

ZUMLINK

900 Series

Serial Radio Module



KEY FEATURES

Multi-High Speed Data Rates:

Five RF Link Rates supporting throughputs from 80 kbps to 2.2 Mbps.

Long Range: Up to 97 km (60 miles) line of sight.

Low Current Consumption:

843 mA @ 3VDC in transmit
680 mA @ 5VDC in transmit

Diagnostics: Allows real-time access to receive signal characteristics for all used channels.

Flexible Interface: Either two RS232 or two TTL serial interfaces.

Noise Immunity: Superior performance in noise congested environments.

Industrial Grade: 100% tested for performance from -40°C to +85°C, C1D2

Reliable Communication: CRC and ARQ

Secure: Frequency Hopping Spread Spectrum technology prevents detection and unauthorized access.

OVERVIEW

Build your next product with the best new radio platform on the market today, FreeWave's ZumLink embeddable radio modules.

These rugged, industrial grade radios are designed to perform at high speeds and long distances with low power consumption. They are perfect for any embedded system that demands the highest standard in quality and performance.

This user-configurable 900 MHz product is available as an OEM board level radio. It shares the same 14-pin interface found on our MM2 OEM board level radios easing migration but is not a drop-in replacement. The FreeWave ZumLink Series of serial radios 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.

SOLUTIONS



DRONES & ROBOTICS



EARTH MONITORING



GOV & DEFENSE



IRRIGATION & PRECISION AGRICULTURE



ASSET TRACKING



OIL & GAS



WATER & WASTEWATER



SMART CITIES



UTILITIES

TECHNICAL SPECIFICATIONS

TRANSMITTER

Frequency Range	902 to 928 MHz
Output Power	10mW to 1W; user selectable
Range	97 km (60 mi.), clear line of sight
Channel Spacing	230.4, 345.6, 691.2, 1382.4, 3225.6 kHz
RF Data Rates	115.2, 250, 500 kbps, 1 & 4 Mbps; user-selectable

RECEIVER

IF Selectivity	> 40 dB
System Gain	136 dB
Sensitivity	
115.2 kbps	-105 dBm
250 kbps	-102 dBm
500 kbps	-99 dBm
1 Mbps	-95 dBm
4 Mbps	-83 dBm

DATA TRANSMISSION

Type	Frequency Hopping Spread Spectrum
Modulation	2 level GFSK and 8-ary FSK
Link Throughput	Up to 2.2 Mbps
Error Detection	16-bit CRC, 16-bit ARQ, retransmit on error
Hopping Rates	400, 200, 100, 50, 25 ms
Hopping Channels	Up to 110; RF Data Rate Dependent
Hopping Patterns	Up to 16; RF Data Rate Dependent
Protocol	Adaptive Spectrum Learning
User Interface Rates	TTL 3 Mbps RS232 1 Mbps

POWER REQUIREMENTS

Operating Voltage +3 to +5 VDC (± 10%)

Current Consumption

Voltage	Transmit	Receive	Idle
+3 VDC	843 mA	30 mA	13 mA
+5 VDC	680 mA	30 mA	13 mA


INTERFACES

Data Interface	14-pin dual row header for power, data, and diagnostics 2mm pin spacing Either two RS232 or two TTL serial interfaces
Diagnostics Interface	Serial, RS232 or TTL
RF Connector	MMCX

GENERAL INFORMATION

Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Humidity	0 to 95%, non-condensing
Dimensions	50.8 L x 35.6 W x 9.65 H (mm) 2.0 L x 1.4 W x 0.38 H (in.)
Weight	15 g (0.03 lbs.)
Reliability	91,328 hour MTBF

CERTIFICATIONS

RoHS	Directive 2011/65/EU
Safety	Class 1 Div 2 Groups A-D
UL	

INFORMATION TO ORDER

Model Number	Description
Z9-C	Board level, RS232
Z9-T	Board level, TTL
Z9-T-DEVKIT	Includes 2 Z9-T units and accessories

CONTACT US

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