Intuicom®

EB-X Wireless Ethernet Gateway

Long-Range, High-Speed Serial/Ethernet Transceiver

Features

- "Best-in-Class" 900 MHz performance
- License-free Operation
- High-Speed performance from 115 kbps up to 4 Mbps
- Long-range: 40+ miles (LOS)
- Dual Ethernet and Serial Port interfaces
- Secure: Data protection with SSH, SNMP, AES-128, and AES-256 encryption
- Single unit–multiple modes of operation: Gateway, Endpoint, Repeater and Peer-to-Peer functionality
- Performance enhancements include compression, aggregation, and adaptive spectrum learning
- Low power consumption: Ideal for remote, solar, and battery applications
- Industrial operating temperature from -40°C to +75°C
- Internal web dashboard for over-the-air diagnostics and configuration

OVERVIEW

The Intuicom EB-X is a long-range, low-power, and high-speed solution that features both IP and serial connectivity. The EB-X is made for reliable transmission and control of data in challenging industrial environments, ideal for making existing networks ready to face the evolving capabilities of future systems.

Fast: Boasting data speeds up to 4 Mbps, the EB-X is our highest-bandwidth radio option in the 900 MHz unlicensed band.

Flexible: With Ethernet and RS-232 Serial connectivity, the EB-X is flexible enough to support legacy serial controllers and sensors as well as modern IoT devices. The EB-X is multi-functional and may be operated as the gateway, endpoint, or repeater, in point-to-point, point-to-multipoint, and peer-to-peer communications.

Capable: Empowered with an ultra-sensitive and highly-selective RF receiver, the EB-X provides real-time robust data transport. With top performance and security that includes 128-bit or 256-bit AES encryption, the EB-X provides superior "real world" throughput and performance over other wireless products.
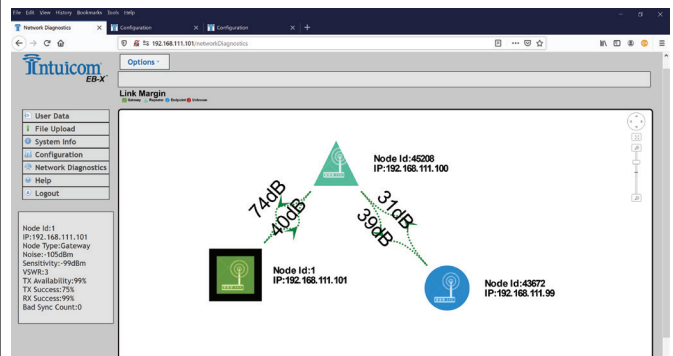
Applications

- SCADA
- Traffic and Transportation Control
- Energy Production
- Water and Wastewater Systems
- Agriculture
- Pipeline Monitoring and Leak Detection
- Electrical Utility Applications
- Automation and Control Solutions

SPECIFICATIONS

Specification	Description		
General			
Enclosure Size	Cast aluminum 165mm x 107mm x 53mm		
Weight	680 g		
Operating Temp.	-40°C to +75°C		
Humidity	0 to 95%, non-condensing		
RoHS	Directive 2011/65/EU		
Ethernet	RJ45 (two)		
Serial	DB-9 (two)		
USB	Micro USB		
RF Connector	TNC (f)		
Power Requirements			
Operating Voltage	+10 to +36 VDC (+/- 10%)		
Transmit Current	464 mA @ 12 VDC		
Receive/Idle Current	180mA/148mA @ 12 VDC		
Data Transmission			
Type	Frequency Hopping Spread Spectrum		
Link Throughput	Up to 1.6 Mbps; 4 Mbps with Compression		
User Interface Rates	Ethernet Rate: 10/100 Mbps Serial: up to 250 kbps		
Modulation	2 level GFSK, 4 and 8-ary FSK		
Error Detection	CRC & ARQ, retransmit on error, FEC		
Data Encryption	128-bit and 256-bit AES CCM		
Advanced Features	Packet compression and aggregation		
Transmitter			
Frequency Range	902-928 MHz		
Output Power	Up to 1 Watt, user selectable		
Range	+40 Miles (LOS)		
Channel Spacing	230.4, 345.6, 691.2, 1382.4, 3225.6 kHz		
RF Data Rates	115.2, 250, 500 kbps, 1, 1.5, 4 Mbps; user selectable		
Hopping Rates	400, 200, 100, 50, 25 ms		
Hopping Channels	Up to 16; RF data-rate dependent		

Specification	Description		
Receiver			
IF Selectivity	>40 dB		
System Gain	135 dB		
Sensitivity	RF Data Rate	Without FEC	With FEC
	115 kbps	-105 dBm	-108 dBm
	250 kbps	-102 dBm	-105 dBm
	500 kbps	-99 dBm	-102 dBm
	1 Mbps	-95 dBm	-98 dBm
	4 Mbps	-83 dBm	-86 dBm
Networking			
VLAN	VLAN tagging 802.1Q (ports and services)		
Serial	Serial TCP server, Modbus/TCP, Modbus RTU, TCP client		
Traffic Filtering	Netmask filter, ARP filter		
Network Accelerators			
Packet Compression			
Packet Aggregation			
Forward Error Correction			
Adaptive Spectrum Learning			

On-board Network Diagnostics