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Using This Manual

This manual contains device usage instructions.

Some illustrations shown in this manual may contain modules and optional equipment that are not included in your system.

The following conventions are used.

Bold Text

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

Example:


Tap **OK**.

Notes and Important Messages

Notes

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


Example:

 Note: Remember to remove the VCI connector from the vehicle's DLC after use.

Warning

Warning indicates a hazardous situation which, if not avoided, could result in minor or moderate injury to the operator or to bystanders.


Example:

 Warning: Retrieving and using DTCs for troubleshooting vehicle operation is only one part of an overall diagnostic strategy. 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 can be found in the vehicle's service manual.

Danger

Danger indicates an imminently or potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

Example:

 Danger: If you must drive the vehicle in order to perform a troubleshooting procedure, always have a second person help you. Trying to drive and operate the diagnostic tool at the same time is dangerous, and could cause a serious traffic accident.

Illustrations

Illustrations used in this manual are samples, the actual testing screen may vary for each vehicle being tested. Observe the menu titles and on-screen instructions to make correct option selection.

Important Safety Precautions

To avoid personal injury, property damage, or accidental damage to the product, read all of the information in this section before using the tool.

DANGER

- When an engine is operating, keep the service area well-ventilated or attach a building exhaust removal system to the engine exhaust system. Engines produce various poisonous compounds (hydrocarbon, carbon monoxide, nitrogen oxides, etc.) that cause slower reaction time and result in death or serious personal injury.
- Please use the included battery and power adaptor. Risk of explosion if the battery is replaced with an incorrect type.
- DO NOT attempt to operate the tool while driving the vehicle. Have second personal operate the tool. Any distraction may cause an accident.

WARNING

- Always perform automotive testing in a safe environment.
- Do not connect or disconnect any test equipment while the ignition is on or the engine is running.
- Before starting the engine, put the gear lever in the Neutral position (for manual transmission) or in the Park (for automatic transmission) position to avoid injury.
- NEVER smoke or allow a spark or flame in vicinity of battery or engine. Do not operate the tool in explosive atmospheres, such as in the presence of flammable liquids, gases, or heavy dust.
- Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
- Wear an ANSI-approved eye shield when testing or repairing vehicles.
- Put blocks in front of the drive wheels and never leave the vehicle unattended while testing.
- Use extreme caution when working around the ignition coil, distributor cap,

ignition wires and spark plugs. These components create hazardous voltage when the engine is running.

- To avoid damaging the tool or generating false data, please make sure the vehicle battery is fully charged and the connection to the vehicle DLC (Data Link Connector) is clear and secure.
- Automotive batteries contain sulfuric acid that is harmful to skin. In operation, direct contact with the automotive batteries should be avoided. Keep the ignition sources away from the battery at all times.
- Keep the tool dry, clean, free from oil, water or grease. Use a mild detergent on a clean cloth to clear the outside of the equipment when necessary.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Store the tool and accessories in a locked area out of the reach of children.
- Do not use the tool while standing in water.
- Do not expose the tool or power adapter to rain or wet conditions. Water entering the tool or power adaptor increases the risk of electric shock.
- This tool is a sealed unit. There are no end-user serviceable parts inside. All internal repairs must be done by an authorized repair facility or qualified technician. If there is any inquiry, please contact the dealer.
- Keep the tool far away from magnetic devices because its radiations can damage the screen and erase the data stored on the tool.
- Do not attempt to replace the internal rechargeable lithium battery. Contact the dealer for factory replacement.
- Do not disconnect battery or any wiring cables in the vehicle when the ignition switch is on, as this could avoid damage to the sensors or the ECU.
- Do not place any magnetic objects near the ECU. Disconnect the power supply to the ECU before performing any welding operations on the vehicle.
- Use extreme caution when performing any operations near the ECU or sensors. Ground yourself when you disassemble PROM, otherwise ECU and sensors can be damaged by static electricity.
- When reconnecting the ECU harness connector, be sure it is attached firmly, otherwise electronic elements, such as ICs inside the ECU, can be damaged.

FCC Statement

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

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.

Note: 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.

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1 Introduction

1.1 Product Profile

This tool is a new Android-based vehicle diagnostic tool. It is characterized by featuring powerful functions, and providing precise test result.

Through Bluetooth communication between the DBSCar IX device and display tablet, it achieves full car model and full system vehicle trouble diagnosis, which include Reading DTCs, Clearing DTCs, Reading Data Stream, Actuation Test and Special Functions.

It mainly has the following features and advantages:

- Diagnose: AutoDetect and manual diagnosis are available.
- I/M Readiness: Check whether or not the various emissions-related systems on the vehicle are operating properly, and ready for Inspection and Maintenance testing.
- Tech 2 Tech: This option aims to help repair shops or technicians launch instant messaging and remote diagnosis, making the repair job getting fixed faster.
- One-click Update: Lets you update your diagnostic software online.
- Diagnostic feedback: Enables you to submit the vehicle issue to us for analysis and troubleshooting.
- Diagnostic History: This function provides a quick access to the tested vehicles and users can choose to view the test report or resume from the last operation, without starting from scratch.
- Vehicle Coverage: Quick dial to view the vehicle models that the tool covers.
- Add-on modules: TPMS, ADAS calibration, Videoscope, BST360 battery tester, Immobilizer Programmer, Mall, X-431 Scopebox and Multimeter are available to extend the functions of the diagnostic tool.

1.2 Components & Controls

There are two main components to the diagnostic system:

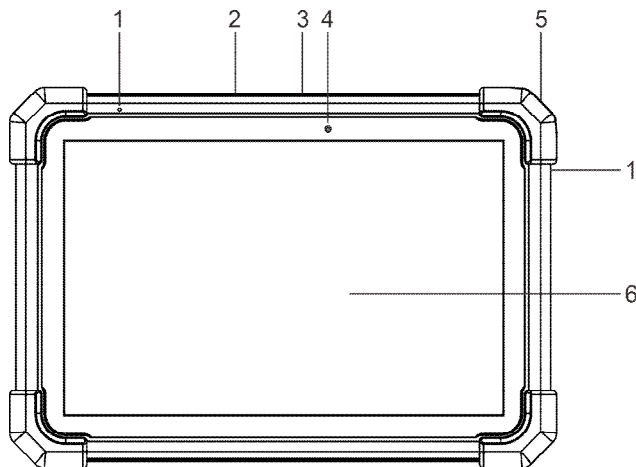
- Display Tablet – the central processor and monitor for the system (See

Chapter “1.2.1”).

- DBSCar IX Device – the device for accessing vehicle data (See Chapter “1.2.2”).

1.2.1 Display Tablet

The tablet acts as the central processing system, which is used to receive and analyze the live vehicle data from the DBSCar IX device and then output the test result.



1. Microphone

2. Type-A USB Port

- Connect to the VCI connector to perform vehicle diagnosis via the USB cable.
- Connect to compatible add-on modules (such as Videoscope) or USB storage devices.

3. Type-C USB Port

- Connect to AC outlet for charging.
- Connect to PC for data exchange.

4. Front Camera

5. POWER Key

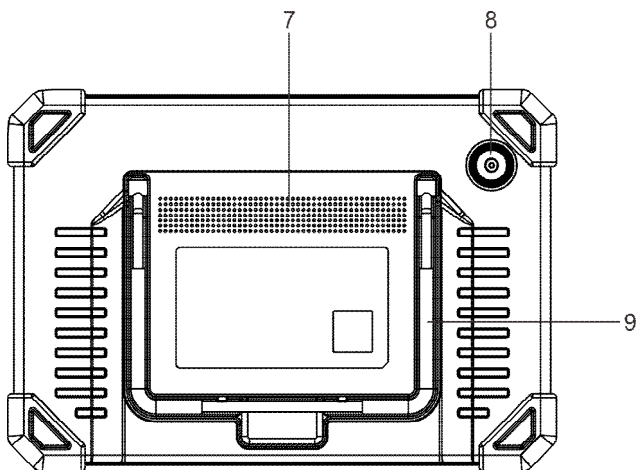
In Off mode, press it for 3 seconds to turn the tablet on.

In On mode:

- Press it once to activate the LCD if the LCD is off. Press it once to turn off the LCD if the LCD lights up.
- Press and hold it for 3 seconds to turn it off.
- Press and hold it for 8 seconds to perform forced shutdown.

6. LCD Screen

Indicate the test result.



7. Speakers

8. Rear Camera

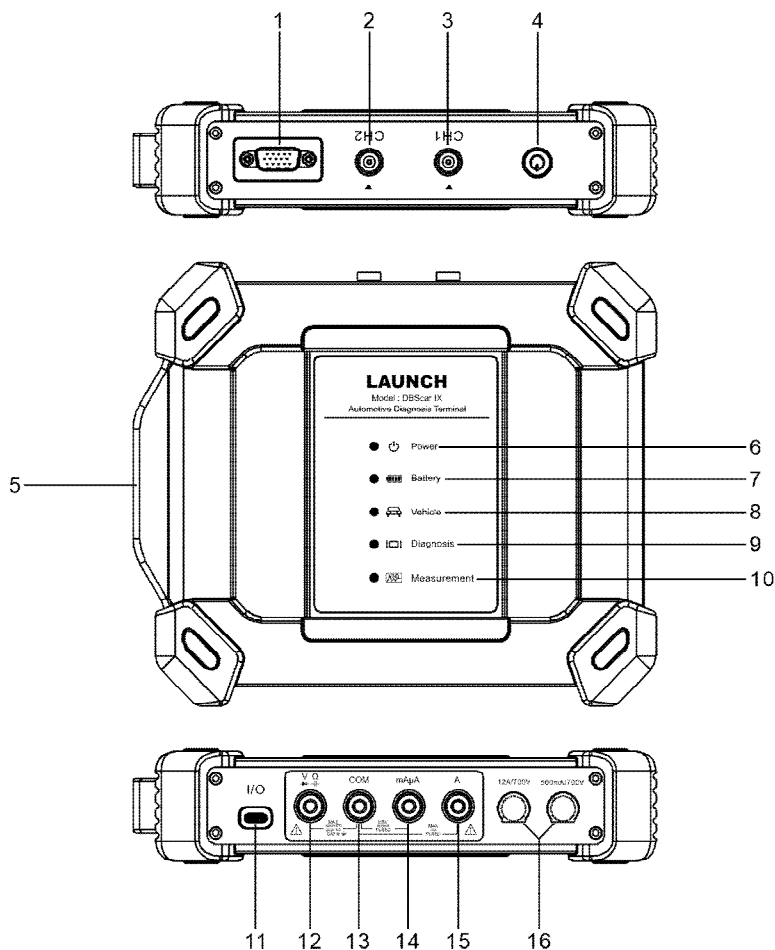
9. Adjustable stand


Flip it out to any angle and work comfortable at your desk, or hang it on steering wheel.

1.2.2 DBSCar IX Device

The DBSCar IX device features powerful functions and it can be applied in the following situations:

- 1). When as a VCI (Vehicle Communication Interface) device, it needs to work in conjunction with the Diagnose module of the tablet, which is used to obtain vehicle data, and then send it to the tablet for analysis via Bluetooth / USB.
- 2). When as a 2-channel oscilloscope, it needs to work together with the specific Oscilloscope module of the tablet. Refer to Chapter 11.7 for details.
- 3). When as a multimeter, it needs to work together with the specific Multimeter module of the tablet. Refer to Chapter 11.8 for details.



 Note: The items marked with * indicates the device is functioning as a 2-channel oscilloscope or a multimeter.

1. DB-15 diagnostic connector

Connect on vehicle's OBD II DLC via the diagnostic cable.

2*. CH2

Channel 2.

3*. CH1

Channel 1.

4. Power button

Press to turn on/off the device.

5. Handle**6. Power LED**

Illuminate red while the device is powered up.

7. Battery LED

Battery level indicator. It is defined as follows:

1). When not in charging mode,

- Solid Green: Battery level normal (equal or more than 50%).
- Solid Yellow: Charging (between 20% and 50%).
- Red Flashes: Battery level low (below 20%).

2). When in charging mode,

- Solid Green: Fully charged.
- Green Flashes: Charging.

8. Vehicle LED

Vehicle communication indicator.

1). Illuminates solid green when the VCI device is connected to the vehicle.

2). Illuminates green and flashes when the VCI device is communicating with the vehicle's ECU.

9. Diagnosis LED

Communication indicator of diagnostic tablet and VCI device. It is defined as follows:

1). Blue: Indicates the VCI device is communicating with the tablet via Bluetooth.

- Blue Flashes: Communicating.
- Solid Blue: Bluetooth paired.

2). Red: Indicates the VCI device is communicating with the tablet via the USB

cable.

- Blue Flashes: Communicating.
- Solid Blue: USB connected.

10*. Measurement LED

It is defined as follows:

- 1). Blue: Indicates the VCI is communicating with the tablet via Bluetooth.
 - Blue Flashes: Communicating.
 - Solid Blue: Bluetooth paired.
- 2). Red: Indicates the VCI is communicating with the tablet via the USB cable.
 - Blue Flashes: Communicating.
 - Solid Blue: USB connected.

11. I/O port

- 1). Connect the device to the tablet to perform vehicle diagnosis via USB cable.
- 2). Connect the device to AC outlet to charge it via the power adaptor.

12. V/ Ω terminal

Voltage/resistance input terminal.

13. COM terminal

Negative public port

14. mA/ μ A terminal

mA/400mA current input port.

15. A terminal

10A current input port.

16. Fuse

1.3 Technical Parameters

Display Tablet

Operating system	Android
Memory	4GB

Storage	128GB
Screen	10.1 inch capacitive touch screen with a resolution of 1280 x 800 pixels
Camera	Front-facing 5.0MP + Rear-facing 8.0MP camera
Connectivity	<ul style="list-style-type: none">• Wi-Fi (802.11a/b/g/n/ac)• Bluetooth
Working temperature	0°C ~ 50°C
Storage temperature	-20°C ~ 70°C

DBSCar IX Device

1. When used as VCI device

Working voltage	9 ~18V
Working temperature	-10°C ~ 50°C
Relative humidity	20% ~ 90%

2. When used as Oscilloscope

Channels	2
Bandwidth	10MHz
Max. sample rate	50MHz/s
Timebase	200ns/div~10s/div
Acquisition mode	Normal sampling
Storage depth	240KB (for two channels)

Coupling	DC, AC
Input impedance	1M Ω ±2%, 15pF±5pF parallel
Vertical scale	10mV/div~10V/div
Sample bit	8 bits
Max. input voltage	40V peak value (DC + AC peak value)
Probe coefficient attenuation	1X, 10X, 100X (need probe support)
Trigger type	Edge
Trigger mode	Auto, Single
Auto measurement items	Peak value, average value, max value, min value, frequency, cycle


3. When used as Multimeter

DC Voltage	Automatic range, measurement range: ±600V
AC voltage	Automatic range, measurement range: ±600V
DC current	Automatic range, measurement range: ±10A (external sensor should be connected for large range current).
AC current	Automatic range, measurement range: ±10A. Average value measurement (external sensor should be connected for large range current).
Resistance	Automatic range, measurement range: 0 Ω ~60M Ω
Diode	0V~2.0V
Make-and-break detection	Make a sound when below 50 Ω

1.4 Package List

The following packing list is for reference purpose only. For different destinations, the accessories may vary. For details, please consult from the seller or check the packing list supplied with this tool together.


No.	Item	Descriptions	Qt.
1	Display tablet	Indicates the test result.	1
2	DBSCar IX device	A device for accessing vehicle live data.	1
3	HDB15F to HDB15F diagnostic cable	<ul style="list-style-type: none"> Connects it to HD15F to OBD II 16 adaptor and the DBSCar IX device for standard OBD II diagnostic socket. Connects it to non-16pin adaptor (sold separately) and the DBSCar IX device for non-OBD II diagnostic socket. 	1
4	HD15F to OBD II 16 adaptor	Connects it to vehicle's OBD II diagnostic socket and the diagnostic cable.	1
5	Password envelope	A piece of paper bearing the product Serial Number and Activation Code for product registration.	1
6	Power adaptor	Charges the tablet via AC outlet.	1
7	Type-A to Type-C USB cable	<ul style="list-style-type: none"> Connects the diagnostic tool to AC outlet / PC for charging / data exchange. Connects the DBSCar IX device to the diagnostic tool to perform vehicle diagnosis. 	1


8	Multilingual Quick Start Guide		1
 Note: The following accessory items are used only when the DBSCar IX device works as a 2-channel oscilloscope or a multimeter.			
9	BNC to 4mm test leads	Dedicated cable used to connect sensor and the DBSCar IX device to test all types of vehicle signals.	1
10	Multimeter test pen (red + black)	Connect to COM and V/ Ω terminal of the sensor module when using multimeter.	Red x 2 + black x 2
11	Crocodile clips (red + black)	Designed to connect the bare terminals or leads.	Red x 2 + black x 2
12	Back probe pins suite	Used to connect sensor and BNC to 4mm test leads, and can easily pierce the insulation of wires to allow for automotive electrical measurements without causing damage to the wires. Additionally, they can be used as pin-tip probes while working with small circuit boards.	1

2 Initial Use

2.1 Charging & Turning On

1. Use the included power adaptor to charge the tablet.
2. After charging is complete, press the POWER button to turn the tablet on. The system starts initializing and then enters the home screen.


 **Note:** If the battery remains unused for a long period of time or the battery is completely discharged, it is normal that the tool will not power on while being charged. Please charge it for a period of 5 minutes and then turn it on.


 **Warning:** Please use the included power adaptor to charge your tool. No responsibility can be assumed for any damage or loss caused as a result of using power adaptors other than the one supplied.


Press [POWER] for 3 seconds, an option menu will pop up on the screen. Tap **Power off** to turn the tool off.

2.2 Screen Layout


There are five on-screen buttons available on the bottom of the screen.

 **Home:** Navigates to the Android's home screen.

 **Recent App:** Views the recently launched applications and running applications.

 **VCI Connection:** Shows whether the VCI device is properly connected or not.

 **Screenshot:** Captures the current screen.

 **Back:** Returns to the previous screen.

2.3 Basic Gestures



Single-tap: To select an item or launch a program.



Double-tap: To zoom in so that the text on a webpage appears in a column that fits your device's screen.



Long press: Tap and hold on the current interface or area until a contextual menu pops up on the screen, and then release it.



Slide: To jump to different pages.



Drag: Tap the application icon and drop it to other location.




Spread apart/pinch together: To zoom in manually, place two fingers on the screen and then spread them apart. To zoom out, place two fingers apart on the screen and then pinch them together.

2.4 Change System Language

The tool supports multiple system languages. To change the language of the tool, please do the following:

1. On the home screen, tap **Settings -> System -> Language & input -> Languages**.
2. Tap **Add a language**, and then choose the desired language from the list.
3. Tap and hold the desired language and drag it to the top of the screen and then release it, the system will change into the target language.

2.5 Adjust Brightness

 Note: Reducing the brightness of the screen is helpful to conserve the battery power.

1. On the home screen, tap **Settings -> Display -> Brightness level**.
2. Drag the slider to adjust it.

2.6 Set Standby Time

If no activities are made within the defined standby period, the screen will be


locked automatically and the system enters sleep mode to save power.

1. On the home screen, tap **Settings -> Display -> Advanced -> Sleep**.
2. Choose the desired sleep time.

2.7 Network Setup

The tablet has built-in Wi-Fi that can be used to get online. Once you're online, you can register your tool, surf the Internet, get apps, send email, launch the remote diagnosis, and check for software updates etc.

1. On the home screen, tap **Settings -> Network & Internet -> WLAN**.
2. Slide the Wi-Fi switch to ON, the tablet starts searching for available wireless networks.
3. Select a wireless network,
 - If the chosen network is open, the tablet will connect automatically.
 - If the selected network is encrypted, a network password will need to be entered.
4. When **Connected** appears, it indicates the Wi-Fi connection is complete.

 Note: When Wi-Fi is not required, this should be disabled to conserve battery power.

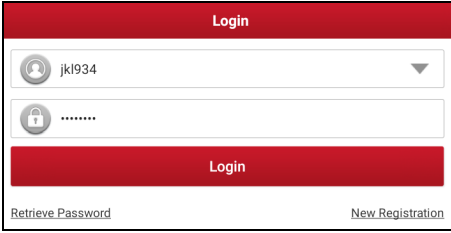
3 Getting Started

For new users, you will need to experience a user registration process before getting started.

3.1 Register & Update

Follow the steps below to proceed registration and update:

Tap the application icon on the home screen to launch it, and then tap **Login** to enter the login interface of diagnosis software.



Login

jk1934

.....

Login

Retrieve Password

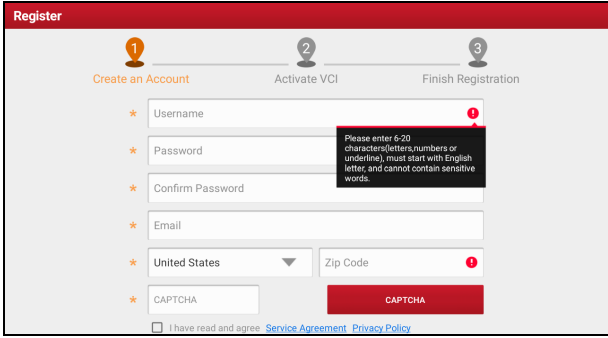
New Registration

(If you are a new user, follow **A** to proceed.)

(If you have registered to be a member, go to **B** to login the system directly.)

(In case you forgot password, refer to **C** to reset a new password.)

a) If you are a new user, tap **New Registration** to enter sign-up page.



Register

1 Create an Account 2 Activate VCI 3 Finish Registration

* Username

* Password

* Confirm Password

* Email

* United States

* Zip Code

* CAPTCHA


Please enter 6-20 characters(letters,numbers or underline), must start with English letter, and cannot contain sensitive words.

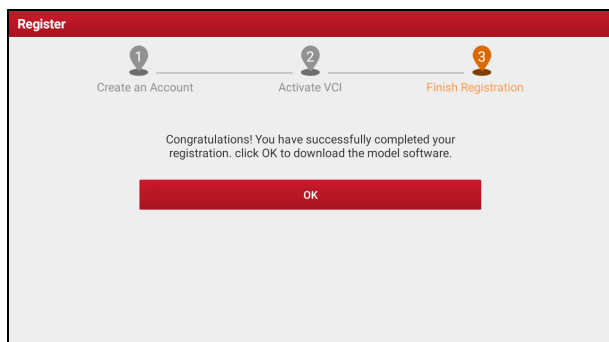
I have read and agree [Service Agreement](#) [Privacy Policy](#)

1. Create an App Account: Input the information to create a new account (all fields must be completed). When finished tap **Register**, the following screen will appear:

2. Activate VCI: Input the Product Serial Number and Activation Code (can be found in the supplied Password Envelope), and tap **Activate** to go to the next step.




-  Note: To exit and activate it later, tap **Skip**. In this case, you can activate the VCI by tapping **Profile -> VCI Management**.




3. **Finish Registration:** Tap **OK** to navigate to the download page and download the diagnostic software.

Tap **Update** to start downloading. To pause downloading, tap **Stop**. After the downloading is complete, the system will install the software package automatically.

 **Note:** When downloading the diagnostic software or checking for updates, make sure the tablet has a strong Wi-Fi connection. It may take a long time to finish it, please be patient to wait.

- b) If you have registered to be a member, input your name and password, and then tap the **Login** button to enter the main menu screen directly.

 **Note:** The tablet has an auto-save function. Once the username and password are correctly entered, the system will automatically store it. After initial setup, it is no longer necessary to input the account information manually to log in.

- c) If you forgot the password, tap **Retrieve password** and then follow on-screen instructions to set a new password.

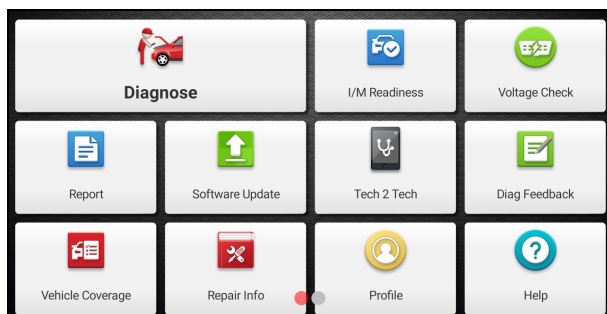
3.2 Job Menu

There are 2 function modules available on the tablet: **Diagnostics** and **Toolbox**.

Swipe in from the left/right edge of the screen to switch between function modules.

3.2.1 Diagnostics

It mainly includes the following items:



Name	Description
Diagnose	Configure the tablet as a professional diagnostic tool.
I/M Readiness	Check whether or not the various emissions-related systems on the vehicle are operating properly, and ready for Inspection and Maintenance testing.
Voltage Check	Performs a check of the vehicle's battery to ensure the system is operating within acceptable limits.
Report	View Health report, ADAS reports, Remote report, ROXIE Reports and Recorded Data.
Software Upgrade	Update vehicle diagnostic software and APK.
Tech 2 Tech	This option aims to help repair shops or technicians launch instant messaging and remote diagnosis, making the repair job getting fixed faster.
Diag Feedback	To feed back the recent 20 diagnostic logs to us for issue analysis.
Vehicle Coverage	To view all the vehicle models that the tablet covers.
Repair Info	Provide quick access to various authorized automotive repair database.
Profile	To manage VCI, reports, change password, configure printer, system settings and logout etc.

Help	Include customer service phone and email, training videos, FAQ and user manual of add-on modules.
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3.2.1 Toolbox

It mainly includes the following items:

Name	Description
TPMS	Configure this tool as a professional TPMS (Tire Pressure Monitoring System) service tool. It needs to work with the TSGUN device (sold separately) to perform all kinds of various TPMS functions.
ADAS	This module allows you to perform ADAS (Advanced Driver Assistance System) calibration operations. It needs to work with the specific ADAS calibration tool (sold separately).
Videoscope	This module allows you to check those unseen parts of engine, fuel tank, braking system. It needs to work with the compatible Videoscope device (sold separately).
BST360	This module allows you to fix battery detection faster and easier. It needs to work with the specific Bluetooth battery tester (sold separately).
Immo Programmer	This module allows you to perform the read-write function for vehicle keys, EEPROM, MCU, and EEPROM/FLASH of vehicle engine and gearbox ECU. It needs to work with the specific immobilizer programmer (sold separately).
Mall	Subscribe some extra software or service functions that are not included in the diagnostic tool online.
X-431 Scopebox	This module assists the auto repair technician with the ability to quickly identify faults on automotive electronic equipment and wiring.
Multimeter	This module provides simple measurements to test

	voltage, current and resistance to help determine faults.
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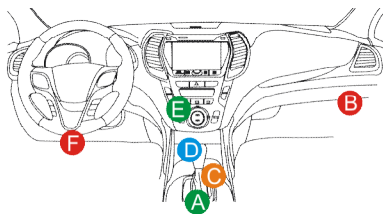
4 Connections

4.1 Preparation

- The ignition is turned on.
- The vehicle battery voltage range is 11-14 volts.
- The throttle is in the closed position.
- Find DLC location.

For Passenger Vehicles.

The DLC (Data Link Connector) is usually located 12 inches from the center of the instrument panel, under or around the driver's side for most vehicles. For some vehicles with special designs, the DLC location may vary. Refer to the following figure for location.



A. Opel, Volkswagen, Audi

B. Honda

C. Volkswagen

D. Opel, Volkswagen, Citroen

E. Changan

F. Hyundai, Daewoo, Kia, Honda, Toyota, Nissan, Mitsubishi, Renault, Opel, BMW, Mercedes-Benz, Mazda, Volkswagen, Audi, GM, Chrysler, Peugeot, Regal, Beijing Jeep, Citroen and other most popular models

If the DLC cannot be found, refer to the vehicle's service manual for the location.

4.2 Vehicle Connection

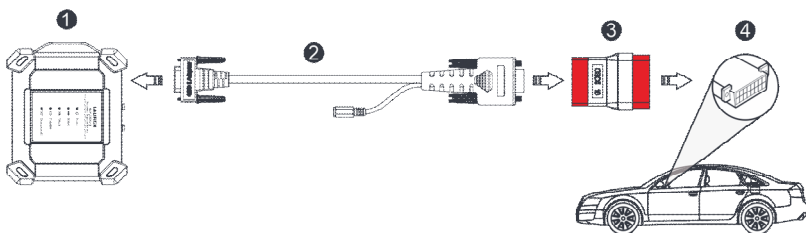
The method used to connect the VCI device to a vehicle's DLC depends on the

vehicle's configuration as follows:

- A vehicle equipped with an OBD II management system supplies both communication and 12V power through a standardized DLC.
- A vehicle not equipped with an OBD II management system supplies communication through a DLC connection, and in some cases supplies 12V power through the cigarette lighter receptacle or a connection to the vehicle battery.

4.2.1 OBD II vehicle Connection

Use the included diagnostic cable (HDB15F to HDB15F diagnostic cable + HD15F to OBD II adaptor) to connect the VCI device to the vehicle's DLC port.




1. VCI device
2. HDB15F to HDB15F diagnostic cable
3. HD15F to OBD II adaptor
4. Vehicle's DLC port

4.2.2 Non-OBD II vehicle Connection

For non-OBDII vehicle, refer to the above figure to make connection.

1. Select the appropriate adaptor according to the vehicle's DLC port type (4).
2. Replace the HD15F to OBD II adaptor (3) with the target adaptor on the above figure. Other steps shall also apply.

 Note: If the pin of the DLC is damaged or the DLC has insufficient power, you can get power via either of the following methods:

A. Battery Clamps Cable (not included):

Connect one end of the battery clamps cable to the power jack of the diagnostic cable, and the other end to the vehicle's battery.

B. Cigarette Lighter Cable (not included):

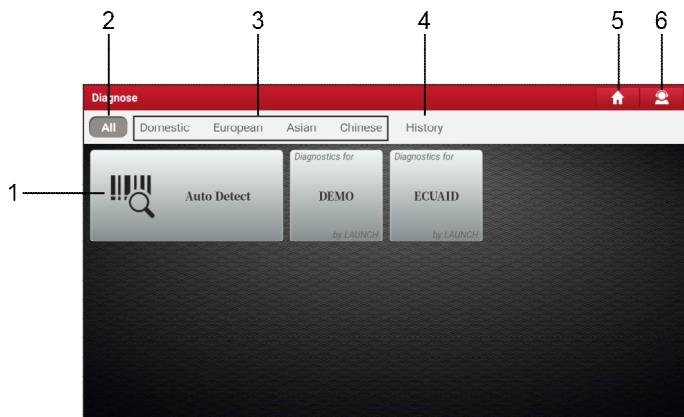
Connect one end of the cigarette lighter cable to the power jack of the diagnostic cable, and the other end to the cigarette lighter receptacle.



If you choose to perform vehicle diagnosis via data cable, connect one end of the data cable into the VCI device, and the other end into the USB port of the tablet.

5 Diagnosis

Three methods are available for vehicle diagnosis: Smart Diagnosis (AutoDetect), Manual Diagnosis and Tech to Tech Remote Diagnosis.

Tap **Diagnose** on the Job Menu to enter the Diagnose main menu.




1. Auto Detect: Obtain vehicle data from the cloud server to perform quick test via reading VIN, to avoid various defects resulting from step-by-step menu selection.
2. All Tab: Display all the vehicle makes in the vehicle menu.
3. Vehicle region buttons: Tap different buttons to switch to corresponding vehicles.
4. History: Generally once a vehicle diagnosis is performed, the tablet will record the every details of diagnostic session. The History function provides direct access to the previously tested vehicles and users can resume from the last operation, without starting from scratch. Refer to Chapter 5.4 for details.
5.  **Home:** Returns to Job menu screen.
6.  **Online technical help:** Tap to seek for online remote help.

5.1 Smart Diagnosis (AutoDetect)

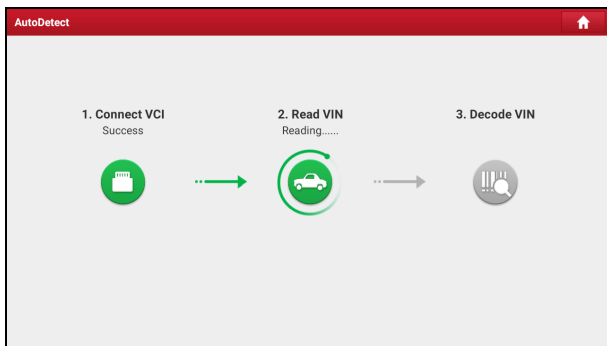
Through simple Bluetooth communication between the display tablet and VCI, you can easily get the VIN (Vehicle Identification Number) information of the currently identified vehicle. Once the VIN is successfully identified, the system will retrieve it from the remote server and then guide you to vehicle information page without step-by-step manual menu selection.

The vehicle information page lists all historical diagnostic records of the vehicle, which lets the technician have a total command of the vehicle faults. In addition, a quick dial to local diagnosis and diagnostic function are also available on this page for reducing the roundabout time and increasing productivity.

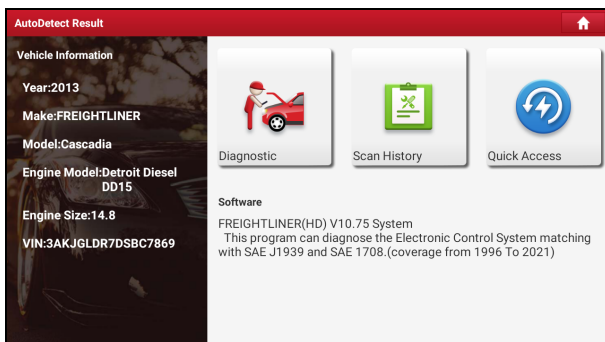
 **Note:** Before using this function, please make sure the VCI is properly connected to the vehicle's DLC. For detailed connection, see Chapter 4.2.

Follow the steps below to proceed.

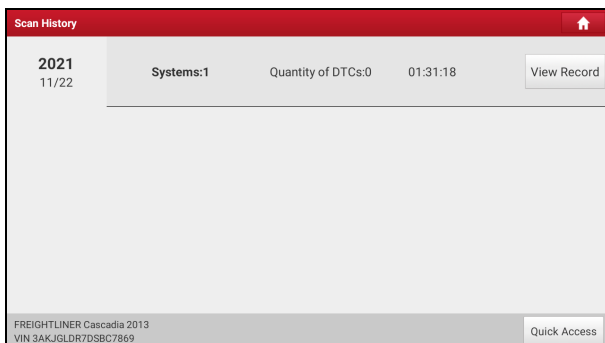
1. Tap **AutoDetect** on the Diagnose main menu screen.



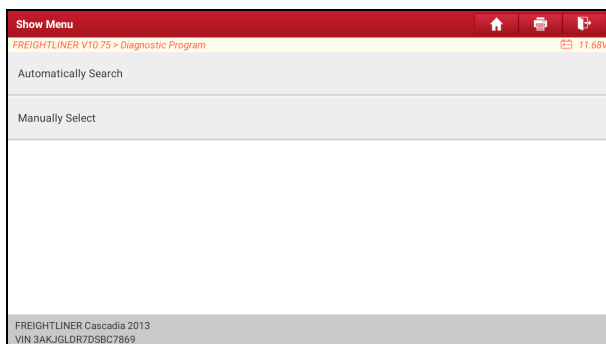
2. Once pairing is complete, the tablet starts reading the vehicle VIN.
 - A. If the VIN can be found from the remote server database, the following screen will appear.



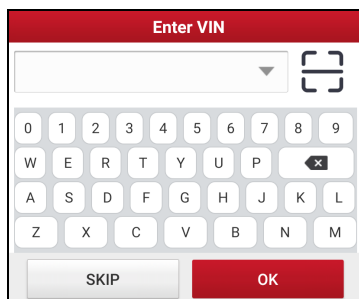
- Tap **Diagnostic** to start a new diagnostic session.
- Tap **Scan History** to view its historical repair record. If there are records available, it will be listed on the screen in sequence of date.




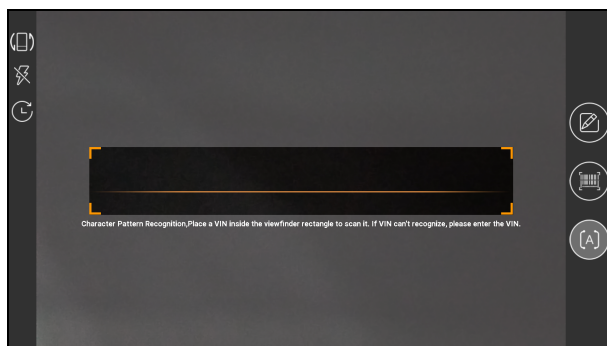
- To perform other functions, tap **Quick Access** to directly go to the function selection screen. Choose the desired one to start a new diagnostic session.









B. If the tablet failed to access the VIN information, the following screen will appear:



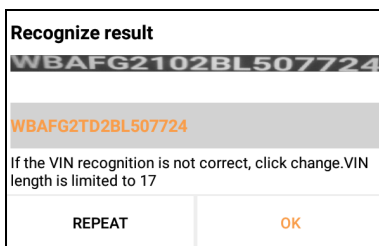
- Tap the input field to directly, tap **OK**. If the VIN exists on the remote server, the system will enter the diagnostic function selection screen.
- Tap  to launch the VIN recognition module.



Place the VIN inside the viewfinder rectangle to scan it. The most recognizable location for this number is in the top left corner on the vehicle's dashboard. Other locations include the driver's door or post, and the firewall under the hood.

- Tap  to switch the display mode of the screen.
- Tap  to turn the camera flash on.
- Tap  to choose it from the record list if the VIN of the vehicle has been scanned before.
- Tap  to input the VIN manually if the tablet has failed to identify the VIN of the vehicle.
- Tap  to scan the VIN barcode. If the VIN barcode cannot be recognized, please manually input the VIN.
- Tap  to scan the VIN character. If the VIN character cannot be recognized, please manually input the VIN.

After scanning, the screen will automatically display the result.



- If the VIN scanned is incorrect, tap the result field to modify it and then tap **OK**.
- To scan it again, tap **REPEAT**.

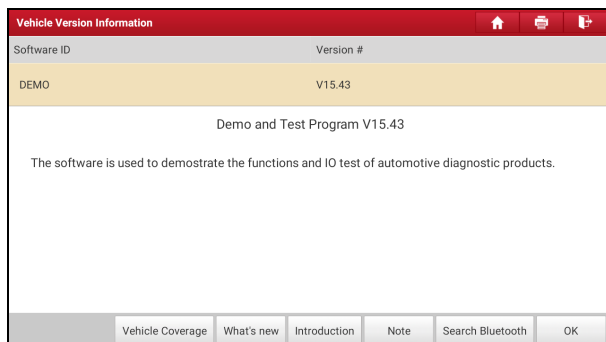
If the VIN exists on the remote server, the system will enter the diagnostic function selection screen.

5.2 Manual Diagnosis

In this mode, you need to execute the menu-driven command and then follow the on-screen instruction to proceed.

Take **Demo (V15.43)** as an example to demonstrate how to diagnose a vehicle.

- 1). Select diagnostic software version: Tap **DEMO** to go to Step 2.



On-screen Buttons:

Vehicle Coverage: Tap to view the vehicle models that the current diagnostic software covers.

What's new: Tap to view the optimized items and enhancements.


Introduction: Tap to check the software function list.


Note: Tap to read some precautions on using the current diagnostic software.


Search Bluetooth: Tap to scan for all available Bluetooth VCIs.

OK: Tap it to go to next step.

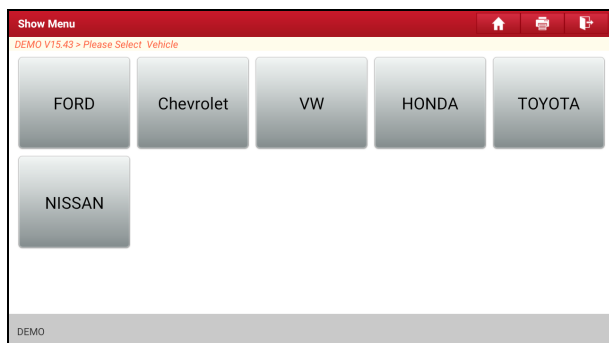
Diagnostics toolbar contains a number of buttons that allow you to print the displayed data or make other controls. It is displayed on the upper right corner of the screen and goes through the whole diagnostic session. Below provides a brief description for the operations of the diagnostics toolbar buttons:

 Home: Returns to Job menu screen.

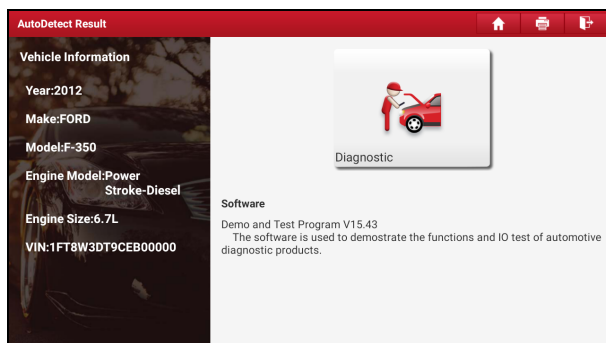
 Print: Print the current screen. To perform printing, you need to purchase an extra Wi-Fi printer manufactured by LAUNCH or other manufacturers separately and then properly configure the wireless printer following the steps described in Chapter 10.8.3.

 Exit: To exit the diagnostic application.

- 2). Select vehicle model (varies with different versions): Select the desired vehicle model. Here we take **Ford** for example.

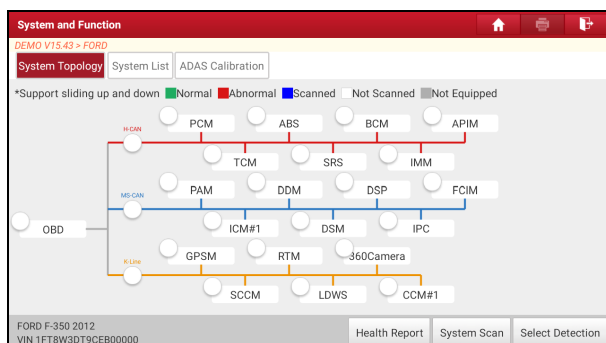


- 3). Read vehicle information: The system automatically decodes the vehicle information. After the vehicle information is retrieved, the following screen will appear.



- 4). **Choose the test item:** After reading the vehicle information, double check if the information is correct or not. If yes, tap **Diagnostic** to enter the following screen.

All vehicle systems can be displayed in form of topology or list. By default, all vehicle systems are displayed in form of topology.

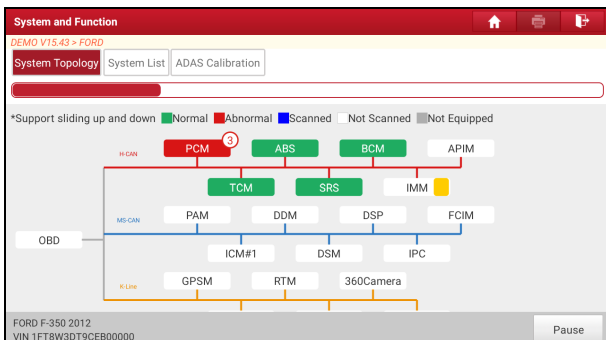


- 1) While in System Topology mode, different highlight bars indicate different detection status.

On-screen Buttons:

Health Report: Tap to quickly access all the electronic control units of the vehicle and generate a detailed report about vehicle health. The tested systems malfunctioning are displayed in red with a number indicator displaying DTC quantity and the systems with functioning properly are displayed in green.

Warning: Diagnostic Trouble Codes or Fault Codes can be used to identify which engine systems or components that are malfunctioning. Never replace a part based only on the DTC definition. Retrieving and using DTCs for troubleshooting vehicle operation is only one part of an overall diagnostic strategy. Follow testing procedures (in vehicle's service manual), instructions and flowcharts to confirm the locations of the problem.




- **Report:** Tap to save the current data in text format.

Choose the report type and input the required information, and then tap **OK**.


Note: Diagnostic report is classified into two categories: Pre-Repair report and Post-Repair report. To facilitate the comparison of the pre-repair and post-repair reports and get accurate test result, please make sure you saved the right type of the diagnostic report.

Enter the tester and customer name and then tap **OK** to save it. All reports are saved in **Report -> Health Reports**.

 **Note:** By default, the workshop information is blank. You can configure and revise it from **Profile -> Settings -> Shop Information**. After you configured the information, it will be automatically generated every time the diagnostic report is saved. All vehicle and workshop information will be appended as a tag on the diagnostic report, which allows you to easily retrieve the desired report while performing the Filter function of Diagnostic Report.

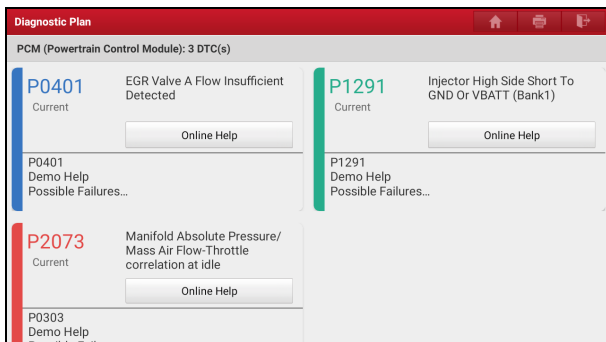
- **Compare Results:** Tap to select the pre-repair report to compare. By comparison of the pre- and post- repair reports, you can easily identify which DTCs are cleared and which remain unfixed.

Compare Results		
DEMO V15.43 > FORD		
DTC	Current	History
PCM (Powertrain Control Module)		
P0401 EGR Valve A Flow Insufficient Detected	Found	N/A
P1291 Injector High Side Short To GND Or VBATT (Bank1)	Found	N/A
P2073 Manifold Absolute Pressure/Mass Air Flow-Throttle correlation at idle	Found	N/A
LDWS(Lane Departure Warning System) Camera Alignment		
C1522 CAN bus-Fault	Found	N/A


 **Note:** Before performing this function, please make sure that: 1) You have saved a pre-repair report of the currently tested vehicle; and 2) You have already

made some repairs and service and cleared the DTCs after the pre-repair reported is generated. Otherwise, no differences exist between the pre- and post-repair reports.

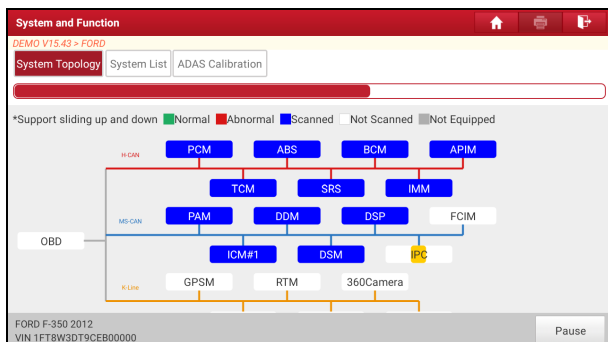
- **Diagnostic Plan:** Figures out the diagnostic plan and repair solutions for the detected DTCs.



- **Clear DTCs:** Tap to clear the existing diagnostic trouble codes.

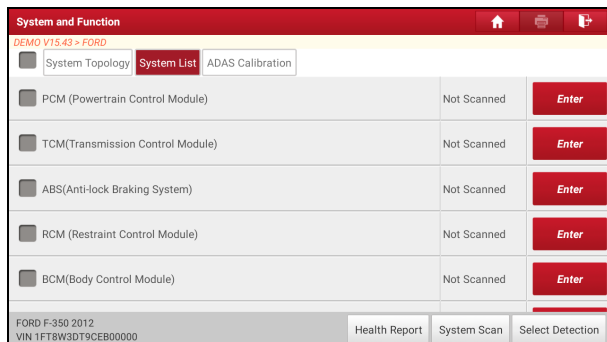
 Note: Clearing DTCs does not fix the problem(s) that caused the code(s) to be set. If proper repairs to correct the problem that caused the code(s) to be set are not made, the code(s) will appear again and the check engine light will illuminate as soon as the problem that cause the DTC to set manifests itself.

System Scan: Tap to quickly scan which systems are installed on the vehicle.

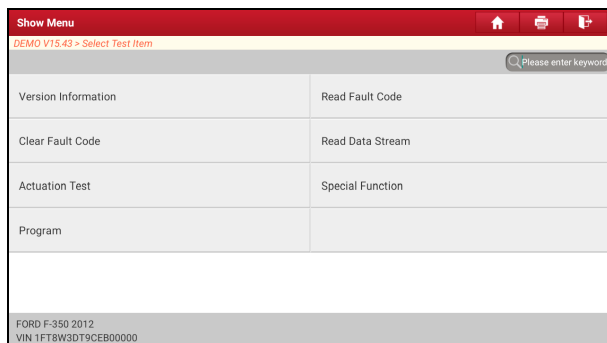


Select Detection: Select certain system and tap it to start scanning the system. Alternatively user also can tap certain system to manually scan it.

- 2) While in System List mode, different highlight bars indicate different detection status.



- **Enter:** Select certain system, and tap this button to enter the diagnostic function selection screen.



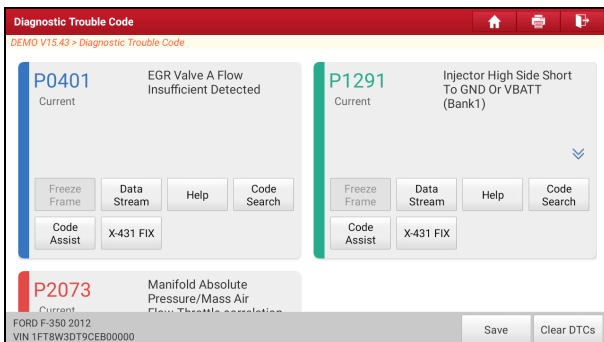
In general, the diagnostic functions vary with different vehicle models. It mainly includes the following options:

A. Module Information

This function is used to read the version information of system mode, vehicle VIN, software and ECU.

B. Read Fault Code

This function displays the detailed information of DTC records retrieved from the vehicle's control system.



On-screen Buttons:

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 frame data includes a snapshot of critical parameter values at the time the DTC is set.

Help: Tap to view the help information.

Code Search: Tap it to search for more information about the current DTC online.

Code Assist: Tap it to retrieve more information (including code and definition, potential causes and frequent fixes) from the DTC database.

2012 FORD F-350 1F78W3DT9CEB00000 6.7L Power Stroke-Diesel	
Code and Definition	
P0401	EGR 'A' Flow Insufficient Detected
Top Reported Fix	
Replaced Exhaust Gas Recirculation (EGR) Cooler	
Potential Causes	
Contaminated Intake Air Sensor	
Exhaust Gas Re-Circulation (EGR) Control Valve	
Exhaust Gas Recirculation (EGR) Cooler	


Report: To save the current data in text format. All reports are saved in **Report** -> **Health Reports**.

Clear DTCs: Tap to clear the existing diagnostic trouble codes.

C. Clear Fault Code


After reading the retrieved codes from the vehicle and certain repairs have been carried out, you can use this function to erase the codes from the vehicle. Before performing this function, please be sure the vehicle's ignition key is in the ON position with the engine off.

Clearing DTCs does not fix the problem(s) that caused the code(s) to be set. If proper repairs to correct the problem that caused the code(s) to be set are not made, the code(s) will appear again and the check engine light will illuminate as soon as the problem that cause the DTC to set manifests itself.

 Note: 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.

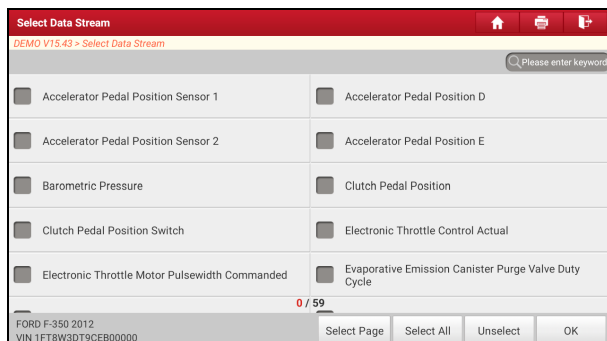
D. Read Data Stream

This option lets you view and capture (record) real-time Live Data. This data including current operating status for parameters and/or sensor information can provide insight on overall vehicle performance. It can also be used to guide vehicle repair.

 **Danger:** If you must drive the vehicle in order to perform a troubleshooting procedure, ALWAYS have a second person help you. Trying to drive and operate the

diagnostic tool at the same time is dangerous, and could cause a serious traffic accident.

Tap **Read Data Stream**, the following screen will appear:



On-screen Buttons:

Select Page: Tap it to select all items of the current page. To select certain data stream item, just check the box before the item name.

Select All: Tap it to select all items.


Unselect: Tap it to deselect all data stream items.

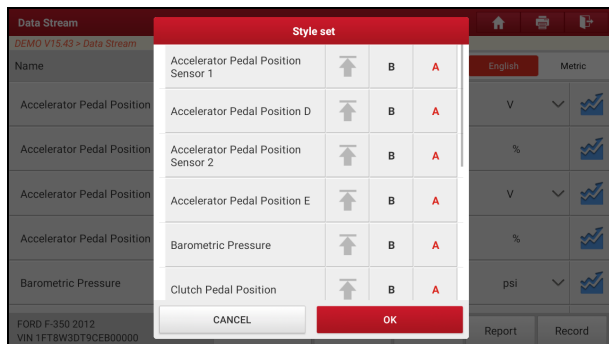
OK: Tap it to confirm and jump to the next step.

After selecting the desired items, tap **OK** to enter the data stream reading page.




Name	Value	Standard Range	Metric	
Accelerator Pedal Position Sensor 1	0.9	0 - 5	V	
Accelerator Pedal Position D	15.69	0 - 100	%	
Accelerator Pedal Position Sensor 2	0.46	0 - 5	V	
Accelerator Pedal Position E	15.69	0 - 100	%	
Barometric Pressure	14.925	0 - 17.58	psi	

Notes:

1. Tap , the following popup will appear.



Here the user can set different display style for each selected item.

 indicates sticky top. If it is tapped, it will change into . On the data stream display screen, the data stream item with  will be shown on the top of the selected data stream list. To remove it from the top of the list, just tap it again.

B indicates this item will be displayed in **Bold**.

A indicates this item will be displayed in **Red**.

2. Tap **English** or **Metric** to switch the measurement unit.
3. If the value of the data stream item is out of the range of the standard (reference) value, the whole line will display in red. If it complies with the reference value, it displays in blue (normal mode).
4. The indicator 1/X shown on the bottom of the screen stands for the current page/total page number. Swipe the screen from the right/left to advance/return to the next/previous page.

There are 3 types of display modes available for data viewing, allowing you to view various types of parameters in the most suitable way.

- ✓ **Value** – this is the default mode which displays the parameters in texts and shows in list format.
- ✓ **Graph** – displays the parameters in waveform graphs.
- ✓ **Combine** – this option is mostly used in graph merge status for data comparison. In this case, different items are marked in different colors.

On-screen Buttons:



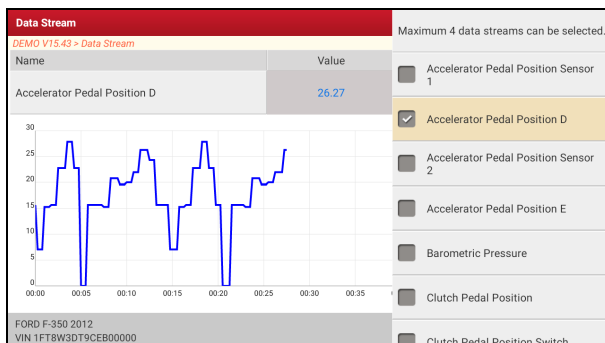
(Single graph): Tap it to view the waveform.



- **Min/Max:** Tap it to define the maximum/minimum value. When the value goes beyond the specified value, the system will alarm.

Graph: Tap it to view the waveform.


- **Combine:** This option is mostly used in graph merge status for data comparison.
- **Value:** Tap to display the parameters in texts.
- **Customize** (⏏): Tap it, a pull-down list of the data stream items appears on the screen. Select/deselect the desired items and then screen will display/remove the waveforms corresponding to these items immediately.



Compare Sample: Tap it to select the sample data stream file, the values you

customized and saved in process of data stream sampling will be imported into the **Standard Range** column for your comparison.


Data Stream					
DEMO V15.43 > Data Stream					
Name	T	Value	Standard Range(Sample)	English	Metric
Accelerator Pedal Position Sensor 1		0.78	0.78 - 1.04	V	↓
Accelerator Pedal Position D		15.69	0 - 27.84	%	↓
Accelerator Pedal Position Sensor 2		0.4	0.39 - 0.55	V	↓
Accelerator Pedal Position E		15.69	0 - 15.69	%	↓
Barometric Pressure		14.925	14.92 - 14.92	psi	↓
FORD F-350 2012 VIN 1FT8W3DT9CEB00000					
		Compare Sample	Save Sample	Graph	Report
					Record

 **Note:** Before executing this function, you have to sample the values of data stream items and save it as a sample data stream file.

Report: To save the current data in text format. All reports are saved in **Report -> Health Reports**.

Record: Tap to start recording diagnostic data. Recorded live data can serve as valuable information to help you in troubleshooting of vehicle problems. All recorded files are stored in **Report -> Recorded Data**.

Data Stream					
DEMO V15.43 > Data Stream					
Name	T	Value	Standard Range	English	Metric
Accelerator Pedal Position Sensor 1		0.78	0 - 5	V	↓
Accelerator Pedal Position D		20.78	0 - 100	%	↓
Accelerator Pedal Position Sensor 2		0.4	0 - 5	V	↓
Accelerator Pedal Position E		0	0 - 100	%	↓
Barometric Pressure		14.925	0 - 17.58		↓
Recording ● 00:02					
FORD F-350 2012 VIN 1FT8W3DT9CEB00000					
		Compare Sample	Save Sample	Graph	Report
					Record

 **Note:** The saved file follows the naming rule: It begins with vehicle type, and then the record starting time and ends with .x431 (To differentiate between files, please configure the accurate system time).

Help: Tap to view the help information.

Save Sample: This item enables you to customize the standard range of live data stream items and save it as DS sample file. Each time you run the data stream items, you can call out the corresponding sample data to overwrite the current standard range.

Tap it to start recording the sample data (🔴) Note: Only data stream items with units will be recorded).

Data Stream						
DEMO V15.43 > Data Stream						
Name	Value	Standard Range	English	Metric		
Accelerator Pedal Position Sensor 1	0.78	0 - 5	V	✓		
Accelerator Pedal Position D	0	0 - 100	%	✓		
Accelerator Pedal Position Sensor 2	0.39	0 - 5	V	✓		
Accelerator Pedal Position E	0	0 - 100	%	✓		
Barometric Pressure	14.925	0 - 17.58		✓		
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> ● Sample Recording </div> <div style="border: 1px solid red; padding: 2px;"> 00:05 </div> </div>						
FORD F-350 2012 VIN 1FT8W3DT9CE800000		Compare Sample	Save Sample	Graph	Report	Record

Once recording is complete, tap (🔴) to stop it and navigate to the data modification screen.

Confirm Sample DS					
DEMO V15.43 > Data Stream					
Name	Min Value	Max Value	Unit		
Accelerator Pedal Position D	0.0	✕ 27.84	✕ %		
Accelerator Pedal Position E	0.0	✕ 15.69	✕ %		
Accelerator Pedal Position Sensor 1	0.78	✕ 1.04	✕ V		
Accelerator Pedal Position Sensor 2	0.39	✕ 0.55	✕ V		
Barometric Pressure	99.5	✕ 99.5	✕ Kpa		
FORD F-350 2012 VIN 1FT8W3DT9CE800000					Save

Tap the Min./Max. value to change it. After modifying all desired items, tap **Save** to save it as a sample data stream file. All data stream files are stored in **Profile**

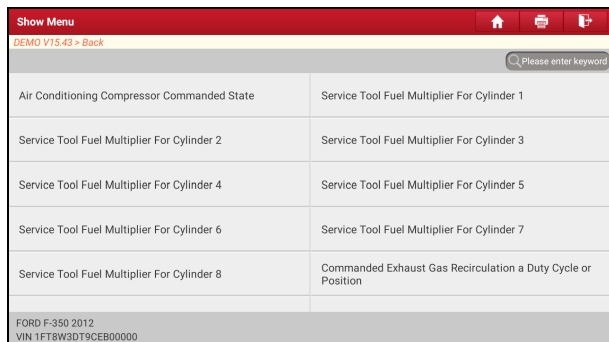
-> Sample.

E. Actuation Test

This option is used to access vehicle-specific subsystem and component tests. Available test vary by vehicle manufacturer, year, and model.

During the actuation test, the tablet outputs commands to the ECU in order to drive the actuators, and then determines the integrity of the system or parts by reading the ECU data, or by monitoring the operation of the actuators, such as switching a injector between two operating states.

On the diagnostic function selection screen, tap **Actuation Test**, the following screen will appear:

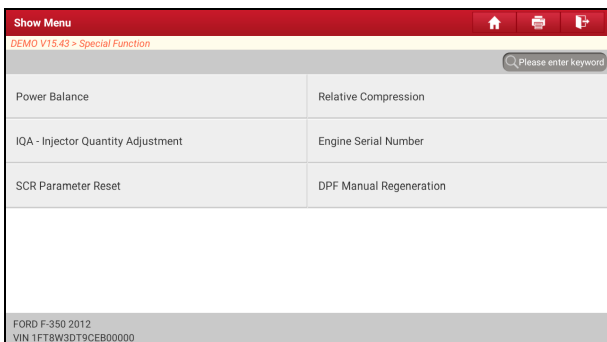


Simply follow the on-screen instructions and make appropriate selections to complete the test.

Each time when an operation is successfully executed, *Completed* displays.

F. Special Functions

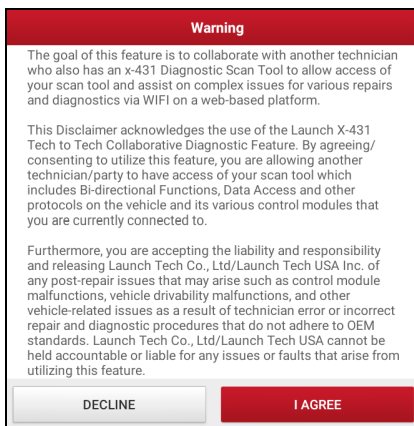
It offers coding, reset, relearn and more service functions, to help vehicles get back to functional status after repair or replacement. Available tests vary by vehicle manufacturer, year, and model.



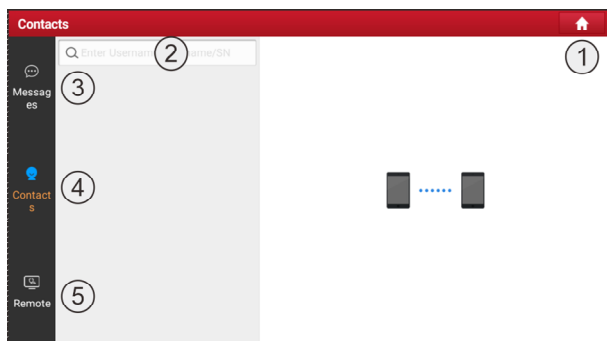
5.3 Tech 2 Tech

This option aims to help repair shops or technicians launch instant messaging and remote diagnosis, making the repair job getting fixed faster.

Tap **Tech 2 Tech** on the Job menu, a disclaimer page will pop up on the screen:



Tap **I AGREE** to enter the Contacts page. The following screen will appear.



1	Home button	Tap it to navigate to the Job menu screen.
2	Search bar	Directly input the registered username of the tool to start searching, and then tap the desired one to add it into your Contacts list.
3	Message tab	If an incoming message reaches, a red dot will appear on the upper right corner of the tab.
4	Contacts tab	Tap to enter the friend list. The screen appears blank by default.
5	Remote tab	There are two modules available for remote operation. 1. Request remote help: If you need support, just use this option to invite a technician to perform a remote control on your tool. 2. Remote help: Request to control the partner's device remotely to help him diagnose the vehicle.

1. If you cannot fix a touch vehicle problem and want to seek a trusted second opinion or additional expertise from other technicians, refer to Chapter 5.3.2.1.
2. If you can provide the professional repair help, refer to Chapter 5.3.2.2.


Whatever you request remote help or provide remote help, the partner must be the users who have registered their Launch's diagnostic tools. They may be the

following:

- Workshop
- Technician
- golo users

The display tablet is allowed to launch remote diagnosis with other diagnostic tools (including but not limited to the X-431 Torque Link) of Launch family, which are equipped with this module.

5.3.2.1 Request remote help


 Note: Before performing this operation, please make sure the following are met:

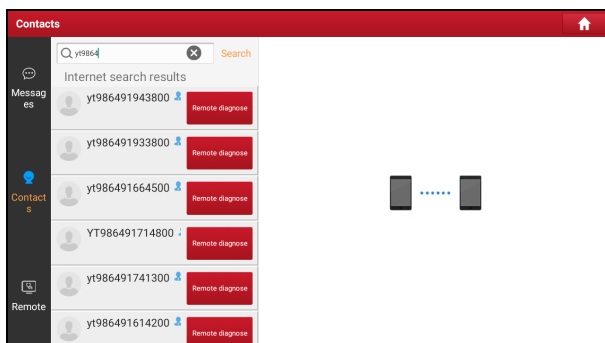
- Turn on the vehicle power supply.
- The tablet should be properly connected to the vehicle's DLC and a successful communication is required.
- In process of remote diagnosis, please note the following things:
 - You are not suggested to execute any actions.
 - The partner is not allowed to save any diagnostic reports or records on your tablet.
- Once you received the report from the partner, tap **View Report** to view details. All diagnostic reports are saved under the **Remote Reports** tab of **Report** on the Job Menu screen.

There are 4 ways available for requesting remote help:

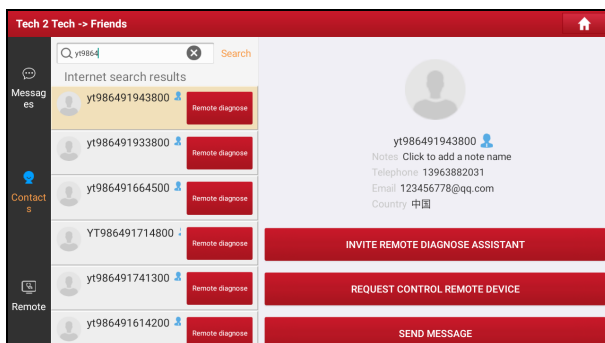
- **Via “Contacts”**

Tap **Contacts**. Input the partner's user name and tap **Search**, the following screen will appear:

 Note: If the partner is added into the Contacts, directly tap it to enter the instant messaging screen.

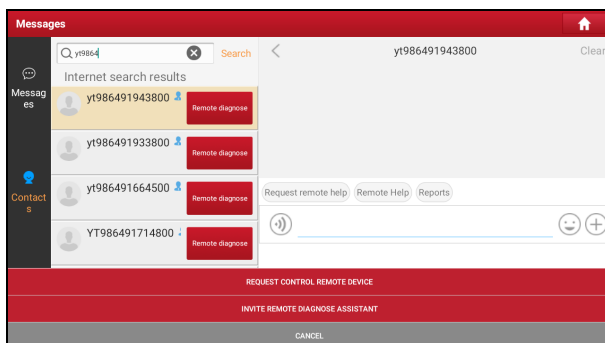


Method 1: Tap the target partner's avatar, the following screen will appear:



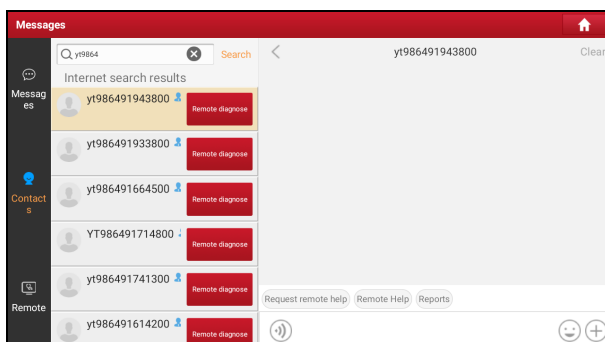
Tap **Invite Remote Diagnose Assistant**, choose the desired vehicle model and wait for the partner's confirmation.


Method 2: Tap **Remote Diagnose**, the following screen will appear:

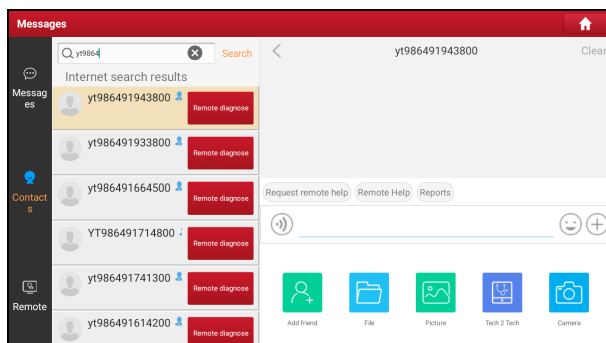



Tap **Invite Remote Diagnose Assistant**, choose the desired vehicle model and wait for the partner's confirmation.



Method 3: Tap the target user name to enter the instant messaging mode. The following screen will appear:



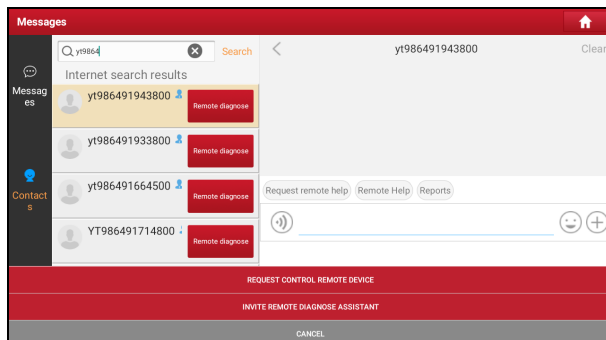
Tap  to call out more function options.



 Note: Here the following operations are available:

- Tap  to send the voice message. Tap  to send the emoji.
- Add friend: Add it into the Contacts list. After the partner receives the request, a beep will sound. After the partner agreed your request, he/she will automatically be listed in the Contacts tab.
- File: Choose diagnostic reports or local files to send.
- Picture: Choose screenshots or pictures to send.
- Tech to Tech: Start a remote diagnostic session.
- Camera: Open camera to take pictures.

Tap **Tech 2 Tech**, the following options will appear:

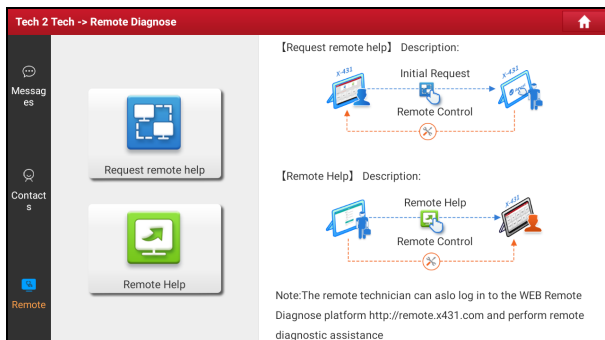


Tap **Invite Remote Diagnose Assistant**, choose the desired vehicle model and

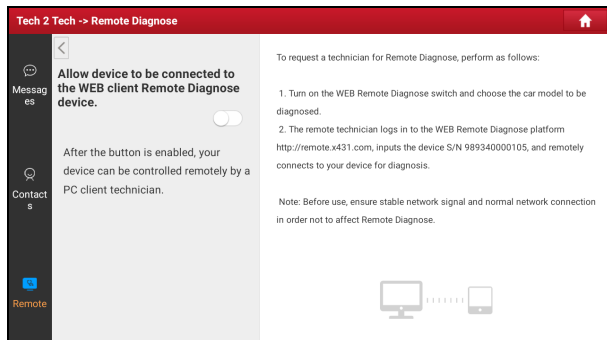
wait for the partner's confirmation.

- Via “Remote”

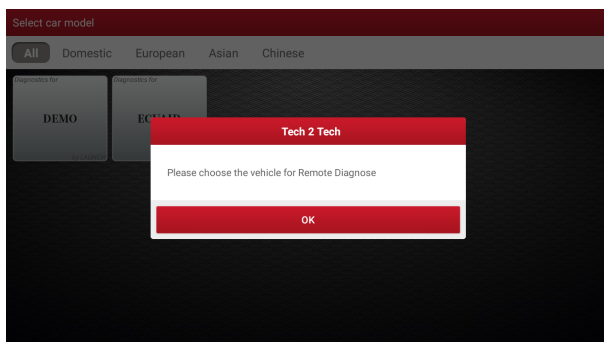
Method 4: Tap **Remote** to ether the following screen.



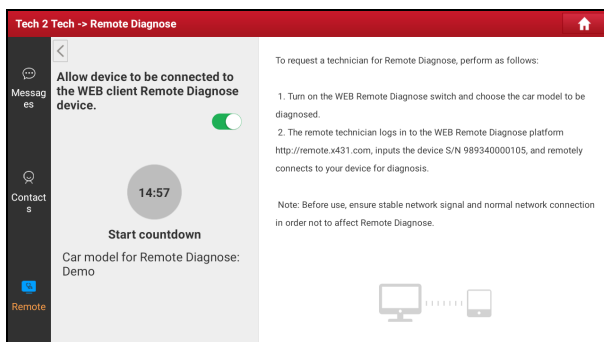
Tap **Request remote help**, the following screen will appear:



Slide the switch *Allow device to be connected to the WEB client remote diagnostic device* to ON so that the partner can find and connect to this device.




Choose the desired vehicle model and wait for the partner's confirmation.



Notify the partner of your device Serial Number and wait for receiving the remote help.

5.3.2.2 Provide remote help


 Notes:

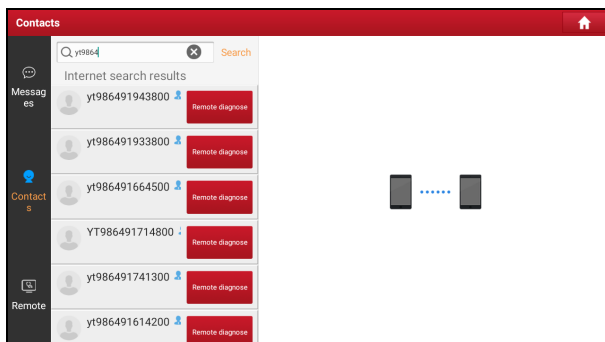
- Before performing this operation, please make sure that you have registered the Launch's diagnostic tool.
- Remote diagnosis has the same diagnostic steps as manual diagnosis.
- In process of remote diagnosis, tap the  button to send a voice message.
- Once vehicle diagnosis is complete, a report will be created. Input your comments on this report, and then tap **Send Report** to send it to the partner.

There are 4 ways available for providing remote help.

- **Via “Contacts”**

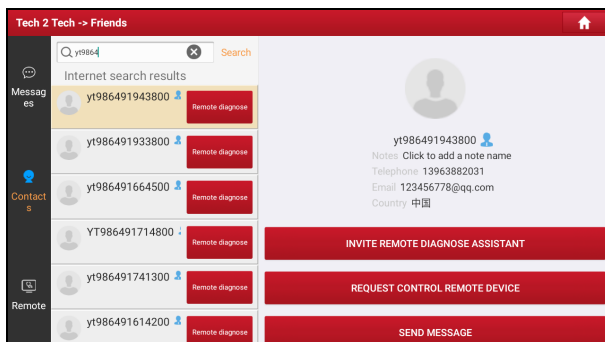
Tap **Contacts**. Input the partner’s user name and tap **Search**, the following screen will appear:

 Note: If the partner is added into the Contacts, directly tap it to enter the instant messaging screen.



Method 1:

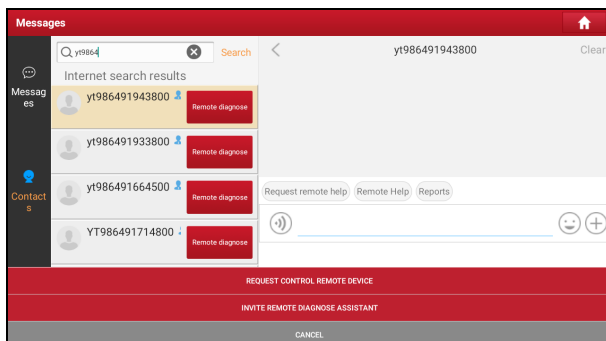
Tap the target partner’s avatar, the following screen will appear:



Tap **Request Control Remote Device** to launch the remote help. After the partner accepts the request, the remote diagnosis is ready to start.

Method 2:

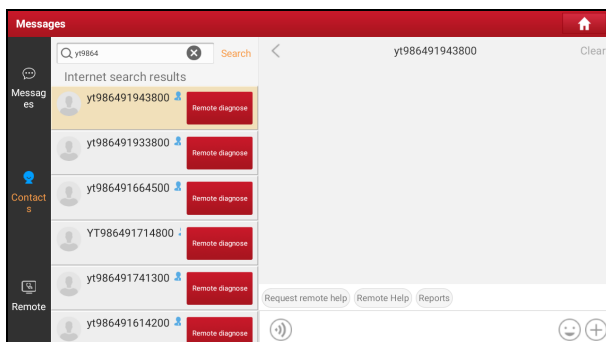
Tap **Remote Diagnose**, the following screen will appear:




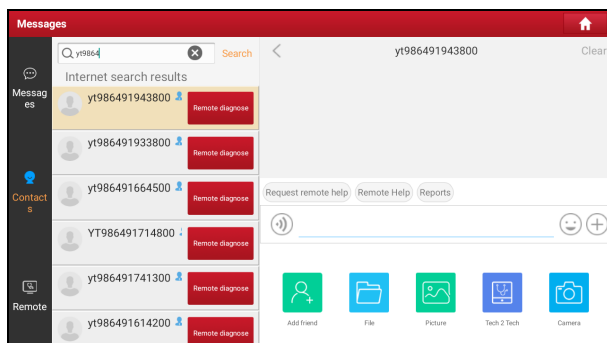
Tap **Request Control Remote Device** to launch the remote help. After the partner accepts the request, the remote diagnosis is ready to start.

Method 3:

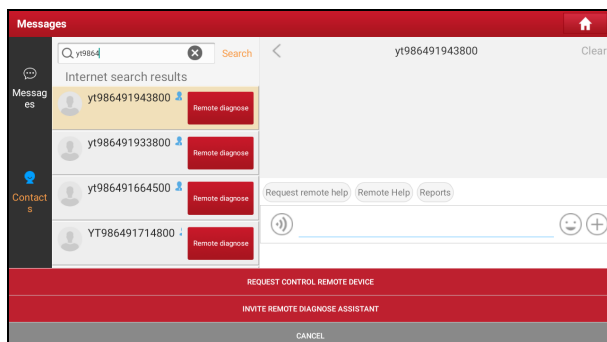
Tap the target user name to enter the instant messaging mode. The following screen will appear:



Tap  to call out more function options.



Tap **Tech 2 Tech**, the following options will appear:

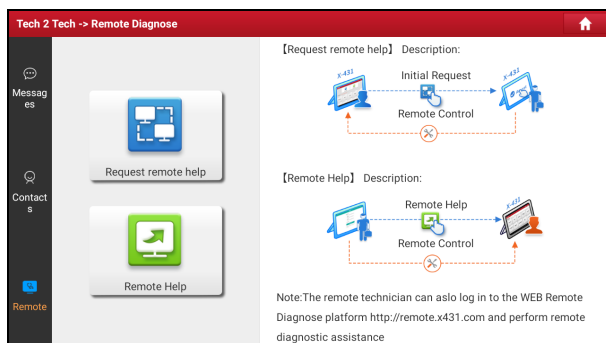


Tap **Request Control Remote Device** to launch the remote help. After the partner accepts the request, the remote diagnosis is ready to start.


- Via “Remote”

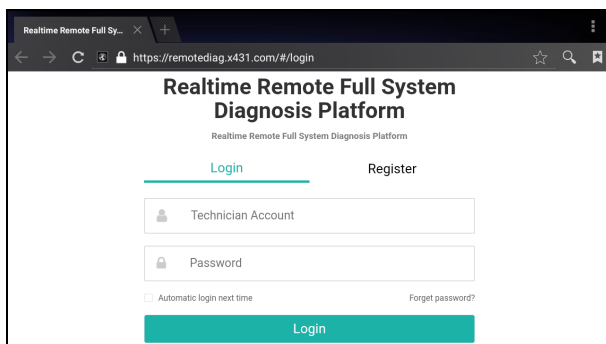
Method 4:

Tap **Remote** to enter the following screen.




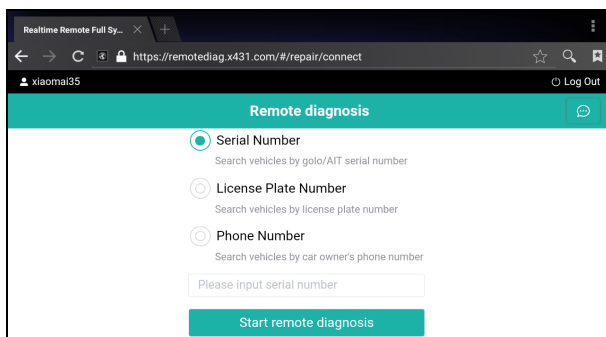
Tap **Remote help**, it will automatically navigate to the real-time remote full system diagnosis platform.

 Note: Alternatively, you can also use a PC to access the website <http://remote.x431.com/cn/> to login the remote full system diagnosis platform if no LAUNCH diagnostic tool keeps attended.



Input the correct technician account and password, and tap **Login**. The following screen will appear:

 Note: The technician account may be either a registered username of the LAUNCH diagnostic tool or a golo technician account.



Check the box *Series Number* and enter the Serial Number provided by the remote help requester, and then tap **Start remote diagnosis** to start the remote help.

The operations in remote diagnosis are same as those in local diagnosis. Once the session is complete, a remote diagnostic report will be automatically generated.

5.4 Diagnostic History

Generally once a vehicle diagnosis is performed, the tablet will record the every details of diagnostic process. The History function provides direct access to the previously tested vehicles and users can resume from the last operation, without starting from scratch.

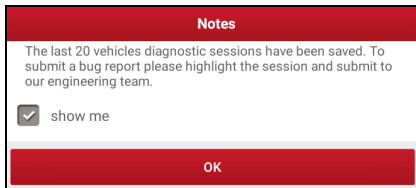
Tap **History** on the Diagnose main menu screen, all diagnostic records will be listed on the screen in date sequence.

- Tap certain vehicle model to view the details of the last diagnostic report.
- To delete certain diagnostic history, select it and then tap **Delete**. To delete all historical records, tap **Select All** and then tap **Delete**.
- Tap **Quick access** to directly navigate to the function selection page of last diagnostic operation. Choose the desired option to proceed.

6 Diagnostic Feedback

This item allows you to feedback your diagnostic problems to us for analysis and troubleshooting.

Tap **Diag Feedback**, a pop-up message will appear:



Tap **OK**, the following 3 options will be displayed on the left column of the screen.

A. Feedback

Tap certain tested vehicle model to enter the feedback screen.

- 1) Tap **Choose File** to open the target folder and choose the desired diagnostic logs.
- 2) Choose the failure type and fill in the detailed failure description in the blank text box and telephone or email address. After inputting, tap **Submit Result** to send it to us.

B. History

Tap it to view all diagnostic feedback records. Different process states are marked with different colors.

C. Offline list

Tap it to display all diagnostic feedback logs which have not been submitted successfully due to network failure. Once the handset gets a stable network signal, it will be uploaded to the remote server automatically.

7 I/M Readiness

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.

Currently, there are eleven OBD II Readiness Monitors (or I/M Monitors) defined by the U.S. Environmental Protection Agency (EPA). Not all monitors are supported in every vehicles and the exact number of monitors in any vehicle depends on the motor vehicle manufacturer's emissions control strategy.

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
- 2) Fuel System
- 3) Comprehensive Components (CCM)

Once the vehicle is running, the OBD II system is continuously checking the above components, monitoring key engine sensors, watching for engine misfire, and monitoring fuel demands.

Non-Continuous Monitors -- Unlike the continuous monitors, many emissions and engine system components require the vehicle to be operated under specific conditions before the monitor is ready. These monitors are termed non-continuous monitors and are listed below:

- 1) EGR System
- 2) O₂ Sensors
- 3) Catalyst
- 4) Evaporative System
- 5) O₂ Sensor Heater
- 6) Secondary air Injection

7) Heated Catalyst

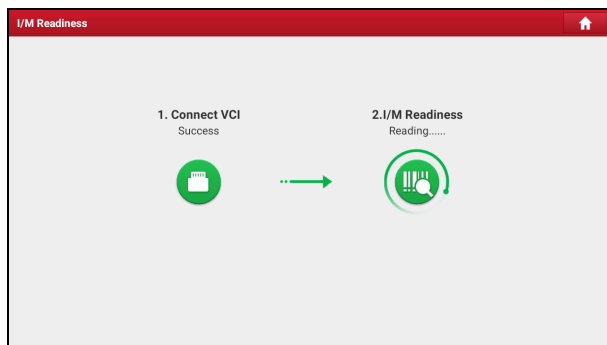
8) A/C system

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.

Tap **I/M Readiness** on the Job Menu to start checking the readiness.



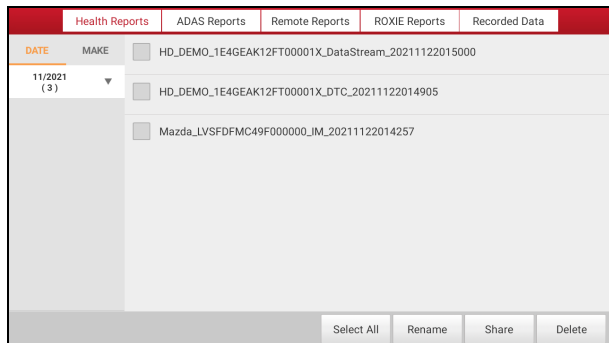
After checking all I/M readiness status, the screen will output the result:

I/M Readiness			
			CAN-15765-4 Protocol
DTCs	Off	43.162	Protocol
Monitor	Value	Monitor	Value
Misfire		Fuel System	
Comprehensive Component		Catalyst	
Heated Catalyst		Evaporative System	
Secondary Air Injection		O2 Sensor	
Mazda 马自达3 2006 VIN LVVSDFMC49F000000			<input type="button" value="Detail"/> <input type="button" value="Report"/>

Note: means not available on this vehicle, means incomplete or not ready, means Completed or Monitor Ok.

8 Reports

This option is used to view, delete or share the saved reports.



1. Health Reports

This module stores all diagnostic reports generated in process of vehicle diagnosis.

All diagnostic reports are sorted by Date and Make. Tap the desired type to re-arrange and filter it.

- To select certain report, check the box before the report. To select all reports, tap **Select All**. To deselect all, tap **Unselect**.
- To change the filename of report, tap **Rename**.
- To share the report with others, select the desired one and then tap **Share**.
- Select the desired report and then tap **Delete** to delete it.

2. ADAS Reports

This option lists all diagnostic reports saved in process of ADAS calibration operations.

3. Remote Reports

This option lists all diagnostic reports generated in process of Tech 2 Tech remote diagnostics.

4. ROXIE Reports






This option stores all vehicle inspection reports generated by the ROXIE W device that has been bound to the tool.

5. Recorded Data

If user records the running parameters or waveform graphs while reading data stream, it will be saved as diagnostic records and appear under this tab.




Tap **Recorded Data**, and select certain diagnostic record to enter.

Select the desired data stream items and tap **OK** to navigate to the playback page.

Diagnostic Record			
Name	Value	English	Metric
Anti-theft Status	—		
Barometric air pressure	141.52	psi	
Barometric air pressure sensor signal voltage	28.92	V	
Battery voltage	28.92	V	
J1939 stop broadcast source address one	(1 / 1) 62464	count	

Auto Playback(x1) 0/20

FRAME PLAYBACK

 Graph
 Combine
 Value

On-screen Buttons:

Graph: Displays the parameters in waveform graphs.

Combine: This option is mostly used in graph merge status for data comparison. In this case, different items are marked in different colors.

Value: This is the default mode which displays the parameters in texts and shows in list format.

Frame Playback: Plays back the recorded data stream items frame by frame. Once it is in frame playback mode, this button changes into **Auto Playback**.

9 Software Update

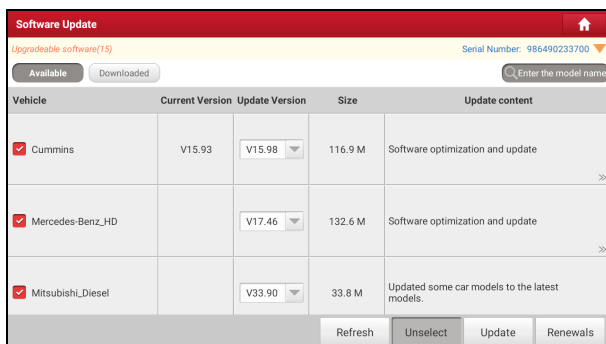
This module enables you to update the diagnostic software & App and frequently used software.

9.1 Update Diagnostic Software & APP

Go to **Software Update** on the Job Menu and tap the **Downloaded** tab.

The **Available** tab displays a list of software that can be updated. Under it, all software is categorized into three kinds:

- **Common software:** mainly includes some common apps that are associated with the diagnostic app. The software of this kind always stays at the top of the list, which can be deselected manually (excluding the system app, such as firmware and ECU aid).
 - **Frequently used vehicle software:** refers to the diagnostic software that is frequently used, including the vehicle diagnostic software and Reset software. It is generally displayed following the **Common software** list.
 - **Other vehicle software:** refers to the diagnostic software that is rarely used or never used. It is generally displayed following the **Frequently used software** list.
- 1). If the user does not download any diagnostic software during the sign-up process, all diagnostic software is selected by default. Tap **Update** to start downloading.
 - 2). If the user downloaded all/some vehicle software during the sign-up process and had it serviced for a long period of time, only the frequently used software is selected. Tap **Update** to start downloading. Other vehicle software that is rarely used will also be listed under the **Available** tab, but it is not selected at default.

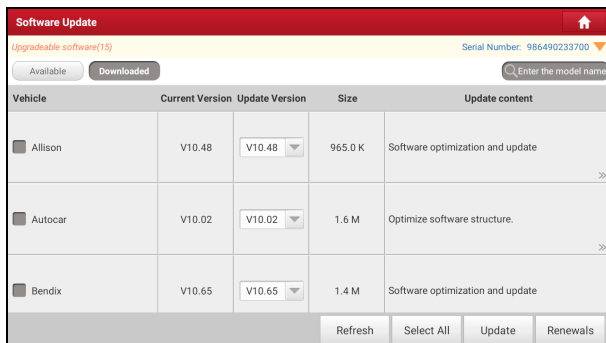


To download certain software that is not frequently used, check the box before the vehicle model. Tap **Update** to start downloading.

Once download is finished, the software packages will be installed automatically.

9.2 Update Frequently Used software

If the user only intends to update the frequently used software, go to **Software Update** and tap the **Downloaded** tab.



Tap **Update** to start downloading. Once download is finished, the software packages will be installed automatically.

9.3 Renew Subscription

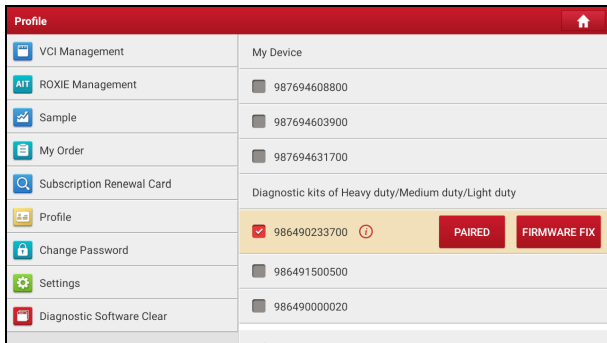
If the software subscription is due or expires, the system will prompt you to renew your subscription.

Tap **Renewal** on the bottom of the screen to go to the Mall to make payment.

10 Profile

This function allows users to manage personal information and VCI etc.

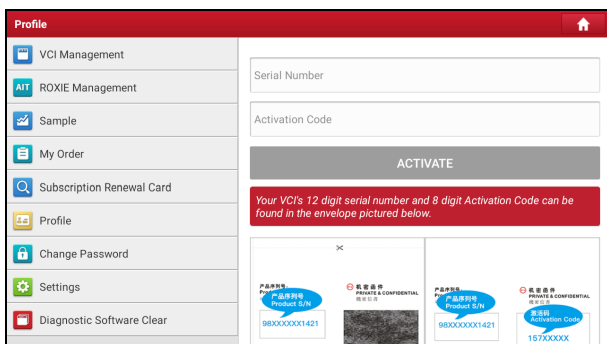
10.1 VCI Management




If several VCI devices are activated on this tool, a list of VCI devices will be displayed on the screen.

Once you choose the device that belongs to other account, you have to log out, and then input the right account to continue.

- If you use another VCI to test a vehicle, select the desired checkbox and tap **Pair** to pair it with the tablet.
- If the current VCI comes across communication failure, tap **Firmware Fix** to update and fix the diagnostic firmware. During fixing, please do not cut power or switch to other interfaces.
- If you use the current account to test a vehicle with another tablet, tap **Paired** to unpair the VCI device with the previously paired tablet.
- If you bought a new VCI device or skipped the Activate VCI step in process of sign-up, tap **Activate VCI** to activate it.



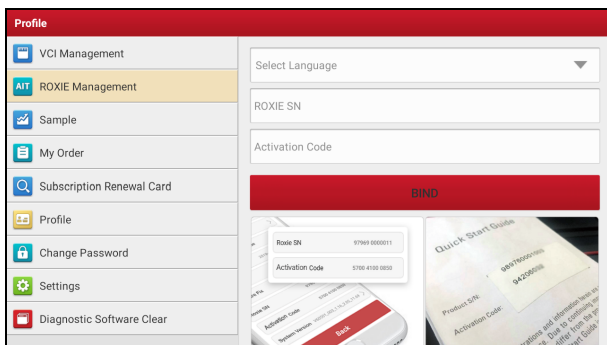
Input the Serial Number and Activation Code (can be found from the included Password Envelope), and then tap **Activate** to activate it.

 Note: please be sure to keep the VCI powered on while performing the operation.

10.2 ROXIE Management

This option is used to activate and bind the ROXIE W device to the tool. Once bound, the reports generated by the ROXIE W device will be automatically pushed to the tool each time the inspection session is finished.

Tap **ROXIE Management**, the following screen will appear:



Fill in the ROXIE W S/N and Activation Code (can be found in the Settings on the Job Menu), then tap **Bind**.

10.3 Sample

This feature allows you to manage the recorded data stream sample files.

10.4 My Order

This item allows you to check the status of all your orders.

10.5 Subscription Renewal Card

This item is used to check the status of the subscription renewal card.

Input the 12-digit subscription renewal card number. Tap **Search** to get the search result.

10.6 Profile

Use this item to view and configure personal information.

10.7 Change Password

This item allows you to modify your login password.

10.8 Settings

10.8.1 General

1). Units

It is designed to set the measurement unit. Metric System and English System are available.

2). Diagnostic Software Auto Update

This option is designed to turn on/off the automatic diagnostic software update function. If set as ON, the system will automatically update the available diagnostic software when the tablet has a network connection and a newer version is detected.

3). Automatic detection once connected

This option enables you to determine whether to start an automatic VIN

detection once the tablet is properly connected to the vehicle's DLC.

4). Auto Generate Health Report once connected

Once it is set as ON, the system will automatically output a health report once the AutoDetect diagnostic session is finished.

10.8.2 Shop Information

This option lets you define your print information. It mainly includes Workshop, Address, Zip Code, Telephone, Email etc.

Settings	
General	Shop Name shopbcvbgd
Shop Information	Address line1 avdfdvdfvf
Printer Set	Address line2 svsvffvs
Clear Cache	Country United States >
Log Out	County / Region sate
	City city
	Zip Code zipcode
	Telephone 18126555566

After inputting, tap **SAVE**.

Once you saved the print information, it will be entered automatically in the *More Information* box every time you save the diagnostic report.

10.8.3 Printer Set

This option is designed to establish a wireless connection between the tablet and the Wi-Fi printer (sold separately) while performing printing operations.

The App is compatible with the *LAUNCH Wi-Fi Printer* (sold separately) and *System* (external printer).

For LAUNCH Wi-Fi mini printer, follow the instructions described in the user manual included with the Wi-Fi mini printer to configure it.

For other Wi-Fi printers,

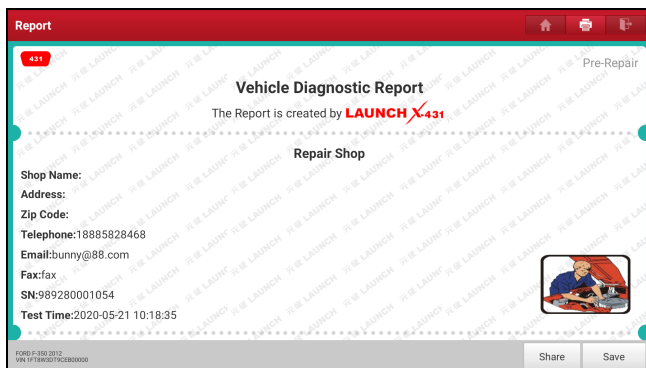
Before printing, make sure the following conditions are met:

- The Wi-Fi printer is powered on and working normally.

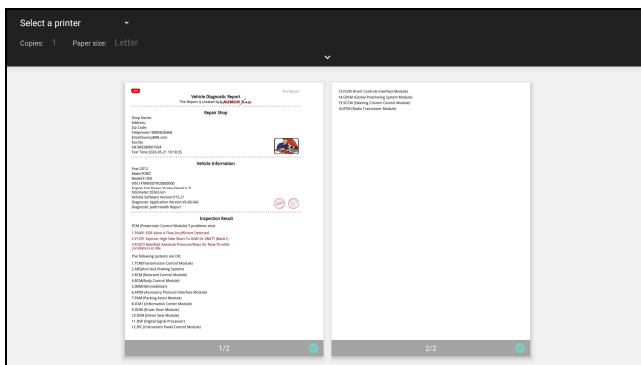
- The print service plug-in associated with the printer is already installed on the tablet (Go to Google Play or use the Browser to download and install it).

Follow the steps below to proceed:

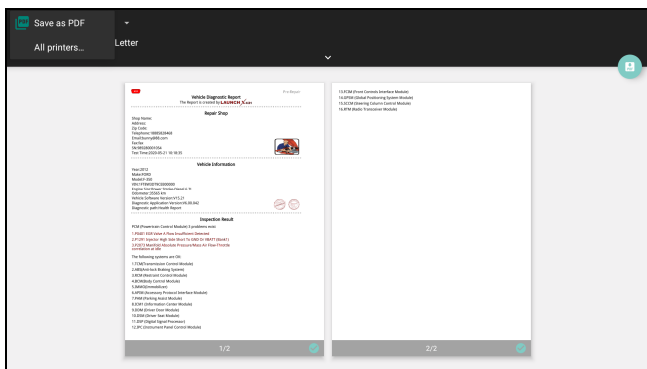
1. Set the default printer as **System**.
2. Go to **Settings -> Network & Internet -> WLAN**, set the WLAN switch to Off.
3. On the report details page, tap .



4. Touch  next to **Select a printer** on the upper left corner of the screen.



5. Select **All Printers -> Add printer** and enable the installed printer service, the system starts searching for all available Wi-Fi printers of the brand.



6. Select the desired Wi-Fi printer from the list. If the chosen Wi-Fi printer hotspot is open, the tablet can connect it directly. If it is encrypted, a password may be required. Refer to the Wi-Fi printer user manual to get the default password.
7. Now the printer is ready for printing.
8. Alternatively, you can also choose **Save as PDF** to save the current diagnostic report as a PDF file for later printing.

10.8.4 Clear Cache

This option allows you to clear the App cache. Clearing the cache will restart the App.

10.8.5 Login/Logout

To logout the current user ID, tap **Logout**.

To login the system again, tap **Login**.


10.9 Diagnostic Software Clear

This item allows you to hide/clear the diagnostic software that is not frequently used.

Tap **Diagnostic Software Clear** to enter.

Under the **Hide Software** tab, select the desired diagnostic software and tap **Hide**, it will become invisible. Tap **Unhide** to undo the hide operation.

Under the **Remove Software** tab, select the desired diagnostic software and tap **Delete**, it will disappear from the screen.

 Note: Removing software may completely delete the software from the tablet. If some software is not used and the tablet runs out of space, you can use this feature to remove it. To re-download it, go to **Software Update -> Available**.

11 Add-on Modules

11.1 TPMS

This module allows you to configure the tablet as TPMS activation & diagnostic tool, which provides the ability to trigger TPMS sensor, program TPMS sensor, perform the relearning procedure. It needs to work with the compatible TSGUN device (sold separately).

For more details, please refer to the User Manual included with the module.

11.2 ADAS (Calibration)

This module enables you to effectively and accurately calibrate a wide range of camera-based & radar-based driver assistance systems, e.g. the front camera for the lane departure warning system, the radar sensor for the ACC (Adaptive Cruise Control) or the camera for adaptive headlights. It needs to work with the specific ADAS calibration tool (sold separately).

For more details, please refer to the User Manual included with the module.

11.3 Videoscope

This module allows you to check those unseen parts of engine, fuel tank, braking system. It needs to work with the compatible Videoscope device (sold separately).

For more details, please refer to the User Manual included with the module.

11.4 BST360 (Battery Tester)

This module allows you to fix battery detection faster and easier. It needs to work with the specific Bluetooth battery tester (sold separately).

For more details, please refer to the User Manual included with the module.

11.5 Immobilizer Programmer

This module allows you to perform the read-write function for vehicle keys,

EEPROM, MCU, and EEPROM/FLASH of vehicle engine and gearbox ECU. It needs to work with the specific immobilizer programmer (sold separately).

For more details, please refer to the User Manual included with the module.

11.6 Mail

This module allows you to subscribe some extra software or service functions that are not included in the diagnostic tool online.


11.7 X-431 Scopebox

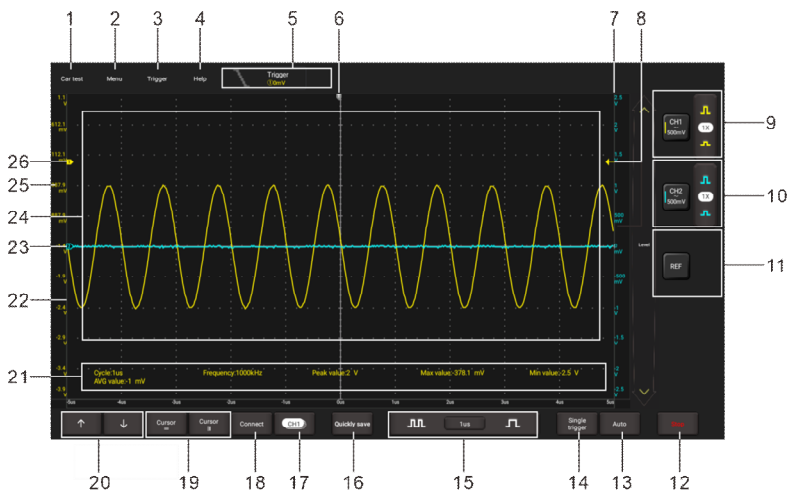
This module assists the auto repair technician with the ability to quickly identify faults on automotive electronic equipment and wiring. The oscilloscope sweep speed is far greater than the signal frequency of such vehicles, usually 5-10 times of the measured signal and quickly acquire the circuit signal while slowly displaying the waveform for observation and analysis. In this case, the DBSCar IX device works as a 2-channel oscilloscope.

11.7.1 Initial Use





1. Getting Started


Tap the app icon and the following screen will appear:

















 Note: If no proper connection is made, no waveforms will be displayed on the screen and most functions become disabled.



No.	Description	Operation tips
1	<p>Car Test</p> <p>Provides all kinds of the testing applications on the automotive parts (including circuits, sensors, actuators, ignition etc.).</p>	<p>Tap this button once to expand the submenu. Tap it again to fold the submenu.</p>
2	<p>Menu</p> <p>Includes the following options:</p> <ul style="list-style-type: none"> • Measure: 6 parametric measurement items. • Save: Save format and path of channel waveform. • Display: Set the display mode of the waveform. • User Settings: Clear data, access oscilloscope settings and automatic calibration. 	<p>Tap this button once to expand the submenu. Tap it again to fold the submenu. For detailed operations on the submenus, refer to section 4.4.</p>

	<ul style="list-style-type: none"> • About: Display the detailed information of the app. 	
3	<p>Trigger Use to setup trigger condition and trigger type.</p>	
4	<p>Help</p>	Check detailed operation instructions of application.
5	<p>Trigger information of current channel Readouts represent storage depth, sample rate and trigger information respectively.</p>	Displays working status.
6	<p> Horizontal trigger position marker</p>	
7	<p>Level scale of the Channel 2</p>	
8	<p>Edge trigger level marker</p>	
9	<p>Channel 1 vertical settings panel Controls the amplitude of displayed signal. User can change Invert, coupling and probe attenuation coefficient.</p>	<p>Tap  once - Turns on the channel and sets it as the current channel.</p> <p>Tap  twice - Calls out the channel vertical settings.</p>
10	<p>Channel 2 vertical settings panel Controls the amplitude of displayed signal. User can change Invert, coupling and probe attenuation coefficient.</p>	<p>Tap  three times - Turns off the channel.</p>
11	<p>Reference channel settings panel Setup reference channel.</p>	

12	<p>RUN/STOP/WAIT</p> <ul style="list-style-type: none"> • WAIT: All pre-triggered data has been acquired and the oscilloscope is ready to accept a trigger. • STOP: The oscilloscope has stopped acquiring waveform data. • RUN: The oscilloscope is running. 	
13	<p>Auto Automatically adjusts the vertical scale, horizontal scale and trigger settings.</p>	Tap this button to start auto setup function.
14	<p>Single trigger Capture one single trigger, complete acquisition, and then stop.</p>	
15	<p>Horizontal setting Control the time base.</p>	
16	<p>Quick save Quickly saves the measured waveform of current channel. To modify save path and file type, go into Menu -> Save.</p>	
17	<p> Channel selection button Tap it to select the target channel.</p>	Tap this button once, the channel (only the channels that have been turned on) selection pop-up will appear. Tap it again to fold the submenu.
18	<p>Connection status button</p>	Tap this button to search and connect the DBSCar IX device. It will display


		“Connected” when successfully connected.
19	 Cursor position Turn on/off the horizontal/vertical cursor measurement function. When set to ON, two horizontal/vertical reference lines named with Y1 & Y2/X1 & X2 will be displayed on the waveform display area. The user can use   or   to fine tune the line or drag the line directly to move it.	Tap this button once to start the cursor calculation function. Tap it again to disable it.
20	  or   Fine-tuning button Fine tunes the vertical/horizontal reference line.	When the horizontal cursor is ON, the fine tuning buttons display  and  . If the vertical cursor is ON, the fine tuning buttons will change into  and  .
21	Measurement value area	Go to Menu -> Measure to expand it.
22	Level scale of the Channel 1	
23	Channel 2 marker Shows the reference points of the displayed waveforms. If there is no marker, the channel is not displayed.	If the marker is displayed as  , it indicates the channel is not the current channel. Tap the marker  , it will change into  indicating the channel is the current channel.

24	Waveform display area	
25	Channel 1 marker Shows the reference points of the displayed waveforms. If there is no marker, the channel is not displayed.	Same with “Channel 2 marker.”

2. Automatic Calibration

The automatic calibration routine lets you optimize the oscilloscope signal path for maximum measurement accuracy. You can run the routine at any time but you should always run the routine if the ambient temperature changes by 10°C or more.


For accurate calibration, power on the DBSCar IX device and wait twenty minutes to ensure it is warmed up. Calibration mainly includes simulation channel calibration, trigger voltage of trigger circuit calibration and non-linear calibration of horizontal base line deviation.

 Note: During auto calibration, please make sure no signal in input terminal of CH1 / CH2, otherwise it may damage device.

Tap **Menu** -> **User Settings**, then tap **Automatic Calibration**.



Tap **OK** on the pop-up message box to start calibration. The Measurement LED on the DBSCar IX device starts flashing and the prompt message “Calibrating, please wait” will appear on the upper left corner of the screen.

 Note: While calibrating, no operations are allowed to perform until the calibration process is successfully finished.

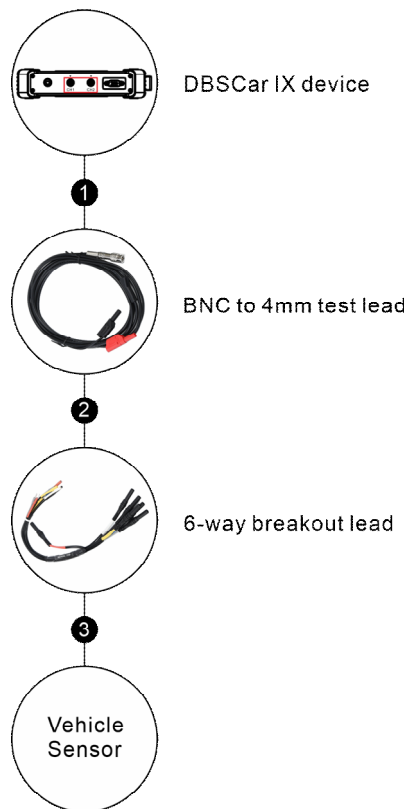
The self-calibration routine takes several minutes. After calibration is complete, the prompt message "Correction successful" will pop up on the screen.

Tap **OK** to complete automatic calibration.

3. Connection

Testing Sensor:

Follow the illustration below to proceed.



1. Connect the BNC connector of the BNC to 4mm test lead to the CH1/CH2 (select number of channel and channel No. according to actual situations).
2. Plug the black (GND) and red (SIGNAL) 4mm connectors into the Black (GND) and other color (SIGNAL) banana sockets of the 6-way breakout leads respectively.
3. Connect the black terminal and signal wire (its other end connected to the red 4mm connector) of the 6-way breakout lead to the GND and signal terminal of the vehicle sensor.

11.7.2 Operations

1. Channel Selection

A total of 3 channels are available: CH1, CH2 and REF (reference channel). Follow the methods to select a channel:

- A. Tap the channel tab shown on the right edge of the screen.



- B. Tap **CH1** to select the target channel. This method is only applicable to the channel that is turned on.



Note: For better comparison and identification, each channel and waveform is marked in different color.

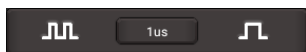
The oscilloscope can display multiple waveforms simultaneously, but only one waveform is allowed to display at top. The top channel is called current channel displayed as **▶**.



2. Channel Attributes & Trigger Setting

Channel attributes can be set via horizontal settings and vertical settings.

1). Horizontal Settings

User can change the horizontal time/division scale by tapping  or  directly or by tapping the time/division value from the pull-down list.

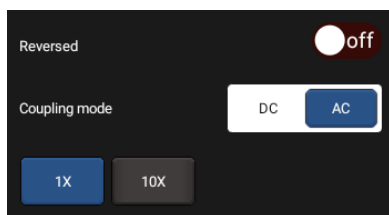


If the waveform acquisition is stopped, the time/division selector ( ) expands or compresses the waveform.

2. Vertical Setup

This option allows you to adjust vertical scale and position, and other channel setup. Each channel has one separate vertical menu, you can set individually.

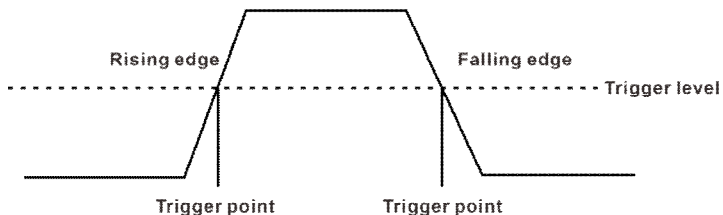
Tap the target channel to call out the vertical setting option.



Option descriptions:

Menu	Comments/Settings
Reversed	<p>This option will affect how channel is displayed.</p> <p><u>ON</u>: Turn on the invert function. When Invert is set as On, voltage value of displayed wave is reversed (upside down). When using basic trigger, it is necessary to adjust the trigger level to keep waveform triggered steadily.</p> <p><u>OFF</u>: Restore to the original display of the waveform.</p>
Coupling mode	<p>Trigger coupling determines what part of the signal passes to the trigger circuit. AC and DC are included:</p> <p><u>DC</u>: Both DC and AC current can pass through, and can be used to view waveform as low as 0Hz without large</p>

The oscilloscope applies edge trigger, which is the most commonly used and effective trigger method. A clear majority of applications apply this trigger method to trigger waveform. An edge trigger determines whether the oscilloscope finds the trigger point on the rising/falling/dual edge of a signal. When the tested signal voltage direction is consistent with preset direction, and the value reaches trigger voltage, the oscilloscope will be triggered and capture waveform.



Menu	Comments/Settings
Source	Select channel source of triggered signal.
Trigger	<p><u>Level</u>: The electrical level that signals shall exceed when capturing waveform.</p> <p><u>Rise</u>: Trigger on rising edge.</p> <p><u>Drop</u>: Trigger on falling edge.</p> <p><u>Close</u>: Turning off trigger mode.</p>

In this mode, the user can set the trigger level by directly dragging the Level scroll bar or the icon ← on the right side of the waveform display area.

3. Auto-Set

The oscilloscope has an auto-set feature that sets up the oscilloscope automatically to display the input signal in a best fit.

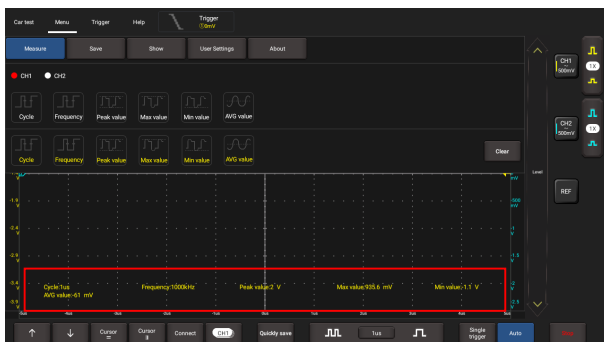
Tap **Auto**, the oscilloscope may change the current settings to display the signal. It automatically adjusts the vertical and horizontal scaling, as well as the trigger coupling and position.

4. Menu Operations

1. Measure

The oscilloscope provides 6 parametric auto measurements. Tap **Measure** and the following screen will appear:

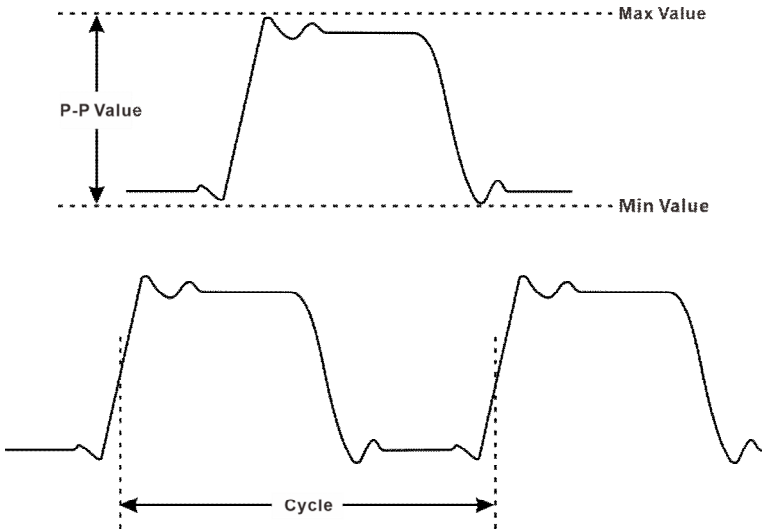
Tap to select the desired measurement item. All selected items will be shown on the left side of the **Clear** button.



Tap it to remove the measurement item. The values corresponding to the selected items will be displayed on the bottom of the screen.

Parameter type	Description
Cycle	Time for the first signal cycle to complete in the waveform.
Frequency	Reciprocal of the period of the first cycle in the waveform.
Peak value	Peak-to-peak = Max-Min, measured over the entire waveform.
Max value	Voltage of the absolute maximum level, measured over the entire waveform.
Min value	Voltage of the absolute minimum level, measured over the entire waveform.
AVG value	The arithmetic mean over the entire waveform.

The following illustrations explain some common measurement items for your reference.



Tap **Clear** to turn off all measurement items.

2. Save

This function allows you to save the waveforms of the channels.

Tap **Save** and the following screen will appear:



Select the desired measurement channel, select file type (.WAV or .CSV), tap the default file name to change the file name and select save. Alternatively, the

user can save the waveform files to the designated folder (R1, R2). If the files are saved under this folder, the user can recall the saved files for reference and play back through REF channel.

3. Display

This function enables you to setup waveform brightness and coordinate axis display level. Coordinate axis comes with Full, Grid, Crosshairs and Frame.

Tap **Display** and the following screen will appear:



4. User Settings

This option provides access to data clearing, waveform display, auto calibration and oscilloscope parameter save and recovery.

Tap **User Settings** and the following screen will appear:



Item description:

Clear Data: Clear saved data and user setup.

Oscilloscope settings: User can save system setup parameter using **Save** function. **Restore** function can enable user to use system setup saved previously to avoid repeated setup.

Automatic calibration: The self-calibration routine lets you optimize the oscilloscope signal path for maximum measurement accuracy.

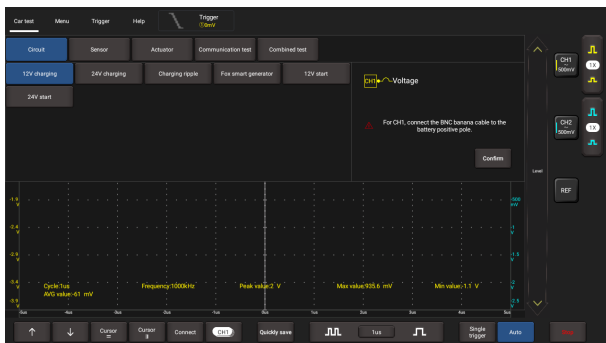
5. About

Displays basic information of the APP.

5. Car Test Operations

This function provides all kinds of the testing applications on the automotive parts (including circuits, sensors, actuators, ignition etc.) and detailed connection methods.

Tap **Car test** and the following screen will appear:



Tap to select the desired automotive part, the system will automatically configure the option to the preset parameters. The user does not need to make any settings. Just follow the on-screen instructions to make connections and proceed.

6. Cursor Measurement

The Cursor function can be used for assisting in measurement.

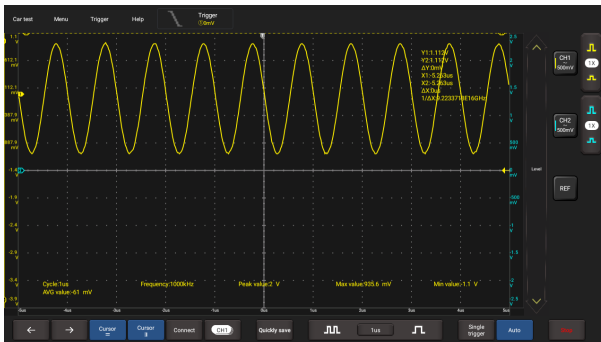
Tap  to turn on the cursor function and place the cursor on the

measurement point to read the waveform measurement value.

There are two types of cursors: horizontal cursor and vertical cursor. The horizontal cursor measures the value in the vertical direction, and the vertical cursor can measure the value in the horizontal direction.

When set to ON, two horizontal/vertical reference lines named with Y1 & Y2/X1 & X2 will be displayed on the waveform display area. The user can use \uparrow/\downarrow or \leftarrow/\rightarrow to fine tune the line or drag the line directly to move it.

Tap $\text{=}/\text{||}$ again to turn it off.



Note:

Δ Reading: indicates the difference between the two cursor positions.

The voltage reading after Y1, Y2: indicates the position of the activated cursor in the horizontal cursor relative to the zero level.

The time reading after X1, X2: indicates the position of the activated cursor in the vertical cursor relative to the trigger point.

1/ Δ X: Frequency.

7. Quick Save

This function is used to quickly save the currently running measurement waveform. The oscilloscope can save waveform of analog channel or mathematical channel to the local. Saved file format can be WAV or CSV.

The oscilloscope has two reference channels. WAV file can be uploaded to reference channel for waveform reference. Relevant setup can be found in "Menu".

8. REF (reference) Waveform

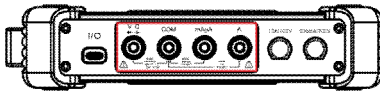
The oscilloscope has reference channel to display reference waveform. User can upload previously saved WAV file to reference channel and compare it with actual waveform to identify difference.

11.8 Multimeter

Meanwhile, the DBSCar IX device can work as a multimeter, which provides simple measurements to test voltage, current, resistance, diode and Make-and-break. The unit will determine if the device is operating normally, a fault is detected and if the circuit is complete.

11.8.1 Operation

1. First connect the DBSCar IX device to power supply.

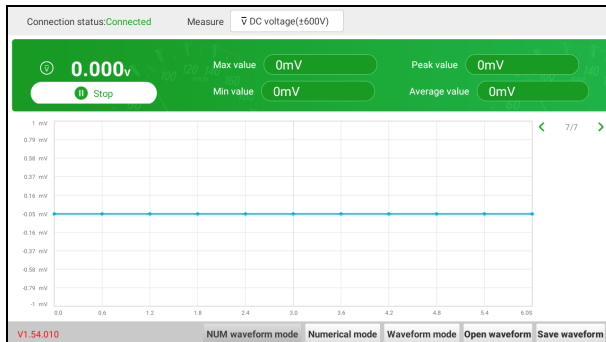


2. Connection method varies with tested object. Please refer to the following method to test:

A. Voltage Measurement

DC voltage and AC voltage measurement apply the same connection method.

1. Tap **Toolbox** -> **Multimeter** on the diagnostic tool to enter the following screen.




2. Select **DC voltage/AC voltage** and corresponding range. Tap **Not connected** to search for DBSCar IX devices. When it is successfully connected, the diagnostic tool will display connection status.
3. Insert the black and red test pen into COM and V/ Ω terminal of the DBSCar IX device respectively.
4. Attach black and red test pen tip to tested point. Keep test pen attached to it firmly.

Option descriptions:

Menu	Comments/Settings
Numerical waveform mode	Displays the measurement result in both numerical and waveform form.
Numerical mode	Displays the measurement result in numerical form.
Waveform mode	Displays the measurement result in waveform form.
Open waveform	Open saved waveform file.
Save waveform	Save measurement result as a waveform file.

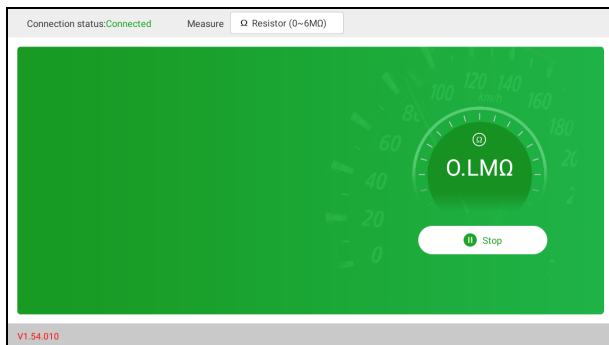
5. Tap **Start**, a numerical value will be displayed directly on the diagnostic tool.

 **Warning:** The tip of the test pen is metal, do not touch it with hands during measurement, otherwise it might cause electricity shock and affect measurement results.


B. Current Measurement

DC current and AC current measurement apply the same connection method.

1. Tap **Toolbox -> Multimeter** on the diagnostic tool to enter the following screen.



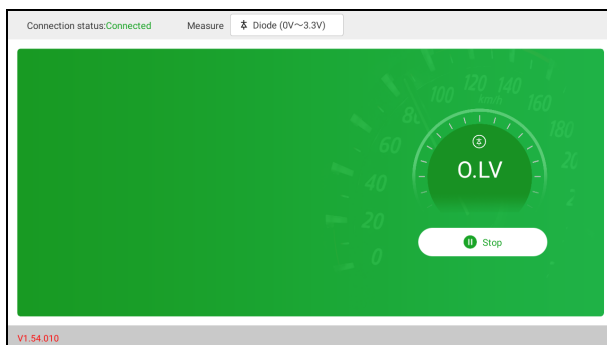
2. Select **Resistance**, tap **Not connected** to search for DBSCar IX devices. When it is successfully connected, the diagnostic tool will display connection status.
3. Insert the black and red test pen into **COM** and **V/Ω** terminal of the DBSCar IX device respectively.
4. Attach the black and red test pen to metal part of resistance ends. Keep test pen firmly attached to resistance.
5. Numerical value will be displayed directly on the diagnostic tool.

 Note: You can touch resistance with hands during measurement, but do not touch both ends of resistance simultaneously, as it will affect measurement accuracy.

D. Diode Measurement

This multimeter can measure light-emitting diode and rectifier diode. The way test pen is placed is the same with voltage measurement.

1. Tap **Toolbox -> Multimeter** on the diagnostic tool to enter.
2. Select **Diode**, tap **Not connected** to search for DBSCar IX devices. When it is successfully connected, the diagnostic tool will display connection status.



3. Insert the black and red test pen into **COM** and **V/Ω** terminal of the DBSCar IX device respectively.
4. Attach red test pen to positive end of diode, black test pen to negative end of diode. Keep test pen firmly attached to diode.
5. Diode forward conduction current will be displayed directly on the diagnostic tool.

E. Make-and-break Measurement

1. Tap **Toolbox -> Multimeter** on the diagnostic tool to enter.
2. Select **On/Off**, tap **Not connected** to search for DBSCar IX devices. When it is successfully connected, the diagnostic tool will display connection status.
3. Insert the black and red test pen into **COM** and **V/Ω** terminal of the DBSCar IX device respectively.
4. Attach red and black test pen to tested point.
5. Readings will be displayed directly on the diagnostic tool.

11.8.2 Test Example

Knock sensor test

(1) Detect knock sensor resistance

Turn off the ignition switch, disconnect the knock sensor wire connector, and use **Resistance** to detect the resistance between the knock sensor wire terminal and the housing. The resistance should be ∞ (disconnected). If the resistance is 0Ω (connected), the knock sensor must be replaced. For the magnetostrictive

knock sensor, "Resistance" can also be used to detect the coil resistance. The resistance should be consistent with the specified value (Refer to the service manual for the specific data). Otherwise, the knock sensor must be replaced.

(2) Check knock sensor output signal

Remove the knock sensor plug. Use **AC Voltage** to check the voltage between the knock sensor wire terminal and ground when the engine is idling. There should be a pulse voltage output. If there is no voltage output, replace the knock sensor.

Cooling water temperature sensor test

(1) Detect coolant temperature sensor resistance

Check on the vehicle: Turn off the ignition switch, disconnect the coolant temperature sensor wire connector, and use **Resistance** to test the resistance between the two terminals of the sensor. Its resistance value is inversely proportional to the temperature (negative temperature coefficient) and should be less than 1k Ω during warm-up.

Single piece check: disconnect the coolant temperature sensor wire connector, remove the sensor from the engine, place the sensor into the water in the beaker, heat the water in the beaker, and use **Resistance** to test the resistance between the two terminals of the sensor under different water temperature conditions. Compare the measured value with the standard value. If the standard value is not met, the coolant temperature sensor should be replaced.

(2) Detect coolant temperature sensor output signal voltage

Install the coolant temperature sensor, insert the sensor wire connector, turn on the ignition switch, and test the sensor output voltage signal between the two terminals of the coolant temperature sensor wire connector. The measured voltage value should vary inversely with the coolant temperature. When the coolant temperature sensor harness is disconnected and the ignition switch is on, the voltage should be about 5V.

11.8.3 Attention

1. Before usage, please reset APP value on the multimeter to zero.

2. The tip of the test pen is metal, do not touch it with hands during measurement, otherwise it might cause electric shock and affect measurement results.
3. Before test, please check measurement range and socket into which the test pen is inserted, perform test after checked with no error.
4. If it is unable to estimate measured value, choose max measurement range, and shift to suitable range based on measured results.
5. **It is strictly forbidden to shift measurement range when measuring high voltage or large current, as it can cause electric arc to burn switch contact. If you want to change range, please disconnect metal contact tip first.**
6. **To avoid instrument damage, it is strictly forbidden to measure resistance when tested circuit is powered on.**
7. When you want to measure DC current with multimeter, please reset it to zero first, then select suitable measurement range. Current varies in different modules, please refer to module mark to shift measurement range. During measurement, connect the multimeter in series, and measure circuit one by one. The bypass voltage can be disconnected. Please be aware that parallel connection of multimeter is forbidden, as it can cause multimeter damage and personnel injury.

12 FAQ

1. How to save power?

- Please turn off the screen while the tool keeps idle.
- Set a shorter standby time.
- Decrease the brightness of the screen.
- If WLAN connection is not required, please turn it off.

2. Communication error with vehicle ECU?

Please confirm:


1. Whether the VCI device is correctly connected.
2. Whether ignition switch is ON.
3. If all checks are normal, send vehicle year, make, model and VIN number to us using Diagnostic Feedback feature.

3. Failed to enter into vehicle ECU system?

Please confirm:

1. Whether the vehicle is equipped with this system.
2. Whether the VCI device is correctly connected.
3. Whether ignition switch is ON.
4. If all checks are normal, send vehicle year, make, model and VIN number to us using Diagnostic Feedback feature.

4. How to reset the tablet?

 Resetting may cause data loss. Before doing so, please make sure important data and information has been backed up.

Do the following to reset the tablet:

1. Tap **Settings -> System -> Reset options**.
2. Tap **Erase all data (factory reset)**.
3. Tap **RESET TABLET**.

4. Tap **ERASE EVERYTHING** to start resetting until the tool automatically reboots.

5. What to do if the language of vehicle diagnostic software does not match the system language?

English is the default system language of the tool. After the system language is set to the preference language, please go to the update center to download the vehicle diagnostic software of the corresponding language.

If the downloaded diagnostic software is still displayed in English, it indicates that the software of the current language is under development.

6. How to retrieve the login password?

Please follow below steps to proceed in case you forgot the login password:

1. Tap the application icon on the home screen to launch it.
2. Tap the **Login** button on the upper right corner of the screen.
3. Tap **Retrieve password**.
4. Input product S/N and follow the on-screen prompts to retrieve the password.

7. How to backup system data?


There are two USB ports available on this tool: USB Type A and USB Type C. The former is reserved for external USB storage device and the latter is used with PC when performing system data backup. It is strongly recommended to use the USB Type C interface for this operation.

A. If exchanging data with an external USB storage device.

1. Plug the USB storage device into the USB Type A interface.
2. Swipe the screen from the top to select the USB drive.
3. Now you can exchange the data with the USB storage device.

B. If exchanging data with a PC.

1. On the home screen, tap **Settings** -> **USB Management**. Slide the USB Switch to OFF to enable the USB Type C interface.

 Note: By default, the USB Switch is set as ON. In this case, the USB Type C interface is only for charging and disabled for data exchange.

-
2. Plug the Type C end of the included data cable into the Type C port of the tool, and the other end to the USB port of the PC.
3. After the PC successfully identifies the tool, you can perform data backup.

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 stipulated procedures.

Order Information

Replaceable and optional parts can be ordered directly from your authorized tool supplier. Your order should include the following information:

- Quantity
- Part number
- Item description

Customer Service

If you have any questions or comments please forward them to:

LAUNCH Tech USA

Product Support

Phone: 877-528-6249 xt: 4

E-mail: support@launchtechusa.com

Fax: 562-463-1590

Monday - Friday 5 am - 5 pm PST

Service & Repair

Phone: 877-528-6249 xt: 5

Monday - Friday 8 am - 5 pm PST

If your unit requires repair service, return it to the manufacturer with a copy of the sales receipt and a note describing the problem. If the unit is determined to be in warranty, it will be repaired or replaced at no charge. If the unit is determined to be out of warranty, it will be repaired for a nominal service charge plus return freight. Send the unit pre-paid to:

Attn: LAUNCH Tech USA
1820 South Milliken Ave.
Ontario, CA 91761

Statement:

LAUNCH reserves the rights to make any change to product designs and

specifications without notice. The actual object may differ a little from the descriptions in the manual in physical appearance, color and configuration. We have tried our best to make the descriptions and illustrations in the manual as accurate as possible, and defects are inevitable, if you have any question, please contact local dealer or after-sale service center, LAUNCH does not bear any responsibility arising from misunderstandings.