

The **Xeta4 Debian** Ethernet radio is an extremely capable and flexible industrial software defined radio covering 403 to 470 MHz frequency band (model dependent). The **Xeta4 Debian** Ethernet radio is offered with an option to include 8 programmable inputs and outputs. The **Xeta4** is based on the XetaWave patented **Dual Decode Digital Architecture™** that offers significant receiver performance.

The **Xeta4** supports multiple modulation schemes and features that can 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 transfer rates to communicate with a single Access Point over the same network. The **Enhanced MultiPoint, XetaEMP**, mode provides an increase in throughput and decreased in latency over our standard modes and against competitive products.



Key Features

High Speed Over-the-air data transfer rates from 5 to 216 kbps plus higher throughput with payload compression and in the **XetaEMP** mode.

Selective Modulation Multiple MSK, 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 8 Watts (+10 to +39 dBm) RF output.

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

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

XetaEMP Enhanced MultiPoint protocol with increased throughput and decreased latency.

Xeta4 Debian Specifications

Transmitter	FCC	IC/FCC	ETSI/RED
Frequency Range	450 to 470 MHz	406 to 430 & 450 to 470 MHz	406 to 470 MHz
Output Power	10 to 8000 mW (10 to 39 dBm)		
Modulation	MSK, QSPK, 8PSK, 16QAM, 32QAM, 64QAM		
Data Rate	5 to 216 kbps		5 to 61 kbps
Channel Bandwidth	6.25, 12.5, 25 & 50 kHz		6.25 & 12.5 kHz
Frequency Stability	1.0 ppm		
Range	70+ miles		

Receiver	6.25 kHz Channel		12.5 kHz Channel		25 kHz Channel	
Modulation	Sensitivity	Data Rate	Sensitivity	Data Rate	Sensitivity	Data Rate
MSK	-112 dBm	5 kbps	-115 dBm	10 kbps	-114 dBm	18 kbps
QPSK			-104 dBm	20 kbps	-107 dBm	29 kbps
8PSK			-100 dBm	31 kbps	-101 dBm	44 kbps
16QAM			-95 dBm	41 kbps	-98 dBm	59 kbps
32QAM			-91 dBm	51 kbps	-95 dBm	76 kbps
64 QAM			-90 dBm	61 kbps	-89 dBm	91 kbps

Receiver	50 kHz Channel	
Modulation	Sensitivity	Data Rate
MSK		43 kbps
QPSK		72 kbps
8PSK		105 kbps
16QAM		144 kbps
32QAM		180 kbps
64 QAM		216 kbps

Xeta4 Debian Specifications

Processing

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

Power

Transmit	945 mA @ +12 Vdc
Receive	300 mA @ +12 Vdc
Idle	176 mA @ +12 Vdc

Interfaces

Power Connector	2-pin Phoenix / +12 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

Environmental/Physical

Op. Temperature	-40°C to +75°C
Humidity	95% @ +40°C non-condensing
Safety	UL Class 1 Div 2
Dimensions (LxWxH)	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
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
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
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 that has the same or different frequency band

Xeta4 Debian Specifications

Ordering

IC/FCC 406-430 & 450-470 MHz

XETA4-22MMDFB	Metal Enclosed, 2 Ethernet & 2 Serial
XETA4-22MMDFB-IO	Metal Enclosed, 2 Ethernet & 2 Serial with 8 Programmable I/O
XETA4X4-22MMDFB	Metal Enclosed, Dual Radio, 2 Ethernet & 2 Serial
XETA4X4-22MMDFB-IO	Metal Enclosed, Dual Radio, 2 Ethernet & 2 Serial with 8 Programmable I/O

ETSI/RED 406-430 & 450-470 MHz

XETA4-22MMDEB	Metal Enclosed, 2 Ethernet & 2 Serial
XETA4-22MMDEB-IO	Metal Enclosed, 2 Ethernet & 2 Serial with 8 Programmable I/O

FCC 450-470 MHz

XETA4B-22MMDFB	Metal Enclosed, 2 Ethernet & 2 Serial
XETA4B-22MMDFB-IO	Metal Enclosed, 2 Ethernet & 2 Serial, with 8 Programmable I/O
XETA4BX4B-22MMDFB	Metal Enclosed, Dual Radio, 2 Ethernet & 2 Serial
XETA4BX4B-22MMDFB-IO	Metal Enclosed, Dual Radio, 2 Ethernet & 2 Serial with 8 Programmable I/O

Mixed Band Dual Radios

XETA9X4-22DMDFC	902-928 MHz & 406-430/450-470 MHz Dual Radio, Metal Enclosed, 2 Ethernet & 2 Serial
XETA9X4-22DMDFC-IO	902-928 MHz & 406-430/450-470 MHz Dual Radio, Metal Enclosed, 2 Ethernet & 2 Serial with 8 Programmable I/O
XETA9X4B-22DMDFC	902-928 MHz & 450-470 MHz Dual Radio, Metal Enclosed, 2 Ethernet & 2 Serial

