

Linux Edge Computer Software Defined Industrial Radio



The **XetaEdge9** combines the **XetaEdge** and **Xeta9** to provide an extremely capable and flexible industrial Edge Computing application device with built-in 900 MHz Frequency Hopping Spread Spectrum (FHSS) and Digital Transmission System (DTS) software defined radio. The **XetaEdge9** is compatible with the Xeta9 family of radios in the ISM band and is Class 1 Div 2 certified.

The **XetaEdge9** is 100% open source allowing quick and simple hosting of many existing or new applications like the **AUTOSOL eACM** and the **Inductive Automation Ignition Edge** to offer multiple protocols to interact with exiting devices like flow meters, ROCs, and PLCs while reducing bandwidth needs with the use of the **MQTT** protocol.

The **XetaEdge9** supports multiple modulation schemes with auto configuration, **MultiSpeed MultiPoint™** mode, and simultaneous peer to peer transmission within a network using **XetaMESH**.

Key Features

High Speed Over-the-air data rates from 10 kbps to 4.4 Mbps.

Dual Mode Frequency hopping and single channel operations in the 902 to 928 MHz unlicensed ISM band.

Networks Point to Point, Point to MultiPoint, CSMA Peer to Peer, and XetaMESH.

Industrial Safe C1D2 certified and operating temperature of -40°C to $+85^{\circ}\text{C}$.

Memory capacity Host applications with 1 GB RAM and 4 GB Flash plus a micro SD slot.

Apps AUTOSOL eACM and Ignition Automation Ignition Edge installations available.

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

Processing

CPU	1 GHz ARM Cortex-A8
OS	Linux Debian, Ubuntu Server, Open Embedded
RAM / Flash / Expansion	1 GB / 4 GB / micro SD slot
Software	Ignition Edge, eACM, Node-RED, Java, Python, many more

Data Transmission

Data Interface	Ethernet & RS232/485 Serial
Data Connector	RJ45 (2 Ethernet & 2 Serial)
Data Interface Rate	10/100 Mbps (Ethernet) Up to 1Mbps (Serial)
Error Handling	CRC, FEC, Retransmit on error
Error Correction	Goley, Small Block, Reed-Solomon
Operating Modes	Point to Point, Point to MultiPoint, CSMA Peer to Peer, XetaMESH
RF Connector	TNC / 50 Ohms

Power

Connector	2-pin Phoenix
Input Voltage	+10 to +32 Vdc
Transmit	225 mA @ +12 Vdc
Receive	190 mA @ +12 Vdc
Idle	176 mA @ +12 Vdc

Environmental / Physical

Op Temperature	-40°C to +85°C	Dimensions	5.5" x 3.5" x 1.5" (L x W x H)
Humidity	95% @ +40°C non-condensing	Weight	182 grams
Safety	UL Class 1 Div 2		

Ordering

XETAEC9-22IPDFA	Plastic Enclosed, 2 Ethernet, 2 Serial, Debian
XETAEC9-22IPDFA-IO	Plastic Enclosed, 2 Ethernet, 2 Serial, 8 I/O, Debian

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

Receiver

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
	-81 dBm	2.65 Mbps	32QAM
900 kHz	-98 dBm	663 kbps	2FSK
1.2 MHz	-98 dBm	884 kbps	BPSK
	-95 dBm	1.76 Mbps	QPSK
	-90 dBm	2.65 Mbps	8PSK
	-83 dBm	3.53 Mbps	16PSK
	-86 dBm	3.53 Mbps	16QAM
	-81 dBm	4.41 Mbps	32QAM