

400 MHz MAS Serial Software Defined Industrial Radio

The **Xeta4** Serial radio is an extremely capable and flexible industrial software defined radio (SDR) supporting the licensed 406 to 470 MHz frequency band. The **Xeta4** utilizes a XetaWave **Dual Decode Digital Architecture** which offers significant receiver performance.

The **Xeta4** 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 **Xeta4** Serial radios 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 **Xeta4** also supports compatibility with the **MDS 4710/4790** and **SD4** master radios.

Key Features

High Speed Over-the-air data rates from 5 kbps to 216 kbps plus higher throughput when operating in **EMP** mode.

Dual Mode Duplex and simplex operation.

Adjustable RF Output Power output up to 10 Watts (+40 dBm).

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

Selective Modulation Multiple MSK, PSK, and QAM modulations.

Secure Over-the-air data encryption using 128-bit and 256-bit AES.

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

EMP An enhanced Point to MultiPoint protocol with higher throughput and lower latency.

Xeta4 Serial Specifications

Transmitter	FCC	IC/FCC	ETSI/RED
Frequency Range	450 to 470 MHz	406 to 430 & 450 to 470 MHz	406 to 470 MHz
Output Power	10 to 8000/10000 mW (10 to 39/40 dBm)		
Modulation	MSK, QSPK, 8PSK, 16QAM, 32QAM, 64QAM		
Data Rate	5 to 216 kbps		5 to 61 kbps
Channel Bandwidth	6.25, 12.5, 25 & 50 kHz		6.25 & 12.5 kHz
Frequency Stability	1.0 ppm		
Range	70+ miles		

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

Receiver	6.25 kHz Channel		12.5 kHz Channel		25 kHz Channel	
	Sensitivity	Data Rate	Sensitivity	Data Rate	Sensitivity	Data Rate
MSK	-112 dBm	5 kbps	-115 dBm	10 kbps	-114 dBm	18 kbps
QPSK			-104 dBm	20 kbps	-107 dBm	29 kbps
8PSK			-100 dBm	31 kbps	-101 dBm	44 kbps
16QAM			-95 dBm	41 kbps	-98 dBm	59 kbps
32QAM			-91 dBm	51 kbps	-95 dBm	76 kbps
64 QAM			-90 dBm	61 kbps	-89 dBm	91 kbps

50 kHz Channel

Modulation	Sensitivity	Data Rate
MSK		43 kbps
QPSK		72 kbps
8PSK		105 kbps
16QAM		144 kbps
32QAM		180 kbps
64 QAM		216 kbps

Xeta4 Serial Specifications

Power

Transmit	945 mA @ +12 Vdc
Receive	100 mA @ +12 Vdc
Idle	85 mA @ +12 Vdc

Interfaces

Power	2-pin Phoenix +12 to +32 Vdc
Data	1x RJ45 up to 1Mbps RS232/422/485
Control/Diag	1x RJ45 115.2 kbps RS232
RF	TNC 50 Ohms

Environmental/Physical

Op. Temp.	-40°C to +60°C
Humidity	95% @ +40°C non-condensing
Safety	UL Class 1 Div 2
Dimensions	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 4710/4790 and SD4
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

XETA4-10MMNFB	Metal Enclosed, 2 Serial, 406-430 & 450-470 MHz, MAS
XETA4B-10MMNFB	Metal Enclosed, 2 Serial, 450-470 MHz, MAS
XETA4-10MMNEB	Metal Enclosed, 2 Serial, 406-430 & 450-470 MHz, ETSI

