

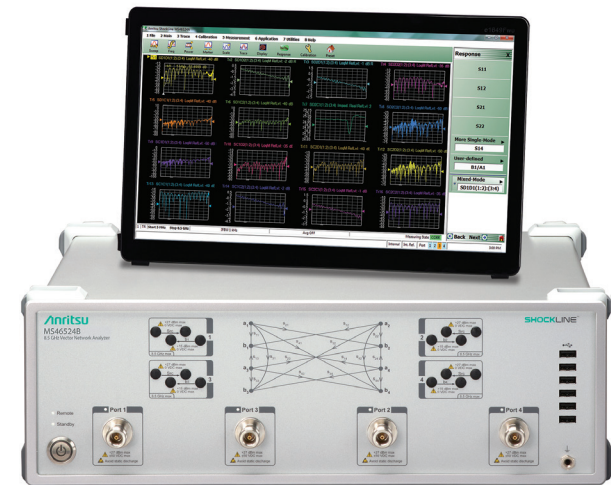
ShockLine MS46524B 4-Port Performance Vector Network Analyzer

RF and Microwave VNAs to 43.5 GHz

The MS46524B is a series of 4-port Performance ShockLine Vector Network Analyzers. Delivering an unprecedented level of value and performance, including best-in-class dynamic range, the Performance series lowers cost-of-test and speeds time to market in numerous testing of applications up to 43.5 GHz. These applications include characterizing and manufacturing, multi-port mobile network equipment, mobile devices, automotive cables, high-speed data interconnects and system integration components.

The MS46524B configured with option 10, 20, or 43 brings RF to microwave frequency capabilities to the Performance ShockLine family. These frequency options, combined with powerful ShockLine software, provide a cost effective solution for the most challenging, passive device testing.

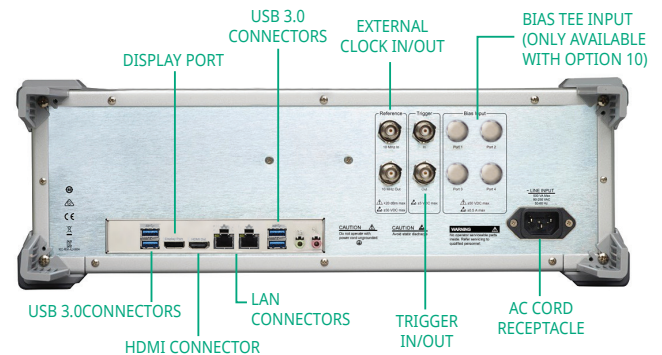
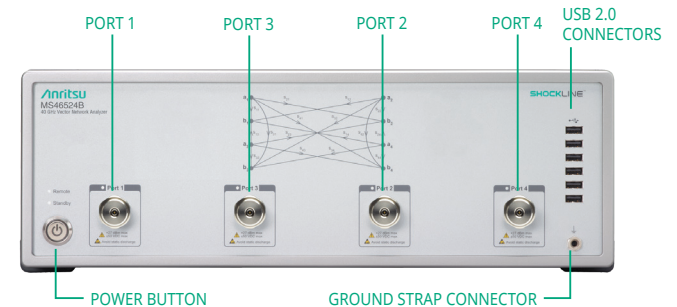
The MS46524B series comes in a 3U high chassis and uses the same GUI, software, command syntax, drivers, and programming environments as the rest of the ShockLine family.



MS46524B-010 (8.5 GHz VNA SHOWN ABOVE)

ShockLine 4-Port VNA Highlights

- Specified performance to 43.5 GHz with Extended-K™ ports on option 43.
- Ideal for testing single-ended and multi-port RF and uW devices.
- Wide dynamic range enables measurement of very low reflection artifacts.
- Excellent corrected directivity minimizes measurement uncertainty.
- Time domain with gating option grants easier and faster fault identification.
- Advanced Time Domain option provides Signal Integrity testing capabilities.
- Bias Tee option increases test setup flexibility.
- Modern LAN interface for remote control is faster than GPIB.
- A common GUI and SCPI interface within the ShockLine family.
- USB ports allow for easy connection to peripherals like keyboard and mouse.
- The compact 3U high packages allows for the efficient use of rack space.



ShockLine MS46524B 4-Port Performance Vector Network Analyzer

Key Specifications

Analyzer Performance	
Frequency Option	MS46524B-010, 50 kHz to 8.5 GHz, type N(f) ports MS46524B-020, 50 kHz to 20 GHz, type K(m) ports MS46524B-043, 50 kHz to 43.5 GHz, type Extended-K(m) ports
Dynamic Range	≥ 120 dB (50 MHz to 43.5 GHz), typical
Output Power	-30 dBm to +9 dBm (300 kHz to 40 GHz), typical
Corrected Directivity	≥ 40 dB (300 kHz to 40 GHz, calibrated with 36585K AutoCal)
General	
Measurement Parameters	Single ended S-Parameters: $S_{11}, S_{12}, S_{13}, S_{14}, S_{21}, S_{22}, S_{23}, S_{24}, S_{31}, S_{32}, S_{33}, S_{34}, S_{41}, S_{42}, S_{43}, S_{44}$ Mixed-Mode S-Parameters: SD1D1, SD1D2, SD1C1, SD1C2, SD2D1, SD2D2, SD2C1, SD2C2, SC1D1, SC1D2, SC1C1, SC1C2, SC2D2, SC2C1, SC2C2 User-defined combination: $a_1, a_2, a_3, a_4, b_1, b_2, b_3, b_4, 1$. Max Efficiency: kQ product, η_{max}
Display Graphs	Log Magnitude, Phase, Group Delay, Linear Magnitude, Real, Imaginary, SWR, Impedance, Smith Chart (Impedance) kQ product and η_{max}
Measurements Data Points	2 to 20,001 points
Limit Lines	Single or segmented. 2 limit lines per trace. 50 segments per trace.
IF Bandwidth	10, 20, 30, 50, 70, 100, 200, 300, 500, 700 Hz 1, 2, 3, 5, 7, 10, 20, 30, 50, 70, 100, 200, 300, 500 kHz
Display and Traces	Up to 16 traces. A separate memory for each trace can be used to store measurement data for later display or subtraction, addition, multiplication or division with current measurement data. The trace data can be saved and recalled.
Markers	12 markers + 1 reference marker per trace
Remote Control Interface	SCPI/Software drivers over LAN
Display	Powerful GUI displayed on user-provided monitor, touchscreen compatible
Dimensions (H x W x D)	152 mm x 445 mm x 442 mm
Weight:	< 13.6 kg (< 30 lbs), typical

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Product Options

Option Number	Description
MS46524B-001	Rack mount
MS46524B-002	Time Domain with time gating
MS46524B-022	Advanced Time Domain
MS46524B-024	Universal Fixture Extraction
MS46524B-061	Bias Tee (Only available with Option 10)

Calibration Accessories

Part Number	Description
MN25208A	2-Port SmartCal 8.5 GHz USB Auto Calibration Unit
MN25218A	2-Port SmartCal 20 GHz USB Auto Calibration Unit
MN25408A	4-Port SmartCal 8.5 GHz USB Auto Calibration Unit
MN25418A	4-Port SmartCal 20 GHz USB Auto Calibration Unit
36585K	2-Port Precision AutoCal 40 GHz Auto Calibration Unit
TOSLN50A-8	Precision N Male Through/Open/Short/Load Mechanical Calibration Tee
TOSLNF50A-8	Precision N Female Through/Open/Short/Load Mechanical Calibration Tee
TOSLK50A-40	Precision K Male Through/Open/Short/Load Mechanical Calibration Tee
TOSLKF50A-40	Precision K Female Through/Open/Short/Load Mechanical Calibration Tee
TOSLK50A-43.5	Precision Extended-K Male Through/Open/Short/Load Mechanical Calibration Tee, DC to 43.5 GHz, 50 ohm, includes .s1p files for data-based calibration support
TOSLKF50A-43.5	Precision Extended-K Female Through/Open/Short/Load Mechanical Calibration Tee, DC to 43.5 GHz, 50 ohm, includes .s1p files for data-based calibration support
3650A	SMA/3.5 mm Calibration Kit, Without Sliding Loads, DC to 26.5 GHz, 50 Ω
3652A	K Connector Calibration Kit, Without Sliding Loads, DC to 40 GHz, 50 Ω
3653A	N Connector Calibration Kit, Without Sliding Loads, DC to 18 GHz, 50 Ω

Accessories

Cables



Automatic Calibration Unit



Calibration Accessories



Torque Wrenches



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