

## *200 MHz Serial Software Defined Industrial Radio*

The **Xeta2 serial** radio is an extremely capable and flexible industrial software defined radio covering the 217 to 220 MHz frequency band. The **Xeta2** is based on the XetaWave patented **Dual Decode Digital Architecture™** that offers significant receiver performance.

The **Xeta2** supports multiple modulation schemes and features that can selectively switch to achieve optimal data throughput given the available channel size and environmental noise.

The **Enhanced MultiPoint, XetaEMP**, mode provides an increase in throughput and decrease in latency over our standard modes and against competitive products.

All Xeta2 radios are over-the-air compatible and the Xeta1 also **supports compatibility with MDS 2710 and SD2** master and repeater radios.



## Key Features

**High Speed** Over-the-air data transfer rates from 9 to 960 kbps plus higher throughput with payload compression and in the **XetaEMP** mode.

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

**Dual Mode** Duplex and single channel operations.

**Network Types** Point to Point, Point to MultiPoint, CSMA peer to peer, Enhanced MultiPoint (**XetaEMP**).

**Adjustable RF Output** 10 mW to 5 Watts (+10 to +37 dBm) RF output.

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

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

**XetaEMP** An enhanced Point to MultiPoint protocol with increased throughput and decreased latency.

# Xeta2 Serial Specifications

Transmitter	Part 90	Part 90 Subpart T	Part 80
Frequency Range	217 to 220 MHz	220 to 222 MHz	217 to 218 & 219 to 220 MHz
Output Power	10 to 5000 mW (10 to 37 dBm)		
Modulation	MSK, QSPK, 8PSK, 16QAM, 32QAM, 64QAM		
Data Rate	10 to 216 kbps	9 to 480 kbps	153 to 960 kbps
Channel Bandwidth	12.5, 25 & 50 kHz	15, 50 & 100 kHz	200 & 250 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.

Receiver Part 90	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	18 kbps	-109 dBm	43 kbps
QPSK	-113 dBm	17 kbps	-112 dBm	29 kbps	-106 dBm	72 kbps
8PSK	-107 dBm	26 kbps	-106 dBm	44 kbps	-103 dBm	105 kbps
16QAM	-104 dBm	36 kbps	-103 dBm	59 kbps	-100 dBm	144 kbps
32QAM	-102 dBm	45 kbps	-100 dBm	76 kbps	-97 dBm	180 kbps
64QAM	-92 dBm	54 kbps	-89 dBm	91 kbps	-85 dBm	216 kbps

Receiver Part 90 Subpart T	15 kHz Channel		50 kHz Channel		100 kHz Channel	
Modulation	Sensitivity	Data Rate	Sensitivity	Data Rate	Sensitivity	Data Rate
MSK	-115 dBm	9 kbps	-105 dBm	36 kbps	-105 dBm	76 kbps
QPSK	-110 dBm	19 kbps	-101 dBm	59 kbps	-99 dBm	160 kbps
8PSK	-95 dBm	28 kbps	-95 dBm	88 kbps	-93 dBm	240 kbps
16QAM	-90 dBm	37 kbps	-88 dBm	117 kbps	-89 dBm	320 kbps
32QAM	-88 dBm	47 kbps	-85 dBm	146 kbps	-86 dBm	400 kbps
64 QAM	-84 dBm	56 kbps	-78 dBm	176 kbps	-80 dBm	480 kbps

Receiver Part 80	200 kHz Channel		250 kHz Channel	
Modulation	Sensitivity	Data Rate	Sensitivity	Data Rate
MSK	-102 dBm	153kbps	-102 dBm	194 kbps
QPSK	-100 dBm	320 kbps		
8PSK	-89 dBm	480 kbps		
16QAM	-88 dBm	640 kbps		
32QAM	-86 dBm	800 kbps		
64 QAM	-76 dBm	960 kbps		

# Xeta2 Serial Specifications

## Power

Transmit	460 mA (2W) & 620 mA (5W) @ +12 Vdc
Receive	300 mA @ +12 Vdc
Idle	176 mA @ +12 Vdc

## Interfaces

Power	2-pin Phoenix / +12 to +32 Vdc
Date	RJ45 / up to 1Mbps / RS232/422/485
Control	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 (LxWxH)	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 2710 and SD2
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
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

## Ordering

XETA2-10MMNFB	Metal Enclosed, 2 Serial
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