



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

## FINALLY, 5G MILLIMETER WAVE ANALYSIS IN A COMPACT, PORTABLE FORMAT - POWER AND PERFORMANCE.

The SM435B is a high-performance spectrum analyzer and monitoring receiver. Tuning from 100 kHz to 43.5 GHz, the analyzer has 160 MHz of instantaneous bandwidth (IBW), 110 dB of dynamic range, 1 THz/sec sweep speed at 30 kHz RBW, and ultra-low phase noise to rival even the most expensive spectrum analyzers on the market. As a front-end spectrum analyzer and monitoring receiver, the SM435B provides accurate RF data when it's needed most.

### APPLICATIONS

- General Purpose RF Test & Measurement
- EMC pre-compliance
- Phase Noise Characterization
- EVM
- 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 43.5 GHz Sub-Octave Preselector
- Spectrum Monitoring
- Ultra-low Phase Noise
- Real-time Analysis Features



# SM435B Real-Time Spectrum Analyzer & Monitoring Receiver

May 2023

## Production Specifications

Frequency Range	100 kHz to 43.5 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 160 MHz	-156 dBm	
	• 160 MHz to 2.2 GHz	-159 dBm	
	• 2.2 GHz to 24 GHz	-155 dBm	
	• 24 GHz to 36 GHz	-153 dBm + 0.5 dB/GHz	
	• 36 GHz to 43.5 GHz	-147 dBm + 1.1 dB/GHz	
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"> <li>• ±5 x 10<sup>-10</sup> when locked to GPS</li> <li>• Holdover of ±5 x 10<sup>-9</sup> /day for aging (±2 x 10<sup>-8</sup> first day typ)</li> <li>• Holdover of ±1 x 10<sup>-8</sup> for temperature over -40°C to 65°C (typ)</li> </ul>		
System Noise Figure (typ)	<ul style="list-style-type: none"> <li>• 12 dB over 700 MHz to 2.5 GHz</li> <li>• 15 dB from 2.5 GHz to 24 GHz</li> <li>• 18 dB + 0.5 dB/GHz from 24 GHz to 40 GHz</li> <li>• 26dB + 2.0 dB/GHz from 40 GHz to 43.5 GHz</li> </ul>		
Linearity	IP <sub>2</sub>	IP <sub>3</sub>	
	• 100 kHz to 20 GHz +75 dBm	• 100 kHz to 4 GHz +28 dBm	
	• 20 GHz to 43.5 GHz +70 dBm	• 4 GHz to 6 GHz +23 dBm	
		• 6 GHz to 43.5 GHz +20 dBm	
Amplitude Accuracy	100 kHz to 6 GHz • ± 2.0 dB	6 GHz to 43.5 GHz • ± 3.0 dB	RBW filter shape • Flat-Top windowing
Residual Responses REF LEVEL ≤ -20 dBm	• 100 kHz to 6 GHz	-110 dBm	
	• 6 GHz to 15 GHz	-100 dBm	
	• 15 GHz to 44 GHz	-90 dBm	
SSB Phase Noise at 1 GHz Center Frequency	Offset Frequency	dBc/Hz	
	• 10 Hz	-76	
	• 100 Hz	-108	
	• 1 kHz	-125	
	• 10 kHz	-136	
	• 100 kHz	-138	
	• 1 MHz	-138	
Lo Leakage at RF Input	• 100 kHz to 6 GHz	-80 dBm	
	• 6 GHz to 24 GHz	-50 dBm	
	• 24 GHz to 43.5 GHz	-75 dBm	
Spurious Mixer Responses	• 100 kHz to 6 GHz	-55 dBc	
	• 6 GHz to 24 GHz	-45 dBc	
	• 24 GHz to 43.5 GHz	-45 dBc	
Sub-Octave Preselector Filters	20 MHz to 43.5 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	• 10.45" x 7.2" x 2.15" (265mm 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)

Option-80 – IF Output Option (800MHz BW of IF tunable between 24GHz – 43.5GHz)