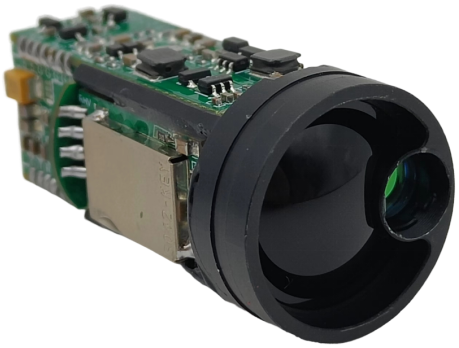
905nm Laser Rangefinder-1000

SKU:LRF905-1000

OVERVIEW

The LRF905-1000 laser rangefinder is a new lightweight and compact ranging module , which works at 905nm wavelength. The maximum measurement range of the product is ≥1000 m. It adopts UART-TTL interface and supporting test software, which is convenient for users to further develop. It has the characteristics of small size, light weight and reliable performance. It can be used in aviation, communication, geology, police, outdoor sports and other occasions.



TECHNICAL SPECIFICATIONS

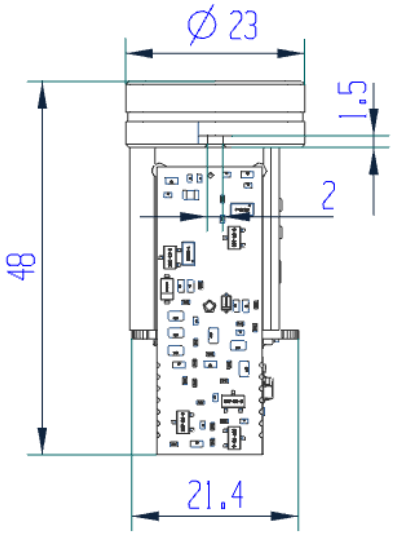
Project	Technical Parameters
Laser wavelength	905 nm
Range	5 m-1000m
Ranging accuracy	± 1.25m
Ranging frequency	1 Hz
Accuracy rate	≥98%
False alarm rate	≤1%
Divergence angle	≤ 5 mrad
Receiving caliber	18 mm
Communication Interface	UART-TTL
Voltage	5V
Working power consumption	≤ 1.1W
Standby power consumption	≤ 500 mW
Size	Φ 24 mm ×4 8 mm
Weight	≤ 24g
Range of working temperature	- 15 °C-+60°C
Storage temperature range	-55°C-+70°C

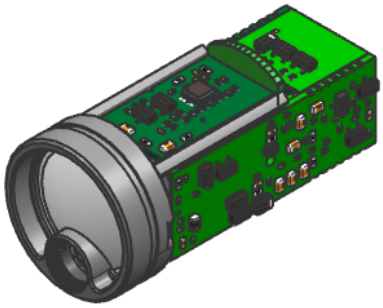
ELECTRICAL INTERFACE

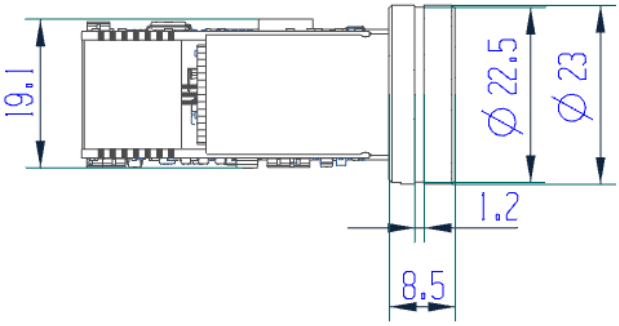
Pin	Definition	Illustrate
1	enable pin	Low level power on
2	TTL_RXD	Serial port receiver, TTL level 3.3V
3	TTL_TXD	Serial port sender , TTL level 3.3V
4	NC	empty feet
5	5V power supply	5V DC power supply
6	GND	ground wire

Email:sales@erditechs.com **TEL:** +86-28-81076568 **FAX:** +86-28-87897578
ADD: No.23,Chaoyang road, Xihe street, Longquanyi district, Chengdu, 610107, China.

MECHICAL INTERFACE







COMMUNICATION PROTOCOL

Communication mode: serial communication mode

Baud rate: 115200 (default)

Data Bits: 8 Bits

Length of a frame: 8 bytes

Data protocol									
		Frame head H	Frame head L	Function word	D1	D2	D3	D4	verification
	send	55	AA						SUM(function word +DATA1+... +DATA4)
	Reply	55	AA						SUM(frame header H+ frame header L+... +DATA4)

Measurement instruction

Single ranging	send	55	AA	88	FF	FF	FF	FF	SUM[3：7]
		55 AA 88 FF FF FF FF 84							
	Reply	55	AA	88	STA	FF	DIS_H	DIS_L	SUM[1：7]
		STA = 0 measurement failure; STA = 1: The measurement was successful DIS_H: high bytes of the measured result; DIS_L: The lower bytes of the measurement result **Data returns are returned in hexadecimal, and all data results are output by multiplying the real data by 10**							
Continuous ranging	send	55	AA	89	FF	FF	FF	FF	SUM[3：7]
		55 AA 89 FF FF FF FF 85							
	Reply	55	AA	88	55	AA	88	FF	SUM[1：7]
		STA = 0 measurement failure; STA = 1: The measurement was successful DIS_H: high bytes of the measured result; DIS_L: The lower bytes of the measurement result **Data returns are returned in hexadecimal, and all data results are output by multiplying the real data by 10**							
Stop ranging	send	55	AA	8E	FF	FF	FF	FF	SUM[3：7]
		55 AA 8E FF FF FF FF 8A							
	Reply	55	AA	8E	STA	FF	FF	FF	SUM[1：7]
		STA= 0 closes multiple measurement failures; STA = 1 closes multiple measurements successfully							
Angle measurement	send	55	AA	8A	FF	FF	FF	FF	SUM[3：7]
		55 AA 8A FF FF FF FF 86							
	Reply	55	AA	8A	STA	FF	ANG_H	ANG_L	SUM[1：7]
		STA = 0 measurement failure; STA = 1: The measurement was successful ANG_H: high bytes of the measured result; ANG_L: Measurement result low bytes **Data returns are returned in hexadecimal, and all data results are output by multiplying the real data by 10** Only in the movement with Angle sensor							

Boot self test									
Self-test information	Reply	55	AA	80	STA	00	00	ErrCode	SUM[1：7]
		STA = 0 failed to boot initialization, ErrCode is an error code; STA = 1 The boot initialization was successful							

Setting up the system									
Baud rate	send	55	AA	TYPE	FF	FF	FF	FF	SUM[3：7]
		TYPE = 01 sets the baud rate to 9600 bps TYPE = 02 Set the baud rate to 14400 bps TYPE = 03 Set the baud rate to 19200 bps TYPE = 04 Set the baud rate to 38400bps TYPE = 05 Set the baud rate to 56,000 BPS TYPE = 06 Set the baud rate to 57600bps TYPE = 07 Set the baud rate to 115200bps							

		TYPE = 08 Set the baud rate to 128000bps TYPE = 09 Set the baud rate to 230400bps **The baud rate does not change immediately after it is set and only takes effect after a restart**							
	Reply	55	AA	TYPE	STA	FF	FF	FF	SUM[1：7]
		STA = 0 setting failure; STA = 1 is set successfully							
External circuit enable	send	55	AA	70	AB	CD	00	00	SUM[3：7]
		55 AA 70 AB CD 00 00 E8							
	Reply	55	AA	70	STA	00	00	00	SUM[1：7]
		STA = 0, enable failure; STA = 1, enabling success							
		55	AA	71	AB	CD	00	00	SUM[3：7]
		55 AA 71 AB CD 00 00 E9							
		55	AA	71	STA	00	00	00	SUM[1：7]
		STA = 0, disable failure; If STA = 1, it is disabled successfully							

ErrCode		
Error code	Description	Remarks
0x00	No echo signal was received	
0x16	Out of range: below the minimum range	
0x18	No echo signal was received	
0x00~0x07	Hardware error	

NOTES:

1, send and reply verification content is not the same, pay attention to distinguish.

2, the check bit is: the sum of the required check byte takes the lower eight bits.

3. All data are sent and received in hexadecimal.