869 MHz Series

Industrial 869 MHz Radio

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The FreeWave Technologies board level and enclosed 869 MHz radio provides outstanding performance and versatility. The small footprint of the board level version is ideal for OEM applications and offers a cost effective solution for incorporating wireless communications into a wide variety of applications. The 869 MHz Series provides a surface mount design, no additional RF shielding, and a unit both ETSI and RoHS compliant. The 869 MHz Series has tremendous flexibility for use in applications throughout Europe and around the world, including water, environmental monitoring, SCADA, agriculture, golf, and more.

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

Features *All specifications are tested and guaranteed.*

- High Speed: 75 Kbps maximum throughput.
- Long Range: 25km range with clear line of sight
- Error-free Communications: 32 bit CRC with automatic retransmission.
- Industrial Grade Specifications: Tested for RF performance from –40°C to +75°C.
- Input voltage range is 6-30 VDC at full RF output power. Receive current is less than 80 mA @ 12 VDC. Sleep mode only consumes 6 mA.
- Separate diagnostic serial connector allows real-time local diagnostics and setup menu access.
- Diagnostics, including signal level in dBm, and transmit current.
- RS232 / 485 / 422 interface.
- Noise immunity: Superior performance in noise congested environments.
- Supports Listen Before Talk as well as 10% Transmit per ETSI specification.
- ETSI compliant.
  EN 300 220, EN 301 489
  REC 70-03, IEC 60950
- RoHS compliant.

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Radio Technical Specifications

Transmitter				
Frequency Range	869.40 to 869.65 MHz (Single Channel)			
Output Power	5mW to 500mW			
Range - Line of Sight	25 kilometers			
Modulation	2 level GFSK, Maximum 75 Kbps			
Occupied Bandwidth	Compliant to ETSI standards (EN 300 220, EN 301 489, REC 70-03, IEC 60950)			
RF Connector	Type SMA			
Receiver				
Sensitivity	-107 dBm for BER 10^{-4}, -106 dBm for BER 10^{-6}			
System Gain	134 dB			
Data Transmission				
Error Detection	32 bit CRC, Retransmit on error			
Data Encryption	Proprietary Spread Spectrum Technology			
Link Throughput*	75 kbps maximum **Uncompressed, measured assuming 75% frequency availability.*			
Data Interface	Serial			
Protocol	RS232 / 485 / 422, 1200 Baud to 115.2kBaud Handshaking highly recommended above 9600 Baud			
Data Connector	Board Level: 10-pin header with locking ramp, 0.1 inch spacing, power/data connector. Enclosed: DB9			
Diagnostics				
Connector	Board Level: Separate 20-pin connector | Enclosed: 3-pin PCB header			
Power Requirements				
Operating Voltage	6 to 30 VDC			
	Mode	**6 V**	**12 V**	**30 V**
	Transmit	550	280	135
	Receive	125	76	46
	Idle	36	28	23
	Sleep	8	6	3
General Information				
Operating Temperature Range	-40 °C to +75 °C. Every radio is RF tested over this range.			
Dimensions	Board Level: 127 L x 61 W x 12 H (mm) | Enclosed: 173mm L x 107mm W x 35mm H			
Weight	Board Level: 50 g | Enclosed: 590 g			
Humidity	0 to 95% non-condensing			

FreeWave Radios Require Professional Installation. Specifications may change at any time without notice.

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