

Eclipse RF™ Products

RXT7306



The **RXT7306** is a quad-channel 3U-VPX wideband digital receiver/transmitter packaged in a rugged, conduction-cooled module. It is ideal for applications requiring high channel density, reliability, and performance at an affordable price.

These modules are designed to support multi-channel phase coherent applications and are suitable for scaling to large system configurations. They also provide an extensive set of features relevant to emerging multi-function and secure system architectures.

The RXT7306 is the first in the seventh generation of products from Eclipse. Eclipse has been delivering high-performance, open-standards based products to the commercial off-the-shelf market for more than 25 years. With 7000-series products, customers receive a flexible combination of RF and digital capabilities that span the spectrum of features necessary to meet emerging system requirements in a package that supports Modular Open Radio Frequency Architecture (MORA) and Sensor Open Systems Architecture (SOSA) standards.

Features and benefits

- Four simultaneous RF input channels per 3U VPX module support embedded systems optimized for size, weight, power, and cost.
- RF input channels are tunable between 2 MHz to 6 GHz covering the frequency bands typically used for voice, digital broadcast and wireless network applications.
- Transmit output channel is tunable from 2 MHz to 18 GHz and may be used for local boresight and test, or as a transmitter in an active system.
- Wideband instantaneous bandwidths up to 150MHz increase the collection of wide spread spectrum signals without channel stacking and post-processing.
- Built in narrow-band digital down converter functions filter and separate the signal of interest, while providing an optimal I&Q sample rate.
- Microsecond tune speed supports high speed scanning and collection of frequency agile transmitters.
- Ultra-low phase noise supports spatial processing and demodulation of higher order phase signals.
- Large Spur Free Dynamic Range (SFDR) enables the capture of extremely weak signals in the presence of strong in-band and out-of-band interference.
- Compliance with modular open standards such as SOSA, MORA and VITA-46, 48, 49.2 and 67 protects the customers' investment and prevents vendor-lock in.
- Available with a large Xilinx field programmable gate array (FPGA), and capable of supporting user-defined local functions, or a smaller FPGA, results in lower-cost applications.
- High-speed 100GbE interfaces simultaneously transport multi-channel wideband digital data and narrow-band streams.
- RF delay memory on each channel supports continuous capture and replay for further post-processing of signals and events of interest.

Receiver Specifications

Tuning range	2 MHz to 6 GHz
Tuning resolution	1 Hz
Tune speed	Consult factory
RF input impedance	50 Ohms
Instantaneous bandwidth	Up to 150 MHz (pre-selector limited in some lower bandwidths)
VSWR	< 2.5:1
Max input level	+24 dBm
Noise figure	14 dB typical, 16 dB maximum
Single tone SFDR	TBD
Third-order intermodulation (IMD3)	> 69 dBc
Number of RF receive channels	4 when ordered as receive-only; 2 when configured with single Tx option

Transmitter Specifications

Tuning range	2 MHz to 6 GHz
Step size	2 MHz
Switching time	Consult factory
Output power	-30 dBm to max 0 dBm
Modulation bandwidth 2 MHz to 6 GHz	100 MHz
Modulation bandwidth 6 GHz to 18 GHz	500 MHz
Spurious inside bandwidth	< -55 dBc
Spurious harmonics out-of-band	< -15 dBc

Phase noise

100 Hz	-70 dBc/Hz
1 kHz	-80 dBc/Hz
10 kHz	-80 dBc/Hz
100 kHz	-90 dBc/Hz
1 MHz	-110 dBc/Hz

For more information contact:

John Brickman
17111 Waterview Pkwy
Dallas, Texas 75252

T: 972 699 8580

E: John.brickman@baesystems.com

W: baesystems.com/eclipse

Cleared for open publication on **08/20**

Disclaimer and copyright

This document gives only a general description of the product(s) and service(s) and, except where expressly provided otherwise, shall not form any part of any contract. From time to time, changes may be made in the products or the conditions of supply.

BAE SYSTEMS is a registered trademark of BAE Systems plc.

©2020 BAE Systems. All rights reserved.

CS-20-C55

ES-C4ISR-081220-0151

Preliminary data, subject to change.