

**LRS455-CE**

LRS455 Serial Data 435-470 MHz Radio

Licensed Spectrum

**LRS455-C
LRS455-T**

The FreeWave board level and enclosed LRS455 radios provide outstanding performance and versatility. The LRS455 offers a cost effective solution that allows customers to incorporate wireless communications into a wide variety of applications.

The small footprint of the board level version is ideal for internally mounted applications. The LRS455 is also offered in a surface mount design, and no additional RF shielding.

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

Key Features

User-Selectable: Across the 435 to 470 MHz spectrum

Reliable: 100% tested for RF performance from -30°C to +60°C

Flexible: Support for RS232, RS485, and RS422

Long Range: Up to 113 km (70 miles) with clear line of sight and with the ability to extend even further through the use of a Repeater

Versatile: A single radio can operate simultaneously as an Endpoint or Repeater

High Speed: Up to 18 kbps throughput on a single 12.5 kHz RF channel

Error Free Communications: 32-bit CRC with automatic retransmission

Input Voltage Range: From +6 to +27 VDC, receive mode requires less than 110 mA @12 VDC

Noise Immunity: Superior performance in noise congested environments

Transmitter

Frequency Range	435 to 470 MHz
Output Power	Up to 2 W
Data Link Range	113 km (70 miles) with clear line of sight
Modulation	2 and 4 level GFSK
Occupied Bandwidth	12.5 kHz
Frequency Channels	5,600 channels @ 6.25 kHz

Receiver

Sensitivity	-112 dBm, standard speed, 1×10^{-4}
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Data Transmission

Error Detection	32-bit CRC, retransmit on error
Data Throughput	18 kbps, at high speed RF data rate 9 kbps, at standard speed RF data rate
Data Interface	Serial, 1200 bps to 230.4 kbps
Protocol	Board Level: RS232/RS485/ RS422 (-C) TTL (-T) Ruggedized Enclosure: RS232/RS422/RS485
Data Connector	Board Level: 10-pin header with locking ramp, 0.1 inch spacing, power/data connector Ruggedized Enclosure: DB9 female, DCE

Diagnostics

Connector	Board Level: 20-pin PCB header Ruggedized Enclosure: 3-pin header
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Power Requirements

Operating Voltage	+6 VDC to +27 VDC			
Current Consumption	Voltage	Transmit	Receive	Idle
	+6 VDC	1.5 A	200 mA	50 mA
	+12 VDC	750 mA	100 mA	25 mA
	+27 VDC	340 mA	45 mA	12 mA

General Information

Operating Temperature	-30°C to +60°C (-22°F to +140°F)
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: 605 g
Antenna Connector	Board Level: SMA female
	Ruggedized Enclosure: TNC female

Certifications

FCC	Part 90, UL Class I, Division 2
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Information to Order

Model Number	Options
LRS455-C	Board Level
LRS455-T	Board Level
LRS455-CE	Ruggedized Enclosure