

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 60 miles line of sight.

Low Current Consumption:

843 mA @ 3VDC
680 mA @ 5VDC

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.

High Reliability: 100% tested for performance from -40°C to +85°C

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. 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.

TECHNICAL SPECIFICATIONS

TRANSMITTER

Frequency Range	902 to 928 MHz
Output Power	10mW to 1W; user selectable
Data Link Range	60 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, RF Data Rate Dependent
Hopping Rates	400ms, 200ms, 100ms, 50ms, 25ms
Protocol	Adaptive Spectrum Learning

RECEIVER

Sensitivity	-106 dBm @ 115.2 kbps; -99 dBm @ 250 kbps; -95 dBm @ 500 kbps and 1 Mbps; -82 dBm @ 4Mbps;
IF Selectivity	> 40 dB
System Gain	136 dB

DATA TRANSMISSION

Error Detection	CRC
Link Throughput	Up to 2.2 Mbps
User Interface Rates	TTL 3 Mbps RS232 1 Mbps

INTERFACES

Data Connector	Dual row 14-pin header, 2mm pin spacing
RF Connector	MMCX

POWER REQUIREMENTS

Operating Voltage	+3 to +5 VDC (± 10%)
Transmit Current	843 mA @ 3V, 680 mA @ 5V
Receive/Idle Current	30 mA @ 3V; 13 mA @ 5V

GENERAL INFORMATION

Operating Temperature	-40°C to +85C
Dimensions	50.8mm L x 35.56mm W x 9.65mm H
Weight	15 g
Humidity	0 to 95%, non-condensing
Reliability	62,000 hour MTBF
Safety	Class 1 Div 2 Groups A-D
UL	
RoHS	Directive 2011/65/EU

INFORMATION TO ORDER

Model Number	Description
Z9-C	RS232 Board level 902-928 MHz
Z9-T	TTL Board level 902-928 MHz
Z9-T-DEVKIT	Includes 2 Z9-T units and accessories

SOLUTIONS



DRONES & ROBOTICS



EARTH MONITORING



GOV & DEFENSE



IRRIGATION & PRECISION AGRICULTURE



ASSET TRACKING



OIL & GAS



WATER & WASTEWATER



SMART CITIES



UTILITIES

CONTACT US

5395 Pearl Parkway, Boulder, CO 80301
 TF: 866-923-6168 T: (303) 381-9200
 For more information, visit www.freewave.com