Anritsu Advancing beyond

Site Master™

Handheld Cable & Antenna Analyzer
Featuring Classic and Advanced Modes

S331L
2.0 MHz to 4.0 GHz Cable & Antenna Analyzer
50 MHz to 4.0 GHz Power Meter

Introduction

Anritsu introduces its ninth generation, compact handheld Cable & Antenna Analyzer for installation and maintenance of antenna systems.

Optimized for Field Use

- > 8 Hour Battery Life
- Rugged and Reliable
- Instant On from Standby Mode
- Highest RF Immunity
- Built-in InstaCal™ Module
  - Fast, One-connection Calibration
- FlexCal™ Calibration
  - One Calibration for All Frequencies

- Optical connector inspection with IEC 61300-3-35 based Pass/Fail standard (Requires USB Video Inspection Probe, sold separately)
- Built-in Power Meter
- High Accuracy USB Power Meter (Requires USB Sensor, sold separately)
- Impact, Dust, and Splash Resistant
- Smallest, Lightest Site Master™

Easy to Use

- Integrated Help Function
- S331D-like Classic Mode
- S331E-like Advanced Mode
  - Additional Markers
  - Customizable Shortcuts
  - Full-screen View

- Multiple USB Ports
- 800 x 480 7" TFT Touch Screen
  - Alphanumeric Keyboard
  - EZ Name Quick Matrix
- Backlit Keypad
- easyTest™

Efficient Sweep Management

- Internally Store >1000 Files
  - Sweeps, Setups, Screen Shots
- Line Sweep Tools (LST) Software
  - Edit Sweeps, Rename, Archive
  - Generate PDF or HTML Reports

- Fast Preview of Stored Sweeps
- Standard *.dat Sweep File Format
- Compatible with HHST
  - Widely Accepted by Operators
- Location Data with Compatible USB GPS Module

Site Master™ S331L Cable & Antenna Analyzer Featuring 7.0 in Daylight Viewable Touch Screen
Compact Size: 250 mm x 177 mm x 61 mm (10.0 in x 7.1 in x 2.4 in), Lightweight: < 2.0 kg (4.4 lb)

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Definitions

All specifications and characteristics apply to Revision 2 instruments under the following conditions, unless otherwise stated:

Warm-Up Time	After 5 minutes of warm-up time, where the instrument has completely stabilized to the ambient temperature.
Frequency Reference	Internal frequency reference is used.
Calibration	Instrument is within the recommended calibration cycle of 12 months. Cable and Antenna Analyzer measurements applicable after standard OSL calibration is performed using Anritsu calibration components.
Typical Performance	Typical specifications in parenthesis () describe performance that will be met by a minimum of 80% of all products. They do not include guard bands and are not warranted.
	Typical specifications that are not in parenthesis are not tested and not warranted. They are generally representative of the nominal characteristic performance.
Uncertainty	A coverage factor of k = 2 is applied to the measurement uncertainties to facilitate comparison with other industry monitors.
	All specifications subject to change without notice. For the most current data sheet, please visit the Anritsu web site: www.anritsu.com

🛎 Cable and Antenna Analyzer

Measurements

Measurements	VSWR
	Return Loss
	Cable Loss (One Port)
	Distance-to-Fault (DTF) Return Loss
	Distance-to-Fault (DTF) VSWR
	Smith Chart 50 Ω/ 75 Ω (Advanced Mode Only)
	1-Port Phase (Advanced Mode Only)
	Transmission with External Sensor (Advanced Mode Only)

Setup Parameters–Classic Mode

Measurement Display	Single Display with independent markers
Frequency	F1/F2
DTF	D1/D2, DTF Aid, Cable Loss, Propagation Velocity, Cable type
Windowing	Rectangular, Normal Side Lobe, Low Side Lobe, Minimum Side Lobe
Amplitude	Top, Bottom Auto Scale, Full Scale
Sweep	Data Points, Run/Hold, Single/Continuous, RF Immunity (High/Low), RF Power in Hold (On/Off), Trace
Data Points	130, 259, 517, 1033, 2065
Markers	Markers 1 to 6 (On/Off), Delta Markers 2 to 4 (Ref M1), Marker to Peak/Valley, Marker Table, Marker 5 (Peak/Valley between M1 & M2), Marker 6 (Peak/Valley between M3 & M4), Independent Markers for Frequency and Distance Measurements
Traces	Copy Trace To Memory, Trace Display, Trace Math [Trace - Memory, Trace + Memory, (Trace + Memory)/2]
Limit Line	On/Off, Edit Value, Limit Alarm, Pass/Fail On/Off, Limit Preset
Calibration	Start Calibration, Cal Info, Cal Correction (On/Off), Cal Method (OSL, InstaCal™), Cal Type (Standard, FlexCal™)
Save/Recall	Setups, Measurements, Screen Shots

Setup Parameters–Advanced Mode

Measurement Display	Single/Dual Display with independent markers
Frequency	Start Frequency (F1), Stop Frequency (F2)
DTF	Start Distance (D1), Stop Distance (D2), Units m/ft, DTF Aid, Cable List, Cable Loss, Propagation Velocity
Windowing	Rectangular, Normal Side Lobe, Low Side Lobe, Minimum Side Lobe
Amplitude	Top, Bottom, Auto Scale, Full Scale
Sweep	Data Points, Run/Hold, Single/Continuous, RF Immunity (High/Low), RF Power in Hold (On/Off)
Data Points	130, 259, 517, 1033, 2065
Markers	Markers 1 to 8 (On/Off), Delta Markers 2 to 8 (Ref M1), Marker Tracking (On/Off), Marker to Peak/Valley, Marker Table, Marker 5 & 7 (Peak/Valley between M1 & M2), Marker 6 & 8 (Peak/Valley between M3 & M4), Independent Markers for Frequency and Distance Measurements
Traces	Copy Trace to Memory, Trace Display, Trace Math [Trace - Memory, Trace + Memory, (Trace + Memory)/2]
Limit Line	Active Limit (Upper/Lower), Limit State (On/Off), Move Active Limit, Edit Segments (42 upper and 42 lower segments maximum), Limit Alarm, Pass/Fail On/Off, Limit Preset
Calibration	Start Calibration, Cal Info, Cal Correction (On/Off), Cal Method (OSL, InstaCal™, Transmission, OSL + Transmission), Cal Type (Standard, FlexCal™)
Save/Recall	Setups, Measurements, Screen Shots

Frequency

Frequency Range	2 MHz to 4 GHz
Frequency Accuracy	± 5 ppm @ 23 °C ± 3 °C
Frequency Resolution	1 kHz

Power

Output Power	–3 dBm, typical

Interference Immunity

On-Channel	+17 dBm outside calibrated sweep range
On-Frequency	+13 dBm within calibrated sweep range

Measurement Speed

Return Loss	≤ 1.50 ms/data point, RF immunity low, typical
Distance-to-Fault	≤ 1.75 ms/data point, RF immunity low, typical

Return Loss

Measurement Range	0 to 60 dB
Resolution	0.01 dB

VSWR

Measurement Range	1 to 65
Resolution	0.01

🎎 Cable and Antenna Analyzer (continued)

Cable Loss

Measurement Range	0 to 30 dB
Resolution	0.01 dB

Distance-to-Fault

Vertical Range Return Loss	0 to 60 dB
Vertical Range VSWR	1 to 65
Fault Resolution (meters)	$(1.5 \times 10^8 \times vp)/\Delta F$ (vp = propagation velocity, ΔF is F2 – F1 in Hz)
Horizontal Range (meters)	0 to (Data Points – 1) x Fault Resolution, to maximum of 1500 meters (4921 ft)

1-Port Phase (Advanced Mode Only)

Measurement Display Range	–450 ° to +450 °
Resolution	0.01 °

Smith Chart (Advanced Mode Only)

Impedance	50 Ω, 75 Ω
Resolution	0.01

Transmission Ext Sensor (Advanced Mode Only)

Measurement Display Range	–100 dB to +100 dB
Resolution	0.01 dB

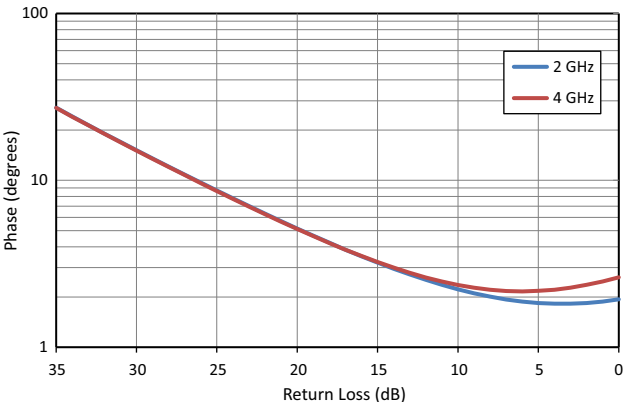### Measurement Accuracy (at 23 °C ± 3 °C)

Corrected Directivity	≥ 38 dB, InstaCal™ calibration
	≥ 42 dB, OSL calibration (OSLN50A-8, OSLNF50A-8, OSLN50-1, OSLNF50-1)

Return Loss Measurement Uncertainty (Standard OSL calibration. OSLN50-1 Precision Open/Short/Load calibration component.)

Magnitude Uncertainty
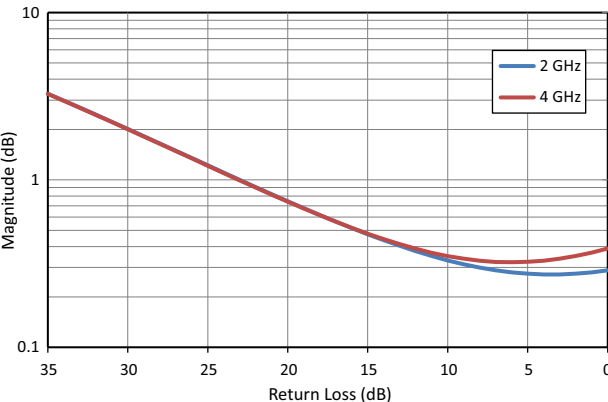
Phase Uncertainty

🖼 Internal Power Meter

Frequency	Measurement Frequency (for Cal Factor)
Amplitude	Max Value, Min Value, Offset Value, Relative On/Off, Units dBm/Watts, Auto Scale, Fullscale
Calibration	Zero On/Off
Average	Running Average, Max Hold (On/Off), Run/Hold, Average Mode (Continuous/Single)
Limits	Limit (On/Off), Upper Value, Lower Value
Frequency Range	50 MHz to 4 GHz
Display Range	–100 dBm to +100 dBm
Offset Range	Max ± 100 dB, user settable value
Measurement Range	–33 dBm to +20 dBm
VSWR	1.5:1 typical
Maximum Power	+27 dBm, ± 45 VDC (damage level)
Connector	Type N(m), 50 Ω
Accuracy	± 0.7 dB (0 dBm, 1 GHz CW, @ 23 °C ± 3 °C)
Frequency Response and Linearity	Additional ± 0.8 dB (± 0.5 dB typical)
Temperature Effect	Additional ± 0.02 dB per 1 °C change (typical)

🖼 High Accuracy Power Meter (requires external USB Power Sensor)

Amplitude	Maximum, Minimum, Offset, Relative On/Off, Units, Auto Scale
Average	# of Running Averages, Max Hold
Zero/Cal	Zero On/Off, Cal Factor (Center Frequency, Signal Standard)
Limits	Limit On/Off, Limit Upper/Lower

Power Sensor Model	MA24105A	MA24106A	MA24108A/18A/26A	MA24208A/18A	MA24330A/40A/50A
Description	Inline High Power Sensor	High Accuracy RF Power Sensor	Microwave USB Power Sensor	Microwave Universal USB Power Sensor	Microwave CW USB Power Sensor
Frequency Range	350 MHz to 4 GHz	50 MHz to 6 GHz	10 MHz to 8/18/26 GHz	10 MHz to 8/18 GHz	10 MHz to 33/40/50 GHz
Connector	Type N(f), 50 Ω	Type N(m), 50 Ω	Type N(m), 50 Ω (8/18 GHz) Type K(m), 50 Ω (26 GHz)	Type N(m), 50 Ω	Type K(m), 50 Ω (33/40 GHz) Type V(m), 50 Ω (50 GHz)
Dynamic Range	+3 dBm to +51.76 dBm (2 mW to 150 W)	–40 dBm to +23 dBm (0.1 µW to 200 mW)	–40 dBm to +20 dBm (0.1 µW to 100 mW)	–60 dBm to +20 dBm (1 nW to 100 mW)	–70 dBm to +20 dBm (0.1 nW to 100 mW)
Measurand	True-RMS	True-RMS	True-RMS, Slot Power, Burst Average Power	True-RMS, Slot Power, Burst Average Power	Average Power
Measurement Uncertainty	± 0.17 dB[a]	± 0.16 dB[b]	± 0.18 dB[c]	± 0.17 dB[d]	± 0.17 dB[e]
Data sheet (for complete specifications)	11410-00621	11410-00424	11410-00504	11410-00841	11410-00906

Notes:
a. Expanded uncertainty with K=2 for power measurements of a CW signal greater than +20 dBm with a matched load. Measurement results referenced to the input side of the sensor.
b. Total RSS measurement uncertainty (0 °C to 50 °C) for power measurements of a CW signal greater than –20 dBm with zero mismatch errors.
c. Expanded uncertainty with K=2 for power measurements of a CW signal greater than –20 dBm with zero mismatch errors.
d. Power uncertainty expressed with two sigma confidence level for CW measurement after zero operation. Includes calibration factor and linearity over temperature uncertainties, but not the effects of mismatch, zero set and drift, or noise.
e. Includes linearity over temperature uncertainties, but not the effects of calibration factor, mismatch, zero set and drift, and noise.

Video Inspection Probe (Requires external USB Video Inspection Probe, sold separately)

Setup Parameters

|	
Probe Models	G0306A or G0306B 400X USB Visual Inspection Probe
Tip Type (included with G0306A)	SC_APC_F:, SC_PC_F:, LC_PC_F:, FC_PC_F:, 2.5APC_M:, 2.5PC_M:, 1.25PC_M:
Test Profile (IEC 61300-3-35)	SM PC >45:, SM APC:, SM PC >25:, MM PC 62.5:, MM PC 50.0:
Auto Analyze	On/Off
Auto Filename	On/Off
Auto Filename Settings	Location, File Prefix, Start Number, Include Date

Measurement Parameters

Live	View Live Image
Captured	Capture Image for Analysis
Analyze	Analyze Image
Results Table	Auto/Off
Overlay	On/Off
Zoom Control Help	Displays instruction for image Zoom feature

### Save/Recall Parameters

Save	Measurement (*.vipi), VIP Image (*.png), Screen Shot (.png)
Recall	Measurement (*.vipi), VIP Image (*.png), Screen Shot (.png)
File Management	Rename, Create Folder, Copy, Paste, Delete

Report Parameters

Header Settings	Customer, Project, Operator, Notes, Include Logo
Generate Report	Generates pdf report with options to include multiple *.vipi files

Instrument Displays
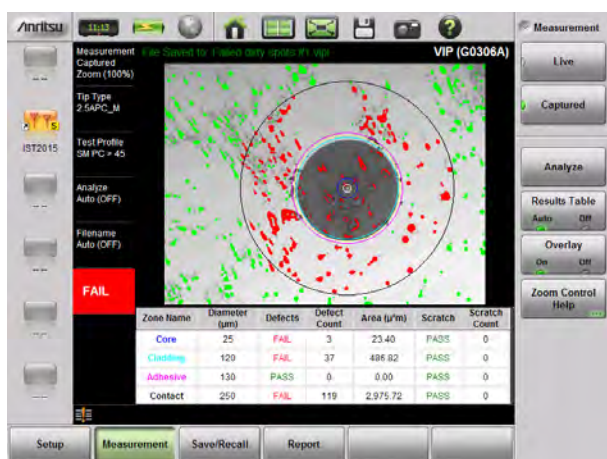
Dirty, oily fiber fails inspection
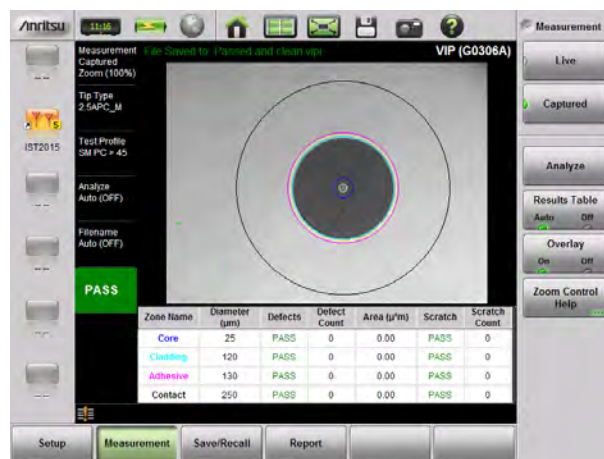
After proper cleaning, fiber passes 100%

📱 General Specifications

Setup Parameters

System Info	Status, Battery
System Setups	Date/Time, Language, Display/Audio
Date/Time	Time and Date Settings, Time Zone Settings
Language	English, French, German, Italian, Spanish, Russian, Portuguese, Japanese, Korean, Chinese
Display/Audio	Brightness, Color Schemes, Screen Shot Settings, Volume
Connectivity	GPS, Ethernet Configuration (DHCP/Static)
Diagnostics	Self Test
Preset	Preset, Reset, Update Firmware
Reset	Factory Reset, Delete All User Files, Delete Custom Files, Master Reset
File	Save, Recall, File Management
Save	Measurement (*.dat), Setup (*.stp), Screen Shot (*.png)
Recall	Recall, Create Folder, Copy, Paste, Delete
File Management	Rename, Create Folder, Copy, Paste, Delete
Navigation	Top, Bottom, Page Up, Page Down
Help Menu	System Info, FAQ, User Guide
Internal Trace/Setup Memory	> 1000 files (files may be traces, setups, screen shots, or any combination)
External Trace/Setup Memory	Limited only by size of USB Flash drive

Connectors

RF Out/Reflect In	Type N, female, 50 Ω, Maximum Input +42 dBm, ± 50 VDC
InstaCal™/Power Meter	Type N, male, 50 Ω, Maximum Input +27 dBm, ± 45 VDC (Damage Level)
External Power	5.5 mm barrel connector, 11 to 14 VDC, < 3.0 A
USB Ports	USB 2.0 Type A (two ports)
USB Interface	Type mini-B, Connect to PC for data transfer

Display

Type	TFT Resistive Touch Screen
Size	7.0 in daylight viewable color LCD
Resolution	800 x 480
Pixel Defects	No more than five defective pixels (99.9986% good pixels)

GPS Connectivity (external GPS USB module sold separately)

GPS Time/Location Indicator	Time, Latitude, Longitude and Altitude in GPS dialog (current or last known location)
	Time, Latitude, Longitude and Altitude with trace storage (current or last known location)
Setup	Clear Data, Synchronize system time to GPS

Battery

Type	Li-Ion
Battery Operation	> 8.0 Hours typical (70 % brightness setting, continuous usage)
Standby	7 days typical (With fully charged battery. Actual time will vary depending on battery charge level)

Regulatory Compliance

European Union	EMC 2014/30/EU, EN 61326:2013, CISPR 11/EN 55011, IEC/EN 61000-4-2/3/4/5/6/8/11 Low Voltage Directive 2014/35/EU Safety EN 61010-1:2010 RoHS Directive 2011/65/EU applies to instruments with CE marking placed on the market after July 22, 2017
Australia and New Zealand	RCM AS/NZS 4417:2012
Canada	ICES-1(A)/NMB-1(A)
South Korea	KCC-REM-A21-0004

Environmental — MIL-PRF-28800F Class 2

Operating Temperature Range	–10 ℃ to 55 ℃
Storage Temperature Range	–51 ℃ to 71 ℃
Maximum Relative Humidity	95 % RH at 30 ℃, non-condensing
Vibration, Sinusoidal	5 Hz to 55 Hz
Vibration, Random	10 Hz to 500 Hz
Half Sine Shock	30 g_n
Altitude	4600 meters, operating and non-operating
Explosive Atmosphere	MIL-PRF-28800F Section 4.5.6.3 MIL-STD-810G, Method 511.5, Procedure 1

Size and Weight

Size	250 mm x 177 mm x 61 mm (10.0 in x 7.1 in x 2.4 in)
Weight	< 2.0 kg (4.4 lb), including battery

Warranty

Duration	Standard three-year warranty (battery one-year warranty)

🦋 Anritsu Tool Box and Line Sweep Tools (for your PC)

Line Sweep Tools (LST) is a free PC based program that increases productivity for people who deal with numerous Cable and Antenna traces every day. LST is the next generation of Anritsu's familiar Handheld Software Tools (HHST) and shares its uncomplicated user interface, giving a new face to the term "ease of use."

Cable Editor[1]	Instrument Cable Lists may be retrieved from the instrument, modified as required, and uploaded back into instrument.
Distance to Fault[2] (DTF)	Easily convert Return Loss or VSWR traces to Distance to Fault traces with one button press.
Measurement Calculator	Provides quick conversion between commonly used measurement units such as VSWR, RL, and others.
Signal Standard Editor[1]	Signal Standard Lists may be retrieved from the instrument, modified as required, and uploaded back into instrument.
Naming Grid	A naming grid function makes changing file names, trace titles, and trace subtitles from field values to those required by contract simple and quick. Once the naming grid is populated with user defined file name segments, a few simple button presses will then fill out the file, title, and sub-title names. Quickly applied to multiple traces, the naming grid can save time, increase efficiency and accuracy.
Presets	Presets make applying markers and a limit line to similar traces quick and easy. They only need to be set once, and recorded. After this, applying them to a similar trace requires only one button push. This speeds up trace processing and makes providing consistent marker and limit line settings easy.
Report Generator	The report generator creates a professional PDF or HTML based report. Reports may include GPS[3] location, power level[3], company logo[4], instrument and calibration status along with a display of all open traces. It also may contain additional information such as addresses and phone numbers.
Capture	Plots to Screen, Database, *.dat, *.jpg
Connect	To PC using USB, Ethernet, Serial
Download/Upload[1]	Lists/measurements and live traces to PC for storage and analysis.
Supported File Types	Input: *.dat, *.vna, *.mna, *.pim, *.tm
	Output: *.dat, *.vna, *.pim, *.tm, *.csv, *.bmp, *.jpg, *.png

📒 easyTest Tools (for your PC)

Instrument Mode

	Cable & Antenna Analyzer Mode

Commands

Display Image	Allows putting a custom image on the instrument screen
Recall Setup	Places the instrument into a known state
Prompt	Displays instructional messages on the instrument screen
Save	Allows automatic or manual saving of traces

Connectivity

Connections	USB cable or USB memory stick

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1. Instrument type/model must match original
2. Only *.dat and *.vna file types supported
3. Model dependent
4. Optionally set by user

Ordering Information

	Model Number	Description
	S331L (Includes all items listed in the description)	Cable and Antenna Analyzer - 2 MHz to 4 GHz
		Internal InstaCal™ - 2 MHz to 4 GHz
		Internal Power Meter - 50 MHz to 4 GHz
		High Accuracy Power Meter (requires External USB Power Sensor, sold separately)
		GPS Location/System Time Sync (requires External GPS Module 2000-1723-R, sold separately)
		Optical connector inspection with IEC 61300-3-35 based Pass/Fail standard (requires USB Video Inspection Probe, sold separately)

Calibration and Extended Warranty Options

Warranty	Warranty with Z540 Calibration	Description
S331L-ES510	S331L-ES513	Warranty Extension to 5 Years, Return to Anritsu

Calibration Only Options

Option	Description
S331L-0098	Standard Calibration to ISO17025 and ANSI/NCSL Z540-1. Includes calibration certificate.
S331L-0099	Premium Calibration to ISO17025 and ANSI/NCSL Z540-1. Includes calibration certificate, test report, and uncertainty data.

Standard Accessories (included with instrument)

Accessory	Description
	2000-1676-R Soft Carrying Case
	2000-1691-R Stylus with Coiled Tether
	Certificate of Calibration and Conformance
	40-187-R AC-DC Adapter

Accessory	Description
	2000-1687-R Torque Multiplier N(m)
	3-2000-1498 USB A/5-pin mini-B Cable, 10 ft
	806-141-R Automotive Power Adapter, 12 VDC, 60 W

USB Power Sensors (for complete ordering information, see the respective data sheets of each sensor)

Accessory	Description
	MA24330A Microwave CW USB Power Sensor, 10 MHz to 33 GHz, +20 dBm
	MA24340A Microwave CW USB Power Sensor, 10 MHz to 40 GHz, +20 dBm
	MA24350A Microwave CW USB Power Sensor, 10 MHz to 50 GHz, +20 dBm
	MA24208A Microwave Universal USB Power Sensor, 10 MHz to 8 GHz, +20 dBm to –60 dBm
	MA24218A Microwave Universal USB Power Sensor, 10 MHz to 18 GHz, +20 dBm to –60 dBm
	MA24106A High Accuracy RF Power Sensor, 50 MHz to 6 GHz, +23 dBm to –40 dBm
	SC8268 USB Transmission Sensor, K(m), 1 MHz to 40 GHz, +10 dBm to –50 dBm

Accessory	Description
	MA24108A Microwave USB Power Sensor, 10 MHz to 8 GHz, +20 dBm to –40 dBm
	MA24118A Microwave USB Power Sensor, 10 MHz to 18 GHz, +20 dBm to –40 dBm
	MA24126A Microwave USB Power Sensor, 10 MHz to 26 GHz, +20 dBm to –40 dBm
	MA24105A Inline Dual Directional High Power Sensor, 350 MHz to 4 GHz, +3 dBm to +51.76 dBm
	MA25100A RF Power Indicator

Optional Accessories

Backpack and Transit Case

Accessory	Description
	67135 Anritsu Backpack (for Handheld Instrument and PC)

Accessory	Description
	760-286-R Compact Transit Case with Wheels and Handle 55.6 cm x 35.5 cm x 22.9 cm (21.89" x 13.98" x 9.01")

USB Extender Kit   (for use with external 2-port cable loss/transmission sensors; requires Cat 5e extension cable, sold separately)

Accessory	Description
	2000-1900-R USB 2.0 Active 100 meter Extender (with Type A power cord for USA, Japan, North America, Central America and Caribbean)
	2000-1901-R USB 2.0 Active 100 meter Extender (with Type C power cord for use in Europe, India, South Korea, and many countries in Middle East and Africa)
	2000-1902-R USB 2.0 Active 100 meter Extender (with Type I power cord for use in Australia, New Zealand, Argentina, and the South Pacific)
	2000-1903-R USB 2.0 Active 100 meter Extender (with Type G power cord for use in the UK, and several other countries in Asia, the Middle East, and Africa)

Accessory	Description
	2000-1717-R USB 1.1 Passive 40 m Extender (Not compatible with sensors MA24208A, MA24218A, MA24330A, MA24340A, MA24350A; must use active extenders with these sensors.)
	2100-28-R Cat 5e extension cable for use with USB Extender (22.5 m)

GPS Module

Accessory	Description
	2000-1723-R High Performance USB Mag-Mount GPS Module

Ethernet Adapter

Accessory	Description
	2000-1810-R Portable USB to Ethernet LAN Adapter

Video Inspection Probe

Accessory	Description
971-14-R	Ferrule Cleaner, 2.5 mm SC
971-15-R	Ferrule Cleaner, 1.25 mm LC
971-16-R	Fiber Ferrule Cleaner

Accessory	Description
G0306B	Video Inspection Probe (400x), including the following standard connector tips:
	Universal Tips: H0361A 1.25PC-M, H0360A 2.5PC-M, H0362A 2.5APC-M
	Bulkhead Tips: H0363A LC-PC-F, H0364A FC-PC-F, H0375A ST-PC-F, H0366A SC-APC-
	Additional Tips Available: H0372A E2000-PC-F, H0373A FC-APC-F, H0374A MU-PC-F, H0365A SC-PC-F, H0376A 1.25APC-M

Phase-Stable Test Port Cables, Armored w/Reinforced Grip   (recommended for cable & antenna line sweep applications)

Accessory	Description
15RDN50-1.5-R	1.5 m, DC to 6 GHz, N(m) to 7/16 DIN(m), 50 Ω
15RDFN50-1.5-R	1.5 m, DC to 6 GHz, N(m) to 7/16 DIN(f), 50 Ω
15RDN50-3.0-R	3.0 m, DC to 6 GHz, N(m) to 7/16 DIN(m), 50 Ω
15RDFN50-3.0-R	3.0 m, DC to 6 GHz, N(m) to 7/16 DIN(f), 50 Ω

Accessory	Description
15RNFN50-1.5-R	1.5 m, DC to 6 GHz, N(m) to N(f), 50 Ω
15RNFN50-3.0-R	3.0 m, DC to 6 GHz, N(m) to N(f), 50 Ω

Interchangeable Adapter, Phase Stable Test Port Cables, Armored w/Reinforced Grip   (recommended for cable and antenna line sweep applications. It uses the same ruggedized grip as the Reinforced grip series cables. Now you can also change the adapter interface on the grip to four different connector types.)

Accessory	Description
15RCN50-1.5-R	1.5 m, DC to 6 GHz, N(m), N(f), 7/16 DIN(m), 7/16 DIN(f), 50 Ω
15RCN50-3.0-R	3.0 m, DC to 6 GHz, N(m), N(f), 7/16 DIN(m), 7/16 DIN(f), 50 Ω

Phase-Stable Test Port Cables, Armored   (recommended for use with tightly spaced connectors and other general purpose applications

Accessory	Description
15NNF50-1.5C	1.5 m, DC to 6 GHz, N(m) to N(f), 50 Ω
15NN50-1.5C	1.5 m, DC to 6 GHz, N(m) to N(m), 50 Ω
15NNF50-3.0C	3.0 m, DC to 6 GHz, N(m) to N(f), 50 Ω
15NN50-3.0C	3.0 m, DC to 6 GHz, N(m) to N(m), 50 Ω
15NNF50-5.0C	5.0 m, DC to 6 GHz, N(m) to N(f), 50 Ω
15NN50-5.0C	5.0 m, DC to 6 GHz, N(m) to N(m), 50 Ω

Accessory	Description
15NDF50-1.5C	1.5 m, DC to 6 GHz GHz, N(m) to 7/16 DIN(f), 50 Ω
15ND50-1.5-R	1.5 m, DC to 6 GHz, N(m) to 7/16 DIN(m), 50 Ω
15N43M50-1.5C	Test Port Extension Cable, Armored, 1.5 m DC to 6 GHz, N(m) to 4.3-10(m)
15N43F50-1.5C	Test Port Extension Cable, Armored, 1.5 m, DC to 6 GHz, N(m) to 4.3-10(f)
15N43M50-3.0C	Test Port Extension Cable, Armored, 3 m, DC to 6 GHz, N(m) to 4.3-10(m)
15N43F50-3.0C	Test Port Extension Cable, Armored, 3 m, DC to 6 GHz, N(m) to 4.3-10(f)

Coaxial Calibration Components, 50 Ω

Accessory	Description
	22NF50 Open/Short, N(f), DC to 18 GHz, 50 Ω
	OSLN50A-8 High Performance Type N(m), DC to 8 GHz, 50 Ω
	OSLNF50A-8 High Performance Type N(f), DC to 8 GHz, 50 Ω
	2000-1914-R Precision Open/Short/Load, 4.3-10(f), DC to 6 GHz, 50 Ω
	2000-1915-R Precision Open/Short/Load, 4.3-10(m), DC to 6 GHz, 50 Ω
	2000-1618-R Precision Open/Short/Load, 7/16 DIN(m), DC to 6.0 GHz, 50 Ω
	2000-1619-R Precision Open/Short/Load, 7/16 DIN(f), DC to 6.0 GHz 50 Ω
	22N50 Open/Short, N(m), DC to 18 GHz, 50 Ω
	SM/PLNF-1 Precision Load, N(f), 4 dB, 6.0 GHz, 50 Ω
	SM/PL-1 Precision Load, N(m), 4 dB, 6.0 GHz, 50 Ω

Coaxial Calibration Components, 75 Ω

Accessory	Description
	22N75 Open/Short, N(m), DC to 3 GHz, 75 Ω
	22NF75 Open/Short, N(f), DC to 3 GHz, 75 Ω
	26N75A Precision Termination, N(m), DC to 3 GHz, 75 Ω
	26NF75A Precision Termination, N(f), DC to 3 GHz, 75 Ω
	12N50-75B Matching Pad, DC to 3 GHz, 50 Ω to 75 Ω

Adapters

Accessory	Description	Accessory	Description
1091-26-R	SMA(m) to N(m), DC to 18 GHz, 50 Ω	510-102-R	N(m) to N(m), DC to 11 GHz, 50 Ω, 90 degrees right angle
1091-27-R	SMA(f) to N(m), DC to 18 GHz, 50 Ω	510-90-R	7/16 DIN(f) to N(m), DC to 7.5 GHz, 50 Ω
1091-80-R	SMA(m) to N(f), DC to 18 GHz, 50 Ω	510-91-R	7/16 DIN(f) to N(f), DC to 7.5 GHz, 50 Ω
1091-81-R	SMA(f) to N(f), DC to 18 GHz, 50 Ω	510-92-R	7/16 DIN(m) to N(m), DC to 7.5 GHz, 50 Ω
1091-172-R	BNC(f) to N(m), DC to 1.3 GHz, 50 Ω	510-93-R	7/16 DIN(m) to N(f), DC to 7.5 GHz, 50 Ω
1091-435-R	Low PIM Adapter, 4.1-9.5(f) to N(m), DC to 3.0 GHz, 50 Ω	510-96-R	7/16 DIN(m) to 7/16 DIN (m), DC to 7.5 GHz, 50 Ω
1091-436-R	Low PIM Adapter, 4.1-9.5(m) to N(m), DC to 3.0 GHz, 50 Ω	510-97-R	7/16 DIN(f) to 7/16 DIN (f), DC to 7.5 GHz, 50 Ω
1091-434-R	Low PIM Adapter, 4.1-9.5(m) to 7/16 DIN(f), DC to 3.0 GHz, 50 Ω	1091-433-R	Low PIM Adapter, 4.1/9.5(f) to 7/16 DIN(f), DC to 3.0 GHz, 50 Ω
1091-465-R	Adapter, DC to 6 GHz, 4.3-10(f) to N(f), 50 Ω	1091-467-R	Adapter, DC to 6 GHz, 4.3-10(m) to N(f), 50 Ω
1091-440-R	Low PIM Adapter, 4.3-10(f) to 7/16 DIN(f), DC to 6.0 GHz, 50 Ω	1091-441-R	Low PIM Adapter, 4.3-10(m) to 7/16 DIN(f), DC to 6.0 GHz, 50 Ω
1091-442-R	Low PIM Adapter, 4.3-10(f) to N(m), DC to 6.0 GHz, 50 Ω	1091-443-R	Low PIM Adapter, 4.3-10(m) to N(m), DC to 6.0 GHz, 50 Ω

Precision Adapters

Accessory	Description
	34NN50A N(m) to N(m), DC to 18 GHz, 50 Ω

Accessory	Description
	34NFNF50 N(f) to N(f), DC to 18 GHz, 50 Ω

Attenuators

Accessory	Description
	1010-121-R 40 dB, 100 W, DC to 18 GHz, N(f) to N(m), Un-idirectional
	3-1010-122 20 dB, 5 W, DC to 12.4 GHz, N(m) to N(f)
	3-1010-123 30 dB, 50 W, DC to 8.5 GHz, N(m) to N(f)
	3-1010-124 40 dB, 100 W, DC to 8.5 GHz, N(f) to N(m), Uni-directional

Accessory	Description
	42N50-20 20 dB, 5 W, DC to 18 GHz, N(m) to N(f)
	42N50A-30 30 dB, 50 W, DC to 18 GHz, N(m) to N(f)
	1010-127-R 30 dB, 150 W, DC to 3 GHz, N(m) to N(f)
	1010-128-R 40 dB, 150 W, DC to 3 GHz, N(m) to N(f)

Documentation (available at www.anritsu.com)

Part Number	Description
10100-00065	Product Information, Compliance, and Safety
11410-00616	Site Master™ S331L Technical Data Sheet
10580-00321	Site Master™ S331L User Guide
11410-00640	Site Master S331L Product Brochure (Includes information about additional Site Master models)
11410-00662	Site Master S331L Quick Fact Sheet
11410-00674	Cable and Antenna Analysis Troubleshooting Guide
10580-00253	Site Master™ S331L Maintenance Manual

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