

Anritsu's ShockLine Family of Vector Network Analyzers (VNA) is a series of six VNA models (with 18 products to choose from) that provide a broad range of solutions to meet your unique performance, application, and budgetary needs. Whether you are looking for an economical, portable 1-port solution or a full-featured solution that delivers best-in-class performance, the ShockLine family of VNAs provides you with:

- **Simplicity:** compact, durable, and ready-to-use right out of the box
- **Economy:** wide frequency range across the family of solutions with fast test times for optimal throughput
- **Great performance:** fast measurement speeds with high dynamic range minimizes test times and maximizes throughput in automated and manual test applications
- **Stability:** excellent corrected directivity and minimal drift reduces measurement uncertainty and smaller guard bands for improved yield in production
- **World-class customer support:** 3-year warranty provides the support and service when you need it.

Anritsu's modern architecture employs the patented nonlinear transmission line (NLTL) shockline technology, which enables high-frequency measurements at an economical cost.

Price / Performance

High Performance

VectorStar
(MS464xB)



Performance

ShockLine
(MS46522B)



ShockLine
(MS4652xB)

Economy

ShockLine
(MS46131A)

ShockLine
(MS46121B)

ShockLine (MS46122B)

ShockLine (MS46322B)

Handhelds



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Anritsu utilizes recycled paper and environmentally conscious inks and toner.

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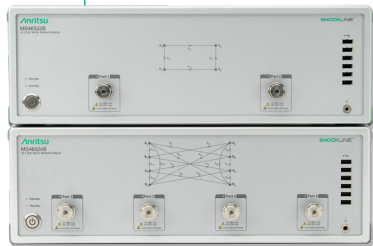
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ShockLine™

Selection Guide



MS46522B
2-port **Performance** VNA
50 kHz to 8.5/20/43.5 GHz and E-band
N(f), K(m) connectors, WR12 waveguide



MS46131A
1-port **Modular** VNA
1 MHz - 8/20/43.5 GHz
N(f) and K(m) connectors

MS46121B
1-port **USB** VNA
150 kHz to 6 GHz
N(m) connector

MS46122B
2-port **USB** VNA
1 MHz - 8/20/43.5 GHz
N(f) and K(m) connectors



MS46524B
4-port **Performance** VNA
50 kHz to 8.5/20/43.5 GHz
N(f) and K(m) connectors

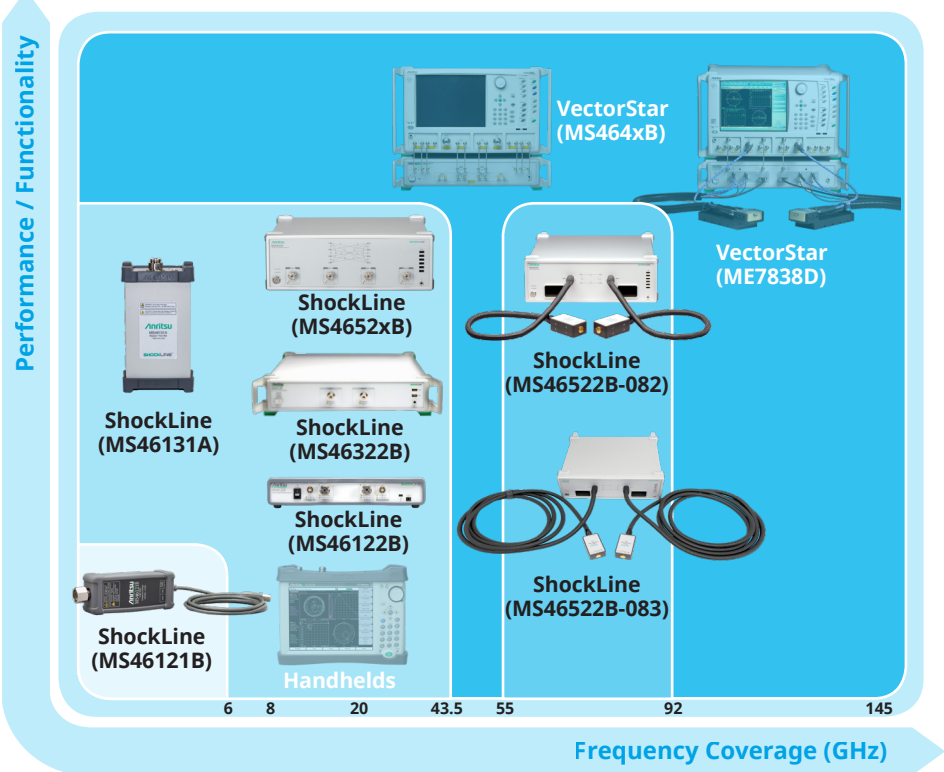


MS46322B
2-port **Economy** VNA
1 MHz to 8/20/43.5 GHz
N(f) and K(m) connectors



The right solution for your frequency or port requirements. ShockLine VNAs provide 1-, 2-, and 4-port solutions that cover a broad range of frequencies. Wide band models are available that cover frequencies as low as 50 kHz to as high as 43.5 GHz. The MS46522B 2-port Performance VNA is also available in two banded versions, covering the extended E-band frequencies from 55 GHz to 92 GHz.

VNA Frequency Guide



Note: Figures used in comparison graphics are not to scale.

ShockLine VNA Series Comparison

	MS46522B Option 82 (1 m E-band) MS46522B Option 82 (5 m E-band)	MS46522B/524B	MS46322B	MS46122B	MS46131A	MS46121B
Frequency Range	55 to 92 GHz Extended E-band	50 kHz to 8.5/20/ 43.5 GHz	1 MHz to 8/20/ 43.5 GHz	1 MHz to 8/20/ 43.5 GHz	1 MHz to 8/20/ 43.5 GHz	40 MHz to 4 GHz 150 kHz to 6 GHz
Dynamic Range	> 106 dB, 60 GHz to 67 GHz > 110 dB, 67 GHz to 83 GHz > 110 dB, 83 GHz to 87 GHz (1m) > 98 dB, 83 GHz to 87 GHz (5m) > 98 dB, 87 GHz to 90 GHz	> 140 dB, 50 MHz to 2 GHz > 130 dB, 2 GHz to 6 GHz > 114 dB, 6 GHz to 40 GHz > 100 dB, 40 GHz to 43.5 GHz	> 100 dB, 10 MHz to 8 GHz > 95 dB, 8 GHz to 14 GHz > 100 dB, 14 GHz to 40 GHz > 97 dB, 40 GHz to 43.5 GHz	> 100 dB, 10 MHz to 8 GHz > 95 dB, 8 GHz to 14 GHz > 100 dB, 14 GHz to 40 GHz > 97 dB, 40 GHz to 43.5 GHz	Corrected Directivity: >=42 dB (with database calibration)	Scalar Transmission: 80 dB (typical, 150 kHz to 6 GHz)*
Trace Noise (rms) (100 Hz IFBW)	0.004 dB	0.004 dB, >300 kHz to 43.5 GHz	0.006 dB, 20 MHz to 40 GHz 0.009 dB, 40 GHz to 43.5 GHz	0.006 dB, 20 MHz to 40 GHz 0.009 dB, 40 GHz to 43.5 GHz	0.003 dB (Typical)	0.02 dB (typical)
Port Power	Variable: -50 to 0 dBm	Variable: -30 to +15 dBm	High State: +5, -3 dBm Low State: -20 dBm	High State: +5, -3 dBm Low State: -20 dBm	High State: 0 dBm (±2 dBm, typical) Low State: -20 dBm (± 2 dBm, typical)	Nominal Output: +3 dBm (>23.2 MHz to 4 GHz)
Measurement Speed, Typical (@widest IFBW)	30 µs/point	30 µs/point	130 µs/point	130 µs/point	230 µs/point	120 µs/point
Major Options	Time Domain and Rack-Mount	Time Domain, Advanced Time Domain, Bias Tees, and Rack-Mount	Time Domain and Rack-Mount	Time Domain and Rack-Mount (Standard)	Time Domain	Low Pass Time Domain (Band Pass TD Standard)
Remote Control	LAN	LAN	LAN	USB	USB	USB
Calibration	SOLT, SOLR, SSLT, SSST, LRL/LRM, WG, Microstrip, Thru Update, Secondary Match Correction	SOLT, SOLR, SSLT, SSST, LRL/LRM, WG, Microstrip, AutoCal/SmartCal, Thru Update, Secondary Match Correction	SOLT, SOLR, SSLT, SSST, LRL/LRM, WG, Microstrip, AutoCal/SmartCal, Thru Update, Secondary Match Correction	SOLT, SOLR, SSLT, SSST, LRL/LRM, WG, Microstrip, AutoCal/SmartCal, Thru Update, Secondary Match Correction	SOL, SSL, SSS, AutoCal/SmartCal	SOL, SSL, SSS, Scalar Thru (w/option 21), AutoCal/SmartCal
Sweep Type	Freq: Linear, Log CW, Segment	Freq: Linear, Log CW, Segment Power: Linear	Freq: Linear, Log, CW, Segment	Freq: Linear, Log, CW, Segment	Freq: Linear, Log, CW, Segment	Freq: Linear, Log, CW, Segment
Max Number of Points	20,001	20,001	16,001	16,001	16,001	20,001

* Specified using two MS46121B instruments with option 21 at 30 Hz IFBW with external reference.

With a robust set of capabilities, the ShockLine family of VNAs are a simple and economical solution for manufacturing, engineering labs/R&D, mil/aero, and universities looking to perform measurements on passive RF and microwave devices.

VNA Port Count Guide

ShockLine (MS46121B)

Control up to 16 MS46121B VNAs per PC

ShockLine (MS46131A)

Modular configurability for up to two MS46131A VNAs per PC

1-Port Model

ShockLine (MS46522B)

ShockLine (MS46322B)

ShockLine (MS46122B)

Handhelds

2-Port Models

VectorStar (MS464xB)

ShockLine (MS4652xB)

2- and 4-Port Models

VNA Capabilities Guide

ShockLine (MS46121B)

Control up to 16 MS46121B VNAs per PC

ShockLine (MS46131A)

Modular configurability for up to two MS46131A VNAs per PC

ShockLine (MS46322B)

ShockLine (MS46122B)

- Wideband frequency coverage to 43.5 GHz
- 100 dB dynamic range
- Hi/Lo port output power control
- Return loss, insertion loss, time domain testing

ShockLine Series (MS4652xB)

- Multipoint S-parameter measurements
- Time domain, signal integrity, OTA applications
- Variable port output power control
- Source per port (standard)
- Optional bias tees (8.5 GHz model only)

Application Complexity