

Signal Hound designs and builds premium accessible test and measurement equipment for engineers 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/SCIP1 Automation
- DANL -160 dBm
- Real-time Analysis



SP145 Real-Time Spectrum Analyzer & Monitoring Receiver

February 2024

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		IP ₃	
	• 100 kHz to 500 MHz	+40 dBm	• 100 kHz to 2.8 GHz	+30 dBm
	• 500 MHz to 13 GHz	+30 dBm	• 2.8 GHz to 5.3 GHz	+24 dBm
	• 13 GHz to 14.5 GHz	+28 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)