

77Ghz Millimeter- Wave Radar Commercial Vehicle Forward Collision Warning Terminal Instruction Manual



Model: K5

Radar Version: A100

I. Product Introduction

Thank you for selecting our company's 77Ghz Millimeter- Wave Radar Forward Collision Warning Terminal for commercial vehicles. The product consists of a touch- screen main unit, a 77Ghz vehicle- mounted millimeter- wave radar and connecting wiring harnesses.

Product Application

The 77Ghz millimeter- wave radar is mounted at the front of the vehicle, and the touch- screen is installed on the instrument panel. This product delivers warnings by calculating the time- to- collision with obstacles ahead.

****77Ghz Millimeter- Wave Radar****: It is a 77Ghz vehicle- mounted millimeter- wave radar designed to detect forward obstacles while commercial vehicles are in motion. Compared with infrared, laser and ultrasonic radars, this millimeter- wave radar is less affected by weather changes. It features excellent anti- interference performance and distance- detection capability, with a maximum detection range of 100 meters. Its refresh rate of 33 times per second ensures real- time data availability.

****Touch- screen Main Unit****: It receives and processes data from the 77Ghz vehicle- mounted millimeter- wave radar, and displays the distance to forward obstacles in real time. It alerts drivers to slow down via audio prompts and colour- coded distance readings, so as to reduce accident risks caused by harsh weather conditions or driver inattention. The touch- screen supports configuration of collision- warning TTC (Time- To- Collision), mandatory

warning distance and warning speed range.

II. Product List

Name	quantity
77Ghz Millimeter- Wave Obstacle- Avoidance Radar	1
touch screen host	1
GPS module	1
power cord	1
Radar extension line	1(5 meters)
Radar bracket	1
Accessory Kit	1

A、 B. Appearance drawing of touch-screen host

B、 B. Appearance drawing of touch-screen host



A



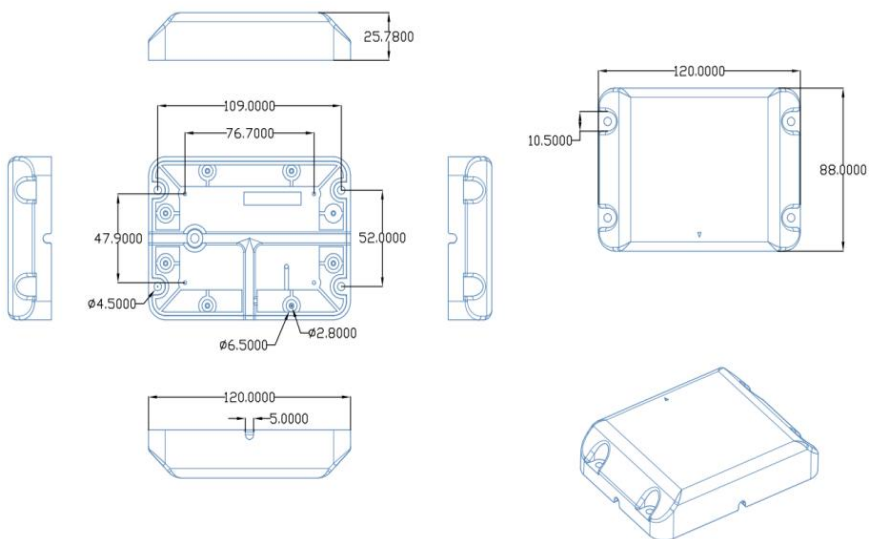
B

C、 External View of Radar



C

Radar dimensions: 120*88*25.78mm



III. Technical Parameters

Nu mber	Project	Specifications
01	Operating Voltage	14-32V
02	Radar operating frequency band	77-78Ghz

03	Operating temperature	- 40℃ ~ + 85℃
04	power consumption	<3W
05	Full- load power consumption	<6W
06	Radar waterproof rating	Ip67
07	Refresh rate	33Hz
08	Number of transmit- receive channels	2TX4RX
09	Elevation Beamwidth (6dB)	-5 ~ 5°
10	Horizontal Beam Width (6dB)	— 60°~+60°
11	Range resolution	0.2M
12	Velocity resolution	1.9km/h
13	Speed measurement range	±120km/h
14	Maximum detection range	100 meters (vehicle- testing)

I.Product Features



① Real- time display of the distance to obstacles ahead

Green for no- alarm status, buzzer off

Yellow for Level- 1 alarm, buzzer intermittent slow beep

Red for Level- 2 alarm / mandatory alarm, buzzer intermittent fast beep

② Real- time display of the vehicle's own speed

II. Parameter Settings: Set the warning area, time-to-collision and forced warning distance.

<返回	默认参数	参数设置	更多参数	En	保存
	左范围	右范围	近端距离	远端距离	碰撞时间
检测区域	-1.2m	1.2m	0.0m	100.0m	5.0s
强制报警区域	-1.2m	1.2m	0.0m	1.2m	2.5s

Set the warning distance and primary- level collision time for the yellow box.

Set the mandatory warning distance and secondary- level collision time for the red box.

Left- right range: 1.2 meters on each side by default; modification is not recommended.

Longitudinal distance: 100 meters by default; modification is not recommended.

III. Multi-parameter: Configure warning speed range, export logs and other functions.



① Warning Speed Range:

An external GPS module is installed on the main unit to detect the vehicle's speed. Users can set minimum and maximum speed values to define the speed range for radar warning.

② Export Logs:

```
time:2025-03-29 14:14:03, x:0.0, y:64.4, v:3.2, warnLevel:1
time:2025-03-29 14:14:03, x:0.0, y:64.4, v:3.2, warnLevel:1
time:2025-03-29 14:14:03, x:0.0, y:64.4, v:3.2, warnLevel:1
time:2025-03-29 14:14:03, x:0.0, y:64.4, v:3.2, warnLevel:1
time:2025-03-29 14:14:03, x:0.0, y:65.2, v:4.0, warnLevel:1
time:2025-03-29 14:14:03, x:0.0, y:65.2, v:4.0, warnLevel:1
time:2025-03-29 14:14:03, x:0.0, y:65.2, v:4.0, warnLevel:1
time:2025-03-29 14:14:03, x:0.0, y:65.2, v:4.0, warnLevel:1
time:2025-03-29 14:14:03, x:0.0, y:66.4, v:4.4, warnLevel:1
```

A TF card can be inserted on the right- hand side of the touch- screen host. You may set the number of alarm records to be exported and export such records to the TF card.

③ Time Zone Setting:

Set the local time zone for time display calibration via GPS.

④ Speed Range / Dynamic Warning Distance:

Configure safety- distance warnings within specified speed ranges.

Example: Trigger a warning when the distance to the vehicle ahead drops below 10 metres at 50- 80 km/h;

Trigger a warning when the distance to the vehicle ahead drops below 20 metres at 80- 100 km/h;

Trigger a warning when the distance to the vehicle ahead drops below 30 metres above 100 km/h.

⑤ Radar ID Setting:

Used to configure communication between the radar and the touch- screen host when connecting a new radar.

IV. Installation Instructions

Please read the usage precautions carefully before installation!!!

(1) Keep the radar cover clean during installation. Clean the cover by wiping it with a soft damp cloth, then let it air- dry naturally;

(2) Pay attention to the radar shape during installation. Make sure the radar is installed without deformation. Do not squeeze, bump or drop it;

(3) During installation, keep away from locations with strong magnetic field interference such as frequently started high- power electrical equipment and motors as much as possible;

(4) No obstructions shall be present within the radar signal range during testing. The test environment should be as open as possible to avoid affecting measurement results.



A. Radar Installation Method:

(1) Installation Direction: The triangular mark on the front of the radar shall face upward. Install the radar perpendicular to the ground and parallel to the

cross- section of the vehicle front. (Due to the small pitch angle of the antenna, keep it as perpendicular to the ground as possible during installation);
(2) Installation Height: The recommended installation height is 0.8- 1.5 m above the ground.

B. Installation Method of Touch- Screen Main Unit: The touch- screen main unit shall be fixed on the instrument panel, with the screen within the driver's line of sight in the driving seating position.

IV. Circuit Connection Legend:

