

# ShockLine MS46522B 2-Port Performance Vector Network Analyzer

## RF and Microwave VNAs to 92 GHz

The MS46522B is a series of 2-port Performance ShockLine Vector Network Analyzers. Delivering an unprecedented level of value and performance, the MS46522B series lowers cost-of-test and speeds time to market in numerous test applications up to 92 GHz. These applications include characterizing and manufacturing mobile network equipment, mobile devices, automotive cables, high-speed data interconnects and system integration components.

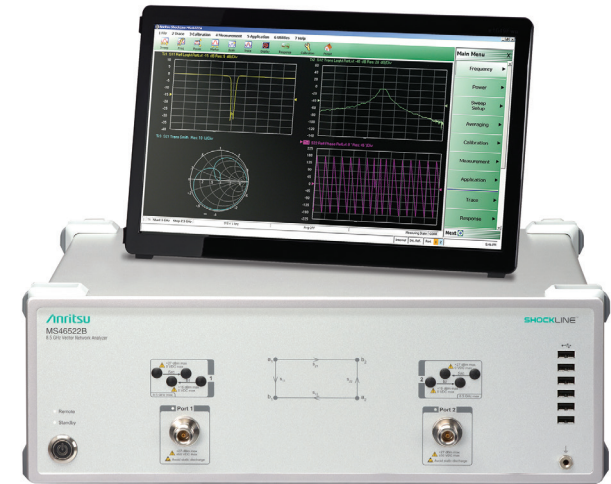
The MS46522B configured with option 10, 20, or 43 brings 50 kHz to 8.5/20/43.5 GHz frequency capabilities to the Performance ShockLine family. These frequency options, combined with powerful ShockLine software, provide a cost effective solution for the most challenging passive device testing.

MS46522B-082 and -083 are unique tethered E-band frequency options for the MS46522B series which delivers banded mmWave measurement capabilities at an unprecedented level of convenience and value to the marketplace. The one-meter option 82 targets production and characterization of E-band components while the MS46522B with the five-meter option 83 aims at over-the-air (OTA) applications.

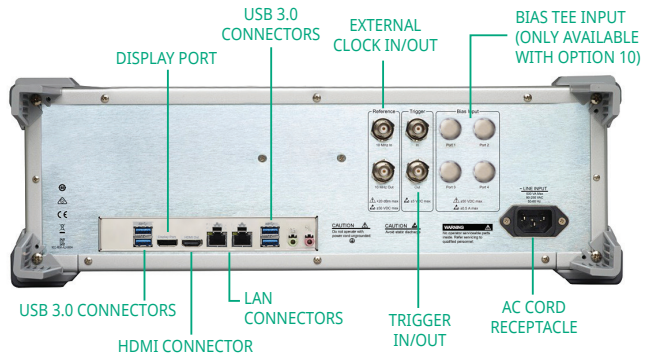
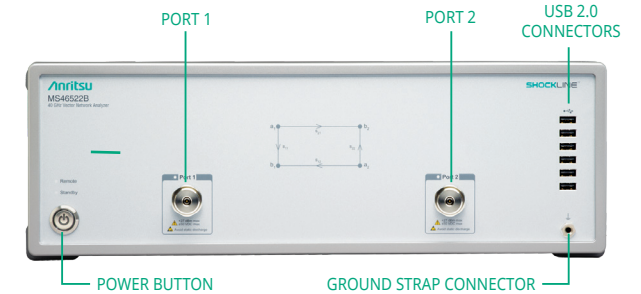
The MS46522B series comes in a 3U high chassis and uses the same GUI, software, command syntax, drivers, and programming environments as the rest of the ShockLine family.

## Key Features and Benefits

- Guaranteed performance to 43.5 GHz with Extended-K™ ports on option 43.
- High output power allows measurement of high attenuation devices.
- Wide dynamic range enables measurement of very low reflection artifacts.
- Excellent corrected directivity minimizes measurement uncertainty.
- SmartCal auto calibration unit reduces calibration and setup time.
- Advanced Time Domain option provides Signal Integrity testing capabilities.
- Bias Tee option increases test setup flexibility.
- Time domain with time gating option grants easier and faster fault identification.
- Modern 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.



MS46522B-010 (8.5 GHz VNA SHOWN ABOVE)



Simple | Economical | Great Performance

# ShockLine MS46522B 2-Port Performance Vector Network Analyzer

## Key Specifications

Analyzer Performance	
Frequency Options	MS46522B-010, 50 kHz to 8.5 GHz, type N(f) ports MS46522B-020, 50 kHz to 20 GHz, type K(m) ports MS46522B-043, 50 kHz to 43.5 GHz, type Extended-K(m) ports MS46522B-082, 55 GHz to 92 GHz, WR12 waveguide flange, one-meter MS46522B-083, 55 GHz to 92 GHz, WR12 waveguide flange, five-meter
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: $S_{11}$ , $S_{21}$ , $S_{12}$ , $S_{22}$ Mixed-Mode S-Parameters: SDD, SCC, SDC, SCD User-defined combination: $a_1$ , $a_2$ , $b_1$ , $b_2$ , 1 Max Efficiency: kQ product, $\eta_{max}$
Display Graphs	Log Magnitude, Phase, Group Delay, Linear Magnitude, Real, Imaginary, SWR, Impedance, Smith Chart, Polar, Power in/out, Max Efficiency (kQ product and $\eta_{max}$ )
Measurements Data Points	2 to 20,001 points
Limit Lines	Single or segmented. 2 limit lines per trace. 100 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
Dimensions (H x W x D)	152 mm x 445 mm x 442 mm
Weight:	< 11 - 15 kg (< 25 - 33 lb), typical depending on frequency option

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## Product Options

Option Number	Description
MS46522B-001	Rack mount
MS46522B-002	Time Domain with time gating
MS46522B-022	Advanced Time Domain
MS46522B-024	Universal Fixture Extraction
MS46522B-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
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
3655E	Waveguide Calibration Kit (WR12)

## Accessories

### Cables



### Automatic Calibration Unit



### Calibration Accessories



### Torque Wrenches



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