



Licensed Spectrum

LRS455 Serial Data 435-470 MHz Radio



LRS455-C
LRS455-T



LRS455-CE

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, Colorado.

MODEL	DIMENSIONS	PRODUCT OPTIONS
LRS455-C 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

APPLICATIONS



Oil & Gas



Smart Grid



Water & Wastewater



Precision Agriculture

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 – TTL/RS232/RS422/RS485 serial data interface.
- **Long Range:** Up to 70 miles with clear Line of Sight (LOS) and with the ability to extend even further through the use of a repeater
- **Versatile:** A single radio can operate as simultaneously as a Slave 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
- **Powerful Diagnostic Tools:** Including signal level dBm.

LRS455 Serial 435-470 MHz Data Radio Technical Specifications

		Board Level (-C) & (-T)	Ruggedized Enclosure (-CE)		
TRANSMITTER	Frequency Range	435 to 470 MHz			
	Output Power	Programmable to 2 W (33 dBm)			
	Data Link Range	70 miles, Clear Line of Sight			
	Modulation	2 level GFSK 4 level GFSK			
	RF Data Rate	High-Speed, 19.2 kbps or Standard-Speed, 9.6 kbps			
	Occupied Bandwidth	12.5 kHz			
	Frequency Channels	5,600 Channels @ 6.25 kHz			
RECEIVER	Nominal Sensitivity	-112 dBm, at Standard-Speed, 1×10^{-4}			
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	RS232/RS422/RS485 (-C) TTL (-T)	RS232/RS422/RS485		
	Data Connector	10-pin header with locking ramp, 0.1 inch spacing, power/data connector	DB9 Female, DCE		
DIAGNOSTICS	Connector	20-pin PCB Header	3-pin Header		
POWER REQUIREMENTS	Operating Voltage	+6 to +27 VDC			
	Typical Current	Mode	+6 VDC	+12 VDC	+27 VDC
		Transmit	1.5 A	750 mA	340 mA
		Receive	200 mA	100 mA	45 mA
		Idle	50 mA	25 mA	12 mA
	Sleep	26 mA	14 mA	8 mA	
GENERAL INFORMATION	Operating Temperature	-30° C to +60° C (-22° F to +140° F)			
	Humidity	0 to 95% non-condensing			
	Dimensions	128 L x 61.8 W x 19.7 H (mm)	173 L x 105 W x 35 H (mm)		
	Weight	74.4 g	605 g		
	Antenna Connector	SMA Female	TNC Female		
	Certifications	FCC Part 90, UL Class 1, Div 2			



FreeWave Radios Require Professional Installation. Specifications may change at any time without notice. ©2013 FreeWave Technologies, Inc.

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