

Signal Hound®

SM200B Real-Time Spectrum Analyzer

Signal Hound designs and builds powerful, affordable spectrum analyzers and signal generators for engineers, operators 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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Preliminary 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 x 10⁻¹⁰ when locked to GPS • Holdover of ±5 x 10⁻⁹ /day for aging (±2 x 10⁻⁸ first day typ) • Holdover of ±1 x 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)