TFmini Plus Single-Point Ranging LiDAR

1. Product Description

TFmini Plus is a single-point ranging LiDAR, based on ToF principle. Mainly used for stable, accuracy and high-frequency range detection. This module is characterized by the following points:

- High frequency(Up to 1000Hz)
- Small size
- Low power consumption(550mW, <=100mW in special mode)
- IP65 Enclosure

TFmini Plus is mainly used in the following application field:

- Pedestrian detection
- Vehicle detection
- Altimeter
- Robot fall-arrest

2. Technical Specifications and Parameters

Table 1 Main characteristic parameters of TFmini Plus

Patameters		UART	I²C
Performance	Operating Range	0.1m~12m@90%Reflectivity 0.1~4m@10% Reflectivity 0.1m~12m@90% Reflectivity (70Klux) 0.1~4m@10% Reflectivity (70Klux)	
	Accuracy	±5cm@（0.1-5m）① ±1%@（5m-12m）	
	Distance resolution	1cm	
	Frame rate	1-1000Hz（adjustable）②	1-100Hz（adjustable）
	Repetitive Accuracy	1σ：<3cm(@100Hz)③	1σ：<4cm(@100Hz)
	Ambient light immunity	70Klux	
	Operating Temperature	-20℃~60℃	
	Enclosure Rating	IP65	
Optical parameters	Light source	LED	
	Central wavelength	850nm	
	Photobiological safety	Exemption level (EN62471)	
	FOV	3.6°④	
Electrical parameters	Supply voltage	5V±0.5V	
	Average current	≤110mA	
	Power consumption	550mW（Low Power Consumption Mode：<100mW）	
	Peak current	140mA	
	Communication level	LVTTL（3.3V）	
	Communication interface	UART、I/O	I²C
Miscellaneous	Size	35mm*18.5mm*21mm	

	Housing material	PC/ABS
	Storage temperature	-20℃~75℃
	Weight	12g±1g
	Cable length	30cm

① *Accuracy was calculated based on the standard indoor test condition of 25℃ and whiteboard of 90% reflectivity, changes in conditions may cause errors to increase.*

② *Only frame rates meet the formula – 1000/n (n is positive integer) can be set.*

③ *More detailed information please refer to the user manual.*

④ *This is a the*oretical reference value

3. Product Appearance and Structure

Fig. 1 Dimension of TFmini Plus(Unit:mm)

4. Communication Interface

TFmini Plus supports two interfaces: UART and I2C.

Table 2 Communication Interface--UART

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

Table 3 Communication Interface--I^2C

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

5. Configurable parameters

Table 4 Configurable parameters list

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	/
Low power consumption mode	Adjustable, normal/low power consumption mode	Off	Not support	/
Baud rate	Adjustable,9600~921600bps	115200bps	Adjustable,<=400kbps	/
Reset to default	Reset all the settings to default	/	Reset all the settings to default	/

PS: Refer to user manual for more information

6. Certifications

EN62471光生物安全认证