FREEWAVE

LRS455A-CE

LRS455A Serial Data 435-470 MHz Radio
Licensed Spectrum

LRS455A-C
LRS455A-T

The FreeWave board level and enclosed LRS455A radios provide outstanding performance and versatility. The LRS455A 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 LRS455A 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

Industrial Grade: Operating temperature 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 16.875 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

Designed, Manufactured, and Tested in Boulder, CO

Made in USA

Transmitter

Frequency Range	435 to 470 MHz
Output Power	Up to 2 W, user selectable
Range	113 km (70 miles), clear line of sight
Channel Spacing	12.5 kHz
RF Data Rate	9,600 bps, standard speed 19,200 bps, high speed

Receiver

System Gain	145 dB at 9,600 bps 133 dB at 19,200 bps
Sensitivity	2 level GFSK: -112 dBm, standard speed, 1×10^{-4} 4 level GFSK: -100 dBm, high speed, 1×10^{-4}

Data Transmission

Modulation	2 and 4 level GFSK
Link Throughput	8.3125 kbps, standard speed 16.875 kbps, at high speed
Error Detection	32-bit CRC, retransmit on error
Hopping Channels	5,601 channels @ 6.25 kHz
Protocol	**Board Level Unit:** RS232 / RS485 / RS422 (-C) TTL (-T) **Enclosed Unit:** RS232 / RS422 / RS485

Power Requirements

Operating Voltage	+6 to +27 VDC			
Current Consumption	**Voltage**	**Transmit**	**Receive**	**Idle**
	+6 VDC	1.5 A	200 mA	76 mA
	+12 VDC	750 mA	100 mA	44 mA
	+27 VDC	340 mA	53 mA	24 mA

Interfaces

Data Interface	Serial, 1200 bps to 230.4 kbps
Data Connectors	**Board Level Unit:** 10-pin header with locking ramp, 0.1 inch spacing, power/data connector **Enclosed Unit:** DB9 female, DCE
Diagnostic Interface	Serial, RS232, or TTL
RF Connector	**Board Level Unit:** SMA Female **Enclosed Unit:** TNC Female

General Information

Operating Temperature	-30°C to +60°C -22°F to +140°F
Humidity	0 to 95% non-condensing
Dimensions	**Board Level Unit:** 137.29 L x 61.85 W x 21.49 H (mm) 5.40 L x 2.44 W x 0.85 H (in.) **Enclosed Unit:** 172.71 L x 111.43 W x 34.19 H (mm) 6.80 L x 4.39 W x 1.35 H (in.)
Weight	**Board Level Unit:** 74.4 g (0.16 lbs.) **Enclosed Unit:** 605 g (1.33 lbs.)

Information to Order

Model Number	Options
LRS455A-C	Board Level
LRS455A-T	Board Level
LRS455A-CE	Ruggedized Enclosure

FREEWAVE

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