

Radios
communication without barriers

IM-Series 2.4 GHz Ethernet Spread Spectrum Radios

European Union and Region 1 Approved

Features:

- **Frequency Hopping Spread Spectrum**
- **High Speed** –Over the air data rate of 120-170 kbps.
- **Long Range** – 32 kilometer range
- **Error Free Communications** – 32 bit CRC with automatic retransmission.
- **Industrial Grade Specifications** – 100% tested for full performance from -40°C to +75°C.
- **Master, Slave, Repeater** functions in a single radio.
- **Improved supply voltage range and power consumption.** Input voltage range is now 6-30 VDC at full RF output power. Receive current is less than 130 mA @ 12 VDC.
- **Mixed Network Capability**– FreeWave Ethernet radios are network compatible with standard non-Ethernet FreeWave radios allowing connectivity to both IP addressable and non IP addressable devices in a single network.
- **Separate diagnostic serial connector** allows real time local diagnostics and setup menu access.
- **10Base-T Interface.**
- **Built in Crossover Button**– Ensures you are never caught with the wrong cable
- **Noise Immunity** – Superior performance in noise congested environments.
- **Secure** – proprietary spread spectrum technology prevents detection and unauthorized access.
- **100% backward compatible** with every 2.4 GHz FreeWave radio ever shipped.
- **European Union Standards**—programmable to comply with either the EN 300 328-2 or EN 300 440-2 standards.

The FreeWave® Technologies long range, very robust, very secure Ethernet wireless bridge is ideal for applications where an Ethernet interface is needed, yet throughput in the megabit range is not required. Customers may need an Ethernet interface, but they do not need the throughput over 100 Kbps. The FreeWave Ethernet radio provides the best of both worlds. All radios are built and tested in our world class manufacturing facility in Boulder, Colorado to operate over the temperature range of -40° to +75°C, making the Ethernet radio ideal for the demanding needs of the industrial market.





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Technical Specifications

Transmitter & Receiver	Transmitter	
	Frequency Range	2.400 - 2.483 GHz
	Output Power	100 mW to 500 mW
	Range, Line of Sight	32 kilometers with clear line of sight
	Modulation	Spread Spectrum GFSK
	Occupied Bandwidth	230 kHz
	Spreading Method	Frequency Hopping
	Hopping Patterns	15 per band, 105 total, user selectable
	Hopping Channels	75 to 80, user selectable
	Hopping Bands	3, user selectable
Receiver	Receiver	
	Sensitivity	-105 dBm for 10 ⁻⁶ BER -107 dBm for 10 ⁻⁴ BER
	Selectivity	20 dB at fc ± 115 kHz 60 dB at fc ± 145 kHz
	System Gain	137 dB
Data Transmission & Power	Data Transmission	
	Error Detection	32 bit CRC, Retransmit on Error
	Data Encryption	Substitution, Dynamic Key
	Maximum Throughput	100 Kbps
	Data Connector	10Base-T RJ-45
	Power Requirement	
	Operating Voltage	550 mA at 12 VDC
	Transmit Current	550 mA at 12 VDC
Receive Current	125 mA at 12 VDC	
Idle Current	70 mA at 12 VDC	
General	General Information	
	Operating Temperature Range	-40°C to +75°C 100% full performance tested
	Dimension	165.1 mm L x 74.42 mm W x 58.64 mm H
	Weight	441 grams
	External Antenna Connector	Type N female. Professional installation only.
	Humidity	0 to 95% non-condensing

Specifications may change at any time without notice
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