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FGR2 Series

FGR2-C/FGR2-T Industrial 900 MHz Series

Overview:

FreeWave Technologies, Inc's 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.

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

Features:

- 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.
- Backward compatible with the FGR & DGR Series of FreeWave radios.
- 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; AES 128 / 256 bit encryption available.
- Reliability: Every radio 100% tested for RF performance from -40°C to +75°C.
- Low Power Consumption: Industry leading.
- UL Class 1, Division 2.



FGR2 Series

FGR2-C/FGR2-T Industrial 900 MHz 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				
Sensitivity	-107 dBm for BER 1x10 ⁻⁶ , -109 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	AES 128/256 bit encryption available* and Proprietary Spread Spectrum Technology			
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			
Diagnostics				
Connector	Board Level: Separate 20-pin PCB header Enclosed (ruggedized): 3-pin PCB header			
Power Requirements				
Operating Voltage	+6 to +30 VDC			
Typical Current (mA)	Mode	+6 VDC	+12 VDC	+30 VDC
	Transmit	700	365	150
	Receive	85	48	26
	Idle	19	11	8
	Sleep	5	3	3
General Information				
Operating Temperature Range	-40° C to +75° C (-40° F to +167° F)			
Dimensions	Board Level: 136mm L x 62mm W x 14mm H			
Weight	Board Level: 58 g			
Humidity	0 to 95% non-condensing			

*Contact your FreeWave reseller or sales rep for implementation details.

FreeWave Radios Require Professional Installation. Specifications may change at any time without notice. ©2012 FreeWave Technologies, Inc.

