

# Non-destructive retrofitting of van cameras with Radar blind spot warning systems

## I. Product Introduction

Thank you for choosing our commercial vehicle blind spot monitoring and lane assist warning system, which consists of a 24Ghz microwave radar, an indicator light and connecting wiring harness.

The system provides early warning of dangerous targets in adjacent lanes. 24Ghz microwave radar's unique ability to penetrate smoke, fog and dust enables all-weather, all-day applications, real-time detection of objects in the signal area and identification of objects approaching with relative displacement. Targets can be detected up to 12 meters away, with a final warning signal output.

## II. Product List

| Name                      | Quantity |
|---------------------------|----------|
| 24Ghz microwave radar     | 1pc      |
| In-car warning light      | 1pc      |
| Wires                     | 1 set    |
| Angle ruler               | 1pc      |
| Bracket and accessory kit | 1 set    |

## III. Technical specifications

| No. | Item                     | Specification              |
|-----|--------------------------|----------------------------|
| 01  | Operating voltage        | 12V                        |
| 02  | Operating frequency band | 24Ghz                      |
| 03  | Operating temperature    | -40℃ ~ +85℃                |
| 04  | Power consumption        | < 2W                       |
| 05  | Waterproof rating        | Ip67                       |
| 06  | Distance resolution      | 0.5m                       |
| 07  | Distance measuring       | accuracy better than 0.18m |
| 08  | Max. detection distance  | 10m                        |

## IV. Product Function

The radar is powered on, detects objects in the signal area in real time, and issues a warning signal when it identifies an object that is approaching the vehicle at a faster relative speed  
Early warning mode: the car light is always on.

## V. Installation instructions

- 1、Radar installation height: 0.5-1.4m from the ground; more than 1.4m radar slightly downward tilt (Figure 4)
- 2, radar installation angle: 20 degrees arrow beveled to fit the radar, scale ruler body parallel to the body (Figure 1).
- 3, radar signal face towards the back of the car, there should be no metal material blocking in front of the radar signal.
- 4、Radar outlet facing downwards.
- 5、Radar is mounted on the outside of the left/right body of the car; (as shown in the yellow box in figure 2/figure 3/figure 4)

- 6、The single red wire of the main harness outputs the warning trigger signal: it can be connected to the trigger wire of the video host camera, which is used to switch the corresponding camera screen.
- 7、In-car warning light: stick to the left and right side of the display (corresponding to the left and right radar). As in Figure 5, Figure 6.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

# Radar monitoring area

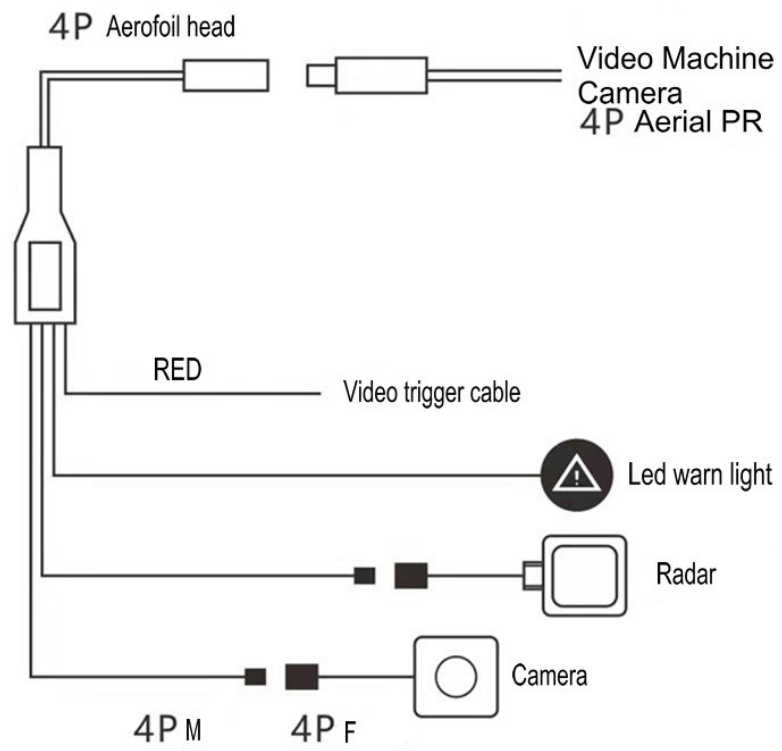
The shaded area is the radar signal coverage area  
3m wide and 10m long



Radar warning of an object entering the signal area at a faster relative speed

Installed at an angular scale of 20 degrees (radar forms a 110° angle with the vehicle): measures objects moving close behind the side lane.

VII. Example of wiring connection diagram



VIII. Product diagram



## IX. Caution

1. The radar may not alert in the following cases.

A. The vehicle is located in a blind zone behind the side of the adjacent lane on the right and remains relatively at the same speed for a long time.

B. The adjacent lane in which the vehicle is located is extremely wide and exceeds the radar signal calculation range

C. When crossing a hill or the top of a mountain pass

2. If the road width is narrow, vehicles in both lanes may be detected

3. When water droplets completely cover the radar housing in heavy rain, it will reduce the detection sensitivity and effect.

4. When the vehicle is stationary, the radar can sense heavy rain falling and will produce a warning signal

5. To the car, the radar will sense the rear fixed objects (because of the relative speed with the radar close)

### **Warning:**

**Always visually inspect the surrounding area before making an actual lane change.**

**This system is only intended to assist you in detecting vehicles approaching from the side and rear during a lane change and should not be relied upon exclusively.**



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