Version: V1.00.000
Revised date: July 24, 2019

Important Safety Precautions

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

• Never collide, throw, or puncture the tool, and avoid falling, extruding and bending it.

• Do not insert foreign objects into or place heavy objects on your device. Sensitive components inside might cause damage.

• Do not use the device in exceptionally cold or hot, dusty, damp or dry environments.

• In places using the tool may cause interference or generate a potential risk, please turn it off.

• The 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.

• DANGER: Do not attempt to replace the internal rechargeable lithium battery. Contact the dealer for factory replacement.

• CAUTION: Please use the included battery and charger. Risk of explosion if the battery is replaced with an incorrect type.

Precautions on Using X-431 Euro Mini

Before using this test equipment, please read the following safety information carefully.

• Always perform automotive testing in a safe environment.

• Wear an ANSI-approved eye shield when testing or repairing vehicles.

• The vehicle shall be tested in a well-ventilated work area, as engines produce various poisonous compounds (hydrocarbon, carbon monoxide, nitrogen oxides, etc.)

• Do not connect or disconnect any test equipment while the ignition is on or the engine is running.

• Put blocks in front of the drive wheels and never leave the vehicle unattended while testing.

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

necessary.

- Do not drive the vehicle and operate the test equipment at the same time. Any distraction may cause an accident.

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

- 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.

- To avoid damaging the test equipment 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.

Precautions on Operating Vehicle's ECU

- 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.

TABLE OF CONTENTS

1 Introduction

1.1 Product Profile

X-431 Euro Mini is a new Android-based vehicle trouble diagnostic tool. It is characterized by covering a wide range of vehicle models, featuring powerful functions, and providing precise test result.

Through simple communication between the handset and vehicle, 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.

1.2 Features

1. Diagnose:

- Diagnose: To diagnose a vehicle by performing menu-driven command manually. Diagnosis functions include: Read DTCs, Clear DTCs, Read Data Stream, Special Functions etc.

- 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 the necessity of starting from scratch.

- 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.

- Vehicle Coverage: Quick dial to view the vehicle models that the tool covers.

2. Wi-Fi connection is supported.

3. Web browser: Users can make online search and visit any website.

2 Knowledge of X-431 Euro Mini

2.1 X-431 Euro Mini Handset

Fig. 2-1

1	**POWER key**	In Off mode, press it for 3 seconds to turn the tool on. In On mode: • Press it to activate the LCD if the LCD is off.

		⬩ Press it to turn off the LCD if the LCD lights up.
		⬩ Press it for 3 seconds to turn it off.
2	**DB-15 diagnostic connector**	
3	🏠	Press to navigate to the Job Menu.
4	(cursor up/down control)	Move cursor up or down for selection.
	(cursor left/right control)	Move cursor left or right for selection; or turn page up and down when more than one page is displayed.
5	**OK**	Confirms a selection (or action) from a menu list.
6	↩	Return to the previous screen.
7	**Speakers**	
8	**Foldable Stand**	Flip out it to any angle and work comfortable at your desk, or hang it on the steering wheel.
9	**LCD Screen**	Indicates the test result.
10	**Charging LED**	RED means Charging, and GREEN means Fully Charged.
11	**DC-IN Port**	To connect to AC outlet for charging.

2.2 Technical Specifications

Operating system	Android
Memory	1GB

Storage	16GB
Screen	7 inch capacitive touch screen
OBD II input voltage range	9~18V
Charging via	• DC 5V charging cable • Diagnostic cable through connection to vehicle's DLC
Working temperature	0℃ ~ 50℃
Storage temperature	-20℃ ~ 70℃

2.3 Package List

Common accessories are same, but for different destinations, the accessories (such as diagnostic software, testing connectors) may vary. Please consult from the local agency or check the package list supplied with the tool together.

No.	Item	Descriptions	Qt.
1	X-431 Euro Mini handset	Indicates the test result.	1
2	Diagnostic cable	To connect the tool to the OBD II vehicle's DLC.	1
3	Password envelope	A piece of paper bearing the product Serial Number and Activation Code for product registration.	1
4	Power adaptors & cable	For charging the tool via AC outlet.	1
5	OBD I adaptor box	For connecting the diagnostic cable and non-16pin adaptor cable.	1

6	Non-16pin adaptor cable kit	To connect to the vehicle equipped with non-OBD II management system.	1

3 Preparations

3.1 Charging the tool

1. Insert one end of the included charging cable into the power adaptor.
2. Connect the other end into the DC-IN port of the tool.
3. Plug the adaptor into AC outlet.

If appears on the screen, it indicates it is being charged. If the logo changes into , it indicates that the battery is fully charged. Unplug the power adaptor from the AC outlet.

3.2 Using your battery

*   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.
*   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.
*   While the tool has low battery, a beep will sound. If it is very low, the tool will be switched off automatically.

3.3 Power on/off

3.3.1 Power on

Press [POWER] to turn the tool on.

*Note: If it is the first time you have used this tool or the tool remains idle for a long period of time, the tool could fail to turn on. Please charge the tool for a minimum of 5 minutes and attempt to turn on again.

3.3.2 Power off

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

3.4 Screen layout

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

🏠	Tap to navigate to the Job Menu.
⬛	Tap it to display a list of applications that are currently running or recently used.
🖼	Tap it to capture the current screen and all captured screenshots are stored in the Screenshots folder.
↩	Tap it to return to the previous screen or exit the application.

3.5 Adjust brightness

*Tips: Reducing the brightness of the screen is helpful to save the power of the tool.

1. On the Job Menu, tap **Tablet Settings -> Display -> Brightness level**.
2. Drag the slider to adjust it.

3.6 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 Job Menu, tap **Tablet Settings -> Display -> Sleep**.
2. Choose the desired sleep time.

3.7 Network Setup

*Note: Once WLAN is set as ON, the tool will consume more power. While WLAN keeps unused, please turn it off to conserve battery power.

The tool has a built-in Wi-Fi module that can be used to get online. Once you're online, you can register the tool, update the diagnostic software & APK, surf the Internet and send email on your network.

3.7.1 Connect to a Wi-Fi network

1. On the Job Menu, tap **Tablet Settings** -> **Wi-Fi**.
2. Tap or slide the Wi-Fi switch to ON, the tool starts searching for all available wireless LANs.

3. Choose the desired Wi-Fi access point / network,

   • If the network you chose is open, you can connect directly.

   • If the selected network is encrypted, you have to enter the right security key (network password).

3.7.2 Disconnect from a Wi-Fi network

1. On the Job Menu, tap **Tablet Settings** -> **Wi-Fi**.

2. Tap the network with a **Connected** status, then tap "Disconnect".

4 Initial Use

4.1 Getting Started

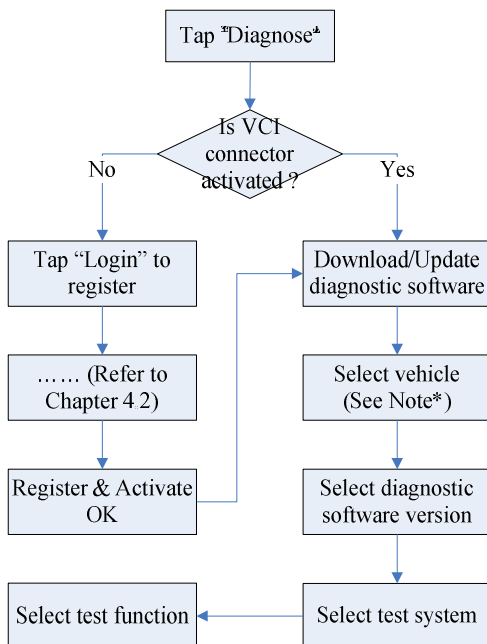For new users, please follow the operation chart shown in Fig. 4-1 to start using this tool.

```
                    ┌─────────────────────┐
                    │   Tap "Diagnose"     │
                    └─────────────────────┘
                               │
                               ▼
                         ╱ Is VCI ╲
                  No   ╱  connector  ╲   Yes
              ◄───────╱  activated ? ╲───────►
                      ╲              ╱
                       ╲            ╱
        │                                      │
        ▼                                      ▼
┌─────────────────┐              ┌─────────────────────┐
│ Tap "Login" to  │              │  Download/Update    │
│    register     │              │ diagnostic software │
└─────────────────┘              └─────────────────────┘
        │                                      │
        ▼                                      ▼
┌─────────────────┐              ┌─────────────────────┐
│ …… (Refer to    │              │   Select vehicle    │
│  Chapter 4 2)   │              │   (See Note* )      │
└─────────────────┘              └─────────────────────┘
        │                                      │
        ▼                                      ▼
┌─────────────────┐              ┌─────────────────────┐
│Register & Activate              │ Select diagnostic   │
│      OK         │              │ software version    │
└─────────────────┘              └─────────────────────┘
        │                                      │
        │                                      ▼
        ▼                                      │
┌─────────────────┐              ┌─────────────────────┐
│Select test function│◄───────────│ Select test system  │
└─────────────────┘              └─────────────────────┘
```

Fig. 4-1

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4.2 Register & Download Diagnostic Software

4.2.1 User registration

After the tool is initialized, tap "Login" on the upper right corner of the screen, a screen similar to the following appears.
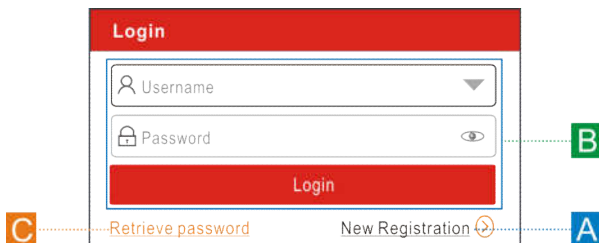

Fig. 4-2

(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 registration page. See Fig. 4-3.
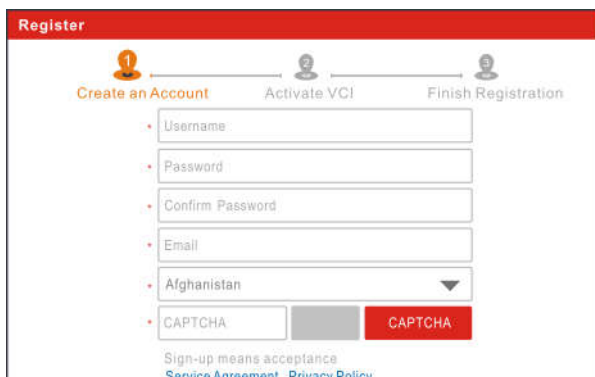
Fig. 4-3

In Fig. 4-3, fill in the information in each field (Items with * must be filled). After inputting, tap "Register", a screen similar to the following will appear:
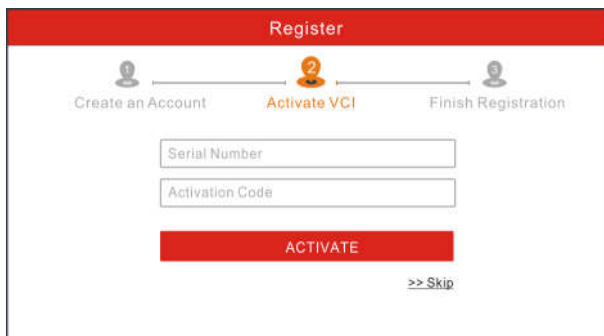
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Fig. 4-4

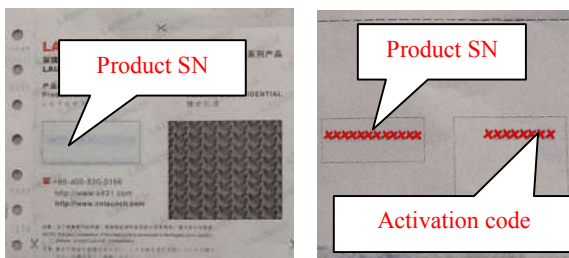In Fig. 4-4, input the Serial Number and Activation Code, which can be found in the password envelope.

Fig. 4-5

Note: To exit and activate it later, tap "Skip". In this case, you can activate your connector by tapping "Activate VCI" in "User Info". For details, please refer to Chapter 9.4.

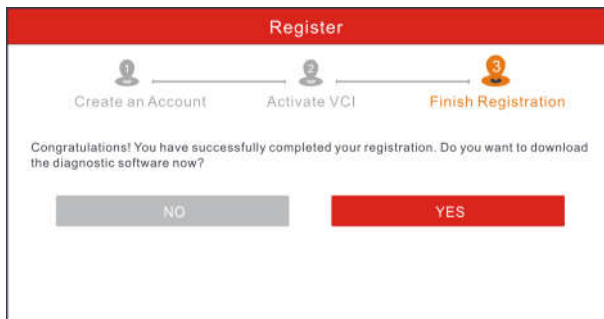Tap "Activate" to finish your registration. See Fig. 4-6.

Fig. 4-6

To download the diagnostic software, tap "Yes" to enter the software update screen.

Tap "No" to download and install it later.

On the update page, tap "Update" to start downloading. To pause downloading, tap "Stop". To resume it, tap "Continue". Once download is complete, the system will install the software package automatically.

*Note: In process of download, please make sure the tool has a strong Wi-Fi signal. It may take several minutes 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 tool has an auto-save function. Once the username and password are correctly entered, the system will automatically store it. Next time you login the system, you will not be asked to input the account manually.

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

4.2.2 Job menu

It mainly includes the following items:

Name	Description
Diagnose	To diagnose a vehicle manually.
Software Update	To update vehicle diagnostic software and APK.

Diagnostic History	Generally once a vehicle diagnosis is performed, the tool will automatically save every details of diagnostic process. This function provides a quick access to the tested vehicles. Test can be resumed from the last operation, without starting from scratch.
Vehicle Coverage	To view all the vehicle models that the tool covers.
Diag Feedback	To feed back the recent 20 diagnostic logs to us for issue analysis.
Maintenance	Abundant maintenance data are available, which helps repair professionals diagnose and repair vehicles efficiently, accurately and profitably.
User Info	To manage my reports, change password, configure Wi-Fi printer and system settings and logout etc.
Tablet Setting	Make some system settings of the tool, such as Wi-Fi, system language and brightness level etc.
More	Includes TeamViewer, Email, Browser, and product manual etc.

4.2.3 Vehicle menu layout

After downloading the diagnostic software, go to "Diagnose" to check if all software are completely downloaded and installed.

Tap "Diagnose", a screen similar to the following figure appears:

Fig. 4-7

1	**All** Tab: Displays all the vehicle makes in the vehicle menu.
2	**Common** Tab: Displays all the commonly used vehicle makes.
3	Vehicle region buttons: Tap different buttons to switch to corresponding vehicles.

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4	Search bar: Enables you to use the virtual keyboard to quickly locate the vehicle model. Input the desired vehicle model to start searching.

4.2.4 Diagnostics toolbar

The 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. The table below provides a brief description for the operations of the diagnostics toolbar buttons:

Fig. 4-8

Name	Button	Description
Home		Returns to Job menu screen.
Print		Tap to print the current screen. To perform printing, you need to purchase an extra Wi-Fi printer manufactured by LAUNCH separately and then properly configure it following the steps described in Chapter 9.10.3.
Exit		To exit the diagnostic application.

4.3 Connections

4.3.1 Preparation

<u>Normal testing conditions</u>

• Turn on the vehicle power supply.
• The vehicle battery voltage should be 9~18V.
• Throttle should be in a closed position.

4.3.2 DLC location

The DLC (Data Link Connector) is typically a standard 16 pin connector where diagnostic code readers interface with the vehicle's on-board computer. The DLC is usually located 12 inches from the center of the instrument panel (dash), under or around the driver's side for most vehicles. If Data Link Connector is not

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located under dashboard, a label should be there telling location. For some Asian and European vehicles, the DLC is located behind the ashtray and the ashtray must be removed to access the connector. If the DLC cannot be found, refer to the vehicle's service manual for the location.
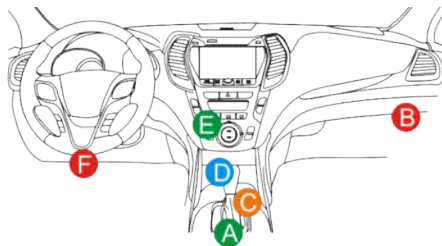

Fig. 4-9

4.3.3 Vehicle connection

The method used to connect the main cable to a vehicle's DLC depends on the vehicle's configuration as follows:

A. OBD II Vehicle Connection: Plug one end of the main cable into the vehicle's DLC, and the other end into the DB15 diagnostic socket of the tool, and then tighten the captive screws.

B. Non-OBD II Vehicle Connection: For vehicles with non-OBD II diagnostic socket, a non-16pin adaptor cable is required.

a). For non-OBDII Passenger Vehicles, proceed as follows:

1. Select the non-16pin adaptor cable corresponding to the tested vehicle.

2. Plug one end of the main cable into the DB15 diagnostic socket of the tool, and the other end to into the OBD I adaptor.

3. Plug the non-16pin end of the adaptor cable into the DLC socket, and the other end to the OBD I adaptor, and then tighten the captive screws.

4. To supply power to OBD I adaptor from:

A. Cigarette Lighter Cable (not included): Connect one end of the cigarette lighter cable to vehicle's cigarette lighter receptacle, and the other end to the power jack of OBD I adaptor.
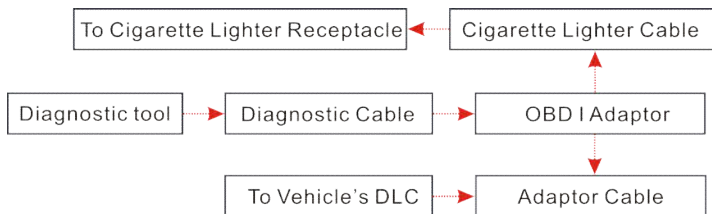
```
┌─────────────────────────────────┐      ┌──────────────────────────────┐
│ To Cigarette Lighter Receptacle │◄┄┄┄┄┄│  Cigarette Lighter Cable     │
└─────────────────────────────────┘      └──────────────────────────────┘
                                                         ▲
                                                         ┊
┌─────────────────┐    ┌──────────────────┐    ┌──────────────────────┐
│ Diagnostic tool │┄┄►│ Diagnostic Cable │┄┄►│    OBD I Adaptor     │
└─────────────────┘    └──────────────────┘    └──────────────────────┘
                                                         ┊
                                                         ▼
                    ┌──────────────────┐    ┌──────────────────────┐
                    │ To Vehicle's DLC │┄┄►│    Adaptor Cable     │
                    └──────────────────┘    └──────────────────────┘
```

Fig. 4-9

B. Battery Clamps Cable (not included):   Connect one end of the battery clamps cable to vehicle's battery, and the other end to the power jack of OBD I adaptor.

```
┌──────────────────────┐      ┌──────────────────────────────┐
│ To Vehicle's Battery │◄┄┄┄┄┄│  Battery Clamps Cable        │
└──────────────────────┘      └──────────────────────────────┘
                                              ▲
                                              ┊
┌─────────────────┐    ┌──────────────────┐    ┌──────────────────────┐
│ Diagnostic tool │┄┄►│ Diagnostic Cable │┄┄►│    OBD I Adaptor     │
└─────────────────┘    └──────────────────┘    └──────────────────────┘
                                                         ┊
                                                         ▼
                    ┌──────────────────┐    ┌──────────────────────┐
                    │ To Vehicle's DLC │┄┄►│    Adaptor Cable     │
                    └──────────────────┘    └──────────────────────┘
```
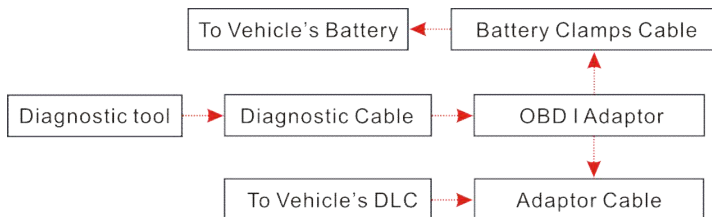
Fig. 4-10

5 Diagnosis

5.1 Diagnose

Tap "Diagnose" to enter the vehicle selection page.

Tap a corresponding diagnostic software logo, and then follow the on-screen instruction to access the diagnostic software.

Take Demo as an example to demonstrate how to diagnose a vehicle.

1). Select diagnostic software version: Tap the "DEMO" to go to Step 2. (Note: If more than one version is available on this tool, it will be listed on the screen.)
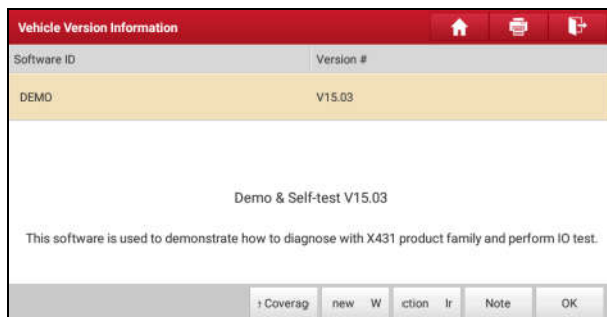

Fig. 5-1

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 newly added function.

Introduction: Tap to check the software function list.

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

OK: Tap it to go to next step.

2). Select test item: Select the desired test item to proceed.

Fig. 5-2

5.1.1 Health Report (Quick Test)

This function varies from vehicle to vehicle. It enables you to quickly access all the electronic control units of the vehicle and generate a detailed report about vehicle health.

Tap "Health Report", the system start scanning the ECUs.

Once the scanning is complete, a screen similar to the following appears:
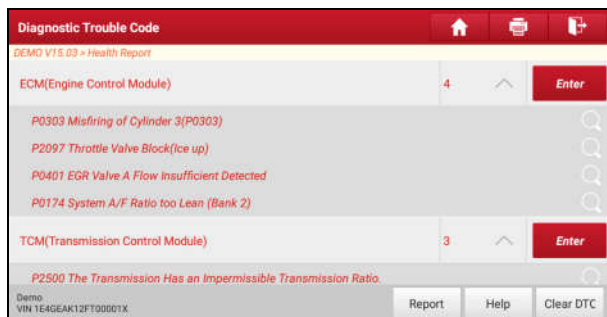
Fig. 5-3

In the above figure, the tested system with fault code appears in red and the system with OK displays in black (normally).

On-screen Buttons:

Enter: Tap to enter the diagnostic menus of the current system.

Search: Tap to launch the browser to search for more detailed information about the current DTC online.

Clear DTC: 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

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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.

Report: Tap to save it as a diagnostic report.

Fig. 5-14

Input the required information, and then tap "OK" to save it.

Alternatively you can also set the workshop information in "User Info" -> "Settings" -> "Print Information".

Once you configured the information, it will be automatically generated every time you saved the diagnostic report. All vehicle and workshop information will be appended to the diagnostic report.

To skip the workshop information, tap "Skip" to go to the next step.

All reports are saved under the tab "Diagnostic Report" in "My Report" from "User Info" menu. For details on report operations, please refer to Chapter 9.1 "My Report".

5.1.2 System Scan

This option allows you to quickly scan which systems are installed on the vehicle.

In Fig. 5-2, tap "System Scan", the system start scanning the systems. Once the

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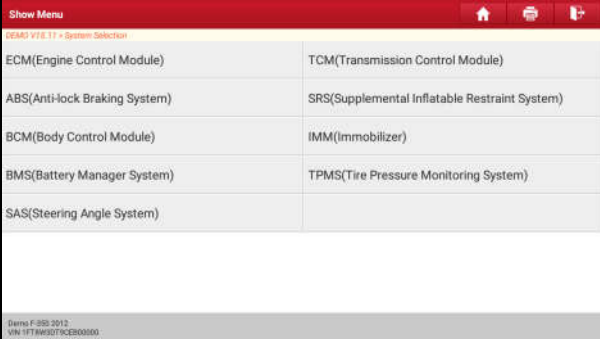scanning is complete, the screen will display the result.

Fig. 5-5

Tap the desired system to advance to the test function selection page. For detailed operations on test function, please refer to Chapter 5.1.3.

5.1.3 System Selection

This option allows you manually select the test system and function step by step.

In Fig. 5-2, tap "System Selection", the screen displays as follows:

Fig. 5-6

Swipe the screen from the bottom to view the vehicle system on the next page.

Tap the desired system (take "ECM" for example) to jump to the test function page.
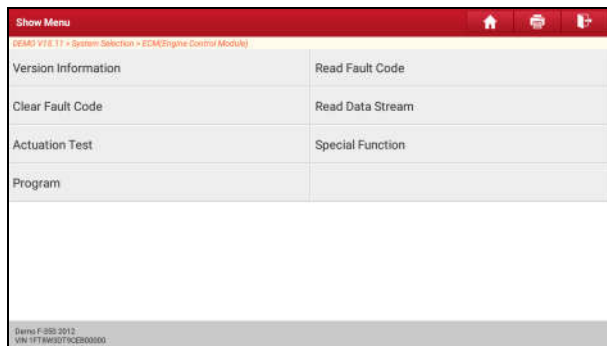
Fig. 5-7

Note: Different vehicle has different diagnostic menus.

A. Version 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.

*Notes:

• 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.

• 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.

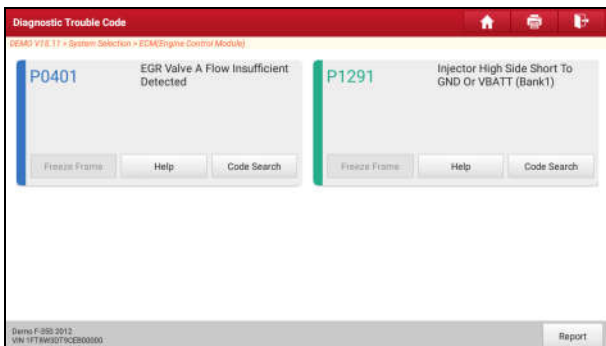In Fig. 5-7, tap "Read DTC", the screen will display the diagnostic result.

Fig. 5-8

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.

Report: To save the current data in text format. All reports are saved under the tab "Diagnostic Report" in "My Report" from "User Info" menu. For details on report operations, please refer to Chapter 9.1 "My Report".

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.

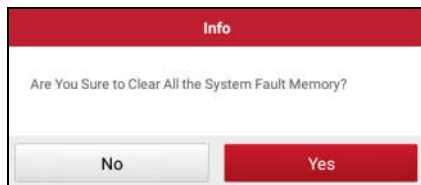In Fig. 5-7, tap "Clear Fault Code", a confirmation dialog box pops up on the screen.

Fig. 5-9

Tap "Yes", the system will automatically delete the currently existing trouble code.

*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.

*Note: 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.

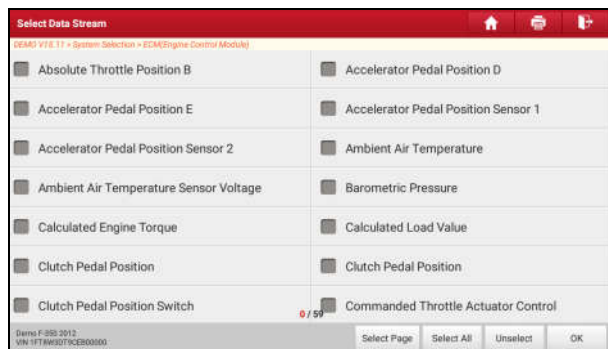In Fig. 5-7, tap "Read Data Stream", the system will display data stream items.

Fig. 5-10

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On-screen Buttons:

Select Page: Tap it to select all items of the current page.

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

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.

Fig. 5-11

Notes:

1. 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).

2. 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.

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

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:

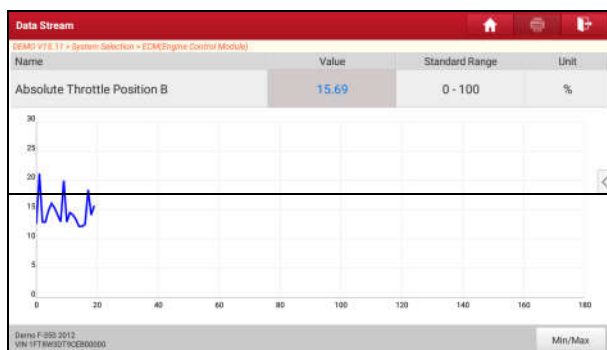📈 **Graph(Single):** Tap it to view the waveform.

Fig. 5-12

Compare Sample: Tap it to select the sample DS file, the values you customized and saved in process of DS sampling will be imported into the "Standard Range"(See below) column for your comparison.

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

Fig. 5-13

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 (*Only data stream items with measurement units will be recorded), and the screen displays as below:

Fig. 5-14

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

Fig. 5-15

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Tap the Min./Max. value to change it. After modifying all desired items, tap "Save" to save it as a sample DS file. All DS files are stored under the "Data Stream Sample" file in "User Info".

Graph: Tap it to view the waveform.

Fig. 5-16

• **Combine**: This option is mostly used in graph merge status for data comparison. In this case, different items are marked in different colors (maximum 4 items can be displayed on the same screen simultaneously). If the graph is more than one page, swipe the screen from the left to jump to the next page.
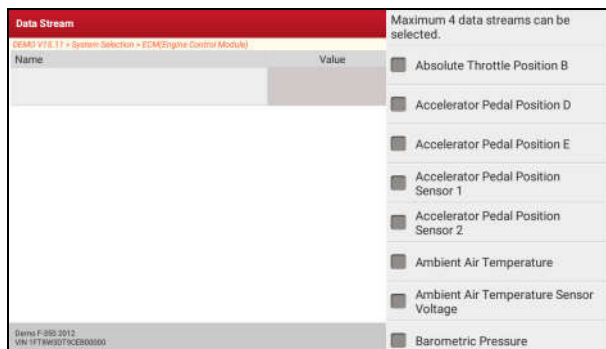
Fig. 5-17

- **Value**: Switches the current graph display mode to Value display mode.

- **Report**: To save the current data in text format. All reports are saved under the tab "Diagnostic Report" in "My Report" from "User Info" menu.

- **Record**: Tap to start recording diagnostic data for future playback and analysis. The file is stored in "My Report" under "User Info" menu.

Report: To save the current data in text format. All reports are saved under the tab "Diagnostic Report" in "My Report" from "User Info" menu. For details on report operations, please refer to Chapter 9.1 "My Report".

Record: Tap to start recording diagnostic data for future playback and analysis. 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). The file is stored in "My Report" under "User Info" menu.

Fig. 5-18

Help: Tap to view the help information.

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 tool 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.

In Fig. 5-7, tap "Actuation Test", the system will display as follows:
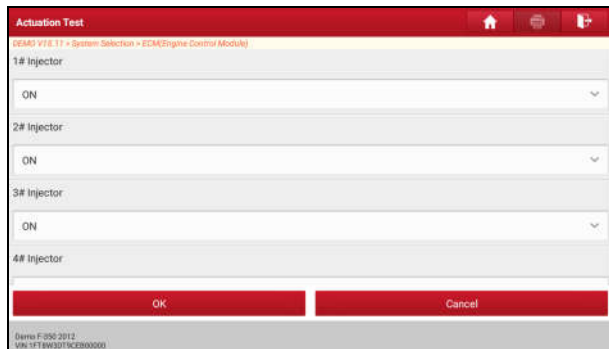
Fig. 5-19

Simply follow the on-screen instructions and make appropriate selections to complete the test. Each time when an operation is successfully executed, "Completed" displays.

5.2 How to view diagnostic history?

Generally once a vehicle diagnosis is performed, the tool 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 the necessity of starting from scratch.

Tap "Diagnostic History" on the Job 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.

5.3 How to feedback diagnostic logs?

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

Tap "Diag. Feedback", the following 3 options will be displayed on the left

column of the screen.

A. Feedback

Tap a 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 tool gets a stable network signal, it will be uploaded to the remote server automatically.

6 Special (Reset) Function

In addition to amazing & powerful diagnostic function, the tool also features various service functions. The most commonly performed service functions contain:

• Oil Reset Service
• Electronic Parking Brake Reset
• Steering Angle Calibration
• ABS Bleeding
• TPMS (Tire Pressure Monitor System) Reset
• Gear Learning
• IMMO Service
• Injector Coding
• Battery Maintenance System
• Diesel Particulate Filter (DPF) Regeneration
• Electronic Throttle Position Reset

There are two methods to reset service lamp: Manual reset or Auto reset. Auto reset follows the principle of sending command from the tool to vehicle's ECU to do resetting. While using manual reset, users just follow the on-screen instructions to select appropriate execution options, enter correct data or values, and perform necessary actions, the system will guide you through the complete performance for various service operations.

6.1 Oil Reset Service

This function allows you to perform reset for the engine oil life system, which calculates an optimal oil life change interval depending on the vehicle driving conditions and climate.

This function can be performed in the following cases:

1. If the service lamp is on, you must provide service for the car. After service, you need to reset the driving mileage or driving time so that the service lamp turns off and the system enables the new service cycle.

2. After changing engine oil or electric appliances that monitor oil life, you need to reset the service lamp.

6.2 Electronic Parking Brake Reset

1. If the brake pad wears the brake pad sense line, the brake pad sense line sends a signal sense line to the on-board computer to replace the brake pad. After replacing the brake pad, you must reset the brake pad. Otherwise, the car alarms.

2. Reset must be performed in the following cases:

   a) The brake pad and brake pad wear sensor are replaced.
   b) The brake pad indicator lamp is on.
   c) The brake pad sensor circuit is short, which is recovered.
   d) The servo motor is replaced.

6.3 Steering Angle Calibration

To reset the steering angle, first find the relative zero point position for the car to drive in straight line. Taking this position as reference, the ECU can calculate the accurate angle for left and right steering.

After replacing the steering angle position sensor, replacing steering mechanical parts (such as steering gearbox, steering column, end tie rod, steering knuckle), performing four-wheel alignment, or recovering car body, you must reset the steering angle.

6.4 ABS Bleeding

This function allows you to perform various bi-directional tests to check the operating conditions of Anti-lock Braking System (ABS).

1. When the ABS contains air, the ABS bleeding function must be performed to bleed the brake system to restore ABS brake sensitivity.

2. If the ABS computer, ABS pump, brake master cylinder, brake cylinder, brake line, or brake fluid is replaced, the ABS bleeding function must be performed to bleed the ABS.

6.5 Tire Pressure Monitor System Reset

This function allows you to quickly look up the tire sensor IDs from the vehicle's ECU, as well as to perform TPMS replacement and sensor test.

1. After the tire pressure MIL turns on and maintenance is performed, the tire pressure resetting function must be performed to reset tire pressure and turn off the tire pressure MIL.

2. Tire pressure resetting must be performed after maintenance is performed in the following cases: tire pressure is too low, tire leaks, tire pressure monitoring device is replaced or installed, tire is replaced, tire pressure sensor is damaged, and tire is replaced for the car with tire pressure monitoring function.

6.6 Gear Learning

The crankshaft position sensor learns crankshaft tooth machining tolerance and saves to the computer to more accurately diagnose engine misfires. If tooth learning is not performed for a car equipped with Delphi engine, the MIL turns on after the engine is started. The diagnostic device detects the DTC P1336 'tooth not learned'. In this case, you must use the diagnostic device to perform tooth learning for the car. After tooth learning is successful, the MIL turns off.

After the engine ECU, crankshaft position sensor, or crankshaft flywheel is replaced, or the DTC 'tooth not learned' is present, tooth learning must be performed.

6.7 IMMO Service

An immobilizer is an anti-theft mechanism that prevents a vehicle's engine from starting unless the correct ignition key or other device is present. Most new vehicles have an immobilizer as standard equipment. An important advantage of this system is that it doesn't require the car owner to activate it since it operates automatically. An immobilizer is considered as providing much more effective anti-theft protection than an audible alarm alone.

As an anti-theft device, an immobilizer disables one of the systems needed to start a car's engine, usually the ignition or the fuel supply. This is accomplished by radio frequency identification between a transponder in the ignition key and a device called a radio frequency reader in the steering column. When the key is placed in the ignition, the transponder sends a signal with a unique identification code to the reader, which relays it to a receiver in the vehicle's computer control module. If the code is correct, the computer allows the fuel supply and ignition systems to operate and start the car. If the code is incorrect or absent, the computer disables the system, and the car will be unable to start until the correct key is placed in the ignition.

To prevent the car being used by unauthorized keys, the anti-theft key matching function must be performed so that the immobilizer control system on the car identifies and authorizes remote control keys to normally use the car.

When the ignition switch key, ignition switch, combined instrument panel, ECU,

BCM, or remote control battery is replaced, anti-theft key matching must be performed.

6.8 Injector Coding

Write injector actual code or rewrite code in the ECU to the injector code of the corresponding cylinder so as to more accurately control or correct cylinder injection quantity.

After the ECU or injector is replaced, injector code of each cylinder must be confirmed or re-coded so that the cylinder can better identify injectors to accurately control fuel injection.

6.9 Battery Maintenance System Reset

This function enables you to perform a resetting operation on the monitoring unit of vehicle battery, in which the original low battery fault information will be cleared and battery matching will be done.

Battery matching must be performed in the following cases:

a) Main battery is replaced. Battery matching must be performed to clear original low battery information and prevent the related control module from detecting false information. If the related control module detects false information, it will invalidate some electric auxiliary functions, such as automatic start & stop function, sunroof without one-key trigger function, power window without automatic function.

b) Battery monitoring sensor. Battery matching is performed to re-match the control module and motoring sensor to detect battery power usage more accurately, which can avoid an error message displaying on the instrument panel.

6.10 Diesel Particulate Filter (DPF) Regeneration

DPF regeneration is used to clear PM (Particulate Matter) from the DPF filter through continuous combustion oxidation mode (such as high temperature heating combustion, fuel additive or catalyst reduce PM ignition combustion) to stabilize the filter performance.

DPF regeneration may be performed in the following cases:

a) The exhaust back pressure sensor is replaced.

b) The PM trap is removed or replaced.

c) The fuel additive nozzle is removed or replaced.

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d) The catalytic oxidizer is removed or replaced.

e) The DPF regeneration MIL is on and maintenance is performed.

f) The DPF regeneration control module is replaced.

6.11 Electronic Throttle Position Reset

This function enables you to make initial settings to throttle actuators and returns the "learned" values stored on ECU to the default state. Doing so can accurately control the actions of regulating throttle (or idle engine) to adjust the amount of air intake.

7 Software Update

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

If you did not download the software in process of product registration or a pop-up message prompting you that some new software can be updated, you may use this option to download it or keep it synchronized with the latest version.

7.1 Update Diagnostic Software & APP

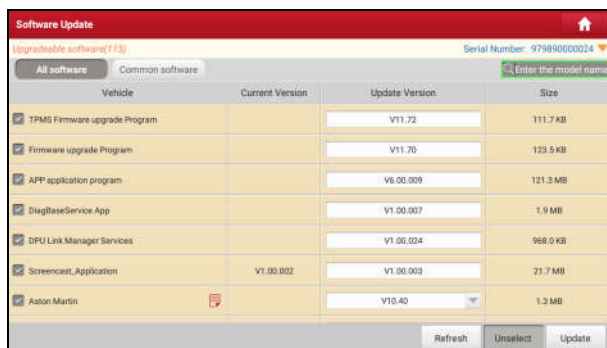Tap "Software Update" on the Job Menu to enter the update center.

Fig. 7-1

By default, all diagnostic software is selected. To deselect certain software, tap "Unselect", and then check the box next to vehicle model. Tap "Update" to start downloading. It may take several minutes to finish it, please be patient to wait. To pause downloading, tap "Stop". To resume it, tap "Continue". If network connection failure occurs, tap "Retry" to try again.

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

7.2 Set Frequently Used software

To easily locate and quickly update some frequently used software, you can use the "Common Software" option to create a frequently used software list.
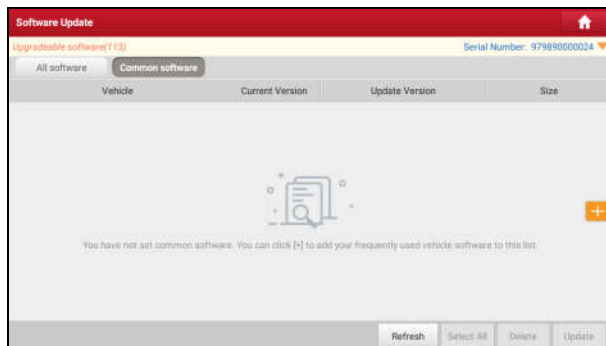
Fig. 7-2

Tap "+" on the right edge of the screen, a pop-up window appears. Select the checkbox before the software name and tap "SAVE", the software will be displayed in the Common software list. Next time you want to update it, just go to "Common Software".

7.3 Renew Subscription

If the software subscription is due or expires, the system will prompt you to renew your subscription and a "Renew" button will appear on the bottom of the update page.

Tap "Renewal" to navigate to the payment screen.

There are two ways available for you to make payment: PayPal and Subscription Renewal Card (*need to buy it from the local dealer where you purchased the tool).

A. Using PayPal

1. Tap "Renewal" on the update page to navigate to the renewal type selection screen.
2. Select "PayPal", and then follow the on-screen instructions to finish the transaction.
3. After payment, go to update center to update the diagnostic software.

B. Using Subscription Renewal Card

1. Tap "Renewal" to navigate to the renewal type selection screen.
2. Select "Subscription Renewal Card".

3. Input the 24-digit pin code of Subscription Renewal Card and then tap "Submit" to finish the renewal.

4. Go to update center to update the diagnostic software.

8 Other Modules

8.1 Email

The function allows you to send and receive email.

*Note: Before sending or receiving email, you have to set up an email account. In addition, this function required a stable network connection.

1. On the Job Menu, tap **Other Modules -> Email**.
2. Input the Email address, tap **NEXT**.
3. Choose the desired email account type.
4. Input the password, tap "Next".

*Note: If "Manual setup" is selected, please consult your email service provider for detailed parameter setting.

5. Follow the on-screen instructions to proceed until the system prompts you that the account setup has been finished.

8.2 TeamViewer

TeamViewer is a simple, fast and secure remote control interface, which enables you to receive remote support from technician fellows, colleagues or friends by allowing them to control your tablet on their computer or TeamViewer software on the mobile device.

Computer and mobile devices that run TeamViewer are identified by a globally unique ID. The first time the TeamViewer is launched, this ID is generated automatically based on the hardware characteristics and will not change later on.

8.2.1 TeamViewer QuickSupport

This app allows you to request a remote support from a partner.

Follow the steps below to proceed:

1. On the Home screen, tap **Other modules -> TeamViewer QuickSupport**. The TeamViewer interface displays and the device ID is generated and shown.
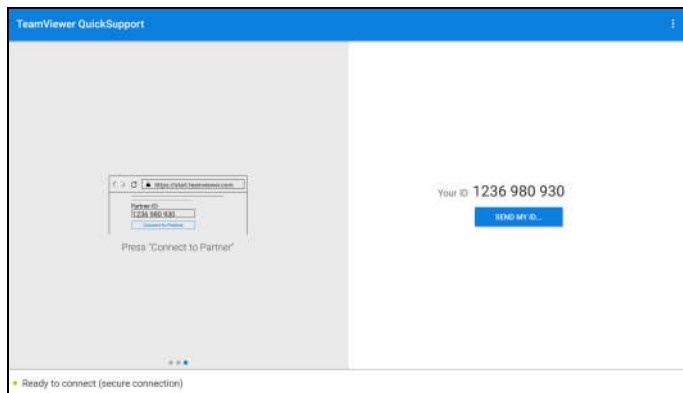
Fig. 8-1

2. Your partner must install the TeamViewer full version program (if not installed, go to http://www.teamviewer.com to download it), and then start the software on his/her computer at the same time, in order to provide support and take control of your tablet remotely.

3. Provide your ID to the partner, and wait for him/her to send you a remote control request.

4. A dialog box asking for your confirmation to allow remote control on your tablet will appear.

5. Tap Allow to accept, or tap Deny to reject.

For more information, please refer to the associated TeamViewer documents.

8.2.2 TeamViewer

This app enables you to remotely control a partner's device.

1. On the Home screen, tap **Other modules -> TeamViewer**. The TeamViewer interface displays.
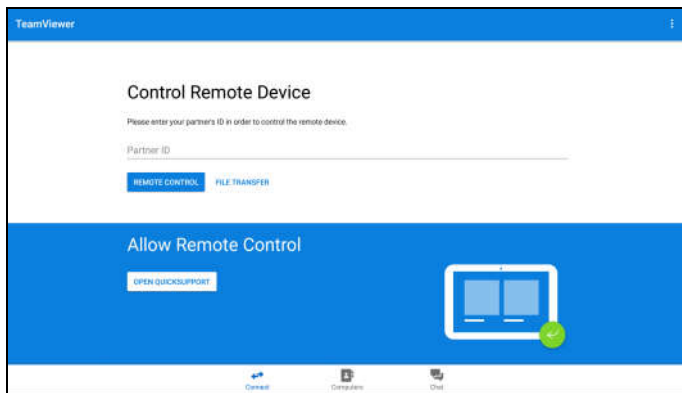
Fig. 8-2

2. Your partner must install the TeamViewer QuickSupport program (if not installed, go to http://www.teamviewer.com to download it), and then start the software on his/her computer/mobile device at the same time, in order to control the partner's computer/mobile device remotely.

3. Input the partner's ID, tap "REMOTE CONTROL" to send a remote control request.

4. After the partner confirms to accept remote control from your tablet, the remote assistance is now starting.

8.3 System OTA Upgrade

An Over-the-Air (OTA) update is the wireless delivery of new operating system, software or data to tablets and mobile phones. Wireless carriers have traditionally used over-the-air updates to deploy firmware and configure phones or tablets for use on their network. The initialization of a newly purchased tablet required an over-the-air update.

*Note: While performing OTA update, please make sure the tool battery has at least 70% and DO NOT run any other programs during the update.

1. On the Job Menu, tap **Other modules -> System OTA Upgrade**.

2. Tap "Check the Latest Version". Once a newer version is found, follow the on-screen instructions to download and install the update file.

3. Be patient to wait until the update is done.

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8.4 ES File Explorer

ES File Explorer is a file and application manager. You can access and create folders on the tablet without needing to connect it to a computer.

The app also features an application manager, task killer and download manager. Another excellent feature is support for cloud storage accounts. This means you can download files directly to the folders you want without using a separate app.

The app has built-in ZIP and RAR sources, so you can access compressed files without unpacking them on your computer first.

For more information, please refer to the associated ES file explorer documents.

8.5 Gallery

This function allows you to take new pictures and manage the picture library (including screenshots).

9 User Info

This function allows users to manage personal information and activate the VCI.

9.1 My Report

This option is used to view the diagnostic report generated in process of vehicle diagnosis. Additionally, delete and share operations are also supported.

Tap "**My Report**", there are total 3 options available.

In case the DTC result is saved on Read Trouble Code page, the files will be listed under **Health Reports** tab.
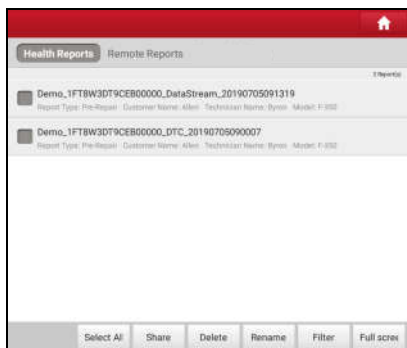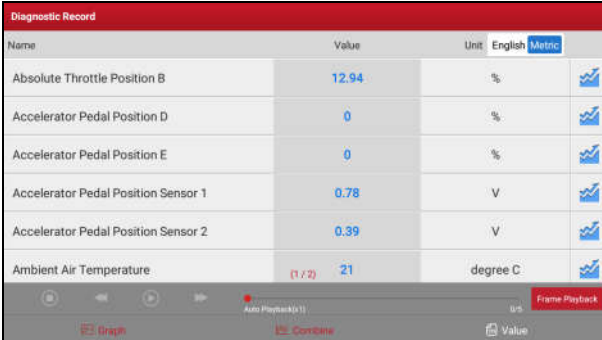

Fig. 9-1

- 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.

If user records the running parameters while reading data stream, it will be saved as .x431 file and appear under **Recorded Data** tab.

Tap the desired one to enter, and select the desired data stream items and tap "OK" to jump to the playback page.

Fig. 9-2

On-screen Buttons:

Graph – displays the parameters in waveform graphs.

Value – this is the default mode which displays the parameters in texts and shows in list format.

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

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".

9.2 VCI

This item allows you to check whether the VCI is activated or not.

9.3 Activate VCI

This item lets you to activate the VCI dongle. If you skip the "Activate VCI" step in process of the product registration, alternatively you also can use this option to activate it.
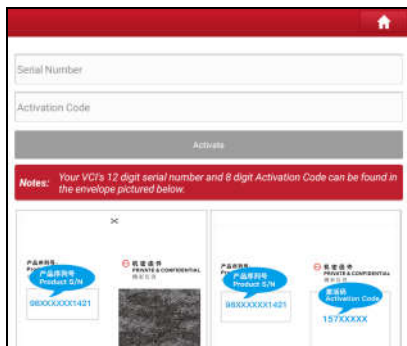
Fig. 9-3

Input the Serial Number and Activation Code, and then tap "Activate" to activate the VCI dongle.

For details on how to obtain Activation Code, tap the link below to get help.

9.4 Firmware Fix

Use this item to upgrade and fix diagnostic firmware. During fixing, please do not cut power or switch to other interfaces.

9.5 My News

This option allows you to receive some commercial and promotional activity messages.

9.6 Profile

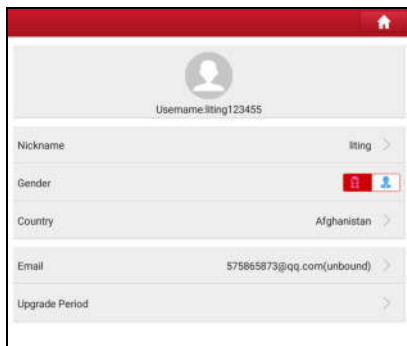Use this item to view and configure personal information.

Fig. 9-4

• Tap the user image to change it.
• Tap > next to "Free Upgrade Period" to check the due date of all diagnostic software.

9.7 Change password

This item allows you to modify your login password.

9.8 Settings

It enables you to make some application settings and view software version information etc.

9.8.1 Units

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

9.8.2 Shop Information

This option lets you define your print information. It mainly includes Workshop, Address, Telephone, Fax and License Plate.
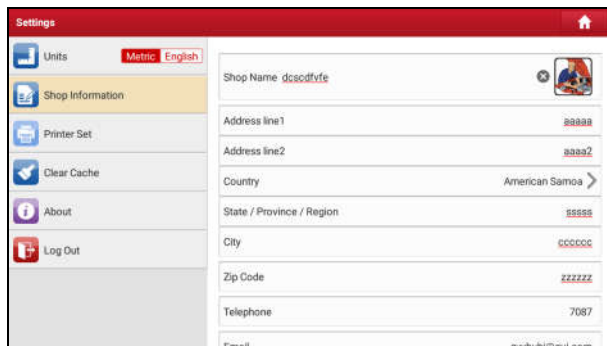
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Fig. 9-5

After inputting, tap "Save".

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

9.8.3 Printer Set

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

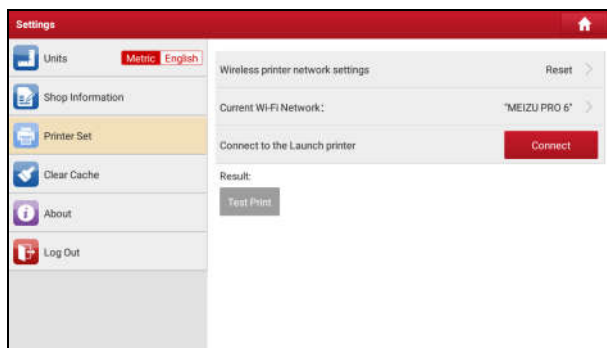Follow the steps below to connect the printer.

1. Tap "Printer Set".

Fig. 9-6

A. If it is the first time you have operated this printer, please proceed the following:

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2. For initial use, you are suggested to reset the printer: Press and hold [MODE] & [FEED] for 8 seconds, the following resetting command will be printed out:

at + default = 1

ok

at + reboot = 1

rebooting...

1. Tap "Reset" to configure Wi-Fi printer.

   Step 1: Connect the printer:

   Tap "Scan" to start scanning and select the desired printer hotspot named with X-431PRINTER-XXXX (XXXX stands for 4 characters), and then tap "Connect" to enter Step 2.

   Step 2: Join the Wi-Fi printer into LAN:

   Tap "Scan" to select the desired local Wi-Fi network from the list, and type in the security password (If it is an open network, password is not required), and then tap "Confirm".

4. Once the Wi-Fi network of the printer is connected and the printer is found, tap "Printing test" to test the printing.

Now you can use the Wi-Fi printer to print!

If the printer is not found, please reset the printer to default factory settings (refer to Step 2 for details) and check whether the current device and the printer are on the same LAN.

B. If you have configured the Wi-Fi printer to the LAN:

2. Tap "Connect to Printer":

   a). If the local network remains as it is, tap "Test Print" directly to test the printing.

   b). If the local network changes, you have to reset the Wi-Fi printer.

9.8.4 Clear Cache

This item is used to clear the App cache.

Tap "Clear Cache", a pop-up window will appear on the screen. Tap "OK" to clear cache and the system will restart the App.

9.8.5 About

The software version information and disclaimer are included.

9.8.6 Login/Logout

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

To login the system again, tap "Login".

10 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.

➢   Disable GPS function if GPS service is not in use.

2. Communication error with vehicle ECU?

Please confirm:

1. Whether the diagnostic cable 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 Diag. Feedback feature.

3. Failed to enter into vehicle ECU system?

Please confirm:

1. Whether the vehicle is equipped with this system.

2. Whether the diagnostic cable 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 Diag. Feedback feature.

4. How to reset the tool?

⚠ 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 tool:

1. Tap "Tablet Settings" -> "Back & Reset".

2. Tap "Factory data reset".

3. Tap "Reset tablet".

4. Tap "Clear all data" to start resetting until the tool automatically reboots.

5. How to register the tool?

Note: Before registration, please make sure the network is properly connected.

A. If this is the first time using the tool, please refer to "Chapter 4.2.1" in the user manual for product registration.

B. If you have not activated the VCI in process of product registration, please follow the below steps to activate:

   1. Tap "User Info" -> "Activate VCI".

   2. Input product S/N and activation code, which can be found from the included password envelope, then tap "ACTIVATE".
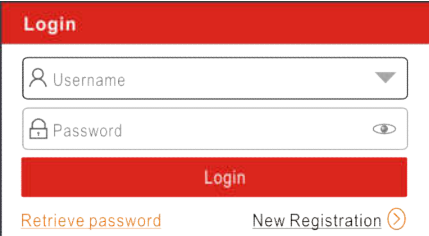
6. How to update the APK and diagnostic software?

1. On the Job Menu, tap "Software Update".

2. Tap "Update" on the bottom of the screen to start the download. During the upgrade, please make sure the tool has a stable network connection.

7. How to retrieve the login password?

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

1. Tap [Login] button on the upper right corner of the Job Menu.

2. Tap "Retrieve password".

3. Input product S/N and follow the on-screen prompts to retrieve the password.

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 from date of delivery to the user.

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

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

Disclaimer

The above warranty is in lieu of any other warranty, expressed or implied, including any warranty of merchantability or fitness for a particular purpose.

Purchase Order

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

- Order quantity
- Part number
- Part name

Customer Service

If you have any questions on the operation of the unit, please contact local dealer, or contact **Diagtools LTD**:

Address: Pernavas 43A, Riga, Latvia, LV-1009

Phone: +37129416069

Email: info@diagtools.eu

Website: www.diagtools.eu

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 of LAUNCH, LAUNCH does not bear any responsibility arising from misunderstandings.