Quick Fact Sheet
ShockLine™ MS46122B
Compact Vector Network Analyzers
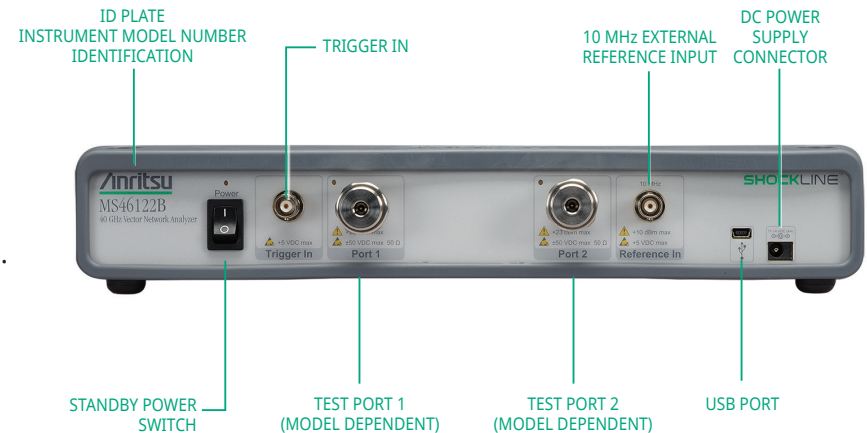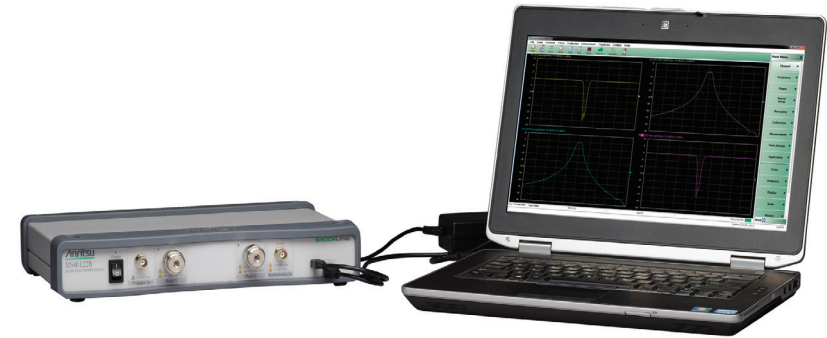
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World's only series of compact VNAs with Extended-K™ ports specified to 43.5 GHz

The ShockLine MS46122B is a series of three compact ShockLine USB vector network analyzers (VNAs). The VNAs are packaged in a compact 1U chassis and are externally controlled via USB from a user supplied PC running the same Graphical User Interface (GUI) software as the rest of the ShockLine family of VNAs. The unit also comes standard with 19" rack mount hardware for convenient rack mount installation.

The ShockLine MS46122B benefits from patented shockline VNA-on-chip technology that simplifies the internal VNA architecture at high frequencies, reduces instrument cost, and enhances accuracy and measurement repeatability. The combination of lower cost, small size, and good performance make the ShockLine MS46122B series VNAs ideal for passive device test applications where performance and small form factor are desired.

ShockLine Compact VNA Highlights

- Guaranteed specs with K connector ports to 43.5 GHz for cost-effective measurements.
- Small and lightweight, easily shared between test locations.
- PC control takes advantage of external computer processing power and functionality.
- Compact 1U high package for efficient use of bench and rack space.
- No onboard data storage eliminates the need for data purging in secure applications.
- Time domain with time gating option grants easier and faster fault identification.
- A common GUI interface within the ShockLine family reduces switching costs between models.
- Compatibility with AutoCal and SmartCal units enables fast calibrations.

ID PLATE
INSTRUMENT MODEL NUMBER IDENTIFICATION

TRIGGER IN

10 MHz EXTERNAL REFERENCE INPUT

DC POWER SUPPLY CONNECTOR

STANDBY POWER SWITCH

TEST PORT 1 (MODEL DEPENDENT)

TEST PORT 2 (MODEL DEPENDENT)

USB PORT

SHOCKLINE™

Simple | Economical | Great Performance

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ShockLine™ MS46122B
Compact Vector Network Analyzers

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Key Specifications

Analyzer Performance	
Frequency Options	MS46122B-010, 1 MHz to 8 GHz, type N(f) ports MS46122B-020, 1 MHz to 20 GHz, type Ruggedized K(m) ports MS46122B-043 1 MHz to 43.5 GHz type Ruggedized Extended-K (m) ports (Extended-K (m) ports are compatible with standard K (2.92 mm), 3.5 mm and SMA connectors.)
Dynamic Range	> 110 dB, 14 GHz to 43.5 GHz, typical
Sweep Speed	130 µs / data point, typical
High Level Noise	0.001 dB, 20 MHz to 43.5 GHz, typical
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, ηmax
Display Graphs	Log Magnitude, Phase, Group Delay, Linear Magnitude, Real, Imaginary, SWR, Impedance, Smith Chart, Polar kQ product and ηmax
Measurements Data Points	2 to 16,001 points
Limit Lines	Single or segmented. 2 limit lines per trace. 50 segments per trace.
IF Bandwidth	10, 20, 50, 70, 100, 200, 300, 500, 700 Hz 1, 2, 5, 7, 10, 20, 30, 50, 70, 100, 300 kHz
Display Channels and Traces	Up to 16 channels with a maximum of 16 traces each. 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
Display	Powerful GUI displayed on user-provided computer.
Temperature	Operating Temperature 0 ℃ to 50 ℃
Dimensions	61 mm x 328 mm x 198 mm (H x W x D)
Weight:	< 2.2 kg (< 5 lbs), typical

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Product Options

Option Number	Description
MS46122B-002	Time Domain with time gating

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
TOSLN50A-18	Precision N Male Through/Open/Short/Load Mechanical Calibration Tee
TOSLNF50A-18	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
36585K	2-Port AutoCal 40 GHz Auto Calibration Unit
3653A	Type N Calibration Kit
3652A	Type K Calibration Kit
3650A	SMA / 3.5 mm Calibration Kit

Accessories

Cables	Automatic Calibration Unit

Calibration Accessories	Torque Wrenches