Xeta24 Series 2.4 GHz
57 *kbps – 4.4 Mbps*

XETAWAVE CUSTOM RF SOLUTIONS

License Free Software Defined Radio

The **Xeta24** series is a license free 2.402 – 2.478 GHz software defined radio that features **Dynamic Modulation**, flexible configuration options, and VLAN capabilities.

The **Xeta24** selectively switches modulation based on link quality and environmental noise. This **Dynamic Modulation** allows for RF data rates from 57 kbps – 4.4 Mbps in the unlicensed ISM band using 76 kHz – 1.2 MHz channel sizes and power output from 50 mW – 1W (17 – 30 dBm).

With built-in support for **MultiSpeed MultiPoint™** networks, the **Xeta24** enables both high and low speed remotes to operate on the same network with a single access point. This new capability empowers wireless network planners to add video cameras and other higher data-rate monitoring systems to their SCADA infrastructure without the need to build separate radio networks for these devices.

Multi-Master Sync (MMS) network synchronization precisely controls the transmission timing within a multiple Master network to eliminate self-interference.

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 57 kbps – 4.4 Mbps over-the-air RF data rates. XetWave's proprietary DSM technology offers one of the industry's highest data rates in a 12.5 kHz channel.

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.

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

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

Onboard Diagnostics Built-in diagnostic support with tools such as RF Ping and Radio Statistics in combination with SNMP.

1 Watt Adjustable power output from 50 mW to 1 Watt (+17 dBm to +30 dBm).

Industry Applications

Oil & Gas

- Bandwidth for expanding IP-based control systems & video monitoring.
- Unified serial and IP/Ethernet infrastructure
- Licensed free product where pad site communications can utilize 2.4 GHz ISM band.
- Channel size selectivity 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.

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.

Xeta24 Series 2.4 GHz

Technical Specifications

Transmitter

Frequency Range	-	2.403 – 2.478 GHz
Output Power	-	50 mW to 1W (17 – 30 dBm)
Modulations	-	MSK, BPSK, QPSK, 8PSK,16PSK, 16QAM, 32QAM
RF Data Rate	-	10 kbps to 4.4 Mbps
Occupied Bandwidth	-	FHSS: 76 / 154 / 207 / 310 kHz DTS: 600 / 900 / 1200 kHz
Frequency Stability	-	1.0 ppm
Duty Cycle	-	Continuous
Output Impedance	-	50 Ohms
Range	-	30+ miles

Receiver

Sensitivity	-	FHSS -110 @ MSK 57 kbps -109 @ MSK 114 kbps -109 @ MSK 153 kbps -99 @ MSK 229 kbps

DTS – 600 kHz
-98   @ BPSK   530   kbps
-99   @ QPSK   1061 kbps
-96   @ 8PSK   1591 kbps
-91   @ 16QAM   2121 kbps
-85   @ 32QAM   2651 kbps

DTS – 1200 kHz
-100 @ BPSK   884   kbps
-96   @ QPSK   1768 kbps
-90   @ 8PSK   2651 kbps
-85   @ 16QAM   3535 kbps
-84   @ 16PSK   3535 kbps
-77   @ 32QAM   4419 kbps

RF Selectivity	-	50dB 50dB

Data Transmission

Error Detection[1]	-	Up to 32-bit CRC, Retransmit on Error	Data Encryption[1]	-	AES128 / AES 256
Data Interfaces[1]	-	2 x 10/100Mbps Ethernet 2 x RS232/422/485	Data Connector[1]	-	4 x RJ45
Serial Interface Speed[1]	-	up to 230.4 kbps	[1] Does not apply to Xeta24m-T RF Module		

Power / Physical

Operating Voltage	-	10-32VDC with reverse polarity protection to 32 VDC		
Power Consumption (mA) @ 12VDC (Avg)				
• **Xeta24-E** (1W)	-	Transmit : 335 mA	Receive: 290 mA	Idle: 270 mA
• **Xeta24x24-E** (1W)	-	Transmit : 385 mA	Receive: 300 mA	Idle: 292 mA
RF Connector	-	Enclosed: TNC		
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	-	**Xeta24-E** 1.54 lbs / 0.70 kg, **Xeta24x24-E** 1.61 lbs / 0.73 kg		

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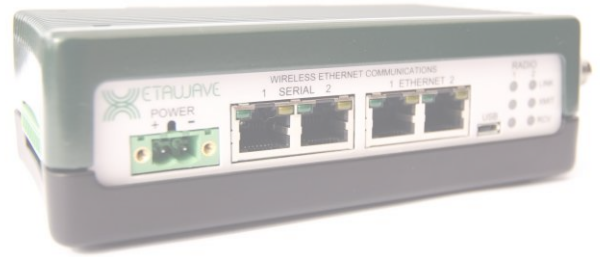
Operating Temp Range	-	-40°C to +75°C. *Contact XetaWave for lower temperature operation.*
Humidity	-	95% operating humidity @ 40°C non-condensing.

UL Class 1 Div 2 & ᶜULᵤₛ approved

CUSTOM RF SOLUTIONS

Xeta24 Series

Xeta24-E

- Single RF Module
- License Free 2.403 – 2.478 GHz ISM Band
- 57 kbps – 3.5 Mbps Data Rates with 1W Max RF Xmit Power
- uTasker Operating System
- HTTP
- VLANs
- 2 x 10/100 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; Web-UI, Diagnostics and SNMP

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

Xeta24x24-E

- Dual RF Module – can be installed as a Repeater or dual-AP
- License Free 2.403 – 2.478 GHz ISM Band
- Frequency Diversity – Second RF Module can be Xeta4, 9, 24 etc.
- 57 kbps – 3.5 Mbps Data Rates with 1W Max RF Xmit Power
- uTasker Operating System
- HTTP
- VLANs
- Back to Back Repeater Capabilities
- 2 x 10/100 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**
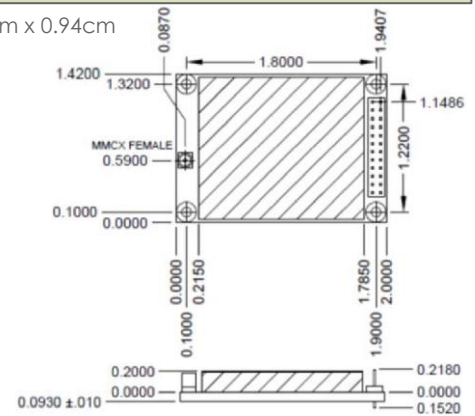- Management; Web-UI, Diagnostics and SNMP

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

XETA24M-T

- OEM RF Module only
- License Free 2.403 – 2.478 GHz ISM Band
- 3.3 – 5 VDC ± 10%
- CMOS / RS232 Interface
- Transmit Current <1.0A @ 5VDC for 1W RF
- Receive Current <275mA @ 5VDC in search mode <85mA @ 5VDC in linked low power mode
- Sleep/Idle Current <50mA @ 5VDC
- Serial Interface Speed 2Mbps TTL / 1Mbps 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 1.4" x 0.37" / 5.1cm x 3.5cm x 0.94cm
Weight 0.05lbs / 24grams

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.