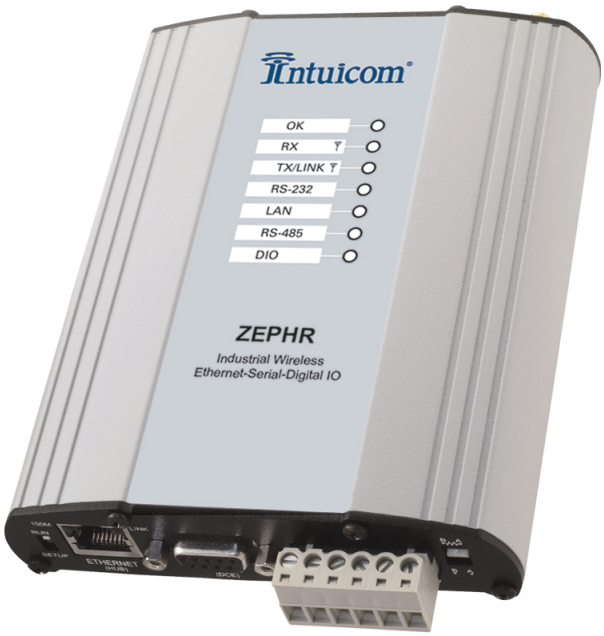
ZEPHR-2

2.4 GHz High-Speed Industrial Ethernet-Serial-I/O Wireless Connectivity



The Intuicom ZEPHR-2 wireless Ethernet modem is a robust, inexpensive, license-free wireless 802.11 standards-compliant transceiver capable of high-bandwidth communications. Operating at 2.4GHz and up to 630 mW, the Intuicom ZEPHR-2 is optimized for data rates of up to 108 Mbps, providing robust long-distance and secure two-way wireless communications in challenging environments typical of industrial monitoring and control applications.

Capable of operating in access point/client configuration, functioning as a network bridge/router, or serving as a serial server (RS-232/RS-485), the Intuicom ZEPHR-2 offers unique node-to-node deterministic mesh network repeatability for greater range and multiple channel spacing options to increase network scalability. Integrated Modbus® server capability allows seamless I/O expansion through the use of Intuicom's I-O expansion modules or third-party modbus devices.

The Intuicom ZEPHR-2 is a cost-effective and robust solution to enable your devices for the Internet of Things (IoT) and Industry 4.0. With an easy to access 802.11 wireless network, the ZEPHR-2 allows your devices to communicate through the industry- standard 2.4GHz frequency band used by most devices. The Intuicom ZEPHR-2 Ethernet modem delivers with industry-leading transmit power and industrial ratings including a hazardous area rating of Class 1, Division 2.

Features

- 802.11 b/g Standards-Compliant Options
- 2.412-2.475 GHz Frequency (802.11 b/g) and 15–630 mW RF Power
- Hazardous Area Rating of Class 1, Division 2
- 13-Channel Option Support
- Single Antenna Connection for Easy Installation
- Access Point/Client and Bridge/Router Configuration
- Serial Client/Server/Multicast Modbus TCP to RTU Gateway
- 10/100Base-T IEEE® 802.3 Ethernet
- Spanning Tree Support
- Deterministic AP-to-AP Mesh Network Repeatability
- Fast Roaming for AP-to-AP Handover
- IEEE 802.11i Secure 128-bit AES Encryption (WPA2)
- MAC and IP Address Filtering
- Digital I/O Channel Transfer
- Configurable Settings for High-noise Environments
- Over-the-air Network Diagnostics and Configuration
- VLAN Tagging Support for Bridging and Routing Modes

Applications

- Traffic Control & ITS
- Industrial/Factory Automation
- Security/Surveillance
- Oil & Gas Production
- Energy Development & Management

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Technical Data: ZEPHR-2

SPECIFICATIONS

Specification	Description
Transmitter And Receiver	
Frequency	2.412-2.472 GHz[1]
Transmit Power	15–630 mW (country-specific)
Transmission Modulation	Direct sequence spread spectrum (DSSS)[1]
	Orthogonal frequency data modulation (OFDM)[1]
Receiver Sensitivity	–100 dBm at 6 Mbps; –74 dBm at 108 Mbps (8% FER)[1]
Channel Spacing	5 MHz spacing (13 channels)[1]
Data Rate	250 kbps - 108 Mbps[1] "Auto Mode" selects fastest rate possible relative to RSSI
Range (LoS)	10 miles (16 km)[2]
Antenna Connector	1 x female SMA, standard polarity
Input And Output	
Discrete I/O	Input voltage-free contact[3] Output FET 30 Vdc 500 mA[3]
Ethernet Port	
Ethernet Port	100Base-T, RJ-45 connector–IEEE 802.3
Link Activity	Link, 100Base-T via LED
Serial Port	
RS-232	DB-9 female DCE, RTS/CTS/DTR/DCD
RS-485	2-pin terminal block, non-isolated[4]
Data Rate (bps)	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps
Serial Settings	7/8 data bits, stop/start/parity (configurable)
Protocols And Configuration	
System Address	ESSID; 1–31 character text string
Protocols Supported	TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP
User Configuration	User configurable parameters via HTTPS embedded Web server
Configurable Parameters	Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP–AP repeater) Serial client/server/multicast Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/remote for I/O transfer
Security	Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol
Bandwidth Protection	MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist

Specification	Description
LED Indication And Diagnostics	
LED Indication	Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status
Reported Diagnostics	RSSI measurements, connectivity information/statistics, log file
Network Management	Optional network management system
Compliance	
EMC	FCC Part 15; EN 301 489–17; AS/NZS CISPR22
RF (Radio)	EN 301 893; FCC Part 15; RSS 210
Hazardous Area	CSA Class I, Division 2; ATEX; IECEx nA IIC
Safety	IEC 60950 (RoHS compliant)
UL®	UL Listed
General	
Size	4.5 in x 5.5 in x 1.2 in (114 mm x 140 mm x 30 mm)
Housing	Powder-coated aluminum
Mounting	DIN rail
Terminal Blocks	Removable, max. conductor 14 AWG 0.1 in^2 (2.5 mm^2)
Temperature Rating	–40 to +140 °F (–40 to +60 °C)
Humidity Rating	0–99% RH noncondensing
Weight	1.0 lb (0.45 kg)
Power supply	
Nominal Supply	9 to 30 Vdc, under/overvoltage protection
Average Current Draw	270 mA at 12V (idle), 140 mA at 24V (idle)
Transmit Current Draw	470 mA at 12V (400 mW), 250 mA at 24V (600 mW)

SPECIFICATIONS SUBJECT TO CHANGE

1: Frequency range dependent on country of model and antenna.
2: Typical maximum line of sight range, RF Power dependent.
3: Can be used to transfer I/O status or communications failure output.
4: Maximum distance: 3937 ft (1200 m).

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