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Licensed Band

LRS-140 Industrial 1.4 GHz Radio

Overview:

FreeWave Technologies offers a licensed band radio in the recently approved 1.4 GHz band. This radio has applications wherever licensed radios are preferred ranging from Oil & Gas to municipalities and more. This OEM product has tremendous flexibility for use in applications around the world. The LRS-140 is offered as a board level product (LRS-140CSU) and in an enclosure (LRS-140-CE).

Features:

- High Speed: 19.2 Kbps throughput.
- Long Range: 30 mile range with clear line of sight.
- Error Free Communications: 32 bit CRC with automatic retransmission.
- Industrial Grade Specifications: 100% tested for RF performance from -30° C to $+75^{\circ}$ C.
- Input voltage range: 6.5 to 30 VDC at full RF output power. Receive current is less than 90 mA @ 12 VDC.
- Separate diagnostic: Serial connector allows real-time local diagnostics and setup menu access.
- Diagnostics: Include signal level in dBm and transmit current.
- 1.427-1.432 GHz Licensed radios are available with a user-programmable RS-232/RS-485/RS-422 interface.
- Noise Immunity: Superior performance in noise congested environments.
- UL Class 1 Division 2



* Enclosed version available with optional mounting shoe and or din rail mount.



Licensed Band

LRS-140 Industrial 1.4 GHz Radio Technical Specifications

Transmitter				
Frequency Range	1.427-1.432 GHz			
Output Power	Programmable up to 611 mW			
Range - Line of Sight (LOS)	30 miles with clear LOS			
Modulation	2 and 4 level GFSK			
Occupied Bandwidth	12.5 kHz, 25 kHz			
Spreading Method	N/A			
Hopping Channels	N/A			
Frequency Channels	200 Channels @ 25 kHz 400 Channels @ 12.5 kHz			
RF Connector	SMA, TNC-Enclosed version only (Female connectors)			
Receiver				
Sensitivity	-108 dBm for BER 1x10 ⁻⁶ (2 level GFSK); -98 dBm for BER 1x10 ⁻⁴ (4 level GFSK)			
Selectivity	20 db at fc +/- 460 kHz (2nd IF)			
System Gain	136 db at 2 level GFSK; 126 db at 4 level GFSK			
Data Transmission				
Error Detection	32 bit CRC, Retransmit on error			
Link Throughput	9.6 Kbps at 2 level GFSK 19.2 Kbps at 4 level GFSK			
Data Interface	Serial			
Protocol	RS232 / 485/ 422			
Data Connector	Board Level: 10-pin header with locking ramp, 0.1 inch spacing, power/data connector Enclosed (ruggedized): 3-pin PCB header			
Receiver				
Selectivity	20 db at fc +/- 460 kHz (2nd IF)			
Power Requirement				
Operating Voltage	6.5 to 30 VDC			
	Mode	6.5 VDC	12 VDC	30 VDC
	Transmit	1 A	500 mA	200 mA
	Receive	150 mA	90 mA	12 mA
	Idle	40 mA	30 mA	12 mA
General Information				
Operating Temperature Range	-30 °C to + 75 °C			
Dimensions	Board Level: 128 L x 61.8 W x 19.7 H (mm) Enclosed: 173 L x 107 W x 33 H (mm)			
Weight	Board Level: 74.4 g Enclosed: 604.4g			
External Antenna Connector	SMA/ TNC			
Humidity	0 to 95% non-condensing			

FreeWave Radios Require Professional Installation. Specifications may change at any time without notice. ©2010 FreeWave Technologies, Inc.

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