ANRITSU

S251C

The Anritsu Site Master S251C is a handheld, battery-operated 2-port cable and antenna analyzer designed specifically for tower top and duplex applications. Operating in the 625 MHz to 2500 MHz frequency range, it is optimized for field technicians working on cellular, PCS/GSM, and ISM systems. Featuring a second test port for isolation, gain, and insertion loss measurements, along with built-in FDR (Frequency Domain Reflectometry) technology for precise Distance-to-Fault analysis, the S251C provides high dynamic range and exceptional immunity to RF interference in active RF environments.

SPECIFICATIONS

General

Interfaces	RS232
Display	640 x 480 monochrome LCD with backlight (standard) / TFT color display (Option 3 dependent)

Physical

Power Supply	AC/DC power supply, 12.5 VDC automobile cigarette lighter adapter, or rechargeable battery
Operating Temperature	-10 °C to 55 °C °C
Dimensions (W×H×D)	300 x 178 x 80 mm mm
Weight	1.8 kg (4 lbs) including battery kg

Frequency and Amplitude Performance

Frequency Range	625 MHz to 2500 MHz
RF Source Frequency Steps	100 kHz steps

Vector Network Analysis Features

Dynamic Range	>90 dB (for antenna isolation measurements)
Selectable RF Output Power	0 dBm or -30 dBm

Measurement Capabilities and Signal Processing

RF Interference Rejection	Patented RF interference rejection feature
Measurement Modes	Return loss, cable loss, distance-to-fault (DTF), VSWR power meter, isolation, gain, and insertion loss
Distance-to-Fault Technology	Frequency Domain Reflectometry (FDR)
Display Markers	6 markers, limit lines, and segmented limit lines
Cable Database	Pop-up menus featuring over 70 cable types with velocity of propagation and attenuation values
Power Monitor Option	Optional external power monitor compatibility
Bias Tee Support	Optional built-in Bias Tee
Distance Units	Selectable feet and meters

System Architecture and Storage

Saved Test Setups	Up to 10 measurement configurations
Saved Measurement Traces	Up to 200 traces
Data Labeling	Alphanumeric labeling with automatic time and date stamp
Multi-Language Support	English, French, Chinese, Japanese, Spanish, German

Power and Electrical Specifications

Battery Customization	Rechargeable, field-replaceable battery pack
Electrical Protection	Reverse, over voltage, and under voltage protection

Environmental

Storage Temperature Range	-20 °C to 75 °C
Maximum Operating Altitude	4,500 m
Relative Humidity	85% or less (non-condensing)

Performance

Sweep Speed	< 2.5 ms/data point (typical)
Data Points	130, 259, 517
Directivity (Corrected)	≥ 42 dB
Source Match (Corrected)	≥ 30 dB
Load Match (Corrected)	≥ 38 dB
System Impedance	50 Ω
Return Loss Resolution	0.01 dB
VSWR Resolution	0.01

Frequency

Frequency Accuracy	±75 ppm
Frequency Resolution	100 kHz

Inputs & Outputs

Test Port Connector	N-type, female, 50 Ω
RF In Connector	N-type, female, 50 Ω

Electrical

Maximum Input Damage Level	+22 dBm, ±50 VDC

TECHNOLOGY

Frequency Domain Reflectometry (FDR)

APPLICATIONS

Cellular, PCS/GSM, and ISM field testing, tower top and duplex system analysis, antenna-to-antenna isolation, and TMA gain verification