



Signal Hound designs and builds powerful, affordable spectrum analyzers and signal generators for engineers, operators 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

Preliminary 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"> • ±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"> • 12 dB over 700 MHz to 2.5 GHz • 15 dB from 2.5 GHz to 24 GHz • 18 dB + 0.5 dB/GHz from 24 GHz to 40 GHz • 26dB + 2.0 dB/GHz from 40 GHz to 43.5 GHz | | |
| Linearity | IP ₂ | IP ₃ | |
| | • 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 20 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)