

MS46524A 4-Port ShockLine™ Vector Network Analyzers

Ideal for Testing Passive Multiport Devices

The MS46524A is a series of 4-port RF ShockLine™ Vector Network Analyzers with frequency ranges from 50 kHz to 4.5/8.5 GHz.

The MS46524A are a low cost, 4-port VNAs packaged in a compact and rugged 2U chassis capable of measuring 16 single-ended and mixed-mode S-parameters. Additionally, time domain measurements are available as an option for simple signal integrity testing on high-speed digital boards, high speed connectors, cables and PC boards.

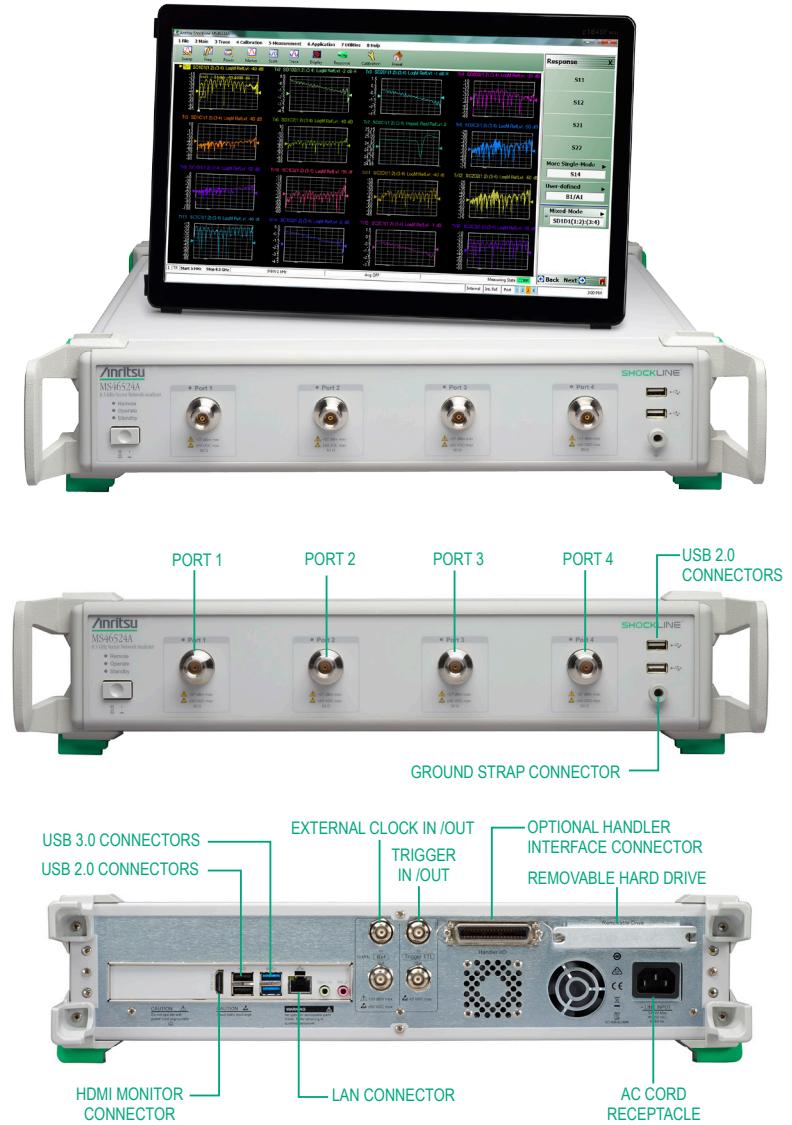
The MS46500A series has a unique architecture which allows simultaneous measurements of forward and reverse parameters in a single sweep. This capability essentially reduces the measurement time by a factor of four as compared to traditional 4-port serial sweep.

ShockLine™ 4-Port VNA Highlights

- Simultaneous sweep captures all S-parameters in a single sweep increasing production throughput
- Simple signal integrity testing of passive multiport and differential devices
- Fast sweep speed and wide dynamic range minimizes production test time
- Excellent corrected directivity allows for less measurement uncertainty
- Time domain with time gating option grants easier and faster fault identification
- The LAN interface for remote control is faster than GPIB
- A common GUI and SCPI interface within the Shockline Family for ease of use
- USB ports allow for easy connection to peripherals like keyboard and mouse
- The small 2U packages allows for the efficient use of rack space



Simple. Economical. Great Performance.



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Quick Fact Sheet

MS46524A 4-Port ShockLine™ Vector Network Analyzers



Key Specifications

Analyzer Performance	
Frequency Options	MS46524A-004, 50 kHz to 4.5 GHz, type N(f) ports MS46524A-010, 50 kHz to 8.5 GHz, type N(f) ports
Dynamic Range	> 110 dB
Sweep Speed	77 µs / data point, typical
Corrected Directivity	> 42 dB
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, SC1D2, SC2D2, SC2C1, SC2C2 User-defined combination: $a_1, a_2, a_3, a_4, b_1, b_2, b_3, b_4, 1$.
Display Graphs	Log Magnitude, Phase, Group Delay, Linear Magnitude, Real, Imaginary, SWR, Impedance, Smith Chart (Impedance)
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
Remote Control Interface	SCPI/Software drivers over LAN
Display	Powerful GUI displayed on user-provided monitor, touchscreen compatible
Temperature	Operating Temperature 0 °C to 50 °C, humidity 95% or less at 40 °C
Dimensions	108 mm x 484 mm x 590 mm
Weight:	< 12.5 kg (< 28 lb), typical

Product Options

Option Number	Description
MS46524A-001	Rack mount
MS46524A-002	Time Domain with time gating
MS46524A-005	Handler Interface

Calibration Accessories

Part Number	Description
MN25208A	2-Port SmartCal 8.5 GHz USB 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
3653A	Type N Calibration Kit
3650A	SMA / 3.5 mm Calibration Kit

Accessories

Cables	Automatic Calibration Unit
Calibration Accessories	Torque Wrenches

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