

ANRITSU

S251B

The Anritsu S251B Site Master is a high-performance, handheld, 2-port cable and antenna analyzer designed specifically for installing, commissioning, and troubleshooting wireless communication transmission systems. Covering the 625 MHz to 2500 MHz frequency band, it supports return loss, VSWR, cable loss, distance-to-fault (DTF), and transmission measurements.

SPECIFICATIONS

General

Interfaces	RS-232 (9-pin D-sub)
Display	Monochrome graphical LCD with backlighting

Physical

Power Supply	12 to 15 VDC, internal rechargeable NiMH battery, or external AC/DC adapter
Operating Temperature	0 to 50 °C °C
Dimensions (W×H×D)	254 mm × 178 mm × 61 mm mm
Weight	1.8 kg (4.0 lbs) kg

RF and Frequency Specifications

Frequency Range	625 MHz to 2500 MHz
Frequency Resolution	10 kHz
Frequency Accuracy	±75 ppm
Output Power Range	0 dBm or -10 dBm (nominal)

Measurement Performance

Transmission Dynamic Range	625 MHz to 2000 MHz: > 80 dB; 2000 MHz to 2500 MHz: > 75 dB
Directivity	> 42 dB (after 1-port calibration)
Source Match	> 30 dB (after 1-port calibration)
Measurement Speed	4.5 ms per data point (typical)

Cable and Antenna (CAT) Measurements

Return Loss Range	0 to 60 dB
Return Loss Resolution	0.01 dB
VSWR Range	1.00 to 65.00
VSWR Resolution	0.01
Cable Loss Range	0 to 30 dB
Cable Loss Resolution	0.01 dB

Distance-to-Fault (DTF) and TDR Specifications

Maximum Distance Range	Up to 1000 m (3281 ft)
Propagation Velocity (Vp) Range	0.20 to 1.00

Test Port and System Interfaces

RF Port Connector Type	Type N, female (Port 1 and Port 2)
RF Port Impedance	50 Ω
RF Port Damage Level	+22 dBm, $\pm$ 50 VDC

Display and User Interface

On-Screen Markers	4 markers
Limit Lines Configuration	Single limit and multi-segment limits

Data Storage and Software

Internal Trace Storage Capacity	Up to 200 non-volatile trace memories
PC Analysis Software Compatibility	Anritsu Handheld Software Tools

Power and Battery Management

Battery Operating Time	2.0 to 2.5 hours typical
Battery Type	Rechargeable NiMH
External AC Power Adapter Input	100 to 240 VAC, 50 to 60 Hz
DC Input Range	12 to 15 VDC, 1 A max

Physical and Environmental Characteristics

Storage Temperature Range	-20 to 75 $^{\circ}$ C
Relative Humidity Range	Up to 95% non-condensing

Calibration and Standards Compliance

Supported Calibration Types	1-Port (OSL), Transmission (Gain/Loss) Calibration
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Performance

Number of Data Points	130, 259, 517
Interfering Signal Immunity	+15 dBm (on-channel), +22 dBm (off-channel)
Transmission Dynamic Range (625 MHz to 2000 MHz)	> 80 dB
Transmission Dynamic Range (2000 MHz to 2500 MHz)	> 75 dB
Directivity (Corrected)	$\geq$ 42 dB
Source Match (Corrected)	$\geq$ 30 dB

Environmental

Environmental Shock Resistance	MIL-T-28800E, Class 5
Operating Altitude	Up to 4,572 m (15,000 ft.)
Non-operating Altitude	Up to 15,240 m (50,000 ft.)

Options

Optional Power Monitor Frequency Range (Option 5)	10 MHz to 3000 MHz
Optional Power Monitor Measurement Range (Option 5)	-50 dBm to +20 dBm

Power Monitor (Option 5)

Power Monitor Offset Range (Option 5)	-99.9 to +99.9 dB
Power Monitor Resolution (Option 5)	0.1 dB, 0.1 W
Power Monitor Units (Option 5)	dBm, W, mW, μ W, nW

Inputs & Outputs

Port 1 Connector Type	Type N, female, 50 Ω
Port 2 Connector Type	Type N, female, 50 Ω

Regulatory & Compliance

EMC Compliance	Conforms to European Community Council Directive 89/336/EEC, EN 55011 Class A, EN 50082-1
Safety Compliance	Conforms to European Council Directive 73/23/EEC, EN 61010-1

TECHNOLOGY

Vector Network Analysis

APPLICATIONS

Cellular and Wireless Base Station Transmission Testing

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.