

The module features a UART interface, enabling high-speed data transmission and seamless system integration. It is ideal for applications such as UAV altitude control, industrial automation, robotic navigation, and intelligent transportation. With its high precision, reliability, and low power consumption, it serves as an optimal solution for distance measurement, particularly in scenarios requiring strict spatial and weight constraints. For more product details, visit: www.siman.asia



- Main measurement laser (905nm): Class 1 laser product. Safe under normal operating conditions.
- This product has no explosion-proof structure, and it is forbidden to use in flammable and explosive environments.
- Do not remove this product.
- Be sure to turn off the power before operating. Do not connect wires while powered on!
 1. Avoid use in dust/steam or corrosive gas environment;
 2. Use in places where corrosive gases are not generated;
- Do not use this product in water.
- When used outdoors, pay attention to adding a waterproof cover.

order number	name	function	functional description
1	GND	Power supply	Input: power ground, communication ground

2	VCC	source	Input: 3~3.3V DC power supply, current>300mA+
3	NC		
4	UART TX	Communication output	Serial communication: The module's sending pin is compatible with the controller's receiving pin (TTL3.3V/TTL5V).
5	UART RX	Communication input	Serial communication. The module's serial port receiving pin is connected to the control. Terminal send pin (compatible with TTL3.3V/TTL5V)
6	POWER ON	mains switch	Input: High-level enable; TTL3.3V

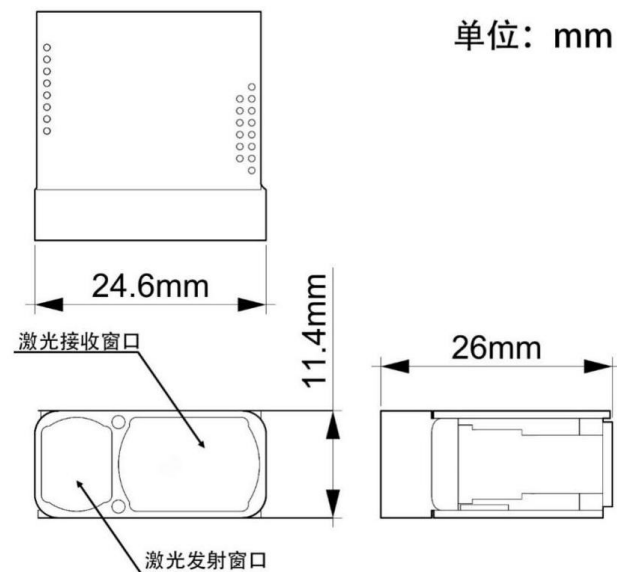
measuring rang

resolution ratio	0.1m
service voltage	Typical value DC+3.3V
	Voltage range 2.5...3.5V
absolute accuracy	± 1m
power dissipation	500mW@3.3V
Maximum single measurement time	1s
specification and dimension	26*24.6*11.4mm
Ambient Light	1000kLux outdoor sunlight
weight	10g
illuminant	905nm laser
working temperature	-20~70℃
Laser safety level	1
Laser life	Over 100,000h
communication interface	UART
	The baud rate is 115200bps

product mode

product model	SDDM-800	SDDM-1200	SDDM-1500	SDDM-2000
range	800m	1200m	1500m	2000m

11/11/2016



单位: mm

contact us	
Siman Ximan Sensing Technology Co., LTD URL: www.siman.asia Wanda Mall 1, Qingpu District, Shanghai 11 Changchun Road, High-tech Zone, Zhengzhou City, Henan Province Email: 17317261651@163.com	 Scan the QR code to follow us

Baud rate	1152
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Start position: 1	Data bit 8	Stop position 1	Check bit: None	Flow control: None
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1) All communicat

fun	
ctio	data
n	

	Bytes	0	1	2	3	4-5	6-7	8
	Name	MsgType	MsgCode	BrdId	PayLoadLen	MeaType	MeaTimes	CRC
	Data	0xFA	0x01	0xFF	0x04	0xAAAA	0BBBBB	0xZZ

Start a single measurement example: fa 01 ff 04 01 00 01 00 00
Start continuous measurement example: fa 01 ff 04 01 00 00 00 ff
Stop measurement example: fa 01 ff 04 00 00 00 00 fe

Me asu	Bytes	0	1	2	3	5	6	7	8	9
	Name	MsgType	MsgCode	BrdId	PayLoadLen	DataValidInd	Distance		CRC	
	Data	0xFB	0x03	0xFF	0x04	0xAAAA	0xBBBB		0xZZ	
	Unit						dm			

re Re por t	After starting the measurement, the module returns the measurement value after each measurement (the maximum duration for a single measurement is 1.5s) until the specified number of measurements is reached or a measurement stop message is received. BrdId = 0xXX indicates the module ID for transmission DataValidInd = 0xAAAA indicates whether the data is valid: 1 means the measurement data is valid, and 0 means it is invalid. Distance = 0xB BBB indicates the measured distance in decimeters (dm).
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Example: Parse the message fb 03 00 04 01 00 4c 00 4f												
Bytes	0	1	2	3	5	6	7	8	9			
Name	MsgType	MsgCode	BrdId	PayLoadLen	DataValidInd	Distance		CRC				
Data	0xFB	0x03	0xXX	0x04	0xAAAA	0xBBBB		0xZZ				
Case	fb	03	00	04	0100		4c00		4f			
					valid data		76dm					
Set module parameters	transmitter	Bytes	0	1	2	3	4	5	6	7	8	
		Name	MsgType	MsgCode	BrdId	PayLoadLen	Type		Value		CRC	
		Data	0xFA	0x06	0xXX	0x04	0xAAAA		0xBBBB		0xZZ	
		BrdId = 0xXX specifies the receiving module ID, where 0xFF indicates a broadcast message. Type = 0xAAAA parameter type Value = 0xBBBB. New settings take effect immediately except for the module ID setting, which resets after the new value takes effect. Example: fa 06 ff 04 00 00 00 00 03										
	receiver	Bytes	0	1	2	3	4	5	6	7	8	
		Name	MsgType	MsgCode	BrdId	PayLoad	Err		Type		CRC	
		Data	0xFB	0x07	0xXX	0x04	0xAAAA		0xBBBB		0xZZ	
		BrdId = 0xXX indicates the module ID for transmission Err = 0xAAAA indicates success or failure, where 0 means success and non-zero means failure, Type = 0xBBBB parameter type Example: fb 07 00 04 00 00 00 00 06										
	Module parameter	type	name	Window default	span		meaning					
		0	module ID	0	0-254		1) The module ID in the request message identifies the receiving module; 2) The module ID in response or report messages indicates the message source; 3) When the sender ignores the receiver's module ID or wants to broadcast the message, the module ID is set to 0xFF					
		1	Serial port baud rate	1152	9216,1152,384,192,96,24,12		Unit: 100bps					
	Read module parameter	transmitter	Bytes	0	1	2	3		4	5	6	
			Name	MsgType	MsgCode	BrdId	PayLoadLen		Type		CRC	
			Data	0xFA	0x08	0xXX	0x02		0xAAAA		0xZZ	
BrdId = 0xXX specifies the receiving module ID, where 0xFF indicates a broadcast message. Type = 0xAAAA parameter type Example: fa 08 ff 02 00 00 03												

s

receiver

Bytes	0	1	2	3	4	5	6	7	8
Name	MsgType	MsgCode	BrdId	PayLoad	Type		Value		CRC
Data	0xFB	0x09	0xXX	0x04	0xAAAA		0xBBBB		0xZZ

BrdId = 0xXX indicates the module ID for transmission

Type = 0xAAAA parameter type

Value = 0xBBBB parameter value

Example: fb 09 00 04 00 00 00 00 08

Note: CRC stream calculation and usage

1. For a single measurement message, the message code stream is: fa 01 ff 04 01 00 01 00 00

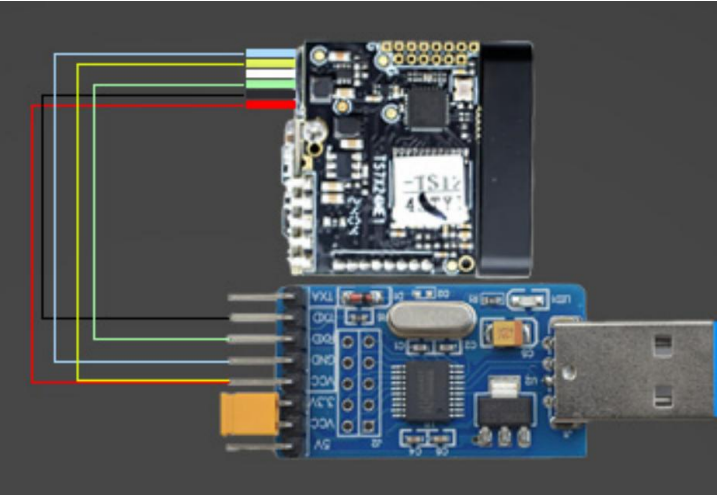
Sum the entire message using the U8 array: 0xfa + 0x01 + 0xff + 0x04 + 0x01 + 0x00 + 0x01 + 0x00 = 0x200

2. Take the lower 8 bits of the accumulated value as the CRC value: i.e., 0x00

Operation Guide

The module connects to the USB-TTL converter as shown in the figure below.

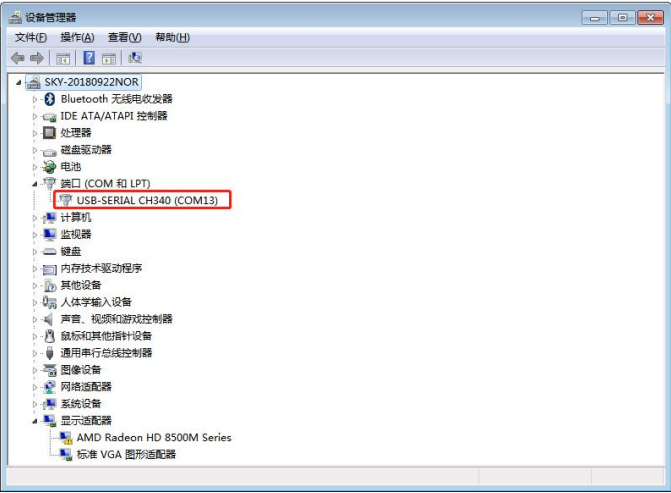
- If you're using a USB-TTL adapter like ours, here's how to connect it:
- If you're using a different USB-TTL model, connect a pull-up resistor (a resistor between the red VCC and yellow TXD lines).
- When connecting the TTL signal to a microcontroller, install a pull-up resistor (a resistor between VCC and TXD).



Test demo software

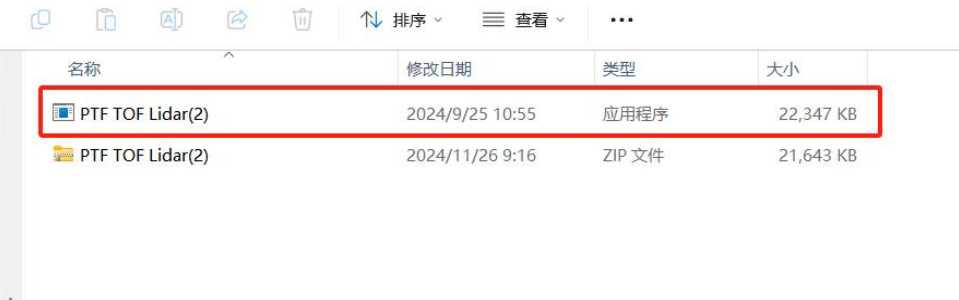
Before starting the test, we need to confirm:

1. Insert and install the CH341 USB-TTL converter driver on your computer. The following indicates successful installation.



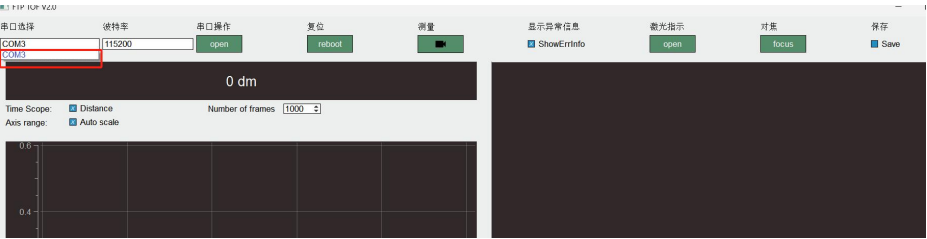
2、Download the host computer software: www.siman.asia;

3. Open the host computer's folder, select the corresponding.exe folder, and double



-click "PTF TOF Lidar" to launch the software.

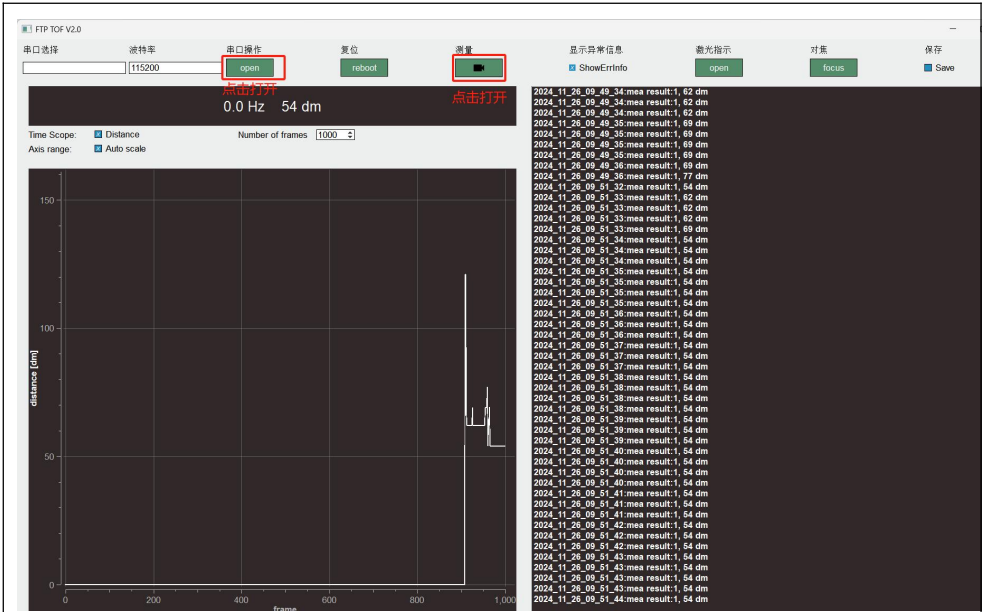
4. The following window will appear: The serial port number is correct. Click "Open Serial Port".



5. The Porter rate is selected as 115200;



6. Open the serial port, click "open" below the serial port operation, then click the icon button below the measurement to start the measurement.



7. Click "Save Data" to save all data on the interface in txt format.

