TFmini-S LiDAR Module

1. Product Description

TFmini-S is a single-point ranging LiDAR based on TFmini upgrade. The blind zone is shortened to 10cm, the outdoor performance and accuracy of different reflectivity are improved, it can achieve stable, accuracy, sensitive and high frequency range detection.

the module is characterized by the following points:

- Small size
- Light weight
- Low power consumption
- High frame rate(up to 1000Hz)

Main application scenario:

- Pedestrian detection
- Vehicle detection
- Intelligent barrier gate
- Altimeter

2. Technical Specifications and Parameters

Table 1 Main characteristic parameters of TFmini-S

Patameters		Value
Product Performance	Operating Range	0.1m~12m@90%Reflectivity 0.1~7m@10% Reflectivity 0.1m~12m@90%Reflectivity（70Klux） 0.1~7m@10% Reflectivity（70Klux）
	Accuracy	±6cm@（0.1-6m）[1] ±1%@（6m-12m）
	Distance resolution	1cm
	Frame rate	100Hz
	Ambient light immunity	70Klux
	Operating Temperature	0℃~60℃
	Enclosure Rating	/
Optical parameters	Light source	VCSEL
	Central wavelength	850nm
	Photobiological safety	Class1（EN60825）
	FOV	2°[2]
Electrical parameters	Supply voltage	5V±0.1V
	Average current	≤140mA
	Power consumption	≤0.7W
	Peak current	200mA
	Communication level	LVTTL（3.3V）
	Communication interface	UART / I2C
Miscellaneous	Dimension	42mm*15mm*16mm(L*W*H)
	Housing	PC/ABS
	Storage temperature	-20℃~75℃
	Weight	5g±0.3g
	Cable length	10cm

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[1] *Accuracy was calculated based on a standard white board with 90% reflectivity in indoor condition(25 ℃), changes in conditions may cause errors to increase*

[2] *This is a theoretical reference value, there is a certain deviation in the actual angle value.*
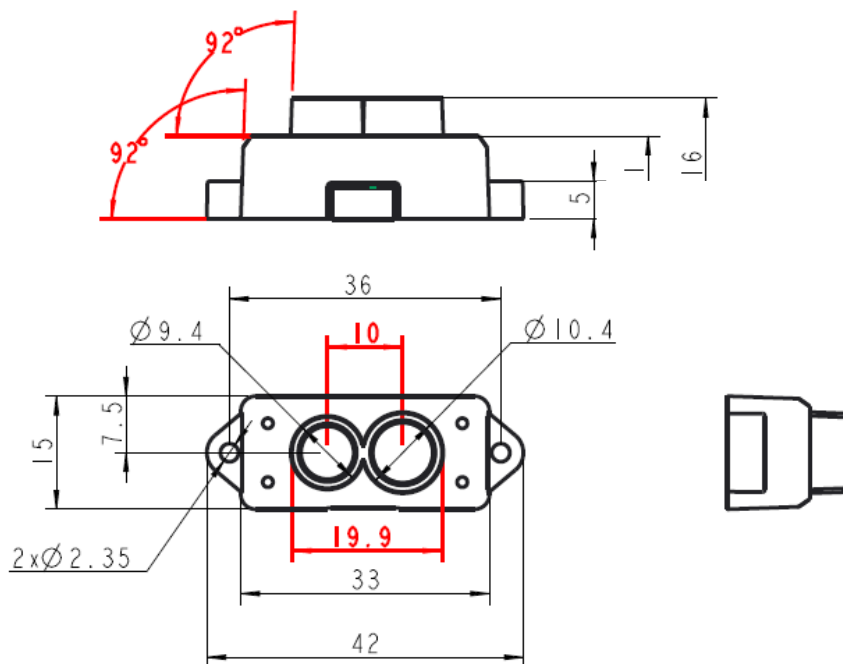
3. Product Appearance and Structure

Figure 1 Dimension of TFmini-S　（Unit:mm）

4. Communication Interface

Table 2 Communication Interface--UART

Default Baud rate	115200
Data bits	8
Stop bit	1
Parity	None

Table 3 Communication Interface--I^{2}C

Max transmission rate	400kbps
Master/Slave mode	Slave
Default address	0x10
Address range	0x01~0x7F

5. Configurable Parameters

Table 4 Configurable parameters

Parameters	UART		I2C	
	Description	**Default setting**	**Description**	**Default setting**
Communication interface	UART, I²C and I/O	UART	UART, I²C and I/O	I²C
Frame rate	Adjustable,1~1000Hz	100Hz	Adjustable,1~100Hz	/
Baud rate	Adjustable,9600~921600bps	115200bps	Fast mode（400kbps）	/
Reset to default	Reset all the settings to default	/	Reset all the settings to default	/

Note: Refer to user manual for more information

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