FGR2 Series

FGR2-WC Waterproof 900 MHz Industrial Radio

Key Features

Wide Input Voltage Range: +6 to +30 VDC

Synthesized Waveform Transmit Data: Reduces out of band modulation products

Backward Compatible: 100% compatible with all existing 900 MHz FreeWave serial radios

Versatile: A single radio can operate as a Gateway, Endpoint, Repeater or Endpoint/Repeater

High Noise Immunity: Superior performance in noise congested environments

Secure: Proprietary Spread Spectrum Technology prevents detection and unauthorized access; AES 128/256 bit encryption available

Selectable Speeds: 115.2 kbps & 153.6 kbps

Long Range: 60 mile range with clear line of sight; ability to extend through Repeaters

Error Free Communications: 32 bit CRC with automatic retransmission

Industrial Grade: 100% tested for RF performance from -40°C to +75°C

Overview

FreeWave Technologies Provides wireless data solutions for applications around the world ranging from mission critical to recreational. While most users deploy the FGR2 Board level radio, this radio is often used for base stations. The FGR2-WC offers industrial grade wireless security and encrypted communications all in one package.

All radios are designed, manufactured and tested in Boulder, CO.

Specifications

MODEL	FORM FACTOR	OPTIONS
FGR2-WC	165 L x 78 W x 60 H (mm)	Waterproof Enclosure

FreeWave®

FGR2-WC 900 MHz Industrial Radio: Technical Specifications

TRANSMITTER	
Frequency Range	902 to 928 MHz (FHSS)
Output Power	5 mW to 1 W
Data Link Range	60 miles, clear line of sight
Modulation	2 level GFSK, 115.2 kbps or 153.6 kbps
RF Data Rate	153.6 kbps high speed, 115.2 kbps standard speed
Occupied Bandwidth	230 kHz
Hopping Patterns	15 per band, 105 total, user-selectable
Hopping Channels	50 to 112, user-selectable
Frequency Zones	16 zones, 7 channels per zone

RECEIVER	
Nominal Sensitivity	-105 dBm at high speed, $1x10^{-4}$ BER
	-109 dBm at standard speed, $1x10^{-4}$ BER
IF Selectivity	40 dB at fc +/- 230 kHz
RF Selectivity	50 dB at 869 MHz, 935 MHz
Dynamic Range	+10 dBm 3rd order intercept point at input connector

DATA TRANSMISSION	
Error Detection	32 bit CRC, retransmit on error
Data Encryption	AES 128/256 bit encryption available* and PSST**
Data Throughput	115.2 kbps at high speed RF data rate
	80 kbps at standard speed RF data rate
Data Interface	Serial, 1200 bps to 230.4 kbps
Protocol	RS232/RS422/RS485

DIAGNOSTICS	
Connector	Fischer 11-pin

POWER REQUIREMENTS		
Operating Voltage	+6 VDC to +30 VDC	
+6 VDC Typical Current		
Transmit: 700 mA	Receive: 85 mA	Idle: 19 mA
+12 VDC Typical Current		
Transmit: 365 mA	Receive: 48 mA	Idle: 11 mA
+30 VDC Typical Current		
Transmit: 150 mA	Receive: 26 mA	Idle: 8 mA

GENERAL INFORMATION	
Operating Temperature	-40°C to +75°C
Humidity	0 to 95% non-condensing
Dimensions	165 L x 78 W x 60 H (mm)
Weight	496 g
RF Connector	N-Type female

FGR2-WC 900 MHz Industrial Radio: Applications


Oil and Gas


Agriculture


Utilities


Defense


SCADA


Mining


Fleet Management


Municipal


Enterprise

Contact your FreeWave reseller or sales rep for implementation details.

FreeWave Technologies, Inc.

5395 Pearl Parkway, Suite 100, Boulder, CO 80301 TF 866.923.6168 T 303.381.9200
For more information, visit www.freewave.com
Specifications are subject to change without notice.