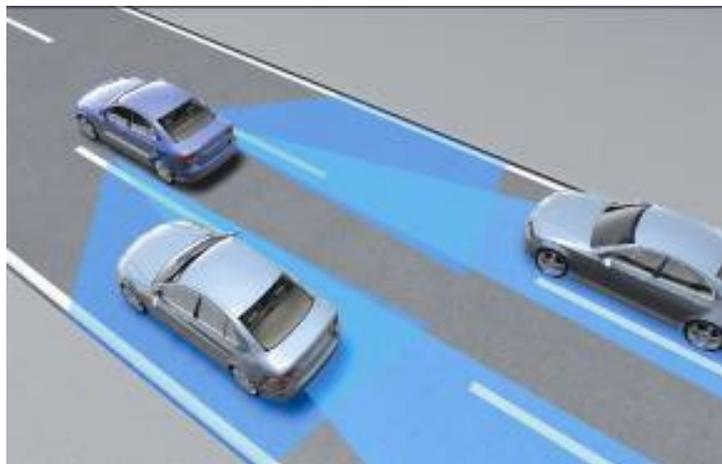


User Manual for 24 GHz Blind-Spot Radar Sensor SRR2-A



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2 Purpose

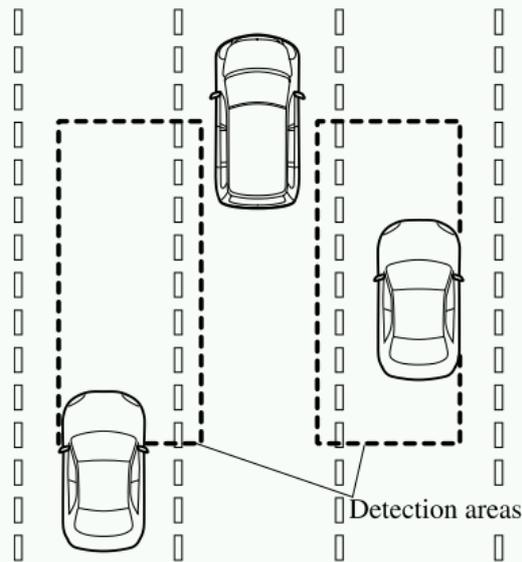
In this document an operational description of Continental's 24 GHz blind spot radar sensor SRR2-A is given. Sufficient information is provided to understand the operation principle, the set up and the tuning of the radar sensor.

3 System operational description

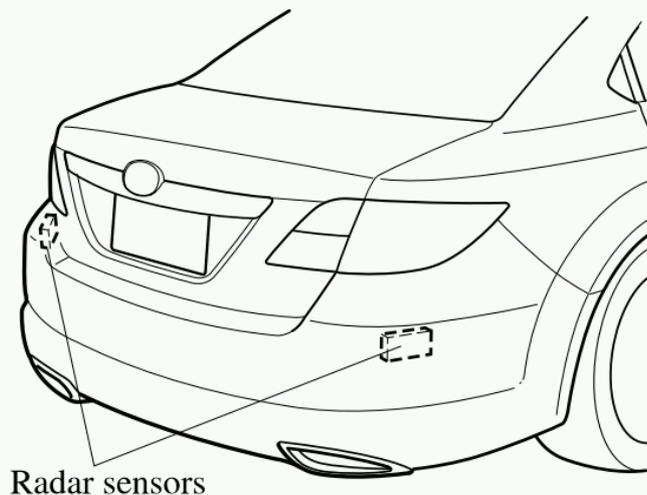
The Blind Spot Monitoring (BSM) system is designed to assist the driver by monitoring blind spots on both sides of the vehicle to the rear in certain situations such as when changing lanes on roads and freeways.

The BSM system monitors the detection areas on both sides of the vehicle to the rear when the vehicle speed is about 32 km/h (20 mph) or more, and notifies the driver of vehicles in the detection area by illuminating the BSM warning light.

If the turn signal lever is operated in the direction the BSM warning light is illuminated, the system warns the driver of the vehicle in the detection area with a beep sound.



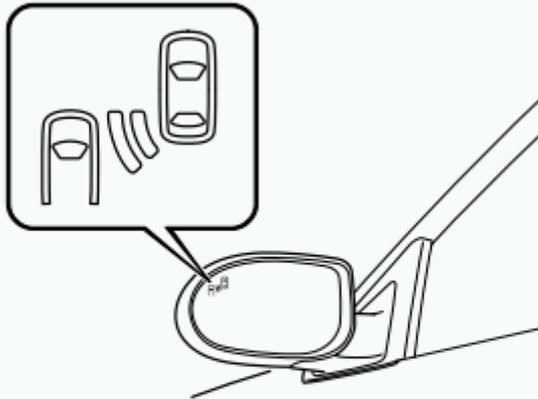
The radar sensors are equipped inside the rear bumper.



▼ BSM Warning Light/Beep

BSM warning light

Equipped on the left and right door mirrors.

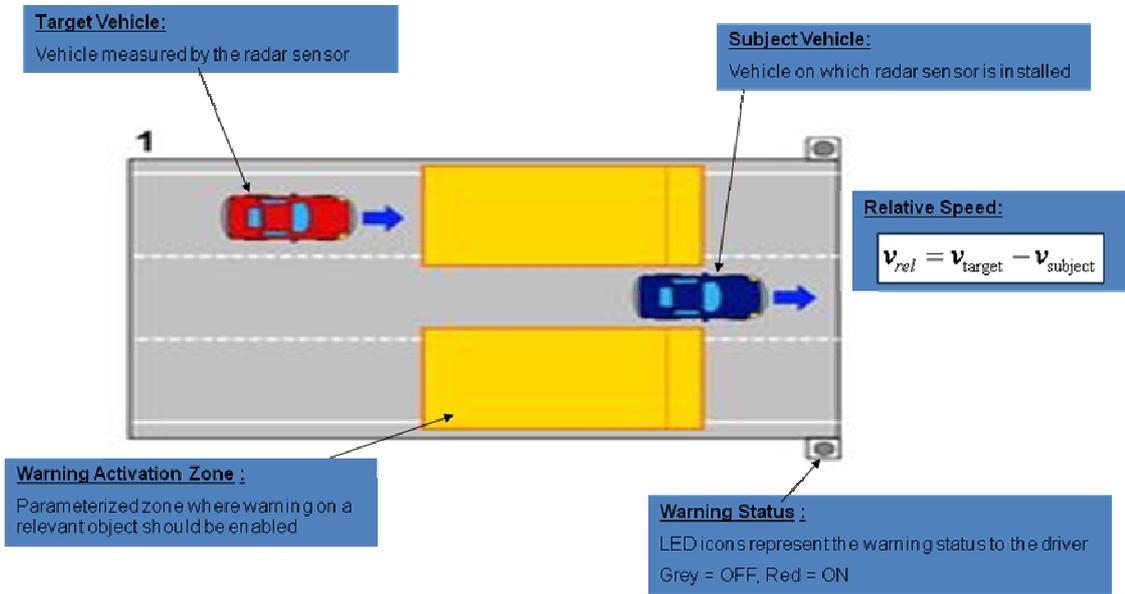


This warning light illuminates for a few seconds when the ignition is switched ON.

If the BSM system detects a vehicle in the detection area while the vehicle is driven at a speed of about 32 km/h (20 mph) or more, the BSM warning light illuminates on the side of the vehicle where the rear on-coming vehicle is detected.

(depending on the implementation by the customer)

4 SRR2-A sensor warning activation zone



Note: All warnings preconditions in this document are Conti proposal values

Figure 1: SRR2-A warning activation zone

5 SRR2-A sensor component description

The SRR2-A sensor consists of the following components:

- Plastic housing with sensor CAN connector and sealing
- RF antenna board which is plugged into the housing
- EMC shield to protect the RF board from digital noise of the ECU board
- An aluminum back cover closes the sensor and serves as a mounting area for the sensor to be mounted to the car. Typical mounting angle is 20° with respect to the driving direction.

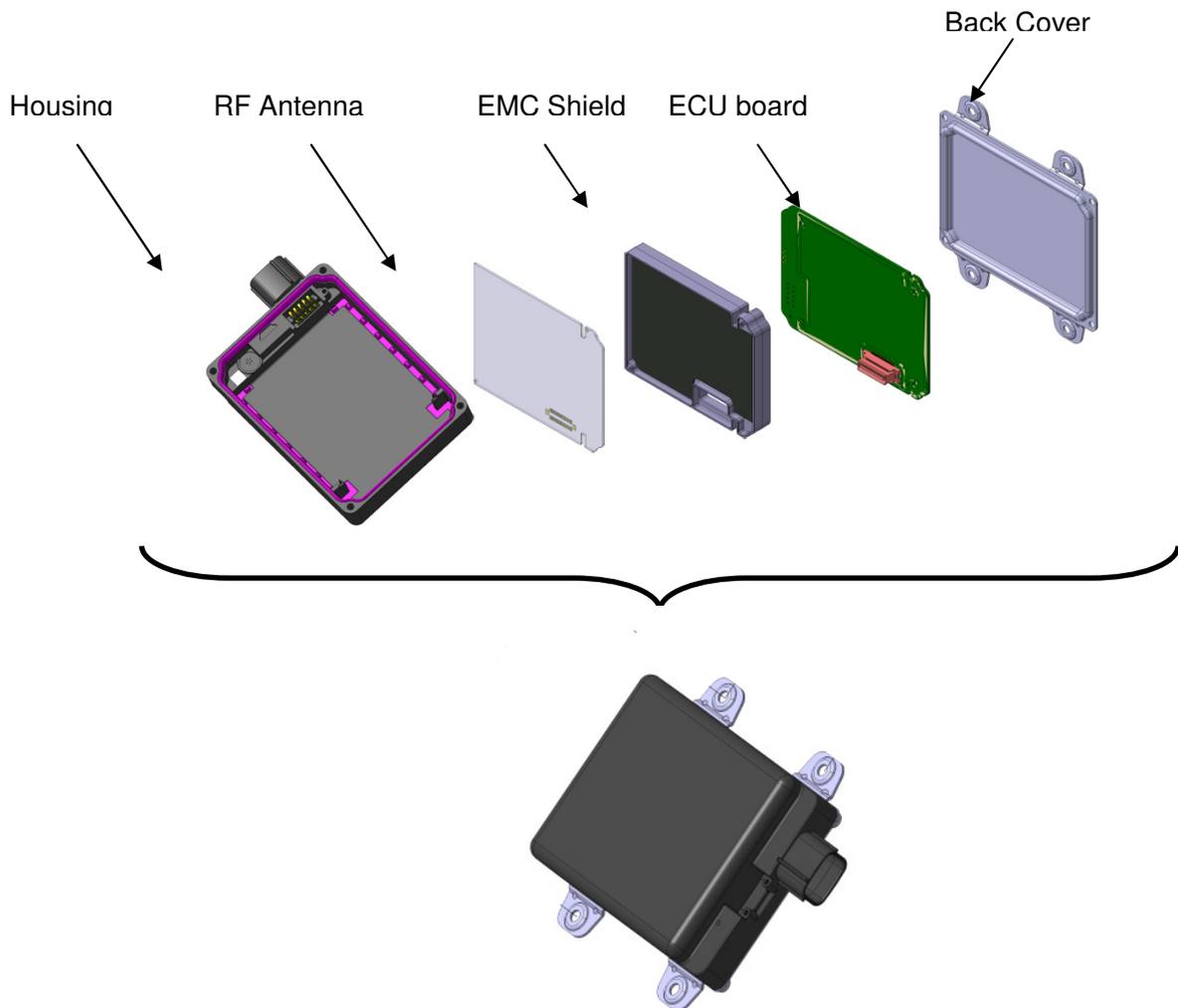


Figure 2: SRR2-A sensor drawing

6 SRR2-A sensor software operation

Only one operational mode exists which does radar measurements with FM frequency modulation. The sensor operates in this mode during the complete lifetime in the host car.

The sensor SW of the test sensors for type approval is configured in such a way that the sensor enters its operational mode once a 12 V battery supply is applied to the supply pin and 0V of the battery is applied to the GND pin. No CAN message protocol or diagnostic handshake protocol is necessary in this special mode.

7 SRR2-A radiation hazard

This BSM (blind spot monitoring) device emits intentional electromagnetic radiation in the 24,05 to 24.25 GHz frequency range.

At a distance of 20cm from the sensor, the radiated power is 0.0027mW/cm²

Channel	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density		Limit (mW/cm2)	Result
				(mW/cm2)	(W/m2)		
	(1)	(2)	(3)	(4)		(5)	
N/A	20.0	-1.23	12.5	0.0026659	0.0266595	1	Compliant

Data from "Test report 206-11R1" of COMPLIANCE WORLDWIDE, INC, section 6, page 18

This value is a factor of 370 below the legal human exposure protection limit of 1 mW/ cm² (MPE) in Europe and US.

8 SRR2-A equipment authorization

This BSM devices complies with part 15 of the FCC rules (15.249), with RSS-310 of Industry Canada, and with EN 302 858 of ETSI/CEPT on a Class1 basis.

Operation is subject to the following 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.
3. This device may only work when the vehicle is in operation.

In Europe operation is allowed in the R & TTE countries:

Country	2-digit country code according to ISO 3166	Country	2-digit country code according to ISO 3166
Belgium	BE	Netherlands	NL
Bulgaria	BG	Norway	NO
Denmark	DK	Austria	AT
Germany	DE	Poland	PL
Estonia	EE	Portugal	PT
Finnland	FI	Romania	RO
France	FR	Sweden	SE
Greece	GR	Switzerland	CH
Ireland	IE	Slovakia	SK
Island	IS	Slovenia	SI
Italy	IT	Spain	ES
Latvia	LV	Czech Republic	CZ
Liechtenstein	LI	Turkey	TR
Litauen	LT	Hungary	HU
Luxemburg	LU	United Kingdom	GB
Malta	MT	Cyprus	CY

In addition, SRR2-A complies with the radio regulations of Japan, China, Korea, Russia, Ukraine, Singapore, Australia, New Zealand, Mexico and many other countries worldwide.

For countries not mentioned in this chapter and not mentioned on the car’s user manual, the SRR2-A radar device has to be deactivated.

9 SRR2-A labeling (on sensor)

USA:	FCC-ID: OAYSRR2A	(warning statement will be written in user manual, as the sensor is smaller as a hand and the label is not visible to the end user)
Canada:	Canada 310	(category 2 equipment)
China	CMIIT ID: 2011DJ2982	
Korea	 + KCC-CEM-C1A-SRR2A	
Japan:	 R 204Y51100100	
Russia	 AB 28	
EU:	CE	

10 SRR2-A labeling (in users manual)

USA: FCC-ID: OAYSRR2A



This device complies with part 15 of the FCC Rules and Industry Canada RSS- 310. 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

Canada: **Canada 310** (category 2 equipment)

China: **CMIT ID: 2011DJ2982**

Korea: + **KCC-CEM-C1A-SRR2A**

Japan: **204Y51100100**

Russia: **AB 28**

Ukraine: **030**

EU: + Declaration of Conformity to R&TTE directive 1999/05/EC



Declaration of Conformity in accordance with Directive 1999/05/EC (R&TTE Directive)

We, **A.D.C. Automotive Distance Control Systems GmbH,**
Peter-Dormier-Strasse 10, 88151, Lindau, Germany

declare under our sole responsibility, that the product

Product Name: Blind Spot Monitoring System
Trade Name: Continental
Type or Model: SRR2-A

manufactured by:
Conti Temic microelectronic GmbH,
Ringlerstraße 17, 89057 Ingolstadt, Germany

with intended use:
**monitoring of vehicles in the blind spot for comfort/safety applications
in passenger cars**

to which this declaration relates is in conformity with the essential requirements and other relevant provisions of Directive 1999/05/EC, when used for its intended purpose.
The product is in conformity with the following standards and/or normative documents

Essential requirements	Specifications / Standards	Document	Result
Health (R&TTE, Article 3.1c)	EN62311:2007	Test reports	Conform
Safety (R&TTE, Article 3.1a)	EN 60950-1: 2006 + A11:2009 + A1:2010	Test reports	Conform
EMC (R&TTE, Article 3.1b)	EN 301 489-3 V1.4.1	Test reports	Conform
	EN 301 489-4 V1.3.1		
Efficient use of spectrum (R&TTE, Article 3.4)	EN 302 855-1 V1.2.1 (2011-05)	Test reports	Conform
	EN 302 855-2 V1.2.1 (2011-05)		

The following marking applies to the above mentioned product:



Subject products are manufactured and tested according to appropriate quality control procedures. Modifications from tested type do not influence the characteristics of the radar system.

A.D.C. Automotive Distance Control Systems GmbH, Lindau, 2011-08-18

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European Branch
Continental
1000, 1000, 1000
Continental, S. P. 10

**Declaration of compliance for 24 GHz
blind spot radar**

(U.S.A)

FCC ID: OAY SRR2A

This vehicle is equipped with a 24 GHz blind spot monitoring (BSM) radar system, which complies with part 15 of the FCC rules. Operation is subject to the following 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.

(CANADA)

IC:4135A- SRR2A

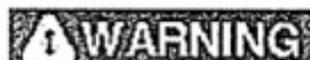
This vehicle is equipped with a 24 GHz blind spot monitoring (BSM) radar system, which complies with the radio standards specification RSS-310 of Industry Canada. Operation is subject to the following conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

(MEXICO)

NOTE

During printing time of this user manual the approvals listed below are granted. Further countries may become available or actual certification identifiers may be subject to change or update.



Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.