BAE SYSTEMS

RXR6332 Multichannel HF Receiver

Eclipse SIGINT Products

The **RXR6332** is a 3U VPX wideband dual-channel high-frequency direct-conversion receiver packaged in a rugged, conduction-cooled module. It is ideal for applications that require an open, standards-based solution to the reception of signals in the high-frequency spectrum.

The RXR6332 is a standard product offering in the R6000 series of signals intelligence (SIGINT) modules and integrated hardware subsystems. Eclipse has been delivering high-performance, open-standards based products to the SIGINT market for more than 25 years.

Key features and benefits

- Two HF receiver channels per 3U VPX module are digitally tunable from 100 kHz to 110 MHz with sub-Hz resolution for precise tuning
- Excellent tuning speed and spectral purity enables the detection of short duration signals in the presence of noise
- RF pre-selection filters on each input channel provide optimal performance in the presence of adjacent interfering signals
- Optional pre-selection by-pass mode presents the entire spectrum up to 110 MHz to the analog-to-digital converter for wideband search mode
- Each HF input channel is sampled by a corresponding analog-to-digital converter at 250 MS/sec with 16-bit resolution for high-dynamic range
- 32 narrowband digital down converter filters per high-frequency input channel support simultaneous narrowband and wideband operation
- N-channel coherent operation employing one to many receivers enables spatial processing applications, such as direction finding and beamforming
- Modular open-architecture design complies with VITA-46, -48, -49, -67, and emerging upper-level standards, such as SOSA and CMOSS, which are VITA standards based
- Slot compatible with the Eclipse RXR6322 VHF/UHF receiver in mechanical, electrical, and software interfaces providing flexibility to the system integrator when optimizing solutions for a given mission

RXR6332 specifications

Radio frequency (RF)

Frequency range	100 kHz to 110 MHz
Tune resolution	Sub-Hz in re-sampler direct digital controls
Input impedance	50 Ohms
Voltage standing wave ratio	Less than 2.5:1
Pre-selection	14 pre-selection filters
Maximum input level	+24 dBm
Gain	30 dB typical
LO re-radiation	< -90 dBm
Noise figure	16 dB maximum, 14 dB typical, 13 dB typical at maximum gain
In band of final IF (IIP3)	+ 15 dBm at 15 dB gain, + 25 dBm at max attenuation
Out of band	+30 dBm typical at 0 dB attenuation, two tone
Second-order intercept	+ 50 dBm min, +60 dBm typical

External reference

(Recommended minimum performance specifications)

Frequency	10 MHz +/- 5 PPM or better
Amplitude	0 dBm +/- 3 dB
Harmonics	-20 dBc maximum
Non-harmonic spurious	-80 dBc maximum
Source voltage standing wave ratio	1.5:1 max (50 Ohms)

Digital specifications

Wideband data format	16-bit real or 16-bit I&Q complex
Filtered narrowband	16-bit I&Q complex
Output sample data rate	Set by selected re-sampler (80, 40, 12.8 cMsps) Consult factory for options
IF bandwidths	500 Hz to 2 MHz (>2 MHz with reduction in number of available DDCs)
Wideband gain control modes	Attenuation range 45 dB with 1 dB steps
Gain control	Fast attack, slow decay, freeze, dump attack-freeze, manual
Signal memods	AM, FM, USB, LSB, CW, OOK u/a-law TDM output, FFT options
Delay memory	250 Mbytes/channel

Data and control interface

Control/status	PCIe or 1 Gig-E
Data plane	PCIe or 1 Gig-E
Sync input/output	Backplane daisy chain
Coherency	LO and timing distribution for coherent operation of multiple receivers (N channel)

Size, weight and power

VPX voltages required (standard)	3.3, 5, 12, -12 VDC
Power dissipation	44 Watts typical, 55 Watts maximum
Temperature	Operational from -20 to +70 degrees Celsius at module rails
Humidity	95 percent non-condensing
Size	3U-160 VPX 1 inch pitch
Weight	27 ounces

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