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Safety Information

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


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


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

Before using the equipment, 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 equipment only as described in this manual. Read, understand, and follow all safety messages and instructions in this manual.

Safety Messages


Safety messages are provided to help prevent personal injury and equipment damage. All safety messages are introduced by a signal word indicating the hazard level.

 **DANGER:** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

 **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

Safety Instructions

The safety messages herein cover situations Autel is aware of. Autel 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.

WARNINGS:

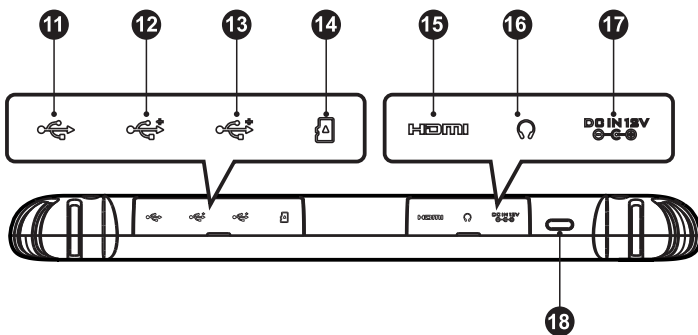
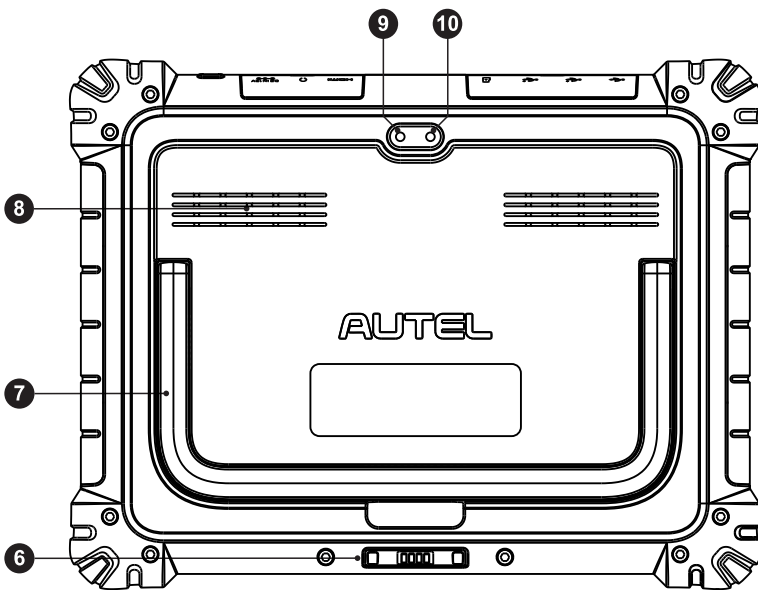
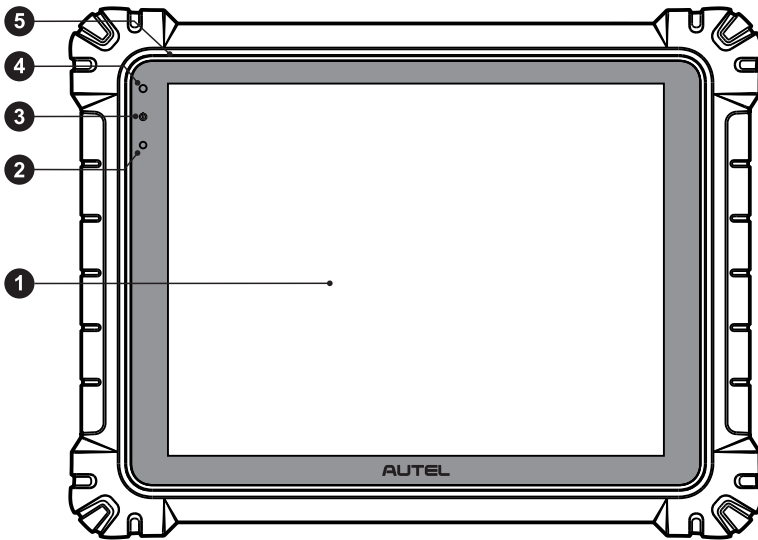
- Always perform automotive testing in a safe environment.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the vehicle in a well ventilated work area, for exhaust gases are poisonous.
- 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 in 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.

PRODUCT DESCRIPTIONS

The MaxiSys® Ultra EV is a new generation of intelligent diagnostics system for electric, gas and diesel, and hybrid vehicles. It supports high-voltage system testing and analysis, allowing you to quickly read detailed battery pack data. Equipped with the new EVDiag Box, Ultra EV supports the testing of battery packs.

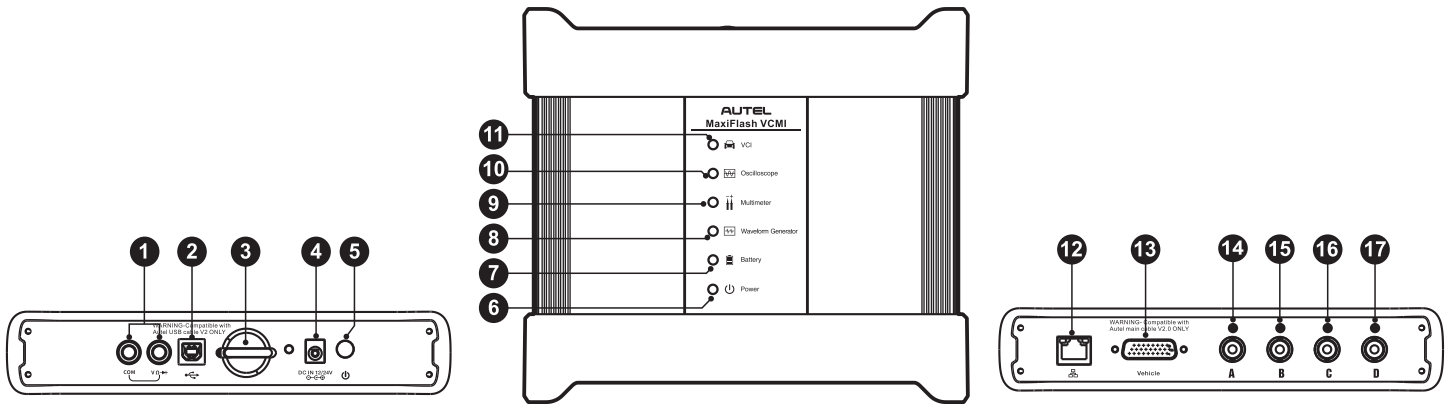
The MaxiSys Ultra EV has three main components:

- MaxiSys Tablet — the central processor and monitor for the system
- VCMI — the vehicle communication and measurement interface
- EVDiag Box — the battery pack communication interface



1. 12.9" TFT-LCD Capacitive Touch Screen
2. Ambient Light Sensor — detects ambient brightness
3. Power LED
4. Front Camera
5. Microphone
6. Docking Station Port
7. Collapsible Stand — extends from the back to allow hands-free viewing of the tablet
8. Speaker
9. Rear Camera
10. Camera Flash
11. Mini USB Port — cannot be used with the USB port simultaneously
12. USB Port
13. USB Port
14. Mini SD Card Slot
15. HDMI (High-Definition Multimedia Interface) Port
16. Headphone Jack
17. DC Power Supply Input Port
18. Power/Lock Button — long press to turn the tablet on and off, or short press to lock the screen

MAXISYS ULTRA EV



MaxiFlash VCM1

1. Multimeter Jacks
2. USB Port
3. Hook
4. DC Power Supply Input Port
5. Power Button
6. Power LED — refer to Table 1-1 Power LED Description for details
7. Battery LED — refer to Table 1-2 Battery LED Description for details
8. Waveform Generator LED — lights green when operating in the waveform generator mode
9. Multimeter LED — lights green when operating in the multimeter mode
10. Oscilloscope LED — flashes green when operating in the oscilloscope mode
11. Vehicle LED — refer to Table 1-3 Vehicle LED Description for details
12. Ethernet Port
13. Vehicle Data Connector (DB26-Pin)
14. Input Channel A
15. Input Channel B
16. Input Channel C
17. Input Channel D



IMPORTANT: Do not disconnect this programming device while the vehicle LED is on! If programming is interrupted while the vehicle's ECU is blank or only partially programmed, the module may be unrecoverable.

Table 1-1 Power LED Description

LED	Color	Description
Power	Yellow	Lights yellow automatically at power up when VCM1 is self-testing.
	Green	Lights solid green when powered on.
	Red	<ul style="list-style-type: none"> • Lights solid red when system failure occurs. • Flashes red when VCM1 is upgrading.

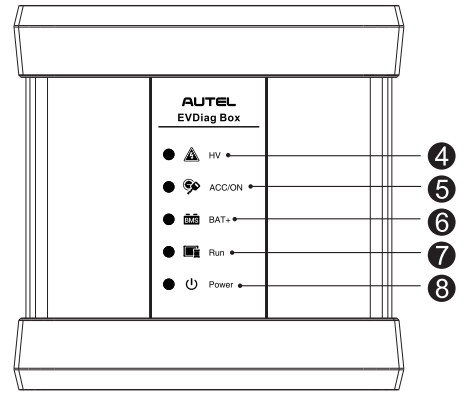
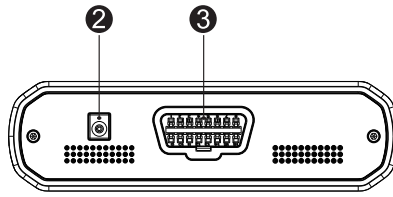
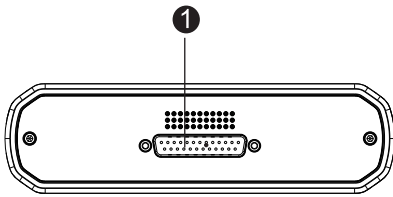
Table 1-2 Battery LED Description

LED	Color	Description
Battery	Green	<ul style="list-style-type: none"> • Flashes green when VCM1 is charging. • Lights solid green when fully charged or the battery level is above 50%.
	Yellow	Lights yellow when the battery level is above 25% but below 50%.
	Red	<ul style="list-style-type: none"> • Lights red when the battery level is above 10% but below 25%. • Flashes red when the battery level is below 10%.

Table 1-3 Vehicle LED Description

LED	Color	Description
Vehicle	Green	<ul style="list-style-type: none"> • Lights solid green when connected via USB cable. • Flashes green when communicating via USB/Ethernet cable.
	Blue	<ul style="list-style-type: none"> • Lights solid blue when connected via Ethernet cable/Bluetooth. • Flashes blue when communicating via Bluetooth.
	Cyan	<ul style="list-style-type: none"> • Lights solid cyan when connected via Wi-Fi. • Flashes cyan when communicating via Wi-Fi.

MAXISYS ULTRA EV



EVDiag Box

1. DB25 Connector
2. DC Power Supply Input Port
3. OBDII Connector
4. HV LED — flashes yellow when the device is connected to the battery pack during high voltage output
5. ACC/ON LED — lights green when the ACC/ON ignition signal output is normal
6. BAT+ LED — lights green when the power output is normal
7. Run LED — lights blue when communicating with the tablet
8. Power LED — refer to Table 1-4 Power LED Description for details

Table 1-4 Power LED Description

LED	Color	Description
Power	Green	Lights green when operating normally.
	Red	<ul style="list-style-type: none"> • Flashes red when upgrading. • Lights red when upgrade has failed.

GETTING STARTED



IMPORTANT: Before operating or maintaining this unit, please read these instructions carefully, paying extra attention to the safety warnings and precautions. Use this unit correctly and with care. Failure to do so may cause damage and/or personal injury and will void the limited product warranty.

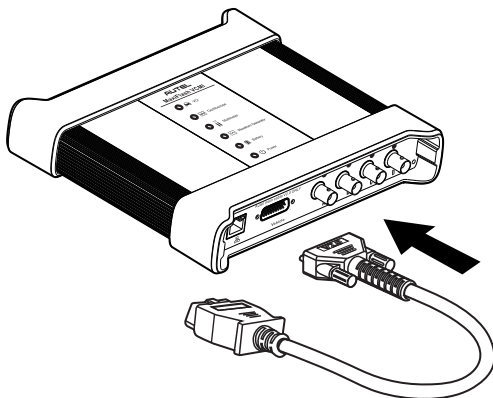


WARNING: The MaxiFlash VCMII is compatible with Autel main cable V2.0 and USB cable V2 only.

Intelligent EV Diagnostics

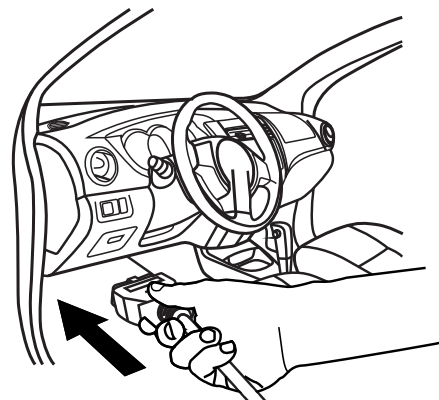
1

Connect the main cable V2.0 to the Vehicle Data Connector on the VCMII and tighten the thumb screws.



2

Connect the cable's 16-pin adapter to the vehicle's DLC, which is generally located under the vehicle dash.



3 Power up the tablet. Ensure the tablet has a charged battery or is connected to the supplied DC power supply.

The diagram shows a tablet with a protective case. A power icon is shown above the tablet, and a callout points to the power button on the top edge of the case.

4 Select one of the three methods shown below, Bluetooth, Wi-Fi or USB cable V2, to connect the tablet with the VCMI and establish a communication link. Use only the USB cable connection when programming.

The diagram shows the tablet on the left and the VCMI on the right. Three connection methods are indicated: Bluetooth (BT), Wi-Fi, and USB. The text 'OR' is placed between each method.

5 When the VCMI is properly connected to the vehicle and the tablet, the VCMI status button at the bottom bar on the screen shows a green badge, indicating the system is ready to start vehicle diagnosis.

The diagram shows a car's interior with the VCMI connected to the OBDII port. The tablet is connected to the VCMI via Bluetooth. A green badge is visible on the VCMI status button at the bottom of the tablet screen.

6 The Measurement application enables testing of electrical wiring, circuits, and systems.

The diagram shows the tablet screen displaying the Measurement application. The interface includes icons for Oscilloscope, Multimeter, Waveform Generator, and Bus Inspection.

Battery Pack Test



WARNING: This product must be operated only in accordance with local regulations and by properly qualified personnel. ONLY high voltage technicians and high voltage experts are allowed to perform high voltage related operations.



IMPORTANT: Ensure that the battery pack has passed the insulation test. Before performing the test function, be sure to wear proper protective equipment, such as a helmet, protective suit, work shoes, and protective gloves.

1 Connect the main cable V2.0 to the Vehicle Data Connector on the VCMI and tighten the thumb screws.

The diagram shows the VCMI with a main cable V2.0 being inserted into the Vehicle Data Connector. Arrows indicate the direction of insertion and the location of the thumb screws.

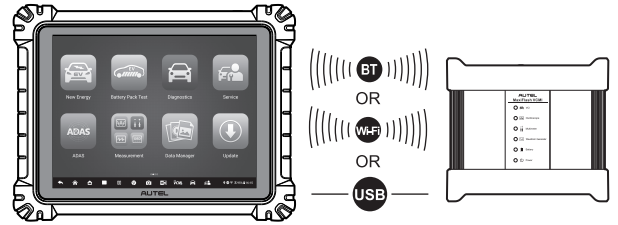
2 Connect the cable's 16-pin adapter to the OBDII connector of the EVDiag Box.

The diagram shows the EVDiag Box with a 16-pin adapter being inserted into the OBDII connector. Arrows indicate the direction of insertion.

3 Power up the tablet. Ensure that the tablet battery is charged or that it is connected to the supplied DC power supply.



4 Select from Bluetooth, Wi-Fi or USB cable to connect the tablet with the VCMI and establish a communication link. Use only the USB cable connection when programming.



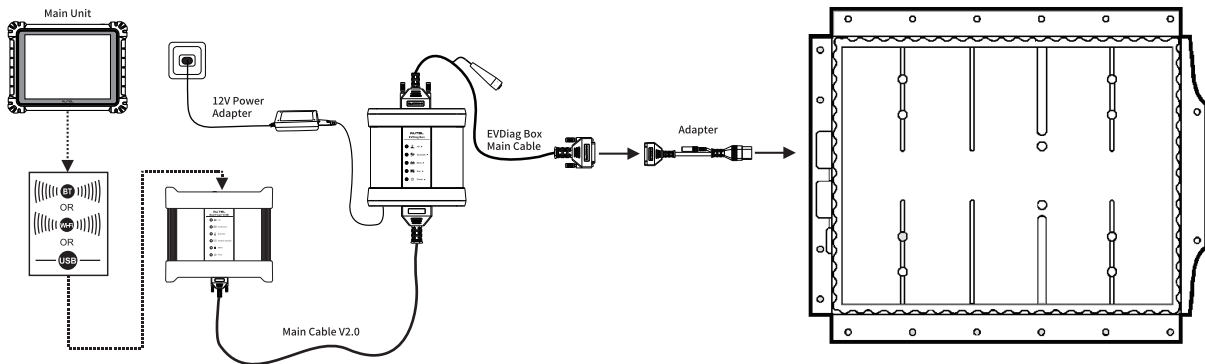
5 Tap **Battery Pack Test** on the MaxiSys Job Menu. Follow the onscreen instructions to confirm the relevant technical certifications and complete preparation.



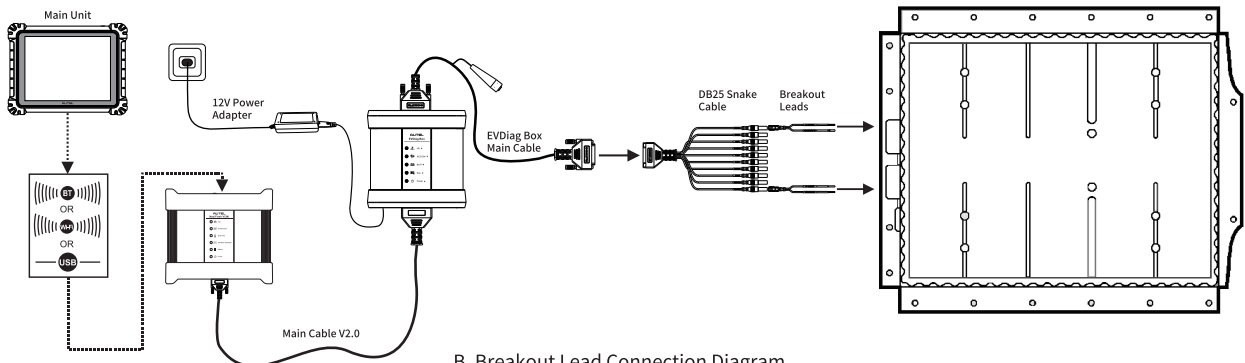
6 Follow the onscreen instructions to select the test vehicle, including its make, area, model, capacity, etc.



7 Follow the onscreen cable connection diagram to connect the EVDiag Box to the battery pack.



A. Adapter Connection Diagram



B. Breakout Lead Connection Diagram



NOTE: The required adapter or breakout leads may vary by vehicle. Please make the correct connection according to your actual situation.

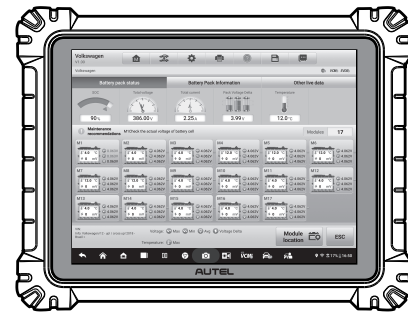
8

Power up the EVDiag Box. Ensure the EVDiag Box is connected to the DC power supply. Tap the **OK** button on the tablet's Connection Diagram screen to connect the tablet with the EVDiag Box and establish a communication link. The Main Menu screen will appear once the link has been established.



9

Tap **Battery Pack Information** on the Main Menu screen. The screen will display the data obtained from the battery pack, including the SOC, voltage, current, pack voltage delta, and temperature.



Thank you for purchasing Autel MaxiSys Ultra EV. Autel manufactures its tools to the highest standards. If properly maintained and used according to instructions, the Ultra EV will provide years of trouble-free use.