

Licensed Spectrum

LRS140 Industrial 1.4 GHz Data Radio



LRS-140CE



LRS-140CSU

KEY FEATURES

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

Long Range: 30 miles with clear line of sight with the ability to extend through Repeaters.

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 -30°C to +70°C.

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 and 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-140CE).

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	1.427 to 1.432 GHz
Output Power	Up to 611 mW
Range	Up to 48 km (30 mi.), clear line of sight
Channel Spacing	12.5 kHz, 25 kHz
RF Data Rate	9.6 kbps or 19.2 kbps, user-selectable

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

Type	Frequency Hopping Spread Spectrum
Modulation	2 or 4 level GFSK
Data Throughput	9.6 kbps at 2 Level GFSK 19.2 kbps at 4 level GFSK
Error Detection	32-bit CRC, retransmit on error
Frequency Channels	200 Channels @ 25 kHz 400 Channels @ 12.5 kHz
Protocol	RS232 / RS422 / RS485

POWER REQUIREMENTS

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

INTERFACES

Data Interface	
Board Level:	10-pin header with locking ramp for power, data, and diagnostics 2.5mm pin spacing
Ruggedized Enclosure:	3-pin PCB header 1 Serial: RS232, RS422, RS485
Diagnostics Interface	Serial
Antenna Connector	Board Level: SMA female Ruggedized Enclosure: TNC female

GENERAL INFORMATION

Operating Temperature	-30°C to +70°C (-22°F to +158°F)
Humidity	0 to 95%, non-condensing
Dimensions	
Board Level:	128 L x 61.8 W x 19.7 H (mm) 5.04 L x 2.43 W x 0.78 H (in.)
Ruggedized Enclosure:	173 L x 105 W x 35 H (mm) 6.81 L x 4.13 W x 1.38 H (in.)
Weight	
Board Level:	74.4g (0.16 lbs.)
Ruggedized Enclosure:	604.4g (1.33 lbs.)

INFORMATION TO ORDER

Model Number	Description
LRS-140CSU	Board level, SMA
LRS-140CE	Ruggedized enclosure, TNC

CONTACT US

5395 Pearl Parkway, Boulder, CO 80301
 TF: 866-923-6168 T: (303) 381-9200
 For more information, visit www.freewave.com