广东六力智行科技有限公司
GUANGDONG SFOUNDINT TECHNOLOGY CO.,LTD.

Millimeter wave radar

SRD-120-10-40-01

Application Manual

Guangdong Sfoundint Technology Co., Ltd.

Disclaimer

Thank you for choosing this product designed and manufactured by GUANGDONG SFOUNDINT TECHNOLOGY CO., LTD..

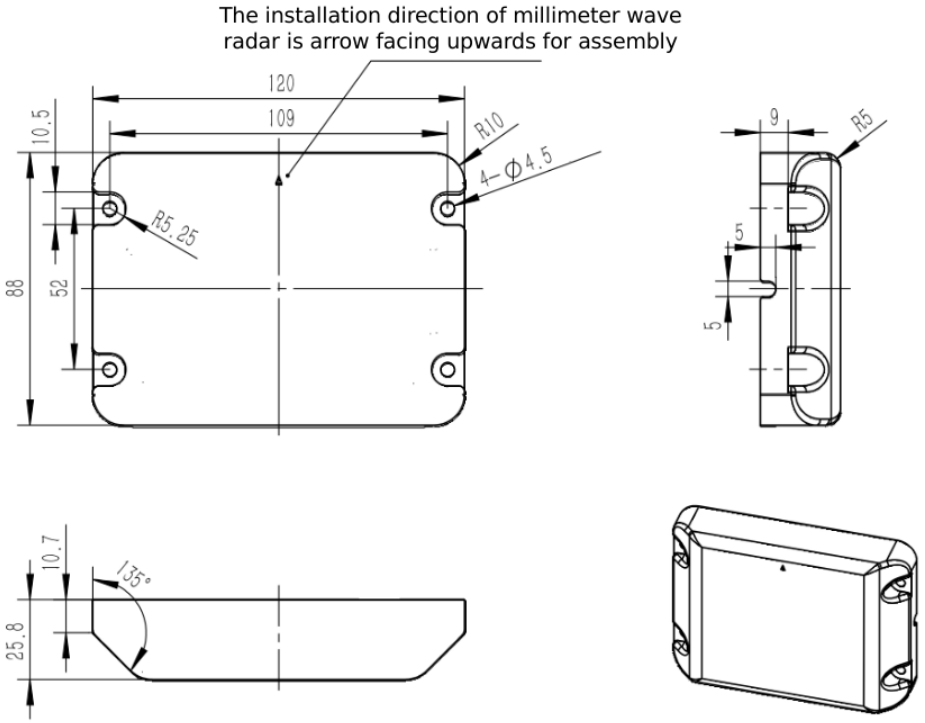
Please read this statement carefully before using this product. Once used, it shall be deemed to be an approval and acceptance of the contents of this statement. Please install and use the product in strict accordance with the manual. In case of any damage or damage caused by improper use, Guangdong Sfoundint Technology Co., Ltd. shall not bear the corresponding loss and compensation liability.

Contents

1-Brief Introduction

SRD-120-10-40-01 77GHz millimeter wave radar is developed for the detection of obstacles in front and forward collision warning when driving at medium/low speed. Compared with infrared, laser and ultrasonic radars, millimeter wave radar is less affected by weather changes and has good anti-jamming performance and range detection ability.

The dimensions are 120 * 88 * 25.8mm, detection distance 40m, integrated CAN interface.



2-Precautions for Product Use

● Please keep the radome clean during installation. Clean the radome with a soft wet cloth, and then dry it naturally.

● Please pay attention to the shape of the radar during installation to ensure that the radar is not deformed, and do not squeeze, bump or fall.

● During installation, try to stay away from high-power electrical equipment and motors with strong magnetic field interference.

● During the test, there shall be no obstructions within the radar beam range, and the test environment shall be as wide as possible to avoid affecting the measurement results.

● During installation, ensure that the radar is brand new, and do not disassemble it by yourself.

If you encounter problems that cannot be solved during installation and use, please contact the manufacturer for assistance.

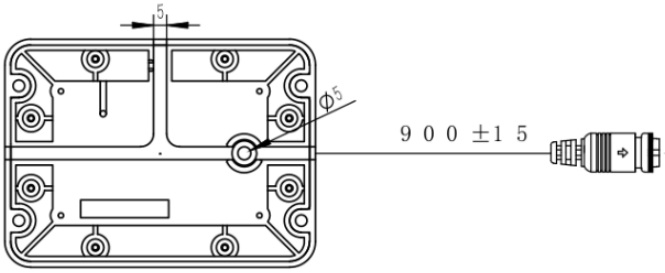
3-Specifications and Parameters

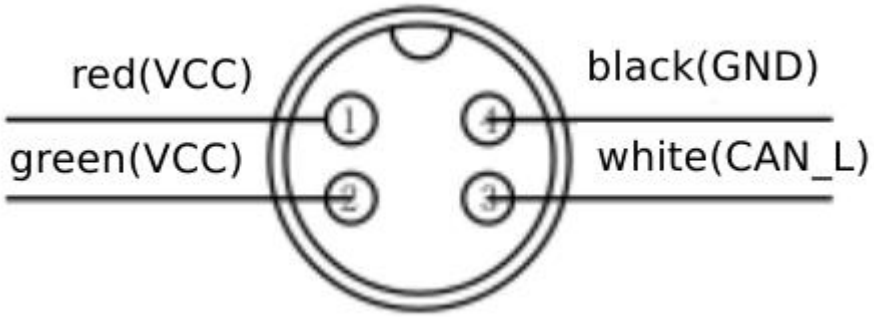
Items	Parameter	Technical Specification
System Properties	Working Voltage	12V/24V DC
	Mains Power Supply	9~32V DC
	Operating Temperature	-40℃~+85℃
	Power Consumption	< 3.0W
	Protection Rating	IP67
	Radar Operating Frequency Band	77-78GHz
	Refresh Rate	33Hz
Antenna Performance	Antenna Channels	2Tx* 4Rx
	Elevation Beam Width(6 dB)	-5~+5°
	Azimuth Beam Width (6 dB)	- 60° ~ + 60°
	Resolution Distance Measuring	0.2m
	Velocity Resolution	1.9km/h
	Velocity Range	±60km/h
	Distance Range	40m
	Accuracy Distance Measuring	±0.1m
	Velocity Accuracy	±1km/h

4-Quick Use Guide

4.1 Definition of wire harness

Use 4-PIN connector, outline structure is shown as below



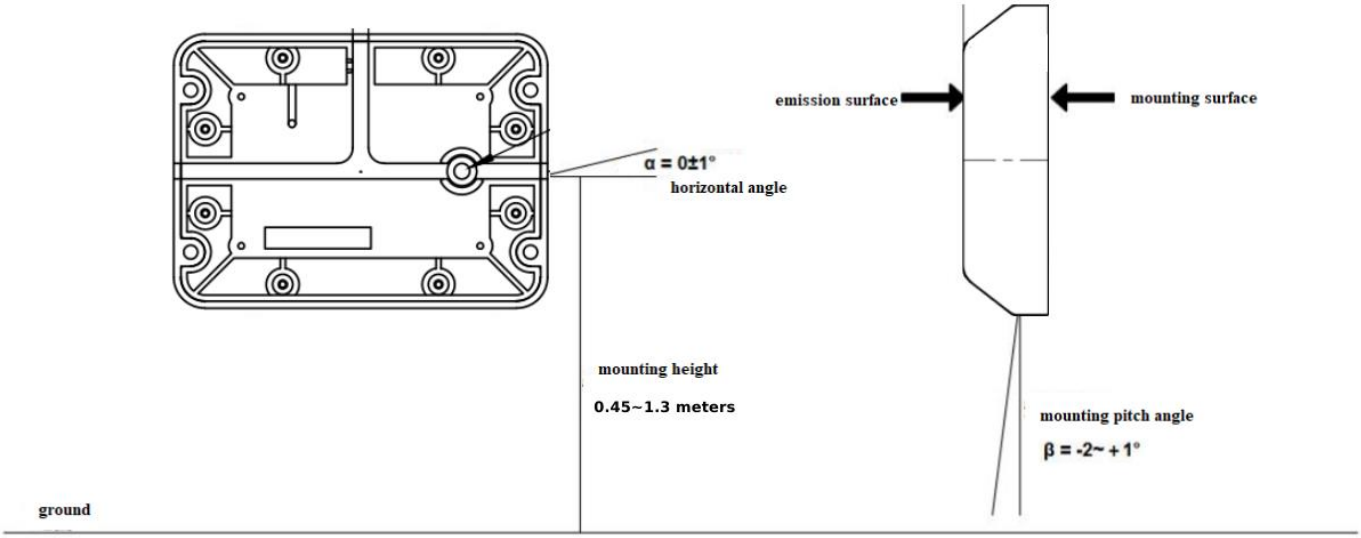


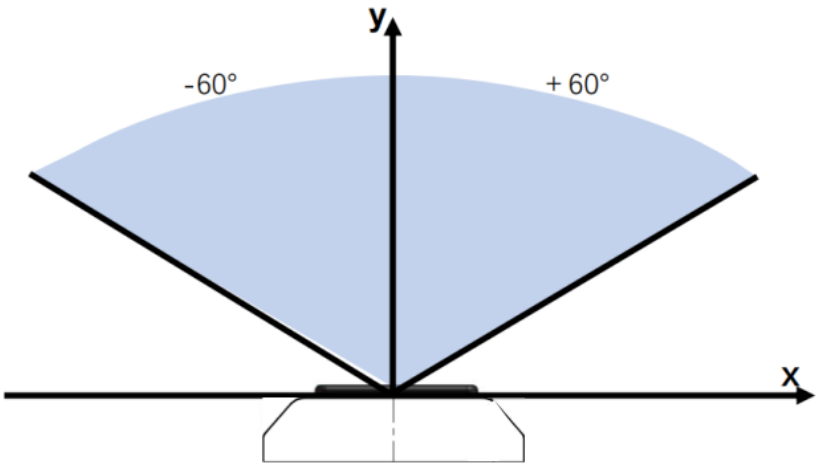
Sr No.	Cable ID	Cable Color	Description
1	VCC	Red	Power Positive
2	CAN_H	Green	CAN_H
3	CAN_L	White	CAN_L
4	GND	Black	Power Negative

4.2 Installation and coordinate system

1) Installation direction: the radar antenna faces the detection area and is installed vertically; the connector comes out to the right, The installation diagram is as below:

2) Installation height: it is recommended to be 0.65-1.3m from the ground; If the mounting pitch angle is -5~+5°





4.3 Test operation steps

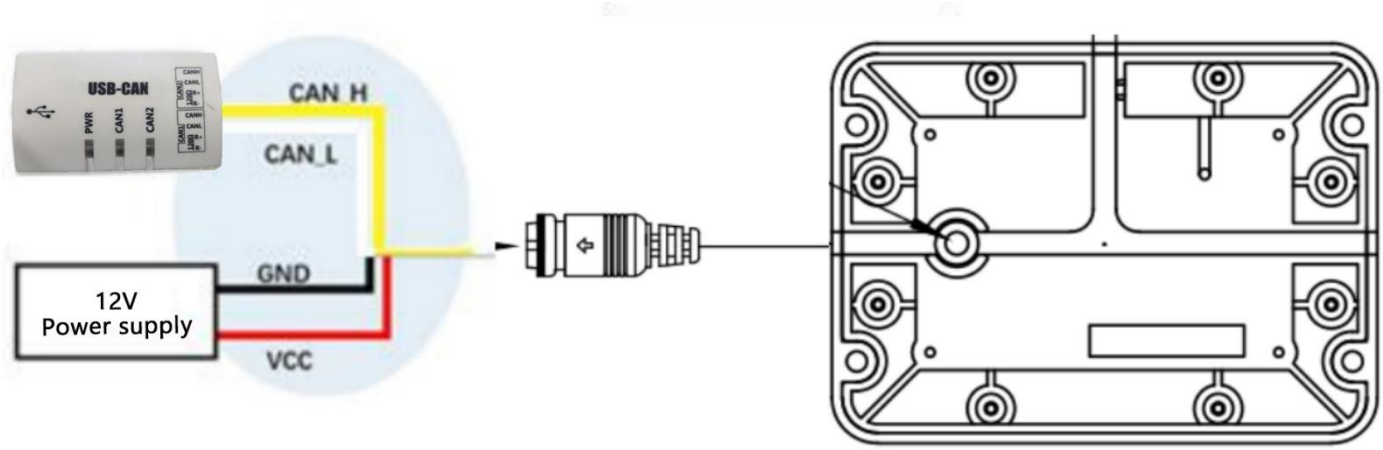
The following devices need to be prepared during the test:

Sr No.	Device name	Q'ty
1	SRD-120-10-40-01 Millimeter wave radar	1
2	SRD-120-10-40-01 Millimeter wave radar wire harness	1
2	Laptop	1
3	USB CAN box	1
4	Power terminal (DC female head)	1
5	12V power adapter	1
6	Test software	1

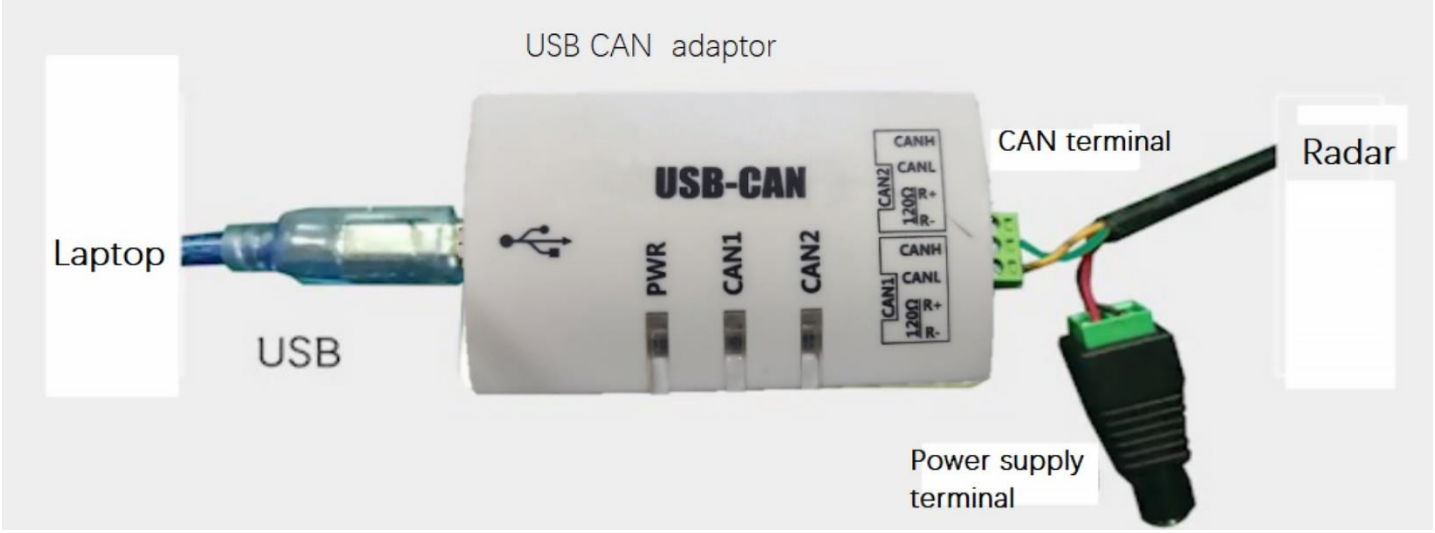
4.3.1. Prepare the USB CAN box (support USB CAN (CANalyst-II)), and install the driver on the Laptop at the same time.

4.3.2. Connect the radar harness end blue wire (CAN_H) and yellow wire (CAN_L) to the corresponding terminal on the USB CAN box, also connect the radar harness end red wire (power positive) and black wire (power negative) to the DC female head (power supply end).

4.3.3. After the 12VDC power supply is connected, the green light (power) of the USB CAN box will be on continuously.



4.3.4. As shown in the figure below, the CAN box communicates with the radar. The delivery packing list does not include the CAN box. If necessary, customers can purchase by themselves or from the radar manufacturer.



4.3.5. Connect the USB interface of the USB CAN box to the laptop and open the test software. If there is no data output, the CAN box test can be carried out first.

4.3.6. Open CANTest software

4.3.7. Select "select device - USBCAN-2E-U " in the upper left corner of the software

4.3.8. Select 500K baud rate, click "OK and start CAN”

4.3.9. The following interface indicates data output.

5- Frequently asked questions（FAQs）

Q1: During the test, click the open test and there is no response

A: 1. Whether the USB CAN box is suitable.
2. Whether the power supply is connected correctly (12V).
3. Whether CAN box drive is installed.

Q2: Poor test results?

A: Please check the quick use guide carefully, pay attention to the installation height and direction of the radar, and keep the radar perpendicular to the ground. In case of detection distance short, please check whether the radar is installed vertically.

Q3: Poor indoor detection effect?

A: There is multi-path effect indoors. It is recommended to evaluate it outdoors. If test Indoors, the radar can be tested against strong reflectors such as the ceiling.

FCC Statement

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This transmitter must not be co‑located or operating in conjunction with any other antenna or transmitter.This equipment should be installed and operated with minimum distance 20cm between the radiator& your body. Note : This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates,uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.