Anritsu’s ShockLine Family of Vector Network Analyzers (VNA) is a series of five VNA models (with 16 products to choose from) that provide a broad range of solutions to meet your unique performance, application, and budget 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.

**VNA Models**

- **United States**
  - Anritsu Company
  - Anritsu Electronics Ltd.
  - Anritsu Corporation
- **Canada**
  - Anritsu Ltd.
  - Anritsu Corporation, Ltd.
- **Brazil**
  - Anritsu Electronic Ltda.
- **Mexico**
  - Anritsu Company, S.A. de C.V.
- **United Kingdom**
  - Anritsu EMMA Ltd.
- **France**
  - Anritsu S.A.
  - Anritsu S.A.
- **Germany**
  - Anritsu GmbH
- **Italy**
  - Anritsu Italia S.r.L.
- **Sweden**
  - Anritsu AB
- **Finland**
  - Anritsu Ab Teknikkuus Ltd.
- **Denmark**
  - Anritsu A/S
- **Russia**
  - Anritsu EMMA Ltd.
- **Spain**
  - Anritsu EMMA Ltd.
- **India**
  - Anritsu India Pvt Ltd.
- **Singapore**
  - Anritsu Pte. Ltd.
- **China**
  - Anritsu (China) Co., Ltd.
- **Australia**
  - Anritsu Pty Ltd.
- **Korea**
  - Anritsu Corporation, Ltd.
- **Japan**
  - Anritsu Corporation
- **United Arab Emirates**
  - Anritsu EMMA Ltd.
- **Taiwan**
  - Anritsu Company Inc.

**Selection Guide**

**ShockLine™**

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**ShockLine Selection Guide**

- **Performance / Functionality**
- **Note:** Figures used in comparison graphics are not to scale.

**VNA Frequency Guide**

- **E-band frequencies from 55 GHz to 92 GHz.**
- **models are available that cover frequencies as low as 50 kHz to solutions that cover a broad range of frequencies.**

**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**

<table>
<thead>
<tr>
<th>Frequency Coverage (GHz)</th>
<th>ShockLine (MS46121B)</th>
<th>ShockLine (MS464xB)</th>
<th>VectorStar (MS464x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 kHz to 8.5/20/43.5 GHz</td>
<td>N(f) and K(m) connectors</td>
<td>WR12 waveguide</td>
<td></td>
</tr>
<tr>
<td>1 MHz to 8/20/43.5 GHz</td>
<td>N(f) and K(m) connectors</td>
<td>WR12 waveguide</td>
<td></td>
</tr>
<tr>
<td>40 MHz to 4 GHz</td>
<td>N(f) and K(m) connectors</td>
<td>WR12 waveguide</td>
<td></td>
</tr>
</tbody>
</table>

**VNA Capabilities Guide**

- **Frequency to 6 GHz**
- **80 dB Scalar Transmission Dynamic Range Measurements: 1-port S-parameters.**
- **Single port output power.**

**VNA Port Count Guide**

- **1-Port Model**
- **2-Port Models**
- **2- and 4-Port Models**

**ShockLine VNA Series Comparison**

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>MS46522B Option 82 (1-meter E-band)</th>
<th>MS46522B Option 83 (3-meter E-band)</th>
<th>MS46322B</th>
<th>MS46522B</th>
<th>MS46412B</th>
<th>MS46521B</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 to 92 GHz</td>
<td>1 MHz to 8/20/43.5 GHz</td>
<td>1 MHz to 8/20/43.5 GHz</td>
<td>1 MHz to 8/20/43.5 GHz</td>
<td>40 MHz to 4 GHz</td>
<td>150 kHz to 6 GHz</td>
<td></td>
</tr>
</tbody>
</table>

**Dynamic Range**

<table>
<thead>
<tr>
<th>Performance</th>
<th>Power: Linear</th>
<th>CW, Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lin</td>
<td>106 dB 60 MHz to 67 GHz</td>
<td>110 dB 67 GHz to 83 GHz</td>
<td>110 dB 83 GHz to 87 GHz</td>
<td>110 dB 87 GHz to 90 GHz</td>
<td>140 dB 50 MHz to 2 GHz</td>
<td>140 dB 2 GHz to 6 GHz</td>
</tr>
</tbody>
</table>

**Trace Noise (rms)**

<table>
<thead>
<tr>
<th>Performance</th>
<th>Power: Linear</th>
<th>CW, Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lin</td>
<td>0.004 dB</td>
<td>0.004 dB</td>
<td>0.006 dB</td>
<td>0.006 dB</td>
<td>0.02 dB</td>
<td>0.02 dB</td>
</tr>
</tbody>
</table>

**Remote Control**

<table>
<thead>
<tr>
<th>Performance</th>
<th>Power: Linear</th>
<th>CW, Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lin</td>
<td>LAN</td>
<td>LAN</td>
<td>USB</td>
<td>USB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Calibration**

<table>
<thead>
<tr>
<th>Performance</th>
<th>Power: Linear</th>
<th>CW, Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
</tr>
</thead>
</table>

**Sweep Type**

<table>
<thead>
<tr>
<th>Performance</th>
<th>Power: Linear</th>
<th>CW, Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lin</td>
<td>Freq: Linear, Log, CW, Segment</td>
<td>Freq: Linear, Log, CW, Segment</td>
<td>Freq: Linear, Log, CW, Segment</td>
<td>Freq: Linear, Log, CW, Segment</td>
<td>Freq: Linear, Log, CW, Segment</td>
<td>Freq: Linear, Log, CW, Segment</td>
</tr>
</tbody>
</table>

**Max Number of Points**

<table>
<thead>
<tr>
<th>Performance</th>
<th>Power: Linear</th>
<th>CW, Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lin</td>
<td>20,001</td>
<td>20,001</td>
<td>16,001</td>
<td>16,001</td>
<td>20,001</td>
<td>20,001</td>
</tr>
</tbody>
</table>

* 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.

**Simple. Economical. Great Performance.**