D4

OVERVIEW

D4 is a 360 degrees 2D LiDAR. Based on the principle of Triangulation, it is equipped with related optics, electricity, and algorithm design to achieve high-frequency and high-precision distance measurement. The mechanical structure rotates 360 degrees to continuously output the angle information as well as the point cloud data of the scanning environment while ranging.

TECHNICAL SPECIFICATIONS

PERFORMANCE PARAMETER

Item	Min	Typical	Max	Unit	Remarks
Ranging frequency	/	9000	/	Hz	/
Motor frequency	5	7	12	Hz	Software speed control, default speed = 7Hz
Ranging distance	0.12	/	16	m	Ranging frequency =4KHz (to be customized), 80% Reflectivity
	0.26	/	16	m	Ranging frequency =8KHz (to be customized), 80% Reflectivity
	0.28	/	16	m	Ranging frequency =9KHz, 80% Reflectivity
Field of view	/	0-360	/	Deg	/
Systematic error	/	2	/	cm	Range≤1m
Relative error	/	2.0%	/	/	1m<range ≤8m
Tilt angle	0.25	1	1.75	Deg	/
Angle resolution	0.2 (Frequency @5Hz)	0.28 (Frequency @7Hz)	0.48 (Frequency @12Hz)	Deg	When motor frequency =7Hz, and the ranging Frequency =9000Hz

ELECTRICAL PARAMETER

Item	Min	Typical	Max	Unit	Remarks
Supply voltage	4.8	5.0	5.2	V	Excessive voltage might damage the Lidar while low affect normal performance
Startup current	1000	/	/	mA	The driving capability that the power supply for the lidar needs to meet
Sleeping current	/	/	50	mA	System sleep, motor stops
Working current	/	350	500	mA	System work, motor speed=7Hz

INTERFACE DEFINITION

Pin	Type	Description	Defults	Range	Remarks
VCC	Power supply	Positive	5V	4.8V-5.2V	/
Tx	Output	System serial port output	/	/	Data stream: LiDAR→Peripherals
Rx	Input	System serial port Input	/	/	Data stream: Peripherals→LiDAR
GND	Power supply	Negative	0V	0V	/
NC	Reserve	Reserved pin	/	/	/

SERIAL PORT SPECIFICATION

Item	Min	Typical	Max	Unit	Remarks
Baud rate	/	230400	/	bps	8-bit data bit,1 stop bit, no parity
High signal level	2.4	3.3	3.5	V	/
Low signal level	0	0.3	0.6	V	/

LASER OPTICAL PARAMETERS

Item	Min	Typical	Max	Unit	Remarks
Laser wavelength	775	792	800	nm	Infrared band
Laser power	/	3.5	6	mw	Average power
FDA	Class I IEC60825-1				

OTHERS

Item	Min	Typical	Max	Unit	Remarks
Operating temperature	0	20	50	℃	Long-term working in a high temperature environment will reduce the life span
Storage temperature	-10	/	60	℃	/
Lighting environment	0	550	2000	Lux	For reference only
weight	/	214	/	g	/