

Signal Hound®

PCR4200 Phase Coherent Receiver



Signal Hound designs and builds powerful, affordable spectrum analyzers and signal generators for engineers, operators and RF professionals around the globe.

THE PCR4200 IS A HIGH-PERFORMANCE, 100 kHz - 20 GHz, 4-CHANNEL PHASE COHERENT RECEIVER, STREAMING I/Q DATA OVER A VITA 49 INTERFACE.

Each channel on the PCR4200 may be configured as a phase coherent channel using the high-performance shared local oscillator (LO), or independently tuned using that channel's dedicated LO. Additionally, any single channel may be configured to provide swept spectrum data at up to 160 GHz/s. Other features include a built-in 30 MHz - 20 GHz vector signal generator to simplify system alignment and calibration, and an internal GPS to provide precise time, frequency, and location.

FEATURES

- Frequency Range 100 kHz to 20 GHz
- Streams 40 MHz Bandwidth per Channel over 10 GbE SFP+
- Built-in Sub-Octave Preselectors from 45 MHz to 20 GHz
- Built-in Vector Signal Generator
- Noise Figure: 9 dB Typical for X band
- Calibrated I/Q Data
- Ultra-Low Phase Noise: -136 dBc/Hz 10 kHz Offset from 1 GHz Center Frequency
- Internal GPS
- 110 dB Dynamic Range
- Each channel may be configured as:
 - A Phase Coherent I/Q Channel
 - An Independently Tuned I/Q Channel
 - Up To 160 GHz/s Sweep Speed
 - Up To 16 Phase Coherent Channels

APPLICATIONS

- Emitter Detection and Geolocation
- Multi-Channel Transmitter Testing
- Simultaneous Multi-Band Spectrum Monitoring
- SIGINT/COMINT/ELINT
- Drone Detection
- MIMO Channel Testing
- **SIZE: 12" x 11.5" x 3" • WEIGHT: 16.2 lbs**



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PCR4200 Four-Channel Phase Coherent Receiver

October 2025

Preliminary Specifications			
Frequency Range	100 kHz to 20 GHz		
Streaming Bandwidth	Up to 40 MHz per channel		
Sweep Speed (typ)	Speed	RBW	
	• 160 GHz/sec	10 kHz	
	• 18 GHz/sec	1 kHz	
Timebase Accuracy	• $\pm 5 \times 10^{-10}$ when locked to GPS • Holdover of $\pm 5 \times 10^{-9}$ /day for aging ($\pm 2 \times 10^{-8}$ first day typ) • Holdover of $\pm 1 \times 10^{-8}$ for temperature over -40°C to 65°C (typ)		
I/Q Acquisition Modes	Calibrated Streaming I/Q: Independent or Phase Coherent		
System Noise Figure (typ)	• 7-9 dB from 50 MHz to 2.7 GHz • 9-11 dB from 2.7 GHz to 5.6 GHz		• 7-9 dB from 5.6 GHz to 12 GHz • 9-13 dB from 12 GHz to 20 GHz
Linearity	IP ₂ • 50 MHz to 7 GHz • 7 GHz to 9 GHz • 9 GHz to 20 GHz	+75 dBm +65 dBm +70 dBm	IP ₃ • 100 kHz to 3 GHz • 3 GHz to 9 GHz • 9 GHz to 20 GHz
			+28 dBm +18 dBm +23 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 $\leq$ -20 dBm	• 100 kHz to 20 GHz 		

Ordering Options
Standard, Temperature Range 32°F to 122°F (0°C to +50°C)
Option 1, Temperature Range -22°F to 140°F (-30°C to 60°C)