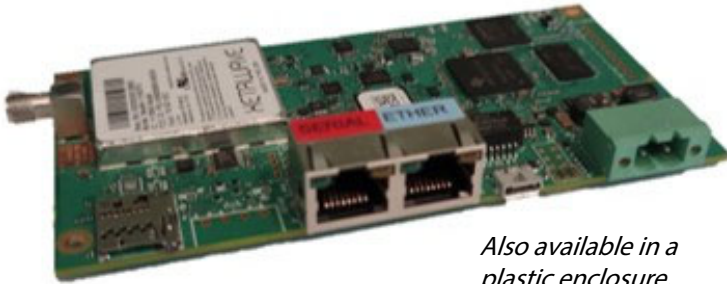


# Xeta9x Linux

## 900 MHz Emancipator

### Software Defined Industrial Radio

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*Also available in a plastic enclosure.*

The **Xeta9x Linux Emancipator** is an extremely capable, flexible, low cost industrial Frequency Hopping Spread Spectrum (FHSS) and Digital Transmission System (DTS) 900 MHz software defined radio (SDR). The **Xeta9x** is available in a board level version or a plastic enclosure as an Ethernet/Serial radio.

The **Xeta9x Linux Emancipator** utilizes XetaWave's patented **Dual Decode Digital Architecture™** that offers superior receiver performance, supports multiple modulation schemes, and selectively switches modulation to achieve optimal data throughput given the available channel size and environment noise. XetaWave's **MultiSpeed MultiPoint™** mode enables Endpoints operating at different over-the-air data transfer rates to communicate with a single Access Point over the same network while **XetaEMP** provides enhanced multipoint capability and **XetaMESH** provides peer to peer frequency hopping.

## Key Features

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**High Speed** Over-the-air data transfer rates from 57 to 5.3 Mbps plus higher throughput with payload compression and in the **XetaEMP** mode.

**Selective Modulation** Multiple MSK, FSK, PSK, and QAM modulations.

**Dual Mode** Frequency hopping and single channel operations.

**Network Types** Point to Point, Point to Multipoint, Enhanced MultiPoint, Peer to Peer, and **XetaMESH**.

**Secure** Over-the-air data encryption using 128-bit and 256-bit AES.

**Adjustable RF Output** RF power output from 10 mW to 1 Watts (+10 dBm to +30 dBm).

**MultiSpeed Multipoint** Enables Access Points to communicate with Endpoints operating at different RF Data Rates.

**Multiple Form Factors** Board level and plastic enclosed versions available.

**Compatibility** Optional modes offer the ability to communicate with GE MDS TransNET repeaters and master radios.

# Xeta9x Linux Specifications

Transmitter	ISM FHSS	ISM DSS
Frequency Range	902 to 928 MHz	
Output Power	10 to 1000 mW (10 to 30 dBm)	
Modulation	MSK, 2FSK, BPSK, QPSK, 8PSK, 16PSK, 16QAM, 32QAM, 64QAM	
Data Rate	57 to 5303 kbps	530 to 5303 kbps
Channel Bandwidth	77, 154, 207, 310, 600 & 1200 kHz	600, 900 & 1200 kHz
Frequency Stability	1.0 ppm	
Range	70+ miles	

ISM Receiver	77 kHz Channel		154 kHz Channel		207 kHz Channel	
Modulation	Sensitivity	Data Rate	Sensitivity	Data Rate	Sensitivity	Data Rate
MSK	-110 dBm	57 kbps	-107 dBm	114 kbps	-106 dBm	153 kbps
	310 kHz Channel		600 kHz Channel		1200 kHz Channel	
MSK	-103 dBm	229 kbps				
BPSK			-98 dBm	530 kbps	-100 dBm	884 kbps
QPSK			-99 dBm	1061 kbps	-96 dBm	1768 kbps
8PSK			-96 dBm	1591 kbps	-90 dBm	2651 kbps
16PSK					-84 dBm	3535 kbps
16QAM			-91 dBm	2121 kbps	-85 dBm	3535 kbps
32QAM			-85 dBm	2651 kbps	-80 dBm	4419 kbps
64 QAM				3182 kbps		5303 kbps

900 kHz Channel		
Modulation	Sensitivity	Data Rate
2FSK	-98 dBm	663 kbps

\* Frequency Range may vary by Country, for example

Australia, Peru	916-928 MHz
Brazil	902-907 & 916-928 MHz

# Xeta9x Linux Specifications

Power		Environmental/Physical	
Transmit	< 204 mA@ +12 Vdc	Op. Temperature	-40°C to +85°C (board) & +75°C (plastic)
Receive	< 141mA@ +12 Vdc	Humidity	95% @ +40°C non-condensing
Idle	< 103 mA @ +12 Vdc	Safety	UL Class 1 Div 2
Interfaces		Dimensions (LxWxH)	5.5" x 3.5" x 1.5" (plastic) 5.1" x 3.2" x 1.0" (board level)
Power Connector	2-pin Phoenix / +10 to +32 Vdc	Weight	182 grams (plastic) 170 grams (board level)
Ethernet	1 x RJ45 / 10/100 Mbps Base-T		
Serial	1 x RJ45 / up to 1Mbps / RS232/422/485		
Micro USB	ON-the-Go; +5 Vdc @ 500 mA		
RF Connector	TNC / 50 Ohms (plastic) SMA / 50 Ohms (board level)		

Functionality	
Operating Modes	Point to Point, Point to MultiPoint, Enhanced MultiPoint, Peer to Peer, Mesh
Roles	Access Point, Endpoint, Repeater
Networking	Static IP Routing, Net Filtering, Port Forwarding, Network Address Translation, Modbus Bridging
Protocols	IEEE 802.3, TCP, UDP, ARP, DHCP, NTP, FTP, ICMP, HTTP, HTTPS, SSH, Telnet, Multicast SNMP
Management	Web GUI, SNMP v1, v2, & v3
VLANs	802.1q VLANs and Trunks, QoS
Quality of Service	Four Levels of VLAN QoS
Serial Services	TCP/UDP Terminal Server, TCP Terminal Client, Modbus RTU Server
Error Handling	CRC, FEC, Retransmit on error
Error Correction	Golay, Reed-Solomon
Data Encryption	128 & 256-bit AES Payload Data Encryption
RF Encryption	128-bit AES RF Overhead Encryption
Hop Patterns	10 Pseudo Random, 1 Pseudo Random Based on Network ID, & 1 Secure
Secure Hop Pattern	128-bit AES Hop Pattern Determination
Compression	Low, High, Decompress Only
Repeater	Store-and-forward
MultiMaster	Synchronization of Collocated Access Points or Multiple Access Points within a Network
MultiSpeed	Up to 4 Data Rates within the Same Channel Bandwidth
Diagnostics	Neighbor List, RF Ping, RF Throughput, RF Statistics, IP Ping, Traceroute, IPERF, TCP Dump, DNS Lookup, Serial Statistics, Modbus Bridging Statistics

# Xeta9x Linux Specifications

## Ordering

XETA9X-11INLFC	Board level, 1 Ethernet & 1 Serial
XETA9X-11IPLFC	Plastic Enclosed, 1 Ethernet & 1 Serial