

Prüfbericht-Nr.: Test report no.:	60500216-001	Auftrags-Nr.: Order no.:	23870622 030	Seite 1 von 22 Page 1 of 22	
Kunden-Referenz-Nr.: Client reference no.:	2384582	Auftragsdatum: Order date:	2021.10.20		
Auftraggeber: Client:	Raytelligence AB				
Prüfgegenstand: Test item:	Radar Sensor				
Bezeichnung / Typ-Nr.: Identification / Type no.:	Eazense / FCC ID: 2A3XO-A01				
Auftrags-Inhalt: Order content:	Accredited testing				
Prüfgrundlage: Test specification:	FCC 47 CFR Part 15B with parts 15.107 & 15.109 ANSI C63.4: 2014				
Wareneingangsdatum: Date of sample receipt:	2021.10.20				
Prüfmuster-Nr.: Test sample no.:	See section 2.3				
Prüfzeitraum: Testing period:	2021.11.16 – 2021.12.09				
Ort der Prüfung: Place of testing:	Lund, Sweden				
Prüflaboratorium: Testing laboratory:	TÜV Rheinland Sweden				
Prüfergebnis*: Test result*:	Pass				
überprüft von: reviewed by:			genehmigt von: authorized by:		
Datum: 2022.01.28 Date:	Signed by: Niall Forrester		Datum: 2022.01.28 Date:	Signed by: Hakan Ahlberg	
Stellung / Position:	Senior Technical Expert		Stellung / Position:	Lab Manager	
Sonstiges / Other:					
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:			Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable	5 = poor N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts.</i>					

Revision History

REVISION	DATE	REMARKS	AUTHOR
001	2022-01-28	First release	Niall Forrester

Note: Latest revision report will replace all previous reports

This report based on FCC Part 15B no JBP Template version 1.2

Summary of Test Results

FCC 47 CFR Rule Part	Test Description	Applicability	Report Section	RESULT	REMARKS
15.107	AC Power Line Conducted Emissions (Unintentional Radiators)	YES	4.1	PASS	
15.109	Radiated Emissions (Unintentional Radiators)	YES	4.2	PASS	

Possible test case verdicts:

- | | |
|--|-----------------------|
| - Test case does not apply to the test object: | N/A |
| - Test object complies with the requirement: | PASS or COMPLIANT |
| - Test object does not meet the requirement: | FAIL or NOT COMPLIANT |
| - Test case not performed on the test object: | N.P. |

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1. GENERAL INFORMATION

1.1 Test Site

Test Facility:	TÜV Rheinland Sweden AB
Address:	Mobilvägen 10
	223 62 Lund
	Sweden
Swedac Registration Number:	10325
FCC Test Firm Registration Number:	517458
ISED Test Site Registration Number:	24753

1.2 Client Information

Company Name:	Raytelligence AB
Address:	Olofdalsvägen 40
	30241 Halmstad
	Sweden
Contact Person:	Emil Nilsson
Contact e-Mail / Telephone	emil.nilsson@raytelligence.com +46 730797744

2. PRODUCT INFORMATION

2.1 General Description

Model name:	Eazense
Manufacturer:	Raytelligence AB
Model number / Marketing name:	Eazense
FCC ID:	2A3XO-A01
Description:	“Radar sensor eazense is a cost-effective, non-intrusive sensor providing 24-hour monitoring of activity”
Ancillary Equipment:	See section 2.7

2.2 Device Characteristics

Device Class for 47 CFR Part 15 B	B
Type of Power Supply	Power over Ethernet
Nominal Supply Voltage	48V DC PoE (115V AC input to PoE Switch adapter)
Supply Voltage Range	37V – 57V DC PoE (100V – 240V AC input to PoE Switch adapter)
Operating Temperature Range	10°C - 40°C
Operating Air Humidity Range	20% - 80% RH
Highest Internal Frequency Source	63.00 GHz

2.3 Test Samples

EUT #	EUT ID	Description	Used For:
1	A003152562-006	Standard Sample	All tests

2.4 Wireless Technologies and Bands Supported by the EUT

Technology	Band	Frequency Range (Tx)	Evaluation Performed*
Radar	57–71 GHz	60.75 GHz – 63.00 GHz	YES

*This statement refers only to this report. Other wireless technologies may be covered by other reports.

2.5 Antenna Information

Technology	Band	Number of Antennas	Antenna Type(s)	Gain
Radar	57–71 GHz	1	Patch Antenna Array	7 dBi

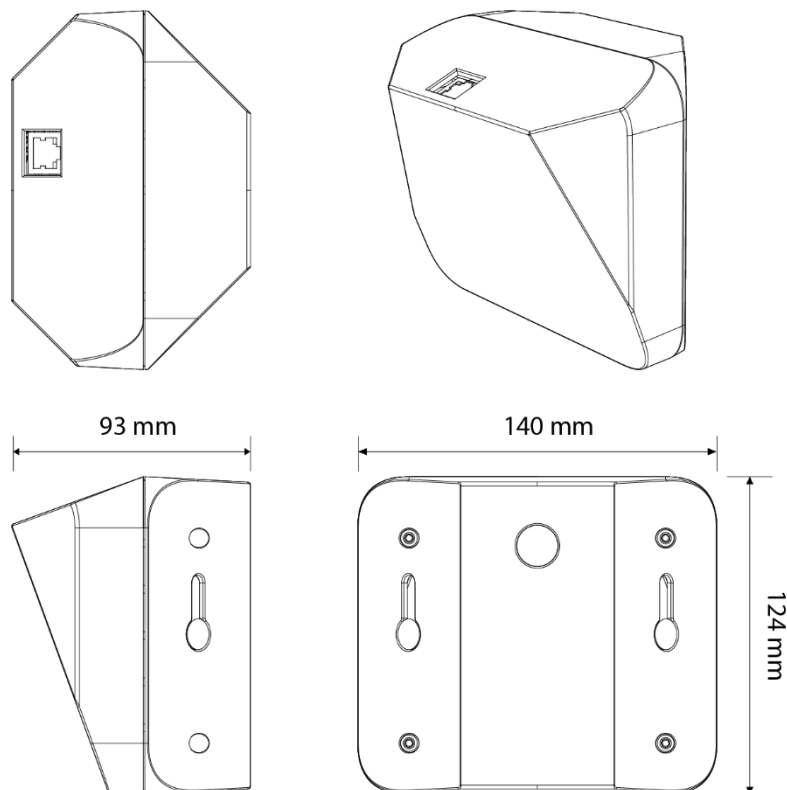
2.6 Wireless Technology Details

Technology	Band	Modulation Type(s)	No. of Channels	Channel Spacing	Adaptivity
Radar	57–71 GHz	FMCW	N/A	N/A	N/A

2.7 Ancillary Equipment

A003152562-007	PoE Switch (D-Link DGS-100P) with AC/DC Adapter
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2.8 EUT Diagrams



3. TEST METHODS

3.1 Test Standards

Testing was performed according to the following standards / references

Standard	Version	Description
FCC 47 CFR 15.107	-	Conducted limits
FCC 47 CFR 15.109	-	Radiated emission limits

3.2 Additional references

The following standards / references were also considered for the testing

Standard	Version	Description
ANSI C63.4	2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.3 Limits

FCC 47 CFR Rule Part	Test Description	Limit Reference (FCC 47 CFR Reference)
15.107	AC Power Line Conducted Emissions (Unintentional Radiators)	15.107 (a) for Class B Devices
15.109	Radiated Emissions (Unintentional Radiators)	15.109 (a) for Class B Devices *See Note 1

Interpretation of the measurement results has been performed in accordance with ANSI C63.4 section 10.2.8.2

Compliance with the requirements has been based on the results of the measurements compared to the specified limits, not taking into account measurement instrumentation uncertainty.

Measurement Uncertainty figures are stated in section 6

Note 1

Radiated Emissions limits in the tables from 47 CFR sections 15.109 are presented in $\mu\text{V/m}$. Measurements on the test system are made in $\text{dB}\mu\text{V/m}$. To convert between these, the following adjustment is used:

$$\text{New Limit} = 20 \log \left(\frac{\text{Original Limit}}{10^6} \right) + 120$$

Example: from 15.209(a) the limit for 30MHz – 88MHz is $100\mu\text{V/m}$ at 3m. This gives:

$$\text{New Limit} = 20 \log \left(\frac{100}{10^6} \right) + 120 = 40\text{dB}\mu\text{V/m at 3m}$$

Additionally, in some cases testing has been performed at distances other than those specified in the tables. When this has occurred, the limits have been adjusted in accordance with the requirements in 47 CFR 15.31, using an extrapolation factor of 40dB/decade at frequencies below 30MHz and 20dB/decade at or above 30MHz

Example: from 15.209(a) the limit for 1.705MHz – 30MHz is $30\mu\text{V/m}$ (=29.54 $\text{dB}\mu\text{V/m}$) at 30m

$$\text{Limit@3m} = \text{Limit@30m} + 40 \log \left(\frac{30}{3} \right) = 29.54 + 40.00 = 69.54 \text{ dB}\mu\text{V/m at 3m}$$

Example: from 15.209(a) the limit for 1GHz – 18GHz is $500\mu\text{V/m}$ (=53.98 $\text{dB}\mu\text{V/m}$) at 3m

$$\text{Limit@1m} = \text{Limit@3m} + 20 \log \left(\frac{3}{1} \right) = 53.98 + 9.54 = 63.52 \text{ dB}\mu\text{V/m at 1m}$$

3.4 Description of Test Methods and Equipment Setup

3.4.1 General Description

Testing was performed in accordance with the various requirements of ANSI C63.4 and ANSI C63.10. Any deviations from the test methods are described in section 3.7

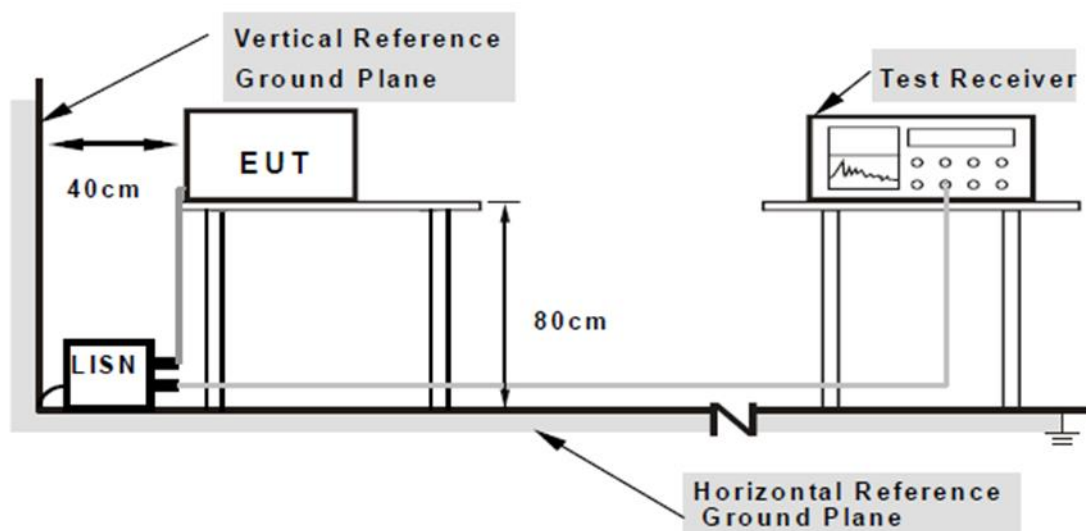
Where different arrangements of equipment were used for different types of measurements, these are tabulated in section 3.4.2 and details of each arrangement are included in subsequent sections

3.4.2 Test Equipment Setup Used by Test Type

FCC 47 CFR Rule Part	Test Description	Test Equipment Used
15.107	AC Power Line Conducted Emissions (Unintentional Radiators)	Conducted Emissions
15.109	Radiated Emissions (Unintentional Radiators)	SAC5

3.4.3 Test Equipment Setup – Conducted Emissions

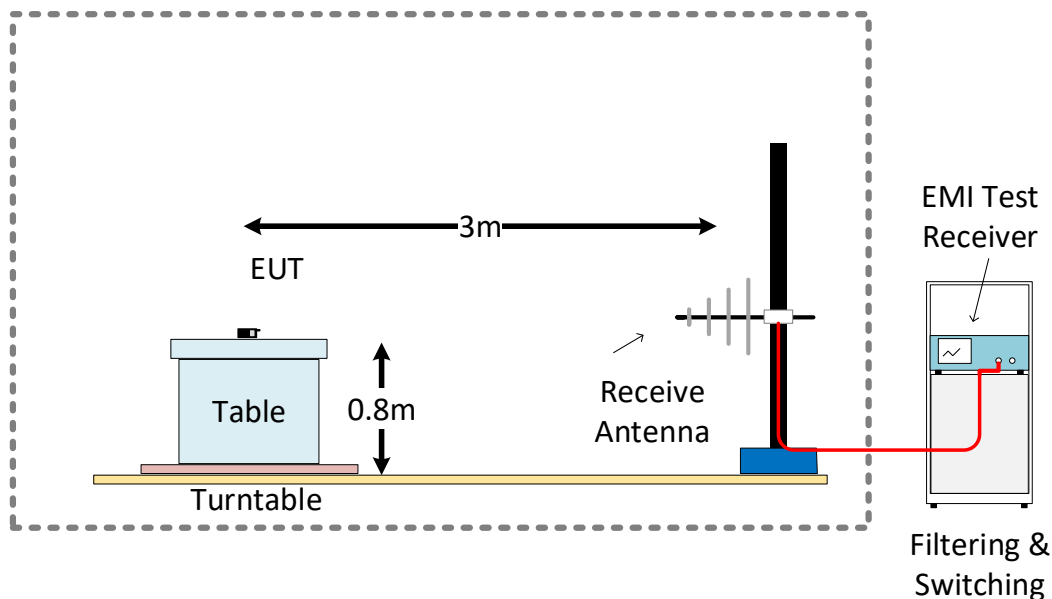
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The LISNs provide 50Ω/ 50μH of coupling impedance for the measuring instrument.
- The lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10 dB under the prescribed limits could not be reported.



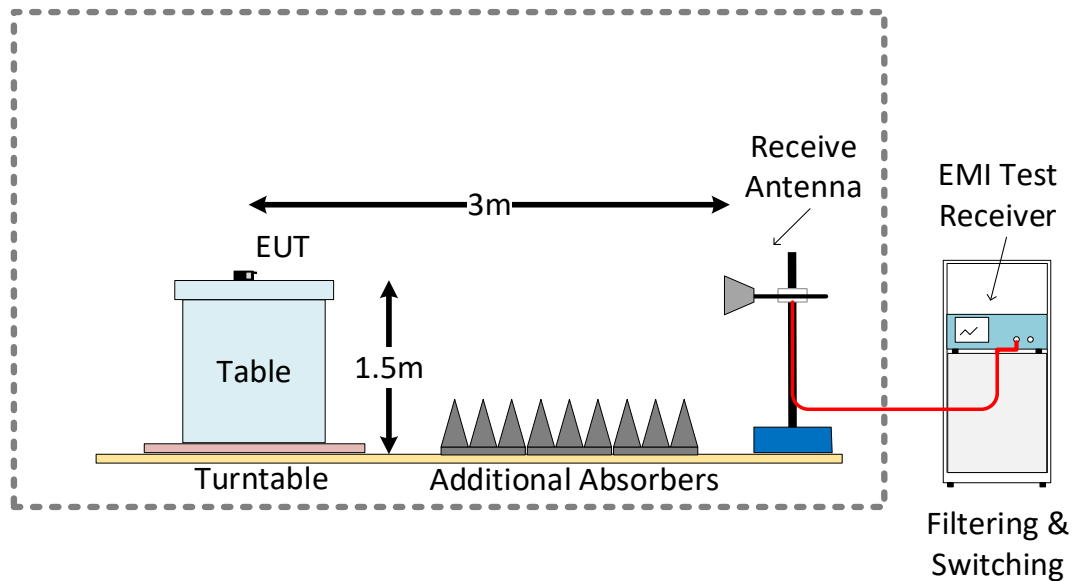
3.4.4 Test Equipment Setup – SAC 5 (Radiated Emissions)

- For frequency range 30MHz-1GHz Log-Periodic Antenna was used. Antenna elevated from 100 cm from floor to 400 cm from floor, and was placed at 3 m from center of turntable in tilted position. The equipment under test (EUT) was placed at the middle of the turntable at 150 cm height from floor. The antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.
- For frequency range 1GHz-18GHz horn Antenna was used. Antenna elevated from 100 cm from floor to 200 cm from floor, and was placed at 3 m from center of turntable. The equipment under test (EUT) was placed at the middle of the turntable at 150 cm height from floor. The antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.
- For frequency range 18GHz-40GHz double horn Antenna was used. Antenna's height was adjusted to 150 cm from floor, and 1 m distance to center of turntable. The equipment under test (EUT) was placed at the middle of the turntable on at 150 cm height from floor.
- For all frequency ranges the turntable was rotated 360° for obtaining the maximum emission.

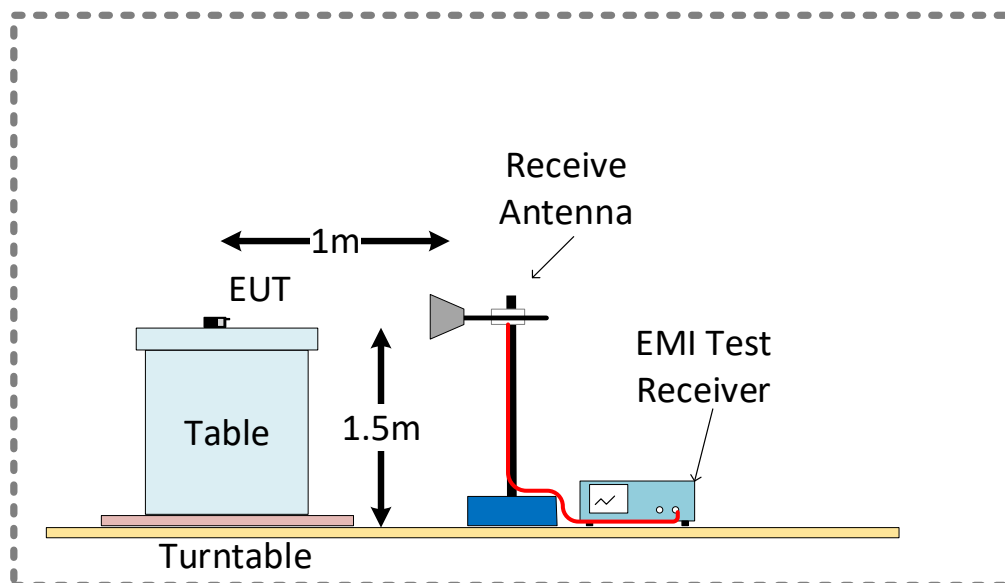
SAC 5 Test Setup Configuration 30MHz – 1GHz



SAC 5 Test Setup Configuration 1GHz – 18GHz

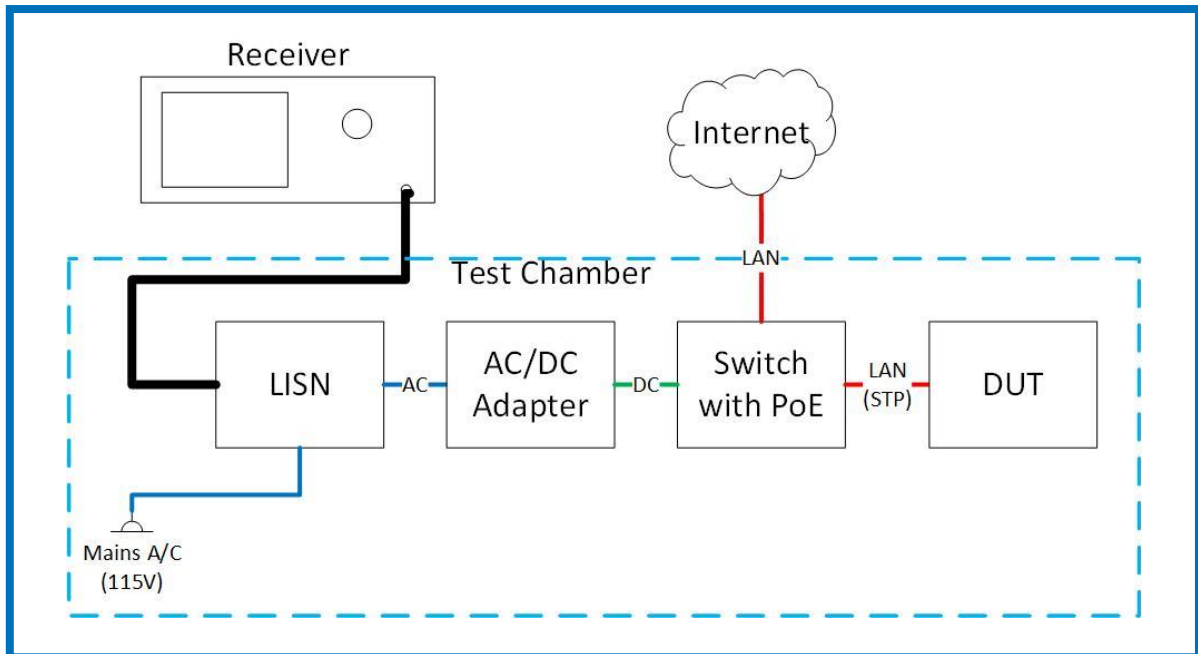


SAC 5 Test Setup Configuration 18GHz – 40GHz

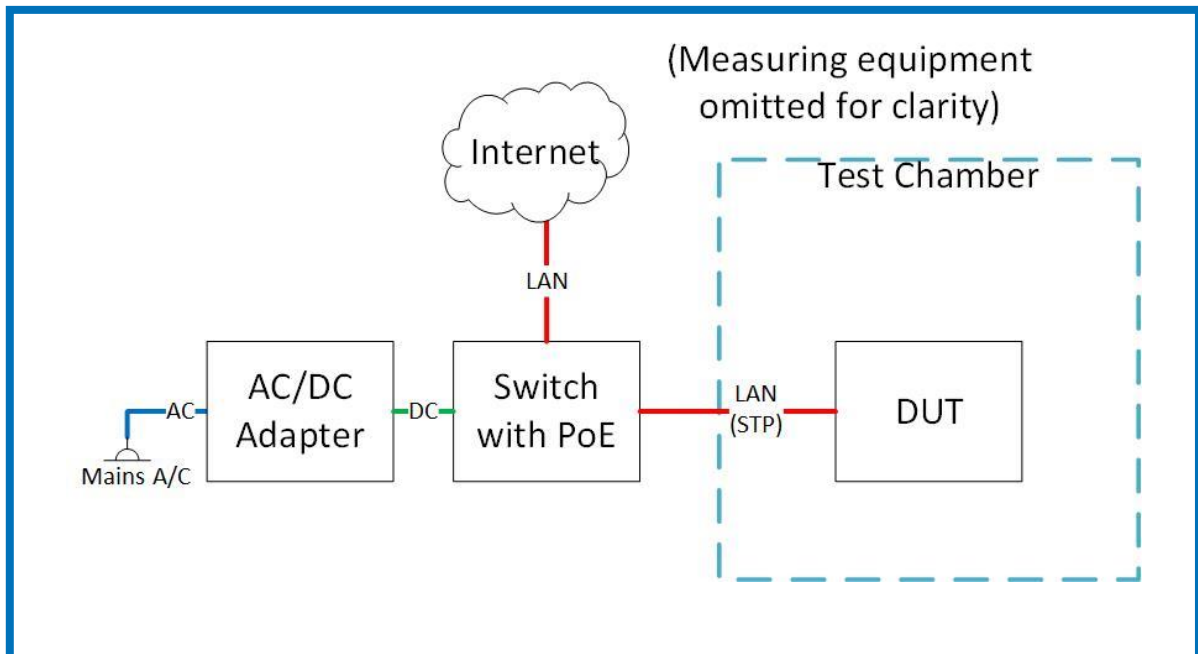


3.5 EUT Configuration During Test

Conducted Emissions Testing: Block Diagram (Power via PoE)



Radiated Emissions Testing: Block Diagram (Power via PoE)



3.6 EUT Operation Modes

Operation mode	Description
Default	The device is powered and the radar is operating as normal. Power via PoE over an STP LAN cable with a ferrite attached at the DUT end.

3.7 Deviations from the Test Standard

Note that the radar output in the device is always active when the device is powered. No 'idle' or 'receive' mode is implemented. As the frequency of the transmitter in this case is higher than the maximum frequency to be tested, testing could be performed with the transmitter active.

Hence measurements used for these unintentional transmitter tests are identical to those used for the intentional transmitter tests (below 40GHz)

3.8 Environmental Conditions

3.8.1 Environmental Conditions – Conducted Emissions System

Date	Time	Temperature (°C)	Relative Humidity (%)
2021-12-09	13:30	22.8	32

3.8.2 Environmental Conditions – SAC5 (Radiated Emissions)

Date	Time	Temperature (°C)	Relative Humidity (%)
2021.11.16	08:05	18.5	44
2021.11.24	08:28	19.2	43
2021.11.27	09:22	18.6	44

4. TEST RESULTS

4.1 Test Results – AC Power Line Conducted Emissions (Unintentional Trans.)

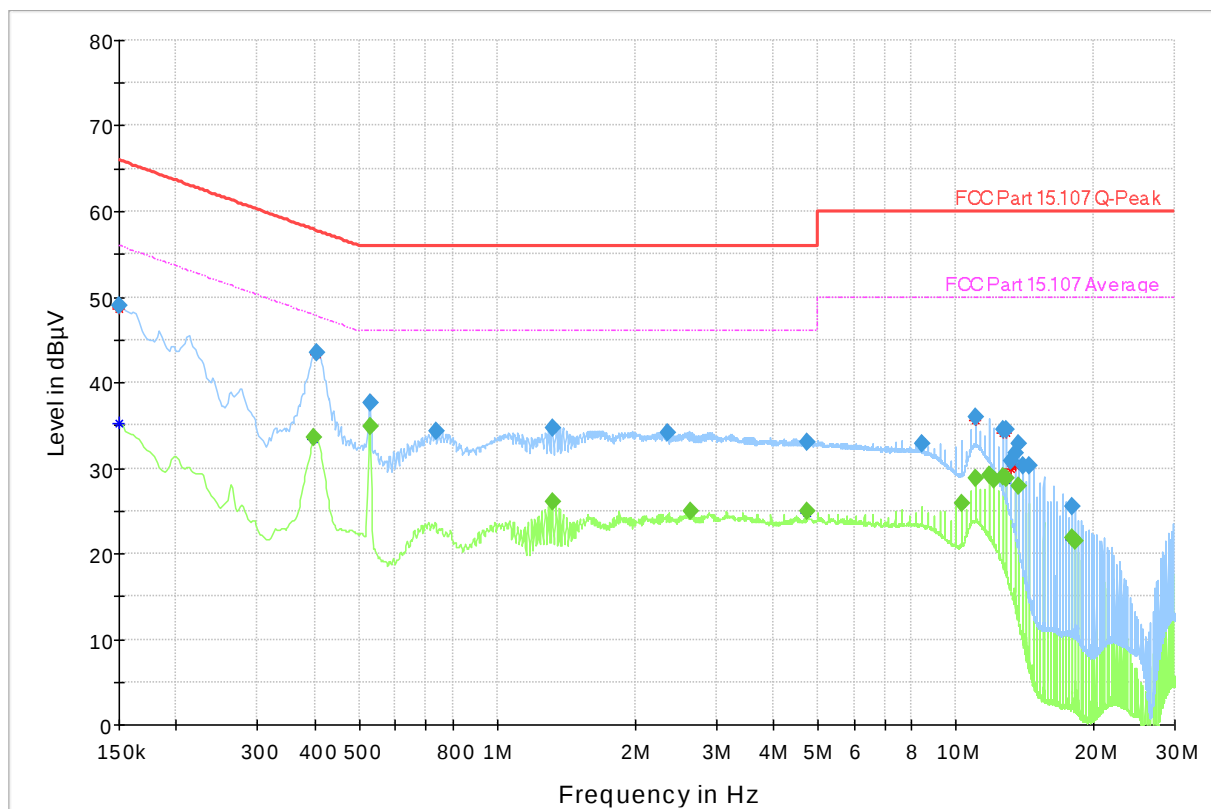
4.1.1 AC Power Line Conducted Emissions (Unintentional) – Test Summary

Test Specification	FCC 47 CFR 15.107 (Part 15 Subpart B)	
Test Engineer & Date	Niall Forrester	2021.12.09
EUT and Ancillary Equipment IDs	A003152562-006	A003152562-007
EUT Operation Mode(s)	Default	
EUT Wireless Configuration(s)	Chirp Mode	
EUT Hardware Configuration(s)	-	
Overall Result	PASS	
Test Parameter	Frequency Range	Result*
AC Power Line Emissions 115V A/C 60Hz – “N” Line	150 kHz – 30 MHz	PASS
AC Power Line Emissions 115V A/C 60Hz – “L1” Line	150 kHz – 30 MHz	PASS

* For detailed measurements, see tables and graphs in sections below

4.1.2 AC Power Line Conducted Emissions (Unintentional) – Test Details

Test mode condition	Conducted Emissions	
Sweep frequency	150 kHz – 30 MHz	
Standard	FCC 47 Part 15.107	
EUT	A003152562-006	
Ancillary Equipment	A003152562-007	
Test Engineer	Niall Forrester	Date: 2021.12.09



— Preview Result 2-CAV — Preview Result 1-QPK * Critical_Freqs CAV
— FCC Part 15.107 Q-Peak — FCC Part 15.107 Average
◆ Final_Result QPK ◆ Final_Result CAV

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter
0.150000	48.91	---	66.00	17.09	1000.0	9.000	N	ON
0.399750	---	33.58	47.86	14.28	1000.0	9.000	L1	ON
0.404250	43.49	---	57.77	14.28	1000.0	9.000	N	ON
0.528000	---	34.82	46.00	11.18	1000.0	9.000	L1	ON
0.528000	37.67	---	56.00	18.33	1000.0	9.000	N	ON
0.735000	34.25	---	56.00	21.75	1000.0	9.000	N	ON
1.317750	34.72	---	56.00	21.28	1000.0	9.000	N	ON
1.320000	---	26.06	46.00	19.94	1000.0	9.000	N	ON
2.352750	34.18	---	56.00	21.82	1000.0	9.000	N	ON
2.636250	---	25.03	46.00	20.97	1000.0	9.000	N	ON
4.744500	---	24.86	46.00	21.14	1000.0	9.000	L1	ON
4.744500	32.98	---	56.00	23.02	1000.0	9.000	N	ON
8.434500	32.92	---	60.00	27.08	1000.0	9.000	N	ON
10.277250	---	25.79	50.00	24.21	1000.0	9.000	L1	ON
11.069250	35.89	---	60.00	24.11	1000.0	9.000	N	ON
11.069250	---	28.76	50.00	21.24	1000.0	9.000	N	ON
11.859000	---	29.14	50.00	20.86	1000.0	9.000	L1	ON
12.124500	---	28.63	50.00	21.37	1000.0	9.000	L1	ON
12.651000	34.47	---	60.00	25.53	1000.0	9.000	N	ON
12.651000	---	28.99	50.00	21.01	1000.0	9.000	L1	ON
12.914250	34.44	---	60.00	25.56	1000.0	9.000	N	ON
12.914250	---	28.82	50.00	21.18	1000.0	9.000	L1	ON
13.177500	30.81	---	60.00	29.19	1000.0	9.000	N	ON
13.440750	31.70	---	60.00	28.30	1000.0	9.000	N	ON
13.704000	---	27.89	50.00	22.11	1000.0	9.000	L1	ON
13.704000	32.86	---	60.00	27.14	1000.0	9.000	N	ON
13.967250	30.25	---	60.00	29.75	1000.0	9.000	N	ON
14.496000	30.29	---	60.00	29.71	1000.0	9.000	N	ON
17.920500	25.44	---	60.00	34.56	1000.0	9.000	L1	ON
17.922750	---	21.77	50.00	28.23	1000.0	9.000	N	ON
18.186000	---	21.53	50.00	28.47	1000.0	9.000	L1	ON

4.2 Test Results – Radiated Emissions (Unintentional Transmitter)

4.2.1 Radiated Emissions (Unintentional) – Test Summary

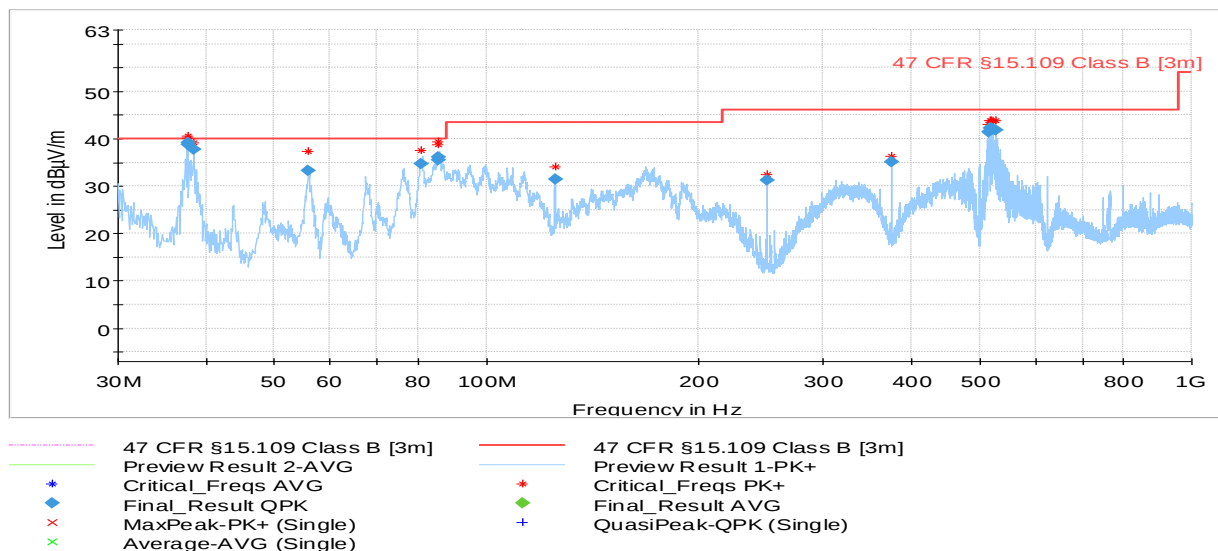
Test Specification	FCC 47 CFR 15.109 (Part 15 Subpart B)	
Test Engineer & Date	Niall Forrester	2021.11.16 – 2021.11.27
EUT and Ancillary Equipment IDs	A003152562-006	A003152562-007
EUT Operation Mode(s)	Default	
EUT Wireless Configuration(s)	Chirp Mode	
EUT Hardware Configuration(s)	-	
Overall Result	PASS	
Test Parameter	Frequency Range	Result*
Radiated Emissions - Idle Mode	30 MHz – 1 GHz	PASS
Radiated Emissions - Idle Mode	1 GHz – 18 GHz	PASS
Radiated Emissions - Idle Mode	18 GHz – 40 GHz	PASS

* For detailed measurements, see tables and graphs in sections below

4.2.2 Radiated Emissions (Unintentional) – Test Details

30MHz – 1GHz

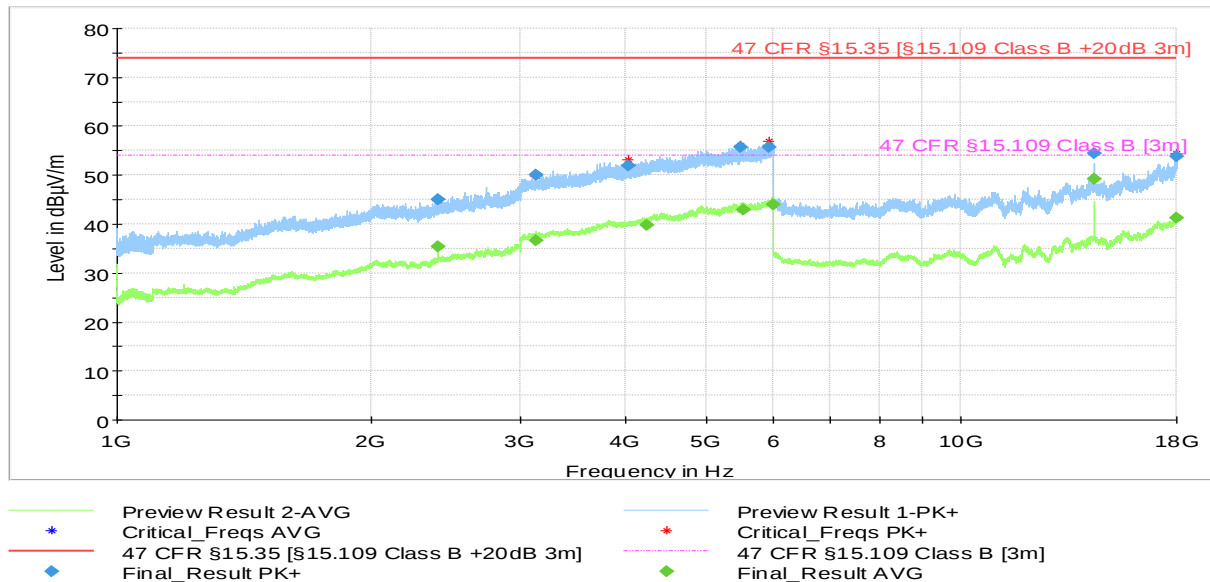
Test mode condition	Default mode	
Antenna orientation	Horizontal and Vertical	
Sweep frequency	30 MHz – 1 GHz	
Standard	47 CFR FCC Part 15 subpart B	
EUT	A003152562-006	
Ancillary Equipment	A003152562-007	
Test Engineer	Niall Forrester	Date: 2021.11.16
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
37.649640	38.74	40.00	1.26	1000.0	120.000	125.0	V	200.0
37.667920	39.17	40.00	0.83	1000.0	120.000	125.0	V	200.0
38.453880	37.71	40.00	2.29	1000.0	120.000	125.0	V	200.0
55.866320	33.32	40.00	6.68	1000.0	120.000	375.0	V	9.0
80.885600	34.72	40.00	5.28	1000.0	120.000	275.0	H	72.0
85.327800	35.58	40.00	4.42	1000.0	120.000	275.0	H	267.0
85.570600	36.10	40.00	3.90	1000.0	120.000	258.0	H	72.0
124.986640	31.39	43.52	12.13	1000.0	120.000	125.0	V	334.0
249.978800	31.16	46.02	14.86	1000.0	120.000	125.0	H	41.0
374.955520	35.06	46.02	10.96	1000.0	120.000	229.0	V	311.0
516.112840	41.49	46.02	4.53	1000.0	120.000	100.0	V	296.0
518.207480	42.33	46.02	3.69	1000.0	120.000	100.0	V	296.0
520.187000	42.24	46.02	3.78	1000.0	120.000	100.0	V	296.0
523.043320	42.07	46.02	3.95	1000.0	120.000	100.0	V	296.0
526.476480	41.92	46.02	4.10	1000.0	120.000	100.0	V	296.0

1GHz – 18GHz

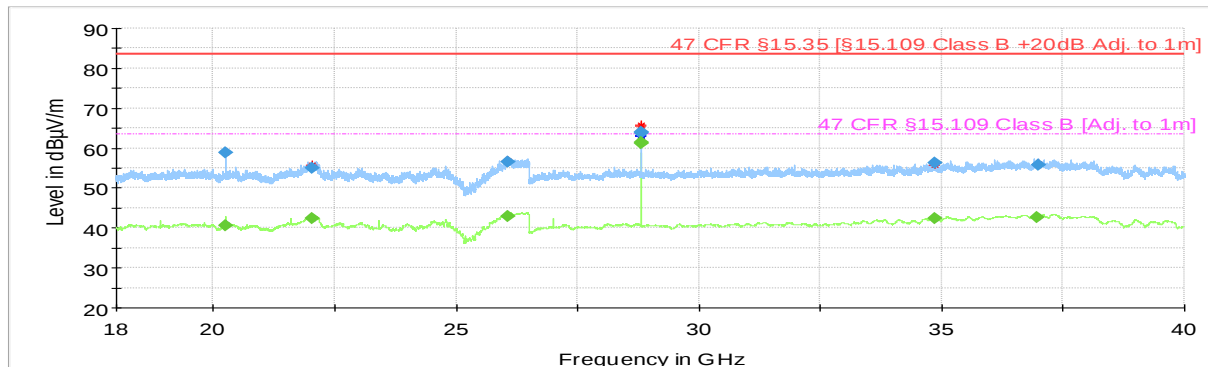
Test mode condition	Default mode	
Antenna orientation	Horizontal and Vertical	
Sweep frequency	1 GHz – 18 GHz	
Standard	47 CFR FCC Part 15 subpart B	
EUT	A003152562-006	
Ancillary Equipment	A003152562-007	
Test Engineer	Niall Forrester	Date: 2021.11.27
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2399.047000	45.07	---	73.98	28.91	1000.0	1000.000	100.0	H	232.0
2399.874000	---	35.39	53.98	18.59	1000.0	1000.000	100.0	V	-8.0
3132.121000	50.10	---	73.98	23.88	1000.0	1000.000	365.0	H	188.0
3140.387000	---	36.74	53.98	17.24	1000.0	1000.000	100.0	H	142.0
4036.352000	51.93	---	73.98	22.05	1000.0	1000.000	239.0	H	52.0
4237.534000	---	39.79	53.98	14.18	1000.0	1000.000	335.0	H	188.0
5475.189000	55.79	---	73.98	18.19	1000.0	1000.000	100.0	V	38.0
5527.358000	---	42.90	53.98	11.08	1000.0	1000.000	285.0	V	128.0
5928.989000	55.74	---	73.98	18.24	1000.0	1000.000	165.0	H	52.0
5987.662000	---	43.98	53.98	10.00	1000.0	1000.000	185.0	H	312.0
14399.212000	54.48	---	73.98	19.50	1000.0	1000.000	410.0	V	42.0
14399.272000	---	49.22	53.98	4.76	1000.0	1000.000	385.0	V	52.0
17965.980000	53.87	---	73.98	20.11	1000.0	1000.000	189.0	V	-4.0
17984.868000	---	41.20	53.98	12.78	1000.0	1000.000	100.0	V	-4.0

18GHz – 40GHz

Test mode condition	Default mode	
Antenna orientation	Horizontal and Vertical	
Sweep frequency	18 GHz – 40 GHz	
Standard	47 CFR FCC Part 15 subpart B	
EUT	A003152562-006	
Ancillary Equipment	A003152562-007	
Test Engineer	Niall Forrester	Date: 2021.11.24
Chamber details	Chamber: SAC 5	



- Preview Result 2-AVG
- Preview Result 1-PK+
- * Critical_Freqs AVG
- * Critical_Freqs PK+
- 47 CFR §15.35 [§15.109 Class B +20dB Adj. to 1m]
- 47 CFR §15.109 Class B [Adj. to 1m]
- ◆ Final_Result PK+
- ◆ Final_Result AVG
- × MaxPeak-PK+ (Single)
- + Average-AVG (Single)

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
20248.837000	58.97	---	83.52	24.55	1000.0	1000.000	150.0	H	116.0
20248.967000	---	40.66	63.52	22.86	1000.0	1000.000	150.0	H	116.0
22038.142000	55.12	---	83.52	28.40	1000.0	1000.000	150.0	H	188.0
22042.532000	---	42.33	63.52	21.19	1000.0	1000.000	150.0	H	56.0
26069.723000	---	43.01	63.52	20.51	1000.0	1000.000	150.0	V	-8.0
26072.097000	56.64	---	83.52	26.88	1000.0	1000.000	150.0	H	188.0
28798.515000	63.85	---	83.52	19.67	1000.0	1000.000	150.0	V	326.0
28798.549000	---	61.30	63.52	2.22	1000.0	1000.000	150.0	V	326.0
28798.562000	---	61.36	63.52	2.16	1000.0	1000.000	150.0	V	326.0
28798.569000	63.93	---	83.52	19.59	1000.0	1000.000	150.0	V	326.0
34846.542000	---	42.49	63.52	21.03	1000.0	1000.000	150.0	V	22.0
34866.993000	56.17	---	83.52	27.35	1000.0	1000.000	150.0	V	172.0
36948.280000	---	42.53	63.52	20.99	1000.0	1000.000	150.0	V	292.0
36987.621000	55.73	---	83.52	27.79	1000.0	1000.000	150.0	H	186.0

5. TEST EQUIPMENT STATUS

5.1 List of Hardware with Calibration Dates

5.1.1 Hardware List – Conducted Emissions System

Type	Manufacturer	Model	Serial Number / ID	Calibration Date	Calibration Due
Two Line V-Network	Rohde & Schwarz	ENV 216	101090 2704076	2021.08.03	2022.08.03
Test Receiver 9KHz to 3.5 GHz	Rohde & Schwarz	ESR3	101674 2704016	2021.07.09	2022.07.09
RF Probe	Fischer Custom Communication	F-52	22 2902256	2021.07.21	2022.07.22
Temperature & humidity Logger	Lufft	OPUS 20 THI	113.0118.0802.033 2771025	2020.07.31	2022.07.31

5.1.2 Hardware List – SAC5 System

Type	Manufacturer	Model	Serial Number / ID	Calibration Date	Calibration Due
EMI Test Receiver	Rohde & Schwarz	ESW44	101760 2881044	2021.07.15	2022.07.15
Ultra Broadband Antenna	Rohde & Schwarz	HL562E	100988 2823181	2021.07.26	2023.07.26
Double Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF907	102678 2823164	2021.07.26	2023.07.26
Horn Antenna	ETS Lindgren	UG-596A/U	20898 2814839	2020.07.27	2022.07.27
Horn Antenna	ETS Lindgren	UG-600A/U	20623 2814834	2020.07.27	2022.07.27
Control Device	Maturo	NCD	NCD/393/2372.01	N/A	N/A
Open Switch & Control Unit	Rohde & Schwarz	OSP150	100081 2884198	2021.08.04	2022.08.04
Open Switch & Control Unit	Rohde & Schwarz	OSP120	100084 2761253	2021.08.04	2022.08.04
Shielded Filter Unit	Rohde & Schwarz	OSP-F Extension 1	101333 2761265	2021.08.04	2022.08.04
Shielded Filter Unit	Rohde & Schwarz	OSP-F Extension 2	101335 2761266	2021.08.04	2022.08.04
Shielded Filter Unit	Rohde & Schwarz	OSP-F Base Unit	101330 2761262	2021.08.04	2022.08.04
Humidity Temperature Probe	Lufft	OPUS 20 THI	126.0118.0802.033 2771042	2020.07.31	2022.07.31

5.2 Software / Firmware Versions

Equipment	Software / Firmware Name	Version
Conducted Emissions System	EMC 32	V10.60.20
SAC 5	EMC 32	V10.60.20

6. MEASUREMENT UNCERTAINTY

6.1 Measurement Uncertainty for Conducted Emissions

Parameter	Uncertainty (Coverage Factor k=2)
Conducted emissions with LISN 150KHz to 30 MHz	2.98 dB

6.2 Measurement Uncertainty for SAC 5 (Radiated Emissions & Band Edge)

Parameter	Uncertainty (Coverage Factor k=2)
Field Strength 10 Hz -9 kHz	3.38 dB
Field Strength 9 kHz -30 MHz	3.38 dB
Field Strength 30 MHz -1000 MHz	3.38 dB
Field Strength 1 GHz -18 GHz	4.88 dB
Field Strength 18 GHz - 40 GHz	5.14 dB

7. PHOTOGRAPHS

For photographs see Appendix 1.