Xeta2 Series 217-222 MHz *10 – 800 kbps*

Licensed Software Defined Radio

The **Xeta2** series is built around a licensed 217-222 MHz software defined radio that features dynamic modulation, flexible configuration options and multi-layer Ethernet capabilities including VLAN and Routing.

The **Xeta2** selectively switches modulation based on link quality and environmental noise. This dynamic modulation allows for RF data rates from 10 kbps – 800 kbps using 12.5 – 250 kHz channel sizes and power output from 50 – 5000 mW (17 – 37 dBm).

With built-in support for **MultiSpeed Multipoint™** the **Xeta2** enables both high and low speed remotes to operate on the same network with a single Access Point.

This new capability allows for unparalleled flexibility in network design. Remotes with shorter links can operate at faster data rates, maximizing system performance, while remotes with longer or more challenging links can operate at slower data rates, maximizing system flexibility.

Lastly, based on its patent pending **Dual Decode Digital Architecture™**, XetaWave's technology platform offers performance second to none in the commercial market today.

Technology Differentiators

FCC Part 80 & Part 90 Operation 217-222 MHz.

High Speed 10 – 800 kbps over-the-air RF data rates.

Dual Radio Support for optional 2nd radio module (of any Xeta Series) in a single enclosure provides enhanced repeater functionality, higher throughput rates and multi-band/multi-frequency operations.

Link Adaptation Dynamic data rate automatically adapts communication parameters to achieve optimal link performance.

Multi-Speed Multi-point Unique to XetaWave, a *single* radio can have multi-logical data channels with different speeds, providing configuration and installation flexibility where long range or high speed can be prioritized.

Ethernet Switch The **Xeta2** acts like a switch, making more efficient use of RF bandwidth when compared to other "bridge" products. Two independent Ethernet ports and up to two RF Modules, each with full VLAN support, allow multiple logical networks to exist within the same physical system.

IP Routing Layer 3 Routing provides improved Ethernet traffic management for slower narrowband links, making the most efficient use of RF link bandwidth.

Seamless Serial integration for hybrid networks utilizing both Ethernet and Serial devices.

Configuration Management HTTP/HTTPS Web UI, text based configuration files and CLI (accessed via serial interface or SSH).

Onboard Diagnostics Built in diagnostic support with tools such as Neighbor List, RF Ping, RF Throughput and RF Statistics.

SNMP V1/V2, V3 support for network management.

5 Watts Adjustable power output from 50 mW – 5 W (17 – 37 dBm)

Industry Applications

Oil & Gas

- Bandwidth for expanding IP-based control systems.
- Unified serial and IP/Ethernet infrastructure
- Licensed product where 217 – 222 MHz licenses are available.
- Channel size selectivity to meet various global frequency deployment criteria.

Energy

- 100% testing over full -40°C to +60°C operating range ensures reliable communications across the harshest environments.

Industrial Controls

- Optional I/O allows seamless integration of ModBus RTU, ModBus TCP, and DNP3 protocols into a unified wireless network.

Electric Power

- Distribution Automation
- Substation Automation
- SCADA
- Grid Sensors
- Voltage Optimization

Water & Wastewater

- Higher data rates allows more frequent polling and the ability to add compressed video monitoring in critical locations.
- Standard AES 256 bit encryption support secures critical communications channels from unauthorized use and interception.

XETAWAVE
CUSTOM RF SOLUTIONS

Technical Specifications

Transmitter

Frequency Range	-	217-222 MHz
Output Power	-	50 – 5000 mW (17 – 37 dBm) limited to 2W Part 90 217-220MHz) Step size 10 mW
Modulations	-	MSK, QPSK, 8PSK,16QAM, 32QAM
RF Data Rate	-	10 – 800 kbps
Occupied Bandwidth	-	12.5 / 15 / 25 / 50 / 200 / 250 kHz
Output Impedance	-	50 Ohms
Range	-	70+ miles

Receiver

217-220 MHz Part 90

	12.5 kHz	25 kHz	50 kHz
MSK	-116 @ 10 kbps	-113 @ 18 kbps	-109 @ 43 kbps
QPSK	-111 @ 17 kbps	-109 @ 29 kbps	-105 @ 72 kbps
8PSK	-106 @ 26 kbps	-103 @ 44 kbps	-100 @ 105 kbps
16QAM	-102 @ 36 kbps	-100 @ 59 kbps	- 96 @ 144 kbps
32QAM	- 99 @ 45 kbps	- 96 @ 76 kbps	- 92 @ 180 kbps

220-222 MHz Part 90, Subpart T

	15 kHz	50 kHz
MSK	-115 @ 10 kbps	-109 @ 36 kbps
QPSK	-102 @ 19 kbps	-101 @ 59 kbps
8PSK	- 96 @ 28 kbps	- 95 @ 88 kbps
16QAM	- 92 @ 37 kbps	- 88 @ 117 kbps
32QAM	- 89 @ 47 kbps	- 85 @ 146 kbps

217-218 / 219-220 MHz Part 80

	200 kHz	250 kHz
MSK		-105 @ 194 kbps
QPSK	- 98 @ 320 kbps	
8PSK	- 92 @ 480 kbps	
16QAM	- 88 @ 640 kbps	
32QAM	- 85 @ 800 kbps	

Data Transmission

Error Detection	-	Up to 32-bit CRC, Retransmit on Error	Data Encryption	-	AES128 / AES 256
Data Interfaces	-	2 x 10/100 Mbps Ethernet 2 x RS232/422/485	Data Connector	-	4 x RJ45
Serial Interface Speed	-	up to 230.4 kbps			

Power / Physical

Operating Voltage - 12 – 32 VDC with reverse polarity protection to 32 VDC

Power Consumption (mA) @ 12VDC (peak)

• **Xeta2-EL** (0.1/1/2/5 Watts)	- Transmit: 750/1100/1400/2100 mA	Receive: 280 mA	Idle: 200 mA
• **Xeta2x2-EL** (0.1/1/2/5 Watts)	- Transmit: 1500/2200/2800/4200 mA	Receive: 430 mA	Idle: 280 mA

RF Connector	-	Enclosed: TNC	Module: MMCX
Dimensions (L x W x H)	-	Enclosed:	6.625 " x 3.45 " x 1.835 " / 16.83 cm x 8.76 cm x 4.66 cm
Weight	-	**Xeta2-EL** 1.54 lbs / 0.70 kg, **Xeta2x2-EL** 1.61 lbs / 0.73 kg,	

Environmental

Operating Temp Range	-	-40°C to +60°C | *-55°C available*
Humidity	-	95% operating humidity @ 40°C non-condensing

UL Class 1 Div 2 pending

XETAWAVE
CUSTOM RF SOLUTIONS

Xeta2 Series

Xeta2-EL

- Single Radio Module
- 10 – 800 kbps Data Rates with 5 W Max RF Xmit Power
- Linux Operating System
- HTTP/HTTPS
- VLANs
- IP Routing
- 2 x 10/100 Mbps Ethernet Ports
- 2 x RS232/422/485 Serial Ports
- TCP Terminal Server, TCP Terminal Client, UDP Terminal and Modbus RTU Server capabilities
- IO support
- Management; UI, Configuration Files, Diagnostics and SNMP

Dimensions (L x W x H): 6.625 " x 3.45 " x 1.835 " / 16.83 cm x 8.76 cm x 4.66 cm
Weight 1.54 lbs / 700 grams

Xeta2x2-EL

- Dual Radio Module – can be installed as a Repeater or Dual-AP
- Frequency Diversity – Second radio module can be Xeta1, 2, 4, 7, 9 or 24
- 10 – 91 kbps Data Rates with 5 W Max RF Xmit Power
- Linux Operating System
- HTTP/HTTPS
- VLANs
- IP Routing1,
- Back to Back Repeater Capabilities
- 2 x 10/100 Mbps Ethernet Ports
- 2 x RS232/422/485 Serial Ports
- TCP Terminal Server, TCP Terminal Client, UDP Terminal and Modbus RTU Server capabilities
- IO support
- Management; UI, Configuration Files, Diagnostics and SNMP

Dimensions (L x W x H): 6.625 " x 3.45 " x 1.835 " / 16.83 cm x 8.76 cm x 4.66 cm
Weight 1.61 lbs / 730 grams

Contact

For more information or to schedule a demo, please contact us at **408.642.5458** or **sale@elevatewireless.com**

Distributed by:
Elevate Wireless
Ph.: 408-642-5458
Email: sales@elevatewireless.com

XetaWave provides an industry leading 3 year warranty on its products.

All XetaWave radios are 100% designed, manufactured, and tested at its headquarters in Louisville, Colorado, USA.