

XetaEdge24

Industrial Edge Computer w/2.4 GHz Radio

The **XetaEdge24** combines the **XetaEdge** and **Xeta24** to provide an extremely capable and flexible industrial Edge Computing application device with an integrated 2.4 GHz Frequency Hopping Spread Spectrum (FHSS) and Digital Transmission System (DTS) software defined radio (SDR). The **XetaEdge24** is compatible with the Xeta24 family of radios and is Class 1 Div 2 certified.

The **XetaEdge24** is 100% open source allowing quick and simple hosting of many existing or new applications including the **AUTOSOL eACM** and the **Inductive Automation Ignition Edge** for interacting with existing devices like flow meters, ROCs, and PLCs while reducing bandwidth needs with the use of the **MQTT** protocol.



Plastic enclosure. Metal enclosure also available.

The **XetaEdge24** also supports multiple modulation schemes and MultiSpeed MultiPoint™ which 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.

Key Features

High Speed Over-the-air data rates from 57 kbps to 5.3 Mbps plus higher throughput with payload compression and in the **XetaEMP** mode.

Dual Mode Frequency hopping and single channel operations in the 2.402 to 2.478 GHz unlicensed ISM band.

Networks Point to Point, Point to MultiPoint, Enhanced MultiPoint (**XetaEMP**), CSMA Peer to Peer, and **XetaMESH**.

Memory Capacity Host and run applications with 1 GB RAM and 4 GB Flash with an option for 8GB or 16GB plus a micro SD slot.

Apps AUTOSOL eACM, Node-RED, Inductive Automation Ignition Edge, AVEVA IoT View, and more are supported.

Open Source Utilize existing Linux applications or host new ones developed in Java, Python, Ruby, Perl, and many more.

XetaEdge24 Specifications

Transmitter	FCC FHSS	FCC DTS
Frequency Range	2402 to 2478 MHz	
Output Power	10 to 1000 mW (10 to 30 dBm)	
Modulation	MSK, BPSK, QPSK, 8PSK, 16PSK, 16QAM, 32QAM, 64QAM	
Data Rate	57 to 5303 kbps	530 to 5303 kbps
Channel Bandwidth	77, 154, 207, 310, 600, & 1200 kHz	600 & 1200 kHz
Frequency Stability	1.0 ppm	
Range	40 miles	10 miles

Receive sensitivity numbers below are with FEC disabled. With FEC enabled, these typically improve by 3 dBm.

Receiver	77 kHz Channel		154 kHz Channel		207 kHz Channel	
	Sensitivity	Data Rate	Sensitivity	Data Rate	Sensitivity	Data Rate
MSK	-110 dBm	57 kbps	-107 dBm	114 kbps	-106 dBm	153 kbps

Receiver	310 kHz Channel		600 kHz Channel		1200 kHz Channel	
	Sensitivity	Data Rate	Sensitivity	Data Rate	Sensitivity	Data Rate
MSK	-103 dBm	229 kbps				
BPSK			-98 dBm	530 kbps	-100 dBm	884 kbps
QPSK			-99 dBm	1061 kbps	-96 dBm	1768 kbps
8PSK			-96 dBm	1591 kbps	-90 dBm	2651 kbps
16PSK					-84 dBm	3535 kbps
16QAM			-91 dBm	2121 kbps	-85 dBm	3535 kbps
32QAM			-85 dBm	2651 kbps	-80 dBm	4419 kbps
64 QAM			-80 dBm	3182 kbps	-77 dBm	5303 kbps

XetaEdge24 Specifications

Processing

CPU	1 GHz ARM Cortex-A8
OS	Debian
RAM / Flash	1 GB / 4 GB 8 GB & 16 GB Flash Options

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

Power

Transmit	225 mA @ +12 Vdc
Receive	190 mA @ +12 Vdc
Idle	176 mA @ +12 Vdc

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" (metal) 5.5" x 3.5" x 1.5" (plastic)
Weight	700 grams (metal) 182 grams (plastic)

Functionality

Operating Modes	Point to Point, Point to MultiPoint, Enhanced MultiPoint, Peer to Peer, Mesh
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
Hop Patterns	10 Pseudo Random, 1 Pseudo Random Based on Network ID, & 1 Secure (ISM)
Secure Hop Pattern	128-bit AES Hop Pattern Determination (ISM)
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

XetaEdge24 Specifications

Ordering

XETAEC24-22IMDFB	Metal Enclosed, 2 Ethernet & 2 Serial
XETAEC24-22IMDFB-IO	Metal Enclosed, 2 Ethernet & 2 Serial, 8 IO
XETAEC24-22IPDFB	Plastic Enclosed, 1 Ethernet & 1 Serial
XETAEC24-22IPDFB-IO	Plastic Enclosed, 2 Ethernet & 2 Serial, with 8 Programmable I/O