Product Brochure

Anritsu

Site Master™ S311D/S312D

Cable and Antenna Analyzer, 2 MHz to 1600 MHz
Spectrum Analyzer, 100 kHz to 1600 MHz

Site Master™ is the perfect instrument for Land Mobile Radio and Public Safety system applications.

Anritsu's S311D/S312D Site Master is the latest addition to the successful Site Master cable and antenna analyzer series. It builds upon Anritsu's expertise in developing accurate, portable, rugged, and easy-to-use field instruments with a rich set of features aimed at simplifying life for field use.

The Site Master is the perfect instrument for Land Mobile Radio (LMR) and Public Safety system technicians testing the RF performance of P25 and TETRA radios in the VHF/UHF, 700 MHz and 800 MHz bands. With its 2 MHz frequency coverage, the Site Master works well for defense applications in the HF band. The S31xD is also ideal for broadcast and cellular applications.

The high performance 1600 MHz cable and antenna analyzer can be used to sweep cables and antennas at the frequency of operation using the Return Loss and VSWR measurements. The Distance-To-Fault (DTF) measurement can easily spot poor connections, contamination, damaged cables, water penetration, and bad antennas. Site Master's Frequency Domain Reflectometry (FDR) techniques break away from the traditional fix-after-failure maintenance process by finding small, hard to identify problems before major failures occur.

The S312D combines the high performance cable and antenna analyzer with a fully functional spectrum analyzer. The –135 dBm noise floor is needed to find low level interfering signals which can interfere with LMR and SMR systems. The Interference analyzer provides helpful tools to aid in diagnosing and tracking interference. The S312D can be equipped with a cable and antenna analyzer, spectrum analyzer, interference analyzer, channel scanner, Received Signal Strength Indicator (RSSI), AM/FM demodulation, and RF power meter.

Rugged and Reliable

Because the Site Master was designed specifically for field environments, it can easily withstand the day-to-day punishments of field use. The instrument is almost impervious to the bumps and bangs typically encountered by portable field equipment.

Easy-to-Use

The menu driven user interface is intuitive and easy to use and requires little or no training time. A standard high resolution TFT color display provides visibility in broad day light. A full range of markers enable the user to make accurate measurements. Limit lines simplify measurements allowing users to create quick and simple pass/fail tests.

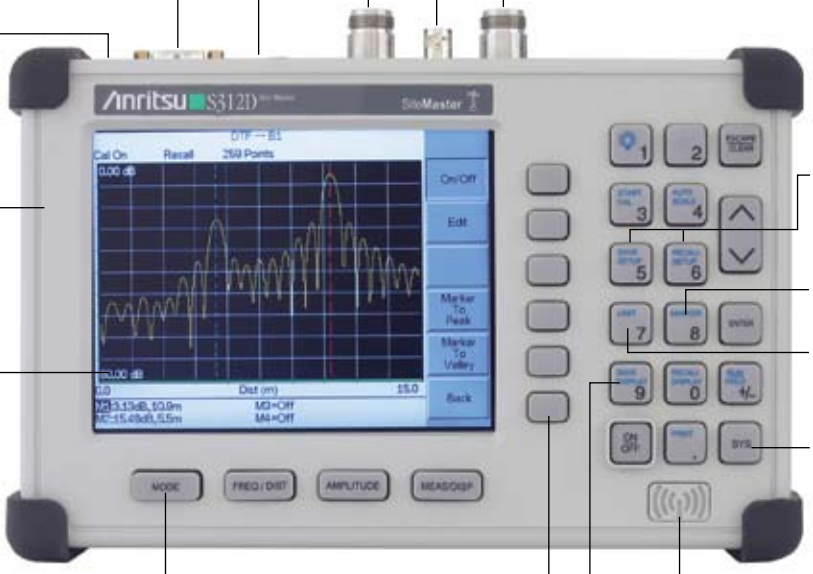
Take it anywhere

Weighing less than 5 lbs (2.3 kg) with its rechargeable NiMH battery, the S311D/S312D moves effortlessly from ground installations to anywhere where critical measurements are needed. Sophisticated charging circuits optimize the life of the battery. Replacing the battery in the field takes no time at all and requires no tools.

Six built-in Languages

The Site Master is equipped with local language support in English, Chinese, Japanese, French, German, and Spanish.

The Site Master is a multi-function field solution



External DC Power Port

RS-232 Interface
Transfer stored data to and from a personal computer (PC) or download to a printer via a serial cable for further analysis. Use PC to automatically control and collect data in the field.

Snap-in Field replaceable battery location

Rugged and Reliable Chassis Design
Ruggedized, lightweight, compact, high-impact housing is designed to withstand repeated drops and rough handling. Weather resistant seals and rubber membrane keypad protect unit from dirt and moisture.

TFT Color Display
Standard TFT (640 x 480) color display featuring variable brightness control. Viewable in direct sunlight.

Function Keys
Four dedicated function keys simplify measurement tasks.

Soft Keys
Intuitive soft key menu and user interface.

Save and Recall Display
Up to 300 memory locations. Alphanumeric data labeling and automatic time/date stamp simplify data management.

Spectrum Analyzer and Power Meter Port

External Trigger and External Reference In

Cable and Antenna Analyzer Port

Save and Recall Setup
Save setups for fast repeatable testing:
S312D Models - 25
S311D Models - 10

Markers
Six markers for more comprehensive measurements.

Limits
Create simple pass/fail measurements with a single limit line, upper and/or lower mask limit lines.

Multilingual User Interface
Multi-language user interface features on-screen menus and messages in six different languages: Chinese, English, French, German, Japanese, Spanish.

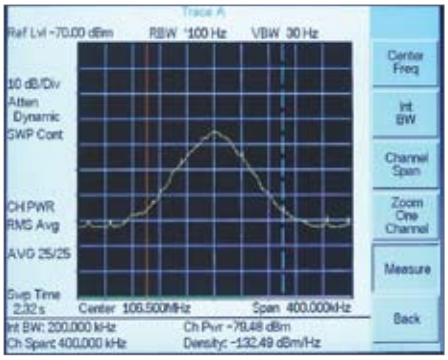
AM/FM Receiver with Internal Speaker
Built-in AM/FM demodulator enables testing and trouble-shooting of wireless communications systems. An internal speaker and jack are included.

Function	Benefits
Cable and Antenna Analyzer (S311D/S312D)	Characterize cable and antenna systems, and pinpoint location of faults.
Spectrum Analyzer (S312D)	Easily locate, identify and record various signals with high accuracy
Interference Analyzer (312D)	Take advantage of the –135 dBm noise floor to track low level interference with the Spectrogram display and the Received Signal Strength Indicator (RSSI).
AM/FM Demodulator (S312D)	Built-in demodulator for AM, narrow band FM, wide band FM, and SSB allows technician to listen to and identify interfering signals.
Transmission Measurement (S312D)	Characterize and adjust filters, combiners, and duplexers.
Channel Scanner (S312D)	Measure frequency, bandwidth and power of multiple transmitted signals.
CW Signal Generator (S312D)	CW source to test low noise amplifiers.
High Accuracy Power Meter (S311D/S312D)	Use a high performance sensor to measure RF power of CW and modulated signals with better than 0.16 dB accuracy. Eliminates the need for a separate watt meter.
Power Meter (S311D/S312D)	Make RF power measurements without an external detector.
GPS Receiver (S311D/S312D)	Provides location (latitude, longitude, altitude) and UTC time information.
Bias Tee (S312D)	Bias the amplifier using the internal bias tee. Eliminates the need for external supplies.
2 MHz Low Frequency Option (S311D/S312D)	Extend the lower frequency range of the cable and antenna analyzer to 2 MHz to cover the HF band.

High Performance Cable & Antenna Analyzer and Spectrum Analyzer

Spectrum Analysis (S312D)

The S312D integrated Spectrum Analyzer provides the ultimate in measurement flexibility for field measurements. The Site Master has dedicated routines for critical smart measurements including: Channel Power, Carrier-To-Interference, occupied bandwidth, interference analysis, adjacent channel power (ACPR), and AM/FM demodulation. These are increasingly critical measurements for today's wireless communication systems. The excellent noise floor in the S312D is crucial for tracking low level interference.



Channel Power

The channel power measurement in the S312D provides great flexibility for measuring the rms channel power of P25 and TETRA signals. This smart measurement allows you to change the RBW/VBW, detection method, frequency range, attenuator, and preamp settings and much more.

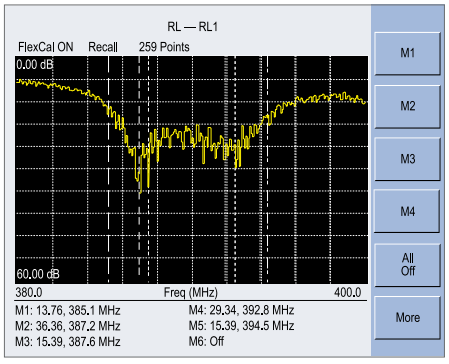
AM/FM/SSB Demodulator

A built-in demodulator for AM, narrowband FM, wideband, FM and single sideband (USB or LSB) allow a technician to easily identify interfering signals.

Cable and Antenna Analysis – (S311D/S312D)

The cable and antenna analyzer in the Site Master is designed to provide field users with key measurements to sweep cables and antenna systems. The Site Master uses the superior Frequency Domain Reflectometry (FDR) approach for its Return Loss/VSWR, Cable Loss, and Distance-To-Fault measurement.

The Site Master has the sensitivity to identify poor connections, damaged cables, water penetration, and bad antennas. It is also equipped with a special RF immunity protection that allows you to make accurate measurements even in RF rich environments.

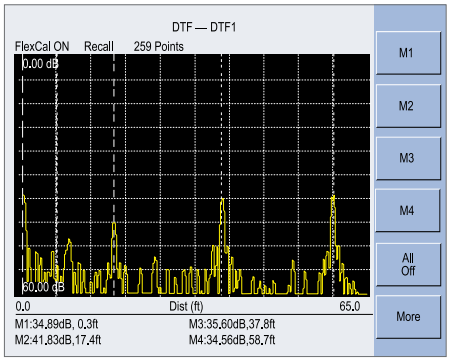


Return Loss / VSWR

Return Loss and VSWR measurements ensure conformance to system specifications.

Cable Loss

The cable loss measurement measures the level of insertion loss within the cable feed line system. The Site Master automatically computes the average cable loss value over the measured frequency range.



Distance-To-Fault (DTF)

Although a return loss test can tell user the magnitude of signal reflections, it cannot tell the precise location of a cable defect. The DTF measurement provides the clearest indication of trouble areas as it tells us both the magnitude of signal reflection and the location of the signal anomaly.

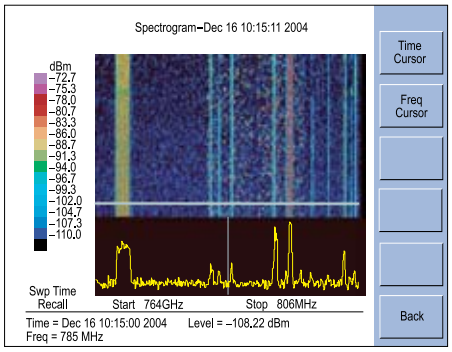
2 MHz Frequency Extension (Option 2, S311D/S312D)

The standard cable and antenna analyzer spans from 25 MHz to 1600 MHz. The lower frequency range can optionally extend to 2 MHz and provide Return Loss/VWSR, Cable Loss, and DTF measurements from 2 MHz to 1600 MHz.

The Site Master offers a wide range of options

Bias Tee (Option 10A, S312D)

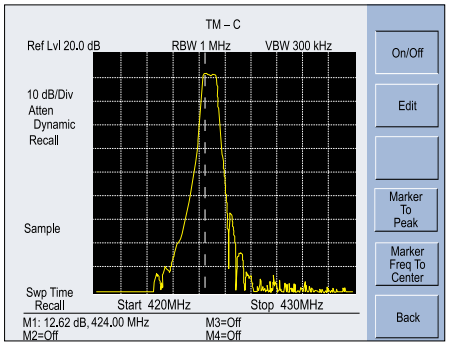
The optional (+12 to +24V) bias tee is integrated into the Site Master and is designed for applications where both DC and RF signals must be applied to a device under test.



Interference Analyzer (Option 25, S312D)

The interference analyzer option displays interference in four different ways: Spectrogram, RSSI, Signal Strength, Signal ID.

The Spectrogram is a three dimensional display of frequency, power, and time of the spectrum activity. The RSSI feature is useful to observe the signal strength at a single frequency over time (seven days).



Transmission Measurement (Option 21, S312D)

The transmission measurement option coupled with the excellent dynamic range allows users to view and adjust the RF performance of critical RF devices including filters, duplexers, transmitter combiners, receiver multi-couplers and tower top amplifiers.

CW Signal (Option 28, S312D)

The CW signal generator provides a CW signal source to test low noise amplifiers, repeaters, and receivers. The external attenuator can be varied from 0 to 90 dB in 1 dB steps. The display shows the output power and the frequency. This feature can be operated simultaneously with the power monitor option.

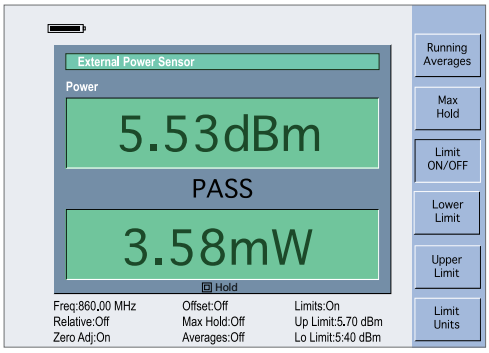
GPS Receiver (Option 31, S311D/S312D)

Built-in GPS provides location information (latitude, longitude, and altitude) and Universal Time (UT) information. Site Master can stamp each trace with location information to check if the measurements are taken at the right location. Site Master stores the GPS location information until the unit is turned off. This stored location information can be used to stamp traces taken indoors at the same cell site location. The GPS option is offered with a magnet mount antenna with a 15-foot (~ 5 m) cable to mount on the car or other useful surface.

RF Power Measurements for a variety of applications

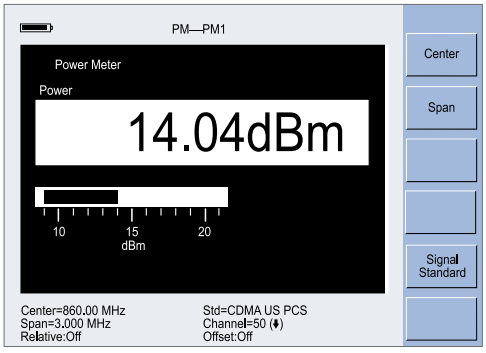
High Accuracy Power Meter (Option 19, S311D/S312D)

Anritsu's High Accuracy Power Meter option enables users to make high accuracy RMS measurements, perfect for both CW and digitally modulated signals such as CDMA/EV-DO, GSM/EDGE, P25 and TETRA. This option requires sensor PSN50 or MA24104A. The PSN50 sensor provides high accuracy measurements from 50 MHz to 6 GHz with a dynamic range from –30 to +20 dBm. The MA24104A is an Inline High Power Sensor with a frequency range from 600 MHz to 4 GHz and can measure signals as high as 150 W. Both of the sensors are equipped with an RS-232 interface for fast and easy connection to the Site Master.



PSN50
High Accuracy Power Sensor

MA24104A
Inline High Power Sensor



Power Meter (Option 29, S312D)

The power meter performs accurate transmitter power meter measurements from 3 MHz to 1600 MHz. The Spectrum Analyzer is used to measure channel power. No external sensor or detector is required. This option is ideal for channelized power measurements as it eliminates the need for external filters.

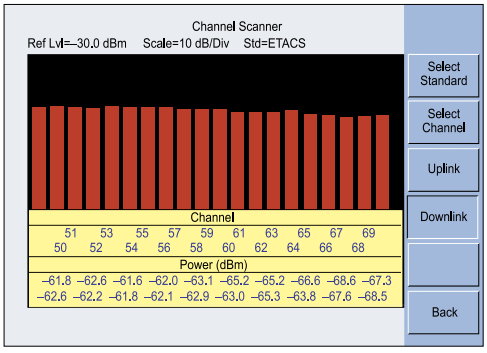
Power Monitor (Option 5, S311D/S312D)

The optional Power Monitor features precision, high return loss (low SWR) detectors ideal for broadband CW power monitoring. A wide range of detectors is available with upper frequency ranges from 3 GHz to 50 GHz. Display formats include absolute power (dBm or Watts) and relative power (dBr or %). Built-in Auto- Averaging automatically reduces the effects of noise while zeroing control allows optimum measurement accuracy at low power levels.

S312D Site Master
with 560-7N50B Detector

Channel Scanner (Option 27, S312D)

The channel scanner option gives the user another convenient way to view power by measuring multiple transmitted signals. The focus of the measurements made with this option is on channelized communication systems such as land mobile systems and maritime communication. The span and step size are adjustable and up to 20 channels can be viewed simultaneously.



Master Software Tools™

Master Software Tools provides the user with comprehensive data management and post processing tools which augment the capabilities of the Site Master. This software provides a simple and easy way to manage, archive, analyze, print measurement reports, customize your cable list, antenna list, signal standards list and keep your Site Master up to date with the latest instrument firmware. Master Software Tools (MST) is a Windows program which is included with every Site Master instrument. For the most current version of Master Software Tools, please visit www.us.anritsu.com.

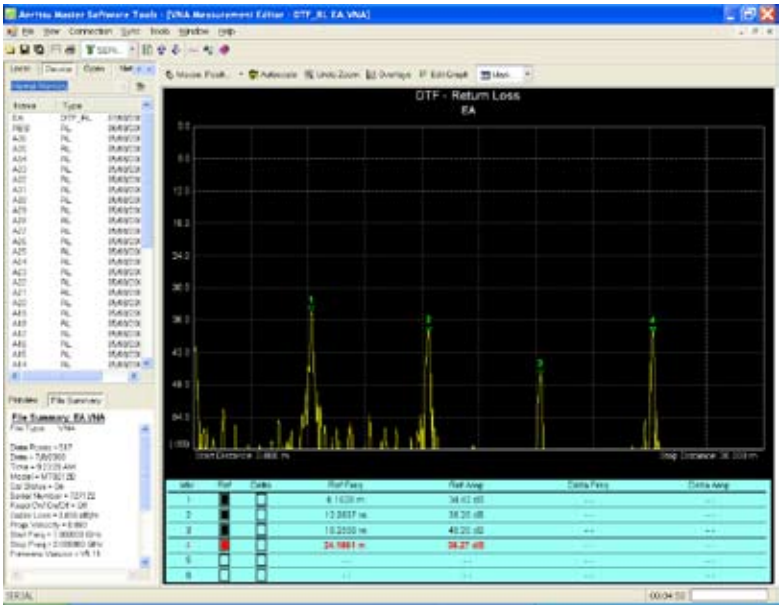


Figure 1, DTF trace transferred to MST

- Up to 300 Site Master trace memory locations can be downloaded with a single menu selection
- Build historical records with an unlimited number of traces in one document
- Intelligent Trace Renaming features allow you to rename hundreds of traces in minutes instead of hours.
- Edit and create custom signal standards and cable lists
- Create custom reports
- View Spectrogram displays in 3D
- Copy markers and limit lines from one trace to all the traces in a specific folder with easy to use group edit functions
- Use the Product Update feature to make sure you always use the latest instrument firmware.

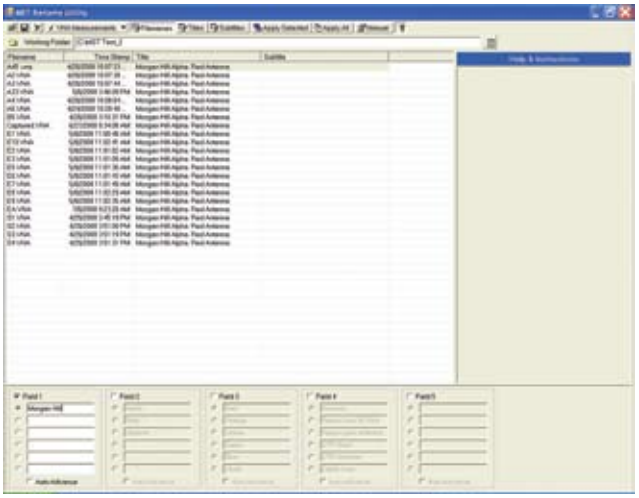


Figure 2, Update file names with the Trace Rename utility

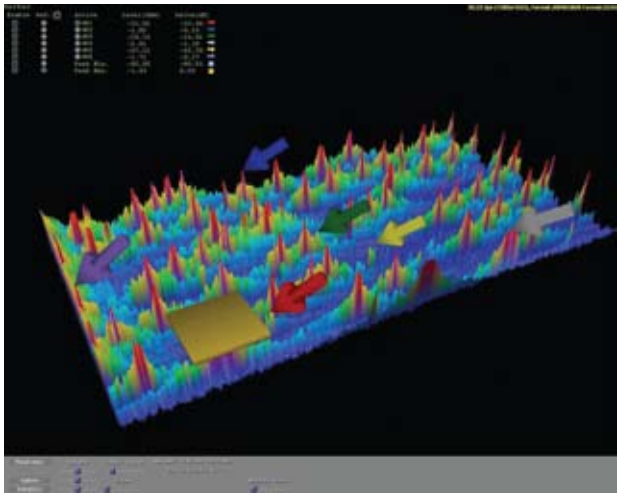


Figure 3, View Spectrogram displays in 3D

Specifications

Cable and Antenna Analyzer

Frequency Range: 25 MHz to 1.6 GHz
Frequency Accuracy: ≤ ±50 ppm at +25 °C
Frequency Resolution: 1 kHz (CW On)
100 kHz (CW Off)
Output Power: 0 dBm typical
Immunity to Interfering Signals: On-channel: +17 dBm
On-frequency: –5 dBm
Measurement Speed: ≤ 2.5 msec / data point (CW ON)
Number of Data Points: 130, 259, 517
Return Loss: Range: 0.00 to 60.00 dB
Resolution: 0.01 dB
VSWR: Range: 1.00 to 65.00
Resolution: 0.01
Cable Loss: Range: 0.00 to 30.00 dB
Resolution: 0.01 dB
Measurement Accuracy: > 42 dB directivity after calibration
Distance-to-Fault:
Vertical Range: Return Loss: 0.00 to 60.00 dB
VSWR 1.00 to 65.00
Horizontal Range: 0 to (# of data pts –1) x Resolution to a maximum of 1497 m (4909 ft), # of data pts = 130, 259 or 517
Horizontal Resolution
(Rectangular Windowing): Resolution (meter) = (1.5 x 108) x (Vp)/ΔF
Where Vp is the cable's relative propagation velocity and where ΔF is the stop frequency minus the start frequency (in Hz).

2 MHz Frequency Extension (Option 2)

Cable and Antenna Analyzer
Frequency Range: 2 MHz to 1600 MHz
(All other specs remain the same as standard S31xD)

Spectrum Analyzer (S312D)

Frequency:
Frequency Range: 100 kHz to 1.6 GHz (tunable to 9 kHz)
Frequency Reference
(Internal Timebase) Aging: ± 1 ppm/yr
Accuracy: ± 2 ppm
Frequency Span: 10 Hz to 1.599 GHz in 1, 2, and 5 step selections in auto mode, plus zero span
Sweep Time: ≤ 1.1 sec full span
≤ 50 µsec to 20 sec selectable in zero span
Resolution Bandwidth (–3 dB): 100 Hz to 1 MHz in 1-3 sequence ± 5% Accuracy
Video Bandwidth (–3 dB): 3 Hz to 1 MHz in 1-3 sequence
± 5% Accuracy typical
SSB Phase Noise (1 GHz) at 30 kHz Offset: ≤ –75 dBc/Hz
Spurious Responses Input Related: ≤ –45 dBc
Spurious Residual Responses: ≤ –90 dBm, ≥10 MHz
≤ –80 dBm, <10 MHz
(10 kHz RBW, pre-amp on)

Amplitude:
Total Level Accuracy: ± 1 dB typical (± 1.5 dBm max), ≥ 10 MHz to 1.6 GHz
± 2 dB typical, <10 MHz for input signal levels
≥ –60 dBm, excludes input VSWR mismatch
Measurement Range: +20 dBm to –135 dBm
Input Attenuator Range: 0 to 51 dB, selected manually or automatically coupled to the reference level. Resolution in 1 dB steps
Displayed Average Noise Level: ≤ –135 dBm, ≥ 10 MHz (preamp on)
≤ –115 dBm, < 10 MHz (preamp on) for input terminated, 0 dB attenuation, RMS detection, 100 Hz RBW
Dynamic Range: > 65 dB, typical
Display Range: 1 to 15 dB/division, in 1 dB steps, 10 divisions displayed
Scale Units: dBm, dBV, dBmV, dBmV, V, W
RF Input VSWR: (with ≥ 20 dB atten.), 1.5:1 typical, (10 MHz to 1.6 GHz)

Power Monitor (Option 5)

Display Range: –80 to +80 dBm (10 pW to 100 kW)
Measurement Range: –50 to +16 dBm (10 nW to 40 mW)
Offset Range: 0 to +60 dB
Resolution: 0.1 dB, 0.1 xW
Accuracy: ±1 dB

Bias Tee (Option 10A, S312D)

Voltage: +12 V to +24 V (variable in 1 V steps)
Power: 6 W steady state
Current: 6 W/Voltage (V)

High Accuracy Power Meter (Option 19)

Compatible Sensors: PSN50 and MA24104A
PSN50 High Accuracy Power Sensor
Frequency Range: 50 MHz to 6 GHz
Measurement Range: –30 to +20 dBm
Linearity: ± 0.13 dB
Input Connector: Type N, female, 50 Ω
Complete Technical Datasheet: p/n 11410-00423
MA24104A Inline High Power Sensor
Frequency Range: 600 MHz to 4 GHz
Measurement Range: +3 dBm to +51.76 dBm (2 mW to 150 W)
Linearity: ± 0.13 dB
Input Connector: Type N, male, 50 Ω
Complete Technical Datasheet: p/n 11410-00483

Transmission Measurement (Option 21, S312D)

Frequency Range: 25 MHz to 1.6 GHz
Frequency Resolution: 10 Hz
Output Power Level: –10 dBm typical
Dynamic Range: 80 dB
Output Impedence: 50 Ω

Channel Scanner (Option 27, S312D)

Frequency Range: 100 kHz to 1.6 GHz
Frequency Accuracy: ± 10 Hz + Time base error, 99% confidence level
Measurement Range: +20 dBm to –100 dBm
Channel Power: ± 1 dB typical (± 1.5 dB max)
Adjacent Channel Power Accuracy: ± 0.75 dBc

Power Meter (Option 29, S312D)

Frequency Range: 3 MHz to 1.6 GHz
Measurement Range: –80 dBm to +20 dBm (+80 dBm with 60 dB external attenuator)
Display Range: –80 dBm to +80 dBm
Offset Range: 0 to +60 dB
Accuracy***: ± 1 dB typical (± 1.5 dBm max), ≥ 10 MHz to 1.6 GHz
± 2 dB typical, 3 MHz to 10 MHz
VSWR: 1.5:1 typical (Pin > –30 dBm, 10 MHz to 1.6 GHz)
Maximum Power: +20 dBm (0.1 W) without external attenuator
***(Excludes Input VSWR)

Specifications

GPS (Option 31)

GPS Location Indicator
Latitude, Longitude, and Altitude on Display
Latitude, Longitude, and Altitude with trace storage

General

Language Support: Chinese, English, French, German, Japanese, Spanish
Internal Trace Memory: 300 traces
Setup Configuration:
S311D: 10 setups
S312D: 25 setups
Display: TFT color LCD with adjustable backlight
Inputs and Outputs Ports:
RF Out: Type N, female, 50 Ω
Maximum Input without Damage: +23 dBm, ± 50 VDC
RF In: Type N, female, 50 Ω
Maximum Input without Damage: +43 dBm (peak), ± 50 VDC
Ext. Trig In: BNC, female (5 V TTL) (S312D models only)
Ext. Freq Ref In (2 to 20 MHz): Shared BNC, female, 50 Ω, (–15 dBm to +10 dBm)
s(S312D models only)
Serial Interface: RS-232 9 pin D-sub, three wire serial
Electromagnetic Compatibility:
Meets European Community requirements for CE marking
Safety: Conforms to EN 61010-1 for Class 1 portable equipment
Temperature:
Operating: –10 °C to 55 °C, humidity 85% or less
Non-operating: –51 °C to +71 °C (Recommend the battery be stored separately between 0 °C and +40 °C for any prolonged non-operating storage period.)
Environmental: MIL-PRF-28800F Class 2
Power Supply:
External DC Input: +12.5 to +15 Volt DC, 3A max
Internal NiMH battery: 10.8 Volts, 1800 mAH
Dimensions:
Size (W x H x D): 25.4 cm x 17.8 cm x 6.1 cm (10.0 in. x 7.0 in. x 2.4 in.)
Weight: <2.28 kg (<5 lbs) includes battery

Ordering Information

Basic Models

S311D	Cable and Antenna Analyzer (25 MHz to 1.6 GHz)
S312D	Cable and Antenna Analyzer (25 MHz to 1.6 GHz Spectrum Analyzer (100 kHz to 1.6 GHz)

Options

S311D-002	2 MHz Frequency Extension
S312D-002	2 MHz Frequency Extension
S311D-005	Power Monitor - requires external detector
S312D-005	Power Monitor - requires external detector
S312D-010A	+12 to +24 V Variable (1 V steps) Bias Tee
S311D-019	High Accuracy Power Meter (sensor not included)
S312D-019	High Accuracy Power Meter (sensor not included)
S312D-021	Transmission Measurement
S312D-025	Interference Analyzer (directional antenna not included)
S312D-027	Channel Scanner
S312D-028	CW Signal Generator (requires CW Signal Generator Kit)
S312D-029	Power Meter (does not require external detector)
S311D-031	GPS Receiver for location information. (includes GPS antenna)
S312D-031	GPS Receiver for location information. (includes GPS antenna)

Standard Accessories

65717	Soft Carrying Case
633-27	Rechargeable Battery, Ni-MH
40-168-R	AC–DC Adapter
806-141	Automotive Cigarette Lighter 12 Volt DC Adapter
2300-347	Handheld Software Tools CDROM
800-441	Serial Interface Cable (null modem type)
551-1691-R	USB to RS-232 Adapter Cable
10580-00185	S311D/S312D Site Master User's Guide
	One Year Warranty

Calibration Components

ICN50B	InstaCal™ Calibration Module, 2 MHz to 6.0 GHz, N(m), 50 Ω
OSLN50-1	Precision Open/Short/Load, DC to 6 GHz, 42 dB, 50 Ω, N(m)
OSLNF50-1	Precision Open/Short/Load, DC to 6 GHz, 42 dB, 50 Ω, N(f)
22N50	Open/Short, DC to 18 GHz, N(m), 50 Ω
SM/PL-1	Precision Load, DC to 6 GHz, 42 dB, N(m), 50 Ω
22NF50	Open/Short, DC to 18 GHz, N(f), 50 Ω
SM/PLNF-1	Precision Load, DC to 6 GHz, 42 dB, N(f), 50 Ω
2000-767	Precision Open/Short/Load, DC to 4 GHz, 7/16 DIN(m), 50 Ω
2000-768	Precision Open/Short/Load, DC to 4 GHz, 7/16 DIN(f), 50 Ω
22N75	Open/Short, DC to 3 GHz, N(m) 75 Ω
26N75A	Precision Termination, DC to 3 GHz, N(m) 75 Ω
22NF75	Open/Short, DC to 3 GHz, N(f) 75 Ω
26NF75A	Precision Termination, DC to 3 GHz, N(f) 75 Ω
12N50-75B	Matching Pad, DC to 3 GHz, 50 Ω to 75 Ω

Precision Adapters

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

Adapters

1091-26	Adapter, N(m)-SMA(m), DC to 18 GHz, 50 Ω
1091-27	Adapter, N(m)-SMA(f), DC to 18 GHz, 50 Ω
1091-80-R	Adapter, N(f)-SMA(m), DC to 18 GHz, 50 Ω
1091-81-R	Adapter, N(f)-SMA(f), DC to 18 GHz, 50 Ω
1091-172	Adapter, N(m)-BNC(f), DC to 1.3 GHz, 50 Ω
510-90	Adapter, 7/16 DIN(f)-N(m), DC to 7.5 GHz, 50 Ω
510-91	Adapter, 7/16 DIN(f)-N(f), DC to 7.5 GHz, 50 Ω
510-92	Adapter, 7/16 DIN(m)-N(m), DC to 7.5 GHz, 50 Ω
510-93	Adapter, 7/16 DIN(m)-N(f), DC to 7.5 GHz, 50 Ω
510-96	Adapter, 7/16 DIN(m)-7/16 DIN(m), DC to 7.5 GHz, 50 Ω
510-97	Adapter, 7/16 DIN(f)-7/16 DIN(f), DC to 7.5 GHz, 50 Ω

Adapters w/ Reinforced Grip

1091-379-R	Adapter w/ Reinforced Grip, 7/16 DIN(f)-7/16 DIN(f), DC to 6 GHz, 50 Ω

Test Port Cables

3-806-151	Cable, 0.46 m, N(m)-N(m), 4 GHz, 50 Ω
806-186-R	Cable, 0.91 m, N(m)-N(f), 4 GHz, 50 Ω
806-187-R	Cable, 0.91 m, N(m)-N(m), 4 GHz, 50 Ω

Test Port Cable Armored

15NN50-1.5C	Test Port Cable Armored, 1.5 m, N(m)-N(m), 6 GHz, 50 Ω
15NN50-3.0C	Test Port Cable Armored, 3.0 m, N(m)-N(m), 6 GHz, 50 Ω
15NN50-5.0C	Test Port Cable Armored, 5.0 m, N(m)-N(m), 6 GHz, 50 Ω
15NNF50-1.5C	Test Port Cable Armored, 1.5 m, N(m)-N(f), 6 GHz, 50 Ω
15NNF50-3.0C	Test Port Cable Armored, 3.0 m, N(m)-N(f), 6 GHz, 50 Ω
15NNF50-5.0C	Test Port Cable Armored, 5.0 m, N(m)-N(f), 6 GHz, 50 Ω
15ND50-1.5C	Test Port Cable Armored, 1.5 m, N(m)-7/16 DIN(m), 6 GHz, 50 Ω
15NDF50-1.5C	Test Port Cable Armored, 1.5 m, N(m)-7/16 DIN(f), 6 GHz, 50 Ω

Test Port Cables, Armored w/ Reinforced Grip

15RNFN50-1.5-R	Test Port Cable Armored w/Reinforced Grip 1.5 m, N(f)-N(m), 6 GHz, 50 Ω
15RDFN50-1.5-R	Test Port Cable Armored w/Reinforced Grip 1.5 m, D(f)-N(m), 6 GHz, 50 Ω
15RDFN50-3.0-R	Test Port Cable Armored w/Reinforced Grip 3.0 m, D(f)-N(m), 6 GHz, 50 Ω
15RDN50-1.5-R	Test Port Cable Armored w/Reinforced Grip 1.5 m, D(m)-N(m), 6 GHz, 50 Ω
15RDN50-3.0-R	Test Port Cable Armored w/Reinforced Grip 3.0 m, D(m)-N(m), 6 GHz, 50 Ω

Antennas

2000-1200	Portable Antenna, SMA (m), 806-866 MHz, 50 Ω
2000-1473	Portable Antenna, SMA (m), 870-960 MHz, 50 Ω
2000-1035	Portable Antenna, SMA (m), 896-941 MHz, 50 Ω
2000-1410	Magnet Mount GPS Antenna with 15-foot cable

Directional Antennas

2000-1411-R	Portable Yagi Antenna, N(f), 822 to 900 MHz, 10 dBd
2000-1412-R	Portable Yagi Antenna, N(f), 885 to 975 MHz, 10 dBd

Filters

1030-114-R	Filter, Bandpass, 806 to 869 MHz, N(m)-SMA(f), 50 Ω
1030-109-R	Filter, Bandpass, 824 to 849 MHz N(m)-SMA(f), 50 Ω
1030-110-R	Filter, Bandpass, 880 to 915 MHz, N(m)-SMA(f), 50 Ω
1030-105-R	Filter, Bandpass, 890 to 915 MHz, N(m)-N(f), 50 Ω

Attenuators

3-1010-119	Attenuator, 10 dB, 2 W, DC to 6 GHz
3-1010-122	Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f)
42N50-20	Attenuator, 20 dB, 5 W, DC to 18 GHz, N(m)-N(f)
3-1010-123	Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f)
42N50A-30	Attenuator, 30 dB, 50 W, DC to 18 GHz, N(m)-N(f)
1010-127-R	Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f)
3-1010-124	Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional
1010-121	Attenuator, 40 dB, 100 W, DC to 18 GHz, N(m)-N(f)
1010-128-R	Attenuator, 40 dB, 150 W, DC to 3 GHz, N(m)-N(f)

Ordering Information

Miscellaneous Accessories

633-27	Rechargeable Battery, Ni-MH
806-141	Automotive Cigarette Lighter/12 Volt DC Adapter
40-168-R	AC/DC Adapter
2000-1029	Battery Charger, NiMH, w/ Universal Power Supply
551-1691-R	USB to RS-232 Adapter Cable
800-441	Serial Interface Cable
70-28	Headset
65717	Soft Carrying Case
67135	Site Master Backpack
760-243-R	Transit Case
1N50C	Limiter, N(m) to N(f), 50W, 10 MHz to 18 GHz
ODTF-1	Optical DTF Module, 1550 nm, Single Mode
61534	CW Signal Generator Kit with variable step attenuator
65701	3 GHz Offset Cal Kit consisting of one each: 3-1010-119, 10 dB Attenuator, DC to 6 GHz, 2W, 3-806-151, 4 GHz Cable, 18" (46 cm)
2300-347	Handheld Software Tools CDROM

Power Monitor Detectors

5400-71N50	Detector, .001 to 3 GHz, N(m), 50 Ω
5400-71N75	Detector, .001 to 3 GHz, N(m), 75 Ω
560-7N50B	Detector, 10 MHz to 20 GHz, N(m), 50 Ω
560-7S50B	Detector, 10 MHz to 20 GHz, WSMA(m), 50 Ω
560-7K50	Detector, 10 MHz to 40 GHz, K(m), 50 Ω
560-7VA50	Detector, 10 MHz to 50 GHz, V(m), 50 Ω

Power Monitor Extender Cables

800-109	7.6 m (25 ft)
800-111	30.5 m (100 ft)

High Accuracy Power Meter Accessories

PSN50	High Accuracy Power Sensor, 50 MHz to 6 GHz
MA24104A	Inline High Power Sensor, 600 MHz to 4 GHz
40-168-R	AC-DC Adapter
800-441	Serial Interface Cable
3-1010-122	Attenuator, 20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f)
1010-127-R	Attenuator, 30 dB, 150 W, DC to 3 GHz, N(m)-N(f)
3-1010-123	Attenuator, 30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f)
3-1010-124	Attenuator, 40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional
65701	3 GHz Offset Cal Kit consisting of one each: 3-1010-119, 10 dB Attenuator, DC to 6 GHz, 2 W, 3-806-151, 4 GHz Cable, 18" (46 cm)

Product Literature

10580-00185	S311D/S312D Site Master's User's Guide
10580-00186	S311D/S312D Site Master Programming Guide

15RNFN50-1.5-R
Test Port Cable Armored with Reinforced Grip

67135
SiteMaster Backpack

ICN50B
InstaCal™ Calibration Module

1010-128-R
40 dB, 150 W, Attenuator

ODTF-1
Optical DTF Module, 1550 nm

1091-379-R
Adapter with Reinforced Grip

Anritsu

Anritsu Corporation
5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555 Japan
Phone: +81-46-223-1111
Fax: +81-46-296-1264

• U.S.A.
Anritsu Company
1155 East Collins Boulevard, Suite 100,
Richardson, Texas 75081 U.S.A.
Toll Free: 1-800-ANRITSU (267-4878)
Phone: +1-972-644-1777
Fax: +1-972-671-1877

• Canada
Anritsu Electronics Ltd.
700 Silver Seven Road, Suite 120, Kanata,
Ontario K2V 1C3, Canada
Phone: +1-613-591-2003
Fax: +1-613-591-1006

• Brazil
Anritsu Electrônica Ltda.
Praca Amadeu Amaral, 27-1 Andar
01327-010 - Paraiso, São Paulo, Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3886940

• Mexico
Anritsu Company, S.A. de C.V.
Av. Ejército Nacional No. 579 Piso 9, Col. Granada
11520 México, D.F., México
Phone: +52-55-1101-2370
Fax: +52-55-5254-3147

• U.K.
Anritsu EMEA Ltd.
200 Capability Green, Luton, Bedfordshire LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

• France
Anritsu S.A.
16/18 Avenue du Québec-SILIC 720
91961 COURTABOEUF CEDEX, France
Phone: +33-1-60-92-15-50
Fax: +33-1-64-46-10-65

• Germany
Anritsu GmbH
Nemetschek Haus, Konrad-Zuse-Platz 1
81829 München, Germany
Phone: +49 (0) 89 442308-0
Fax: +49 (0) 89 442308-55

• Italy
Anritsu S.p.A.
Via Elio Vittorini, 129, 00144 Roma, Italy
Phone: +39-06-509-9711
Fax: +39-06-502-2425

• Sweden
Anritsu AB
Borgafjordsgatan 13, 164 40 Kista, Sweden
Phone: +46-8-534-707-00
Fax: +46-8-534-707-30

• Finland
Anritsu AB
Teknobulevardi 3-5, FI-01530 Vantaa, Finland
Phone: +358-20-741-8100
Fax: +358-20-741-8111

• Denmark
Anritsu A/S
Kirkebjerg Allé 90 DK-2605 Brøndby, Denmark
Phone: +45-72112200
Fax: +45-72112210

• Spain
Anritsu EMEA Ltd.
Oficina de Representación en España
Edificio Veganova
Avda de la Vega, nº 1 (edf 8, pl1, of 8)
28108 ALCOBENDAS - Madrid, Spain
Phone: +34-914905761
Fax: +34-914905762

• Russia
Anritsu EMEA Ltd.
Representation Office in Russia
Tverskaya str. 16/2, bld. 1, 7th floor.
Russia, 125009, Moscow
Phone: +7-495-363-1694
Fax: +7-495-935-8962

• United Arab Emirates
Anritsu EMEA Ltd.
Dubai Liaison Office
P O Box 500413 - Dubai Internet City
Al Thuraya Building, Tower 1, Suite 701, 7th Floor
Dubai, United Arab Emirates
Phone: +971-4-3670352
Fax: +971-4-3688460

• Singapore
Anritsu Pte. Ltd.
60 Alexandra Terrace, #02-08, The Comtech (Lobby A)
Singapore 118502
Phone: +65-6282-2400
Fax: +65-6282-2533

• India
Anritsu Pte. Ltd.
India Branch Office
3rd Floor, Shri Lakshminarayan Niwas,
#2726, 80 ft Road, HAL 3rd Stage, Bangalore - 560 075, India
Phone: +91-80-4058-1300
Fax: +91-80-4058-1301

• P. R. China (Hong Kong)
Anritsu Company Ltd.
Units 4 & 5, 28th Floor, Greenfield Tower, Concordia Plaza,
No. 1 Science Museum Road, Tsim Sha Tsui East,
Kowloon, Hong Kong, P.R. China
Phone: +852-2301-4980
Fax: +852-2301-3545

• P. R. China (Beijing)
Anritsu Company Ltd.
Beijing Representative Office
Room 2008, Beijing Fortune Building,
No. 5 , Dong-San-Huan Bei Road,
Chao-Yang District, Beijing 100004, P.R. China
Phone: +86-10-6590-9230
Fax: +82-10-6590-9235

• Korea
Anritsu Corporation, Ltd.
8F Hyunjuk Bldg. 832-41, Yeoksam-Dong,
Kangnam-ku, Seoul, 135-080, Korea
Phone: +82-2-553-6603
Fax: +82-2-553-6604

• Australia
Anritsu Pty Ltd.
Unit 21/270 Ferntree Gully Road, Notting Hill
Victoria, 3168, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

• Taiwan
Anritsu Company Inc.
7F, No. 316, Sec. 1, Neihu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

Please Contact:

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