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One-Year Limited Warranty

Subject to the conditions of this limited warranty, Shenzhen Foxwell Technology Co., Ltd ("FOXWELL") warrants its customer that this product is free of defects in material and workmanship at the time of its original purchase for a subsequent period of one (1) year.

In the event this product fails to operate under normal use, during the warranty period, due to defects in materials and workmanship, FOXWELL will, at its sole option, either repair or replace the product in accordance with the terms and conditions stipulated herein.

Terms and Conditions

1 If FOXWELL repairs or replaces the product, the repaired or replaced product shall be warranted for the remaining time of the original warranty period. No charge will be made to the customer for replacement parts or labor charges incurred by FOXWELL in repairing or replacing the defective parts.

2 The customer shall have no coverage or benefits under this limited warranty if any of the following conditions are applicable:

a) The product has been subjected to abnormal use, abnormal conditions, improper storage, exposure to moisture or dampness, unauthorized modifications, unauthorized repair, misuse, neglect, abuse, accident, alteration, improper installation, or other acts which are not the fault of FOXWELL, including damage caused by shipping.

b) The Product has been damaged from external causes such as collision with an object, or from fire, flooding, sand, dirt, windstorm, lightning, earthquake or damage from exposure to weather conditions, an Act of God, or battery leakage, theft, blown fuse, improper use of any electrical source, or the product was used in combination or connection with other product, attachments, supplies or consumables not manufactured or distributed by FOXWELL.

3 The customer shall bear the cost of shipping the product to FOXWELL. And FOXWELL shall bear the cost of shipping the product back to the customer after the completion of service under this limited warranty.

4 FOXWELL does not warrant uninterrupted or error-free operation of the product. If a problem develops during the limited warranty period, the consumer shall take the following step-by-step procedure:

a) The customer shall return the product to the place of purchase for repair or replacement processing, contact your local FOXWELL distributor or visit our website www.foxwelltech.us to get further information.

b) The customer shall include a return address, daytime phone number and/or fax number, complete description of the problem and original invoice specifying date of purchase and serial number.

c) The customer will be billed for any parts or labor charges not covered by this limited warranty.

d) FOXWELL will repair the Product under the limited warranty within 30 days after receipt of the product. If FOXWELL cannot perform repairs covered under this limited warranty within 30 days, or after a reasonable number of attempts to repair the same defect, FOXWELL at its option, will provide a replacement product or refund the purchase price of the product less a reasonable amount for usage.

e) If the product is returned during the limited warranty period, but the problem with the product is not covered under the terms and conditions of this limited warranty, the customer will be notified and given an estimate of the charges the customer must pay to have the product repaired, with all shipping charges billed to the customer. If the estimate is refused, the product will be returned freight collect. If the product is returned after the expiration of the limited warranty period, FOXWELL' normal service policies shall apply and the customer will be responsible for all shipping charges.

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PRODUCT OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT OR FACILITIES, DOWNTIME, THE CLAIMS OF ANY THIRD PARTIES, INCLUDING CUSTOMERS, AND INJURY TO PROPERTY, RESULTING FROM THE PURC HASE OR USE OF THE PRODUCT OR ARISING FROM BREACH OF THE WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL OR EQUITABLE THEORY, EVEN IF FOXWELL KNEW OF THE LIKELIHOOD OF SUCH DAMAGES. FOXWELL SHALL NOT BE LIABLE FOR DELAY IN RENDERING SERVICE UNDER THE LIMITED WARRANTY, OR LOSS OF USE DURING THE PERIOD THAT THE PRODUCT IS BEING REPAIRED.

6. Some states do not allow limitation of how long an implied warranty lasts, so the one-year warranty limitation may not apply to you (the Consumer). Some states do not allow the exclusion or limitation of incidental and consequential damages, so certain of the above limitations or exclusions may not apply to you (the Consumer). This limited warranty gives the Consumer specific legal rights and the Consumer may also have other rights which vary from state to state.

Safety Information

For your own safety and the safety of others, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your scanner. The safety messages presented below and throughout this user's manual are reminders to the operator to exercise extreme care when using this device. Always refer to and follow safety messages and test procedures provided by vehicle manufacturer. Read, understand and follow all safety messages and instructions in this manual.

Safety Message Conventions Used

We provide safety messages to help prevent personal injury and equipment damage. Below are signal words we used to indicate the hazard level in a condition.

⚠ DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

⚠ WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

⚠ CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

Important Safety Instructions

And always use your scanner as described in the user's manual, and follow all safety messages.

⚠ WARNING

- Do not route the test cable in a manner that would interfere with driving controls.
- Do not exceed voltage limits between inputs specified in this user's manual.
- Always wear ANSI approved goggles to protect your eyes from propelled objects as well as hot or caustic liquids.
- Fuel, oil vapors, hot steam, hot toxic exhaust gases, acid, refrigerant and other debris produced by a malfunction engine can cause serious injury or death. Do not use the scanner in areas where explosive vapor may collect, such as in below-ground pits, confined areas, or areas that are less than 18 inches (45 cm) above the floor.
- Do not smoke, strike a match, or cause a spark near the vehicle while testing and keep all sparks, heated items and open flames away from the battery and fuel / fuel vapors as they are highly flammable.
- Keep a dry chemical fire extinguisher suitable for gasoline, chemical and electrical fires in work area.
- Always be aware of rotating parts that move at high speed when an engine is running and keep a safe distance from these parts as well as other potentially moving objects to avoid serious injury.
- Do not touch engine components that get very hot when an engine is running to avoid severe burns.
- Block drive wheels before testing with engine running. Put the transmission in park (for automatic transmission) or neutral (for manual transmission). And never leave a running engine unattended.
- Do not wear jewelry or loose fitting clothing when working on engine.
- Don't connect or disconnect the equipment while the ignition is on or the engine is running.

Table of Contents

1 Using This Manual

We provide tool usage instructions in this manual. Below is the conventions we used in the manual.

1.1 Bold Text

Bold text is used to highlight selectable items such as buttons and menu options.

Example:

Press the **ENTER** button to select.

1.2 Symbols and Icons

1.2.1 Solid Spot

Operation tips and lists that apply to specific tool are introduced by a solid spot ●.

Example:

When **Settings** is selected, a menu that lists all available options displays. Menu options include:

- WIFI
- Language
- Unit
- Shortcuts
- Uninstall
- Display Test
- Keypad Test
- About

1.2.2 Arrow Icon

An arrow icon indicates a procedure.

Example:

To change menu language:

1. Scroll with the arrow keys to highlight **Language** on the menu.
2. Press the **ENTER** button to select.

1.2.3 Note and Important Message

Note

A NOTE provides helpful information such as additional explanations, tips, and comments.

Example:

NOTE

Test results do not necessarily indicate a faulty component or system.

Important

IMPORTANT indicates a situation which, if not avoided, may result in damage to the test equipment or vehicle.

Example:

IMPORTANT

Do not soak keypad as water might find its way into the scanner.

2 Introductions

This series of scanners from Foxwell are innovative diagnostic tools for most vehicles on the road today.

With the tool properly connected to the vehicle's data link connector (DLC), you can use the scanner to read diagnostic trouble codes and view "live" data readings from a variety of control systems. You can also save "recordings" of the data readings, and print stored information.

2.1 Scanner Descriptions

This section illustrates external features, ports and connectors of the scanner.

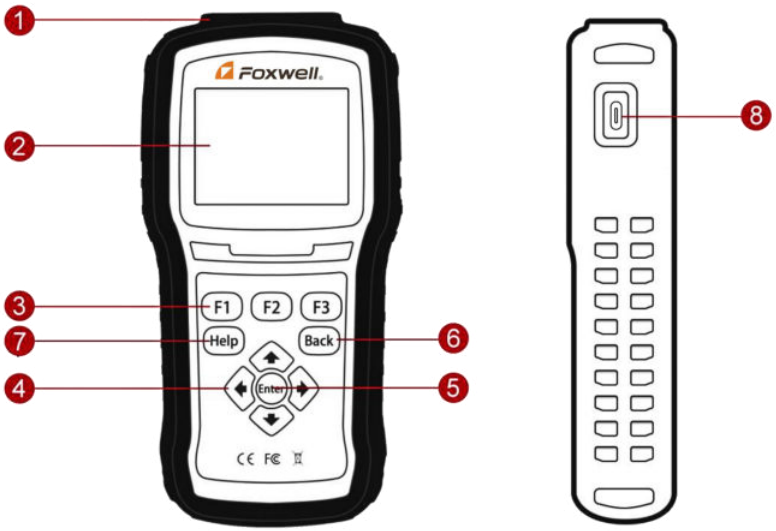

Figure 2-1 Front View

1 **Diagnostic Port** - provides connection between vehicle and the scanner.
2 **LCD Display** - shows menus, test results and operation tips.
3 **Function Keys / Shortcut keys** - three keys that correspond with "buttons" on some screens for executing special commands or provide quick access to most frequently used applications or functions.
4 **Direction Keys** - select an option or scroll through a screen of data or text.
5 **ENTER Key** - executes a selected option and generally goes to the next screen.
6 **BACK Key** - exits a screen and generally returns to previous screen.
7 **HELP Key** - displays helpful information.
8 **USB Port** - provides USB power connection between the scanner and PC/laptop.

IMPORTANT

Do not use solvents such as alcohol to clean keypad or display. Use a mild nonabrasive detergent and a soft cotton cloth.

2.2 Accessory Descriptions

This section lists the accessories that go with the scanner. If you find any of the following items missing from your package, contact your local dealer for assistance.

1 **User's Guide** - provides operation instructions for the usage of the scanner.
2 **Diagnostic Cable** - provides connection between the scanner and a vehicle.
3 **USB Cable** - provides connection between the scanner and a computer to update and print data.

4 **Warranty Card** - A warranty card is required if you need any repair or replacement from us.
5 **Blower Molding Case** - stores the scanner and its accessories.

2.3 Technical Specifications

Display: Backlit, 2.8'' TFT color display
Working Temperature: 0 to 60 ℃ (32 to 140℉)
Storage Temperature: -20 to 70℃ (-4 to 158℉)
Power Supply: 8-18V vehicle power and 3.3V USB power
Dimensions: (L*W*H**)**: 200*130*40mm
Weight: 0.9 Kg

3 Getting Started

This section describes how to provide power to the scanner, provides brief introductions of applications loaded on the scanner and display screen layout and illustrates how to input text and numbers with the scan tool.

3.1 Providing Power to Scanner

Before using the scanner, make sure to provide power to the scanner.

The unit operates on any of the following sources:

- 12-volt vehicle power
- USB connection to computer

3.1.1 Connecting to Vehicle Power

The scanner normally powers on whenever it is connected to the data link connector (DLC).

To connect to vehicle power:

1. Locate the data link connector (DLC). The DLC is generally located under the dash on the driver side of the vehicle.
2. Attached the Diagnostic cable to the scanner and tighten the captive screws to ensure good connection.
3. Connect a correct adapter to the data cable according to the vehicle being serviced and plug it into the vehicle DLC.
4. Switch the ignition key to the ON position.
5. The scanner automatically boots up.

IMPORTANT
Never try to provide power for the scan tool from USB connection when the scan tool is communicating with a vehicle.

3.1.2 Connecting to Computer with USB Cable

The scan tool also receives power through the USB port when it is connected to a computer for software updates and printing of data.

To connect to computer:

1. Connect the scanner to a computer with the USB cable provided.

3.2 Application Overview

When the scan tool boots up, the Home screen opens. This screen shows all applications loaded on the unit. The available vehicle applications may vary depending on software configuration.

- **Auto VIN** - leads to screens for identifying a car by VIN reading.
- **OBDII/EOBD** - leads to OBDII screens for all 9 generic OBD system tests.
- **Diagnostic** - leads to screens for diagnostic trouble code information, live data stream, ECU information of a variety of vehicles.

- **Maintenance** - leads to screens of tests of the most frequently required service features.
- **Settings** - leads to screens for adjusting default settings to meet your own preference and view information about the scanner.
- **Data Manager** - leads to screens for access to data records.
- **Update** - leads to screen for updating the scanner.

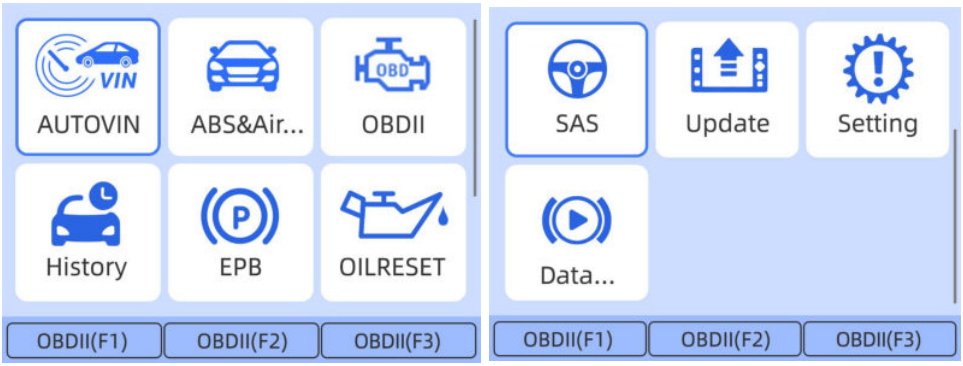

Figure 3-1 Sample Home Screen

3.3 Input Dialog Box

This section illustrates how to use the scan tool to input letters and numbers, such as VIN number, channel number, test values and DTC number. Typically, you may be required to input letters or numbers when you are doing any of the following operations.

- VIN entry
- input channel number
- set adaptation value
- enter block number
- enter login code
- key matching
- look up DTCs

The scan tool provides 4 different types of keyboard to meet your specific needs. Depending on the needs of text entry, it automatically shows the most suitable keypad.

- classic QWERTY keyboard for input of texts that contain both letters and numbers
- numeric keyboard for input of numbers
- alphabet keyboard for input of letters
- hexadecimal keyboard for special functions, such as key matching, UDS coding

To input text with the scan tool:

1. When you are requested to input text, press the function key **Keyboard**.

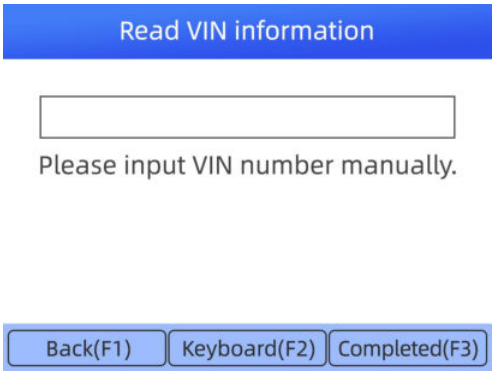

Figure 3-2 Sample Input Text Screen

2. Scroll with the arrow keys to highlight your desired letter or number and press the **ENTER** key to confirm.

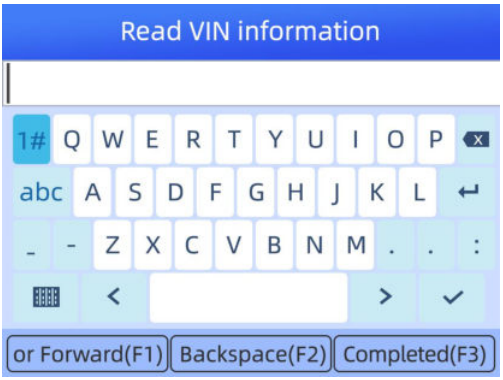

Figure 3-3 Sample Numeric Keyboard Screen

3. To delete a letter or number, use the function key **Cursor Forward t**o move the cursor to it and then press the **Backspace** button.
4. When finished the entry, press **Completed** key to continue.

Test

4 Diagnostic Operations

This section illustrates how to use the scanner to read and clear diagnostic trouble codes, and view "live" data readings and ECU information on controllers installed on 48 vehicles and also save "recordings" of the data readings.

4.1 Vehicle Identification

The vehicle identification information presented is provided by the ECM of the vehicle being tested. Therefore, certain attributes of the test vehicle must be entered into the scan tool to ensure the data displays correctly. The vehicle identification sequence is menu driven, you simply follow the screen prompts and make a series of choices. Each selection you make advances you to the next screen. A Back button in the upper left corner of the screen returns you to the previous screen. Exact procedures may

vary somewhat by vehicle.

It typically identifies a vehicle by any of the following means:

- Automatic VIN acquisition
- Manual VIN entry
- Manual vehicle selection

NOTE

Not all identification options listed above are applicable to all vehicles. Available options may vary by vehicle manufacturer.

4.1.1 Auto VIN

Auto VIN allows to identifying a vehicle by automatically requesting the vehicle identification number (VIN).

To identify a vehicle automatic VIN acquisition:

1.Scroll with the arrow keys to highlight Auto VIN from the main menu and press the ENTER key to start.

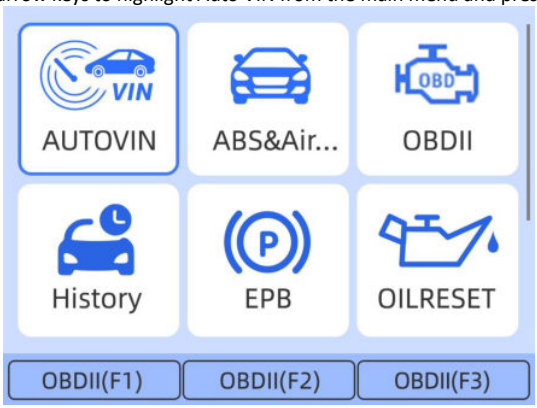

Figure 4-1 Sample Main Menu Screen

Or scroll with the arrow keys to highlight ABS&SRS from the Application menu and press the **ENTER** key to start. If you have the application assigned to one of the function keys at the bottom of the screen, you can alternatively press the function key to start the application.

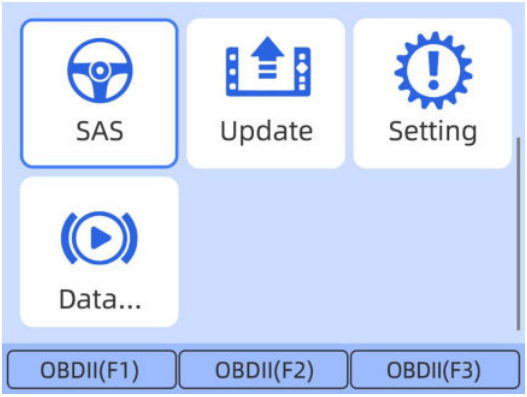

Figure 4-2 Sample Application Menu

2.A screen with vehicle manufacturer areas displays. Select the area where the vehicle manufacturer is from. A menu of all vehicle manufacturers from this area displays.

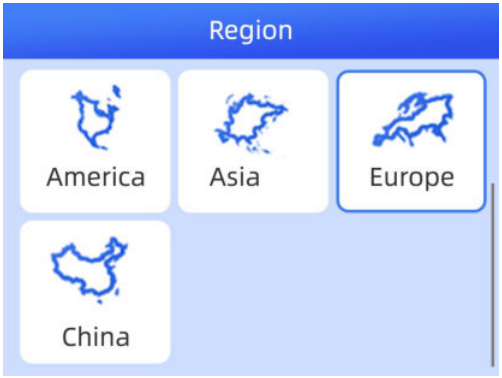

Figure 4-3 Sample Vehicle Manufacturer Area Selection Screen

3.Select the vehicle manufacturer. A list of vehicle identification options displays.

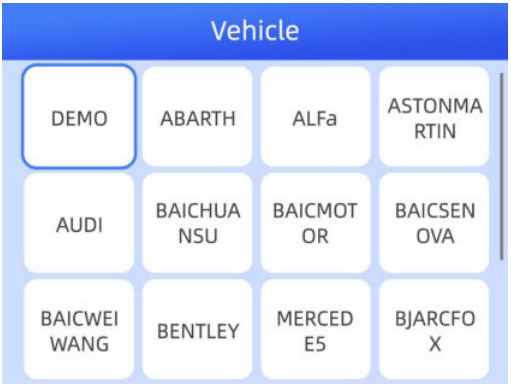

Figure 4-4 Sample Vehicle Manufacturer Selection Screen

4.Select **SmartVIN** from the menu, and press the **ENTER** key.

Figure 4-5 Sample VIN Acquisition Screen

5.The scan tool starts to communicate with the vehicle and read the Vehicle Specification or VIN Code automatically.

Figure 4-6 Sample VIN Automatic Acquisition

6.Answer **YES** if the Vehicle Specification or VIN code is correct and a menu of controller selection displays. Answer **NO** if it is incorrect, and you are required to enter the correct VIN number manually.

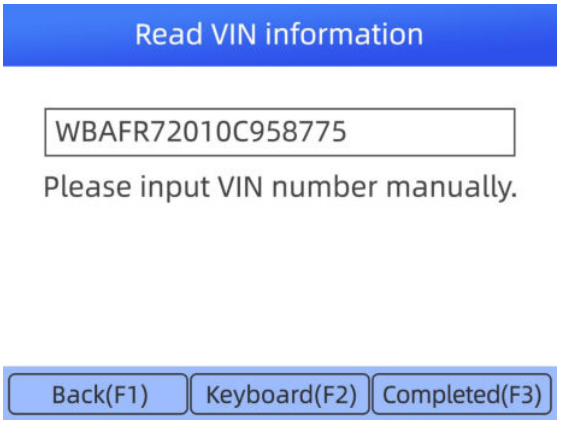

Figure 4-7 Sample manual VIN entry screen

4.1.2Manual VIN Entry

Manual VIN Entry identifies a vehicle by manually inputting a 17-digit VIN code.

To identify a vehicle by manual VIN entry:
1.Refer to Step 1-3 of 4.1.1 Automatic VIN Acquisition.
2.Select an appropriate option from the menu. A virtual keyboard opens for VIN entry.

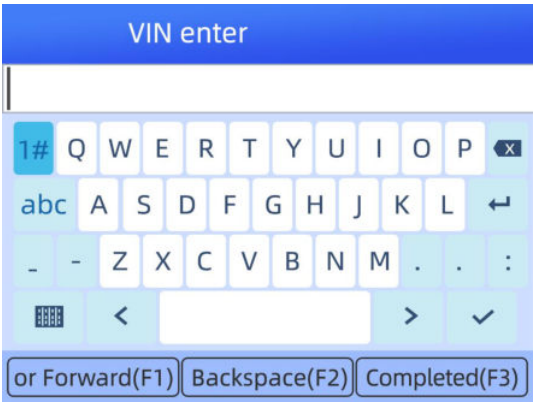

Figure 4-8 Sample Manual VIN Entry with Keyboard

3.Input a valid VIN code and use the function key **Completed** to confirm. The scan tool starts to identify the vehicle.

4.1.3Manual Vehicle Selection

Manual Vehicle Selection identifies a vehicle by making several selections according to certain VIN characters, such as model year, and engine type.

To identify a vehicle by manual vehicle selection:

1.Refer to Step 1-3 of 4.1.1 Automatic VIN Acquisition.

2.On each screen that appears, select the correct option and then press the **ENTER** key. Do this until the complete vehicle information is entered and the menu of controller selection displays.

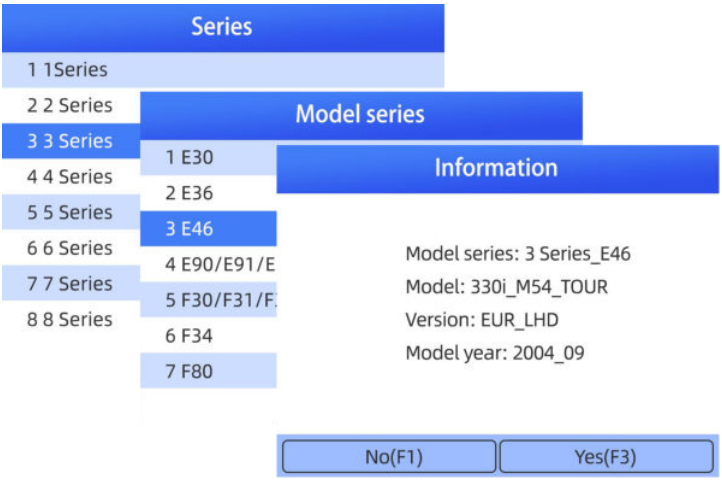

Figure 4-9 Sample Manual Vehicle Selection Screen

4.2 System Selection

When you have completed the identification of vehicle, a menu for selecting system to test displays. Menu options typically include:

- Quick Scan
- Control Modules
- Service

4.2.1Quick Scan

Quick Scan performs an automatic system test to determine which control modules are installed on the vehicle and obtain diagnostic trouble codes (DTCs) overview. Depending on the number of control modules, it may take a few minutes to complete the test.

To perform an automatic system scan:

3.Scroll with the arrow keys to highlight **Quick Scan** from the menu and press **ENTER** tostart.

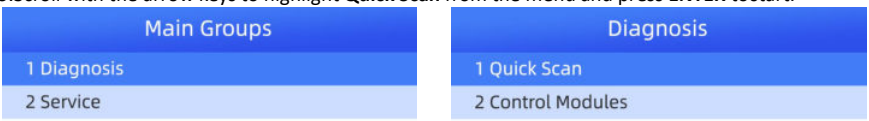

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Figure 4-10 Sample Select System Scan Screen

5.4-11To pause the scan, press the function key corresponding with **Pause** on the screen.

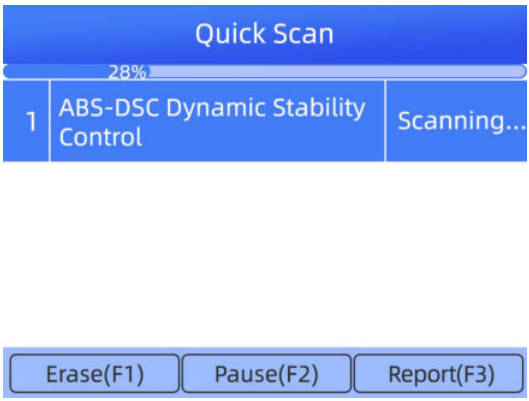


Figure 4-11 Sample Automatic system scan screen

6.At the end of successful automatic controller scan, a menu with a list of installed controllers together with their DTC overview displays.

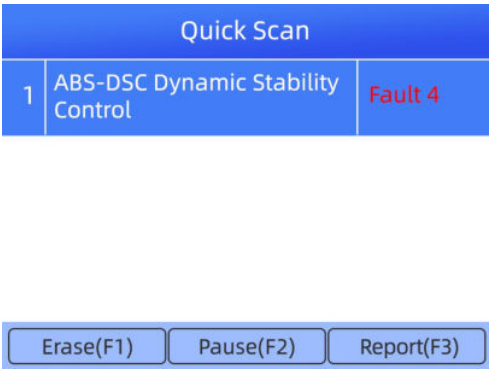


Figure 4-12 Sample Quick scan

7.If there is diagnostic trouble code(s) detected in a control unit, press the function key corresponding with Report on the screen to view details of code information, and press the function key Erase to clear them.

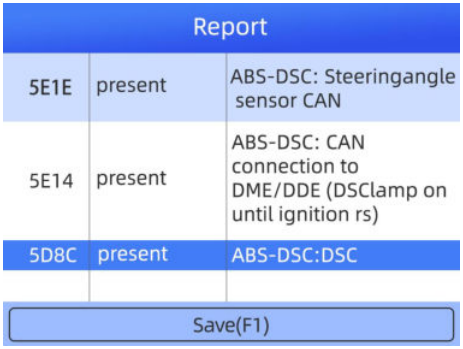


Figure 4-13 Sample Report screen

8.Press function key F1 to save the trouble code information.

9.Select the system you would like to test, and press the **ENTER** key. When the scanner has established connection with the vehicle, the Function Menu displays.

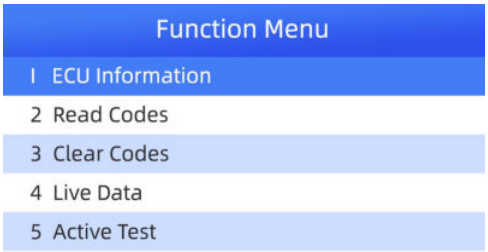


Figure 4-14 Sample Function Menu screen

4.2.2 Manual Selection

Manual Selection screen displays all controllers available of the vehicle manufacturer. The controllers listed on the menu do not mean that they are installed on the vehicle.

To select a system for testing:

10. Scroll with the arrow keys to highlight **Manual Selection** from the menu and press the **ENTER** key. A controller menu displays.

Figure 4-15 Sample Control Unit Menu Screen

11. Select the system you would like to test. When the scanner has established connection with the vehicle, the Function Menu displays.

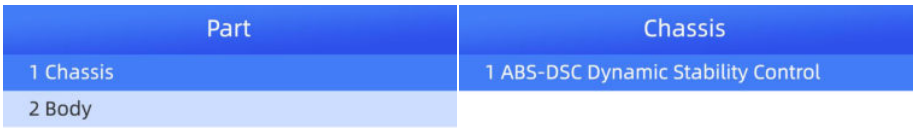


Figure 4-16 Sample Common menu screen

4.3 Diagnostic Function Selection

After a system is selected and the scanner establishes communication with the vehicle, the Function Menu displays. The menu options may include:

- Read Codes
- Erase Codes
- ECU Information
- Live Data
- Special Function

NOTE

Not all function options listed above are applicable to all vehicles. Available options may vary by the year, model, and make of the test vehicle. A "The selected mode is not supported!" message displays if the option is not applicable to the vehicle under test.

4.3.1 Read Codes

Read Codes menu lets you read trouble codes found in the control unit. Typical menu options

Present/Permanent/Current codes stored in a control module are used to help identify the cause of a trouble or troubles with a vehicle. These codes have occurred a specific number of times and indicate a problem that requires repair.

History codes are also referred to as past codes that indicate intermittent DTCs that are not currently active.

To read codes from a vehicle:

12. Scroll with the arrow keys to highlight **Read Codes** from Function Menu and press the **ENTER** key. A code list including code number and its description displays.

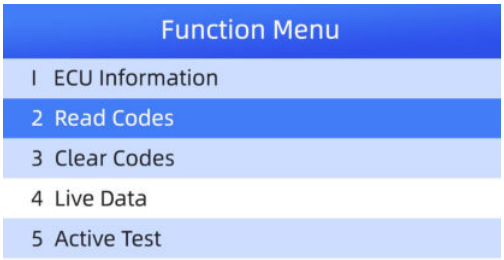


Figure 4-17 Sample Function menu screen

13. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.

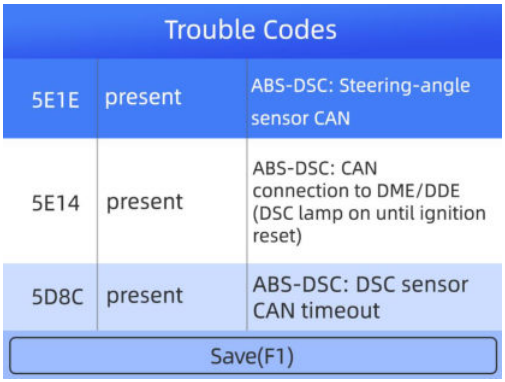


Figure 4-18 Sample Code Screen

14.Press function key **Save** to store DTC information. Or use the **BACK** key to exit.

4.3.2 Clear Codes

Clear Codes menu lets you to clear all current and stored DTCs from a selected control module. Also it erases all temporary ECU information, including freeze frame. So make sure that the selected system are completely checked and serviced by technicians and no vital information will be lost before clearing codes.

NOTE

- To clear codes, make sure that the ignition key is switched to ON with the engine off.
- Erase Codes does not fix the problem that caused the fault! DTCs should only be erased after correcting the condition(s) that caused them.

To clear codes:

15.Scroll with the arrow keys to highlight **Clear Codes** from Function Menu and press the **ENTER** key.

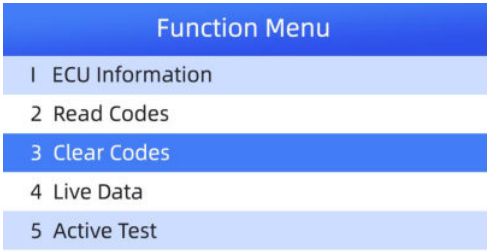


Figure 4-19 Sample Function Menu Screen

16.Follow the on-screen instructions and answer questions about the vehicle being tested to complete the procedure.

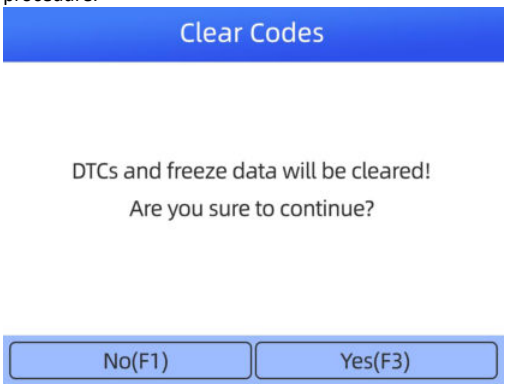


Figure 4-20 Sample Clear Codes Screen

17.Check the codes again. If any codes remain, repeat the Clear Codes steps.

4.3.3 ECU Information

ECU Information screen displays the identification data of the control module under test, such as the control module identification string and the control module coding.

To read ECU information:

18.Select **ECU Information** from the menu and press the **ENTER** key.

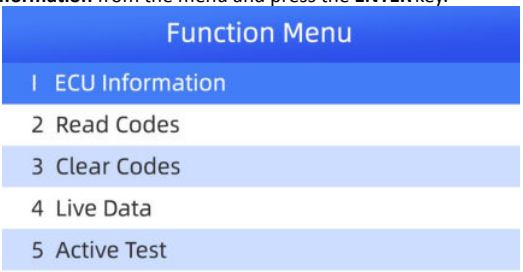


Figure 4-21 Sample Function Menu Screen

19.A screen with detailed information of the selected control module displays.

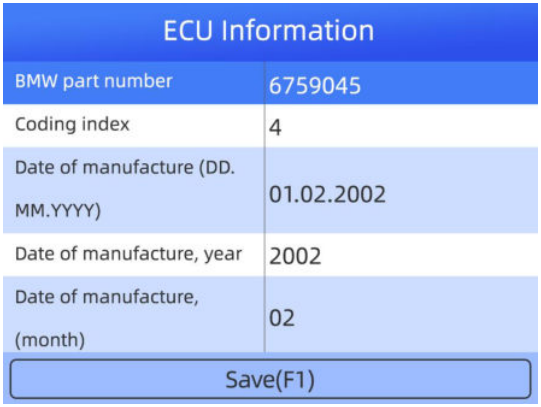


Figure 4-22 Sample ECU Information Screen

20.Press function key **Save** to store ECU information. Or use the **BACK** key to exit.

4.3.4 Live Data

Live Data menu lets you view and record real time PID data from a selected vehicle electronic control module.

Menu options typically include:

- Complete List
- Custom List

4.3.4.1 Complete List

Complete Data List menu lets you view all live PID data from a selected system.

To view all live PID data

1. Scroll with the arrow keys to highlight **Live Data** from the menu and press the **ENTER** key to display the live data menu.

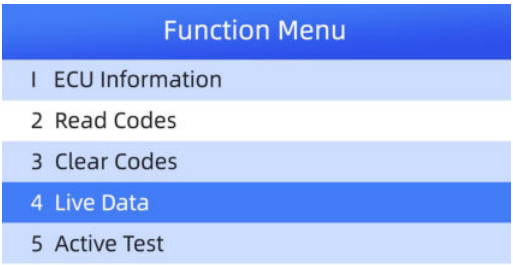


Figure 4-23 Sample Live Data Selection Screen

2. Select the **Complete List** from the menu and press the **ENTER** key to display the datastream screen.

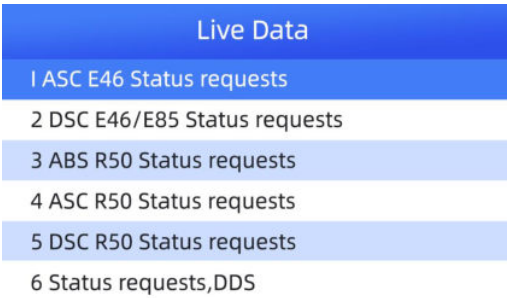


Figure 4-24 Sample Complete List Screen

3. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.

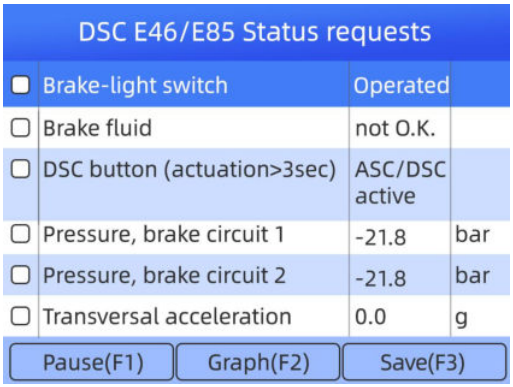


Figure 4-25 Sample PID graph Screen

4. Scroll with the up and down arrow keys to highlight a line, if the **One Graphic** on the bottom is highlighted, it indicates the graphing is available for the selected line. Press the function key **One Graphic** to display the PID graph.

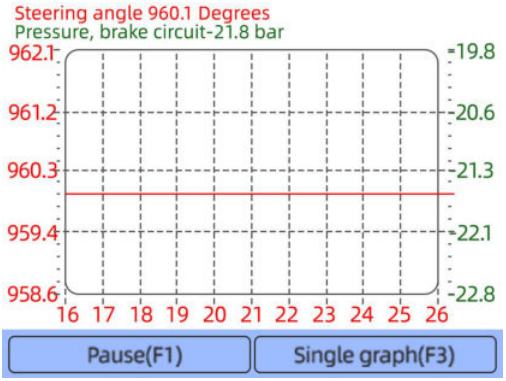


Figure 4-26 Sample PID Graph Screen

5. Press the function key **Merge Graph** to display two PID plots in one coordinate for easy and intuitive diagnosis.

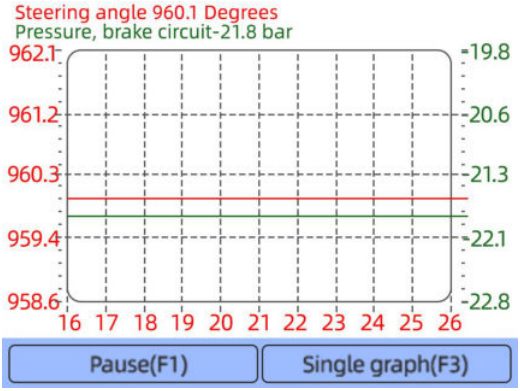


Figure 4-27 Sample Merged PID Plots Screen

6. To record the data to memory of the scanner, use the function key **SAVE**, and press **Stop Saving** to stop recording at any time.
7. Press **Back** to return to text viewing of PID data.
8. Select **Pause** to suspend collecting data from the scanner and use the Continue key to resume collecting data.
9. Press the Back key to return to the previous menu.

4.3.4.2 Custom List

Custom List menu lets you to minimize the number of PIDs on the data list and focus on any suspicious or symptom-specific data parameters.

To create a custom list:

10. Select **Custom List** from the menu and press the **ENTER** key.

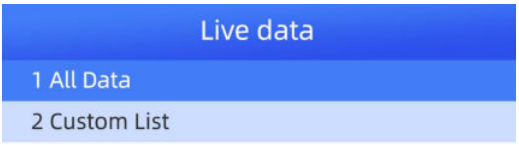


Figure 4-28 Sample Live Data Screen

1. The custom data stream selection screen displays. Scroll with the up and down arrow keys to highlight a line, press the **ENTER** key and then repeat the action to make moreselections.

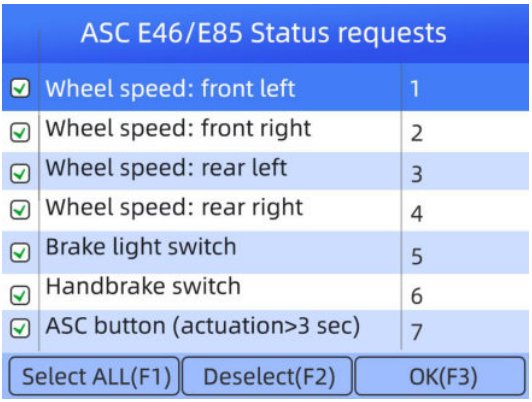


Figure 4-29 Sample Custom List Selection Screen

NOTE

To deselect an item, select it again and then press the **ENTER** key. Alternatively, use the function keys **Select All** and **Deselect** to select or deselect all items at once.

2. When finished selection, use the function key **VIEW DATA** to display selected items.

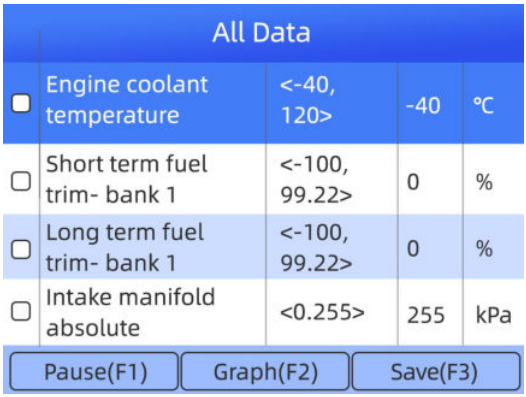


Figure 4-30 Sample Data stream Screen

4.3.5 Active Test

Active Tests, also known as Actuator Tests, are bi-directional diagnostic tests on vehicle systems and component. The tests let you to use the scanner temporarily activate or control a vehicle system or component, and when you exit the test, the system/component returns to normal operation. Some tests display a command to the operator. For example, if “Press Brake Pedal” displays, the operator has to press and hold the brake pedal and then continue. The sequence, number and type of tests are dictated by the control module.On some systems, the actuator tests cannot be restarted until the ignition key is switched off for some time. Alternatively, briefly start and run the engine, shut down, turn the ignition to the run position, then re-initiate the actuator tests.

To start a test:

1. Press Active Test from the menu.

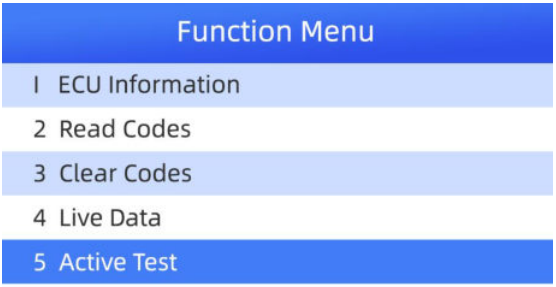


Figure 4-31 Sample Active Test Screen

2.Select an option to start the test .

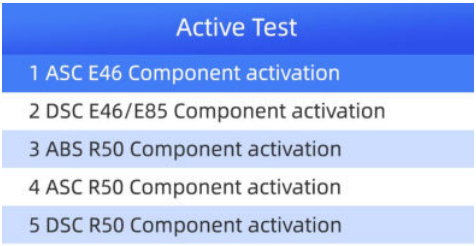


Figure 4-32 Sample Selection Active Test Screen 1

3.Follow on-screen instructions to make proper selections and operations to complete the tests.

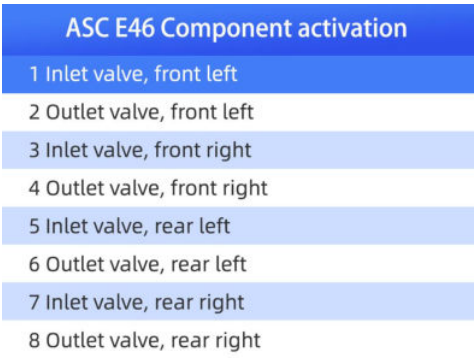


Figure 4-33 Sample Selection Active Test Screen 2

4.Press " **Back** " to exit.

4.3.6 Special Functions

Special tests are bi-directional diagnostic tests on anti-lock brake systems and air bags. The tests let you to use the scanner temporarily activate or control a vehicle system or component, and when you exit the test, the system/component returns to normal operation.

Some tests display a command to the operator. For example, if “Press Brake Pedal” displays, the operator has to press and hold the brake pedal and then continue. The number, and type of tests will vary for each vehicle, year and components.

Typical special test options include:

- **ABS Manual Control Tests** – allows to manually control the actuators in order to test ABS motors, solenoids, solenoid enable relays, EMBs, and more.
- **ABS Motor Test** – allows to manually control the ABS pump motor.
- **ABS Version Test** – displays the name of the brake system and the ABS controller version number, software ID, and sequence value.
- **Actuator Tests** – allows to manually control the actuators in order to test AYC valves, inlet valves, outlet valves, pump motors, and TRACS valves.
- **Autobleed Test, Automated Bleed, or Service Bleed** – removes air from the internal brake fluid chambers after servicing the brakes.

IMPORTANT

- Before bleeding the brake system, make sure no diagnostic codes are present.
- Do not let the master cylinder run dry during the brake bleeding procedure.
- Do not allow brake fluid to contact the motor pack or the electrical connectors.
- Use a recommended brake fluid. Do not use silicone brake fluids in an ABS-equipped vehicle.

⚠ WARNING

After bleeding the brake system, check the brake pedal for excessive travel or a "spongy" feel. Bleed again if either condition is present.

- **Automated Test** – automatically commands each solenoid valve and the pump motor on and off to test for proper operation.
- **Brake Bleed Preparation Test** – prepares the brake lines for bleeding by clearing air from the modulator. The test rehomes all the ABS and TCS motors, cycles the TCS motors, and then returns all motors to the "home" position at the bottom of the bore.
- **Function Test** – automatically commands the ABS relay, valve solenoids, and pump motor on and off to test for proper operation.
- **Gear Tension Relief Test** – relieves tension from the ABS motor gears so you can separate the ABS motor pack from the ABS hydraulic modulator.
- **Hydraulic Control Tests** – allows to manually engage and disengage the ABS solenoids for troubleshooting the hydraulic functions.
- **Idle Up Manual Control Test** – allows to manually control the idle up actuators.
- **Lamp Tests** – allows to manually control the ABS or TCS warning or indicator lamps.
- **Motor Rehome Test** – prepares the brake lines for bleeding by clearing air from the modulator. The test returns all ABS motors to their "home" positions.
- **Pump Motor Tests** – allows to manually control the pump motor.
- **Relay Test** – allows to manually engage and disengage either the ABS or TCS relays in order to test relay operation.
- **Requested Torque Test** – allows to manually control the engine torque to test for proper operation of the traction control system (TCS).
- **Setup SDM Serial Number (Air Bag Sensing and Diagnostic Module)** – allows to program a new air bag serial number into the dash integration module (DIM). You use this test after installing a new air bag; otherwise a diagnostic trouble code will be set when you turn on the ignition.
- **Solenoid Tests** – allows to manually control the inlet and output valve solenoids.
- **System Identification** – displays information about the brake system, the vehicle, and the ABS controller.
- **TCS Test** – allows to control the pump motor in order to apply fluid pressure to the front wheel circuits.
- **Traction Control System (TCS) Manual Control Tests** – allows to perform motor tests and an adjuster assembly control test.
- **Voltage Load Test** – "loads" the ABS battery supply circuit to test for adequate battery capacity.

To perform special tests on a vehicle:

1. Scroll with the arrow keys to **Service** on the menu and press the **ENTER** key.

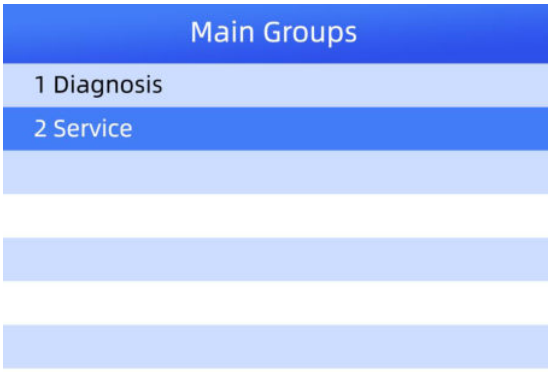


Figure 4-34 Sample Function menu screen

2. A group selection screen, test selection screen, several step-by-step instruction screens, or bi-directional control screen may appear. Read the screens and follow all instructions. If necessary, use the function keys to perform commands or answer any questions. If more than 3 function keys displays, use the **Up/Down** arrow keys to select a command and press the **ENTER** key to confirm.

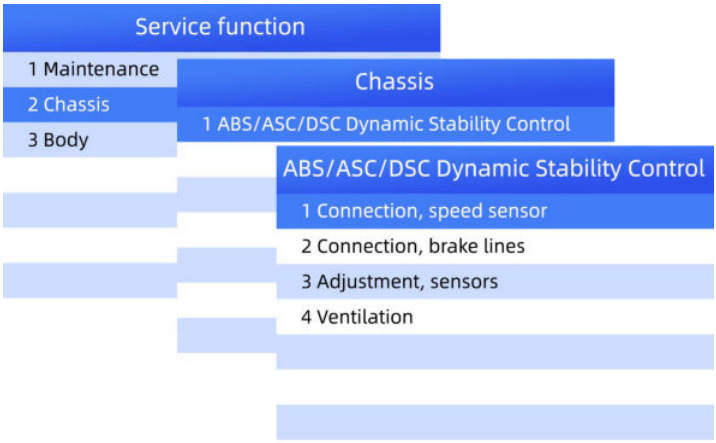


Figure 4-35 Sample Special function screen

3. When completed, press the **BACK** key to return to previous screens.

NOTE

Not all function options listed above are applicable to all vehicles. Available options may vary by the year, model, and make of the test vehicle. A “The selected mode is not supported!” message displays if the option is not applicable to the vehicle under test.

5 OBDII/EOBD Operations

OBD-II/EOBD menu lets you access all OBD service modes. According to ISO 9141-2, ISO 14230-4, and

SAE J1850 standards, the OBD application is divided into several sub programs, called 'Service $xx'. Below is a list of OBD diagnostic services:

- **Service $01** - request current powertrain diagnostic data
- **Service $02** - request powertrain freeze frame data
- **Service $03** - request emission-related diagnostic trouble codes
- **Service $04** - clear/reset emission-related diagnostic information
- **Service $05** - request oxygen sensor monitoring test results
- **Service $06** - request on-board monitoring test results for specific monitored systems
- **Service $07** - request emission-related diagnostic trouble codes detected during current or last completed driving cycle
- **Service $08** - request control of on-board system, test or component
- **Service $09** - request Vehicle Information

When OBDII/EOBD application is selected from Home screen, the scanner starts to detect the communication protocol automatically. Once the connection has established, a menu that lists all of the tests available on the identified vehicle displays. Menu options typically include:

- System Status
- Read Codes
- Freeze Frame Data
- Erase Codes
- Live Data
- I/M Readiness
- O2 Sensor Test
- On-board Monitor Test
- Component Test
- Vehicle Information
- Modules Present
- Code Lookup

NOTE

Not all function options listed above are applicable to all vehicles. Available options may vary by the year, model, and make of the test vehicle. A "The selected mode is not supported!" message displays if the option is not applicable to the vehicle under test.

5.1 Diagnostic trouble codes & FFD

Read Codes menu lets you read both stored codes and pending codes found in the control unit. Typical menu options include:

- Stored Codes
- Pending Codes

Diagnostic trouble codes stored in a control module are used to help identify the cause of a trouble or troubles with a vehicle. These codes have occurred a specific number of times and indicate a problem that requires repair.

Pending codes are also referred to as maturing codes that indicate intermittent faults. If the fault does not occur within a certain number of drive cycles (depending on vehicle), the code clears from memory. If a fault occurs a specific number of times, the code matures into a DTC and the MIL illuminates or blinks.

To read codes/pending codes from a vehicle:

1. Scroll with the arrow keys to highlight **Diagnostic trouble codes & FFD** from Diagnostic Menu and press the **ENTER** key.

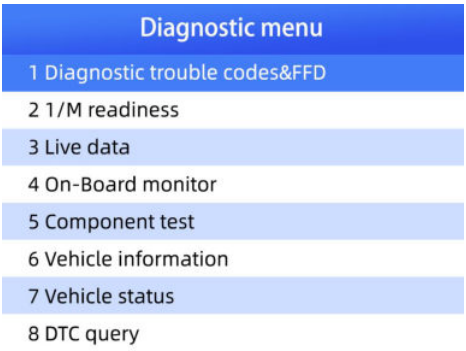


Figure 5-1 Sample Diagnostic Menu Screen

2. It will display **Stored** Codes or **Pending** Codes on the menu.

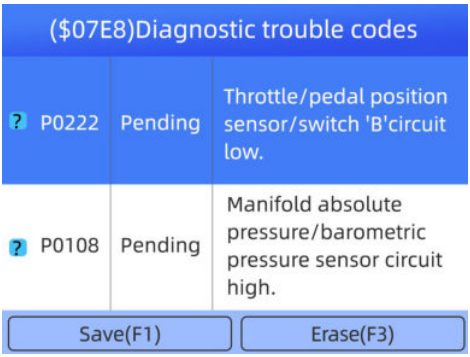
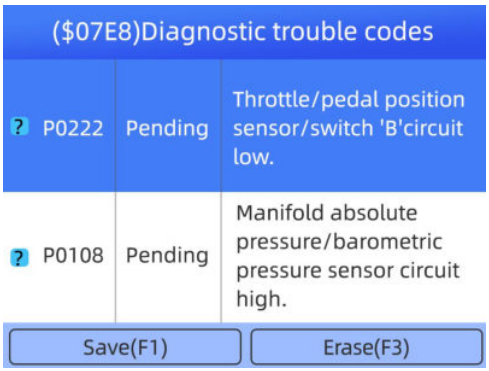


Figure 5-2 Sample Read Codes Screen

If no DTCs are present the message “No (Pending) Codes Found!” is displayed. If any manufacturer specific or enhanced codes detected, select vehicle a make before viewing DTC information.

3. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.



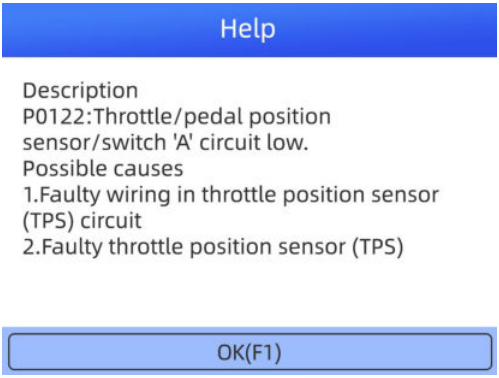


Figure 5-3 Sample Code screen

NOTE

"?" means there are help information. No "?" means there are no help information.

4. Click " Erase " to erase codes.

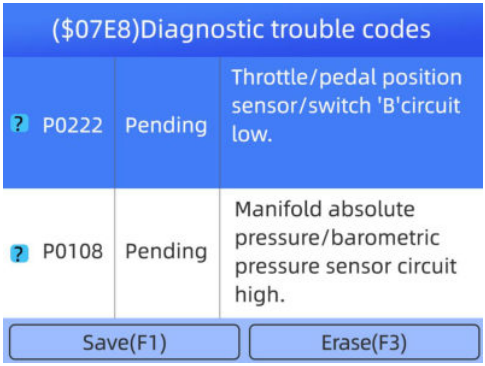


Figure 5-4 Sample Erase Codes Screen

5. Follow the on-screen instructions and answer questions about the vehicle being tested to complete the procedure.

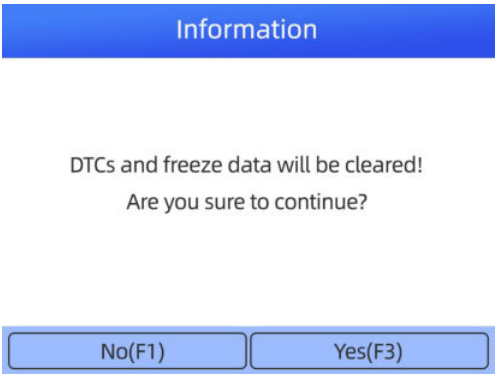


Figure 5-5 Sample Erase Codes Screen

6. Check the codes again. If any codes remain, repeat the Erase Codes steps.

5.2 Live Data

Live Data menu lets you view and record real time PID data from the electronic control module. Menu options typically include:

- Complete List
- Custom List

5.2.1 Complete Data List

Complete Data List menu lets you view all live PID data from a selected system.

To view all live PID data:

1. Scroll with the arrow keys to highlight **Live Data** from the menu and press the **ENTER** key to display the live data menu.

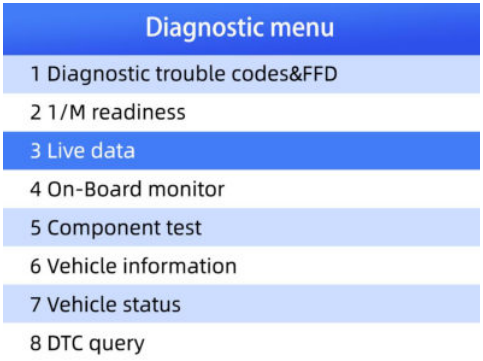


Figure 5-6 Sample Live Data Selection Screen

2. Select the **Complete List** from the menu and press the **ENTER** key to display the datastream screen.

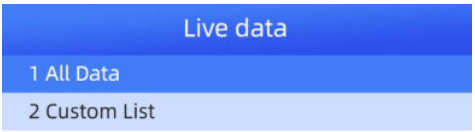


Figure 5-7 Sample Complete List Screen

3. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.

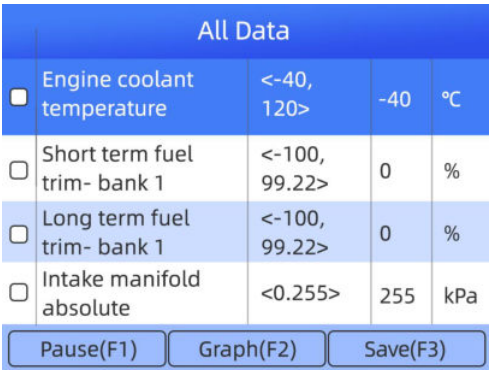


Figure 5-8 Sample PID graph Screen

4. Scroll with the up and down arrow keys to highlight a line, if the **One Graphic** on the bottom is highlighted, it indicates the graphing is available for the selected line. Press the function key **One Graphic** to display the PID graph.

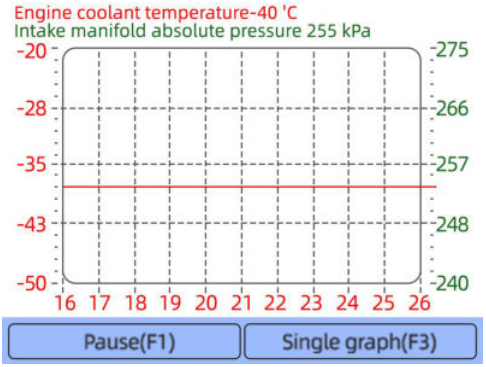


Figure 5-9 Sample PID Graph Screen

5. Press the function key **Two Graphics** to display two PID graphs in one screen

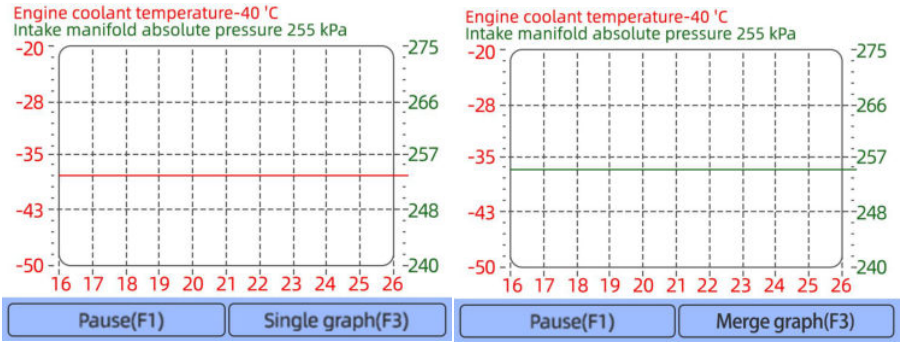


Figure5-10 Sample Two PID Graph Screen

6. Press the function key **Merge Graph** to display two PID plots in one coordinate for easy and intuitive diagnosis.

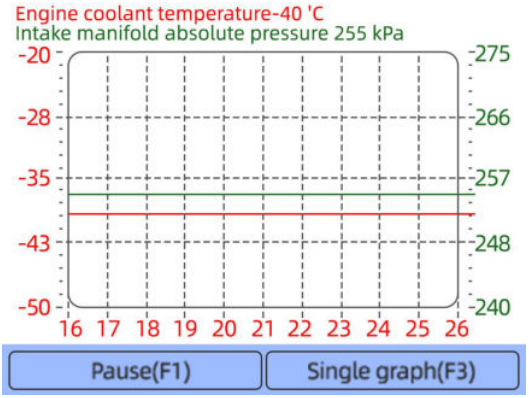


Figure 5-11 Sample Merged PID Plots Screen

7. To record the data to memory of the scanner, use the function key **SAVE**, and press **Stop Saving** to stop recording at any time.
8. Press **Back** to return to text viewing of PID data.
9. Select **Pause** to suspend collecting data from the scanner and use the **Continue** key to resume collecting data.
10. Press the **Back** key to return to the previous menu.

5.2.2 Custom List

Custom Data List menu lets you to minimize the number of PIDs on the data list and focus on any suspicious or symptom-specific data parameters.

To create a custom data list:
1.Select **Custom List** from the menu and press the **ENTER** key.

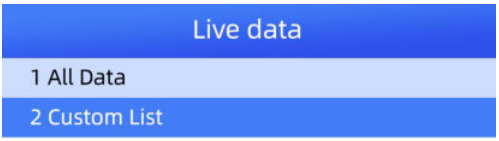


Figure 5-12 Sample Live Data Menu Screen

2.The custom data stream selection screen displays. Scroll with the up and down arrow keys to highlight a line, press the **ENTER** key and then repeat the action to make moreselections.

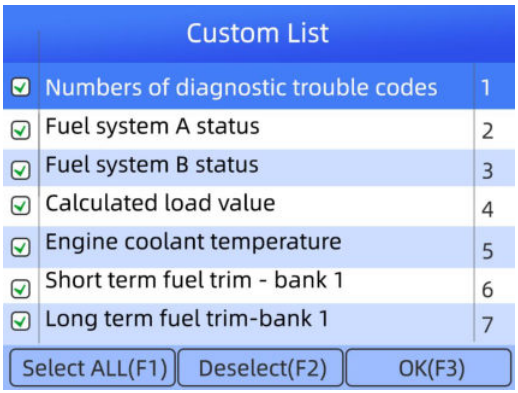


Figure 5-13 Sample Custom Data stream Selection Screen

NOTE

To deselect an item, select it again and then press the **ENTER** key. Alternatively, use the function keys **Select ALL** and **Deselect** to select or deselect all items at once.

3.When finished selection, use the function key **VIEW DATA** to display selected items.

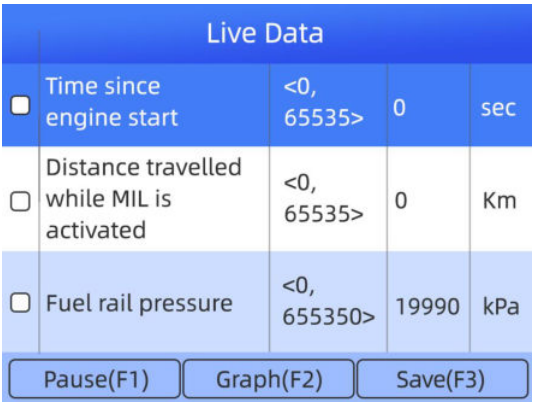


Figure 5-14 Sample Data stream Screen

5.3Freeze Frame

Freeze Frame menu displays freeze frame data, a snapshot of critical vehicle operating conditions automatically recorded by the on-board computer at the time of the DTC set. It is a good function to help determine what caused the fault.

To view freeze frame data:

1. Select **Freeze Frame** from the Diagnostic Menu. Details of freeze frame data displays.

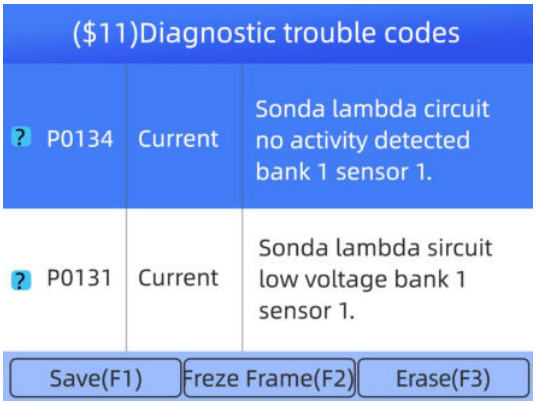


Figure 5-15 Sample Diagnostic Menu Screen

2. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data. If no freeze frame detected, the message “No freeze frame data stored!” is displayed.

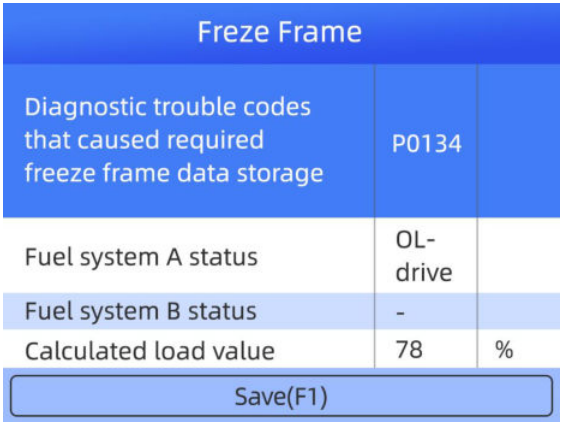


Figure 5-16 Sample Freeze Data Screen

3. Press function key **Save** to store freeze frame information. Or use the **BACK** key toexit.

5.4 Read I/M Readiness Status Data

I/M Readiness option allows to view a snapshot of the operations for the emission system on OBDII/EOBD vehicles.

I/M Readiness is a useful function used to check if all monitors are OK or N/A. The vehicle's computer performs tests on the emission system during normal driving conditions. After a specific amount of drive time (each monitor has specific driving conditions and time required), the computer's monitors decide if the vehicles emission system is working correctly.

When the monitor's status is:

- OK - vehicle was driven enough to complete the monitor.
- INC (Incomplete) - vehicle was not driven enough to complete the monitor.
- N/A (Not Applicable) - vehicle does not support that monitor.

There are two types of I/M Readiness tests:

- Since DTCs Cleared - shows status of the monitors since the DTCs were lastcleared.
- This Drive Cycle - shows status of monitors since the start of the current drive cycle. Below is

a list of abbreviations and names of OBD II monitors supported by thescanner.

No.	Abbreviation	Name
1	Misfire Monitor	Misfire Monitor
2	Fuel System Mon	Fuel System Monitor
3	Comp. Component	Comprehensive Components Monitor
4	Catalyst Mon	Catalyst Monitor
5	Htd Catalyst	Heated Catalyst Monitor
6	Evap System Mon	Evaporative System Monitor
7	Sec Air System	Secondary Air System Monitor
8	A/C Refrig Mon	Air Conditioning Refrigerant Monitor
9	Oxygen Sens Mon	Oxygen Sensor Monitor
10	Oxygen Sens Htr	Oxygen Sensor Heater Monitor
11	EGR System Mon	Exhaust Gas Recirculation System Monitor

NOTE

- To review I/M Readiness status, make sure that the ignition key is switched to ON with the engine off.
- Not all monitors are supported by all vehicles.

To retrieve I/M Readiness Status data:

4. Scroll with the arrow keys to highlight **I/M Readiness** from Diagnostic Menu and press the **ENTER** key. If vehicle supports both types of monitors, a screen for monitor type selection displays. Select a monitor type and press the **ENTER** key

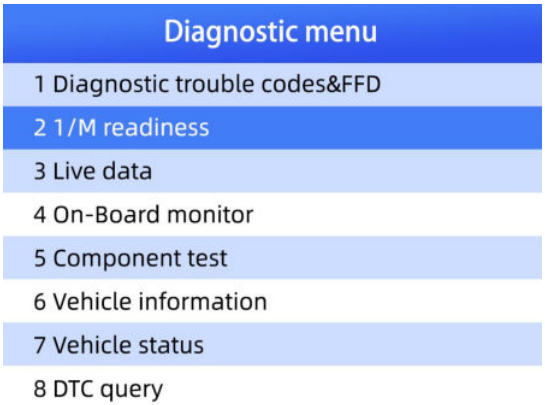


Figure 5-17 Sample Diagnostic Menu Screen

5. Depending on readiness test, one of these 2 screens will be present. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.

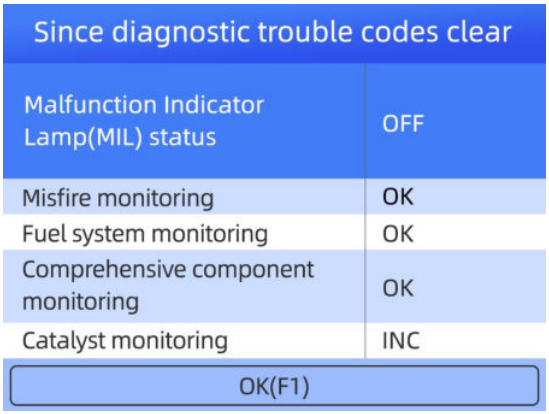


Figure 5-18 Sample IM Readiness Screen 1

Or

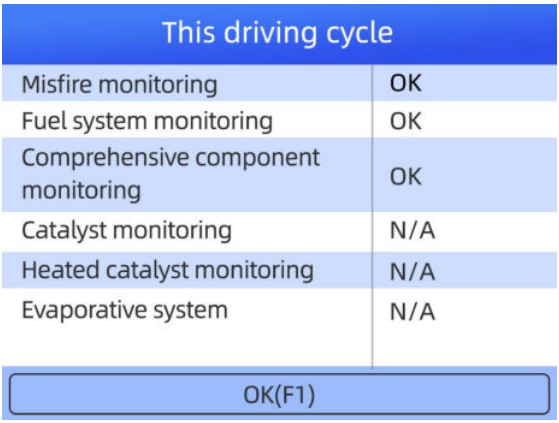


Figure 5-19 Sample IM readiness screen 2

6. Press the **BACK** key to exit.

5.5 Sonda lambda monitor

OBD II regulations require certain vehicles monitor and test oxygen (O2) sensors to isolate fuel and emissions related faults. The O2 Monitor Test function is used to retrieve completed O2 sensors monitor test results.

The O2 Monitor Test is not an on-demand test. O2 sensors are not tested when selected via the menu but tested when engine operating conditions are within specified limits.

If the vehicle uses a controller area network (CAN) protocol to communicate, this function is not supported by vehicle. Refer to “On-Board Monitor Tests” on page 38-39 for O2 monitor data of CAN-equipped vehicles.

To retrieve O2 monitor data:

1. Scroll with the arrow keys to highlight **Sonda lambda monitor** from Diagnostic Menu and press the **ENTER** key. A screen with a list of available sensors displays.

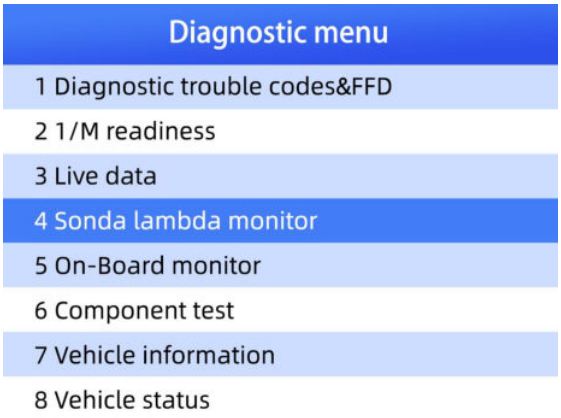


Figure 5-20 Sample Diagnostic Menu Screen

2. Scroll with the arrow keys to highlight an O2 sensor and press the **ENTER** key to confirm. A screen with details of the selected sensor displays.

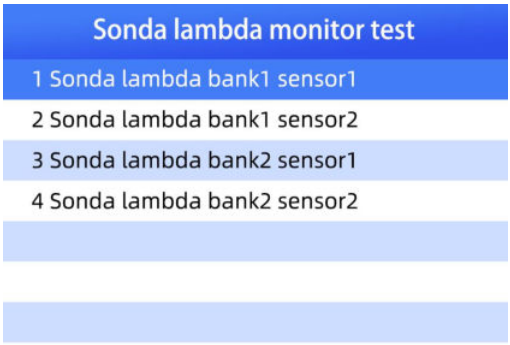


Figure 5-21 Sample O2 Monitor Test screen

3. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.

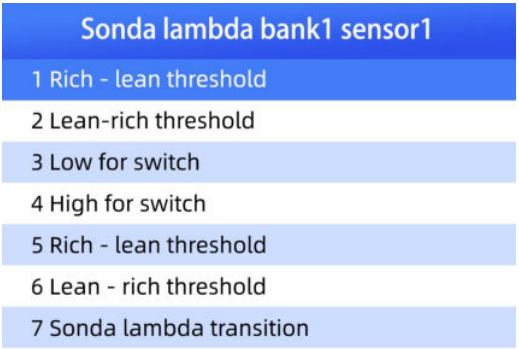


Figure 5-22 Sample O2 Bank1 Sensor 1 Screen

4. Press Enter key to view data of selection.

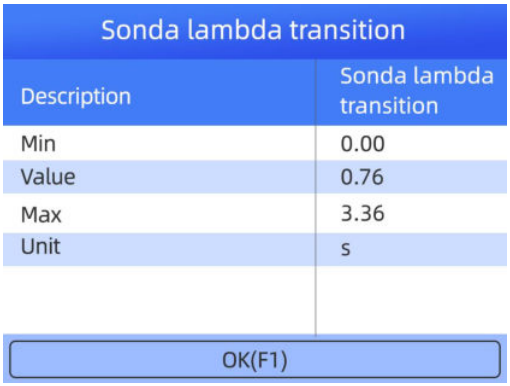


Figure 5-23 Sample data of $81 screen

5. Press the **BACK** key to exit and return.

5.6 On-Board Monitor Test

The On-Board Monitor Test function is useful after servicing or after clearing a vehicle ECU's memory. It receives test results for emission-related powertrain components and systems that are not continuously monitored for Non-CAN vehicles. And for CAN vehicles, it receives test data for emission-related powertrain components and systems that are and are not continuously monitored. It is vehicle manufacturer who is responsible for assigning test and component IDs.

NOTE

Test results do not necessarily indicate a faulty component or system.

To request on-board monitor test results:

1. Scroll with the arrow keys to highlight **On-Board Monitor Test** from Diagnostic Menu and press the **ENTER** key.

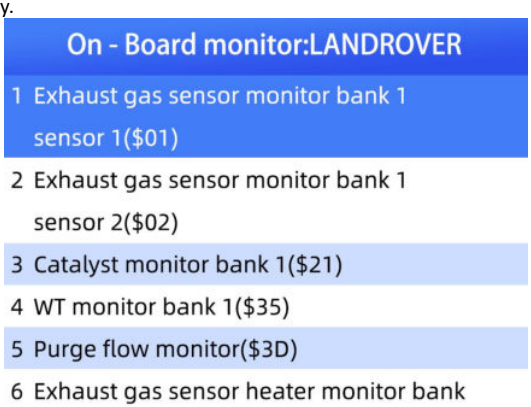


Figure 5-24 Sample Diagnostic Menu Screen

2. Depending on the protocol the vehicle used, one of these 2 screens shows.

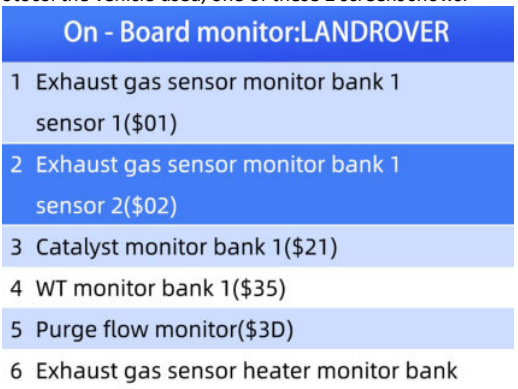


Figure 5-25 Sample Non-CAN Vehicle Test Screen

Or

Figure 5-26 Sample CAN vehicle test screen

3. Scroll with the arrow keys to highlight a test group and press the **ENTER** key to confirm. A screen with details of the selected sensor displays. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data. For non-CAN vehicles, test screen is illustrated as below:

Figure 5-27 Sample Non-CAN vehicle test screen

For CAN vehicles, test screen is illustrated as below:

Figure 5-28 Sample Can vehicle test screen

4. Press the **BACK** key to exit and return.

5.7 Component Test

Component Test allows the scanner to control operation of vehicle components, tests or systems.

NOTE

- Some manufacturers do not allow tools to control vehicle systems.
- The manufacturer sets the criteria to automatically stop test. Refer to appropriate vehicle service manual before using this function.

To perform a component test:

5. Scroll with the arrow keys to highlight **Component Test** from Diagnostic Menu and press the **ENTER** key. A screen with a list of available tests displays.

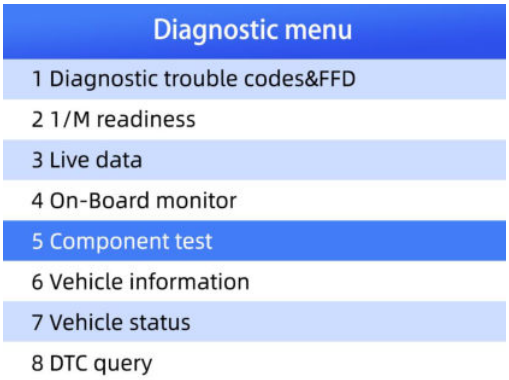


Figure 5-29 Sample Diagnostic Menu Screen

6. Scroll with the arrow keys to highlight a system or component, press the **ENTER** key to start test and the scanner displays the message “Command Sent!”.

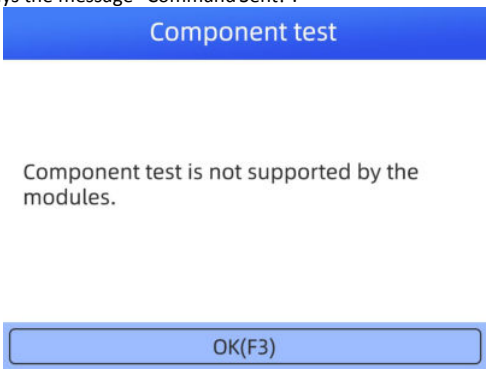


Figure 5-30 Sample Component test screen

7. Press the **BACK** key to exit and return.

5.8 Request Vehicle Information

Vehicle Information allows to request the vehicle’s VIN number, calibration ID(s) which identifies

software version in vehicle control module(s), calibration verification numbers (CVN(s)) and in-use performance tracking on model year 2000 and newer OBD II compliant vehicles.

CVNs are calculated values required by OBD II regulations. They are reported to check if emission-related calibrations have been changed. Multiple CVNs may be reported for a control module. It may take several minutes to do the CVN calculation. In-use performance tracking tracks performance of key readiness monitors.

NOTE

Available options will vary depending on the vehicle under test.

To request vehicle information:

1. Scroll with the arrow keys to highlight **Vehicle Info.** from Diagnostic Menu and press the **ENTER** key.

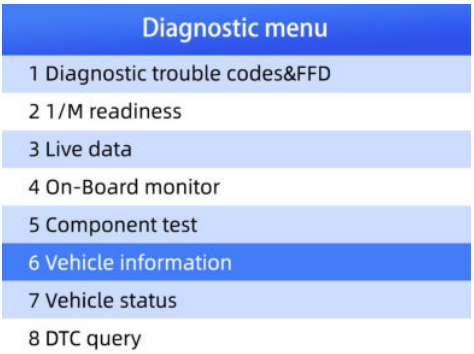


Figure 5-31 Sample Diagnostic Menu Screen

2. Follow on-screen instruction and send the command to read vehicle information. A screen with a list of available options displays.

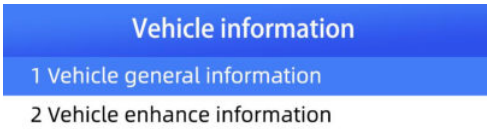


Figure 5-32 Sample Vehicle Info Screen

3. Scroll with the arrow keys to highlight an available option and press the **ENTER** key. A screen with details of the selected option displays.

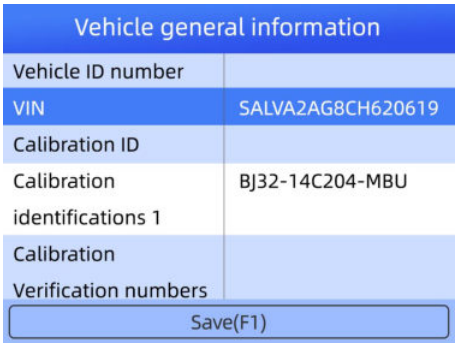


Figure 5-33 Sample Calibration ID Screen

4. Press function key **Save** to store the readiness data. Or use the **BACK** key to exit andreturn.

5.9 Vehicle status

The scanner identifies module IDs and communication protocols for OBD2 modules in the vehicle.

To view module IDs and communication types:

1. Scroll with the arrow keys to highlight **Vehicles status** from Diagnostic Menu and pressthe **ENTER** key.

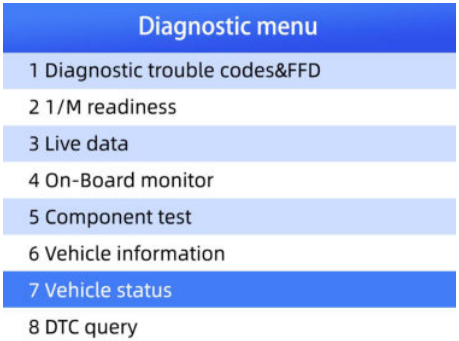


Figure 5-34 Sample Diagnostic Menu Screen

2. A screen with the module IDs and protocols displays.

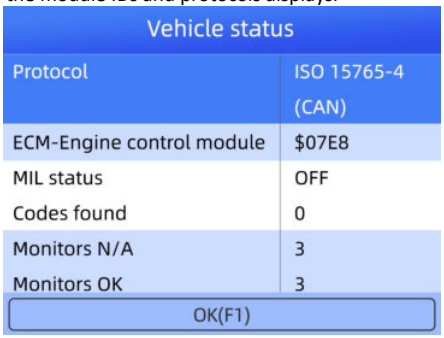


Figure 5-35 Sample Module Present Screen

5.10 DTC Query

DTC Lookup menus allows to request DTC definitions stored in the scan tool. To Look up DTCs:

1. Scroll with the arrow keys to highlight **DTC query.** from Diagnostic Menu and press the **ENTER** key.

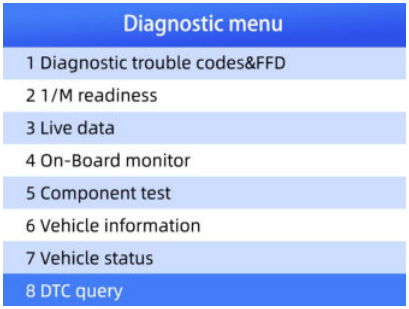


Figure 5-36 Sample Diagnostic Menu Screen

2. Enter a valid code number and press the function key **Finish**.

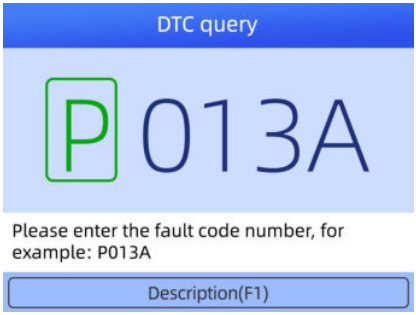


Figure 5-37 Sample DTC Lookup Screen

3. A screen with code number and its definition displays. If definition could not be found (SAE or Manufacturer Specific), the scanner displays “DTC definition not found! Please refer to vehicle service manual!” If a P1xxx, C1xxx, B1xxx or U1xxx code is entered, select a vehicle make to look for DTC definitions. Press the **Back** key to exit.

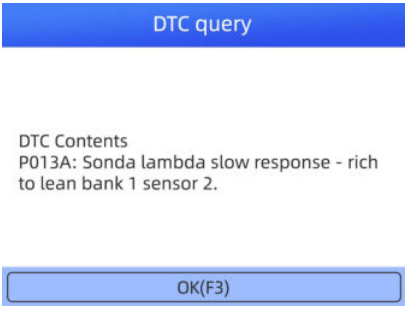


Figure 5-38 Sample Trouble Codes Screen

6 System Setup

This section illustrates how to program the scanner to meet your specific needs.

When **Settings** is selected, a menu with available service options displays. Menu options typically include:

- Language
- Unit
- Shortcuts
- Beep Set
- Display Test
- Keypad Test
- About

6.1 Select Language

Selecting **Language** opens a screen that allows you to choose system language. The scan tool is set to display English menus by default.

To configure system language:

1. Scroll with the arrow keys to highlight **Language** from Settings menu and press **ENTER** key.

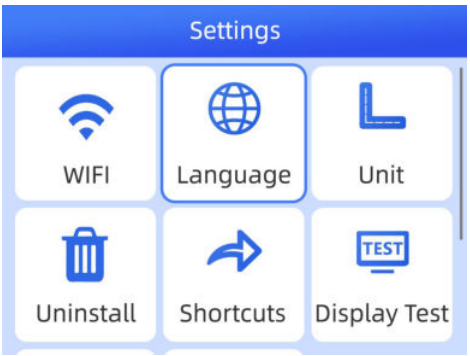


Figure 6-1 Sample Settings Screen

2. Press left and right arrow key select a language and press the **ENTER** key to confirm. Press the **Back** key to exit and return.

Figure 6-2 Sample Language Selection Screen

6.2 Change Units

Selecting **Unit** opens a dialog box that allows you to choose units of measure.

To change the unit setup:

1. Scroll with the arrow keys to highlight **Units** from Settings menu and press the **ENTER** key.

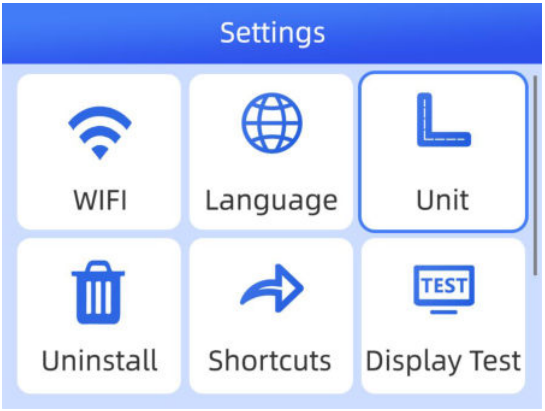


Figure 6-3 Sample Settings Screen

2. Press the up and down arrow key select an item and press the **ENTER** key to save and return.

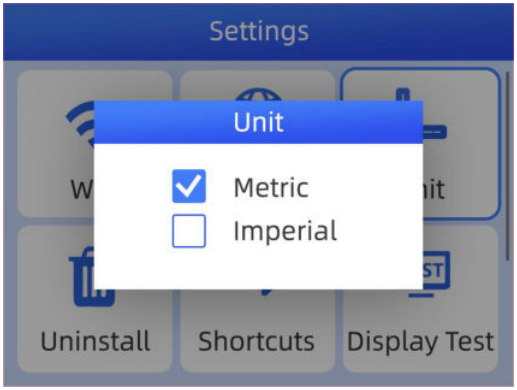


Figure 6-4 Sample Unit Selection Screen

6.3 Configure Shortcut Keys

Selecting **Shortcuts** option lets you to change the functionality of the shortcut buttons.

To assign a function to a shortcut button:

1. Scroll with the arrow keys to highlight **Shortcuts** from Settings menu and press the **ENTER** key. A screen with available shortcut keys displays.

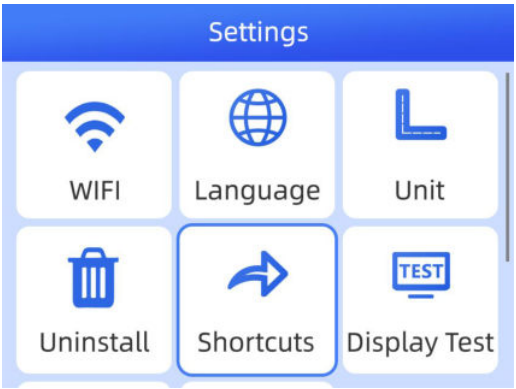


Figure 6-5 Sample Settings screen

2. Press the up and down arrow key select a shortcut key and press the **ENTER** key. A screen with a list of loaded applications displays.

Figure 6-6 Sample Shortcuts Screen

3. Scroll with the arrow keys to highlight an application and press the **ENTER** key to assign the application to the shortcut key.

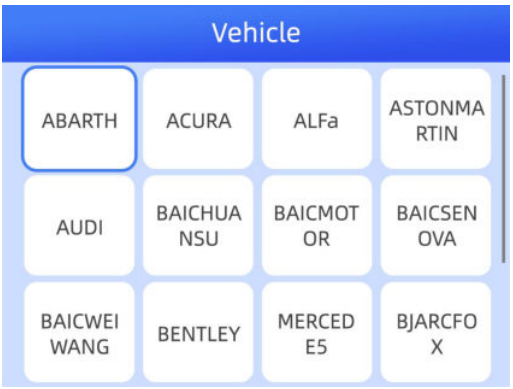


Figure 6-7 Sample Shortcuts Screen

6.4 Display Test

Selecting **Display Test** option opens a screen that allows you to check the functionality of the display.

To test the display:

1. Scroll with the arrow keys to highlight **Display Test** from Settings menu and press the **ENTER** key to start test. Check if there are any missing spots in the LCD screen.

Figure 6-8 Sample LCD Test Screen

2. To quit the test, press the **Back** key.

6.5 Keypad Test

Selecting **Keypad Test** option opens a screen that allows you to check the functionality of the keypad.

To test the keypad:

1. Scroll with the arrow keys to highlight **Keypad Test** from Settings menu and press **ENTER** key.

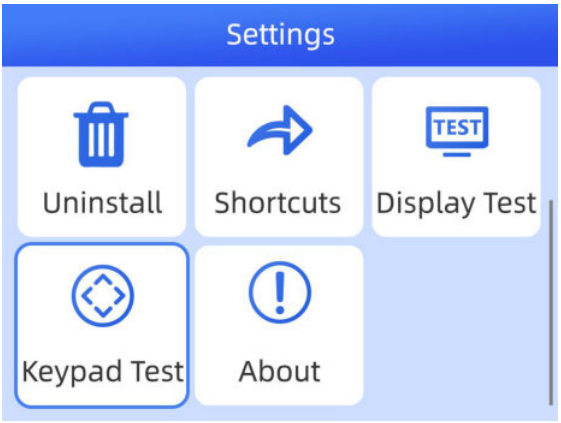


Figure 6-9 Sample Settings Screen

2. Press any key to start test. The virtue key corresponding with the key you pressed will be highlighted on the screen if it works correctly.

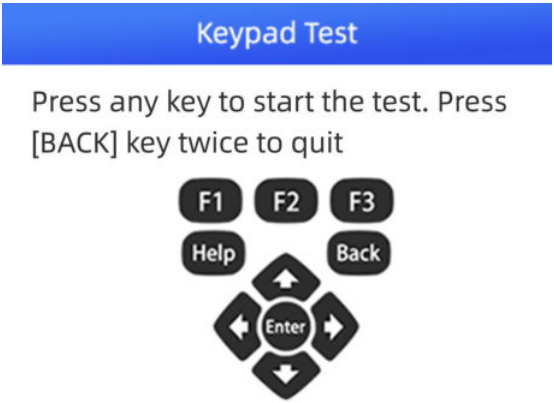


Figure 6-10 Sample Keypad Test Screen

3. To quit the test, press **Back** key twice.

6.6 Tool Information

Selecting **About** option opens a screen that shows information about your scan tool, such as serial number, which may be required for product registration.

To view information of your scan tool:

1. Scroll with the arrow keys to highlight **About** from Settings menu and press the **ENTER** key.

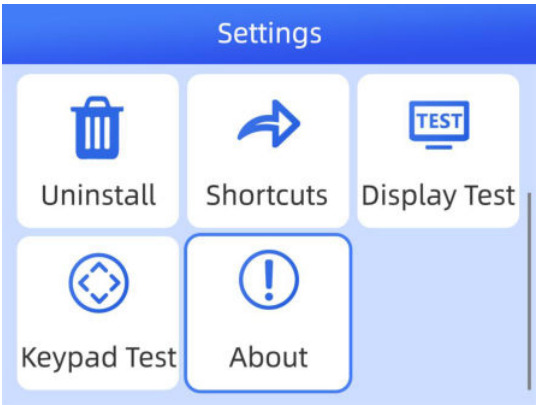


Figure 6-11 Sample Settings Screen

2. A screen with detailed information of the scanner displays.

Figure 6-12 Sample Tool Information Screen

3. Press the **Back** key to exit.

7 Update

To update scanner**,** you need the following tools:

- The scan tool
- Available WIFI service
- power supply with USB ports or diagnostic cable

NOTE
Before updating, please make sure your network works correctly.
Before updating, please make sure you have already created a Foxwell ID.
Before updating, please make sure your scanner is turned on.

1.Enter **Update** and select an avaliable WIFI to connect.

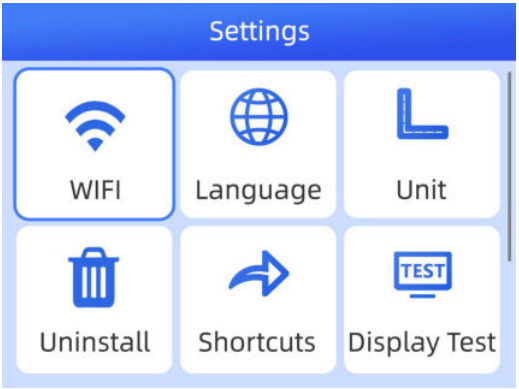


Figure 7-1 Sample WIFI Screen

Figure 7-2 Sample WIFI Selection Screen

2.In the **Update**, click the check box(es) in front of the software(s) you wish to update and then click the **Update Selec**t button to download.

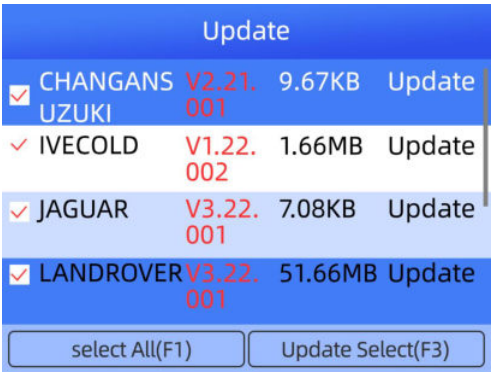


Figure 7-3 Sample Upgrade Check Screen

3.When all the items are updated, an **“All software downloads are successfully installed!”** message displays.

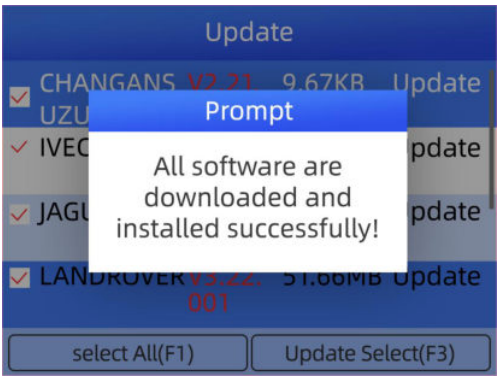


Figure 7-4 Sample Update Completed Screen

8 Uninstall

This option allows you to uninstall the vehicle software installed in the scanner.

To uninstall a vehicle software:

1. Enter **Settings** application on home screen.

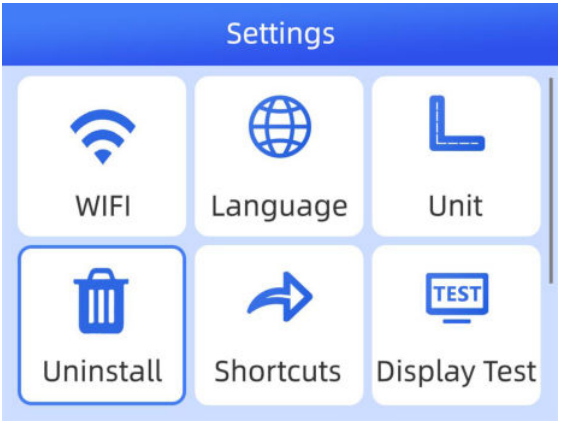


Figure 8-1 Sample Uninstall Vehicle Software Screen

2. Select the Uninstall Vehicle Software option on the option list.
3. Choose the vehicle software you want to delete or choose **Select All** to **Uninstall**.

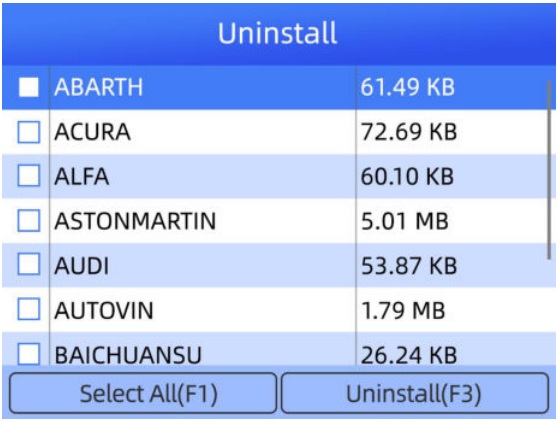


Figure 8-2 Sample Uninstall Vehicle Software Screen

FCC Warning Statement

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

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.

FCC Radiation Exposure Statement
The device has been evaluated to meet general RF exposure requirement.

The device can be used in portable exposure condition without restriction.