

Prüfbericht-Nr.: <i>Test Report No.:</i>	CN21V89X 001	Auftrags-Nr.: <i>Order No.:</i>	244347276	Seite 1 von 25 <i>Page 1 of 25</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	1288983	Auftragsdatum: <i>Order date.:</i>	2021-07-19	
Auftraggeber: <i>Client:</i>	IKEA of Sweden AB Box 702, SE-343 81, Älmhult Sweden			
Prüfgegenstand: <i>Test item:</i>	VAPPEBY 20 gen 3			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	E2036 FCC ID: FHO-E2036			
Auftrags-Inhalt: <i>Order content:</i>	TÜV Rheinland EMC service			
Prüfgrundlage: <i>Test specification:</i>	FCC 47 CFR Part 15, Subpart B:2020 Class B ICES-003:2020			
Wareneingangsdatum: <i>Date of receipt:</i>	2021-07-20			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A003094054-006			
Prüfzeitraum: <i>Testing period:</i>	Refer to test report			
Ort der Prüfung: <i>Place of testing:</i>	Refer to clause 1.1			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: / tested by: Xuelan Zhang		genehmigt von: / authorized by: Jiayi Zhou		
Datum: / Date: 2021-12-03 <i>Xuelan Zhang</i>		Datum: / Date: 2021-12-03 <i>Jiayi Zhou</i>		
Stellung: / Position: Senior project manager		Stellung: / Position: Senior manager		
Sonstiges / <i>Other:</i>				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable 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. This test report does not entitle to carry any test mark.</i>				

TEST SUMMARY

5.1.1 MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE

Result:

Passed

5.2.1 RADIATED EMISSION (30 MHz-1 GHz)

Result:

Passed

5.2.2 RADIATED EMISSION (1-6 GHz)

Result:

Passed

Contents

1	TEST SITES	4
1.1	TEST FACILITIES	4
2	GENERAL PRODUCT INFORMATION	5
2.1	PRODUCT FUNCTION AND INTENDED USE	5
2.2	RATINGS AND SYSTEM DETAILS	5
2.3	INDEPENDENT OPERATION MODESS	5
2.4	DESCRIPTION OF INTERCONNECTING CABLES	5
2.5	NOISE GENERATING AND NOISE SUPPRESSING PARTS	5
2.6	HIGHEST FREQUENCY GENERATED OR USED IN THE DEVICE OR ON WHICH THE DEVICE OPERATES OR TUNES	5
2.7	SUBMITTED DOCUMENTS	5
3	TEST SET-UP AND OPERATION MODES	6
3.1	PRINCIPLE OF CONFIGURATION SELECTION	6
3.2	EQUIPMENT AND CABLE ARRANGEMENT	6
3.3	TEST SOFTWARE	7
3.4	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	7
3.5	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	7
4	CONFORMITY DECISION RULE	8
5	TEST RESULTS EMISSION	9
5.1	EMISSION IN THE FREQUENCY RANGE UP TO 30 MHz	9
5.1.1	<i>Mains Terminal Continuous Disturbance Voltage</i>	9
5.2	EMISSION IN THE FREQUENCY RANGE ABOVE 30 MHz	13
5.2.1	<i>Radiated emission (30 MHz-1 GHz)</i>	13
5.2.2	<i>Radiated emission (1-6 GHz)</i>	19
6	LIST OF TEST AND MEASUREMENT INSTRUMENTS	24
7	LIST OF FIGURES	25

Prüfbericht - Nr.: CN21V89X 001
Test Report No.:Seite 4 von 25
Page 4 of 25

1 Test Sites

1.1 Test Facilities

Laboratory: TÜV Rheinland (Shanghai) Co., Ltd.

Address: No.177, 178, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China

The used test equipment is in accordance with CISPR 16-1 series standards for measurement of radio interference.

Refer to Clause 7 for test and measurement instruments.

2 General Product Information

2.1 Product Function and Intended Use

The EUT (equipment under test) is an ordinary VAPPEBY 20 gen 3. For the further information, refer to the user's manual.

2.2 Ratings and System Details

System input : AC 100-240 V, 50-60 Hz; 640 mA~300 mA or 14.4 Vdc,
2600 mAh
Protection class : II

2.3 Independent Operation Modess

The basic operation modes are the below,
Mode 1: Continuously playing by AUX IN port with AC input port
Mode 2: Continuously playing by AUX IN port with battery

2.4 Description of interconnecting cables

None.

2.5 Noise Generating and Noise Suppressing Parts

Refer to the circuit diagram for further information.

2.6 Highest frequency generated or used in the device or on which the device operates or tunes

The highest frequency used in the EUT is less than 500 MHz.

2.7 Submitted Documents

Circuit diagram, user's manual and rating label.

3 Test Set-up and Operation Modes

3.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible emission level. The test conditions were adapted accordingly in reference to the instructions for use.

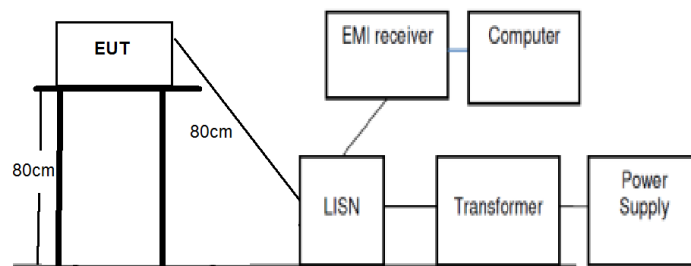
Refer to the related paragraph of this report.

The sequence of testing:

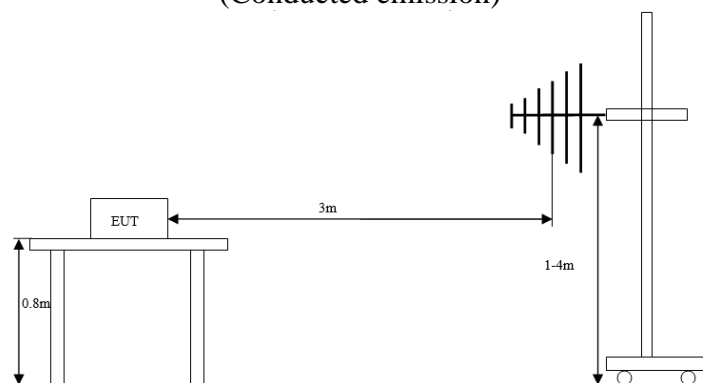
1. Radiated emission tests were performed on 2021-08-11 and 2021-08-13;
2. Conducted emission tests were performed on 2021-08-10.

3.2 Equipment and cable arrangement

Block diagram for both conducted emission and radiated emission tests is as follows:



(Conducted emission)



(Radiated emission)

Also refer to photographs on clause 6 for test setups for both conducted emission test and radiated emission test.

Prüfbericht - Nr.: CN21V89X 001

Test Report No.:

Seite 7 von 25

Page 7 of 25

3.3 Test Software

No special test software was used during the tests.

3.4 Special Accessories and Auxiliary Equipment

During the tests, the below equipments were used.

No.	Equipment	Model	Manufacturer
1	Cell phone	EML-AL100	Huawei

3.5 Countermeasures to achieve EMC Compliance

No other special measure is employed to achieve the requirement.

4 Conformity Decision Rule

For all EMI tests included in this report, as measurement uncertainties are less than the values U_{CISPR} given in CISPR 16-4-2, compliance with the limits is determined by comparing measurement results directly with corresponding limits without taking into consideration of measurement uncertainties.

5 Test Results EMISSION

5.1 Emission in the Frequency Range up to 30 MHz

5.1.1 Mains Terminal Continuous Disturbance Voltage

Result:	Passed
Date of testing	: 2021-08-10
Test procedure	: FCC 47 CFR Part 15, Subpart B:2020, ICES-003:2020, ANSI C63.4-2014 and CISPR 16-1 series standards
Frequency range	: 0.15 – 30 MHz
Limits	: Quasi-peak limit: 0.15 - 0.5 MHz, 66 to 56 dB μ V (decrease with the logarithm of frequency); 0.5 - 5 MHz, 56 dB μ V; 5 - 30 MHz, 60 dB μ V Average limit: 0.15 - 0.5 MHz, 56 to 46 dB μ V (decrease with the logarithm of frequency); 0.5 – 5 MHz, 46 dB μ V; 5 – 30 MHz, 50 dB μ V
Bandwidth of EMI receiver for final measurement	: 9 kHz
Measurement time for final measurement	: 1 s
Kind of test site	: Shielded room
Input voltage	: AC 120 V, 60 Hz
Operational mode	: Mode 1 as defined in clause 2.3
Ambient condition	: Temperature: 22.6 °C; Relative humidity: 36.2 %
Expanded measurement uncertainty ($k=2$)	: 3.39 dB

The measurement setup was made according to ANSI C63.4-2014 in a shielded room.

The measurement equipment like test receivers, quasi-peak detector and artificial mains network (AMN) are in compliance with CISPR 16-1 series standards.

The tested object was set-up on a wooden support. The EUT was set 0.8 m away from the AMN. The cord longer than necessary to be connected to the AMN was folded forth and back parallel so as to form a bundle with a length between 0.3 m and 0.4 m.

The disturbance voltage test was performed on the neutral line and phase line of the power supply of the EUT respectively.

The following figures and tables were those measured by an automatic measuring system. Both quasi-peak and average measurements were performed. In the following spectral diagram, “*” means Quasi-Peak Value and “*” means Average Value results.

Prüfbericht - Nr.: CN21V89X 001

Test Report No.:

Seite 10 von 25

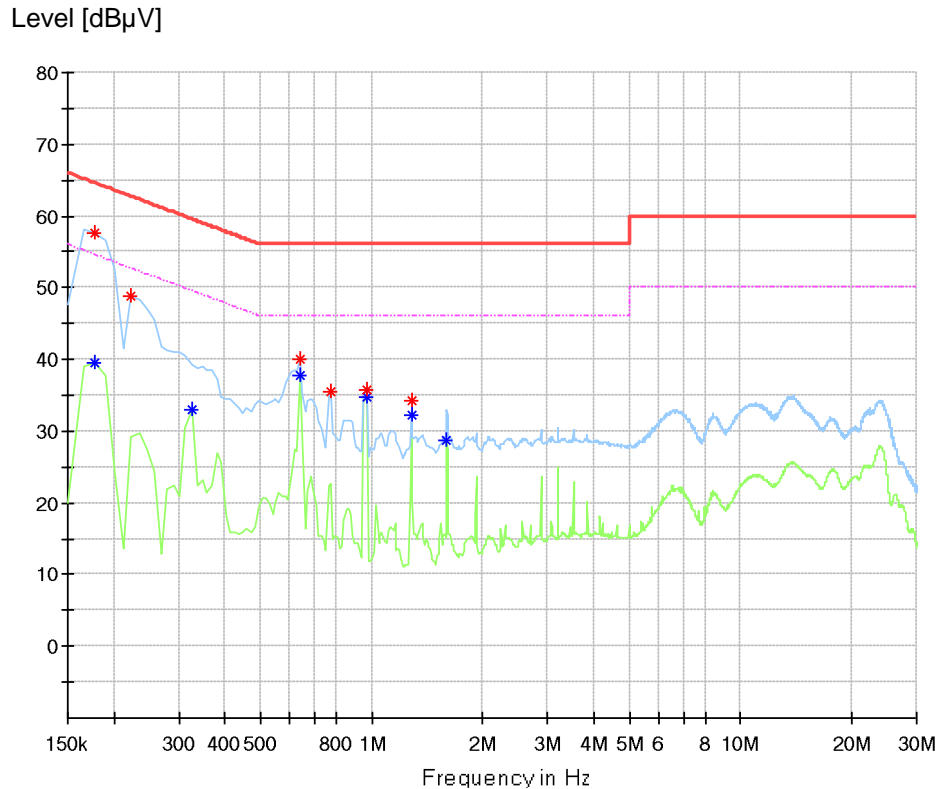
Page 10 of 25

Notes on following tables of conducted emission results and conversions:

Level (dB μ V): final measurement results by using quasi-peak detector and average detector

Transd (dB): transducer factor including cable loss, insertion loss of artificial mains network and gain of pre-amplifier (if used)

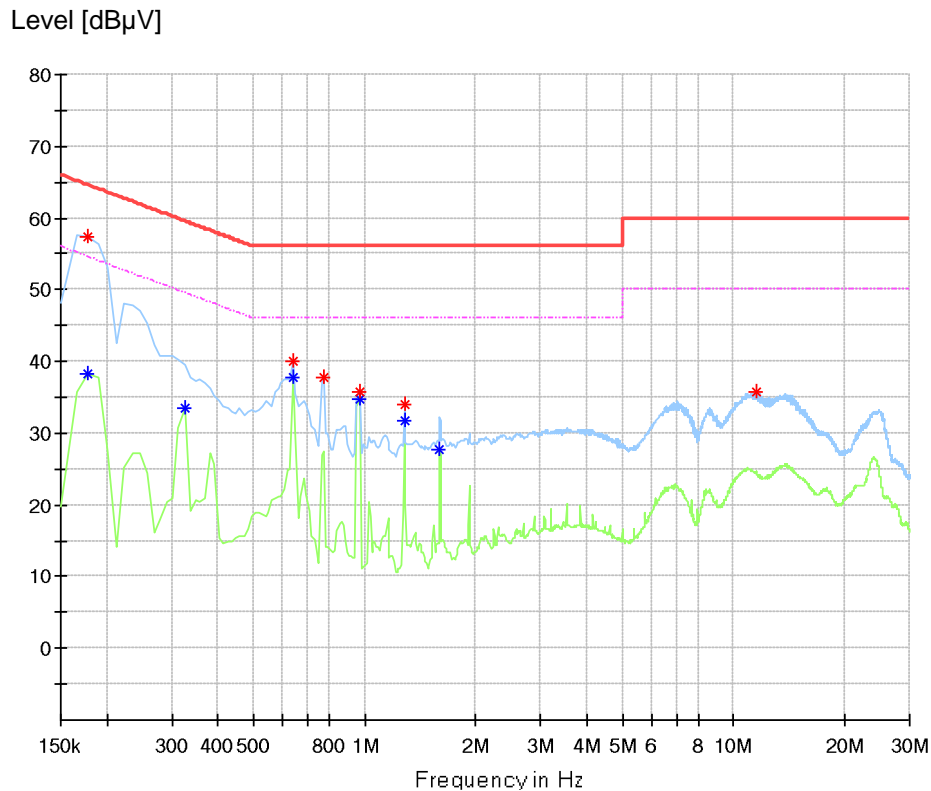
Margin: Limit (dB μ V) - Level (dB μ V)

Figure 1: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, L

Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line
1.280625	34.36	56.00	21.64	L1
0.774375	35.51	56.00	20.49	L1
0.965625	35.74	56.00	20.26	L1
0.639375	40.12	56.00	15.88	L1
0.223125	48.85	62.70	13.85	L1
0.178125	57.74	64.57	6.83	L1

Final Average measurement result:

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line
1.595625	28.74	46.00	17.26	L1
1.280625	32.15	46.00	13.85	L1
0.965625	34.84	46.00	11.16	L1
0.178125	39.52	54.57	15.06	L1
0.324375	33.02	49.59	16.57	L1
0.639375	37.70	46.00	8.30	L1

Figure 2: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, N

Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line
1.280625	33.88	56.00	22.12	N
11.563125	35.64	60.00	24.36	N
0.965625	35.87	56.00	20.13	N
0.774375	37.69	56.00	18.31	N
0.639375	39.94	56.00	16.06	N
0.178125	57.33	64.57	7.24	N

Final Average measurement result:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line
1.280625	33.88	56.00	22.12	N
11.563125	35.64	60.00	24.36	N
0.965625	35.87	56.00	20.13	N
0.774375	37.69	56.00	18.31	N
0.639375	39.94	56.00	16.06	N
0.178125	57.33	64.57	7.24	N

5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Radiated emission (30 MHz-1 GHz)

Result	Passed
Date of testing	: 2021-08-11
Test procedure	: FCC 47 CFR Part 15, Subpart B:20, ICES-003:2020, ANSI C63.4-2014 and CISPR 16-1 series standards
Frequency range	: 30 – 1000 MHz Note: The highest frequency in the EUT is 996 MHz. According to FCC Part 15 subpart B §15.33 (b) (1), the upper frequency for radiated emission measurement is 5 GHz.
Limits	: Quasi-peak limits (3 m distance): 30 – 88 MHz, 40 dB μ V/m; 88 – 216 MHz, 43.5 dB μ V/m; 216 – 960 MHz, 46 dB μ V/m; Above 960 MHz, 54 dB μ V/m.
Bandwidth of EMI receiver for final measurement	: 120 kHz
Measurement time for final measurement	: 1 s
Kind of test site	: Semi-anechoic chamber
Operational mode	: Mode 1, 2 as defined in clause 2.3
Ambient condition	: Temperature: 22.6 °C; Relative humidity: 36.2 %
Expanded measurement uncertainty ($k=2$)	: 5.49 dB

The radiated disturbance test was carried out in a semi-anechoic chamber. The test distance from the receiving antenna to the EUT is 3 m. The normalized site attenuation of the semi-anechoic chamber is regularly calibrated to ensure the radiated disturbance test results are valid. During the test, the EUT was placed on a 0.8 m high wooden table above the reference ground plane. The wooden table was rotated 360° around and the height of the antenna was varied from 1 m to 4 m to find the maximum disturbance. The test was performed with the antenna both in its horizontal and vertical polarizations.

The following figures and tables were those measured by an automatic measurement system. A preview test was firstly performed with peak detector. The final test was performed with quasi-peak at those critical frequencies during the preview test. In the following spectral diagram, “×” means quasi-peak test results.

Notes on following tables of radiated emission results and conversions:

QuasiPeak (dB μ V/m): final measurement results by using quasi-peak detector

Prüfbericht - Nr.: CN21V89X 001

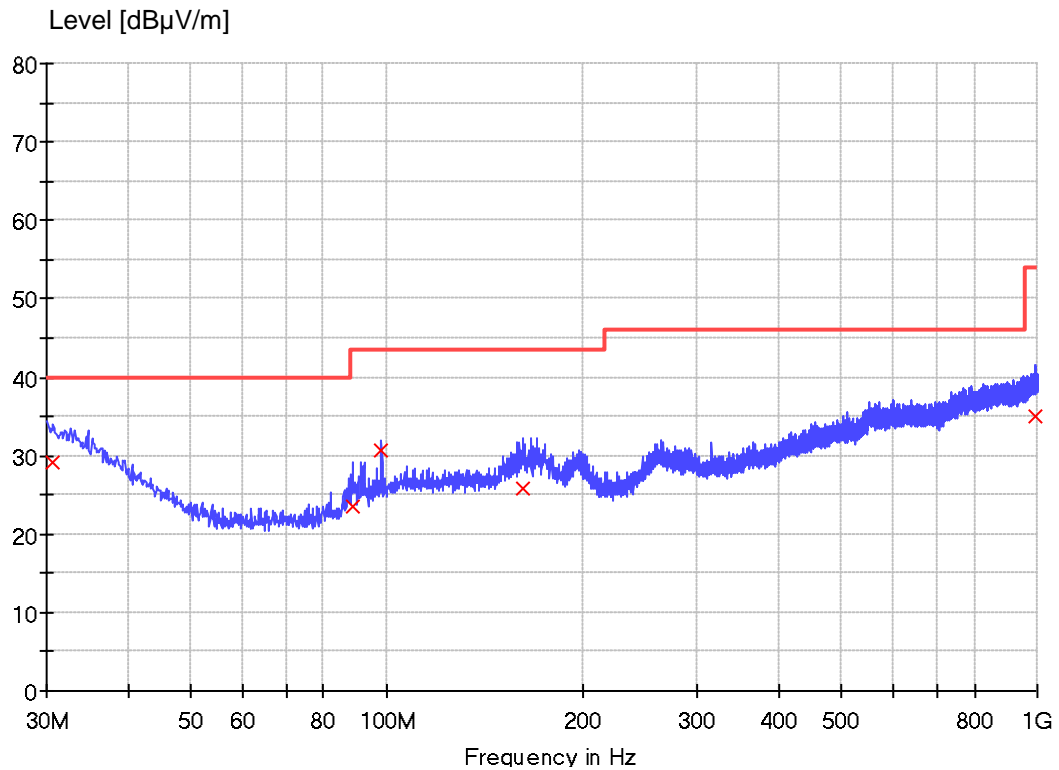
Test Report No.:

Seite 14 von 25

Page 14 of 25

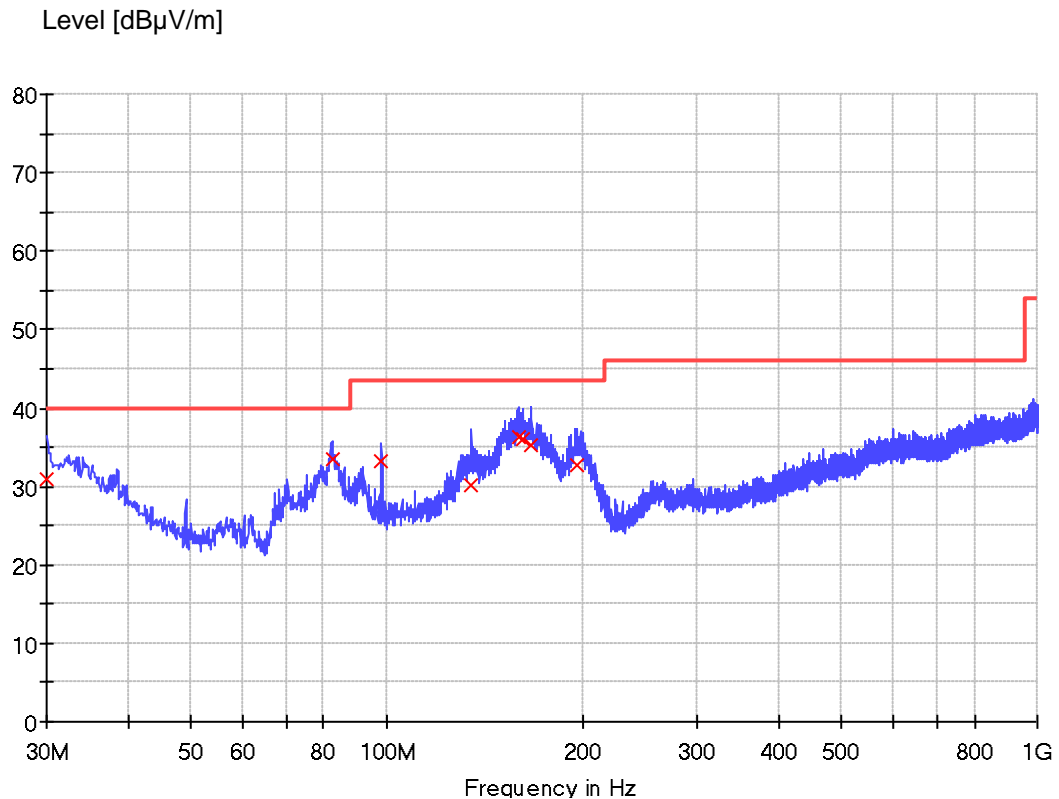
Corr. (dB): correction factor including: antenna factor, cable loss, and gain of pre-amplifier (if used)

Margin: Limit (dB μ V/m) - QuasiPeak (dB μ V/m)

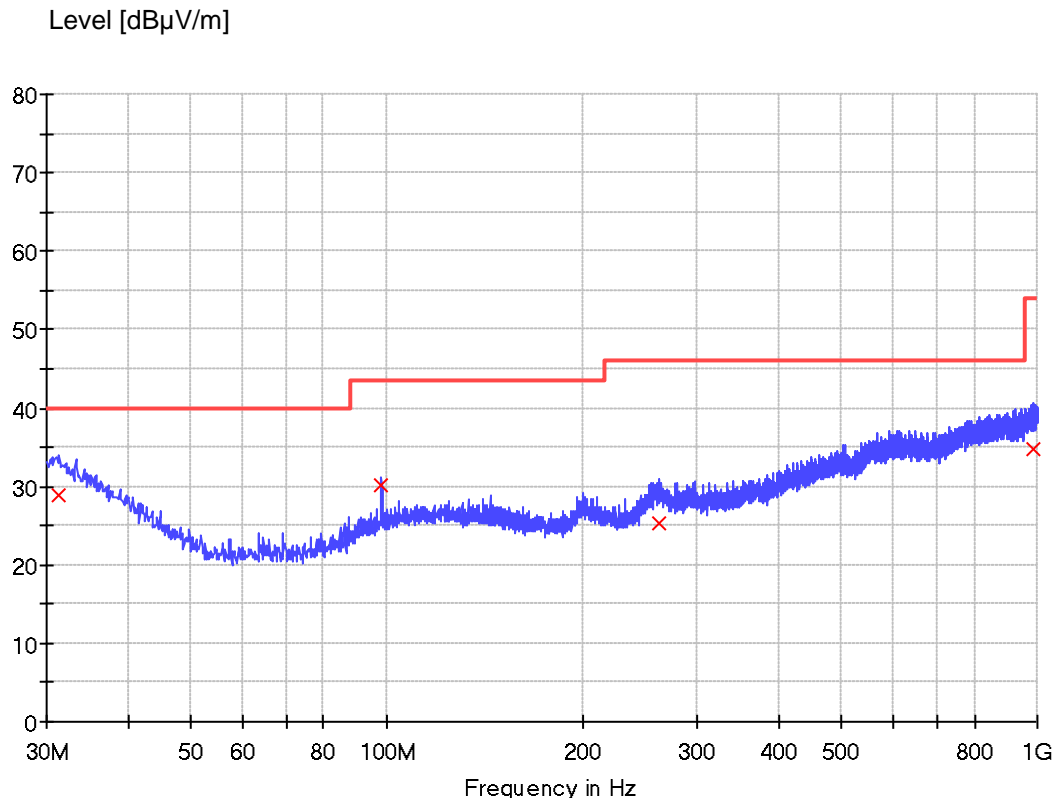
Figure 3: Spectral Diagrams and measurement results, horizontal polarization (30 MHz to 1 GHz), mode 1


Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
30.727500	29.2	1000.0	120.000	200.0	H	180.0	25.0	10.9	40.0
88.685000	23.5	1000.0	120.000	200.0	H	180.0	15.1	20.0	43.5
98.263750	30.8	1000.0	120.000	150.0	H	90.0	17.2	12.7	43.5
161.920000	25.9	1000.0	120.000	150.0	H	22.0	16.7	17.7	43.5
995.150000	35.1	1000.0	120.000	200.0	H	180.0	28.9	19.0	54.0

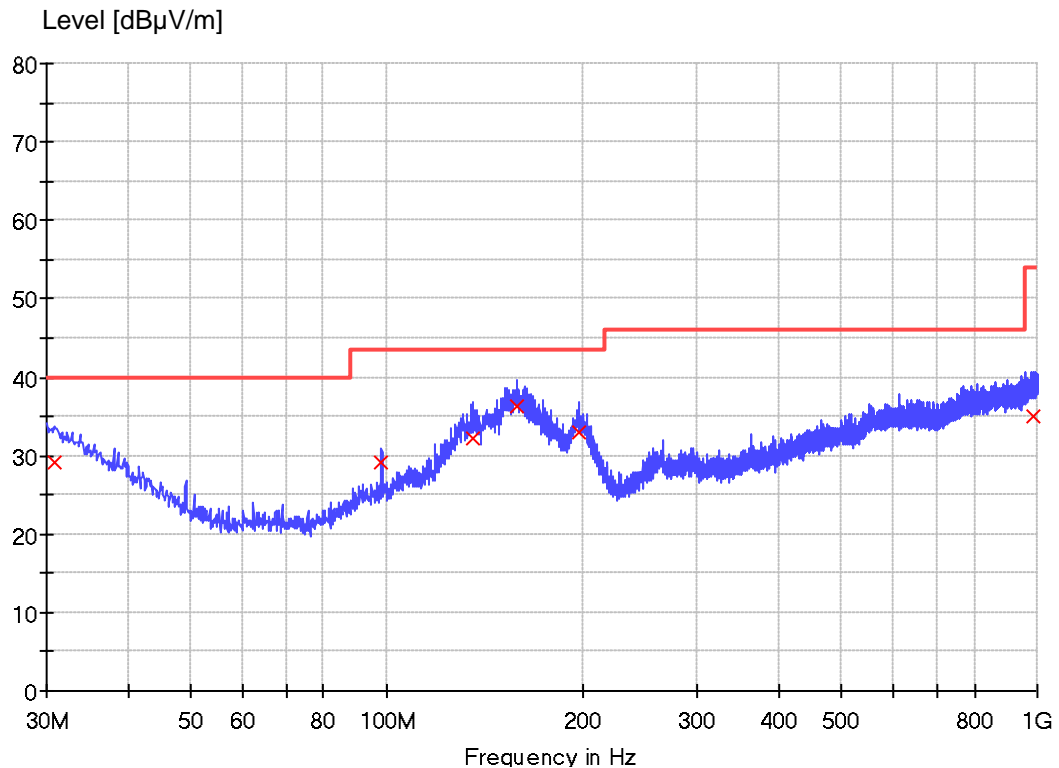
Figure 4: Spectral Diagrams and measurement results, vertical polarization (30 MHz to 1 GHz), mode 1

Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dB μ V/m)
30.000000	31.0	1000.0	120.000	100.0	V	-180.0	25.4	9.0	40.0
82.380000	33.4	1000.0	120.000	100.0	V	145.0	14.0	6.6	40.0
98.263750	33.2	1000.0	120.000	100.0	V	-180.0	17.2	10.3	43.5
135.123750	30.1	1000.0	120.000	100.0	V	129.0	18.4	13.4	43.5
159.131250	36.2	1000.0	120.000	100.0	V	-180.0	16.8	7.3	43.5
161.798750	36.2	1000.0	120.000	100.0	V	180.0	16.7	7.3	43.5
166.163750	35.4	1000.0	120.000	100.0	V	-180.0	16.5	8.1	43.5
195.748750	32.8	1000.0	120.000	100.0	V	180.0	16.1	10.7	43.5

Figure 5: Spectral Diagrams and measurement results, horizontal polarization (30 MHz to 1 GHz), mode 2


Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dB μ V/m)
31.333750	28.8	1000.0	120.000	150.0	H	-180.0	24.8	11.2	40.0
98.263750	30.1	1000.0	120.000	200.0	H	90.0	17.2	13.4	43.5
262.921250	25.2	1000.0	120.000	150.0	H	-180.0	20.7	20.8	46.0
983.631250	34.9	1000.0	120.000	150.0	H	-160.0	28.8	19.2	54.0

Figure 6: Spectral Diagrams and measurement results, vertical polarization (30 MHz to 1 GHz), mode 2


Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
30.848750	29.0	1000.0	120.000	150.0	V	0.0	25.0	11.0	40.0
98.263750	29.1	1000.0	120.000	100.0	V	-180.0	17.2	14.4	43.5
135.366250	32.2	1000.0	120.000	100.0	V	-150.0	18.4	11.3	43.5
158.403750	36.2	1000.0	120.000	100.0	V	-90.0	16.8	7.3	43.5
196.961250	33.0	1000.0	120.000	100.0	V	30.0	16.1	10.5	43.5
985.086250	34.9	1000.0	120.000	150.0	V	-180.0	28.9	19.1	54.0

5.2.2 Radiated emission (1-6 GHz)

Result:
Passed

Date of testing	:	2021-08-13
Port	:	Enclosure
Test procedure	:	FCC 47 CFR Part 15, Subpart B:2020, ANSI C63.4-2014 and CISPR 16-1 series standards ICES-003:2020 and IEC CISPR 32:2015
Limit	:	1-6 GHz, Peak limit: 74 dB μ V/m; Average limit: 54 dB μ V/m
Frequency range	:	1-6 GHz Note: The highest frequency in the EUT is 996 MHz. According to FCC Part 15 subpart B §15.33 (b) (1), the upper frequency for radiated emission measurement is 5 GHz.
Bandwidth of EMI receiver for final measurement	:	1000 kHz
Measurement time for final measurement	:	1 s
Test distance	:	3 m
Kind of test site	:	Semi-anechoic chamber
Operational mode	:	Modes 1, 2 as defined in clause 2.3
Input voltage	:	AC 120 V; 60 Hz
Earthing	:	No earthing (as class II equipment)
Ambient condition	:	Temperature: 22.6 °C; Relative humidity: 36.2 %

The radiated disturbance test was carried out in a semi-anechoic chamber. The test distance from the receiving antenna to the EUT is 3 m. The normalized site attenuation of the semi-anechoic chamber is regularly calibrated to ensure the radiated disturbance test results are valid. During the test, the EUT was placed on a non-conductive table, which is 0.8 m high. The wooden table was rotated 360° around and the antenna was varied from 1 m to 4 m to find the maximum disturbance. The test was performed with the antenna both in its horizontal and vertical polarizations.

The following figures and tables were those measured by an automatic measurement system. The final test was performed with peak detector and average detector at those critical frequencies during the preview test. In the following figure, “x(red)” means measurement results with peak detector and “+ (blue)” means measurement results with average detector.

Notes on following tables of radiated emission results and conversions:

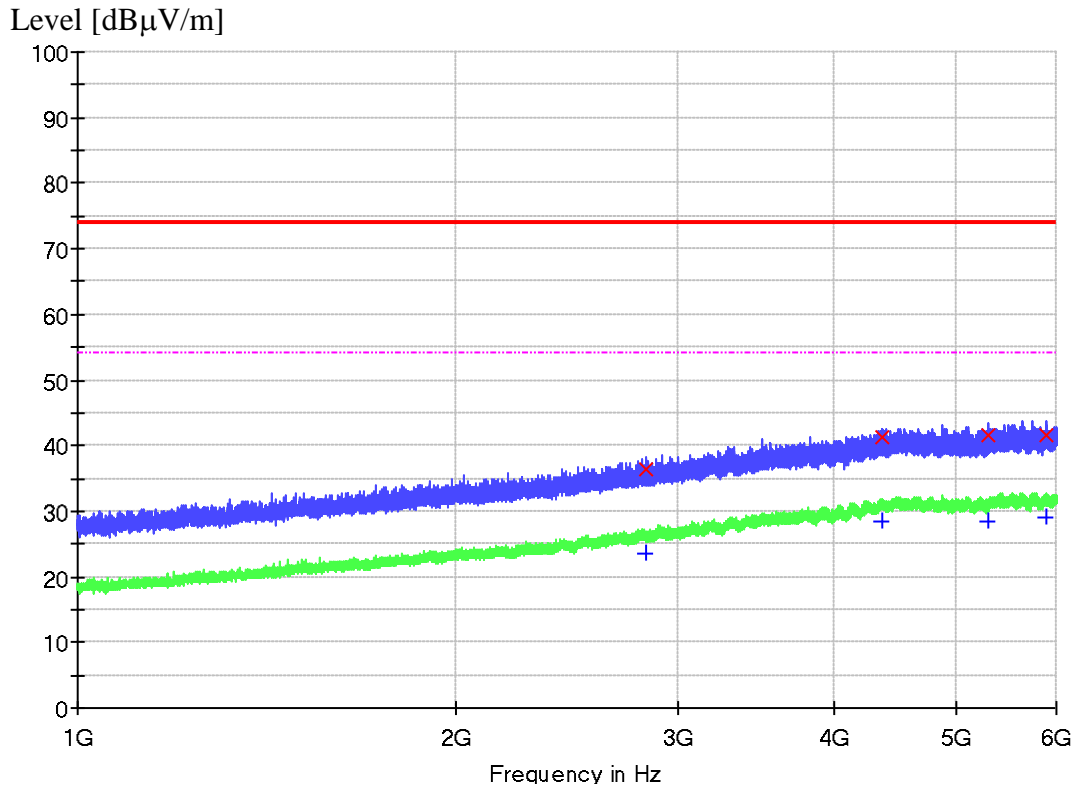
Peak (dB μ V/m): final measurement results by using peak detector

Average (dB μ V/m): final measurement results by using average detector

Corr. (dB): correction factor including: antenna factor, cable loss, and gain of pre-amplifier (if used)

Margin: Limit PK (dB μ V/m) - Peak (dB μ V/m)

Limit CAV (dB μ V/m) – Average (dB μ V/m)

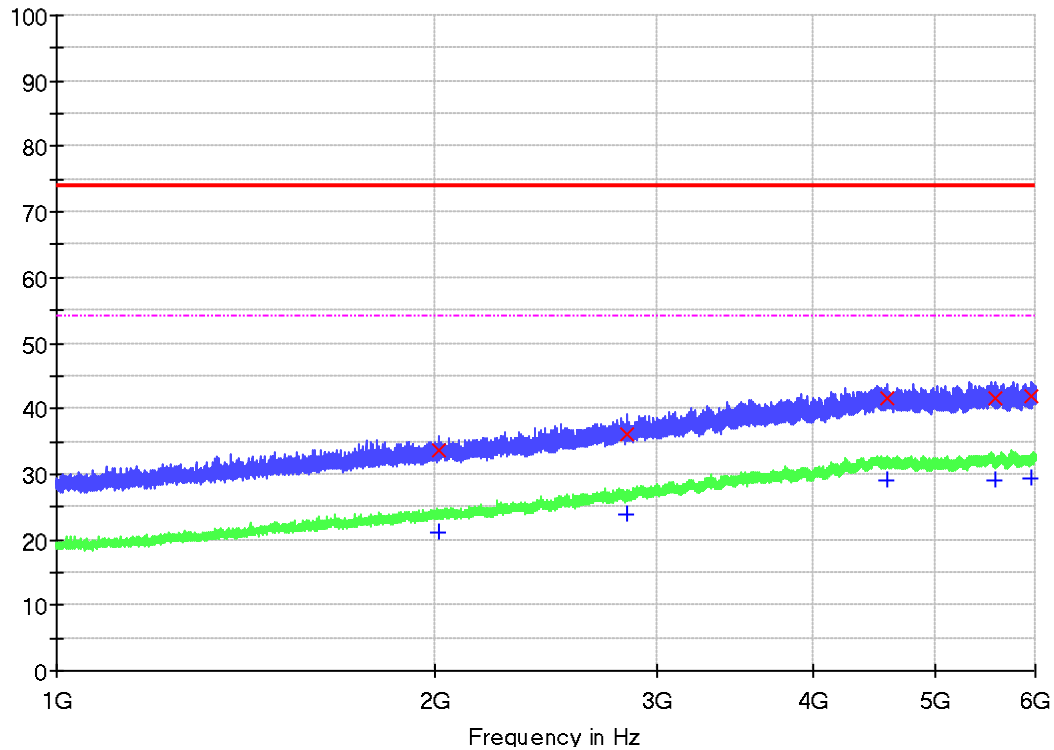
Figure 7: Spectral Diagrams and measurement results, 1-6 GHz, horizontal polarization, mode 1

Final Peak measurement results:

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2832.187500	36.4	1000.0	1000.000	150.0	H	0.0	-13.3	37.6	74.0
4355.781250	41.4	1000.0	1000.000	200.0	H	90.0	-7.6	32.6	74.0
5304.843750	41.6	1000.0	1000.000	150.0	H	-60.0	-6.8	32.4	74.0
5884.687500	41.7	1000.0	1000.000	200.0	H	30.0	-6.6	32.3	74.0

Final Average measurement results:

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2832.187500	23.4	1000.0	1000.000	150.0	H	0.0	-13.3	30.6	54.0
4355.781250	28.5	1000.0	1000.000	200.0	H	90.0	-7.6	25.5	54.0
5304.843750	28.5	1000.0	1000.000	150.0	H	-60.0	-6.8	25.5	54.0
5884.687500	29.1	1000.0	1000.000	200.0	H	30.0	-6.6	24.9	54.0

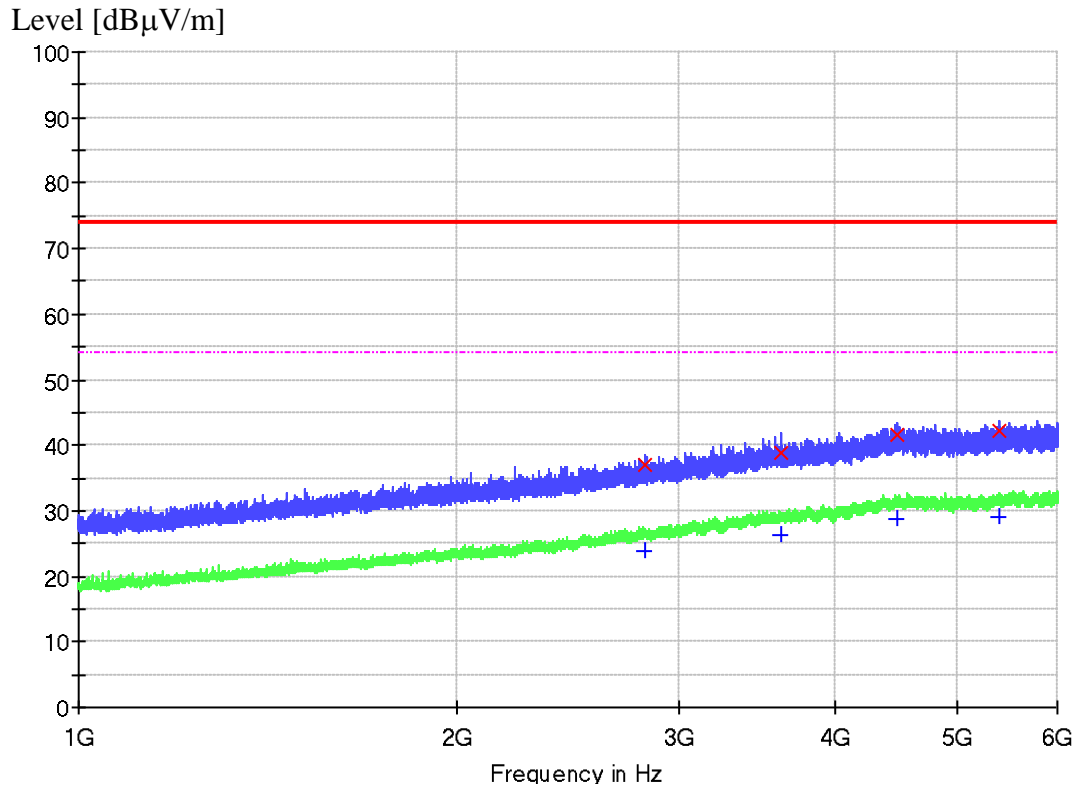
Figure 8: Spectral Diagrams and measurement results, 1-6 GHz, vertical polarization, mode 1

 Level [dB μ V/m]

Final Peak measurement results:

Frequency (MHz)	MaxPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dB μ V/m)
2010.000000	33.7	1000.0	1000.000	100.0	V	30.0	-17.0	40.3	74.0
2840.625000	36.1	1000.0	1000.000	150.0	V	0.0	-13.3	37.9	74.0
4574.375000	41.7	1000.0	1000.000	100.0	V	-180.0	-7.1	32.3	74.0
5581.562500	41.6	1000.0	1000.000	150.0	V	70.0	-6.4	32.4	74.0
5965.625000	41.8	1000.0	1000.000	150.0	V	65.0	-6.6	32.2	74.0

Final Average measurement results:

Frequency (MHz)	Average (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dB μ V/m)
2010.000000	21.0	1000.0	1000.000	100.0	V	30.0	-17.0	33.0	54.0
2840.625000	23.8	1000.0	1000.000	150.0	V	0.0	-13.3	30.2	54.0
4574.375000	28.9	1000.0	1000.000	100.0	V	-180.0	-7.1	25.1	54.0
5581.562500	29.0	1000.0	1000.000	150.0	V	70.0	-6.4	25.1	54.0
5965.625000	29.4	1000.0	1000.000	150.0	V	65.0	-6.6	24.7	54.0

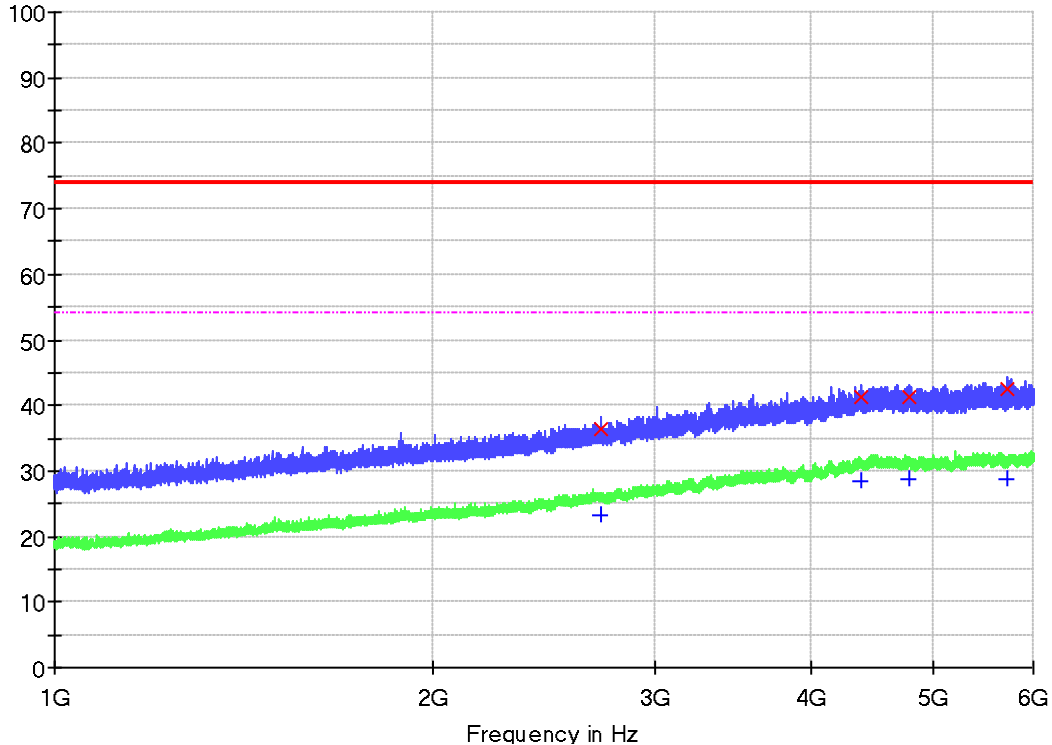
Figure 9: Spectral Diagrams and measurement results, 1-6 GHz, horizontal polarization, mode 2

Final Peak measurement results:

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2819.062500	37.1	1000.0	1000.000	150.0	H	-180.0	-13.4	36.9	74.0
3617.343750	39.0	1000.0	1000.000	200.0	H	90.0	-10.0	35.0	74.0
4472.812500	41.6	1000.0	1000.000	200.0	H	0.0	-7.1	32.4	74.0
5389.375000	42.1	1000.0	1000.000	200.0	H	45.0	-6.6	31.9	74.0

Final Average measurement results:

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2819.062500	23.8	1000.0	1000.000	150.0	H	-180.0	-13.4	30.3	54.0
3617.343750	26.4	1000.0	1000.000	200.0	H	90.0	-10.0	27.6	54.0
4472.812500	28.9	1000.0	1000.000	200.0	H	0.0	-7.1	25.1	54.0
5389.375000	29.0	1000.0	1000.000	200.0	H	45.0	-6.6	25.0	54.0

Figure 10: Spectral Diagrams and measurement results, 1-6 GHz, vertical polarization, mode 2

 Level [dB μ V/m]

Final Peak measurement results:

Frequency (MHz)	MaxPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dB μ V/m)
2719.531250	36.4	1000.0	1000.000	150.0	V	0.0	-13.8	37.6	74.0
4375.781250	41.3	1000.0	1000.000	150.0	V	90.0	-7.5	32.7	74.0
4785.312500	41.3	1000.0	1000.000	150.0	V	60.0	-7.1	32.7	74.0
5729.375000	42.4	1000.0	1000.000	100.0	V	-180.0	-6.5	31.6	74.0

Final Average measurement results:

Frequency (MHz)	Average (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dB μ V/m)
2719.531250	23.3	1000.0	1000.000	150.0	V	0.0	-13.8	30.7	54.0
4375.781250	28.4	1000.0	1000.000	150.0	V	90.0	-7.5	25.6	54.0
4785.312500	28.6	1000.0	1000.000	150.0	V	60.0	-7.1	25.4	54.0
5729.375000	28.8	1000.0	1000.000	100.0	V	-180.0	-6.5	25.2	54.0

6 List of Test and Measurement Instruments

Equip.	Description	Model	Manufacturer	Last Date DD.MM.YYYY	Due Date DD.MM.YYYY
G1824845	EMC measurement software	EMC32 (Ver 10.20.01)	Rohde&Schwarz	NA*	NA*
9023229	EMI test receiver	ESR3	Rohde&Schwarz	22.03.2021	22.03.2022
G1811403	Artificial mains network	ENV216	Rohde&Schwarz	23.11.2020	23.11.2021
G1824248	Dual display multimeter	F45	Fluke	18.09.2020	18.09.2022
G1811378	3m modified semi-anechoic chamber	SAC3	Frankonia	27.06.2019	27.06.2022
G1811402	EMI test receiver	ESCI	Rohde&Schwarz	18.09.2020	18.09.2021
G1811425	Bilog antenna	CBL 6112D	Teseq	10.03.2020	10.03.2023
G1811417	Log periodic antenna	HL050	Rohde&Schwarz	10.03.2020	10.03.2023
G1822702	Spectrum analyser	FSV40	Rohde&Schwarz	01.11.2019	01.11.2021
G1825371	Preamplifier	EMC051845SE	Taiwan EMCI	14.05.2021	14.05.2023

7 List of Figures

Figure 1: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, L.....	11
Figure 2: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, N	12
Figure 3: Spectral Diagrams and measurement results, horizontal polarization (30 MHz to 1 GHz), mode 1	15
Figure 4: Spectral Diagrams and measurement results, vertical polarization (30 MHz to 1 GHz), mode 1	16
Figure 5: Spectral Diagrams and measurement results, horizontal polarization (30 MHz to 1 GHz), mode 2	17
Figure 6: Spectral Diagrams and measurement results, vertical polarization (30 MHz to 1 GHz), mode 2	18
Figure 7: Spectral Diagrams and measurement results, 1-6 GHz, horizontal polarization, mode 1	20
Figure 8: Spectral Diagrams and measurement results, 1-6 GHz, vertical polarization, mode 1	21
Figure 9: Spectral Diagrams and measurement results, 1-6 GHz, horizontal polarization, mode 2.....	22
Figure 10: Spectral Diagrams and measurement results, 1-6 GHz, vertical polarization, mode 2.....	23

End of test report