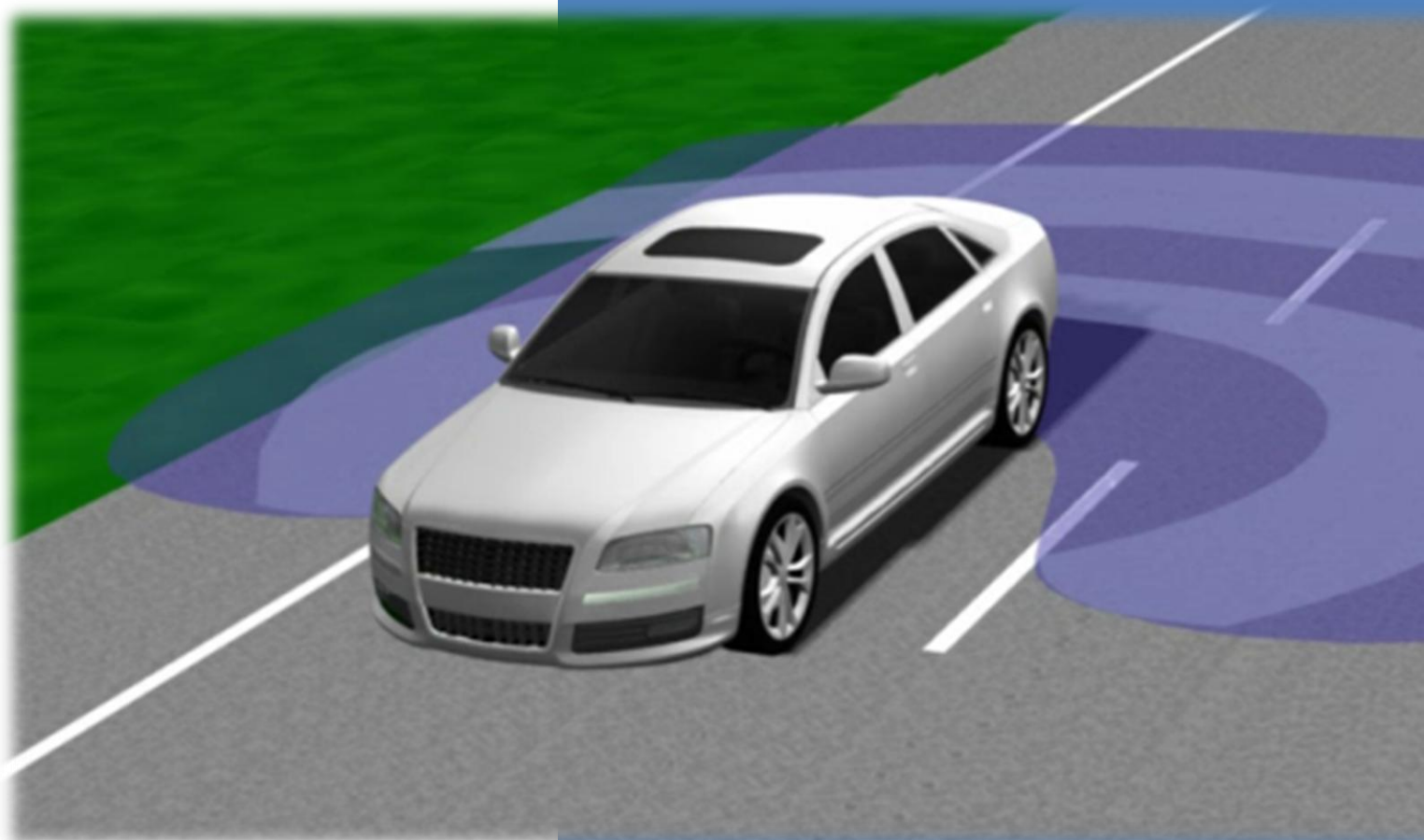




24GHz Blind Spot Detection Radar

User Manual

v0.01



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Blind Spot Detection Radar System

24GHz radar blind spot detection system (hereinafter referred to as BSD system) is a set of auxiliary system which uses radar sensor to detect road traffic conditions and visual blind spot area. It is to provide alert information for driver when changing lanes. This blind spot monitoring system set range includes both sides and the rear of the vehicle. The system will provide different warning level to remind drivers based on the message of indicator for changing lane once target enter the blind spot zone.

Notice:

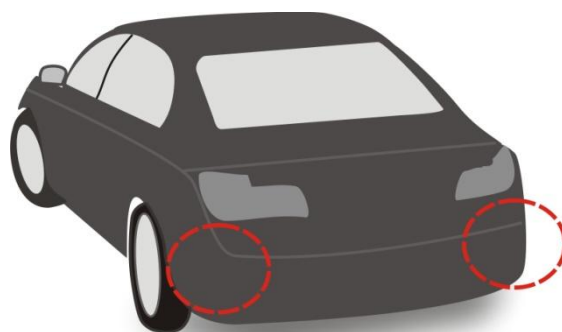
- Blind spot detection system is not able to detect all the cars in all cases. There is still the risk of accidents.
- Blind spot detection system can not be used to replace the judgment of driving on the road, do not place undue reliance on detection results. For changing lanes or similar operations, driver still needs to concentrate and observe the surrounding environment.
- If the rear car driving fast, blind spot detection system may not react.
- Blind spot detection system will start detection mechanisms with car speed 10 km / h or more.
- If the radar sensor system detects error, a warning light will be turned on and maintained, this system will point out the problem comes from left or right side of the sensor.

Radar and Warning System location

Blind spot detection system consists of two radar sensors and a warning system

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Radar sensors are installed in the rear bumper of the left and right sides (such as schematic in Figure 1). The radars on the two sides help drivers detect vehicles.

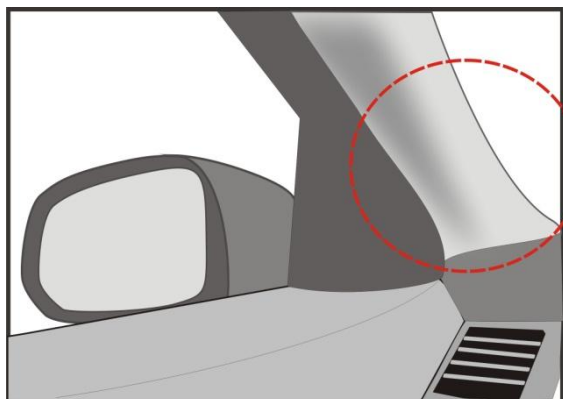


(Figure 1)

If the radar sensor is obscured, it may not detect obstacles and reduce system performance. To avoid radar sensor function is affected, please pay special attention to the following points:

- Do not shield radar sensor foreign body parts (such as stickers, bike rack, trailer).
- Avoid bumper was hit or damaged, if the above situations, such as shock or damage, please contact the service center as soon as possible and repair.
- Ensure that the soil/ snow or ice on the site of the radar sensor has been cleared..

Warning system will be installed in the driver's seat and front passenger side A-pillar (as shown in Figure 2).



(Figure 2)

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Blind spot detection system startup and shutdown

Start up

After pressing the button, the button's indicator light is and the system is turned on.

Shut down

Pressing the button again, the indicator on the button goes off button and the system is shut down. When you turn off the system, you will not receive alerts.



Blind spot detection system switch will remain in the position you set.

Warning level

Blind spot detection system provides the driver lane change assistance according to if driver uses indicator light when changing lane.

Warning display is divided into two levels:

Level One Warning:

If you are on a normal driving lane and do not intend to use light indicates to change lanes, blind spot detection system only detects whether both sides would become a danger for the car to change lanes. If the relative speed and relative distance are considered to be hazardous for changing lane, warning system on A pillar will provide light alert.

Level Two warning:

If you use indicator to change lane and the blind spot detection system detects the danger from both sides, the warning system will provide light and audio alert.

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Level One and Level Two warning is to remind the driving situation. Driver still needs to concentrate and observe the driving conditions.

Detection range and warning systems

When you start the engine / ACC (TBD), the blind spot detection system indicator will appear briefly lit and warning beep sound to confirm that the system is functioning properly.



For automatic transaxle car, this system only works when the S, D gear.

Blind Spot Detection System provides alert for driver assistance (As shown in Figure A). when another vehicle from behind goes into the blind spot area, referred to here as the blind spot area extending from the sides of the vehicle around the rearview mirror to a position about 3 meters away from the bumper .

Blind spot detection system will active when the vehicle speed exceeds 10km/h. Level one warning will be triggered when you overtake or another vehicle comes from the front into the blind spot area with relative speed equal or less 10km/h.



When the vehicle pass rapidly through the blind spot region (The relative speed is greater than 60km/h, or less than 2 seconds Time to Collision) will not trigger the alarm.

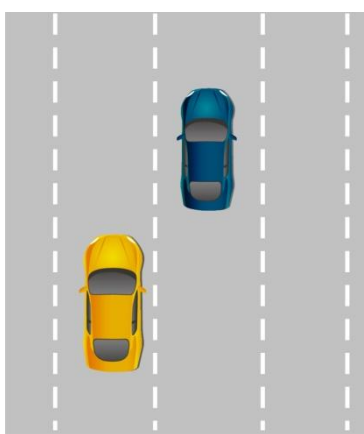
Blind spot detection system does not have the ability to measure the width of the lane. The system is based on a fixed lane width to detect. The main detection range is the normal driving lane which cover two adjacent lanes. It does not

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consider driver is driving whether in the center of the lane or in the edge of the lane.

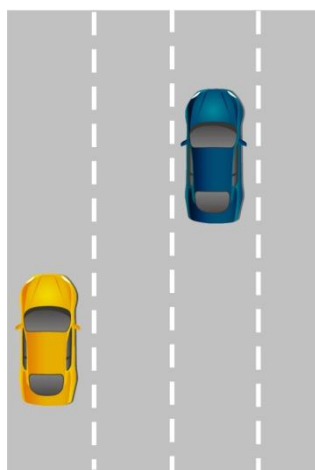
If the driver rides in the narrow lane or does not in the center of the road, the system may not provide alert for the vehicle driving in adjacent lane (as shown in Figure B) based on Level One and Two Warning.

When driving on a relatively wide lane, the blind spot detection system may not detect the vehicle on the adjacent lane because they are out of the observation range.



(Figure A)

Driving on normal lane width within the range of observation,



(Figure B)

When driving on narrow lanes, blind spot detection system may react to the vehicle driving in adjacent lane.

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Please note that the design of the blind spot detection system is not used to avoid collisions with other vehicles or objects. blind spot detection system cannot be sole basis for for hanging lanes. Please keep driving carefully. This system provides a warning only as a assistant tool to help you to find the vehicle in blind spot area.

Radar detection limitation

In some cases, when the vehicle enters or leaves the blind area it may cause improper detection.

The conditions are below:

- Abnormal driving conditions
- Mud, snow or ice deposits in the rear bumper which is on radar sensor radiation area.
- Vehicle pass through the blind spot area with high speed.. (Less than two seconds)
- Radar detection sensitivity may be reduced suddenly because of the rain, snow and splashes in a blind spot detection system. The Blind Spot Detection System may not detect timely or even miss detection to the car. Driver needs to continue to maintain driving direction and carefully observe the surrounding environment.
- When multiple vehicles pass through the blind spot area closely, it may not get alert for the following vehicle.
- In narrow curve lane, the blind spot detection system can not detect the car. When driving into the corners, it may get Level One Warning for the oncoming vehicles in adjacent lane.
- If there is a short error, such as a car battery power is too low, it may be temporarily unable to start the blind spot detection system.
- In the heavy rain or condition which may affect detection, the radar sensor may not detect obstacles.

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False alarms

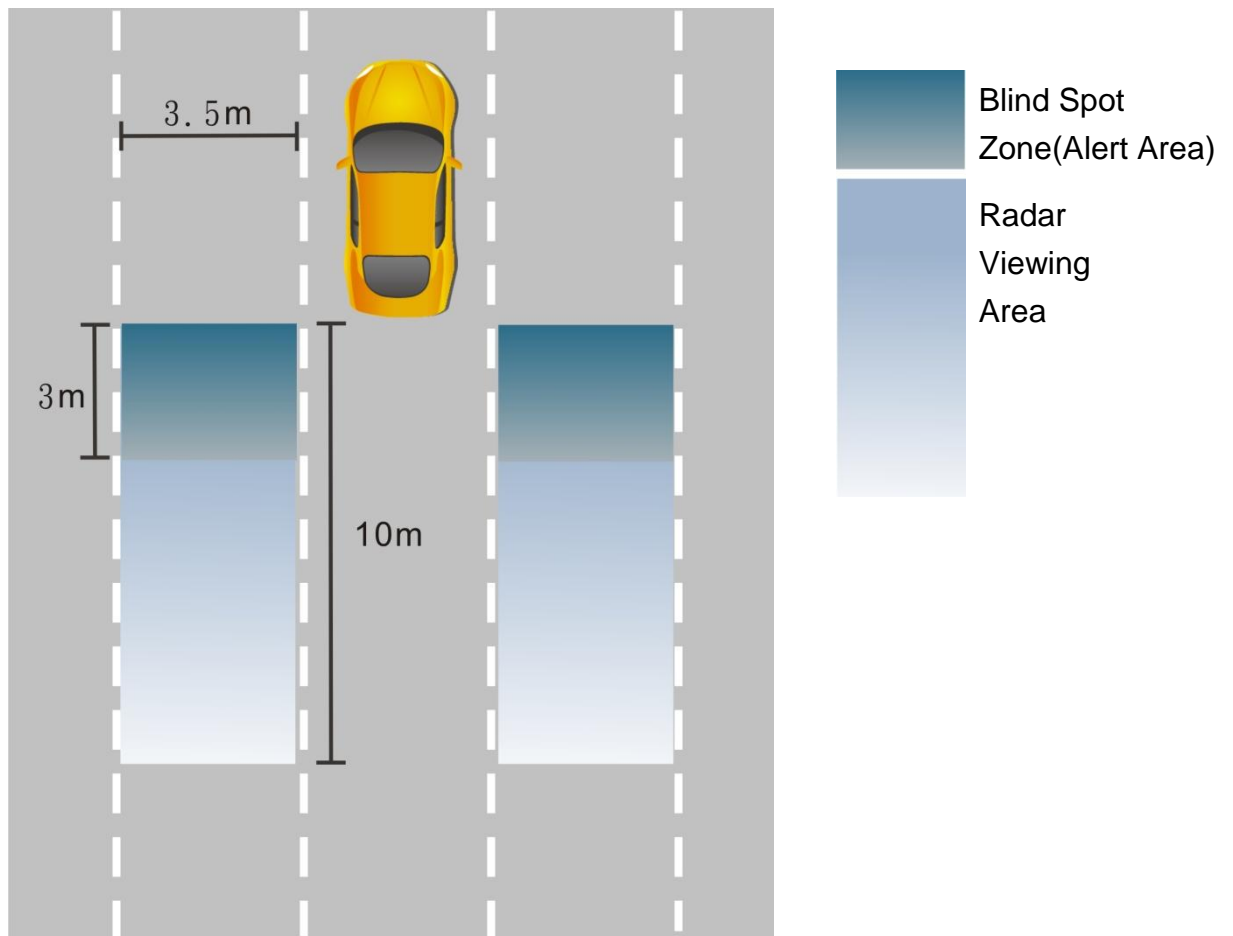
In some cases, an warning occurs but there is no vehicles in the blind spot area. In this case, the alarm is usually a temporary error and the system will correct itself.

Conditions may cause false alarms are as follows:

- Bush
- Construction fence
- highway concrete walls
- Narrow road curve or arch
- Sharp turn around the building
- Guide barricade placed in high or misplaced
- Road barricade
- Equip with non-recognized trailer hitch: The system should be close to avoid false alert if the trailer is used. For the trailer hitch that is installed at the factory, as you plug power to the trailer socket, blind spot detection system will automatically open.

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Blind spot zone and the radar viewing area



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FCC Statement:

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.