

I2 Series

I2-G-C Industrial 2.4 GHz Data Radio



I2-G-RG



I2-G-C

KEY FEATURES

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

Long Range: 20 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 technology prevents detection and unauthorized access.

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.

Available Options: TDMA, Super Epoch TDMA, and 128, 192, and 256-bit AES encryption.

OVERVIEW

The FreeWave Technologies family of board level radios provides outstanding performance and versatility in a small footprint that is ideal for internally mounted applications. The I2-G offers a cost effective solution to incorporate wireless communications into a wide variety of applications.

With more interface options available, a surface mount design, and no additional RF shielding, this OEM radios has tremendous flexibility for use in applications around the world.

100% backward compatibility with every FreeWave 2.4 GHz radio.

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

SOLUTIONS



DRONES & ROBOTICS



EARTH MONITORING



GOV & DEFENSE



IRRIGATION & PRECISION AGRICULTURE



ASSET TRACKING



OIL & GAS



WATER & WASTEWATER



SMART CITIES



UTILITIES

TECHNICAL SPECIFICATIONS

TRANSMITTER

Frequency Range	2.4 to 2.483 GHz
Output Power	Up to 500 mW
Range	Up to 32 km (20 mi.), clear line of sight
Channel Spacing	230 kHz
RF Data Rate	115.2 or 153.6 kbps, user-selectable

RECEIVER

Sensitivity	-105 dBm for BER 1x10 ⁻⁴ -103 dBm for BER 1x10 ⁻⁶
IF Selectivity	20 dB at fc +/- 230 kHz 60 dB at fc +/- 290 kHz
System Gain	132 dB

DATA TRANSMISSION

Type	Frequency Hopping Spread Spectrum Options: TDMA, Super Epoch TDMA
Modulation	2 level GFSK
Data Throughput	115.2 kbps, standard speed 80 kbps low speed Uncompressed; measured assuming 75% frequency available
Error Detection	32-bit CRC, retransmit on error
Data Encryption	FHSS technology Options: AES 128 / 192 / 256-bit encryption
Hopping Zones	16 zones, user-selectable
Hopping Bands	7, user-selectable
Hopping Channels	75 to 80, user-selectable
Hopping Patterns	15 per band, 105 total, user-selectable
Protocol	RS232 / RS422 / RS485

POWER REQUIREMENTS

Operating Voltage +6.5 VDC to +20 VDC

Current Consumption

Voltage	Transmit	Receive	Idle
+6.5 VDC	375 mA	120 mA	9 mA
+12 VDC	295 mA	80 mA	5 mA
+30 VDC	140 mA	51 mA	3 mA

INTERFACES

Data Interface

Board Level: 10-pin header with locking ramp for power, data, and diagnostics
2.5mm pin spacing

Ruggedized Enclosure: DB9 female, DCE
1 Serial: RS232, RS422, RS485,

RF Connector SMA, MCX, or Type N

GENERAL INFORMATION

Operating Temperature -40°C to +75°C (-40°F to +167°F)

Humidity 0 to 95%, non-condensing

Dimensions

Board Level: 127 L x 61 W x 11 H (mm)
5.00 L x 2.40 W x 0.43 H (in.)

Ruggedized Enclosure: 173 L x 112 W x 35 H (mm)
6.81 L x 4.40 W x 1.38 H (in.)

Weight

Board Level: 53g (0.12 lbs.)

Ruggedized Enclosure: 604.4g (1.33 lbs.)

INFORMATION TO ORDER

Model Number	Description
I2-G-C	Board level, SMA
I2-G-C-SR001	Board level with right-angle 10-pin connector, SMA
I2-G-MS	Board level, MCX
I2-G-MS-SR001	Board level with right-angle 10-pin connector, MCX
I2-G-RG	Waterproof, ruggedized enclosure, Type N

CONTACT US

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