

MS46121A 1-Port ShockLine™ Vector Network Analyzers

ShockLine™ 1-Port USB VNAs up to 6 GHz

The MS46121A is a series of two PC-controlled 1-Port USB ShockLine Vector Network Analyzers with frequency ranges from 40 MHz to 4 GHz and 150 kHz to 6 GHz. The VNAs are packaged in a compact housing 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 MS46121A is ideal for testing 1-port devices in university laboratories and production lines. The combination of small size and good performance make the MS46121A 1-Port VNAs ideal for passive device test applications where low cost, performance and small form factor are desired.

The MS46121A with Option 2 provides a Time Domain Reflectometry (TDR) like display that enables real impedance measurements over frequency. With Option 21, scalar transmission between two to four MS46121A instruments can be performed in various configurations.

ShockLine™ 1-Port VNA Highlights

- Enables multisite testing of 16 DUTs in one single sweep.
- Direct connection to DUT avoids the need for RF cables resulting in improved measurement stability
- PC control takes advantage of external computer processing power and functionality.
- Compact package allows measurements at hard to reach places.
- No onboard data storage eliminates the need for data purging in secure applications.
- Standard bandpass time domain grants easier and faster fault identification.
- A common GUI interface within the ShockLine family reduces switching costs between models.
- Low cost, small and lightweight.



MS46121A 1-PORT VECTOR ANALYZER



Simple | Economical | Great Performance

Quick Fact Sheet

MS46121A 1-Port ShockLine™

Vector Network Analyzers



Key Specifications

Analyzer Performance	
Frequency Options	MS46121A-004, 40 MHz to 4 GHz, type N(m) ports MS46121A-006, 150 kHz to 6 GHz, type N(m) ports
Corrected Directivity	42 dB, typical
Sweep Speed	100 μ s / data point, typical
Trace Noise	Magnitude: 0.01 dB, typical Phase Noise: 0.05 degree, typical
General	
Measurement Parameters	S_{11} and any user-defined combination of a_1 , b_1 , 1. Option 21: $S_{ XY }$ where Y is the source and X is the receiver
Display Graphs	Log Magnitude, Phase, Linear Magnitude, Real, Imaginary, SWR, Impedance, Smith Chart, Polar
Measurements Data Points	2 to 20,000 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, 100 kHz Option 21 External Reference Enabled 1, 2, 3, 5, 7, 10, 20, 30, 50, 100 kHz Internal Reference Enabled 10, 20, 30, 50, 100 kHz
Display Channels	ShockLine software can control up to 16 MS46121A VNAs at a time, each on an independent channel. Great for making parallel measurements and reducing test time.
Traces	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 °C to 50 °C
Dimensions	52 mm x 36 mm x 144 mm (HxWxD)
Weight:	0.4 kg (0.9 lb)

Product Options

Option Number	Description
MS46121A-002	Low Pass Time Domain
MS46121A-021	Scalar Transmission Measurement

Calibration Accessories

Part Number	Description
MN25208A	2-Port SmartCal 8.5 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
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

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