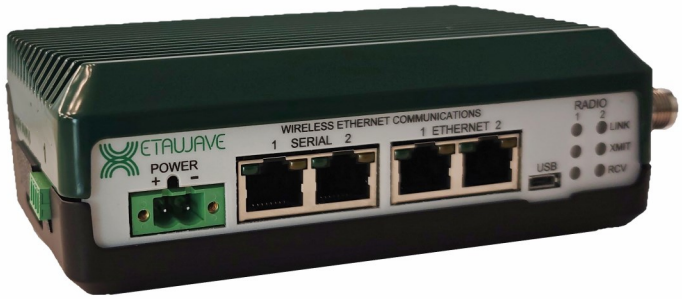
Xeta8 Debian

800/900 MHz MAS Ethernet
Software Defined Industrial Radio

The **Xeta8** Debian Ethernet radio is an extremely capable and flexible industrial software defined radio (SDR) supporting the licensed 896 to 901 and 935 to 940 MHz frequency range. Based on the Debian operating system, the **Xeta8** Debian radios are XetaWave's latest generation of radios.



The **Xeta8** utilizes a XetaWave patented **Dual Decode Digital Architecture™** which offers significant receiver performance. The radio supports multiple modulation schemes and features. The **MultiSpeed** mode allows Endpoints operating at different RF data rates to communicate with a single Access Point to achieve optimal data throughput given the available channel size and RF environment. The **Enhanced Multipoint (EMP)** mode provides an increase in throughput and a decrease in latency over traditional modes and against competitive products.

All **Xeta8** radios from the XetaWave Debian and XetaEdge families are over-the-air compatible. The **Xeta8** Debian radios support **compatibility** with the **MDS 9710/9790** and **SD9** master radios and the **Xeta8x8** Debian radio also supports full duplex operation.

Key Features

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

Dual Mode Duplex and single channel operation.

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.

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

MultiSpeed Endpoints communicate at different RF data rates with Access Point.

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

258 South Taylor Avenue | Louisville, CO 80027 | 303-447-2745 | sales@xetawave.com

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	1.0 ppm
Range	70+ miles

Receive sensitivity numbers are with FEC disabled. When enabled, sensitivity improves by 3 dBm.

Receiver	Part 90			
	12.5 kHz Channel		25 kHz Channel	
Modulation	**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	

Xeta8 Debian Specifications

Processing

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

Power

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

Interfaces

Power	2-pin Phoenix | +12 to +32 Vdc
Ethernet	2x RJ45 | 10/100 Mbps Base-T
Serial	2x RJ45 | up to 1Mbps | RS232/422/485
Micro-USB	On-the-Go | +5 Vdc @ 500 mA
RF	TNC | 50 Ohms
Standard I/O	1x MMS input/output | 2 x DI

Environmental/Physical

Op. Temp.	-40°C to +60°C
Humidity	95% @ +40°C non-condensing
Safety	UL Class 1 Div 2
Dimensions	6.62” x 3.45” x 1.83”
Weight	700 grams

Functionality

Operating Modes	Point to Point, Point to MultiPoint, Enhanced MultiPoint, Peer to Peer, Full Duplex
Roles	Access Point, Endpoint, Repeater
Compatibility	As an Endpoint compatible with MDS 9710/9790 and SD9
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, Up to 5 Simultaneous Connections
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
Compression	Low, High, Decompress Only
Repeater	Store-and-forward
MultiMaster (MMS)	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, Statistics Graphing and CSV downloading
Programmable I/O Option	8 programmable input/output signals (4 independently programmed analog inputs/ outputs or digital inputs and 4 independently programmed digital inputs/outputs)
Dual Radio Option	Dual radio with the same or different frequency bands

Xeta8 Debian Specifications

Ordering

XETA8-22MMDFA	Metal Enclosed, 2 Ethernet & 2 Serial, 2 DIs, 1 MMS, MAS
XETA8-22MMDFA-IO	Metal Enclosed, 2 Ethernet & 2 Serial with 8 Programmable I/O, 1 MMS, MAS
XETA8X8-22MMDFA	Metal Enclosed, Dual Radio, 2 Ethernet & 2 Serial, 2 DIs, 1 MMS, MAS
XETA8X8-22MMDFA-IO	Metal Enclosed, Dual Radio, 2 Ethernet & 2 Serial with 8 Programmable I/O, 1 MMS, MAS

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