Signal Hound®

SP145 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.

SPECIALIZED FOR ACCURATE REMOTE SPECTRUM MONITORING AND ANALYSIS IN A PORTABLE AND DURABLE FORMAT.

The SP145 is a high-performance 14.5 GHz real-time spectrum analyzer and monitoring receiver. It features 200 GHz/sec sweep speed, 40 MHz streaming bandwidth, and -160 dBm displayed noise average. This impressive product includes an internal GPS adding a critical dimension of spectrum analysis when out in the field. The SP145 is USB-C powered for fast and accurate RF data acquisition in a continuously changing environment.

APPLICATIONS

- General Purpose RF Test & Measurement
- Phase Noise Characterization
- EVM Measurement
- Airborne RF Measurement Systems
- Spectrum Monitoring
- WiFi & Bluetooth Characterization
- Calibration
- Manufacturing Test
- Demodulation
- Satellite Peaking
- RF Surveying

FEATURES

- 200 GHz/sec Sweep Speed
- 40 MHz Streaming Bandwidth
- Internal GPS
- Programmable API/SCIPI Automation
- DANL -160 dBm
- Real-time Analysis

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SP145 Real-Time Spectrum Analyzer & Monitoring Receiver

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Preliminary Specifications

Frequency Range	100 kHz to 14.5 GHz
Sweep Speed	Speed / RBW • 200 GHz/sec ≥70 kHz • 135 GHz/sec 30 kHz • 90 GHz/sec 10 kHz • 36 GHz/sec 3 kHz • 13.5 GHz/sec 1 kHz
Displayed Average Noise Level (DANL)	Frequency Range / dBm/Hz / Typical • 0.1 kHz to 50 MHz -158 dBm -161 dBm • 50 MHz to 1000 MHz -164 dBm -169 dBm • 1 Ghz to 4.5 GHz -163 dBm -168 dBm • 4.5 GHz to 12 GHz -161 dBm -167 dBm • 12 GHz to 14.5 GHz -157 dBm -162 dBm
I/Q Acquisition Modes	Calibrated Streaming I/Q: Up to 40 MHz of selectable I/Q streaming bandwidth
Timebase Accuracy	• +/- 1 ppb when locked to GPS
System Noise Figure (typ)	• 8 dB over 50 MHz to 2.7 GHz • 10 dB from 2.7 GHz to 4.5 GHz • 12 dB from 4.5 GHz to 8.5 GHz
Linearity (typ)	IP_2 • 100 kHz to 500 MHz +40 dBm • 500 MHz to 13 GHz +30 dBm • 13 GHz to 14.5 GHz +28 dBm IP_3 • 100 kHz to 2.8 GHz +30 dBm • 2.8 GHz to 5.3 GHz +24 dBm • 5.3 GHz to 14.5 GHz +22 dBm
Amplitude Accuracy	• Absolute Accuracy: ±2.0 dB (Flat top window) • Range:+10dBm to Displayed Average Noise Level (DANL)
Residual Responses	• <-103 dBm (ref Level ≤ -20 dBm, 0 dB Attenuation)
SSB Phase Noise at 1 GHz Center Frequency	Offset Frequency / dBc/Hz • 10 Hz -60 • 100 Hz -80 • 1 kHz -100 • 10 kHz -120 • 100 kHz -120 • 1 MHz -135
Lo Leakage at RF Input	• Below 5 GHz: < -80 dBm • 5 GHz to 10 GHz: < -47 dBm • 10 GHz to 12.2 GHz: < -37 dBm • 12.2 GHz to 14.5 GHz: < -27 dBm
Spurious Mixer Responses	• -40 dBc (Typical)
Synchronization	External trigger, GPIO, Internal GPS (+/-40ns)
Operating Temperature	Standard 32°F to 113°F (0°C to +45°C)
Size and Weight	• 7.45" x 4.51" x 1.81" (189mm x 115mm x 46mm) • 1.1 lbs. (0.5 kg)
Power Consumption	• 5 VDC • 10 Watt Maximum
Interface	USB Type C
System Requirements	Windows or Linux Operating System, x64_86 architecture

Ordering Options
Standard, Temperature Range 32°F to 113°F (0°C to +45°C)
Option 1, Temperature Range -22°F to 140°F (-30°C to +60°C)