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ANCEL will not be liable for any direct damages or for any special, incidental, or indirect damages or for any economic consequential damages (including lost profits).

Safety Information

For your own safety and the safety of others, and to prevent damage to the device and vehicles upon which it is used, it is important that the safety instructions herein presented throughout this manual be read and understood by all persons operating or coming into contact with the device.

There are various procedures, techniques, tools, and parts for servicing vehicles, as well as in the skill of the person doing the work. Because of the vast number of test applications and variations in the products that can be tested with this equipment, we cannot possibly anticipate or provide advice or safety messages to cover every circumstance.

It is the automotive technician's responsibility to be knowledgeable of the system being tested. It is crucial to use proper service methods and test procedures. It is essential to perform tests in an appropriate and acceptable manner that does not endanger your safety, the safety of others in the work area, the device being used, or the vehicle being tested.

Before using the device, always refer to and follow the safety messages

and applicable test procedures provided by the manufacturer of the vehicle or equipment being tested. Use the device only as described in this manual. Read, understand, and follow all safety messages and instructions in this manual.

Safety Instructions

The safety messages herein cover situations ANCEL is aware of. ANCEL cannot know, evaluate or advise you as to all of the possible hazards. You must be certain that any condition or service procedure encountered does not jeopardize your personal safety.

DANGER: When an engine is operating, keep the service area WELL VENTILATED or attach a building exhaust removal system to the engine exhaust system. Engines produce carbon monoxide, an odorless, poisonous gas that causes slower reaction time and can lead to serious personal injury or loss of life.

Do Not Turn the Volume Up Too Loud When Using HeadphonesListening at high volumes that over-stimulate the ear for long periods of time may result in loss of hearing.

SAFETY WARNINGS:

- Always perform automotive testing in a safe environment.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the vehicle in a well-ventilated work area, for exhaust gases are poisonous.
- Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.
- Put blocks in front of the drive wheels and never leave the vehicle unattended while testing.
- Be extra cautious when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.
- Keep a fire extinguisher suitable for gasoline, chemical, and electrical fires nearby.
- Do not connect or disconnect any test equipment while the ignition is on or the engine is running.
- Keep the test equipment dry, clean, free from oil, water or grease.
 Use a mild detergent on a clean cloth to clean the outside of the

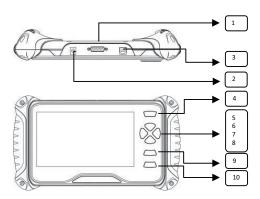
- equipment as necessary.
- Do not drive the vehicle and operate the test equipment at the same time. Any distraction may cause an accident.
- Refer to the service manual for the vehicle being serviced and adhere to all diagnostic procedures and precautions. Failure to do so may result in personal injury or damage to the test equipment.
- To avoid damaging the test equipment or generating false data, make sure the vehicle battery is fully charged and the connection to the vehicle DLC is clean and secure.
- Do not place the test equipment on the distributor of the vehicle. Strong electro-magnetic interference can damage the equipment.

Chapter 1 General Introduction

The FX8000 intelligent diagnostic scanner is an evolutionary smart solution for specialized automotive diagnosis combing with the best possible coverage of OE-level diagnostics, the FX8000 intelligent diagnostic scanner information with test instrumentation to help you diagnose symptoms, codes, and customer complaints easily, quickly and efficiently. This manual describes the construction and operation of these devices and how they work together to deliver diagnostic solutions.

1.1 Layout for FX8000 intelligent diagnostic scanner

1.1.1 Functional Description



| 1 | For main cable connection | 2 | Power Port |
|---|---------------------------|----|--------------|
| 3 | For USB Connection | 4 | FN Key |
| 5 | Up Button | 6 | Down Button |
| 7 | Left Button | 8 | Right Button |
| 9 | OK Button | 10 | ESC Button |

1.1.2 Technical Specifications

| 1 | Screen Display | 7-inch Color |
|---|----------------------------|--------------|
| 2 | Packing Dimension (LxWxH) | 46x35x14cm |
| 3 | Gross Weight for Full Kits | 1kg |
| 4 | OS Platform | Linux |
| 5 | Memory | 16G |
| 6 | Input Voltage | DC 12V |

1.1.3 Standard Accessory Kits

| 1 | Nylon Carrying Case |
|---|---------------------|
| 2 | Main Unit |
| 3 | OBD main cable |
| 4 | USB Cable |
| 5 | User Manual |

1.1.4 Powering Up

Make sure the FX8000 intelligent diagnostic scanner is well connected for vehicle diagnosis. The system boots up and shows the screen with the FX8000 intelligent diagnostic scanner Job Menu as below:

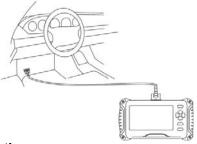


Almost all operations on the display are controlled by menu driven, which allows you to quickly locate the test procedure, or data that you need, through a series of choices and questions. Detailed descriptions of the menu structures are found in the chapters for the various applications.

Chapter 2 Get Ready before Diagnosis

By establishing a data link to the electronic control systems of the vehicle being serviced, the Diagnostics application allows you to retrieve diagnostic information, view live data parameters, and perform active tests. The Diagnostics application can access the electronic control module (ECM) for various vehicle control systems, such as engine, transmission, anti-lock brake system (ABS), airbag system (SRS) etc.

2.1 Cable Connection for On-Board Diagnosis



Connection:

To connect the main unit with the OBD main cable to get power supply.

2.2 Application Icon Introduction

The Application buttons configure the FX8000 intelligent diagnostic scanner for the type of operation or activity to be performed.

Providing 6 modules on the screen including Diagnose, Special Function, OBD, Settings, About and Update. Each module supports different functions.





| NAME | PICTURES | DESCRIPTION |
|---------------------|----------------|--|
| Diagnose | ~ Q | Executes the corresponding vehicle diagnostic program based on the selected region and vehicle make. |
| Special Function | | Provides quick access to vehicle systems for the most commonly performed service functions and maintenance experience. |

| Settings | SETTINGS | Adjusts and views system settings, including the measurement unit for the diagnostic system, the display language for the device, log and sound settings. |
|----------|----------|--|
| OBDII | | All modes of OBDII test for cars after1996 and newer |
| | I/M 🕹 | I/M Including read/erase codes, view live data, view freeze frame data, view I/M readiness, O2 monitor test, on-board monitor test etc. |
| | 2.5.6.6 | DTC Library To provide you with the latest definition of PCBU fault codes. For example, after entering "P02AE", you will get its definition as "Cylinder 6 – Fuel Trim at Max Limit" |
| About | ABOUT | Displays the device information including serial number, register password, firmware version and system software version. |
| Update | | When the device is connected to the Internet, checks for the latest version for vehicle diagnostic programs, and performs updating procedures. |
| | | Update via Wi-Fi |
| | | Update via PC client |



Feedback

You can upload the vehicle diagnosis log to faster solve your problems during vehicle diagnosing.

Chapter 3 To Start a New Test

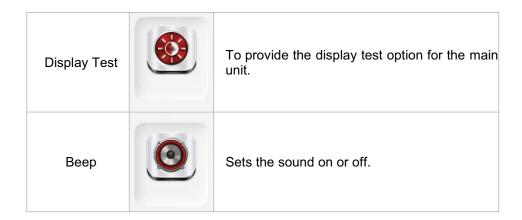
To start a new test, you need to establish the proper vehicle communication to the FX8000 Diagnostic Scanner; you need to follow the screen instructions step by step for the car testing. The operations require connecting the FX8000 Diagnostic Scanner main unit to the test vehicle through the main cable.

| No. | Description | Features and Functions |
|-----|---------------------------------|---|
| 1 | Main Cable | To connect the connector and the vehicle |
| 2 | Diagnostic Scanner Main Unit | To communicate with vehicle and display the diagnostic result |
| 3 | Diagnostic Socket on car | Socket location varies based on different car makes/models |

3.1 Application Icon Introduction

| Name | Button | Description |
|----------|--------|--|
| European | | Displays the European vehicle menu. Including BMW, Alfa, Jaguar, Land Rover, Fiat, Ford, Citroen, Mercedes-Benz, Volkswagen, Audi, Volvo, Renault, etc. |
| Asian | | Displays the Asian vehicle menu. Including Toyota, Lexus, Honda, Acura, Nissan, Infiniti, Mitsubishi, Daewoo, Mazda, Hyundai, Kia, Isuzu, Suzuki, etc. |

| American | | Displays the USA vehicle menu. Including GM, Chrysler, Ford, etc |
|----------|----|---|
| Chinese | | Displays Chinese domestic vehicle menu. Including Chana, Chery, Geely, GWM, MG, Roewe, etc |
| Language | Aà | 13 languages supported: English, Russian, Korean, Hungarian, Polish, Portuguese, Japanese, Dutch, German, Italian, French, French, Spanish, Arabic, Turkish, etc |
| Log | | Two options for Logging On and Logging OFF with the slide button. [Logging ON] must be set if the client wants to record the live data, otherwise the client cannot send logging files. |
| Unit | | To provide two options for the unit of live data: Metric Unit and English Unit. |
| Key Test | | To provide the key test options for the main unit. |



3.2 Vehicle Selection

When the main unit is properly connected to the vehicle, click the Diagnostics icon button on the FX8000 intelligent diagnostic scanner. The FX8000 intelligent diagnostic scanner supports more than three methods for Vehicle Identification with the Automatic Selection, Manual Selection, and Special Function.

3.2.1 Automatic selection

The FX8000 intelligent diagnostic scanner features the latest VIN-based Auto VIN Scan function to identify CAN vehicles in just one touch, which allows the technician to quickly detect vehicles, scan all the diagnose ECUs on every vehicle and run diagnostics on the selected system.

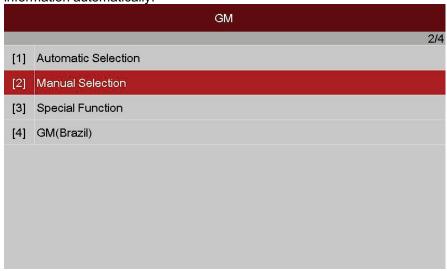
3.2.1.1 To perform Auto VIN Scan

Select [GM] from [AMERICAN]. The vehicle menu displays.



Three options come out including [Automatic Selection], [Manual Selection] and [Special Function].

Select **[Automatic Selection]** and the system will proceed to acquire VIN information automatically.



3.2.1.2 VIN code input code via virtual keyboard



In case the FX8000 intelligent diagnostic scanner provides an option for vehicle VIN scan allowing users to input the VIN manually.





Select the model of the vehicle accordingly. The FX8000 intelligent diagnostic scanner display ECU information in details:

3.2.2 Manual Selection

The FX8000 Diagnostic Scanner intelligent scan also provides manual selection (system selection) for some vehicles.

3.2.2.1 To perform Manual Selection

Tap the [Manual Selection] button on the screen as below.

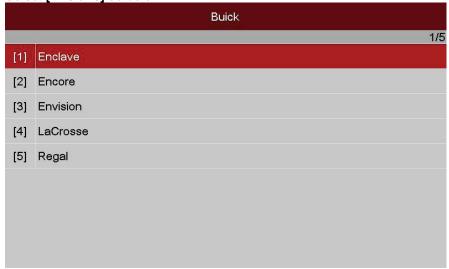
Select the year to be tested accordingly. Take 2020 GM as an example: The vehicle will be identified in a few seconds, and once the matching is successful, the system will guide you the vehicle diagnostics screen directly. Select [Buick] as below:

| 2/4 |
|-----|
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| |

| | Manual Selection |
|-----|------------------|
| | 1/25 |
| [1] | 2020 |
| [2] | 2019 |
| [3] | 2018 |
| [4] | 2017 |
| [5] | 2016 |
| [6] | 2015 |
| [7] | 2014 |
| [8] | 2013 |
| [9] | 2012 |



Select [Enclave] as below:



Select [Engine Control Module] from the list as below:

| | Enclave | | | | | | |
|-----|--|------|--|--|--|--|--|
| | | 1/30 | | | | | |
| [1] | Engine Control Module | | | | | | |
| [2] | Transmission Control Module | | | | | | |
| [3] | Electronic Brake Control Module | | | | | | |
| [4] | Body Control Module | | | | | | |
| [5] | Inflatable Restraint Sensing and Diagnostic Module | | | | | | |
| [6] | HVAC Control Module | | | | | | |
| [7] | Instrument Cluster | | | | | | |
| [8] | Suspension Control Module | | | | | | |
| [9] | Keyless Entry Control Module | | | | | | |

3.2.3 Special Function

The FX8000 Diagnostic Scanner intelligent scan also provides special functions for some vehicles.

The Special Function provides the service section specially designed for quick access to the vehicle systems.

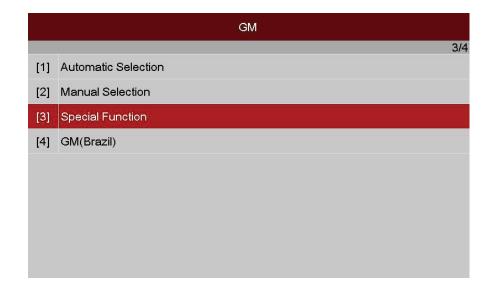
Note:

There are two methods to reset service lamp: Manual reset or Auto reset. **Manual reset**: Users just follow the on-screen instructions to select appropriate execution options, enter correct data or values, and perform necessary actions, the system will guide you through the complete performance for various service operations.

Auto reset: Follows the principle of sending command from the tool to vehicle's ECU to do resetting.

3.2.3.1 To perform Special Function

Following the diagnostic function, click the button [Special Function] from the menu as below:



| | Special Function | | | | |
|-----|-------------------------|--|--|--|--|
| | 1/14 | | | | |
| [1] | Oil Service Light Reset | | | | |
| [2] | EPB Replacement | | | | |
| [3] | Throttle Learning | | | | |
| [4] | ABS Bleeding | | | | |
| [5] | Immobilizer Programming | | | | |
| [6] | Battery Reset | | | | |
| [7] | Gear Learning | | | | |
| [8] | TPMS | | | | |
| [9] | Window and Door | | | | |

Press [▶] the next page, the screen will display as below:

| Special Function | | | | |
|------------------|----------------------|--|--|--|
| | 14/14 | | | |
| [6] | Battery Reset | | | |
| [7] | Gear Learning | | | |
| [8] | TPMS | | | |
| [9] | Window and Door | | | |
| [10] | Injector Coding | | | |
| [11] | AT Calibration | | | |
| [12] | Steering Angle Reset | | | |
| [13] | Tire Size Adjustment | | | |
| [14] | Adjust Flex | | | |

Oil Reset Service

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

This function can be performed in the following cases:

- 1. If the service lamp is on, you must provide service for the car. After service, you need to reset the driving mileage or driving time so that the service lamp turns off and the system enables the new service cycle.
- 2. After changing engine oil or electric appliances that monitor oil life, you need to reset the service lamp.

Electronic Parking Brake Reset

- 1. If the brake pad wears the brake pad sense line, the brake pad sense line sends a signal sense line to the on-board computer to replace the brake pad. After replacing the brake pad, you must reset the brake pad. Otherwise, the car alarms.
- 2. Reset must be performed in the following cases:
- a) The brake pad and brake pad wear sensor are replaced.
- b) The brake pad indicator lamp is on.
- c) The brake pad sensor circuit is short, which is recovered.
- d) The servo motor is replaced.

Steering Angle Calibration

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

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

ABS Bleeding

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

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

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

Tire Pressure Monitor System Reset

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

- 1. After the tire pressure MIL turns on and maintenance is performed, the tire pressure resetting function must be performed to reset tire pressure and turn off the tire pressure MIL.
- 2. Tire pressure resetting must be performed after maintenance is performed in the following cases: tire pressure is too low, tire leaks, tire pressure monitoring device is replaced or installed, tire is replaced, tire pressure sensor is damaged, and tire is replaced for the car with tire pressure monitoring function.

Gear Learning

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

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

FCC Warning

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.

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

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.

*RF warning for Mobile device:

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 & your body.

original low battery information and prevent the related control module from detecting false information. If the related control module detects false information, it will invalidate some electric auxiliary functions, such as automatic start & stop function, sunroof without one-key trigger function, power window without automatic function.

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

Diesel Particulate Filter (DPF) Regeneration

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

DPF regeneration may be performed in the following cases:

- a) The exhaust back pressure sensor is replaced.
- b) The PM trap is removed or replaced.
- c) The fuel additive nozzle is removed or replaced.
- d) The catalytic oxidizer is removed or replaced.
- e) The DPF regeneration MIL is on and maintenance is performed.
- f) The DPF regeneration control module is replaced.

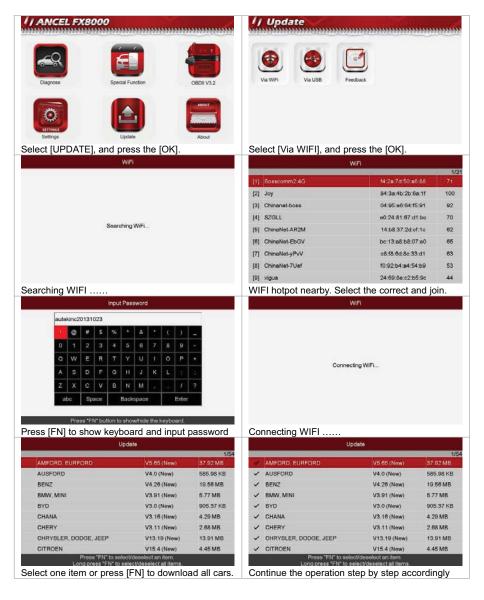
Electronic Throttle Position Reset

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

Chapter 4 Software Update

4.1 Update via WIFI

Providing two ways for update: USB mode and WIFI mode.



How to set WIFI if the mobile is iPhone 11 or higher version? Step 1: Settings Person Hotspot

Personal Hotspot on your iPhone can provide Internet access to other devices signed into your iCloud account without requiring you to enter the password.

Step 2: Allow Others to Join

Allow other users or devices not signed into iCloud to look for your shared network when you are in Personal Hotpot settings.

Note: The device can only display Wi-Fi name consisting of English character.

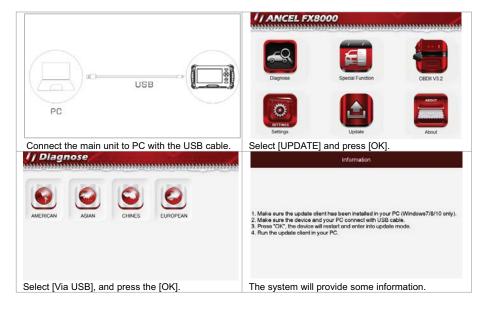
Step 3: Maximize Compatibility.

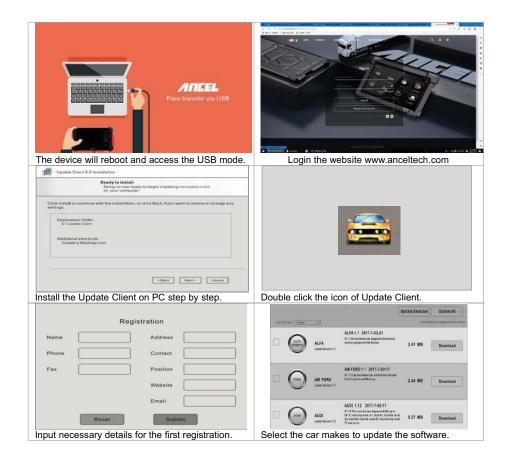
- 1- Choose the correct name from the Wi-Fi settings on your computer or other device.
- 2- Enter the password when promoted.

Note: Internet performance may be varied when the devices connected to your hotspot.

4.2 Update via USB

Providing the USB update procedures for software as below.





Chapter 5 Troubleshooting

Why can't the PC update client automatically identify the device serial number?

Please connect the scanner to PC before running the PC update client, and put the scanner in the USB update mode, that is, the screen displays "Files transfer via USB".

Why the vehicle linking error?

Follow the steps if the scanner fails to communicate with the ECU.

- 1– Verify the ignition is ON.
- 2- Check cable or connector securely connected to the vehicle DLC.
- 3– Turn the ignition off and wait for about 10 seconds and turn the ignition back to ON and continue the testing.

4– Verify the control module is not defective.

Why the device doesn't power up?

If the auto scanner won't power up or operate correctly in any other way, follow the steps to check the connections:

- 1– Check the connector properly inserted to the socket seat.
- 2- Check the DLC pins bent or broken.
- 3- Clean the DLC pins if necessary.

Why the devices have no permission to update?

Please contact the local distributor to get authorization.

Why cannot find the WIFI name?

The device can only display the Wi-Fi name consisting of English character or numbers.

When the display does not work properly:

Make sure the machine has been registered online.

Make sure the system software and diagnostic application software are properly updated.

Make sure the machine is connected to the Internet.

Check all cables, connections, and indicators to see if the signal is being received.

Chapter 6 Service Procedures

This section introduces information for technical support, repair service, and application for replacement or optional parts.

Technical Support

If you have any question or problem on the operation of the product, please contact ANCEL Tech Support for help.

OBDSPACE TECHNOLOGY CO., LTD

D03,Block A, No.973 Minzhi Ave. Longhua District, Shenzhen, Guangdong, China

Guariguorig, Crima

Email: support@anteltech.com Website: www.anceltech.com

Repair Service

If it becomes necessary to return your device for repair, please contact ANCEL local dealer for help.

The following information must be included:

- Contact name
- > Return address
- > Telephone number
- Product name
- Complete description of the problem
- Proof-of-purchase for warranty repairs

Chapter 7 Warranty

Thank you choosing our products, we will provide you with the following services and promises.

The warranty period of this product is 1 year.

After the warranty period expires, repairs will be charged for replacement parts.

After the failure, please contact the manufacturer, we will give you the most complete service in the shortest time.

12-Month Limited Warranty

OBDSPACE TECHNOLOGY CO., LTD warrants to the original retail purchaser of this auto scanner, that should this product or any part thereof during normal consumer usage and conditions, be proven defective in material or workmanship that results in product failure within twelve (12) months period from the date of delivery, such defects will be repaired, or replaced (with new or rebuilt parts) with Proof of Purchase, at the Company's option, without charge for parts or labor directly related to the defects.

The Company shall not be liable for any incidental or consequential damages arising from the use, misuse, or mounting of the auto scanner. Some states do not allow limitation on how long an implied warranty lasts, so the above limitations may not apply to you.

The following items are not covered by the warranty:

- Product subject to abnormal use or conditions, accident, mishandling, neglect, unauthorized alternation, misuse, improper installation or repair or improper storage;
- 2) Products whose mechanical serial number or electronic serial number has been removed, altered or defected;
- 3) Damage from expose to excessive temperatures or extreme environmental conditions;
- 4) Damage resulting from connection to, or use of any accessory or other product not approved or authorized by Company;

- 5) Defects in appearance, cosmetic, decorative or structural items such as framing and non-operative parts;
- 6) Product damaged from external causes such as fire, dirt, sand, battery leakage, blown fuse, theft or improper usage of any electrical source.

IMPORTANT: All contents of the product may be deleted during the process of repair. You should create a back-up copy of any contents of your product before delivering the product for warranty service.

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Disclaimer

All information, illustrations, and specifications contained in this manual, ANCEL resumes the right of modification this manual and the machine itself with no prior notice. The physical appearance and color may differ from what is shown in the manual, please refer to the actual product. Every effort has been made to make all descriptions in the book accurate, but inevitably there are still inaccuracies, if in doubt, please contact your local dealer of ANCEL after service center, we are not responsible for any consequences arising from misunderstanding.



FCC Warning

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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.

*RF warning for Mobile device:

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 & your body.