



BSM BLIND SPOT MONITORING SYSTEM

INSTRUCTION MANUAL

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1. Product Introduction

Thank you for your choosing our Blind Sport Monitoring System (BSM). This system is a vehicle assistance device that helps driver lane changing safely during driving. With the aid of 24GHz microwave sensor, probe the side / rear of the vehicle for those moving objects into the blind spot of the detection zone. The system works in two microwave sensors, two LED light (or blind region monitor), a buzzer and the wire harness which is the perfect connection of microwave and computer.

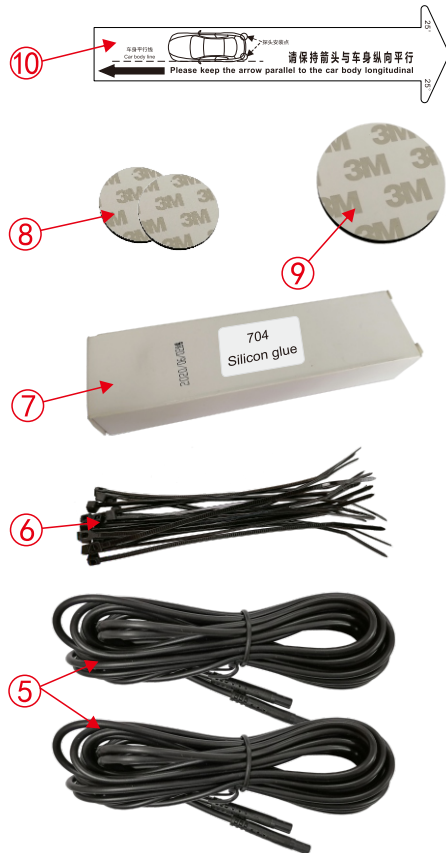
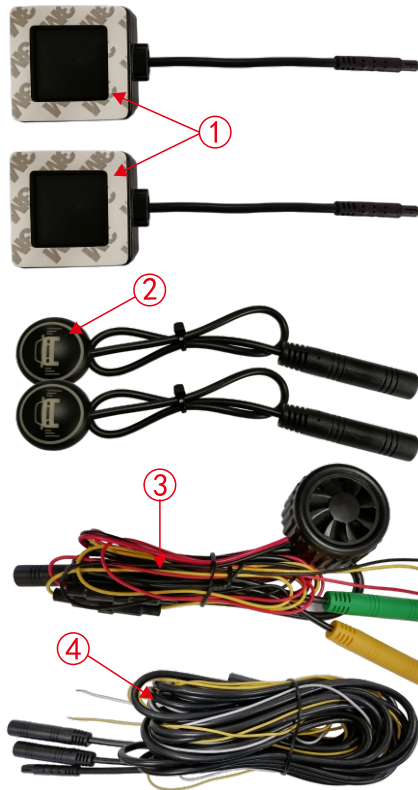
There is blind zone at the rear of the vehicle which is easy to endanger driving safety.! When you installed BSM into your lovely car, no matter it's day time, night time or even in the snow, you can be alerted whenever there is a moving object pop into the rear of the vehicle, with the aid of LED lighting on , blinking, buzzer sound so that the driver can be cautious when lane changing to avoid the possibility of side crash accident.This system is easy to be installed, no need to punch, non destructive car appearance. Installed at the plastic bumper left / right side of the rear of the vehicle, will instantly improve the use of the original car performance.

“Lane changing has warning, make driving safer”.

Sincerely thanks for the choice of this system.

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2. Product Contents



Number	Parts Name	Quantity
①	Microwave sensor	2
②	LED light	2
③	Main wire harness with buzzer	1
④	Extension of sensor cable	1
⑤	Extension of LED	2
⑥	Black tie band	20
⑦	704 Silicon glue	1
⑧	Double-side sticker of LED	2
⑨	Double-side sticker of buzzer	1
⑩	Bevel protractor	1
⑪	Manual	1

3. Technical parameter

Number	Project specification
01	Electricity Voltage : 12V
02	Maximum Power : 5W (max)
03	Working Temperature : $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
04	Storage Temperature : $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
05	Waterproof level :IP67K
06	Detection Range : Lateral Distance : 0.3m – 4m; Rear side Distance : 0.3m – 10m.
07	Detection Range Accuracy : $\geq 96\%$
08	Alarm Range : 0. 3m–10m
09	System Alarm Accuracy : $\geq 96\%$
10	Alarm method : method 1 => LED light turn on. Method 2 => LED flash and buzzer sound.

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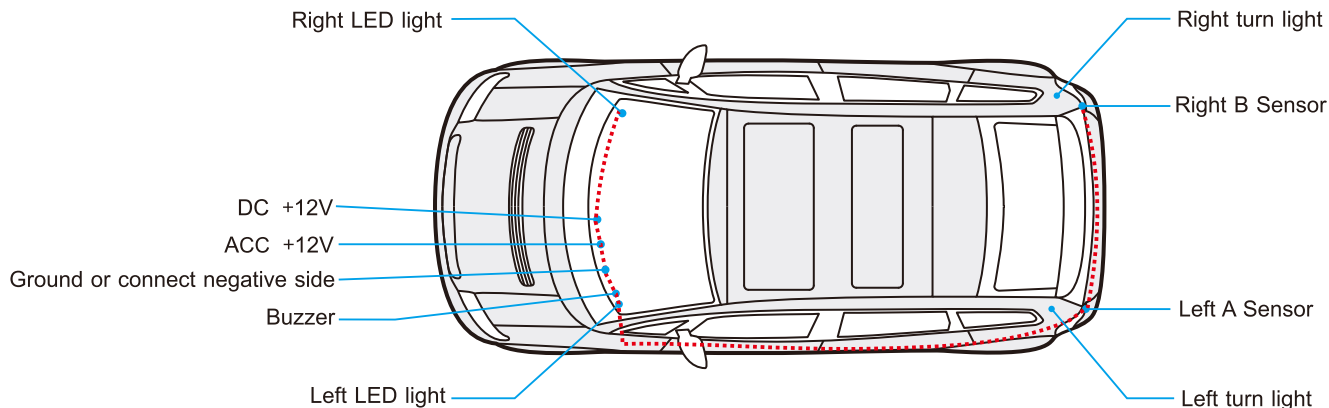
4. Cautions points during installation

1. Please prepare necessary disassembly tool and protective bumper painted sponge pad or cloth pad.
2. When you disassemble connector, MUST NOT pull wire harness in force, otherwise, will broken the harness. Please plug in connector until it practically tightened (you can hear the sound of "Click").
3. The wire harness should be fixed with the car cable harness by tie band. Neither droop nor abnormal sound. Cut off excess tie band.
4. Disassemble and assemble procedure, please strictly follow our installation manual. Try not to break parts as careful as possible. In case of breakage, please change the parts immediately.

5. Microwave sensor installation cautions points.

1. Microwave sensor (signal launching surface) can only penetrate the plastic bumper case.
2. Microwave sensor (signal launching surface) in the front, must be no metal intervention.
3. Should not install microwave sensor opposite to fluorescent light.

6. Overall diagram of installation



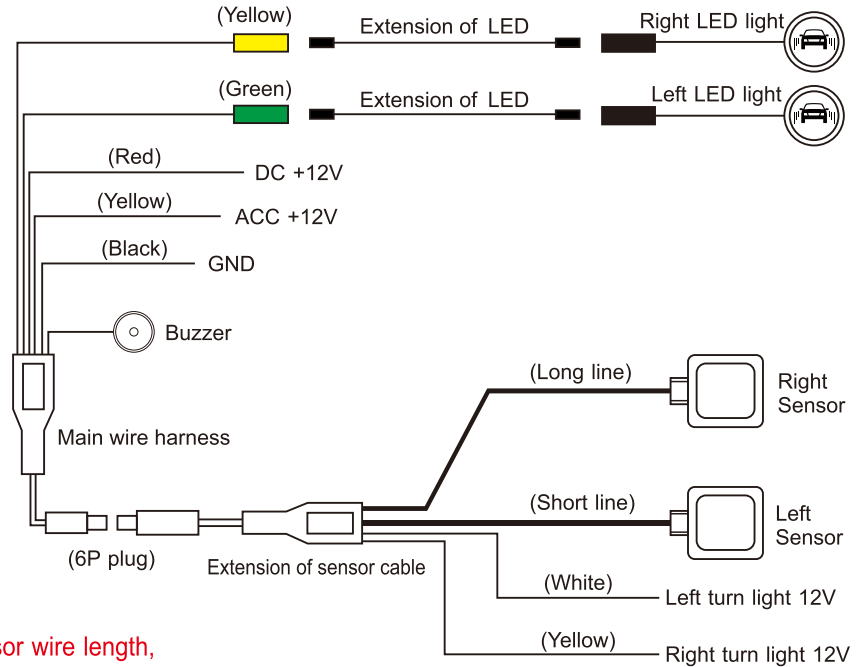
7. Wire connection

1. Power supply wire connection

- (1) Connect black wire of power supply wire with negative side of the vehicle or ground.
- (2) Connect yellow wire of power supply wire with vehicle power supply ACC 12V.
- (3) Connect red wire of power supply wire with vehicle power supply ACC 12V.
- (4) Connect indicator extension wire to power supply wire with same labeling. Yellow wire to right indicator, green wire to left indicator.

2. Extension of sensor cable connection

- (1) Connect 6P sensor wire to power supply wire.
- (2) Sensor wires connect to left and right sensors, make sure connect tightly.
- (3) Connect white wire of extension of sensor cable with right turn light 12V.
- (4) Connect yellow wire of extension of sensor cable with left turn light 12V.



Caution: Because of different left and right sensor wire length, power supply wire is assumed to connect to driver's side. If power supply wire connect to front passenger's side, left and right sensors should install in vice versa.

Wiring diagram

8. Method of Installation

1.Sensor installation

- (1) Blind spot sensors are to be pasted on vehicle back's two sides inner arc of plastic bumper, The installation height within 35-90 cm.
(Diagram 1)



Diagram 1

- (2) Curve side of microwave sensors install in 25° to parallel line of car body. Find suitable position of inner side bumper, sticker sensors to it. Avoid install behind metal, back light or parking sensors, since microwave cannot penetrate these materials, and will affect detection distance.
(Diagram 2)

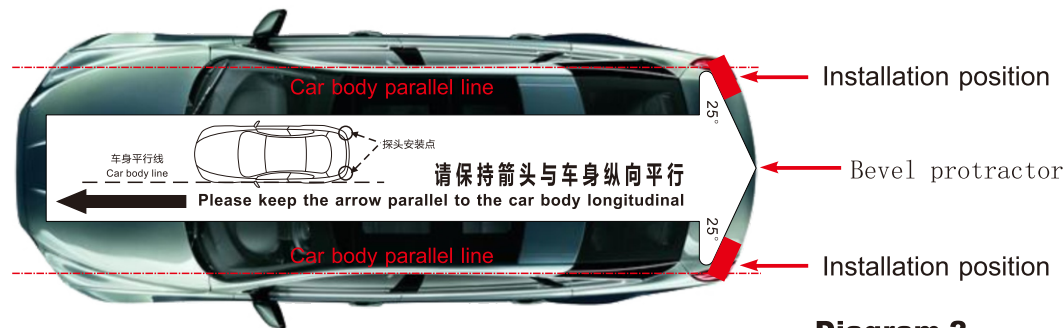


Diagram 2

- (3) Remove rear plastic bumper, cautious not to scratch the surface paint, put the bumper onto soft sponge or cloth pad.
- (4) Corresponding side of the remarked outer arc, that is inner arc of the bumper (note: inner arc and outer arc must be at the same position).
Wipe the area which sensor is to be pasted by a cloth with alcohol and make a marking.
- (5) Remove 3M sticker of the sensor, paste sensor on the marked inner arc, press tight, be aware of wire terminal direction of sensor during installation, sensors install horizontally with wire in up or down direction. (Diagram 3)
- (6) Finally fix the microwave sensors with 704 silicon glue. Connect sensors wire to control box sensor extension cable.(Diagram 4)
- (7) Repeat above procedure to install another sensor.

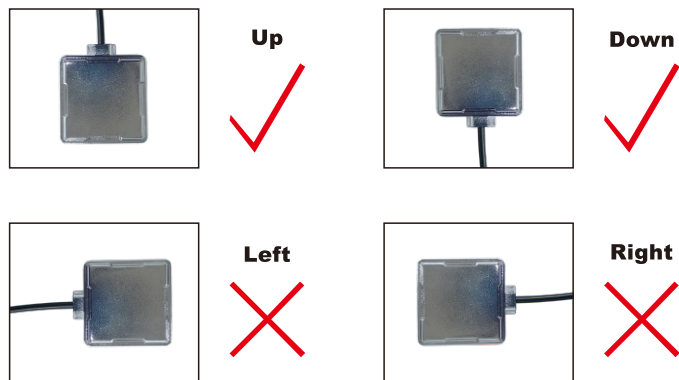
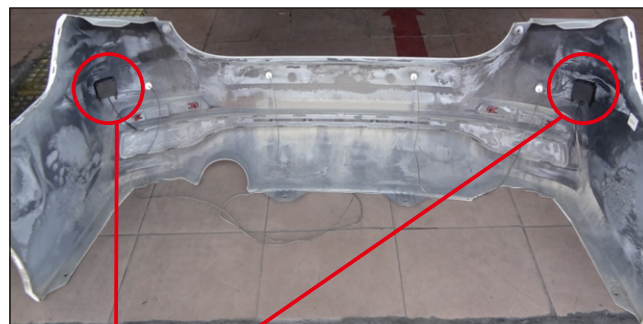


Diagram 3



Warning: Make sure microwave sensors stick firmly to bumper. When apply 704 silicon glue to it, does not allow glue comes into the contact surface. Cover with gule will affect penetration distance.

Diagram 4

2. Special Blind Sport Mirror Installation (Please skip this procedure for universal product)

- (1) Remove the front door trim panel and rear view mirror and unplug the heating plug of the mirror.
- (2) At the front door, pull the LED extension wire to the rear view mirror position, then connect the LED extension wire connector with the relative connector of the BSM rear view mirror of special car.
- (3) Plug in the heating plug with the BSM rear view mirror.

3. Universal LED light Installation (Please skip this procedure for special product)

Please paste LED light on rear view mirror A pillar upside position, it is best to see the position of the rear view mirror at the same time. (Diagram 6)

4. Control box and buzzer installation

Buzzer to attached to the driver's place. Control box installed in the plastic panel of driver's main cab dashboard. Should avoid the place of high temperature, moist, leakage.

9. Testing after installation and vehicle parts recovery

1. Confirmation of Installation status

- (1) Before powering on, check if there is any abnormality in cabling and installation.
- (2) Specifically check of improperly pressed, stretched, stuck etc. of the vehicle wire harness.

2. Power Restore

- (1) Start the car to ensure that the vehicle functions properly.
- (2) If any abnormalities occur, please check wire harness installation.

3. Functional Test and parts recovery

- (1) Start the car, move car near the back of sensor to see if LED is light on, both left and right side is to be tested.
- (2) Switch on both "Left / Right turn on light" separately, when move near car, test if LED blinks and produce sound alert altogether.
- (3) Functionality test passed, then restore those uninstalled original car parts and check if all function properly.



Diagram 5

10. User's Guide

1. After the car ACC is powered on, the LED lights installed on the left and right sides will light at the same time and turn off after 1 second, indicates that the system is powered up. The system enters the working status immediately.
2. After the system enters the working status, it detects the blind areas (cover both sides of the driveway, length direction is about 10 meters) of the rear sides of the car. (Diagram 7)
3. When the reverse gear is hung, the system enters interference avoidance mode, the system is temporarily shut down, and the system resumes working mode after exiting the reverse gear.

Left side blind area check:

- (1) When moving vehicle is detected in the left rear blind zone, left side LED light will light up.
- (2) If you turn on the Left turn signal at this time, then Left side LED light flash as the reminder.
Simultaneously, buzzer sounds three consecutive alarms.

Right side blind area check:

- (1) When moving vehicle is detected in the right rear blind zone, right side LED light will light up.
- (2) If you turn on the Right turn signal at this time, then right side LED light flash as the reminder.
Simultaneously, buzzer sounds three consecutive alarms.

In other cases, LED light and buzzer no reaction.



Notice

Before the lane changes in the actual lane, be sure to inspect the surrounding area. The system is used only to assist you in detecting the vehicles behind the lane. Due to some restrictions on the actual working environment, sometimes the vehicle is in the adjacent lane, but the system is tied. The unified warning signal lights are not flickered or may delay glint. It is not entirely dependent on this system, and the company is not responsible for any accident.

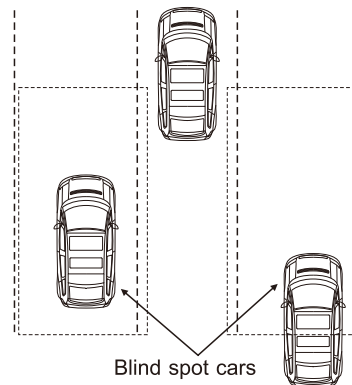
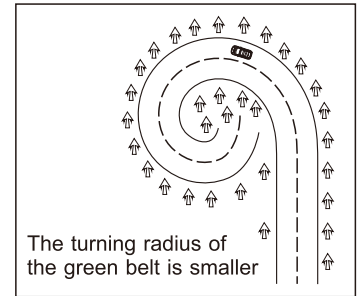
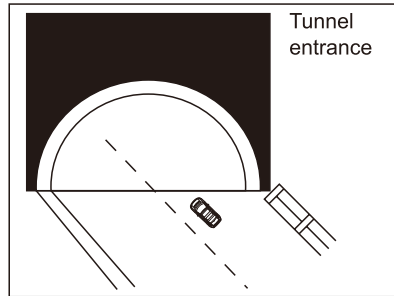
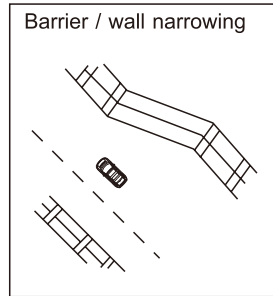
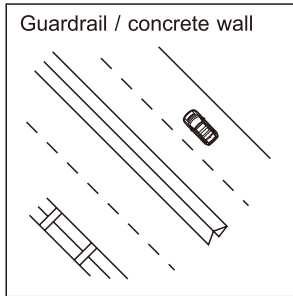


Diagram 7

4. Under the following circumstances, the radar sensor cannot detect the target object.
- The vehicle is in a blind sport behind the adjacent lane, but the vehicle is not close.
 - Opposite approach vehicle.
 - The adjacent lane of the vehicle is very wide, exceeding the detection range of the radar probe.
 - The vehicle nearly at the same speed along with your driveway at a longer driver time.
 - Vehicles in adjacent lanes try to exceed you.
5. Under the following circumstances, system alert lights and alarms may not be activated or may be delayed.
- When the vehicle changes from two lanes to the adjacent lane.
 - When driving on steep slopes.
 - When passing through the vertices of a hill or a mountain trail.
 - When small change in radius (deep turn at the intersection).
 - When there is a difference in altitude between the driving lane and the adjacent lane.
6. If the width of the road is narrow, two-lane vehicles may be detected.
7. This system alarm signal light may turn on, when there are on-road or roadside stationary objects (road guards, concrete wall, tunnel, green area, etc.)



11. General troubleshooting

Number	Failure symptoms	Causes analysis	Solutions
1	LED doesn't turn on	Loose or missing harness connector	Check all wire harness to ensure connected properly.
		LED light broken	Change LED light
2	Reverse alarm of Left right LED light	Left Right LED light connector on the PCB were adversely connected	Reverse back Left Right LED light connector on the PCB
3	Buzzer doesn't sound	Loose or missing harness connector	Check all wire harness to ensure connected properly.
		Buzzer broken	Change buzzer
4	System malfunction	Broken wire harness or poor contact connector	Change new wire harness
		Broken microwave sensor	Change new microwave sensor