

ShockLine Vector Network Analyzer

Anritsu's ShockLine Family of Vector Network Analyzers (VNAs) consists of seven model series (24 product variations including the ME7868A and ME7869A variants) that offer a broad range of solutions to meet diverse performance, application, and budget requirements.



The **1-port** models are suitable for measurements such as antenna return loss, SWR, bandwidth, and related parameters.



For **compact** models, the MS46122B can be controlled via USB, while the MS46322B provides HDMI, USB, and LAN interfaces. A rack mount option is available, making these models suitable for integration into automated measurement systems.



For **high-performance** applications, Anritsu offers the 2-port MS46522B and the 4 port MS46524B. These models include a power sweep function, enabling evaluation of active devices such as amplifiers. The MS46522B supports E-band waveguides and is available with Option 082 (1 m module cable) or Option 083 (5 m module cable).



The 2 port **distributed** models are ideal for long distance S-parameter measurements such as testing long RF cables, antenna measurements in outdoor or large Open The Air (OTA) chambers, True Bi-static Radar Cross Section (RCS) measurements etc. The supported cable lengths are up to 25 m for ME7868A and up to 100 m for ME7869A.

Applications vs. Supported Models

Applications	1-port MS46121B MS46131A	Compact MS46122B MS46322B	Performance MS46522B MS46524B	Distributed ME7868A ME7869A
Antenna	✓	✓	✓	✓
Passive devices (cables, connectors, filters, couplers/ dividers, circulators, etc.)	*1	✓	✓	✓
Active devices (amplifiers, etc.)		*2	✓	*2
Differential measurements (printed circuit boards, cables, connectors, etc.)		*3	*4	*3
[Option 002 Time Domain] Cable fault detection	✓	✓	✓	
[Option 002 Time Domain] Time Domain Reflectometry (TDR)*5 (Impedance measurement)	*6	✓	✓	

*1: Reflection attenuation, phase, SWR, and impedance only
*2: Small-signal characteristics can be measured; source power setting has only two-step switching: High Power/Low Power.
*3: Reflection attenuation only
*4: The MS46522B measures reflection attenuation only
*5: In time-domain low-pass mode, measurements equivalent to a TDR oscilloscope are possible
*6: Single-ended measurement only

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Specifications are subject to change without notice.

- United States**
Anritsu Americas Sales Company
490 Jarvis Drive, Morgan Hill, CA 95037-2809, U.S.A.
Phone: +1-800-Anritsu (1-800-267-2000)
- Canada**
Anritsu Electronics Ltd. Americas Sales and Support
490 Jarvis Drive, Morgan Hill, CA 95037-2809, U.S.A.
Phone: +1-800-Anritsu (1-800-267-4878)
- Brazil**
Anritsu Eletrônica Ltda.
Praça Amadeu Amaral, 27 - 1 Andar
01327-010 - Bela Vista - Sao Paulo - SP, Brazil
Phone: +55-11-3283-2511
- Mexico**
Anritsu Company, S.A. de C.V.
Blvd Miguel de Cervantes Saavedra #169 Piso 1,
Col. Granada Mexico, Ciudad de Mexico, 11520,
MEXICO
Phone: +52-55-4169-7104
- United Kingdom**
Anritsu EMEA Limited
900 Capability Green, Luton, Bedfordshire, LU1
3LU, U.K.
Phone: +44-1582-433200
- France**
Anritsu SA
12 avenue du Québec, Immeuble Goyave, 91140
VILLEBON SUR YVETTE, France
Phone: +33-1-60-92-15-50
- Germany**
Anritsu GmbH
Nemetschek Haus, Konrad-Zuse-Platz 1, 81829
München, Germany
Phone: +49-89-442308-0
- Italy**
Anritsu S.R.L.
Spaces Eur Arte, Viale dell'Arte 25, 00144 Roma,
Italy
Phone: +39-6-509-9711
- Sweden**
Anritsu AB
Kistagången 20 B, 2 tr, 164 40 Kista, Sweden
Phone: +46-8-534-707-00
- Finland**
Anritsu AB
Technopolis Aviapolis, Teknobulevardi 3-5
(D208.5.), FI-01530 Vantaa, Finland
Phone: +358-20-741-8100
- Denmark**
Anritsu A/S
c/o Regus Winghouse, Ørestads Boulevard 73,
4th floor, 2300 Copenhagen S, Denmark
Phone: +45-7211-2200
- Spain**
Anritsu EMEA GmbH Representation Office in Spain
Calle Manzanares 4, Primera planta, 28005 Madrid,
Spain
Phone: +34-91-572-6761
- Austria**
Anritsu EMEA GmbH
Am Belvedere 10, A-1100 Vienna, Austria
Phone: +43-(0)1-717-28-710
- United Arab Emirates**
Anritsu A/S
Office No. 164, Building 17, Dubai Internet City
P. O. Box - 501901, Dubai, United Arab Emirates
Phone: +971 (0) 4-2424919
- India**
ANRITSU INDIA PRIVATE LIMITED
6th Floor, Indique ETA, No.38/4, Adjacent to
EMC2, Doddanekundi, Outer Ring Road,
Bengaluru - 560048, India
Phone: +91-80-6728-1300
Fax: +91-80-6728-1301
- Singapore**
ANRITSU PTE LTD
1 Jalan Kilang Timor, #07-04/06 Pacific Tech Centre
Singapore 159303
Phone: +65-6282-2400
- Vietnam**
ANRITSU COMPANY LIMITED
16th Floor, Peakview Tower, 36 Hoang Cau Street,
O Cho Dua Ward, Hanoi, Vietnam
Phone: +84-24-3201-2730
Fax: +84-24-3201-2740
- P.R. China (Shanghai)**
Anritsu (China) Co., Ltd.
Room 2301-2303, Tower A, New Caohejing
International Business Center No. 391 Gui Ping
Road, Shanghai, 200233, P.R. China
Phone: +86-21-6237-0898
- P.R. China (Hong Kong)**
ANRITSU COMPANY LIMITED
Unit 1302, 13th Floor, New East Ocean Center,
No.9 Science Museum Road, TsimShaTui East,
Kowloon, Hong Kong
Phone: +852-2301-4980
- Japan**
Anritsu Corporation
8-5, Tamura-cho, Atsugi-shi, Kanagawa,
243-0016 Japan
Phone: +81-46-296-1244
Fax: +81-46-296-1239
- Korea**
Anritsu Corporation Limited
8F, A TOWER, 20, Gwacheondaero 7-gil, Gwacheon-
si, Gyeonggi-do, 13840, Republic of Korea
Phone: +82-2-6259-7300
- Australia**
Anritsu Pty Ltd
Unit 20, 21-35 Ricketts Road, Mount Waverley,
Victoria 3149, Australia
Phone: +61-3-9558-8177
- Taiwan**
ANRITSU COMPANY, INC.
7F, No. 316, Sec. 1, NeiHu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816

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ShockLine™ Selection Guide



Automatic Calibration Kit

SmartCal™ and AutoCal™ automate VNA calibration by controlling open, short, load, and through connections from a PC.

Frequency	300 kHz to 8.5 GHz	300 kHz to 20 GHz	1 MHz to 40 GHz
2-port	 SmartCal MN25208A	 SmartCal MN25218A	 AutoCal 36585K
4-port	 SmartCal MN25408A	 SmartCal MN25418A	

Manual Calibration Kit

Anritsu offers calibration kits that integrate open, short, load, and thru elements, as well as precision kits that include high-accuracy connectors, gauges, and a torque wrench.



N-type Calibration Kit
Male: [OSLN50A-x](#)
Female: [OSLNF50A-x](#)
(Open/Short/Load)



N-type Calibration Kit
Male: [TOSLN50A-x](#)
Female: [TOSLNF50A-x](#)
(Open/Short/Load/Through)



K-type Calibration Kit
Male: [TOSLK50A-x](#)
Female: [TOSLKF50A-x](#)
(Open/Short/Load/Through)



Coaxial Calibration Kit
[3650A](#), [3652A](#), [3653A](#)



Waveguide Calibration Kit
[3655E](#)



For details on vector
network analyzers



For calibration kits,
connectors, and cables

ShockLine VNA Series Comparison

Model Name	MS46522B-082 (1 m E-band) MS46522B-083 (5 m E-band) 	MS46522B MS46524B 	MS46322B 	MS46122B 	ME7868A ME7869A 	MS46131A 	MS46121B 
Frequency and connector	55 to 92 GHz, WR12	50 kHz to 8.5 GHz, N(f)	1 MHz to 8.5 GHz, N(f)				40 MHz to 4 GHz, N(f)
		50 kHz to 20 GHz, K(m)	1 MHz to 20 GHz, K(m)				150 kHz to 6 GHz, N(f)
		50 kHz to 43.5 GHz, Extended K(m)	1 MHz to 43.5 GHz, Extended K(m)				
Frequency sweep type	Linear, Log, CW, Segmented						Linear, Log, Segmented
Dynamic range	>106 dB, 62 to 67 GHz >110 dB, 67 to 83 GHz >110 dB, 83 to 87GHz (1 m) >98 dB, 83 to 87GHz (5 m) >98 dB, 87 to 90 GHz	>140 dB, 50 MHz to 1.8 GHz >130 dB, 1.8 to 6 GHz >114 dB, 6 to 40 GHz >110 dB, 40 to 43.5 GHz	>100 dB, 10 MHz to 40 GHz > 97 dB, 40 to 43.5 GHz		>97 dB, 1 MHz to 5 GHz >97 dB, 5 to 8.5 GHz >98 dB, 8.5 to 20 GHz >102 dB, 20 to 40 GHz >99 dB, 40 to 43.5 GHz	N/A	N/A
Directivity	45 dB, >63 to 67 GHz ^{*1} 47 dB, >67 to 71 GHz ^{*1} 42 dB, >71 to 75 GHz ^{*1} 40 dB, >75 to 79 GHz ^{*1}	50 dB ^{*2} , >2.5 to 20 GHz 48 dB ^{*2} , 20 to 40 GHz	50 dB ^{*3} , 1 MHz to <10 GHz 45 dB ^{*3} , 10 to 40 GHz		50 dB ^{*4} , 1 MHz to <0 GHz 45 dB ^{*4} , 10 to 40 GHz		42 dB
High-level noise	0.004 dB, 60 to 90 GHz	0.02 dB, 50 to 300 kHz 0.004 dB, >300 kHz to 43.5 GHz	0.03 dB, 1 to <20 MHz 0.006 dB, 20 MHz to 40 GHz 0.009 dB, >40 to 43.5 GHz		0.007 dB, 1 MHz to 6 GHz 0.011 dB, >6 to 8 GHz 0.006 dB, >8 to 40 GHz 0.011 dB, >40 to 43.5 GHz	0.009 dB, 1 MHz to 6 GHz 0.022 dB, >6 to 8 GHz 0.006 dB, >8 to 40 GHz 0.009 dB, >40 to 43.5 GHz	0.02 dB, typical
Output power	Variable -55 to -5 dBm, 60 to 69 GHz -55 to 0 dBm, >69 to 88 GHz -55 to -10 dBm, >88 to 90 GHz	Variable -30 to +15 dBm, 300 kHz to 6 GHz -30 to +10 dBm, 6 to 8.5 GHz -30 to +6 dBm, 8.5 to 40 GHz -30 to +2 dBm, 40 to 43.5 GHz	2-level High State: +5 dBm, 1 MHz to 8 GHz -3 dBm, 8 to 43.5 GHz Low State: -20 dBm		2-level High State: 0 dBm (±2 dB, typical) Low State: -20 dBm (±2 dB, typical)		Fixed Nominal output: +3 dBm (>23.2 MHz to 4 GHz)
Power sweep type	N/A	Linear	N/A		N/A		N/A
Maximum measurement points	20,001		16,001		16,001		20,001
Measurement speed	30 μs/point (typical) ^{*5}		140 μs/point (typical) ^{*6}		250 μs/point (typical) ^{*6}	180 μs/point (typical) ^{*7}	120 μs/point (typical) ^{*8}
Remote control interface	LAN		LAN	USB	USB		USB
Calibration method	SOLT, SOLR, SSLT, SSST, LRL/LRM, TRL/TRM ^{*9} , Thru Update, Secondary Match Correction, SmartCal™, AutoCal™					OSL, SSL, SSS ^{*10} , SmartCal™, AutoCal™	
		Source Calibration, Receiver Calibration					Scalar Thru (with option 21)
Major Options		002 Time Domain 024 Universal Fixture Extraction	002 Time Domain 024 Universal Fixture Extraction			002 Time Domain 012 PhaseLync Synchronization	002 Time Domain 021 Scalar Transmission Measurement

*1: Calibration with the 3655E

*2: Calibration with AutoCal™, MS46522B-043 and MS46524B-043

*3: Calibration with AutoCal™, MS46122B-043 and MS46322B-043

*4: Calibration with AutoCal™, MS46131A-043

*5: 500 kHz IFBW, 1601 points, uncalibrated, 1 to 1.2 GHz

*6: Data measurement with 300 kHz IFBW, 1601 points, during 2-port calibration

*7: Data measurement with 300 kHz IFBW, 1601 points

*8: Data measurement with 100 kHz IFBW, 1601 points, during 1-port calibration

*9: Short-Open-Load-Through (SOLT), Short-Open-Load-Reciprocal (SOLR), Offset-Short-Offset-Short-Load-Through (SSLT), Triple-Offset-Short-Through (SSST), Line-Reflect-Line (LRL) / Line-Reflect-Match (LRM), Thru-Reflect-Line (TRL) / Thru-Reflect-Match (TRM)

*10: Open Short Load (OSL), Offset Short (SSL), Triple Offset Short (SSS)