

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.

MultiSpeed MultiPoint™ mode enables Endpoints operating at different over-the-air data transfer rates to communicate with a single Access Point over the same network. The **Enhanced MultiPoint, XetaEMP**, mode provides an increase in throughput and decrease in latency over our standard modes and against competitive products.



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 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 | | |

Part 90

| Receiver | 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 |

Part 90 Subpart T

| Receiver | 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 |

Part 80

| Receiver | 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 |
| 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 |
|---------------|--------------------------|