

MICROWAVE RADAR BLIND SPOT DETECTION SYSTEM

User's Manual

BSD Type:2016

Version : V2.0

AutoEase Technology









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Foreword

Thanks for using our BSD system. The System is designed for universal cars, please read this product manual carefully for installing and uninstalling the product.

I. Components

NO.	ITEM	QTY	PICTURE
1	BSD Main Harness	1 PCS	
2	Sensor	2 PCS	
3	BSD Harness	2 PCS	
4	LED indicator	2 PCS	 OR
5	Buzzer	1 PCS	
6	Instruction manual	1PCS	
7	Cable tie	20 PCS	
8	3M tape	2 PCS	

Tools for angle calibration: tape, ruler, angle calibration cloth, marker pen, magnet.

Tools for installing and uninstalling: plastic pry, alcohol, cleaning cloth, insulated tape, multi-meter, screwdriver.

II. System Specification

NO.	Item	Specification
1	System Configuration	2pcs Radar Sensors 2pcs LED Indicator lights 1pcs Buzzer
2	Compliance	ISO17387:2008
3	Detection Rang Accuracy	$\pm 0.25\text{m}$ (Typical)
4	Max. Detection Range	Truck : 0.3m ~ 15m; Car : 0.3m ~ 15m; Motorcycle : 0.3m ~ 10m; Pedestrian : 0.3m ~ 7m;
5	Alert Range	0.3m~15m
6	System Alert Accuracy	Car : $\geq 98\%$ Motorcycle : $\geq 95\%$ Pedestrian : $\geq 95\%$
7	HMI(Human Machine Interface)	Level 1:LED Stay lit Level 2:LED Blink+ Beep Sound
8	IP Rating	IP6K7K
9	Power Consumption	$\leq 100\text{mA}$ @12VDC
10	Operation voltage	12V
11	Operation Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
12	Storage Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

III. Install Caution

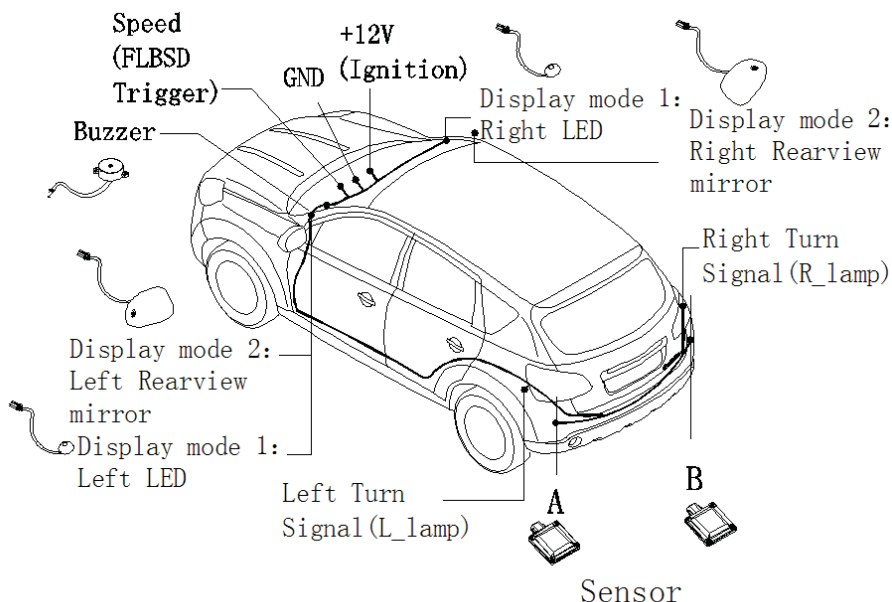
1. Please release negative power before operation.
2. Do not pull the harness when removing the connector, insert the connector to the buckle until a sound.
3. Harness should be fixed with car harness by cable tie.

The installation and disassembly should follow the vehicle maintenance manual and relative operating instruction. Avoid breaking any components of the car, replace the corresponding parts immediately should there is any broken component.

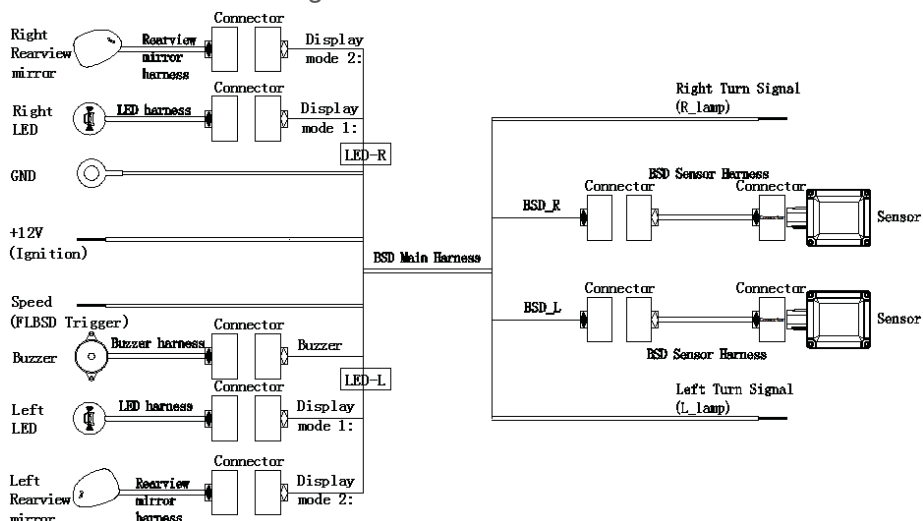
IV. Requirements for Radar Sensor Setting

1. Radar sensor can only penetrate plastic object (bumper shell).
2. Radar sensor should not be interfered by metal objects.
3. Do not install the radar sensor against fluorescent lamps.

V. Installation Diagram



VI. Wires Connection Diagram



Annotation:

1. BSD_L connect to left sensor of BSD
2. BSD_R connect to right sensor of BSD
3. Display mode 1: Left LED connect to LED-L of BSD main harness
Right LED connect to LED-R of BSD main harness
4. Display mode 2: Left Rearview mirror connect to LED-L of BSD main harness
Right Rearview mirror connect to LED-R of BSD main harness
5. L_Lamp connect to left turn signal (turn left light)
6. R_Lamp connect to right turn signal (turn right light)
7. Buzzer connect to buzzer harness
8. Speed connect to vehicle speed signal (reserved)
9. +12v connect to ACC connector
10. GND connect to Vehicle GND wire

VII. Installation Gist

1. Sensor settings

Step1. Sensors of the BSD system should be pasted to both inner corners of rear bumper shell with an angle of $25^{\circ} \pm 5^{\circ}$, at height of 35-90cm.(Fig.1-Fig.3).

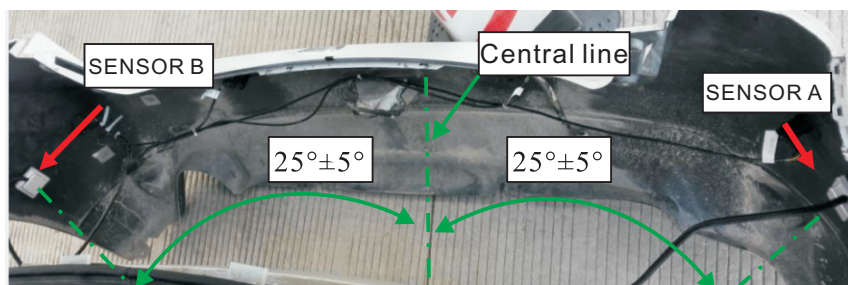


Fig.1

Installation Angle: $25^{\circ} \pm 5^{\circ}$

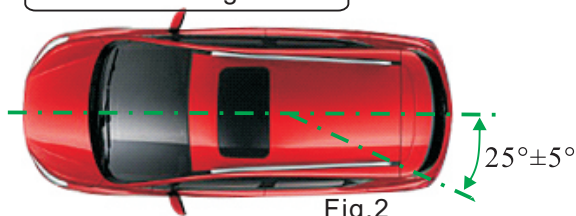


Fig.2

Installation Height: 30-90cm

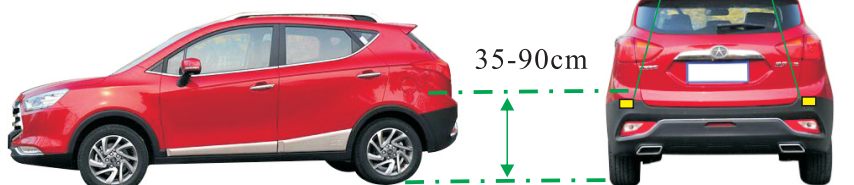


Fig.3

Fig.1 ~ Fig.3

Step2. Place a straight tape between front wheel and rear wheel, then place a 30° angle calibration cloth under the rear bumper, the cloth edge should be paralleled with the tape (Fig.4).

Step3. Place a ruler (about80cm) vertically, one side of the ruler should be leaned on the rear bumper, the other side of the ruler should be paralleled with the calibrating lines on calibration cloth (Fig.5-Fig.6).

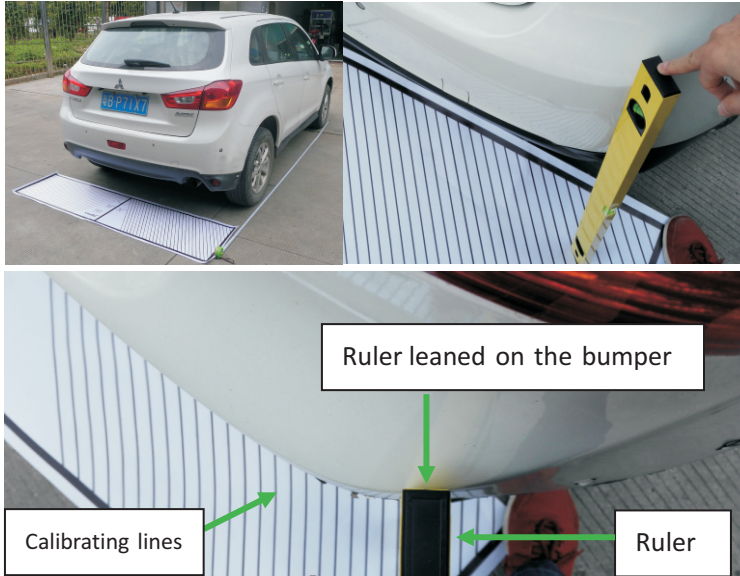


Fig.4-Fig.6

Step4. Mark down the position ruler against the bumper with a marker (Fig.7-Fig.9).

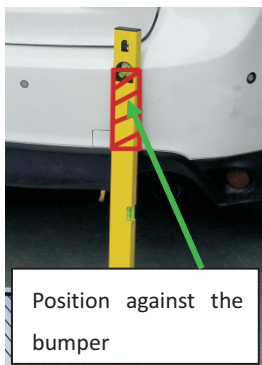


Fig.7

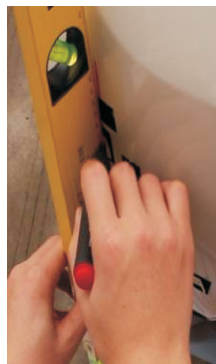


Fig. 8



Fig. 9

Step5. Mark down the position with same method for the other side of bumper (Fig.10).



Fig. 10

Step6. Take off the plastic rear bumper (be aware of scratching on the bumper)(Fig.11-Fig.12).



Fig. 11



Fig. 12

Step7. Clean the installation location of sensor with alcohol (Fig.13-Fig.14).



Fig. 13



Fig. 14

Step8. Prepare 2 pieces of magnetic metal; place one on the line marker outside the bumper and the other one on the corresponding spot inside of it. Mark the location with the marker. (Fig.15-Fig.17)



Fig.15



Fig. 16



Fig. 17

Step9. Clean the plastic surface of the sensor with alcohol and then place a 3M adherent tape on the sensor, then connect sensor and BSD harness(Fig.18-Fig.20)

Step10. Stick the sensor to the location of Fig.17 (Step.8). Place let the terminal wires of the sensors up or down vertically(Fig.21,22), not allow horizontal(Fig.23,24)

Step11. Install the sensor on the other side with same method



Fig.18

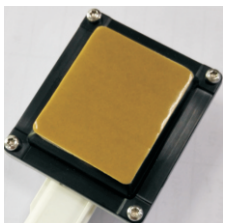


Fig.19

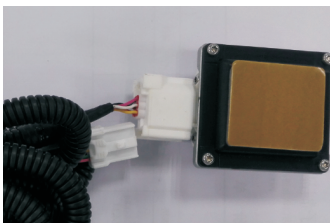


Fig.20



Fig.21

Fig.22

Fig.23

Fig.24

Step12. The wiring scheme of sensor please refer to Fig.25, allow some adjustments due to different cars.

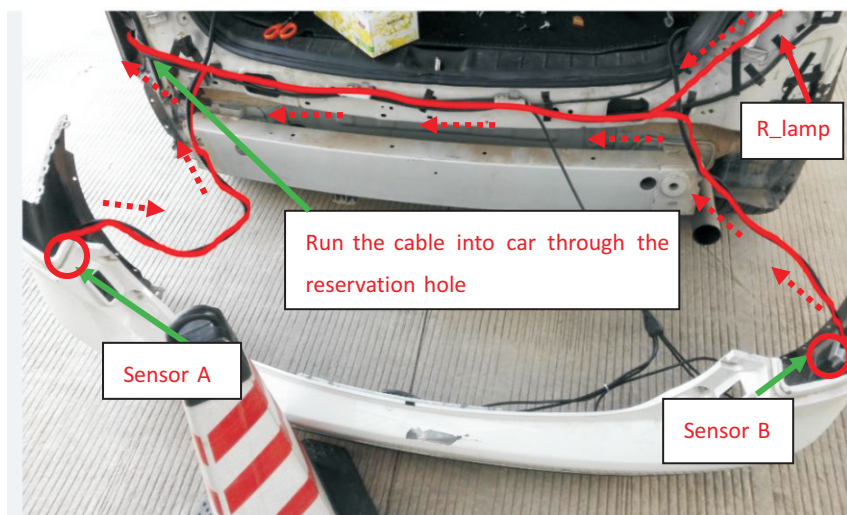


Fig. 25

2. Installation of left/right signal lights harness

Step13. Take out the reversing lamp, turn on the right signal light, the right-turn signal light is on, find out the 12v power cable with multi-meter, connect the R_LAMP in harness cable with the 12v power cable, and connect the L-LAMP in harness cable with the left side power cable. (Fig.26-Fig.28)



Fig. 26



Fig. 27



Fig. 28

3. Installation of LED indicator

Step14. LED installation effect(as following picture 29,30, are for universal LED lights. Picture 31,32 are for special mirror effect)



Fig.29



Fig.30



Fig31



Fig32

4. Installation of Buzzer

Step15. The buzzer should be pasted and hidden inside the panel. (Fig. 33, Fig.34)

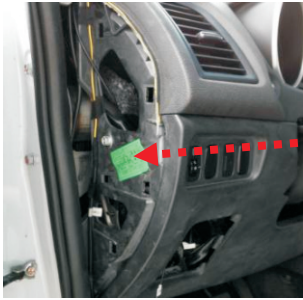


Fig. 33



Fig. 34

Step16. Route the wiring harness based on the installation diagram.

VIII. Parts Recovery

Step1. Confirmation of installation condition

1. The wiring and installation shall be checked prior to power connection.
2. Be cautious whether there is excessive pressure, stretch or getting stuck with the wires.

Step2. Power supply recovery

1. Connect the negative terminal of battery (-) to make sure it functions well.
2. In case of abnormality, check the wiring arrangement.
3. Step3. Restore the cars parts step by step and check every single part to avoid abnormal sound.

IX. Operation Instruction

1. When the ACC is on, the LED lights on left and right A pillar will be on for 2 seconds, which means the system is powered on. The system will immediately initiate to the environmental adaption detection, after 5-8 seconds system will start to work.(Fig.35 Fig.36)



Fig. 35



Fig. 36

2. When the system is on, the system would start detecting objects in the blind area (cover two-side road, the length is about 15m) behind the vehicle (Fig. 37).

A. Blind detection on right side :

1. Right LED indicator will turn on and stay lit when there is object approaching on the right blind area .
2. If the right signal light is turned on at this time, the right LED indicator will keep blinking and the buzzer will be on with sound beeping.

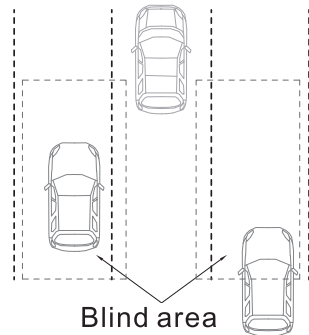


Fig.37

B. Blind detection on left side :

1. Left LED indicator will turn on and stay lit when there is object approaching on the left blind area .
2. If the left signal light is turned on at this time, the left LED indicator will keep blinking and the buzzer will be on with sound beeping.

- C. The LED and buzzer would not react if there is no object approaching on both sides.

⚠ WARNING

Please check the surroundings before change lane:
This system just help you to check the vehicle behind you when you change lane. Because of the operation limits, the system will not warning or LED may delay to flash when the car beside you. Pleas always check surroundings for safety

3.The system can't detect the target under below condition:

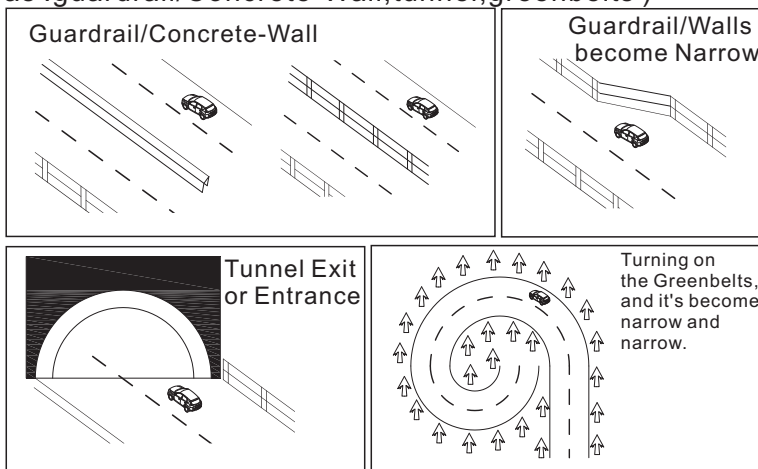
- The vehicle is behind the adjacent lane which not approach
- The speed of the vehicle is the same as yours, and keep this driving speed for some time.
- Counter flow
- The Adjacent lanes of the vehicle wants to speed up, And it's beside you. Not behind.
- The Adjacent lanes is too wide to detect. Our range was set up according to the standard high way.

4.The system will not trigger the BSD warning or delay to warning you

- The vehicle change the lane(from third lane to Second lane , or other)
- When it drives On the steep slope
- Through the fop of the hills or mountain
- In a sharp turn at the intersection
- When there is height distance between driving lane and Adjacent lanes

5.If the road too narrow, it may detect the two lanes

6.The warning LED of BSD will light by some motionless object(such as :guardrail/Concrete-Wall,tunnel,greenbelts)



X. Usual malfunction elimination

NO.	Malfunction	Reason	Solution
1	LED light doesn't work	Wrong connection or missed connection on harness	Check the harness and make sure connection is correct
		LED light is broken	Replace LED light
2	Contrary alarm on right/left LED lights	Contrary connection of BSD_L and BSD_R on the BSD main harness	Exchange the connection of BSD_L and BSD_R
3	Buzzer doesn't work	Wrong connection or missed connection on harness	Check the harness and make sure connection is correct
		Buzzer is broken	Replace buzzer

Please contact che1.com for further support.