ADVANTEST

R3271

The Advantest R3271 is a high-performance microwave spectrum analyzer designed for a wide range of RF and microwave measurements up to 26.5 GHz. It offers exceptional spectral purity, a broad resolution bandwidth range from 10 Hz to 3 MHz, and continuous sweeping capabilities. Equipped with a built-in frequency counter and an internal speaker for voice demodulation, the R3271 is well-suited for demanding field and laboratory analysis, including EMI adaptation measurements.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488)
Display	Large CRT display

Physical

Power Supply	90 to 132 VAC / 198 to 250 VAC, 48 to 440 Hz, 250 VA max
Operating Temperature	0 to 50 °C °C
Dimensions (W×H×D)	350 mm × 177 mm × 450 mm mm
Weight	22 kg kg

Frequency Specifications

Frequency Range	100 Hz to 26.5 GHz
Frequency Counter Resolution	1 Hz
Phase Noise	-110 dBc/Hz (at 10 kHz offset from carrier)

Sweep & Bandwidth

Resolution Bandwidth (RBW) Range	10 Hz to 3 MHz
Sweep Capability	Continuous and repeated sweep across the complete bandwidth

Measurement Capabilities & Features

Voice Demodulation	Supported (using an internal speaker)

Connectivity & Interface Ports

RF Input Impedance	50 ohms

RF Input

Input Attenuator Range	0 to 70 dB in 10 dB steps
Maximum Safe RF Input Level	+30 dBm (1 W), 0 VDC
RF Input Connector	3.5 mm female (compatible with SMA)
Input VSWR (100 Hz to 3.1 GHz)	≤ 1.5:1 (with ≥ 10 dB attenuation, for 100 kHz to 3.1 GHz)
Input VSWR (3.1 GHz to 26.5 GHz)	≤ 2.0:1 (with ≥ 10 dB attenuation)

Sweep

Sweep Time Range	50 µs to 1000 s (20 µs to 1000 s in zero span)

Bandwidth

Video Bandwidth (VBW) Range	1 Hz to 3 MHz

Frequency Stability

Frequency Reference Aging	±2 × 10^-8/day, ±1 × 10^-7/year

Performance

Displayed Average Noise Level (10 kHz to 3.1 GHz)	-115 dBm @ 1 kHz RBW
Displayed Average Noise Level (3.1 GHz to 8.0 GHz)	-110 dBm @ 1 kHz RBW
Displayed Average Noise Level (7.8 GHz to 15.4 GHz)	-103 dBm @ 1 kHz RBW
Displayed Average Noise Level (15.2 GHz to 23.0 GHz)	-96 dBm @ 1 kHz RBW
Displayed Average Noise Level (22.0 GHz to 26.5 GHz)	-90 dBm @ 1 kHz RBW
1 dB Gain Compression Point	-3 dBm (at mixer input, >10 MHz)

Accuracy

Frequency Response (100 Hz to 3.1 GHz)	±1.5 dB
Frequency Response (3.1 GHz to 8.0 GHz)	±1.5 dB
Frequency Response (7.8 GHz to 15.4 GHz)	±2.5 dB
Frequency Response (15.2 GHz to 23.0 GHz)	±3.5 dB
Frequency Response (22.0 GHz to 26.5 GHz)	±4.0 dB

Auxiliary Connections

External Mixer Range	18 GHz to 325 GHz (using external mixers)

Detection & Sweep

Detection Modes	Normal, POS Peak, NEG Peak, Sample

TECHNOLOGY

Superheterodyne Spectrum Analysis

APPLICATIONS

Microwave and RF Signal Analysis, EMI Testing

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