Xeta4-FCC Series 400 MHz
10 kbps – 57 kbps

Licensed Software Defined Radio for North American FCC and IC Applications

The **Xeta4** is a licensed dual band 406 – 430 / 450 – 470 MHz software defined radio that features **Dynamic Modulation**, flexible configuration options and multi-layer Ethernet capabilities including VLAN and Routing.

The **Xeta4** selectively switches modulation based on link quality and environmental noise.

For FCC operation, this Dynamic Modulation allows for data rates from 10 kbps – 57 kbps in the licensed 406 – 430 / 450 – 470 MHz bands using a 12.5 kHz channel and power output from 50 – 8000 mW (17 – 39 dBm).

With built-in support for **MultiSpeed MultiPoint™** the **Xeta4** 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 where the network isn't compromised by the longest or weakest link.

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

High Speed 10 kbps – 57 kbps over-the-air data rates. XetaWave's proprietary DSM technology offers the industry's highest data rate in a 12.5 kHz channel.

Dual Band 406 – 430 / 450 – 470 MHz with FCC and IC compliance support a wide range of licensed operation in a single radio.

Dual Radio Support for optional 2nd RF 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 **Xeta4** acts like a switch, making 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.

Serial Services Enables integration of hybrid networks utilizing both Ethernet and legacy Serial devices through TCP Terminal Server, TCP Terminal Client, UDP Terminal, and Modbus RTU Server capabilities.

IO Services Enables integration of Digital / Analog inputs and outputs with control and monitoring via Modbus TCP with ASCII/RTU support.

Configuration Management With text-based configuration files and dedicated CLI, the **Xeta4** offers users the ability to manage radio configurations more efficiently.

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

8 Watts Adjustable power output from 50 mW – 8 W (17 – 39 dBm)

Industry Applications

Oil & Gas

- Bandwidth for expanding IP-based control systems.
- Unified serial and IP/Ethernet infrastructure.
- Licensed product where 406 – 430 / 450 – 470 MHz licenses are available.
- Custom channel sizes to meet various global frequency deployment criteria.

Energy

- 100% testing over full -40°C to +75°C operating range ensures reliable communications across the harshest environments. *Contact XetaWave for lower temperature operation.*

Industrial Controls

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

  ** Xeta4 seamlessly passes DNP3 only.*

Electric Power

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

Water & Wastewater

- Higher data rates allows more frequent polling.
- Standard AES 256 bit encryption support secures critical communications channels from unauthorized use and interception.

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Technical Specifications – North American FCC & IC Applications

Transmitter

Frequency Range	-	406 – 430 / 450 – 470 MHz
Output Power	-	50 – 8000 mW (17 – 39 dBm)
Modulations	-	MSK, QPSK, 8PSK,16QAM, 32QAM
RF Data Rate	-	10 kbps – 57 kbps
Occupied Bandwidth	-	12.5 kHz (**25 kHz, 50 kHz and other custom channel sizes available to meet local regulations**)
Frequency Stability	-	1.0 ppm
Duty Cycle	-	Continuous
Output Impedance	-	50 Ohms
Range	-	70+ miles

Receiver

Sensitivity - 12.5 kHz

MSK	-116	@	10 kbps
QPSK	-104	@	23 kbps
8PSK	-100	@	34 kbps
16QAM	-106	@	45 kbps
32QAM	-93	@	57 kbps

For European applications including ETSI and the new Radio Equipment Directive (RED), please refer to the Xeta4-RED Series Data Sheet.

Data Transmission

Error Detection	-	Up to 32-bit CRC, Retransmit on Error	Data Encryption[1]	-	AES128 / AES 256
Data Interfaces[1]	-	2 x 10/100 Mbps Ethernet 2 x RS232/422/485	Data Connector[1]	-	4 x RJ45
Serial Interface Speed[1]	-	up to 230.4 kbps			

[1] *Only applies to fully enclosed products; does not apply to the Xeta4m-T RF Module*

Power / Physical

Operating Voltage	-	10 – 32 VDC with reverse polarity protection to 32 VDC		
Power Consumption (mA) @ 12VDC (Avg)				
• **Xeta4-EL** (1W/8W)	-	Transmit: 562 / 945 mA	Receive: 266 / 430 mA	Idle: 194 / 345 mA
• **Xeta4x4-EL** (1W/8W)	-	Transmit: 611 / 1145 mA	Receive: 380 / 1108 mA	Idle: 215 / 387 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 Module: 2.0 " x 2.0 " x 0.37 " / 5.1 cm x 5.1 cm x 0.94 cm		
Weight	-	**Xeta4-EL** 1.54 lbs / 0.70 kg, **Xeta4x4-EL** 1.61 lbs / 0.73 kg, **Xeta4m-T** 0.06 lbs / 30 grams		

Environmental

Operating Temp Range	-	-40°C to +75°C. *Contact XetaWave for lower temperature operation.*
Humidity	-	95% operating humidity @ 40°C non-condensing.

UL Class 1 Div 2 c UL us approved

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Xeta4 Series

Xeta4-EL

- Single RF Module
- Dual Band; 406 – 430 / 450 – 470 MHz
- 10 kbps – 57 kbps Data Rates with 8 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 for DI1 and External Trigger input for MMS
- Management; 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

Xeta4x4-EL

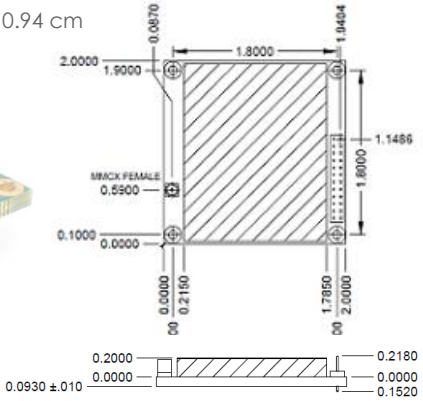
- Dual RF Module – can be installed as a Repeater or dual-AP
- Dual Band; 406 – 430 / 450 – 470 MHz
- Frequency Diversity – Second RF Module can be Xeta4, 9, 24 etc.
- 10 kbps – 57 kbps Data Rates with 8 W Max RF Xmit Power
- Linux Operating System
- HTTP/HTTPS
- VLANs
- IP Routing
- Back to Back Repeater 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 for DI1 and External Trigger input for **MMS**
- Management; 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

Xeta4m-T

- OEM RF Module only
- Dual Band; 406 – 430 / 450 – 470 MHz
- 12 VDC ± 0.5 V
- CMOS / RS232 Interface
- Transmit Current <1.0 A @ 12 VDC for 1 W RF
- Transmit Current <4.0 A @ 12 VDC for 8 W RF
- Receive Current <275 mA @ 12 VDC for 1 W RF
- Idle Current <150 mA @ 12 VDC
- Sleep Current <30 mA @ 12 VDC
- Serial Interface Speed 2 Mbps CMOS / 1 Mbps RS232
- 24-pin Samtec MTMM-112-05-L-D-159 power/data connector
- MMCX RF connector

Dimensions (L x W x H) 2.0 " x 2.0 " x 0.37 " / 5.1 cm x 5.1 cm x 0.94 cm
Weight 0.06 lbs / 30 grams



Contact

For more information or to schedule a demo, please contact us at **303.447.2745** or **sales@xetawave.com**

XetaWave is the ideal partner for the deployment of wireless technologies that are proven and lead the industry in performance, functionality and reliability.

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.