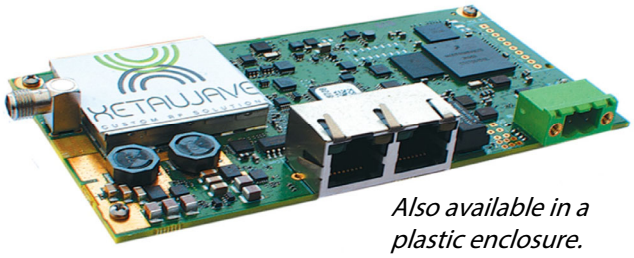
Xeta9x

900 MHz Serial Software Defined Industrial Radio



Also available in a plastic enclosure.

The **Xeta9x** radio is an extremely capable, flexible, low cost industrial Frequency Hopping Spread Spectrum (FHSS) and Digital Transmission System (DTS) 900 MHz software defined radio (SDR). The **Xeta9x** is a Serial only radio available as a board level version or in a plastic enclosure.

The Xeta9x utilizes a XetaWave patented **Dual Decode Digital Architecture™** that offers significant receiver performance. The Xeta9x also supports multiple modulation schemes and MultiSpeed MultiPoint™ that allows End Points to selectively switch transfer rates with an Access Point to achieve optimal data throughput given the available channel size and RF environment.

All Xeta9 radios are over-the-air compatible with each other and XetaWave's seamless serial mode allows serial and Ethernet End Points to simultaneously communicate with Ethernet Access Points. The Xeta9x radio also **supports compatibility with MDS TransNET™** master and repeater radios.

Key Features

High Speed Over-the-air data transfer rates from 57 kbps to 5.3 Mbps plus higher throughput in **XetaEMP** mode.

Adjustable RF Output RF power output up to 1 Watt (+30 dBm).

Dual Mode Frequency hopping and single channel operations.

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

Selective Modulation Multiple MSK, FSK, PSK, and QAM modulations.

MultiSpeed Multipoint Enables Access Points to communicate with Endpoints operating at different RF Data Rates.

Compatibility Over-the-air compatible with GE MDS TransNET repeater and master radios.

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Xeta9x Specifications

Transmitter	ISM FHSS	ISM DSS
Frequency Range	902 to 928 MHz	
Output Power	10 to 1000 mW (non-QAM) and 250 mW (QAM)	
Modulation	MSK, 2FSK, 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, 900 & 1200 kHz
Frequency Stability	1.0 ppm	
Range	70+ miles	

Receive sensitivity numbers below are with FEC disabled. With FEC enabled, these typically improve by 3 dBm.

ISM Receiver	77 kHz Channel		154 kHz Channel		207 kHz Channel	
Modulation	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**
MSK	-110 dBm	57 kbps	-107 dBm	114 kbps	-106 dBm	153 kbps

	310 kHz Channel		600 kHz Channel		1200 kHz Channel	
Modulation	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**
MSK	-105 dBm	229 kbps				
BPSK			-100 dBm	530 kbps	-99 dBm	884 kbps
QPSK			-98 dBm	1061 kbps	-97 dBm	1768 kbps
8PSK			-93 dBm	1591 kbps	-92 dBm	2651 kbps
16PSK					-85 dBm	3535 kbps
16QAM			-89 dBm	2121 kbps	-87 dBm	3535 kbps
32QAM			-86 dBm	2651 kbps	-83 dBm	4419 kbps
64 QAM			-76 dBm	3182 kbps	-76 dBm	5303 kbps

	900 kHz Channel	
Modulation	**Sensitivity**	**Data Rate**
2FSK	-100 dBm	663 kbps

RF Selectivity	50 dB

**** Frequency Range may vary by Country, for example***

Australia, Peru	916-928 MHz
Brazil	902-907 & 916-928 MHz

Xeta9x Specifications

Power

Transmit	< 204 mA@ +12 Vdc
Receive	< 75 mA@ +12 Vdc
Idle	< 47 mA @ +12 Vdc

Environmental/Physical

Op. Temperature	-40°C to +85°C
Humidity	95% @ +40°C non-condensing
Safety	UL Class 1 Div 2
Dimensions (LxWxH)	5.1" x 3.2" x 1.0" (board level)
Weight	170 grams

Interfaces

Power Connector	2-pin Phoenix / +10 to +32 Vdc
Serial	1 x RJ45 / up to 1Mbps / RS232/422/485
	1 x RJ45 / 115.2 kbps / RS232
FGR (optional)	10-pin FGR compatible
RF Connector	SMA / 50 Ohms

Functionality

Operating Modes	Point to Point, Point to MultiPoint, Enhanced MultiPoint, Peer to Peer
Roles	Access Point, Endpoint, Repeater
Compatibility Modes	As an Endpoint compatible with MDS TransNET
Repeater	Store-and-forward
Error Handling	CRC, FEC, Retransmit on error
Error Correction	Golay, Small Block
Data Encryption	128 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
MultiSpeed	Up to 4 Data Rates within the Same Channel Bandwidth
Diagnostics	Neighbor List, RF Ping, RF Throughput, RF Statistics, RF Scan

Ordering

XETA9X-10INNFC	Board level, 1 Serial Data & 1 Serial Config
XETA9X-10INNFC-FGR	Board level, 1 Serial Data & 1 Serial Config, FGR 10-pin connector
XETA9X-10INPFC	Plastic enclosed, 1 Serial Data & 1 Serial Config

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Specifications subject to change without notice.

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