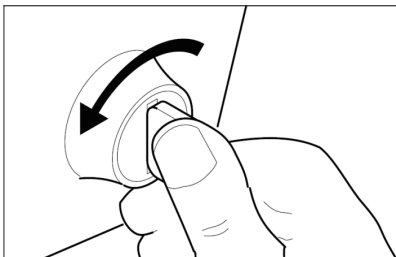
2) Locate the vehicle's 16-pin Data Link Connector (DLC).
3) Plug the diagnostic cable of the scanner into the vehicle's DLC.
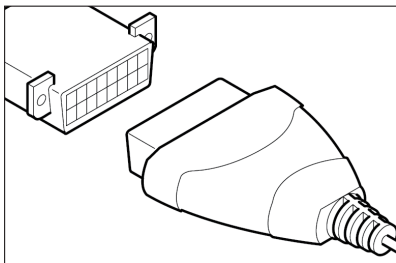
Notes:

- A plastic DLC cover may be found for some vehicles and you need to remove it before plugging the diagnostic cable.

- The cable connector is keyed and will only fit one way. If you have problems connecting the cable connector to the DLC, rotate the connector 180^{0} and try again.

4) Turn the ignition on. Engine can be off or running.

⚠ CAUTION: Don't connect or disconnect any test equipment with ignition on or engine running.

---

5) The system automatically turns on and navigates to the Job menu screen.

4.2 Job Menu

The Job Menu includes the following function modules:
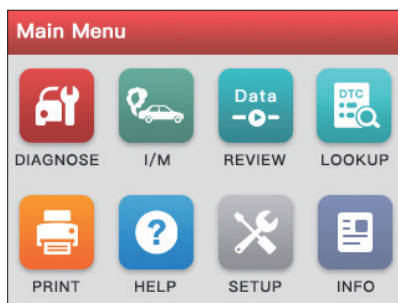
Modules	Descriptions
DIAGNOSE	Configures this scanner as a professional OBD II code reader.
I/M Readiness	I/M refers to Inspection and Maintenance that is legislated by the Government to meet federal clean-air standards. I/M Readiness indicates whether or not the various emissions-related systems on the vehicle are operating properly and are ready for Inspection and Maintenance testing.
REVIEW	This option is designed to review or delete the recorded DTC, Data Streams and Freeze Frame.
LOOKUP	Allows you retrieve the desired DTC and view its detailed definition and diagnostic solutions.

PRINT	Prints the diagnostic records saved during diagnostic session. *Note: This function required a USB cable connection to PC.
HELP	Helps you have a general knowledge of the OBD, Data stream and I/M etc.
SETUP	Makes several adjustments and settings to configure the scanner to your particular needs.
INFO	Views the detailed information of the scanner.

5. Operations

5.1 Start Diagnostics

After the scanner is properly connected to the vehicle's DLC, select [Diagnose] in the Job Menu and press [OK]. The scanner will automatically start a check of the vehicle's computer to determine which type of communication protocol it is using. When the scanner identifies the computer's communication protocol, a communication link is established and then the screen will display the Monitor Status.

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

Monitor Status	
MIL Status	OFF
DTCs in this ECU	108
Readiness Completed	5
Readiness Not Completed	2
Readiness Not Supported	3
Datastream Supported	119
OK	

Figure 5-1

Press [OK] to enter the Diagnostic Menu, the following screen will appear:

Diagnostic Menu

Read C…	Erase …	I/M Re …	Data S …
Freeze…	O2 Sen…	On-Boa…	Evap S …
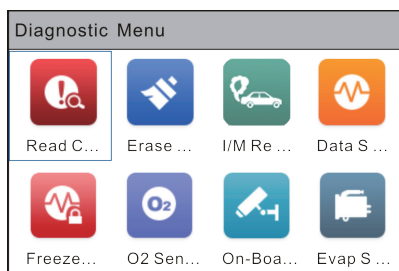
Figure 5-2

1. Read Codes

This function allows you to view the Diagnostic Trouble Codes (DTCs) retrieved from the vehicle's on-board computer.

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

Select [Read Codes] from the Diagnostic Menu and press [OK]. A screen similar to the following figure will appear.

Read Codes
The vehicle's code is defined by the manufacturer, please enter to select the manufacturer.
OK ⤴
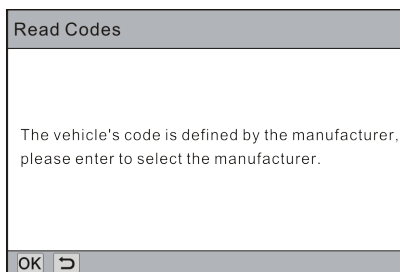
Figure 5-3

Press [OK] to enter to select the manufacturer. Figure 5-4 will be shown on the screen. Press [▲] / [▼] to select different items; press the [◀ / ▶] button to turn to next or previous page. After selecting the desired one, press [OK] to confirm.

Select Car Brand	1/28
FORD	
GM	
CHRYSLER	
BENZ	
BMW	
VW/AUDI	
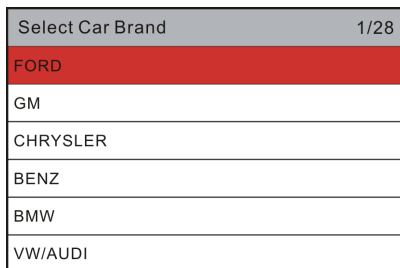
Figure 5-4

• If the GREEN LED on the scanner lights up, it indicates that all engine systems are "OK" and operating normally. All monitors supported by the vehicle have run and performed their diagnostic testing, and no trouble codes are present.

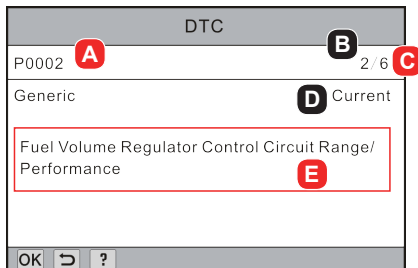• If some DTCs are found, the screen will display the codes as shown below:

Figure 5-5

In Fig. 5-5,

• **A - DTC**: Displays the Diagnostic Trouble Code (DTC) number. Each fault is assigned a code number that is specific to that fault.

• **B - Code Number Sequence**: The scanner assigns a sequence number to each DTC that is present in the computer's memory, starting with "1." This number indicates which code is currently displayed.

• **C - Code Enumerator**: Indicates the total number of codes retrieved from the vehicle's computer.

• **D - Code Type**: Indicates the type of code being displayed; Generic Current, Generic Pending, Generic Permanent, etc.

Pending DTC: A code recorded on the "first trip" for a "two-trip" code. If the fault that caused the code to be set is not detected on the second trip, the code is automatically erased. When pending DTCs are found, the YELLOW LED on the scanner will light up.

Permanent DTC: When the currently displayed DTC is a Permanent DTC, the RED LED on the scanner will light up. It indicates there is a problem in one or more of the vehicle's systems. In this case, the Malfunction Indicator ("Check Engine") lamp on the vehicle's instrument panel will light steady on.

• **E - Test Data Display Area**: Displays DTC definitions.

The screen will also show the content of the code below the number of code. Press [▼] to view the next code.

Press [OK] to record the diagnostic trouble code for later printing. The saved records are stored in "Print" in the Main Menu.

Press [HELP] to view the diagnostic tips/solution associated with the current DTC.

After viewing all the codes, press [↰] to return to the Diagnostic Menu.

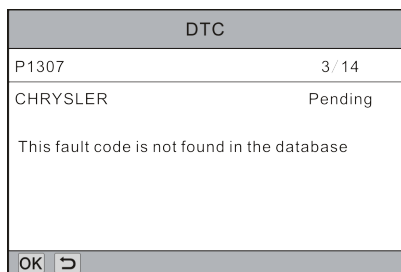• If the DTC can not be found, a screen similar to the following figure will appear:

DTC	
P1307	3 / 14
CHRYSLER	Pending
This fault code is not found in the database	
OK ↰	

Figure 5-6

2. Erase Codes

🖳 Note: When this function is used to erase DTCs from the vehicle's on-board computer, "Freeze Frame" data is erased and "Permanent" DTCs ARE NOT erased.

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.

Select [Erase Codes] from the Diagnostic Menu and press [OK], the following screen will appear:

Erase Codes

Clear/Reset Emission Related Diagnostic
Information. Are you Sure?

OK ↰
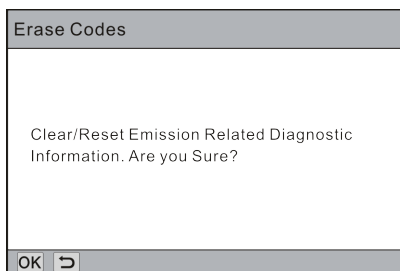
Figure 5-7

Press [OK] to erase DTCs, and the screen will display the interface as shown below:

Erase Codes

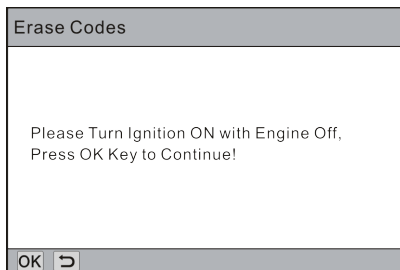Please Turn Ignition ON with Engine Off,
Press OK Key to Continue!

OK ↰

Figure 5-8

Follow the on-screen prompts to turn the ignition on with engine off, press [OK] to clear the DTCs.

Note: 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 OBD II Drive Cycle must be performed. Refer to your vehicle's service manual for information on how to perform an OBD II Drive Cycle for the vehicle under test.

After clearing, you should retrieve trouble codes once more or turn ignition on and retrieve codes again. If there are still some trouble codes in the system, please troubleshoot the code using a factory diagnosis guide, then clear the code and recheck.

3. I/M Readiness

I/M refers to Inspection and Maintenance that is legislated by the Government to meet federal clean-air standards. I/M Readiness indicates whether or not the various emissions-related systems on the vehicle are operating properly and are ready for Inspection and Maintenance testing.

The purpose of the I/M Readiness Monitor Status is to indicate which of the vehicle's Monitors have run and completed their diagnosis and testing, and which ones have not yet run and completed testing and diagnosis of their designated sections of the vehicle's emissions system.

The I/M Readiness Monitor Status function also can be used (after repair of a fault has been performed) to confirm that the repair has been performed correctly, and/or to check for Monitor Run Status.

Select [I/M Readiness] from the Diagnostic Menu and press [OK], the screen will display the I/M readiness result.

I/M Readiness			
MIL	🚗	IGN	Spark
DTC	108	Pd DTC	2
MIS	⊘	EVAP	✓
FUE	✓	AIR	✓
CCM	✗	O2S	✓
CAT	⊘	HRT	⊘
HCAT	✗	EGR	✓

Figure 5-9

The glossary of terms and abbreviation shown in Figure 5-9:

Abbreviation	Definition / Descriptions
MIL	Malfunction Indicator Light
IGN	Ignition (indicates the ignition method of the vehicle. Spark ignition and Compression ignition are included.)
DTC	Diagnostic Trouble Code

Pd DTC	Pending Diagnostic Trouble Code 🖥 Note: If a "Pending" DTC is present, it indicates that there is a possible problem and/or some of the vehicle's emission monitor have not run their diagnostic testing. In this case, the LED of DTC type on the scanner will illuminate YELLOW.
The following monitors include Continuous monitors and Non-continuous monitors. For detailed descriptions about these monitors, please refer to Chapter 2.6.	
MIS	Misfire Monitor
FUE	Fuel System monitor
CCM	Comprehensive Components Monitor
CAT	Catalyst Monitor
HCAT	Heated Catalyst Monitor
EVAP	Evaporative System Monitor
AIR	Secondary Air System Monitor
O2S	O_2 Sensor Monitor
HRT	O_2 Sensor Heater Monitor
EGR	Exhaust Gas Recirculation System Monitor

⊘ means not available on this vehicle, ✗ means incomplete or not ready, ✓ means Completed or Monitor OK.

Press [⮐] to return to Diagnostic Menu.

4. Data Stream

Select [Data Stream] from the Diagnostic Menu and press [OK], the following screen will appear.

Data Stream	1/3
View All Items	
Select Itmes	
View Graphic Items	

Figure 5-10

• Select [View All Items] and press [OK] button, the screen will display the dynamic data of all data stream items:

Datastream	1~5/87
Fuel system 1 status	—
Fuel system 2 status	---
Calculated LOAD Value	52.9%
Engine Coolant Temperature	54°C
Short Term Fuel Trim - Bank 1	-44.5°C

Figure 5-11

Press the [◀ / ▶] button to turn page to view other data streams.

Press [↩] to return to Diagnostic Menu.

• Select [Select Items] in Data stream menu and press [OK], the screen will display the interface as shown below:

Select Datastream	1~4/87
[ ]	All Datastream of Page
[ ]	Fuel system 1 status
[ ]	Fuel system 2 status
[ ]	Calculted LOAD Value
[ ]	Engine Coolant Temperature

Figure 5-12

Press the [▲] / [▼] button to check data stream items, and press the [◀ / ▶] button to turn page.

After selecting items, press [↰], the screen will display the selected data stream items. To select all data stream of the current page, check the option "All Datastream of Page" and press [OK], √ will appear before all items. To deselect all, just press [OK] again.

• If [View Graphic Items] is selected in Data stream menu and press [OK] to enter the graphic items selection screen.

Press the [▲] / [▼] button to select single data stream items, and press [OK] button, the screen will display the selected items of live graphic data.

Note: While viewing the live data, press [OK] to record the diagnostic record for later printing. The saved records are stored in "Print" in the Job menu.

Press [↰] to return to Diagnostic Menu.

5. View Freeze Frame

When an emission-related fault occurs, certain vehicle conditions are recorded by the on-board computer. This information is referred to as freeze frame data. Freeze Data is a snapshot of the operating conditions at the time of an emission-related fault.

Note: If DTCs were erased, Freeze Data may not be stored in vehicle's memory depending on vehicle.

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6. O2 sensor test

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

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

7. On-board monitor test

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

8. EVAP System Test

The EVAP test function lets you initiate a leak test for the vehicle's EVAP system. This scanner does not perform the leak test, but signals to vehicle's on-board computer to initiate the test. The vehicle manufacturer determines the criteria and method for stopping the test once it has been started. Before using the system test function, refer to the vehicle's service repair manual to determine the procedures necessary to stop the test.

9. Vehicle Info

Select [Vehicle Info] from the Diagnostic Menu and press [OK], the scanner will retrieve a list of information (provided by the vehicle manufacturer) from the vehicle's on-board computer. This information may include:

• **VIN** (Vehicle identification Number). It is applicable to model year 2000 and newer OBD II-compliant vehicles.

• **CID** (Calibration ID). These IDs uniquely identify the software version(s) for

the vehicle's control module(s).

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

5.2 I/M Readiness

A quick access to the I/M Readiness of the Diagnostics. Refer to Chapter 5.1 for details.

5.3 Review

This option is designed to review or delete the recorded DTC, Data Streams and Freeze Frame.

5.4 DTC Lookup

Select [LOOKUP] in the Job menu and press [OK], the following screen will appear:

```
┌─────────────────────────────────────┐
│ DTC Lookup                           │
├─────────────────────────────────────┤
│  Please input DTC:                   │
│                                      │
│         P 0 0 0 0                    │
│  The 1st range: P, C, B, U           │
│  The 2nd range: 0,1, 2, 3            │
│  The others from  0  to  F           │
│  Press [▲] or [▼] to change input, press [◀] or │
│  [▶] to select position, then press [OK] to │
│  confirm.                            │
├──────┬──────┬──────┬─────────────────┤
│  ▲   │  ▼   │  ▶   │  OK            │
└──────┴──────┴──────┴─────────────────┘
```

Figure 5-13

Press [◀ / ▶] to switch to different position. Press [▲] / [▼] to alter the value. After you input the DTC, press [OK] to view its detailed definition of the DTC.

DTC
P0201
Generic
Injector Circuit/Open - Cylinder 1
⟲ ?
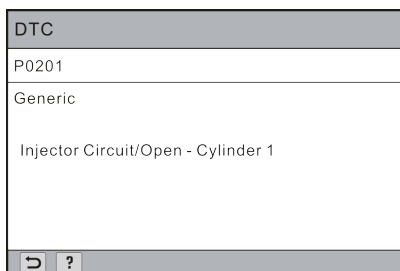
Figure 5-14

Press [HELP] to view the diagnostic tips/solution associated with the current DTC.

DTC
P0201
The role of the injector is to atomize fuel so as
to adapt to the requirement of combustion.
The working principle is: when the solenoid
is energized, suction force will be generated,
and needle valve will be sucked, then open
the injector hole, and fuel will be injected at
a high speed from the annular gap between
axial needle at the top of the needle valve
▶ ⟲
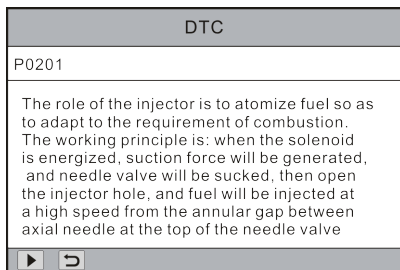
Figure 5-15

After viewing the definition, press [⟲] to return to the Job menu.

5.5 Print

This function is used to print the records saved on the Read Codes or Data Stream screen.

Note: Print manager is integrated in the update tool. To perform this function, you need to download the update tool and install it on the computer (For details, refer to Chapter 6 Upgrade).

1. Connect the OBD II scanner to the computer via USB cable, the scanner screen will display as follows.

```
Boot Version:
   V1.00.000
Serial Number:
   972893000004
Register Code:
   6411384A3230
1. USB Connected for Upgrade.
2. Press [EXIT] key to Enter Normal Mode.
```
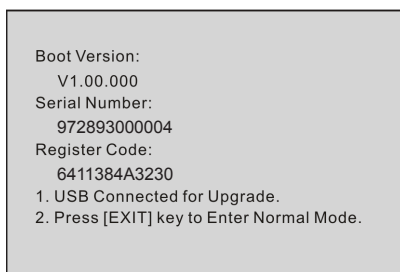
Figure 5-16

2. Press [⟲] to enter the normal mode and naviage to the Job menu screen.

3. Run the update tool on your PC, the following screen will appear.
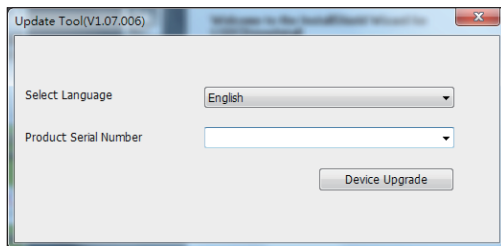
Figure 5-17

Generally the system automatically detects the Serial Number of the OBD II scanner and the user does not need to enter itmanually. Please wait for about one minute until a screen similar to the following appears.
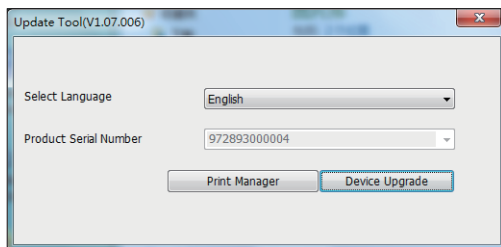
Figure 5-18

📇 Note: After the system identified the scanner information, it will display in gray in Product Serial Number input box and the "Print Manager" module will be activated immediately.

---

3. Click [Print Manager] to enter the print manager screen.
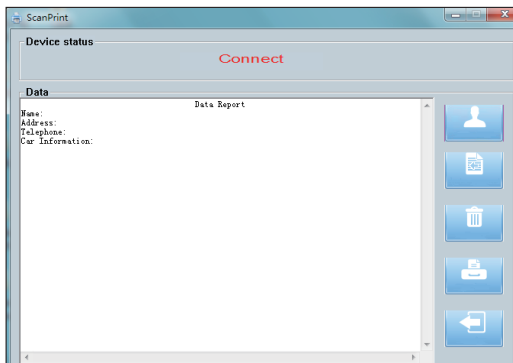
Figure 5-19

4. Select [PRINT] from the Job menu on the OBD II scanner and press [OK] to enter the diagnostic record list screen. Select the desired one record and press [OK].
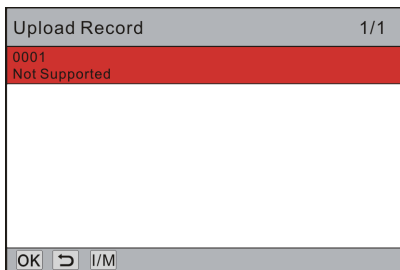
Figure 5-20

5. The print manager will synchronize all reports from the scanner and display the records on the computer.
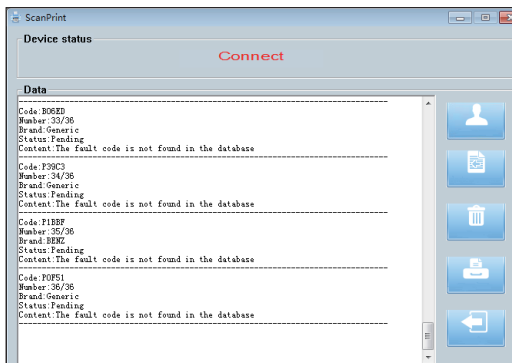
Figure 5-21

On-screen buttons:

[icon] : Allows you to modify the personal information. Configured information is automatically generated and displayed on the top of the report each time the diagnostic report is synchronized on the computer.
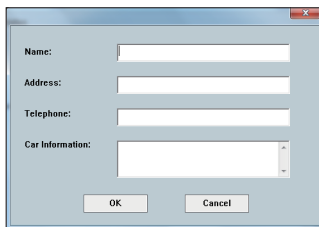

Figure 5-22

[icon] : Exports the current report on the local disk on the computer.

[icon] : Clears all contents of the current report.

[icon] : Prints the current report via the printer connected to the computer

[icon] : Exits the update tool.

6. Click the [icon] button to print it out via the printer connected to the computer.

[icon] Note: To delete certain record, highlight it and press [HELP].

5.6 Help

This function allows you to have a general knowledge of OBD, Data stream and I/M Readiness.

* **About OBD**: Relevant introduction information about OBD.
* **About Data stream**: Relevant introduction information about Data stream.
* **Print Help**: Provides a operation tips on Printing the diagnostic record or DTCs.
* **I/M Readiness**: Introduces the full name of each monitor and indicates status of each icon (✗, ⊘ and ✓).

5.7 Setup

Select [SETUP] in the Job menu and press [OK], the screen similar to the following figure will appear:

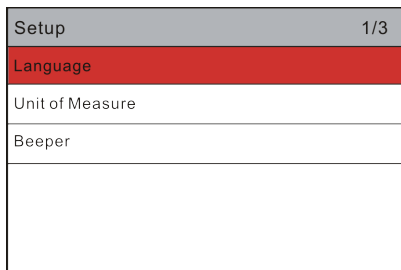| Setup	1/3
Language	
Unit of Measure	
Beeper	

Figure 5-23

This option allows you to make the following settings:

5.7.1 Language

This option enables you to set the user interface language.

Due to continuous software upgrade, language interface may vary with different software versions.

Choose [Language] and press [OK], the screen will display all available languages. Press [▲] / [▼] to select the desired language and press [OK] to confirm. The system will convert to the chosen language interface at once.

5.7.2 Unit of Measure

This option allows you to set measurement unit.

Choose [Unit of Measure] and press [OK] to enter the measurement unit selection page.

Press [▲] / [▼] to select the desired one and press [OK] to save your change.

5.7.3 Beeper

It is used to set the buzzer On/Off.

5.8 Info

This function is used to view the detailed information of the scanner. It mainly includes: software & hardware version and serial number etc.

6. Upgrade

The scanner can be updated via USB cable.

Note: Make sure the PC has an Internet connection.

1. Go to http://www.x431.com/CR529 and download the update tool to the computer.
2. Decompress and install it on your computer(compatible with Windows XP, Windows 7, Windows 8 & Windows 10).
3. After installation, connect one end of the USB cable to the USB port of PC, and the other end to the scanner.
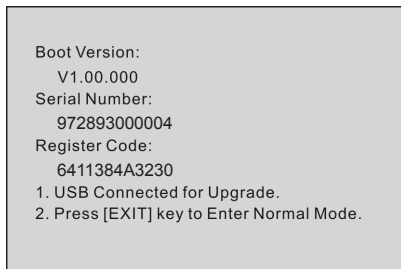4. If a newer version is found, a screen similar to the following figure will appear.

Boot Version:
   V1.00.000
Serial Number:
   972893000004
Register Code:
   6411384A3230
1. USB Connected for Upgrade.
2. Press [EXIT] key to Enter Normal Mode.

Figure 6-1

5. Run the update tool on your PC, the following screen will appear.

Update Tool(V1.07.006)

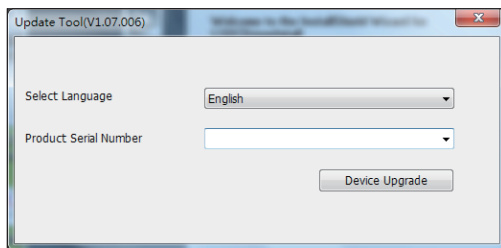Select Language   English

Product Serial Number

Device Upgrade

Figure 6-2

Generally the system automatically detects the Serial Number of the scanner and the user does not need to enter itmanually. Please wait for about one minute until a screen similar to the following appears.
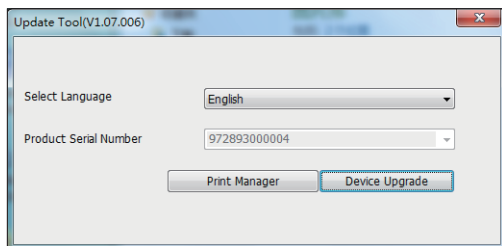
Figure 6-3

Note: After the system identified the scanner information, it will display in gray in Product Serial Number input box and the "Print Manager" module will be activated immediately.

6. Choose the desired interface language and click [Device Upgrade], a screen similar to the following figure will appear.
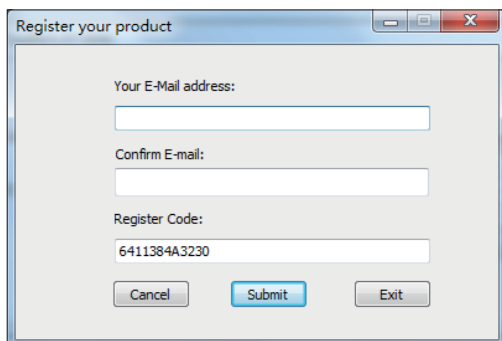

Figure 6-4

Enter the required E-mail address (*The Register Code is identified by the system automatically) and click [Submit] to enter the update center.

Note: For initial use, user needs to go through a registration process. Once you finished it, the registration screen will not appear again each time you click the [Device Upgrade] button in the future.

7. Choose the software version and then click [Upgrade] to start updating.

8. Once update is complete, a "Upgrade success" message box will pop up.
9. The update process is complete, your scanner is now ready for use.

7. FAQ

Here we list some frequently asked questions and answers related to this OBD II scanner.

Q: System halts when reading data stream. What is the reason?

A: It may be caused by a slackened connector. Please turn off the scanner, firmly connect the connector, and switch it on again.

Q: Screen of main unit flashes at engine ignition start.

A: Caused by electromagnetic disturbance and this is normal phenomenon.

Q: There is no response when communicating with on-board computer.

A: Please confirm the proper voltage of power supply and check if the throttle has been closed, the transmission is in the neutral position, and the water is in proper temperature.

Q: Why are there so many fault codes?

A: Usually, it's caused by poor connection or fault circuit grounding.

Q: How to record the live data?

A: While viewing the live data, press [OK] to record the diagnostic record for later printing. The saved records are stored in "Print" in the Job menu.

Q: What to do if I want to print the saved record?

A: The saved records are stored in "Print" in the Job menu. To print the record, user needs to visit www.x431.com/CR529 to download and install the update tool on the computer since the print manager is integrated in the update tool. Refer to Chapter 5.5 Print for details.

Warranty

THIS WARRANTY IS EXPRESSLY LIMITED TO PERSONS WHO PURCHASE LAUNCH PRODUCTS FOR PURPOSES OF RESALE OR USE IN THE ORDINARY COURSE OF THE BUYER'S BUSINESS.

LAUNCH electronic product is warranted against defects in materials and workmanship for one year (12 months) from date of delivery to the user.

This warranty does not cover any part that has been abused, altered, used for a purpose other than for which it was intended, or used in a manner inconsistent with instructions regarding use. The exclusive remedy for any automotive meter found to be defective is repair or replacement, and LAUNCH shall not be liable for any consequential or incidental damages.

Final determination of defects shall be made by LAUNCH in accordance with procedures established by LAUNCH. No agent, employee, or representative of LAUNCH has any authority to bind LAUNCH to any affirmation, representation, or warranty concerning LAUNCH automotive meters, except as stated herein.

Customer Service

If you have any questions on the operation of the unit, please contact local dealer, or contact LAUNCH TECH CO., LTD:

Website: www.x431.com

Phone: +86 755 8455 7891

Email: overseas.service@cnlaunch.com

Statement:

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