30m High Frequency

Laser Distance Measuring Module

Key Properties

- Measurement Range: 0.05 ~ 30m
- Measurement Frequency: 90 Hz (Max)
- Measurement Accuracy: ±2cm @ 0~2m
  ≤1% @ 2~30m
- Wavelength: 780 nm
- Communication Interface: TTL (UART)

Function

- Single Measurement
- Continuous Measurement
- Laser ON/OFF

Introduction

High Frequency Laser Distance Measuring Module is suitable for various applications such as UAVs, floor sweepers, industrial robots, and related fields. It is based on the TOF ranging principle and utilizes a 780nm laser. The module is characterized by its small size, low cost, excellent performance, and strong anti-environmental light interference ability, making it a great upgrade alternative product.

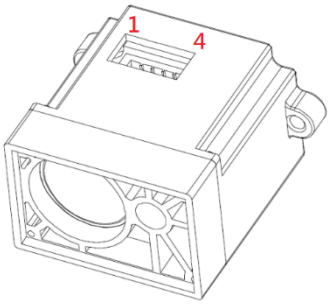
With a maximum measurement frequency of 90Hz, it is ideal for measuring dynamic targets and real-time applications. The module's compact design makes it easy to integrate into any system or device. It uses a standard TTL (UART) communication interface, which allows users to develop and program their own applications.

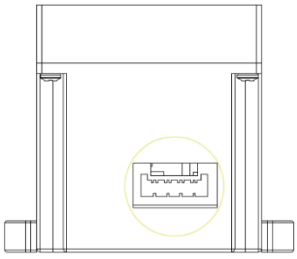
1. Specifications

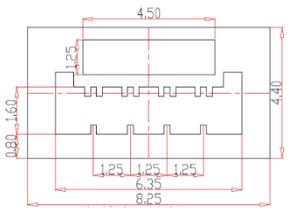
Technical specifications	
Model Name	LRF30M90HS
Measurement Range	0.05m ~ 30m
Measurement Frequency	90Hz (Max)
Measurement Accuracy	±2cm @ 0~2m ≤1% @ 2~30m
Wavelength	780nm
Measurement Method	Time-of-Flight
Anti-ambient Light	100K LUX @ 10m
Electrical	
Input Voltage	3.3~5V DC
Power Consumption	80mA@5V
Communication	
Communication Interface	3.3V TTL UART
Interface Connector	JST GH1.25-4P
Data Resolution	1 mm
Baud Rate	115200bps
Mechanical	
Dimensions	20 x 22 x 14 mm
Weight	~8g
Environmental	
Operating Temperature	-10°C~60°C
Storage Temperature	20°C~70°C

2. Pin Assignment

1	GND
2	Vcc
3	RXD
4	TXD







3. Communication

3.1 UART configuration parameters:

8N1 with default 115200 baud rate, byte data are expressed in ASCII.

Data bits: 8

Parity bits: None

Stop bits: 1

*The protocol data frame is transmitted in ASCII code and interpreted in hexadecimal.

3.2 Communication frame format:

1	2	3	4	5	6	7	8	9	10	11
Head	Address	Command	Register		Data		CheckSum (CRC)		End	
'~'	0x00~0xFF	0x00~0xFF	0~65535		0~65535		0~65535		'\r'	'\n'

*Head fixed as '~' and End fixed as '\r\n' in ASCII type.

*Example: The serial port receives the string in ASCII code: ~01030100019AC5CD\r\n

*'~': Data frame starters.

*01: Address of sensor.

*03: Command code.

*0100: Parameter register.

*019A: Data of measurement result in hexadecimal, 019A is 410mm.

*C5CD: CheckSum(CRC16)

*'\r\n': Data frame end.

4. Command List

Single Measurement	~01030100000185F6\r\n
Continuous Measurement	~01060000000089CA\r\n
Stop Measurement	~010600000001480A\r\n
Laser ON	~0106003000014805\r\n
Laser OFF	~01060030000089C5\r\n

5. Dimensions