

RF Exposure Assessment

For

AXIS D2210-VE Radar

FCC ID: PNB-AXISD2210-VE
IC: 3919A-D2210VE

Assessment Reference: MDE_AXISE_2301_MPE_01_rev01

Date: 2023-11-29

Test Laboratory:

7layers GmbH
Borsigstraße 11
40880 Ratingen
Germany

Note:

The following test results relate only to the devices specified in this document. This report shall not be reproduced in parts without the written approval of the test laboratory.

7layers GmbH
Borsigstraße 11
40880 Ratingen, Germany
T +49 (0) 2102 749 0
F +49 (0) 2102 749 350
www.7layers.com

Registergericht registered in:
Geschäftsführer /
Managing Directors:
Sebastian Doose
Stefan Kischka
Bernhard Retka

Düsseldorf, HRB 75554
USt-IdNr VAT No.:
DE203159652
TAX No. 147/5869/0385
A Bureau Veritas Group Company

Table of Contents

0	Summary	3
0.1	Technical Report Summary	3
1	Administrative Data	4
1.1	Testing Laboratory	4
1.2	Project Data	4
1.3	Applicant Data	4
1.4	Manufacturer Data	4
2	Test object Data	5
2.1	General EUT Description	5
3	Evaluation Results	6
3.1	RF Exposure Evaluation	6

0 Summary

0.1 Technical Report Summary

Type of Report

RF Exposure and Maximum ERP/EIRP Assessment for a standalone 60GHz radar sensor.

Applicable FCC and ISED Rules

For RF Exposure:

KDB 447498 D01 General RF Exposure Guidance v06

FCC 47 CFR FCC Part 2.1091

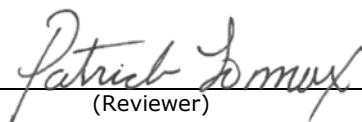
FCC 47 CFR §1.1307

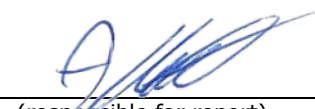
FCC 47 CFR §1.1309

FCC 47 CFR §1.1310

RSS-102 Issue 5 – March 2015

Report version control			
Rev Version	Release date	Changes	Version validity
initial	2023-09-14	-	Not-Valid
rev01	2023-11-29	Frequency range revised at page 6	Valid


(Reviewer)
Patrick Lomax


(responsible for report)
Andreas Tuebel

1 Administrative Data

1.1 Testing Laboratory

Company Name: 7layers GmbH

Address Borsigstr. 11
40880 Ratingen
Germany

1.2 Project Data

Responsible for assessment and report: Andreas Tübel

Date of Report: 2023-11-29

1.3 Applicant Data

Company Name: Axis Communications AB

Address: Gränden 1
SE-223 69 Lund
Sweden

Contact Person: Mr. Martin Alumets
Email: Martin.Alumets@axis.com

1.4 Manufacturer Data

Company Name: please see Applicant Data

Address:

Contact Person:

2 Test object Data

2.1 General EUT Description

Equipment under Test	AXIS D2110-VE Radar
Kind of Device:	Radar sensor
FCC ID:	PNB-AXISD2210-VE
IC:	3919A-D2210VE

General product description:

The EUT is a network-radar intended for a continuous surveillance operation.

Output power values are based on the manufacturer documentation and data sheets provided.

Duty cycle factor used for 61-61.5 GHz is 100%.

Prediction distance used for this calculation is 20 cm.

3 Evaluation Results

3.1 RF Exposure Evaluation

Standards
KDB 447498 D01 General RF Exposure Guidance v06
RSS-102 Issue 5 – March 2015

3.1.1 Test limits

As specified in Table 1B of 47 CFR 1.1310 – Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure.

Frequency range (MHz)	Power density (mW/cm ²)
300 – 1,500	f/1500
1,500 – 100,000	1.0

Limits specified per RSS-102, Issue 5.

Frequency range (MHz)	Power density (W/m ²)	Power density (mW/cm ²)
15000 – 150000	10	mW/cm ² = W/m ² * 0.1

Equation:
$$S = \frac{PG}{4\pi R^2} = \frac{EIRP}{4\pi R^2}$$

Where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

3.1.2 Test Protocol

FCC and ISSED MPE values using the antenna gain values.

Prediction Distance d in cm =>	20	TX frequ. band	Prediction frequ.	Average (temporal) power (log.)	Average (temporal) power (lin.)	Antenna Gain (log.)	Antenna Gain (lin.)	Power density at distance d	Power density limit at frequency f _i	Ratio to exposure reference level	Sum of S _i / ERL _i	Compliance, if Sum of S _i / ERL _i < 1
		f _{Band}	f _i	P _{dBm}	P _{mW}	g _{dB}	G _i	S _i	ERL _i	S _i / ERL _i	-	-
Radio technology	Band	MHz	MHz	dBm	mW	dBi	-	mW/cm ²	mW/cm ²	-	-	-
61 GHz	FMCW Radar	61000-61500	61000	10	10.00	6	3.98	0.008	1.000	0.008	0.008	Pass

END OF REPORT