**Anritsu** *envision : ensure*

# Site Master™ S331L
## Handheld Cable & Antenna Analyzer

Featuring Classic & Advanced Modes
2 MHz to 4 GHz Cable & Antenna Analyzer
50 MHz to 4 GHz Power Meter

# Site Master™ S331L Cable & Antenna Analyzer Overview

"Site Master is the most trusted, reliable, and preferred cable and antenna analyzer by tower contractors, installation and maintenance contractors, and wireless service providers."

## Introduction

Anritsu is proud to introduce the new Site Master™ S331L, our 9th generation compact handheld Cable & Antenna Analyzer.

The S331L is newly designed from the ground up. We took all of our experience, customer feedback, field trials, and the latest technology advancements, and developed the best value in a low cost, field optimized, trusted, reliable, rugged, easy to use, one port Cable & Antenna Analyzer.



S331L SITE MASTER HANDHELD CABLE AND ANTENNA ANALYZER AND LAPTOP

**Optimized** for field use

- ▶ >8 hour battery life
- ▶ Instant On from standby mode
- ▶ Highest RF Immunity
- ▶ Built-in InstaCal™ Module
  - Fast, one connection calibration
- ▶ FlexCal™ Calibration
  - One calibration for all frequencies
- ▶ Built-in Power Meter
- ▶ Rugged and reliable
- ▶ Impact, dust and splash resistant
- ▶ Smallest, lightest Site Master™
- ▶ Optical connector inspection with IEC 61300-3-35 based Pass/Fail standard (Requires USB Video Inspection Probe, sold separately)

**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

**Efficient** sweep management

- ▶ Internally store >1000 files
  - Sweeps, setups, screenshots
- ▶ Fast preview of stored sweeps
- ▶ Line Sweep Tools (LST) Software
  - Edit sweeps, rename, archive
  - Generate PDF or HTML reports
- ▶ Standard *.dat sweep file format
- ▶ Compatible with HHST
  - Widely accepted by operators
- ▶ SweepMasters DIRECT
  - Online trace delivery service

# Site Master™ S331L Cable & Antenna Analyzer Features

## Cable & Antenna Analyzer



**S331L SITE MASTER IS SPLASH RESISTANT**

### Rugged, dust and splash resistant, reliable, lightweight and portable

Site Master S331L is rugged, dust and splash resistant, reliable, field proven and always ready, even if you're not. At under 2.0kg (4.4lbs) including battery, it's effortless to carry whether you are on level ground, climbing a large tower, or heading through a roof hatch, your Site Master easily goes along with you.
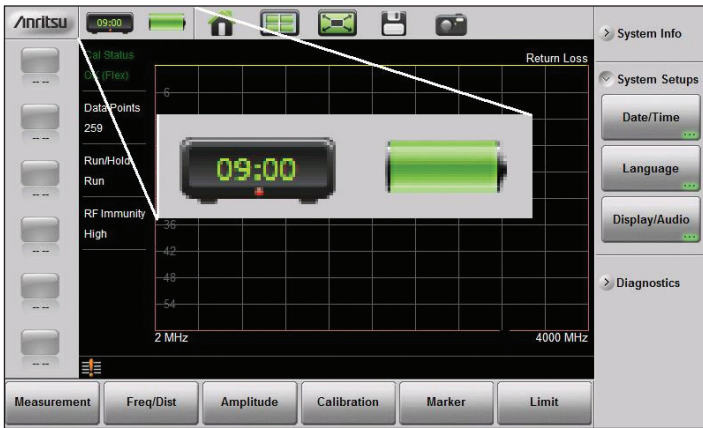


**STARTING OUT FULLY CHARGED AT 9:00 AM**

### Beginning of a traditional workday

With the battery fully charged, you're ready for a full workday of measurements. This is the longest lasting Site Master operation time we've ever offered in a handheld cable and antenna analyzer. You won't need to look for outlets and drag power supplies with you from site to site anymore. Now you can focus on what matters, making measurements and getting the job completed.
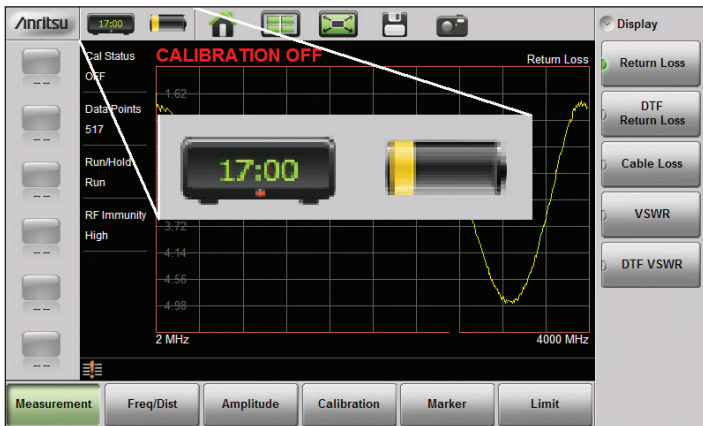


**ALL DAY ON BATTERY AND STILL RUNNING AT 5 PM**

### 8 hours later, still running and still measuring

After 8 continuous hours of battery operation, the Site Master S331L is still measuring. We understand that 8 continuous hours is an unlikely scenario, but we are proud of the S331L's extended battery life and feel it deserves to be recognized.

The S331L also has intelligent power saving features to extend the operating time further, providing as much as 10 hours of operation.

Features like sleep mode with instant on, handy for travelling between sites, and auto-display brightness that will reduce the screen backlight automatically if the instrument has not been accessed for some time. One touch of the screen, keypad, or twiddle-knob will automatically restore brightness levels.

# Site Master™ S331L Cable & Antenna Analyzer Features

## Cable & Antenna Analyzer

### Efficient Menu Screen

The Menu Key activates the touch screen menu for one button access to all of the Analyzers modes, and quick access to the dedicated setup shortcut icons

**MAIN MENU SCREEN PROVIDES ONE TOUCH MODE SELECTION**

### One Button Help

An intelligent, useful help menu launches with the press of the Help Key.

**ON SCREEN HELP MENU**

# Site Master™ S331L Cable & Antenna Analyzer Features
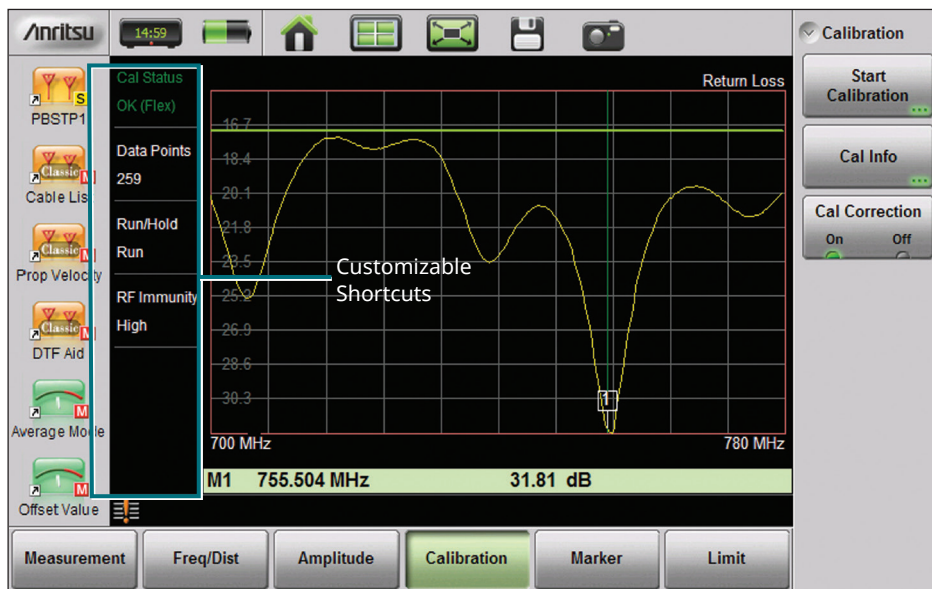
### Cable & Antenna Analyzer

### Markers & Limits

Using the stylus pen (provided) or fingers, users can drag or place markers and limits anywhere on the measurement screen. Values can also be entered with number keys, or by turning the rotary knob. Several easy and convenient ways to place markers and limits where you want them, or use the auto search max/min peak functions if you prefer.
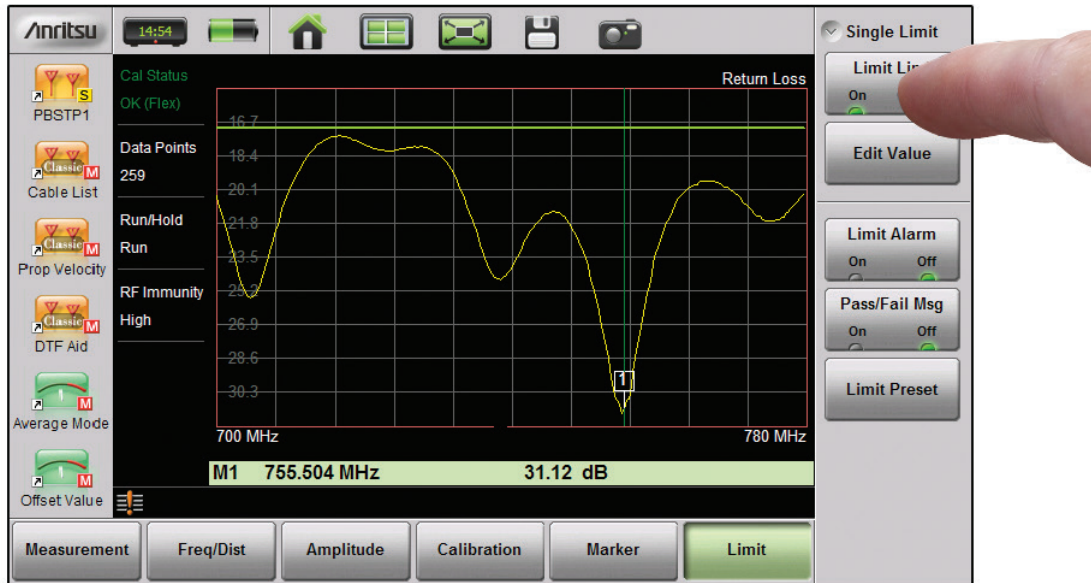


**DRAGGING MARKERS AND LIMITS WITH FINGERS IS REALLY EASY AND CONVENIENT**

### Convenient Shortcuts

User defined shortcuts can be created for one-button access to commonly used functions. (Advanced Mode only)



**USER DEFINABLE SHORTCUTS FOR FREQUENTLY USED FUNCTIONS**

# Site Master™ S331L Cable & Antenna Analyzer Features

## Cable & Antenna Analyzer



**CONVENIENT MULTIPLE USB PORTS**

### Multiple USB ports

The Site Master S331L comes with two USB type A ports and one USB type mini B port. This allows for a quick and convenient file transfer, memory expansion, or you can add an external mouse or keyboard to enhance usability. You can even charge your cellphone in case it happens to run out of battery power.
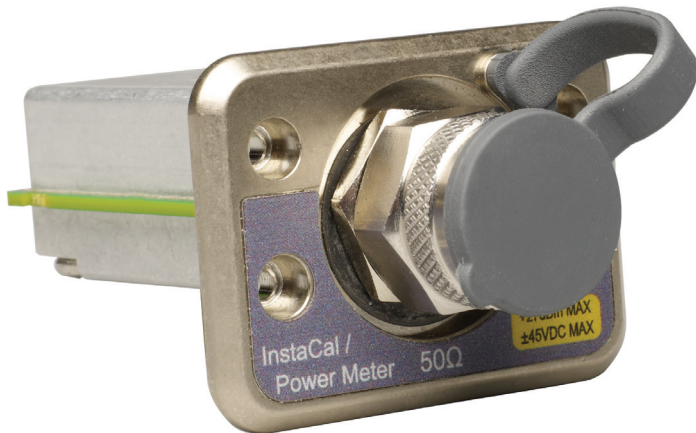


**INSTACAL™/POWER METER MODULE**

### Field replaceable module

We know accidents can happen out there, so we developed a field replaceable module solution to save valuable time and money, allowing you to keep your productivity up. If a user accidentally damages the Power Meter module by putting too much power into it, simply contact Anritsu and we will send you a replacement exchange module* that simply plugs into the dedicated slot and is held in with 4 screws. There's no need to return your instrument, no need to recalibrate the instrument, (calibration factors are stored within each module) and most importantly, down time is reduced to the absolute minimum. Order a spare module for your field kits and your downtime in the event of an accident is essentially zero.
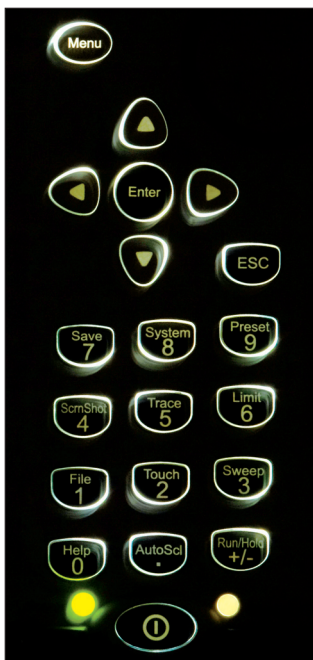


**EASY TO SEE BACKLIT KEYS**

### LED Backlit Keypad

The LED backlit keypad allows for operation in dimly lit environments. Whether it's the winter season, or you are just working late into the evening, you'll be able to see the keypad without any strain. You'll know exactly what key you are pressing so you can complete your measurements more efficiently.

*Charges may apply. Exchange module pricing is based on defective core returned to Anritsu. Contact Anritsu for more details.

# Site Master™ S331L Cable & Antenna Analyzer Features

## Cable & Antenna Analyzer
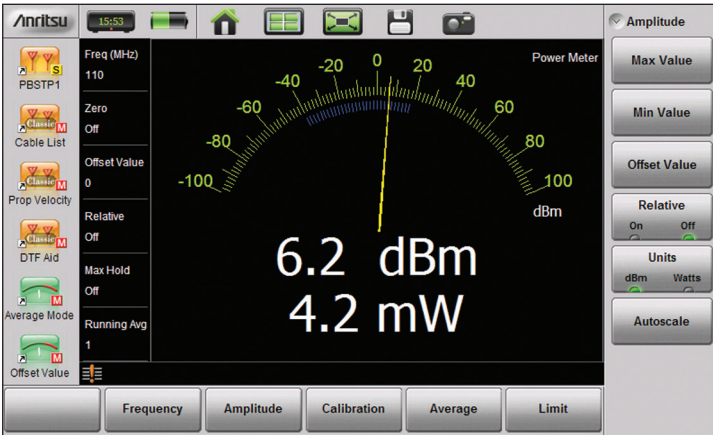


**BUILT IN POWER METER MEASUREMENT SCREEN**

### Internal Power Meter

The Site Master S331L includes a convenient, easy to use, built in power meter.

Setting the transmitter output power of a base station properly is critical to the overall operation of wireless networks. A very small change in power levels can create a large change in actual coverage area, resulting in dropped calls and low data rates.
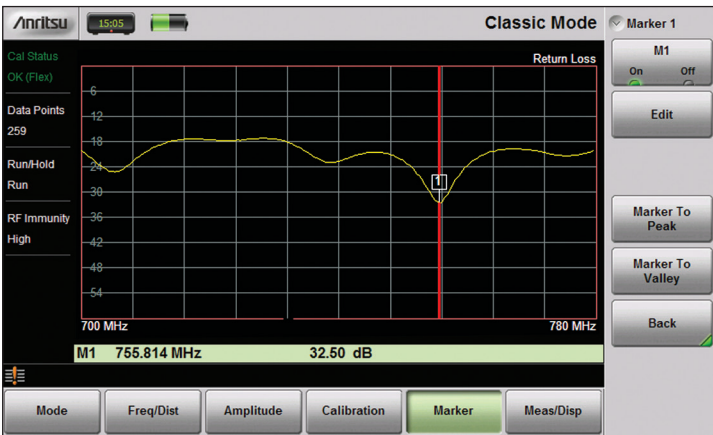


**CLASSIC MODE CAN REDUCE OR ELIMINATE TRAINING FOR EXPERIENCED SITE MASTER USERS.**

### Classic Mode

The Site Master S331L offers a convenient Classic Mode that's easy to use. If you have used the Site Master D series model, or even older Site Master models, you'll find this Classic Mode familiar and easy to use. We didn't keep all of the D characteristics though, Classic Mode allows you to use the convenient popup keyboard for saving data. Complex filenames are no longer limited to 16 characters, there's plenty of characters available to suit any filenames you might require.
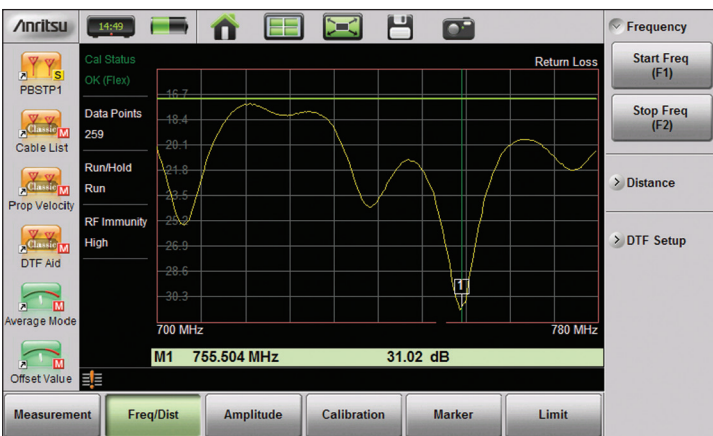


**ADVANCED MODE CONTAINS SEVERAL POWERFUL NEW FEATURES NOT AVAILABLE IN CLASSIC MODE.**

### Advanced Mode

The Site Master S331L also offers a mode with more capability, we call it Advanced Mode. Advanced Mode has a much more modern look and feel to it, and many users will immediately appreciate the new Advanced Mode GUI and button layout/function. With Advanced Mode you also get some extra capabilities such as 8 markers instead of 6. There are 6 customizable touch screen icons for quick recalling of regularly used setups, making operation easier and more efficient.
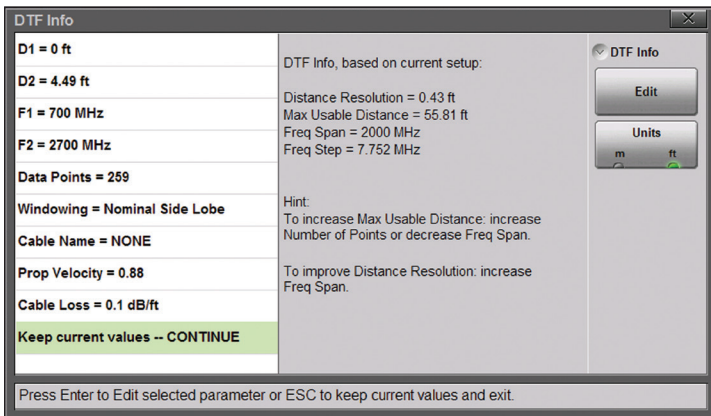
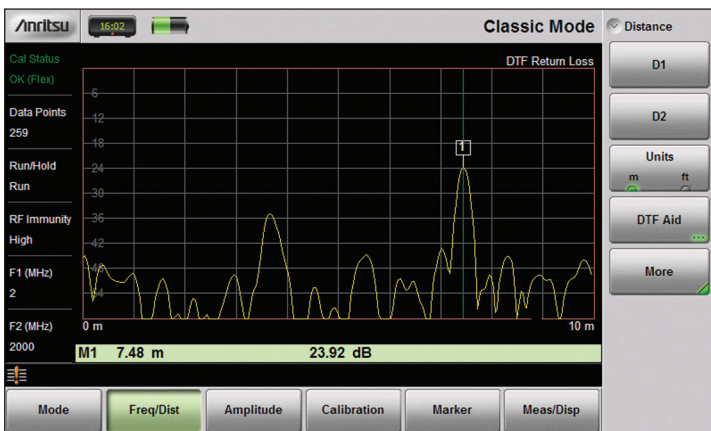# Site Master™ S331L Cable & Antenna Analyzer Features

## Cable & Antenna Analyzer
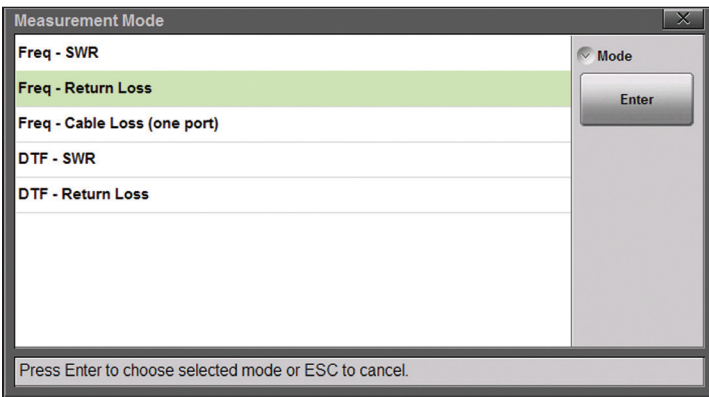


CLASSIC MODE SELECTOR SCREEN. SAME FAMILIAR LAYOUT AS D MODELS.

### Classic Mode Measurement Selector Screen

The Site Master S331L classic mode was developed based on customer feedback. Many of our loyal customers have asked us to create an easy to use GUI like the one they have become accustomed to on the Site Master D models. The result of that valuable feedback is what we are proud to announce as Classic Mode.



DTF AID PARAMETER SCREEN. SAME FAMILIAR LAYOUT AS D MODELS.

### Classic Mode Distance-to-Fault Aid Menu Screen

DTF Aid screen contains the same options in a similar layout format as the Site Master D models. Former Site Master D model users should have no difficulty setting DTF parameters in Classic Mode. We've even added some useful hints to help optimize the settings.



DISTANCE-TO-FAULT (DTF) MEASUREMENT SCREEN.

### Classic Mode Distance-to-Fault Measurement

Here is an example of the Classic Mode Distance-to-Fault (DTF) measurement screen. Notice the Distance menu buttons labeled "D1" and "D2" just as they are in the D models.
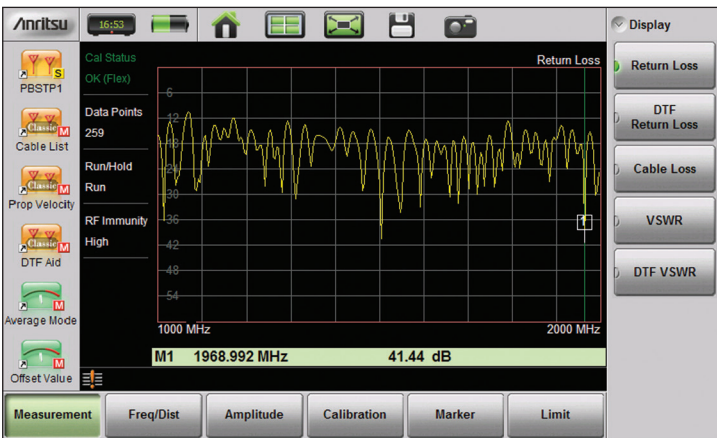
These changes allow users experienced with older Site Master models to become immediately productive with the new S331L. Saves training costs and downtime.

# Site Master™ S331L Cable & Antenna Analyzer Features

## Cable & Antenna Analyzer



**EASIER ACCESS TO DESIRED MEASUREMENT TYPES IN ADVANCED MODE**

### Advanced Mode Measurement Selector Screen

In Advanced Mode, users no longer need to press the Mode key before selecting desired measurement. Users are now able to select the desired measurement directly, simply by pressing the primary menu key "Measurement" then choose the desired measurement from the secondary menu keys on the right side.
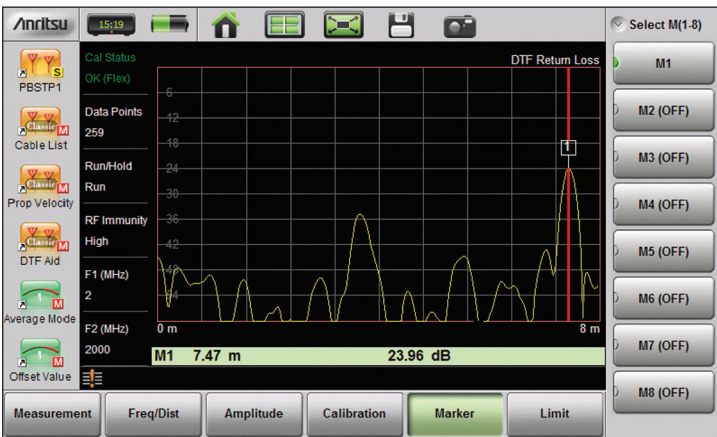


**8 MARKERS IN ADVANCED MODE PROVIDES MORE FLEXIBILITY**

### More Markers in Advanced Mode

In Advanced Mode you have 8 markers available to you. That's 2 additional markers which can be used as you wish, either as additional regular markers, additional delta markers, or additional bounded markers. Provides more flexibility than Classic Mode.
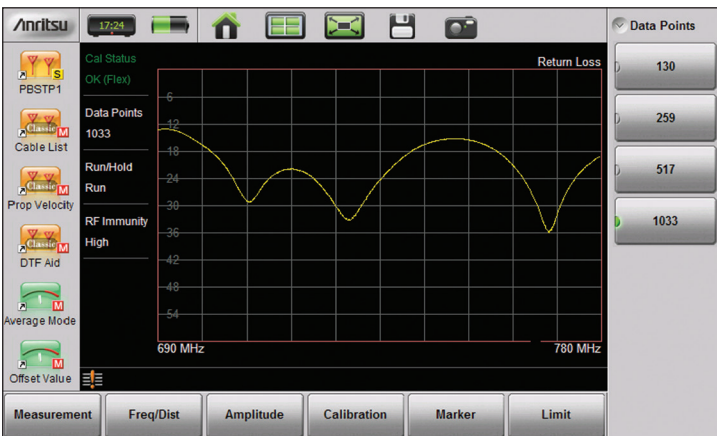


**WITH 1033 DATAPOINTS YOU CAN EXTEND THE MAXIMUM DISTANCE-TO-FAULT RANGE EASILY**

### 1033 Datapoints

You have up to 1033 datapoints available for use. Increased datapoints can be used to provide better frequency resolution for your VSWR/RL measurements, or they can be used to extend the maximum distance range for your Distance-to-Fault (DTF) measurements without sacrificing distance resolution. A handy feature at your fingertips.
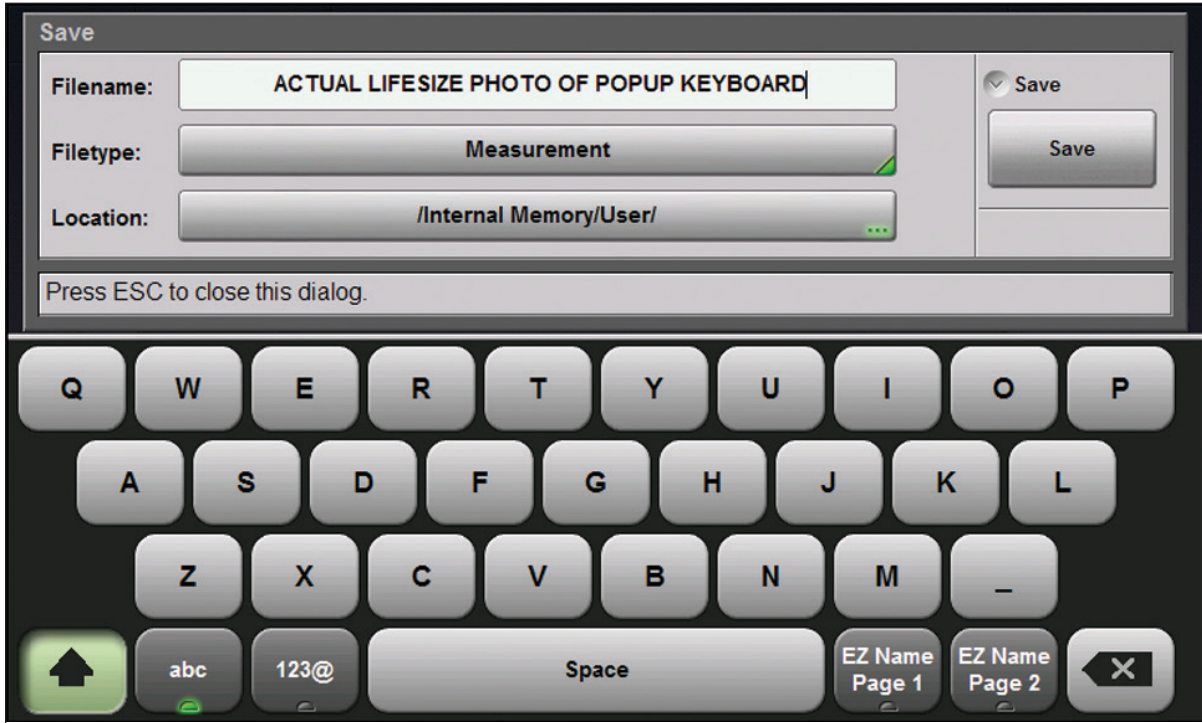
# Site Master™ S331L Cable & Antenna Analyzer Features

## Cable & Antenna Analyzer

### Large, easy to see touch screen Keyboard

A large built-in popup keyboard saves valuable time in the field when entering trace names.

For Cable and Antenna Analysis, an EZ Name Matrix can be customized for quickly naming your line sweeps



**BUTTONS ARE LARGE, EASY TO SEE AND PRESS. MAKES FILE SAVING EASIER THAN EVER.**

### EZ Name Quick Naming Matrix saves valuable time

Unique to Anritsu, the customizable EZ Name Quick Naming Matrix saves valuable time. Users can preset up to 36 commonly used names. The resulting time saved is immediately beneficial. Save file names labeled with Site ID, Sector, Color Code, Measurement type, Termination and Frequency in less than 5 seconds. Now you can label the traces of the entire site in minutes instead of hours.
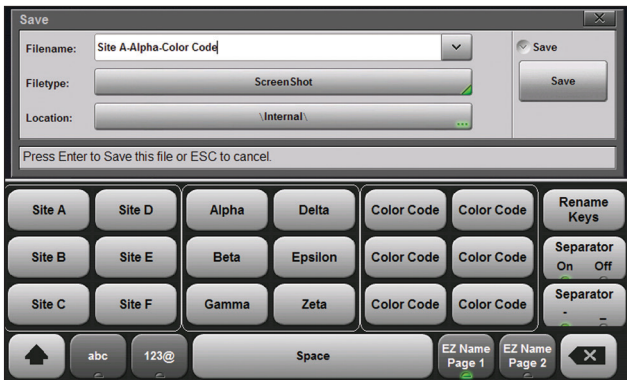


**MOST COMMON SITE NAME REQUIREMENTS ARE PREPROGRAMMED INTO THE EZ NAME MATRIX. PAGE 1 OF 2 SHOWN.**
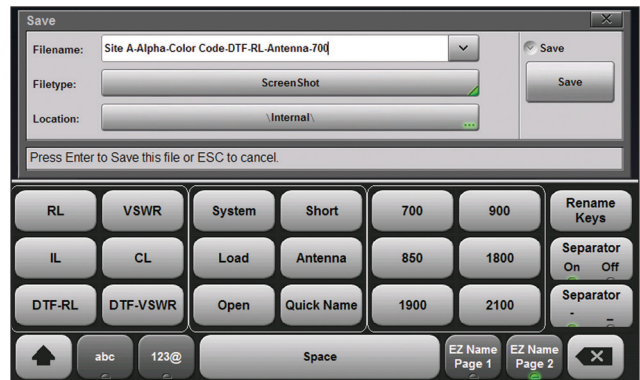


**18 ADDITIONAL CUSTOMIZABLE EZ NAME BUTTONS AVAILABLE ON PAGE 2.**

# Site Master™ S331L Cable & Antenna Analyzer Features

## Cable & Antenna Analyzer

**OSL Calibration just got a lot easier!**

The S331L guides you through the entire OSL calibration process with not only text instructions, but with actual on screen photos to aid the user during the entire process. What could be easier? InstaCal™ of course, *psst*...we have that too!



ACTUAL INSTRUMENT ON-SCREEN INSTRUCTIONS.



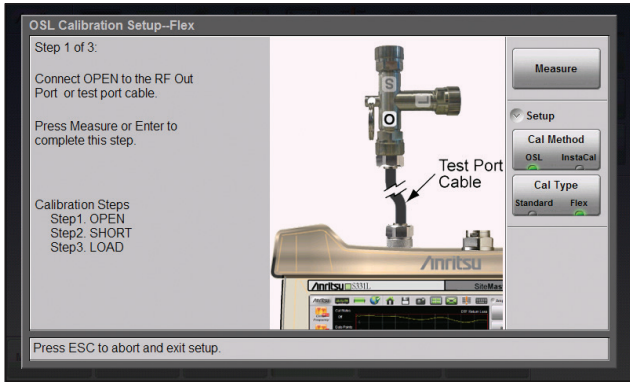ACTUAL INSTRUMENT ON-SCREEN INSTRUCTIONS.

**Step 1**

Connect Open as shown. S331L will automatically guide you through the entire OSL calibration sequence step by step with pictures and instructions on screen
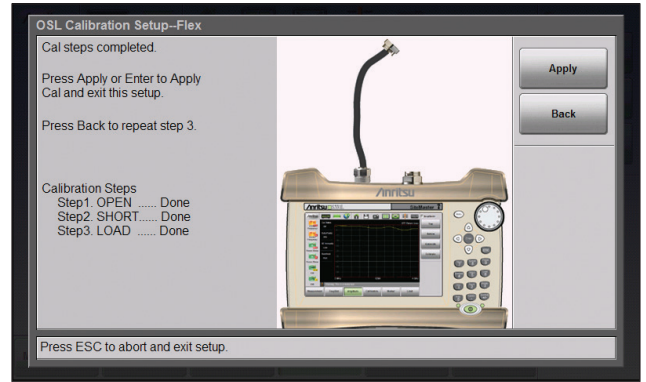
**Step 4**
**Complete!**

**Internal InstaCal/Power Meter**

Quick, easy (one connection), and accurate calibrations anytime, anywhere with InstaCal. Measure power anytime with the built in power meter. With these two standard items built into the instrument, you will always be prepared for whatever scenario you may encounter.

**InstaCal in action**

Simply connect the test port cable to the InstaCal module, select InstaCal in the calibration menu, then the S331L does the rest automatically!
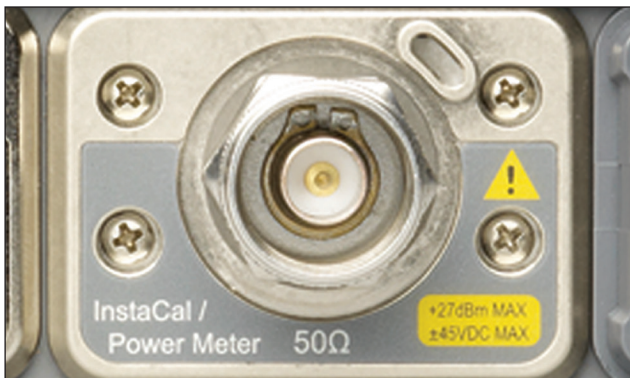


CLOSE UP VIEW OF INSTRUMENT TOP PANEL SHOWING INTERNAL INSTACAL MODULE
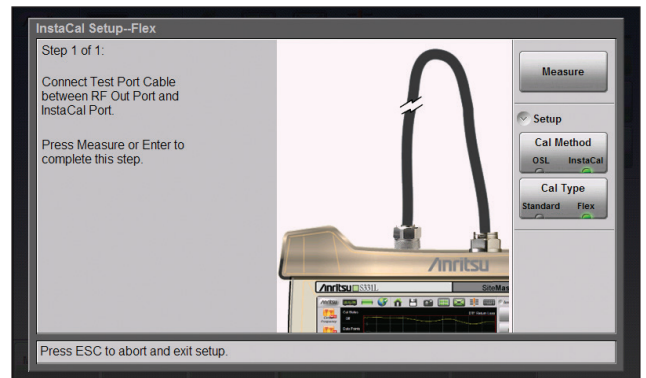


ACTUAL INSTRUMENT ON-SCREEN INSTRUCTIONS.

# Site Master™ S331L Cable & Antenna Analyzer Measurements

## Cable & Antenna Analyzer
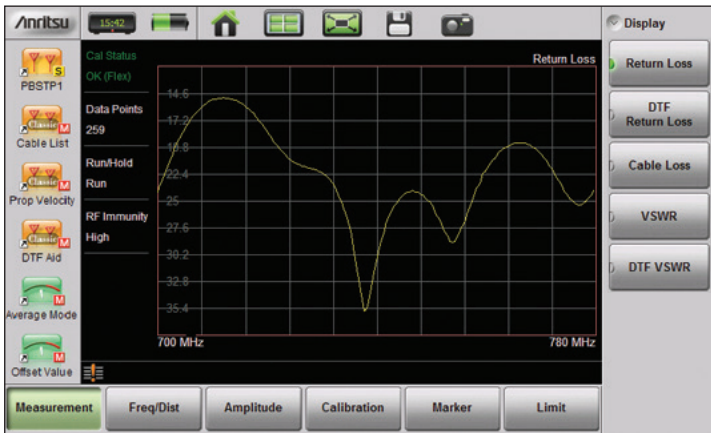


**RETURN LOSS MEASUREMENT SCREEN (ADVANCED MODE)**

### Return Loss/VSWR Measurement

Poor Return Loss/VSWR can damage transmitters, reduce the coverage area, increase dropped and blocked calls, and lower data rates.
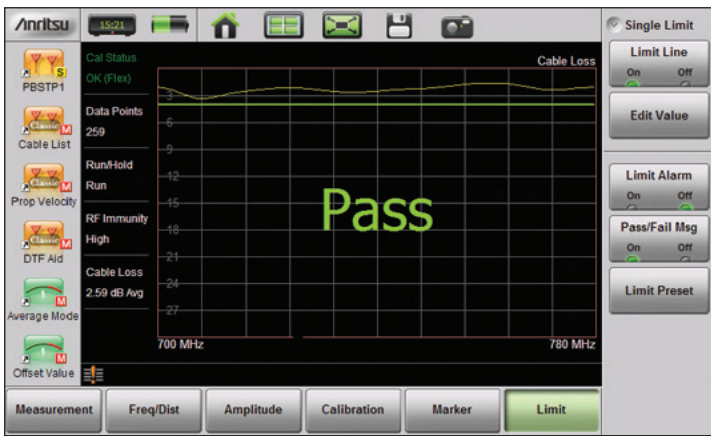


**CABLE LOSS MEASUREMENT SCREEN (ADVANCED MODE)**

### Cable Loss Measurement

This an important commissioning check. Excessive loss reduces the coverage area and can mask return loss issues, creating false good readings later.
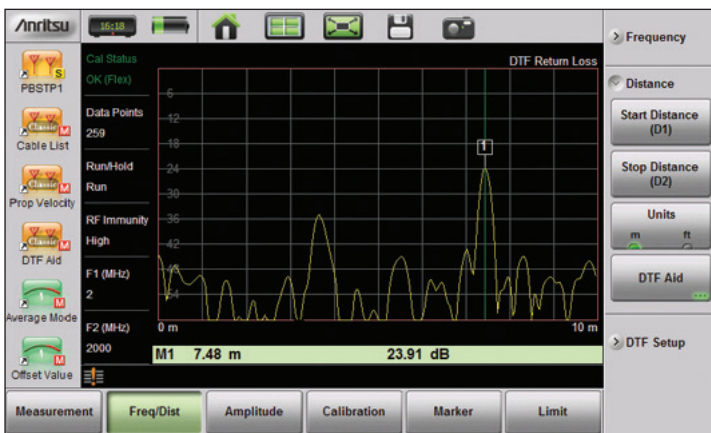


**DISTANCE-TO-FAULT MEASUREMENT SCREEN (ADVANCED MODE)**

### Distance-to-Fault (DTF) Measurement

DTF can be used to identify and precisely locate faulty cables, components, or connector pairs with poor Return Loss/VSWR in meters or feet. Use 1033 points in Advanced mode to get more maximum distance without sacrificing resolution.

# Site Master™ S331L Cable & Antenna Analyzer Measurements

## Cable & Antenna Analyzer
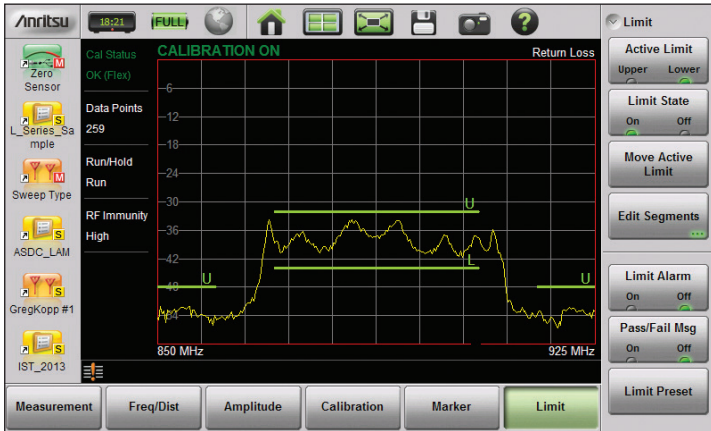


**UPPER/LOWER LIMITS AND SEGMENTED LIMIT LINES SCREEN
(ADVANCED MODE ONLY)**

**Feature additions/enhancements (Advanced Mode Only):**
Upper/lower limits and segmented limit lines are now available. Up to 42 segments for both upper and lower limits may be created (84 segments total).
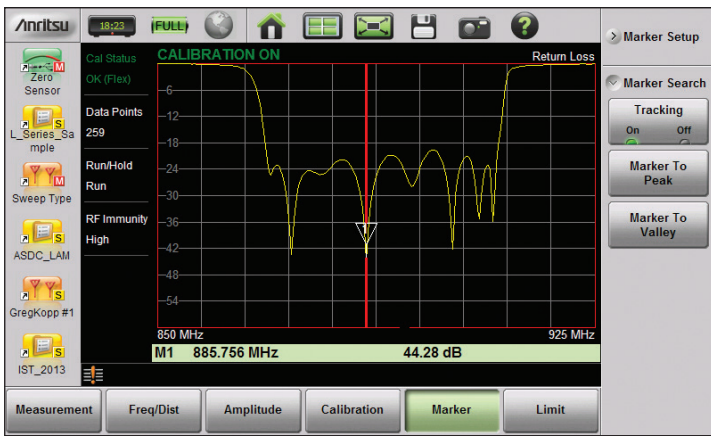


**MARKER PEAK/VALLEY TRACKING SCREEN (ADVANCED MODE ONLY)**

Marker peak/valley tracking. This allows users to have the marker automatically track either the peak or valley response of a measurement, which is very useful when tuning devices.
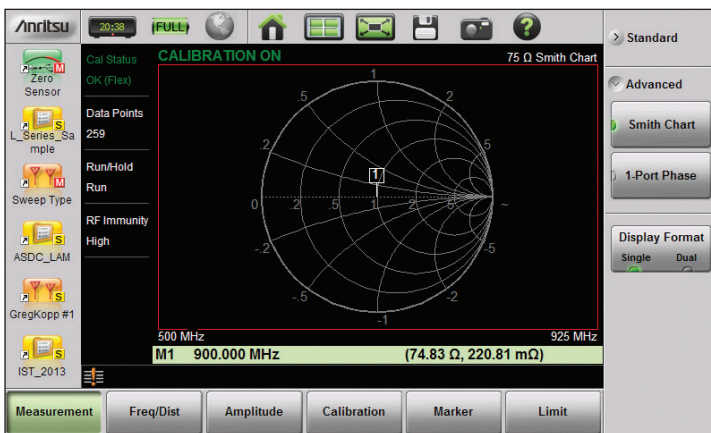


**SMITH CHART 50/75 Ω SELECTABLE SCREEN (ADVANCED MODE ONLY)**

Smith Chart (50/75 Ω selectable) has been added as an advanced measurement type. 75 Ω Smith Chart measurements are shown.

# Site Master™ S331L Cable & Antenna Analyzer Measurements

## Cable & Antenna Analyzer
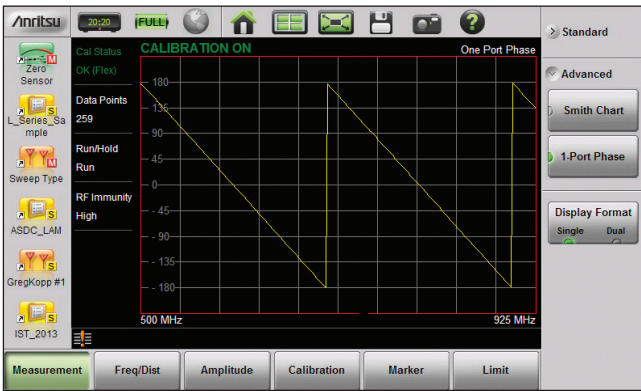


**1-PORT PHASE MOVEMENT SCREEN (ADVANCED MODE ONLY)**

**Feature additions/enhancements (Advanced Mode Only):**

1-Port phase measurement has been added as an advanced measurement type.



**DUAL SCREEN SPLIT HORIZONTALLY SCREEN (ADVANCED MODE ONLY)**
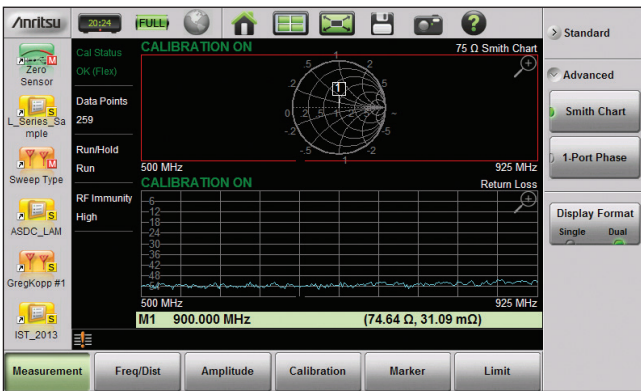
Dual screen (split horizontally) has been added as an advanced measurement feature. Users may select any of the available measurement types when in dual screen mode.
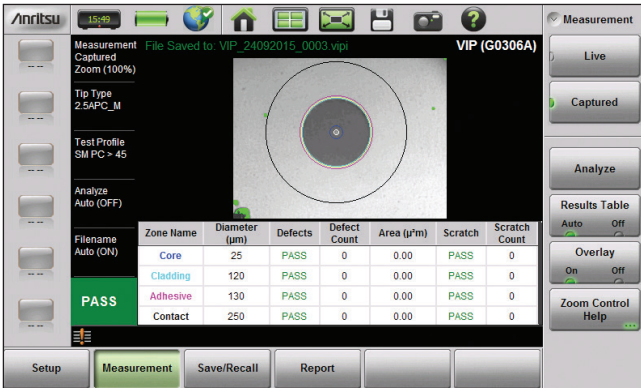


**VIP (VIDEO INSPECTION PROBE)**

Dirty or damaged optical connectors can greatly effect network performance. Scratches, chips and contamination on optical fiber connector end faces reduce transmission quality and increase errors. This leads to additional I&M work and cost.

The G0306A Video Inspection Probe can reduce these issues by verifying the condition and cleanliness of connector end faces during the installation phase. The connector image and detailed PASS/FAIL status is displayed as defined by IEC 61300-3-35 ensuring quality and consistency from connector to connector, technician to technician.
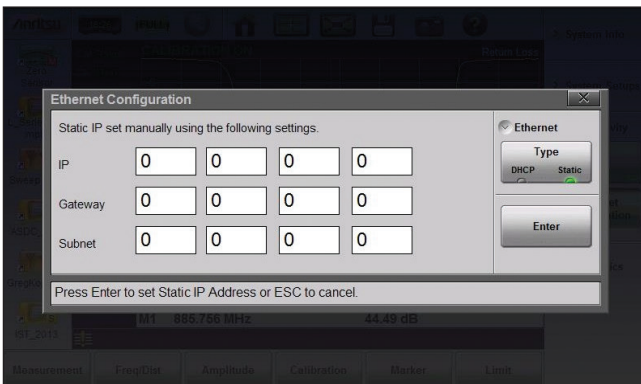


**DHCP AND STATIC IP SCREEN (ADVANCED MODE ONLY)**

DHCP and Static IP settings are now in the System menu. With the new 2000-1810-R USB to Ethernet LAN adapter, units are now able to be connected to via Ethernet.

# Site Master™ S331L Cable & Antenna Analyzer Information

## Physical Information



**RF OUTPUT**  **INSTACAL™/POWER METER**  **TYPE A USB**

**DC INPUT**

**TYPE A USB**  **TYPE B MINI USB**
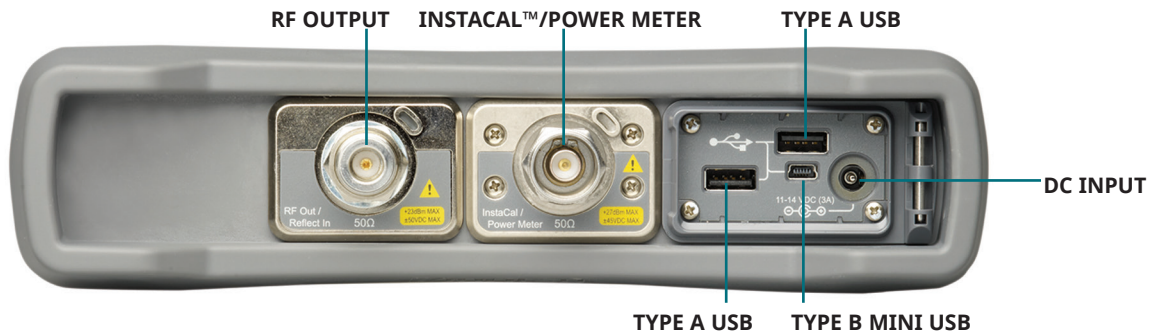
All Connectors are conveniently located on the top panel, leaving the sides clear for handheld use.
Connectors have splash proof covers to provide additional protection from harsh elements



**SPLASH RESISTANT PROTECTORS**

**SPLASH RESISTANT PROTECTORS**

**ROTARY KNOB**

**KEYPAD**

**MAIN MENU KEYS**

**SUBMENU KEYS**



**Size:** 250 mm x 177 mm x 61 mm (10 in. x 7.1 in. x 2.4 in.)
**Weight:** < 2.0 kg (4.4 lbs), including battery

**TILT BAIL IS INTEGRATED INTO THE SOFT CASE
FOR BETTER SCREEN VIEWING**

# SweepMasters DIRECT, Sweep Master Pro™ and Sweep Master Pro+™

## SweepMasters DIRECT Online Trace Delivery Service

**Capture**  Capture and upload multiple traces from the Anritsu Site Master S331L.

**Deliver**  Deliver multiple traces in a timely manner

Prevent un-authorized users from accessing the traces.



### What is SweepMasters DIRECT?

SweepMasters DIRECT, available from SweepMasters™, is an easy-to-use online trace delivery system for your cable and antenna analyzer test results. It allows you to capture, upload, and deliver traces using an online trace delivery service. Every Anritsu S331L instrument is authored to use the SweepMasters DIRECT online trace delivery service.

### How are results delivered?

When you are ready to deliver results, links to the organized traces, as well as a PDF report, are sent via e-mail to the project management company or wireless carrier you specify. Passwords prevent unauthorized access to your data.

This fulfills two of the usual requirements for cable and antenna system testing.

### Who is SweepMasters?

SweepMasters is one of Anritsu's business partners, providing web-based services for Anritsu's cable and antenna analyzers.
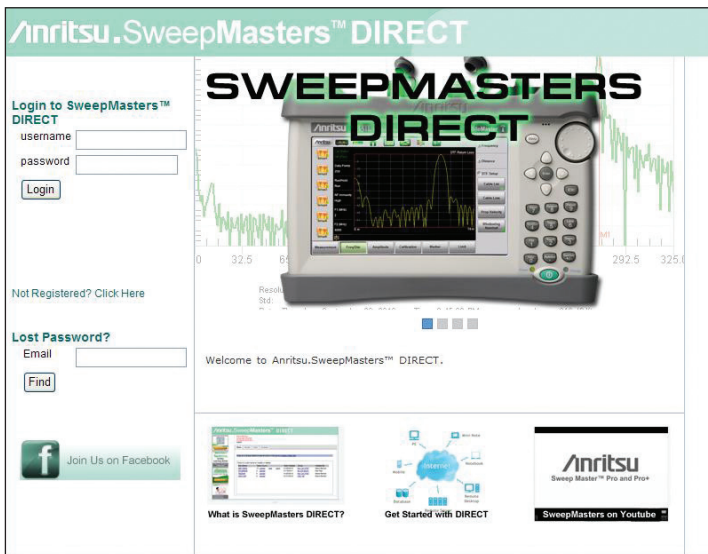
## Professional Enterprise Services available from SweepMasters™

### Sweep Master Pro™

**Capture** and automatically rename line sweeps.

**Verify** that the cables and antennas meet specifications.

Sweep Master Pro is an enterprise level web-based line sweep and tracking tool perfect for large multi cell-site installation and maintenance projects. This enterprise level tool allows users to Capture and upload.

Sweep Master Pro enables a manager to capture the cable, antenna, and PIM traces that are uploaded by contractors or field technicians to a password protected web site. Sweep Master Pro will automatically place marker and limit lines and apply pass/fail criteria for all traces with red/green flagging for quick project review status.

### Measurements types:

Return Loss, Cable Loss, Distance-to-Fault, Transmission Measurements, PIM, Distance-to-PIM™

### Services:

- Bulk measurement upload
- Automatic renaming of traces to network operator standards
- Verifying measurements
- Automatic pass/fail analysis of traces to network operator standards
- Trace Accept/Reject Red sweep/Green sweep tools
- Fraud detection
- Current progress visible to all

### Site Access Information:

- Site location information
- Access instructions for field workers
- Nearest hospital location for emergencies

### Sweep Master Pro+

**Capture** and automatically rename line sweeps.

**Verify** that the cables and antennas meet specifications.

**Manage** documents and acceptance decisions

**Report**, and generate reports, automatically.

Sweep Master Pro+ has enhanced enterprise level document capture capabilities, project management capabilities, and complete reporting capabilities. The Sweep Master Pro+ simplifies project management, shortens rework time, and dramatically eases reporting tasks.

# Site Master™ S331L Line Sweep Tools

## Line Sweep Tools™ (for your PC)

## easyTest Tools™ (for your PC)

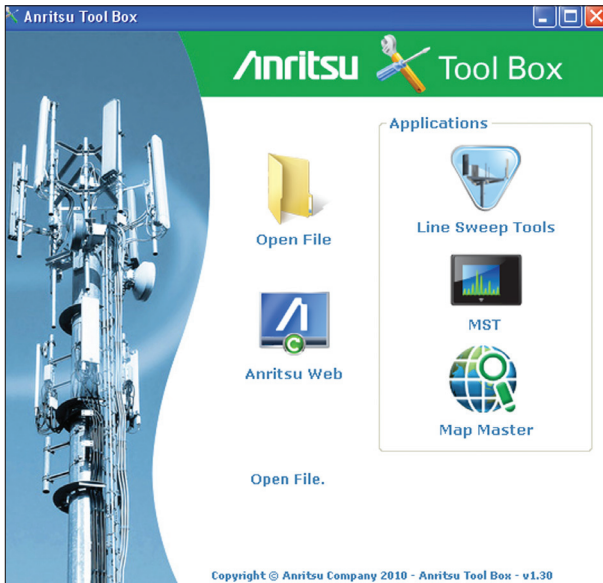| | |
|---|---|
| **Collect** | Sweeps from Anritsu line sweep gear |
| **Verify** | That cables and antenna systems meet specifications and that the sweeps were done properly |
| **Report** | Findings quickly to the standards required by contract |



### The Anritsu Tool Box

The Anritsu Tool Box (included on disc or freely downloadable at www.anritsu.com) is a convenient central location where Anritsu supporting software programs and online support options can be found for most of our handheld product portfolio. Simply choose the desired application that suits your needs. The Anritsu Tool Box comes with LST and grows as more Anritsu tool box programs are added.

### Marker and Limit Line 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.

### 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.

### Report Generator

The report generator will create a professional PDF or HTML based report. Reports includes GPS[1], power level[1], company logo[2], instrument and calibration status along with a display of all open traces. It also may contain additional information such as addresses and phone numbers.

HTML type reports may be post edited using programs such as Microsoft Word.

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 user interface, giving a new face to the term "ease of use."



### Cable Editor[3]

Instrument Cable Lists may be retrieved from the instrument, modified as required, and uploaded back into instrument.

### Signal Standard Editor[3]

Signal Standard Lists may be retrieved from the instrument, modified as required, and uploaded back into instrument.

### Distance to Fault[4] (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.

**Capture:** Plots to Screen, Database, *.dat, *.jpg

**Connect:** To PC using USB, Ethernet, Serial

**Download:** Lists/measurements and live traces to PC for storage and analysis.

**Upload[3]:** Lists/measurements from PC to instrument.

### Supported File Types

Input:   *.dat, *.vna, *.mna, *.pim, *.tm

Output: *.dat, *.vna, *.pim, *.tm, *.csv, *.bmp, *.jpg, *.png

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

### easyTest Tools™

easyTest Tools allows users to create work instruction files on their PC, deliver these files by e-mail, and then display work instructions on the Site Master™ or Cell Master™ "E" series cable and antenna analyzers. These easyTest™ files provide step-by-step instructions for both the test setup and instrument operation.

easyTest works with the S331L, S331E, S332E, S361E, S362E, S820E, MT8212E, and MT8213E when operating in Cable and Antenna Analyzer mode.

### Instrument Mode

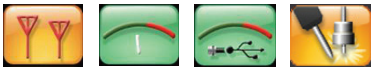Cable and Antenna Mode

### PC Requirements

Anritsu's software tools runs on computers using Windows operating systems, specifically:

Windows XP, Service Pack 2 or higher, Windows Vista, Windows 7 or 8.

PC must have at least 1 GB of RAM and 1 GB of available hard drive space.

# Site Master™ S331L Ordering Information

## Ordering Information – Options

| | | |
|---|---|---|
| **S331L** | | **Description** |
| Includes all items listed in 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 | |
|---|---|---|
| S331L-ES510 | S331L-ES513 | Warranty Extension to 5 Years, Return to Anritsu |

## Calibration Only Options

| | | |
|---|---|---|
| | S331L-0098 | Standard Calibration to ISO/IEC 17025:2005 |
| | S331L-0099 | Premium Calibration to ISO/IEC 17025:2005 plus Test Data |

## Other Site Master Models From Anritsu (more data available at www.anritsu.com)

**S331E**
2 MHz to 4 GHz

**S361E**
2 MHz to 6 GHz

**Cable & Antenna Analyzer features**

2204 datapoints, 8.4" TFT touch screen,

Dual Display capability, Smith Chart Display

Optional 2-port Tx measurements

Optional GPS

Optional Bias Tee

Optional High-Accuracy Power Meter (requires external USB sensor sold separately)

**Cable and Antenna Analyzers**

**S332E**
2 MHz to 4 GHz
100 kHz to 4 GHz SpA

**S362E**
2 MHz to 6 GHz
100 kHz to 6 GHz SpA

**Cable & Antenna Analyzer with integrated Spectrum Analyzer features**

2204 datapoints, 8.4" TFT touch screen,

Dual Display capability, Smith Chart Display

Optional 2-port Tx measurements

Optional GPS

Optional Bias Tee

Optional High Accuracy Power Meter (requires external USB sensor sold separately)

**Spectrum Analyzer features**

Optional Interference Analysis with Interference Mapping

Spectrogram, Signal ID

Optional Coverage Mapping

Optional AM/FM/PM Analysis

Optional Channel Scanner

**Cable and Antenna Analyzers with integrated Spectrum Analyzer**

**S820E**
1 MHz to 40 GHz

**Microwave Cable & Antenna Analyzer features**

2-Port Measurements Standard

Display: Single or Dual Measurement Touchscreen

Benchtop VNA Performance

Standard High Accuracy Power Meter

**Microwave Cable and Antenna Analyzer**

# Site Master™ S331L Ordering Information

## Ordering Information (continued)

**Standard Accessories** (included with instrument)

| Part Number | Description |
|---|---|
| 2000-1676-R | Soft Carrying Case |
| 2000-1691-R | Stylus with Coiled Tether |
| 2000-1687-R | Torque Multiplier N(m) |
| 40-187-R | AC-DC Adapter |
| 806-141-R | Automotive Power Adapter, 12 VDC, 60 W |
| 3-2000-1498 | USB A/5-pin mini-B Cable, 305 cm (120 in) |
| | Standard Three-Year Warranty (battery one-year warranty) |
| | Certificate of Calibration and Conformance |

**Recommended Spare Accessories** (not included)

| Part Number | Description |
|---|---|
| 2000-1691-R | Replacement Stylus with Coiled Tether |
| 2000-1687-R | Replacement Torque Multiplier N(m) |
| 2000-1723-R | High-Performance USB Mag-Mount GPS Module |
| 2000-1810-R | Portable USB to Ethernet LAN Adapter |

**USB Extender Kit** (for 2-port cable loss/transmission (external sensor)measurements)

| Part Number | Description |
|---|---|
| 2000-1717-R[a] | USB 1.1 Passive 40 m Extender |
| 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) |
| 2100-28-R | Cat 5e extension cable for use with USB Extender (22.5 m) |

a. Not compatible with sensors MA24208A, MA24218A, MA24330A, MA24340A, MA24350A; must use active extenders with these sensors.

**Power Sensors**

| Part Number | Description |
|---|---|
| MA24105A | Inline Peak Power Sensor, 350 MHz to 4 GHz, +3 dBm to +51.76 dBm |
| MA24106A | RF USB Power Sensor and 2-Port Loss/Transmission Sensor, 50 MHz to 6 GHz, +23 dBm to -40 dBm |
| MA24108A | Microwave USB Power Sensor and 2-Port Loss/Transmission Sensor, 10 MHz to 8 GHz, +20 dBm to –40 dBm |
| MA24118A | Microwave USB Power Sensor and 2-Port Loss/Transmission Sensor, 10 MHz to 18 GHz, +20 dBm to –40 dBmm |
| MA24126A | Microwave USB Power Sensor and 2-Port Loss/Transmission Sensor, 10 MHz to 26 GHz, +20 dBm to –40 dBm |
| MA24208A | Microwave Universal USB Power Sensor and 2-Port Loss/Transmission Sensor, 10 MHz to 8 GHz, +20 dBm to –60 dBm |
| MA24218A | Microwave Universal USB Power Sensor and 2-Port Loss/Transmission Sensor, 10 MHz to 18 GHz, +20 dBm to –60 dBm |
| MA24330A | Microwave CW USB Power Sensor and 2-Port Loss/Transmission Sensor, 10 MHz to 33 GHz, +20 dBm to –70 dBm |
| MA24340A | Microwave CW USB Power Sensor and 2-Port Loss/Transmission Sensor, 10 MHz to 40 GHz, +20 dBm to –70 dBm |
| MA24350A | Microwave CW USB Power Sensor and 2-Port Loss/Transmission Sensor, 10 MHz to 50 GHz, +20 dBm to –70 dBm |
| SC8268 | USB Transmission Sensor, K(m), 1 MHz to 40 GHz, +10 dBm to –50 dBm |

# Site Master™ S331L Information

## Ordering Information (continued)

**Documentation** (vailable at www.anritsu.com)
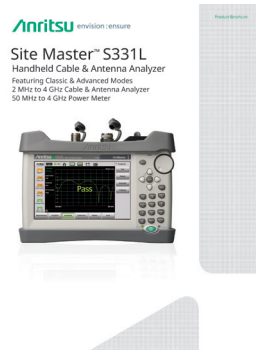
| Part Number | Description |
|---|---|
| 11410-00616 | Site Master S331L Technical Data Sheet |
| 10580-00321 | Site Master S331L User Guide |
| 11410-00662 | Site Master S331L Quick Fact Sheet |
| 11410-00674 | Cable and Antenna Analysis Troubleshooting Guide |
| 10580-00253 | Site Master S331L Maintenance Manual |

**Video Inspection Probe**

| Part Number | 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-F |
| Additional Tips Available | H0372A E2000-PC-F, H0373A FC-APC-F, H0374A MU-PC-F, H0365A SC-PC-F, H0376A 1.25APC-M |
| Accessories | |
| 971-14-R | Ferrule Cleaner, 2.5 mm SC |
| 971-15-R | Ferrule Cleaner, 1.25 mm LC |
| 971-16 | Fiber Ferrule Cleaner |

# Site Master™ S331L Information

## Optional Accessories

**Calibration Components, 50 Ω**

| Part Number | Description |
|---|---|
| OSLN50A-8 | Precision Open/Short/Load, N(m), 42 dB, DC to 8.0 GHz, 50 Ω |
| OSLNF50A-8 | Precision Open/Short/Load, N(f), 42 dB, DC to 8.0 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 |
| 22NF50 | Open/Short, N(f), DC to 18 GHz, 50 Ω |
| SM/PL-1 | Precision Load, N(m), 42 dB, 6.0 GHz |
| SM/PLNF-1 | Precision Load, N(f), 42 dB, 6.0 GHz |
| 2000-1914-R | Open/Short/Load, 4.3-10(f), DC to 6 GHz, 50 Ω |
| 2000-1915-R | Open/Short/Load,   4.3-10(m), DC to 6 GHz, 50 Ω |

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

| Part Number | 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 |
| 15NDF50-1.5C | 1.5 m, DC to 6 GHz, N(m) to 7/16 DIN(f), 50 Ω |
| 15ND50-1.5C | 1.5 m, DC to 6 GHz, N(m) to 7/16 DIN(m), 50 Ω |
| 15NN50-3.0C | 3.0 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 |
| 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 |
| 15N43M50-1.5C | Test Port Extension Cable, Armored, 1.5 meters, DC to 6GHz, N(m) to 4.3-10(m) |
| 15N43F50-1.5C | Test Port Extension Cable, Armored, 1.5 meter, DC to 6GHz, N(m) to 4.3-10(f) |
| 15N43M50-3.0C | Test Port Extension Cable, Armored, 3 meters, DC to 6 GHz, N(m) to 4.3-10(m) |
| 15N43F50-3.0C | Test Port Extension Cable, Armored, 3 meters, DC to 6 GHz, N(m) to 4.3-10(f) |
| 15NF43M50-1.5C | Test Port Extension Cable, Armored, 1.5 meters, DC to 6 GHz, N(f) to 4.3-10(m) |
| 15NF43F50-1.5C | Test Port Extension Cable, Armored, 1.5 meters, DC to 6 GHz, N(f) to 4.3-10(f) |
| 15NF43M50-3.0C | Test Port Extension Cable, Armored, 3 meters, DC to 6 GHz, N(f) to 4.3-10(m) |
| 15NF43F50-3.0C | Test Port Extension Cable, Armored, 3 meters, DC to 6 GHz, N(f) to 4.3-10(f) |

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

| Part Number | Description |
|---|---|
| 15RNFN50-1.5-R | 1.5 m, DC to 6 GHz, N(m) to N(f), 50 Ω |
| 15RDFN50-1.5-R | 1.5 m, DC to 6 GHz, N(m) to 7/16 DIN(f), 50 Ω |
| 15RDN50-1.5-R | 1.5 m, DC to 6 GHz, N(m) to 7/16 DIN(m), 50 Ω |
| 15RNFN50-3.0-R | 3.0 m, DC to 6 GHz, N(m) to N(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 |

**Interchangeable Adaptor 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 adaptor interface on the grip to four different connector types)

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

**Calibration Components, 75 Ω**

| Part Number | Description |
|---|---|
| 12N50-75B | Matching Pad, DC to 3 GHz, 50 Ω to 75 Ω |
| 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 |

## Optional Accessories (continued)

### Adapters

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

### Precision Adapters

| Part Number | Description |
| --- | --- |
| 34NN50A | Precision Adapter, N(m) to N(m), DC to 18 GHz, 50 Ω |
| 34NFNF50 | Precision Adapter, N(f) to N(f), DC to 18 GHz, 50 Ω |

### Attenuators for use with Power Meter

| Part Number | Description |
| --- | --- |
| 3-1010-122 | 20 dB, 5 W, DC to 12.4 GHz, N(m) to N(f) |
| 42N50-20 | 20 dB, 5 W, DC to 18 GHz, N(m) to N(f) |
| 42N50A-30 | 30 dB, 5 W, DC to 18 GHz, N(m) to N(f) |
| 3-1010-123 | 30 dB, 50 W, DC to 8.5 GHz, N(m) to N(f) |
| 1010-127-R | 30 dB, 150 W, DC to 3 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 |
| 1010-121 | 40 dB, 100 W, DC to 18 GHz, N(f) to N(m), Uni-directional |
| 1010-128-R | 40 dB, 150 W, DC to 3 GHz, N(m) to N(f) |

### Miscellaneous Accessories

| Part Number | Description |
| --- | --- |
| 67135 | Anritsu Backpack (For Handheld Instrument and PC) |
| 760-256-R | Large Transit Case with Wheels and Handle |

**Notes**

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