Autel MaxiSYS Ultra EV

Autel MaxiSYS Ultra EV Diagnostic Scanner User Manual

Model: MaxiSYS Ultra EV (ULTRAEVMS909EV)

1. Introduction

The Autel MaxiSYS Ultra EV is an advanced intelligent diagnostic scanner designed for electric, hybrid, and traditional gasoline vehicles. This device provides comprehensive analysis capabilities, including expanded topology mapping and detailed battery pack analysis for electric vehicles. It integrates a high-performance tablet with a MaxiFlash VCMI measurement device, a Bluetooth-enabled vehicle communication interface, a J2534 pass-thru programming device, and a dedicated EVDiag box.
This manual provides essential information for setting up, operating, maintaining, and troubleshooting your MaxiSYS Ultra EV scanner.

2. Setup

2.1 Unpacking the Device

Carefully unpack all components from the packaging. The box should contain the following items:

- Main Tablet (12.9-inch touchscreen)
- MaxiFlash VCMI (Vehicle Communication and Measurement Interface)
- EVDiag Box
- Necessary Cables and Adapters
- Power Adapter

Image 2.1: The Autel MaxiSYS Ultra EV scanner, including the main tablet, MaxiFlash VCMI, and EVDiag kit, along with various cables and adapters.

2.2 Initial Power On and Configuration

1. Connect the power adapter to the tablet and a power outlet.
2. Press and hold the power button to turn on the tablet.
3. Follow the on-screen instructions to complete the initial setup, including language selection, Wi-Fi connection, and Autel ID registration.

2.3 Connecting the VCMI and EVDiag Box

The MaxiFlash VCMI connects wirelessly via Bluetooth to the tablet. The EVDiag Box connects to the MaxiFlash VCMI using the provided cables. Ensure both devices are charged and properly connected before initiating diagnostics.

3. Operating Instructions

3.1 Intelligent Diagnostics

The Intelligent Scan feature provides a guided diagnostic process with step-by-step repair instructions. This includes access to Technical Service Bulletins (TSB), DTC Analysis, Repair Assist, Repair Tips, Component Measurement, and relevant case studies to streamline the diagnostic workflow.

3.2 EV Diagnostics

The MaxiSYS Ultra EV, with its dedicated EVDiag Kit, offers specialized diagnostics for electric and hybrid vehicles.

3.2.1 High Voltage Battery Pack Analysis

Perform comprehensive analysis of the high-voltage battery pack to determine its State of Health (SOH) and State of Charge (SOC). The system can read SOH with one click, display module locations, and provide maintenance recommendations. It also monitors total current, total voltage, individual cell temperatures, and SOC/SOH.

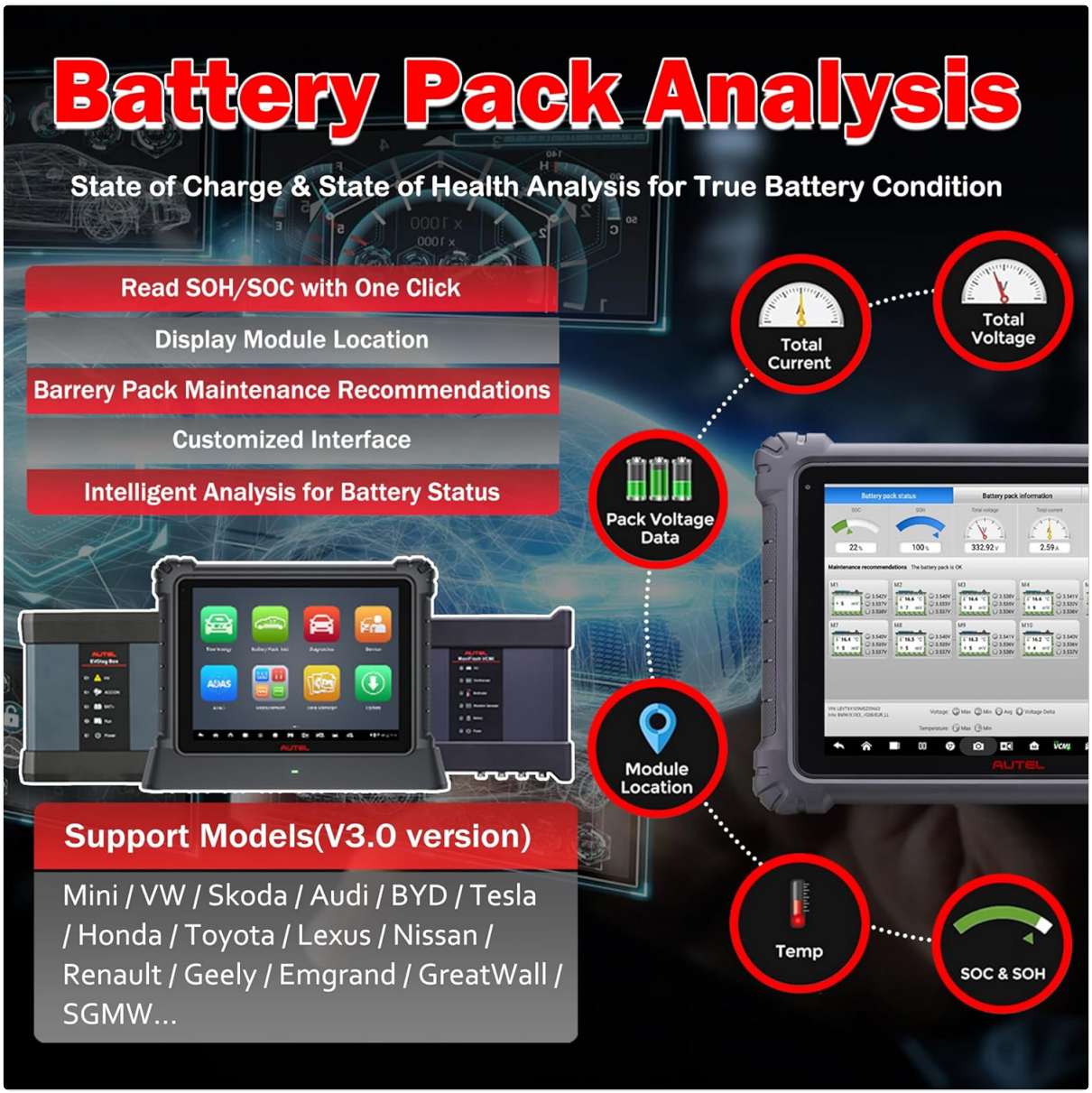

Image 3.2.1: Screen displaying detailed battery pack analysis, including State of Charge (SOC), State of Health (SOH), voltage, current, and temperature readings.

3.2.2 High-Voltage System Diagnostics

Diagnose high-voltage systems by reading and clearing Diagnostic Trouble Codes (DTCs), scanning new energy systems, and viewing system block diagrams. The tool provides HV system diagrams, operation instructions, component locations, live data viewing, and report generation for professional maintenance suggestions.

Image 3.2.2: The MaxiSYS Ultra EV performing high-voltage system diagnostics, showing a detailed system block diagram and diagnostic interface.

3.3 ECU Programming & Coding

The MaxiSYS Ultra EV supports advanced ECU programming and coding functionalities.

3.3.1 OE-Level ECU Programming

This function allows for programming, rewriting, coding, and matching new ECUs after module replacement. It supports CAN-FD, DoIP Bus protocols, D-PDU, J2534, and RP1210 standards. It can program existing data to used modules, renew ECU software versions, and program adaptive data to new modules.

3.3.2 Advanced ECU Coding

Perform advanced ECU coding on a wide range of vehicles to unlock hidden features, activate high-end

functions, and improve vehicle performance. This includes programmed module installation, online/offline ECU coding, component matching, and disabling unwanted features.

Image 3.3.1: Visual representation of ECU programming and coding capabilities, highlighting OE-level programming and advanced coding features.

3.4 5-in-1 VCMI Functions

The MaxiFlash VCMI integrates five key functions into one device:

- **Oscilloscope:** Displays changes of signals in a graph with high precision.
- **Waveform Generator:** Simulates signals of various sensors and ECU modules.
- **Multimeter:** Measures voltage, current, resistance, frequency, diode, and duty cycle.
- **CAN BUS Check:** Displays the connection between the Ultra EV and the vehicle visually.
- **VCI (Vehicle Communication Interface):** Facilitates communication with the vehicle's systems.

Image 3.4.1: The MaxiFlash VCMI unit, illustrating its integrated functions as an oscilloscope, waveform generator, multimeter, and CAN BUS checker.

3.5 Topology Mapping 2.0

This feature provides an intuitive visual representation of the vehicle's module communication network. It automatically scans ECUs, covers over 50 vehicle makes, displays module status in colors, accurately locates fault codes, and combines multi-module data into a single view.

Image 3.5.1: The tablet screen displaying Topology Mapping 2.0, showing interconnected vehicle modules and their status.

3.6 Comprehensive Service Functions

The MaxiSYS Ultra EV supports over 40 service functions for various vehicle systems, including but not limited to:

- EPB Reset (Electronic Parking Brake)
- SAS (Steering Angle Sensor) Calibration
- Battery Reset
- Throttle Reset
- ABS Bleed
- Injector Coding
- Power Balance
- Suspension Calibration
- VGT Turbo Calibration
- Headlamp Adjustment
- Window, Door, Roof Initialization

3.7 Vehicle Coverage

The device supports D-PDU/SAE J2534/RP1210/DoIP/CAN FD protocols, providing wide coverage for approximately 99% of vehicles on the market, including compatibility with OE factory tools for advanced services and programming.

4. Maintenance

4.1 Software Updates

Regularly update the software to ensure optimal performance, access to the latest vehicle models, and new diagnostic features. Connect the tablet to a stable internet connection and navigate to the 'Update' section in the main menu to check for and install available updates.

4.2 Cleaning and Storage

Clean the tablet screen and device surfaces with a soft, damp cloth. Avoid using abrasive cleaners or solvents. Store the device and its components in a dry, cool environment, away from direct sunlight and extreme temperatures, to prevent damage.

5. Troubleshooting

5.1 General Issues

If you encounter any operational issues, try the following basic troubleshooting steps:

- Ensure all cables are securely connected.
- Verify that the VCMI and EVDiag Box are powered on and properly communicating with the tablet.
- Restart the tablet and the vehicle communication devices.
- Check for and install any pending software updates.

5.2 Contacting Support

For persistent issues or advanced technical assistance, please contact Autel customer support. You can reach them via Amazon Message or email at obd2mart@outlook.com. Provide your device's serial number and a detailed description of the problem for faster resolution.

6. Specifications

Feature	Specification
Operating System	Android 7.0

Processor	Samsung Exynos8895V Octa-core (2.3GHz quad-core + 1.7GHz quad-core A53)
Memory	256GB Built-in Memory, 4GB RAM
Display	12.9-inch Touch Screen
Battery	18000 mAh
Camera	16 Megapixel, Autofocus with Flashlight
Dimensions	14.43 x 11.06 x 1.34 inches
Item Weight	59.9 pounds
Manufacturer Part Number	ULTRAEVMS909EV
UPC	792499185954

7. Warranty and Support

7.1 Product Warranty

The Autel MaxiSYS Ultra EV comes with a 1-year quality warranty. For specific terms and conditions, please refer to the warranty documentation included with your product or contact Autel customer service.

7.2 Return Policy

A 30-day money-back guarantee or new replacement option is available. Please contact the seller for details regarding returns and replacements.

7.3 Technical Support

For any technical inquiries or support needs, please contact Autel via Amazon Message or email at obd2mart@outlook.com. Remote technical support is available to provide solutions and assistance.