

Free yourself from legacy networks by installing new high performing, low cost Xeta9x-Emancipator radios -

- *Decrease polling times*
- *Provide Ethernet to the wellhead*
- *Add video surveillance*
- *...and more*

The **Xeta9x Emancipator** series includes two low priced, high performance software defined board level radios that can be deployed within a new network or seamlessly integrated into an existing network. The Xeta9x Emancipator and Emancipator+ operate over 902-928 MHz, ISM-FHSS & DTS, with data rates of 57 kbps up to 2.6 Mbps. Such capability and flexibility leads the industry in price:performance.

There are two versions of the Xeta9x - the Emancipator (Xeta9x-SB) and Emancipator+ (Xeta9x-E). The Emancipator is a serial only radio with one diagnostic port and one serial port. The Emancipator+ is both a serial and/or Ethernet radio with one serial port and one Ethernet port.



When deployed within an existing network and in conjunction with the **Xeta9-INS**, Intelligent Network Synchronizer, the Xeta9x and other XetaWave radios can co-exist with existing legacy (non-XetaWave) radios within one seamless network. This capability enables you to leverage your

existing investment in legacy radio networks while taking advantage of the increased performance and capability of XetaWave's new generation software defined radios. For oil and gas networks, by example, this capability enables you to decrease polling times, provide Ethernet to the wellhead, and add security cameras to legacy networks. **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.

The Xeta9x can also **interoperate within a MDS™ TransNET™ network**, specifically communicate with a 900 MHz MDS TransNET repeater or master. The lower cost Xeta9x can be implemented in place of legacy MDS TransNET radios with no interruption to the operation of the network. The higher performance of the Xeta9x offers MDS TransNET users a migration path to a technology platform that offers higher serial speeds (up to 20 times faster as compared to 115.2 kbps with a MDS TransNET), and Ethernet capability.

Xeta9x Series	Xeta9x-SB Emancipator	Xeta9x-E Emancipator+
Data Rate	57 kbps - 2.6 Mbps	57 Kbps - 2.6 Mbps
Frequency	ISM - FHSS & DTS	ISM - FHSS & DTS
Data Interface	1 Serial	1 Serial & 1 Ethernet
Output Power	1W	1W
Temp (°C)	-40 to +85	-40 to +85
Input Voltage	10-32V	10-32V
Antenna Connector	SMA	SMA
Form Factor & Dimensions	Board Level 5" x 2.4"	Board Level 5" x 2.4"

The Xeta9 Series complements and extends the performance and capability of the Xeta9x Emancipator series by offering data rates up to 3.5 Mbps, one additional Ethernet and one additional serial port, and an enclosure in addition to board level offerings. Refer to the Xeta9-E and Xeta9m data sheets for detailed specifications.


Xeta9x Series *Performance Specifications*

Transmitter		
Frequency	902–928 MHz: ISM-FHSS & DTS	
Output Power	10mW to 1W, step size 10mW	
Range – Line of Sight	70+ miles	
Modulation	MSK, BPSK, FSK, QPSK, PSK, QAM	
RF Data Rate	57 kbps to 2.6 Mbps	
Occupied Bandwidth	6.25 kHz to 1.5 MHz	
Frequency Stability	Better than 1.0 ppm	
Duty Cycle	Continuous	
Output Impedance	50 Ohms	
Receiver		
Sensitivity - ISM (dBm)	-111 @ 57 kbps MSK	-101 @ 884 kbps BPSK
	-109 @ 114 kbps MSK	-98 @ 1768 kbps QPSK
	-108 @ 153 kbps MSK	-91 @ 2651 kbps 8-PSK
	-105 @ 229 kbps MSK	-86 @ 3535 kbps 16-QAM
	-101 @ 663 kbps 2-FSK	-75 @ 3535 kbps 16-PSK
RF Selectivity	50 dB	
Adjacent Channel Rejection	51 dB @ 12.5 kHz, 60 dB @ 25 kHz, 70 dB @ 50 kHz	
Data Transmission		
Error Detection	Up to 32-bit CRC, X ² ECC, Retransmit on error	
Data Encryption	AES256 (<i>FIPS 140-2 validation in progress</i>)	
Data Interfaces	Emancipator: 1 Serial Emancipator+: 1 Serial & 1 Ethernet	
Data Connector	Emancipator: 10 pin (2x RJ45 optional) Emancipator+: 2x RJ45	
Serial Interface Speed	Up to 230.4 kbps	
Power		
Operating Voltage	10-32 VDC	
Transmit Current	430mA @ 12V for 1W RF	
RF Connector	SMA	
Dimensions	5.0" x 2.4"	
Weight	77 grams	

Specifications subject to change without notice.

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Environmentals

- -40°C to +85°C operating temperature range. -55°C available
- 95% operating humidity @ 40°C non-condensing
- Slave only UL Class 1 Div 2 & 

Security

- AES 256-bit encryption
- Password authentication
- VLAN network segregation for Xeta9x-Emancipator+

Management

- SNMP V3

Physical

Dimensions: 5.0" x 2.4"

Weight: 77 grams

Available Versions

Xeta9x-SB Emancipator
1 Serial port

Xeta9x-E Emancipator+
1 Serial Port &
1 Ethernet Port

