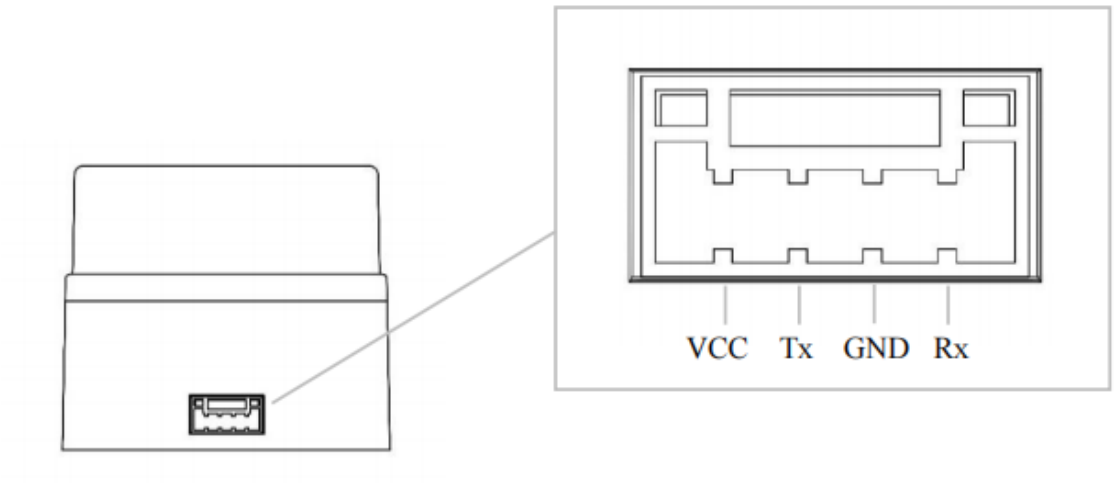
Radar Introduction

As a low-cost single-line high-precision laser radar sensor, the T-mini Plus radar uses the TOF measurement method. The T-mini Plus radar is small in size, so it can be built into the robot body to optimize the space utilization of the robot. Although it is small in size, it integrates a variety of long-range measurement optimization algorithms, and the range of 80% reflectivity can reach 12.0m; at the same time, its power system uses a customized and optimized brushless DC motor with a service life of more than 10,000 hours.

Specifications are as follows:

Parameter	Value	Description
Ranging frequency	4000Hz	-
Scanning frequency	6Hz-12Hz	Software speed adjustment, factory default 6Hz
Ranging range	0.05m-12m 0.05m-4m	80% reflectivity 10% reflectivity
Scanning angle	0-360°	-
Ranging accuracy	20mm	0.05m < distance≤12m
Angular resolution	0.54°	-
Pitch angle	Typical value: 0.75°	-
Power supply voltage	5.0±0.2V	Too high will damage the device, too low will affect performance or even fail to measure distance
Power-on current	Typical value: 840mA	Power-on instantaneous peak current
Working current	Typical value: 300mA	System working, default motor speed
Working temperature	-10℃-45℃	Typical value: 25℃
Weight	45g	Bare weight

Interface definition:
T-mini Plus external physical interface terminal is GH1.25-4P, which realizes system power supply and data communication.



Pin	Type	Description	Default	Range	Notes
VCC	Power supply	Positive supply voltage	5V	4.8V-5.2V	/
Tx	Output	System serial port output	/	/	Data flow: radar->peripheral
Rx	Input	System serial port input	/	/	Data flow: peripheral->radar
GND	Ground	Negative supply voltage	0V	0V	/

Serial port configuration parameters:

Baud rate	Data bit	Stop bit	Parity bit	Flow control
230400	8	1	None	None

For more information about the radar, please refer to the official document [YDLIDAR T-mini Plus Development Manual_V1.0 (231222).pdf].