

<b>Prüfbericht-Nr.:</b> <i>Test Report No.:</i>	<b>CN25LZME 001</b>	<b>Auftrags-Nr.:</b> <i>Order No.:</i>	<b>326071633</b>	<b>Seite 1 von 28</b> <i>Page 1 of 28</i>
<b>Kunden-Referenz-Nr.:</b> <i>Client Reference No.:</i>	<b>1288983</b>	<b>Auftragsdatum:</b> <i>Order date.:</i>	<b>2025-01-06</b>	
<b>Auftraggeber:</b> <i>Client:</i>	<b>IKEA of Sweden AB</b> Box 702, SE-343 81, Älmhult, Sweden			
<b>Prüfgegenstand:</b> <i>Test item:</i>	<b>SOLSKYDD Bluetooth speaker 29</b>			
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	<b>E2505</b>			
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	<b>TÜV Rheinland EMC service</b>			
<b>Prüfgrundlage:</b> <i>Test specification:</i>	<b>FCC 47 CFR Part 15, Subpart B:2023 Class B</b> <b>ICES-003:2020</b>			
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	<b>2025-01-07</b>	Refer to the EUT photos file		
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	<b>A003901740-001</b> <b>A003901552-001~002</b>			
<b>Prüfzeitraum:</b> <i>Testing period:</i>	<b>Refer to test report</b>			
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	<b>Refer to clause 1.1</b>			
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	<b>TÜV Rheinland (Shanghai) Co., Ltd.</b>			
<b>Prüfergebnis*:</b> <i>Test result*:</i>	<b>Pass</b>			
<b>geprüft von: / tested by:</b>	<b>genehmigt von: / authorized by:</b>			
	<i>Jiuyu Huang</i>		<i>Jiayi Zhou</i>	
<b>Datum: / Date:</b> 2025-03-04	<b>Datum: / Date:</b> 2025-03-04			
<b>Stellung: / Position:</b> Jiuyu Huang/Project engineer	<b>Stellung: / Position:</b> Jiayi Zhou/Authorizer			
<b>Sonstiges / Other:</b>	FCC ID: FHO-E2505 IC: 10912A-E2505 Test Firm Name: TUV Rheinland (Shanghai) Co., Ltd. Designation Number: CN1396 Test Firm Registration Number: 930979			
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>	<b>Prüfmuster vollständig und unbeschädigt</b> <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				
<b>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.</b> <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>				

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**Anmerkungen**  
*Remarks*

- |          |  |
|----------|--|
| <b>1</b> | <p>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.<br/>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</p> <p><i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.</i></p> <p><i>Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i></p>   |
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| <b>3</b> | <p>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.<br/>Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</p> <p><i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i></p> <p><i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i></p>  |
| <b>4</b> | <p>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</p> <p><i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i></p>  |

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**Revision history of test report:**

<b>Report number</b>	<b>Issue date</b>	<b>Contents and reason for change if appropriate</b>
CN25LZME 001	2025-03-04	Initial release.

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## **1 Test Sites**

### **1.1 Test Facilities**

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

**Address: Workshop 14, North Half of Workshop 10 and Workshop 16, Pingqian (Taicang) Modern Industrial Park, No.525, Yuewang Lingang South Road, Shaxi, Taicang, Jiangsu, China**

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

Refer to Clause 6 for test and measurement instruments.

## **2 General Product Information**

### **2.1 Product Function and Intended Use**

The EUT (equipment under test) is a SOLSKYDD Bluetooth speaker 29. For the further information, refer to the user's manual.

### **2.2 Ratings and System Details**

Rated input : AC 100-240 V, 50-60 Hz; 640-300 mA  
Protection class : II

### **2.3 Independent Operation Modess**

The basic operation modes are following:

Mode 1: Continuous playing 1 kHz audio signal by Bluetooth.

Mode 2: Continuously playing 1 kHz audio signal by AUX Line in.

### **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 2.4 GHz.

### **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.

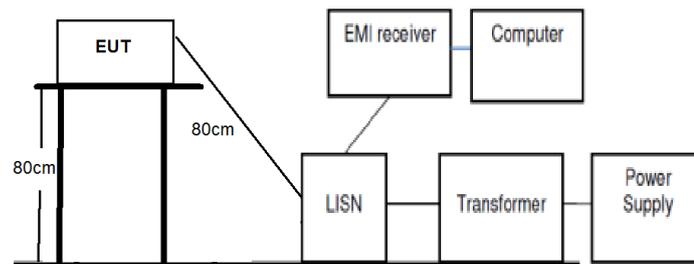
Refer to the related paragraph of this report.

The sequence of testing:

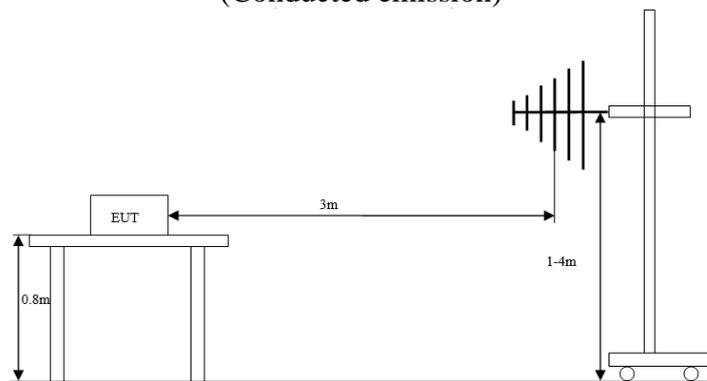
1. Radiated emission tests were performed on 2025-02-08.
2. Conducted emission tests were performed on 2025-02-10.

#### 3.2 Equipment and cable arrangement

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



(Conducted emission)



(Radiated emission)

### 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 equipment were used.

No.	Equipment	Model	Manufacturer
1	Cell phone	HONOR 60	HONOR
2	Laptop	ThinkPad T14	Lenovo

### 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  $U_{\text{CISPR}}$  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	: 2025-02-10
Test procedure	: FCC 47 CFR Part 15, Subpart B:2023, ICES-003:2020, ANSI C63.4-2014 and CISPR 16-2-1
Frequency range	: 0.15 – 30 MHz
Limits	: Quasi-peak limit: 0.15 - 0.5 MHz, 66 to 56 dB $\mu$ V (decrease with the logarithm of frequency); 0.5 - 5 MHz, 56 dB $\mu$ V; 5 - 30 MHz, 60 dB $\mu$ V Average limit: 0.15 - 0.5 MHz, 56 to 46 dB $\mu$ V (decrease with the logarithm of frequency); 0.5 – 5 MHz, 46 dB $\mu$ V; 5 – 30 MHz, 50 dB $\mu$ 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 as defined in clause 2.3
Ambient condition	: Temperature: 20.1 °C; Relative humidity: 44.2 %
Expanded measurement uncertainty ( $k=2$ )	: 2.33 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, “◆” mean Quasi-Peak Value and “◆” mean Average Value results.

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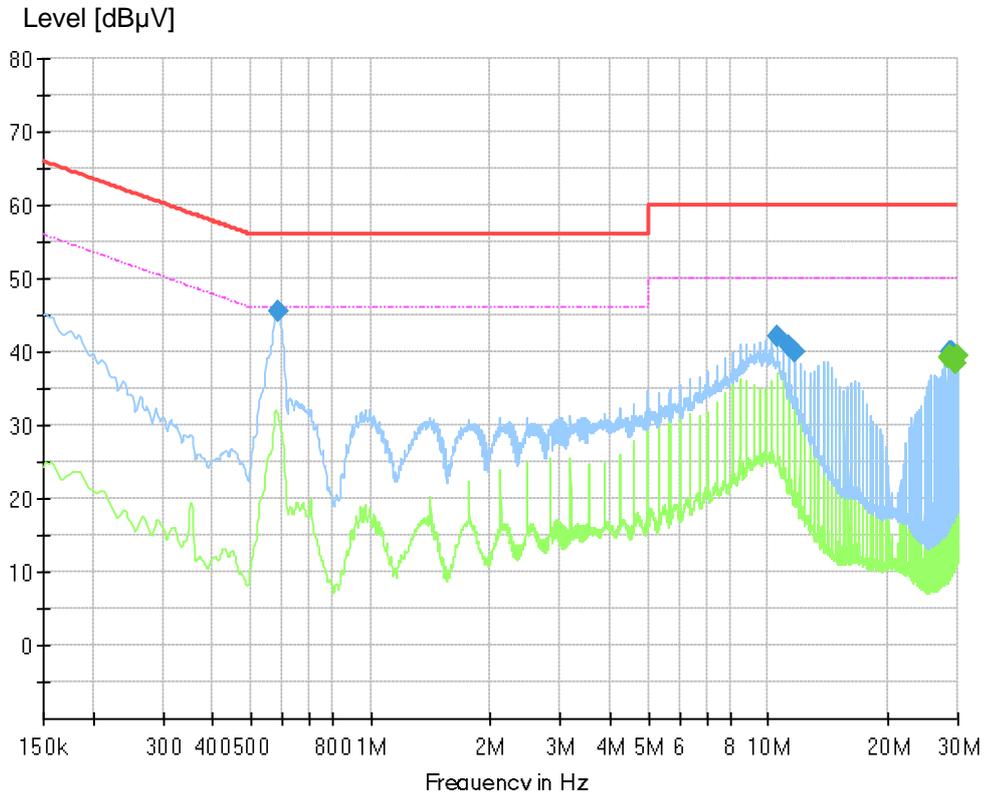
Notes on following tables of conducted emission results and conversions:

Level (dB $\mu$ 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 $\mu$ V) - Level (dB $\mu$ V)

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



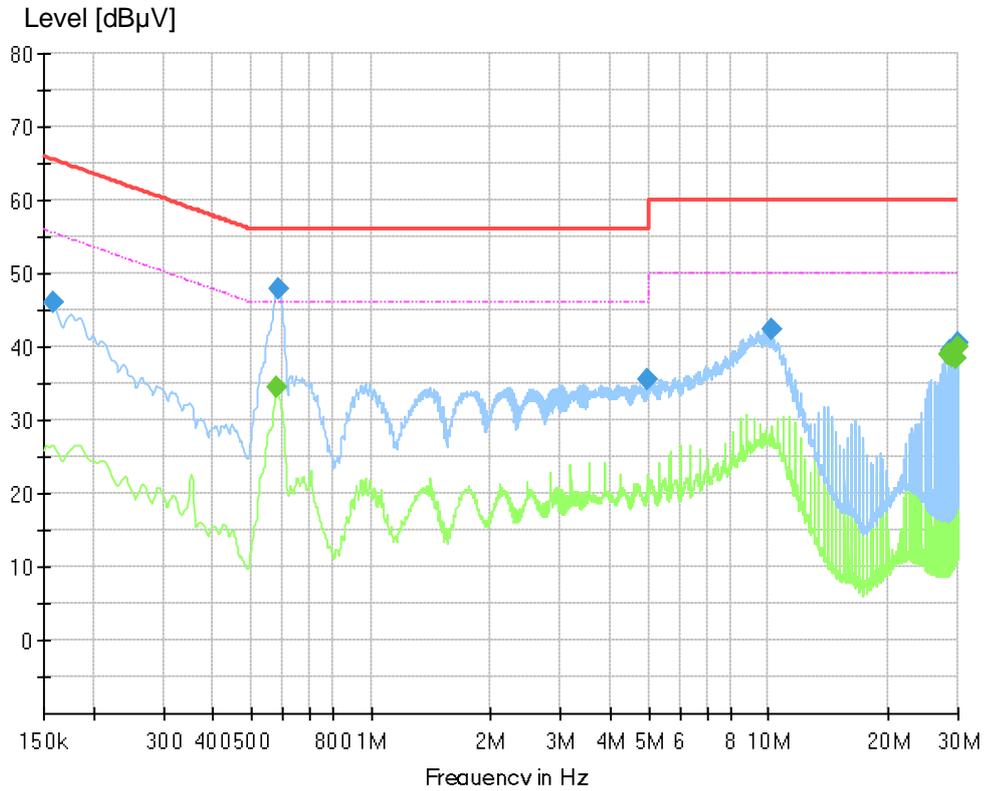
Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.582000	45.53	56.00	10.47	1000.0	9.000	L1	10.3
10.587750	42.16	60.00	17.84	1000.0	9.000	L1	10.8
11.294250	40.71	60.00	19.29	1000.0	9.000	L1	10.8
11.647500	39.94	60.00	20.06	1000.0	9.000	L1	10.8
28.587750	40.09	60.00	19.91	1000.0	9.000	L1	11.3
28.941000	39.92	60.00	20.08	1000.0	9.000	L1	11.3

Final Average measurement result:

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
28.234500	39.08	50.00	10.92	1000.0	9.000	L1	11.3
28.587750	39.44	50.00	10.56	1000.0	9.000	L1	11.3
28.941000	39.31	50.00	10.69	1000.0	9.000	L1	11.3
29.294250	38.77	50.00	11.23	1000.0	9.000	L1	11.3
29.647500	38.39	50.00	11.61	1000.0	9.000	L1	11.3
30.000000	39.38	50.00	10.62	1000.0	9.000	L1	11.3

Figure 2: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, N line, mode 1



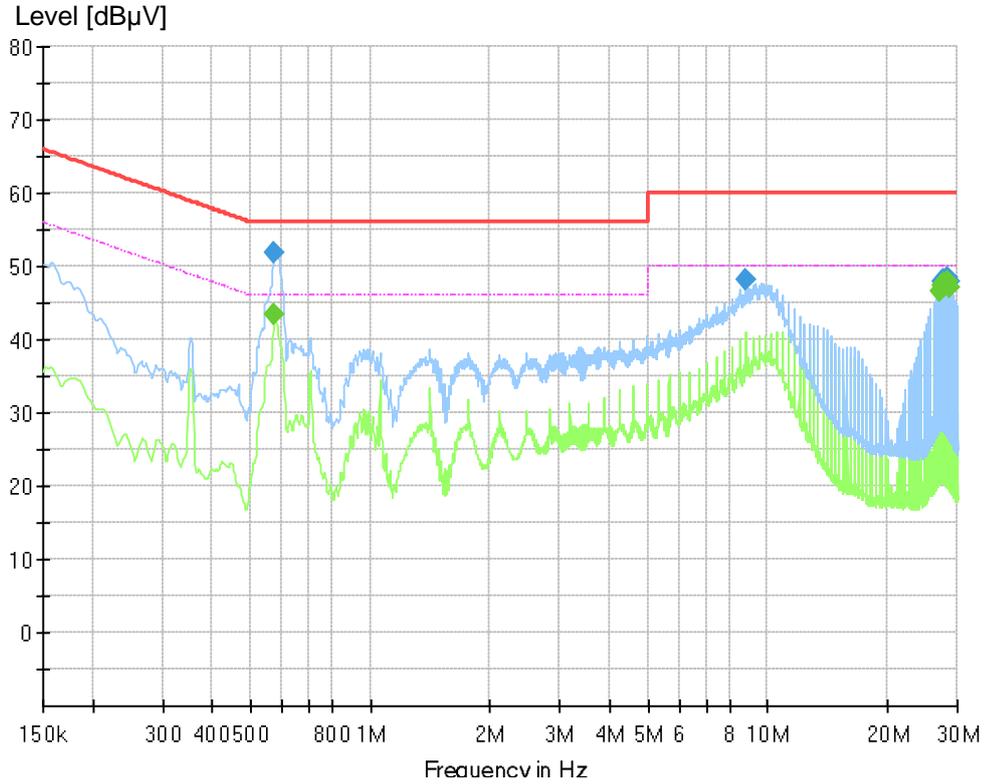
Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.159000	46.12	65.52	19.39	1000.0	9.000	N	10.3
0.582000	47.98	56.00	8.02	1000.0	9.000	N	10.3
4.965000	35.54	56.00	20.46	1000.0	9.000	N	10.7
10.137750	42.28	60.00	17.72	1000.0	9.000	N	11.1
28.587750	39.42	60.00	20.58	1000.0	9.000	N	11.6
30.000000	40.50	60.00	19.50	1000.0	9.000	N	11.7

Final Average measurement result:

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.577500	34.48	46.00	11.52	1000.0	9.000	N	10.3
28.234500	38.91	50.00	11.09	1000.0	9.000	N	11.6
28.587750	39.00	50.00	11.00	1000.0	9.000	N	11.6
28.941000	38.63	50.00	11.37	1000.0	9.000	N	11.6
29.647500	38.33	50.00	11.67	1000.0	9.000	N	11.7
30.000000	39.94	50.00	10.06	1000.0	9.000	N	11.7

Figure 3: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, L line, mode 2



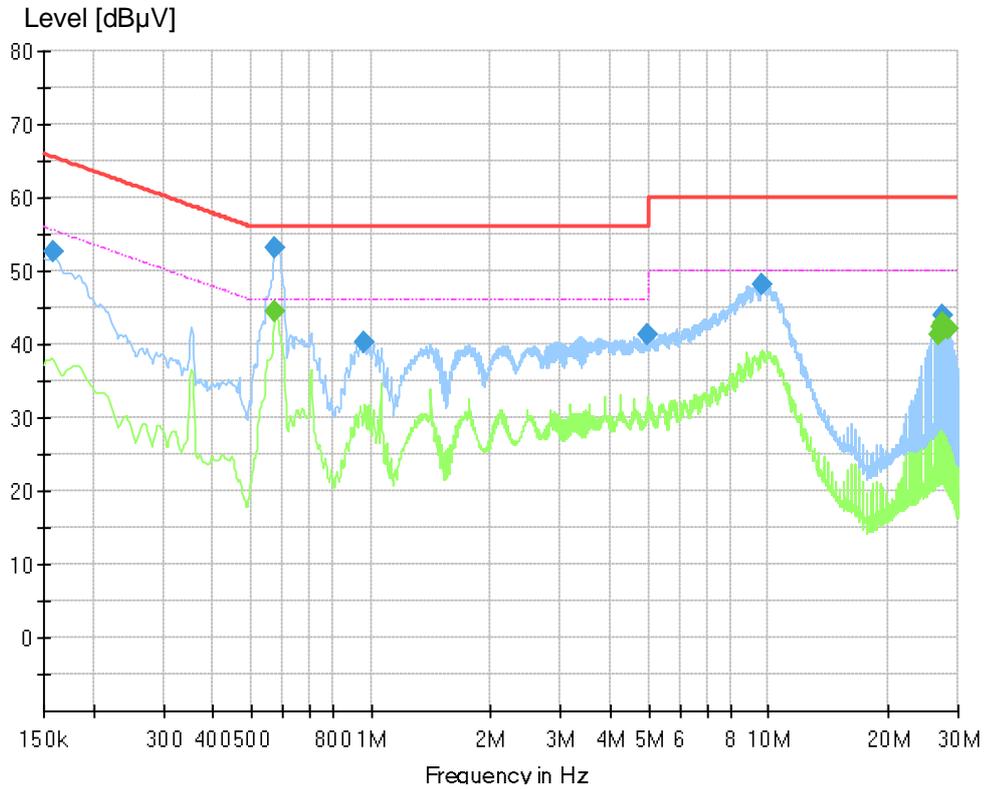
Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.575250	51.87	56.00	4.13	1000.0	9.000	L1	10.3
8.823750	48.24	60.00	11.76	1000.0	9.000	L1	10.8
27.530250	47.96	60.00	12.04	1000.0	9.000	L1	11.2
27.881250	48.28	60.00	11.72	1000.0	9.000	L1	11.3
28.234500	48.41	60.00	11.59	1000.0	9.000	L1	11.3
28.587750	47.97	60.00	12.03	1000.0	9.000	L1	11.3

Final Average measurement result:

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.575250	43.35	46.00	2.65	1000.0	9.000	L1	10.3
27.177000	46.52	50.00	3.48	1000.0	9.000	L1	11.2
27.530250	47.30	50.00	2.70	1000.0	9.000	L1	11.2
27.881250	47.66	50.00	2.34	1000.0	9.000	L1	11.3
28.234500	47.80	50.00	2.20	1000.0	9.000	L1	11.3
28.587750	47.23	50.00	2.77	1000.0	9.000	L1	11.3

Figure 4: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, N line, mode 2



Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.159000	52.68	65.52	12.83	1000.0	9.000	N	10.3
0.575250	53.29	56.00	2.71	1000.0	9.000	N	10.3
0.962250	40.24	56.00	15.76	1000.0	9.000	N	10.4
4.942500	41.25	56.00	14.75	1000.0	9.000	N	10.7
9.658500	48.22	60.00	11.78	1000.0	9.000	N	11.0
27.530250	43.96	60.00	16.04	1000.0	9.000	N	11.6

Final Average measurement result:

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.575250	44.46	46.00	1.54	1000.0	9.000	N	10.3
26.823750	41.37	50.00	8.63	1000.0	9.000	N	11.6
27.177000	42.26	50.00	7.74	1000.0	9.000	N	11.6
27.530250	42.84	50.00	7.16	1000.0	9.000	N	11.6
27.881250	42.70	50.00	7.30	1000.0	9.000	N	11.6
28.234500	42.18	50.00	7.82	1000.0	9.000	N	11.6

## 5.2 Emission in the Frequency Range above 30 MHz

### 5.2.1 Radiated emission (30 MHz - 1 GHz)

<b>Result:</b>	<b>Passed</b>
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Date of testing	: 2025-02-08
Test procedure	: FCC 47 CFR Part 15, Subpart B:2023, ICES-003:2020, ANSI C63.4-2014 and CISPR 16-2-3
Frequency range	: 30 – 1000 MHz
Limits	: Quasi-peak limits (3 m distance): 30 – 88 MHz, 40 dB $\mu$ V/m; 88 – 216 MHz, 43.5 dB $\mu$ V/m; 216 – 1000 MHz, 46 dB $\mu$ 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 as defined in clause 2.3
Input voltage	: AC 120 V; 60 Hz
Ambient condition	: Temperature: 20.1 °C; Relative humidity: 43.1 %
Expanded measurement uncertainty ( $k=2$ )	: 5.40 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.

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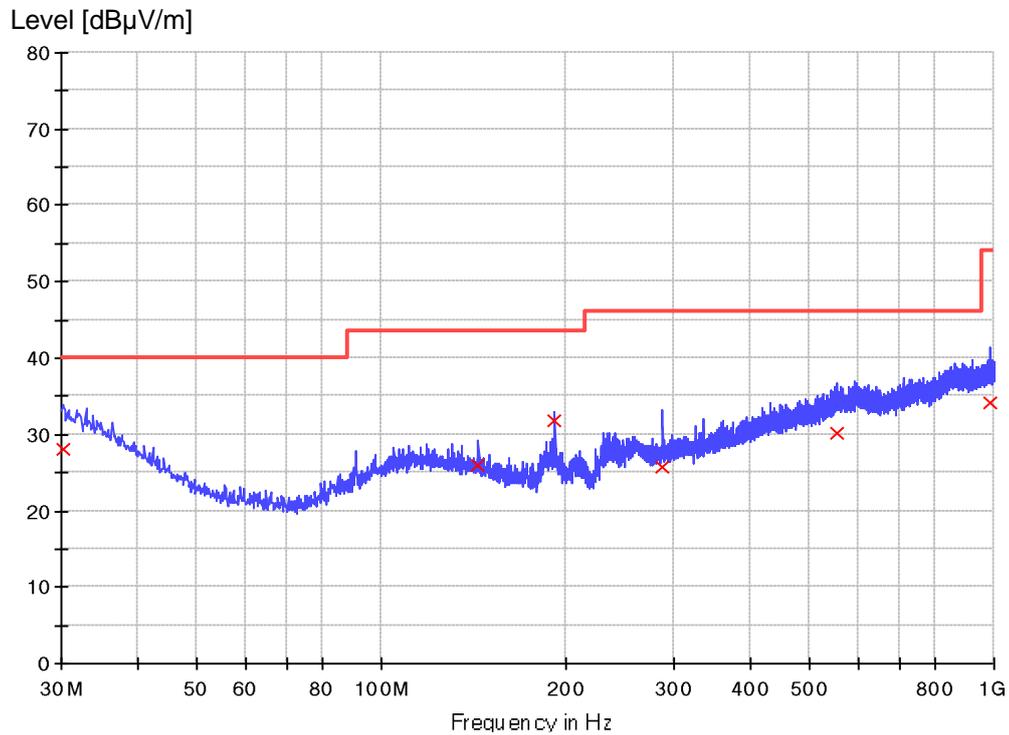
Notes on following tables of radiated emission results and conversions:

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

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

Margin: Limit (dB $\mu$ V/m) - QuasiPeak (dB $\mu$ V/m)

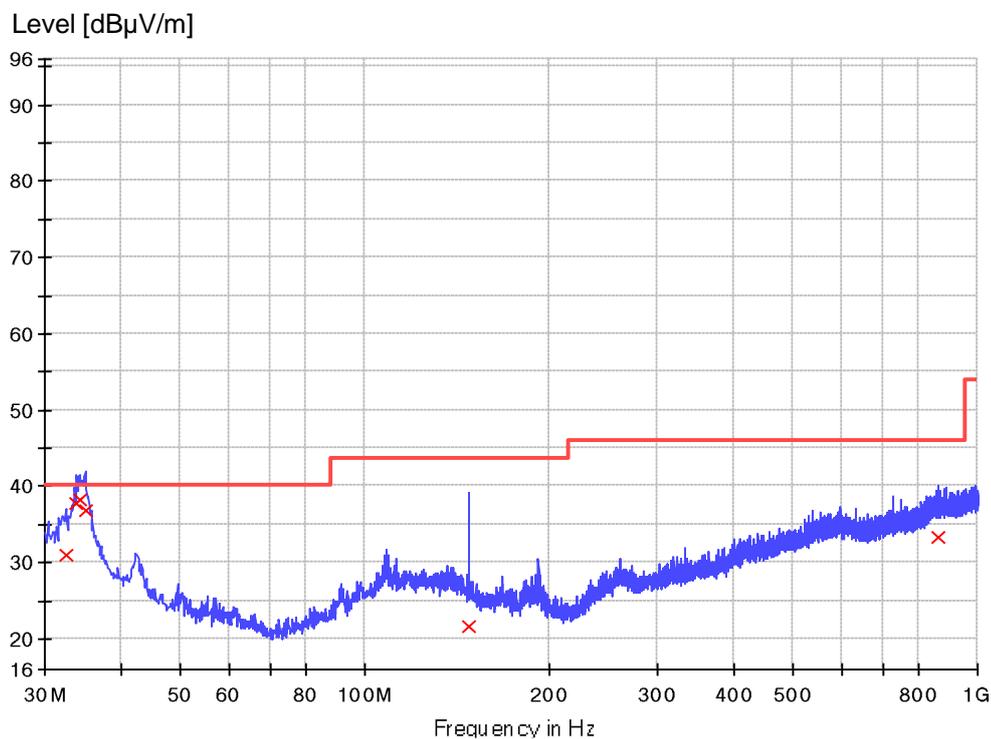
**Figure 5: Spectral Diagrams and measurement results, 30 MHz - 1 GHz, horizontal polarization, mode 1**



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)
30.242500	28.1	1000.0	120.000	130.0	H	-29.0	24.7	11.9	40.0
143.975000	26.1	1000.0	120.000	130.0	H	-33.0	17.9	17.4	43.5
191.990000	31.8	1000.0	120.000	150.0	H	-35.0	15.9	11.7	43.5
288.020000	25.8	1000.0	120.000	130.0	H	96.0	20.1	20.2	46.0
552.708750	30.3	1000.0	120.000	140.0	H	7.0	26.7	15.7	46.0
982.418750	34.1	1000.0	120.000	140.0	H	25.0	29.8	19.9	54.0

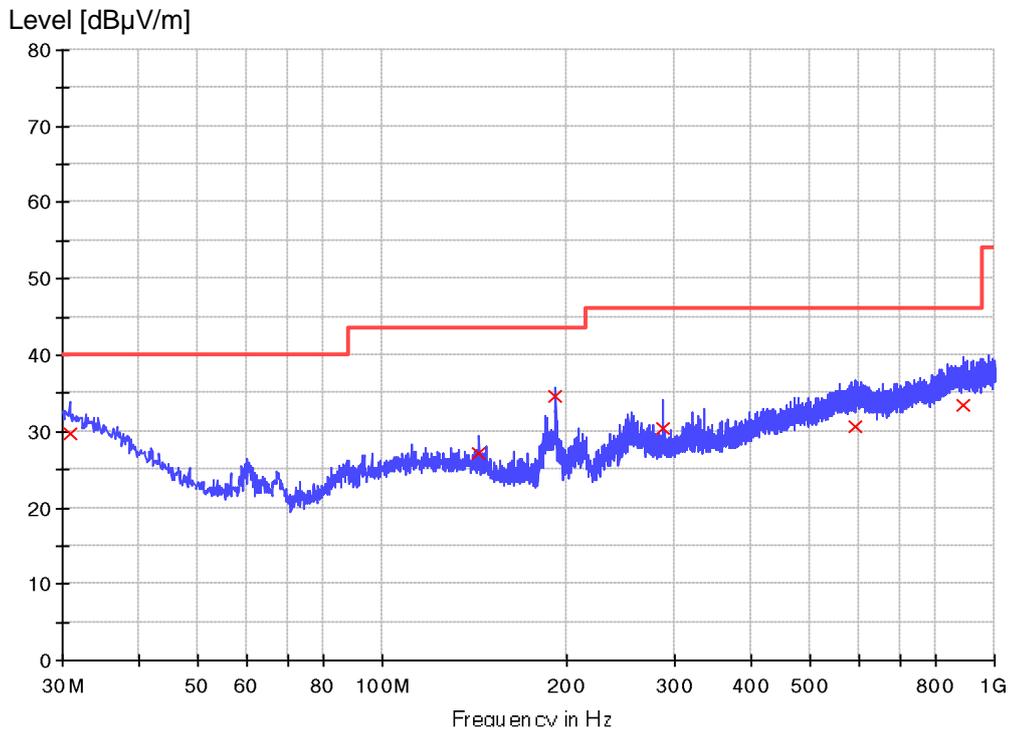
**Figure 6: Spectral Diagrams and measurement results, 30 MHz - 1 GHz, vertical polarization, mode 1**



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)
32.425000	31.0	1000.0	120.000	100.0	V	-107.0	23.7	9.1	40.0
33.880000	37.8	1000.0	120.000	130.0	V	110.0	23.0	2.2	40.0
34.243750	38.1	1000.0	120.000	130.0	V	-23.0	22.9	1.9	40.0
34.971250	36.7	1000.0	120.000	100.0	V	-131.0	22.5	3.3	40.0
147.370000	21.6	1000.0	120.000	120.0	V	-69.0	17.7	21.9	43.5
862.381250	33.4	1000.0	120.000	150.0	V	134.0	28.8	12.6	46.0

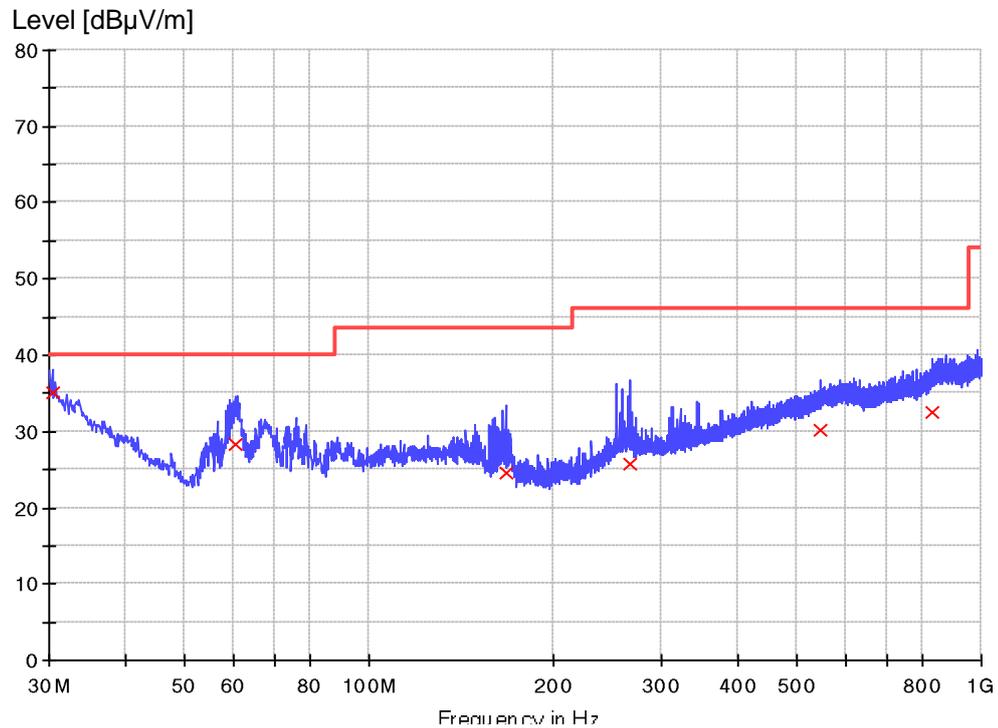
**Figure 7: Spectral Diagrams and measurement results, 30 MHz - 1 GHz, horizontal polarization, mode 2**



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	29.8	1000.0	120.000	120.0	H	-113.0	24.4	10.2	40.0
143.975000	27.2	1000.0	120.000	100.0	H	-138.0	17.9	16.3	43.5
191.990000	34.6	1000.0	120.000	110.0	H	40.0	15.9	8.9	43.5
288.020000	30.5	1000.0	120.000	120.0	H	98.0	20.1	15.5	46.0
591.145000	30.6	1000.0	120.000	100.0	H	-163.0	26.8	15.4	46.0
890.875000	33.4	1000.0	120.000	150.0	H	-88.0	28.7	12.7	46.0

**Figure 8: Spectral Diagrams and measurement results, 30 MHz - 1 GHz, vertical polarization, 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)
30.363750	35.2	1000.0	120.000	110.0	V	-85.0	24.6	4.8	40.0
60.676250	28.3	1000.0	120.000	150.0	V	-15.0	12.9	11.7	40.0
167.012500	24.6	1000.0	120.000	100.0	V	104.0	16.7	18.9	43.5
266.680000	25.7	1000.0	120.000	110.0	V	-153.0	20.5	20.3	46.0
545.918750	30.1	1000.0	120.000	120.0	V	-84.0	26.6	15.9	46.0
829.522500	32.5	1000.0	120.000	130.0	V	44.0	28.4	13.5	46.0

### 5.2.2 Radiated emission (Above 1 GHz)

<b>Result:</b>	<b>Passed</b>
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- Date of testing : 2025-02-08
- Port : Enclosure
- Test procedure : FCC 47 CFR Part 15, Subpart B:2023, ANSI C63.4-2014 and CISPR 16-2-3 ICES-003:2020
- Limit : Above 1 GHz, Peak limit: 74 dB $\mu$ V/m; Average limit: 54 dB $\mu$ V/m
- Frequency range : 1-18 GHz  
 Note: The highest frequency in the EUT is 2.4 GHz. According to FCC Part 15 subpart B §15.33 (b) (1), the upper frequency for radiated emission measurement is 12 GHz. The actual test frequency is up to 18 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 : Mode as defined in clause 2.3
- Input voltage : AC 120 V; 60 Hz
- Earthing : No earthing
- Ambient condition : Temperature: 20.1 °C; Relative humidity: 43.1 %

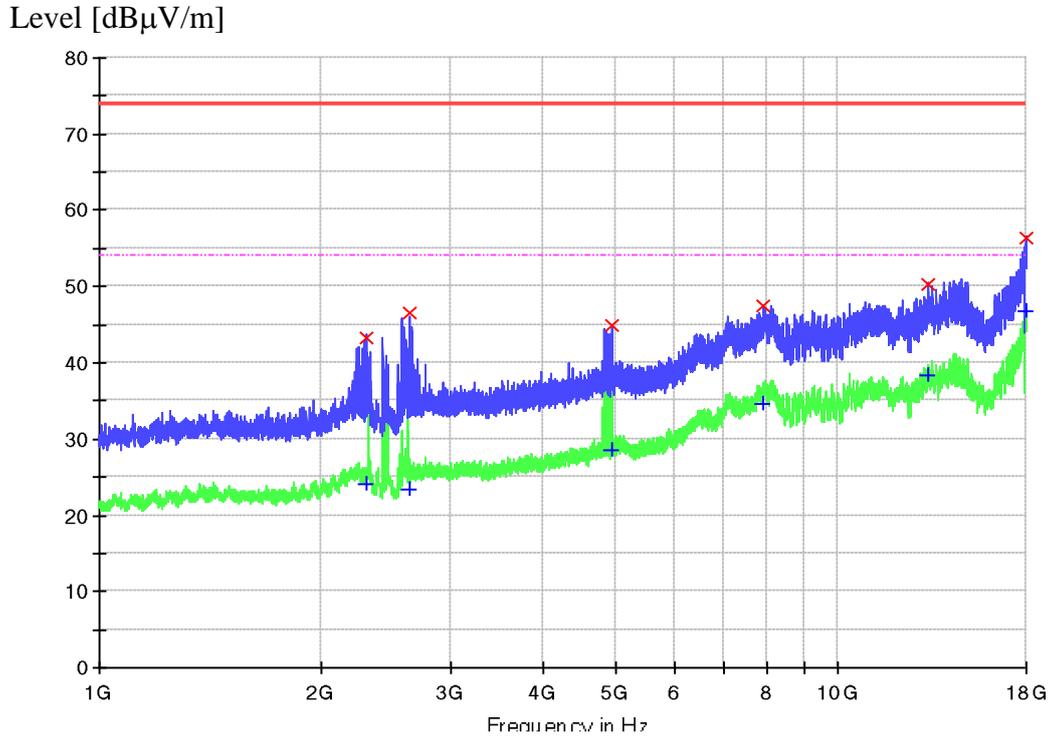
The radiated disturbance test was carried out in a semi-anechoic chamber. The test distance from the receiving antenna to the EUT is 3 m. The normalized site attenuation of the semi-anechoic chamber is regularly calibrated to ensure the radiated disturbance test results are valid. During the test, the EUT was placed on a poly 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, “× (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 $\mu$ V/m): final measurement results by using peak detector
- Average (dB $\mu$ 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 $\mu$ V/m) - Peak (dB $\mu$ V/m)
- Limit CAV (dB $\mu$ V/m) – Average (dB $\mu$ V/m)

**Figure 9: Spectral Diagrams and measurement results, 1-18 GHz, horizontal polarization, mode 1**



Final Peak measurement results:

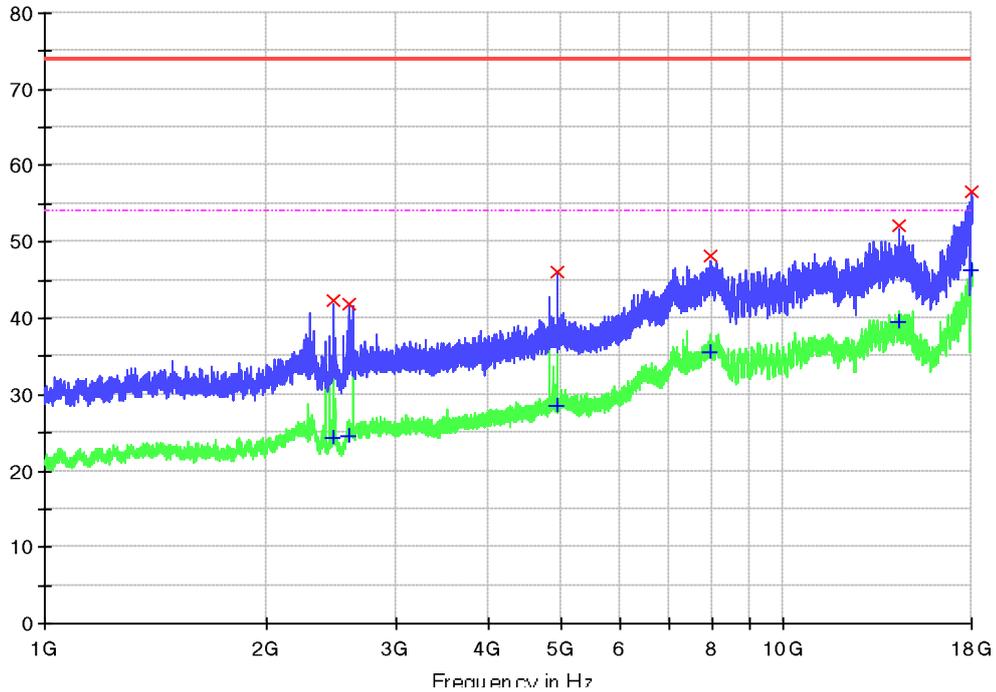
Frequency (MHz)	MaxPeak (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2303.156250	43.3	1000.000	120.0	H	53.0	-15.8	30.7	74.0
2627.218750	46.6	1000.000	150.0	H	-61.0	-15.7	27.4	74.0
4940.281250	45.0	1000.000	100.0	H	-121.0	-11.2	29.1	74.0
7922.718750	47.4	1000.000	120.0	H	154.0	-3.8	26.6	74.0
13228.312500	50.3	1000.000	150.0	H	-26.0	0.1	23.7	74.0
17976.093750	56.5	1000.000	120.0	H	-44.0	12.0	17.5	74.0

Final Average measurement results:

Frequency (MHz)	Average (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2303.156250	24.1	1000.000	120.0	H	53.0	-15.8	29.9	54.0
2627.218750	23.5	1000.000	150.0	H	-61.0	-15.7	30.5	54.0
4940.281250	28.5	1000.000	100.0	H	-121.0	-11.2	25.5	54.0
7922.718750	34.5	1000.000	120.0	H	154.0	-3.8	19.5	54.0
13228.312500	38.4	1000.000	150.0	H	-26.0	0.1	15.6	54.0
17976.093750	46.8	1000.000	120.0	H	-44.0	12.0	7.2	54.0

**Figure 10: Spectral Diagrams and measurement results, 1-18 GHz, vertical polarization, mode 1**

Level [dB $\mu$ V/m]



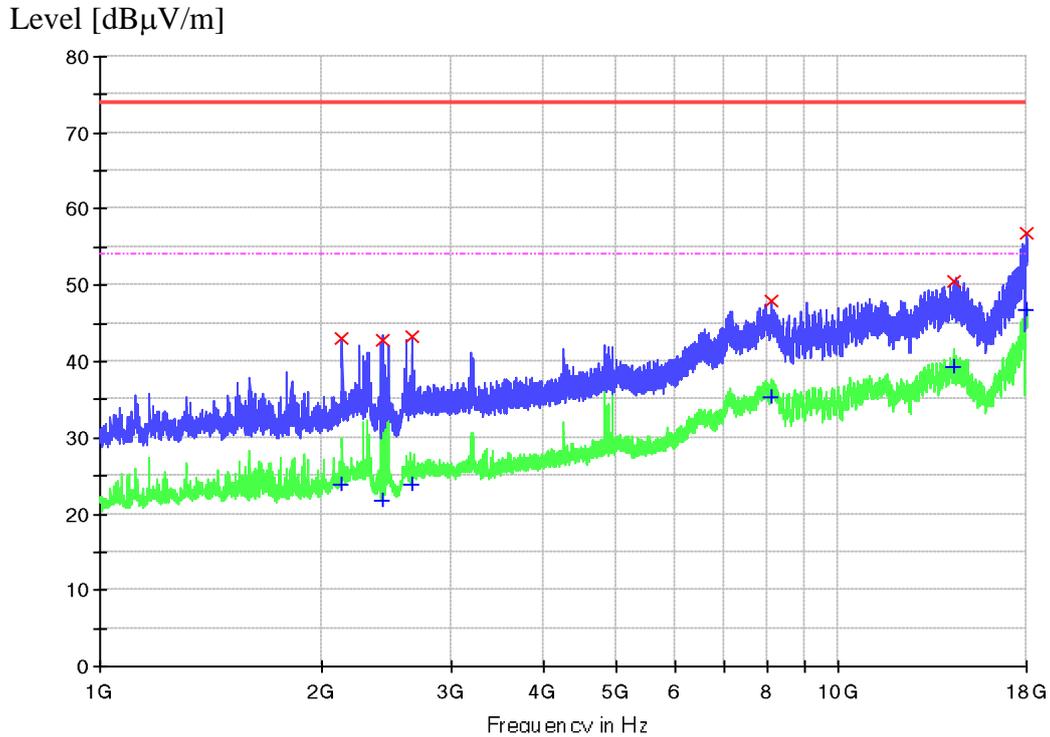
Final Peak measurement results:

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dB $\mu$ V/m)
2460.937500	42.4	1000.000	100.0	V	-66.0	-16.2	31.7	74.0
2585.250000	41.9	1000.000	110.0	V	-179.0	-15.9	32.1	74.0
4932.312500	46.0	1000.000	120.0	V	16.0	-11.2	28.0	74.0
7982.218750	48.3	1000.000	100.0	V	29.0	-3.6	25.7	74.0
14375.812500	52.1	1000.000	150.0	V	122.0	2.3	21.9	74.0
17958.031250	56.6	1000.000	120.0	V	-149.0	11.6	17.4	74.0

Final Average measurement results:

Frequency (MHz)	Average (dB $\mu$ V/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dB $\mu$ V/m)
2460.937500	24.3	1000.000	100.0	V	-66.0	-16.2	29.7	54.0
2585.250000	24.5	1000.000	110.0	V	-179.0	-15.9	29.5	54.0
4932.312500	28.6	1000.000	120.0	V	16.0	-11.2	25.4	54.0
7982.218750	35.5	1000.000	100.0	V	29.0	-3.6	18.5	54.0
14375.812500	39.5	1000.000	150.0	V	122.0	2.3	14.5	54.0
17958.031250	46.4	1000.000	120.0	V	-149.0	11.6	7.6	54.0

Figure 11: Spectral Diagrams and measurement results, 1-18 GHz, horizontal polarization, mode 2



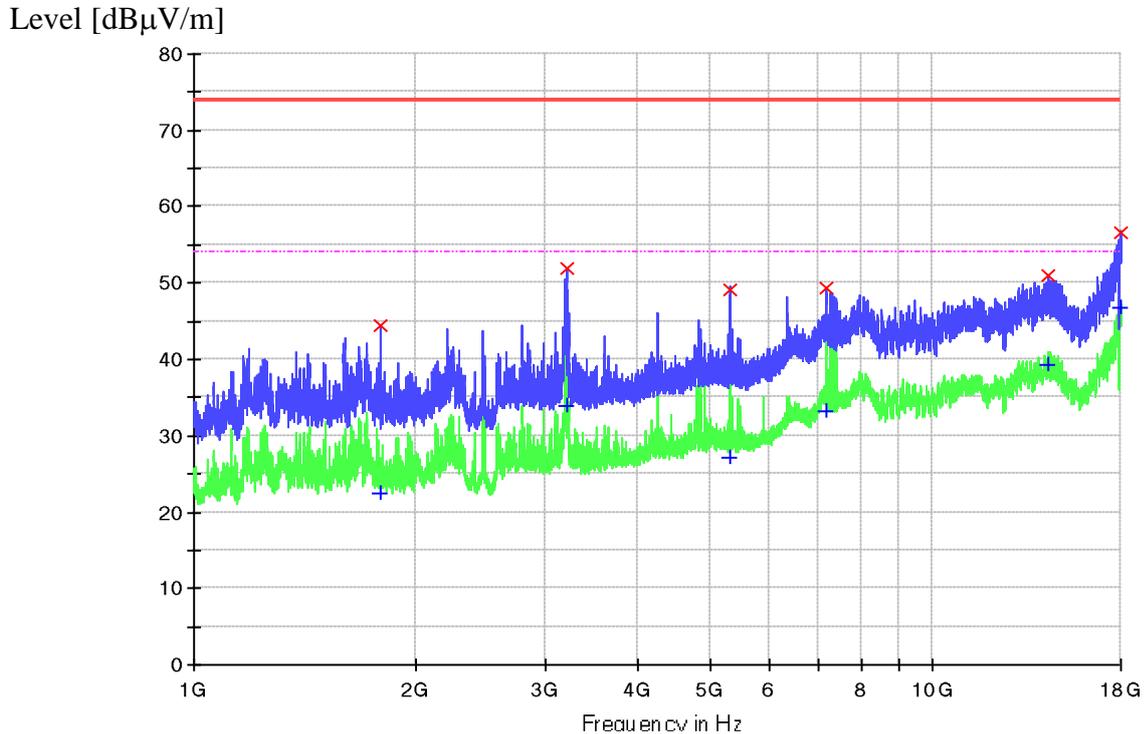
Final Peak measurement results:

Frequency (MHz)	MaxPeak (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2128.375000	43.0	1000.000	110.0	H	90.0	-16.6	31.1	74.0
2421.625000	42.9	1000.000	110.0	H	-47.0	-16.1	31.1	74.0
2641.031250	43.2	1000.000	120.0	H	38.0	-15.6	30.8	74.0
8126.718750	47.9	1000.000	110.0	H	-67.0	-4.2	26.1	74.0
14369.968750	50.5	1000.000	120.0	H	75.0	2.3	23.6	74.0
17977.156250	56.8	1000.000	150.0	H	-74.0	12.0	17.2	74.0

Final Average measurement results:

Frequency (MHz)	Average (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2128.375000	24.0	1000.000	110.0	H	90.0	-16.6	30.0	54.0
2421.625000	21.8	1000.000	110.0	H	-47.0	-16.1	32.2	54.0
2641.031250	23.9	1000.000	120.0	H	38.0	-15.6	30.1	54.0
8126.718750	35.2	1000.000	110.0	H	-67.0	-4.2	18.8	54.0
14369.968750	39.4	1000.000	120.0	H	75.0	2.3	14.6	54.0
17977.156250	46.8	1000.000	150.0	H	-74.0	12.0	7.2	54.0

Figure 12: Spectral Diagrams and measurement results, 1-18 GHz, vertical polarization, mode 2



Final Peak measurement results:

Frequency (MHz)	MaxPeak (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1792.625000	44.4	1000.000	110.0	V	91.0	-18.8	29.6	74.0
3191.937500	52.0	1000.000	120.0	V	-57.0	-14.7	22.0	74.0
5324.906250	49.2	1000.000	130.0	V	164.0	-11.7	24.8	74.0
7199.156250	49.3	1000.000	110.0	V	178.0	-6.0	24.7	74.0
14360.937500	51.0	1000.000	100.0	V	-81.0	2.2	23.0	74.0
17976.625000	56.6	1000.000	110.0	V	-49.0	12.0	17.5	74.0

Final Average measurement results:

Frequency (MHz)	Average (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1792.625000	22.4	1000.000	110.0	V	91.0	-18.8	31.6	54.0
3191.937500	34.0	1000.000	120.0	V	-57.0	-14.7	20.0	54.0
5324.906250	27.2	1000.000	130.0	V	164.0	-11.7	26.8	54.0
7199.156250	33.3	1000.000	110.0	V	178.0	-6.0	20.7	54.0
14360.937500	39.3	1000.000	100.0	V	-81.0	2.2	14.7	54.0
17976.625000	46.8	1000.000	110.0	V	-49.0	12.0	7.2	54.0

## 6 List of Test and Measurement Instruments

Equip.	Description	Model	Manufacturer	Last Date DD.MM.YYYY	Due Date DD.MM.YYYY
9061503	Shielded enclosure	10.055x3.605x3.000	Frankonia	08.11.2023	08.11.2028
9023229	EMI test receiver	ESR3	Rohde&Schwarz	03.08.2024	03.08.2025
G1830003	Artificial mains network	ENV432	Rohde&Schwarz	11.10.2024	11.10.2025
G1824248	Dual display multimeter	F45	Fluke	28.06.2024	28.06.2025
9062744	EMI measurement software	EMC32-E+ (10.60.20)	Rohde&Schwarz	NA*	NA*
G1811378	3m semi-anechoic chamber	SAC3	Frankonia	03.12.2023	03.12.2026
G1811391	EMI test receiver	ESCI	Rohde&Schwarz	17.10.2024	17.10.2025
G1811425	Bilog antenna	CBL 6112D	Teseq	20.04.2023	20.04.2026
9062745	EMI measurement software	EMC32-MEB (10.60.20)	Rohde&Schwarz	NA*	NA*
9042162	EMI test receiver	ESR7	Rohde&Schwarz	21.01.2025	21.01.2026
9053499	Signal conditioning unit	SCU18F	Rohde & Schwarz	11.10.2024	11.10.2025
G1822702	Spectrum analyser	FSV40	Rohde&Schwarz	15.07.2024	15.07.2025
G1825371	Preamplifier	EMC051845SE	Taiwan EMCI	24.07.2024	24.07.2025
G1822694	Double ridged broadband horn antenna	BBHA 9120 D	Schwarzbeck	24.03.2021	24.03.2026

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**End of test report**