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ETHERNET - SERIES

HT Industrial 900 MHz Radio

Overview:

The FreeWave® Technologies FGR-HT is a leap forward for customers who need an industrial grade high speed Ethernet radio that operates in harsh environments and noisy RF conditions. Designed to the same high level of quality that FreeWave products are known for, the FGR-HT is a rugged and reliable solution that performs where other products fall apart.

The FGR-HT product family supports transparent bridging of all Ethernet protocols. All radios are built and tested at FreeWave's world class manufacturing facility in Boulder, Colorado.

Features:

- Wide input voltage range - 6 to 30 Volt DC.
- The Lowest Current Draw of any Radio: 12 Volts:
 - 150 mA in full time receive
 - 550 mA transmit current
 - 70 mA idle
- High Noise Immunity - Superior Performance in noise congested environments.
- Secure - Proprietary spread spectrum technology prevents detection and unauthorized access.
- High Speed - 867 Kbps over-the-air throughput.
- Point-to-Point Range - 40 miles with clear line of sight.
- Point-to-Multipoint Range - 15 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 +60 °C.



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HT Industrial 900 MHz Radio

Technical Specifications

Transmitter

| | |
|----------------------|---|
| Frequency Range | 902-928 MHz (FHSS / FCC DTS) |
| Output Power | 5 mW up to 1 Watt |
| Range, Line of Sight | Point-to-point: 40 Miles, Point-to-multipoint: 15 miles |
| Modulation | 2 level GFSK |
| Occupied Bandwidth | 611.2 kHz |
| Hopping Patterns | 15 per Band, 105 total, user selectable |
| Hopping Channels | 41, user selectable |
| Hopping Bands | 7, user selectable |
| Frequency Zones | 16 Zones, 2-3 Channels per zone |
| RF Connector | N Type (ruggedized enclosure), SMA (sandwich version available) |

Receiver

| | |
|-------------|---|
| Sensitivity | -102 dBm for BER 1×10^{-4} at 614 kbps, -96 dBm for BER 1×10^{-4} at 867 kbps |
| Selectivity | TBD |
| System Gain | 129 dB |

Data Transmission

| | |
|-------------------|---|
| Error Detection | 32 bit CRC, Retransmit on Error |
| Data Encryption | Dynamic Key Substitution |
| Link Throughput** | 540 Kbps standard speed, 360 Kbps low speed ** Uncompressed, measured assuming 75% frequency availability |
| Data Interface | Ethernet |
| Protocol | 10 Base T |
| Data Connector | RJ-45 port |

Diagnostic Interface

| | |
|-----------|------------------------|
| Connector | 3-pin diagnostics port |
|-----------|------------------------|

Power Requirement

| | | | | |
|-------------------|-------------|--------|--------|--------|
| Operating Voltage | 6 to 30 VDC | | | |
| Current [mA] | Mode | 6VDC | 12 VDC | 30 VDC |
| | Transmit | 1.1 A | 550 mA | 220 mA |
| | Receive | 252 mA | 150 mA | 63 mA |
| | Idle | 140 mA | 70 mA | 32 mA |

General Information

| | |
|-----------------------------|---|
| Operating Temperature Range | -40 °C to +60 °C |
| Enclosure Dimensions | 165 L x 74 W x 59 H (mm) (Sandwich Board: 143 L x 70 W x 37 H mm) |
| Enclosure Weight | 427 g (Sandwich Board: 138 g) |
| Humidity | 0 to 95% non-condensing |

FreeWave Radios Require Professional Installation.

Specifications may change at any time without notice. ©2009 FreeWave Technologies, Inc.



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