

Instructions for Vehicle-mounted Radar and Vision Fusion

Blind Spot Terminal



1. Product Introduction 2.

Product List 3. Technical

Parameters 4. Radar Warning

Mode 5. Radar Product Function 6.

Installation Instructions 7. Line Connection

Diagram

1. Product Introduction

Thank you for choosing our vehicle-mounted radar-vision fusion blind spot warning terminal. The product consists of a high-definition display, a radar control host, It consists of 4 77Ghz millimeter-wave medium- and short-range obstacle avoidance radars, 4 high-definition cameras and connecting wiring harnesses.

Product application: 77Ghz millimeter wave radar is suitable for installation in the front, back, left and right of the vehicle body, equipped with radar debugging APP, the display screen shows the picture, The radar detection distance is superimposed on the screen. It is widely used in trucks, construction machinery, airport and port machinery, agricultural machinery and other heavy vehicles. Commercial vehicles.

77Ghz millimeter wave radar: It is a 77GHz vehicle-mounted millimeter wave radar for detecting obstacles ahead when driving at medium and low speeds. Compared with infrared, laser and ultrasonic radars, millimeter wave radar is less affected by weather changes and has good Anti-interference performance and distance detection capability, the detection distance can reach 40 meters.

Radar host: Receive and process 77Ghz obstacle avoidance radar data, set the radar warning range, and the warning range is centered on the radar Three areas are set within a rectangular range of 4 meters on each side and 40 meters long, with 485 output protocol and reserved IO input and output ports.

HD camera: Get the environment image in real time.

High-definition display: HiSilicon chip solution development, receiving camera images, while receiving the detection distance output by the radar host and superimposing it on On the screen, during the recording process, the radar warning screen is recorded at the same time; it is a high-end intelligent vehicle-mounted terminal with four-channel video surveillance.

2. Product List

name	quantity
77Ghz millimeter wave obstacle	1-4 (optional)
avoidance radar HD	1-4 (optional)
camera radar	1
host HD display	1
power cord	1
radar extension	1-4, standard 5 meters (10 meters, 15 meters optional)
cable camera extension	1-4, standard 5 meters (10 meters, 15 meters optional)
cable radar 1 point 2 adapter	0-2 configurations on demand
cable radar	1-4 groups optional
bracket accessories package	1 pack

A. Complete product picture



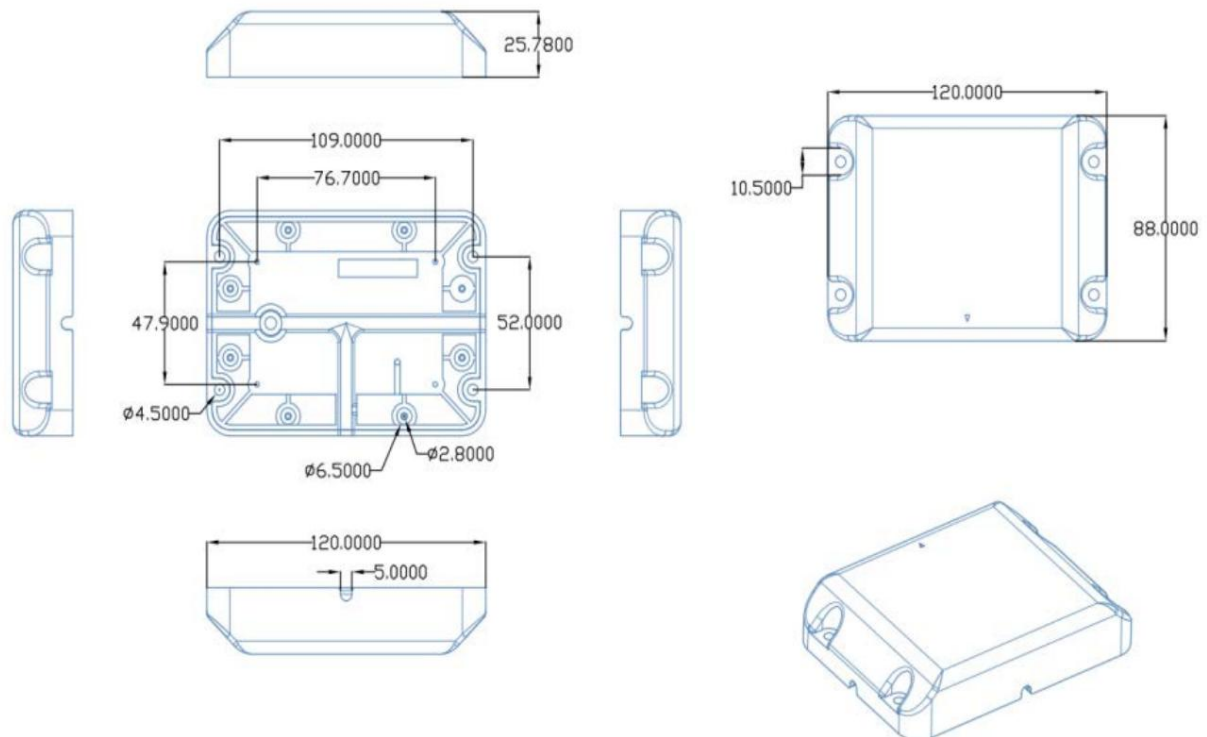
B. Display screen appearance



C. Radar appearance



Radar size: 120*88*25.78mm



D. Camera appearance

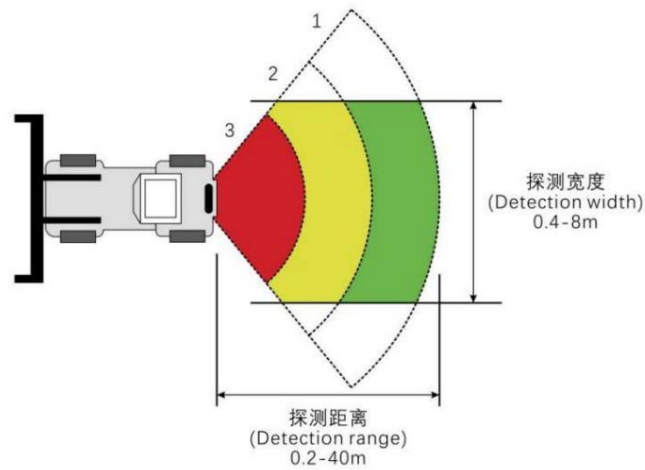


3. Technical parameters

77Ghz millimeter wave radar parameters		
serial number	project	Specification
01	Operating voltage	12-30V
02	Radar operating frequency band	77-78Ghz
03	Operating temperature	- 40℃ ~ + 85℃
04	Full load power consumption	≤10W
05	Radar waterproof level	Ip67
06	Refresh rate	33Hz
07	Number of transmit and receive channels	2TX4RX
08 Elevation	beamwidth (6dB)	-5~5°
9	Horizontal beam width (6dB)	≤60°~≥60°
10	Distance resolution	0.2M
11	Speed resolution	1.9km/h
12	Speed range	±60km/h
13	Detection distance	1. Length 0.2~40m, detection width can be limited, maximum Set up 3 detection areas (the distance of each area can be configured) 2. Each radar can set the warning area independently

Four-way car display parameters		
operate	Operating System	Embedded Linux Operating System
	Operating Language	Chinese/English
	Operation interface	Graphical menu operation interface
Audio and Video	Video format	PAL/NTSC
	Compression standard	H.264
	Image resolution	720P, D1/HD1/CIF
	The video quality can be configured from 1 to 8 levels, with 1 being the highest quality and 8 being the lowest. The screen display supports 1 and 4 screen displays.	
	Audio compression	G.711A, G.711U, G.726-32K, G.726-40K
	Recording mode	Synchronous recording of sound and
Video	video; Video bit rate	4096kbps for full frame, 8 levels of image quality
	optional; Audio bit rate	8KB/s;
	Storage medium	SD card;
	Video query	Searchable by channel, video type
	Local playback	Playback by file
interface	Audio and video input	4-way aerial camera
	Alarm input	4 input signals
	Communication interface	1 channel RS485
	SD Card	1 SD card storage, maximum support 256G
other	Power input DC	9V~36V
	Power output	12V/1A, 5V/0.6A
	Power consumption	19W, voltage: 12V/1.6A, voltage: 24V/0.8A, sleep: 1.2W
	Working temperature	-20℃ ~ 70℃
	Storage temperature	-40℃ ~ 85℃
	Storage capacity	D1 about 500M/hour/channel, 720P about 1G/hour/channel
	Built-in battery	No
Software Upgrade	Upgrade mode	manual upgrade
	Upgrade method	SD card

4. Radar Warning Mode



3 warning levels:

Level 1 warning (farthest area): The screen displays a green frame, the numbers are green, the distance is displayed, and the buzzer does not sound;

Second level warning (middle area): the screen displays a yellow frame, the numbers are yellow, the distance is displayed, and the buzzer flashes and sounds;

Level 3 warning (nearest area): The screen displays a red frame, the numbers are red, the distance is displayed, and the buzzer sounds for a long time.

5. Radar Product Functions

A. Radar parameter settings (APP settings)

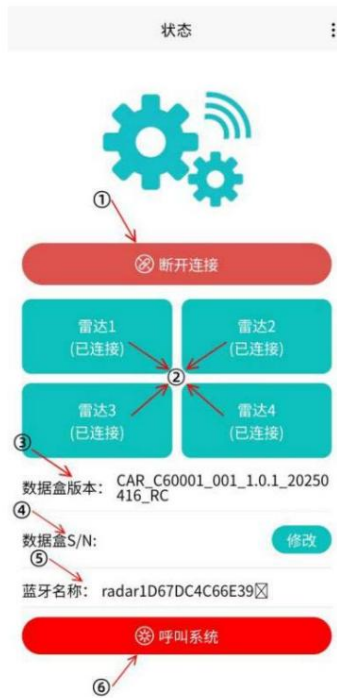


Figure 1: APP page

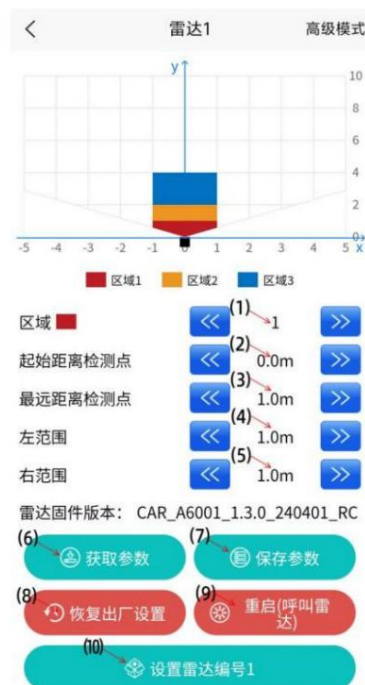


Figure 2: Radar parameter settings

Turn on Bluetooth, click Connect, and select the Bluetooth name in the pop-up box to enter

ÿConnect with radar host

ÿSet radar parameters:

Set the radar number. You can only connect one radar at a time to set the radar number. After the radar number is set, it will display blue and show that it is connected. Click the radar to enter the regional parameter setting. (Later, you can modify the warning distance parameters at the same time for multiple radar connection states)

•Area: Warning level (1: nearest area; 2: middle area; 3: farthest area).

•Starting distance detection point: the shortest detection distance (if there is a fixed obstacle in front of the radar, such as the rear bumper, a distance value greater than the distance from the radar to the bumper can be set to filter the bumper as a fixed alarm target) .

•Farthest distance detection point: farthest detection distance.

•Left range: left detection distance.

•Right range: right detection distance.

•Get parameters: Get current radar parameters.

•Save parameters: Save the current setting parameters.

•Restore factory settings: restore the current radar parameters to the default parameters.

•Restart (call radar): restart the radar.

•Set radar number: number the current radar.

•Data box version: current radar host version, which can be updated remotely.

•Data box S/N: Current radar host serial number.

•Bluetooth name: The current Bluetooth name of the radar host, which cannot be changed.

•Calling system: with network version function, can contact the system.

6. Installation Instructions

A. Radar installation precautions:

(1) Please keep the radar cover clean during installation. To clean the cover, wipe it with a soft damp cloth and let it air dry naturally. (2) Pay attention to the shape of the radar during installation to ensure that the installed radar is not deformed. Do not squeeze, bump or drop it. (3) When installing, try to stay away from high-power electrical equipment and motors that are frequently started and have strong magnetic field interference. (4) During testing, there must be no obstructions within the radar beam range, and the test environment should be as open as possible to avoid affecting the measurement results.

Installation and coordinate system:



1) Installation direction: The radar module should be installed vertically or horizontally with the triangle mark on the front facing upwards (since the antenna pitch angle is small, try to keep it vertical to the ground during installation); 2) Installation position: The recommended installation height is 0.5~1.5m from the ground; if the installation height is less than 0.5m, the upward angle needs to be adjusted appropriately; if the installation height is greater than 1.5m, the downward angle needs to be adjusted appropriately.

B. Notes on installation of four-way vehicle-mounted terminal:

(1) The camera and radar should be installed on the same surface with corresponding numbers. (2) Replacement of SD card: The SD card should be plugged in and replaced when the device is completely turned off. (3) Wiring: The power cord and GND wire should be as thick as possible (close to the thickness of the device power cord). All wire connections should be securely connected and wrapped with electrical tape.

7. Line connection diagram

