ANCEL®

BD310
USER'S MANUAL

—— OBDII/EOBD+CAN ——
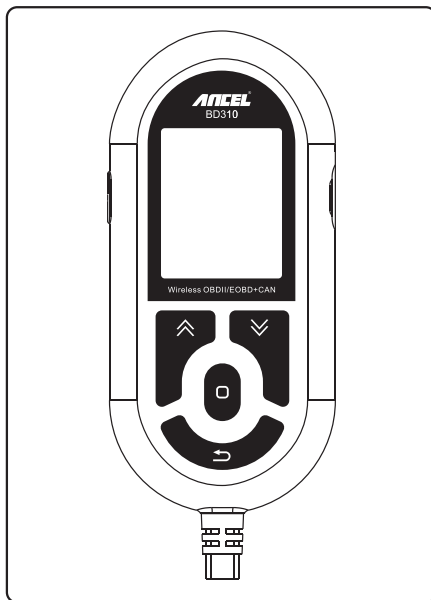
BD310 Display function inside the device

1. Safety Precautions and Warnings

To prevent personal injury or damage to the vehicle and/or the scan tool, read this instruction manual first and observe the following safety precautions whenever working on a vehicle:

- Turn the ignition off first. Connect 16-pin to plug, then turn the ignition on.

- Always perform automotive testing in a safe environment.

- Do not attempt to operate or observe the tool while driving a vehicle.

- Operating or observing the tool will cause driver distraction and could cause a fatal accident.

- 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 place: Exhaust gases are Poisonous.

- Put blocks in front of the drive wheels and never leave the vehicle unattended while running tests.

- Use extreme caution when working around the ignition coil, distributor cap, ignition wires, and spark plugs. These components create hazardous voltages when the engine is running.

- Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.

- Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.

- Don't connect or disconnect any test equipment while the ignition is on or the engine is running.

- Keep the scan tool dry, clean, and free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the scan tool when needed.

2. General Information

2.1 On-Board Diagnostics (OBD) II

The first generation of On-Board Diagnostics (called OBD I) was developed by the California Air Resources Board (CARB) and implemented in 1988 to monitor some of the emission control components on vehicles. As technology evolved and the desire to improve the On-Board Diagnostic system increased, a new generation of On-Board Diagnostic system was developed. This second generation of On-Board Diagnostic regulations is called "OBD II".

The OBD II system is designed to monitor emission control systems and key engine components by performing either continuous or periodic tests of specific components and vehicle conditions. When a problem is detected, the OBDII system turns on a warning lamp (MIL) on the vehicle instrument panel to alert the driver typically by the phrase "Check Engine" or "Service Engine Soon". The system will also store important information about the detected malfunction so that a technician can accurately find and fix the problem. Here, below, follow these three pieces of such valuable Information:

1) Whether the Malfunction Indicator Light (MIL) is commanded 'On' or 'Off';

2) Which, if any, Diagnostic Trouble Codes (DTCs) are stored;

3) Readiness Monitor status.

2.2 Diagnostic Trouble Codes (DTCs)

OBD II Diagnostic Trouble Codes are codes that are stored by the on-board computer diagnostic system in response to a problem found in the vehicle.

These codes identify a particular problem area and are intended to provide you with a guide as to where a fault might be occurring within a vehicle. OBD II Diagnostic Trouble Codes consist of a five-digit alphanumeric code. The first character, a letter, identifies which control system sets the code. The other four characters, all numbers, provide additional information on where the DTC

originated and the operating conditions that caused it to be set. Below is an example to illustrate the structure of the digits:
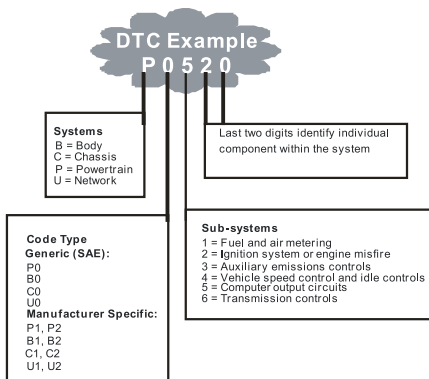

**DTC Example
P 0 5 2 0**

Systems
B = Body
C = Chassis
P = Powertrain
U = Network

Last two digits identify individual component within the system

**Code Type
Generic (SAE):**
P0
B0
C0
U0
Manufacturer Specific:
P1, P2
B1, B2
C1, C2
U1, U2

Sub-systems
1 = Fuel and air metering
2 = Ignition system or engine misfire
3 = Auxiliary emissions controls
4 = Vehicle speed control and idle controls
5 = Computer output circuits
6 = Transmission controls

Figure 1-2: Explanation of a diagnostic trouble code.

## 2.3 Location of the Data Link Connector (DLC)

The DLC (Data Link Connector or Diagnostic Link Connector) is the standardized 16-pin connector where diagnostic scan tools interface with the vehicle's on-board computer. The DLC is usually located 12 inches from the center of the instrument panel (dash), under, or around the driver's side for most vehicles. If the Data Link Connector is not located under the dashboard, a label should be there revealing its location. For some Asian and European vehicles, the DLC is located behind the ashtray and the ashtray must be removed to access the connector. If the DLC cannot be found, refer to the vehicle's service manual for the location.

Figure 1-3: The DLC connector (left) can be found in the area of the car interior seen at right (black arrow).
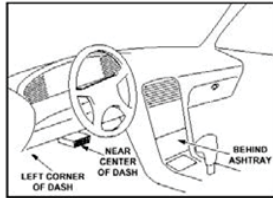
3. Using the Scan Tool

3.1 Tool Description- ANCEL BD310
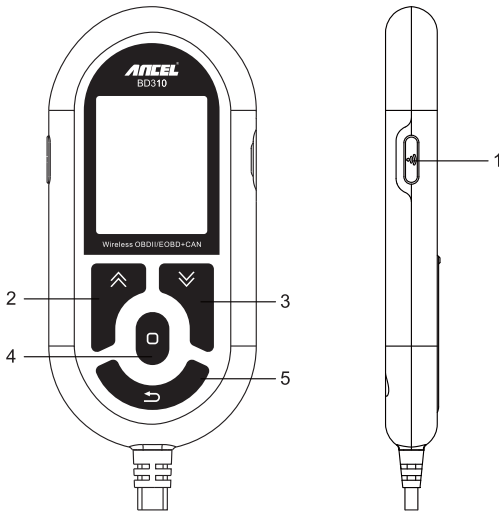
OBDII/EOBD+CAN

1. Wireless Bluetooth terminal and handheld device switching button, Bluetooth wake button.

2. - UP BUTTON - Up scroll item by item in a menu.

3. - DOWN BUTTON - Down scroll item by item in a menu .

4. - ENTER BUTTON - Confirm a selection (or action) from a menu.

5. - EXIT BUTTON - Cancel a selection (or action) from a menu or return to the previous menu.

3.2 Specifications

1) Display: full 65k color 2.0 inch TFT

2) Operating Temperature: 0 to 50℃ (32 to 140 F°)

3) Storage Temperature: -20 to 70℃ (-4 to 158 F°)

4) External Power: 8.0 to 18.0 V power provided via vehicle battery

5) Dimensions: 130*61.5*15.6mm

6) Weight: 0.35kg

3.4 I/M

A snapshot of the emission systems operations for all OBD II vehicles - i.e., misfire monitor, evap systems monitor, and more.

Choose [I/M] and it displays as follows：

3.5 Meter TEST

The function is used to read real data stream. You can quickly check the main data such as VSS, RPM, coolant temperature, oil temperature, intake air temperature, and voltage .

From the Main Menu, use the UP / DOWN scroll button to select the meter menu and press the ENTER button. The screen will display the interface as shown below:
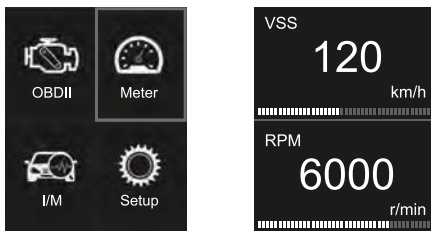
3.6 Tool /Setup

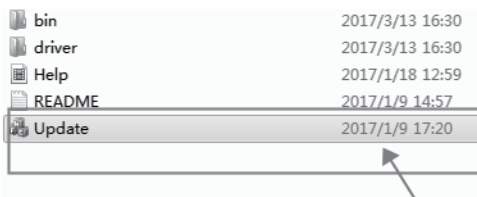The scan tool allows you to make the following adjustments and settings:

1) Select Language: Selects the desired language.

2) Unit of Measure: Sets measurement to English or Metric.
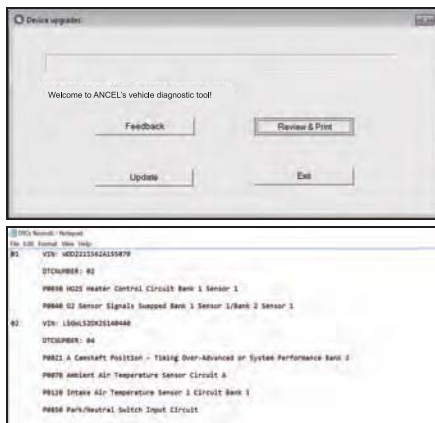
3) Feedback.

4) Sleep immediately.

5) Tool information.
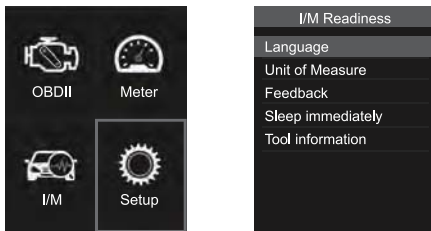
3.7 Review & Print diagnostic reports

1）Connect to a computer via USB.

2）Download upgrade files from ANCEL's website.

3）Install updated driver according to the "upgrade instruction" file.

4）Open the "update" application.

bin	2017/3/13 16:30
driver	2017/3/13 16:30
Help	2017/1/18 12:59
README	2017/1/9 14:57
Update	2017/1/9 17:20

5）Click the "Review & print" option. Then you can save or print the diagnostic report as needed.

4. OBDⅡ Diagnostics

CAUTION: Don't connect or disconnect any test equipment with ignition on or engine running.

1) Turn the ignition off.

2) Locate the vehicle's 16-pin Data Link Connector (DLC).

3) Plug the scan tool cable connector into the vehicle's DLC.

4) Turn the ignition on. The engine can be off or running.

5) Press ENTER to enter the Main Menu. Press the UP / DOWN button to select Diagnostics from the menu.

OBDⅡ　　Meter

I/M　　Setup

Entering System

ISO9141-2

Entering system.
Please wait...
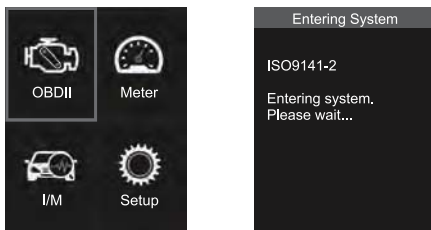
6) Press ENTER to confirm.

If "LINKING ERROR!" message shows on the display.

- Verify that the ignition is ON;

- Check if the scan tool's OBD Ⅱ connector is securely connected to the vehicle's DLC;

- Turn the ignition 'off' and wait for about 10 seconds. Turn the ignition back to 'on' and repeat the procedure from step 5.

4.1 Diagnostic Menu

- Stored emission-related codes are hard codes which illuminate the malfunction indicator lamp(MIL).
- Pending codes are current codes or historical codes which will not illuminate the malfunction indicator(MIL).

1) Select OBDII in Main Menu and press ENTER, shown as follows:

Monitor Status	
MIL Status	ON
DTCs in this ECU	3
Readiness Supported	8
Readiness Completed	5
Readiness Not Supported	3
Datastream Suppored	66
Ignition	Spark
Protocol Type	VPW

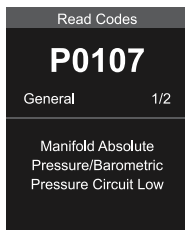2) Press ENTER to go to the Diagnostic Menu, screen will display as follows:

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
Evap System Test
Vehicle Information

4.2 Read Codes

1) Press UP / DOWN button to select Read Codes and press ENTER in the Diagnostic Menu. If there are some codes, the screen will display the codes as shown below:

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
Evap System Test
Vehicle Information

Read Codes
Current DTCs ($03)
Pending DTCs ($07)
Permanent DTCs ($0A)
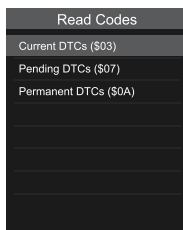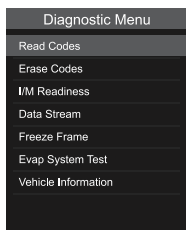
2) According to the above figure, select a different item by pressing UP or DOWN and press ENTER to confirm.

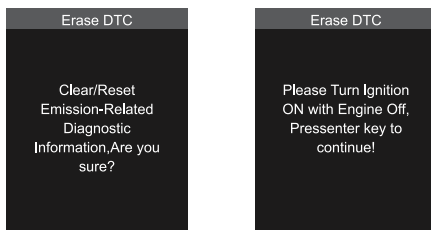| Read Codes |
|---|
| **P0107** |
| General   1/2 |
| Manifold Absolute Pressure/Barometric Pressure Circuit Low |

3) After viewing all the codes, you can press EXIT to return to the previous menu.

4.3 Erase Codes

1) Press UP /DOWN button to select Erase Codes. The screen will display the interface as shown below.

Press ENTER to erase DTC's, and the screen will display the interface as shown below:

Erase DTC	Erase DTC
Clear/Reset Emission-Related Diagnostic Information,Are you sure?	Please Turn Ignition ON with Engine Off, Pressenter key to continue!

2) According to the above figure, press ENTER and the screen will display the interface as shown on the next page:

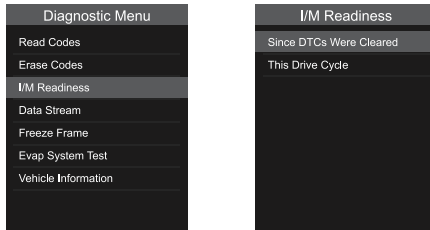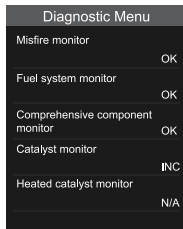| Erase DTC |
|---|
| Emission-Related Diagnostic Information has been Cleared! |
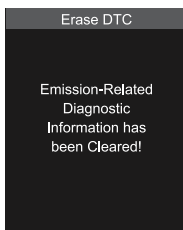
Notes:

• Before performing this function, make sure to retrieve and record the trouble codes.

• After clearing, you should retrieve trouble codes once more or turn ignition on and retrieve the codes again. If there are still some trouble codes in the system, please troubleshoot the codes using a factory diagnosis guide. Then clear the codes and re-check.

4.4 I/M Readiness

Press the UP / DOWN button to select I/M Readiness and press ENTER. The screen will display the interface as shown below:

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
Evap System Test
Vehicle Information

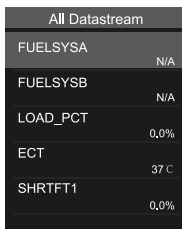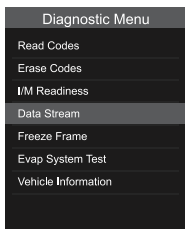| I/M Readiness |
| --- |
| Since DTCs Were Cleared |
| This Drive Cycle |

I/M readiness is to test Misfire / Fuel system / Comprehensive component. You can use the UP or DOWN button to select and press ENTER, shown as follows:

Diagnostic Menu	
Misfire monitor	OK
Fuel system monitor	OK
Comprehensive component monitor	OK
Catalyst monitor	INC
Heated catalyst monitor	N/A

N/A means not available on this vehicle, INC means incomplete or not ready, and OK means Completed or Monitor OK.

4.5 Data Stream

Press the UP or DOWN button to select Data Stream in the Main Menu interface and then press ENTER button to confirm. The screen will display the interface as shown below:

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
Evap System Test
Vehicle Information

All Datastream	
FUELSYSA	N/A
FUELSYSB	N/A
LOAD_PCT	0.0%
ECT	37℃
SHRTFT1	0.0%

If you want to know the meaning of the abbreviation data, you can press the ENTER button. The screen will display the interface as shown below:

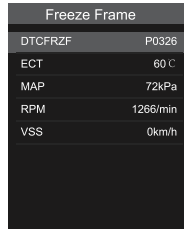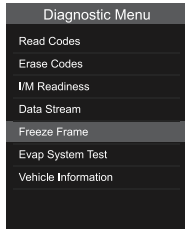| FUEL SYSA |
|---|
| Fuel system 1 status |
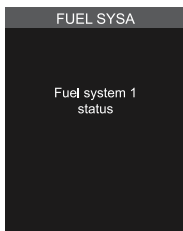
4.6 View Freeze Frame

When an emission-related fault occurs, a snapshot of current vehicle parameters is recorded by the ECU.

Note: If DTCs were erased, Freeze Data may not be stored in vehicle.

Select Freeze Frame in main menu interface. The screen will display the interface as shown below:
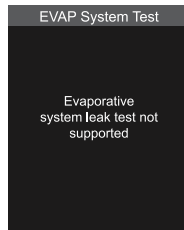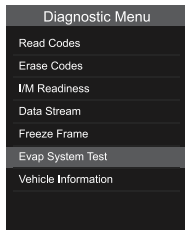
Diagnostic Menu	
Read Codes	
Erase Codes	
I/M Readiness	
Data Stream	
Freeze Frame	
Evap System Test	
Vehicle Information	

Freeze Frame	
DTCFRZF	P0326
ECT	60 ℃
MAP	72kPa
RPM	1266/min
VSS	0km/h

You can use the UP / DOWN button to view the data. Press EXIT to return to the Diagnostic Menu.
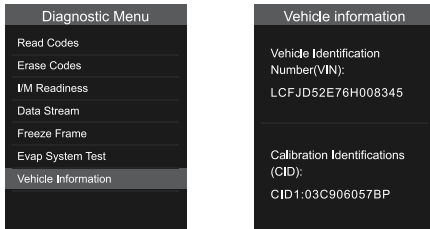
4.7 EVAP System Test

The EVAP test function lets you initiate a leak test for the vehicle's EVAP system. The device does not perform the leak test, but signals to the vehicle's on-board computer to initiate the test. Before using the system test function, refer to the vehicle's service repair manual to determine the procedures necessary to stop the test.

Select the EVAP System Test and press ENTER. The screen will display the relative information about the EVAP system. Some vehicle manufacturers do not allow external devices to control vehicle system. If the car supports this function, it will display as below:

Diagnostic Menu	
Read Codes	
Erase Codes	
I/M Readiness	
Data Stream	
Freeze Frame	
Evap System Test	
Vehicle Information	

| EVAP System Test |
| --- |
| Evaporative system leak test not supported |

4.8 Vehicle Info

Press the UP / DOWN button to select [Vehicle Info] and press ENTER. The screen will display the information such as VIN (Vehicle identification Number), CID (Calibration ID) and CVN (Calibration verification number) as shown below (different cars will show different data):

Diagnostic Menu	Vehicle information
Read Codes	Vehicle Identification Number(VIN):
Erase Codes	LCFJD52E76H008345
I/M Readiness	
Data Stream	
Freeze Frame	Calibration Identifications (CID):
Evap System Test	CID1:03C906057BP
Vehicle Information	

Press EXIT to return to the Diagnostic Menu.

5. Update

1) When you connect the device to the computer with an USB cable.
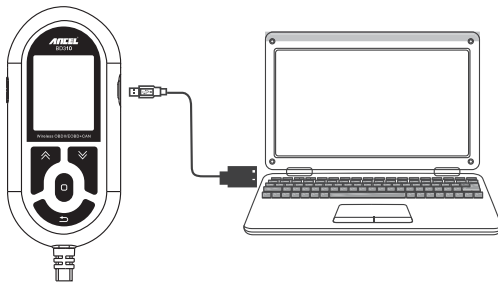
2) The update software only supports Windows 7/8/10.

3) Other systems can be updated software directly. Windows 7 must be installed the driver first before upgrading the software.

Name	Date modified	Type	Size
◢ Unspecified (6)			
bin	2017/4/11 21:32	File folder	
driver	2017/4/11 21:32	File folder	
feedback.bin	2017/6/20 13:40	BIN File	0 KB
Help.avi	2017/1/9 15:33	Video Clip	56,189 KB
README.txt	2017/1/9 14:57	Text Document	1 KB
Update.exe	2017/5/12 14:47	Application	9,166 KB

The 32-bit OS driver is X86 and the 64-bit OS driver is X64.

Note: If users want to know more instructions, please watch the [help.avi] video files.

Bluetooth diagnostics function via mobile phone

1.BD310 bluetooth diagnostics tool supports two operation system: IOS and Android. This product adopts Bluetooth wireless communication technology. Its softeware carries cell-phone touching operation experience, perfectly combing with technology and usage.

Vividly virtual meter display meets the requirement by the car owners on keeping in-depth knowledge on his car, drivers have easy access to the driving sensor parameters.

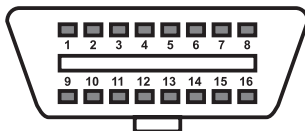**BD310 APP Download method: scanning the QR code to download software on the outer package,**

Other method：download software search for "ANCEL" on Google play app store and IOS app store.

ANCEL

2. Turn the ignition key on or press the one-button start.

3. Plug the ANCEL BD310 Device into the diagnostic link connector(DTC).

Next, the BD310 device screen will display the interface:

When the screen displays the words: "Bluetooth Mode", it is showing the Bluetooth test status.

4. Android phone pairing method:

4.1. Open "Settings" in your phone and find the Bluetooth menu.

4.2. Select the "Bluetooth" menu，press the the icon , and make sure the status of Bluetooth is" ON "in the setting of your phone. Off is "turn off Bluetooth" and on is "turn on Bluetooth".

4.3 Search for Bluetooth, display matching Bluetooth devices, select the device name: ANCEL BD310, and click the ANCEL BD310.

Notes:

1.Most Android users need to pair with the ANCEL BD310 (not for iOS users).

2.Android users need to pair with the ANCEL BD310 for the first time using the product and need to enter the password ("0000" or "1234" without quotes).

3.Click the device and enter the pairing request interface, enter the password, and click ok to mach. If Bluetooth is turned on, you can skip this step.

4.4. To start diagnostic, open ANCEL BD310. The app will display an interface. Click "connect" and the menu will display the ANCEL BD310 name.
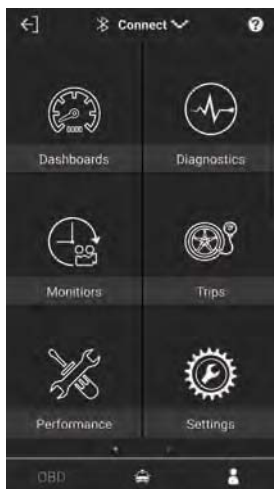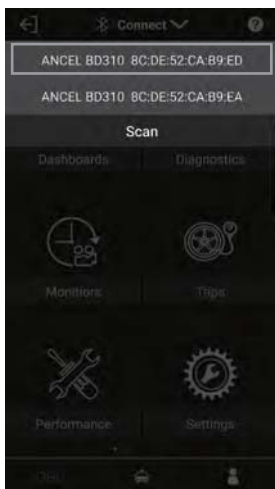
It is connecting and succeeded.
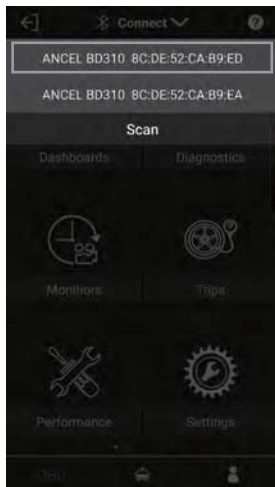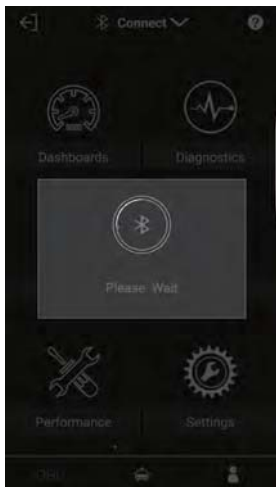
When the interface becomes color, the connection is successful.

5. IOS Bluetooth match method

5.1 Open "setting up" in your cellphone and link the "Bluetooth".

5.2 Open the ANCEL BD310 APP, click the "connect" button, and select Bluetooth ID(ANCEL BD310). Press the "Connect" button to disconnect.

Notes

(If the connection failed, check if the device is connected well with the car or not. Exit the app in the phone and reconnect the Bluetooth app.)

6. Diagnostic function in the BD310 APP

It supports all 10 modes of OBDII test for a complete diagnosis. Not only is it easy to use, it also can be customized to your favorite style.

BD310 can retrieve generic (P0, P2, P3 and U0), manufacturer specific (P1, P3 and U1) codes and pending codes. It easily determines the cause of the Check Engine Light(MIL), turns off Check Engine Light (MIL), clears codes and resets monitors, and displays / Views freeze frame data.

Exclusive OBD2 diagnostics displays monitor and I/M readiness status (emissions), reads live PCM datastream, displays live O2 sensor test data, graphs data (1996 and newer vehicles), and reads, stores, and plays back live sensor data.

Troubleshooter code tips guide technicians to the root cause of a trouble code faster, saving diagnosis and repair time. This retrieves vehicle information (VIN, CIN and CVN). It has a multilingual menu and DTC definitions – in English, Spanish and French, etc.
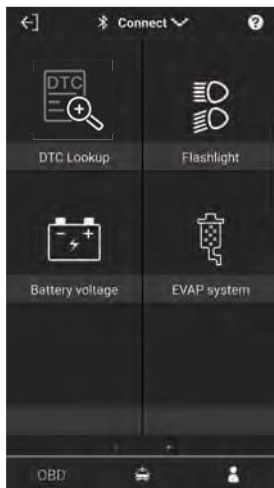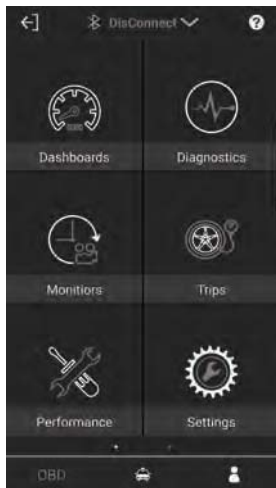
FAQ

1. Why is there a Vehicle Linking Error?

A communication error occurs if the scan tool fails to communicate with vehicle's ECU (Electronic Control Unit).

Answer:

Verify that the ignition is ON.

Check if the scan tool's connector is securely connected to the vehicle's DLC.

Turn the ignition off and wait for about 10 seconds and turn the ignition back to on. Then continue the testing.

Verify the control module is not defective.

2. Why Doesn't The Scan Tool Power Up?

If the scan tool doesn't power up or operates incorrectly in any other way.

Answer:

Check if the scan tool's connector is securely connected to the vehicle's DLC.

Check if the DLC pins are bent or broken. Clean the DLC pins if necessary.

Check the vehicle's battery to make sure it is still good with at least 8.0 volts.

3. Why is there an Operating Error?

In rare cases, the scanner might suddenly freeze. If the scan tool freezes, then an exception occurs or the vehicle's ECU is too slow to respond to requests.

Answer:

Reset the scan tool first, then turn the ignition off and wait for 10 seconds. Turn the ignition back to on and continue the test.

4. Why can I not connect the BD310 code reader?

a. Most android users need to pair with the BD310; not for iOS users

b. Android users need to pair with the BD310 for the first time using the product and you need to enter the password (0000 or 1234).

c.Click the device and enter the pairing request interface, enter the password, and click OK to pair. If Bluetooth is turned on, you can skip this step.

5. What do I need to pay attention to?

a. BD310 code reader works on 12volt vehicles and some light trucks. It cannot do the 24v truck.

b. The update software only supports Windows 7/8/10.

c. Other systems can run update software directly, only windows 7 needs to install the driver. Select the driver folder.

The 32-bit OS driver is X86, 64-bit OS driver is X64.

FCC Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in 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.

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

FCC Radiation Exposure Statement

This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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