



1880 S. Flatiron Court, Suite F
Boulder, CO 80301

tf 866.923.6168

p 303.381.9200

f 303.786.9948

www.freewave.com
sales@freewave.com

FGR - SERIES

FGRSRCSU / FGRSRTSU Industrial 900 MHz Radio

Overview:

The FreeWave® Technologies family of board level radios provides outstanding performance and versatility in a small footprint that is ideal for OEM applications. The board level radio offers a cost effective solution that allows customers to incorporate wireless communications into a wide variety of applications. With more interface options available, a 6-20 VDC operating voltage, a temperature range of -40°C to +75°C, surface mount design, no additional RF shielding, and a unit with Class 1 Div 2 classification, the OEM board level product has tremendous flexibility for use in applications around the world.

Features:

- Wide Input Voltage Range - 6 to 20 Volt DC.
- The Lowest Current Draw of any Radio: 12 Volts
 - 21 mA in idle mode
 - 86 mA in full time receive
 - 500 mA transmit current
- Synthesized Waveform Transmit Data - reduces out of band modulation products.
- Backward Compatible - 100% compatible with all existing 900 MHz FreeWave radios.
- High Noise Immunity - Superior Performance in noise congested environments.
- Secure - Proprietary spread spectrum technology prevents detection and unauthorized access.
- High Speed - 115.2 Kbps continuous throughput.
- Range - 2 miles with clear line of sight.
- Error Free Communications - 32 bit CRC with automatic retransmission.
- Industrial Grade Specifications - 100% tested for RF performance from -40 °C to +75 °C.



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Technical Specifications

Transmitter

Frequency Range	902-928 MHz (FHSS)
Output Power	100 mW
Range, Line of Sight	2 Miles
Modulation	2 Level GFSK, 115.2 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	SMA

Receiver

Sensitivity	-98 dBm for BER 1x10 ⁻⁶ , -100 dBm for BER 1x10 ⁻⁴
Selectivity	20 dB at fc ± 230 kHz (2nd IF)
System Gain	120 dB

Data Transmission

Error Detection	32 bit CRC, Retransmit on Error
Data Encryption	Dynamic Key Substitution
Maximum Throughput	115.2 Kbps
Data Interface	Serial
Protocol	RS232 / 485 / 422 or TTL, 1200 Baud to 115.2 KBaud
Data Connector	10 pin header with locking ramp, 0.1 inch spacing, power/data connector.

Diagnotics Interface

Connector	Separate 20-pin PCB header (Ltd.)
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Power Requirement

Operating Voltage	6-20 VDC			
Current [mA]	Mode	6VDC	12VDC	20VDC
	Transmit	120 mA	68 mA	46 mA
	Receive	68 mA	36 mA	28 mA
	Idle	22 mA	13 mA	10 mA

General Information

Operating Temperature Range	-40 °C to +75 °C
Dimension	127 L x 61 W x 16 H (mm)
Weight	50 g
Humidity	0 to 95% non-condensing

FreeWave Radios Require Professional Installation.

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