BY-J 24GHz 063-NEW

BY-J 24GHz Millimeter Wave Blind Spot Monitoring System User Manual

Model: 24GHz 063-NEW

1. Introduction

The BY-J 24GHz Millimeter Wave Blind Spot Monitoring System is a vehicle assistance device designed to enhance driving safety by detecting potential collision risks in blind spots. This system integrates Blind Spot Detection (BSD), Lane Change Assist (LCA), and Door Open Warning (DOW) functionalities.
The system utilizes a 24GHz millimeter-wave radar sensor chip with single transmit and four receive radar antennas, equipped with sophisticated computer algorithms. It offers a detection range of up to 15 meters and can monitor closing objects in adjacent lanes within a 3.5-meter range, with a speed gap over 0.5 meters per second.

Figure 1.1: Illustration of scenarios where a Blind Spot Monitoring System is beneficial.

Figure 1.2: Comparison of Microwave Radar vs. Ultrasonic Radar technology.

2. Safety Information

Please read and understand all safety warnings before installing and operating this system.

- **Important Note:** This system is a driving aid and should not replace the driver's attention, use of mirrors, or looking over the shoulder before changing lanes. Always drive with due care and attention.
- The system may not operate properly during severe weather conditions such as snow, ice, heavy rain, or spray.
- This system does not prevent contact with other vehicles, pedestrians, animals, or other infrastructure. It is not designed to detect parked vehicles.
- The system may not alert you if a vehicle quickly passes through the detection zone.
- **Installation Requirement:** This system is designed for vehicles with a **plastic bumper only**. It will not function correctly with vehicles equipped with a metal bumper, as metal can interfere with the radar sensor. Professional installation is required.

3. Product Components

The BY-J Blind Spot Monitoring System includes the following components:

Figure 3.1: System Components (1. Wire harness, 2. Buzzer, 3. Ruler clamp, 4. 24GHz radar*2, 5. Screw, 6. Fixing bracket, 7. LED lights*2)

- Wire Harness
- Buzzer
- Ruler Clamp (for installation)
- 24GHz Radar Sensors (x2)
- Screws
- Fixing Brackets
- LED Warning Lights (x2)

4. Setup and Installation

Professional installation is highly recommended for this system. The following steps provide a general overview of the installation process. Refer to the provided installation videos for detailed visual guidance.

4.1. Power Supply Connection

1. Locate the vehicle's power supply, typically under the steering wheel.
2. Ensure the vehicle is in ACC (Accessory) gear for accurate power measurement.

3. Connect the power cord positive to the ACC position and the negative to a suitable ground point.

4.2. Sensor Installation

The radar sensors are installed behind the rear bumper. This requires removal of the vehicle's rear bumper cover.

Figure 4.1: Installation Diagram for Radar Probes and Wiring.

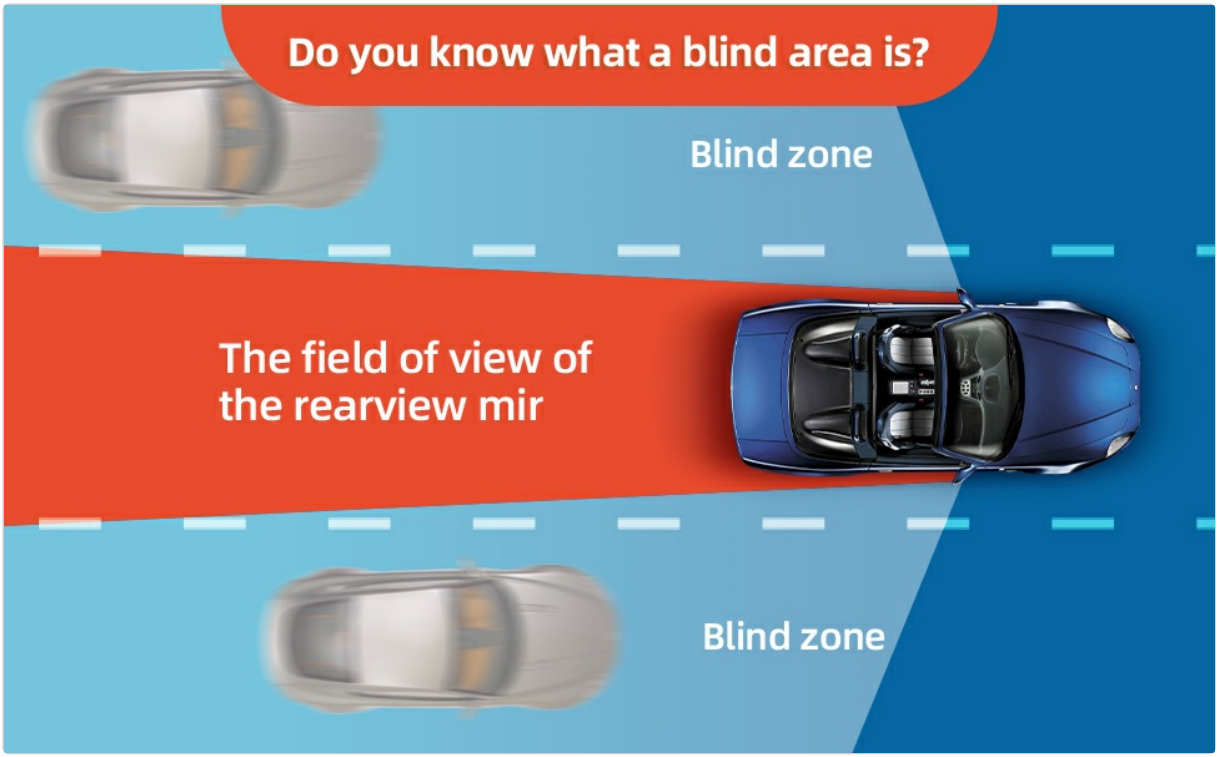

Figure 4.2: Recommended Installation Location and Angle for Radar Probes.

1. Remove the rear bumper cover.
2. Identify a relatively flat and blank area on the vehicle body for sensor placement, avoiding areas that may interfere with signals (e.g., wiring harnesses, reverse sensors, decorations).
3. The installation height of the sensor should be between 55-90 cm (21.7-35.4 inches) from the ground. Adjust to suit the vehicle, but do not exceed these limits.
4. Use the provided bracket and auxiliary adhesive to attach the sensor. Ensure the sensor connector faces inward.
5. Place a level on top of the sensor to ensure it is perpendicular to the ground, keeping the plane vertical.
6. Secure the sensor with screws.
7. After installation, double-check the angle using the auxiliary ruler. The ruler should be placed immediately behind the sensor, kept straight and parallel to the rear tire. The sensor should be

mounted at a 20-degree outward angle.

4.3. Wiring

1. Disassemble interior panels (e.g., under the A-pillar, driver's side wrap, rear seat door edge wrap) to route the wiring.
2. Connect the power extension cable to the sensor cable.
3. Route the power extension cord along the wireway to meet the power cord at the front of the vehicle. Tie wires to the original car harness with cable ties for neatness.
4. Connect the yellow wire to the left turn signal, the orange wire to the right turn signal, and the white wire to the reversing light.

4.4. Interior Warning Lamp Installation

The interior warning lamp can be mounted in the A-pillar backlighting area.

1. Peel off the adhesive backing of the interior warning lamp and stick it to the selected location.
2. Route the left cue light wire down the A-pillar slot to meet the power wire.
3. Route the right cue light wire down the A-pillar wireway, then from the passenger side to the main driver's side to meet the power cord.

4.5. Installation Videos

Video 4.1: Detailed installation guide for the BY-J Blind Spot Monitoring System, covering power connections, sensor placement, and wiring.

Video 4.2: Step-by-step instructions on how to install the blind spot detection sensor system.

Video 4.3: Overview of the BY-J Blind Spot Detection System, including 24/77 GHz /GPS Millimeter features and installation highlights.

5. Operating Instructions

The BY-J Blind Spot Monitoring System provides alerts to assist the driver in various situations.

5.1. Blind Spot Monitoring (BSD)

When a vehicle enters your blind spot, the system will activate the LED warning light on the corresponding side. If you engage the turn signal while a vehicle is in your blind spot, the LED light will flash, and a buzzer will sound to alert you of a potential collision risk.

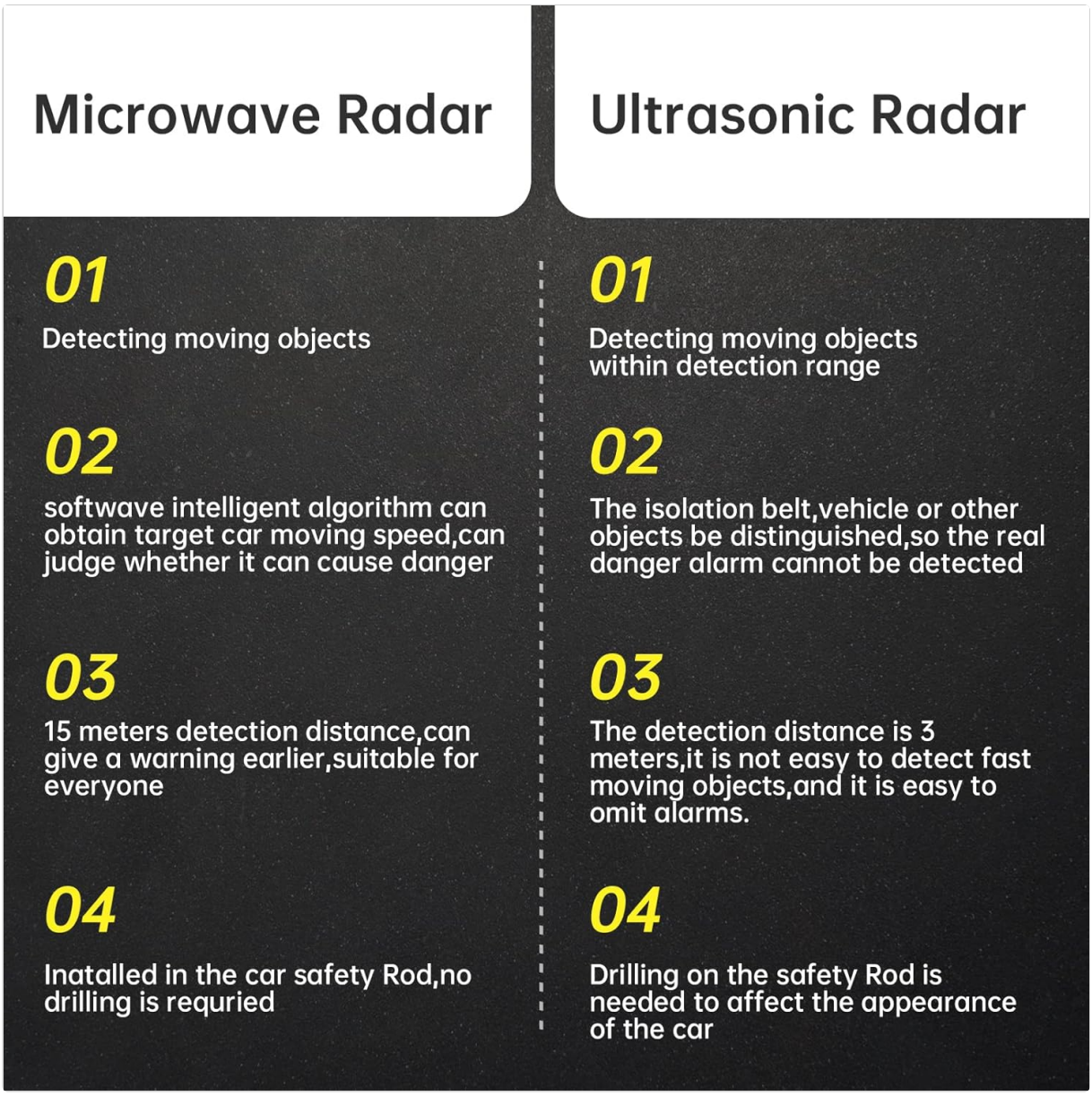

Figure 5.1: Blind Spot Detection in action, showing radar coverage and in-mirror warning.

Figure 5.2: Early Warning and Blind Zone Detection Range.

Figure 5.3: Alarm Triggering Logic for Blind Spot Detection.

5.2. Lane Change Assist (LCA)

This feature assists during parallel lane changes by monitoring the adjacent lanes for rapidly approaching vehicles. If a vehicle approaches quickly in an adjacent lane, the system will activate the warning light and sound the buzzer if you attempt to change lanes.

5.3. Door Open Warning (DOW)

The DOW feature (optional for two doors) alerts you to approaching pedestrians or vehicles from behind when your vehicle is parked and you are about to open a door. This helps prevent collisions when exiting the vehicle.

Video 5.4: Demonstration of blind area detection system functionality, including night driving, lane changing, and performance in various weather conditions.

6. Maintenance

To ensure optimal performance and longevity of your BY-J Blind Spot Monitoring System, follow these general maintenance guidelines:

- Keep the radar sensors and LED warning lights clean and free from dirt, snow, ice, or debris. Obstructions can impair system functionality.
- Regularly inspect all wiring connections for any signs of wear, damage, or looseness.
- Avoid using harsh chemicals or abrasive materials when cleaning the sensors or warning lights. Use a soft cloth and mild cleaning solution.
- If you notice any changes in system performance or receive persistent false alarms, consult the troubleshooting section or contact customer support.

7. Troubleshooting

If you experience issues with your BY-J Blind Spot Monitoring System, consider the following:

- **Inconsistent Detection:** Ensure all connections are secure and correctly wired. Verify that the sensor angle is strictly mounted according to the installation instructions (perpendicular to the ground, 20-degree outward angle). Incorrect mounting angle is a common cause of inconsistent detection.
- **No Alarm/Warning:** Check the power supply connections. Confirm that the turn signal and reverse light wires are correctly connected. Ensure the sensors are not obstructed by dirt, ice, or vehicle modifications.
- **False Alarms:** Re-verify the sensor mounting angle and ensure it is balanced correctly. Check for any nearby objects or vehicle accessories that might be interfering with the radar signal.
- **System Not Activating:** Confirm that the vehicle is in ACC gear and receiving power. Check all wiring for continuity and proper connection.

If problems persist after reviewing these points, please contact customer service for professional assistance.

8. Specifications

Feature	Specification
Item Weight	2.05 pounds
Product Dimensions	9.45 x 6.7 x 3.94 inches (packaging); 15"L x 11"W x 3"H (product)
Item Model Number	24GHz 063-NEW
Display Type	LED
Compatible Devices	Most DC12v sedans, compact cars, SUVs, MPVs, and pickups without metal bumpers
Frequency Bands Supported	24 GHz
Power Source	DC Power Supply
Voltage	12 Volts
UPC	739722614508

9. Warranty

This product comes with a**1-year warranty** from the date of purchase. Please retain your proof of purchase for warranty claims. The warranty covers manufacturing defects and malfunctions under normal use. It does not cover damage caused by improper installation, misuse, accidents, or unauthorized modifications.

10. Customer Support

For any questions, installation assistance, or troubleshooting not covered in this manual, please contact our customer service team. We are committed to providing you with professional support.
Contact Information: Please refer to the product packaging or the seller's contact details on the platform where the product was purchased.