Xeta9 Serial

900 MHz Serial
Software Defined Industrial Radio

The **Xeta9 Serial radio** is an extremely capable and flexible industrial Single Channel, Frequency Hopping Spread Spectrum (FHSS), and Digital Transmission System (DTS) software defined radio (SDR) covering both the licensed and/or unlicensed 900 MHz frequency bands. The Xeta9 Serial is offered in a metal or plastic enclosure.

The Xeta9 Serial radio utilizes a XetaWave patented **Dual Decode Digital Architecture™** that offers significant receiver performance. Like all XetaWave radios, the Xeta9 Serial radio 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 Xeta9 Serial radios also **supports compatibility with MDS 9710/9790, SD9, and TransNET™** master and repeater radios.

Key Features

High Speed Over-the-air data rates from 10 kbps to 5.3 Mbps plus higher throughput in **XetaEMP** mode.

Adjustable RF Output Power output up to 1 Watt (+30 dBm) for ISM and 4 Watts (+36 dBm) for MAS.

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 Access Point communicates with Endpoints operating at different RF data rates.

Bands 902 to 928 MHz ISM and 928 to 960 MHz MAS or ISM only.

Compatibility Over-the-air compatible with GE MDS 9710/9790, SD9, and TransNET repeaters and master radios.

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Xeta9 Debian Specifications

Transmitter	ISM FHSS	ISM DTS
Frequency Range	902 to 928 MHz	
Output Power	10 to 1000 mW (10 to 30 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 below are with FEC disabled. With FEC enabled, these typically improve 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 Debian Specifications

Transmitter	MAS
Frequency Range	928 to 960 MHz
Output Power	10 to 4000 mW (10 to 36 dBm)
Modulation	MSK, 4FSK, QSPK, 8PSK, 16QAM, 32QAM, 64QAM
Data Rate	10 to 1209 kbps
Channel Bandwidth	12.5, 25, and 50 kHz (100, 200, & 250 kHz available upon request)
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.

Receiver	MAS					
	12.5 kHz Channel		25 kHz Channel		50 kHz Channel	
Modulation	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**	**Sensitivity**	**Data Rate**
MSK	-115 dBm	10 kbps	-114 dBm	19 kbps	-114 dBm	39 kbps
4FSK	-108 dBm	19 kbps	-111 dBm	39 kbps		
QPSK	-104 dBm	23 kbps	-107 dBm	36 kbps	-107 dBm	71 kbps
8PSK	-100 dBm	34 kbps	-101 dBm	52 kbps	-101 dBm	101 kbps
16QAM	-95 dBm	45 kbps	-98 dBm	70 kbps	-98 dBm	137 kbps
32QAM	-91 dBm	57 kbps	-95 dBm	87 kbps	-95 dBm	175 kbps
64 QAM	-90 dBm	68 kbps	-89 dBm	105 kbps	-89 dBm	210 kbps
RF Selectivity	33 dB		30 dB		30 dB	

Xeta9 Serial Specifications

Power

Transmit	235 mA (ISM) & 395 mA (MAS) @ +12 Vdc
Receive	75 mA @ +12 Vdc
Idle	47 mA @ +12 Vdc

Interfaces

Power	2-pin Phoenix / +10 to +32 Vdc
Date	1 x RJ45 / up to 1Mbps / RS232/422/485
Control	1 x RJ45 / 115.2 kbps / RS232
RF	TNC / 50 Ohms

Environmental/Physical

Op. Temperature	-40°C to +60°C
Humidity	95% @ +40°C non-condensing
Safety	UL Class 1 Div 2
Dimensions (L x W x H)	6.62" x 3.45" x 1.83"
Weight	700 grams

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 9710/9790, SD9, and TransNET
Error Handling	CRC, FEC, Retransmit on error
Error Correction	Golay, Small Block, Reed-Solomon
Data Encryption	128 & 256-bit AES Payload Data Encryption
RF Encryption	128-bit AES RF Overhead Encryption
Repeater	Store-and-forward
MultiSpeed	Up to 4 Data Rates within the Same Channel Bandwidth
Diagnostics	Network Scan, RF Ping, RF Throughput, RF Statistics

Ordering

XETA9-10MMNFC	Metal Enclosed, 2 Serial
XETA9-10IPNFC	Plastic Enclosed, 2 Serial, ISM Only

Specifications subject to change without notice.

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