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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.

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Caution

1) Always perform vehicle diagnose in a safe environment.
2) Never operate the inspecting device while driving the vehicle to avoid distraction and cause the traffic accident.
3) Before starting the engine, the handbrake should be pulled, especially the front wheels should be blocked, and the gearshift lever should be placed in neutral (manual transmission) or **P** gear (automatic transmission) to avoid starting the engine and making the vehicle to move and to injure someone.
4) Exhaust gases from the engine contain a variety of toxic compounds (e.g. hydrocarbons, carbon monoxide, nitrogen oxides, etc.), which can lead to slow response or even serious personal injury or death, and the vehicle under test should be parked in a well-ventilated area during operation.
5) Use extreme caution when operating around ignition coils, distributor caps, ignition circuits and ignition plugs. The voltage generated by these parts while the engine is running is dangerous, so operate them with proper insulation.
6) To avoid damaging the inspecting device or generating incorrect data, make sure that the vehicle battery is fully charged and that the vehicle diagnostic seat is clean and security.
7) Vehicle accumulator liquid contains vitriol, which is corrosive to the skin, so please avoid direct contact between the accumulator liquid and the skin, pay special attention not to splash into the eyes, and strictly prohibit fire from approaching.
8) Keep clothes, hair, hands, tools, testers, etc. away from running or hot engine parts.
9) Please use the charger that comes with the product for charging. The Company is not responsible for any damage or loss caused by charging with other chargers than those specified by the Company.
10) Keep the inspecting device dry and clean, and away from gasoline, water and greasy items. If necessary, clean the surface of the device with a clean cloth coated with a mild detergent.
11) The inspecting device must have all internal services performed by an authorized service facility or an authorized technician. Attempts to disassemble or modify the device will void the warranty.

Operation Specification For New Energy Vehicle Safety Maintenance

1) High-voltage parts identification: The orange wire harnesses of the whole vehicle are all high-voltage cables.
2) High-voltage parts: power battery pack, high-voltage distributor box, on-board charger, drive motor controller and DC-DC assembly, electric power assembly, integrated compressor, PTC heater, service switch.
3) When servicing the high voltage system, the vehicle power supply must be OFF (and the vehicle in a non-charging state) and the service switch must be unplugged; after the emergency service switch is unplugged, it should be kept by a full-time custodian who ensures that it is not plugged in by anyone during the servicing process.

NOTE: When it is necessary to service or replace the high voltage distributor box, the positive and negative high voltage connector clip connecting the battery packs should be carefully unplugged and the exposed wire ends should be wrapped with insulating tape to avoid electric shock.

4) After disconnecting the emergency service switch for 5 minutes, a multimeter should be used to measure the high-tension loop to ensure that there is no electricity before servicing the high voltage system.

4-1) Measure the voltage between the positive terminal of the battery pack and the body to initially determine if there is an electric leakage. If the inspected voltage is more than or equal to 50V, which indicates that the battery pack is leaking, the operation should be stopped immediately;

4-2) When measure the high voltage with multimeter, pay attention to choose the correct measuring span, the accuracy of the multimeter for inspecting is not less than 0.5 level, and it is required to have DC voltage measuring gear, the range is not less than or equal to 600V, and comply with the principle of "one-handed operation";

4-3) A test pen line of the multimeter used is equipped with insulated alligator clips (required to withstand voltage of 3KV, overcurrent capacity of more than 5A), clip to a terminal of the circuit with a clip during the measurement, and then use another test pen connected to the terminal to be measured to measure the readings. Only one hand can hold the test pen during each measurement; it is strictly prohibited to touch the metal part of the test pen during the measurement process.

5) The service switch is not assembled during low-voltage debugging, and the assembly of the service switch must be directed by a full-time custodian during high-voltage debugging.
6) High-voltage debugging must be debugged under the premise of good low-voltage debugging to facilitate the judgment of whether the battery has a leakage, if any leakage should be checked in a timely manner, not high-voltage debugging.
7) When disassembling the battery pack assembly, first of all, connect the high-voltage distributor box to the high-voltage wiring harness plugs with insulating tape, do not damage the wiring

harness during the disassembly process to avoid the risk of electric shock.

8) When repairing or replacing high-voltage wiring harnesses, oil pipes, and other parts that pass through the holes in the body sheet metal, take care to check whether the protection with the body sheet metal is normal to avoid wear and tear of the wiring harnesses and oil pipes.

The following agreement is used in the Manual.

Tips

Tips provide helpful information such as additional operating instructions, skills and advice. Example:

Tip: The VIN number is usually located on the driver's side, in the lower right corner of the front windscreen. The exact location varies from vehicle to vehicle. The VIN number consists of 17 standardized characters. The VIN characters can contain capital letters A to Z and numbers 0 to 9, but the letters I, O and Q are not normally used to avoid misreading.

Warning

Indicates an emergency dangerous situation which, if unavoidable, will result in death or serious injury to the operator or onlookers. Example:

Warning: Reading fault codes when troubleshooting a vehicle is only a small step in the overall diagnostic process. Vehicle fault codes are provided as a reference only and parts cannot be replaced directly based on the fault code definitions given. Each fault code has a test procedure, and the service technician must strictly follow the operating instructions and procedures described in the vehicle service manual to identify the root of the malfunction.

Danger

Indicates an emergency dangerous situation which, if unavoidable, will result in death or serious injury to the operator or onlookers. Example:

Danger: You must drive the vehicle when performing the vehicle troubleshooting, please get someone else to help you. Driving and operating the diagnostic device at the same time is dangerous and can cause serious traffic accidents.

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1. Packing List

The following list is for reference only. The configuration of the product varies for different markets, for details, please consult your local dealer or check the packing list that comes with the product.

Main Unit and Accessories			
No.	**Name**	**Quantity**	**Picture for Reference**
1	SLC	1	
2	Test Cable	1	
3	OBD Ⅱ-16	1	
4	CAT-6 network cable (15 meters)	1	
5	USB cable (Type-B)	1	
6	User Manual	1	-
7	Password Envelope	1	-
8	Packing list	1	-

Adaptor Cable Kit			
No.	**Name**	**Q'TY**	**Reference Picture**
1	OBD Ⅰ Transfer Cable	1	
2	BZ-38	1	
3	B-20	1	
4	G/V-12	1	
5	CR-6	1	

6	TA-17	1	
7	TA-22	1	
8	K-20	1	
9	HA-3	1	
10	NN-14+16	1	
11	FT-3	1	
12	M/H-12+16	1	
13	Cigarette Lighter	1	
14	Light Fuse	2	
15	Tesla-Airbag	1	
16	Diagnosis-5	1	
17	Diagnosis-4	1	
18	Ethernet Adapter	1	

Battery Connectors			
No.	Name	Q'TY	Reference Picture
1	BYD TANG DM TL-101R	1	
2	BYD HAN EV TL-102R	1	
3	Tesla Model 3 TL-124B	1	
4	BYD D1 TL-127R	1	

5	Tesla Model 3 26+26 TL-152B	1	
6	Tesla Model S & X TL-153B	1	
7	Tesla-Airbag	1	
8	Diagnosis-5	1	
9	Diagnosis-4	1	
10	Ethernet Adapter	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	

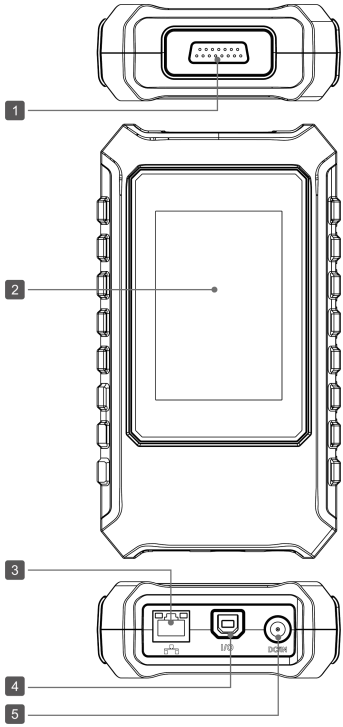
2. Product Introduction

2.1 Overview

SLC is powerful and can be used in the following application scenarios:

- When used as a VCI (Vehicle Communication Interface) device, it is used together with diagnostic device to diagnose vehicles.
- When used as a super remote diagnostic box on the service side, it can be used to request technician experts to assist in remote diagnosis by issuing a demand from the inspecting device.
- When used as a local/remote J2534 tool, it can be used in conjunction with a computer that has the factory diagnostic software installed to perform vehicle ECU.

2.2 Control & Components



No.	Name & Description
1	**DB15 Diagnostic Interface** • Used to connect to the supplied test principal line
2	**Touch screen** • Used to display operating status and make system settings
3	**LAN/WAN Interface** • Used to connect network cable to network the diagnostic box when used as a super remote diagnostic box on the service side
4	**USB Type-B** • Used to connect the inspecting host and VCI for wire communication
5	**DC-IN Power Port** • Used to connect the supplied power adapter for power supply

2.3 Technical Parameters

Item	Specification Parameter
Operating voltage	DC 9V-36V
Communication type	Bluetooth, Wi-Fi wireless communication, USB wire communication, LAN/WAN communication
Stable internal operation	-10℃-50℃
Dimension	192x107x42 mm

3. First Use

3.1 Connection and Communication

When SLC is used as a VCI connector, the main connection methods with the detection tablet are Wi-Fi communication, USB communication, and Bluetooth communication.

The main communication methods between the tablet and the VCI connector are Wi-Fi communication, USB wired communication and Bluetooth communication.

3.1.1 Wi-Fi Communication

To establish a connection between the tablet and VCI connector, users need to register and activate the VCI connector on the tablet. Once the activation is completed, the tablet and VCI connector will automatically match and establish a Wi-Fi connection.

3.1.2 USB Communication

When connecting the tablet and VCI connector via USB cable, the system will automatically switch to USB communication mode.

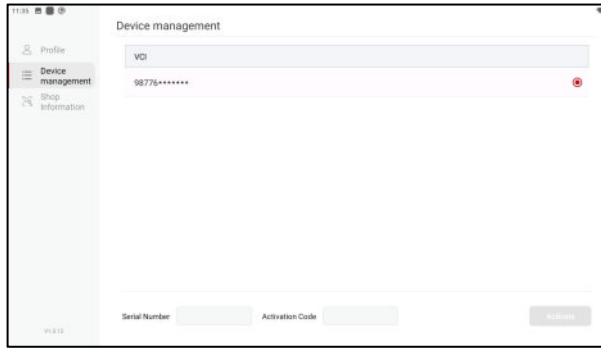
3.1.3 Bluetooth Communication

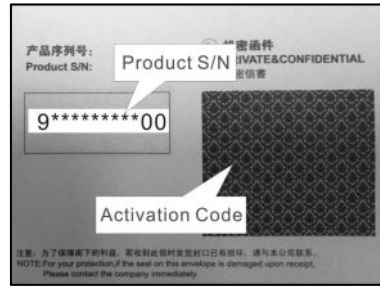
Click the **[Settings]** button in the upper left corner of the "**Diagnose**" interface, and then click the **Firmware Fix** menu option continuously until the "**VCI Management**" pops up in the Settings interface, and then select "**Use Bluetooth Communication Mode**" to open the Bluetooth communication. A pop-up window will be displayed to remind the user to connect the Bluetooth.

Notes: In order to make the data transmission more stable during the communication process, it is recommended to use Wi-Fi communication or USB wired communication.

3.2 Connector Activation

On the detection device (such as ST13), click **Personal Center -> Device Management**, enter the product serial number and activation code at the bottom of the screen and click **Activate** to activate and add a new inspecting connector. The serial number and activation code can be obtained from the password envelope in the package box.



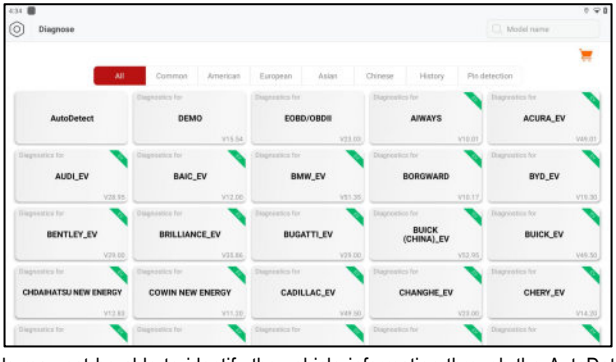


4. Vehicle Diagnose

SLC can be used with detection device for the diagnosis of vehicle electronic control systems. Users can use "**AutoDetect**" to quickly identify the vehicle information and enter the system for vehicle diagnose, or manually select the vehicle model and system for inspection.
Here we take the ST13 intelligent link terminal as an example to introduce the operation steps of vehicle diagnose.

4.1 AutoDetect

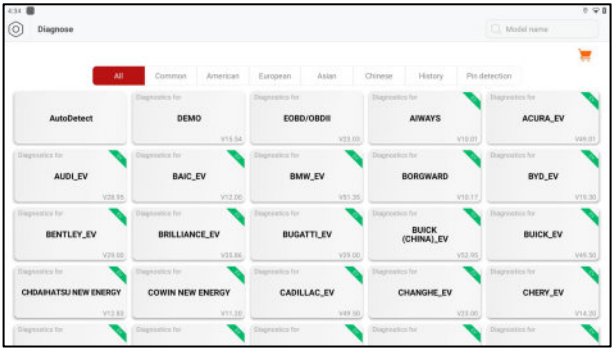
Using "**AutoDetect**" can quickly identify the vehicle information and vehicle diagnose, without the need to manually select the model.
Click **Diagnose -> Autodetect** in the main interface to open the vehicle AutoDetect function.



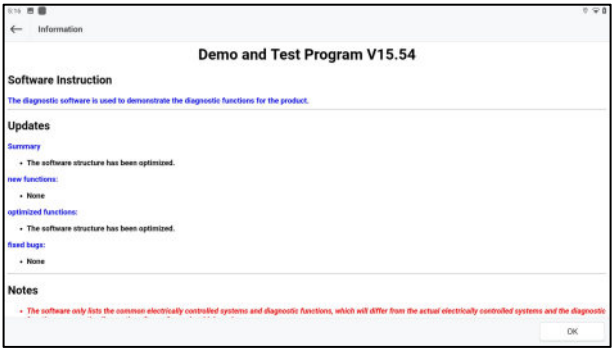
Some models may not be able to identify the vehicle information through the AutoDetect function, then the following dialog box will pop up for the user to scan or manually enter the vehicle VIN code.

4.2 Manual Selection

1) Click **Diagnose** in the main interface to enter the vehicle brand selection interface.



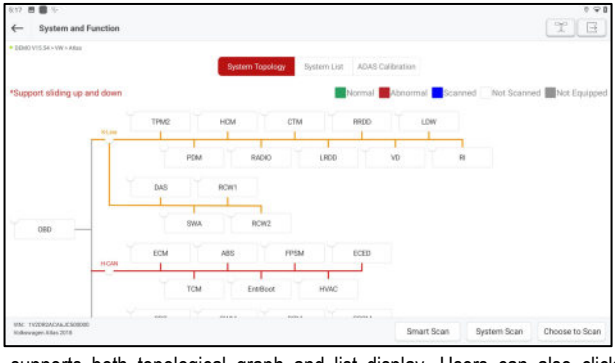
2) Click on the corresponding brand of the vehicle to be inspected, here we take Demo (Version 15.54) as an example to demonstrate how to diagnose a vehicle.



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.



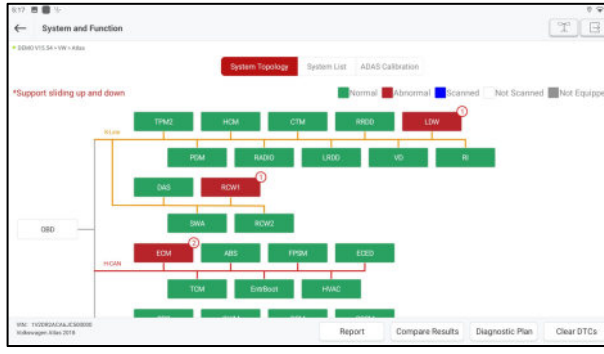
The system supports both topological graph and list display. Users can also click on "**ADAS Calibration**" to perform the vehicle's ADAS-related test options.

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

4.2.1 Smart Scan

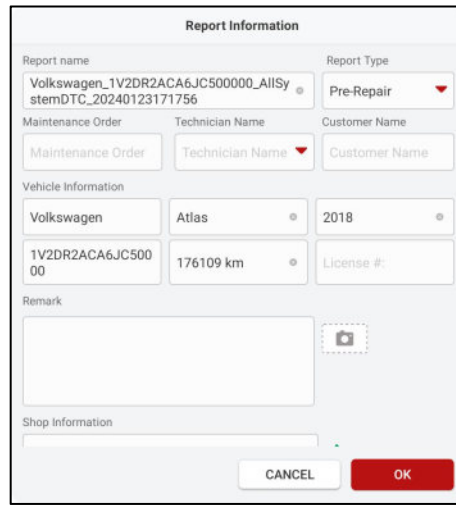
The function is used to quickly inspect the vehicle and directly output the vehicle health report (this item will be displayed only when the model inspection software supports the function).

After clicking **Smart Scan** in the test item selection interface, the system will start scanning each system for fault codes.



The systems with fault codes will be displayed on the screen with a red bottom box, and the number of specific fault codes will be displayed. Clicking on an individual system will allow the users to view the specific fault information. For systems without faults, the bottom box color is displayed in green.

Screen button instructions:

Report	Click to save the current fault report as an inspection report.  Click to ▼ select the report type from the drop-down list, then enter the details and click **OK**. *Note: Diagnostic reports are categorized into three types: Pre-Repair*

	*Report, Post-Repair Report, and Diagnostic Scan (if no comparison is required, users can select "**Diagnostic Scan**" type). The device has the report comparison function, so it is necessary to select the correct report type when saving the report. The service technician can clearly understand whether the fault codes found before diagnosis have been completely cleared after repairing through the comparison.* Enter the name of the inspector and customer, and then click **OK** to enter the report detail view page. On the report detail page, click **Save** to save the report. All saved test reports can be viewed by clicking **Reports** in the main interface.
Compare Results	Click to select the pre-maintenance reports. By comparing the pre-maintenance and post-maintenance diagnose reports, the service technician can clearly understand whether the fault codes found before the repair have been completely cleared after repairing. *Notes: Before executing the function, please make sure that the current test vehicle's pre-repair diagnose report has been saved, and that it has been repaired and cleared after the pre-repair diagnose report has been saved, otherwise there will not be any difference between the pre-repair report and the post-repair report.*
Diagnostic Plan	Click to view the reason analysis of the fault code.
Clear DTCs	Click to clear all fault codes. *Notes: For general models, please strictly follow the regular order of operation: first read the fault code, then clear the fault code, trial test, read the fault code again for verification, service the vehicle, clear the fault code, and trial test again to confirm that the fault code no longer appears.*

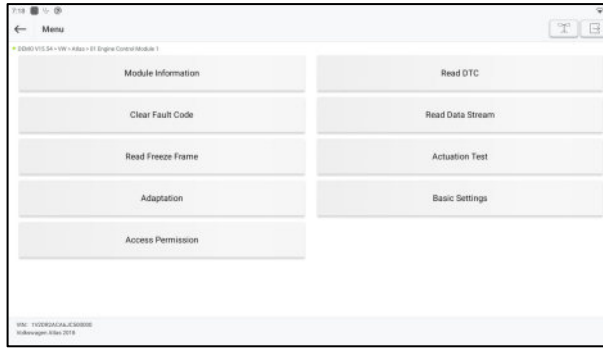
4.2.2 System Scan

The function is used to scan what systems the vehicle is equipped with.

Click **System Scan** in the test option selection interface, the system starts to scan the vehicle system. After the scanning is completed, the screen will display the scanning results.

Users can manually select the vehicle electronic control system for test function operation. Click a single electronic control system (e.g. "**ECM**") in the test item selection interface, and then click "**ENTER**" to go to the test function selection page.

Note: Different models may have different test menus.



A. Module Information

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

B. Read DTC

The function is used to read the current fault codes existing in the ECU of the vehicle, helping the service personnel to quickly understand the causes of vehicle malfunctions.

Click **Read DTC** in the test item selection page, the screen will display the following detection results.

Warning: Reading fault codes when troubleshooting a vehicle is only a small step in the overall diagnostic process. Vehicle fault codes are provided as a reference only and parts cannot be replaced directly based on the fault code definitions given. Each fault code has a test procedure, and the service technician must strictly follow the operating instructions and procedures described in the vehicle service manual to identify the root of the malfunction.

Screen button instructions:

Freeze Frame	If the button is highlighted, then it means there is freeze frame information. The freeze frame function is to record the values of some specific data stream 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 causes of the fault code.
Code Search	Click to search for a specific explanation of the DTC online.
Report	Save the current inspection results as the inspection report. All test reports are stored in the "Report Center".

C. Clear Fault Code

The function is used to clear the fault codes stored in the ECU of the testing system.

Click **Clear Fault Code** on the test item selection page, the system will pop up a dialog box of confirm clearing, click **Yes** to confirm clearing the fault codes.

Notes: For general models, please strictly follow the regular order of operation: first read the fault code, then clear the fault code, trial test, read the fault code again for verification, service the vehicle, clear the fault code, and trial test again to confirm that the fault code no longer appears.

D. Read Data Stream

The function is mainly used to read and display the real-time running data and parameters of the ECU of the vehicle. By observing these real-time data streams, the service technician can gain insight into the overall performance of the vehicle and provide guidance for vehicle servicing.

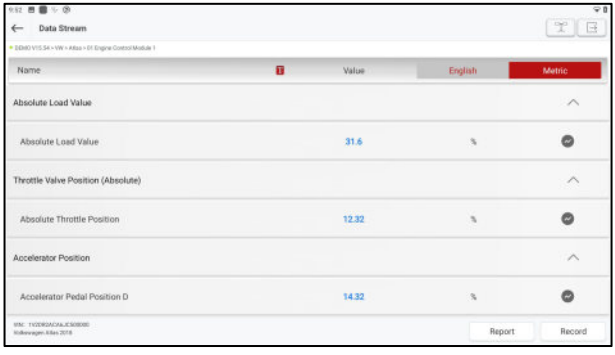
Danger: If you must drive the vehicle when performing the vehicle troubleshooting, please get someone else to help you. Driving and operating the diagnostic device at the same time is dangerous and can cause serious traffic accidents.

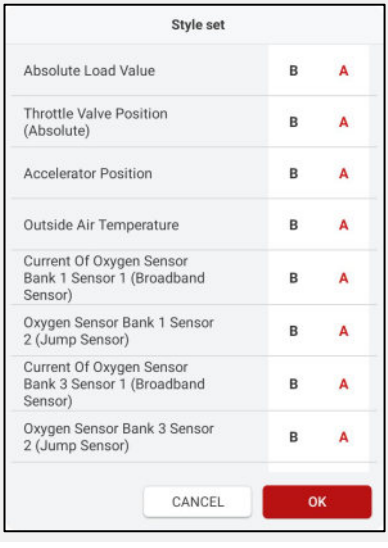
Click **Read Data Stream** on the test item selection page and the system enters the data stream selection page.

Screen button instructions:

Select All	Click to select all data stream options.
Unselect	Click to deselect all selected data stream options.
OK	Confirm the current operation being performed.

Click **OK** and the system will display the dynamic data of the selected items.





Notes:

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.

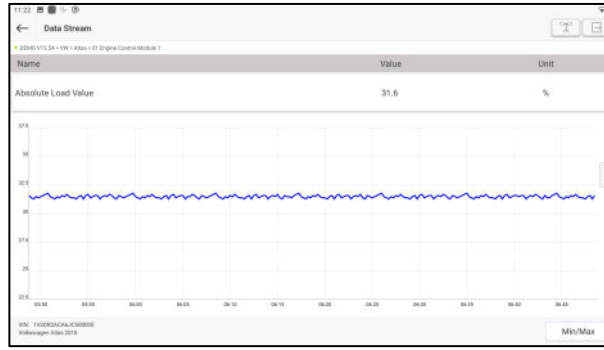
***B** Indicates that the current data stream will be displayed in bold.*

***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:

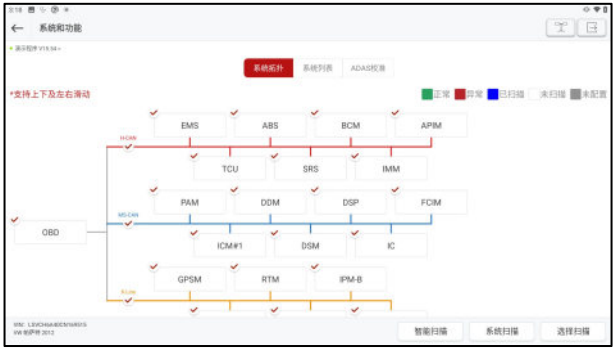
(Single Graphic)	Click to display the current (single) data stream as a waveform graph.  *Note: The waveform can be zoomed in or out. Tap the screen with two fingers (thumb and index finger, for example), then slide the fingers to adjust the distance between the fingers to zoom in and out of the screen.* *• 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 values as a report. All saved test reports can be viewed by clicking **Reports** in the main interface.
Record	Click to start recording inspection data. Recorded inspection data can provide an important reference when technicians troubleshoot vehicle problems. If you want to stop reading, click the button in front of the progress bar. *Notes: The saved file is named after the model + the VCI device serial number + the system time at which recording started. To better distinguish filenames, configure the correct system time.*

E. Actuation test

The function is mainly used to test whether the execution elements in the electronic control system can work properly.

4.2.3 Choose to Scan

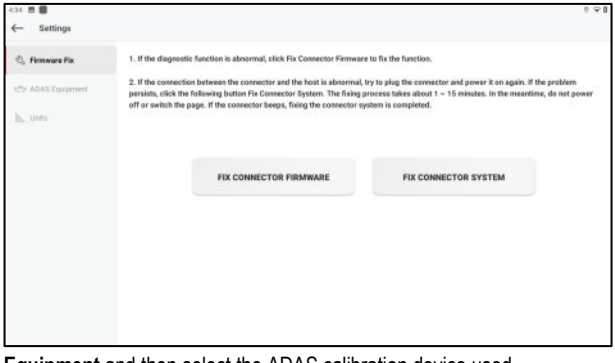
This function is used to select the vehicle electronic control system required by the user for scanning. In the test option selection interface, check the check box in front of the system to be scanned, and then tap **Choose to Scan** to start scanning the selected system.



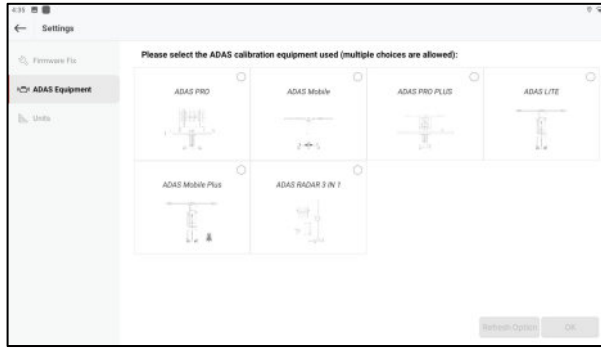
4.3 Diagnose Settings

The function is used to perform firmware repair, ADAS device selection, and diagnostic unit settings.

In the main interface of Vehicle diagnose, click [⚙] in the upper left corner, and then click **Firmware Fix** to select the corresponding repair function as needed. Do not power off or switch interfaces during the repair.



Click **ADAS Equipment** and then select the ADAS calibration device used.



Click **Units** to switch between metric or English units.

Continuously click the **Firmware Fix** menu option until the setting interface pops up "**VCI Management**" Select "**Use Bluetooth Communication Mode**" to open the Bluetooth communication, which will remind the system to connect the Bluetooth pop-up window.

Notes: In order to make the data transmission more stable during the communication process, it is recommended to use Wi-Fi communication or USB wired communication.

4.4 Software Store & Service Upgrade

The function is used to purchase more vehicle software and to renew your subscription.
In the main interface of Vehicle diagnose, click **[🛒]** in the upper right corner, it will enter the **MALL** interface.

4.4.1 Software Store

Click Software Store in the **MALL** interface, the Passenger Vehicle (Gasonline) Software Package details will be displayed. Click **Next** enter the order confirmation page, here you can check the

payment price and change the payment method.

4.4.2 Service Upgrade

Click **Service Upgrade** in the **MALL** interface, here you can renew your subscription.

Click **Renew standard software configuration** to check more different renewal period selections, you can also select **SUBSCRIPTION RENEWAL CARD** and then use Subscription Renewal Card (*need to buy it from the local dealer where you purchased the equipment) to finish the renewal.

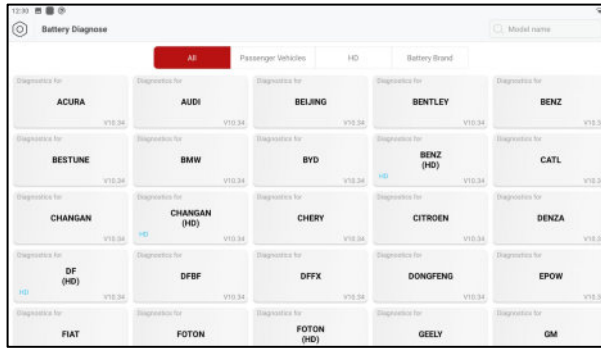
5. Battery Diagnose

The function module is used to carry out in-depth system diagnose of the vehicle battery pack, which facilitates the user to quickly determine the abnormal condition of the battery pack and the point of failure.

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.

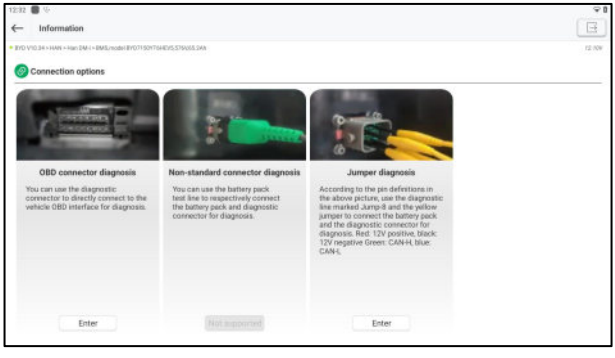
(1) Turn on a detection device (such as ST13) and click **Battery Diagnose** in the main interface.

(2) Select the vehicle brand or battery pack brand (can be found quickly via the search bar in the upper right corner).



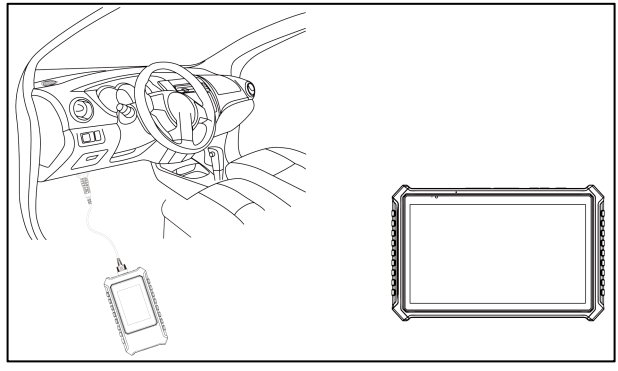
(3) Select the vehicle model and year.

(4) Select the battery pack connection method.



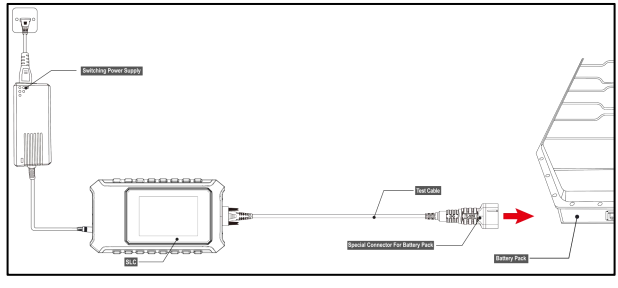
A. OBD Connector Diagnosis

The battery pack of the vehicle was tested by connecting the VCI to the vehicle OBD interface through the test cable.



B. Non-standard Connector Diagnosis

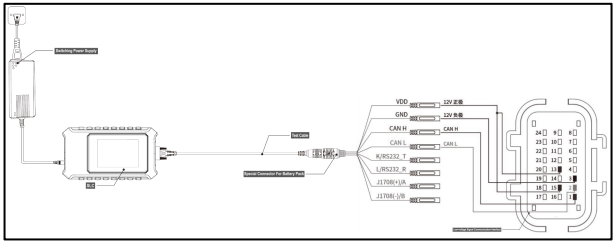
Use the battery pack specialized connector to connect the VCI and the battery pack low voltage signal communication interface respectively to diagnose the battery pack of the vehicle.



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.

Notes: Pictures here are for example only. Different models have different connection methods, please follow the wiring diagram prompted by the software.



(5) 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.

6. ADAS Calibration

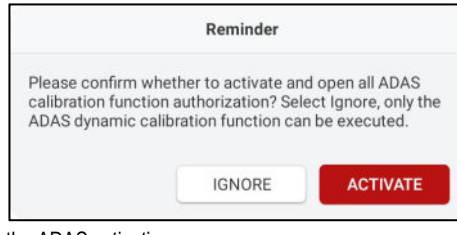
The ADAS calibration function is used to calibrate driver assistance systems with various cameras and radars, such as front-facing cameras for lane departure warning systems, and radar sensors for ACC (Adaptive Cruise Control), etc.

6.1 Activate ADAS Calibration Function

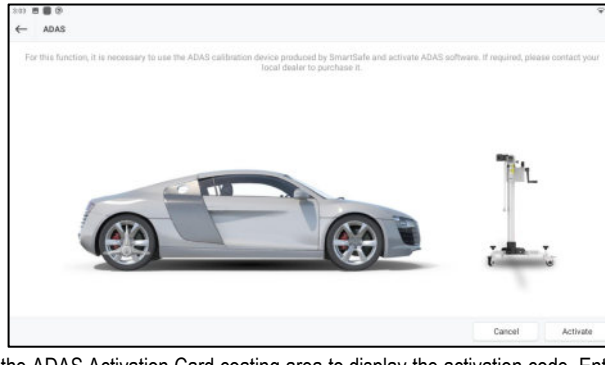
If you need to use the ADAS static calibration function, the user needs to activate the function using the activation card (supplied with the ADAS calibration tool). The function is to be used with the specified ADAS calibration tool (purchased separately).

Follow the steps below to activate:

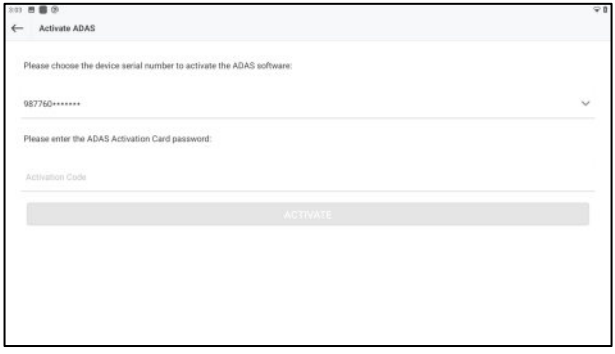
(1) On the main interface of a detection device (such as ST13), click **ADAS Calibration** and select the ADAS calibration equipment used, the following prompt box will pop up on the screen. Click **ACTIVATE** to enter the ADAS activation page.



(2) Click **Activate** on the ADAS activation page.



(3) Scratch the ADAS Activation Card coating area to display the activation code. Enter the 24-digit activation code and click **ACTIVATE** to activate the ADAS function.



(4) After successful activation, the ADAS calibration function can be used normally.

6.2 Start Calibration

The user is required to follow the calibration prompts on the tablet to perform the calibration operation. The following is an introduction to the ADAS calibration function, using the ADAS **DEMO** program.

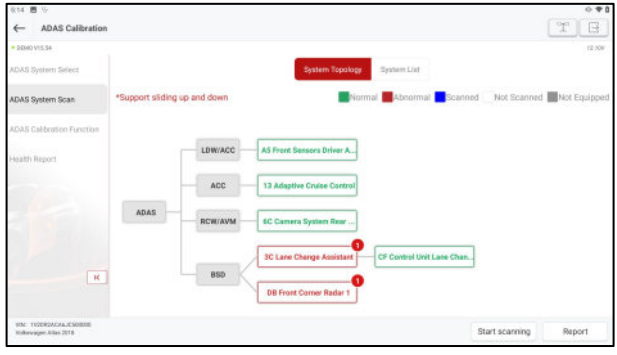
Notes: Before performing the ADAS calibration operation, please make sure that the VCI connector is connected to the vehicle diagnostic seat and its communication with the tablet is normal.

6.2.1 ADAS System Selection

Use the function to select the ADAS system that requires ADAS calibration.

6.2.2 ADAS System Scan

Use the function to scan which ADAS systems are installed on the test vehicle.

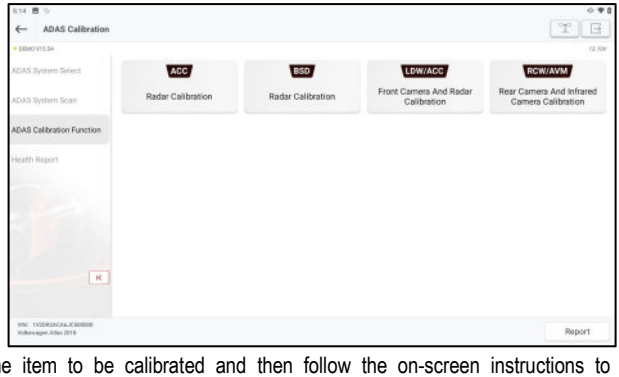


The ADAS system supports both topological graph and list displays. Click **Start Scan** to start scanning ADAS systems one by one. After the scanning is completed, click on the system that is displayed in red (the system is displayed in red, which means that there is a fault code for the system) to view the fault code, and click on the system that is working normally (the system is displayed in green, which means that the system is working normally) to perform other diagnostic functions.

6.2.3 ADAS Calibration Function

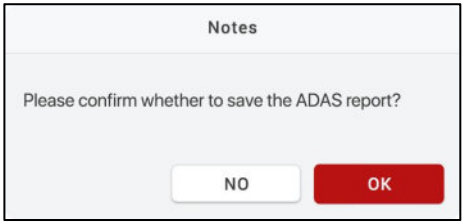
This option allows the user to perform ADAS calibration operations. To perform the function, a calibration tool such as ADAS Mobile or ADAS PRO+ is required. The calibration tool is used to locate the calibration target and the tablet is used to guide the user in placing the calibration tool and manipulating the ADAS calibration.

Click **ADAS Calibration Function** to go to the following page



Click on the item to be calibrated and then follow the on-screen instructions to perform the calibration function.

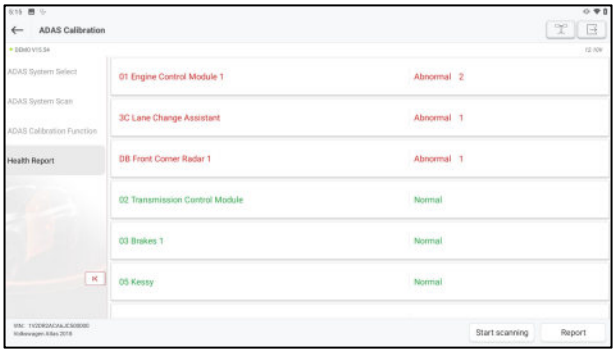
When calibration is complete, the screen pops up with a prompt box for whether or not to save the ADAS report.



Click **OK** to save. All saved test reports can be viewed by clicking **Report** in the main interface.

6.2.4 Whole Vehicle Physical Test

After calibrating the ADAS system, use this option to perform a full vehicle scan to confirm that the vehicle fault codes have cleared.



7. Reset

This module provides the quick entry for commonly used special function operation.

Notes: Specific maintenance functions, which are offered, depend on the model.

7.1 48V MHEV Test

The function is used for offline testing of 48V light hybrid parts.

7.2 Compressor Test

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

7.3 DCDC Test

The DC converter (DCDC) is a high-low voltage DC conversion converter for new energy automobiles, and this function, mainly used for DC converter offline testing.

7.4 OBC Test

The on-board charger (OBC) is a charging device that converts AC power to DC power for new energy vehicles, and this function, mainly used for offline testing for vehicle-mounted chargers.

7.5 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.

7.6 A/F Reset

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

7.7 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.

7.8 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.

7.9 Battery Maintenance System Reset

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

It needs to be performed in the following cases:

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

7.10 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.

7.11 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.

7.12 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.

7.13 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.

7.14 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.

7.15 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.

7.16 Coolant Bleed

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

7.17 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.

7.18 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.

7.19 High Voltage Battery Diagnosis

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

7.20 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.

7.21 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.

7.22 Tire Reset

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

7.23 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.

7.24 AdBlue Reset

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

7.25 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.

7.26 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.

7.27 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).

7.28 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.

7.29 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.

7.30 Language Change

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

7.31 Intelligent Cruise Control System Diagnosis

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

7.32 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.

7.33 Seats Calibration

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

7.34 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.

7.35 EGR Learning

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

7.36 ABS Exhaust

When the ABS system contains air, it is necessary to exhaust the brake system through the ABS exhaust function, thus restoring the sensitivity of the ABS system brakes. In addition, it is necessary to use the ABS exhaust function, to exhaust the ABS system in the case of replacing the

ABS computer, ABS pump, brake master cylinder, brake cylinder, brake pipelines, and brake fluid.

7.37 Airbag Reset

The function will reset the airbag data and clear the airbag crash fault indicator light.

When the vehicle is involved in a collision and the airbag deploys, a fault code corresponding to the collision data will appear, the airbag indicator light will come on, and this fault code cannot be cleared. Since the data inside the airbag computer is disposable, all new parts must be replaced as required. However, after performing this function, the data of the airbag computer can be restored and the fault code can be cleared, and the airbag indicator light will turn off, so the airbag computer can continue to be used.

7.38 Meter Tuning

Meter mileage tuning is the copying, writing or rewriting of kilometers. That is, the data from the chip in the meter is copied, written, or rewritten using automotive inspection device and a data cable so that the meter displays the actual mileage.

Usually when the speed sensor is damaged and the meter is malfunctioning resulting in inaccurate mileage, a meter mileage adjustment is done after the repair is completed.

7.39 ECU Reset

The function is used to perform the control unit reset function after the coding function of the partial system.

7.40 FRM Match

The function is used to reset the FRM control unit (fitted to BMW and MINI models). This setting clears faults related to short circuits.

7.41 Clutch Match

Clutch pedal position or switch learning. After electronic control unit replacement, gearbox replacement/removal, and clutch replacement, this function learns the contacts and position at which the clutch begins to transmit engine torque. Suitable for adaptive clutches. Confirm the performance of the clutch in the position corresponding to the position where the gas pedal is pressed lightly when the vehicle is started. If it is smooth, the contact point is correct. When the engine revs too high when the clutch begins to transmit engine torque, or there is a hard, sharp jump, the contact point is not correct. This situation requires operation of the clutch match function.

7.42 Gateway Module Data Calibration

After replacing the gateway control unit, there may be a VIN inconsistency, so VIN replacement is

required.

7.43 Turbocharging Match

The function is used to learn after boost system parts have been replaced, or to reset turbocharger learning values.

7.44 Rain and Light Sensor

The rain sensor is used to adjust the frequency of the wipers, and the light sensor adjusts the light intensity of the automatic headlights according to the ambient light and darkness. The function allows the adjustment of parameters.

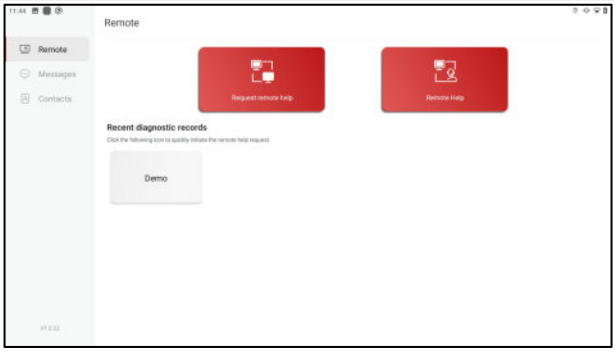
8. Remote Diagnose

The function module is used to remotely assist users in diagnostic operations.

8.1 Request remote help

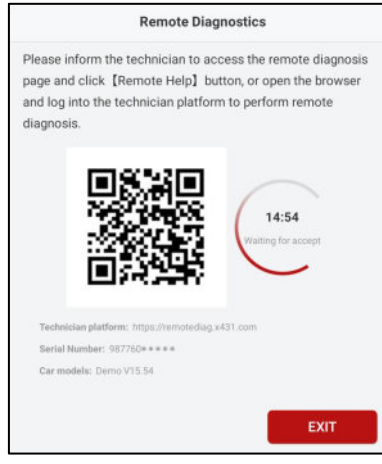
On the main interface of detection device (such as ST13), click **Remote Diagnose** to enter the remote diagnose interface.

*Notes: Clicking on the corresponding software icon of the vehicle model under the **Recent diagnostic records** tab can quickly initiate a remote assistance request.*

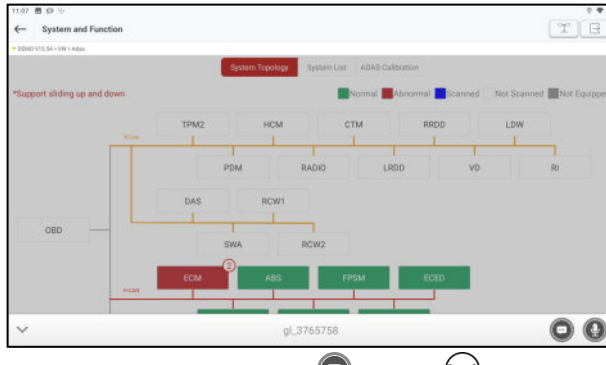


Click **Request remote help** to enter the software selection interface of the car model.

According to the car to be diagnosed, select the corresponding model software (here take **Demo** as an example), the screen will pop up the following dialog box.



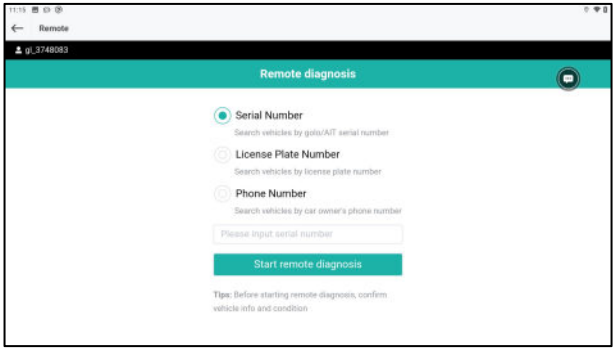
Notify the service technician to assist in remote diagnosis. You can take a picture of the dialog box shown above and share it with the technician, who can scan the QR code and log in to the technician platform for remote diagnosis, or carry out remote diagnosis based on the serial number of the inspection connector, the owner's cell phone number or the license plate number provided by the user.



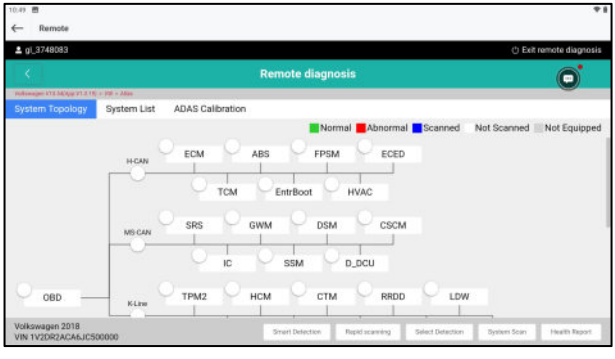
In the process of remote diagnosis, click on the button or button at the bottom of the screen to open the chat interface, which allows interactive communication between the user and the technician. Press and hold the button to record voice, and release your finger to send after recording.

8.2 Remote Assistance

Click **Remote Assistance**, the screen will pop up the following interface:

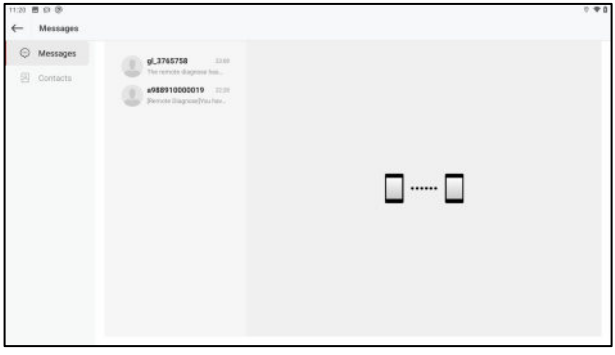


Input the Serial Number of the other party, the owner's License Plate Number or Phone Number, and then click **Start Remote Diagnosis** to send a request for remote assistance to the other party, and the other party agrees to remote assistance to start remote diagnosis.



8.3 Message List

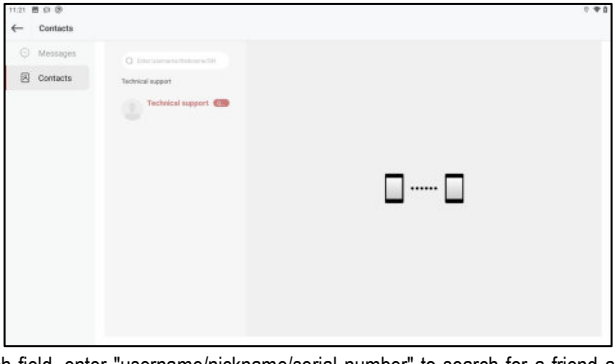
On the remote diagnosis interface, click **Messages** to enter the following interface:



In the message list, click the message you need to view to open the corresponding dialog box, in which you can communicate with text and voice messages, send files and photos, assist the other party or invite the other party to assist in remote diagnosis.

8.4 Contact List

On the remote diagnosis interface, click **Contacts** to enter the following interface:



In the search field, enter "username/nickname/serial number" to search for a friend and then add him/her as a friend. The added friends will appear in the "**Contacts**" list, select the maintenance technician you need to assist from the list to enter the interaction page. In the interactive page, you can communicate by text and voice messages, send files and photos, and invite remote assistance. After the remote diagnosis, the system will automatically generate a diagnostic report, which can be viewed and shared. The generated remote diagnosis report will be stored in the report center.

9. Super Remote

The function module helps remote technicians to remotely diagnose the vehicle through the diagnose device of Smartsafe Company, original factory or other third-party brand diagnose device.

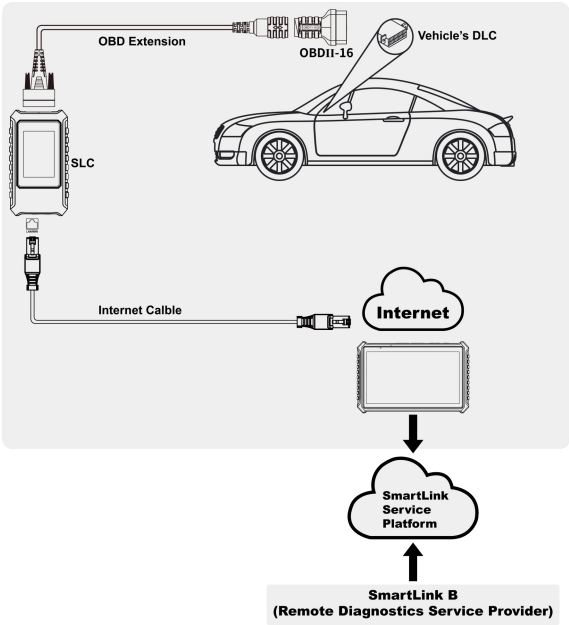
9.1 Working Principle

The SmartLink Remote Diagnostics System is a newly developed powerful service system dedicated to remote vehicle diagnosis and service. In this system, SLC as a service subscriber, can submit remote repair orders to remote diagnostics service provider via SmarLink Service Pltatform (http://smartlink.x431.com). The SLC applies to vehicles that comply with CAN/DoIP/CAN FD/J2534 diagnostic protocol standard.

The SLC system consists of the following two parts:

1) **SmartLink Service Platform** - For binding the SLC and posting the remote repair orders (*Note: Orders can be submitted only after the SLC successfully bound*).
2) **SLC** - Connects with vehicle's Data Link Connector (DLC) to obtain vehicle information before submitting repair orders.

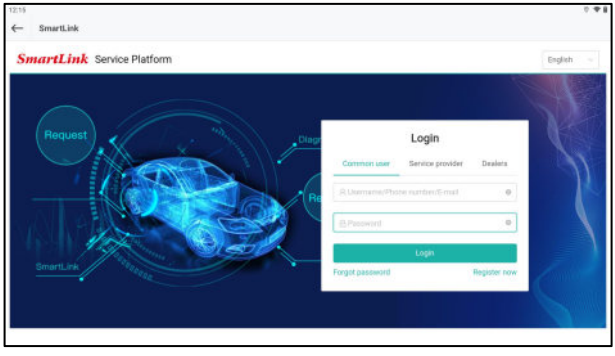
   The working principal diagram is as follows:



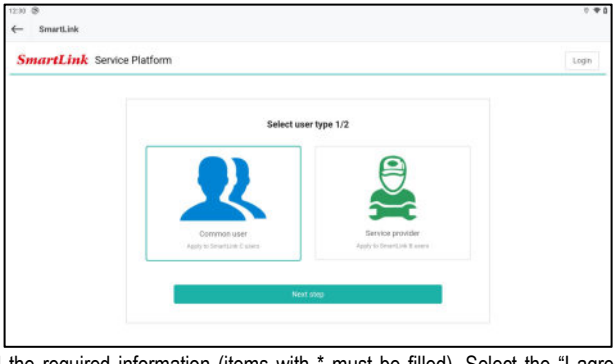
9.2 Operations

9.2.1 Register & Post Remote Diagnostics Orders

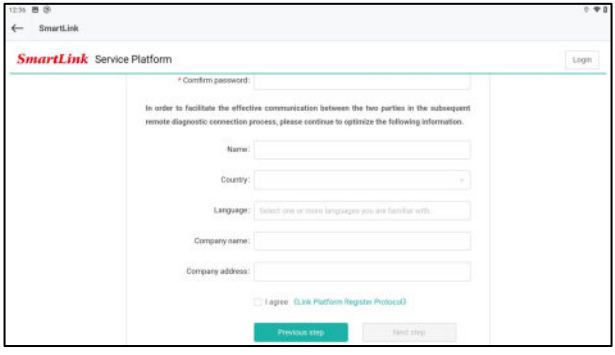
1) On the main interface, click **Super Remote** to enter the remote diagnose interface.



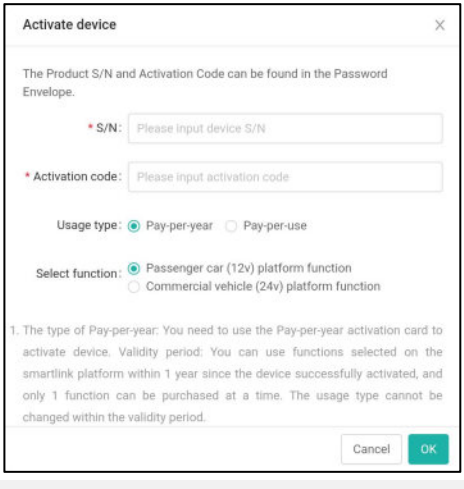
2) Choose the user type (Common user) and then click **Next Step** to go to next step.



3) Enter all the required information (items with * must be filled). Select the “I agree” checkbox after reading “Link Platform Register Protocol”, and then click **Next step** to register.

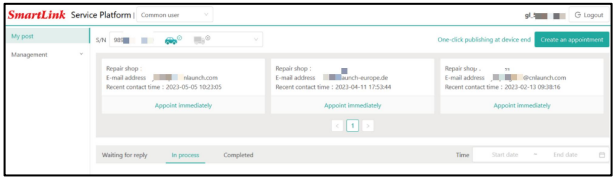


4) Input the product S/N (Serial Number) and Activation Code (where the Product S/N and Activation Code can be found from the Password Envelope) . Click **OK** to enter the pin card number and password (user can purchase the pin card from the seller or local dealer) . After finishing the registration, the system will automatically log in and navigate to the "My Post " page.



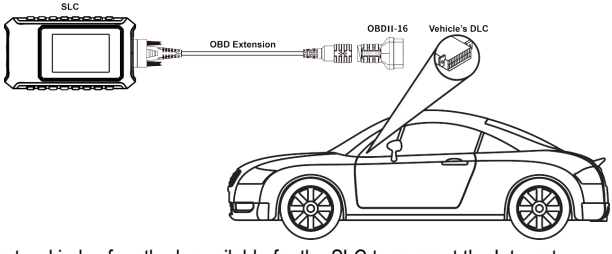
Note: The remote diagnosis can only be performed after the SLC user has submitted the request , and this request has been accepted by the remote technician expert.

5) On the "My Post " page , click **Create an appointment**. Fill in the required information and then click **Submit**.



9.3 Start Diagnostics

1) Turn off the ignition switch of the vehicle.
2) Use OBD extension cable and OBD-II connector to connect SLC to the vehicle's Data Link Connector (DLC).



3) There are two kinds of methods available for the SLC to connect the Internet:

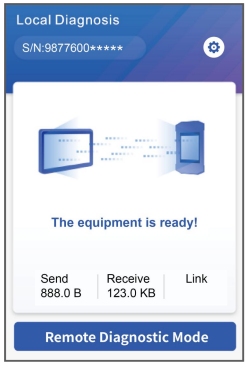
Method 1: Via CAT-6 network cable (strongly recommended)

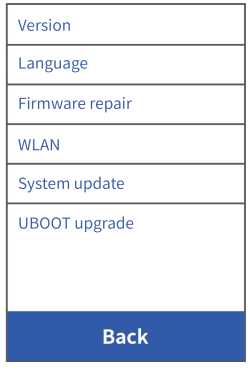
Plug one end of CAT-6 network cable into the LAN/WLAN port of SLC , and the other end into the LAN port of network modem.

Note: The network broadband of 100MB and above is required for this operation.

Method 2: Via WLAN

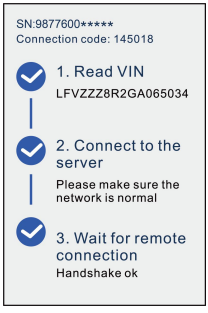
Tap ⚙ -> **WLAN**. Choose the target wireless network to proceed until Connected appears .





4) After a successful network connection, tap **Remote Diagnostic Mode**, the system will automatically generate a random connection code and read the vehicle VIN information, and then connect to the remote diagnosis server.

Notes: If the vehicle VIN decoding fails , it does not affect the remote diagnostic session .

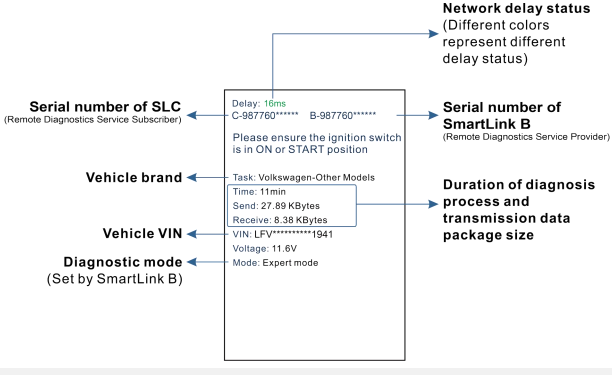


5) Turn the ignition on .

Notes:

- *After receiving the order, the remote diagnostics service provider master technician will accept the order and contact you via phone or E-mail address. Please make sure that you can be reached via the contact information provided by you.*
- *you select the designated service technician when posting your remote order, please notify him/her of the connection code. The service technician will use it to directly retrieve your order and check the details of your order.*

6) After a successful connection to remote diagnostics service provider is established , the following message will be displayed on the SLC screen .



Notes:

- *Please do not disconnect the vehicle or network connection during a remote diagnostic process.*
- *Please make sure that you are well connected with the internet when performing a remote online reprogramming process.*

7) Unplug the network cable when a diagnostic session is completed.

9.4 SLC Setting

Tap ⚙ to enter the following system setting screen.

Version
Language
Firmware repair
WLAN
System update
UBOOT upgrade
Back

Version:

Checks the system version information .

Language:

Sets the preference system language .

Firmware repair:

Fixes the firmware of the dongle when it can not work properly. When performing this operation, please do not cut power or exit the interface .

WLAN:

Connects the dongle to wireless network. Wired network connection is recommended since it has more stable and solid signals than wireless network.

System update:

Updates the current system version to the latest version.

Notes: This function requires a network connection.

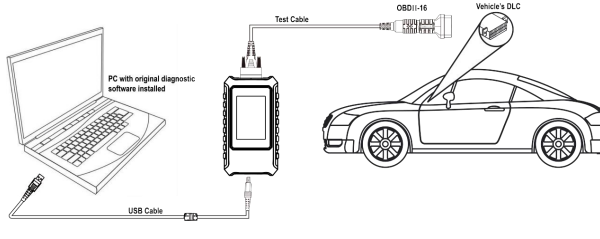
UBOOT upgrade:

Updates the UBOOT loader program .

This function requires a network connection.

9.5 SLC Other Application

Except that the SLC acts as a SmartLink dongle , it also can be used as a local J2534 PassThru device, working together with the PC installed with the OEM diagnostic software to perform the J2534 reprogramming. In this case, the PC needs to install with the Smartsafe's J2534 tool, which can be downloaded from www.newsmartsafe.com.



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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

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:

3310, Building 11, Tian'an Cloud Park, Bantian 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.