Xeta7 Series 700 MHz
10 kbps – 1 Mbps

Licensed Software Defined Radio

The **Xeta7** is a licensed dual band 757 – 758 / 787 – 788 MHz software defined radio that features **Dynamic Modulation**, flexible configuration options and multi-layer Ethernet capabilities including VLAN and Routing.

The **Xeta7** selectively switches modulation based on link quality and environmental noise. This **Dynamic Modulation** allows for data rates from 10 kbps – 1Mbps in the licensed 757 – 758 and 787 – 788 MHz bands using 12.5 – 250 kHz channel sizes and power output from 50 – 3162 mW (17 – 35 dBm).

With built-in support for **MultiSpeed MultiPoint™** the **Xeta7** 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 – 1 Mbps over-the-air data rates. XetaWave's proprietary DSM technology offers the industry's highest data rate in a 12.5 kHz channel at 57 kbps.

Dual Band 757 – 758 / 787 – 788 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 **Xeta7** 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.

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 **Xeta7** 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.

3 Watts Adjustable power output from 50 mW – 3 W (50 – 35 dBm)

Industry Applications

Oil & Gas

- Bandwidth for expanding IP-based control systems & video monitoring.
- Unified serial and IP/Ethernet infrastructure
- Licensed product where 757 – 758 / 787 – 788 MHz licenses are available.
- 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.

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Technical Specifications

Transmitter

Frequency Range	-	757 – 758 / 787 – 788 MHz
Output Power	-	50 – 3162 mW (17 – 35 dBm @ 12.5 / 25 kHz channels) 50 – 2512 mW (17 – 34 dBm @ 50 / 100 / 200 / 250 kHz channels)
Modulations	-	MSK, QPSK, 8PSK,16QAM, 32QAM
RF Data Rate	-	10 kbps – 1 Mbps
Occupied Bandwidth	-	12.5 / 25 / 50 / 100 / 200 / 250 kHz – *other 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	25 kHz	50 kHz
MSK	-113 @ 10 kbps	-113 @ 19 kbps	-110 @ 39 kbps
QPSK	-109 @ 23 kbps	-107 @ 36 kbps	-105 @ 71 kbps
8PSK	-104 @ 34 kbps	-102 @ 52 kbps	-99 @ 101 kbps
16QAM	-100 @ 45 kbps	-98 @ 70 kbps	-93 @ 137 kbps
32QAM	-94 @ 57 kbps	-93 @ 87 kbps	-89 @ 175 kbps

	100 kHz	200 kHz	250 kHz
MSK	-108 @ 76 kbps	-105 @ 153 kbps	-104 @ 194 kbps
QPSK	-103 @ 160 kbps	-102 @ 320 kbps	-101 @ 403 kbps
8PSK	-97 @ 240 kbps	-94 @ 480 kbps	-95 @ 605 kbps
16QAM	-91 @ 320 kbps	-91 @ 640 kbps	-91 @ 806 kbps
32QAM	-87 @ 400 kbps	-87 @ 800 kbps	-87 @ 1008 kbps

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] *Does not apply to Xeta7m-T RF Module*		

Power / Physical

Operating Voltage - 10 – 32 VDC with reverse polarity protection to 32 VDC

Power Consumption (mA) @ 12VDC (Avg)

• **Xeta7-EL** (1W/3W)	-	Transmit: 460/593 mA	Receive: 330/430 mA	Idle: 243/292 mA
• **Xeta7x7-EL** (1W/3W)	-	Transmit: 490/620 mA	Receive: 353/467 mA	Idle: 297/311 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 1.4 " x 0.37 " / 5.1 cm x 3.5 cm x 0.94 cm

Weight - **Xeta7-EL** 1.54 lbs / 0.70 kg, **Xeta7x7-EL** 1.61 lbs / 0.73 kg, **Xeta7m-T** 0.05 lbs / 24 grams

Environmental

Operating Temp Range - -40°C to +75°C. *Contact XetaWave for lower temperature operation.*

Humidity - 95% operating humidity @ 40°C non-condensing.

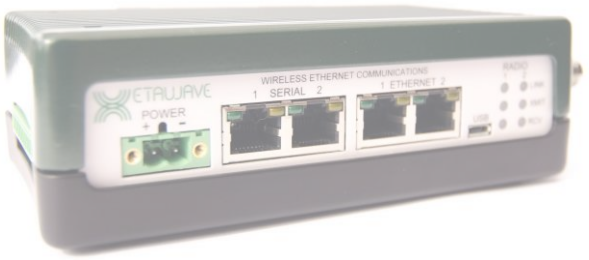
UL Class 1 Div 2 & c UL us approved

Xeta7 Series 700 MHz

Xeta7 Series

Xeta7-EL

- Single RF Module
- Dual Band; 757 – 758 / 787 – 788 MHz
- 10 kbps – 1 Mbps Data Rates with 3.3 W Max RF Xmit Power
- Linux Operating System
- HTTP/HTTPS
- VLANs
- IP Routing
- Store & Forward 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 1.54 lbs / 700 grams

Xeta7x7-EL

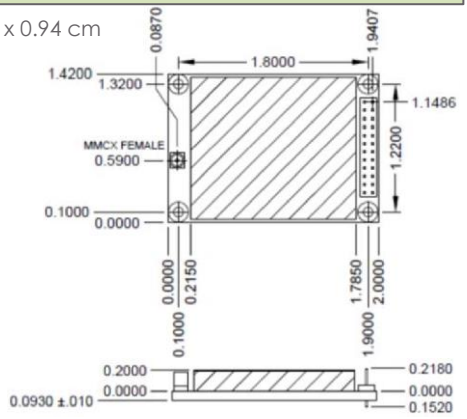
- Dual RF Module – can be installed as a Repeater or dual-AP
- Dual Band; 757 – 758 / 787 – 788 MHz
- Frequency Diversity – Second RF Module can be Xeta4, 9, 24 etc.
- 10 kbps – 1 Mbps Data Rates with 3.3 W Max RF Xmit Power
- Linux Operating System
- HTTP/HTTPS
- VLANs
- IP Routing
- Back to Back AND Store & Forward 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

Xeta7m-T

- OEM RF Module only
- Dual Band; 757 – 758 / 787 – 788 MHz
- 7.5 VDC ± 0.5 V
- CMOS / RS232 Interface
- Transmit Current <1.0 A @ 7.5 VDC for 1 W RF
- Transmit Current <3.0 A @ 7.5 VDC for 3 W RF
- Receive Current <275 mA @ 7.5 VDC for 1 W RF
- Idle Current <150 mA @ 7.5 VDC
- Sleep Current <50 mA @ 7.5 VDC
- Serial Interface Speed 2 Mbps TTL / 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 1.4 " x 0.37 " / 5.1 cm x 3.5 cm x 0.94 cm
Weight 0.05 lbs / 24 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.