

Prüfbericht-Nr.: Test Report No.:	CN25P7US 001	Auftrags-Nr.: Order No.:	326095770	Seite 1 von 28 Page 1 of 28
Kunden-Referenz-Nr.: Client Reference No.:	1288983	Auftragsdatum: Order date.:	2025-02-19	
Auftraggeber: Client:	IKEA of Sweden AB Box 702, SE-343 81, Älmhult Sweden			
Prüfgegenstand: Test item:	KALLSUP			
Bezeichnung / Typ-Nr.: Identification / Type No.:	E2507			
Auftrags-Inhalt: Order content:	TÜV Rheinland EMC service			
Prüfgrundlage: Test specification:	FCC 47 CFR Part 15, Subpart B:2023 Class B ICES-003:2020			
Wareneingangsdatum: Date of receipt:	2025-02-21	Refer to the EUT photos file		
Prüfmuster-Nr.: Test sample No.:	A003928047-015			
Prüfzeitraum: Testing period:	Refer to test report			
Ort der Prüfung: Place of testing:	Refer to clause 1.1			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: / tested by:	genehmigt von: / authorized by:			
Datum: / Date: 2025-05-06 <i>Xuelan Zhang</i>	Datum: / Date: 2025-05-06 <i>Jiayi Zhou</i>			
Stellung: / Position: Project engineer	Stellung: / Position: Authorizer			
Sonstiges / Other:	FCC ID: FHO-E2507 IC: 10912A-E2507 Test Firm Name: TÜV Rheinland (Shanghai) Co., Ltd. Designation Number: CN1396 Test Firm Registration Number: 930979			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* 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				
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Anmerkungen
Remarks

- | | |
|---|--|
| 1 | <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.
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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| 3 | <p>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.
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> |
| 4 | <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 bezüglich 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:

Report number	Issue date	Contents and reason for change if appropriate
CN25P7US 001	2025-05-06	Initial release.

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1 Test Sites

1.1 Test Facilities

Laboratory: TÜV Rheinland (Shanghai) Co., Ltd.
Address: Workshop14, 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 KALLSUP. For the further information, refer to the user's manual.

2.2 Ratings and System Details

Rated input : DC 5 V, 1 A
Battery Rechargeable 14500 Li-ion Battery: 3.6 V 750 mAh
Protection class : III

2.3 Independent Operation Modess

The basic operation mode is the below,

1. Continuous playing 1 kHz audio signal by Bluetooth with power supply.
2. Continuous playing 1 kHz audio signal by Bluetooth with computer.

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.

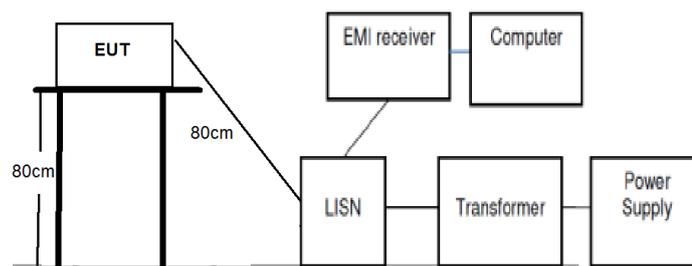
Refer to the related paragraph of this report.

The sequence of testing:

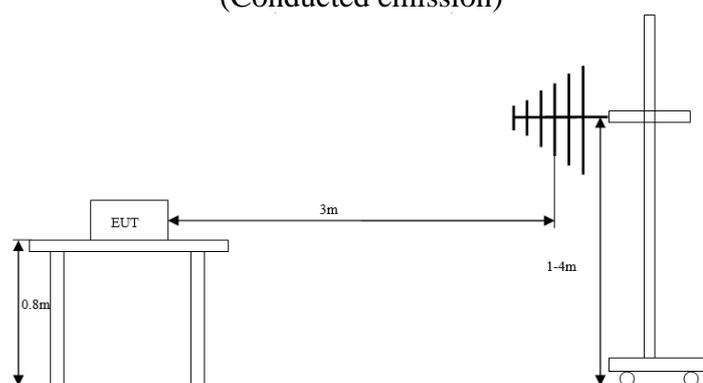
1. Radiated emission tests were performed on 2025-03-05~2025-04-01.
2. Conducted emission tests were performed on 2025-03-05~2025-04-01.

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	Mobile phone	iPhone 15	Apple
2	Computer	ThinkPad T450	lenovo
3	Power supply	ICPSW5-5NA-1	IKEA

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	: 2025-03-05~2025-04-01
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 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: 22.4 °C; Relative humidity: 50 %
Expanded measurement uncertainty ($k=2$)	: 2.33 dB The minimum margin to the limit is 8.3 dB at 0.494250 MHz. The margin is higher than expanded measurement uncertainty.

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.

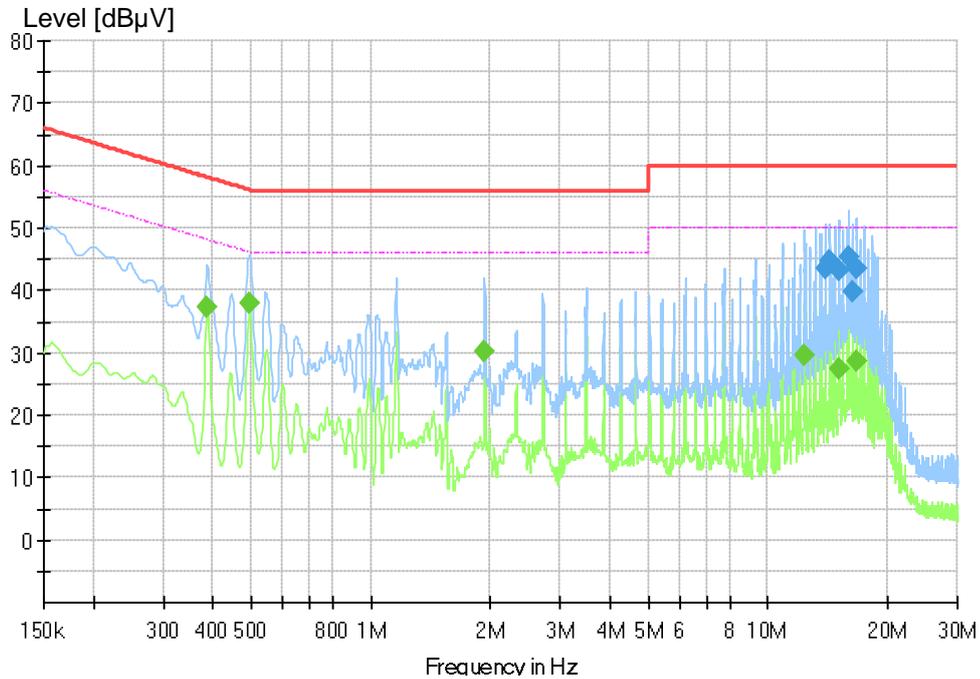
The tested object was set-up on a wooden support. The EUT was set 0.8 m away from the AMN. The cord longer than necessary to be connected to the AMN was folded forth and back parallel so as to form a bundle with a length between 0.3 m and 0.4 m.

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.

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)

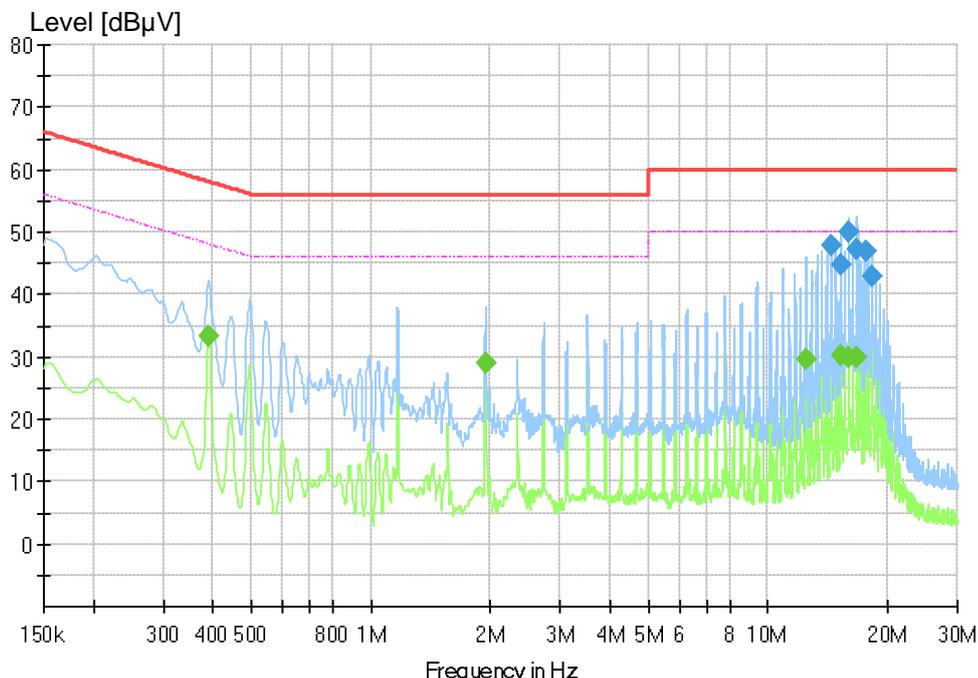
Figure 1: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, L

Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
13.947000	43.56	60.00	16.44	L1	10.8
14.354250	44.78	60.00	15.22	L1	10.8
15.121500	43.11	60.00	16.89	L1	10.8
15.906750	45.27	60.00	14.73	L1	10.9
16.271250	39.89	60.00	20.11	L1	10.9
16.683000	43.61	60.00	16.39	L1	10.9

Final Average measurement result:

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.386250	37.17	48.14	10.97	L1	10.3
0.494250	37.79	46.10	8.30	L1	10.3
1.936500	30.28	46.00	15.72	L1	10.1
12.396750	29.71	50.00	20.29	L1	10.8
15.119250	27.40	50.00	22.60	L1	10.8
16.671750	28.52	50.00	21.48	L1	10.9

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	Corr. (dB)
14.460000	47.95	60.00	12.05	N	11.1
15.231750	44.86	60.00	15.14	N	11.1
16.023750	50.07	60.00	9.93	N	11.2
16.795500	47.21	60.00	12.79	N	11.2
17.587500	46.88	60.00	13.12	N	11.2
18.354750	42.75	60.00	17.25	N	11.2

Final Average measurement result:

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.390750	33.43	48.05	14.62	N	10.4
1.950000	28.86	46.00	17.14	N	10.5
12.486750	29.56	50.00	20.44	N	11.1
15.231750	30.12	50.00	19.88	N	11.1
16.008000	29.80	50.00	20.20	N	11.2
16.793250	29.99	50.00	20.01	N	11.2

5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Radiated emission (30 MHz - 1 GHz)

Result:	Passed
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Date of testing	: 2025-03-05~2025-04-01
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 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 (see Note 1)
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	: Modes 1, 2 as defined in clause 2.3
Input voltage	: AC 120 V; 60 Hz; DC 5 V
Ambient condition	: Temperature: 21.2 °C; Relative humidity: 49 %
Expanded measurement uncertainty ($k=2$)	: 5.40 dB The minimum margin to the limit is 8.2 dB at 31.818750 MHz. The margin is higher than expanded measurement uncertainty.

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.

Note 1: The class B limits of FCC 47 CFR Part 15, Subpart B:2023 is stricter than those ICES-003:2020 for 3 m test distance. Therefore, the former limits are used in following figures and tables.

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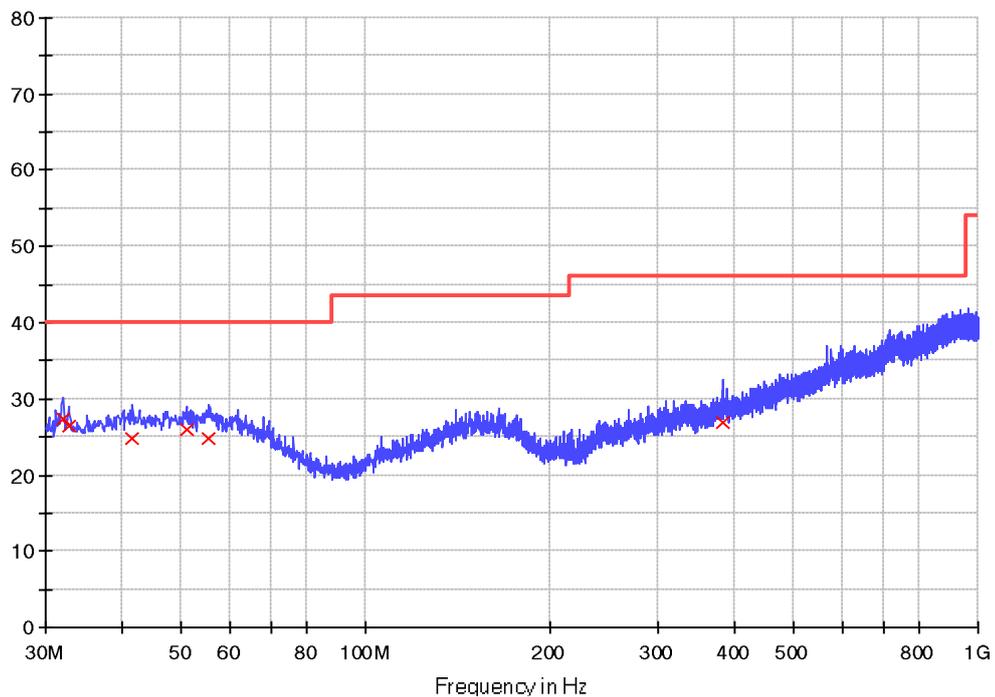
Notes on following tables of radiated emission results and conversions:

QuasiPeak (dB μ 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 μ V/m) - QuasiPeak (dB μ V/m)

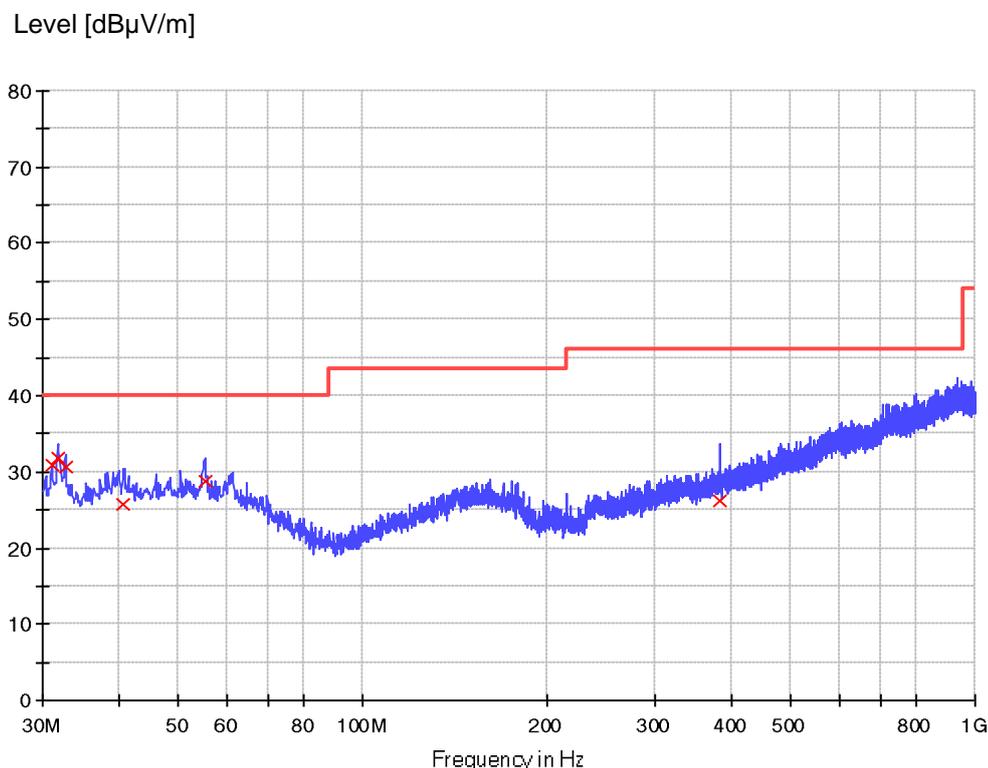
Figure 3: Spectral Diagrams and measurement results, horizontal polarization (30 MHz to 1 GHz), mode 1

 Level [dB μ V/m]


Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dB μ V/m)
32.061250	27.4	120.000	200.0	H	-89.0	19.1	12.6	40.0
32.667500	26.4	120.000	200.0	H	-174.0	19.2	13.6	40.0
41.640000	24.9	120.000	100.0	H	108.0	20.4	15.1	40.0
50.976250	26.0	120.000	200.0	H	47.0	20.7	14.0	40.0
55.462500	24.9	120.000	100.0	H	59.0	20.5	15.1	40.0
383.928750	26.9	120.000	200.0	H	-56.0	22.7	19.2	46.0

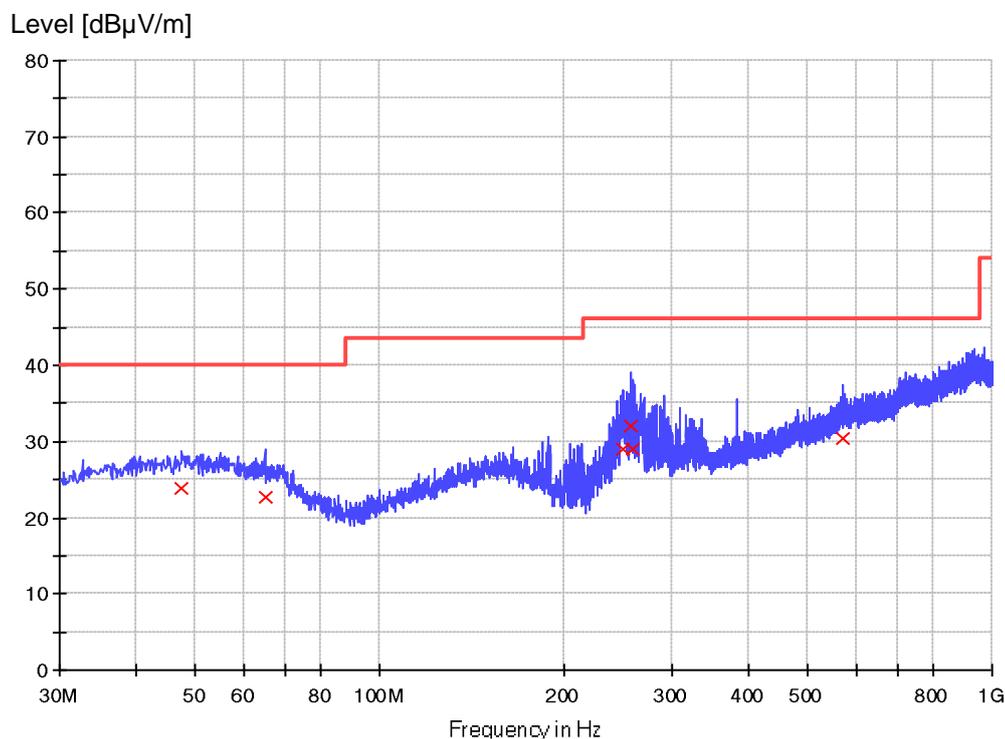
Figure 4: Spectral Diagrams and measurement results, vertical polarization (30 MHz to 1 GHz), mode 1



Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
31.091250	30.8	120.000	100.0	V	-155.0	18.9	9.2	40.0
31.818750	31.8	120.000	200.0	V	-39.0	19.0	8.2	40.0
32.667500	30.6	120.000	100.0	V	14.0	19.2	9.4	40.0
40.670000	25.8	120.000	100.0	V	158.0	20.3	14.3	40.0
55.220000	28.8	120.000	100.0	V	-17.0	20.5	11.3	40.0
384.050000	26.1	120.000	200.0	V	-29.0	22.7	19.9	46.0

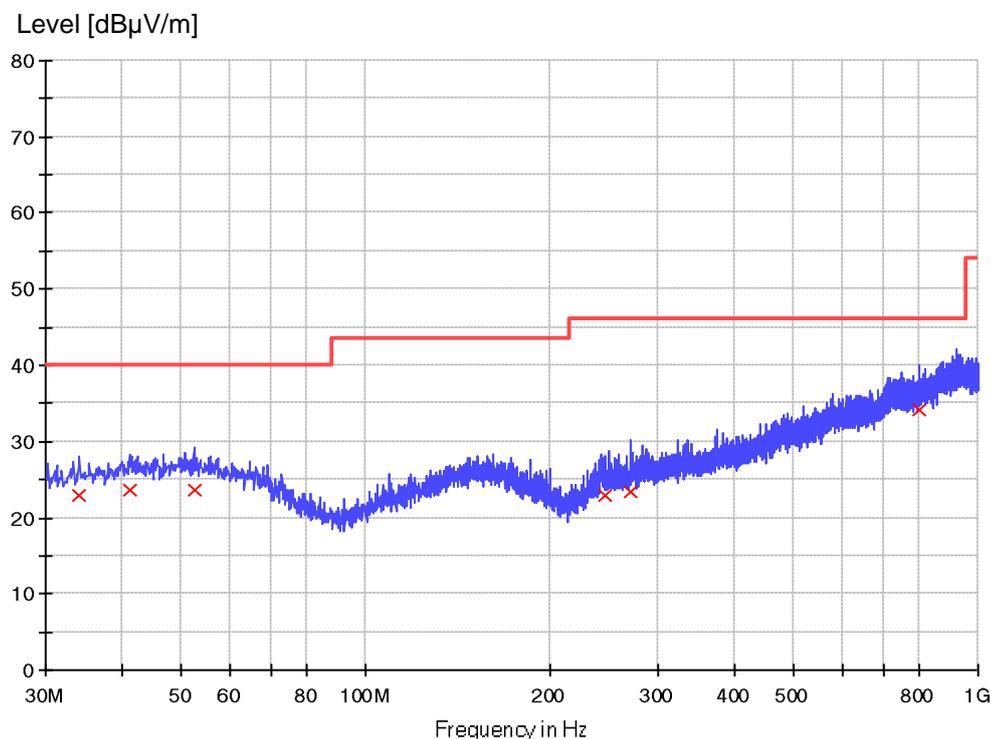
Figure 5: Spectral Diagrams and measurement results, horizontal polarization (30 MHz to 1 GHz), mode 2



Final Quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
47.581250	23.9	120.000	200.0	H	-26.0	20.7	16.1	40.0
64.920000	22.8	120.000	200.0	H	-98.0	19.2	17.2	40.0
248.735000	29.0	120.000	100.0	H	-14.0	19.2	17.0	46.0
256.373750	32.1	120.000	100.0	H	105.0	19.5	13.9	46.0
259.890000	28.9	120.000	200.0	H	112.0	19.4	17.1	46.0
569.926250	30.5	120.000	200.0	H	106.0	26.8	15.5	46.0

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)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
34.122500	22.8	120.000	100.0	V	-158.0	19.5	17.2	40.0
41.155000	23.7	120.000	200.0	V	-36.0	20.4	16.3	40.0
52.431250	23.7	120.000	100.0	V	66.0	20.7	16.3	40.0
246.310000	22.9	120.000	200.0	V	18.0	19.5	23.1	46.0
270.438750	23.4	120.000	100.0	V	89.0	20.0	22.6	46.0
799.816250	34.2	120.000	100.0	V	15.0	30.4	11.8	46.0

5.2.2 Radiated emission (Above 1 GHz)

Result:

Passed

Date of testing	: 2025-03-05~2025-04-01
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 μ V/m; Average limit: 54 dB μ 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 1 as defined in clause 2.3
Input voltage	: AC 120 V; 60 Hz (with power supply) DC 5 V (with computer)
Earthing	: No earthing
Ambient condition	: Temperature: 21.2 °C; Relative humidity: 49 %
Expanded measurement uncertainty ($k=2$)	: 5.08 dB The minimum margin to the limit is 6.6 dB at 17972.375000 MHz. The margin is higher than expanded measurement uncertainty.

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, “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:

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

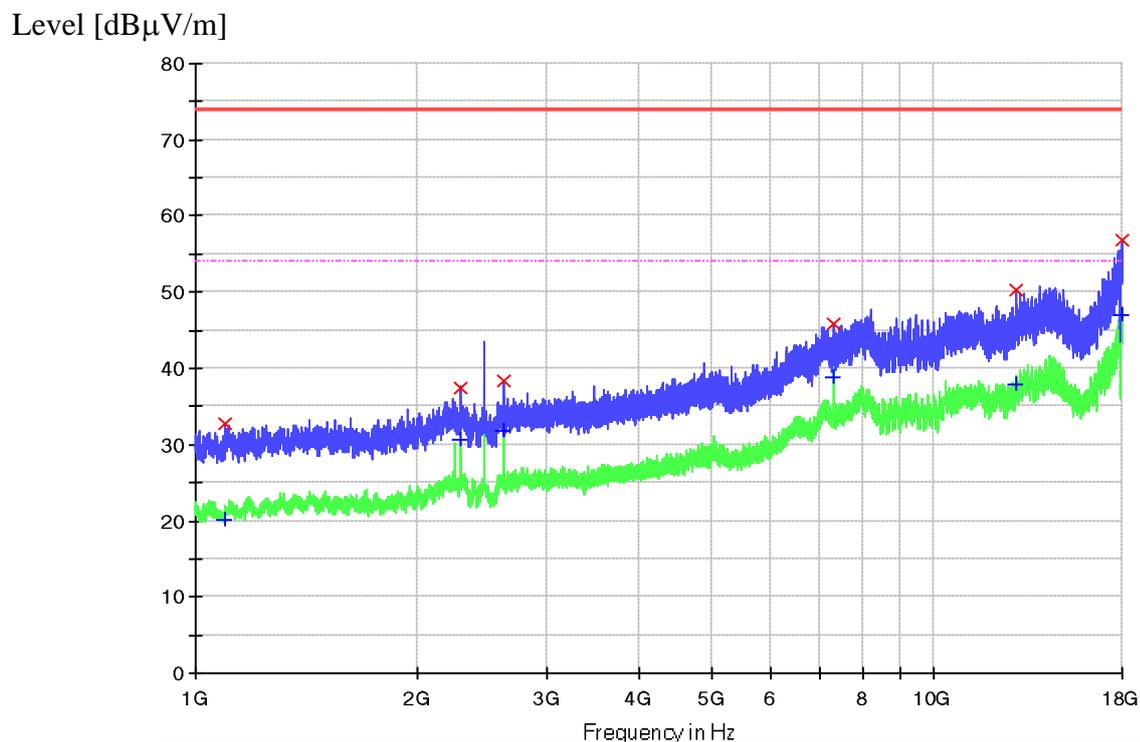
Average (dB μ V/m): final measurement results by using average detector

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, 1-18 GHz, horizontal polarization, mode 1



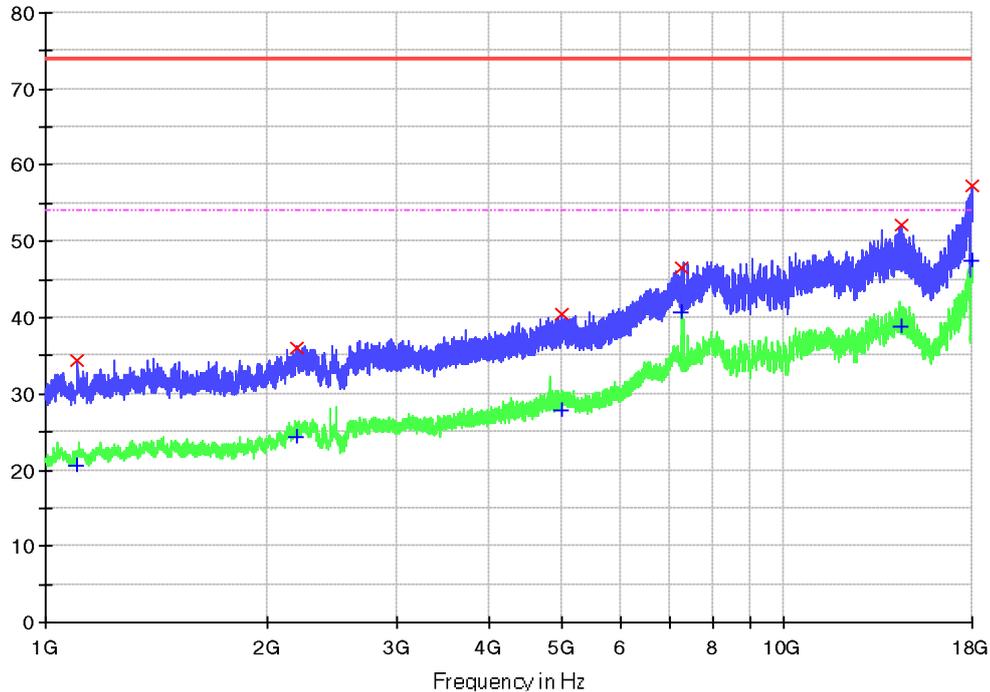
Final Peak measurement results:

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1095.093750	32.7	1000.0	1000.000	100.0	H	-174.0	-20.0	41.3	74.0
2285.093750	37.5	1000.0	1000.000	150.0	H	-152.0	-15.8	36.5	74.0
2616.593750	38.5	1000.0	1000.000	200.0	H	-171.0	-15.7	35.5	74.0
7322.937500	45.9	1000.0	1000.000	200.0	H	-162.0	-6.6	28.1	74.0
12929.750000	50.2	1000.0	1000.000	150.0	H	45.0	0.3	23.8	74.0
17973.437500	56.8	1000.0	1000.000	200.0	H	66.0	11.9	17.2	74.0

Final Average measurement results:

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1095.093750	20.0	1000.0	1000.000	100.0	H	-174.0	-20.0	34.0	54.0
2285.093750	30.6	1000.0	1000.000	150.0	H	-152.0	-15.8	23.4	54.0
2616.593750	31.9	1000.0	1000.000	200.0	H	-171.0	-15.7	22.1	54.0
7322.937500	38.8	1000.0	1000.000	200.0	H	-162.0	-6.6	15.2	54.0
12929.750000	37.8	1000.0	1000.000	150.0	H	45.0	0.3	16.2	54.0
17973.437500	47.1	1000.0	1000.000	200.0	H	66.0	11.9	7.0	54.0

Figure 8: Spectral Diagrams and measurement results, 1-18 GHz, vertical polarization, mode 1

 Level [dB μ V/m]

Final Peak measurement results:

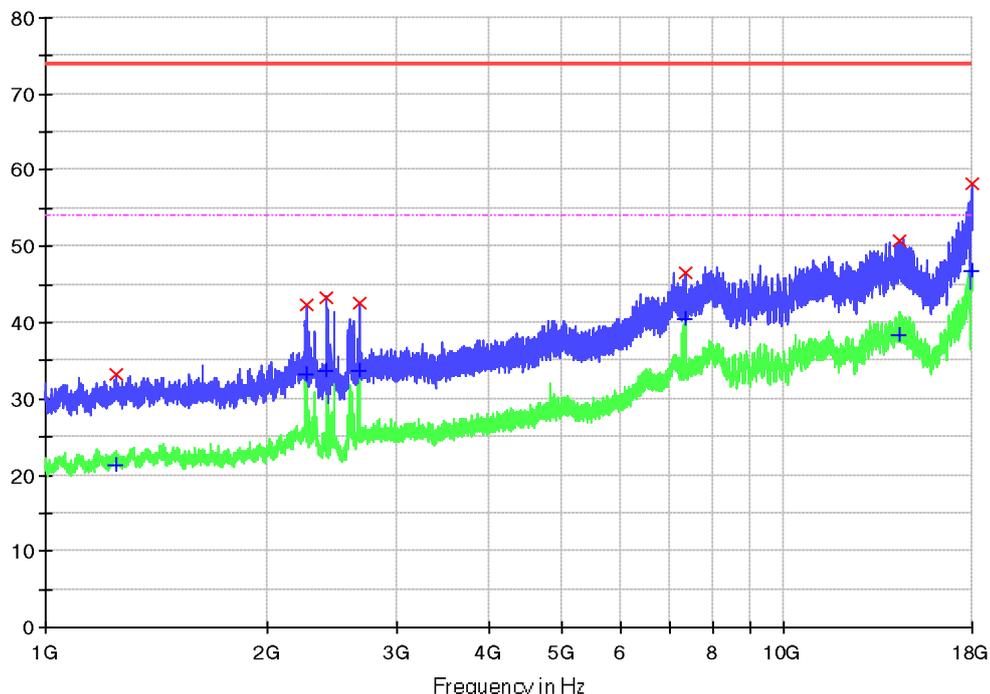
Frequency (MHz)	MaxPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dB μ V/m)
1106.250000	34.5	1000.0	1000.000	200.0	V	-56.0	-19.9	39.5	74.0
2183.625000	36.1	1000.0	1000.000	150.0	V	-147.0	-15.9	37.9	74.0
4990.218750	40.4	1000.0	1000.000	100.0	V	-89.0	-11.0	33.6	74.0
7256.531250	46.6	1000.0	1000.000	200.0	V	22.0	-6.4	27.4	74.0
14408.218750	52.2	1000.0	1000.000	150.0	V	28.0	2.4	21.8	74.0
17972.375000	57.3	1000.0	1000.000	100.0	V	155.0	11.9	16.7	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/m)	Margin - AVG (dB)	Limit - AVG (dB μ V/m)
1106.250000	20.7	1000.0	1000.000	200.0	V	-56.0	-19.9	33.3	54.0
2183.625000	24.3	1000.0	1000.000	150.0	V	-147.0	-15.9	29.8	54.0
4990.218750	28.0	1000.0	1000.000	100.0	V	-89.0	-11.0	26.1	54.0
7256.531250	40.6	1000.0	1000.000	200.0	V	22.0	-6.4	13.4	54.0
14408.218750	38.8	1000.0	1000.000	150.0	V	28.0	2.4	15.2	54.0
17972.375000	47.4	1000.0	1000.000	100.0	V	155.0	11.9	6.6	54.0

Figure 9: Spectral Diagrams and measurement results, 1-18 GHz, horizontal polarization, mode 2

Level [dB μ V/m]



Final Peak measurement results:

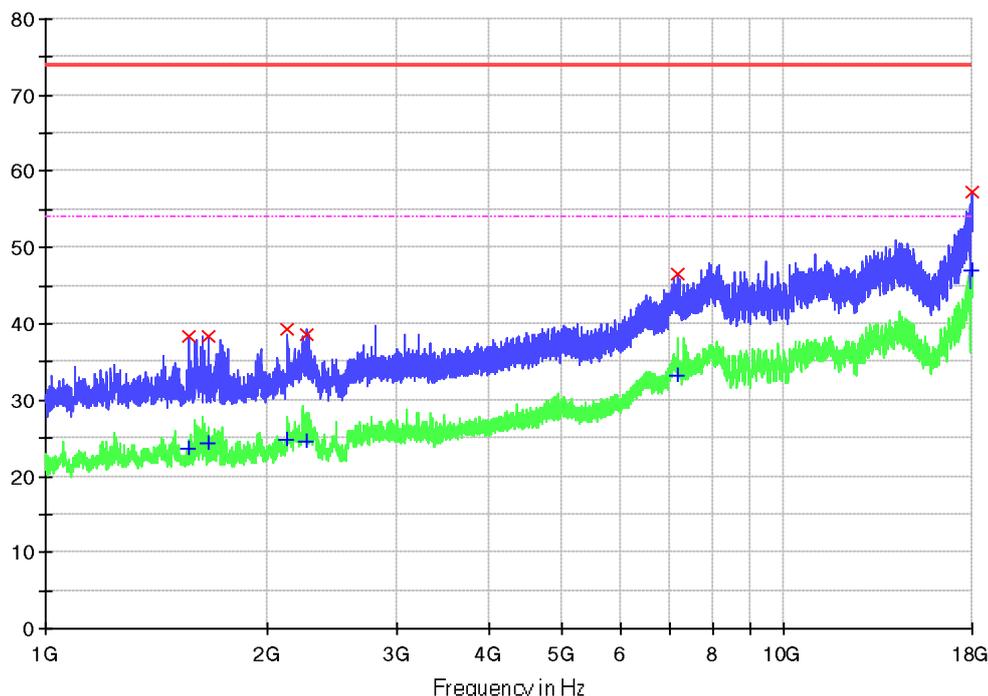
Frequency (MHz)	MaxPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dB μ V/m)
1247.562500	33.3	1000.0	1000.000	200.0	H	144.0	-19.4	40.7	74.0
2254.812500	42.4	1000.0	1000.000	150.0	H	74.0	-15.6	31.6	74.0
2407.281250	43.2	1000.0	1000.000	200.0	H	82.0	-16.0	30.8	74.0
2661.218750	42.5	1000.0	1000.000	150.0	H	85.0	-15.5	31.5	74.0
7380.312500	46.7	1000.0	1000.000	200.0	H	-15.0	-6.3	27.3	74.0
14326.406250	50.9	1000.0	1000.000	100.0	H	-63.0	2.1	23.1	74.0
17976.093750	58.2	1000.0	1000.000	150.0	H	-52.0	12.0	15.8	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/m)	Margin - AVG (dB)	Limit - AVG (dB μ V/m)
1247.562500	21.2	1000.0	1000.000	200.0	H	144.0	-19.4	32.8	54.0
2254.812500	33.2	1000.0	1000.000	150.0	H	74.0	-15.6	20.8	54.0
2407.281250	33.6	1000.0	1000.000	200.0	H	82.0	-16.0	20.4	54.0
2661.218750	33.8	1000.0	1000.000	150.0	H	85.0	-15.5	20.2	54.0
7380.312500	40.5	1000.0	1000.000	200.0	H	-15.0	-6.3	13.5	54.0
14326.406250	38.4	1000.0	1000.000	100.0	H	-63.0	2.1	15.6	54.0
17976.093750	46.9	1000.0	1000.000	150.0	H	-52.0	12.0	7.1	54.0

Figure 10: Spectral Diagrams and measurement results, 1-18 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/m)	Margin - PK+ (dB)	Limit - PK+ (dB μ V/m)
1561.531250	38.4	1000.0	1000.000	100.0	V	-14.0	-18.9	35.6	74.0
1661.406250	38.4	1000.0	1000.000	100.0	V	-75.0	-18.9	35.6	74.0
2125.187500	39.2	1000.0	1000.000	150.0	V	-89.0	-16.6	34.8	74.0
2259.593750	38.7	1000.0	1000.000	100.0	V	-124.0	-15.6	35.3	74.0
7203.406250	46.5	1000.0	1000.000	200.0	V	135.0	-6.1	27.5	74.0
17975.031250	57.3	1000.0	1000.000	150.0	V	136.0	11.9	16.7	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/m)	Margin - AVG (dB)	Limit - AVG (dB μ V/m)
1561.531250	23.6	1000.0	1000.000	100.0	V	-14.0	-18.9	30.4	54.0
1661.406250	24.3	1000.0	1000.000	100.0	V	-75.0	-18.9	29.7	54.0
2125.187500	24.9	1000.0	1000.000	150.0	V	-89.0	-16.6	29.1	54.0
2259.593750	24.7	1000.0	1000.000	100.0	V	-124.0	-15.6	29.3	54.0
7203.406250	33.2	1000.0	1000.000	200.0	V	135.0	-6.1	20.8	54.0
17975.031250	46.9	1000.0	1000.000	150.0	V	136.0	11.9	7.1	54.0

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6 Photographs of the Test Set-Up

Refer to the test setup file.

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7 List of Test and Measurement Instruments

Equip. no.	Equipment name	Model	Serial no.	Manufacturer	Cal. date	Due date
EMC-S-028	EMI measurement software	EMC32-E+ (10.60.20)	100150	Rohde & Schwarz	N/A	N/A
EMC-C-366	Thermohygrometer	608-H1	2485149174	testo	2024-07-26	2025-07-26
EMC-C-195	EMI test receiver	ESR3	102794	Rohde & Schwarz	2024-08-03	2025-08-03
EMC-C-190	Artificial mains network	ENV432	101514	Rohde & Schwarz	2024-10-11	2025-10-11
EMC-S-032	EMI measurement software	EMC32-MEB (10.60.20)	100697	Rohde & Schwarz	N/A	N/A
EMC-C-373	Trilog broadband antenna	VULB 9168	1771	Schwarzbeck	2024-11-23	2025-11-23
EMC-C-121	Thermohygrometer	608-H1	1241320265	testo	2024-06-25	2025-06-25
EMC-C-066	EMI test receiver	ESCI	100280	Rohde & Schwarz	2024-10-17	2025-10-17
EMC-C-001	3 m semi-anechoic chamber	SAC3	FJ129002	Frankonia	2023-12-03	2026-12-03
EMC-C-175	Preamplifier	EMC051845SE	980612	EMCI Taiwan	2024-07-24	2025-07-24
EMC-C-161	Spectrum analyser	FSV40	101258	Rohde & Schwarz	2024-07-15	2025-07-15
EMC-C-019	Double ridged horn antenna	BBHA 9120 D	9120D-433	Schwarzbeck	2025-02-28	2026-02-28

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End of test report