Xeta9 OEM

900 MHz ISM Serial

Software Defined Industrial Radio

The **Xeta9** 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 unlicensed 900 MHz frequency band. The **Xeta9** OEM module utilizes a XetaWave patented **Dual Decode Digital Architecture™** which offers significant receiver performance.

The **Xeta9** 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.

All **Xeta9** OEM modules are backwards compatible and over-the-air compatible with the XetaWave uTasker, Linux, Debian, and XetaEdge families. XetaWave's seamless serial mode allows serial and Ethernet Endpoints to simultaneously communicate with an Ethernet Access Point. The **Xeta9** OEM modules also support compatibility with the **MDS TransNet™** and **TransNext™** master radios.

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 1 Watt (+30 dBm) or 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 TTL or RS232 serial interface, RF power output to 5 Watts (+37 dBm), TDMA, and a dual row 14-pin MM2 compatible header.

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Xeta9 OEM Specifications

Transmitter	ISM FHSS	ISM DTS
Frequency Range	902 to 928 MHz	
Output Power	10 to 1000/5000 mW (10 to 30/40 dBm)	
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, 900 & 1200 kHz	600, 900 & 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	-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

Xeta9 OEM Specifications

Power

Input Voltage	+4.5 to +7.5 Vdc (1W)
	+9.5 to +10 Vdc (5W)
Transmit Current	300 mA @ +7.5 Vdc (1W)
	575 mA @ +10 Vdc (5W)
Receive Current	100 mA @ +7.5 Vdc
Idle Current	90 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 1.45" x 0.37"
Weight	24 grams

Interfaces

Connector	14-pin | 24-pin Samtec Header
Data	Serial TTL | Up to 2 Mbps
	RS232 | Up to 921.6 kbps
Control	Serial TTL | 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
Compatibility	As an Endpoint compatible with the MDS TransNET and TransNEXT
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

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CUSTOM RF SOLUTIONS

Specifications subject to change without notice. 2.2025

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Xeta9 OEM Specifications

Ordering

XETA9-TIFC	Board level OEM, TTL interface, 24-pin header, 1W
XETA9-RIFC	Board level OEM, RS232 interface, 24-pin header, 1W
XETA9-TIFC-TDMA	Board level OEM, TTL interface, 24-pin header, TDMA, 1W
XETA9-TIRC-TDMA5W	Board level OEM, TTL interface, 24-pin header, TDMA, 5W
XETA9-TIRC-TDMA5WMM2	Board level OEM, TTL interface, 14-pin MM2 header, TDMA, 5W
XETA9-RIRC-TDMA5W	Board level OEM, RS232 interface, 24-pin header, TDMA, 5W

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