



FGR Series

FGRSRCSU / FGRSRTSU 900 MHz Industrial Radio



FGRSR-CSU

OVERVIEW

The FGRSR 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 to +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.

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

MODEL	DIMENSIONS	PRODUCT OPTIONS
FGRSR-CSU	127 L x 61 W x 16 H (mm)	RS232/RS485/RS422 Board Level
FGRSR2-TSU	127 L x 61 W x 16 H (mm)	TTL / Board Level

APPLICATIONS



Oil & Gas



Smart Grid



Water & Wastewater



Precision Agriculture

KEY FEATURES

- **Wide Input Voltage Range:** +6 to +20 VDC
- **Lowest Current Draw of any Radio:** 12 V
 - 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:** 100% tested for RF performance from -40° C to +75° C

FGRSR-CSU / FGRSR2-TSU 900 MHz Industrial Radio Technical Specifications

		FGRSR-CSU		FGRSR2-TSU	
TRANSMITTER	Frequency Range	902 - 928 MHz			
	Output Power	100 mW			
	Data Range	2 Miles, Clear Line of Sight			
	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			
RECEIVER	Sensitivity	-98 dBm for BER 10^{-6} -100 dBm for BER 10^{-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 Security	FHSS Technology			
	Data Throughput	115.2 kbps			
	Data Interface	Serial			
	Protocol	RS232/RS485/RS422 or TTL, 1200 Baud to 115.2 kBaud			
	Data Connector	10 pin header with locking ramp, 0.1 inch spacing, power/data connector			
DIAGNOSTICS	Connector	Separate 20-pin PCB header (Ltd.)			
POWER REQUIREMENTS	Operating Voltage	+6 to +20 VDC			
	Typical Current	Mode	+6 VDC	+12 VDC	+20 VDC
		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	-40° C to +75° C (-40° F to +167° F)			
	Humidity	0 to 95%, non-condensing			
	Dimensions	127 L x 61 W x 16 H (mm)			
	Weight	50 g			
	RF Connector	SMA			



FreeWave Radios Require Professional Installation. Specifications may change at any time without notice. ©2013 FreeWave Technologies, Inc.

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