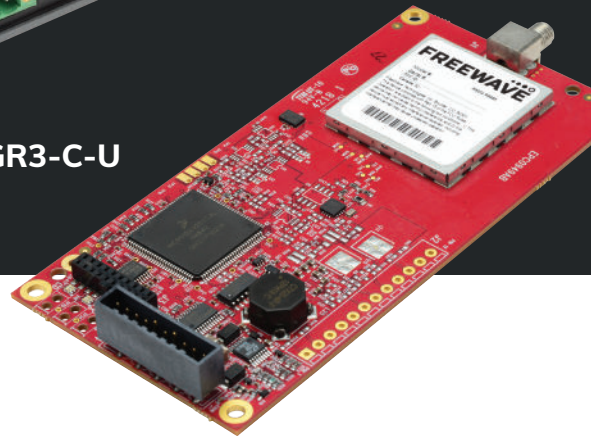


FGR3 Series

FGR3 900 MHz Industrial Radio



FGR3-C-U



Contact NavtechGPS for product details. www.NavtechGPS.com
+1-703-256-8900 • 800-628-0885 • info@navtechgps.com

The FGR3 Series is the next generation of FreeWave's FGR2 Series of serial radios and has the same proven performance, reliability, and quality that our customers have come to know and expect in all of our products. The FGR3 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 a ruggedized enclosure, the FGR3 provides tremendous flexibility for use in applications around the world ranging from oil and gas to golf carts, water systems, and more. The FGR3 Series is backward compatible with the FGR2, 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, CO.

Key Features

Versatility: Gateway, Endpoint, Repeater or simultaneous Endpoint and Repeater function in a single radio

Long Range: Up to 97 km (60 miles) with clear line of sight with the ability to extend through Repeaters

Noise Immunity: Superior performance in noise congested environments

Secure: Frequency Hopping Spread Spectrum (FHSS) technology; available with 128- and 256-bit AES encryption

Error Free Communications: 32-bit CRC with automatic retransmissions

Low Power Consumption: Ideal for solar, battery, and DC applications

Industrial Grade: Operating temperature from -40°C to +75°C

UL Approved: Class I, Division 2



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| Transmitter | |
|-----------------|-------------------------------------------------------------------------|
| Frequency Range | 902 to 928 MHz |
| Output Power | Up to 1 W |
| Range | 97 km (60 miles) with clear line of sight |
| Channel Spacing | 230 kHz |
| RF Data Rate | 115.2 kbps, standard speed 153.6 kbps, high speed user-selectable |

| Receiver | |
|---------------------|--------------------------------------------------------------------------------------------------|
| Sensitivity | -107 dBm @ 115.2 kbps for BER 10 ⁻⁴ -104 dBm @ 153.6 kbps for BER 10 ⁻⁴ |
| IF Selectivity | 40 dB at fc +/- 460 kHz |
| RF Selectivity | >60 dB |
| Maximum Input Power | +10 dBm |

| Data Transmission | |
|-------------------|-----------------------------------------------------------------------------------|
| Type | Frequency Hopping Spread Spectrum |
| Modulation | 2 level GFSK |
| Data Throughput | 80 kbps, standard speed 115.2 kbps, high speed |
| Error Detection | 32-bit CRC, retransmit on error |
| Data Encryption | Options: AES 128- / 256-bit encryption and Proprietary Spread Spectrum Technology |
| Hopping Zones | 16 zones, user-selectable |
| Hopping Channels | 50 to 112, user-selectable |
| Hopping Patterns | 15 per band, 105 total, user-selectable |
| Protocol | RS232 / RS422 / RS485 |

| Power Requirements | | | | | |
|------------------------------|--------------|----------|---------|----------------------|-----------------------|
| Operating Voltage | +6 to 30 VDC | | | | |
| Current Consumption, Typical | Voltage | Transmit | Receive | Idle, Linked (Slave) | Idle, Linked (Master) |
| | +6 VDC | 192 mA | 74 mA | 73 mA | 118 mA |
| | +12 VDC | 101 mA | 42 mA | 42 mA | 63 mA |
| | +30 VDC | 47 mA | 22 mA | 22 mA | 32 mA |

| Interfaces | |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Data Interface | Serial, 1200 bps to 230.4 kbps, DCE FGR3-C-U: 10-pin shrouded header for power and data, 2mm pin spacing FGR3-CE-U: DB-9 |
| Diagnostics Interface | Serial, RS232 or TTL FGR3-C-U: 20-pin header FGR3-CE-U: 3-pin plug |
| RF Connector | FGR3-C-U: SMA Female FGR3-CE-U: TNC Female |

| General Information | |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature | -40°C to +75°C (-40°F to +167°F) |
| Humidity | 0 to 95%, non-condensing |
| Dimensions | FGR3-C-U: 127 L x 61 W x 12 H (mm) 5.0 L x 2.4 W x 0.47 H (in) FGR3-CE-U: 173 L x 107 W x 35 H (mm) 6.8 L x 4.2 W x 1.4 H (in) |
| Weight | FGR3-C-U: 58 g (0.13 lbs) FGR3-CE-U: 504 g (1.1 lbs) |
| Safety | Class I, Division 2, Groups A-D |
| Reliability | 220,000 hours MTBF |

| Information to Order | |
|----------------------|------------------|
| Model Number | Description |
| FGR3-C-U | Board Level |
| FGR3-CE-U | Rugged Enclosure |



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