

## Key Differentiators

**High Speed** 57 kbps – 4.4 Mbps over-the-air throughput.

**Dual Modes** Both Frequency Hopping (FHSS) and Single Channel operating modes are available.

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

### Multi-Speed TDMA

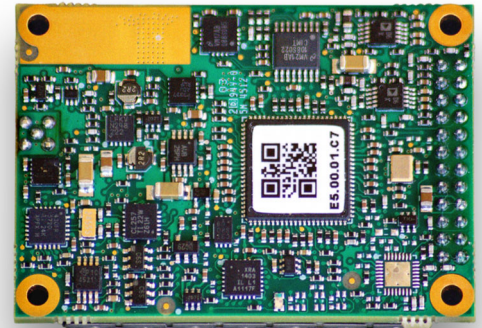
Unique to XetaWave, a *single* radio can have multi-logical data channels with different speeds. This allows for the prioritization/trade off of reliability versus speed.

**5 Watts** Adjustable power output from 100 mW to 5 Watts (+20dBm to +37dBm).

**Supports Multiple DD-1494 Compliant Waveforms**  
MIL-STD-461G TBD

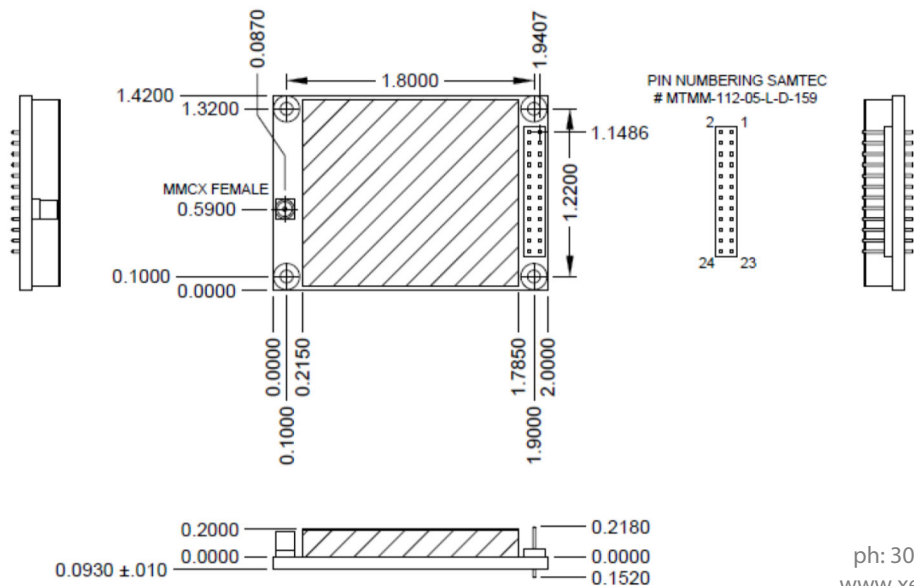
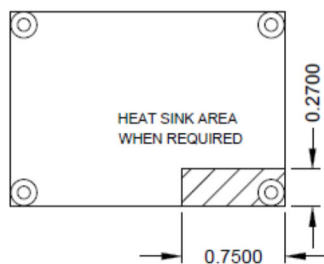
The **Xeta13m** is a software defined OEM radio module that automatically optimizes parameters across three axes - power output, channel size and modulation. This dynamic modulation allows for data transfer rates from 57 kbps to 4.4 Mbps, power output from 100mW to 5W, and channel sizing from 100 kHz to 1.2 MHz. The **Xeta13m** selectively switches modulation schemes to ensure required throughput given available channel sizes and environmental noise. Based on its patent pending Dual Decode Digital Architecture™, XetaWave's technology platform offers performance second to none in its market segment.

In addition, with built-in support for **MultiSpeed MultiPoint™** networks, the **Xeta13m** 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 (for oil and gas applications) to add video cameras and other high data-rate monitoring systems to their SCADA infrastructure without the need to build separate radio networks for these devices. The ability to integrate serial-only sub networks allows for enhanced flexibility with network design. **Multi-Master Sync (MMS) network synchronization** for serial and Ethernet networks precisely controls the transmission timing within a multiple Master network to eliminate self-interference.



OEM Module: 2.0" x 1.4"

Lastly, the **Xeta13m**, **Xeta24m** and **Xeta9m** are **interchangeable** and drop in replacement modules for each other and operate at -40°C to +75°C (*Note: The Xeta24m requires a 3.3-5V power supply.*)



# Xeta13m *Performance Specifications*

Transmitter		
Frequency Range	1350-1390 MHz: FHSS or Single Channel	
Output Power	100mW to 5W, step size 10mW	
Range – Line of Sight	70+ miles	
Modulation	MSK, BPSK, QPSK, 8-PSK, 16-PSK, 16 QAM, 32 QAM	
RF Data Rate	57 kbps to 4.4 Mbps	
Occupied Bandwidth	110 kHz to 1.2 MHz	
Frequency Stability	1.0 ppm	
Duty Cycle	tbd	
Output Impedance	50 Ohms	
Receiver		
Sensitivity - ISM (dBm)	-111 @ 57 kbps MSK	-98 @ 1768 kbps QPSK
	-108 @ 114 kbps MSK	-93 @ 2651 kbps 8-PSK
	-107 @ 153 kbps MSK	-85 @ 3535 kbps 16-PSK
	-104.5 @ 229 kbps MSK	-87 @ 3535 kbps 16-QAM
	-101 @ 884 kbps BPSK	-84 @ 4419 kbps 32-QAM
RF Selectivity	50 dB	
Adjacent Channel Rejection	70 dB @ 100 kHz	
Data Transmission		
Error Detection	Up to 32-bit CRC, Retransmit on error	
Error Correction	Golay, Reed-Solomon	
Data Encryption	AES 256 ( <i>FIPS 140-2 validation in progress</i> )	
Data Interfaces	TTL (Xeta13m-T)	
Data Connector	24-pin connector	
Serial Interface Speed	2 Mbps TTL	
Power / Physical		
Operating Voltage	Module: +12 VDC; Serial Interface 15-30 VDC	
Transmit Current	< 2.3 A @ 12 V for 5W RF	
RX   RX linked   Idle   Sleep	<70mA   <60mA   <3mA   20uA <i>Currents @ 12V, radio only</i>	
RF Connector	MMCX	
Dimensions & Weight	2.0" x 1.4" x 0.37" (L x W x H)   24 grams	

## Environmentals

- -40°C to +75°C operating temperature range.
- 95% operating humidity @ 40°C non-condensing.
- Shock & vibration, humidity, pressure MIL-STD-810G testing available upon request. MIL-STD-461G
- UL Class 1 Div 2 certification available upon request

## Security

- AES 256-bit encryption
- Password authentication
- FIPS 140-2 validation available upon request

## Available Versions

### Board-level

**Xeta13m-T** OEM RF Module  
TTL interface  
12V

**Xeta13m-SB** OEM RF Module  
RS-232 Interface  
15-30V

*Enclosed Ethernet version also available.*



**XETA WAVE**  
CUSTOM RF SOLUTIONS

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