

Xeta8 Debian

800/900 MHz Ethernet

Software Defined Industrial Radio

The **Xeta8 Debian Ethernet radio** is an extremely capable and flexible industrial software defined radio covering the lower (896 to 901 MHz) and upper (935 to 940 MHz) licensed 900 MHz frequency bands. The **Xeta8** is based on the XetaWave patented **Dual Decode Digital Architecture™** that offers significant receiver performance.

The **Xeta8** supports multiple modulation schemes and features that selectively switch to achieve optimal data throughput given the available channel size and environmental noise.



MultiSpeed MultiPoint™ mode enables Endpoints operating at different over-the-air data rates to communicate with a single Access Point. The **Enhanced MultiPoint, XetaEMP**, mode provides an increase in throughput and decrease in latency over our standard modes and against competitive products.

All **Xeta8 Debian** radios support compatibility with **MDS 9710/9790** and **SD9** 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.

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

Dual Mode Duplex and single channel operations.

Network Types Point to Point, Point to MultiPoint, CSMA peer to peer, Enhanced MultiPoint (XetaEMP).

Adjustable RF Output 10 mW to 3 Watts (+34.7 dBm) RF output.

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

Receive sensitivity numbers below are with FEC disabled. With FEC enabled

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	

Xeta8 Debian Specifications

Processing

CPU	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, X710, SDx
Roles	Access Point, Endpoint, Repeater
Compatibility Modes	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
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