

Site Master™ S251C

Broadband Two-Port Transmission Line and Antenna Analyzer

625 MHz to 2500 MHz



The World's Leading Cable and Antenna System Analyzer

THE LEADING CABLE AND ANTENNA ANALYZER FOR WIRELESS PROFESSIONALS

Value Electronics International, Inc. - www.valuetronics.com - Toll Free: 800.562.3258

- Gain/Insertion, Fault Location, Return Loss/SWR and Cable Loss Measurements
- High Immunity to Live Site RF Interference
- Built-in-Bias Tee (240 mA Steady State)
- RF Source 625 to 2500 MHz at 10 kHz steps
- Trace Storage with Date/Time Stamp, Alphanumeric Labeling (Up to 200 Memory Locations)
- Cable List Pop-up Menu Contains Over 75 Cable Types and 3 Frequency Band Presets.

Easy-to-Use

Site Master's S251C menu driven interface requires little training and simplifies the field engineers and technicians task of deployment, site-to-site maintenance and troubleshooting by identifying, recording and solving problems without sacrificing measurement accuracy.

- Store ten test setups for fast repeatable testing.
- Store up to 200 measurement traces in nonvolatile memory.
- Multilingual user interface features on screen menus and messages in 5 different languages.

Powerful Data Analysis Software

Powerful data analysis software comes with every Site Master unit, providing users with an easy method of analyzing system performance, trends and problems in addition to professional report generation.

- Site Master PC software is Windows 95/98/2000/ME and NT workstation compatible and supports long alpha-numeric file names for descriptive data labeling.
- Store an unlimited number of data traces for comparison to historical performance.
- Quickly and easily download data traces from the Site Master to a PC database with a single menu selection.

Accurate, Repeatable Measurements

Utilizing vector error correction, Site Master delivers accurate, reliable and repeatable Return Loss/SWR and Fault Location measurements. Site Master's high immunity to interference allows users to conduct measurements of an active site without the loss of accuracy.

- Locate long range problems with 517 data points.
- Superior immunity to on-channel interference for testing at co-located antenna sites.
- Large, high-resolution display allows for easy viewing and trace interpretation under a variety of conditions.
- Full range of marker and limit functions facilitate quick, comprehensive measurements.

Specifications*1

| | | |
|--|--|---|
| Frequency Range | | 625 to 2500 MHz |
| Frequency Accuracy (CW mode) | | 75 ppm |
| Frequency Resolution | | 10 kHz |
| Display Resolution | | 130, 259, 517 data points |
| Interference Immunity (dBm) | On-Channel*2 | +17 dBm |
| | On-Frequency*3 | +10 dBm, RF out, +30 dBc, RF in |
| Return Loss | Range | 0 to 54 dB |
| | Resolution | 0.01 dB |
| SWR | Range | 1 to 65 |
| | Resolution | 0.01 |
| RF Source | Frequency | 625 to 2500 MHz at 10 kHz step |
| | Power Output (nominal) | Selectable, -30 dBm or +6 dBm |
| Insertion Loss/Gain | Measurement Range | -90 to +50 dB |
| | Resolution | 0.1 dB |
| Distance-to-Fault | Vertical range | Return loss: 0 to 54 dB SWR: 1 to 65 |
| | Horizontal range (meter) | 0 to (data points -1) x resolution to a maximum of 1000 m (3281 ft.), where data points = 130, 259, 517 |
| | Horizontal resolution, (rectangular windowing) (meter) | $(1.5 \times 10^9) (v_p) / \Delta \text{frequency}^4$ |
| RF power monitor, (Option 5) | Display range | -80 to +80 dBm, 10 pW to 100 kW |
| | Detector range | -45 to +20 dBm, 32 nW to 100 mW |
| | Offset range | 0 to +60 dB |
| | Resolution | 0.1 dB, 0.1 x W |
| Bias Tee (Option 10A) | | +15 VDC, 270 mA peak 25m sec, 240 mA steady state |
| Cable Loss | Range | 0 to 54 dB |
| | Resolution | 0.01 dB |
| Test port connector | | Precision N female |
| Maximum input without damage | N(f) test port | +22 dBm |
| | RF power detector | +20 dBm, 50 Ω |
| Trace memory | | up to 200 |
| Instrument configuration with calibration | | 10 |
| Custom cable configuration | | 50 |
| Temperature | Operating | 0 to 50°C |
| | Storage | -20°C to 75°C |
| Weight | | 1.81 kgs (4.0 lbs.) |
| Size | | 25.4 x 17.8 x 6.10 cm (10 x 7 x 2.4 in.) |
| General | Electromagnetic compatibility | Meets European community CE requirements |
| | RS232 | 9 pin D-sub, three wire serial |

*1: All Specifications apply when calibrated at ambient temperature after a five minute warm up.

*2: On-Channel Interference Immunity is specified at >1.0 MHz of the carrier frequency.

*3: On-Frequency Interference Immunity is specified to within ±10 kHz of the carrier frequency.

*4: Where v_p is the cable's relative propagation velocity, Δ frequency is the stop frequency minus the start frequency (in Hz).
Wide frequency sweeps improve resolution but reduce maximum display range.

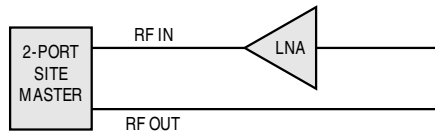
SITE MASTER S251C FOR 2-PORT/TOWER TOP APPLICATIONS

Valuetronics International, Inc. - www.valuetronics.com - Tel: 800.552.8168

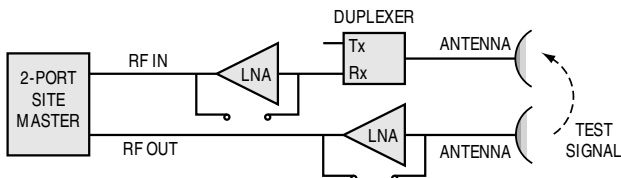
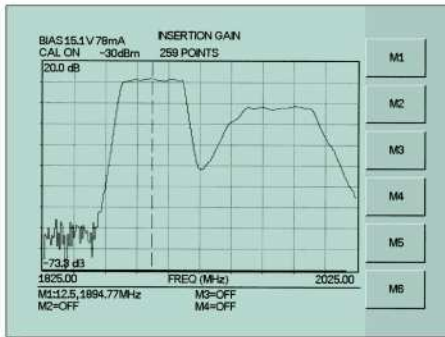
Performance enhancing design trends such as high sector-to-sector isolation, tower-mounted amplifiers and duplexed antennas add new complexities to site installation, deployment, maintenance and troubleshooting. To help simplify performance verification for these systems, a second test port for isolation, gain and insertion loss measurements is required. Addressing this need, the Site Master S251C features a second test-port for testing sector-to-sector isolation, tower-mounted amplifiers and duplexed antennas.

Gain

The Site Master S251C, features a selectable output power at +6 dBm or -30 dBm and an optional, built-in Bias Tee, to enable two-port insertion gain measurement of Tower Mounted Amplifiers (TMA) without the need of an external supply through the PDU (Power Distribution Unit) and an external attenuator. This greatly simplifies the technician's task of verifying amplifier and system performance during installation or periodic maintenance and troubleshooting intervals. Site Master's industry leading high RF interference immunity allows test signal injection between antennas with a minimum of interference induced distortion and is designed to perform both installation and maintenance tests from ground level.



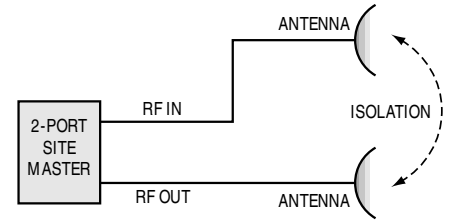
Amplifier Gain Test Measurement.



Site Master's high dynamic range enables LNA measurements at ground level.

Isolation

Improving isolation between antenna sectors can reduce cell-to-cell RF Interference and improve system coverage and capacity. To address this measurement requirement, the Site Master S251C features high dynamic range, which ensures that antenna isolation is accurately measured during deployment and during periodic maintenance intervals – including the extremely high >90 dB isolation ranges required at RF-RF repeater sites.



Accurately measure antenna isolation with Site Master's high dynamic range.

Measuring antenna isolation during periodic maintenance intervals conveniently verifies antenna position after harsh weather. If the antenna has been moved from the installed mounting angle, the change in side lobe and back lobe coupling magnitudes between the antennas causes a clear performance change. Tx-Rx isolation of duplexers and filters is easily tested with Site Master's >90 dB dynamic range. Filters are easily aligned and verified to manufacturer's specifications.



ORDERING INFORMATION

Value Electronics International, Inc. - www.valuetronics.com - Toll Free: 800.552.8258

Model S251C (625 MHz to 2500 MHz), Built in DTF

Standard Accessories Includes

User's Guide
Soft Carrying Case
AC-DC Adapter with Power Cord
Automotive Cigarette Lighter/12 Volt DC Adapter
One Year Warranty
CD ROM containing Fault Location (DTF), Smith Chart and Software Management Tools
Serial Interface Cable
Rechargeable Battery, NiMH



Optional Accessories

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|--------------|--|
| Option 5 | RF Power Monitor (RF Detector not included) |
| Option 10A | Bias Tee, 240 mA (S251C Only) |
| 5400-71N50 | RF Detector, N(m), 50 Ohm, 1 to 3000 MHz |
| 560-7N50B | RF Detector, N(m), 50 Ohm, 10 MHz to 20 GHz |
| 1N50C | Limitter, N(m) to N(f), 50 Ohm, 10 MHz to 50 GHz |
| 22N50 | Precision N(m) Short/Open, 18 GHz |
| 22NF50 | Precision N(f) Short/Open, 18 GHz |
| SM/PL | Precision N(m) Load, 42 dB, 4.0 GHz |
| SM/PLNF | Precision N(f) Load, 42 dB, 4.0 GHz |
| OSLN50LF | Precision Open/Short/Load, DC to 4.0 GHz, 50 Ohm, N(m) |
| OSLNF50LF | Precision Open/Short/Load, DC to 4.0 GHz, 50 Ohm, N(f) |
| 2000-767 | Precision Open/Short/Load, 7/16 (m), 4.0 GHz |
| 2000-768 | Precision Open/Short/Load, 7/16 (f), 4.0 GHz |
| 15NN50-1.5C | Test Port Cable Armored, 1.5 meter, N(m) to N(m), 6.0 GHz |
| 15NN50-3.0C | Test Port Cable Armored, 3.0 meter, N(m) to N(m), 6.0 GHz |
| 15NN50-5.0C | Test Port Cable Armored, 5.0 meter, N(m) to N(m), 6.0 GHz |
| 15NNF50-1.5C | Test Port Cable Armored, 1.5 meter, N(m) to N(f), 6.0 GHz |
| 15NNF50-3.0C | Test Port Cable Armored, 3.0 meter, N(m) to N(f), 6.0 GHz |
| 15NNF50-5.0C | Test Port Cable Armored, 5.0 meter, N(m) to N(f), 6.0 GHz |
| 15ND50-1.5C | Test Port Cable Armored, 1.5 meter, N(m) to 7/16 DIN(m), 6.0 GHz |
| 15NDF50-1.5C | Test Port Cable Armored, 1.5 meter, N(m) to 7/16 DIN(f), 6.0 GHz |
| 34NN50A | Precision N(m) to N(m) Adapter, 18 GHz |
| 34NPNF50 | Precision N(f) to N(f) Adapter, 18 GHz |

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|-------------|--|
| 1091-26 | Adapter, DC to 18 GHz, 50 Ohm, N(m) to SMA(m) |
| 1091-27 | Adapter, DC to 18 GHz, 50 Ohm, N(m) to SMA(f) |
| 1091-80 | Adapter N(f) to SMA(m), 18 GHz |
| 1091-81 | Adapter N(f) to SMA(f), 18 GHz |
| 1091-172 | Adapter, DC to 1.3 GHz, 50 Ohm, N(m) to BNC(f) |
| 510-90 | Adapter 7/16(f) to N(m), 7.5 GHz |
| 510-91 | Adapter 7/16(f) to N(f), 7.5 GHz |
| 510-92 | Adapter 7/16(m) to N(m), 7.5 GHz |
| 510-93 | Adapter 7/16(m) to N(f), 7.5 GHz |
| 510-96 | Adapter 7/16 DIN(m) to 7/16 DIN(m), 7.5 GHz |
| 510-97 | Adapter 7/16 DIN(f) to 7/16 DIN(f), 7.5 GHz |
| 48258 | Spare Soft Carrying Case |
| 40-115 | Spare AC/DC Adapter |
| 806-62 | Spare Automotive Cigarette Lighter/12 Volts DC adapter |
| 800-441 | Spare Serial Interface Cable |
| 760-215A | Transit Cases for Anritsu Site Master |
| 2300-347 | Anritsu Site Master Software Tools |
| 10580-00065 | Anritsu Site Master S251C User's Guide |
| 633-27 | Rechargeable Battery, NiMH (C Series only) |
| 2000-1029 | Battery Charger, NiMH with Universal Power Supply |



Printers

| | |
|-----------|---|
| 2000-766 | HP DeskJet Printer, model 350 Includes: Interface Cable, Black Print Cartridge, and US Power Cable |
| 2000-753 | Spare Serial-to-Parallel Converter Cable |
| 2000-661 | Black Print Cartridge |
| 2000-663 | Power Cable (Europe) for DeskJet Printer |
| 2000-664 | Power Cable (Australia) for DeskJet Printer |
| 2000-665 | Power Cable (U.K.) for DeskJet Printer |
| 2000-667 | Power Cable (So. Africa) for DeskJet Printer |
| 2000-1008 | Seiko DPU-414-30B Thermal Printer Includes: Internal Battery, Thermal Printer Paper, Serial Cable, Power Cable |
| 2000-1012 | Spare Serial 9 pin (male) to 9 pin (female) cable (for Seiko DPU-414-30B) |
| 2000-755 | Five (5) rolls of Thermal Paper |
| 2000-1002 | U.S. Adapter (for Sieko DPU-414-30B) |
| 2000-1003 | Euro Adapter (for Sieko DPU-414-30B) |
| 2000-1194 | Japan Adapter (for Sieko DPU-414-30B) |

Sales Centers:
United States (800) ANRITSU
Canada (800) ANRITSU
South America 55 (21) 286-9141



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Microwave Measurements Division • 490 Jarvis Drive • Morgan Hill, CA 95037-2809
http://www.us.anritsu.com • FAX (408) 778-0239



Sales Centers:
Europe 44 (0) 1582-433433
Japan 81 (03) 3446-1111
Asia-Pacific 65-2822400

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