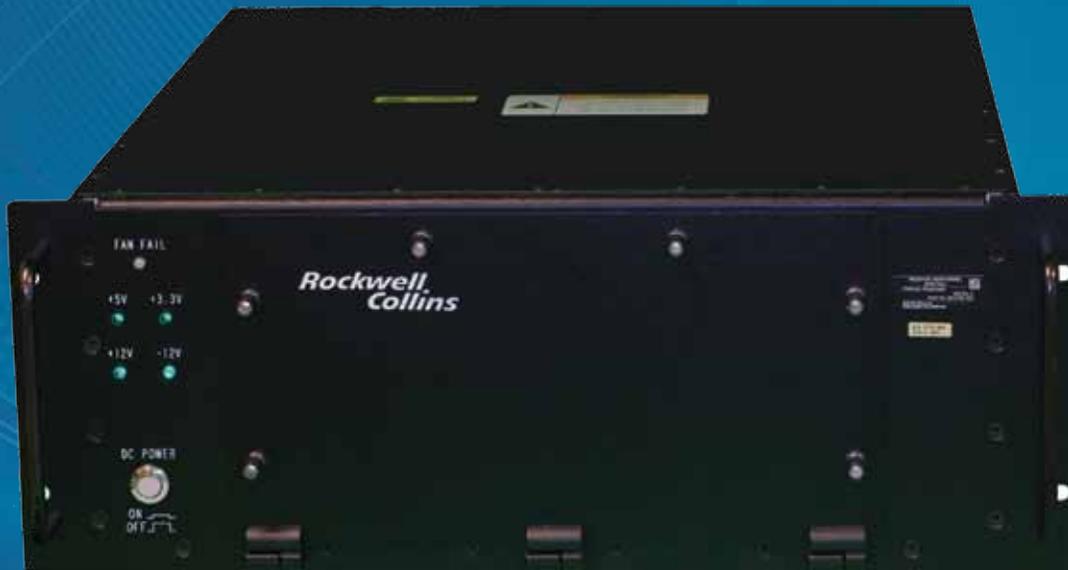


PRISM-6090 Precision Intercept Spectral Monitoring System



The Rockwell Collins PRISM system is a complete full range spectral monitoring system that covers a frequency range from 0.5 to 18 GHz (40 GHz optional).

The PRISM RF Search System generates RF spectral displays across the 0.5 to 18 GHz frequency range for fast detection of signal activity. Display is on a host computer screen via Ethernet LAN to allow the PRISM system chassis to be located close to antenna feeds. The PRISM-6090 contains an RC-5850 RF Tuner, a Wideband IF Digitizer and a CPU that communicates to a host via a GigE LAN. The powerful and flexible PRISM GUI is a derivative of the widely used Rockwell Collins SAT GUI.

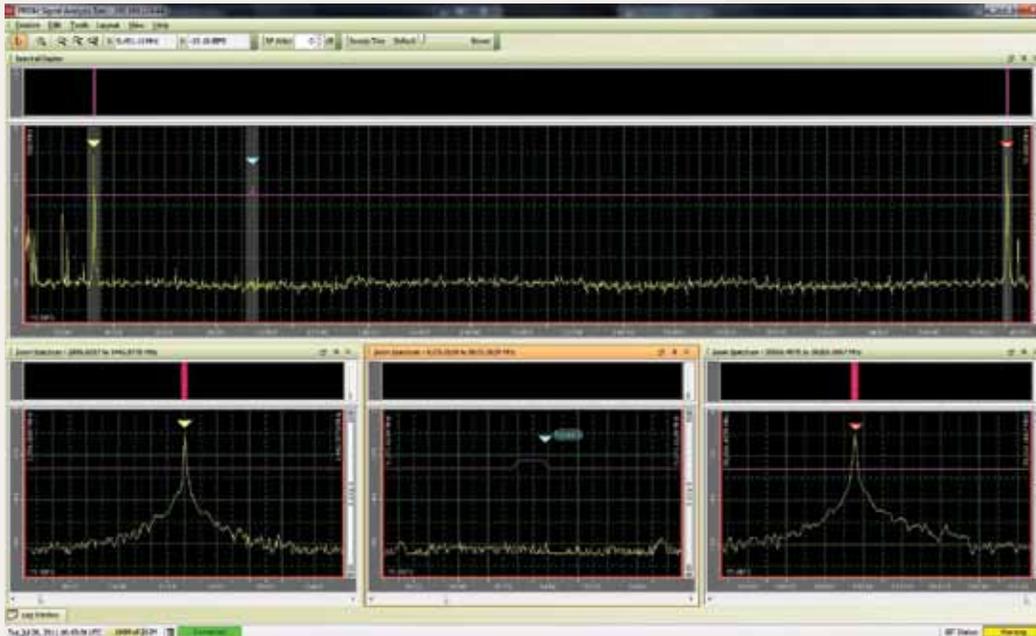
Signal activity across the entire 0.5-18 GHz RF spectrum is displayed in customizable frequency windows. User convenience functions such as peak search and manual/auto tipping help operators to identify and collect on specific signals of interest. A threshold function acts as a threshold for the waterfall display and a detection threshold for the auto tipping function.

The PRISM system's RF tuning is provided by a Rockwell Collins RC-5850 VME tuner. The fast sweep time of the RC-5850 combined with the wide (500 MHz) IF digitizer bandwidth enables the PRISM to sweep the entire RF spectrum (0.5 to 18 GHz) in 40 ms (25 times/sec).

The IF Digitizer digitizes the 1 GHz IF output from the RC-5800 tuner. The 500 MHz bandwidth IF input is digitized by a high speed 1.333 Gbps 10-bit analog to digital converter and then sent to a high performance FPGA processing engine. The FPGA contains high speed parallel processing for computing each 500 MHz spectrum via dedicated Fast Fourier Transform (FFT) processors resulting in a 100% real time duty cycle. A peak hold function is built into the FFT hardware to ensure that low duty cycle signals are properly captured and displayed. The combination of the FFT peak hold function and the fast FFT rates results in a very high probability of intercept (POI).

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KEY FEATURES

- ▶ Full range RF coverage (0.5-18 GHz, 40 GHz optional)
- ▶ Very fast wideband FFT based spectral search
- ▶ Flexible GUI has adjustable zoom windows
- ▶ Peak search quickly locates signals of interest
- ▶ Waterfall plot with adjustable threshold
- ▶ Auto/manual tipping function
- ▶ “Shrink wrap” thresholds for waterfall and auto tipping

SPECIFICATIONS

Input frequency range	0.5 to 18 GHz (40 GHz optional)
System architecture	Fast tuning superhet and digitizer
Spectrum display	Display from 0.5 to 18 GHz with customizable zoom windows
	Waterfall plot available for each window
Tipping	Auto and manual tipping of external ELINT/ESM systems
System sweep rate	25 sweeps per second
SFDR	>48 dB
RF input	SMA female, 50 ohms, 2.5:1 VSWR
Internal reference	Contains highly stable 10 MHz ref oscillator
Ref input	Accepts 10 MHz external reference input, 0 dBm
Data interface	GigE LAN for display data, status, tipping
Inputs/outputs	All I/O is accessible via the rear panel
Dimensions	4U rack mount chassis (7" x 21" x 22")
Weight	32 lbs
Power	Universal AC power, 110-220 VAC, 50-400 Hz, <250 watts
Operating temperature	0 to +55°C

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