



Short Description

SRR 20X /-2 /-2C /-21

Short Range Radar Sensor

SS / HS

“Standard Sensitivity / High Sensitivity”

TC / CL

“Tracks and Collision Avoidance / Cluster or Tracks”

C

“Collision Avoidance”

Technical Data

Version 1.09 en

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1. Overview

1.1 Important information



This short description must be read thoroughly before the device is connected up or put into operation. Dangerous situations may arise otherwise.

This short description is a standard description of most important technical data of the 24 GHz Short Range Radar Sensor manufactured by A.D.C. GmbH, referred to hereafter as the SRR 20X.

Although plant and customer-specific deviations are possible, this documentation does not go into any further details.

All rights reserved by A.D.C. GmbH. No part of this short description may be reproduced and / or processed, copied or distributed using electronic systems, in any form whatsoever, without the express written permission of A.D.C. GmbH.

All due care was taken when preparing this short description. A.D.C. GmbH shall assume no liability whatsoever for any mistakes or omissions.

A.D.C. GmbH shall assume no liability for injury to persons or damage to property caused by failure to comply with this short description or through improper usage of the device. All warranty claims shall also become void.



Arbitrary reconstruction and/or modification of the device is not permitted for warranty, safety and CE approval-related reasons. In such cases, dangerous situations could arise and all guarantee claims shall become void.

In this description solely it is a matter to devices of generation 2 (G2).

We reserve the right to make technical modifications or to amend the delivery specifications.

Please contact your supplier if it should become necessary to check the technical functions or to repair the device.

Please retain the original packaging in order to protect the SRR 20X against transport damage.

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This document describes, in accordance with latest development status, the 24 GHz Short Range Radar Sensor SRR 20X manufactured by A.D.C. GmbH. The document does not claim to cover all the possible applications or deployment areas for these devices. It is amended, corrected and enhanced as approved editions in keeping with development progress. Ensuing new versions are assigned an incremental index number (as underlined in the example below):

Example: 2017_05_31_01 (01 = index number)

The contents of the latest released version are binding and make all preceding versions obsolete.

1.2 Device data

The SRR 20X is a 24 GHz short range radar sensor (working in ISM band) that has been specially designed from A.D.C. GmbH for deployment in automotive applications. Its purpose is the contact-free measurement of distance, speed and position by using digital formed beams with a F.o.V. (Field of View) of up to $\pm 75^\circ$ over mid distances. The SRR 20X is typically mounted behind a secondary plastic surface (radome).

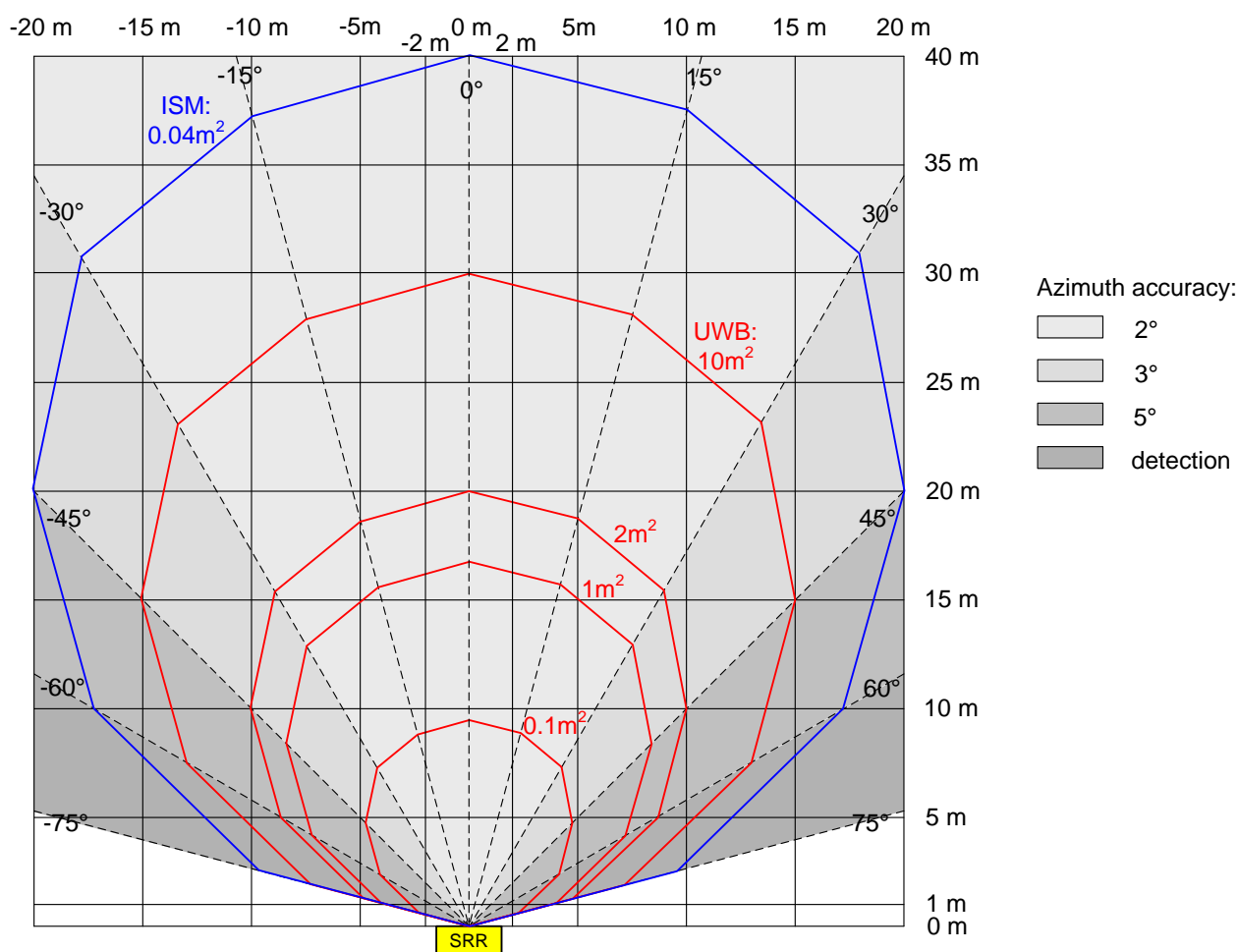


Figure 1: F.o.V. Field of View from SRR 20X with ISM band

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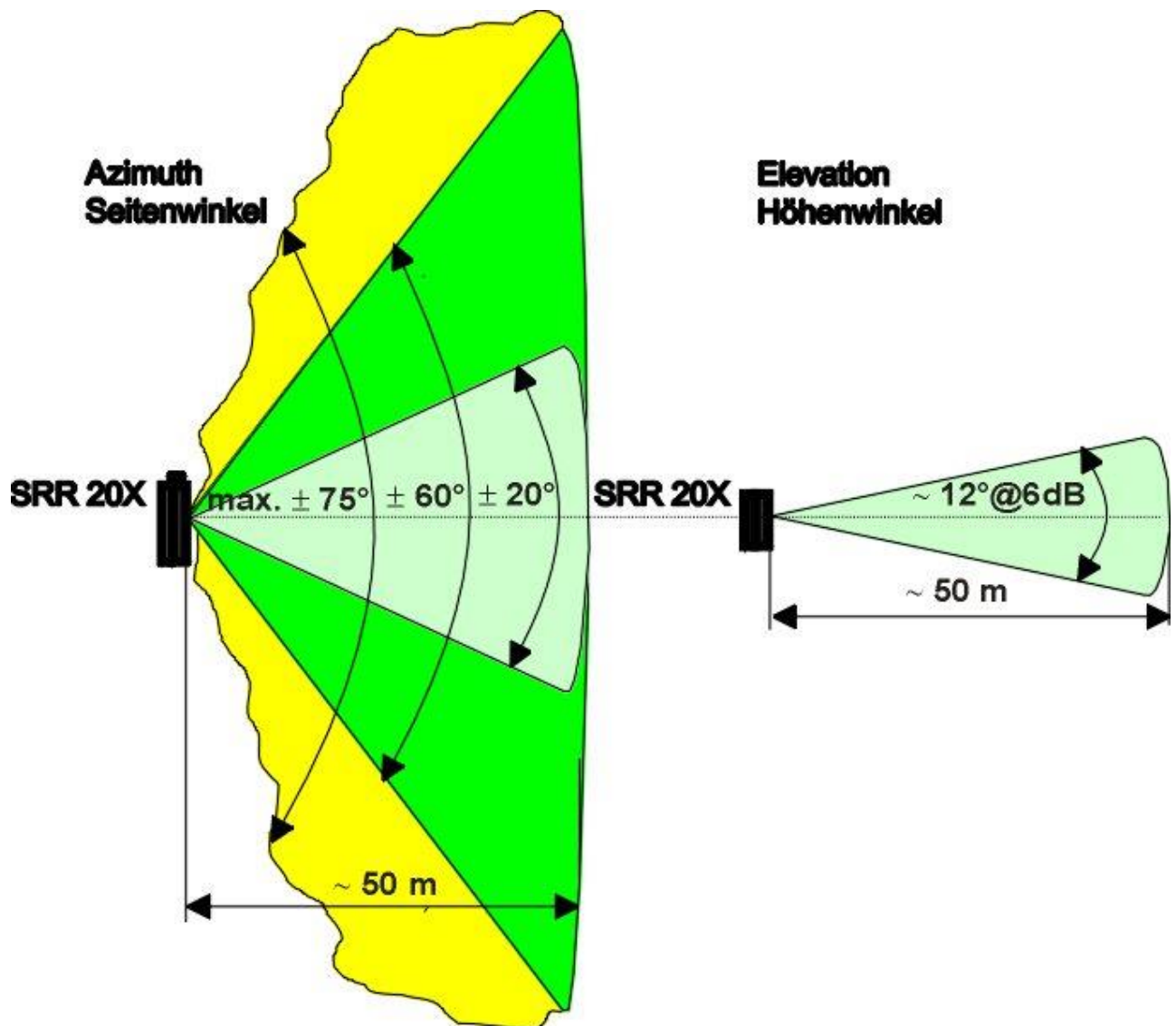


Figure 2: F.o.V. Field of View SRR 20X with azimuth and elevation exposure

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1.3 Technical data

The necessary device data are described in chapter 4 and also in the SRR 20X data sheet, which can be downloaded from www.continental-automotive.com/industrial-sensors.

1.4 Product identification

Exact specifications for the product are given on the type plate on the rear of the device:

Version (name to order)	Remarks	Device type and article no.:
SRR 208-2 VPE* Standard	Sensor SRR 208-2 in packaging unit with cable, technical short description	SRR 208-2 VPE.-no.: 10.005.190-00
SRR 208-2 complete Standard	Sensor SRR 208-2 standard version 1 – 50 m	SRR 208-2 Article.-no.: 10.005.189-00
Cable SRR 20X, 5 m Power Supply and CAN bus	5 m cable with connector for SRR 20X, two CAN buses, four line in / out connections (Type Master and Private CAN)	5 m cable Article no.:10.005.187-00
Connector SRR 20X (Power Supply and CAN bus)	10 pin connector for SRR 20X (Power Supply and 2 x CAN bus and 4 x line in / out) Somitomo (Type 12380WQA10F-B) color black	Connector Article no.:10.005.188-00
SRR 208-2C VPE* Collision Avoidance	Sensor SRR 208-2C in packaging unit with cable, technical short description	SRR 208-2C VPE.-no.: 10.005.204-00
SRR 208-2C complete Collision Avoidance	Sensor SRR 208-2C version collision avoidance 1 – 50 m	SRR 208-2C Article.-no.: 10.005.205-00
SRR 208-21 VPE* Special Functionality	Sensor SRR 208-21 in packaging unit with cable, technical short description	SRR 208-21 VPE.-no.: 10.005.206-00
SRR 208-21 complete Special Functionality	Sensor SRR 208-21 version special functionality 1 – 50 m	SRR 208-21 Article.-no.: 10.005.207-00

*VPE = Packaging Unit

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2. Device Settings

2.1 Connection

In order to check the SRR 20X or put it into operation, the SRR 20X must be connected to a power supply. The SRR 20X must also be connected to a PC or notebook via CAN bus and a separate and suitable interface converter CAN/USB – by example PCAN from company Peak-Systems or CanAlyzer from company Vector.

2.2 Configuration

Having connected the SRR 20X, the device needs to be configured by taking the data protocol as described in the separate Technical Documentation SRR 20X for the CAN protocol.

3. Installation

3.1 Mounting

3.1.1 Place of installation

The SRR 20X sensor can be mounted in any direction in a vertical mounting window of 500 mm up to 1200 mm to the ground.

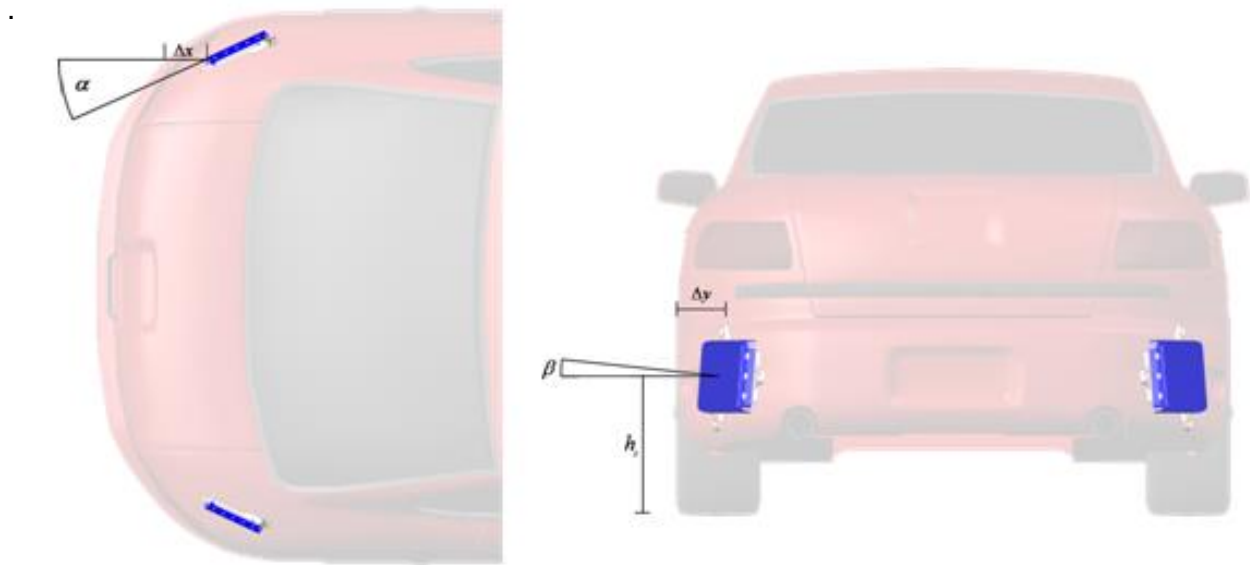


Figure 3: SRR 20X mounted behind a secondary surface (bumper) of a car

The mounting window is depending on the function which realized with the SRR 20X sensor. In addition to these mounting windows from figure 5 the function has additional requirements which are given in this section.

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	Min	Nominal	Max
α	20°	25°	30°
β	-1°	0°	1°
Δx	100 mm	300 mm	500 mm
Δy	50 mm	100 mm	150 mm
h_z	500 mm	600 mm	1200 mm

Figure 4: SRR 20X mounting orientation requirements

Note: Reference point is center of module.

The sensor shall be protected from direct impact of water / mud / snow.

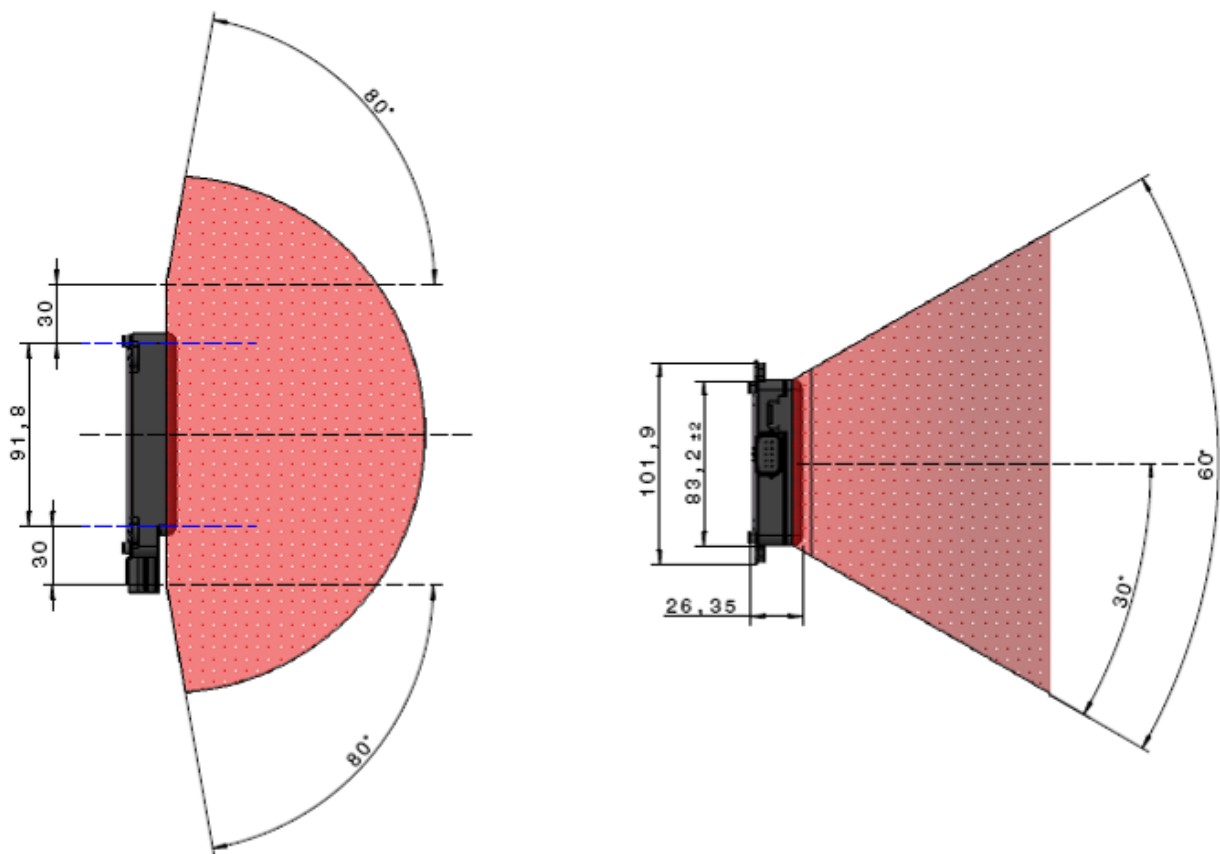


Figure 5: Mounting windows SRR 20X for azimuth and elevation exposure

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3.1.2 Mounting Tolerances / Keep Out and Interference Zones

The **azimuthal** mechanical mounting tolerance $\Delta\alpha_{\text{mech}}$ (including $\Delta\alpha_{\text{driveaxis-vehicle body}}$, $\Delta\alpha_{\text{Vehicle Body-Bracket}}$ and $\Delta\alpha_{\text{Bracket-Sensor}}$) shall not exceed $\pm 3^\circ$.

The mechanical mounting tolerance in **elevation** (roll angle) $\Delta\theta_{\text{mech}}$ (including $\Delta\theta_{\text{vehicle}}$, $\Delta\theta_{\text{vehicle-bracket}}$ and $\Delta\theta_{\text{bracket-sensor}}$) shall not exceed $\pm 4^\circ$.

The mechanical mounting tolerance for the **pitch** angle $\Delta\phi_{\text{mech}}$ (including $\Delta\phi_{\text{vehicle}}$, $\Delta\phi_{\text{vehicle-bracket}}$ and $\Delta\phi_{\text{bracket-sensor}}$) shall not exceed $\pm 4^\circ$.

The mounting window and mounting tolerances have been determined theoretically and have to be verified by tests.

For a proper SRR 20X performance the area in front of the SRR 20X sensor field of view (F.o.V.) needs to be kept free of any materials or objects that may disturb the millimeter wave emission characteristics.

Although a free space with a radius of app. 5 cm to 10 cm in front of the sensor can be assumed, detailed information needs to be agreed upon on a case by case basis.

5-10 cm distance from the bumper is a GUIDELINE. Implementation of lower distance needs to be evaluated based on vehicle integration study.

Radar signal disturbing material should not be located within the keep out zone described in the following:

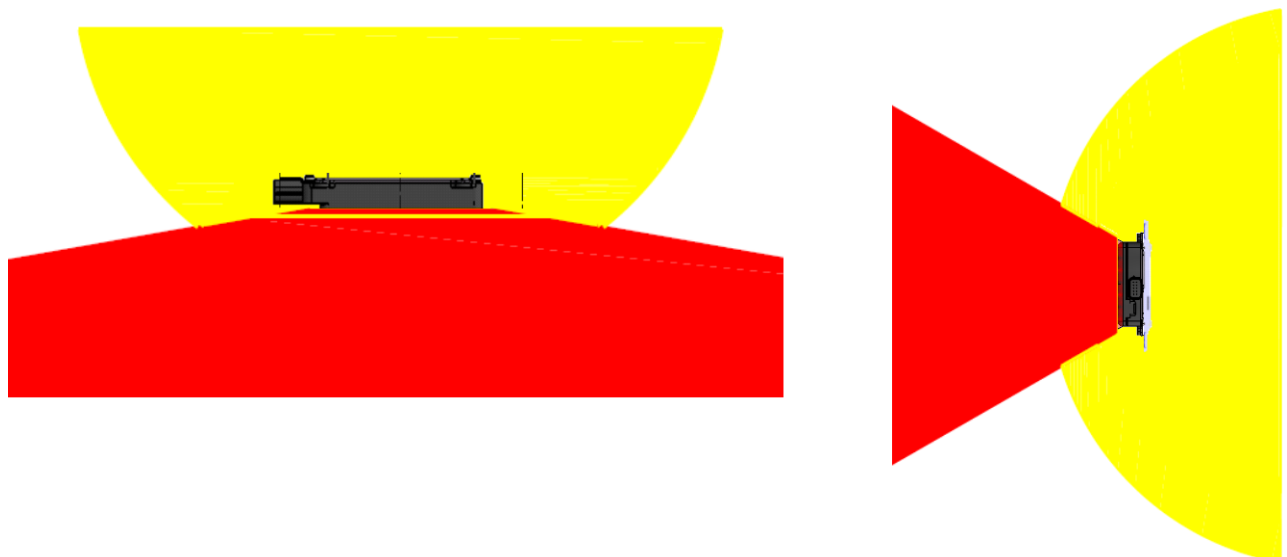


Figure 6: Keep out zones of SRR 20X for azimuth and elevation exposure

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Legend for Details of keep out zone:

- Red Zone = "Must" Keep Out Zone
- Yellow Zone = "Want" Keep Out Zone
- metal / strong reflection objects have to be:
- minimum 5 cm in front of the sensor
- minimum 15 cm to the right and the left of the sensor
- minimum 10 cm upper and under the sensor
- if metal / strong reflection objects are within the interference zone, evaluation driving tests have to be carried out to evaluate influence on sensor performance and warning efficiency.

Comments for SRR 20X sensor interference zones:

- Metal/strong reflecting objects have to be outside the interference (red) zone.
- Metal/strong reflecting objects have to be minimum 5 cm in front of the sensor, minimum 15 cm to the right and the left of the sensor and minimum 10 cm upper and under the sensor.
- If metal/strong reflecting objects are within the interference zone, evaluation driving tests have to be carried out to evaluate influence on sensor performance and warning efficiency.

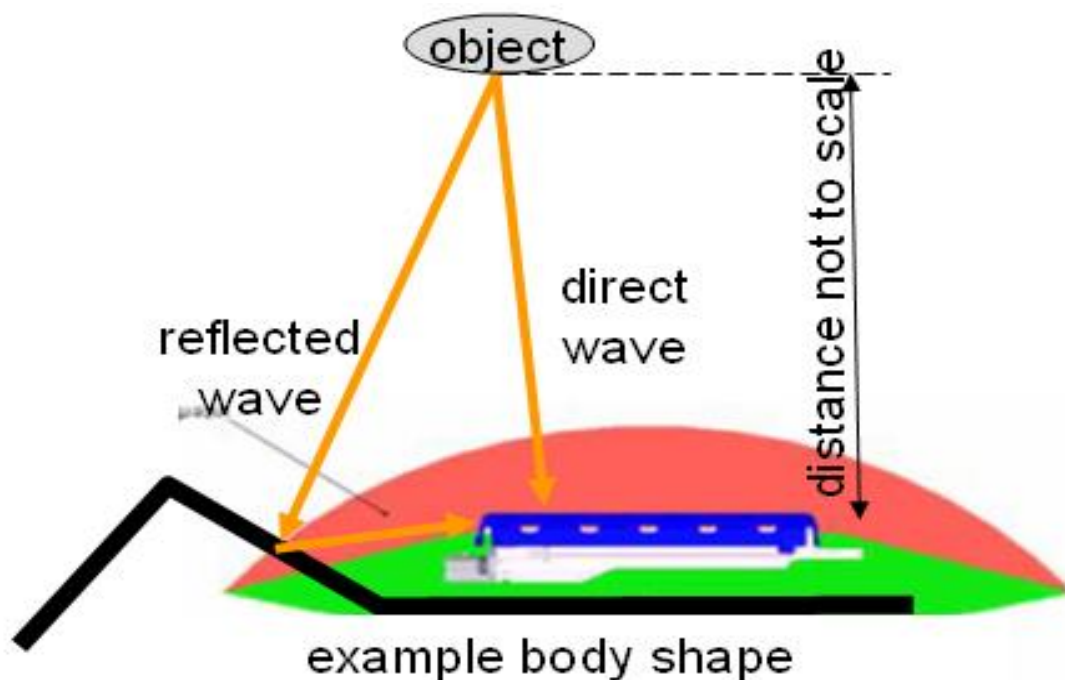


Figure 7: Mounting boundary conditions of SRR 20X

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Comment for Mounting Boundary Conditions:

- Metal shapes that might reflect waves should be avoided as much as possible.

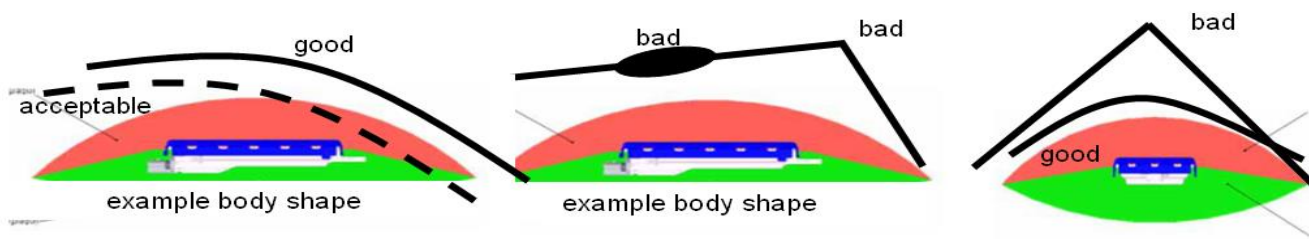


Figure 8: Guideline for secondary surface or bumper design of SRR 20X

Comments for Guidelines for Secondary Surface (Bumper) Design:

- Use smooth curved forms.
- Avoid sharp bends and areas with changing thickness.
- Avoid chrome parts or any other "fancy design features" in the direct Field of View.

3.1.2 Cover Plates, Secondary Surfaces, Radome, Bumpers

Distance and Angle

According to the mounting position of the sensor for a specific platform the distance between the sensor front cover and the secondary surface shall be designed large enough to avoid mechanical interferences, caused by thermal geometry changes or mechanical stress (vibrations).

An exact parallel orientation of the secondary surface with respect to the sensors front surface which would cause a direct back reflection of the radar radiation into the sensors antenna shall be avoided.

To prevent distortion of the radar beam, the curvature of the secondary surface / radome shall be as smooth as possible while providing constant thickness. Ribbed profiles, sharp edges, or abrupt thickness changes for instance, shall be avoided.

The mounting geometry and the surface texture of the mounting part play an important role not only for the generation of parasitic reflections which can disturb the sensor performance, but also for the propagation of surface waves.

Therefore any specific geometry of the secondary surface including the mounting structure of the radar – sensor shall be measured in an anechoic chamber in order to verify the functionality and performance of the sensor.

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Materials

The secondary surface (bumper) material is required to be of 24 GHz transparent material.

The properties of materials used as structure materials for the bumper / secondary surface are as follows:

1. Synthetic materials with low dielectric loss factors at the specific radar frequency shall be used in order to achieve low transition damping.
2. Synthetic materials with low dielectric constants (ϵ_r) shall be used in order to obtain low surface reflection.

Several materials are recommended by A. D. C. GmbH:

Material	Relative Dielectric Number ϵ_r (*)	Applicability
Polypropylene	2.33	best
ABS	2.70	ok
Polyamide	2.73	ok
Polycarbonate	2.80	ok

(*) The values of the relative dielectric number might vary depending on manufacturer and chemical composition.

Figure 9: Recommended materials for secondary surface or bumper design of SRR 20X

Every structure material not contained in the table shall be measured and released by A. D. C. GmbH.

In general the secondary surface (bumper) will carry several layers of primer and varnishes. These layers in combination with the structure material will influence both surface reflection properties and the transition damping. All kinds of metallic materials prevent SRR 20X sensor radiation and can not be used as a second radome.

Varnishes containing metallic particles shall be avoided.

In order to verify the performance of the radar sensor in the specific mounting position, suitable samples have to be provided for the measurement of the reflection coefficients and the transition damping. The compatibility of the fascia material (e. g. TPO, metallic paint) needs to be confirmed on a case by case basis.

Bracket

The bracket has to be connected to the support resp. vehicle body. The bracket shall be metallic. For this a metallic contact area of at least 108 mm² shall be available. This area can be divided to 3 mounting links or it can be anywhere else at the back cover.

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3.1.3 Cable connection and fuse protection

The connecting cable for the SRR 20X can be ordered separately with cable plug connector (without CAN termination) in a standard cable length of 5 m. It is also possible to order only a connector with pins and sealing. The cable has a pre-assembled cable plug connector (female) for plugging into the device, with a 9 pin SUB-D connector (female) for CAN and two pin plugs (banana plugs) for Power Supply at the other end.



The device is to be protected externally without fail at the mains power supply using a cut-out fuse.

3.1.4 CAN bus

The CAN interface allows the communication between a Notebook or PC and the device via separately converter CAN to USB. The CAN bus must have a terminal resistance of respectively 120 Ω between CAN H and CAN L at the first and last subscriber to avoid reflections. Further details about the CAN interface can be found in Chapter 6 “Interfaces”.

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4. Technical Data

Measuring performance		to natural targets (non-reflector targets)
Distance range		1 ...50 m (<1 m no accurate distance measuring)
Resolution distance measuring		1.0 m for point targets; target discrimination = 2 x resolution
Accuracy distance measuring		0.20 m for point targets
Azimuth angle augmentation	(field of view FoV)	-20°...+20° up to -75°...+75° (see accuracy angle)
Elevation angle augmentation	(field of view FoV)	-6°...+6° for -6 dB points
Resolution angle measuring	selectivity / separation effect	14°...18° (14°@0° azimuth) - targets only with different angle – amplitude difference max 6 dB, otherwise smaller targets will be suppressed
Accuracy angle measuring		-2°...+2°@±20°(FoV), -4°...+4°@±60°, -5°...+5°@±75°
Speed measurement range		-146 km/h...+146 km/h (- leaving objects.+ approximation)
Speed measurement resolution		1.1 km/h for point targets; target discrimination = 2 x resol.
Speed measurement accuracy		0.2 km/h for point targets
Cycle time/ transmission cycle		>= 33ms (typ.38ms) / Cluster every 66ms, Tracks 33ms
Planar antenna beams - process	receiver / transmitter	4 / 2 - digital beam forming with 16 beams
Operating conditions		
Radar operating frequency band		24.05..24.25 GHz (ISM band)
Transmission capacity	output power	app. 18 mW = <12.7 dBm at 200 MHz
Mains power supply	typ. 12 V DC	+9.0 V...16 V DC full operation >+16 V DC function-permitting (Power Save Mode) >+27 V DC automatic sensor deactivation
Power consumption	at 12 V DC	app. 4.5 W
High system voltage	at 12 V DC	up to +27 V DC without time limit
Operating-/ storage temperature		-40°C...+85°C / -40°C...+105°C
Shock	mechanical	50 g – no mechanical driven components inside
Vibration	mechanical	9,8 m/s ² 10 – 200Hz
Protection rating		IP X9k (high-pressure cleaning), dust, ice-water shock test, salt fog resistant, mixed gas EN 60068-2-60
Displays and connections		
Monitoring function		self monitoring (fail-safe designed)
Displays		none
Interface		1 x CAN high-speed 500 kbit/s
Housing		
Dimensions / weight	W * H * D (mm) / (mass)	155 * 131.5 * 26 (115 * 86 * 26 without fixing clamp)/ 295g
Material	housing front / plate rear side	PBT-GF30 black colored (Ultradur) / aluminium pressure diecasting (AlMg)
Miscellaneous		
Measuring principle (Doppler's principle) in one measuring cycle due basis of PCM with very fast ramps		independent measurement of distance and velocity and position
Version SRR 208-2	sensor for the industry	open protocol for parameterization and communication
Version SRR 209-2	sensor high sensitivity	as SRR 208-2, but with app. 20 dB higher sensitivity
Version SRR 208-2C	sensor anti-collision	as SRR 208-2, but with anti-collision parameter
Version SRR 208-21	sensor combined functions	as SRR 208-2, but with combined functionality

The version -21 has to be pre-defined by the customer for a factory setting:

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Standard Sensitivity = **SS** or High Sensitivity = **HS**

The type of the sensor will be named SRR 208-21**SSXX** or SRR 208-21**HSXX**.

Tracks and Collision Avoidance = **TC** or **CL**uster or Tracks and no Collision Avoidance = **CL**

The type of the sensor will be named SRR 208-21XX**TC** or SRR 208-21XX**CL**.

The TC version generates Tracks and no Cluster.

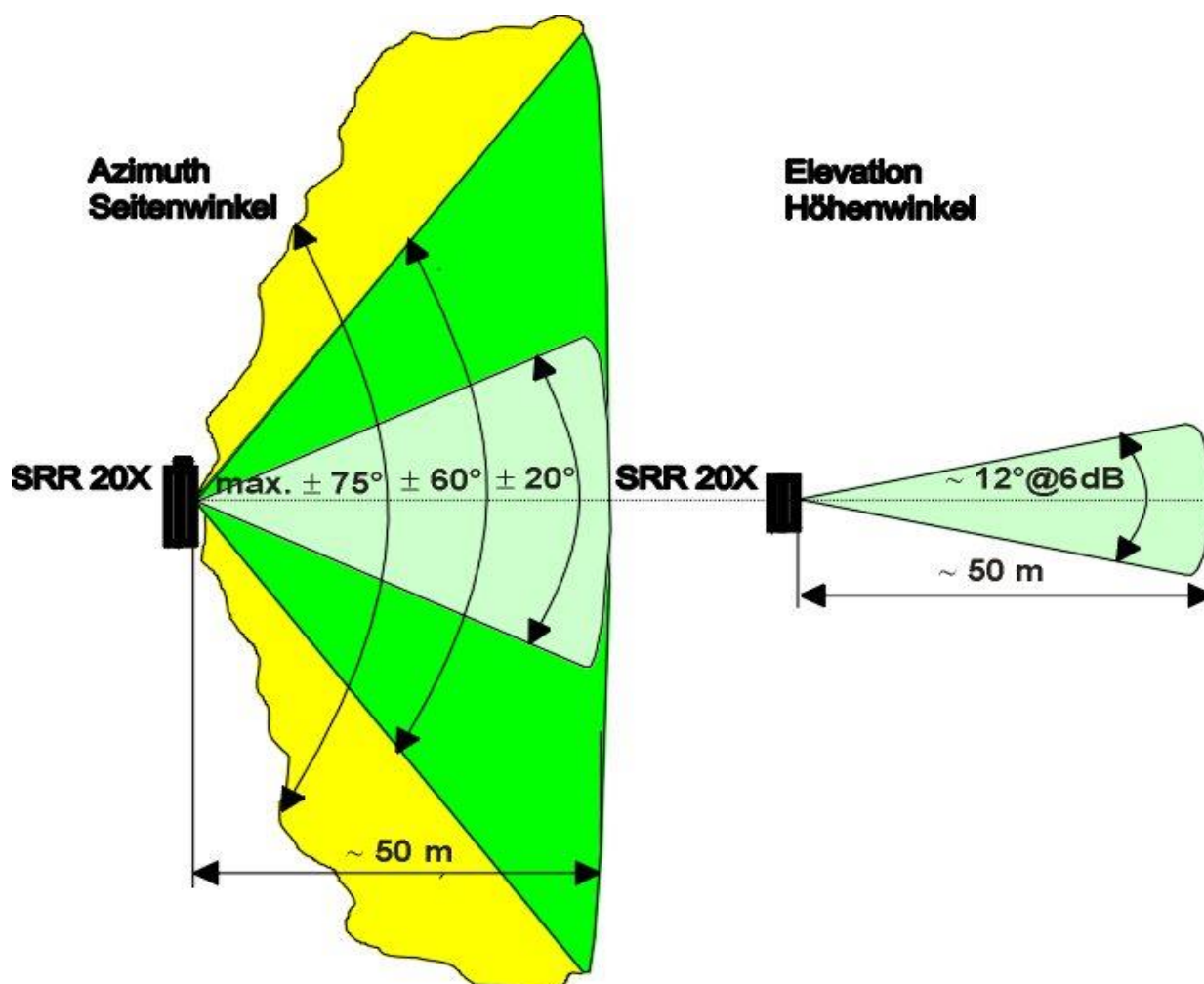
The CL version generates Cluster or Tracks.

The SRR 20X only generates Tracks = Objects from automotive combined with neutral Tracks resp. Objects – not separated automotive and neutral Tracks resp. Objects.

The SRR 20X has been designed for an output of max. 128 Cluster (a few added peaks - smaller than targets) and for max. 25 Tracks = Objects. Here are used dynamic listings, which contents only the currently available Tracks resp. Objects – not all possible Tracks resp. Objects.

4.1 Field of View (FoV) - Beam pattern

The 3 areas of the field of view from the SRR 20X does not have exactly the limits for the angles as exposed in the drawing below, but the accuracy of the 3 areas is changing app. at these values. The so-called flare angle or Field of View (FoV) of the complete scanning beams is max. 150° horizontal and 12° vertical.



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Figure 10: F.o.V. Field of View SRR 20X with azimuth and elevation exposure

5. Connections

5.1 Connection configuration

Only plug connectors enabled and offered from A.D.C. GmbH are used for the SRR 20X. The pin configuration and the pin assignment in the connecting cable are described below.

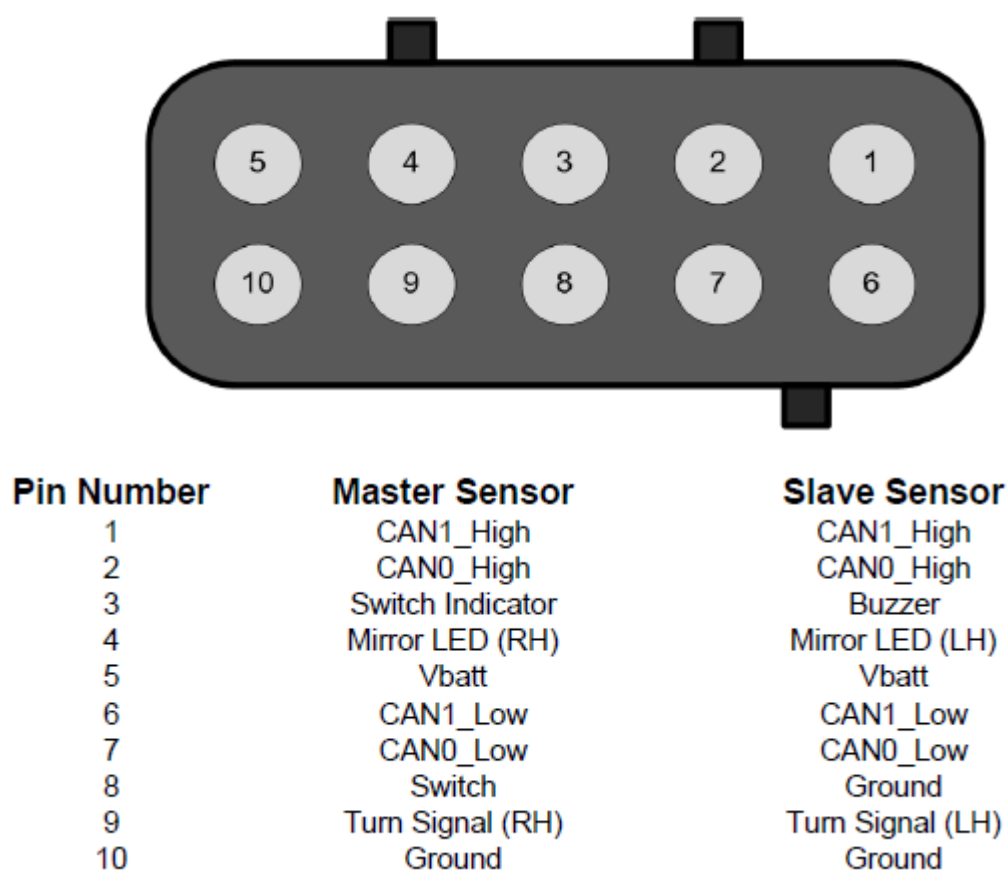
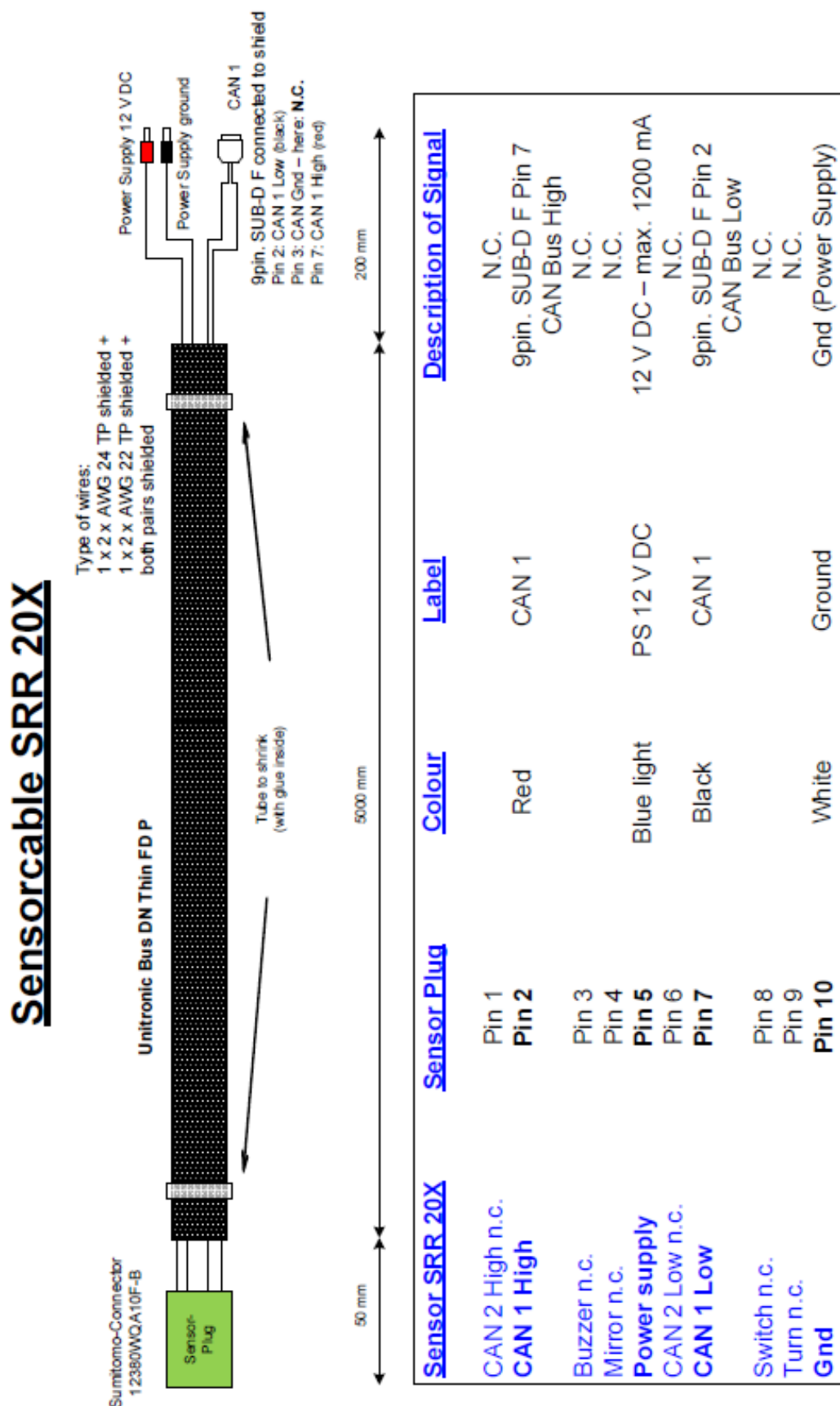


Figure 11: Frontal view with the built-in plug of the CAN and Power Supply in the device

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5.2 Cable configuration



Weight: 0,4 kg
SRR 20X: Without internal termination of the CAN Bus (120 Ohm) !
Attention: CAN wires are twisted and shielded

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6. Interfaces

6.1 CAN interface

The CAN interface uses a special protocol as mentioned before, and is designed for communication directly via CAN or with converter e.g. from CAN to USB.

Generally shielded wiring with twisted pair (TP) conductors should be used to connect the SRR 20X.

General information about the CAN interface:

OSI is an open layer model and serves as the basis for manufacturer-neutral network protocols. The model has 7 layers, whereby 7 is the highest layer. Layer 1 is the bit transfer layer and physical level in which, for example, mechanical plug connectors, electrical level, pulse form, wavelength, cable, glass-fiber and radio are defined. Layer 2 is the packet level, which governs how data packets are to be forwarded to the next nodes (subscribers) and defines the security status of the connection. A maximum of 255 nodes can be connected to a CAN interface. The identifier (ID number) defines the priority of a message. Each subscriber (station) can determine whether a message is relevant or not using this ID. It can then be processed by the subscriber or ignored accordingly. When a message is sent, all the other subscribers in the CAN bus system (network) become recipients.

Line length	Max. transfer rate	Specific line resistance	Cable cross section
0 – 40 m	1 Mbit/s	70 mΩ/m	0.25 – 0.34 mm ²
40 – 300 m	200 Kbit/s	< 60 mΩ/m	0.34 – 0.60 mm ²
300 – 600 m	100 Kbit/s	< 40 mΩ/m	0.50 – 0.75 mm ²
600 – 1000 m	50 Kbit/s	< 26 mΩ/m	0.75 – 0.80 mm ²

Figure 13: Examples for cable lengths and cross sections for different CAN transfer rates

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7. Device Dimensions SRR 20X

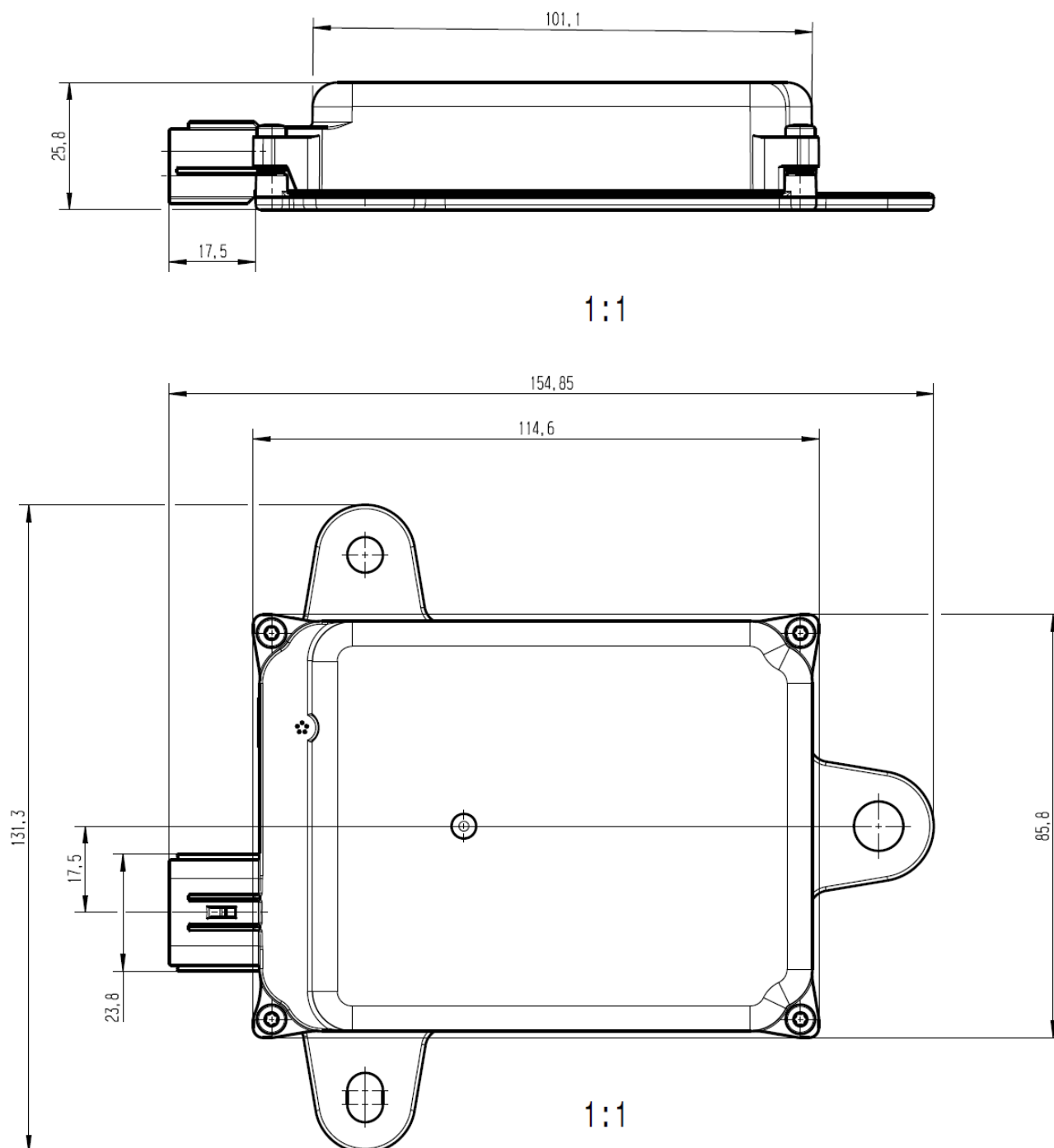


Figure 14: Dimensions of SRR 20X device

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8. Notes on Safety and Risks

This chapter is intended to enable owners and operators of the SRR 20X to recognize all usage-related risks in good time, i.e. in advance wherever possible.

The SRR 20X was developed for use in automobiles. Users must be in possession of basic technical knowledge, and it is assumed that this is the case. The device should only be used by trained operators.

The person or owner responsible for the device must ensure that all operators understand and observe these safety notes.

If the SRR 20X is part of a system, the system manufacturer is responsible for ensuring that the safety-related aspects are heeded, e.g. the operating manual, labeling and instructions.

8.1 Areas of responsibility

Scope of responsibility of the manufacturer regarding the original device or equipment:

A.D.C. Automotive Distance Control Systems GmbH

Industrial Sensors

A Company of the Continental Corporation

Peter-Dornier-Straße 10

D-88131 Lindau

Germany

A.D.C. GmbH is responsible for supplying the device, including the short description and the original accessories, in a technically safe and sound condition.

Scope of responsibility of the manufacturer of third-party accessories:

Manufacturers of third-party accessories are responsible for the development, implementation and communication of safety concepts for their products, and their effects in conjunction with the SRR 20X device from A.D.C. GmbH.

Scope of responsibility of the owner (customer, end customer and end user):



The owner is responsible for ensuring that the device (and equipment) are used for their intended purpose, for the actions of his employees, for giving instruction to the employees, and for the operational safety of the equipment.

The owner is subject to the following obligations:

- He must understand the safety information on the device and the instructions given in the operating manual.
- He must be familiar with the locally applicable accident prevention regulations.
- He is to notify A.D.C. GmbH, or one of its authorized dealers, as soon as a device or the equipment displays any safety defects.

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The owner is responsible and has to confirm that the owner (customer, end customer and end user) will add resp. copy the following disclaimer and information, incl. the declaration of conformity in their own documentation resp. manual.

The radar sensors of series ARS 30X as well as the type ARS 308-2 and ARS 309-2 and ARS 308-21XXXX, of the series ARS 404-21 Entry and ARS 408-21 Premium, of the series SRR 20X as well as SRR 208-2 and SRR 209-2 and SRR 208-21XXXX and of the series SRR 308-21 are allowed for the usage in research & testing purposes.

A generally radio license for the bandwidth of 76 – 77 GHz for “Ground Based Vehiculars” is available for Europe and U.S.A. since begin of 2012 for the ARS 30X series and since begin of 2016 for the ARS 40X series.

Ground Based Vehiculars are all rubber or rail mounted vehicles (car, truck, bus, construction machine, agricultural machine, cranes (RTG, STS, gantry cranes etc. - no tower cranes), autonomous or automated driving vehicles (AGV, robotics etc.) and marine (ship, boat, vessel, yacht, cruise liner etc.).

This typically is also valid for 24 GHz radars and in most countries in the world.

Typical in Europe and U.S.A. it is prohibited to use the radars for stationary applications and in flying objects.


But for TTT (Telematics, Traffic, Transport) stationary applications can be allowed to use. Here individually each customer in their country has to clarify it at the notified body or the administration of authority in the country.

The same is valid for flying objects. Here a single license or special regulations for defense and military companies or on airports are possible.

Here you will find a link for the access to the newest Declaration of Conformity of all available radar sensors from A.D.C. GmbH, which can be download from each customer to update the own documentation.

<http://continental.automotive-approvals.com/>

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Date: 23/03/2017 Page 1 (9) DocID: RED_UserGuideReference_SRR2-A_v2.0.docx	User Guide Reference SRR 2-A Short Range Radar	 Advanced Driver Assistant Systems
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Content of Document

Summary:

This document covers the mandatory user information due to EU legislation of the Radio equipment directive.

Note: Only valid and to be used for model / type as listed in the "product related information" below.

A) Following Generic info to be provided in the user manual:

Manufacturer Postal Address

B) Following text information to be provided in the user manual in all EU official languages:

- 1) **SIMPLIFIED EU DECLARATION OF CONFORMITY**
- 2) Frequency band(s) in which the radio equipment operates:
- 3) Maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates

Note: The related information has to be provided to the user in printed format - accompanying the product.

Legal Baseline:

The texts provided are based on the following EU directive:

"DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC"

Product related information:

Information identifying the product.

Note: The following table does not have to be added to the end user documentation.

Topic	Information
Manufacturer Data	
Manufacturer	ADC Automotive Distance Control Systems GmbH
Manufacturer Address	Peter-Dornier-Strasse 10, 88131 Lindau, Germany
Product Identification	
Type	SRR 2-A
Technical Parameters	
Frequency range	24.05–24.25 GHz
Maximum Power	100mW (20 dBm) Peak EIRP
Links	
CE declaration Web page	http://continental.automotive-approvals.com/

Note: THIS DOCUMENT IS NOT A CE DECLARATION: The simplified EU CE declaration is only valid in combination with the signed version of CE document, which can be downloaded on the related web page. At time of publishing this document the CE declaration of the related product stating compliance with the "DIRECTIVE 2014/53/EU" might not yet be in place.

Change history:

V2.0: Language Text (EFTA Countries) and Language Text (Custom Union Agreement between EU and Turkey) added.
Header is updated from Advanced Radar Sensor to Short Range Radar

A.D.C. Automotive Distance Control Systems GmbH, Sales Dept., Peter-Dornier-Straße 10, D-88131 Lindau, Germany
Tel: +49.8283.9699-0, Fax: +49.8382.9699-57; Internet: www.continental-corporation.com

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A) Generic information:

Manufacturer Postal Address

	ADC Automotive Distance Control Systems GmbH Peter-Dornier-Strasse 10, 88131 Lindau, Germany
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B) Language Text:

01_RED_BG_Bulgarian

ОПРОСТЕНА ЕС ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ	С настоящото ADC Automotive Distance Control Systems GmbH декларира, че този тип радиосъоръжение SRR 2-A е в съответствие с Директива 2014/53/ЕС. Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес: http://continental.automotive-approvals.com/
	радиочестотната лента или ленти, в която или които работи радиосъоръжението: 24.05–24.25 GHz
	максималната радиочестотна мощност, излъчвана в радиочестотната лента или ленти, в която или които работи радиосъоръжението.: 100mW (20 dBm) Peak EIRP

02_RED_ES_Spanish

DECLARACIÓN UE DE CONFORMIDAD SIMPLIFICADA	Por la presente, ADC Automotive Distance Control Systems GmbH declara que el tipo de equipo radioeléctrico SRR 2-A es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: http://continental.automotive-approvals.com/
	Banda o bandas de frecuencia en las que opera el equipo radioeléctrico: 24.05–24.25 GHz
	Potencia máxima de radiofrecuencia transmitida en la banda o bandas de frecuencia en las que opera el equipo radioeléctrico: 100mW (20 dBm) Peak EIRP


03_RED_CS_Czech

ZJEDNODUŠENÉ EU PROHLÁŠENÍ O SHODĚ	Tímto ADC Automotive Distance Control Systems GmbH prohlašuje, že typ rádiového zařízení SRR 2-A je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: http://continental.automotive-approvals.com/
	Kmitočtové pásmo (kmitočtová pásma), v němž (v nichž) rádiové zařízení pracuje: 24.05–24.25 GHz
	Maximální radiofrekvenční výkon vysílaný v kmitočtovém pásmu (v kmitočtových pásmech), v němž (v nichž) je rádiové zařízení provozováno: 100mW (20 dBm) Peak EIRP

04_RED_DA_Danish

FORENKLET EU- OVERENSSTEMMELSE RKLÆRING	Hermed erklærer ADC Automotive Distance Control Systems GmbH, at radioudstyrstypen SRR 2-A er i overensstemmelse med direktiv 2014/53/EU. EU-overensstemmelseserklæringens fulde tekst kan findes på følgende
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	internetadresse: http://continental.automotive-approvals.com/
	Frekvensbånd, som radioudstyret fungerer på: 24.05–24.25 GHz
	Maksimal radiofrekvenseffekt, der udsendes i de frekvensbånd, som radioudstyret fungerer på: 100mW (20 dBm) Peak EIRP

05_RED_DE_German

VEREINFACHTE EU-KONFORMITÄTSERKLÄRUNG	Hiermit erklärt ADC Automotive Distance Control Systems GmbH, dass der Funkanlagentyp SRR 2-A der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: http://continental.automotive-approvals.com/
	Das Frequenzband oder die Frequenzbänder, in dem bzw. denen die Funkanlage betrieben wird: 24.05–24.25 GHz
	Die in dem Frequenzband oder den Frequenzbändern, in dem bzw. denen die Funkanlage betrieben wird, abgestrahlte maximale Sendeleistung: 100mW (20 dBm) Peak EIRP

06_RED_ET_Estonian

LIHTSUSTATUD ELI VASTAVUSDEKLARATSIOON	Käesolevaga deklareerib ADC Automotive Distance Control Systems GmbH, et käesolev raadioseadme tüüp SRR 2-A vastab direktiivi 2014/53/EL nõuetele. ELi vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil: http://continental.automotive-approvals.com/
	Sagedusriba(d), millel raadioseade töötab: 24.05–24.25 GHz
	Raadioseadme töösagedus(t)el edastatav maksimaalne saatevõimsus: 100mW (20 dBm) Peak EIRP

07_RED_EL_Greek


ΑΠΛΟΥΣΤΕΥΜΕΝΗ ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ΕΕ	Με την παρούσα ο/η ADC Automotive Distance Control Systems GmbH, δηλώνει ότι ο ραδιοεξοπλισμός SRR 2-A πληροί την οδηγία 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο: http://continental.automotive-approvals.com/
	Οι ζώνες συχνοτήτων στις οποίες λειτουργεί ο ραδιοεξοπλισμός: 24.05–24.25 GHz
	η μέγιστη ραδιοηλεκτρική ισχύς στις ζώνες συχνοτήτων στις οποίες λειτουργεί ο ραδιοεξοπλισμός: 100mW (20 dBm) Peak EIRP

08_RED_EN_English

SIMPLIFIED EU DECLARATION OF CONFORMITY	Hereby, ADC Automotive Distance Control Systems GmbH declares that the radio equipment type SRR 2-A is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: http://continental.automotive-approvals.com/
	Frequency band(s) in which the radio equipment operates: 24.05–24.25 GHz

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	Maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates:
	100mW (20 dBm) Peak EIRP

09_RED_FR_French

DECLARATION UE DE CONFORMITE SIMPLIFIEE	Le soussigné, ADC Automotive Distance Control Systems GmbH, déclare que l'équipement radioélectrique du type SRR 2-A est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: http://continental.automotive-approvals.com/
	Bandes de fréquences utilisées par l'équipement radioélectrique: 24.05–24.25 GHz
	Puissance de radiofréquence maximale transmise sur les bandes de fréquences utilisées par l'équipement radioélectrique: 100mW (20 dBm) Peak EIRP

10_RED_GA_empty_no_text

Related RED Directive not released.

11_RED_HR_Croatian

POJEDNOSTAVLJENA EU IZJAVA O SUKLADNOSTI	ADC Automotive Distance Control Systems GmbH ovime izjavljuje da je radijska oprema tipa SRR 2-A u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: http://continental.automotive-approvals.com/
	Frekvencijski pojas (frekvencijski pojasi) u kojem (kojima) radijska oprema radi: 24.05–24.25 GHz
	Najveća radiofrekvencijska snaga koja se prenosi u frekvencijskom pojasu (frekvencijskim pojasi) u kojem (kojima) radijska oprema radi: 100mW (20 dBm) Peak EIRP


12_RED_IT_Italian

DICHIARAZIONE DI CONFORMITÀ UE SEMPLIFICATA	Il fabbricante, ADC Automotive Distance Control Systems GmbH, dichiara che il tipo di apparecchiatura radio SRR 2-A è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: http://continental.automotive-approvals.com/
	Bande di frequenza di funzionamento dell'apparecchiatura radio: 24.05–24.25 GHz
	Massima potenza a radiofrequenza trasmessa nelle bande di frequenza in cui opera l'apparecchiatura radio: 100mW (20 dBm) Peak EIRP

13_RED_LV_Latvian

VIENKĀRŠOTA ES ATBILSTĪBAS DEKLARĀCIJA	Ar šo ADC Automotive Distance Control Systems GmbH deklarē, ka radioiekārta SRR 2-A atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē: http://continental.automotive-approvals.com/
	Frekvenču joslu(-as), kurā(-ās) radioiekārtas darbojas: 24.05–24.25 GHz

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	Frekvenču joslā(-ās), kurā(-ās) darbojas radioiekārtas, maksimālo pārraidītā signāla jaudu.: 100mW (20 dBm) Peak EIRP
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14_RED_LT_Lithuanian

SUPAPRASTINTA ES ATITIKTIES DEKLARACIJA	Aš, ADC Automotive Distance Control Systems GmbH, patvirtinu, kad radijo įrenginių tipas SRR 2-A atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: http://continental.automotive-approvals.com/
	Dažnių juosta (-os), kurioje (-iose) veikia radijo įrenginiai: 24.05–24.25 GHz
	Didžiausia radijo dažnių galia, perduodama toje (tose) dažnių juostoje (-ose), kurioje (-iose) veikia radijo įrenginiai: 100mW (20 dBm) Peak EIRP

15_RED_HU_Hungarian

EGYSZERUSÍTETT EU-MEGFELELŐSÉGI NYILATKOZAT	ADC Automotive Distance Control Systems GmbH igazolja, hogy a SRR 2-A típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen:: http://continental.automotive-approvals.com/
	Az(ok) a frekvenciasáv(ok), amely(ek)en a rádióberendezés működik: 24.05–24.25 GHz
	Az abban a frekvenciasávban vagy azokban a frekvenciasávokban továbbított maximális jelerősség, amely(ek)ben a rádióberendezés üzemel: 100mW (20 dBm) Peak EIRP


16_RED_MT_Maltese

DIKJARAZZJONI SSIMPLIFIKATA TA' KONFORMITÀ TAL-UE	B'dan, ADC Automotive Distance Control Systems GmbH, niddikjara li dan it-tip ta' tagħmir tar-radju SRR 2-A huwa konformi mad-Direttiva 2014/53/UE. It-test kollu tad-dikjarazzjoni ta' konformità tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li ġej: http://continental.automotive-approvals.com/
	Il-medda/meded tal-frekwenza li jaħdem fihom it-tagħmir tar-radju: 24.05–24.25 GHz
	Il-potenza massima tal-frekwenza tar-radju trażmessa fil-medda/meded tal-frekwenza li jaħdem fihom it-tagħmir tar- radju: 100mW (20 dBm) Peak EIRP

17_RED_NL_Dutch

VEREENVOUDIGDE EU-CONFORMITEITSVERKLARING	Hierbij verklaar ik, ADC Automotive Distance Control Systems GmbH, dat het type radioapparatuur SRR 2-A conform is met Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: http://continental.automotive-approvals.com/
	Frequentieband(en) waarin de radioapparatuur functioneert: 24.05–24.25 GHz
	Maximaal radiofrequent vermogen uitgezonden in de frequentieband(en) waarin de radioapparatuur functioneert: 100mW (20 dBm) Peak EIRP

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18_RED_PL_Polish

UPROSZCZONA DEKLARACJA ZGODNOŚCI UE	ADC Automotive Distance Control Systems GmbH niniejszym oświadcza, że typ urządzenia radiowego SRR 2-A jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: http://continental.automotive-approvals.com/
	Zakresu(-ów) częstotliwości, w którym (których) pracuje urządzenie radiowe: 24.05–24.25 GHz
	Maksymalnej mocy częstotliwości radiowej emitowanej w zakresie(-ach) częstotliwości, w którym (których) pracuje urządzenie radiowe: 100mW (20 dBm) Peak EIRP

19_RED_PT_Portuguese

DECLARAÇÃO UE DE CONFORMIDADE SIMPLIFICADA	O(a) abaixo assinado(a) ADC Automotive Distance Control Systems GmbH declara que o presente tipo de equipamento de rádio SRR 2-A está em conformidade com a Diretiva 2014/53/UE. O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet: http://continental.automotive-approvals.com/
	A(s) banda(s) de frequências em que o equipamento de rádio funciona: 24.05–24.25 GHz
	A potência máxima de radiofrequências transmitida na(s) banda(s) de frequências em que o equipamento de rádio funciona: 100mW (20 dBm) Peak EIRP

20_RED_RO_Romanian

DECLARAȚIA UE DE CONFORMITATE SIMPLIFICATĂ	Prin prezenta, ADC Automotive Distance Control Systems GmbH declară că tipul de echipamente radio SRR 2-A este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: http://continental.automotive-approvals.com/
	Banda (benzile) de frecvențe în care funcționează echipamentul radio: 24.05–24.25 GHz
	Puterea maximă de radiofrecvență transmisă în banda (benzile) de frecvențe în care funcționează echipamentul radio: 100mW (20 dBm) Peak EIRP


21_RED_SK_Slovak

ZJEDNODUŠENÉ EÚ VYHLÁSENIE O ZHODE	ADC Automotive Distance Control Systems GmbH týmto vyhlasuje, že rádiové zariadenie typu SRR 2-A je v súlade so smernicou 2014/53/EÚ. Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese: http://continental.automotive-approvals.com/
	Frekvenčné pásmo resp. pásma, v ktorých rádiové zariadenie pracuje: 24.05–24.25 GHz
	Maximálny vysokofrekvenčný výkon prenášaný vo frekvenčnom pásme, resp. pásmach, v ktorých rádiové zariadenie pracuje: 100mW (20 dBm) Peak EIRP

22_RED_SL_Slovenian

POENOSTAVLJENA IZJAVA EU O SKLADNOSTI	ADC Automotive Distance Control Systems GmbH potrjuje, da je tip radijske opreme SRR 2-A skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: http://continental.automotive-approvals.com/
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	Frekvenčni pas ali pasovi, na katerih deluje radijska oprema: 24.05–24.25 GHz
	Največja energija za radijsko frekvenco, preneseno po frekvenčnem pasu ali pasovih, na katerih radijska oprema deluje: 100mW (20 dBm) Peak EIRP


23_RED_FI_Finnish

YKSINKERTAISTETTU EU-VAATIMUSTENMUKAISUU SVAKUUTUS	ADC Automotive Distance Control Systems GmbH vakuuttaa, että radio-laitetyyppi SRR 2-A on direktiivin 2014/53/EU mukainen. EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: http://continental.automotive-approvals.com/
	Radiotaajuuudet, joilla radiolaitte toimii: 24.05–24.25 GHz
	Suurin mahdollinen lähetysteho radiotaajuuksilla, joilla radiolaitte toimii: 100mW (20 dBm) Peak EIRP

24_RED_SV_Swedish

FÖRENKLAD EU-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE	Härmed försäkrar ADC Automotive Distance Control Systems GmbH att denna typ av radioutrustning SRR 2-A överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: http://continental.automotive-approvals.com/
	Det eller de frekvensband där radioutrustningen arbetar: 24.05–24.25 GHz
	Den maximala radiofrekvensseffekt som överförs inom det eller de frekvensband där radioutrustningen arbetar: 100mW (20 dBm) Peak EIRP

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C) Language Text (EFTA Countries):

01_RED_IS_Icelandic

EINFÖLDUÐ ESB SAMRÆMISYFIRLÝSING	Hér með lýsir ADC Automotive Distance Control Systems GmbH því yfir, að fjarskiptabúnaðurinn að gerð SRR 2-A er í samræmi við tilskipun 2014/53/ ESB. Textinn í fullri lengd um Samræmisyfirlýsingu ESB er aðgengilegur á eftirfarandi veffangi: http://continental.automotive-approvals.com/
	Bandbreidd(ir), sem fjarskiptabúnaðurinn starfar í: 24.05–24.25 GHz
	Hámarks fjarskiptatiðni sendistyrkleika í bandbreiddinni/bandbreiddunum sem fjarskiptabúnaðurinn starfar í: 100mW (20 dBm) Peak EIRP

D) Language Text (Custom Union Agreement between EU and Turkey):

01_RED_TR_Turkish

BASİTLEŞTİRİLMİŞ AB UYGUNLUK BEYANI	İşbu belge ile, ADC Automotive Distance Control Systems GmbH şirketi SRR 2-A tipi radyo ekipmanının 2014/53/AB sayılı direktife uygun olduğunu beyan eder. AB uygunluk beyanının tam metni aşağıdaki İnternet adresinde mevcuttur: http://continental.automotive-approvals.com/
	Radyo cihazının çalıştığı frekans bandı/bantları: 24.05–24.25 GHz
	Radyo ekipmanının çalıştığı frekans bandında/bantlarında iletilen maksimum radyo frekansı gücü: 100mW (20 dBm) Peak EIRP

--- End of Document ---

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Chassis & Safety 1/1

EU Declaration of Conformity

We,

**ADC Automotive Distance Control Systems GmbH,
Peter-Dornier-Strasse 10, 88131, Lindau, Germany**

declare under our sole responsibility that the

Type	SRR 2-A
Description	Short range radar equipment operating in the 24.05 – 24.25 GHz range

is in conformity with the essential requirements and other relevant requirements of the following directive of the European Parliament and European Council:

2014/53/EU Radio Equipment Directive.


The relevant standards used in relation to which conformity is declared are:

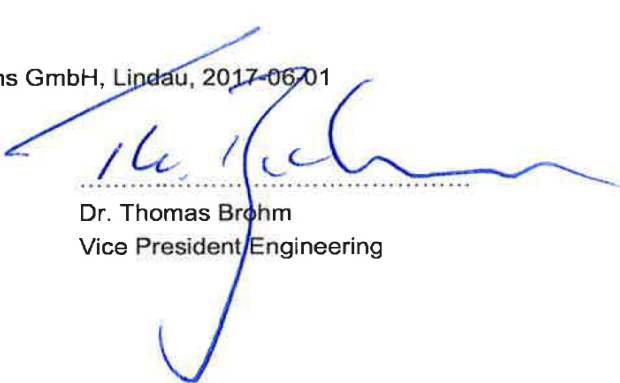
Essential requirements	Standards
Health (Article 3.1a)	EN 62311:2008
Safety (Article 3.1a)	EN 60950-1:2006+A11:2009+A1:2010+AC:2011+A12:2011+A2:2013
EMC (Article 3.1b)	EN 301 489-1 V2.1.1 EN 301 489-51 V1.1.1
Efficient use of spectrum (Article 3.2)	EN 302 858 V2.1.1; EN 303 396 V1.1.1

Information regarding Type Examination Certification:

CTC advanced GmbH, Notified Body Reg.-No. 0682 located at Untertürkheimer Straße 6-10, 66119 Saarbrücken, Germany has performed the assessments in accordance with Annex III of the European Council Directive 2014/53/EU on radio equipment, and issued the EU-type examination certificate with the registration number T817945E-01-TEC.

ADC Automotive Distance Control Systems GmbH, Lindau, 2017-06-01


Marcel Verweinen
Director Human Relations


Dr. Thomas Brohm
Vice President Engineering

1/1

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Bank Account: Deutsche Bank | Ravensburg | BIC / SWIFT Code: DEUTDE33HAN | IBAN: 650 700 84 | Account No.: 34 000 82 00 |
IBAN Code DE90 6507 0084 0340 0082 00

SRR 20X /-2 /-2C /-21 Short Description

For USA & CANADA

FCC ID : OAYSRR2A

IC: 4135A-SRR2A

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiofrequency radiation exposure Information:

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 30 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 30 cm de distance entre la source de rayonnement et votre corps.

FCC Notice

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

Changing of any sensor parameter, including the sensor antenna are prohibited and void the certification of the equipment.

The device was tested with specific antenna and field strength. Only that type of antenna is allowed and you cannot exceed the maximum power it was tested and certified at.

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8.2 Operating risks



The implemented software is not defined for a free use in safety critical systems or in public.

Measures:

The user can generate an own complete system with this sensor, to fulfill safety relevant applications or systems.



Beware of falsified measurements when using a defective device after it has been dropped or subjected to any other prohibited stress or changes, which becomes an overstepping to the specified terms in this manual, e.g. after a lightning strike.

Measures:

Take control the correct measuring periodically, in particular following excessive usage of the device, as well as prior to and following important measuring jobs. May be it is necessary to replace the complete device. Also make sure that the cover or secondary surface are kept clean and pay attention to any possible mechanical damage.



Lacking or incomplete training can lead to incorrect operation or improper usage. This may result in accidents involving serious injury, or damage to property, assets or the environment.

Measures:

All operators are to observe the manufacturer's safety instructions and any instructions given by the owner.



No labeling or warning notices on the SRR 20X are to be concealed when installing the device. This can lead to dangerous situations.

Measures:

Make sure that all labels and signs are readily visible at all times. Additional information can or must be attached as required to ensure safe operation at all times.



When using the devices to measure the distance to, or positioning of mobile objects such as vehicles, cranes, platforms, wagons, machines, etc., falsified measurements may occur as the result of unforeseen events (interruption of the radar beams).

Measures:

Your system must be designed and operated so that in the event of a falsified measurement, device malfunction or a power failure, suitable safety fittings or equipment, e.g. a redundant design, safety switches, etc., ensure that no damage can occur.

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When deploying multiple sensors, ensure that there is no mutual interference between them and the SRR 20X.

Measures:

1. Your system must be so designed, installed and operated so as to avoid any direct reception of signals from opposite-facing sensors.
2. Adjacently installed (i.e. parallel receiving) SRR 20X units must be situated an adequate distance apart so that they cannot be affected by data being transmitted from other sensors.



When installing the devices, it must be ensured that the cover or the secondary surface of the SRR 20X is not directly facing ice-particles or water films. Falsified measurements may be the result.

Measures:

Check in all directions and the immediate vicinity of the deployment site of the device, and if necessary mount a heater or other protection at the device.



When welding activities close to the place of installation of the device SRR 20X the device could be damaged or destroyed.

Measures:

The lines of the device have to be separated during the welding activities.



Corresponding to WEEE guideline about Electric and Electronic Old-Devices the old devices have to be professional disposed respectively recycled by the manufacturer or importer after ending the durability. Make sure, that these old devices in no case have to be loaded to the generic domestic waste – signed by the symbol (icon) in figure 15.

Measures:

Free of charge waste disposal of old devices after ending of the durability by the manufacturer or importer.

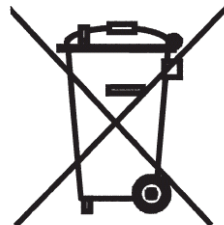


Figure 15: Icon for sign according to WEEE – prohibition for old devices into the domestic waste

The registration code of the A.D.C. GmbH: **WEEE-Reg.-No. DE 92447412**



Always make sure that the device or equipment is not operated, serviced or used by personnel who have not been properly trained to do so.

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8.3 Electromagnetic compatibility

We regard electromagnetic capability to be the facility of the SRR 20X to function correctly in an environment with electromagnetic radiation and electrostatic discharges without causing electromagnetic interference in other devices.



Other devices may be disturbed by electromagnetic radiation. Although the SRR 20X fulfils the stringent requirements of the applicable guidelines and standards, A.D.C. GmbH cannot fully exclude the likelihood of interference from any other devices.

8.4 Maintenance and care

The SRR 20X is practically maintenance-free. The cover or secondary surface should be cleaned depending upon the prevalent environmental factors. Only use a damp, lint-free cloth to clean the cover or secondary surfaces. Under no circumstances should corrosive or aggressively reacting cleaning agents be used.



When cleaning the cover of the SRR 20X, it is absolutely imperative to avoid any scratches or damages of the housing.

When working with safety and components of anti-collision applications, you should proceed in accordance with the valid BGV D6 crane regulations (previously the UVV-VBG 9 crane) by conducting a daily check to ensure that all components and devices of the A.D.C. GmbH and other components of the system integrator of the anti-collision protective system are installed, adjusted and functioning correctly before putting the plant into operation, e.g. during the course of checking the track end thresholds. The functions can be checked by taking test measurements at a defined distance. The radar has no safety or performance level.



A daily check should be performed to ensure that the SRR 20X and system are functioning correctly before putting the plant into operation.

8.5 Service

A.D.C. GmbH must be contacted prior to manipulating the SRR 20X for deployment in a special application or for any other reasons.

You can contact your supplier or the Technical Support team at A.D.C. GmbH regarding the necessity for technical support when putting the device into operation, in the event of operating problems, errors or defects, or regarding any other maintenance-related issues affecting the device or equipment.

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8.6 Approval

Safety certification in compliance with DIN EN 61508 (EN 954) Category 1, 2, 3 or 4 is always to be viewed by the owner or plant constructor in conjunction with all the relevant plant components, such as A.D.C. radar sensors, control units, drive and breaking systems, power supplies or tachometer generators, etc., and is to be fulfilled in its entirety. Any required redundancies are to be taken into account accordingly.

8.7 Additional information

Please contact your supplier if you are not sure how to correctly install or set up the SRR 20X during assembly with regard to aspects that are covered inadequately, or not all, in this operating manual.

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