

Licensed Spectrum LRS455 Serial Data 435-470 MHz Radio



LRS455-CE



LRS455-C
LRS455-T

KEY FEATURES

User-Selectable: Across the 435 to 470 MHz spectrum

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

Flexible: User-programmable — RS232/RS422/RS485 serial data interface

Long Range: Up to 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

OVERVIEW

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.

Specifications

MODEL	FORM FACTOR	OPTIONS
LRS455-C	128 L x 61.8 W x 19.7 H (mm)	Board Level
LRS455-T	128 L x 61.8 W x 19.7 H (mm)	Board Level
LRS455-CE	173 L x 112 W x 35 H (mm)	Ruggedized Enclosure

TECHNICAL SPECIFICATIONS

TRANSMITTER

Frequency Range	435 to 470 MHz
Output Power	Programmable to 2 W
Data Link Range	70 miles, 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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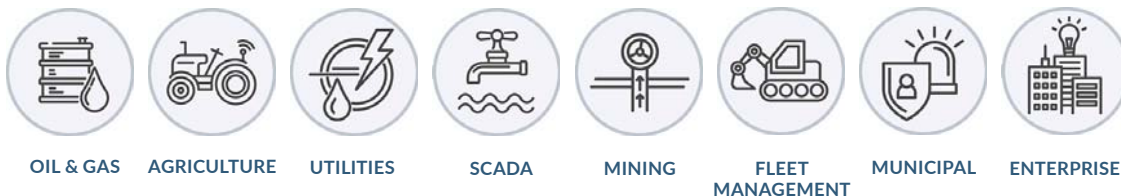
POWER REQUIREMENTS

Operating Voltage	+6 VDC to +27 VDC	
+6 VDC Typical Current		
Transmit: 1.5 A	Receive: 200 mA	Idle: 50 mA
+12 VDC Typical Current		
Transmit: 750 mA	Receive: 100 mA	Idle: 25 mA
+27 VDC Typical Current		
Transmit: 340 mA	Receive: 145 mA	Idle: 12 mA

GENERAL INFORMATION

Operating Temperature	-30°C to +60°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: 605 g
Antenna Connector	Board Level: SMA female Ruggedized Enclosure: TNC female
Certifications	FCC Part 90, UL Class 1, Div 2

APPLICATIONS



OIL & GAS

AGRICULTURE

UTILITIES

SCADA

MINING

FLEET
MANAGEMENT

MUNICIPAL

ENTERPRISE

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