

FGR2 Series

FGR2 900 MHz Industrial Radio

Overview:

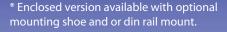
The FreeWave FGR2 radio is the next generation of the FGR Series that has the same proven performance, reliability, and quality that our customers have come to know and expect in all of our products. The FGR2 is a cost effective solution that allows customers to incorporate wireless communications into a wide variety of applications. The FGR2 features a 6 to 30 VDC operating voltage, multiple interface options, a temperature range from –40° C to +75°C, and is UL Class 1, Division 2 approved. Offered as a board level product and in an enclosure, the FGR2 provides tremendous flexibility for use in applications around the world ranging from oil and gas to golf carts, water systems, and more. The FGR2 is backward compatible with the FGR and DGR Series of FreeWave radios, enabling existing customers to leverage and extend their existing investment.

Features: All specifications are tested and guaranteed.

- Improved Low Signal Performance -RISC-based signal demodulation with matched filter.
- Long Range 60 mile range with clear line of sight; ability to extend through repeaters.
- Versatile A single radio can operate as a master, slave, repeater, or slave/repeater.
- UL Class 1, Division 2 approved.
- Unparalleled Signal Performance GaAs FET RF front end with multistage SAW filtering has unmatched combination of overload immunity and sensitivity.

- High Noise Immunity Provides superior performance in noise congested environments.
- Selectable Speeds 115.2 Kbps & 153.6 Kbps.
- Secure Proprietary spread spectrum technology prevents detection and unauthorized access; 128 bit AES encryption available.
- Reliability Every radio 100% tested for RF performance from -40°C to +75°C.
- Low Power Consumption industry leading.
- Backward compatible with the FGR & DGR Series of FreeWave radios.







FGR2 Series

FGR2 900 MHz Industrial Technical Specifications

Transmitter				
Frequency Range	902-928 MHz (FHSS)			
Output Power	5 mW to 1 watt			
Range - Line of Sight	60 miles			
Modulation	2 level GFSK, 115.2 Kbps or 153.6 Kbps			
Occupied Bandwidth	230 kHz			
Hopping Patterns	15 per Band, 105 total, user	selectable		
Hopping Channels	50 to 112, user selectable			
Hopping Bands	7, user selectable			
Frequency Zones	16 Zones, 7 Channels per zone			
RF Connector	Type SMA, TNC-Enclosed version only (Female connectors)			
Receiver				l I
Sensitivity	-108 dBm for BER 1x10 $^{\circ}$, -110 dBm for BER 1x10 4			
IF Selectivity	40 dB at fc +/- 230 kHz			
RF Selectivity	50 dB at 896 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	Dynamic key substitution. 128 bit AES encryption available*.			
Link Throughput	115.2 Kbps Standard Speed; 80 Kbps Low Speed			
Data Interface	Serial			
Protocol	RS232 / 485 / 422, 1200 Baud to 230.4 KBaud			
Data Connector	Board Level: 10-pin header with locking ramp, 0.1 inch spacing, power/data connector Enclosed (ruggedized): DB9			
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Diagnostics	Board Level: Separate 20-pin	າ PCB header Enclosed (ru	ggedized): 3-pin PCB head	der.
Diagnostics Connector		n PCB header Enclosed (ru	iggedized): 3-pin PCB head	der.
Diagnostics Connector Power Requirements		n PCB header Enclosed (ru	iggedized): 3-pin PCB head	der.
Diagnostics Connector Power Requirements Operating Voltage	Board Level: Separate 20-pi	n PCB header Enclosed (ru 6 VDC	ggedized): 3-pin PCB head	der. 30 VDC
Diagnostics Connector Power Requirements Operating Voltage	Board Level: Separate 20-pin 6 to 30 VDC			
Diagnostics Connector Power Requirements Operating Voltage Current	Board Level: Separate 20-pin 6 to 30 VDC Mode	6 VDC	12 VDC	30 VDC
Diagnostics Connector Power Requirements Operating Voltage	Board Level: Separate 20-pin 6 to 30 VDC Mode Transmit	6 VDC 800 mA	12 VDC 380 mA	30 VDC 170 mA
Diagnostics Connector Power Requirements Operating Voltage	Board Level: Separate 20-pin 6 to 30 VDC Mode Transmit Receive	6 VDC 800 mA 90 mA	12 VDC 380 mA 55 mA	30 VDC 170 mA 40 mA
Diagnostics Connector Power Requirements Operating Voltage Current	Board Level: Separate 20-pin 6 to 30 VDC Mode Transmit Receive Idle	6 VDC 800 mA 90 mA 24 mA	12 VDC 380 mA 55 mA 16 mA	30 VDC 170 mA 40 mA 8 mA
Diagnostics Connector Power Requirements Operating Voltage Current General Information	Board Level: Separate 20-pin 6 to 30 VDC Mode Transmit Receive Idle	6 VDC 800 mA 90 mA 24 mA	12 VDC 380 mA 55 mA 16 mA	30 VDC 170 mA 40 mA 8 mA
Diagnostics Connector Power Requirements Operating Voltage	Board Level: Separate 20-pin 6 to 30 VDC Mode Transmit Receive Idle Sleep	6 VDC 800 mA 90 mA 24 mA 8 mA	12 VDC 380 mA 55 mA 16 mA 6 mA	30 VDC 170 mA 40 mA 8 mA 3 mA

 ${\it *Contact your FreeWave reseller or sales rep for implementation details}.$

 $\textbf{FreeWave Radios Require Professional Installation.} \ Specifications \ may \ change \ at \ any \ time \ without \ notice. \\ @2009 \ FreeWave \ Technologies, \ Inc. \\$

