

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/SCIP Automation
- DANL -160 dBm
- Real-time Analysis



# SP145 Real-Time Spectrum Analyzer & Monitoring Receiver

May 2023

## 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) REF LEVEL ≤ -20 dBm	Input Frequency Range	dBm/Hz	
	• 100 kHz to 50 MHz	-159 dBm	
	• 50 MHz to 2.7 GHz	-163 dBm	
	• 2.7 GHz to 8.5 GHz	-159 dBm	
	• 8.5 GHz to 14.5 GHz	-155 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	IP <sub>2</sub>	IP <sub>3</sub>	
	• 50 kHz to 650 MHz +36 dBm	• 50 MHz to 2.7 GHz +26 dBm	
	• 650 MHz to 4.5 GHz +25 dBm	• 2.7 GHz to 6 GHz +23 dBm	
	• 4.5 GHz to 14.5 GHz +20 dBm	• 6 GHz to 14.5 GHz +18 dBm	
Amplitude Accuracy	100 kHz to 6 GHz • ± 2.0 dB	6 GHz to 14.5 GHz • ± 3.0 dB	RBW filter shape • Flat-Top windowing
Residual Responses REF LEVEL ≤ -20 dBm	• 100 kHz to 14.5 GHz -90 dBm		
SSB Phase Noise at 1 GHz Center Frequency	Offset Frequency	dBc/Hz	
	• 10 Hz	-55	
	• 100 Hz	-78	
	• 1 kHz	-104	
	• 10 kHz	-118	
	• 100 kHz	-118	
	• 1 MHz	-134	
Lo Leakage at RF Input	• 100 kHz to 5 GHz	-80 dBm	
	• 5 GHz to 14.5 GHz	-56 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)