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

⚠ Operation Specification For New Energy Vehicle Safety Maintenance

1) Identification of high voltage components: The orange wiring harnesses of the vehicle are all high voltage wires.
2) High voltage parts: power battery pack, high voltage distribution box, on-board charger, driving motor controller and DC-DC assembly, electric power assembly, integrated compressor, PTC heater, maintenance switch.
3) When repairing the high voltage system, the power supply of the vehicle must be OFF (and the vehicle is in the non-charging state), and remove the maintenance switch; After the emergency maintenance switch is removed, it shall be kept by full-time guardianship personnel, and ensure that no one will plug it in during the maintenance process.

   ⚠ *Notice: When the high voltage distribution box needs to be repaired or replaced, remove the positive and negative high voltage connectors connected to the battery pack carefully, and wrap the exposed wires with electrical tape to avoid electric shock.*

4) Five minutes after turning off the emergency maintenance switch, use a multimeter to measure the high voltage circuit and ensure that there is no power before checking and repairing the high voltage system.

4-1) Measure the voltage between the positive electrode of the battery pack and the body to preliminarily determine whether there is electric leakage. If the voltage is greater than or equal to 50V, it indicates that there is a leakage in the battery pack. Stop the operation immediately.

4-2) When using a multimeter to measure high voltage, select the correct measurement range. The accuracy level of the multimeter should not be lower than 0.5, and the measurement range should not be less than or equal to 600V. Please follow "One-hand Operation" principle;

4-3) One pen line of the multimeter is equipped with an insulated alligator clip (the voltage is required to be 3KV; the overcurrent capacity is greater than 5A). During measuring, clamp the clip to a terminal of the circuit first, and then connect the other pen to the terminal to measure the reading. Only hold the pen with one hand during each measurement; do not touch the metal part of the pen during measurement.

5) The maintenance switch shall not be assembled during low-voltage debugging. In high-voltage debugging, the full-time guardian shall instruct the assembly and maintenance switch.
6) High voltage debugging must be carried out under the premise of good low voltage debugging, so as to determine whether the battery has leakage. If there is leakage, it should be checked in time, and high voltage debugging cannot be carried out.
7) During disassembling and installing the power battery pack assembly; wrap the high-voltage wiring harness connector connected to the high-voltage distribution box with

insulation tape. Do not damage the wiring harness during disassembly and installation to avoid electric shock.

8) During repairing or replacing parts that pass through the sheet metal holes of the body, such as high-pressure wiring harnesses and tubing, pay attention to check whether the protection with the sheet metal of the body is normal to avoid the wear of the wiring harnesses and tubing.

NOTES

1) Maintain a safe environment for vehicle testing at all times.
2) Do not operate the detection equipment while driving the vehicle to avoid distraction and causing an accident.
3) Before starting the engine, you should pull the handbrake, especially the front wheel, and put the shift lever in neutral (manual transmission) or [P] gear (automatic transmission) so as not to start the engine and make the vehicle injure people.
4) The exhaust gas from the engine contains a variety of toxic compounds (such as hydrocarbons, carbon monoxide, nitrogen oxides, etc.), which will lead to slow response and even serious personal injury or death. The vehicle under test should be parked in a well-ventilated place during operation.
5) Take extreme care when working around ignition coils, distributor caps, ignition lines and plugs. These components generate dangerous voltages when the engine is running.
6) To avoid damaging the testing equipment or generating incorrect data, please ensure that the vehicle battery is fully charged and that the connection of the vehicle diagnostic seat is clean and safe.
7) The vehicle battery liquid contains sulfuric acid, sulfuric acid is corrosive to the skin, so you should avoid direct contact between the battery liquid and the skin during the operation, especially do not splash it into the eyes, and do not put it close to the fire.
8) Keep clothing, hair, hands, tools, testers, etc. away from running or hot engine parts.
9) Please use the charger that comes with it. The Company will not be responsible for any damage or loss caused by the use of other chargers not designated by the Company.
10) Keep the testing equipment dry and clean, away from gasoline, water and grease. When necessary, clean the surface of the equipment with a clean cloth coated with a mild detergent.
11) All internal repairs to test equipment must be performed by authorized maintenance organizations or authorized technicians. Attempting to disassemble or modify the device will void the warranty.

This manual uses the following conventions.

PROMPT

Prompt information provides helpful information such as additional operation instructions, tips, and suggestions. Example:

Prompt: The VIN code is usually located on the driver's side, in the lower right corner of the front windshield. The exact location varies from car to car. A VIN code is generally composed of 17 standard characters. The VIN code characters can contain the uppercase letters A to Z and the numbers 0 to 9, but the letters I, O, and Q are not usually used to avoid mispronunciation.

WARNING

It indicates an imminent hazard that, if unavoidable, will result in death or serious injury to the operator or bystander. Example:

Warning: Reading a fault code during troubleshooting a vehicle is only a small step in the diagnostic process. The vehicle fault code is only used as a reference, and parts cannot be replaced directly on the basis of the given fault code definition. Each fault code has a set of test procedures, and the service technician must strictly follow the operating instructions and procedures described in the vehicle service manual to confirm the root of the fault.

DANGER

It indicates an imminent hazard that, if unavoidable, will result in death or serious injury to the operator or bystander. Example:

Danger: You must drive the vehicle in order to perform troubleshooting. Please find someone else to help you. It is dangerous to drive and operate diagnostic equipment at the same time, which can cause severe traffic accidents.

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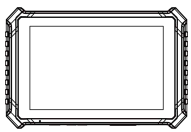
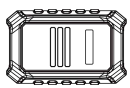
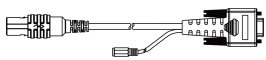
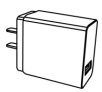
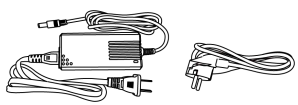
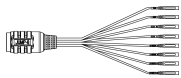
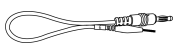
1. Packing List

The following accessories are for reference only. For more details, please consult from the local agency or check the package list supplied with this tool together.

Main Unit and Accessories			
No.	Name	Q'TY	Reference Picture
1	Main Unit	1	
2	VCI	1	
3	HFT Test Cable	1	
4	OBD Ⅱ-16	1	
5	Power Adaptor (5V 3A)	1	
6	USB Cable （Type-C）	1	
7	Switching Power Supply （12V 5A）	1	

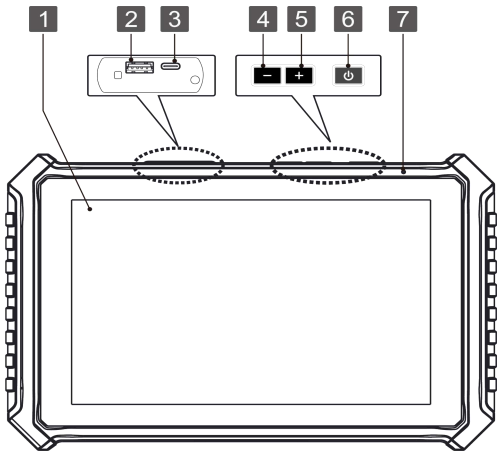
8	Password Envelop	1	-
9	Quick Reference Guide	1	-
10	User Manual	1	-
11	Packing List	1	-
Battery Jumper Adapters			
No.	Name	Q'TY	Reference Picture
1	Jumper Cable (Jump-8)	1	
2	Matching Adapter 1	8	
3	Matching Adapter 2	8	
4	Matching Adapter 3	8	
5	Matching Adapter 6	8	
6	Matching Adapter 7	8	
7	Matching Adapter 8	8	
8	Matching Adapter 10	8	
9	Matching Adapter 11	8	
10	Matching Adapter 12	8	

2. Product Introduction

2.1 Overview

E10 is a professional intelligent inspection device developed by SmartSafe company for new energy vehicles, integrating comprehensive vehicle diagnostics and battery pack testing functions. The device has a unique synergy capability, enabling it to fit perfectly into the groove of the diagnostic charging/discharging balancer (optional). Through contact-based charging, not only is convenient power replenishment achieved, but it can also function as an external screen for operating the diagnostic charging/discharging balancer.

2.2 E10



1. Touch screen

2. USB Type-A

3. USB Type-C

4. Volume -

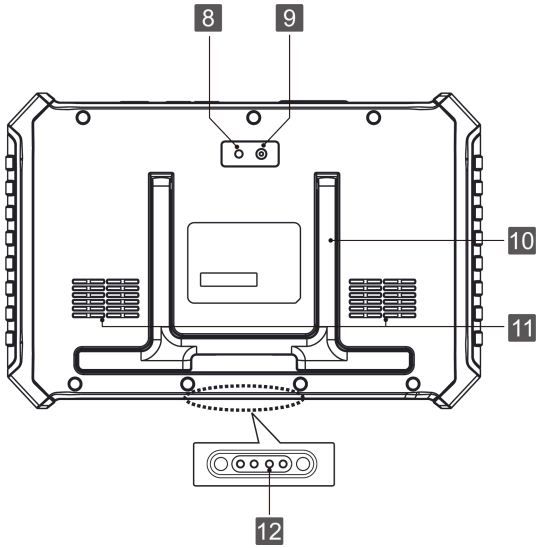
5. Volume +

6. Power button/lock button

- When powered off, press this button for about 3s to turn on the device.

- When powered on, press this button to wake up/turn off the screen. (When powered on, press and hold this button for over 3s for shutdown or restart; press and hold it for about 8s to force a shutdown)

7. Microphone



8. Rear camera
9. Flashing light
10. Bracket
11. Speaker
12. Pogo pin

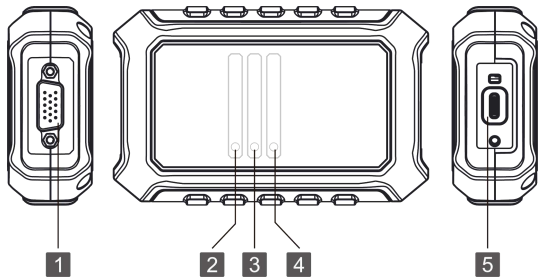
Technical parameters:

Item	Technical parameters
Operating system	Android
CPU	Octa-core processor, 2.0GHz
Memory	4GB
Storage	128GB
Display	10.1-inch touchscreen with a resolution of 1280x800 pixel
Camera	13 MP rear camera
Wi-Fi	2.4GHz/5GHz Dual Wi-Fi
Communication	Bluetooth, USB
Battery	3.8V/9360mAh

Operating temperature	0 °C~45°C
Storage temperature	-20°C~70°C
Size	295.8 x 196.0 x 38.5 mm

2.3 VCI

The device is a Vehicle Communication Interface (VCI) device, which is used to connect the vehicle diagnosis seat or battery pack low-voltage signal communication interface for data collection, and then send the data to the host for analysis.



1. HDB15F interface
2. Power indicator
   - *When the VCI is connected to the vehicle OBD II diagnostic port, the power indicator on the box will be on.*
3. Vehicle communication indicator
   - *When the VCI communicates with the vehicle ECU, the indicator flashes.*
4. Tablet communication indicator
   - *When the VCI communicates with the diagnostic host via Bluetooth, the indicator turns blue.*
   - *When the VCI communicates with the diagnostic host via USB, the indicator turns red.*
5. USB Type-C

Technical parameters

Item	Technical parameters
Operating voltage	DC 9~18V
Communication	Bluetooth, USB

Operating temperature	-10°C - 50°C
Interface	Type C, HDB15F
Size	72.4 x 115.0 x 31.0 mm

3. Initial Use

3.1 Charge the Tablet

⚠ *Warning: Please use the charger that comes with the product for charging. We are not responsible for any damage or economic loss caused by charging with a charger other than the one designated by us.*

The E10 host can be charged using a charger or with the diagnostic charging/discharging balancer that comes with a charging base.

3.1.1 Charging with charger

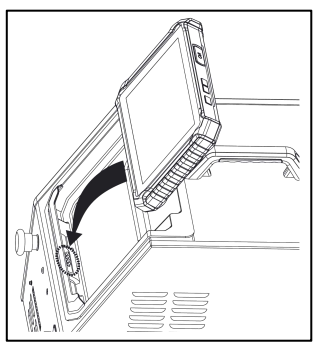
Please follow these steps to charge the E10 device using the charger:

1) Plug one end of the charging cable into the USB port of charger and the other end into the Type-C port of host. Then, connect the charger to a power outlet.
2) The battery icon on the screen showing indicates that it is charging.
3) Once charging is complete, the battery icon will display as .

3.1.2 Charge by Charging Contacts

This method requires the diagnostic charging/discharging balancer with charging contacts (optional) to charge the E10 host.

As shown in the figure, align the contact points at the bottom of the E10 host with the probes on the diagnostic charging/discharging balancer charging contacts, then insert the E10 into the diagnostic charging/discharging balancer groove. Turn on the diagnostic charging/discharging balancer power to charge the E10 host.



Note:

If the device has not been used for a long time or the battery power of the device is exhausted, you may not be able to turn it on normally when charging. This is a normal phenomenon. Please charge the device for a period of time and then try to start the device.

The battery can be recharged. But because the battery is a wear and tear product, after a long time of use, the standby time of the device will be shortened. So please avoid frequent and repeated charging to prolong the battery life.

3.2 Turn On/Off

3.2.1 Turn On

Press and hold the power button on the device until the screen lights up.

3.2.2 Turn Off

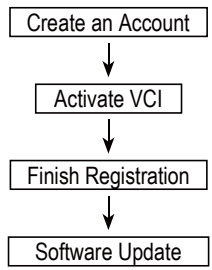
Press and hold the power button on the device until the shutdown prompt dialog box pops up on the screen, tap **Power off** to shut down the device or tap **Restart** to restart the device.

3.3 Network Connection

When using the device for the first time, you need to register a personal account, activate the VCI connector, and upgrade the diagnostic software or APK. In this case, the device must be connected to the internet. For details on wireless network connection, please refer to **Chapter 19.2 Network & Internet**.

3.4 Registration and Update

During the first use, the user needs to follow the following operations:



Note: Before registration, ensure that the network connection to the host is normal and stable.

On the main interface, tap **Other** -> **Personal Center** -> **Login**, and the following dialog box will pop up:

(If you are a new user, follow Section A.)

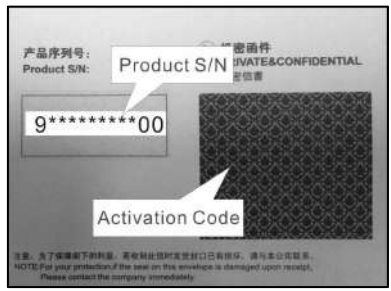
(If you are registered, please refer to Section B for login.)

(If you forget your password, please refer to Section C to reset it.)

A. If you are a new user, please tap **New Registration** to enter the registration page.

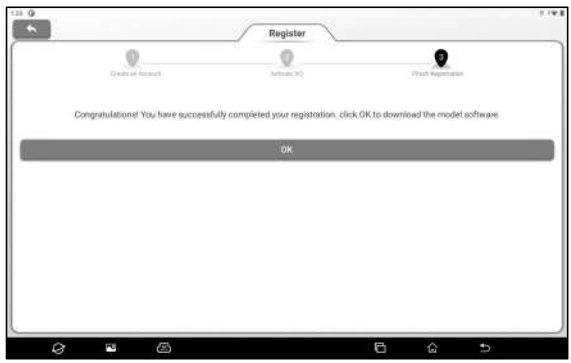
In the figure above, fill in the registration information in turn (the item with * is required). After the account information is filled in, tap **Register**, and the system will enter the interface of connector activation.

Enter the product serial number and activation code. The product serial number and activation code can be obtained from the password envelope in the package box.

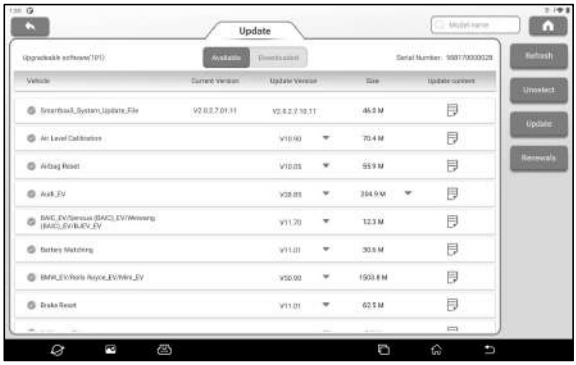


*Note: If you skip the activation step here, you can also go to **Other** -> **Personal Center** -> **Activate VCI** to activate after entering.*

Tap **Activate** to complete the registration.



Tap **OK** to enter the software update interface.



On the software update page, tap **Update** to start downloading. After the download is complete, the system will automatically install the software.

Note: During the update, ensure that the network connection is normal. In addition, due to the large number of software, it may take a long time (depending on the network speed). Please wait patiently.

B. If you have already registered, input the user name and password and tap **Login** to enter the account.

Prompt: The device has the user information memory function. If multiple accounts have logged in to the device, click the triangle drop-down button behind the user name input box to select the corresponding account to log in.

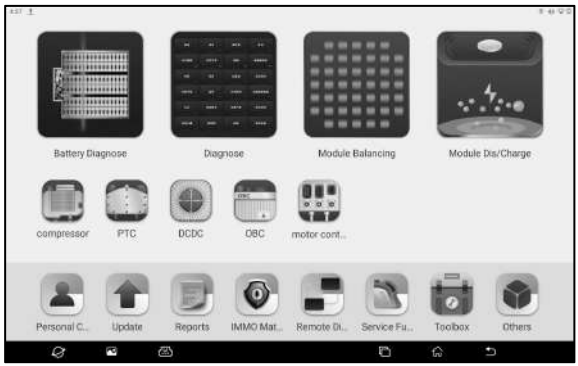
C. If you forget the password, please tap **Retrieve Password** and then set the new password according to the prompts on the screen.

4. Getting Started

4.1 Main Interface and Bottom Navigation Bar

4.1.1 Main interface

The main interface of E10 mainly includes the following functions modules:



Items	Description
Battery Diagnose	This function is used for deep system detection of the vehicle battery pack.
Diagnose	This function is used to test the electronic control system for the whole vehicle.
Module balancing	This function is used to perform balancing operations on battery modules, which should be used with the diagnostic charging/discharging balancer (optional). For specific operation, please refer to the product user manual attached with the diagnostic charging/discharging balancer.
Module Dis/Charge	This function is used to perform charge and discharge operations on battery modules, which should be used with the diagnostic charging/discharging balancer (optional). For specific operation, please refer to the product user manual attached with the diagnostic charging/discharging balancer.

Compressor	This function is used to perform offline testing after vehicle air conditioning compressor replacement and repair.
PTC	Used for offline detection when the PTC of vehicle is changed or repaired.
DCDC	This function is used to perform offline testing after vehicle DCDC replacement and repair.
OBC	This function is used to perform offline testing after vehicle OBC replacement and repair.
Motor Controller	Used for offline detection when the motor controller of vehicle is changed or repaired.
Personal center	View and manage VCI connector, firmware fixing and personal information.
Update	Support one-click upgrade of battery pack software, model software, operating system, client and firmware.
Reports	This module is used to view and manage the diagnostic reports and diagnostic records.
IMMO Matching	This function enables you to perform the anti-theft key matching function, so that the immobilizer control system on the car identifies and authorizes remote control keys to normally use the car.
Remote Diagnosis	The function module is used to remotely assist the user to diagnose the vehicle.
Service Functions	Use this function for special functions such as vehicle maintenance and adjustment etc.
Toolbox	The toolbox includes extended functional modules such as digital power, tire tread depth measuring, current clamp, videoscope, oscilloscope, multimeter, insulation test and voltage monitor.
Others	Including functional modules such as diagnostic feedback, tablet settings, file management, teamviewer, browser, system OTA updates, photo album, recording master, video player, email and camera etc.

4.1.2 Bottom Navigation Bar

The bottom navigation bar contains the following buttons:

Icon	Name and Function Description
	Browser-click this button the start the browser.
	Screenshot-click this button to capture and save the current screen image. The screenshot is saved in the Screenshots folder.
	VCI connection indicator-after the host is successfully connected to the VCI connector, this button lights up in green.
	Process Management - Click this button to display a list of recently used App thumbnails. Click on any of the thumbnails to open the corresponding program, hold the thumbnail to slide upward to close the corresponding program.
	Main interface-click to return to the main interface.
	Return-click to return to previous page.

4.2 Preparation and Vehicle Connection

4.2.1 Preparation

Normal Test Conditions

- The vehicle ignition is turned on.
- The vehicle battery voltage range is 11~14 volts or 23~26 volts.
- The throttle is in the closed position.

Find DLC position: 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.

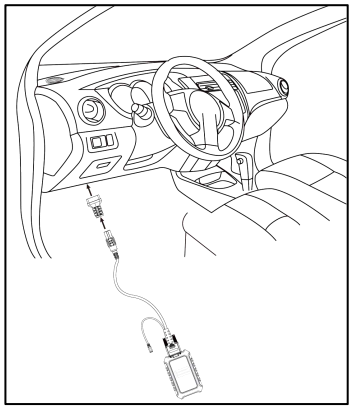
If the DLC cannot be found, refer to the vehicle's service manual for the location.

4.2.2 Vehicle Connection

Use the switch cable to connect the VCI and OBD Ⅱ -16 connector, and then insert the the

OBD Ⅱ-16 connector into the vehicle's DLC port.

Note: When connecting the switch cable and the OBD II 16 connector, please align the arrow identification on the switch cable aviation plug with the model identification on the OBD II 16 aviation plug. When disconnecting the switch cable from the OBD II 16 connector, please firstly pinch the aviation plug of the switch cable and pull it back until the buckle is released, then pull it out.



4.3 Communication Settings

The main connection modes of the tablet and VCI connectors are Wi-Fi communication and USB cable communication.

4.3.1 Wi-Fi Communication

The tablet will prompt the user to register and activate the VCI connector during the first use. Once the activation is complete, the tablet will automatically match with the VCI connector and establishes a Wi-Fi connection. At this time the VCI connector icon VCI at the bottom of the screen lights up and the Wi-Fi indicator of the VCI connector is also on.

4.3.2 USB communication

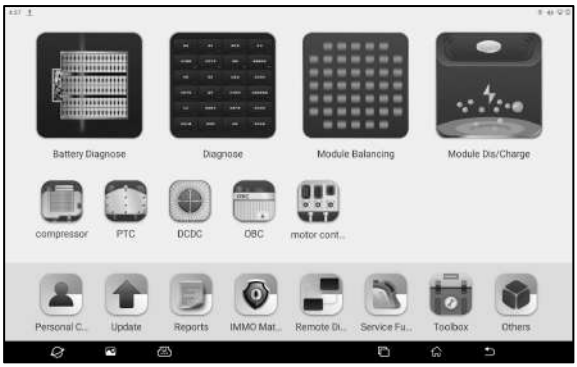
When the tablet and VCI connectors are connected through USB cables, the system automatically switches to USB communication mode. At this time the VCI connector icon VCI at the bottom of the screen will light up, and the USB indicator of the VCI connector will also light up.

5. Battery Diagnose

This function is used to check the detailed data and fault information of battery pack, helping users to quickly determine the abnormal status and fault point of battery pack.

Danger: The personnel who operate the battery pack test must wear protective equipment such as insulation gloves, insulation shoes and goggles. Operating the battery pack without protection can cause a serious electric shock.

1) Start the E10 and tap **Battery Diagnose** on the main interface.



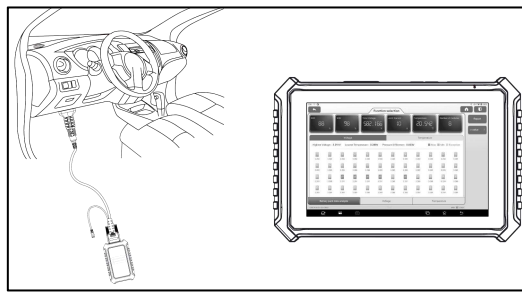
2) Select the vehicle brand or battery pack brand (You can find it quickly through the search bar in the upper right corner).

Select the vehicle model and year.

3) Select the connection method of battery pack.

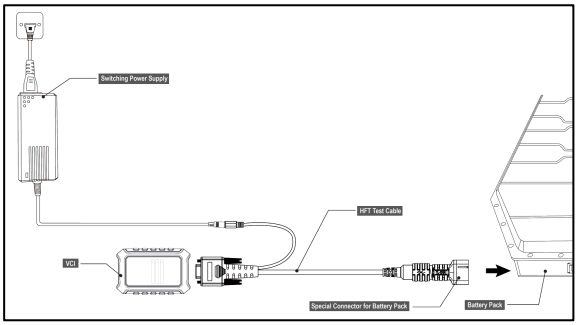
A. OBD Connector Diagnosis

The battery pack of the vehicle was tested by connecting the VCI to the vehicle OBD interface through an switch cable and OBD Ⅱ 16 connector.



B. Non-standard Connector Diagnosis

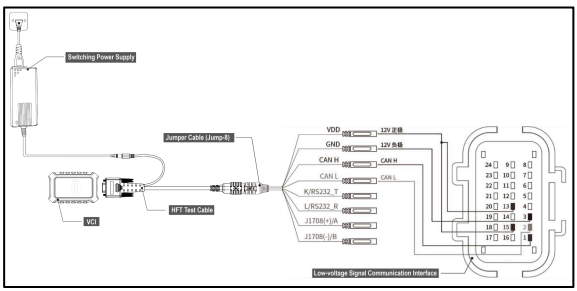
Connect the VCI and the low-voltage signal communication interface of the battery pack respectively with the battery pack special connector (optional) to test the vehicle battery pack.



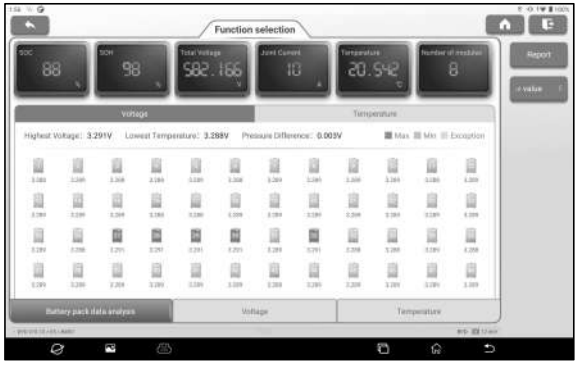
C. Jumper Diagnosis

According to the wiring diagram prompted by the software, the jump-8 jumper is used to connect the VCI and the low-voltage signal communication interface of the battery pack respectively to detect the battery pack of the vehicle.

Note: The picture here is an example only. The connection mode varies with vehicle types. Please connect based on the wiring diagram prompted by the software.



4) After the connection is complete, the device automatically reads and displays the detailed data of the battery pack. Users can determine the abnormal status of the battery pack based on the detection data.



Description for screen buttons:

Main Interface	Click to return to the main interface.
Exit	Click to exit the current detection process.
Report	Click to view/save the detection report of battery pack.
Reference Value	Click to select the voltage reference range of different types of batteries.

Function description:

Batterry Pack Data Analysis	Used to display the voltage and temperature of each cell in the battery pack and mark the highest/lowest voltage cell and the highest/lowest temperature cell in the battery pack.
Voltage	Used to display the voltage parameters of each module in the battery pack and mark the highest/lowest voltage cell in the battery pack.
Temperature	Used to display the temperature parameters of modules and other parts in the battery pack, and mark the maximum/minimum temperature cell in the battery pack.

6. Diagnose

This function is mainly used for vehicle diagnose. Users can use **AutoDetect** to quickly identify vehicle information and enter the system for vehicle diagnose, or manually select models and systems for detection.

6.1 AutoDetect

Use **AutoDectect** to quickly identify vehicle information and vehicle diagnose, without manual selection of vehicle type.

Tap **Diagnose** -> **AutoDetect** on the main interface to enable the intelligent detection function of vehicles.

Some models may not be able to identify the vehicle information through the intelligent detection function. In this case, the following dialog box will pop up for the user to scan or manually input the vehicle VIN code.

6.2 Manual Selection

1) Tap **Diagnose** on the main interface to enter the vehicle brand selection interface.

2) Click the vehicle brand to be tested to enter the model version information interface. Here we take Demo (Version 15.43) as an example to demonstrate how to diagnose a vehicle.

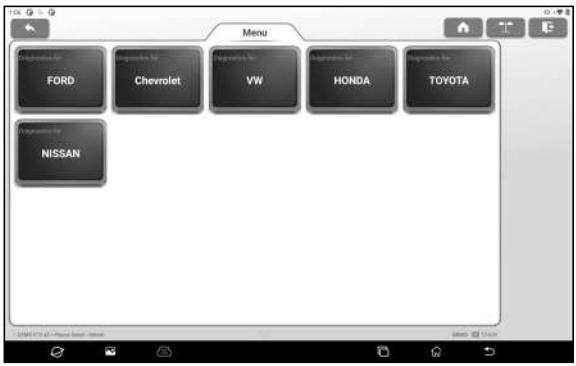
Screen Button Description:

Vehicle Coverage	Click to view the current vehicle models that can be tested.
What's new	Click to view the updated points of the current diagnostic software.
Introduction	Click to view the specific use of the current diagnostic software.
Note	Click to view precautions when using the current diagnostic

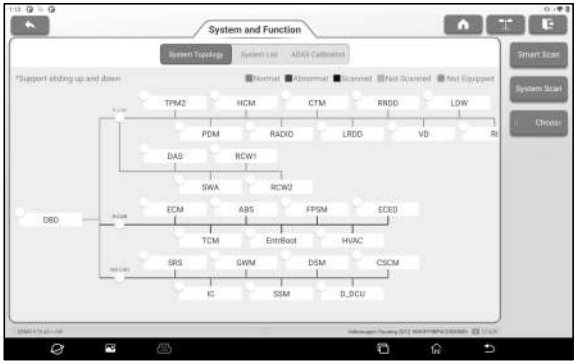
	software.
OK	Click to go to the next step.

3) Tap **Demo** to go to the next step.

4) Select vehicle brand and model. Here we take **VW** as an example.



5) Select the scan option that need to perform.



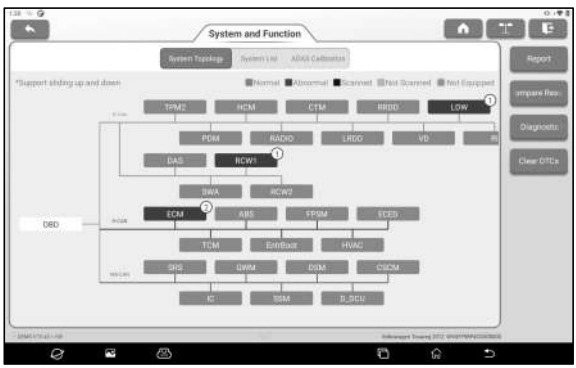
The system supports two display modes: topological diagram and list. User can also tap **ADAS Calibration** to perform ADAS related test options of vehicles .

Note: The specific system and special functions provided depend on the vehicle type.

6.2.1 Smart Scan

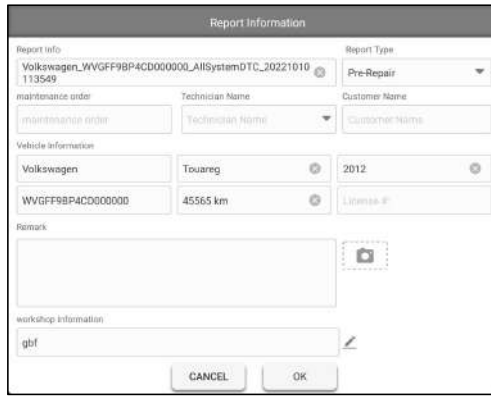
This function is used to quickly detect the vehicle and output the vehicle health report directly (this will only be displayed for the vehicle testing software supports this function.)

Tap **Smart Scan** on the test option selection interface, and the system starts to scan each system for faults code.



The system with fault codes will be displayed with red background, and the specific number of fault codes will be displayed. Click on a single system to view specific fault information. No fault system will be displayed with green background.

Screen Button Description:

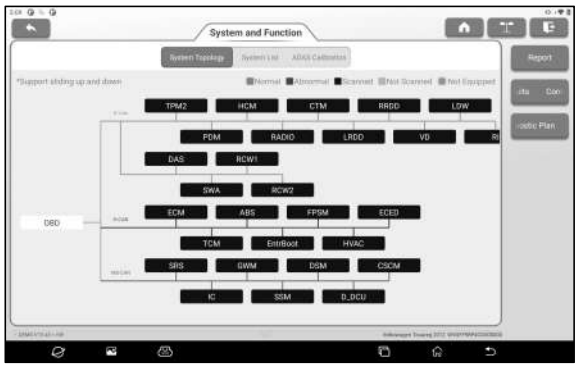
Report	Click to save the current fault report as the detection report.  Click▼ to select the report type from the drop-down list, then enter the details and tap **OK**. *Note: Diagnostic reports can be classified into Pre-Repair Report, Post-Repair Report and Diagnostic Scan (if no comparison is required, you can select Diagnostic Scan). The device has the report comparison function, so you need to select a correct report type when saving reports. By comparison, maintenance technicians can clearly understand whether the fault codes found before diagnosis have been completely cleared after maintenance.* Enter the shop name and then tap **OK** to enter the report details view page. On the report details page, tap **Save** to save the report. All diagnose reports are stored in the **Other** -> **Reports** -> **Diagnostic** tab.
Compare Results	Click to select the report before maintenance. By comparing the reports before and after maintenance, the maintenance technician can clearly understand whether the fault codes found before maintenance have been completely cleared after maintenance. *Note: Before performing this function, please ensure that:* • *The Pre-Repair inspection report of the current test vehicle has been saved; and* • *Repairs have been carried out on the basis of the inspection report*

	before maintenance, and the code has been cleared. Otherwise there will be no difference between the reports before and after the maintenance
Diagnostic Plan	Click to view the reason analysis of the fault code.
Clear DTCs	Click to clear all the fault codes. *Note: For general models, please strictly follow the conventional sequence: read the fault code first, then clear the fault code, test run, read the fault code again for verification, repair the vehicle, clear the fault code, test run again to confirm that the fault code does not appear.*

6.2.2 System Scan

This function is used to scan which systems the vehicle is equipped with.

Tap **System Scan** on the test option selection interface, and the system starts to scan the vehicle system. After the scan is completed, the screen will display the scan results.



The user can manually select the vehicle electronic control system to perform the test function operation. Click a single electronic control system (such as "ECM") in the test option selection interface, and then tap **Enter** to go to the test function selection page.

Note: Different models may have different test menus.

A. Module Information

This function is used to read the ECU version information of the current vehicle.

B. Read DTC

This function is used to read the diagnostic trouble code existing in the current car ECU, and help maintenance personnel quickly understand the cause of vehicle failure.

Tap **Read DTC** on the test function selection page, and the screen will display the following detection results.

⚠ *Warning: Reading a diagnostic trouble code while troubleshooting a vehicle is only a small step in the diagnostic process. The vehicle DTC is only used as a reference, and parts cannot be replaced directly on the basis of the given DTC definition. Each DTC has a set of test procedures, and the maintenance technician must strictly follow the operating instructions and procedures described in the vehicle maintenance manual to confirm the root of the fault.*

Screen Button Description:

Freeze Frame	If the button is highlighted, the frame is frozen. The freezing frame function is to record the values of some specific data streams at the moment when the car breaks down for verification.
Data Stream	Click to read and display the car ECU real-time operation data and parameters.
Help	Click to view the possible cause of the DTC.
Code Search	Click to search for a specific explanation of the DTC online.
Report	Save the current test result as a test report. All test reports are stored in the **Other** -> **Reports** tab.

C. Clear Fault Code

This function is used to clear fault codes stored in the ECU of the system under test.

In the test function selection page, Tap **Clear Fault Code**, the system will pop up a dialog box of confirming clearing, Tap **Yes** to confirm the clearing of the fault code.

Note: For general models, please operate in strict accordance with the conventional sequence: read the fault code first, then clear the fault code in the test run, read the fault code again for verification, repair the vehicle, clear the fault code, and confirm the fault code does not appear in the test run again.

D. Read Data Stream

This function is mainly used to read and display the real-time operation data and parameters of automobile ECU. By observing these real-time data streams, maintenance technicians can gain insight into the overall performance of the vehicle and provide guidance for vehicle maintenance.

Danger: If you must drive the vehicle while performing troubleshooting, please ask someone else to help you. Driving and operating diagnostic equipment at the same time is dangerous and can cause serious traffic accidents.

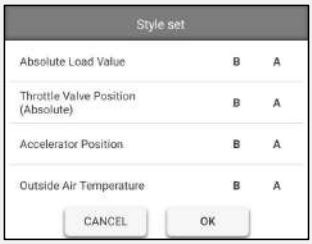
Tap **Read Data Stream** on the test function selection page, and the system enters the data stream selection page.

Screen Button Description:

Select All	Select all data stream options.
Unselect	Click to cancel all the selected data stream options.
OK	Confirm the current operation.

Tap **OK**, the system will display the dynamic data of the selection.

Note:



1. Click T, the left popup will appear on the screen:

Users can set different display styles for each data stream option according to personal preferences.

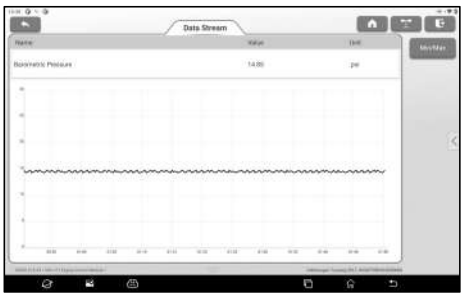
***B** Indicates that the current data stream will be displayed in bold.*

***A** Indicates that the current data stream will be displayed in red.*

*2. Tap **English / Metric** to switch units.*

3. If the read data stream value is out of the standard value range, the data stream is displayed in red.

Screen Button Description:

(single graphic)	Click to display the current (single) data stream as a waveform diagram. 

	Note: The waveform can be zoomed in or out. Tap the screen with two fingers (thumb and index finger, for example), then slide the fingers to adjust the distance between the fingers to zoom in and out of the screen. • Min/Max Limit: Click to set the maximum/minimum value. Once the running value exceeds the set value, the system will issue a warning.
Report	Click to save the current data stream value as a report. The saved test report is stored in **Other** -> **Reports** -> **Diagnostic**.
Record	Click to start recording test data. The recorded test data can provide an important reference for technicians to troubleshoot vehicle problems. To stop reading, click the button in front of the progress bar. *Note: The saved file is named after vehicle type +VCI device serial number + system time when recording starts. To distinguish file names, please set the correct system time.*

E. Actuation Test

This function is mainly used to test whether the executive component in the electronic control system can work normally.

6.2.3 Choose to Scan

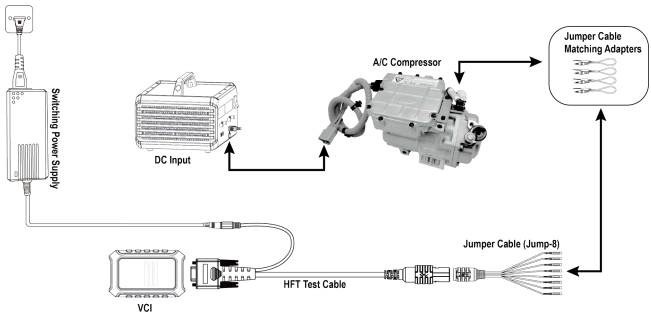
This function is used to select the vehicle electronic control system required by the user for scanning. In the test option selection interface, check the check box in front of the system to be scanned, and then tap **Choose to Scan** to start scanning the selected system.

7. Compressor

This function is used to perform offline testing after vehicle air conditioning compressor replacement and repair.

7.1 Test Preparation

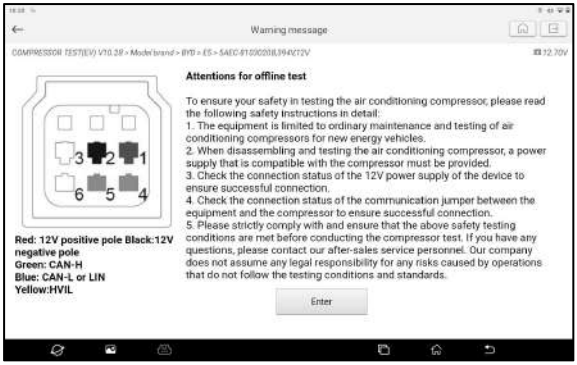
1) After removing the vehicle air conditioning compressor, connect it to the VCI using the optional compressor test line or a jumper cable.
2) The air conditioning compressor operates on direct current supplied at its specified operating voltage.
3) Use the provided 12V power adapter to connect the VCI to the power supply.



7.2 Start Testing

Click **Compressor** on the main interface to go to the following screen:

Select the appropriate compressor based on the vehicle brand, compressor brand, or compressor model. After selecting the compressor, go to the prompt page below; read the relevant test precautions; ensure that the necessary safety conditions are met, and then click **Enter** to go to the compressor testing screen.



After verifying that the parameters are correct, click **Start** to begin the compressor test and observe its operation; click **Stop** to stop the test.

Click **Exit** to exit the current test.

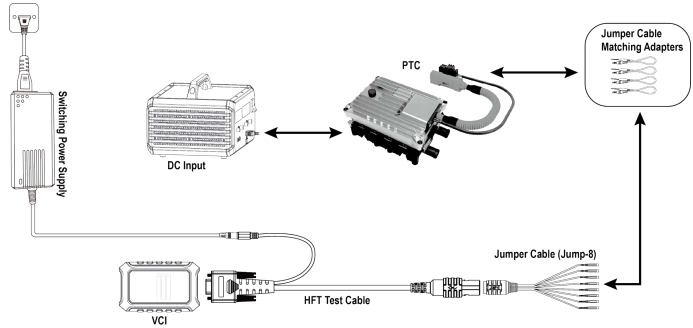
Note: The parameter options displayed may differ depending on the compressor.

8. PTC

This function is used to perform offline testing after vehicle PTC replacement and repair.

8.1 Test Preparation

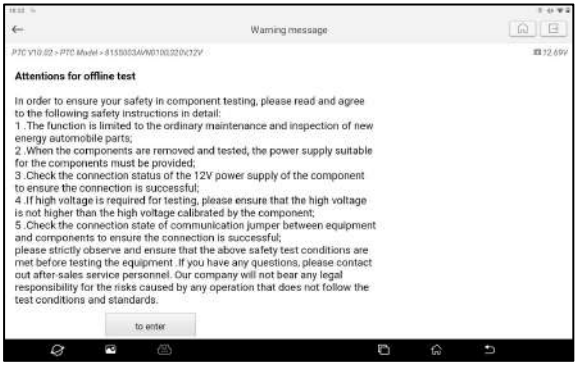
1) After removing the vehicle PTC, use jumper cable to connect the PTC to the VCI.
2) Connect the PTC to the appropriate DC voltage based on its rated voltage.
3) Connect the load to the output of the PTC converter.
4) Use the provided 12V power adapter to connect the VCI to the power supply.



8.2 Start Testing

Click **PTC** on the host interface to go to the following screen:

Select the appropriate PTC based on the vehicle brand and PTC model. Once the PTC is selected, go to the prompt page below; read the relevant test precautions, ensure that the necessary safety testing conditions are met, and then click **to Enter** to go to the PTC testing screen.



After verifying that the parameters are correct, click **Start** to start the PTC test.

Click **Stop** to stop the PTC test.

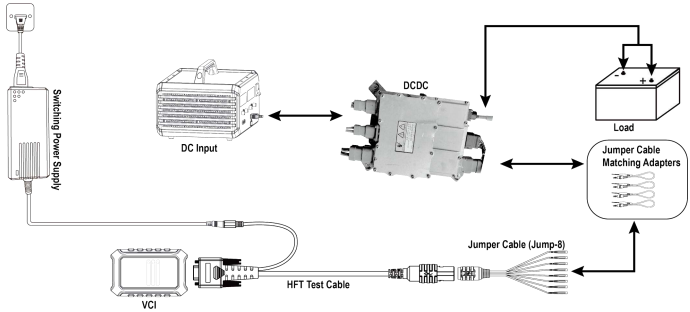
Click **Exit** to exit the current test.

9. DCDC

This function is used to perform offline testing after vehicle DCDC replacement and repair.

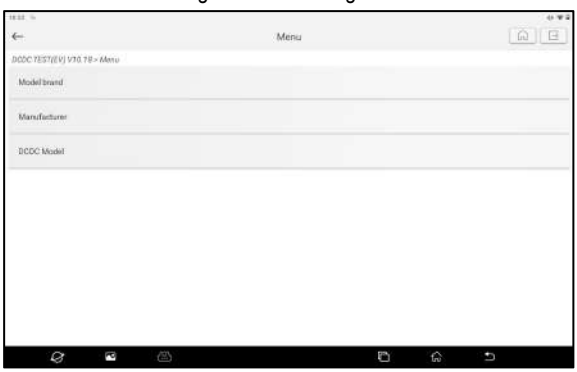
9.1 Test Preparation

1) After removing the vehicle DCDC, use jumper cable to connect the DCDC to the VCI.
2) Connect the DCDC to the appropriate DC voltage based on its rated voltage.
3) Connect the load to the output of the DCDC converter.
4) Use the provided 12V power adapter to connect the VCI to the power supply.



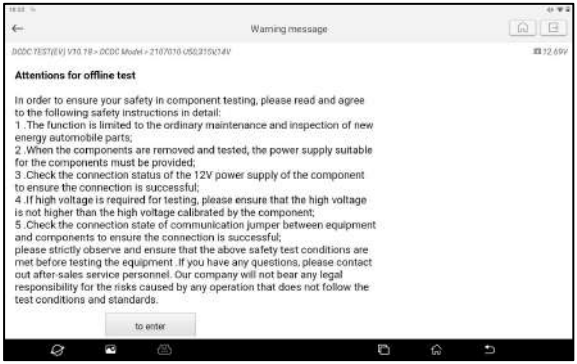
9.2 Start Testing

Click **DCDC** on the host interface to go to the following screen:



Select the appropriate DCDC based on the vehicle brand and DCDC model. Once the DCDC

is selected, go to the prompt page below; read the relevant test precautions, ensure that the necessary safety testing conditions are met, and then click **to Enter** to go to the DCDC testing screen.



After verifying that the parameters are correct, click **Start** to start the DCDC test.

Click **Stop** to stop the DCDC test.

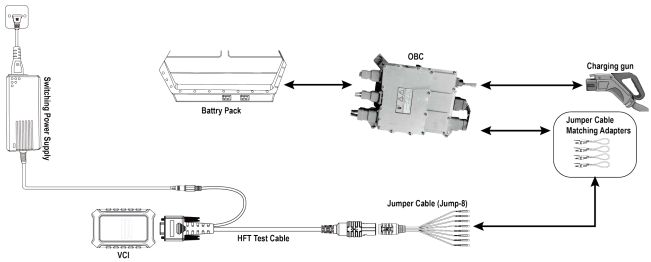
Click **Exit** to exit the current test.

10. OBC

This function is used to perform offline testing after vehicle OBC replacement and repair.

10.1 Test Preparation

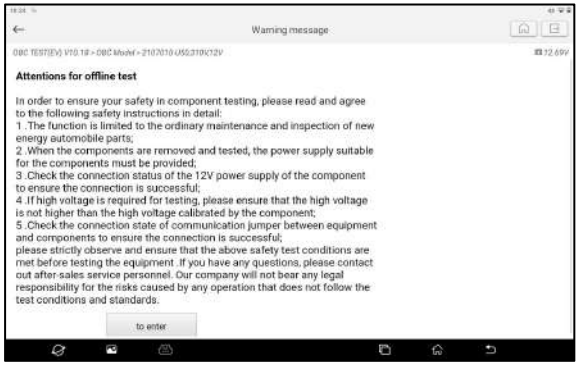
1) After removing the vehicle OBC, use jumper cable to connect the OBC to the VCI.
2) Connect the output terminals of the OBC to the positive and negative terminals of the vehicle battery pack.
3) Connect the CC and CP connectors of the charger to the corresponding pins of the OBC low-voltage interface; connect the L, PE, and N connectors of the charger to the corresponding pins of the OBC high-voltage interface.
4) Use the provided 12V power adapter to connect the VCI to the power supply.



10.2 Start Testing

Click **OBC** on the host interface to go to the following screen:

Select the appropriate OBC based on the vehicle brand, manufacturer and OBC. Once the OBC is selected, go to the prompt page below; read the relevant test precautions, ensure that the necessary safety testing conditions are met, and then click **to Enter** to go to the OBC testing screen.



After verifying that the parameters are correct, click **Start** to start the OBC test.

Click **Stop** to stop the OBC test.

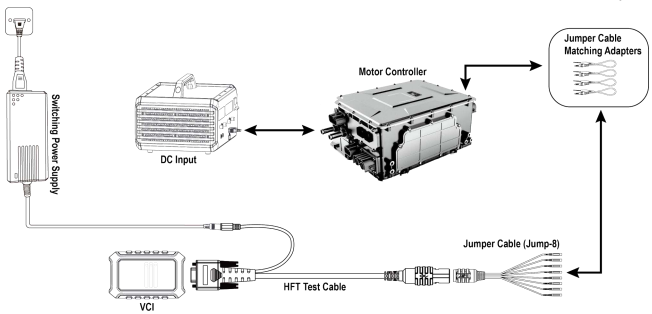
Click **Exit** to exit the current test.

11. Motor Controller

This function is used to perform offline testing after vehicle motor controller replacement and repair.

11.1 Test Preparation

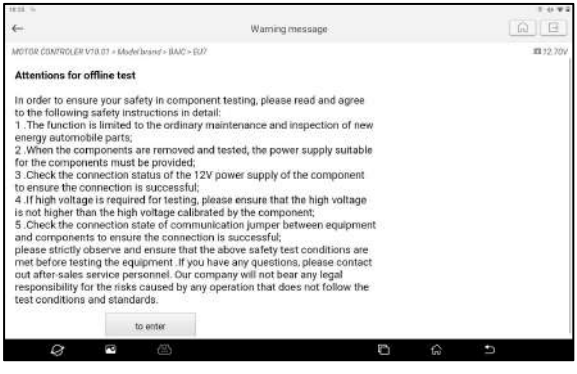
1) After removing the vehicle motor controller, use jumper cable to connect the motor controller to the VCI.
2) Connect the output terminals of the motor controller to the positive and negative terminals of the vehicle battery pack.
3) Connect the CC and CP connectors of the charger to the corresponding pins of the motor controller low-voltage interface; connect the L, PE, and N connectors of the charger to the corresponding pins of the motor controller high-voltage interface.
4) Use the provided 12V power adapter to connect the VCI to the power supply.



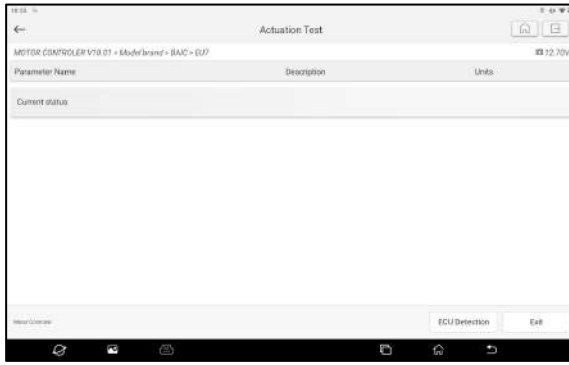
11.2 Start Testing

Click **Motor Controller** on the host interface to go to the following screen:

Select the appropriate motor controller based on the vehicle brand, manufacturer and motor controller. Once the motor controller is selected, go to the prompt page below; read the relevant test precautions, ensure that the necessary safety testing conditions are met, and then click **Enter** to go to the motor controller testing screen.



Click **Exit** to exit the current test.



12. Personal Center

12.1 VCI

This option allows you to manage all your activated VCI devices

12.2 Activate VCI

This item lets you activate the VCI connector in case you ignore the Activate VCI step in process of the product sign-up.

Enter the product serial number and activation code and Tap **Activate**.

12.3 Firmware Fix

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

12.4 Data Sample

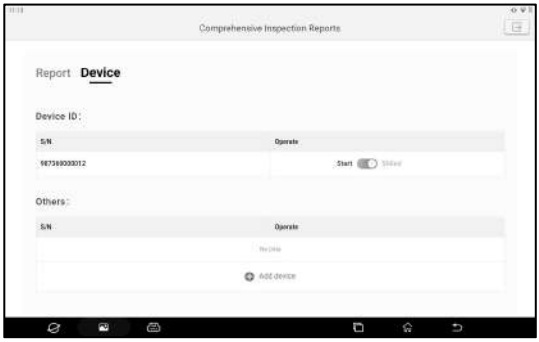
Used to manage the recorded data stream sample files.

12.5 Comprehensive Inspection Reports

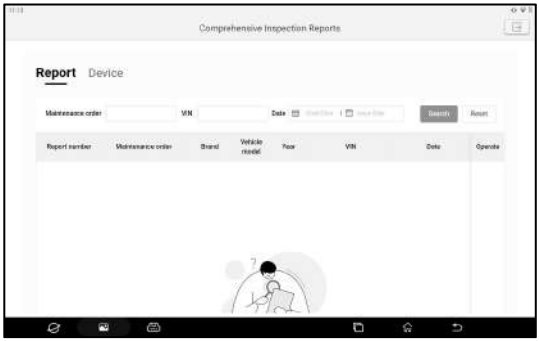
Used for the multi-device collaborative cloud reporting system to automatically generate the single test reports with the same maintenance order number into a comprehensive report.

Tap **Comprehensive Inspection Reports** -> **Device** -> **Add Device** in the personal center, enter the device ID in the pop-up dialog box, and then tap **Save** to add the device.

Note: The test report of a device can be collected to generate a comprehensive report only after adding the device.



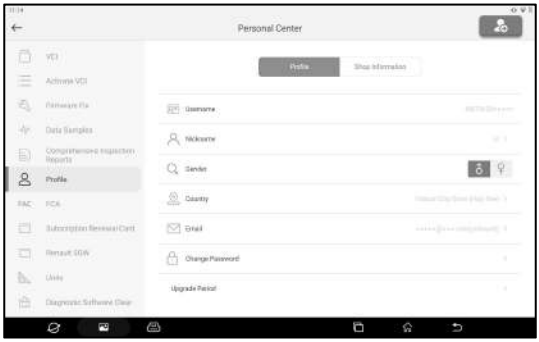
Tap **Report** to view and share the generated comprehensive inspection report.



Note: To generate the test reports of different devices into a comprehensive inspection report, please enter the same maintenance number when saving the test reports of different devices.

12.6 Profile

Use this item to view and configure personal information.



12.7 Subscription Renewal Card

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

12.8 Units

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

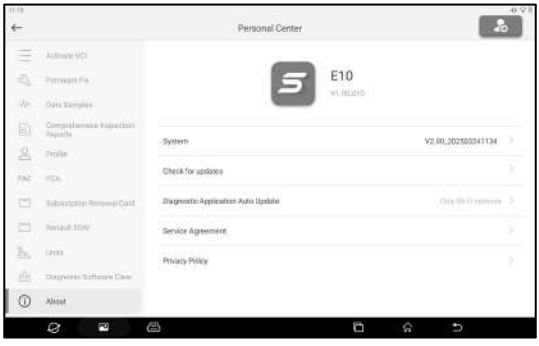
12.9 Diagnostic Software Clear

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

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

12.10 About

The software version information and disclaimer are included.



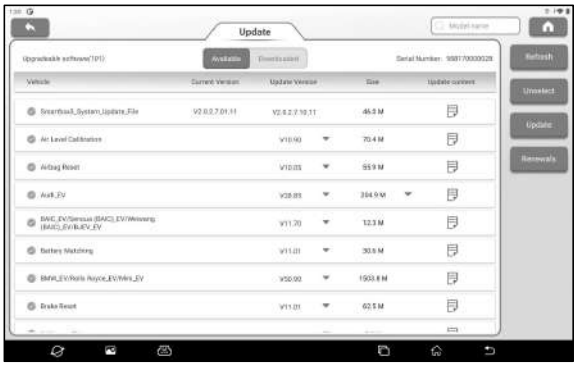
12.11 Login/Logout

Tap the top icon  to log in or log out.

13. Update

When a new model is added or a new version of software is available, the system will prompt the user to update. It is recommended that the user update to the latest version in time.

On the main interface, tap **Update** to enter the following page:



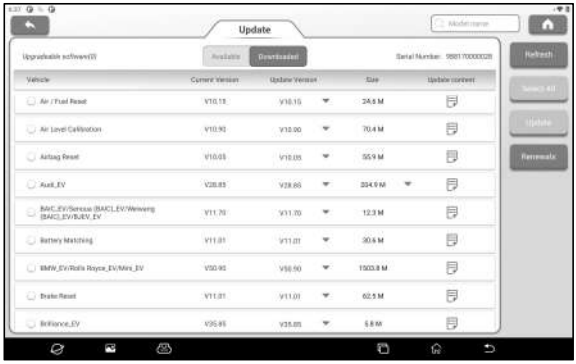
13.1 Update

Under the **Available** tab, tap **Select All** to select all upgradable software or check the software that needs to be upgraded, and tap **Update** to start downloading the software installation package. After the download is complete, the system will automatically install the software.

Note: During the update, ensure that the network connection is normal and stable. If you need to update a lot of software, it may take a long time (depending on the network speed)，please wait in patience.

To cancel the selection of the software, click the check box in front of the software.

Tap the **Downloaded** tab, and the list shows the currently downloaded software. You can view the software version, installation package size, and software update content on this interface.



13.2 Renew Subscription

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

Tap **Renewals** on the bottom of the screen to enter the payment screen.

1) Tap **Subscription Renewal Card** (*need to buy it from the local dealer where you purchased the tool).
2) Input the 24-digit pin code of Subscription Renewal Card and then tap **Submit** to finish the renewal.

3) Go to update center to update the diagnostic software.

14. Reports

This option is used to view and manage saved vehicle test reports and test records. On the home screen, tap **Reports** to enter the following page:

If the test report is saved during the battery diagnose, the report will be displayed on the **Battery Diagnose** tab.

If the test report is saved during the ADAS calibration process, it will be displayed under the label **ADAS Reports**;

If the diagnosis report is saved during remote diagnosis, the report will be displayed under the **Remote Reports** tab.

If the diagnostic report and fault code report are saved during the vehicle diagnosis, the report will be displayed under the **Diagnostic** tab.

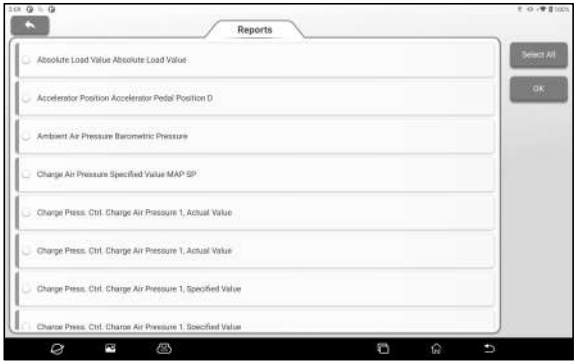
Click a single report in the report list to view the report details, print and share the report.

• Tap **Edit** to delete the selected test report, rename the report and share the report.

• Tap **Filter** to select the report type and enter the vehicle VIN number, car series, model or customer name to filter the required from the report list.

If the detected data is recorded on the read data stream screen, the detected data is displayed in the **Recorded Data** tab.

Tap the test record to be played back to enter the following screen:



Select the data stream option, and then tap **OK** to enter the playback page:

Screen button description:

Graph	Play back the selected data stream options graphically.
Combine	Play back the selected data stream options in a combined form.
Value	Playback the selected data stream options numerically.
Frame Playback	Play back the recorded data stream frame by frame.
Automatic Playback	Automatic playback of the recorded data stream.

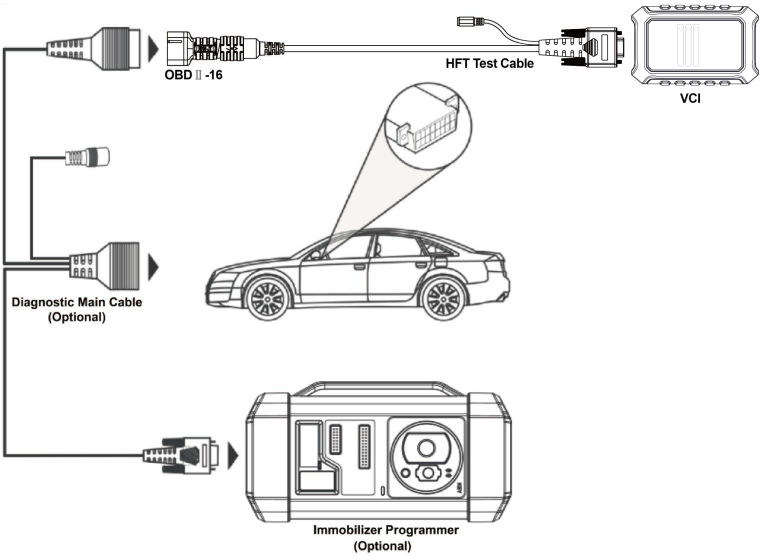
15. IMMO Matching

This function enables you to perform the anti-theft key matching function, so that the immobilizer control system on the car identifies and authorizes remote control keys to normally use the car.

15.1 Anti-theft Matching

15.1.1 Vehicle Connection

1) For most vehicles, just use the switch cable to connect the VCI to the vehicle's DLC port.
2) For other vehicles (including but not limited to the Mercedes Benz, VW, BMW and Porsche), the immobilizer programmer and diagnostic main cable (optional) are required.

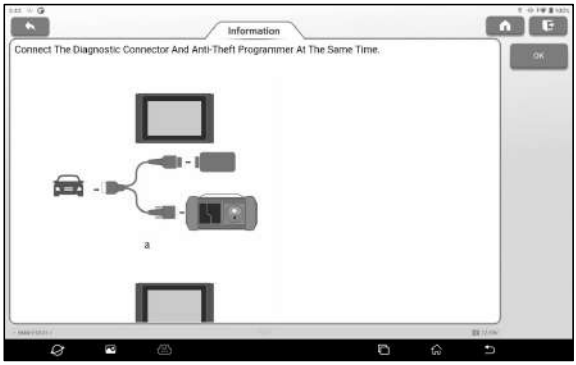


15.1.2 Operations

Here we take the BMW for example to demonstrate how to perform the functions of key adding and all lost for BMW CAS4/CAS4 + anti-theft system module.

1) Tap IMMO Matching and select BMW as the vehicle brand.
2) Check that the VCI, vehicle and immobilizer programmer are correctly connected

according to the prompts in the software picture, and then tap **OK**.



3) Tap **Anti-Theft Key Matching**.

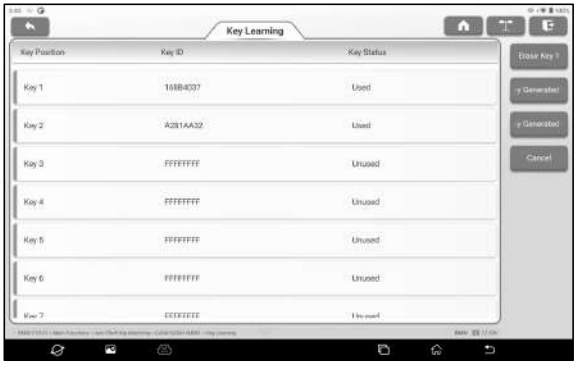
4) Tap **CAS4/CAS4+ IMMO**. If you are not sure about the type of anti-theft system, tap **Automatic Detection**.

5) Tap **Preprocessing** to perform Read anti-theft data, Key matching and more. If it has already been preprocessed, here you can perform the relevant functions. The ECU will be upgraded in this process, and files need to be downloaded online.

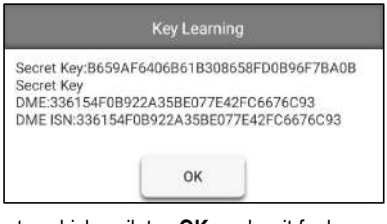
6) After preprocessing, tap **OK**.

7) Return to the function menu and tap **Key Learning**.

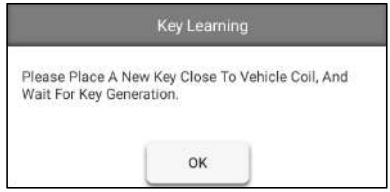
8) After the key information successfully read, select the unused key position and tap **Key Generated By Ignition Switch**.



9) Read and display the password, and tap **OK**.



10) Place a new key close to vehicle coil, tap **OK**, and wait for key generation.



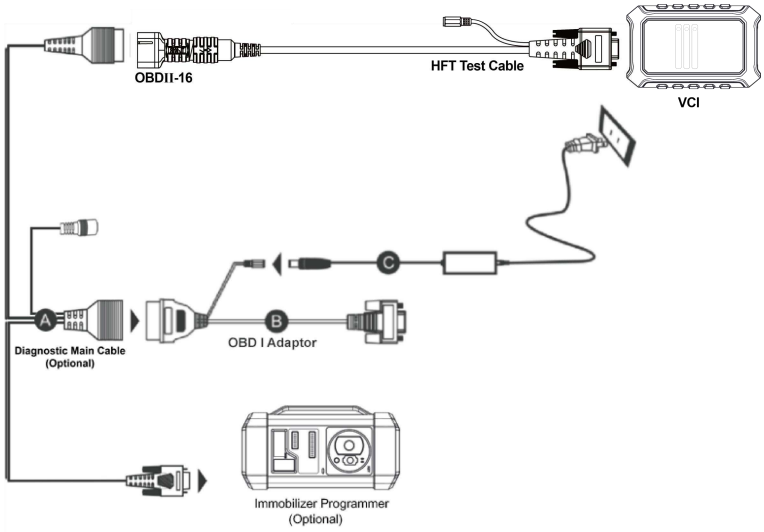
11) After the dealer key is successfully generated, please try to start the vehicle. Now the key matching is finished and the new key is ready for use.

15.2 IMMO PROG

The immobilizer programmer is required when performing this operation. It has the following functions:

- Read transponder data (including Mercedes Benz infrared smart key), and generate exclusive keys.
- Read/write on-board EEPROM chip data, and read/write MCU/ECU chip data.
- Read/write remote control transponder data and detect key frequency.

1) Before performing this function, please make sure the following connections are properly made.



A. Diagnostic main cable

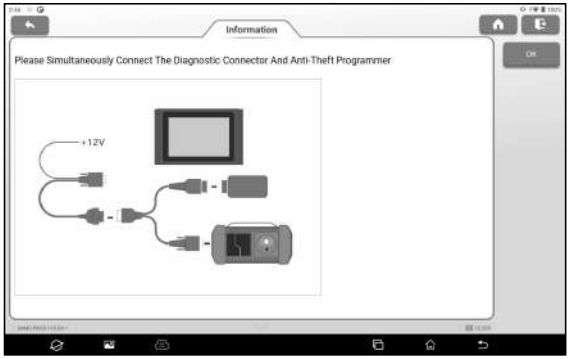
B. OBD I adaptor

C. Switching power supply of the immobilizer programmer

Notes:

- *You are suggested to connect the BOX shown in above diagram to the tablet via the USB cable. Using a USB cable could effectively enhance your data transmission speed.*
- *IMMO Programming does not require a connection to the vehicle. To ensure that the immobilizer programmer works properly, ONLY use the switching power supply and OBD I adaptor to supply power to the immobilizer programmer. Obtaining power through a connection to the DC power jack of the immobilizer programmer via the switching power supply alone is failed.*

2) Tap **IMMO PROG**. Check that the VCI, vehicle and immobilizer programmer are correctly connected according to the prompts in the software picture, and then tap **OK**.



3) Select the desired item to proceed.

15.2.1 EEPROM Programming

This function allows you to read/write on-board EEPROM chip data.

15.2.2 Engine Programming

This function allows you to read the engine data and write in the backup data after a new engine is replaced.

Below procedures show you how to perform engine programming.

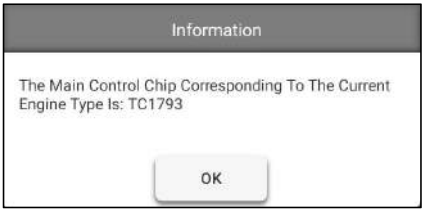
1) Tap **Engine**.
2) Select Engine Brand (e.g. Bosch).

3) Select Engine series (e.g. MED17).

4) Tap **Search For ECU Model**.

5) Check ECU model (printed on the sticker on the back of your Engine), enter the engine type in the dialogue box (for example , the engine type should be MED17.7.7) and tap **OK**.

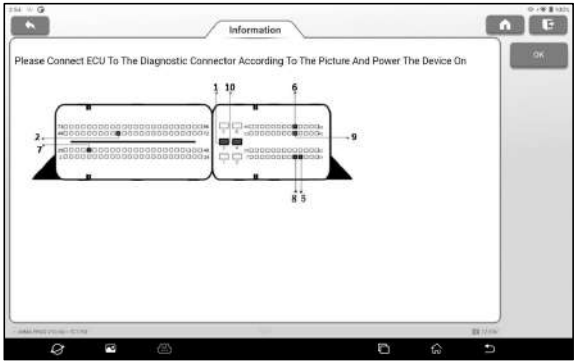
6) Tap **OK** to confirm the engine type and enter the function selection screen.

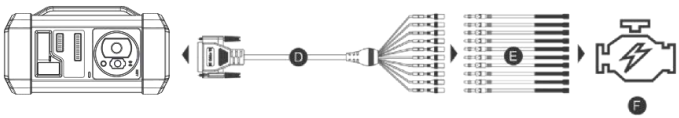


Note: The function selection screen varies by different vehicle manufacturers.

a. Tap **View Wiring Diagram** to check how to connect the engine with the immobilizer programmer.

Note: Vehicle engine connection could vary depending on engine types, for information how to connect the car engine, refer to the onscreen connection diagram.





D. BENCH mode cable (optional)
E. Adaptor cable (optional) associated with the BENCH mode cable
F. Engine

b. Tap **Backup EEPROM data** to create a file name and save it on the tablet.

c. Tap **Restore EEPROM data** to write the backup EEPROM data into the new engine.

Stop: The EEPROM restoration applies only when you have encountered irrevocable faults or after a new engine is replaced.

d. Tap **Backup FLASH data** to save the FLASH data on the tablet to avoid accidents.

e. Tap **Read chip ID** to read the chip information.

15.2.3 Gearbox Programming

This function allows you to restore the old gearbox data or write in new data after a new gearbox is replaced.

Below procedures show you how to perform gearbox programming for AUDI.

There are two kinds of gearbox ECU replacements, and the user can choose the corresponding solution according to the actual situation.

Situation 1 - The data of the original vehicle gearbox ECU is readable. Data is not damaged, and the gearbox can be cloned. In this case, we just need to back up the original gearbox EEPROM and FLASH, and then restore them into the gearbox ECU for replacement.

Situation 2 - The data of the original vehicle gearbox ECU is unreadable or the data is damaged. In this case, we need to back up the EEPROM of the ECU for replacement, and then manually input the original CS code or get the original CS code from the original key.

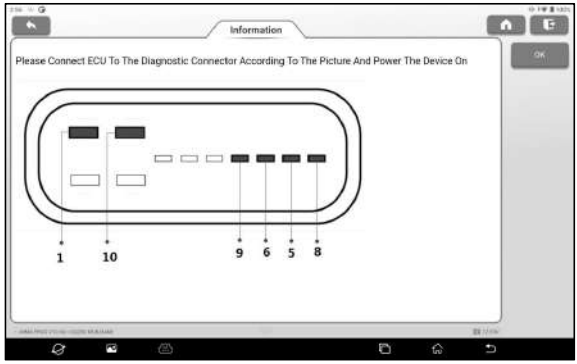
Situation 1:

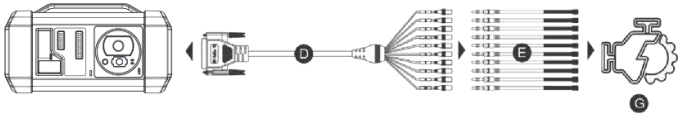
1) Tap **Gearbox**.
2) Select Gearbox type according to the specific model, here we choose **DQ200-MQB** (take this as an example) to enter the function selection screen.

Note: The function selection screen varies by different vehicle manufacturers.

3) Tap **View Writing Diagram** to check how to view the original car gearbox ECU with immobilizer programmer using the BENCH mode cable and its associated adaptor cable.

Note: Vehicle gearbox connection could vary depending on gearbox types, for information how to connect the car gearbox, refer to the onscreen connection diagram.





D. BENCH mode cable (optional)

E. Adaptor cable (optional) for the BENCH mode cable

G. Gearbox ECU

4) Tap **Connect** to read the chip ID of the original car gearbox.
5) Tap **Backup EEPROM Data** to read the EEPROM data of the original car gearbox and then enter the new file name to save it on the tablet.
6) Tap **Backup FLASH Data** to back up the FLASH data of the original vehicle gearbox and then enter the new file name to save it on the tablet.
7) Tap **Disconnect** to disconnect the original vehicle gearbox, and then disconnect the original vehicle gearbox from the BENCH mode cable.
8) Connect the new gearbox ECU to the immobilizer programmer according to the steps 3 and 4.
9) Tap **Restore EEPROM Data**, select the EEPROM data backed up in step 5, and tap **OK** to write the EEPROM data of the original vehicle gearbox in the new gearbox ECU.
10) Tap **Restore FLASH Data** to write the FLASH data of the original vehicle gearbox backed up in step 6 into the new gearbox ECU.

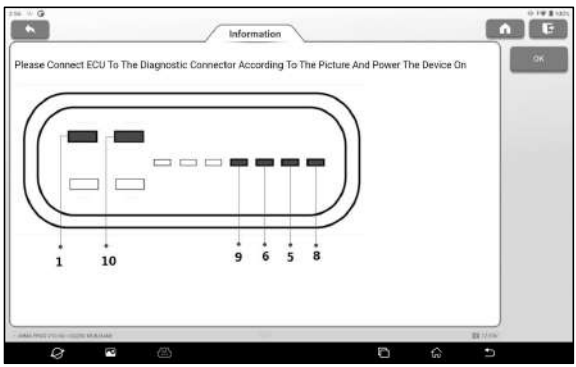
Situation 2:

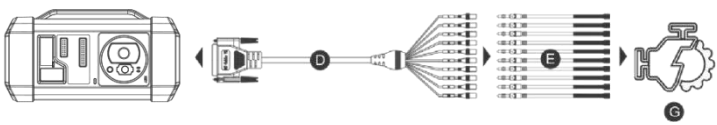
1) Tap **Gearbox**.
2) Select Gearbox type according to the specific model, here we choose **DQ200-MQB** (take this as an example) to enter the function selection screen.

Note: The function selection screen varies by different vehicle manufacturers.

3) Tap **View Writing Diagram** to view how to connect the original car gearbox ECU with immobilizer programmer using the BENCH mode cable and its associated adaptor cable.

Note: Vehicle gearbox connection could vary depending on gearbox types, for information how to connect the car gearbox, refer to the onscreen connection diagram.





D. BENCH mode cable (optional)

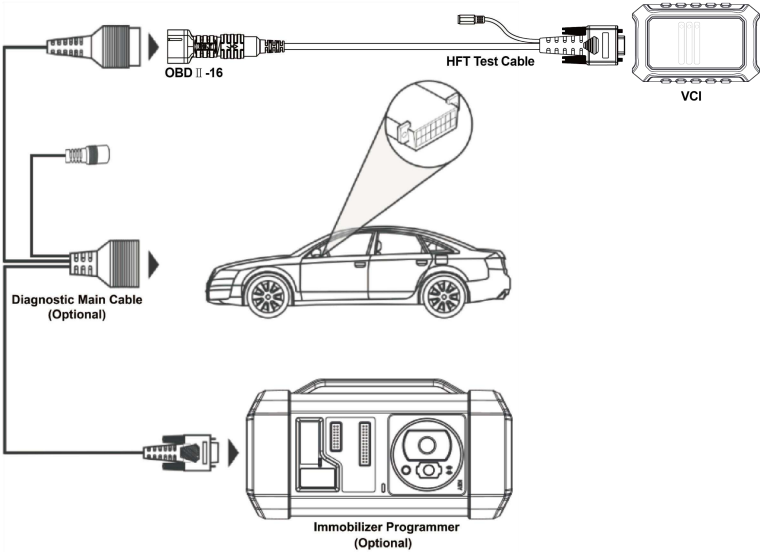
E. Adaptor cable (optional) for the BENCH mode cable

G. Gearbox ECU

4) Tap **Connect** to read the chip ID of the original car gearbox.

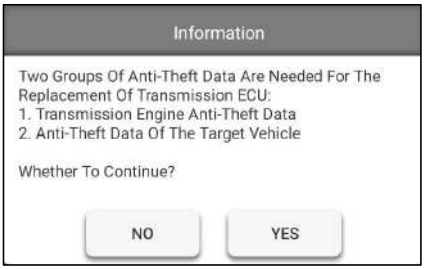
5) Tap **Backup EEPROM Data** to read the EEPROM data of the original car gearbox and then enter the new file name to save it on the tablet.

6) Exit **IMMO PROG**. Install the new gearbox on the vehicle and connect the immobilizer programmer to the vehicle's DLC port.



7) Tap **Special Function** on the main interface and then choose **VW** to enter the anti-theft system, select **MQB Instrument -> Replacement Of Parts -> Transmission**, tap **OK**.

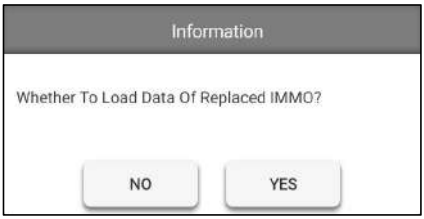
8) Tap **YES** to enter the gearbox replacement screen.



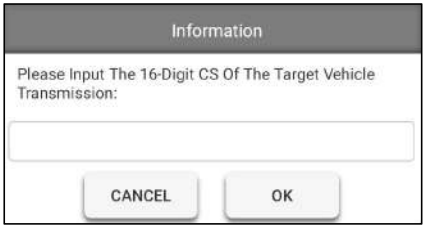
9) When replacing the transmission ECU, two groups of anti-theft data are required:

- Anti-theft data of transmission engine (backed up in step 5)
- Anti-theft data of the target vehicle

9-1) Select **Edit1**, tap **NO**, tap **Obtain From EEPROM Data**, select the new gearbox EEPROM data backed up in step 5, and tap **OK**.



9-2) Tap **Edit2**, if you have obtained the relevant data of the original vehicle gearbox from other equipment, select **Manual Input Data** and enter the 16-byte CS code of the original vehicle gearbox.



*Note: If there is no anti-theft data of the target vehicle, select **Original Vehicle Key Obtained**, put the original vehicle key in the immobilizer programmer, and just follow the prompts to obtain it, no need to enter any data to complete the replacement.*

10) Tap **Start Replacement**, and input the original car's VIN code, power level and CS code of the original car instrument according to the information prompts to complete the gearbox replacement.

*Note: If **Original Vehicle Key Obtained** is selected in step 9, the vehicle's VIN code, power level and CS code in this step will be automatically obtained. The user is not required to enter any data to complete the replacement.*

15.2.4 Key Programming

This function allows you to backup old key data, write in data for new keys and detect remote control frequency.

15.2.5 SCM(Single Chip Microcomputer) Programming

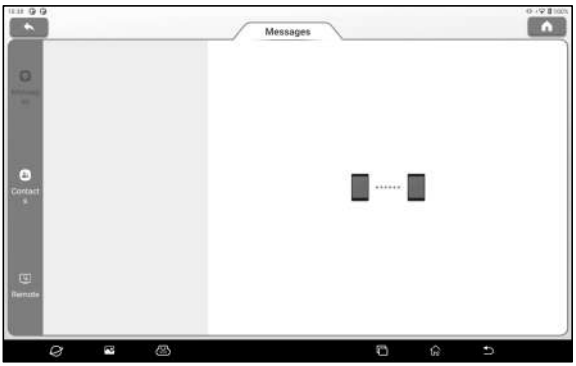
This function allows you to read chip (also called MCU) ID, lock/unlock chip, backup/restore EEPROM data and FLASH data.

Notes:

- *The data flow is large when performing reading/writing operations. To improve the communication stability, you are recommended to use a USB cable.*
- *MCU connection could vary depending on MCU types, for information how to connect the MCU, refer to the onscreen wiring diagram.*

16. Remote Diagnose

The module is used to remotely assist users in diagnosis operations. Tap **Remote Diagnose** to enter the following page:

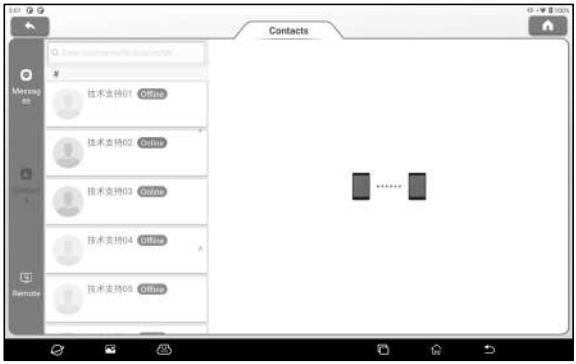


16.1 Messages

Tap **Messages** to enter the messages page, here you can see all the messages received.

16.2 Contacts

Tap **Contact** to enter the following page. Here you can see the contact list including maintenance technicians and added friends.

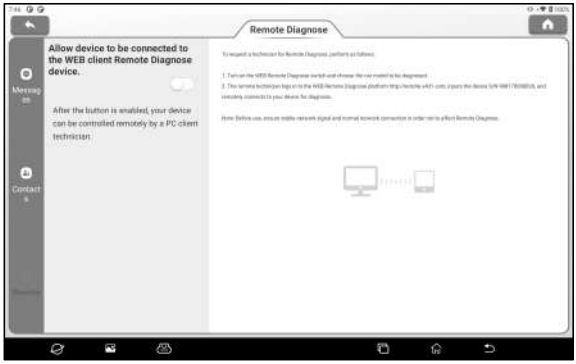


Enter “Username/Nickname/Serial Number" in the search bar to search and add a friend. The added friends will appear in the contacts list.

Select the maintenance technician in the list to enter the interactive page. In the interactive page, you can communicate with text and voice messages, send files and pictures, invite remote diagnose assistance, etc.

16.3 Remote

Tap Remote to enter the following page.



To request a technician for Remote Diagnose, please follow the below steps.

1) Turn on the WEB Remote Diagnose switch and choose the car model to be diagnosed.
2) The remote technician logs in to the WEB Remote Diagnose platform http://remote.x431.com, inputs the device S/N, and remotely connects to your device for diagnosis.

   Note: Before use, ensure stable network connection in order not to affect Remote Diagnose.

17. Service Functions

This module provides the quick entry for commonly used special function operation, including A/F Reset, Brake Reset, maintenance lamp returns to zero, steering angle learning, battery replacement, ABS exhaust, throttle learning, tire pressure reset, DPF regeneration, wave case learning, gear learning, headlamp matching, electronic water pump start, engine power balance, anti-theft matching, high pressure accumulator health detection, GPF regeneration and release of transport mode etc. If you need to operate more special functions, you can enter the diagnostic model software to operate.

Note: The specific special functions provided depend on the vehicle type.

17.1 A/F Reset

This function is applied to set or learn Air/Fuel ratio parameters.

17.2 Electronic Parking Brake Reset

This function enables you to reset the brake pad after replacing the brake pad.

It needs to be performed in the following cases:

1) The brake pad and brake pad wear sensor are replaced.
2) The brake pad indicator lamp is on.
3) The brake pad sensor circuit is short, which is recovered.
4) The servo motor is replaced.

17.3 Oil Reset Service

If the service lamp is on, run car diagnostics first for troubleshooting. After that, reset the driving mileage or driving time, so as to turn off the service lamp and enable a new driving cycle.

17.4 Steering Angle Calibration

This function enables you to reset the steering angle, 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.

17.5 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.

It needs to be performed in the following cases:

1) The main battery is replaced.
2) The battery monitoring sensor is replaced.

17.6 ABS Bleeding

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

It needs to be performed in the following cases:

1) When the ABS contains air.
2) When the ABS computer, ABS pump, brake master cylinder, brake cylinder, brake line, or

brake fluid is replaced.

17.7 Throttle Learning

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.

Cases when throttle learning is required:

1) After the replacement of the ECU, the ECU does not store the characteristics related to the working of the throttle, so the throttle matching is required.
2) After the power-off of the ECU, the memory of the ECU memory is lost, and throttle matching is required.
3) After replacing the throttle assembly, the throttle matching is required.
4) After the replacement or disassembly of the inlet, the coordination of the ECU and throttle body on the idle speed control will be affected, and the throttle matching is required.
5) After cleaning the throttle, the characteristics of the idle throttle potentiometer have not changed, but under the same throttle opening, the air intake has changed, and the idle control characteristics have changed. At this time, it is necessary to match the throttle.

17.8 Tire Pressure Monitor System Reset

This function enables you to quickly look up the tire sensor IDs from the vehicle's ECU, reset tire pressure and turn off the tire pressure MIL.

It needs to be 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.

17.9 Diesel Particulate Filter (DPF) Regeneration

This function enables you 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.

It needs to be performed in the following cases:

1) The exhaust back pressure sensor is replaced.
2) The PM trap is removed or replaced.
3) The fuel additive nozzle is removed or replaced.

4) The catalytic oxidizer is removed or replaced.
5) The DPF regeneration MIL is on and maintenance is performed.
6) The DPF regeneration control module is replaced.

17.10 Gearbox Matching

This function enables you to complete the gearbox self-learning to improve gear shifting quality.

It needs to be performed in the following cases:

When the gearbox is disassembled or repaired.

17.11 Gear Learning

This function enables you to perform tooth learning for the car, to turn off the MIL.

It needs to be performed in the following cases:

1) After the engine ECU, crankshaft position sensor, or crankshaft flywheel is replaced.
2) The DTC 'tooth not learned' is present.

17.12 Motor Angle Calibration

When the rotor position detected by the motor angle position sensor is different from the actual rotor field position, motor angle calibration must be performed.

17.13 Coolant Bleed

Use this function to activate the electronic water pump before venting the cooling system.

17.14 Engine Power Balance Monitoring

It is used to monitor crankshaft acceleration in the power stroke of each cylinder, to determine the relative power provided by each cylinder.

17.15 IMMO Prog

This function supports the reading and writing of car key chip, EEPROM chip, MCU chip, EEPROM and flash of engine ECU and transmission ECU.

17.16 IMMO Service

This function enables you to perform the anti-theft key matching function, so that the immobilizer control system on the car identifies and authorizes remote control keys to normally use the car.

It needs to be performed in the following cases:

When the ignition switch key, ignition switch, combined instrument panel, ECU, BCM, or remote control battery are replaced.

17.17 High Voltage Battery Diagnosis

It is used for high voltage battery diagnosis and status information detection.

17.18 Gas Particulate Filter Regeneration

After the GPF is used for a long time, fuel consumption is increased and engine output power is reduced. In this case, the GPF replacement or regeneration must be performed.

17.19 Transport Mode

In order to reduce power consumption, the following functions may be disabled, including limiting the vehicle speed, not waking up the door opening network, and disabling the remote control key, etc. At this time, the transport mode needs to be deactivated to restore the vehicle to normal.

17.20 Tire Reset

This function is used to set the size parameters of the modified or replaced tire.

17.21 Windows Calibration

This feature is designed to perform door window matching to recover ECU initial memory, and recover the automatic ascending and descending function of power window.

17.22 AdBlue Reset

After the diesel exhaust treatment fluid (car urea) is replaced or filled up, urea reset operation is required.

17.23 NOx Sensor Reset

NOx sensor is a sensor used to detect the content of nitrogen oxides (NOx) in engine

exhaust. If the NOx fault is re-initialized and the NOx catalytic converter is replaced, it is necessary to reset the catalytic converter learned value stored in the engine ECU.

17.24 Injector Coding

This function enables you to 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.

It needs to be performed in the following cases:

After the ECU or injector is replaced.

17.25 Stop/Start Reset

This function is used to open or close the automatic start-stop function via setting the hidden function in ECU (provided that the vehicle has a hidden function and supported by hardware).

17.26 Sunroof Initialization

This function enables you to set the sunroof lock off, closed when it rains, sliding / tilting sunroof memory function, temperature threshold outside the car etc.

17.27 Suspension Calibration

This function enables you to adjust the height of the body.

It needs to be performed in the following cases:

1) When replacing the body height sensor, or control module in the air suspension system.

2) When the vehicle height is incorrect.

17.28 Language Change

This function is used to change the system language of the vehicle central control panel.

17.29 Intelligent Cruise Control System Diagnosis

It is used for matching after the intelligent cruise control module is replaced or repaired.

17.30 AC System Relearn/Initialization

AC system relearn/ initialization must be performed when the vehicle AC ECU or actuator is

replaced or the ECU memory is lost.

17.31 Seats Calibration

This function is applied to match the seats with memory function that are replaced and repaired.

17.32 AFS (Adaptive Front-lighting System) Reset

This function can be used to initialize the adaptive headlamp system. The adaptive headlamp system can decide whether to turn on the headlamp automatically according to the environmental light intensity, and monitor the vehicle's speed and body posture, and adjust the lighting angle of the headlamp timely.

17.33 Compressor Test

This function is used for testing after replacement and maintenance of vehicle compressor.

17.34 Coolant Change

The performance of the coolant deteriorates during normal use and the coolant needs to be changed within a certain period. This function is used to guide and explain the coolant change process.

17.35 EGR Learning

This function is used for learning after EGR (Exhaust Gas Recirculation) valve cleaning or replacement.

18. Toolbox

The toolbox mainly integrates some expansion modules related to the maintenance of vehicle parts, such as tyre tread depth measuring, oscilloscope, multimeter, current clamp and videoscope. Each module basically consists of two parts: hardware and software. The APPs of these modules are integrated on the ST10, and these APPs need to work with the corresponding compatible hardware (optional).

18.1 Tyre Tread Depth Measuring

This function module needs to work with tyre tread depth measuring equipment (optional) to detect the tyre tread data and tyre wear status of four-wheel passenger vehicles, so as to provide reference for vehicle tyre replacement and vehicle maintenance. For specific operation, please refer to the product user manual attached with the equipment.

18.2 Oscilloscope

This functional module needs to work with a new energy oscilloscope multimeter (optional), which can enable automobile repair technicians to quickly judge the fault of automobile electronic equipment and circuits. For specific operation, please refer to the product user manual attached with the new energy oscilloscope multimeter.

18.3 Multimeter

This functional module needs to work with a new energy oscilloscope multimeter (optional), which can measure physical parameters such as voltage, resistance and frequency. For specific operation, please refer to the product user manual attached with the new energy oscilloscope multimeter.

18.4 Current Clamp

This functional module needs to work with a new energy current clamp (optional), which can perform AC/DC current test and DC voltage test. For specific operations, please refer to the product user manual attached with the new energy current clamp.

18.5 Videoscope

This functional module needs to work with videoscope equipment (optional), which can detect invisible or inaccessible parts in the engine, fuel tank and brake system. For specific operations, please refer to the product user manual attached with the videoscope device.

18.6 Insulation Test

This functional module needs to work with insulation resistance tester (optional), which can measure the insulation resistance of electrical equipment. For specific operations, please refer to the product user manual attached with the insulation resistance tester.

19. Other

19.1 Feedback

If an unsolvable problem or diagnostic software problem is encountered during diagnosis, the user can report the problem (the last 20 test records) back to us. After receiving your feedback, we will follow up and deal with it in time, so as to improve our product quality and user experience.

There are three available options:

Feedback	Displays a list of all models that have been tested.
History	Click to view the progress of all submitted diagnostic feedback.
Offline-list	Click to view the diagnostic feedback of upload failure due to network problems. Once the network is restored, the system will automatically upload the data to the server.

Under the **Feedback** tab, click the corresponding model or special function of the diagnosis record to enter.

Tap **Choose File** to open the target folder, select the diagnostic log that needs feedback, and then select the corresponding diagnostic feedback problem type. Enter the fault description and contact information of the feedback person in the text box. Then tap **Submit Result** to send it to us.

After receiving your fault feedback, we will follow up your feedback report in time. Please pay attention to the progress and results of diagnosis feedback in **History**.

19.2 Setting

This option is used to set the system and view device information.

19.2.1 Network & Internet

To set the wireless network connection, please perform the following steps:

Note: The power consumption of the device increases after the WLAN is enabled. You are advised to turn off the WLAN when it is not in use to save power.

1) On the home screen, tap **Other** -> **Setting -> Network and internet** -> **Wi-Fi**.
2) Tap or slide the WLAN switch on. The device automatically scans for available wireless networks.
3) Select the network you want to connect to:

- If you choose an open network, you can connect directly to that network.
- If you choose an encrypted network, you will need to enter an access password before you can connect.

4) If "Connected" is displayed, the connection is successful.

19.2.2 Bluetooth

Used to set up Bluetooth communication connection.

1) On the home screen, tap **Other** -> **Setting -> Connected Devices**.
2) Tap **Pair New Device**. The tablet automatically scans for available devices. Select the device you want to connect to. A dialog box will pop up on the tablet and the selected device. After confirming the correct pairing code, tap **PAIR** on both the tablet and the device to complete the Bluetooth connection.

19.2.3 Apps & Notifications

It is used to manage App permissions and view application notifications.

19.2.4 Battery

Used to view the App power usage and enable the power saving mode of the device.

19.2.5 Display

Used to set and adjust device display parameters.

19.2.5.1 Brightness

1) On the main interface, tap **Other** -> **Setting -> Display** -> **Brightness Level**.
2) Drag the slider to adjust the brightness.

In addition, users can also slide down the screen to bring up the system shortcut bar to adjust the screen brightness.

19.2.5.2 Adaptive brightness

Tap or slide the **Adaptive Brightness** switch to open to enable the device to automatically adjust and optimize the display brightness of the device according to the ambient light conditions.

19.2.5.3 Wallpaper

This option is used to set the wallpaper picture of the device.

19.2.5.4 Screen Timeout

This option is used to set the automatic screen-down time of the device.

1) On the main interface, tap **Other** -> **Setting -> Display** -> **Screen Timeout**.
2) Select a screen timeout period.

19.2.5.5 Screen Saver

This option enables the screen saver function and sets the screen saver background.

19.2.5.6 Font Size

This option is used to set the font size displayed on the device screen.

19.2.6 Sound

Used to set the device volume.

19.2.7 Storage

It is used to manage App storage space and clear App data and caches.

19.2.8 Privacy

It is used to manage device privacy rights. This includes the permission for an App to access device data, whether characters are displayed briefly when entering a password, and whether notifications are displayed when the screen is locked.

19.2.9 Location

Used to manage Apps' access to and use of device location information.

19.2.10 Security

Used for security management such as device lock screen encryption, blocking/allowing the installation of applications from unknown sources.

19.2.11 System

Used to set device system information, including setting of device language and input methods, gesture, date and time parameters, backup, reset and multi-user access etc.

19.2.12 USB management

Used to set the USB switch of the device.

1) After you select this option, set the USB switch status to ON. In this case, the USB Type-C port is only used for charging.
2) Deselect this option and set the USB switch status to OFF. In this case, the USB Type-A port on the device stops being used. The USB Type-C port can be used to charge the device and connect the computer to transfer files.
3) Connect the computer through the USB Type-C interface of the device, slide down the screen, “Charging this device through USB” will be displayed, click this option, the USB debugging window will pop up. Click the USB mode you want to use.

Note: Keep the USB switch ON when the device uses Wi-Fi for wireless diagnosis.

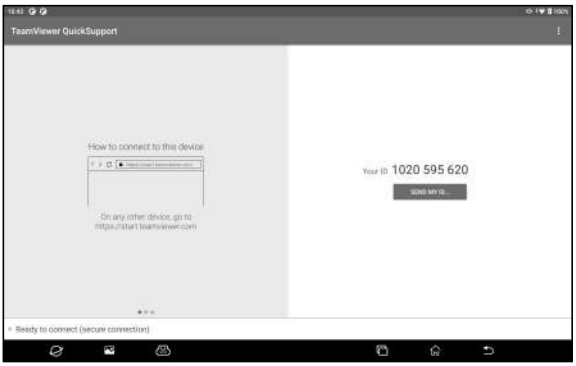
19.3 Files

This module is the file and program manager. Users can access and create folders directly on the device without connecting to a computer.

19.4 TeamViewer

In case of equipment operation problems, you can use this module to request assistance from the other party.

After you start Remote control (TeamViewer QuickSupport), QuickSupport will automatically assign your ID, and the screen displays as follows:



Send your ID to the other party. After the other party enters your ID in TeamViewer, tap **Connect to Partner** to remotely control your device.

19.5 Browser

This module can be used to browse the web.

19.6 System OTA Upgrade

This module is used to upgrade the system.

After entering, tap **Check Version**, the system starts to check whether the current version is the latest version. If the version is the latest, the system will prompt **Current version is the latest version**.

Note: When performing OTA upgrades, ensure that the device has at least 70% power and that no programs are running during the upgrade.

19.7 Album

This feature can be used to take photos, videos and manage galleries (including screenshots).

19.8 Recording Master

A simple-to-use, convenient and quick screen recording software. Support recording screen playback, GIF animation and sharing functions.

19.9 Video Player

This module is used to play music and video files.

19.10 E-mail

This module is used to receive and send e-mail.

19.11 Camera

The module is used to take photos and record videos.

20. Frequently Asked Questions

1) How to save electricity?

a. Close the screen when the device is not in use.
b. Shorten screen standby time.
c. Reduce the screen brightness.
d. Disable the WLAN connection if you do not need to use the WLAN.

2) Failed to communicate with vehicle ECU?

Please confirm:

a. Check whether the VCI connector is properly connected.
b. Whether the ignition switch of the vehicle is turned on.
c. If the above are confirmed to be normal, please send the vehicle type, year, model and VIN code to us through **Feedback** module.

3) Unable to enter vehicle ECU system?

Please confirm:

a. Whether the test vehicle is equipped with this system.
b. Check whether the VCI connector is properly connected.
c. Whether the ignition switch of the vehicle is turned on.
d. If the above are confirmed to be normal, please send the vehicle type, year, model and VIN code to us through **Feedback** module.

4) The detection connector is not energized when connected to the vehicle.

Please confirm:

a. If the VCI connector is improperly connected, reconnect the connector.
b. Poor line contact of vehicle diagnosis seat.
c. The vehicle battery itself has a serious power deficit.
d. The detection connector is damaged.

5) How to reset the E10 tablet?

Please reset the device according to the following procedures:

a. On the home screen, tap **Other** -> **Setting -> System** -> **Reset Options**.
b. Tap **Erase All Data (Factory Reset)**.
c. Tap **Erase All Data** and wait for the system to recover until the tablet automatically restarts.

⚠ *Warning: Resetting the device will result in the loss of device data. Before using it, please ensure that important data has been backed up.*

FCC Warning

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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Warranty

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

SMARTSAFE 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 SMARTSAFE shall not be liable for any consequential or incidental damages.

Final determination of defects shall be made by SMARTSAFE in accordance with procedures established by SMARTSAFE. No agent, employee, or representative of SMARTSAFE has any authority to bind SMARTSAFE to any affirmation, representation, or warranty concerning SMARTSAFE 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 SMARTSAFE authorized dealer. Your order should include the following information:

- Order quantity
- Part number
- Part name

Customer Service Center

For any problem met during the operation, please call +86-0755-89589810.

If the device needs to be repaired, please send it back to SmartSafe, and attach the Warranty Card, Product Qualification Certificate, Purchase Invoice and problem description. SmartSafe will maintain and repair the device for free when it is within warranty period. If it is out of warranty, SmartSafe will charge the repair cost and return freight.

SmartSafe address:

Building 1, Shanglilang Zhichuangyuan, Nanwan Street, Longgang District, Shenzhen, Guangdong, China

SmartSafe Website: http: //www.newsmartsafe.com

Statement:

SMARTSAFE 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 SMARTSAFE, SMARTSAFE does not bear any responsibility arising from misunderstandings.