AUTEL®

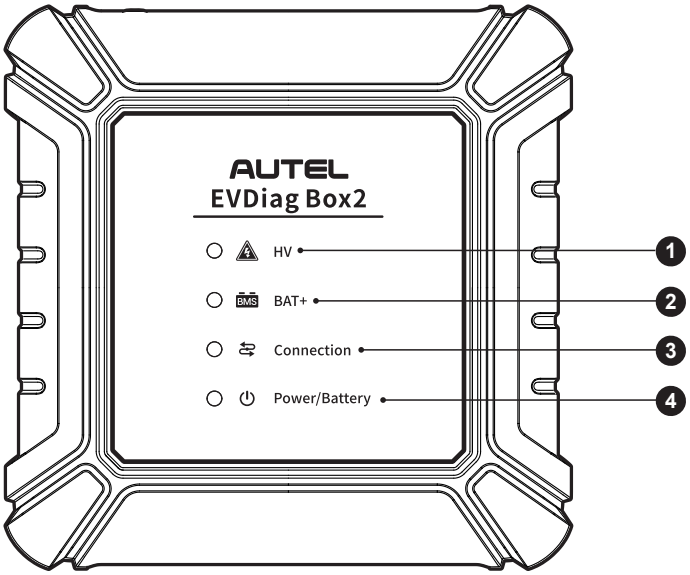
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Quick Reference Guide

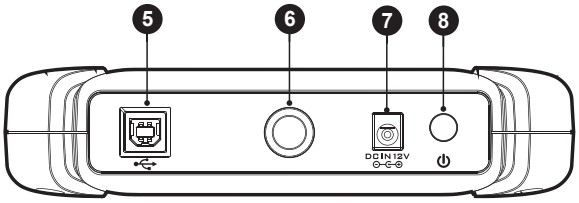
EVDiag Box2

Thank you for purchasing the EVDiag Box2. When used with Autel diagnostic tools (sold separately), this product can be used to conduct HV battery packs and HV components tests, and perform EV measurement on hybrid/electrical vehicle. Our products are manufactured to a high standard and — when used according to these instructions and properly maintained — will provide years of trouble-free performance.

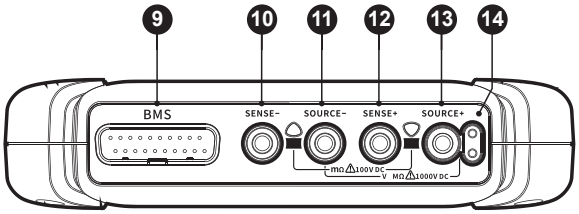
Product Description



Front View



Top View



Bottom View

1. HV LED — refer to Table 1-1 HV LED Description for details.
2. BAT+ LED — lights solid green when the drive function is activated and then flashes according to the communication frequency.
3. Connection LED — refer to Table 1-2 Connection LED Description for details.
4. Power/Battery LED — refer to Table 1-3 Power/Battery LED Description for details.
5. USB Port — used for charging and data exchange.
6. QD Socket — connects the adjustable strap with hook for hanging the EVDiag Box2.
7. DC Power Supply Input Port
8. Power Button — long press to power on/off the device.
9. BMS Port — connects the main cable.
10. Sense- Port — connects the Res- plug of the resistance test lead or connects the HV- insulation test lead when used with the Source- port.
11. Source- Port — connects the Res- plug of the resistance test lead or connects the HV- insulation test lead when used with the Sense- port.
12. Sense+ Port — connects the Res+ plug of the resistance test lead when used with the Source+ port.
13. Source+ Port — connects the Res+ plug of the resistance test lead when used with the Sense+ port or connects the HV+ insulation test lead when used with the HV+ probe button port.
14. HV+ Probe Button Port — connects the HV+ insulation test lead when used with the Source+ port.

Table 1-1 HV LED Description

LED	Color	Description
HV LED	Green	Lights solid green when a measurement function is activated and the voltage is below 60V.
	Orange	Lights solid orange when a measurement function is activated and the voltage is at 60V or above.

Table 1-2 Connection LED Description

LED	Color	Description
Connection LED	Green	Lights solid green when the EVDiag Box2 is connected to the MaxiSys tablet via USB cable.
	Blue	Lights solid blue when the EVDiag Box2 is connected to the MaxiSys tablet via Bluetooth.
	Red	Lights solid red when the EVDiag Box2 is upgrading.
	Yellow	Lights solid yellow when the EVDiag Box2 is starting up and initializing.

Table 1-3 Power/Battery LED Description

LED	Color	Description
Power/ Battery LED	Green	• Flashes green when the EVDiag Box2 is connected to a power adapter for charging. • Lights solid green when the EVDiag Box2 is not connected to a power adapter and the battery level is above 50%.
	Yellow	Lights solid yellow when the EVDiag Box2 is not connected to a power adapter and the battery level is between 25% and 50%.
	Red	• Lights solid red when the EVDiag Box2 is not connected to a power adapter and the battery level is between 5% and 25%. • Flashes red when the EVDiag Box2 is not connected to a power adapter and the battery level is at 5% or below.

Getting Started

This equipment is intended for measurements on high-voltage systems and tests on high-voltage components in hybrid/electrical vehicle. To ensure the safety of personnel and equipment, the operating environment shall meet the following conditions:

- The operating area must be dry and well-ventilated, and the floor should have good insulation properties.
- The operating area should have clear high-voltage warning signs and take isolation measures to prevent unauthorized personnel from entering.
- Do not use the equipment in wet, waterlogged, rainy, snowy, high-temperature, flammable, explosive, or conductive environments.
- Operators should stand on insulated mats during operation and wear personal protective equipment that meets high-voltage operation requirements.
- During high-voltage operations, necessary emergency response conditions must be guaranteed, and single-person operations are not permitted.

⚠ WARNING:

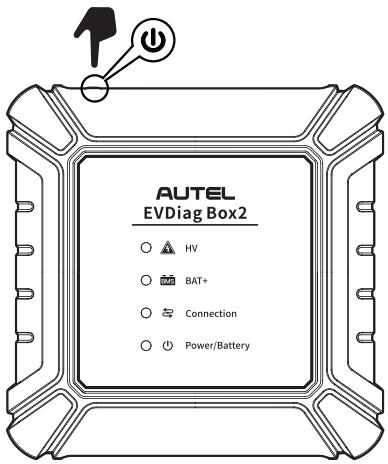
- *This product must be operated only in accordance with local regulations and by properly qualified personnel. ONLY high voltage technicians and high voltage experts are allowed to perform high voltage related operations.*
- *Before operating or maintaining this equipment, please read these instructions carefully, paying extra attention to the safety warnings and precautions. Failure to do so may cause damage and/or personal injury and will void the product warranty.*
- *Ensure that the battery pack has passed the insulation test. Before performing the test or measurement function, be sure to wear proper protective equipment, such as a helmet, protective suit, work shoes, and protective gloves.*

NOTE: *The EVDiag Box2 is compatible with Autel diagnostic tools including MaxiSys Ultra S2, MaxiSys MS909S2, MaxiSys MS919S2, MaxiSys Ultra, MaxiSys MS909, MaxiSys MS919, MaxiSys MS908S3, etc. The following operations use the connection of the EVDiag Box2 with the MaxiSys Ultra S2 as an example.*

Establishing Communication Link

1

Press and hold the **Power** button to power up the EVDiag Box2. Ensure that the device is fully charged or that it is connected to the DC power supply.

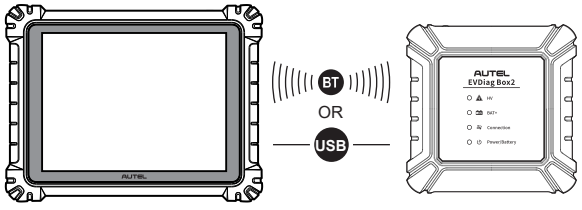


2

After powering on the MaxiSys tablet, select from Bluetooth or USB cable to connect the tablet with the EVDiag Box2 and establish a communication link.

NOTE:

- Select the USB cable connection to link the device when using the EVDiag Box2 for the first time.
- The Bluetooth ID will match the product serial number which can be found on the product label.



3

When you first use the EVDiag Box2, you need to link it with your MaxiSys tablet.

1. Tap **Settings** on the MaxiSys Job Menu.
2. Tap **EVDiag Box Settings**, and tap **Link Now** on the right of the corresponding device.
3. Tap **Read** to automatically acquire the EVDiag Box serial number and tap **Link EVDiag Box**. The device will automatically restart.
4. Download the relevant HV pack test software.



HV Pack Test

1

Tap **HV Pack Test** on the MaxiSys Job Menu. Tap the **Battery** tab and select a battery manufacturer. Follow the on-screen instructions to confirm the relevant technical certifications and complete preparation.



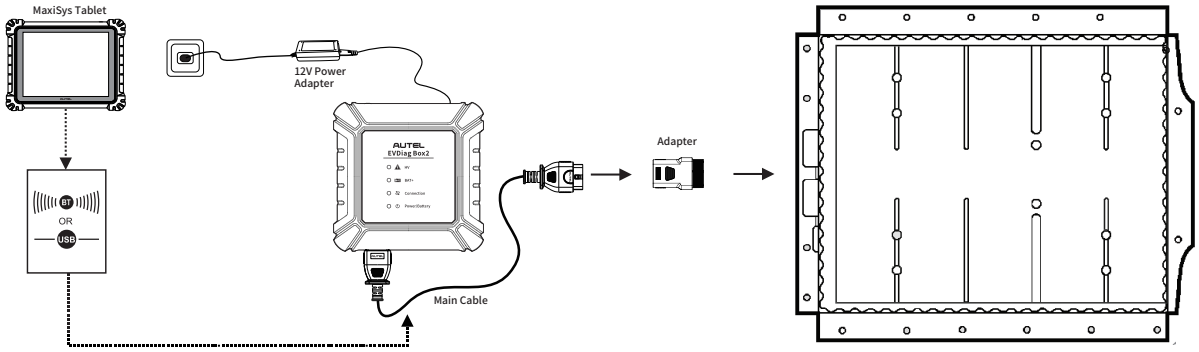
2

Follow the on-screen instructions to select the battery information, including battery type, make, model, etc.

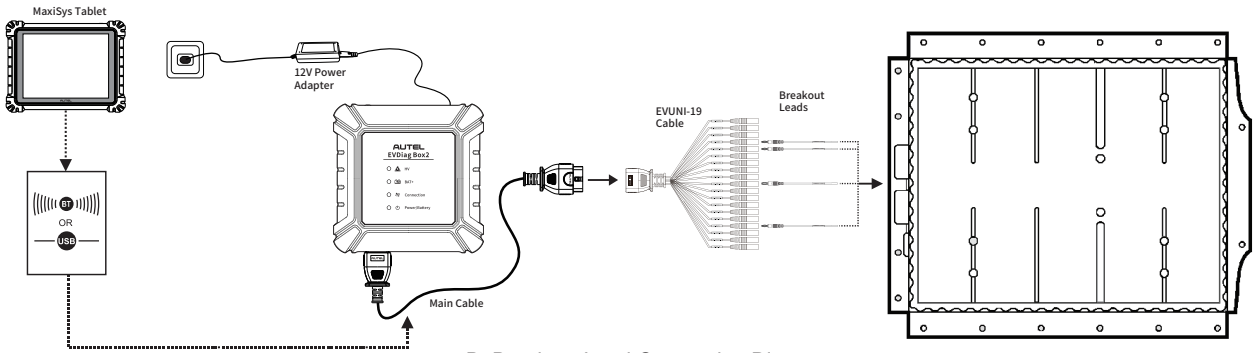


3

Follow the on-screen cable connection diagram to connect the EVDiag Box2 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.*

4 Tap **OK** on the tablet. The MaxiSys system enters the Main Menu screen.



5 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.



EV Measurement

⚠ WARNING:

- *Ensure that no other devices with an earth connection are connected to the tested object at any time during a measurement.*
- *During measurements in high-voltage environment, the equipment may only be used when the voltage source is non-grounded.*
- *Only DC voltage measurement is allowed. It is prohibited to measure AC power sources inside the vehicle, and measurements must not be performed while the vehicle is charging.*
- *Before each measurement, verify that the probe tips and wiring are undamaged.*
- *Avoid touching uninsulated probe tips during measurement to prevent electric shock.*
- *Verify secure probe connections to avoid loose contacts.*
- *Before internal resistance measurement, ensure the battery is neither charging nor discharging, and the voltage between the positive and negative terminals of the battery must be ≤100 VDC.*
- *Before equipotential measurement or insulation test, ensure the tested object is not energized during the test. Wait at least 2 minutes after power-off to ensure high-voltage system capacitors are fully discharged.*
- *To prevent an electric shock, be careful to avoid shorting live lines with the test lead tip.*
- *Do not use the equipment to measure circuits that exceed its ratings or specifications. Otherwise, it may result in equipment damage or electric shock.*
- *Do not use test probes in CAT III environments without the protective cap installed. The protective cap decreases the exposed probe metal to less than 4 mm, which decreases the possibility of arc flash from short circuits.*
- *After completing high-voltage measurements, disconnect the test circuit and wait for the voltage to drop. Do not perform low-voltage measurements or other operations until the HV LED turns green.*

! IMPORTANT:

- *Do not allow test leads to contact the terminals of a leaking battery. Doing so may cause a degradation in the equipment functionality due to exposure to electrolyte from the leaky battery.*
- *Do not subject the test lead tip to force when it is in contact with the battery under measurement at a tilted angle.*

1 Tap **EV Measurement** on the MaxiSys Job Menu. Follow the on-screen instructions to confirm the relevant technical certifications and complete preparation.



2

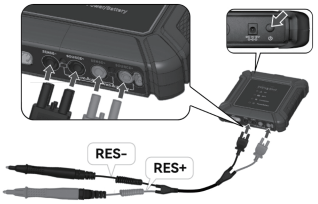
- Select a vehicle by scanning the VIN or license plate, entering the VIN manually, or choosing from the list.
- Tap **Skip** if the test vehicle is not included in the list.



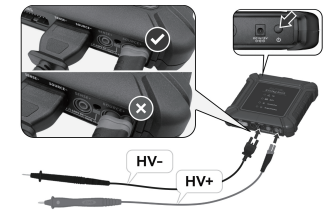
3 The system enters the Main Menu screen. The navigation bar on the left of the screen displays measurement functions including VDC Measure, HV De-energization Check, Insulation Test, Internal Resistance Measure, Equipotential Bonding Check, etc.
Select a function from the navigation bar and read the on-screen instructions carefully.



4 Follow the on-screen cable connection diagram to connect the test leads to the EVDiag Box2, and then tap **OK**.



Resistance Test Lead Connection Diagram



Insulation Test Lead Connection Diagram

5 Follow the on-screen instructions to perform EV measurement.

Completing the Operation

After completing the measurements or tests, ensure that the device is powered off and all cables are disconnected from the device.
Before re-energizing the high-voltage system, confirm the following items.

- All tools and utilities are removed from the hybrid/electric vehicle.
- Grounding and short circuits of the high-voltage system are removed.
- All previously removed protective covers, shields, and panels are securely reinstalled.
- All protective measures at the switching system are removed.

Compliance Information

Autel Intelligent Technology Corp., Ltd. hereby declares that the radio equipment type EVDiag Box2 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following URL:
https://www.autel.com/download.jhtml

NOTE: *The illustrations in this guide are for reference only. The actual product may differ.*