

Licensed Spectrum LRS140 Industrial 1.4 GHz Data Radio



LRS-140RC



LRS-140CSU

KEY FEATURES

High Speed: 19.2 kbps throughput

Long Range: 30 mile range with clear line of sight

Error Free Communication: 32 bit CRC with automatic retransmission

Industrial Grade Specifications: 100% tested for RF performance from -30°C to +60°C

Input Voltage Range: +6.5 VDC 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

Noise Immunity: Superior performance in noise congested environments

1.427 to 1.432 GHz licensed radios are available with a user-programmable RS232/RS485/RS422 interface

OVERVIEW

FreeWave Technologies offers a licensed band radio in the recently approved 1.4 GHz band. This radio has applications wherever 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 LRS140 is offered as a board level product (LRS140- CSU) and in an enclosure (LRS140- RC)

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

Specifications

MODEL	FORM FACTOR	OPTIONS
LRS-140CSU	128 L x 61.8 W x 19.7 H (mm)	Board Level
LRS-140RC	173 L x 105 W x 35 H (mm)	Ruggedized Enclosure

TECHNICAL SPECIFICATIONS

TRANSMITTER

Frequency Range	1.427 to 1.432 GHz
Output Power	Programmable to 611 mW
Data Link Range	30 miles, clear line of sight
Modulation	2 and 4 level GFSK
Occupied Bandwidth	12.5 kHz, 25 kHz
Frequency Channels	200 Channels @ 25 kHz 400 Channels @ 12.5 kHz

RECEIVER

Sensitivity	-108 dBm for BER 1×10^{-6} (2 level GFSK) -98 dBm for BER 1×10^{-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/RS485/RS422
Data Connector	Board Level: 10-pin header with locking ramp, 0.1 inch spacing, power/data connector
Ruggedized Enclosure:	3-pin PCB header

DIAGNOSTICS

Connector	SMA, TNC-Enclosed version only (female connectors)
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POWER REQUIREMENTS

Operating Voltage	+6.5 VDC to +30 VDC	
+6.5 VDC Typical Current		
Transmit: 1 A	Receive: 150 mA	Idle: 40 mA
+12 VDC Typical Current		
Transmit: 500 mA	Receive: 90 mA	Idle: 30 mA
+30 VDC Typical Current		
Transmit: 200 mA	Receive: 12 mA	Idle: 12 mA

GENERAL INFORMATION

Operating Temperature	-30°C to +70°C
Humidity	0 to 95% non-condensing
Dimensions	Board Level: 128 L x 61.8 W x 19.7 H (mm) Ruggedized Enclosure: 173 L x 105 W x 35 H (mm)
Weight	Board Level: 74.4 g Ruggedized Enclosure: 604.4 g
Antenna Connector	Board Level: SMA Ruggedized Enclosure: TNC

APPLICATIONS



OIL & GAS

AGRICULTURE

UTILITIES

DEFENSE

SCADA

MINING

FLEET
MANAGEMENT

MUNICIPAL

ENTERPRISE

CONTACT US

5395 Pearl Parkway, Boulder, CO 80301
TF 866.923.6168 T 303.381.9200
For more information, visit www.freewave.com