

Signal Hound®

SM200B Real-Time Spectrum Analyzer

Signal Hound designs and builds premium accessible test and measurement equipment for engineers and RF professionals around the globe.

DESIGNED TO ACCURATELY PENETRATE DENSE SIGNAL ENVIRONMENTS - FAST AND EFFICIENTLY

The SM200B is a high-performance 20 GHz real-time spectrum analyzer and monitoring receiver. It features 110 dB of dynamic range, ultra low phase noise, and 1 THz/sec sweep speeds. This impressive product captures and records up to 2 seconds of calibrated I/Q data at 160 MHz instantaneous bandwidth over USB 3.0, to your PC. As a front-end spectrum analyzer and monitoring receiver, the SM200B provides accurate RF data in the densest environments.

APPLICATIONS

- General Purpose RF Test & Measurement
- EMC pre-compliance
- Phase Noise Characterization
- EVM Measurement
- Channel Characterization
- CCDF
- WiFi Characterization
- BlueTooth Characterization
- Calibration
- Manufacturing Test
- RF Power Measurement
- Demodulation
- Antenna Pattern Measurement

FEATURES

- 1 THz/sec Sustained Sweep Speed
- 110 dB of Dynamic Range
- 20 MHz to 20 GHz Sub-Octave Preselector
- Spectrum Monitoring
- Ultra-low Phase Noise
- Real-time Analysis Features



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SM200B Real-Time Spectrum Analyzer & Monitoring Receiver

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Production Specifications

Frequency Range	100 kHz to 20 GHz		
Sweep Speed	Speed	RBW	
	• 1 THz/sec	≥30 kHz	
	• 160 GHz/sec	10 kHz	
	• 18 GHz/sec	1 kHz	
Displayed Average Noise Level (DANL) REF LEVEL ≤ -20 dBm	Input Frequency Range	dBm/Hz	
	• 100 kHz to 700 MHz	-156 dBm	
	• 700 MHz to 2.7 GHz	-160 dBm	
	• 2.7 GHz to 4.5 GHz	-158 dBm	
	• 4.5 GHz to 8.5 GHz	-153 dBm	
	• 8.5 GHz to 15 GHz	-154 dBm	
	• 15 GHz to 20 GHz	-151 dBm	
I/Q Acquisition Modes	Calibrated Streaming I/Q: Up to 40 MHz of selectable I/Q streaming bandwidth Up to 2 seconds of calibrated I/Q capture at 160 MHz bandwidth		
Timebase Accuracy	<ul style="list-style-type: none"> • ±5 × 10⁻¹⁰ when locked to GPS • Holdover of ±5 × 10⁻⁹ /day for aging (±2 × 10⁻⁸ first day typ) • Holdover of ±1 × 10⁻⁸ for temperature over -40°C to 65°C (typ) 		
System Noise Figure (typ)	<ul style="list-style-type: none"> • 11 dB over 700 MHz to 2.7 GHz • 14 dB from 2.7 GHz to 4.5 GHz • 18 dB from 4.5 GHz to 15 GHz 		
Linearity	IP ₂		IP ₃
	• 100 kHz to 2 GHz	+64 dBm	• 100 kHz to 4 GHz
	• 2 GHz to 11 GHz	+74 dBm	• 4 GHz to 6 GHz
	• 11 GHz to 13.5 GHz	+76 dBm	• 6 GHz to 14 GHz
	• 13.5 GHz to 20 GHz	+60 dBm	• 14 GHz to 20 GHz
			+28 dBm
			+23 dBm
			+18 dBm
			+23 dBm
Amplitude Accuracy	100 kHz to 6 GHz	6 GHz to 20 GHz	RBW filter shape
	• ± 2.0 dB	• ± 3.0 dB	• Flat-Top windowing
Residual Responses REF LEVEL ≤ -20 dBm	• 100 kHz to 8.0 MHz	-110 dBm	
	• 8.0 MHz to 15 GHz	-100 dBm	
	• 15 GHz to 20 GHz	-90 dBm	
SSB Phase Noise at 1 GHz Center Frequency	Offset Frequency	dBc/Hz	
	• 10 Hz	-76	
	• 100 Hz	-108	
	• 1 kHz	-123	
	• 10 kHz	-132	
	• 100 kHz	-136	
	• 1 MHz	-133	
Lo Leakage at RF Input	• 100 kHz to 5 GHz	-82 dBm	
	• 5 GHz to 10 GHz	-55 dBm	
	• 10 GHz to 18 GHz	-50 dBm	
	• 18 GHz to 20 GHz	-47 dBm	
Spurious Mixer Responses	• 100 kHz to 6 GHz	-58 dBc	
	• 6 GHz to 10 GHz	-55 dBc	
	• 10 GHz to 20 GHz	-44 dBc	
Sub-Octave Preselector Filters	20 MHz to 20 GHz		
Synchronization	External trigger, GPIO, Internal GPS (+/-40ns)		
Operating Temperature	Standard (passive cooling) 32°F to 122°F (0°C to +50°C)		
Size and Weight	• 10.2" x 7.2" x 2.15" (259mm x 183mm x 55mm) • 7.77 lbs. (3.52 kg)		
Power Consumption	• 9 to 16 VDC • 32 Watt Maximum		
Interface	USB 3.0		
System Requirements	Windows or Linux Operating System, x64_86 architecture		

Ordering Options

Standard, Temperature Range 32°F to 122°F (0°C to +50°C)

Option 1, Temperature Range -40°F to 149°F (-40°C to +65°C)