



The **Xeta9 Ethernet radio** is an extremely capable and flexible industrial Frequency Hopping Spread Spectrum (FHSS) and Digital Transmission System (DTS) 900 MHz software defined radio. (SDR). The Xeta9 Ethernet radio is offered as a board level installed on a mounting plate or as an enclosed unit. The module utilizes the XetaWave patent pending **Dual Decode Digital Architecture™** that offers significant receiver performance.

The **Xeta9** supports multiple modulation schemes and features that can selectively switch the modulation scheme to achieve optimal data throughput given the available channel size and environmental noise. The **MultiSpeed MultiPoint™** mode enables Endpoints operating at different over-the-air data transfer rates to communicate with an Access Point over the same network. To eliminate self-interference, transmission timing within networks with multiple Access Points is precisely control using **Multi-Master Synchronization**.

Key Features

High Speed Over-the-air data transfer rates from 57 kbps to 4.4 Mbps.

Dual Band 902 to 928 MHz ISM and 928 to 960 MHz MAS operation.

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

Adjustable RF Output RF power output from 50 mW (+17 dBm) to 1 Watt (+30 dBm) for ISM and to 3 Watts (+34.8 dBm) for MAS.

Network Types Point to Point, Point to Multi-Point, and CSMA Peer to Peer.

Dual Mode Frequency hopping and single channel operations.

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.

Xeta9 Specifications

ISM Transmitter

Frequency Range	902 to 928 MHz
RF Output Power	50 mW to 1 Watt
Modulation	MSK, 2FSK, BPSK, QPSK, 8PSK, 16PSK, 16QAM, 32QAM
RF Data Rate	57 kbps to 4.4 Mbps
Occupied Bandwidth	76 kHz to 1.2 MHz
Frequency Stability	1.0 ppm

ISM Receiver (subset)

Channel Size	Sensitivity	Data Rate	Modulation
76 kHz	-110 dBm	57 kbps	MSK
154 kHz	-107 dBm	114 kbps	MSK
207 kHz	-106 dBm	153 kbps	MSK
310 kHz	-103 dBm	229 kbps	MSK
600 kHz	-99 dBm	530 kbps	BPSK
	-91 dBm	1.59 Mbps	8PSK
	-87 dBm	2.12 Mbps	16QAM
900 kHz	-81 dBm	2.65 Mbps	32QAM
	-98 dBm	663 kbps	2FSK
1.2 MHz	-98 dBm	884 kbps	BPSK
	-95 dBm	1.76 Mbps	QPSK
	-86 dBm	3.53 Mbps	16QAM
	-81 dBm	4.41 Mbps	32QAM
RF Selectivity	50 dB		

MAS Transmitter

Frequency Range	928 to 960 MHz
RF Output Power	50 mW to 3 Watts
Modulation	MSK, 4FSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM
RF Data Rate	10 kbps to 210 kbps
Occupied Bandwidth	12.5, 25, & 50 kHz
Frequency Stability	1.0 ppm

MAS Receiver (subset)

Channel Size	Sensitivity	Data Rate	Modulation
12.5 kHz	-115 dBm	10 kbps	MSK
	-103 dBm	23 kbps	QPSK
	-97 dBm	34 kbps	8PSK
25 kHz	-89 dBm	57 kbps	32QAM
	-112 dBm	19 kbps	MSK
	-106 dBm	36 kbps	QPSK
50 kHz	-100 dBm	52 kbps	8PSK
	-86 dBm	105 kbps	64QAM
	-109 dBm	39 kbps	MSK
	-102 dBm	71 kbps	QPSK
50 kHz	-97 dBm	101 kbps	8PSK
	-90 dBm	175 kbps	32QAM
	-84 dBm	210 kbps	64QAM
RF Selectivity	33 dB (12.5 kHz) / 30 dB (25&50 kHz)		

Compatible With

XETA9X-10INNFC	Board Level, 1 Serial interface, ISM Only
XETA9X-11INLFC	Board Level, 1 Ethernet & 1 Serial interface, Linux
XETA9X9-22DMLFC	Enclosed, Dual 900 MHz

Specifications subject to change without notice.

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XETAWAVE
CUSTOM RF SOLUTIONS

Xeta9 Specifications

Data Transmission

Data Interface	Ethernet & RS232/422/485 Serial
Data Connector	RJ45 (4)
Data Interface Rate	10/100 Mbps (Ethernet) Up to 230.4 kbps (Serial)
Data Encryption	128 & 256-bit AES
Error Handling	CRC, FEC, Retransmit on error

Networking

Protocols	TCP, UDP, ARP, DHCP, NTP, FTP, ICMP, HTTP, & HTTPS
Management	Web GUI, SNMP v1, v2, & v3
Serial	TCP/UDP Server, TCP Client, Modbus RTU Server
VLAN	802.1q VLANs and trunks
Features	IP Routing, Net Filter, NAT, Port Forwarding

Interfaces

Power Connector	2-pin Phoenix
Input Voltage	+10 to +32 Vdc
RF Connector	TNC
RF Resistance	50 Ohms

Ordering (contact XetaWave for other available models)

XETA9-12IMLFC	Metal Enclosed, 2 Ethernet & 1 Serial, Linux OS, ISM Only
XETA9-22DMLFC	Metal Enclosed, 2 Ethernet & 2 Serial, Linux OS
XETA9-22IPLFC	Plastic Enclosed, 2 Ethernet & 2 Serial, Linux OS, ISM Only

ISM Power

Transmit Current	335 mA @ +12 Vdc
Receive	290 mA @ +12 Vdc
Idle	270 mA @ +12 Vdc

MAS Power

Transmit Current	495 mA @ +12 Vdc
Receive	380 mA @ +12 Vdc
Idle	210 mA @ +12 Vdc

Environmental / Physical

Operating Temperature	-40°C to +75°C (ISM) -40°C to +60°C (MAS)
Humidity	95% @ +40°C non-condensing
Safety	UL Class 1 Div 2
Dimensions	6.62" x 3.45" x 1.83" (L x W x H)
Weight	700 grams

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