Xeta13 OEM

1.3 GHz ISM Serial

Software Defined Industrial Radio

The **Xeta13** OEM module is an extremely capable and flexible industrial Frequency Hopping Spread Spectrum (FHSS) and Digital Transmission System (DTS) software defined radio (SDR) supporting the 1350 to 1390 MHz frequency band. The **Xeta13** utilizes a XetaWave patented **Dual Decode Digital Architecture™** which offers significant receiver performance.

The **Xeta13** supports multiple modulation schemes and features. The **MultiSpeed** mode allows Endpoints operating at different RF data rates to communicate with a single Access Point to achieve optimal data throughput given the available channel size and RF environment.

The **Enhanced Multipoint (EMP)** mode provides an increase in throughput and a decrease in latency over traditional modes and against competitive products.

Key Features

High Speed Over-the-air data rates from 57 kbps to 5.3 Mbps plus higher throughput with **EMP**.

Dual Mode Frequency hopping and single channel operation.

Adjustable RF Output Power output up to 5 Watts (+37 dBm).

Network Types Point to Point, Point to Multipoint, Enhanced MultiPoint, Peer to Peer, and TDMA.

Selective Modulation Multiple MSK, PSK, and QAM modulations.

MultiSpeed Endpoints communicate at different RF data rates with Access Point.

Multi-Speed TDMA Offers multiple logical data channels with different speeds within a single radio.

Options Available with TDMA and a dual row 14-pin MM2 compatible header.

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Xeta13 OEM Specifications

Transmitter	ISM FHSS	ISM DTS
Frequency Range	1350 to 1390 MHz	
Output Power	10 to 5000 mW (10 to 37 dBm)	
Modulation	MSK, BPSK, QSPK, 8PSK, 16PSK, 16QAM, 32QAM, 64QAM	
Data Rate	57 to 5303 kbps	530 to 5303 kbps
Channel Bandwidth	77, 154, 207, 310, 600 & 1200 kHz	600 & 1200 kHz
Frequency Stability	1.0 ppm	
Range	70+ miles	30 miles

Receive sensitivity numbers are with FEC disabled. When enabled, sensitivity improves by 3 dBm.

Receiver	ISM					
	77 kHz Channel		154 kHz Channel		207 kHz Channel	
Modulation	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**
MSK	-112 dBm	57 kbps	-110 dBm	114 kbps	-109 dBm	153 kbps
	310 kHz Channel		600 kHz Channel		1200 kHz Channel	
Modulation	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**
MSK	-107 dBm	229 kbps				
BPSK			-98 dBm	530 kbps	-103 dBm	884 kbps
QPSK			-96 dBm	1061 kbps	-99dBm	1768 kbps
8PSK			-91 dBm	1591 kbps	-92 dBm	2651 kbps
16PSK					-82 dBm	3535 kbps
16QAM			-87 dBm	2121 kbps	-89 dBm	3535 kbps
32QAM			-81 dBm	2651 kbps	-81 dBm	4419 kbps
64 QAM			-76 dBm	3182 kbps	-76 dBm	5303 kbps

Xeta13 OEM Specifications

Power

Input Voltage	+4.5 to +7.5 Vdc (1W) +9.5 to 10 Vdc (5W)
Transmit Current	345 mA @ +7.5 Vdc (1W) 465 mA @ +10 Vdc (5W)
Receive Current	95 mA @ +7.5 Vdc
Idle Current	55 mA @ +7.5 Vdc

Environmental/Physical

Op. Temp.	-40°C to +75°C
Humidity	95% @ +40°C non-condensing
Safety	UL Class 1 Div 2
Dimensions	2.0” x 1.42” x 0.37” 2.0” x 2.0” x 0.37”
Weight	24 grams | 42 grams

Interfaces

Connector	14-pin | 24-pin Samtec Header
Data	Serial TTL | Up to 2 Mbps RS232 | Up to 921.6 Mbps
Control	Serial TTL | RS232 | 115.2 kbps
RF	MMCX | 50 Ohms

Functionality

Operating Modes	Point to Point, Point to MultiPoint, Enhanced MultiPoint, Peer to Peer, TDMA
Roles	Access Point, Endpoint, Repeater
Error Handling	CRC, FEC, Retransmit on error
Error Correction	Golay, Reed-Solomon
Data Encryption	128 & 256-bit AES Payload Data Encryption
RF Encryption	128-bit AES RF Overhead Encryption
Hop Patterns	10 Pseudo Random, 1 Pseudo Random Based on Network ID, 1 Secure
Secure Hop Pattern	128-bit AES Hop Pattern Determination
Repeater	Store-and-forward
MultiMaster	Synchronization of Collocated Access Points or Multiple Access Points within a Network
MultiSpeed	Up to 4 Data Rates within the Same Channel Bandwidth
Diagnostics	Network Scan, RF Ping, RF Throughput, RF Statistics

Xeta13 OEM Specifications

Ordering

XETA13-TORA	Board level OEM, TTL interface, 24-pin header, Straight MMCX, 2x1.4
XETA13-TORA-R	Board level OEM, TTL interface, 24-pin header, Right Angle MMCX, 2x1.4
XETA13-RORA	Board level OEM, RS232 interface, 24-pin header, Straight MMCX, 2x1.4
XETA13-TORA-TDMA	Board level OEM, TTL interface, 24-pin header, Straight MMCX, TDMA, 2x1.4
XETA13-TORA-RTDMA	Board level OEM, TTL interface, 24-pin header, Right Angle MMCX, TDMA, 2x1.4
XETA13-TORB	Board level OEM, TTL interface, 24-pin header, Straight MMCX, 2x2
XETA13-TORB-R	Board level OEM, TTL interface, 24-pin header, Right Angle MMCX, 2x2
XETA13-TORB-TDMA	Board level OEM, TTL interface, 24-pin header, Straight MMCX, TDMA, 2x2
XETA13-TORB-RTDMA	Board level OEM, TTL interface, 24-pin header, Right Angle MMCX, TDMA, 2x2

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