

SRR Gen3 – Radar Sensor

System Function and Purpose

The SRR Gen3 is an advanced driver assistant system, to warn the driver of the subject vehicle against potential collisions with vehicles to the side and/or to the rear of the subject vehicle, and moving in the same direction as the subject vehicle during lane change manoeuvres. The system therefore detects vehicles to the rear and sides of the subject vehicle.

When the subject vehicle driver indicates the desire to make a lane change, the system will evaluate the situation and warn the driver if a lane change is not recommended. SRR Gen3 is not meant to encourage aggressive driving. The absence of a warning will not guarantee that the driver can safely make a lane change manoeuvre. The system will not take any automatic action to prevent possible collisions. Responsibility for the safe operation of the vehicle remains with the driver.

Technical Data

Supply Voltage	+9 V ... +15 V
Supply Current	Typ. 0,36 A
Frequency Band 2	24150 MHz ... 24250 MHz
Modulation Bandwidth	< 100 MHz
Modulation	FMCW
EIRP average	< +12,7 dBmW
EIRP peak	< +20 dBmW
Antenna Type	microstrip patch array
Transmit Antenna Gain	11 dBi
Operating Temperature Range	-40...85°C

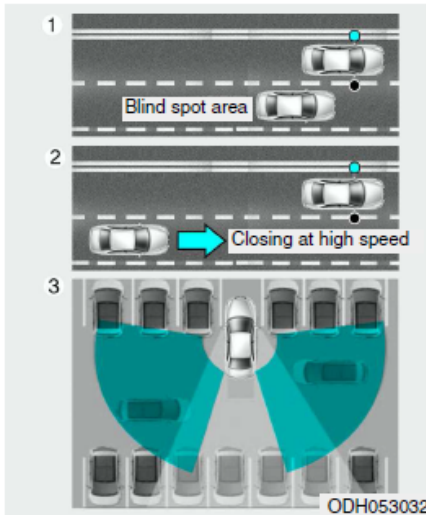
Abbreviations

ADC	analog-to-digital converter
BPF	band pass filter
CAN	controller area network
CP	communication processor
DSP	digital signal processor
EIRP	equivalent isotropically radiated power
FMCW	frequency modulated continuous wave
IF	intermediate frequency
LNA	low noise amplifier
RF	radio frequency
Rx	Receive
Tx	Transmit
VCO	voltage controlled oscillator
XTAL	crystal oscillator

Operation Description

Driving your vehicle

BLIND SPOT DETECTION SYSTEM (BSD) (IF EQUIPPED)



The Blind Spot Detection System (BSD) uses a radar sensor to alert the driver.

It senses the rear side territory of the vehicle and provides an indication to the driver if it detects an object approaching from these areas.

(1) BSD (Blind Spot Detection)

The warning range depends on your vehicle speed. However, if your vehicle is much faster than the other vehicle, the system will not warn you.

(2) LCA (Lane Change Assist)

If the system detects a vehicle approaching you at high speed, the system will warn you.

(3) RCTA (Rear Cross Traffic Alert)

If the sensor detects an approaching vehicle from the left and right side as your vehicle moves rearward, the system will warn you.

WARNING

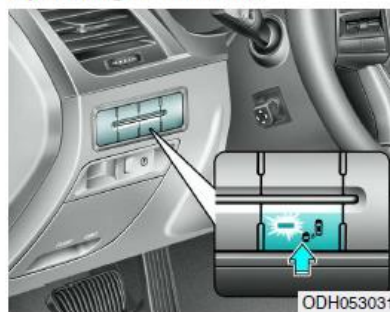
- Always check the road condition while driving for unexpected situations even though the Blind Spot Detection System (BSD) is operating.
- The Blind Spot Detection System (BSD) is a supplemental system to assist you. Do not solely rely on the system and always pay attention and drive safely.
- The Blind Spot Detection System (BSD) is not a substitute for proper and safe driving. Always drive safely and use caution when changing lanes or backing the vehicle up. The Blind Spot Detection System (BSD) may not detect every object alongside the vehicle.

WARNING

As the Blind Spot Detection (BSD) system is a supplemental device for your safe driving, it may be dangerous to rely on only the BSD information of the head up display image when changing the lane. Always pay attention to drive safely.

BSD (Blind Spot Detection) / LCA (Lane Change Assist)

Operating conditions



To operate:

Press the BSD switch with the Engine Start/Stop button in the ON position. The indicator illuminates on the switch. If vehicle speed exceeds 20 mph (30km/h) the system will activate.

To cancel:

Press the BSD switch again. The indicator on the switch will go off.

When the system is not used, turn the system off by turning off the switch.

* NOTICE

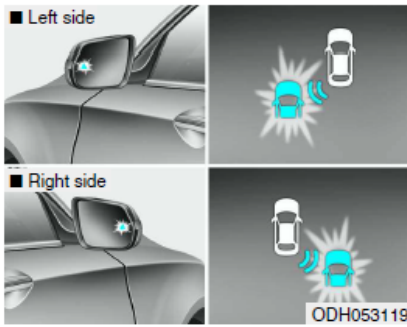
- If the engine is turned off and on, the system returns to the previous state.
- When the system is turned on, the warning light will illuminate for 3 seconds on the outside rearview mirror.

Warning type

The system will activate when:

1. The system is on.
2. Vehicle speed is above about 20 mph (30 km/h).
3. Other vehicles are detected in the rear side.

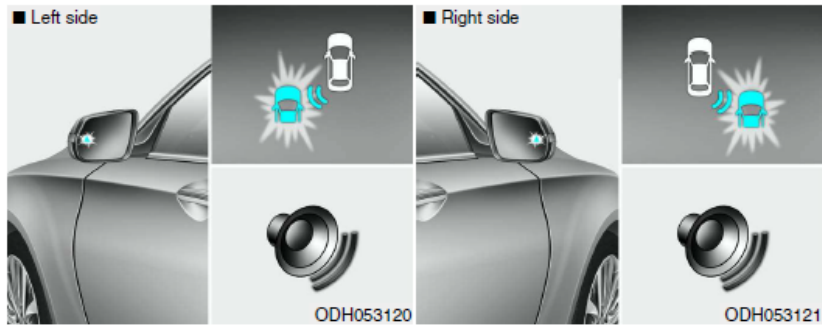
Driving your vehicle



First stage alert

If a vehicle is detected within the boundary of the system, a warning light will illuminate on the outside rearview mirror and the head up display.

If the detected vehicle is not in warning range, the warning will turn off according to driving conditions.



Second stage alert

The second stage alarm will activate when:

1. The first stage alert is on.
2. The turn signal light is on to change a lane.

When the second stage alert is activated, a warning light will blink on the outside rearview mirror, the head up display and an alarm will sound. Also, a steering wheel will vibrate (if equipped with LKAS).

If you turn off the turn signal light, the second stage alert will be deactivated.

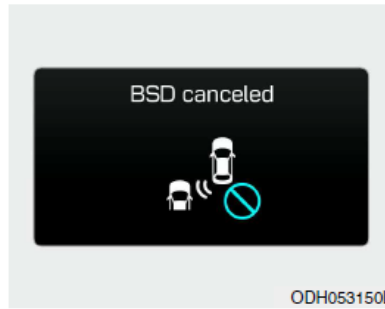
Detecting sensor



The sensors are located inside of the rear bumper.

Always keep the rear bumper clean for the system to work properly.

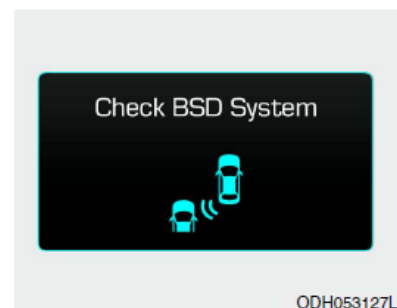
Warning message



The message will appear to notify the driver if there are foreign substances on the rear bumper. The light on the switch and the system will turn off automatically.

Remove the foreign matter on the rear bumper.

If the system does not work normally even though the foreign matter is removed, take your vehicle to an authorized HYUNDAI dealer and have the system checked.

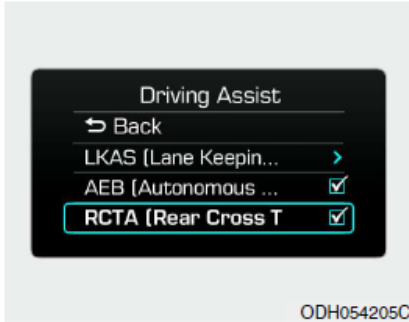


If the system does not work properly, a warning message will appear and the light on the switch will turn off. The system will turn off automatically. Have your vehicle checked by an authorized HYUNDAI dealer.

Driving your vehicle

RCTA (Rear Cross Traffic Alert)

Operating conditions



To operate:

Go to the User Settings Mode (Driving Assist) and select RCTA (Rear Cross Traffic Alert) on the LCD display (For more details, refer to "LCD Display" in chapter 3.). The system will turn on and standby to activate. The system will activate when vehicle speed is below 6 mph (10 km/h) with the shift lever in R (Reverse).

*** NOTICE**

The RCTA (Rear Cross Traffic Alert) detecting range is about 1 feet (0.5 m) ~ 65 feet (20 m). A vehicle will be detected if the vehicle speed is 2.5 mph (4 km/h) ~ 22 mph (36 km/h) within the detecting range. However, the detecting range may change under different conditions. Always pay attention to the surroundings.

Warning type



If the vehicle detected by the sensors approaches your vehicle, the warning chime will sound, the warning light on the outside rearview mirror will blink and a message will appear on the LCD display.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient des émetteurs / récepteurs exempts de licence qui sont conformes au (x) RSS (s) exempts de licence d'Innovation, Sciences et Développement économique Canada. L'opération est soumise aux deux conditions suivantes:

- (1) Cet appareil ne doit pas provoquer d'interférences.*
- (2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.*

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

The frequency and the maximum transmitted power in EU are listed below:

24050 ~ 24150 MHz: 8.34dBm

24150 ~ 24250 MHz: 8.45dBm

Hereby, [HL Klemove Corp.] declares that the radio equipment type [SRR Gen3] is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

<https://www.hlklemove.com/eng/main.do>