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Autel MS909 S2

Autel MaxiSys MS909S2 Diagnostic Scanner User Manual

Model: MS909 S2

1. INTRODUCTION

The Autel MaxiSys MS909S2 is an advanced diagnostic scanner designed for professional automotive technicians. It provides comprehensive vehicle diagnostics, service functions, and programming capabilities. This manual outlines the setup, operation, maintenance, and specifications of the MS909S2 to ensure proper and efficient use.



Image 1.1: Overview of the Autel MaxiSys MS909S2 Diagnostic Scanner highlighting its key features and components.

2. SETUP

2.1 Unpacking and Initial Inspection

Carefully unpack all components from the packaging. Verify that all items listed in the 'What's in the Box' section are present and undamaged. If any items are missing or damaged, contact Autel support immediately.

2.2 Charging the Device

Before first use, fully charge the MS909S2 tablet. Connect the power adapter to the tablet's charging port and plug it into a power outlet. The charging indicator will show the charging status. A full charge ensures optimal performance during diagnostic sessions.

2.3 Connecting the VCI 2 Vehicle Communication Interface

The VCI 2 is essential for communication between the MS909S2 tablet and the vehicle. It can connect via USB, Wi-Fi (5G), or Bluetooth.

1. **Power On:** Ensure the VCI 2 is powered on. It typically draws power from the vehicle's OBDII port.
2. **Vehicle Connection:** Plug the VCI 2 into the vehicle's OBDII port, usually located under the dashboard.
3. **Tablet Connection:**
 - **Bluetooth:** On the MS909S2 tablet, navigate to the VCI Manager and select Bluetooth for wireless connection.
 - **Wi-Fi:** Configure the VCI 2 and tablet to connect to the same Wi-Fi network.
 - **USB:** Connect the VCI 2 to the tablet using the provided USB cable for a direct, stable connection.



3. OPERATING INSTRUCTIONS

The Autel MaxiSys MS909S2 offers a wide range of diagnostic and service functions. This section details the primary operational aspects.

3.1 System Navigation

The MS909S2 runs on Android 13.0 with an intuitive touchscreen interface. Navigate through menus by tapping icons and swiping. The main screen provides access to key functions like Diagnostics, Service, VCI Manager, and Updates.

3.2 Vehicle Diagnostics

This function allows for comprehensive scanning of vehicle systems to identify and resolve issues.

- **Read/Clear DTCs:** Retrieve Diagnostic Trouble Codes (DTCs) from all available modules and clear them after repairs.
- **View Live Data:** Monitor real-time data streams from various sensors and components.
- **Freeze Frame Data:** View a snapshot of sensor values at the moment a DTC was set.
- **Active Test (Bi-directional Control):** Perform specific tests on vehicle components to verify their functionality.

Near **OEM** -Level Diagnostics



15000+ Vehicles

US/European/Asian vehicles (1996–2025, 12V sedans/SUVs/light trucks)

- D-PDU/J2534/RP1210
- DOIP/CAN FD
- FCA AutoAuth
- Renault SCW
- 99% of Cars from 1996–2025



Image 3.1: The MS909S2 interface showing core diagnostic capabilities and supported communication protocols.

3.3 Topology Mapping 3.0

Topology Mapping 3.0 provides an OE-style visualization of the vehicle's ECU network. It displays the communication status of each module with color-coding (green for no fault, red for fault, gray for no response). This feature helps quickly identify communication issues and faulty modules.

TOPOLOGY 3.0



- OE-Style System Analysis of Multi-Speed Communication Protocol Networks
- Active Module and Network Analysis: Locate and Directly Ping ECUs to Test Signal Quality and Network Integrity
- At-a-Glance Color-Coded Module Status

MOTOR TRUSPEED REPAIR



- Component Measurement
- DTC Analysis
- Repair Tips
- Technical Service Bulletin
- Repair Assist
- Relevant Cases

Image 3.2: Topology 3.0 interface showing the vehicle's network structure and module status.

3.4 Data-Driven Diagnostics with Enhanced PID Analysis

This function enhances data stream analysis for more accurate fault tracing.

- **Data Visualization:** Graph multiple parameters simultaneously to observe relationships and anomalies.
- **Live Data Fusion:** Record and compare value changes across different systems.
- **Multi-PID Grouping:** Analyze related parameters together for specific troubleshooting, such as engine performance or emissions.
- **Reference Sampling:** Record and compare selected PIDs for pre- and post-repair analysis.

Data-Driven Diagnostics with Enhanced PID Analysis

Data Visualization

Enhanced graphing capability to visualize multiple parameters.

Live Data Fusion

Record and compare value changes across multiple systems

Parameter Grouping

Multi-PID selection for analyzing related parameters simultaneously.

Reference Sampling

Record, store, and review selected PIDs for pre- and post-repair comparison that will flag min, max, and average.

Real-Time, Split-Screen Analysis



Enhanced Split-Screen Diagnostics

Diagnostics + X (Multiple Applications)

- Topology + Component Location
- Fault Scan + Ping Network
- Topology/List + Data Trouble Code(DTC)



Image 3.3: Data-Driven Diagnostics interface with enhanced PID analysis and split-screen view.

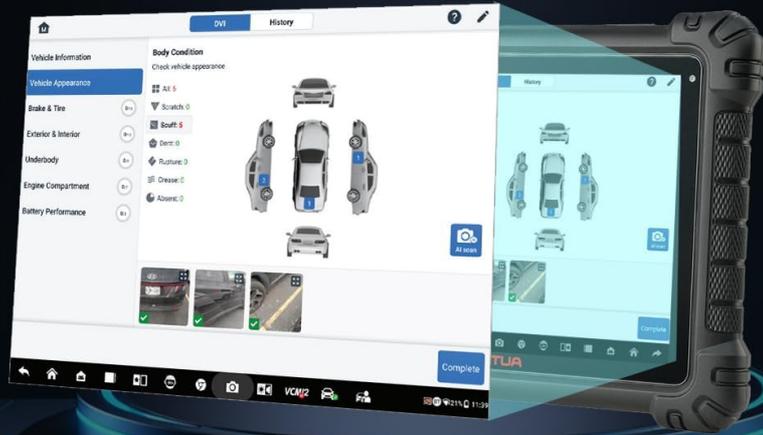
3.5 Hands-Free Virtual Assistant "MAX"

The integrated virtual assistant, MAX, allows for voice-controlled navigation and execution of tasks. Simply say "Hey MAX" to initiate commands such as opening service menus, starting system scans, or running active tests.

Advanced Digital Vehicle Inspection (DVI)

Thorough Multi-Point DVI

- AI-powered image analysis for auto-detection of dents and scratches Pair with Autel TBE200 Tire Tread Examiner and ITS600 TPMS tool to produce detailed tire analysis.
- Vehicle status report.
- Track maintenance.
- Maximize revenue and customer satisfaction.



Meet **MAX**, Your Hands-Free Virtual Assistant



"Hey MAX, open service menu"

MAX enables hands-free navigation of the MS909S2 interface and provides verbal command functionality for various tasks and functions. Effortlessly initiate a system scan, access maintenance tasks, or execute active tests.

Image 3.4: The MAX virtual assistant feature on the MS909S2.

3.6 Enhanced Split-Screen Diagnostics

This feature allows running two applications simultaneously for efficient cross-referencing. Examples include viewing Topology alongside Component Location, or performing a Fault Scan while pinging the network.

3.7 Advanced Digital Vehicle Inspection (DVI)

The DVI function provides a multi-point visual inspection of the vehicle. It includes AI-powered image analysis to detect dents and scratches. It can be paired with optional tools like Autel TBE200 (tire tread) and ITS600 (TPMS) for detailed reports.

3.8 J2534 ECU Programming & Coding

The MS909S2 supports J2534 ECU programming and coding, allowing for flashing new software to ECUs, adapting components, and customizing vehicle settings. This requires a stable internet connection and adherence to manufacturer-specific procedures.

3.9 Service Functions (48+)

The device includes over 48 common maintenance and service functions, such as:

- Oil Reset
- SAS (Steering Angle Sensor) Reset
- EPB (Electronic Parking Brake) Reset
- TPMS (Tire Pressure Monitoring System) Reset
- BMS (Battery Management System) Reset
- Throttle Adaptation
- Injector Coding
- Brake Bleed
- Gear Learning
- Suspension Reset
- And many more.

48+ SERVICES

- Oil Reset
- SAS Reset
- EPB Reset
- TPMS Reset
- Throttle
- BMS Reset
- Injector Coding
- Clutch Learning

- Brake Bleed
- Gear Learning
- Suspension Reset
- Gearbox Reset
- A/F Reset
- ADBLUE
- Coolant Bleed
- Headlight Matching
- Language Set

15+ FEATURES

- Live DataFusion
- Auto Scan 2.0
- Built-in Demo
- FCA & SCW
- Remote Expert
- ADAS Calibration(+Toolkit)

- Pre Scan & Post Scan
- WiFi Printing
- Autel Cloud Management
- Battery Test With BT506

Image 3.5: A selection of the 48+ service functions available on the MS909S2.

3.10 Motor TruSpeed Repair

This feature assists in vehicle repair by providing:

- Component Measurement
- DTC Analysis

- Repair Tips
- Technical Service Bulletins (TSB)
- Repair Assist
- Relevant Cases

3.11 Other Advanced Functions

- **Cloud Report:** Generate and store diagnostic reports in the cloud for easy access and sharing.
- **Wi-Fi Printing:** Print diagnostic reports directly from the device to a Wi-Fi enabled printer.
- **Pre & Post Scan:** Perform scans before and after repairs to document vehicle status.
- **Battery Test (with BT506):** Integrate with the Autel BT506 battery tester for comprehensive battery health analysis.
- **Endoscope (with MV108/MV105):** Connect an Autel endoscope for visual inspection of hard-to-reach areas.
- **Remote Expert:** Access remote technical support and assistance.
- **AutoAuth for FCA:** Provides secure gateway access for 2018 and newer FCA vehicles.
- **VAG Guide:** Guided functions for Volkswagen Audi Group vehicles.



Image 3.6: Icons representing additional advanced functions of the MS909S2.

4. MAINTENANCE

4.1 Software Updates

Regularly update the MS909S2 software to ensure access to the latest vehicle coverage, bug fixes, and new features. Connect the tablet to a stable internet connection and navigate to the 'Update' section on the main menu. Follow the on-screen instructions to download and install updates.

4.2 Cleaning and Storage

- Clean the tablet screen with a soft, lint-free cloth. Avoid abrasive cleaners.
- Keep the device and VCI 2 free from dust, dirt, and moisture.
- Store the MS909S2 in its protective case in a dry, cool environment when not in use.
- Avoid exposing the device to extreme temperatures or direct sunlight for extended periods.

4.3 Battery Care

To prolong battery life, avoid fully discharging the device frequently. If storing for an extended period, ensure the battery is charged to approximately 50-70%.

5. TROUBLESHOOTING

5.1 Device Not Powering On

- Ensure the battery is charged. Connect the power adapter and try again.
- Press and hold the power button for 10-15 seconds to perform a hard reset.

5.2 VCI 2 Connection Issues

- Verify the VCI 2 is securely plugged into the vehicle's OBDII port and receiving power (indicated by LED lights).
- Check the connection status in the VCI Manager on the tablet. Try reconnecting via Bluetooth, Wi-Fi, or USB.
- Ensure the vehicle's ignition is on (Key On, Engine Off).
- Confirm that the VCI 2 firmware is up to date.

5.3 Software Freezing or Slow Performance

- Close unnecessary applications running in the background.
- Clear cache data from the device settings.
- Perform a software update to ensure the latest optimizations.
- If issues persist, consider a factory reset (back up important data first).

5.4 Diagnostic Communication Errors

- Verify the vehicle's ignition is on.
- Ensure the correct vehicle make, model, and year are selected in the software.
- Check for any physical damage to the OBDII cable or VCI 2.
- Try connecting to a different vehicle to rule out vehicle-specific issues.

6. SPECIFICATIONS

Feature	Specification
Model	MS909 S2
Operating System	Android 13.0
Processor	2.7G Octa-Core Processor
Memory	12GB RAM + 256GB Storage
Display	11-inch Anti-Glare Touchscreen (2176 x 1600 resolution)
Battery	15000mAh Lithium Polymer

Feature	Specification
Connectivity	Dual Wi-Fi 6, Bluetooth, USB
VCI	VCI 2 (Supports DoIP, CAN FD, J2534)
Item Weight	14.87 pounds
Package Dimensions	21 x 16 x 5.12 inches

What's New in MS909 S2

MS909S2 vs MS909

		MS909S2	MS909
Hardware	Display	11-inch; 2176x1600	9.7-inch; 1536x2048
	OS	Android 13.0	Android 10.0
	Processor	2.7 GHz 8-core processor	2.2GHz + 1.8GHz OCTA-CORE
	Memory	12 GB RAM + 256 GB storage	4 GB RAM + 128 GB storage
	Battery	15000 mAh	15000 mAh
	Fast Charging	✓	✗
Function	Topology Mapping	Topology 3.0	Topology 2.0
	Services	48+	40+
	AI Technician Assistant	✓	✗
	Live Data Analysis	Live Data Fusion, Multi-PiD grouping	Basic single-PID analysis- No fusion/grouping
	Split-Screen Mode	✓	✗
	Pre/Post-Scan Reports	✓	✓
	AI Digital Vehicle Inspection (DVI)	✓	✗
Autel Cloud Integration	✓	✓	
VCI Details	VCI Details	VCI2(328 ft (100 m, 5G); BT 5.0 + EDR)	VCI(164 ft (50 m, 5G); BT 2.1 + EDR)

Image 6.1: Detailed comparison of MS909S2 specifications against the previous MS909 model.

7. WARRANTY AND SUPPORT

7.1 Warranty Information

The Autel MaxiSys MS909S2 typically comes with a manufacturer's warranty covering defects in materials and workmanship. Please refer to the warranty card included with your product or visit the official Autel website for specific warranty terms and duration. Keep your proof of purchase for warranty claims.

7.2 Technical Support

For technical assistance, software issues, or operational questions, please contact Autel customer support. Support contact information can usually be found on the official Autel website or within the device's 'About' section. Online resources, FAQs, and forums may also be available.

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