ROHDE & SCHWARZ

FSP13

The Rohde & Schwarz FSP13 is a high-performance spectrum analyzer covering a frequency range from 20 Hz to 13 GHz. Ideal for both development and production, it offers excellent RF characteristics, exceptional level measurement accuracy, and a wide array of digital filters.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE 488.2), RS-232-C, VGA, Printer (LPT)
Display	8.4-inch color TFT LCD (VGA, 640 x 480)
Warm-up Time	40 min
Internal Storage	Hard disk drive, 3.5" floppy disk drive (1.44 MB)
Operating System	Windows NT or Windows XP Embedded (hardware version dependent)

Physical

Power Supply	100 V to 240 V AC, 50 Hz to 400 Hz
Operating Temperature	5 to 40 °C
Dimensions (W×H×D)	435 x 192 x 460 mm
Weight	14.3 kg

Frequency

Frequency Range	9 kHz to 13.6 GHz
Frequency Span	0 Hz, 10 Hz to 13.6 GHz

Amplitude

Displayed Average Noise Level (DANL)	-155 dBm (1 Hz)
Total Measurement Uncertainty	0.5 dB
Mechanical Attenuator Range	0 dB to 75 dB
Mechanical Attenuator Step Size	5 dB
1 dB Gain Compression Point	+10 dBm (0 dB RF attenuation, nominal)
Frequency Response (f < 3 GHz)	< 0.5 dB
Frequency Response (3 GHz to 7 GHz)	< 1.5 dB
Frequency Response (7 GHz to 13.6 GHz)	< 2.0 dB
Logarithmic Level Display Range	10 dB to 200 dB

Bandwidth & Sweep

Resolution Bandwidth (RBW) Range	1 Hz to 10 MHz
Resolution Bandwidth Steps	1, 2, 3, 5, 10 sequence
Video Bandwidth (VBW) Range	1 Hz to 10 MHz
FFT Filter Range	1 Hz to 30 kHz
Channel Filter Range	100 Hz to 5 MHz
RRC Filters	Supported
EMI Bandwidths	200 Hz, 9 kHz, 120 kHz
Sweep Time (Span > 10 Hz)	2.5 ms to 16000 s
Sweep Time (Zero Span)	1 µs to 16000 s
Sweep Points	125 to 8001

Phase Noise

Phase Noise @ 10 kHz Offset	typ. -113 dBc/Hz (at 500 MHz CF)
Phase Noise @ 10 MHz Offset	typ. -145 dBc/Hz (at 500 MHz CF)

Measurement Capabilities

Standard Measurement Suites	TOI, ACP(R), OBW, CCDF, APD
Fast ACP in Time Domain	Supported
Trace Detectors	Max Peak, Min Peak, Auto Peak, Sample, RMS, Average, Quasi-Peak
Measurement Speed	Up to 80 measurements/s (including trace transfer via GPIB)

Inputs & Outputs

RF Input Connector	N female
RF Input Impedance	50 Ω
External Reference Input	10 MHz
Internal Reference Output	10 MHz
External Monitor Output	VGA (15-pin D-Sub)

Software & Firmware

Supported Application Firmware	GSM/EDGE, Bluetooth, WCDMA/HSDPA/TD-SCDMA, CDMA2000/1xEV-DV/1xEV-DO, WLAN

RF Input & Maximum Ratings

Maximum RF CW Power	30 dBm (1 W)
Maximum DC Input Voltage (AC Coupled)	50 V

Dynamic Range & Distortion

Third-order Intercept (TOI)	> 16 dBm (typ. 20 dBm)
Second Harmonic Intercept (SHI)	> 40 dBm (typ. 45 dBm) for f > 500 MHz

Frequency Reference

Reference Frequency Aging	1 x 10^-6 per year (standard), 1 x 10^-9 per day with Option FSP-B4

Triggering & Markers

Trigger Sources	Free Run, Video, External, IF Power
Frequency Counter Resolution	0.1 Hz to 10 kHz

Display & Sweep

Number of Traces	3
Reference Level Range	-130 dBm to +30 dBm

Options

Tracking Generator Option (FSP-B9) Frequency Range	9 kHz to 3 GHz
OCXO Option (FSP-B4) Aging per Year	1 × 10^-7

Interfaces & Connectivity

GPIB Interface	IEC 60625-2 (IEEE 488.2)
Serial Interface	RS-232-C (9-pin D-Sub)
Parallel Interface	25-pin D-Sub (LPT)
PS/2 Connectors	2 × PS/2 (Keyboard & Mouse)
LAN Interface	10/100 Base-T (RJ-45)

Environmental

Storage Temperature Range	-40 °C to +70 °C

TECHNOLOGY

Spectrum Analysis

APPLICATIONS

RF & Microwave Testing, Wireless Communication Development and Production