

Prüfbericht-Nr.: Test report no.:	CN260523 001	Auftrags-Nr.: Order no.:	326135062	Seite 1 von 42 Page 1 of 42
Kunden-Referenz-Nr.: Client reference no.:	1288983	Auftragsdatum: Order date:	2025-10-21	
Auftraggeber: Client:	IKEA of Sweden AB Box 702, SE-343 81 Älmhult, Sweden			
Prüfgegenstand: Test item:	LED Pendant Lamp			
Bezeichnung / Typ-Nr.: Identification / Type no.:	T2503			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	FCC CFR47 Part 15, Subpart C Section 15.247 RSS-Gen Issue 5, Amendment 2, February 2021 RSS-247 Issue 4, July 24, 2025			
Wareneingangsdatum: Date of sample receipt:	2025-12-29 2026-03-22	Refer to photo document.		
Prüfmuster-Nr.: Test sample no:	A004173526-006~007 A004174169-001			
Prüfzeitraum: Testing period:	2026-01-28 ~ 2026-03-23			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	☒ <u>Hongfei Wu</u>		genehmigt von: authorized by:	☒ <u>Weidong Wang</u>
Datum: Date: 2026-04-24	Signed by: Hongfei Wu		Datum: Date: 2026-04-24	Signed by: Weidong Wang
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position: Sachverständige(r)/Expert	
Sonstiges / Other:	FCC ID: FHO-T2503 IC: 10912A-T2503 HVIN: T2503 PMN: LÄNGDMÄTT This report is for Thread.			
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 specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
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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

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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	2026-07-11
EMC-C-018	Double ridged horn antenna	BBHA 9120 D	Schwarzbeck	2026-03-24
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	2026-07-11
EMC-C-176	Preamplifier	EMC184045SE	EMCI Taiwan	2026-07-11
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 an LED pendant lamp which support Bluetooth Low Energy, Zigbee and Thread.

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

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Description of EUT	
Product Name:	LED Pendant Lamp
Model No.:	T2503
Operation Voltage:	AC 120V, 60Hz
Test Voltage:	DC 3.3V for RF conducted and radiated test AC 120V, 60Hz for conducted emission test
RF Technical:	1) BLE 2) Zigbee 3) Thread
Technical Specification of Thread	
Frequency Range:	2405~2480MHz
Modulation Type:	OQPSK
Antenna Type:	PCB Antenna
Antenna Gain:	-0.53 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. Thread 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: sscom 5.13.1

Table 5: Power parameter value

Mode	Power Parameter Setting Value
Thread	100

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	Manufacturer	Model
Laptop	Lenovo	21AJ-S57N0J
Mobile phone	Apple	iPhone 15
Loudspeaker	Apple	HomePod mini
Remote control	IKEA	E2489

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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, the directional gain of antenna is -0.53 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

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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:	-0.53 dBi

Verdict: PASS

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

Date of testing	:	2026-01-28
Ambient temperature	:	20.4°C
Relative humidity	:	35.6%
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 5, Amendment 2, February 2021, Clause 6.7
Test procedure	:	ANSI C63.10:2020 ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024
Test voltage	:	DC 3.3V
Test modes applied	:	A

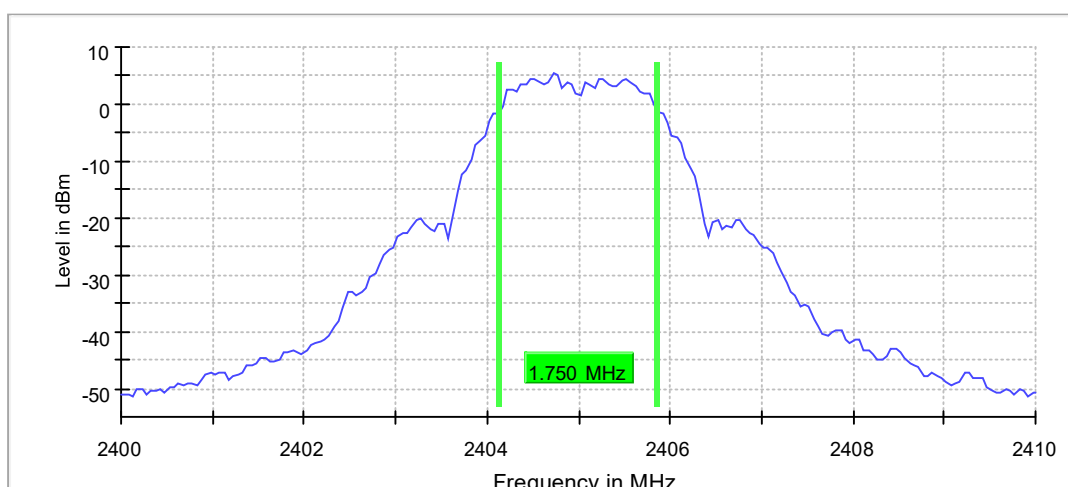
6dB Bandwidth, 2405MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	1.750000	0.500000	---	2404.125000	2405.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2405.000000	5.4	PASS

6 dB Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.41000 GHz	2.41000 GHz
Span	10.000 MHz	10.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	200	~ 200
Sweptime	37.969 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	16 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.14 dB	0.50 dB

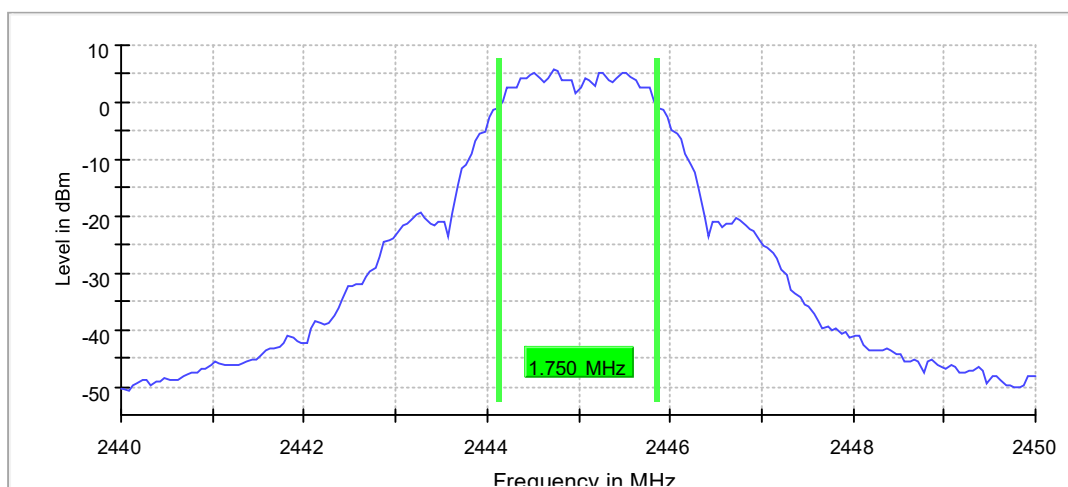
6dB Bandwidth, 2445MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2445.000000	1.750000	0.500000	---	2444.125000	2445.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2445.000000	5.6	PASS

6 dB Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.45000 GHz	2.45000 GHz
Span	10.000 MHz	10.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	200	~ 200
SweepTime	37.969 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	30 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.50 dB

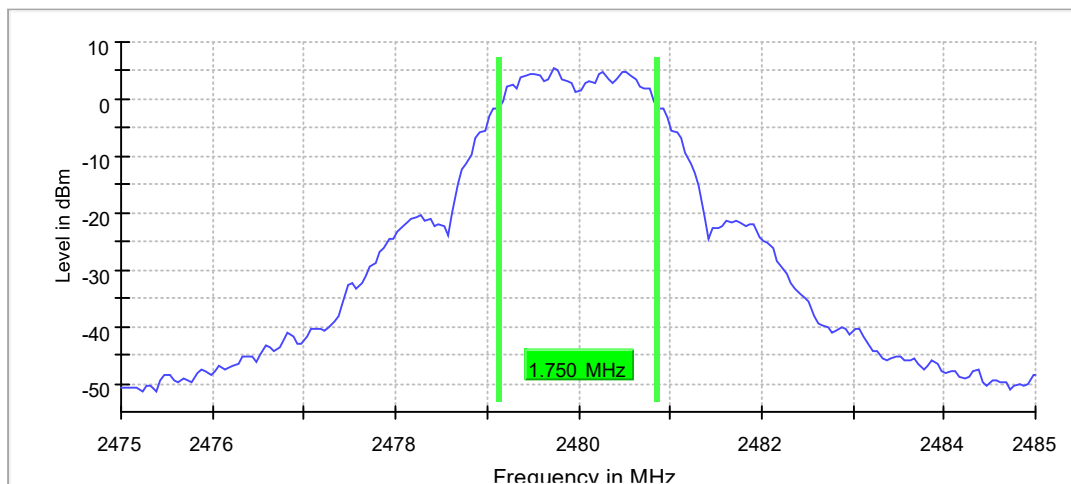
6dB Bandwidth, 2480MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.750000	0.500000	---	2479.125000	2480.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	5.4	PASS

6 dB Bandwidth


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47500 GHz	2.47500 GHz
Stop Frequency	2.48500 GHz	2.48500 GHz
Span	10.000 MHz	10.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	200	~ 200
SweepTime	37.969 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	15 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.10 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	2.275000	---	---	2403.862500	2406.137500

(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	2.40000 GHz	2.40000 GHz
Stop Frequency	2.41000 GHz	2.41000 GHz
Span	10.000 MHz	10.000 MHz
RBW	50.000 kHz	>= 50.000 kHz
VBW	200.000 kHz	>= 150.000 kHz
SweepPoints	400	~ 400
Sweeptime	75.781 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	25 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.06 dB	0.30 dB

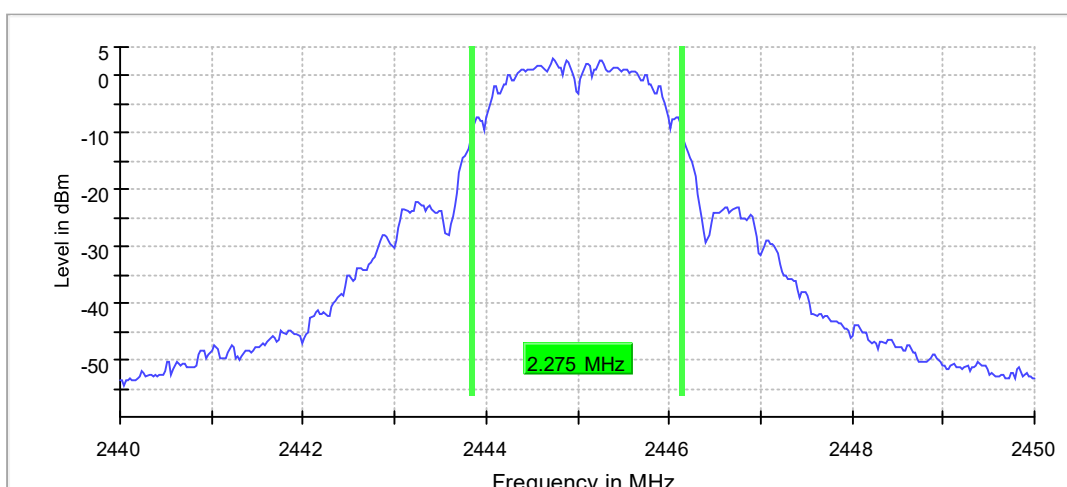
99% Occupied Channel Bandwidth, 2445MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2445.000000	2.275000	---	---	2443.862500	2446.137500

(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	2.44000 GHz	2.44000 GHz
Stop Frequency	2.45000 GHz	2.45000 GHz
Span	10.000 MHz	10.000 MHz
RBW	50.000 kHz	>= 50.000 kHz
VBW	200.000 kHz	>= 150.000 kHz
SweepPoints	400	~ 400
Sweeptime	75.781 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	25 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.03 dB	0.30 dB

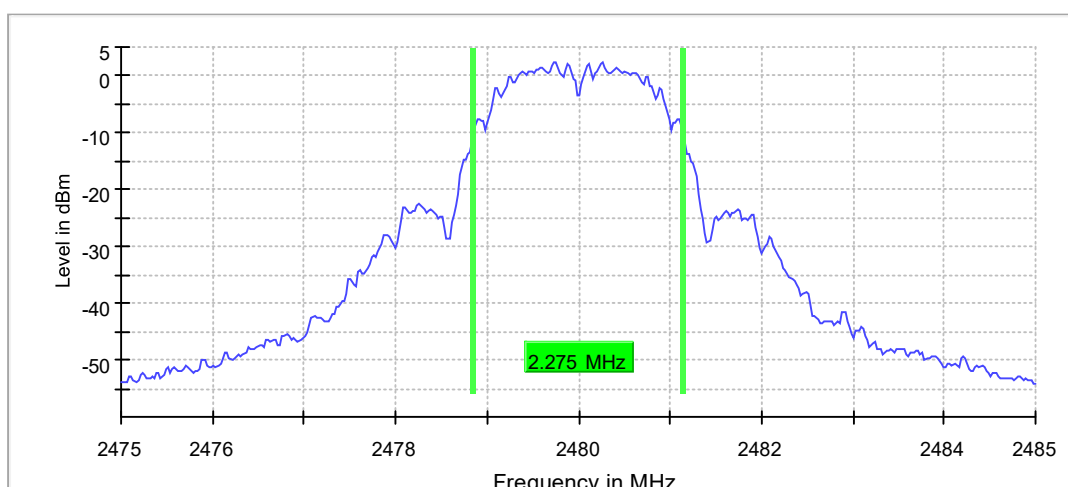
99% Occupied Channel Bandwidth, 2480MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	2.275000	---	---	2478.862500	2481.137500

(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	2.47500 GHz	2.47500 GHz
Stop Frequency	2.48500 GHz	2.48500 GHz
Span	10.000 MHz	10.000 MHz
RBW	50.000 kHz	>= 50.000 kHz
VBW	200.000 kHz	>= 150.000 kHz
SweepPoints	400	~ 400
Sweeptime	75.781 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	22 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.20 dB	0.30 dB

5.1.3 Output Power

RESULT:**Pass**

Date of testing : 2026-01-28
Ambient temperature : 20.2°C
Relative humidity : 35.9%
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 3.3V
Test modes applied : A

Table 9: Peak Output Power

Frequency [MHz]	Peak Conducted Output Power [dBm]	Limit [dBm]
2405	9.1	30
2445	9.3	30
2480	8.9	30

Note:

EIRP=Conducted Output Power + Antenna Gain (-0.53dBi), which is far below the 4 W (36dBm).

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5.1.4 Power Spectral Density

RESULT:

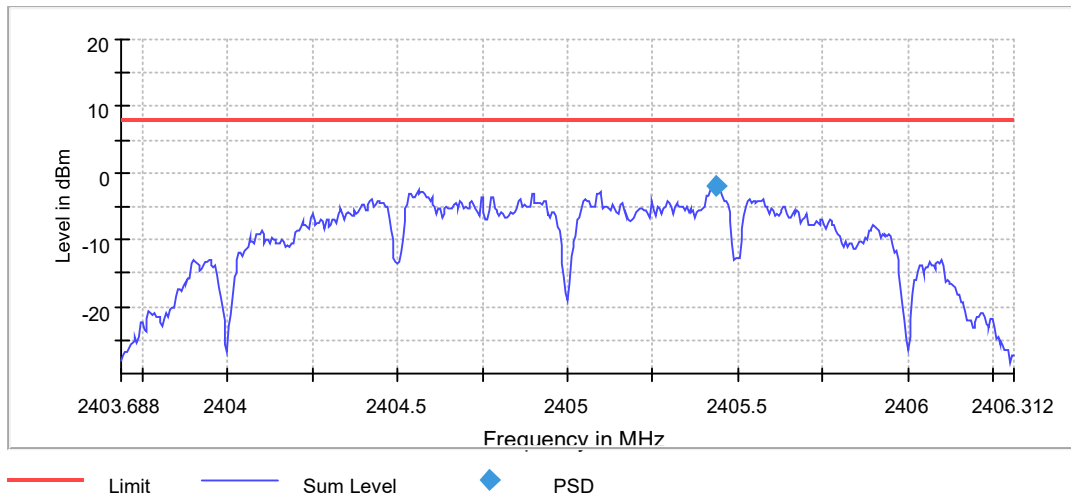
Pass

Date of testing	:	2026-01-28
Ambient temperature	:	20.3°C
Relative humidity	:	35.7%
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 3.3V
Test modes applied	:	A

Power Spectral Density, 2405MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2405.000000	2405.435000	-1.980	8.0	PASS

Peak Power Spectral Density

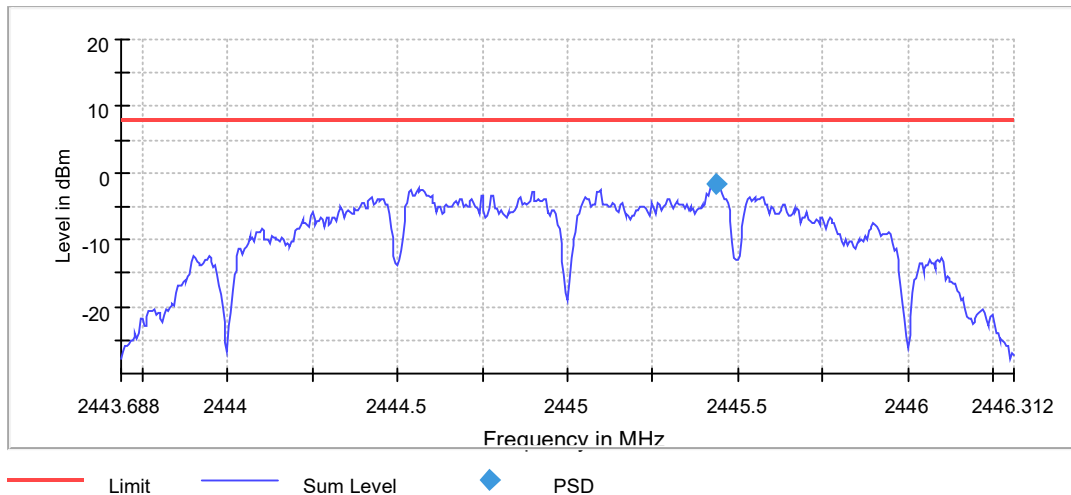

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40369 GHz	2.40369 GHz
Stop Frequency	2.40631 GHz	2.40631 GHz
Span	2.625 MHz	2.625 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	525	~ 525
Sweeptime	2.630 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	12 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.25 dB	0.50 dB

Power Spectral Density, 2445MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2445.000000	2445.435000	-1.728	8.0	PASS

Peak Power Spectral Density

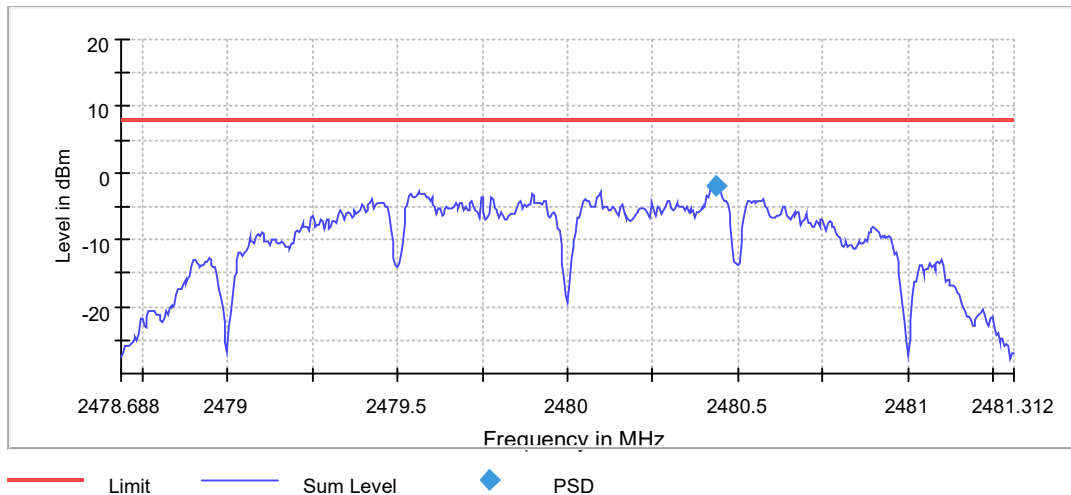

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44369 GHz	2.44369 GHz
Stop Frequency	2.44631 GHz	2.44631 GHz
Span	2.625 MHz	2.625 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	525	~ 525
SweepTime	2.630 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	14 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.23 dB	0.50 dB

Power Spectral Density, 2480MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.435000	-2.113	8.0	PASS

Peak Power Spectral Density


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47869 GHz	2.47869 GHz
Stop Frequency	2.48131 GHz	2.48131 GHz
Span	2.625 MHz	2.625 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	525	~ 525
Sweeptime	2.630 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	13 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.15 dB	0.50 dB

5.1.5 Conducted Band Edge and out-of Band Emissions

RESULT: Pass

Date of testing : 2026-01-28
Ambient temperature : 20.2°C
Relative humidity : 35.5%
Atmospheric pressure : 101kPa
Test requirement : FCC Part 15.247(d)
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 3.3V
Test modes applied : A

Figure 1: Reference level

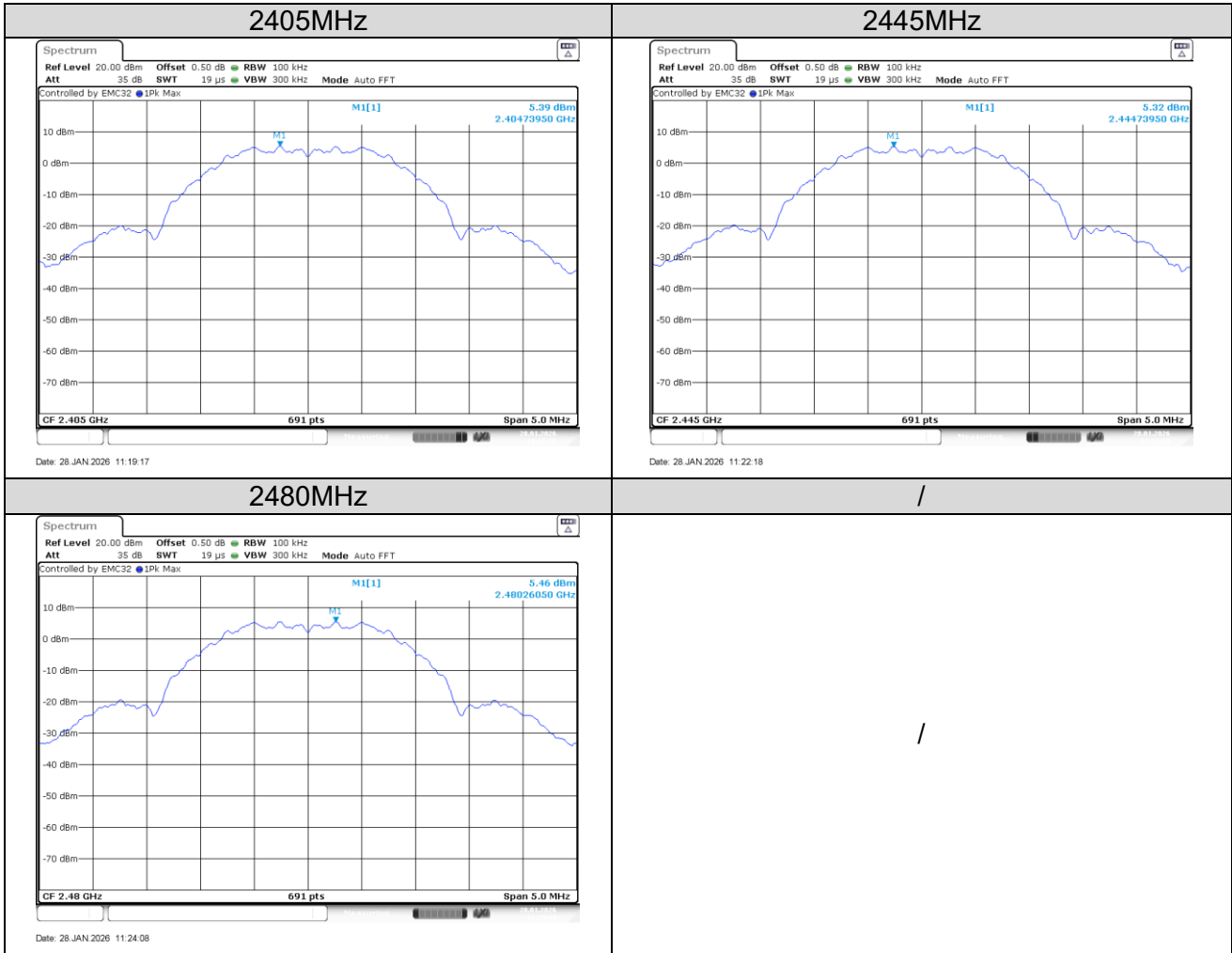
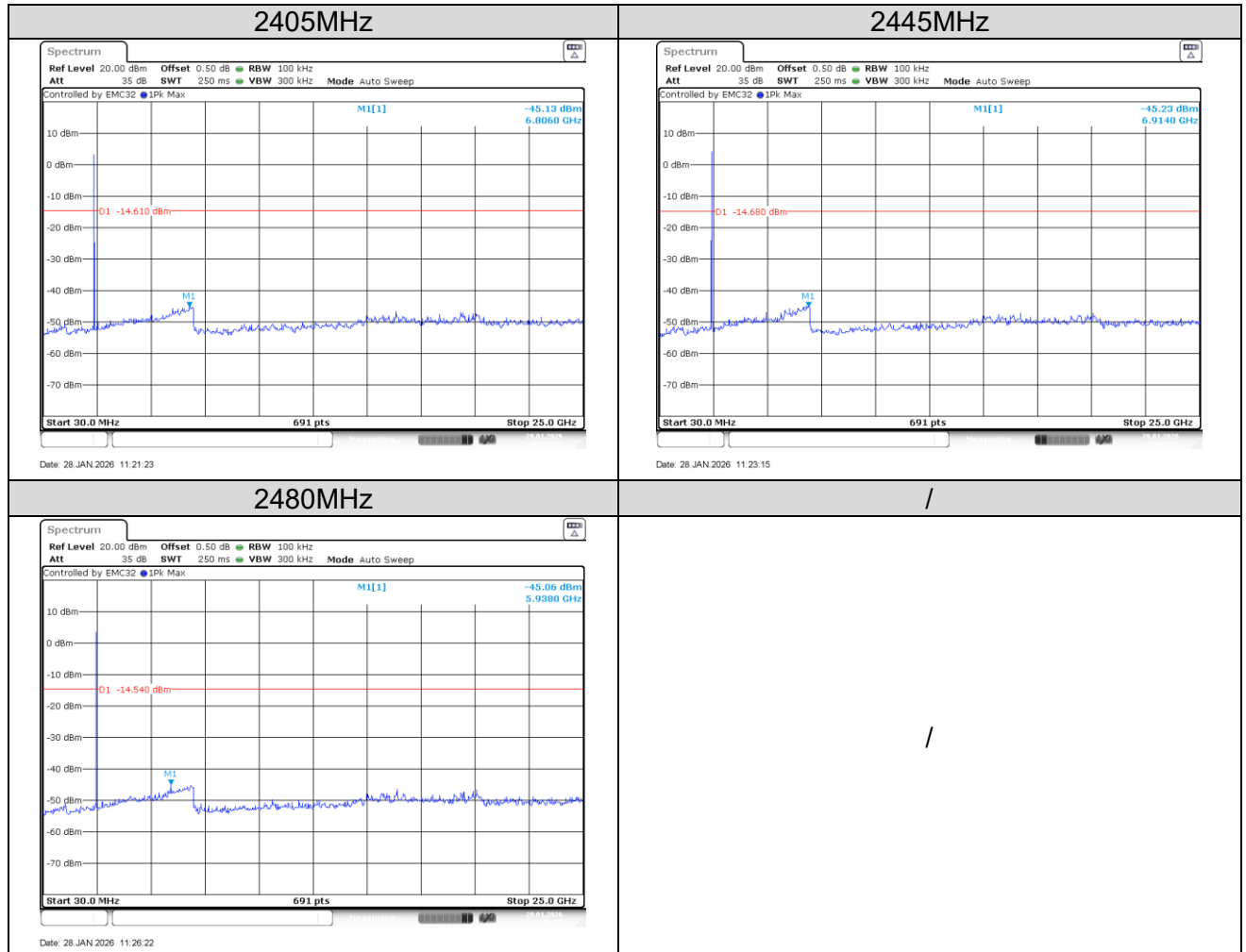
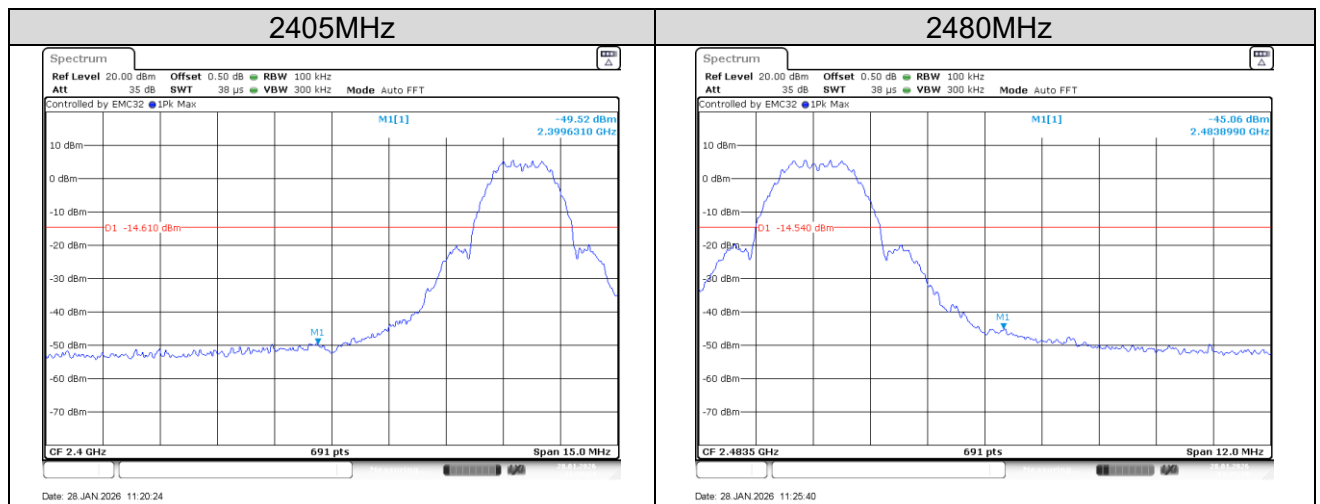


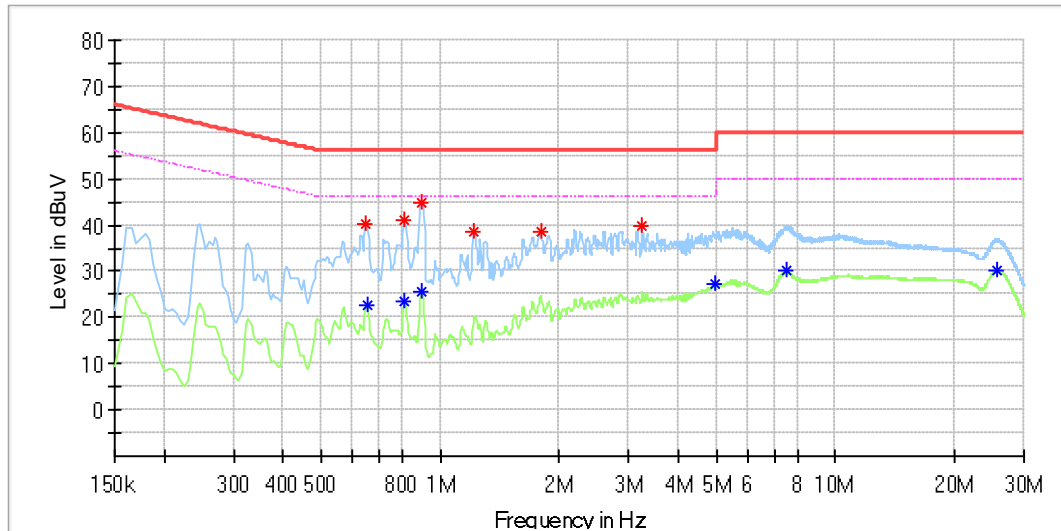
Figure 2: Conducted Spurious Emission

Figure 3: Conducted Band Edge


5.2 Emission in the Frequency Range up to 30MHz

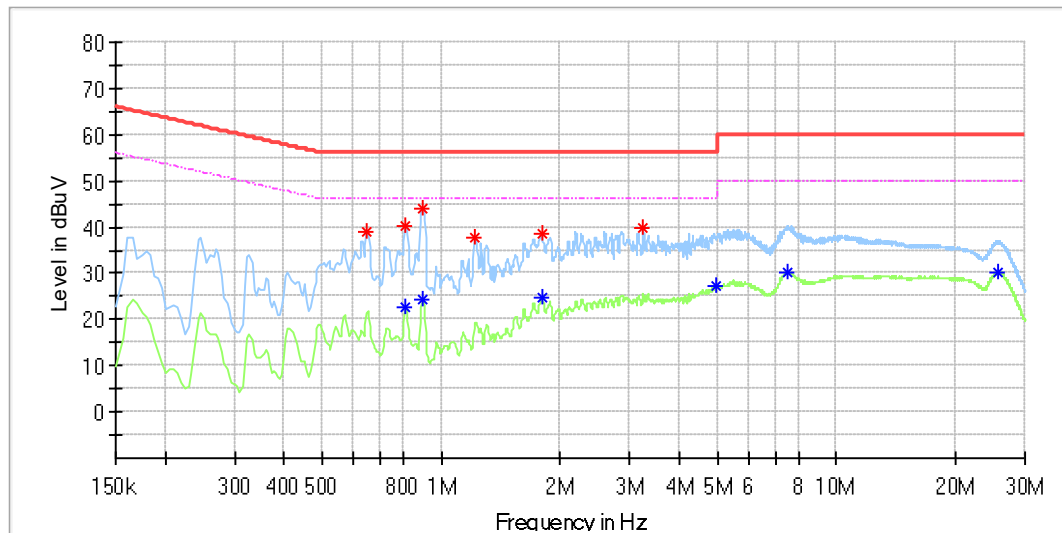
5.2.1 Conducted Emission

RESULT:**Pass**

Date of testing	:	2026-03-23
Ambient temperature	:	26.4°C
Relative humidity	:	44.8%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC Part 15.207 (a) RSS-Gen Issue 5, Amendment 2, February 2021, Clause 8.8
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
Test modes applied	:	B

Figure 4: Conducted Emission, L

Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line
0.647250	40.15	---	56.00	15.85	L1
0.651750	---	22.78	46.00	23.22	L1
0.813750	40.88	---	56.00	15.12	L1
0.813750	---	23.48	46.00	22.52	L1
0.899250	44.85	---	56.00	11.15	L1
0.899250	---	25.43	46.00	20.57	L1
1.214250	38.52	---	56.00	17.48	L1
1.799250	38.59	---	56.00	17.41	L1
3.243750	39.68	---	56.00	16.32	L1
4.944750	---	27.10	46.00	18.90	L1
7.509750	---	30.10	50.00	19.90	L1
25.608750	---	30.32	50.00	19.68	L1

Figure 5: Conducted Emission, N


Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line
0.647250	38.98	---	56.00	17.02	N
0.813750	40.07	---	56.00	15.93	N
0.813750	---	22.56	46.00	23.44	N
0.899250	43.96	---	56.00	12.04	N
0.899250	---	24.31	46.00	21.69	N
1.214250	37.81	---	56.00	18.19	N
1.799250	---	24.93	46.00	21.07	N
1.799250	38.61	---	56.00	17.39	N
3.243750	39.88	---	56.00	16.12	N
4.944750	---	27.20	46.00	18.80	N
7.523250	---	30.33	50.00	19.67	N
25.716750	---	30.25	50.00	19.75	N

5.3 Emission in the Frequency Range above 30MHz

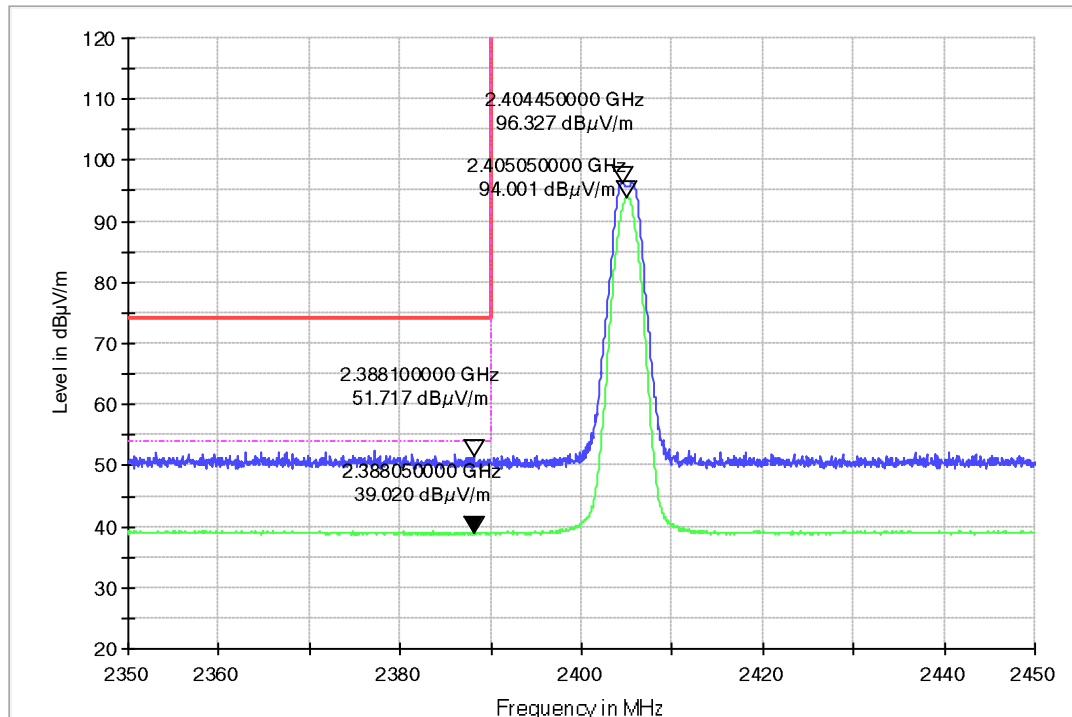
5.3.1 Radiated Band-Edge

RESULT:**Pass**

Date of testing	:	2026-02-28
Ambient temperature	:	21.5°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 5, Amendment 2, February 2021, Clause 8.9 RSS-Gen Issue 5, Amendment 2, February 2021, Clause 8.10 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 3.3V
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

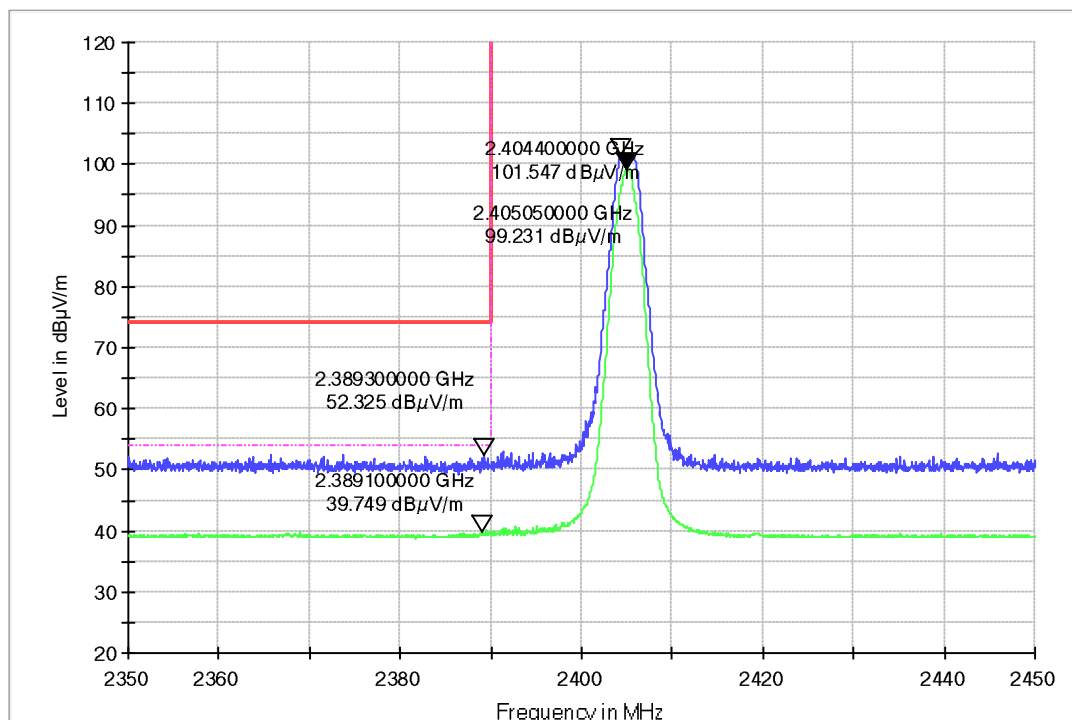
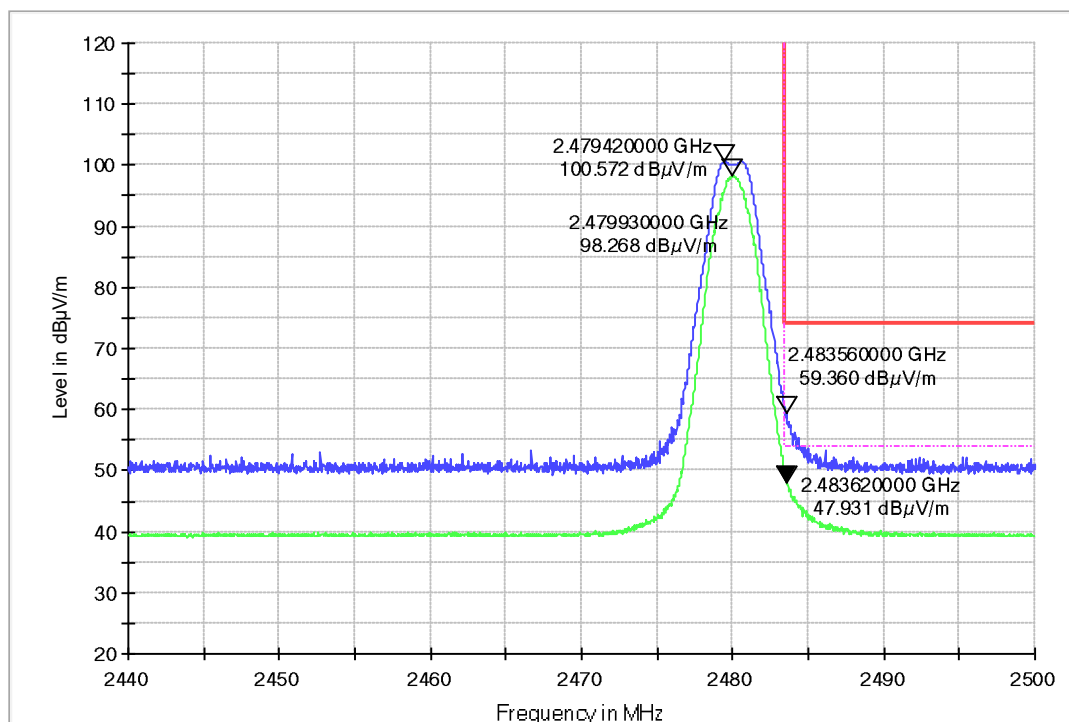
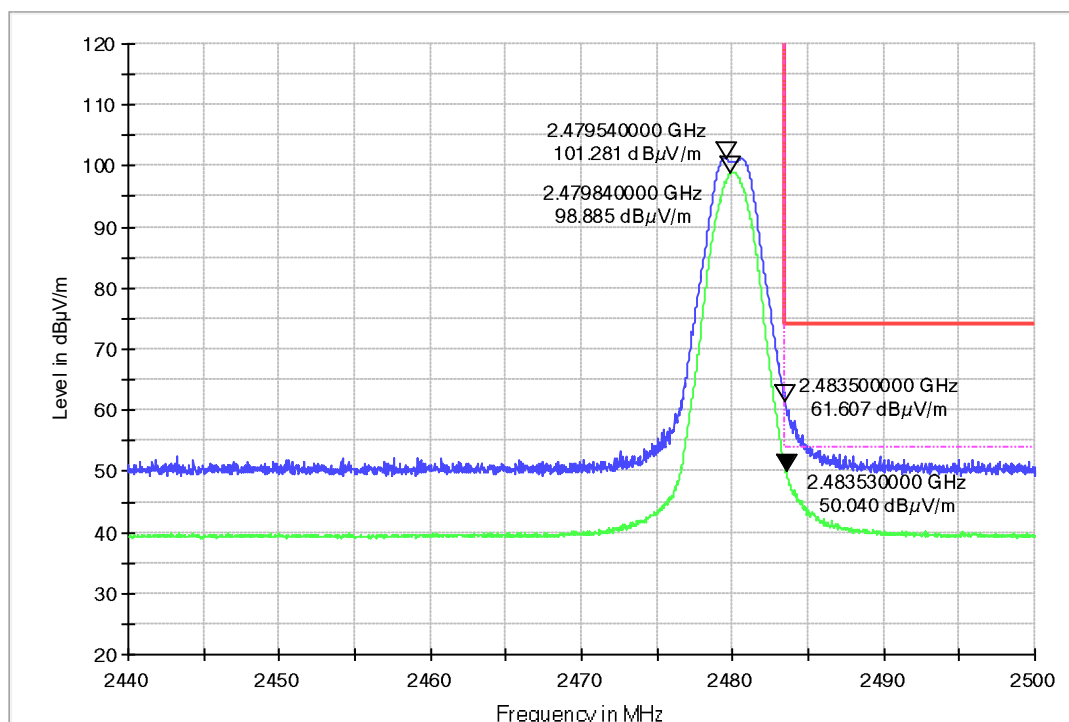


Figure 8: Radiated Band-Edge, 2480MHz, H

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



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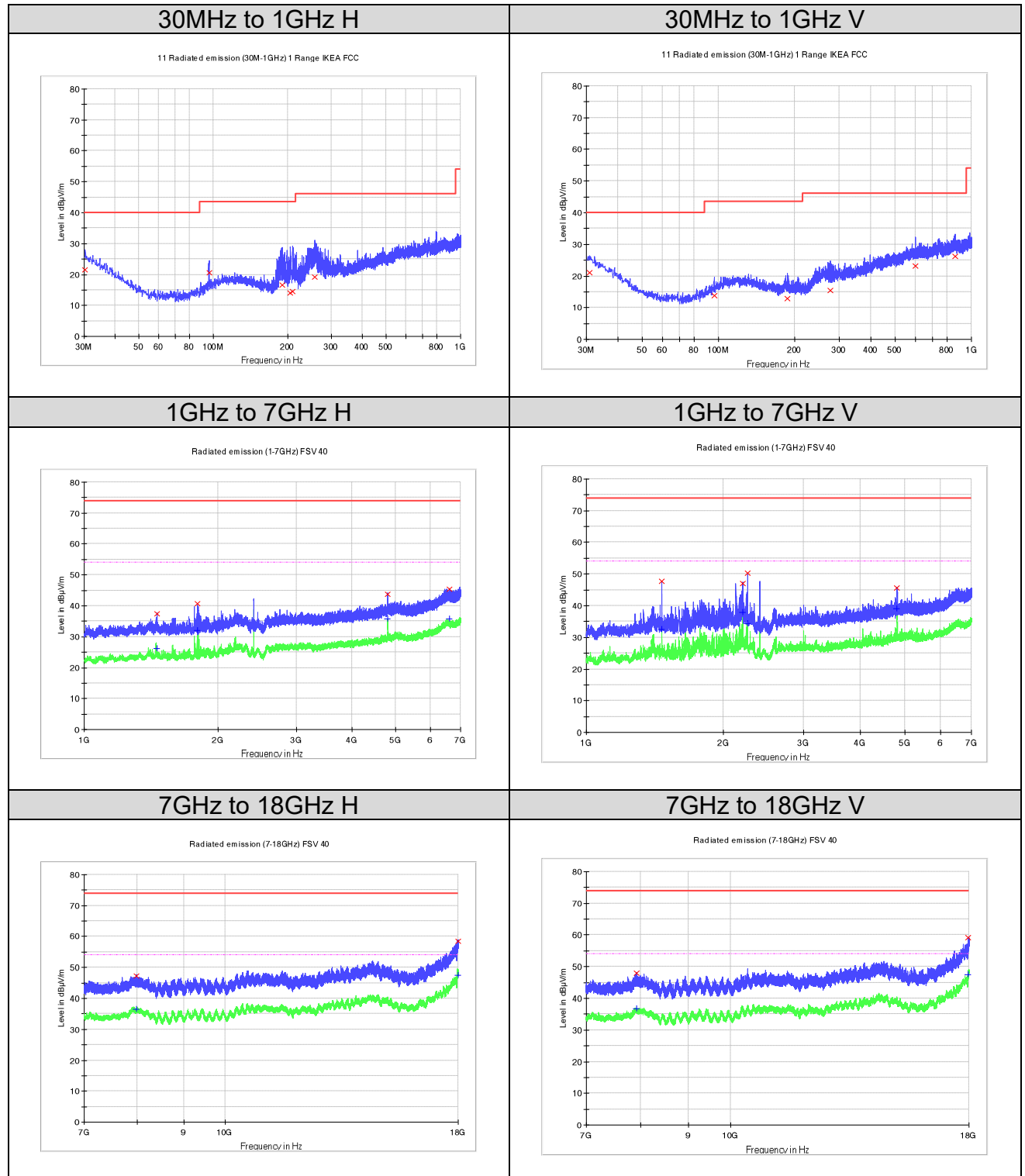
5.3.2 Radiated Spurious Emission

RESULT:**Pass**

Date of testing	:	2026-02-28
Ambient temperature	:	21.3°C
Relative humidity	:	40.3%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC Part 15.247(d) FCC Part 15.209(a) RSS-Gen Issue 5, Amendment 2, February 2021, Clause 8.9 RSS-247 Issue 4, July 24, 2025, Clause 6.6
Test procedure	:	ANSI C63.10-2020+Cor. 1-2023+C63.10a- 2024+Errata to C63.10a-2024
Test voltage	:	DC 3.3V
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

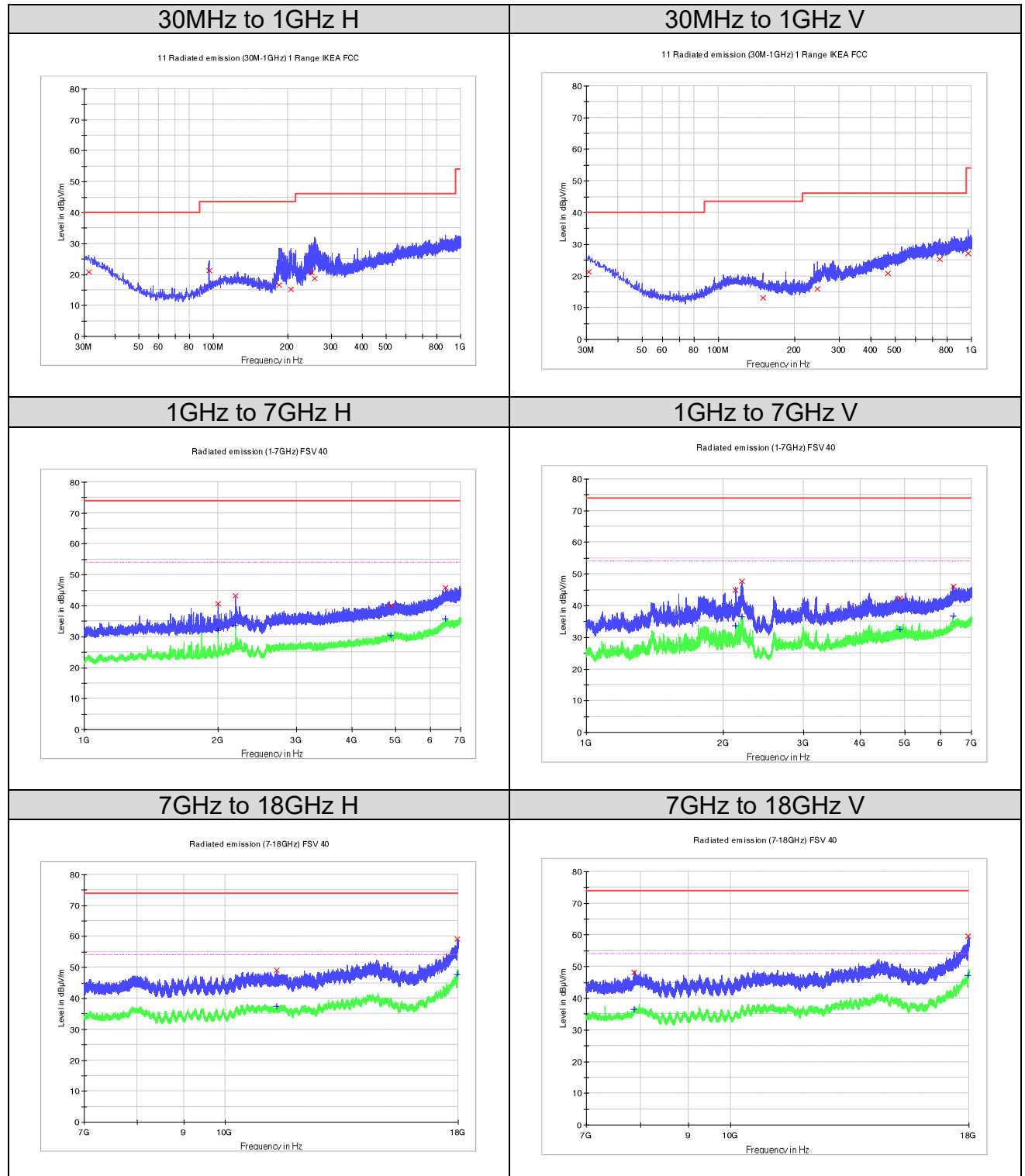
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
30.242500	21.5	H	25.3	18.6	40.0
95.960000	20.6	H	16.6	22.9	43.5
189.807500	16.7	H	15.8	26.8	43.5
205.206250	14.0	H	16.2	29.5	43.5
209.571250	14.5	H	16.2	29.0	43.5
257.707500	19.2	H	20.9	26.8	46.0
30.848750	21.1	V	25.0	18.9	40.0
95.960000	13.9	V	16.6	29.6	43.5
187.140000	13.0	V	15.8	30.5	43.5
277.713750	15.5	V	19.8	30.5	46.0
599.632500	23.2	V	26.4	22.8	46.0
861.411250	26.1	V	29.1	19.9	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1456.272727	37.5	H	-18.6	36.5	74.0
1794.181818	40.6	H	-18.8	33.4	74.0
4809.181818	43.9	H	-11.2	30.1	74.0
6603.181818	45.3	H	-7.4	28.7	74.0
7982.781250	47.3	H	-3.4	26.7	74.0
17982.125000	58.4	H	11.8	15.6	74.0
1462.818182	47.7	V	-18.6	26.4	74.0
2202.454546	47.1	V	-15.7	26.9	74.0
2263.545455	50.3	V	-15.6	23.7	74.0
4808.909091	45.5	V	-11.2	28.5	74.0
7929.500000	48.0	V	-3.6	26.0	74.0
17975.937500	59.2	V	11.7	14.8	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1456.272727	26.3	H	-18.6	27.7	54.0
1794.181818	32.1	H	-18.8	21.9	54.0
4809.181818	35.8	H	-11.2	18.2	54.0
6603.181818	35.7	H	-7.4	18.3	54.0
7982.781250	36.5	H	-3.4	17.6	54.0
17982.125000	47.6	H	11.8	6.4	54.0
1462.818182	32.5	V	-18.6	21.5	54.0
2202.454546	37.8	V	-15.7	16.2	54.0
2263.545455	34.4	V	-15.6	19.6	54.0
4808.909091	39.0	V	-11.2	15.0	54.0
7929.500000	36.7	V	-3.6	17.3	54.0
17975.937500	47.6	V	11.7	6.4	54.0

Figure 11: Radiated Spurious Emission, 2445MHz


Limit and Margin
QP

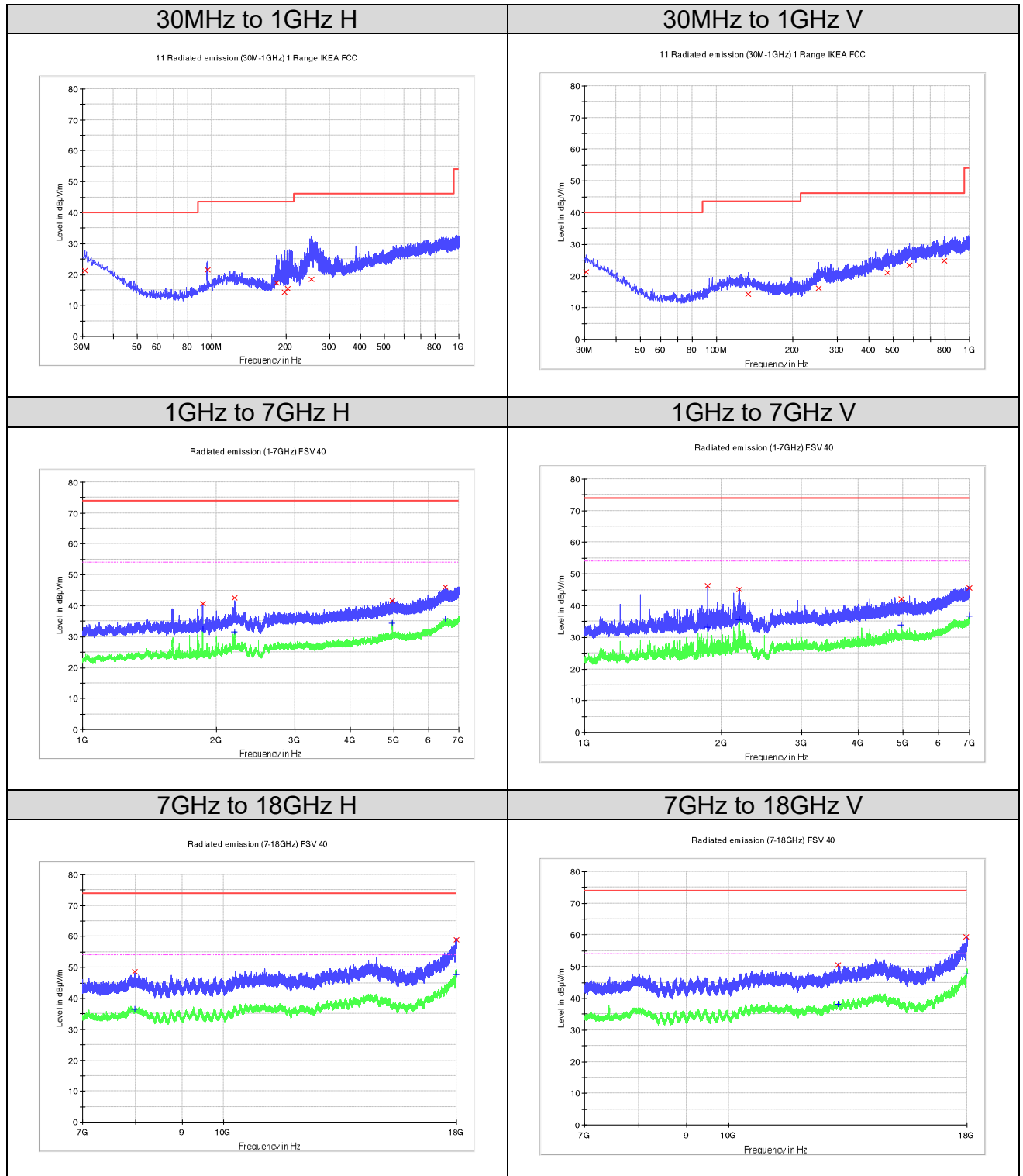
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
31.333750	20.8	H	24.7	19.3	40.0
95.960000	21.3	H	16.6	22.2	43.5
184.472500	16.7	H	15.9	26.8	43.5
205.448750	15.3	H	16.2	28.2	43.5
249.947500	20.7	H	19.3	25.3	46.0
257.707500	18.7	H	20.9	27.3	46.0
30.606250	21.2	V	25.1	18.8	40.0
149.431250	13.0	V	17.1	30.5	43.5
246.310000	15.9	V	19.2	30.1	46.0
468.803750	20.8	V	24.7	25.2	46.0
749.861250	25.3	V	28.5	20.7	46.0
974.173750	27.1	V	30.2	26.9	54.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1994.636364	40.7	H	-17.8	33.3	74.0
2185.545455	43.2	H	-15.8	30.8	74.0
4890.181818	39.9	H	-11.1	34.1	74.0
6475.545455	45.8	H	-7.5	28.2	74.0
11382.468750	49.2	H	-2.1	24.8	74.0
17976.281250	59.2	H	11.7	14.8	74.0
2127.727273	45.0	V	-16.5	29.0	74.0
2195.909091	47.7	V	-15.8	26.3	74.0
4888.272727	42.5	V	-11.1	31.6	74.0
6396.454546	46.2	V	-8.0	27.8	74.0
7884.125000	48.1	V	-4.0	25.9	74.0
17971.812500	59.6	V	11.6	14.4	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1994.636364	32.0	H	-17.8	22.0	54.0
2185.545455	33.6	H	-15.8	20.4	54.0
4890.181818	30.4	H	-11.1	23.6	54.0
6475.545455	35.8	H	-7.5	18.2	54.0
11382.468750	37.5	H	-2.1	16.5	54.0
17976.281250	47.6	H	11.7	6.4	54.0
2127.727273	33.8	V	-16.5	20.2	54.0
2195.909091	36.4	V	-15.8	17.6	54.0
4888.272727	32.5	V	-11.1	21.5	54.0
6396.454546	36.8	V	-8.0	17.2	54.0
7884.125000	36.5	V	-4.0	17.5	54.0
17971.812500	47.3	V	11.6	6.7	54.0

Figure 12: Radiated Spurious Emission, 2480MHz


Limit and Margin
QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
30.606250	21.3	H	25.1	18.7	40.0
95.960000	21.5	H	16.6	22.0	43.5
183.138750	17.4	H	16.0	26.1	43.5
196.718750	14.4	H	15.9	29.1	43.5
202.296250	15.4	H	16.2	28.1	43.5
253.827500	18.4	H	19.9	27.6	46.0
30.485000	21.3	V	25.2	18.7	40.0
132.941250	14.2	V	18.4	29.3	43.5
253.463750	16.2	V	19.9	29.8	46.0
473.896250	21.1	V	24.8	24.9	46.0
578.656250	23.3	V	26.7	22.7	46.0
796.663750	24.9	V	28.0	21.2	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1860.454546	40.8	H	-18.5	33.2	74.0
2192.909091	42.6	H	-15.8	31.4	74.0
4959.181818	41.6	H	-11.0	32.4	74.0
6524.909091	46.0	H	-7.3	28.0	74.0
7984.843750	48.6	H	-3.4	25.5	74.0
17982.468750	59.0	H	11.8	15.0	74.0
1865.909091	46.4	V	-18.5	27.6	74.0
2182.545455	45.1	V	-15.9	29.0	74.0
4959.181818	42.1	V	-11.0	31.9	74.0
6989.363636	45.5	V	-6.3	28.5	74.0
13106.031250	50.5	V	-0.5	23.5	74.0
17977.656250	59.3	V	11.7	14.7	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1860.454546	32.4	H	-18.5	21.6	54.0
2192.909091	31.5	H	-15.8	22.5	54.0
4959.181818	34.5	H	-11.0	19.5	54.0
6524.909091	35.9	H	-7.3	18.1	54.0
7984.843750	36.5	H	-3.4	17.5	54.0
17982.468750	47.7	H	11.8	6.4	54.0
1865.909091	33.3	V	-18.5	20.7	54.0
2182.545455	35.6	V	-15.9	18.5	54.0
4959.181818	33.9	V	-11.0	20.1	54.0
6989.363636	36.8	V	-6.3	17.2	54.0
13106.031250	38.2	V	-0.5	15.8	54.0
17977.656250	47.7	V	11.7	6.3	54.0

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