

Prüfbericht-Nr.: <i>Test report no.:</i>	CN26WNB N 001	Auftrags-Nr.: <i>Order no.:</i>	326182452	Seite 1 von 42 <i>Page 1 of 42</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	1288983	Auftragsdatum: <i>Order date:</i>	2026-04-20	
Auftraggeber: <i>Client:</i>	IKEA of Sweden AB Box 702, SE-343 81 Älmhult, Sweden			
Prüfgegenstand: <i>Test item:</i>	BRANDHAKE			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	E2588			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	FCC CFR47 Part 15, Subpart C Section 15.247 RSS-Gen Issue 6, July 30, 2026 RSS-247 Issue 4, July 24, 2025			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2026-04-29 2026-05-19	Refer to photo document.		
Prüfmuster-Nr.: <i>Test sample no:</i>	A004265396-003~004 A004281009-001~002			
Prüfzeitraum: <i>Testing period:</i>	2026-05-21 ~ 2026-06-25			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	genehmigt von: <i>authorized by:</i>			
Datum: <i>Date:</i>	Datum: <i>Date:</i>			
Stellung / Position:	Stellung / Position:			
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	* Legend:			
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Prüfbericht-Nr.: CN26WNB 001
Test report no.:

Seite 2 von 42
Page 2 of 42

Anmerkungen Remarks

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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>

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 6dB & 99% BANDWIDTH

RESULT: Pass

5.1.3 OUTPUT POWER

RESULT: Pass

5.1.4 POWER SPECTRAL DENSITY

RESULT: Pass

5.1.5 CONDUCTED BAND EDGE AND OUT-OF BAND EMISSIONS

RESULT: Pass

5.2.1 CONDUCTED EMISSION

RESULT: Pass

5.3.1 RADIATED BAND-EDGE

RESULT: Pass

5.3.2 RADIATED SPURIOUS EMISSION

RESULT: Pass

Contents

1.	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS.....	5
2.	TEST SITES	6
2.1	TEST FACILITIES	6
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS.....	7
2.3	TRACEABILITY	7
2.4	CALIBRATION	7
2.5	MEASUREMENT UNCERTAINTY	8
3.	GENERAL PRODUCT INFORMATION.....	9
3.1	PRODUCT FUNCTION AND INTENDED USE	9
3.2	RATINGS AND SYSTEM DETAILS.....	9
3.3	INDEPENDENT OPERATION MODES.....	10
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	10
4.	TEST SET-UP AND OPERATION MODES.....	11
4.1	PRINCIPLE OF CONFIGURATION SELECTION	11
4.2	TEST OPERATION AND TEST SOFTWARE.....	11
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	11
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....	11
5.	TEST RESULTS	13
5.1	CONDUCTED TESTING AT ANTENNA PORT	13
5.1.1	<i>Antenna Requirement</i>	<i>13</i>
5.1.2	<i>6dB & 99% Bandwidth</i>	<i>15</i>
5.1.3	<i>Output Power</i>	<i>22</i>
5.1.4	<i>Power Spectral Density.....</i>	<i>23</i>
5.1.5	<i>Conducted Band Edge and out-of Band Emissions.....</i>	<i>27</i>
5.2	EMISSION IN THE FREQUENCY RANGE UP TO 30MHz.....	29
5.2.1	<i>Conducted Emission</i>	<i>29</i>
5.3	EMISSION IN THE FREQUENCY RANGE ABOVE 30MHz	32
5.3.1	<i>Radiated Band-Edge.....</i>	<i>32</i>
5.3.2	<i>Radiated Spurious Emission.....</i>	<i>35</i>
6.	LIST OF TABLES	42
7.	LIST OF FIGURES	42

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

2. Test Sites

2.1 Test Facilities

TÜV Rheinland (Shanghai) Co., Ltd.

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 for measurement of radio interference.

The Federal Communications Commission has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance with the requirements of section 2.948 of the FCC rules. The description of the test facility is listed under FCC registration number 930979.

The Innovation, Science and Economic Development Canada has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance. The description of the test facility is listed under chambers filing number 33038.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Equip.	Description	Model	Manufacturer	Due Date
EMC-C-196	Wireless connectivity tester	CMW270	Rohde & Schwarz	2027-08-09
EMC-C-302	Signal generator	SMB100B (6 GHz)	Rohde & Schwarz	2026-11-27
EMC-C-303	Vector Signal generator	SMW200A	Rohde & Schwarz	2026-11-27
EMC-C-304	OSP	OSP-B157W8	Rohde & Schwarz	2026-12-17
EMC-C-161	Spectrum analyser	FSV40	Rohde&Schwarz	2027-06-11
EMC-C-019	Double ridged horn antenna	BBHA 9120 D	Schwarzbeck	2026-08-28
EMC-C-066	EMI test receiver	ESCI	Rohde&Schwarz	2026-09-28
EMC-C-068	Broadband horn antenna	BBHA 9170	Schwarzbeck	2028-06-18
EMC-C-155	BiLog antenna	CBL 6112D	Teseq	2026-09-24
EMC-C-175	Preamplifier	EMC051845SE	EMCI Taiwan	2027-06-16
EMC-C-176	Preamplifier	EMC184045SE	EMCI Taiwan	2027-06-16
EMC-C-001	3 m semi-anechoic chamber	SAC3	Frankonia	2026-12-03
EMC-C-195	EMI test receiver	ESR3	Rohde&Schwarz	2026-08-02
EMC-C-190	Artificial mains network	ENV432	Rohde&Schwarz	2026-09-02
software				
EMC-S-036	RF measurement software	WMS32-WB (11.40.00)	Rohde&Schwarz	NA
EMC-S-032	EMI measurement software	EMC32-E+ (10.60.20)	Rohde&Schwarz	NA
EMC-S-028	EMI measurement software	EMC32-MEB (10.60.20)	Rohde&Schwarz	NA

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

Table 2: Measurement Uncertainty

Measurement Type	Frequency	Uncertainty
Antenna Port Conducted Emission	< 1GHz	±0.39dB
	> 1GHz	±0.68dB
Conducted Emission	150kHz - 30MHz	±2.33dB
Radiated Emission	9kHz - 30MHz	±2.93dB
	30MHz - 1GHz	±5.34dB
	> 1GHz	±5.40dB

3. General Product Information

3.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a hub which support 2.4GHz Wi-Fi, Bluetooth Low Energy, Zigbee and Thread.

The aim of this report is to evaluate RF character of Zigbee of the EUT.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Description of EUT	
Product Name:	BRANDHAKE
Model No.:	E2588
Operation Voltage:	DC 5V (USB)
RF Technical:	1) Wi-Fi 2) BLE 3) Zigbee 4) Thread
Technical Specification of Zigbee	
Frequency Range:	2405~2480MHz
Modulation Type:	OQPSK
Antenna Type:	PCB Antenna
Antenna Gain:	1.72 dBi (declared by client)

Table 4: Operation Channel List

RF Channel	Frequency [MHz]	RF Channel	Frequency [MHz]	RF Channel	Frequency [MHz]	RF Channel	Frequency [MHz]
11	2405	15	2425	19	2445	23	2465
12	2410	16	2430	20	2450	24	2470
13	2415	17	2435	21	2455	25	2475
14	2420	18	2440	22	2460	26	2480

3.3 Independent Operation Modes

Test frequencies are lowest channel: 2405 MHz, middle channel: 2445 MHz and highest channel: 2480 MHz

The basic operation modes are:

- A. Zigbee transmitting mode
- B. Radio operating mode

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10:2020 and ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024.

Test Software: adb

Table 5: Power parameter value

Mode	Power Parameter Setting Value
Zigbee	7

4.3 Special Accessories and Auxiliary Equipment

Table 6: Special Accessories

Accessories	Parameter
RF Cable between the antenna port and test system	Cable loss: 0.5dB

Note: The RF cable used in the test was provided by

- ☒ Client
☐ Test Lab

And the cable loss has been factored in the related test.

Table 7: Auxiliary Equipment

Equipment	Brand	Model	Rating
Laptop	Lenovo	21AJ-S57N0J	/
Adapter	IKEA	ICPSW5-5NA-1	Input: AC 100~240V, 50/60Hz Output: DC 5V, 1A
Mobile phone	Apple	iPhone 15	/

4.4 Countermeasures to achieve EMC Compliance

Null.

5. Test Results

5.1 Conducted Testing at Antenna Port

5.1.1 Antenna Requirement

RESULT:**Pass**

According to the manufacturer declared, the EUT has one internal PCB antenna for Zigbee, the directional gain of antenna is 1.72 dBi and the antenna is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Table 8: Antenna Requirement

FCC 15.203 – Antenna Requirement 1		
Requirement:	No antenna other than that furnished by the responsible party shall be used with the device	
Results:	Antenna type:	PCB Antenna
Verdict:	Pass	

FCC 15.204 – Antenna Requirement 2		
Requirement:	An intentional radiator may be operated only with the antenna with which it is authorized. If an antenna is marketed with the intentional radiator, it shall be of a type which is authorized with the intentional radiator.	
Results:	Only one PCB antenna can be used	
Verdict:	Pass	

RSS-Gen 6.4 – External Control		
Requirement:	The device shall not have any external controls accessible to the user that enable it to be adjusted, selected or programmed to operate in violation of the regulatory requirements, including RSS-Gen and the applicable RSSs	
Results:	The device does not have any transmitter external controls accessible to the user that can be adjusted and operated in violation of the limits of this standard.	
Verdict:	PASS	

Prüfbericht - Nr.: CN26WNB 001

Test Report No.

Seite 14 von 42

Page 14 of 42

RSS-Gen 6.8 – Antenna Requirement

Requirement: When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

Results:

a) Antenna Type:	PCB Antenna
b) Manufacture:	N/A
c) Model No.:	N/A
d) Gain with reference to an isotropic radiator:	1.72 dBi

Verdict: PASS

5.1.2 6dB & 99% Bandwidth**RESULT:****Pass**

Date of testing	:	2026-05-21
Ambient temperature	:	21.4°C
Relative humidity	:	48.3%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC Part 15.247(a)(2) RSS-247 Issue 4, July 24, 2025, Clause 6.3.1(a) RSS-Gen Issue 6, July 30, 2026, Clause 5.1
Test procedure	:	ANSI C63.10:2020 ANSI C63.10-2020+Cor. 1-2023+C63.10a- 2024+Errata to C63.10a-2024
Test voltage	:	DC 5V
Test modes applied	:	A

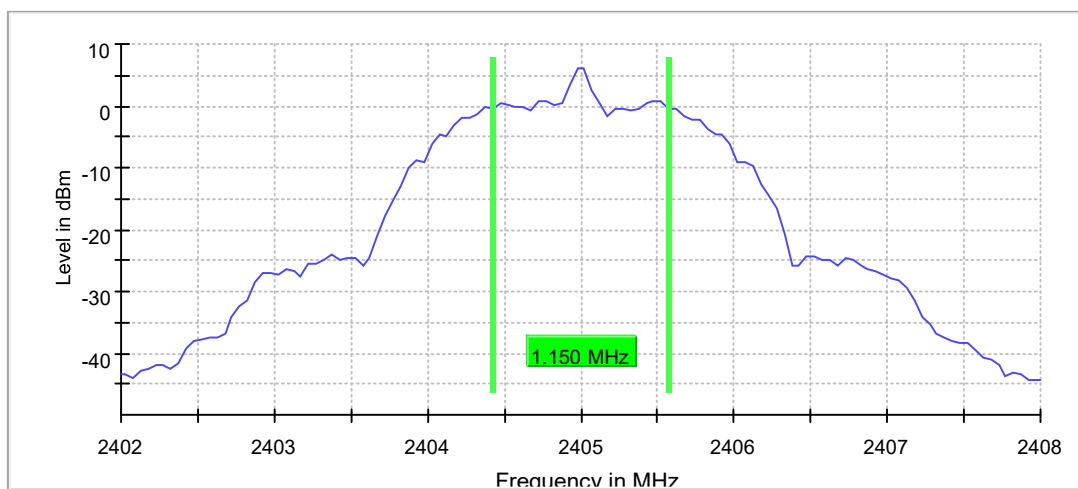
6dB Bandwidth, 2405MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	1.150000	0.500000	---	2404.425000	2405.575000

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2405.000000	6.0	PASS

6 dB Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40200 GHz	2.40200 GHz
Stop Frequency	2.40800 GHz	2.40800 GHz
Span	6.000 MHz	6.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	120	~ 120
Sweeptime	18.984 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.03 dB	0.50 dB

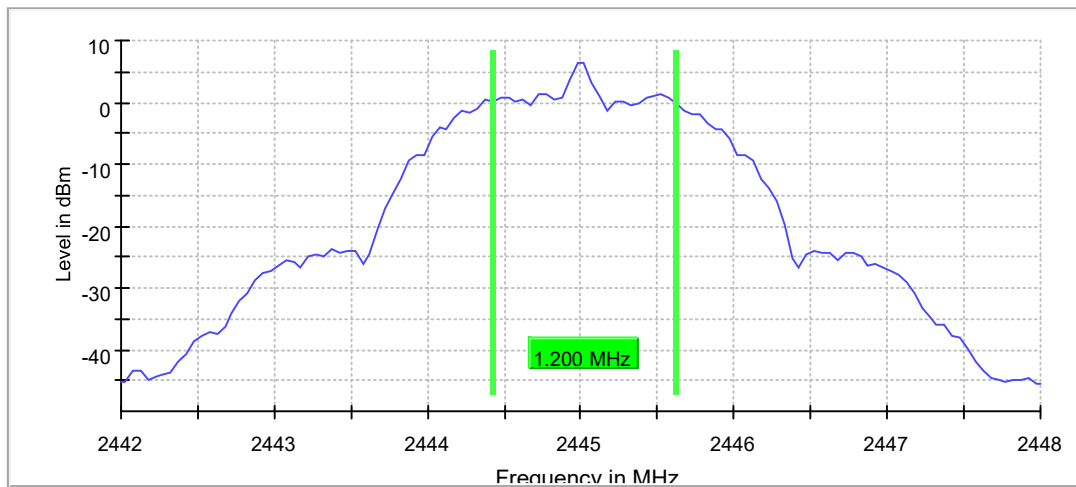
6dB Bandwidth, 2445MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2445.000000	1.200000	0.500000	---	2444.425000	2445.625000

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2445.000000	6.4	PASS

6 dB Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44200 GHz	2.44200 GHz
Stop Frequency	2.44800 GHz	2.44800 GHz
Span	6.000 MHz	6.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	120	~ 120
SweepTime	18.984 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.29 dB	0.50 dB

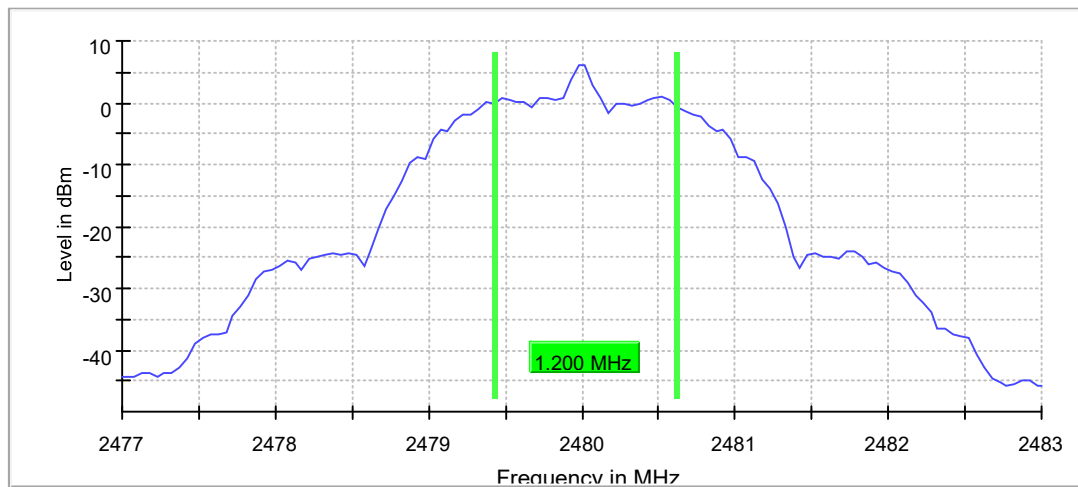
6dB Bandwidth, 2480MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.200000	0.500000	---	2479.425000	2480.625000

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	6.2	PASS

6 dB Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47700 GHz	2.47700 GHz
Stop Frequency	2.48300 GHz	2.48300 GHz
Span	6.000 MHz	6.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	120	~ 120
SweepTime	18.984 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.07 dB	0.50 dB

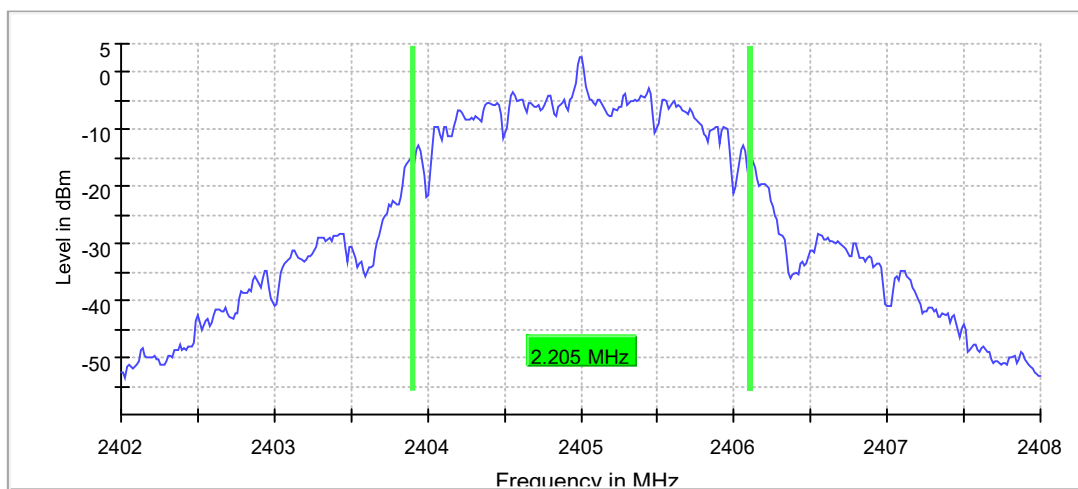
99% Occupied Channel Bandwidth, 2405MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	2.205000	---	---	2403.897500	2406.102500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2405.000000	PASS

99 % Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40200 GHz	2.40200 GHz
Stop Frequency	2.40800 GHz	2.40800 GHz
Span	6.000 MHz	6.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 90.000 kHz
SweepPoints	400	~ 400
SweepTime	63.216 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	6 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.14 dB	0.30 dB

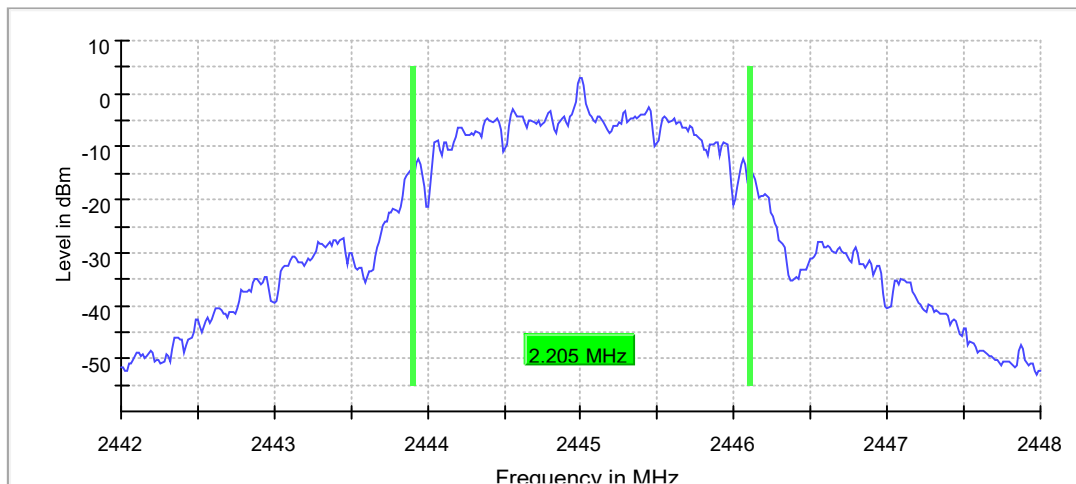
99% Occupied Channel Bandwidth, 2445MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2445.000000	2.205000	---	---	2443.897500	2446.102500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2445.000000	PASS

99 % Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44200 GHz	2.44200 GHz
Stop Frequency	2.44800 GHz	2.44800 GHz
Span	6.000 MHz	6.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 90.000 kHz
SweepPoints	400	~ 400
Sweptime	63.216 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	9 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.09 dB	0.30 dB

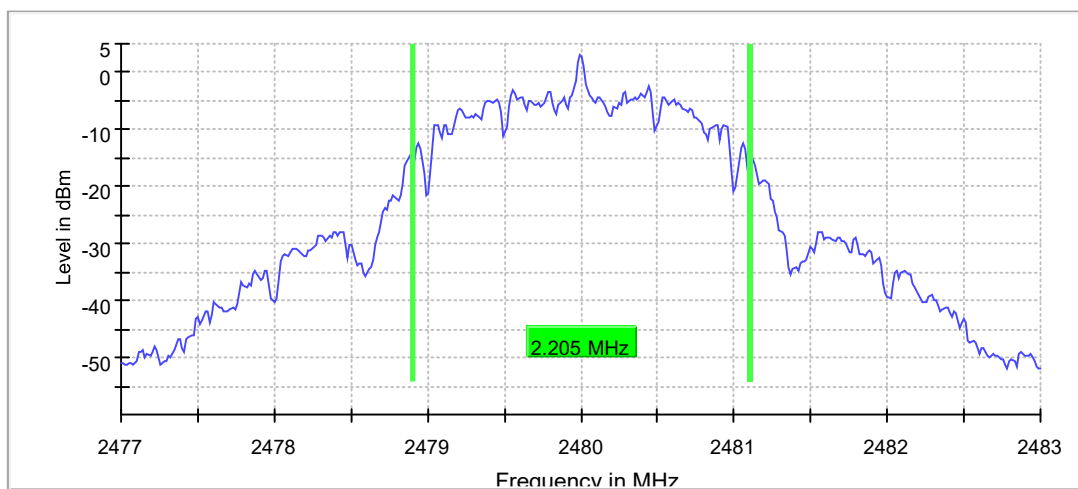
99% Occupied Channel Bandwidth, 2480MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	2.205000	---	---	2478.897500	2481.102500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS

99 % Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47700 GHz	2.47700 GHz
Stop Frequency	2.48300 GHz	2.48300 GHz
Span	6.000 MHz	6.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 90.000 kHz
SweepPoints	400	~ 400
SweepTime	63.216 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	11 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.09 dB	0.30 dB

5.1.3 Output Power

RESULT:**Pass**

Date of testing : 2026-05-21
Ambient temperature : 21.5°C
Relative humidity : 48.6%
Atmospheric pressure : 101kPa
Test requirement : FCC Part 15.247(b)(3)
RSS-247 Issue 4, July 24, 2025, Clause 6.3.2
Test procedure : ANSI C63.10:2020
ANSI C63.10-2020+Cor. 1-2023+C63.10a-
2024+Errata to C63.10a-2024
Test voltage : DC 5V
Test modes applied : A

Table 9: Peak Output Power

Frequency [MHz]	Peak Conducted Output Power [dBm]	Limit [dBm]
2405	6.3	30
2445	6.7	30
2480	6.6	30

Note:

EIRP=Conducted Output Power + Antenna Gain (1.72 dBi), which is far below the 4 W (36dBm).

5.1.4 Power Spectral Density

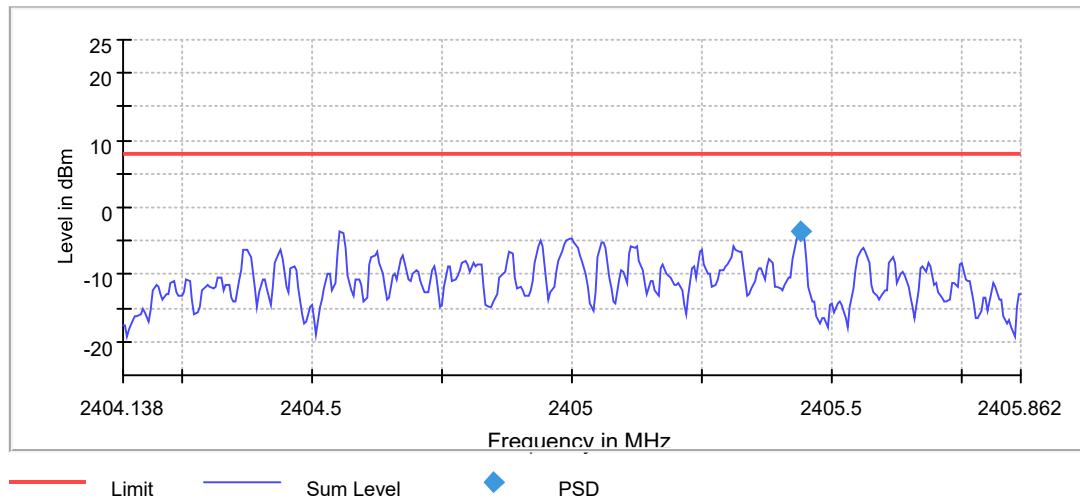
RESULT:**Pass**

Date of testing	:	2026-05-21
Ambient temperature	:	21.3°C
Relative humidity	:	48.5%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC Part 15.247(e) RSS-247 Issue 4, July 24, 2025, Clause 6.3.1(b)
Test procedure	:	ANSI C63.10:2020 ANSI C63.10-2020+Cor. 1-2023+C63.10a- 2024+Errata to C63.10a-2024
Test voltage	:	DC 5V
Test modes applied	:	A

Power Spectral Density, 2405MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2405.000000	2405.440000	-3.614	8.0	PASS

Peak Power Spectral Density

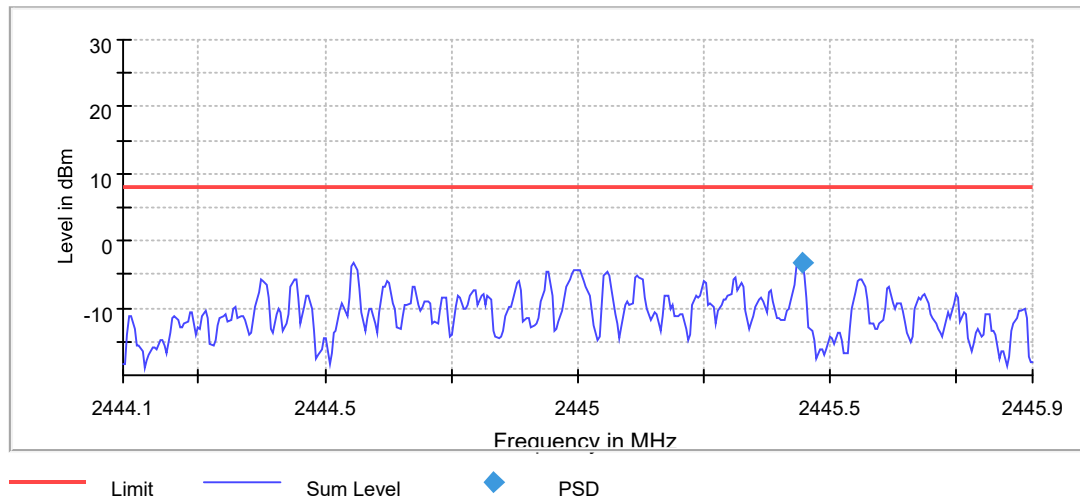

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40414 GHz	2.40414 GHz
Stop Frequency	2.40586 GHz	2.40586 GHz
Span	1.725 MHz	1.725 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	345	~ 345
Sweeptime	1.730 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.06 dB	0.50 dB

Power Spectral Density, 2445MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2445.000000	2445.442500	-3.219	8.0	PASS

Peak Power Spectral Density

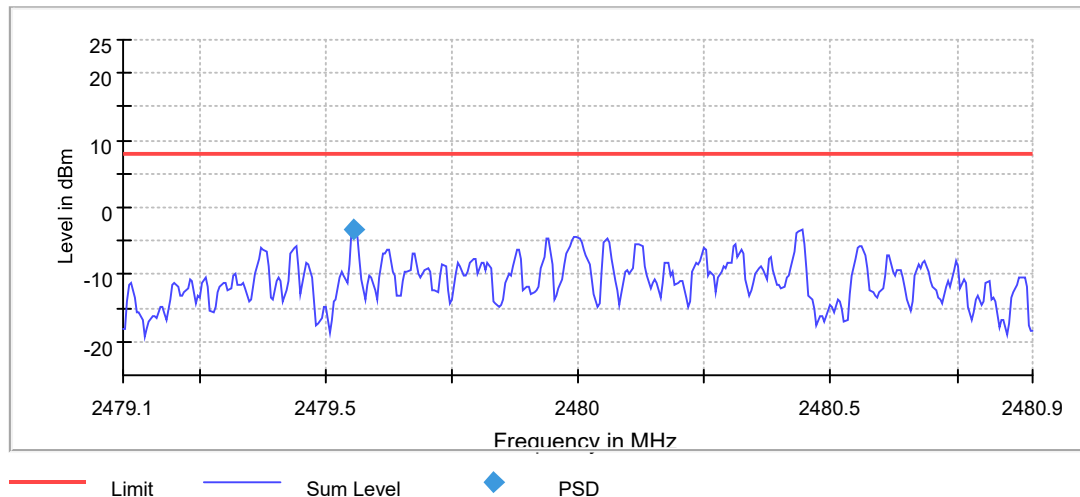

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44410 GHz	2.44410 GHz
Stop Frequency	2.44590 GHz	2.44590 GHz
Span	1.800 MHz	1.800 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	360	~ 360
Sweeptime	1.800 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.13 dB	0.50 dB

Prüfbericht - Nr.: CN26WNB 001
Test Report No.
Seite 26 von 42
Page 26 of 42
Power Spectral Density, 2480MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2479.557500	-3.394	8.0	PASS

Peak Power Spectral Density


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47910 GHz	2.47910 GHz
Stop Frequency	2.48090 GHz	2.48090 GHz
Span	1.800 MHz	1.800 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	360	~ 360
Sweptime	1.800 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	3 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.26 dB	0.50 dB

Figure 2: Conducted Spurious Emission

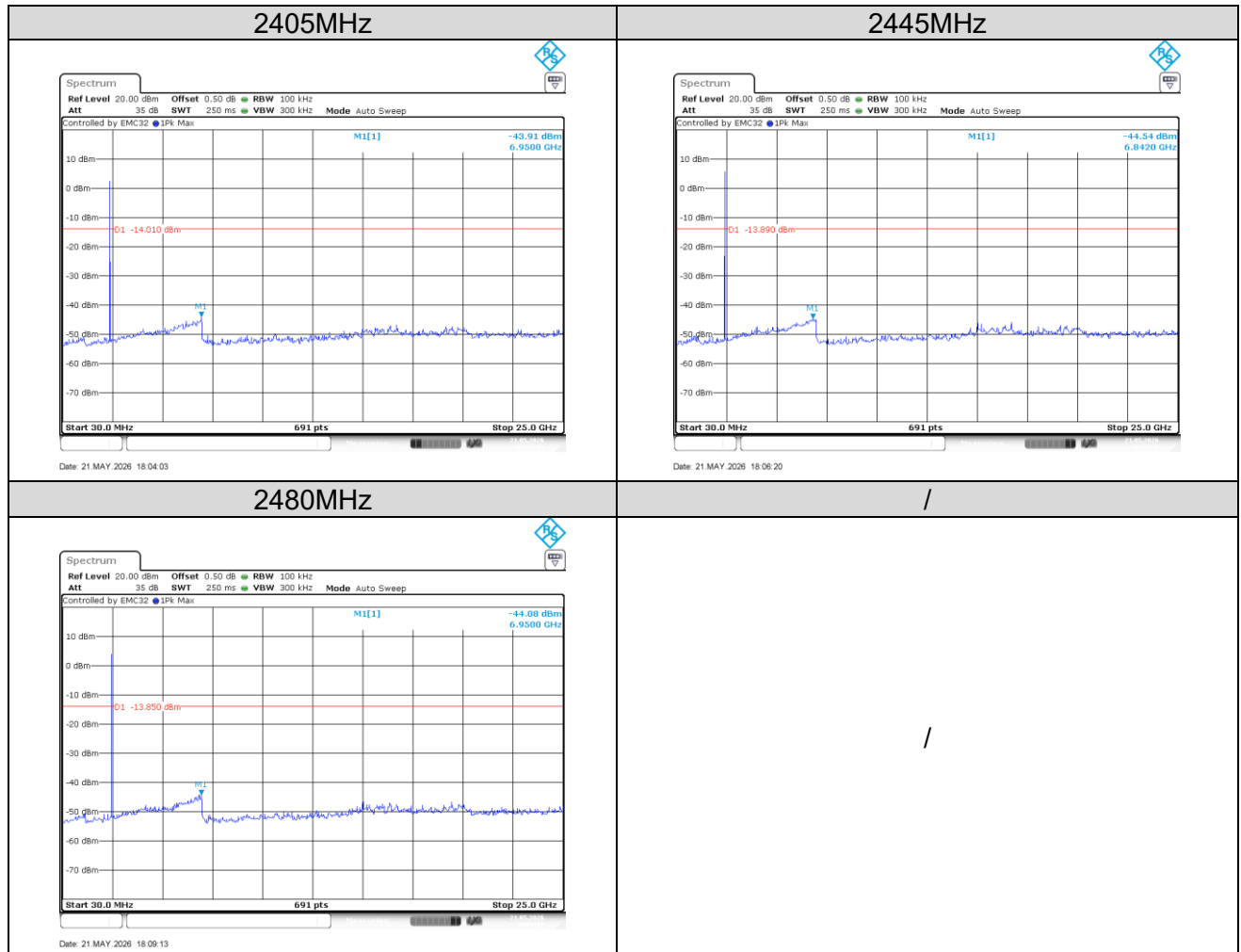
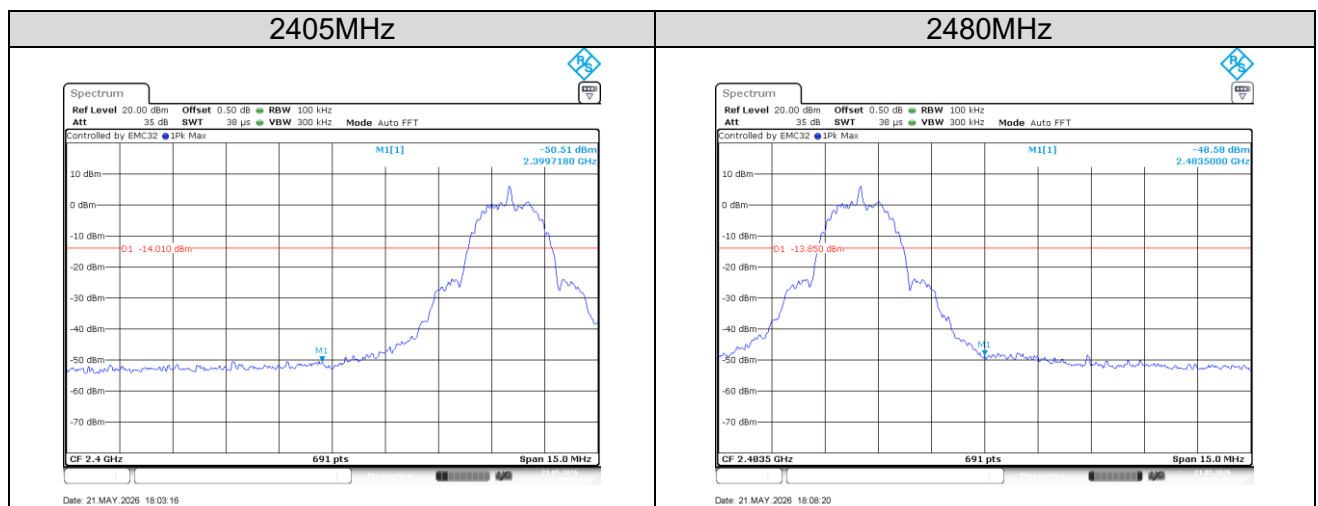


Figure 3: Conducted Band Edge

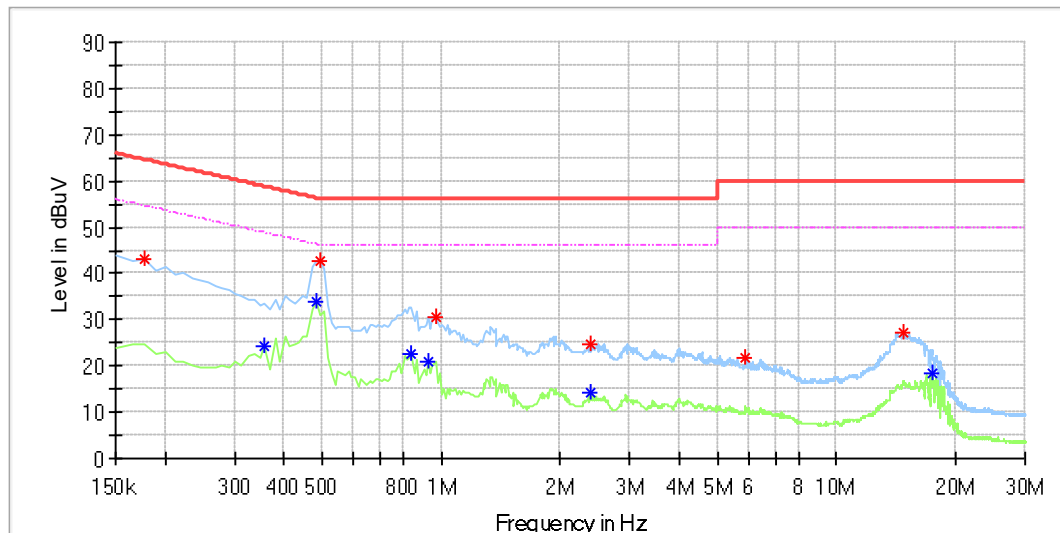


5.2 Emission in the Frequency Range up to 30MHz

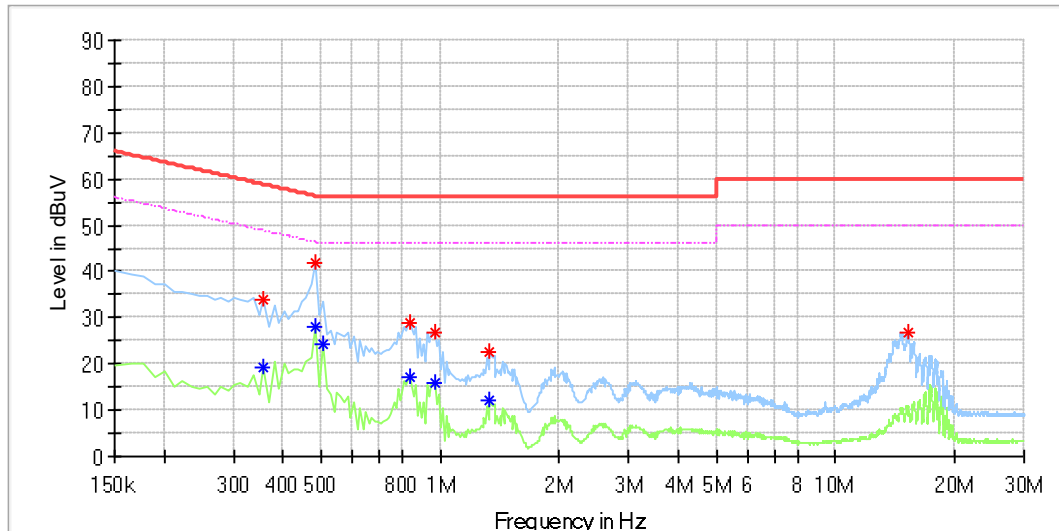
5.2.1 Conducted Emission

RESULT:**Pass**

Date of testing	: 2026-06-01
Ambient temperature	: 22.1°C
Relative humidity	: 49.4%
Atmospheric pressure	: 101kPa
Test requirement	: FCC Part 15.207 (a) RSS-Gen Issue 6, July 30, 2026, Clause 7.4.2
Test procedure	: ANSI C63.10:2020 ANSI C63.10-2020+Cor. 1-2023+C63.10a- 2024+Errata to C63.10a-2024
Test voltage	: AC 120V, 60Hz (powered by adapter)
Test modes applied	: B

Figure 4: Conducted Emission, L

Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line
0.178125	43.24	---	64.57	21.33	L1
0.358125	---	24.39	48.77	24.39	L1
0.481875	---	33.84	46.31	12.46	L1
0.493125	42.86	---	56.12	13.26	L1
0.841875	---	22.74	46.00	23.26	L1
0.931875	---	21.06	46.00	24.94	L1
0.965625	30.62	---	56.00	25.38	L1
2.383125	---	14.05	46.00	31.95	L1
2.383125	24.84	---	56.00	31.16	L1
5.893125	21.90	---	60.00	38.10	L1
14.825625	27.16	---	60.00	32.84	L1
17.390625	---	18.47	50.00	31.53	L1

Figure 5: Conducted Emission, N


Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line
0.358125	33.93	---	58.77	24.85	N
0.358125	---	19.18	48.77	29.59	N
0.481875	41.85	---	56.31	14.45	N
0.481875	---	28.04	46.31	18.27	N
0.504375	---	24.23	46.00	21.77	N
0.841875	---	17.13	46.00	28.87	N
0.841875	28.73	---	56.00	27.27	N
0.965625	---	16.01	46.00	29.99	N
0.965625	26.91	---	56.00	29.09	N
1.336875	---	12.12	46.00	33.88	N
1.336875	22.53	---	56.00	33.47	N
15.241875	26.66	---	60.00	33.34	N

5.3 Emission in the Frequency Range above 30MHz

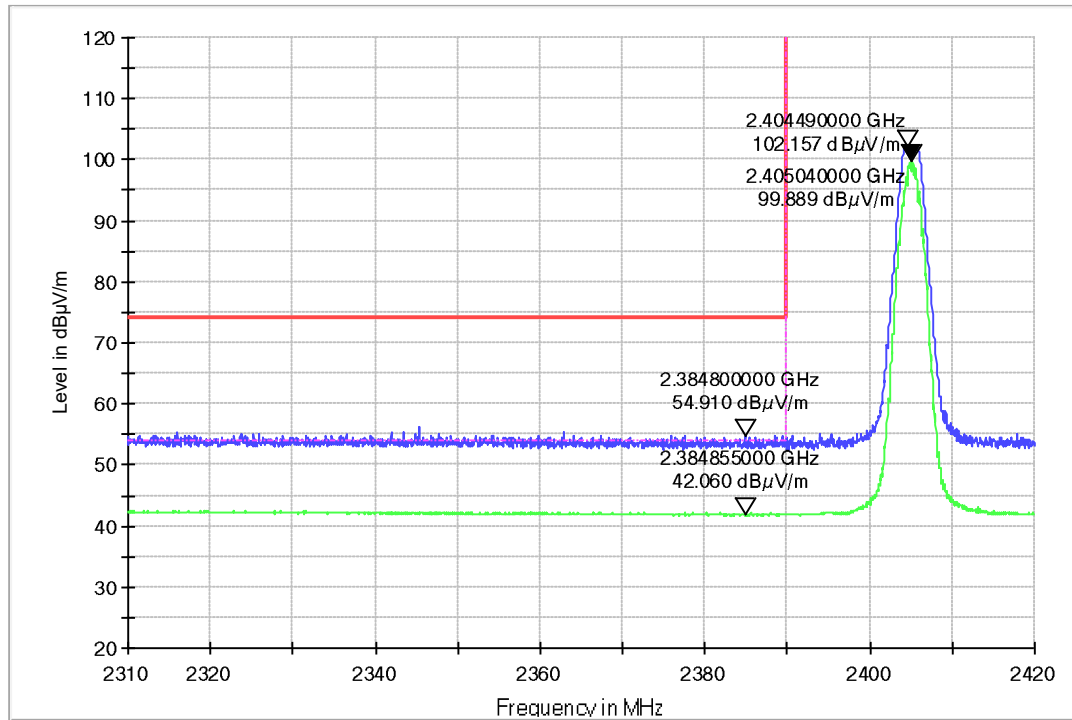
5.3.1 Radiated Band-Edge

RESULT:**Pass**

Date of testing	:	2026-05-26
Ambient temperature	:	20.6°C
Relative humidity	:	40.7%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC Part 15.247(d) FCC Part 15.205(a) FCC Part 15.209(a) RSS-Gen Issue 6, July 30, 2026, Clause 7.4.3 RSS-Gen Issue 6, July 30, 2026, Clause 7.5 RSS-247 Issue 4, July 24, 2025, Clause 6.6
Test procedure	:	ANSI C63.10:2020 ANSI C63.10-2020+Cor. 1-2023+C63.10a- 2024+Errata to C63.10a-2024
Test voltage	:	DC 5V
Test modes applied	:	A

Figure 6: Radiated Band-Edge, 2405MHz, H

XXY- 2310~ 2410 BE 1-18GHz_HL050_FSV40_Pre-10-YUNFANG


Figure 7: Radiated Band-Edge, 2405MHz, V

XXY- 2310~ 2410 BE 1-18GHz_HL050_FSV40_Pre-10-YUNFANG

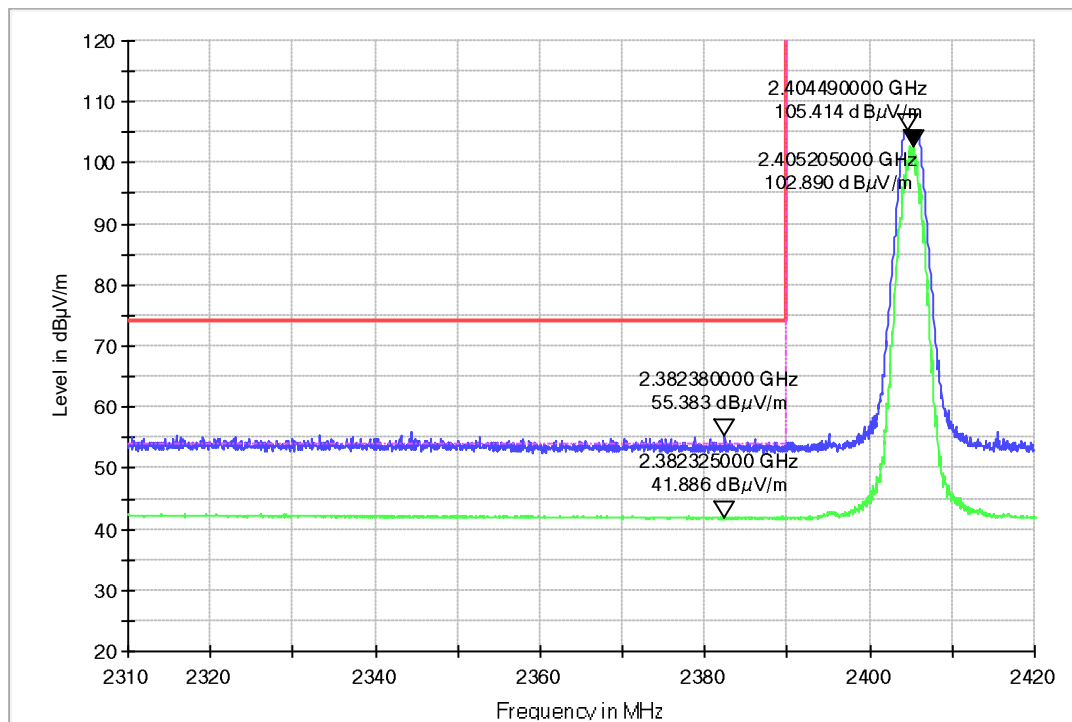
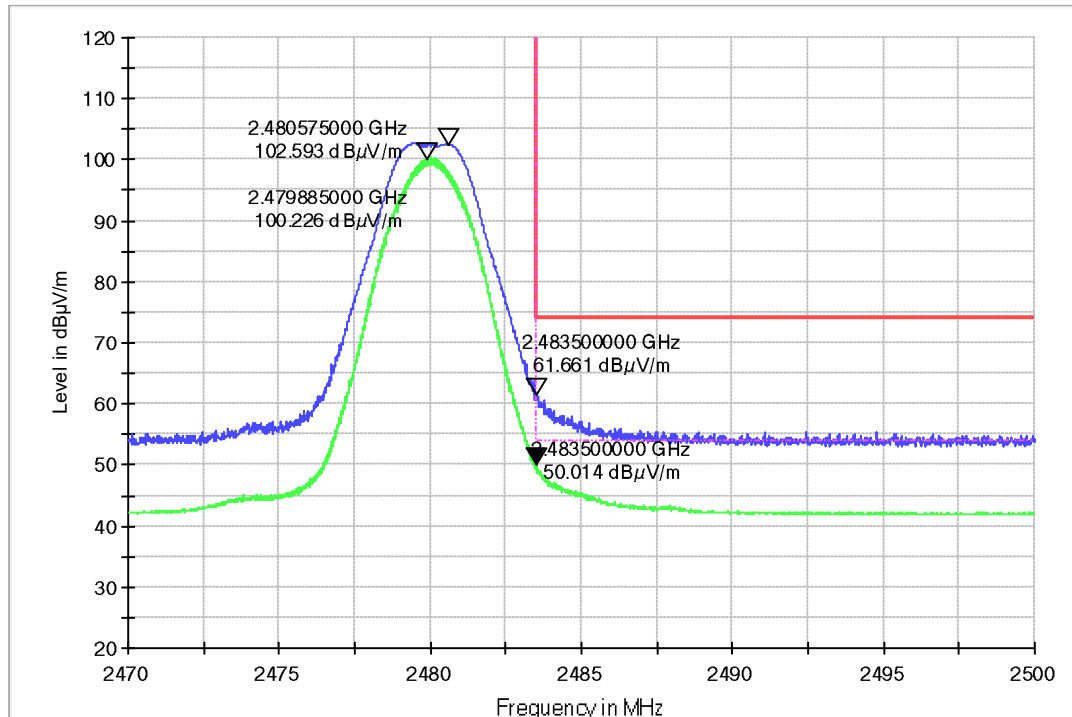
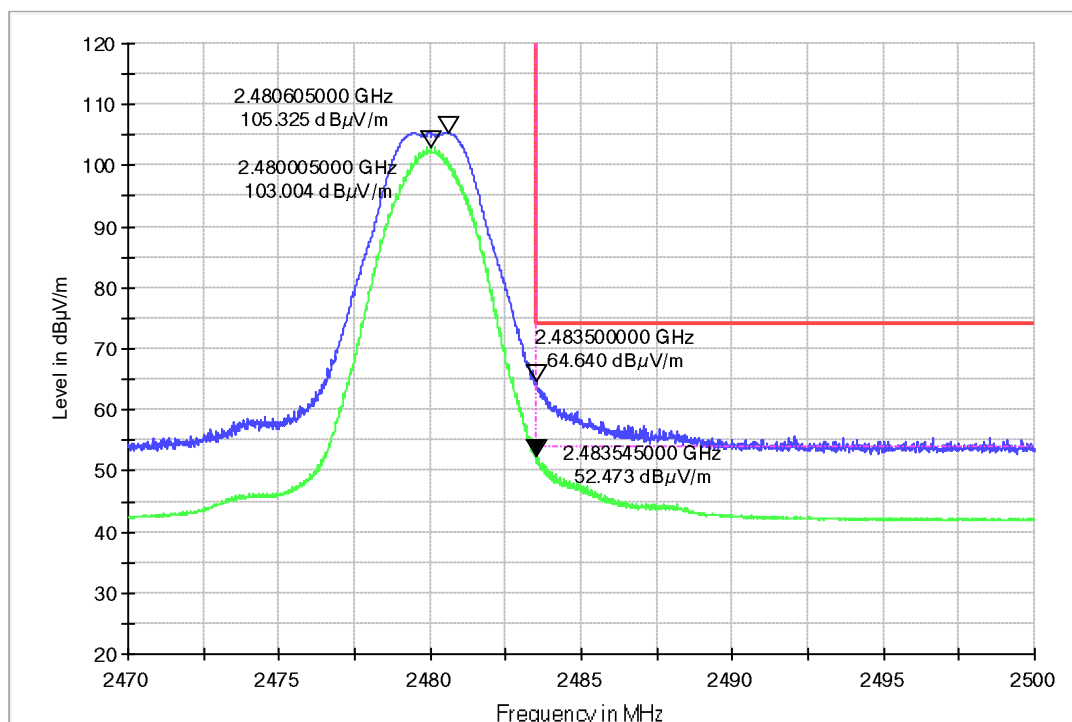


Figure 8: Radiated Band-Edge, 2480MHz, H

XXY-2470° 2500 BE_1-18GHz_HL050_FSV40_Pre-10-YUNFANG


Figure 9: Radiated Band-Edge, 2480MHz, V

XXY-2470° 2500 BE_1-18GHz_HL050_FSV40_Pre-10-YUNFANG

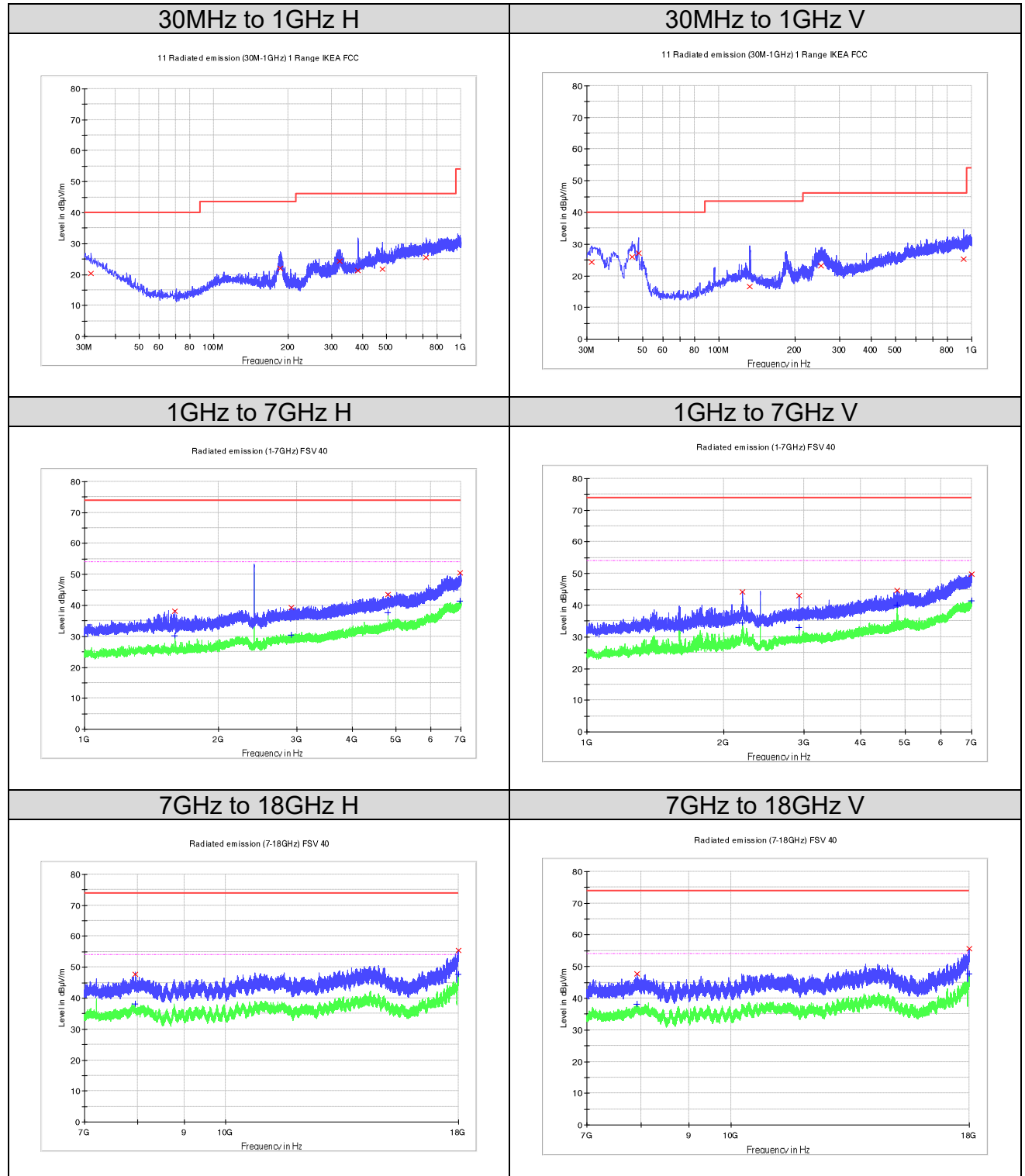


5.3.2 Radiated Spurious Emission**RESULT:****Pass**

Date of testing	:	2026-06-25
Ambient temperature	:	20.5°C
Relative humidity	:	40.3%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC Part 15.247(d) FCC Part 15.209(a) RSS-Gen Issue 6, July 30, 2026, Clause 7.4.3 RSS-247 Issue 4, July 24, 2025, Clause 6.6
Test procedure	:	ANSI C63.10:2020 ANSI C63.10-2020+Cor. 1-2023+C63.10a- 2024+Errata to C63.10a-2024
Test voltage	:	DC 5V
Test modes applied	:	A

Note:

For the frequency range from 18GHz to 25GHz, no emission was found.

Figure 10: Radiated Spurious Emission, 2405MHz


Limit and Margin
QP

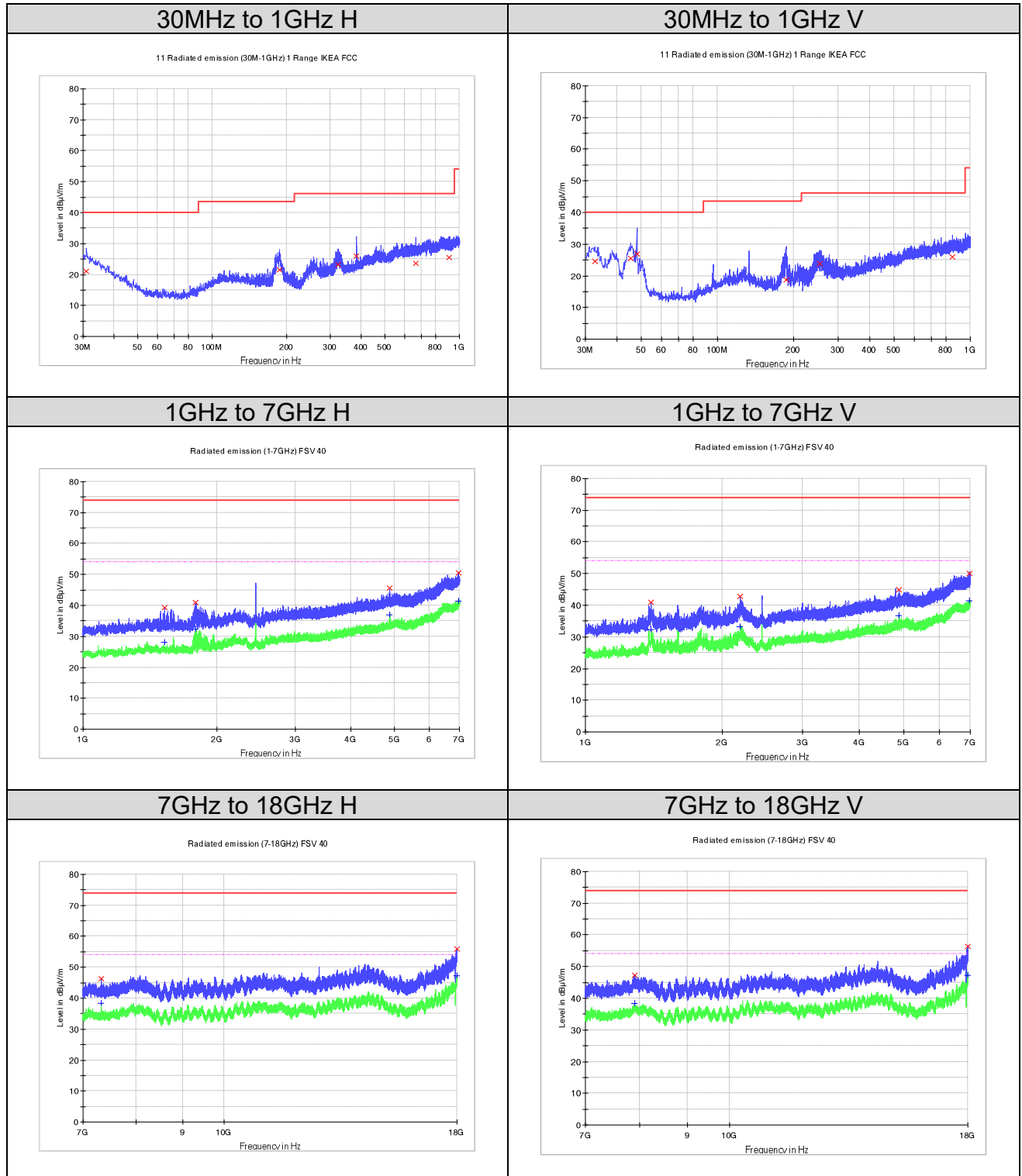
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
31.940000	20.3	H	24.3	19.7	40.0
185.685000	22.1	H	15.9	21.4	43.5
322.333750	24.3	H	21.2	21.7	46.0
383.686250	21.3	H	22.4	24.7	46.0
480.080000	21.8	H	24.7	24.2	46.0
722.580000	25.4	H	28.5	20.6	46.0
31.333750	24.4	V	24.7	15.7	40.0
45.277500	26.1	V	16.9	13.9	40.0
47.945000	27.1	V	15.7	12.9	40.0
131.971250	16.6	V	18.5	26.9	43.5
253.585000	23.1	V	19.9	22.9	46.0
929.190000	25.3	V	28.4	20.7	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1593.454546	38.1	H	-18.9	36.0	74.0
2914.818182	39.3	H	-15.0	34.7	74.0
4808.909091	43.6	H	-11.2	30.4	74.0
6977.090909	50.6	H	-6.4	23.4	74.0
7952.187500	47.8	H	-3.5	26.2	74.0
17982.468750	55.4	H	11.8	18.6	74.0
2193.727273	44.2	V	-15.8	29.8	74.0
2929.000000	43.1	V	-15.1	30.9	74.0
4810.000000	44.8	V	-11.2	29.3	74.0
6995.090909	49.8	V	-6.2	24.2	74.0
7922.281250	47.7	V	-3.6	26.3	74.0
17992.093750	55.6	V	12.0	18.4	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1593.454546	30.1	H	-18.9	23.9	54.0
2914.818182	30.5	H	-15.0	23.5	54.0
4808.909091	37.7	H	-11.2	16.3	54.0
6977.090909	41.5	H	-6.4	12.5	54.0
7952.187500	38.1	H	-3.5	15.9	54.0
17982.468750	47.7	H	11.8	6.3	54.0
2193.727273	34.4	V	-15.8	19.6	54.0
2929.000000	33.0	V	-15.1	21.0	54.0
4810.000000	40.0	V	-11.2	14.0	54.0
6995.090909	41.4	V	-6.2	12.6	54.0
7922.281250	38.2	V	-3.6	15.8	54.0
17992.093750	47.6	V	12.0	6.4	54.0

Figure 11: Radiated Spurious Emission, 2445MHz


Prüfbericht - Nr.: CN26WNB 001
Test Report No.
Seite 39 von 42
Page 39 of 42
Limit and Margin
QP

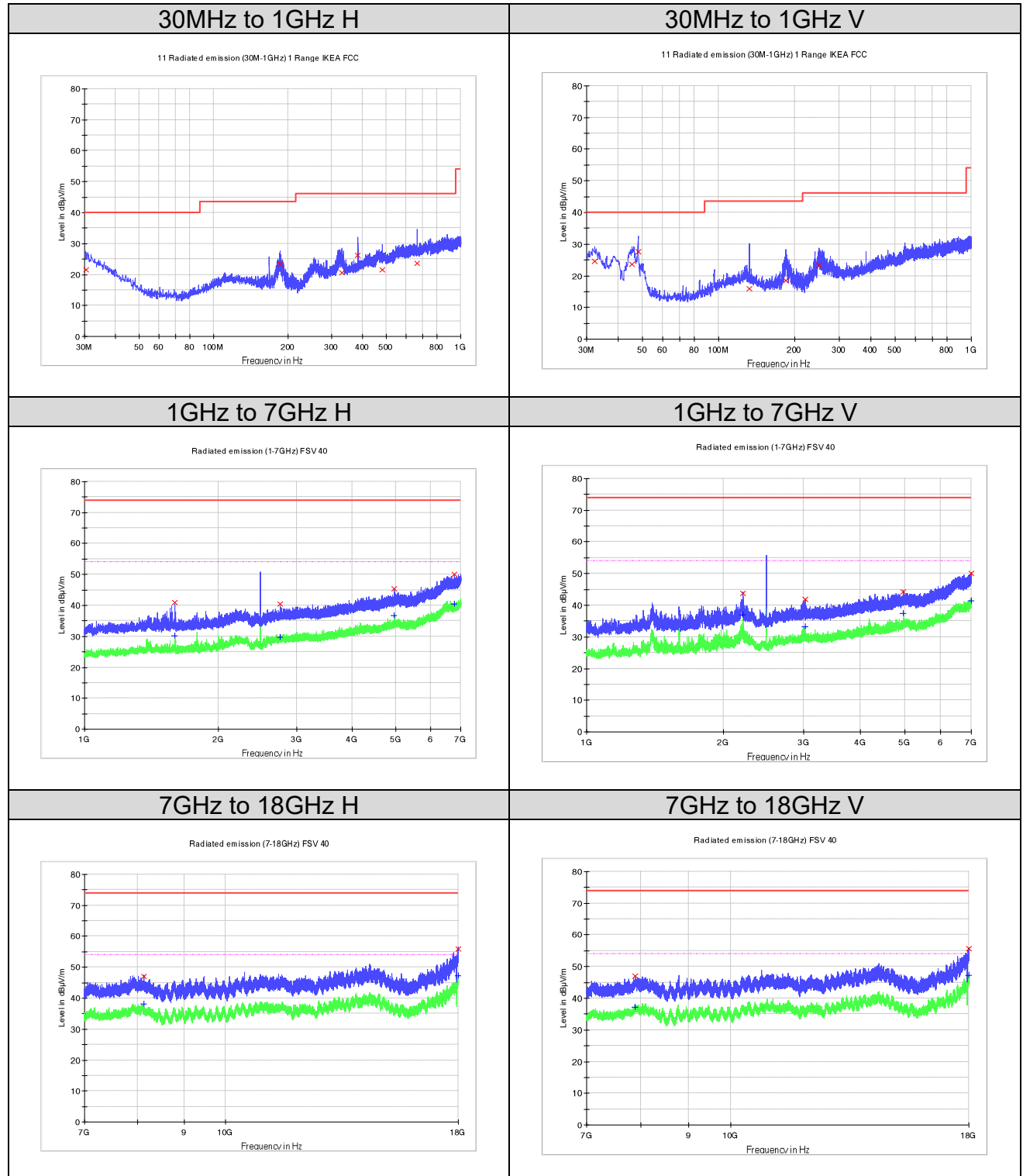
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
30.970000	21.0	H	24.9	19.0	40.0
187.382500	21.5	H	15.8	22.0	43.5
324.152500	23.3	H	21.2	22.7	46.0
384.050000	26.0	H	22.4	20.0	46.0
665.471250	23.6	H	26.6	22.4	46.0
909.668750	25.5	H	28.7	20.5	46.0
32.667500	24.5	V	23.9	15.5	40.0
45.277500	25.4	V	16.9	14.6	40.0
47.945000	26.9	V	15.7	13.1	40.0
186.655000	18.7	V	15.9	24.8	43.5
253.706250	24.0	V	19.9	22.0	46.0
848.073750	26.0	V	29.0	20.0	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1523.090909	39.4	H	-18.8	34.6	74.0
1792.000000	41.0	H	-18.8	33.0	74.0
4889.909091	45.7	H	-11.1	28.4	74.0
6982.545455	50.6	H	-6.4	23.4	74.0
7336.531250	46.2	H	-6.3	27.8	74.0
17985.906250	56.0	H	11.9	18.0	74.0
1395.181818	40.9	V	-18.6	33.1	74.0
2191.272727	42.8	V	-15.8	31.2	74.0
4891.272727	44.8	V	-11.1	29.2	74.0
6972.454546	50.1	V	-6.5	23.9	74.0
7900.968750	47.3	V	-3.8	26.7	74.0
17991.750000	56.5	V	12.0	17.6	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1523.090909	28.0	H	-18.8	26.0	54.0
1792.000000	32.2	H	-18.8	21.8	54.0
4889.909091	37.1	H	-11.1	16.9	54.0
6982.545455	41.5	H	-6.4	12.5	54.0
7336.531250	38.4	H	-6.3	15.6	54.0
17985.906250	47.2	H	11.9	6.8	54.0
1395.181818	32.3	V	-18.6	21.7	54.0
2191.272727	33.2	V	-15.8	20.8	54.0
4891.272727	36.6	V	-11.1	17.4	54.0
6972.454546	41.4	V	-6.5	12.6	54.0
7900.968750	38.3	V	-3.8	15.7	54.0
17991.750000	47.3	V	12.0	6.7	54.0

Figure 12: Radiated Spurious Emission, 2480MHz


Prüfbericht - Nr.: CN26WNB N 001
Test Report No.
Seite 41 von 42
Page 41 of 42
Limit and Margin
QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
30.363750	21.4	H	25.2	18.6	40.0
185.927500	23.5	H	15.9	20.0	43.5
330.821250	20.6	H	21.4	25.4	46.0
384.050000	26.1	H	22.4	19.9	46.0
480.080000	21.6	H	24.7	24.4	46.0
664.501250	23.7	H	26.6	22.3	46.0
32.303750	24.6	V	24.1	15.4	40.0
45.520000	23.6	V	16.8	16.4	40.0
48.066250	27.6	V	15.6	12.4	40.0
132.577500	15.9	V	18.4	27.6	43.5
184.351250	18.6	V	15.9	24.9	43.5
249.220000	23.4	V	19.3	22.6	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1594.818182	40.9	H	-18.9	33.1	74.0
2752.545455	40.4	H	-15.2	33.6	74.0
4961.363636	45.4	H	-11.0	28.6	74.0
6762.727273	50.0	H	-7.7	24.0	74.0
8134.031250	47.1	H	-4.1	26.9	74.0
17986.937500	55.8	H	11.9	18.2	74.0
2201.909091	43.8	V	-15.7	30.2	74.0
3025.000000	41.8	V	-14.8	32.2	74.0
4959.181818	44.3	V	-11.0	29.7	74.0
6988.272727	50.0	V	-6.3	24.0	74.0
7888.593750	47.0	V	-3.9	27.0	74.0
17989.000000	55.6	V	11.9	18.4	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1594.818182	30.3	H	-18.9	23.7	54.0
2752.545455	29.8	H	-15.2	24.2	54.0
4961.363636	36.8	H	-11.0	17.2	54.0
6762.727273	40.4	H	-7.7	13.6	54.0
8134.031250	38.1	H	-4.1	15.9	54.0
17986.937500	47.2	H	11.9	6.9	54.0
2201.909091	36.9	V	-15.7	17.1	54.0
3025.000000	33.3	V	-14.8	20.7	54.0
4959.181818	37.5	V	-11.0	16.5	54.0
6988.272727	41.4	V	-6.3	12.6	54.0
7888.593750	37.1	V	-3.9	16.9	54.0
17989.000000	47.2	V	11.9	6.8	54.0

6. List of Tables

Table 1: List of Test and Measurement Equipment	7
Table 2: Measurement Uncertainty	8
Table 3: Technical Specification of EUT	9
Table 4: Operation Channel List.....	9
Table 5: Power parameter value	11
Table 6: Special Accessories	11
Table 7: Auxiliary Equipment.....	11
Table 8: Antenna Requirement	13
Table 9: Peak Output Power	22

7. List of Figures

Figure 1: Reference level	27
Figure 2: Conducted Spurious Emission	28
Figure 3: Conducted Band Edge	28
Figure 4: Conducted Emission, L	30
Figure 5: Conducted Emission, N.....	31
Figure 6: Radiated Band-Edge, 2405MHz, H.....	33
Figure 7: Radiated Band-Edge, 2405MHz, V.....	33
Figure 8: Radiated Band-Edge, 2480MHz, H.....	34
Figure 9: Radiated Band-Edge, 2480MHz, V.....	34
Figure 10: Radiated Spurious Emission, 2405MHz	36
Figure 11: Radiated Spurious Emission, 2445MHz	38
Figure 12: Radiated Spurious Emission, 2480MHz	40