

The **Xeta8 Debian Ethernet radio** is an extremely capable and flexible industrial single channel software defined radio covering the lower and upper licensed 900 MHz frequency bands, specifically 896-901 MHz and 935-940 MHz. Based on the Debian operating system, the Xeta8 Debian is one of XetaWave's latest generation of radios.

The Xeta8 Debian utilizes a XetaWave patented **Dual Decode Digital Architecture™** that offers significant receiver performance. The Xeta8 Debian also supports multiple modulation schemes and MultiSpeed MultiPoint™ that allows End Points to selectively switch transfer rates with an Access Point to achieve optimal data throughput given the available channel size and RF environment.



XetaWave's Seamless Serial mode allows serial and Ethernet End Points to simultaneously communicate with Ethernet Access Points and the Xeta8 Debian also supports compatibility with **MDS 9710/9790** master and repeater radios.

## Key Features

**Multiple Speed** Over-the-air data rates from 10 kbps to 105 kbps plus higher throughput with payload compression and **XetaEMP**.

**Bands** 896 to 901 MHz and 935 to 940 MHz MAS only.

**Adjustable RF Output** Power output up to 3 Watts (+34.7 dBm).

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

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

**Dual Mode** Simplex or half duplex operations.

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

**MultiSpeed Multipoint** Access Point communicates with Endpoints operating at different RF data rates.

**Diagnostics** monitoring of TX and RX statistics (noise, RSSI, more), voltage, and temperature over SNMP and Modbus.

# Xeta8 Debian Specifications

## Transmitter

## Part 90

Frequency Range	896 to 901 and 935 to 940 MHz
Output Power	10 to 3000 mW (10 to 34.7 dBm)
Modulation	MSK, QSPK, 8PSK, 16QAM, 32QAM, 64QAM
Data Rate	10 to 105 kbps
Channel Bandwidth	12.5 and 25 kHz
Frequency Stability	0.1 ppm
Range	70+ miles

## Receiver

## Part 90

Modulation	12.5 kHz Channel		25 kHz Channel	
	Sensitivity	Data Rate	Sensitivity	Data Rate
MSK	-115 dBm	10 kbps	-114 dBm	15 kbps
QPSK	-104 dBm	22 kbps	-107 dBm	36 kbps
8PSK	-100 dBm	32 kbps	-101 dBm	52 kbps
16QAM	-95 dBm	43 kbps	-98 dBm	70 kbps
32QAM	-91 dBm	54 kbps	-95 dBm	87 kbps
64 QAM	-90 dBm	65 kbps	-89 dBm	105 kbps
RF Selectivity	33 dB		30 dB	

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## Processing

CPU	300 MHz ARM Cortex-A8
OS	Debian
RAM / Flash	256 MB / 4 GB

## Interfaces

Power Connector	2-pin Phoenix / +10 to +32 Vdc
Ethernet	2 x RJ45 / 10/100 Mbps Base-T
Serial	2 x RJ45 / up to 1Mbps / RS232/422/485
Micro USB	On-the-Go; +5 Vdc @ 500 mA
RF Connector	TNC / 50 Ohms
Standard I/O	1 x MMS input/output & 2 x DI

## Power

Transmit	395 mA @ +12 Vdc
Receive	280 mA @ +12 Vdc
Idle	176 mA @ +12 Vdc

## Environmental/Physical

Op. Temperature	-40°C to +75°C (ISM) & +60°C (MAS)
Humidity	95% @ +40°C non-condensing
Safety	UL Class 1 Div 2
Dimensions (LxWxH)	6.62" x 3.45" x 1.83" (metal)
Weight	700 grams (metal)

## Functionality

Operating Modes	Point to Point, Point to MultiPoint, Enhanced MultiPoint, Peer to Peer, MDS X710
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
Error Handling	CRC, FEC, Retransmit on error
Error Correction	Golay, Small Block
Data Encryption	128 & 256-bit AES Payload Data Encryption
RF Encryption	128-bit AES RF Overhead Encryption
Compression	Low, High, Decompress Only
Repeater	Store-and-forward
MultiMaster Sync	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, Network Statistics, Serial Statistics, Modbus Bridging Statistics
Programmable I/O	Option for 8 programmable input/output signals (4 independently programmed analog inputs, analog outputs, or digital inputs and 4 independently programmed digital inputs or digital outputs)
Dual Radio	Option for dual radio with the same or different frequency bands

# Xeta8 Debian Specifications

## Ordering

XETA8-22MMDFA	Metal Enclosed, 2 Ethernet & 2 Serial, MAS Only
XETA8-22MMDFA-IO	Metal Enclosed, 2 Ethernet & 2 Serial with 8 Programmable I/O, MAS Only
XETA8X8-22MMDFA	Metal Enclosed, Dual Radio, 2 Ethernet & 2 Serial, MAS Only
XETA8X8-22MMDFA-IO	Metal Enclosed, Dual Radio, 2 Ethernet & 2 Serial with 8 Programmable I/O, MAS Only