

ZumLink

900 MHz Ethernet Radios



Key Features

Multi-High Speed Data Rates: Five RF Link Rates supporting throughputs from 80 kbps to 4 Mbps

Programmability: Flexible user configurability along with acceptance of 3rd party applications

Long Range: Up to 100+ miles line of sight

Security: 128-bit and 256-bit AES counter mode encryption

User Selectable Hopping Sequence: manipulate channel settings to assure highest performance

Built-in Spectrum Analyzer: Identify potential interference and monitor network performance

Low Current Consumption: 270 mA @ 12V in transmit and 100 mA @ 12 V in receive

Error Free Communication: CRC, FEC and ARQ

Overview

FreeWave's new ZumLink™ 900 series platform, part of our Sensor-2-Server™ solution delivers secure collection, transport and control of data. The ZumLink 900 Series currently operates in the unlicensed 900 MHz spectrum supporting link rates up to 4 Mbps and is user configurable.

This cost effective, high-speed, rugged communication platform is specifically designed for outdoor industrial locations and is reliable under extreme environmental conditions. Its advanced technology makes it ideal for in-field area networks for oil and gas, utilities, mining, facility automation, municipalities, disaster recovery, or any industrial application that needs extremely reliable communications.

It is designed with more flexibility, increased throughput, and lower power consumption to meet the demands of the many wireless applications today. An Ethernet port, two RS232 serial ports, and one USB port is provided.

Virtually any M2M, SCADA, or Industrial IoT application can benefit from the enhanced features provided by our ZumLink product. The product supports SSH, SNMP, VLAN, RADIUS, and AES encryption.

Industry's 1st Programmable Radio

A very powerful new break-through technology ... ZumLink is the industry's first product that will accept third-party applications. It is programmable in JAVA and Python. ZumLink can be connected to any Ethernet enabled device that connects to sensors. Programmability will allow ZumLink to put intelligence at the edge controlling sensor functionality.

FreeWave's ZumLink 900 Series and Sensor-2-Server communication solutions have been designed to provide the performance, reliability, and quality that our customers have come to know and expect in our products. All radios are designed, manufactured and tested in Boulder, CO.



ZumLink 900 MHz Ethernet Radio: Technical Specifications

TRANSMITTER

Frequency Range	902 to 928 MHz
Output Power	10mW to 1W; user selectable
Data Link Range	100 miles
Modulation	GFSK and 8-ary FSK
Channel Sizes	230.4, 345.6, 691.2, 1382.4, 3225.6 kHz
RF Data Rates	115.2, 250, 500, 1000, 4000 kbps
Hopping Channels	up to 112; RF Data Rate Dependent
Hopping Patterns	Up to 16
Hopping Rates	400ms, 200ms, 100ms, 50ms, 25ms

RECEIVER

Sensitivity	-106 dBm @ 115.2 Kbps; -82 dBm @ 4 Mbps
IF Selectivity	> 40 dB
System Gain	136 dB

DATA TRANSMISSION

Error Detection	CRC, FEC and ARQ
Link Throughput	up to 2 Mbps
	Ethernet Rate up to 2 Mbps
	Serial Rate up to 250 kbps
Data Encryption	128-bit and 256-bit AES CCM
Protocol	Proprietary CSMA

INTERFACES

Data Connectors	Three RJ-45 (one Ethernet, two Serial)
USB Connector	micro USB
RF Connector	TNC

POWER REQUIREMENTS

Operating Voltage	+6 to +30 VDC ($\pm 10\%$)
Transmit Current	270 mA @ 12 VDC
Receive/Idle Current	100 mA @ 12 VDC
Max Power	7W

GENERAL INFORMATION

Operating Temperature	-40°C to +60°C
Humidity	0 to 95%, non-condensing
Dimensions	7.52 x 4.31 x 2.52 in
Weight	750 g

ZumLink 900 MHz Ethernet Radio: Applications



Oil and Gas



Agriculture



Utilities



Defense



SCADA



Mining



Fleet Management



Municipal



Enterprise

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Specifications are subject to change without notice.

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