

Prüfbericht-Nr.: <i>Test report no.:</i>	CN25AGHT 001	Auftrags-Nr.: <i>Order no.:</i>	326128437	Seite 1 von 29 <i>Page 1 of 29</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	1288983	Auftragsdatum: <i>Order date:</i>	2025-09-03	
Auftraggeber: <i>Client:</i>	IKEA of Sweden AB Box 702, SE-343 81 Älmhult, Sweden			
Prüfgegenstand: <i>Test item:</i>	LED Ceiling Lamp			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	T2501			
Auftrags-Inhalt: <i>Order content:</i>	TÜV Rheinland EMC service			
Prüfgrundlage: <i>Test specification:</i>	FCC 47 CFR Part 15, Subpart B:2024 Class B ICES-005:2018 ICES-003:2020			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2025-12-05	Refer to the EUT photos file		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A004156714-001			
Prüfzeitraum: <i>Testing period:</i>	2026-01-05~2026-01-15			
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: <i>tested by:</i>	Jessie Xu	genehmigt von: <i>authorized by:</i>	Hexiong Liu	
Datum: <i>Date:</i>	2026-02-25	Ausstellungsdatum: <i>Issue date:</i>	2026-02-25	
Stellung / Position:	Project engineer	Stellung / Position:	Authorizer	
Sonstiges / <i>Other:</i>	FCC ID: FHO-T2501 Test Firm Name: TÜV Rheinland (Shanghai) Co., Ltd. Designation Number: CN1396 Test Firm Registration Number: 930979			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	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 specification(s)	F(ail) = failed a.m. test specification(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 above mentioned 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>				

Prüfbericht-Nr.: CN25AGHT 001
Test report no.:

Seite 2 von 29
Page 2 of 29

Anmerkungen
Remarks

1	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. <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. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie auf folgender Webseite: go.tuv.com/digital-signature <i>As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. For information on verifying the authenticity of our documents, please visit the following website: go.tuv.com/digital-signature</i>
3	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. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	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 115:2023, 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. <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 115:2023, 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>

Prüfbericht - Nr.: CN25AGHT 001
Test Report No.:

Seite 3 von 29
Page 3 of 29

Revision history of test report:

Report number	Issue date	Contents and reason for change if appropriate
CN25AGHT 001	2026-02-25	Initial release.

Contents

1	TEST SITES	5
1.1	TEST FACILITIES.....	5
2	GENERAL PRODUCT INFORMATION	6
2.1	PRODUCT FUNCTION AND INTENDED USE	6
2.2	RATINGS AND SYSTEM DETAILS.....	6
2.3	INDEPENDENT OPERATION MODES.....	6
2.4	DESCRIPTION OF INTERCONNECTING CABLES	6
2.5	NOISE GENERATING AND NOISE SUPPRESSING PARTS	6
2.6	HIGHEST FREQUENCY GENERATED OR USED IN THE DEVICE OR ON WHICH THE DEVICE OPERATES OR TUNES	6
2.7	SUBMITTED DOCUMENTS.....	6
3	TEST SET-UP AND OPERATION MODES.....	7
3.1	PRINCIPLE OF CONFIGURATION SELECTION	7
3.2	EQUIPMENT AND CABLE ARRANGEMENT.....	7
3.3	TEST SOFTWARE	8
3.4	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	8
3.5	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	8
4	CONFORMITY DECISION RULE.....	9
5	TEST RESULTS EMISSION	10
5.1	EMISSION IN THE FREQUENCY RANGE UP TO 30 MHz	10
5.1.1	Conducted emission	10
5.2	EMISSION IN THE FREQUENCY RANGE ABOVE 30 MHz.....	16
5.2.1	Radiated emission (30-1000 MHz).....	16
5.2.2	Radiated Emission (1-18 GHz)	22
6	PHOTOGRAPHS OF THE TEST SET-UP	27
7	LIST OF TEST AND MEASUREMENT INSTRUMENTS	28
8	LIST OF FIGURES.....	29

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 test equipment used 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 LED ceiling lamp with wireless dimming function for lighting and similar use. For further information, refer to the user's manual.

2.2 Ratings and System Details

Rated input : AC 120 V, 60 Hz
Rated power : 18 W

2.3 Independent Operation Modes

The basic operation modes are: "ON" and "OFF" with dimming.

The test modes are as follows:

- Mode 1: EUT was illuminated and shifted color with max. lighting output.
- Mode 2: EUT was illuminated and shifted color with min. lighting output.

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 2480 MHz for wireless module.

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

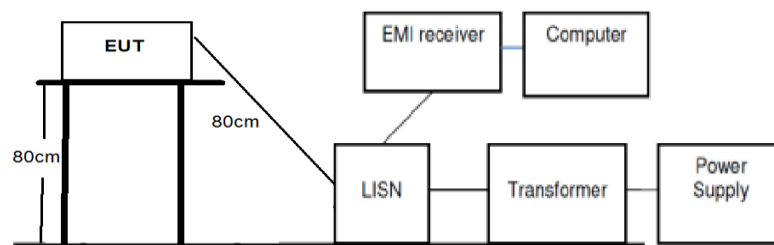
Emission: The equipment under test (EUT) was configured to measure its highest possible emission level. The test conditions were adapted accordingly in reference to the instructions for use.

Refer to the related paragraph of this report.
The sequence of testing:

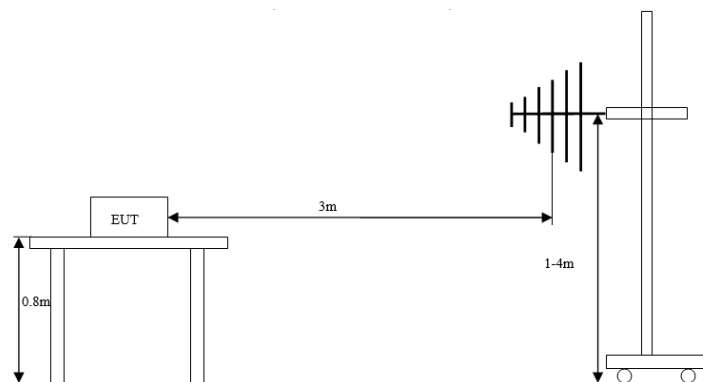
1. Conducted emission tests were performed on 2026-01-05.
2. Radiated emission tests were performed on 2026-01-05~2026-01-15.

3.2 Equipment and cable arrangement

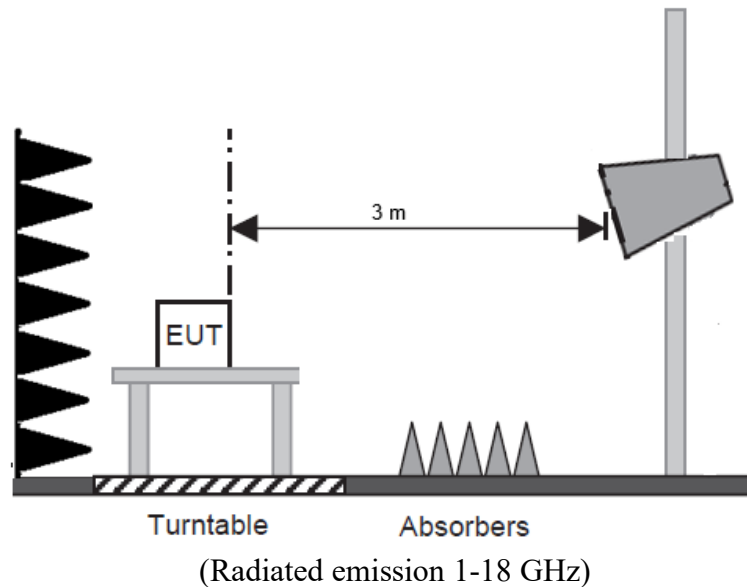
Block diagram for both conducted emission and radiated emission tests is as follows:



(Conducted emission)



(Radiated emission 30-1000 MHz)



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

3.3 Test Software

The “Home” APP for iPhone was used during the tests for color shifting and dimming.

3.4 Special Accessories and Auxiliary Equipment

During the tests, the following auxiliary equipment were used.

No.	Product	Model	Brand
1	Mobile phone	iPhone 15	Apple
2	Loudspeaker	HomePod mini	Apple
3	Remote control	E2489	IKEA

3.5 Countermeasures to achieve EMC Compliance

During tests, no special countermeasure was 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 Conducted emission

Result:		Passed
Date of testing	: 2026-01-05	
Test procedure	: FCC 47 CFR Part 15, Subpart B:2024, ICES-005:2018, 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~ Mode 2, defined in clause 2.3 (The worst case was found by prescanning cold, warm, red, green and blue colour with max and min lighting output, only the test data of worst case was recorded in the report)	
Ambient condition	: Temperature: 24.6 °C; Relative humidity: 43.4 %	
Expanded measurement uncertainty ($k=2$)	: 2.33 dB The minimum margin to the limit is 14.21 dB at 0.268125 MHz. The margin is higher than expanded measurement uncertainty.	
Test setup photo	: Photograph 1 of Attachment 3	

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.

Prüfbericht - Nr.: CN25AGHT 001

Test Report No.:

Seite 11 von 29

Page 11 of 29

The following figures and tables were 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.

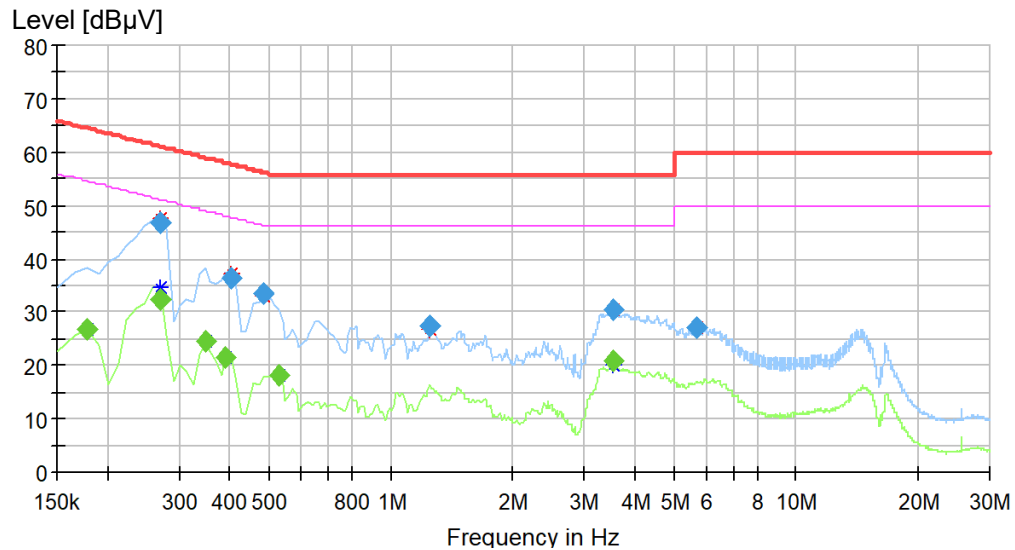
Notes on following tables of conducted emission results and conversions:

Level (dBμV): 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 (dBμV) - Level (dBμV)

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



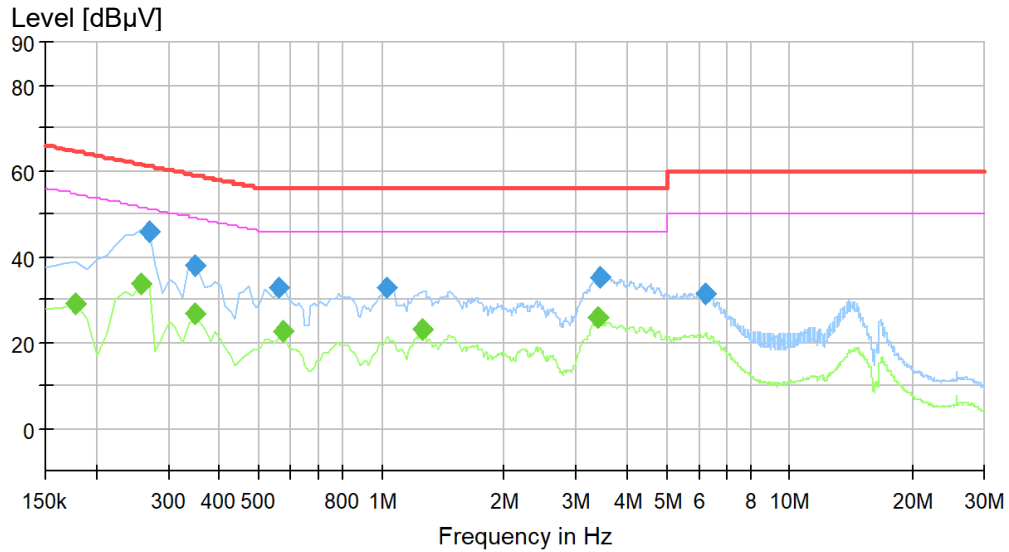
Final quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Band width (kHz)	Line
0.268125	46.97	61.18	14.21	1000.0	9.000	L1
0.403125	36.39	57.79	21.39	1000.0	9.000	L1
0.481875	33.33	56.31	22.98	1000.0	9.000	L1
1.246875	27.39	56.00	28.61	1000.0	9.000	L1
3.519375	30.49	56.00	25.51	1000.0	9.000	L1
5.679375	27.03	60.00	32.97	1000.0	9.000	L1

Final average measurement result:

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Band width (kHz)	Line
0.178125	26.76	54.57	27.82	1000.0	9.000	L1
0.268125	32.41	51.18	18.76	1000.0	9.000	L1
0.346875	24.62	49.04	24.42	1000.0	9.000	L1
0.391875	21.58	48.02	26.44	1000.0	9.000	L1
0.526875	18.19	46.00	27.81	1000.0	9.000	L1
3.519375	20.94	46.00	25.06	1000.0	9.000	L1

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



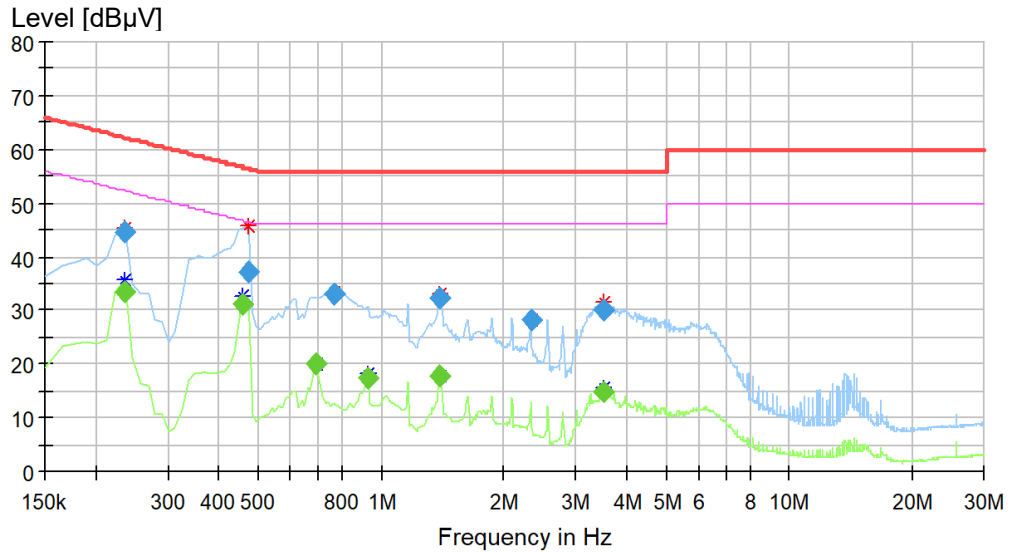
Final quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.268125	45.85	61.18	15.33	1000.0	9.000	N
0.346875	37.87	59.04	21.17	1000.0	9.000	N
0.560625	32.76	56.00	23.24	1000.0	9.000	N
1.021875	32.85	56.00	23.15	1000.0	9.000	N
3.418125	34.92	56.00	21.08	1000.0	9.000	N
6.208125	31.62	60.00	28.38	1000.0	9.000	N

Final average measurement result:

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.178125	28.86	54.57	25.71	1000.0	9.000	N
0.256875	33.78	51.53	17.75	1000.0	9.000	N
0.346875	26.83	49.04	22.21	1000.0	9.000	N
0.571875	22.36	46.00	23.64	1000.0	9.000	N
1.258125	23.09	46.00	22.91	1000.0	9.000	N
3.373125	25.58	46.00	20.42	1000.0	9.000	N

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



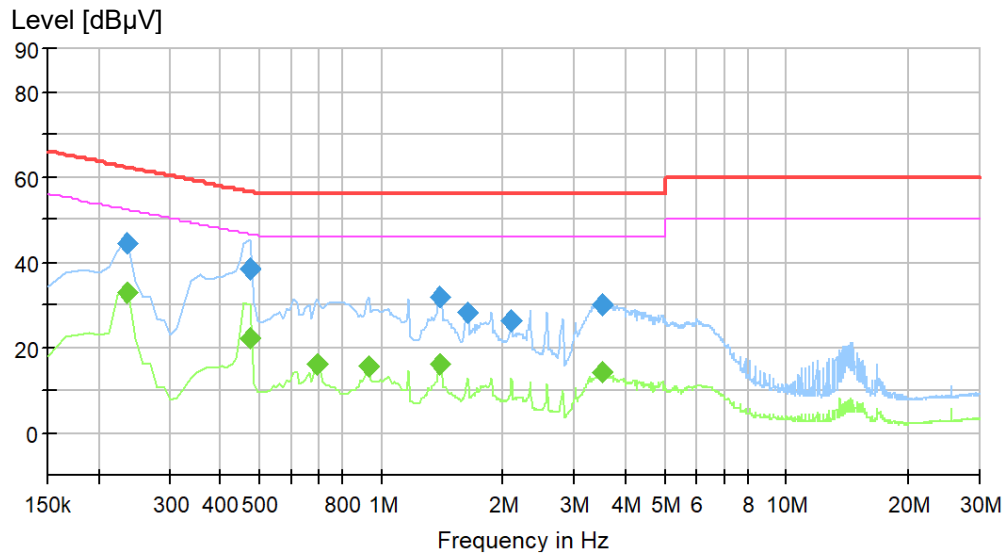
Final quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.234375	44.81	62.29	17.48	1000.0	9.000	L1
0.470625	37.27	56.50	19.24	1000.0	9.000	L1
0.763125	33.25	56.00	22.75	1000.0	9.000	L1
1.393125	32.38	56.00	23.62	1000.0	9.000	L1
2.326875	28.24	56.00	27.76	1000.0	9.000	L1
3.485625	30.19	56.00	25.81	1000.0	9.000	L1

Final average measurement result:

Frequency (MHz)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.234375	33.50	52.29	18.79	1000.0	9.000	L1
0.459375	31.10	46.70	15.60	1000.0	9.000	L1
0.695625	20.01	46.00	25.99	1000.0	9.000	L1
0.931875	17.36	46.00	28.64	1000.0	9.000	L1
1.393125	17.85	46.00	28.15	1000.0	9.000	L1
3.485625	14.90	46.00	31.10	1000.0	9.000	L1

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



Final quasi-peak measurement result:

Frequency (MHz)	QuasiPeak (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.234375	44.39	62.29	17.90	1000.0	9.000	N
0.470625	38.36	56.50	18.15	1000.0	9.000	N
1.393125	32.02	56.00	23.98	1000.0	9.000	N
1.629375	28.28	56.00	27.72	1000.0	9.000	N
2.090625	26.18	56.00	29.82	1000.0	9.000	N
3.496875	30.06	56.00	25.94	1000.0	9.000	N

Final average measurement result:

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.234375	32.59	52.29	19.71	1000.0	9.000	N
0.470625	22.24	46.50	24.26	1000.0	9.000	N
0.695625	15.89	46.00	30.11	1000.0	9.000	N
0.931875	15.60	46.00	30.40	1000.0	9.000	N
1.393125	15.96	46.00	30.04	1000.0	9.000	N
3.496875	14.13	46.00	31.87	1000.0	9.000	N

5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Radiated emission (30-1000 MHz)

Result:		Passed
Date of testing	: 2026-01-05	
Test procedure	: FCC 47 CFR Part 15, Subpart B:2024, ICES-005:2018, ICES-003:2020, ANSI C63.4-2014 and CISPR 16-2-3	
Product classification	: Class B	
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 – 1000 MHz, 46 dB μ V/m (see Note)	
Bandwidth of EMI receiver for final measurement	: 120 kHz	
Measurement time for final measurement	: 1 s	
Kind of test site	: Semi-anechoic chamber	
Input voltage	: AC 120 V, 60 Hz	
Operational mode	: Mode 1 ~ Mode 2, defined in clause 2.3 (The worst case was found by prescanning cold, warm, red, green and blue color with max and min lighting output, only the test data of worst case was recorded in the report)	
Ambient condition	: Temperature: 25.4 °C; Relative humidity: 44.6 %	
Expanded measurement uncertainty ($k=2$)	: 5.40 dB The minimum margin to the limit is 18.3 dB at 30.363750 MHz and 45.762500 MHz. The margin is higher than expanded measurement uncertainty.	
Test setup photo	: Photograph 2 of Attachment 3	

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 an 80 cm wooden support above the reference ground plane. The wooden support was rotated 360° around and the height of the antenna 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 measured by an automatic measurement system. A preview test was first 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, “x” means quasi-peak test results.

Prüfbericht - Nr.: CN25AGHT 001

Test Report No.:

Seite 17 von 29

Page 17 of 29

Notes on following tables of radiated emission results and conversions:

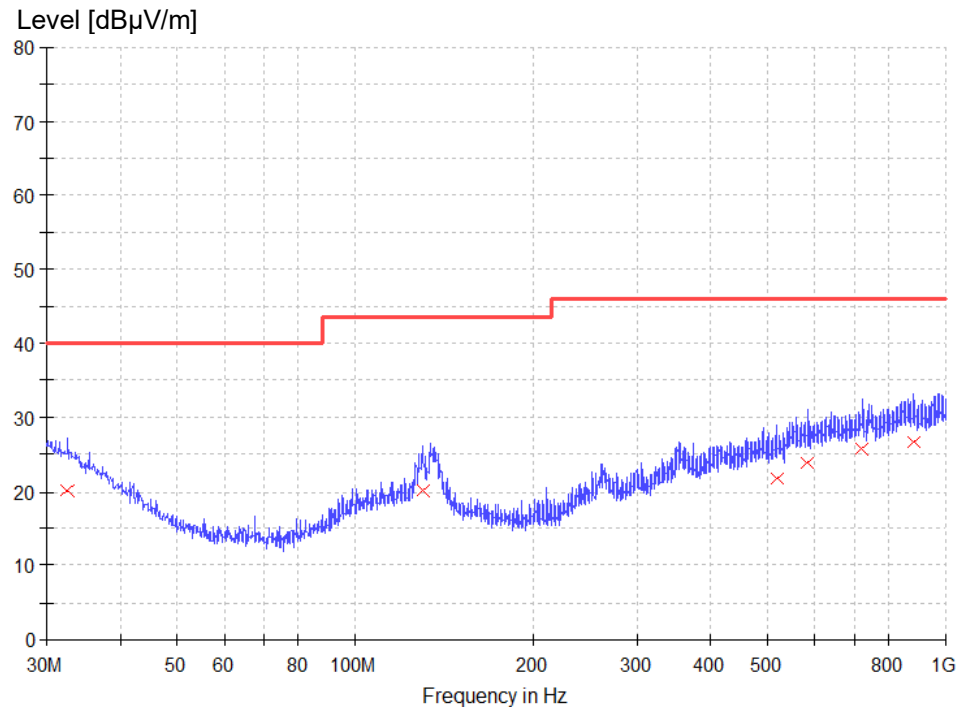
QuasiPeak (dB μ V/m): final measurement results by using quasi-peak detector

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)

Note: The class B limits of ICES-005:2018 is stricter than those FCC 47 CFR Part 15, Subpart B:2024 and ICES-003:2020 for 3 m test distance. Therefore, the former limits are used in following figures and tables.

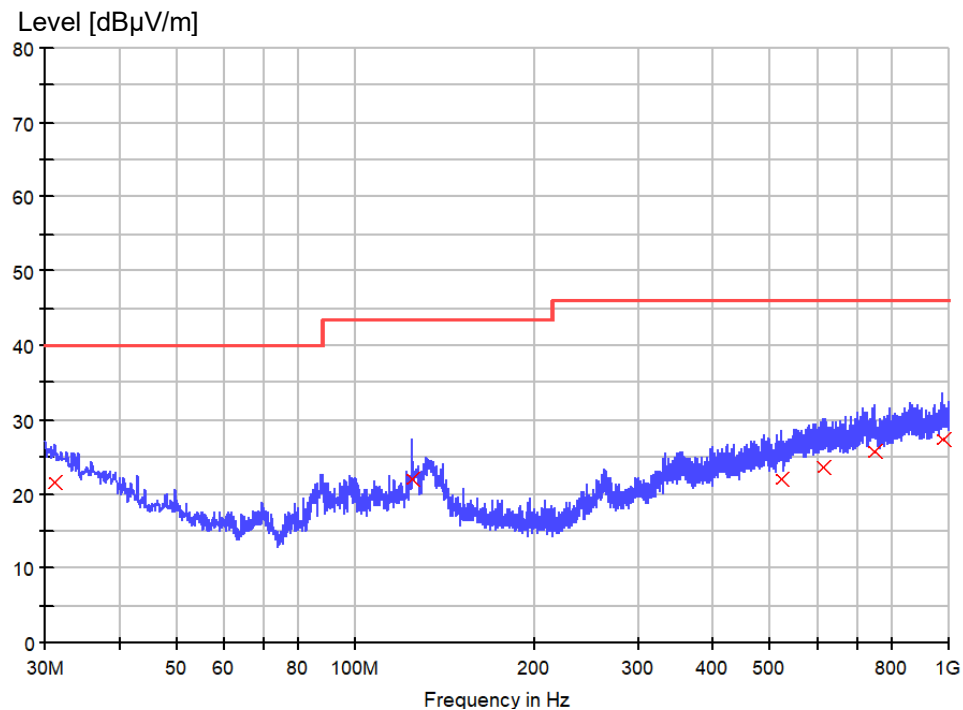
Figure 5: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Horizontal polarization on mode 1



Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
32.546250	20.1	120.000	138.0	H	166.0	24.0	19.9	40.0
130.273750	20.1	120.000	104.0	H	146.0	18.5	23.4	43.5
519.971250	21.8	120.000	132.0	H	119.0	25.3	24.2	46.0
584.233750	23.8	120.000	162.0	H	99.0	26.9	22.2	46.0
724.641250	25.7	120.000	118.0	H	81.0	28.4	20.3	46.0
884.570000	26.6	120.000	106.0	H	59.0	29.4	19.4	46.0

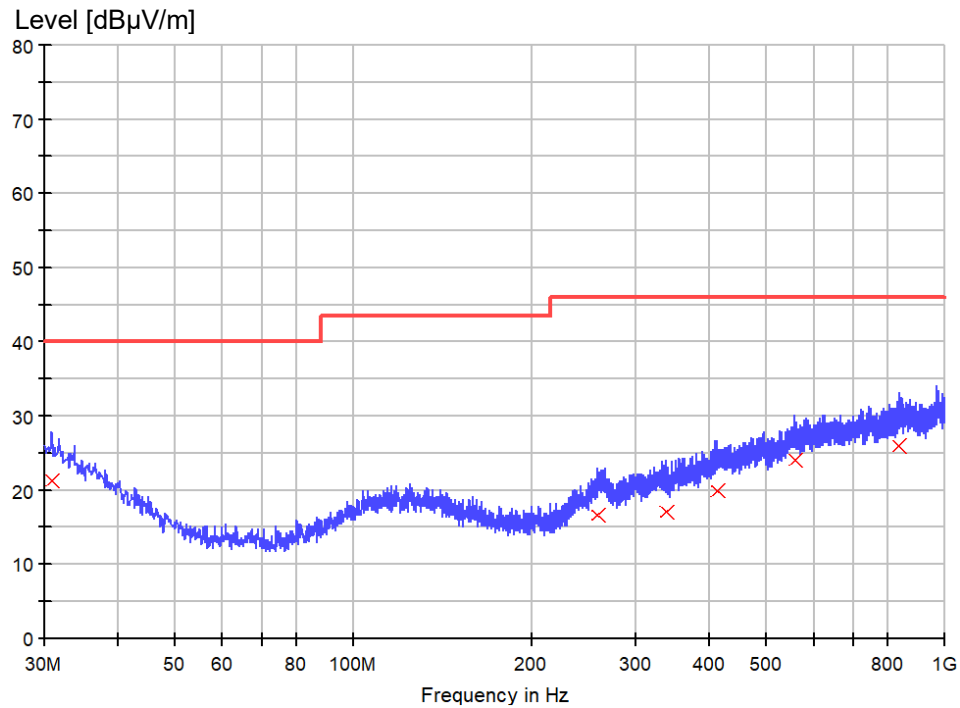
Figure 6: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Vertical polarization on mode 1



Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dBμV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
31.212500	21.4	120.000	144.0	V	166.0	24.8	18.6	40.0
124.938750	21.9	120.000	108.0	V	143.0	18.7	21.6	43.5
521.547500	21.9	120.000	139.0	V	119.0	25.3	24.1	46.0
613.212500	23.6	120.000	167.0	V	106.0	26.5	22.4	46.0
747.436250	25.7	120.000	133.0	V	73.0	28.8	20.4	46.0
974.901250	27.4	120.000	101.0	V	53.0	30.3	18.6	46.0

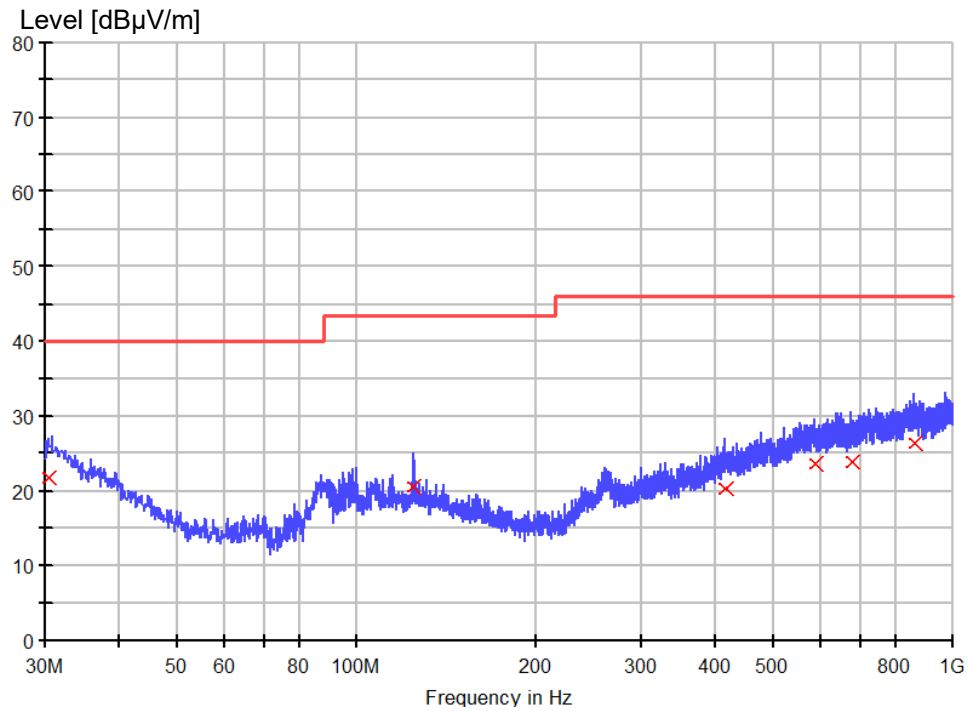
Figure 7: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Horizontal polarization on mode 2



Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dBμV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
30.970000	21.3	120.000	134.0	H	-164.0	24.9	18.7	40.0
258.435000	16.5	120.000	106.0	H	-146.0	21.0	29.5	46.0
338.096250	17.1	120.000	154.0	H	-123.0	20.9	28.9	46.0
412.301250	19.9	120.000	188.0	H	-98.0	23.8	26.1	46.0
558.407500	24.1	120.000	164.0	H	-79.0	26.5	21.9	46.0
838.495000	26.0	120.000	191.0	H	-64.0	28.8	20.0	46.0

Figure 8: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Vertical polarization on mode 2



Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dBμV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
30.363750	21.7	120.000	137.0	V	-166.0	25.2	18.3	40.0
124.938750	20.5	120.000	144.0	V	-142.0	18.7	23.0	43.5
416.060000	20.4	120.000	109.0	V	-123.0	24.0	25.6	46.0
589.690000	23.5	120.000	116.0	V	-97.0	26.4	22.5	46.0
673.958750	23.8	120.000	132.0	V	-86.0	26.6	22.3	46.0
861.411250	26.4	120.000	151.0	V	-64.0	29.1	19.6	46.0

5.2.2 Radiated Emission (1-18 GHz)

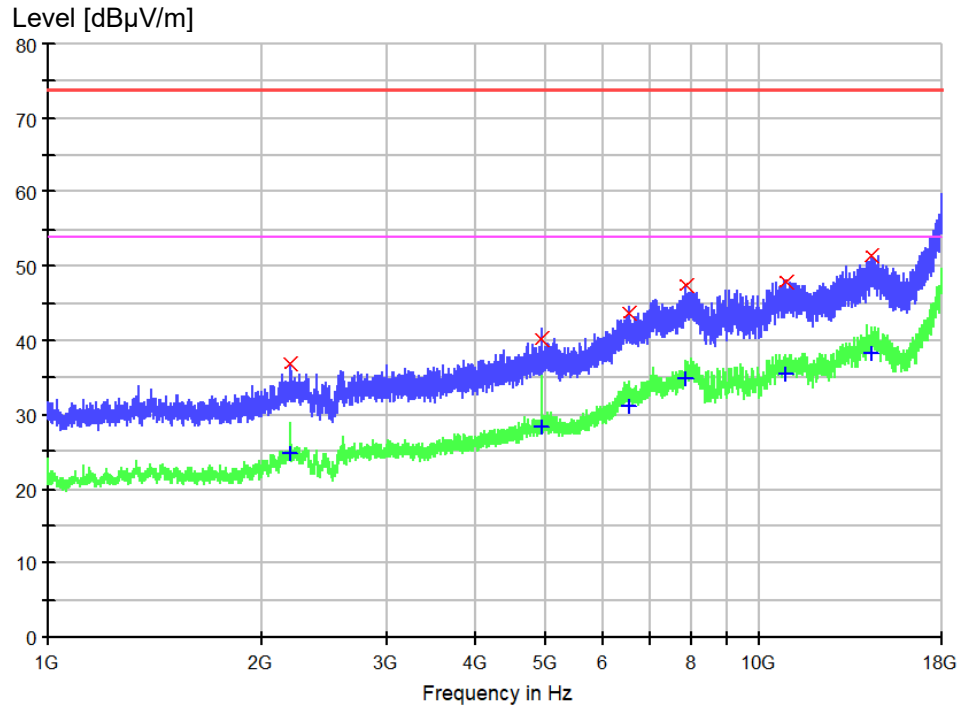
Result:
Passed

Date of testing	: 2026-01-15
Port	: Enclosure
Test procedure	: FCC 47 CFR Part 15, Subpart B:2024, ICES-005:2018, ICES-003:2020, ANSI C63.4-2014 and CISPR 16-2-3
Product classification	: Class B
Limit	: Peak limits (3 m distance): 1 – 18 GHz, 74 dB μ V/m Average limits (3 m distance): 1 – 18 GHz, 54 dB μ V/m
Frequency range	: 1 – 18 GHz (see Note)
Kind of test site	: Absorber-lined semi-anechoic chamber
Test distance	: 3 m
Test voltage	: AC 120 V, 60 Hz
Operational mode	: Mode 1 ~ Mode 2, defined in clause 2.3 (The worst case was found by prescanning cold, warm, red, green and blue color with max and min lighting output, only the test data of worst case was recorded in the report)
Earthing	: No earth
Ambient condition	: Temperature: 25.4 °C; Relative humidity: 44.6 %
Expanded measurement uncertainty ($k=2$)	: 5.17 dB (1 GHz~6 GHz) 5.12 dB (6 GHz~18 GHz) The minimum margin to the limit is 20.8 dB at 11583.562500 MHz. The margin is higher than expanded measurement uncertainty.
Test setup photo	: Photograph 2 of Attachment 3

The radiated disturbance test was carried out in an absorber-lined semi-anechoic chamber. The test distance from the receiving antenna to the EUT is 3 m. The site voltage standing wave ratio (S_{VSWR}) of the absorber-lined semi-anechoic chamber is regularly calibrated to ensure the radiated disturbance test results are valid. During the test, the EUT was placed on an 80 cm supporting table. And the supporting table was rotated 360° around, the receiving antenna was kept aiming at the EUT and its height 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 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, “×” and “+” means measurement results with peak detector and average detector.

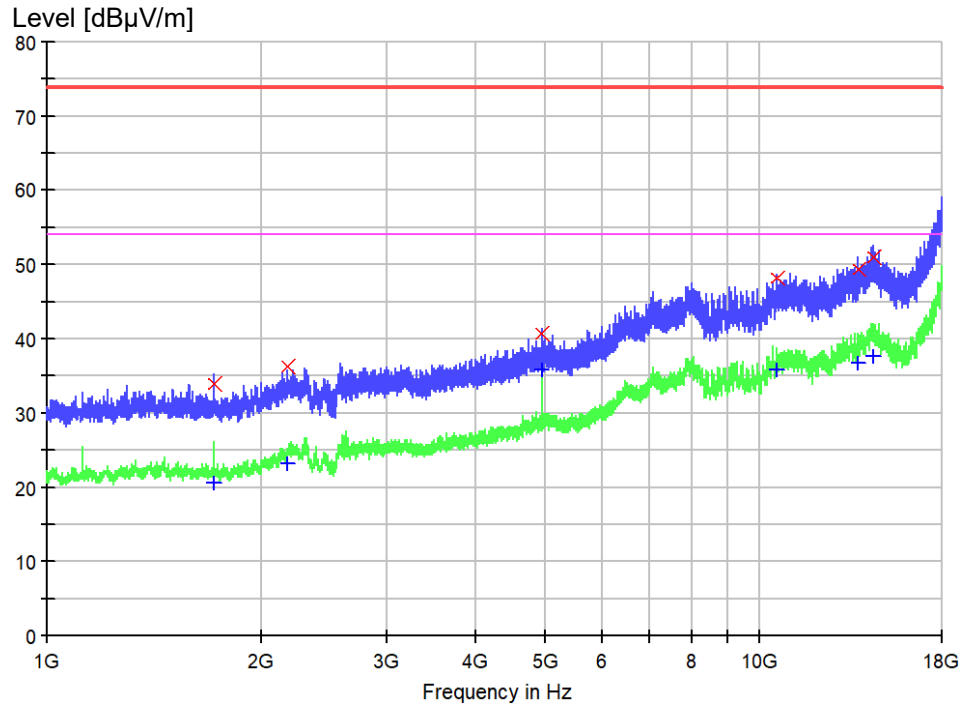
Note: The highest frequency in the EUT is 2480 MHz. According to FCC Part 15 subpart B §15.33 (b) (1) and ICES-003:2020 table 3, the upper frequency for radiated emission measurement is 18 GHz.

Figure 9: Spectral Diagrams and measurement results, 1 GHz – 18 GHz, Horizontal polarization on mode 1

Final peak measurement result:

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)
2187.875000	37.1	1000.0	1000.000	152.0	H	-34.0	-15.8	36.9	74.0
4951.968750	40.2	1000.0	1000.000	117.0	H	-96.0	-11.0	33.8	74.0
6544.656250	43.8	1000.0	1000.000	196.0	H	174.0	-7.3	30.2	74.0
7889.250000	47.5	1000.0	1000.000	133.0	H	158.0	-3.9	26.5	74.0
10889.750000	48.0	1000.0	1000.000	108.0	H	123.0	-1.6	26.0	74.0
14362.531250	51.5	1000.0	1000.000	122.0	H	-146.0	2.6	22.5	74.0

Final average measurement result:

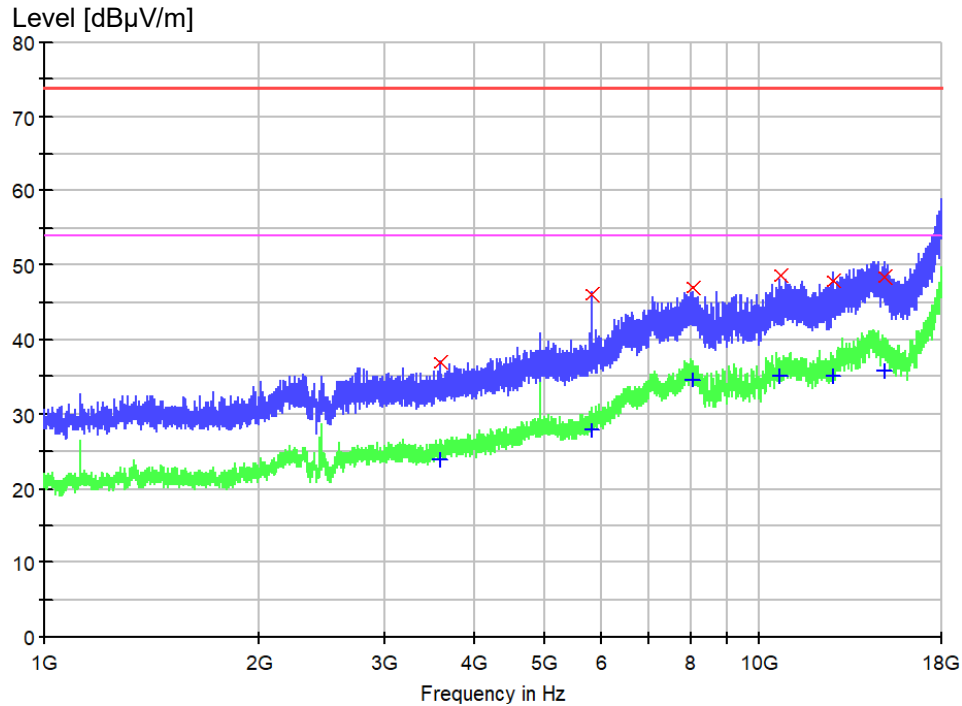
Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
2187.875000	24.8	1000.0	1000.000	152.0	H	-34.0	-15.8	49.3	74.0
4951.968750	28.3	1000.0	1000.000	117.0	H	-96.0	-11.0	45.7	74.0
6544.656250	31.1	1000.0	1000.000	196.0	H	174.0	-7.3	43.0	74.0
7889.250000	34.9	1000.0	1000.000	133.0	H	158.0	-3.9	39.1	74.0
10889.750000	35.5	1000.0	1000.000	108.0	H	123.0	-1.6	38.5	74.0
14362.531250	38.3	1000.0	1000.000	122.0	H	-146.0	2.6	35.7	74.0

Figure 10: Spectral Diagrams and measurement results, 1 GHz – 18 GHz, Vertical polarization on mode 1

Final peak measurement result:

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)
1714.531250	33.9	1000.0	1000.000	147.0	V	47.0	-18.8	40.1	74.0
2179.906250	36.2	1000.0	1000.000	103.0	V	58.0	-15.9	37.8	74.0
4952.500000	40.6	1000.0	1000.000	126.0	V	-69.0	-11.0	33.4	74.0
10563.562500	48.3	1000.0	1000.000	112.0	V	-119.0	-1.4	25.7	74.0
13756.375000	49.4	1000.0	1000.000	148.0	V	-122.0	0.1	24.6	74.0
14420.968750	51.0	1000.0	1000.000	139.0	V	-148.0	2.7	23.0	74.0

Final average measurement result:

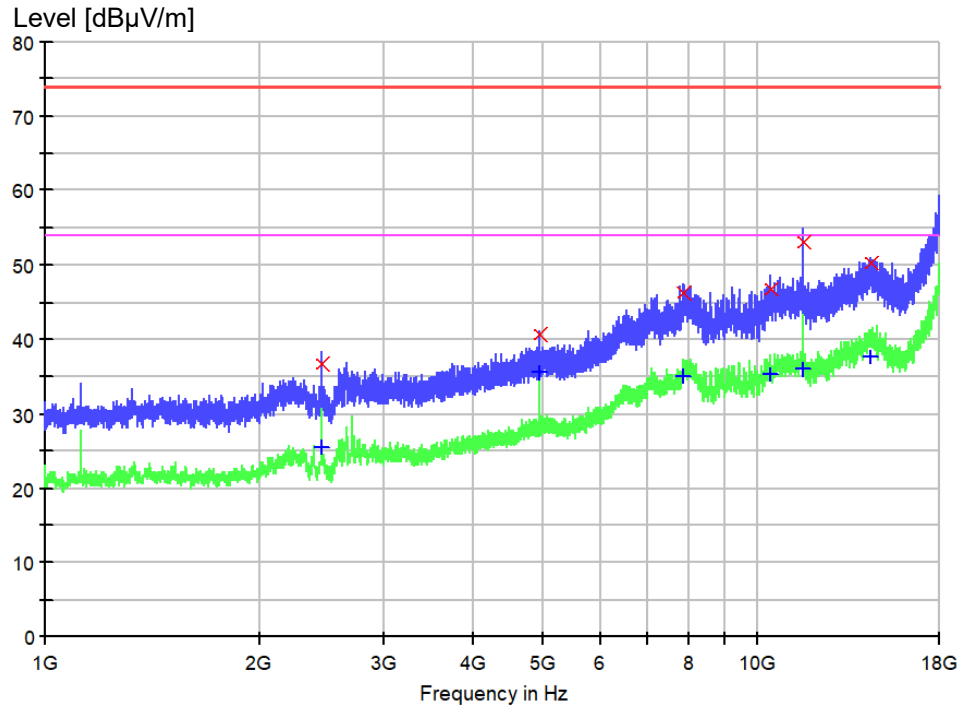
Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1714.531250	20.6	1000.0	1000.000	147.0	V	47.0	-18.8	53.4	74.0
2179.906250	23.2	1000.0	1000.000	103.0	V	58.0	-15.9	50.8	74.0
4952.500000	35.9	1000.0	1000.000	126.0	V	-69.0	-11.0	38.1	74.0
10563.562500	35.8	1000.0	1000.000	112.0	V	-119.0	-1.4	38.2	74.0
13756.375000	36.7	1000.0	1000.000	148.0	V	-122.0	0.1	37.3	74.0
14420.968750	37.7	1000.0	1000.000	139.0	V	-148.0	2.7	36.3	74.0

Figure 11: Spectral Diagrams and measurement results, 1 GHz – 18 GHz, Horizontal polarization on mode 2

Final peak measurement result:

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)
3565.937500	37.0	1000.0	1000.000	100.0	H	-147.0	-14.2	37.0	74.0
5834.375000	46.1	1000.0	1000.000	100.0	H	-147.0	-10.6	27.9	74.0
8081.031250	47.1	1000.0	1000.000	100.0	H	-147.0	-3.7	26.9	74.0
10683.625000	48.6	1000.0	1000.000	100.0	H	-147.0	-1.7	25.4	74.0
12697.062500	47.9	1000.0	1000.000	100.0	H	-147.0	-1.5	26.1	74.0
15000.562500	48.3	1000.0	1000.000	100.0	H	-147.0	1.0	25.7	74.0

Final average measurement result:

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)
3565.937500	23.8	1000.0	1000.000	100.0	H	-147.0	-14.2	50.2	74.0
5834.375000	27.7	1000.0	1000.000	100.0	H	-147.0	-10.6	46.3	74.0
8081.031250	34.5	1000.0	1000.000	100.0	H	-147.0	-3.7	39.5	74.0
10683.625000	35.1	1000.0	1000.000	100.0	H	-147.0	-1.7	38.9	74.0
12697.062500	35.1	1000.0	1000.000	100.0	H	-147.0	-1.5	38.9	74.0
15000.562500	35.8	1000.0	1000.000	100.0	H	-147.0	1.0	38.2	74.0

Figure 12: Spectral Diagrams and measurement results, 1 GHz – 18 GHz, Vertical polarization on mode 2

Final peak measurement result:

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)
2439.156250	36.8	1000.0	1000.000	100.0	V	49.0	-16.0	37.2	74.0
4952.500000	40.6	1000.0	1000.000	152.0	V	-12.0	-11.0	33.4	74.0
7898.812500	46.4	1000.0	1000.000	148.0	V	-36.0	-3.8	27.6	74.0
10435.531250	46.7	1000.0	1000.000	102.0	V	-122.0	-1.9	27.3	74.0
11583.562500	53.2	1000.0	1000.000	133.0	V	-158.0	-1.8	20.8	74.0
14418.312500	50.2	1000.0	1000.000	119.0	V	-147.0	2.7	23.8	74.0

Final average measurement result:

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)
2439.156250	25.5	1000.0	1000.000	100.0	V	49.0	-16.0	48.5	74.0
4952.500000	35.6	1000.0	1000.000	152.0	V	-12.0	-11.0	38.4	74.0
7898.812500	35.0	1000.0	1000.000	148.0	V	-36.0	-3.8	39.0	74.0
10435.531250	35.2	1000.0	1000.000	102.0	V	-122.0	-1.9	38.8	74.0
11583.562500	36.0	1000.0	1000.000	133.0	V	-158.0	-1.8	38.0	74.0
14418.312500	37.7	1000.0	1000.000	119.0	V	-147.0	2.7	36.4	74.0

6 Photographs of the Test Set-Up

Refer to the test setup file.

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	2025-07-11	2026-07-11
EMC-C-195	EMI test receiver	ESR3	102794	Rohde & Schwarz	2025-08-02	2026-08-02
EMC-C-190	Artificial mains network	ENV432	101514	Rohde & Schwarz	2025-09-02	2026-09-02
EMC-S-032	EMI measurement software	EMC32-MEB (10.60.20)	100697	Rohde & Schwarz	N/A	N/A
EMC-C-155	BiLog antenna	CBL 6112D	40530	Teseq	2025-03-24	2026-09-24
EMC-C-121	Thermohygrometer	608-H1	1241320265	testo	2025-06-05	2026-06-05
EMC-C-066	EMI test receiver	ESCI	100280	Rohde & Schwarz	2025-09-28	2026-09-28
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	2025-07-11	2026-07-11
EMC-C-161	Spectrum analyser	FSV40	101258	Rohde & Schwarz	2025-07-11	2026-07-11
EMC-C-019	Double ridged horn antenna	BBHA 9120 D	9120D-433	Schwarzbeck	2025-02-28	2026-08-28

8 List of Figures

Figure 1: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, L on mode 1	12
Figure 2: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, N on mode 1	13
Figure 3: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, L on mode 2	14
Figure 4: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, N on mode 2	15
Figure 5: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Horizontal polarization on mode 1	18
Figure 6: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Vertical polarization on mode 1	19
Figure 7: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Horizontal polarization on mode 2	20
Figure 8: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Vertical polarization on mode 2	21
Figure 9: Spectral Diagrams and measurement results, 1 GHz – 18 GHz, Horizontal polarization on mode 1	23
Figure 10: Spectral Diagrams and measurement results, 1 GHz – 18 GHz, Vertical polarization on mode 1	24
Figure 11: Spectral Diagrams and measurement results, 1 GHz – 18 GHz, Horizontal polarization on mode 2	25
Figure 12: Spectral Diagrams and measurement results, 1 GHz – 18 GHz, Vertical polarization on mode 2	26

End of test report