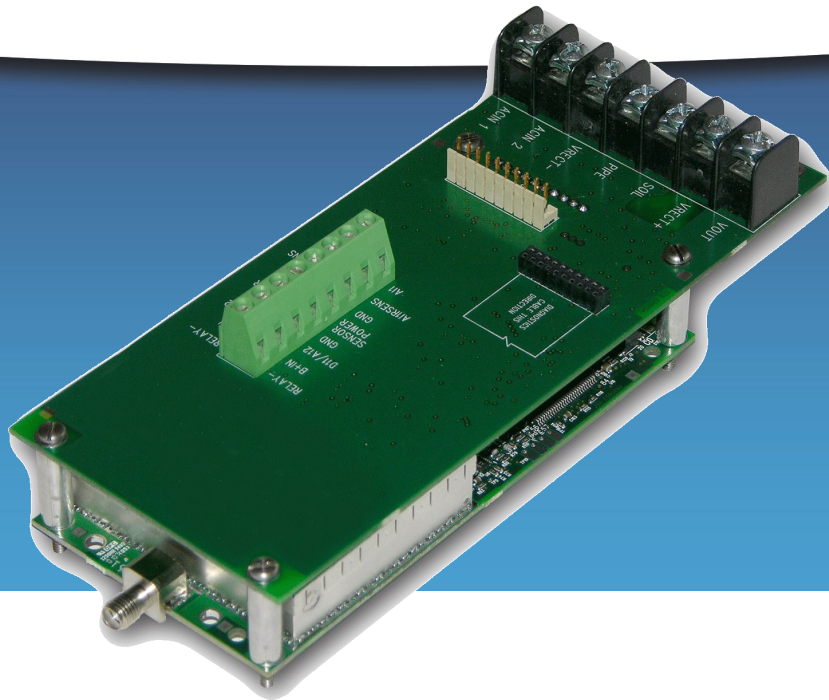


FGR2 Series

Industrial 900 MHz Cathodic Protection

Remote Monitoring



Key Features

Multi-Purpose, All-in-One Radio Modem: Monitor rectifiers, pipe-to-soil test stations, pressure and pipeline scrubbing operations

Open Protocol Communications: Uses open Modbus and extended Modbus

No Obsolescence: 100% backwards compatibility with all legacy FreeWave 900 MH products

No Recurring Monthly Costs: You own your own communication network

Repeater Capabilities: Each FGR2-CP can perform as an Endpoint radio, a Repeater and simultaneous Endpoint/Repeater

Wide Supply Voltage Range: +10 to +30 VDC

Ultra Low Power Consumption: Current draw is less than 8 mA, 12 VDC in linked idle mode, and less than 60 mA in receive mode

Interface: RS232/RS422/RS485 available with user-programmability

Secure: FHSS technology and user-programmable security features prevent detection or unauthorized access

Overview

The FGR2 Cathodic Protection remote monitoring radio is a multi-purpose, spread spectrum radio with specific inputs and outputs for monitoring and reporting operational values on pipelines, tanks, structures and other underground facilities subject to environmental corrosion. Designed to be compatible with other FreeWave radio products, the FGR2-CP is ideal for pipeline and tank companies wishing to extend their investment in telemetry automation to Cathodic Protection structures as well. The FGR2-CP has no recurring monthly costs or fees.

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

Specifications

MODEL	FORM FACTOR	OPTIONS
FGR2-CP	6.5 L x 3.5 W x 2 H (mm)	UL Approved/Board Level
FGR2-CP-S	6.5 L x 3.5 W x 2 H (mm)	Non-UL Approved/Board Level



FGR2 Industrial 900 MHz: Technical Specifications

TRANSMITTER

Frequency Range	902 to 928 MHz (FHSS)
Output Power	1 W
Data Link Range	60 miles, clear line of sight
Modulation	2 level GFSK, 115.2 kbps or 153.6 kbps
Hopping Patterns	15 per band, 105 total, user-selectable
Hopping Channels	75 to 80, user-selectable
Frequency Zones	16 zones, 5 channels per zone
Occupied Bandwidth	230 kHz,
RF Connector	SMA straight, or reversed SMA

RECEIVER

Sensitivity	-107 dBm for BER 1×10^{-6} -109 dBm for BER 1×10^{-4}
Selectivity	20 dB at fc +/- 230 kHz 60 dB at fc +/- 290 kHz
System Gain	134 dB

DATA TRANSMISSION

Error Detection	32 bit CRC, retransmit on error
Data Encryption	FHSS technology
Data Throughput	115.2 kbps standard speed, 80 kbps low speed <i>Uncompressed; measured assuming 75% frequency availability</i>
Data Interface	RS232/RS422/RS485
Data Connector	10-pin header with locking map, 0.1 in. spacing power/data connector Separate 20-pin header diagnostics connector

POWER REQUIREMENTS

Operating Voltage	+10 VDC to +30 VDC
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+10 VDC Typical Current

Transmit: 400 mA	Receive: 155 mA	Idle: 16 mA
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+12 VDC Typical Current

Transmit: 325 mA	Receive: 123 mA	Idle: 13 mA
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+30 VDC Typical Current

Transmit: 150 mA	Receive: 51 mA	Idle: 5 mA
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GENERAL INFORMATION

Operating Temperature	-40°C to +75°C
Humidity	0 to 95% non-condensing
Dimensions	Board Level: 6.5 L x 3.5 W x 2 H (in) LineMarker Test Station: 30 L x 4 W x 4 H (in)
Weight	Board Level: 160 g
Antenna Connector	Board Level: SMA, threaded LineMarker Test Station: Antenna included
Mounting:	Board Level: Standoffs available for FGR2-CP bracket mount

FGR2 Industrial 900 MHz: Applications



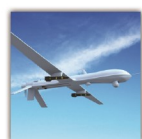
Oil and Gas



Agriculture



Utilities



Defense



SCADA



Mining



Fleet Management



Municipal



Enterprise

Contact your FreeWave reseller or sales rep for implementation details.

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For more information, visit www.freewave.com

Specifications are subject to change without notice.

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