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FGRCP LineMarker Test Station

Cathodic Protection Remote Monitoring



Model FGRCP Industrial 900 MHz Radio

Overview:

The FreeWave Technologies Model FGRCP cathodic protection remote monitoring radio is a multi-purpose, spread spectrum, board level product with specific inputs and outputs for monitoring and reporting CP operational values on pipelines, tanks, structures, and other underground facilities subject to environmental corrosion.

Designed to be compatible with other FreeWave radio products, the FGRCP is ideal for pipeline and tank companies wishing to extend their investment in telemetry automation to cathodic protection structures as well.

The FGRCP board-level radio (shown below) is also available in a preassembled FGRCP LineMarker Test Station complete with solar power system, antenna and conduit mounting bracket.

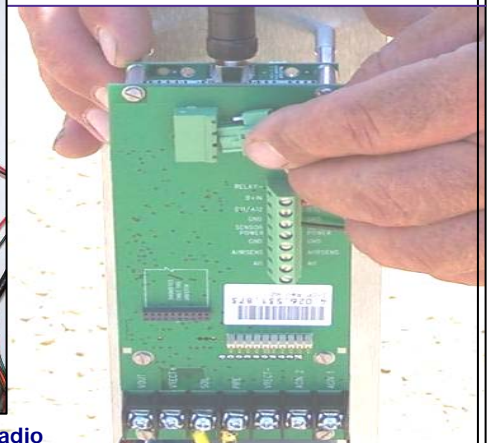
Affordable Radio-Based Cathodic Protection Remote Monitoring FreeWave Model FGRCP Remote Monitoring Unit Features:

- Refreshingly easy to buy with the best return on investment available.
- Multi-Purpose, All-in-One: CP RMU for remotely monitoring:
 - Rectifier Input Power Status
 - Rectifier Power Interruption
 - Rectifier Output Voltage
 - Rectifier Output Amperage
 - Pipe-to-Soil Test Points,
 - Critical Bonds
 - Interference Points
- No Recurring Monthly Fees or Costs
- No Licensing Fees or Costs
- Open Protocol Communications
- Maximum Network Security behind the Company Firewall
- Easily integrates into existing radio networks
- Long Range: up to 60 miles line of sight,
- Infinite Communication Repeater Capability
- Advanced Lightening Surge Isolation
- Industrial Grade temperature tested: -40°F to +165°F.

*No Fees
 No Contracts*



FGRCP Board Level Radio



Specifications

Cathodic Protection Remote Monitoring

Model FGRCP Industrial 900 MHz Radio

Model FGRCP Specifications:

Rectifier Output Monitoring:	Voltage: -12 to +112 VDC, Current Sense: -0.156 to +0.156 VDC												
Rectifier Status Monitoring:	Inlet power status monitoring: 13 VAC or VDC												
Rectifier Interruption:	12 vdc, DO relay output, user selectable												
Pipe-to-Soil Monitoring:	Potential: -8 to +8 volt VDC												
Auxiliary Discrete Output:	Used for rectifier interruption or remote control of field equipment.												
Auxiliary Analog Input:	1 to 5 VDC or 4 to 20 milli-amp (250 ohm)												
Integrated Solar Charging:	12 or 24 VDC, up to 50 Watt Charging circuit and regulator, controller												
Frequency Range:	902-928 MHz												
Output Power:	100mW to 1 Watt												
Range, Line of Sight:	60 Miles with line of sight												
Modulation:	Spread Spectrum GFSK												
Data Throughput:	115.2 Kbps												
Occupied Bandwidth:	230 kHz												
Spreading Method:	Frequency Hopping												
Hopping Pattern:	15 per Band, 105 Total, User Selectable												
Hopping Channels:	50 to 112, User Selectable												
Hopping Bands:	7, User Selectable												
Sensitivity:	-108 dBm for BER 1×10^{-6} -110 dBm for BER 1×10^{-4}												
Selectivity:	20 dB at $f_c \pm 460$ kHz (2 nd IF)												
System Gain:	140 dB												
Error Detection:	32 bit CRC, Retransmit on error												
Data Encryption:	Substitution, Dynamic Key												
Data Interface:	RS232/RS485/RS422 or TTL												
Data Connector:	10 pin, locking data and power connector												
Diagnostics Connector:	20 pin header connector												
Antenna Connector:	Board-Level Radio: SMA, threaded LineMarker Test Station: Antenna included												
Power Requirements:	<table><tr><td></td><td>12vdc</td><td>30vdc</td></tr><tr><td>Transmit:</td><td>500mA</td><td>200mA</td></tr><tr><td>Receive:</td><td>60mA</td><td>30mA</td></tr><tr><td>Idle:</td><td>9mA</td><td>6mA</td></tr></table>		12vdc	30vdc	Transmit:	500mA	200mA	Receive:	60mA	30mA	Idle:	9mA	6mA
	12vdc	30vdc											
Transmit:	500mA	200mA											
Receive:	60mA	30mA											
Idle:	9mA	6mA											
Solar Autonomy:	LineMarker Test Station: fully loaded I/O, 18 days with 1.25 safety factor												
Electrical Classification:	None, Class 1, Division 2 (pending)												
Operating Temperature:	Range: -40°C to +75°C, fully tested												
Humidity:	0-95% non-condensing												
Dimensions:	Board-Level Radio: h 5", w 3.5", d 2" LineMarker Test Station: h 30", w 4", d 4"												
Weight:	Board-Level Radio: 160 grams LineMarker Test Station: 12 pounds												
Mounting:	Board-Level Radio: Standoffs available or FGRCP bracket mount LineMarker Test Station: 3 inch conduit riser pipe or 8x8 surface mount, flat adapter bracket												



**Model FGRCP
LineMarker
Test Station on
3 inch conduit
pipe.**



FreeWave Radios Require Professional Installation

Specifications may change without notice. 2008 FreeWave Technologies, Inc.



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