Product Information, Compliance, and Safety

ShockLine™ Vector Network Analyzers and Site Master™ Cable and Antenna Analyzers

Introduction

This guide provides important notices, warranty, safety, and regulatory compliance information for Anritsu RF and microwave analyzers. Be sure to read these important notices before operating the equipment.

For additional information and literature, visit the product page of your instrument and select the Library tab.

MS4612xA/B ShockLine Compact Vector Network Analyzer

http://www.anritsu.com/test-measurement/products/ms46121b
http://www.anritsu.com/test-measurement/products/ms46122b

MS46131A ShockLine Modular Vector Network Analyzer

http://www.anritsu.com/test-measurement/products/ms46131a

MS46322A/B ShockLine Economy Vector Network Analyzer

http://www.anritsu.com/test-measurement/products/ms46322b

MS4652xB ShockLine Performance Vector Network Analyzer


ME7868A Modular 2-Port Vector Network Analyzer System

http://www.anritsu.com/test-measurement/products/ms46131a

S331P Ultraportable Site Master Cable and Antenna Analyzer

http://www.anritsu.com/test-measurement/products/s331p

Contacting Anritsu

To contact Anritsu, please visit: http://www.anritsu.com/contact-us

Here, you can find the latest sales, service, and support contact information for your country or region, provide online feedback, complete a “Talk to Anritsu” form to get your questions answered, or obtain training or other services offered by Anritsu.
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1 — Important Notices and Warranty

1-1 Applicable Product Models

The information in this guide relates to the following product models:

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Port USB ShockLine VNA</td>
<td>MS46121A/B</td>
</tr>
<tr>
<td>Compact ShockLine VNA</td>
<td>MS46122A/B</td>
</tr>
<tr>
<td>Modular ShockLine VNA</td>
<td>MS46131A / ME7868A</td>
</tr>
<tr>
<td>Economy ShockLine VNA</td>
<td>MS46322A/B</td>
</tr>
<tr>
<td>Performance ShockLine VNA</td>
<td>MS46522B, MS46524B</td>
</tr>
<tr>
<td>Ultraportable Site Master</td>
<td>S331P</td>
</tr>
</tbody>
</table>

1-2 Unauthorized Use or Disclosure

Anritsu Company has prepared the product user documentation for use by Anritsu Company personnel and customers as a guide for the proper installation, operation, and maintenance of Anritsu Company equipment and software programs. The drawings, specifications, and information contained therein are the property of Anritsu Company, and any unauthorized use or disclosure is prohibited; they shall not be reproduced, copied, or used in whole or in part as the basis for manufacture or sale of the equipment or software programs without the prior written consent of Anritsu Company.

1-3 Export Management

The Anritsu products identified herein and their respective manuals may require an Export License or approval by the government of the product country of origin for re-export from your country. Before you export these products or any of their manuals, please contact Anritsu Company to confirm whether or not these items are export-controlled. When disposing of export-controlled items, the products and manuals must be broken or shredded to such a degree that they cannot be unlawfully used for military purposes.
1-4 Trademark Acknowledgments

The following trademark acknowledgments are listed for one or more of the products listed in Section 1-1.

- Anritsu, ShockLine, AutoCal, SmartCal, Advanced-LRM, K-Connector, V-Connector, and W1-Connector are trademarks or registered trademarks of the Anritsu Company, Morgan Hill, California, USA.
- LabView, LabWindows, NI, NI-VISA, are registered trademarks of the National Instruments Corporation.
- Smith (Smith Chart) is a registered trademark of Analog Instruments Company.
- Teflon is a registered trademark and brand name of the DuPont Company.
- Windows is a registered trademark of Microsoft Corporation.
- Bi-Lobe is a registered trademark of Omnetics Corporation.
- All other trademarks mentioned are the property of their respective companies.

1-5 Warranty Information

The Anritsu products listed in Section 1-1 are warranted against defects in materials and workmanship for three (3) years from the date of shipment. Anritsu’s obligation covers repairing or replacing products which prove to be defective during the warranty period. Buyers shall prepay transportation charges for equipment returned to Anritsu for warranty repairs. Obligation is limited to the original purchaser. Anritsu is not liable for consequential damages.

Limitation of Warranty

The foregoing warranty does not apply to Anritsu connectors that have failed due to normal wear. Also, the warranty does not apply to defects resulting from improper or inadequate maintenance, unauthorized modification or misuse, or operation outside of the environmental specifications of the product. No other warranty is expressed or implied, and the remedies provided herein are the Buyer's sole and exclusive remedies.

Disclaimer of Warranties

To the maximum extent permitted by applicable law, Anritsu Company and its suppliers disclaim all warranties, either expressed or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose, with regard to the product. The user assumes the entire risk of using the product. Any liability of provider or manufacturer will be limited exclusively to product replacement.

No Liability for Consequential Damages

To the maximum extent permitted by applicable law, in no event shall Anritsu Company or its suppliers be liable for any special, incidental, indirect, or consequential damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or any other pecuniary loss) arising out of the use of or inability to use the product, even if Anritsu Company has been advised of the possibility of such damages. Because some states and jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply to you.
2 — Safety

To reduce the risk of personal injury or loss related to equipment malfunction, Anritsu Company uses the following symbols to indicate safety-related information. You may encounter them on your products and in documentation. For your own safety, please read the information carefully before operating the equipment.

### 2-1 Safety Notices Used in Manuals

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning Symbol]</td>
</tr>
<tr>
<td>Danger or Warning indicates a risk from a hazardous condition or procedure that could result in light-to-severe injury or death, or loss related to equipment malfunction. Follow all safety precautions and procedures to minimize this risk.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Caution Symbol]</td>
</tr>
<tr>
<td>Caution indicates a risk from a hazardous procedure that could result in loss related to equipment malfunction. Follow all safety precautions and procedures to minimize this risk.</td>
</tr>
</tbody>
</table>

### 2-2 Safety Symbols Used on Equipment and in Manuals

The following symbols are used inside or on the equipment near operation locations to provide information about safety items and operation precautions and status. Ensure that you clearly understand the meanings of the symbols and take the necessary precautions before operating the equipment. Some or all of the following symbols may or may not be used on Anritsu equipment. In addition, there may be other labels attached to products that are not shown in the diagrams in the manual.

- ![Prohibited Operation Symbol] This indicates a prohibited operation. The prohibited operation is indicated symbolically in or near the barred circle.
- ![Compulsory Safety Precaution Symbol] This indicates a compulsory safety precaution. The required operation is indicated symbolically in or near the circle.
- ![Danger, Warning, or Caution Symbol] This indicates a danger, warning, or caution. The contents are indicated symbolically in or near the triangle.
- ![Note Symbol] This indicates a note. The contents are described in the box.
- ![Push Button Out Position Symbol] This indicates a push button Out position (generally Off condition).
- ![Push Button In Position Symbol] This indicates a push button In position (generally On condition).
- ![Off Condition Symbol] This indicates an Off condition.
- ![On Condition Symbol] This indicates an On condition.
- ![Alternating Current Symbol] This indicates Alternating Current (AC).
- ![Direct Current Symbol] This indicates Direct Current (DC).
### 2-3 Safety Symbols and Notices

**Warning**

Always refer to the equipment manual when working near locations where the alert mark, shown on the left, is displayed. If equipment operation is conducted without heeding the advice in the manual, there is a risk of personal injury. In addition, the equipment performance may be reduced.

This alert mark is sometimes used with other marks and descriptions indicating other dangers.

**Warning**

This equipment may present a risk to electric shock. Only qualified service personnel should access areas where this alert mark is present. Ensure that precautions are taken and that appropriate lockout mechanisms are in place before proceeding to enter the areas presenting this risk.

**Warning**

Unless your equipment is rated for Ingress Protection (IP) or is otherwise ruggedized, it is not designed to withstand exposure to extreme environments or water. If your equipment gets wet or is dropped, remove external power and any user serviceable batteries from the equipment and contact Anritsu support for any additional precautions and instructions to bring the equipment back into service. Always follow the environmental operating and storage requirements listed in the product technical data sheet.

**Warning**

Before supplying power to this equipment, ensure that proper voltage and current source is connected as indicated on the equipment labeling. Your equipment may be supplied with an external power adapter or it may be connected directly to the mains supply. Be sure to always use the supplied external power adapter and cabling. If your equipment connects directly to the mains supply, the input may be auto sensing or require a switch setting to match your supplied voltage. If power is supplied to the equipment that does not match the input specifications printed on the equipment labeling, there is a risk of personal injury and damage to the equipment.

**Warning**

When supplying power to this equipment, connect the accessory 3-pin power cord to a 3-pin grounded power outlet. If required, ground the instrument chassis to a suitable earth ground. If power is supplied without grounding the equipment, there is a risk of receiving a severe or fatal electric shock.

**Warning**

This equipment cannot be repaired by the operator. Do not attempt to remove the equipment covers or to disassemble internal components. Only qualified service technicians with a knowledge of electrical fire and shock hazards should service this equipment. There are high-voltage parts in this equipment that present a risk of severe injury or fatal electric shock. In addition, there is a risk of damage to precision components.
**Warning**

NEVER touch parts where the label shown on the left is attached. Such parts are hotter than 55 degrees Celsius and you risk receiving a burn.

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**Caution**

Electrostatic Discharge (ESD) can damage the highly sensitive circuits in the instrument. ESD is most likely to occur as test devices are being connected to, or disconnected from, the instrument’s front and rear panel ports and connectors. You can protect the instrument and test devices by wearing a static-discharge wristband. Alternatively, you can ground yourself to discharge any static charge by touching exposed, unpainted metal of the outer chassis of the grounded instrument before touching the instrument’s front and rear panel ports and connectors. Avoid touching the test port center conductors unless you are properly grounded and have eliminated the possibility of static discharge.

Repair of damage that is found to be caused by electrostatic discharge is not covered under warranty.
3 — Regulatory Compliance

Following compliance notices and declarations of conformity apply to the products listed in Section 1-1. This equipment is categorized as Class A devices as noted below:

- A device marketed for use in an industrial application and is not intended for use in the home or residential area is classified as Class A. Class A equipment, commonly known as ISM (industrial, scientific, and medical) equipment, are for professional use in engineering and scientific applications commanding specialized training and good understanding of the English language. Products being sold in a commercial market for such applications have significantly less stringent emissions limits than Class B (residential) devices.

- A device that is marketed for use in the home or a residential area by the customer is classified as a Class B device. Class B verification is for devices that are marketed for in-home use, but are not permanently connected to a personal computer.
3-1 Compliance Notifications

CE Conformity Marking

Anritsu affixes the CE Conformity marking onto its conforming products in accordance with Council Directives of The Council Of The European Communities in order to indicate that these products conform to the EMC, LVD, RoHS, and RED directives of the European Union (EU).


RCM Conformity Marking

Anritsu affixes the Regulatory Compliance Mark (RCM) onto its conforming products in accordance with the electromagnetic compliance regulations of Australia and New Zealand in order to indicate that these products conform to the EMC regulations of Australia and New Zealand.

KCC Conformity Marking

Anritsu affixes the Korean Communications Commissions (KCC) mark onto its conforming products in accordance with the electromagnetic compliance regulations of Korea.

Recycle Marking

Anritsu affixes the universal recycle symbol onto its products to indicate that the marked part is made from recyclable materials and should be recycled. Materials should be recycled in accordance with your local regulatory requirements.

Canadian ICES-001 Conformity Marking

Anritsu affixes the CAN ICES-1(A)/NMB-1(A) compliance label onto its conforming products in accordance with the following Canadian Interference-Causing Equipment Standards.

CAN/ICES-1(A)/NMB-1(A)

ICES-001 — Industrial, Scientific and Medical (ISM) Radio Frequency Generators
Proposition 65 Notification

Notification for California customers: Chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm may be present in the products listed in Section 1-1 or their related accessories. For information, see: https://oag.ca.gov/prop65

Perchlorate Material Notification – Special Handling May Apply

Notification for California customers: this product uses a small Lithium battery installed internally on the circuit board that may contain perchlorate. Disposal may be regulated due to environmental considerations. Please contact your local authorities for disposal or recycling information. For information, see: http://www.dtsc.ca.gov/hazardouswaste/perchlorate

Chinese RoHS Compliance Statements

**Applicable Models:**

MS46322A/B, MS4652xB, ME7868A

Products without Hg-free LCD and with Battery

**Applicable Models:**

MS46121A/B, MS46122A/B, MS46131A, MS46322A/B, S331P

Products without Hg-free LCD and without Battery