

Prüfbericht-Nr.: Test report no.:	CN26VFOQ 001	Auftrags-Nr.: Order no.:	326140632	Seite 1 von 42 Page 1 of 42			
Kunden-Referenz-Nr.: Client reference no.:	1288983	Auftragsdatum: Order date:	2025-12-08				
Auftraggeber: Client:	IKEA of Sweden AB Box 702, SE-343 81 Älmhult, Sweden						
Prüfgegenstand: Test item:	LED Ceiling Lamp						
Bezeichnung / Typ-Nr.: Identification / Type no.:	T2504						
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:	2025-12-15 2025-12-22	Refer to photo document.					
Prüfmuster-Nr.: Test sample no:	A004163520-004 A004169150-007~008						
Prüfzeitraum: Testing period:	2025-12-29 ~ 2026-02-28						
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>Yanli Fan</u>			
Datum: Date:	2026-04-27	Signed by: Hongfei Wu		Datum: Date:	2026-04-27	Signed by: Yanli Fan	
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert			
Sonstiges / Other:	FCC ID: FHO-T2504 IC: 10912A-T2504 HVIN: T2504 PMN: SPEGELBLANKT 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 bezueglich 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 ceiling 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 Ceiling Lamp
Model No.:	T2504
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:	2.45 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	70

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 2.45 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

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:	2.45 dBi

Verdict: PASS

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

Date of testing	:	2026-02-02
Ambient temperature	:	20.3°C
Relative humidity	:	36.3%
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 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

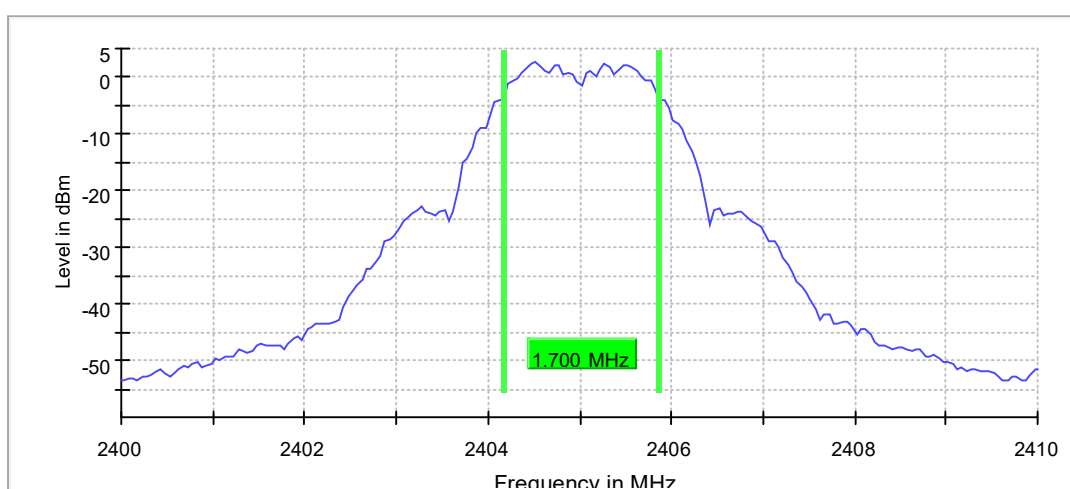
6dB Bandwidth, 2405MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	1.700000	0.500000	---	2404.175000	2405.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2405.000000	2.6	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	15 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.50 dB

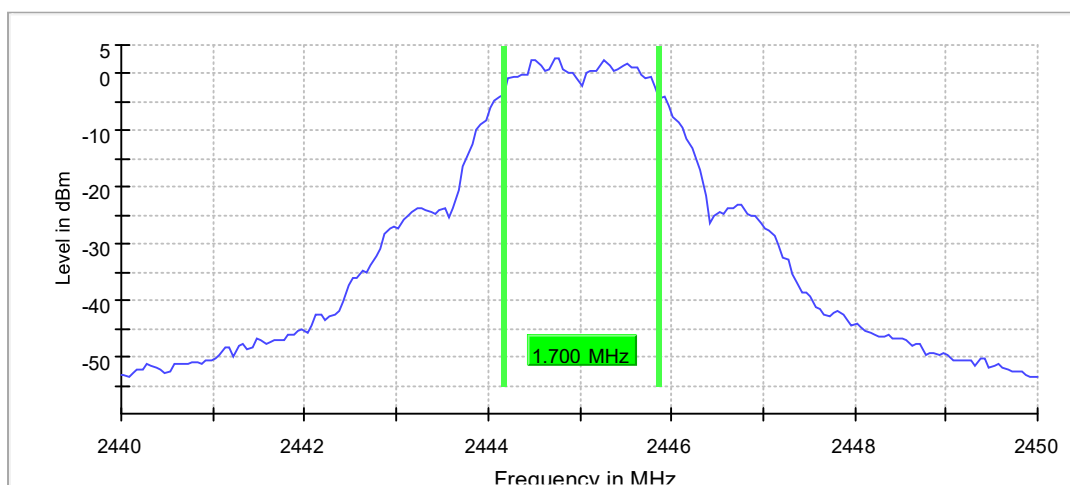
6dB Bandwidth, 2445MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2445.000000	1.700000	0.500000	---	2444.175000	2445.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2445.000000	2.6	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
Preamplifier	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	0.00 dB	0.50 dB

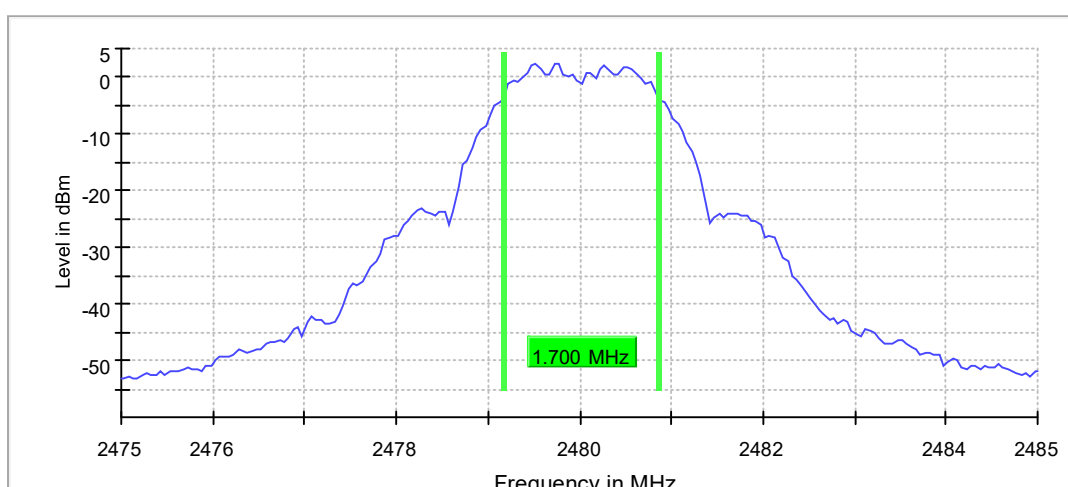
6dB Bandwidth, 2480MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.700000	0.500000	---	2479.175000	2480.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	2.5	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	0.03 dB	0.50 dB

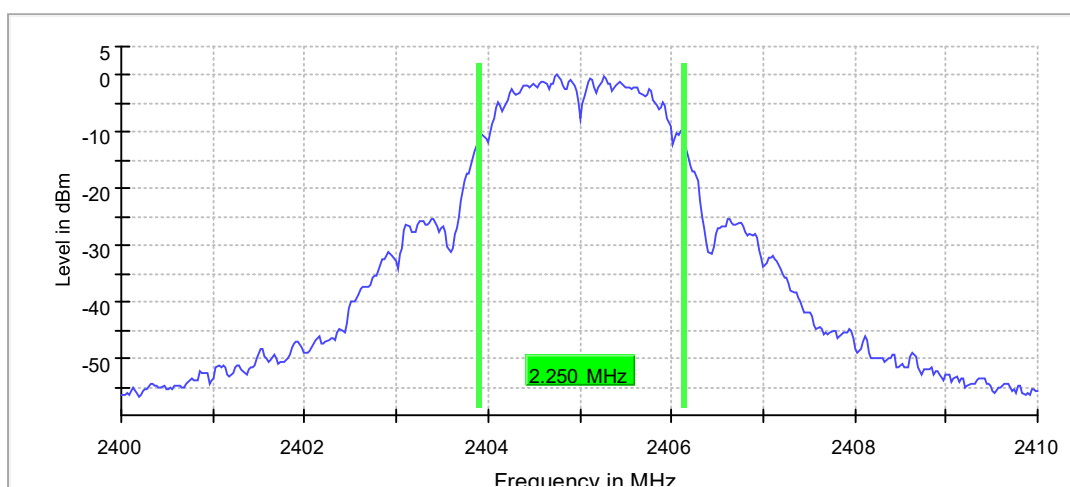
99% Occupied Channel Bandwidth, 2405MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	2.250000	---	---	2403.887500	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	18 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.11 dB	0.30 dB

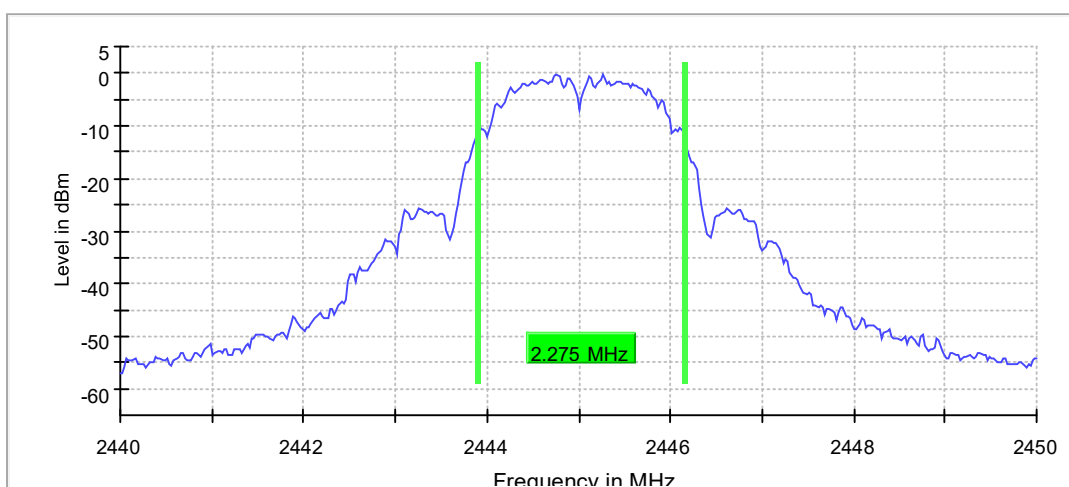
99% Occupied Channel Bandwidth, 2445MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2445.000000	2.275000	---	---	2443.887500	2446.162500

(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	18 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.22 dB	0.30 dB

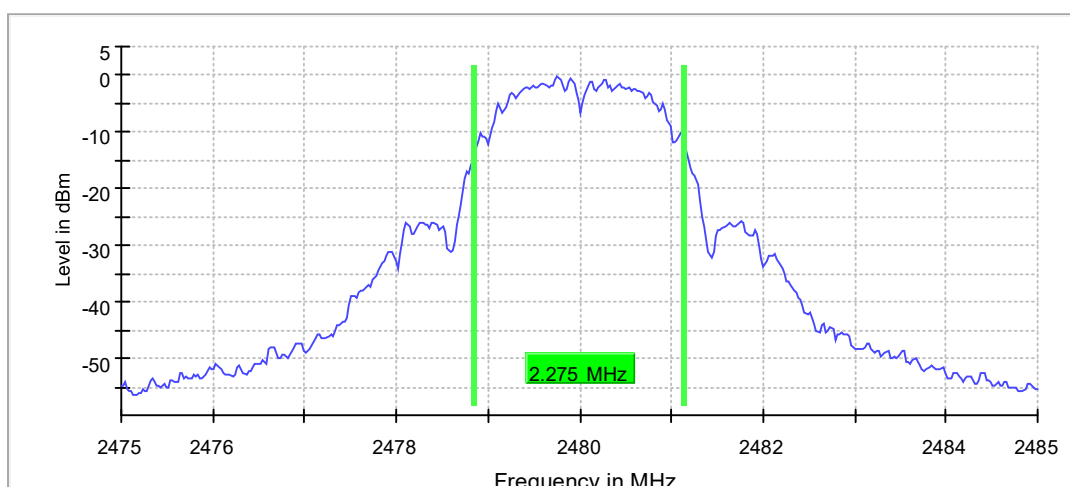
99% Occupied Channel Bandwidth, 2480MHz

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	18 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.29 dB	0.30 dB

5.1.3 Output Power

RESULT:**Pass**

Date of testing : 2026-02-02
Ambient temperature : 20.1°C
Relative humidity : 36.5%
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	6.5	30
2445	6.3	30
2480	6.1	30

Note:

EIRP=Conducted Output Power + Antenna Gain (2.45 dBi), which is far below the 4 W (36dBm).

5.1.4 Power Spectral Density

RESULT:

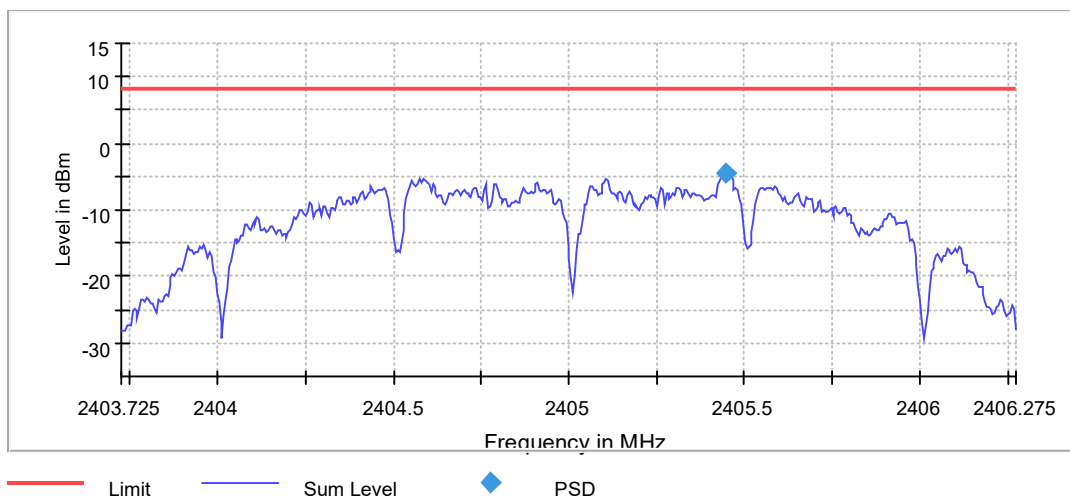
Pass

Date of testing	:	2026-02-02
Ambient temperature	:	20.5°C
Relative humidity	:	36.1%
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	2405.447500	-4.637	8.0	PASS

Peak Power Spectral Density

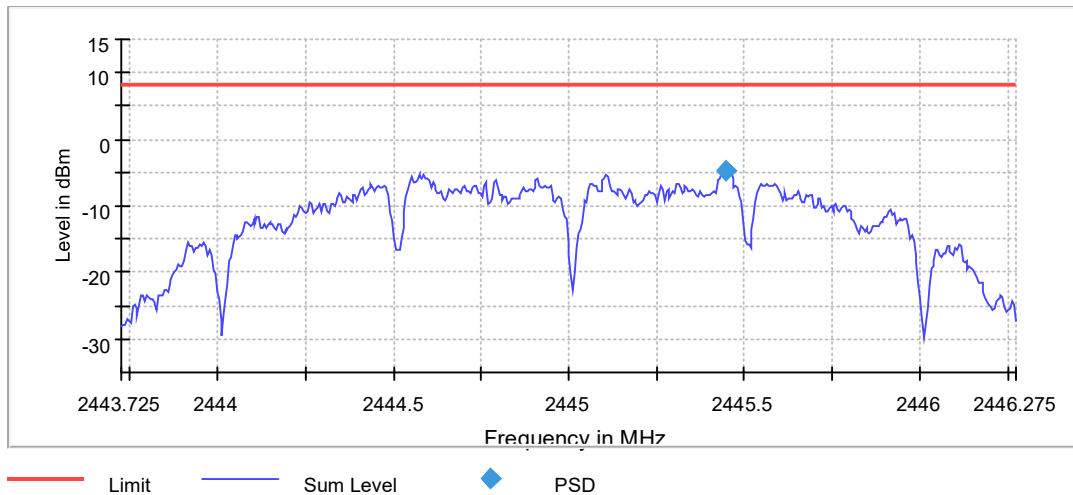

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40373 GHz	2.40373 GHz
Stop Frequency	2.40628 GHz	2.40628 GHz
Span	2.550 MHz	2.550 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	510	~ 510
Sweptime	2.550 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	11 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.23 dB	0.50 dB

Power Spectral Density, 2445MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2445.000000	2445.447500	-4.726	8.0	PASS

Peak Power Spectral Density

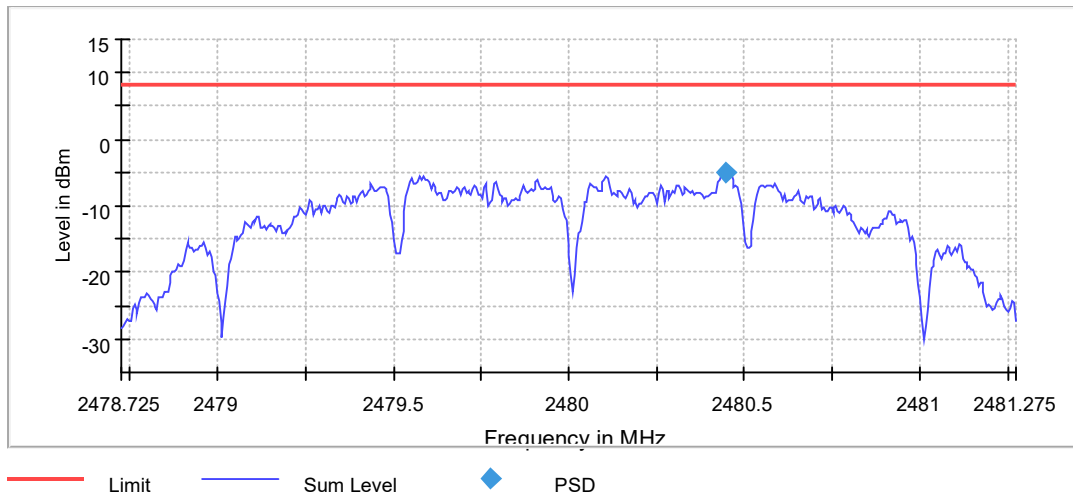

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44373 GHz	2.44373 GHz
Stop Frequency	2.44628 GHz	2.44628 GHz
Span	2.550 MHz	2.550 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	510	~ 510
SweepTime	2.550 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	10 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.19 dB	0.50 dB

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Power Spectral Density, 2480MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.447500	-4.953	8.0	PASS

Peak Power Spectral Density


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47873 GHz	2.47873 GHz
Stop Frequency	2.48128 GHz	2.48128 GHz
Span	2.550 MHz	2.550 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	510	~ 510
Sweptime	2.550 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	0.50 dB	0.50 dB

5.1.5 Conducted Band Edge and out-of Band Emissions

RESULT:

Pass

Date of testing	:	2026-02-02
Ambient temperature	:	20.1°C
Relative humidity	:	36.3%
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

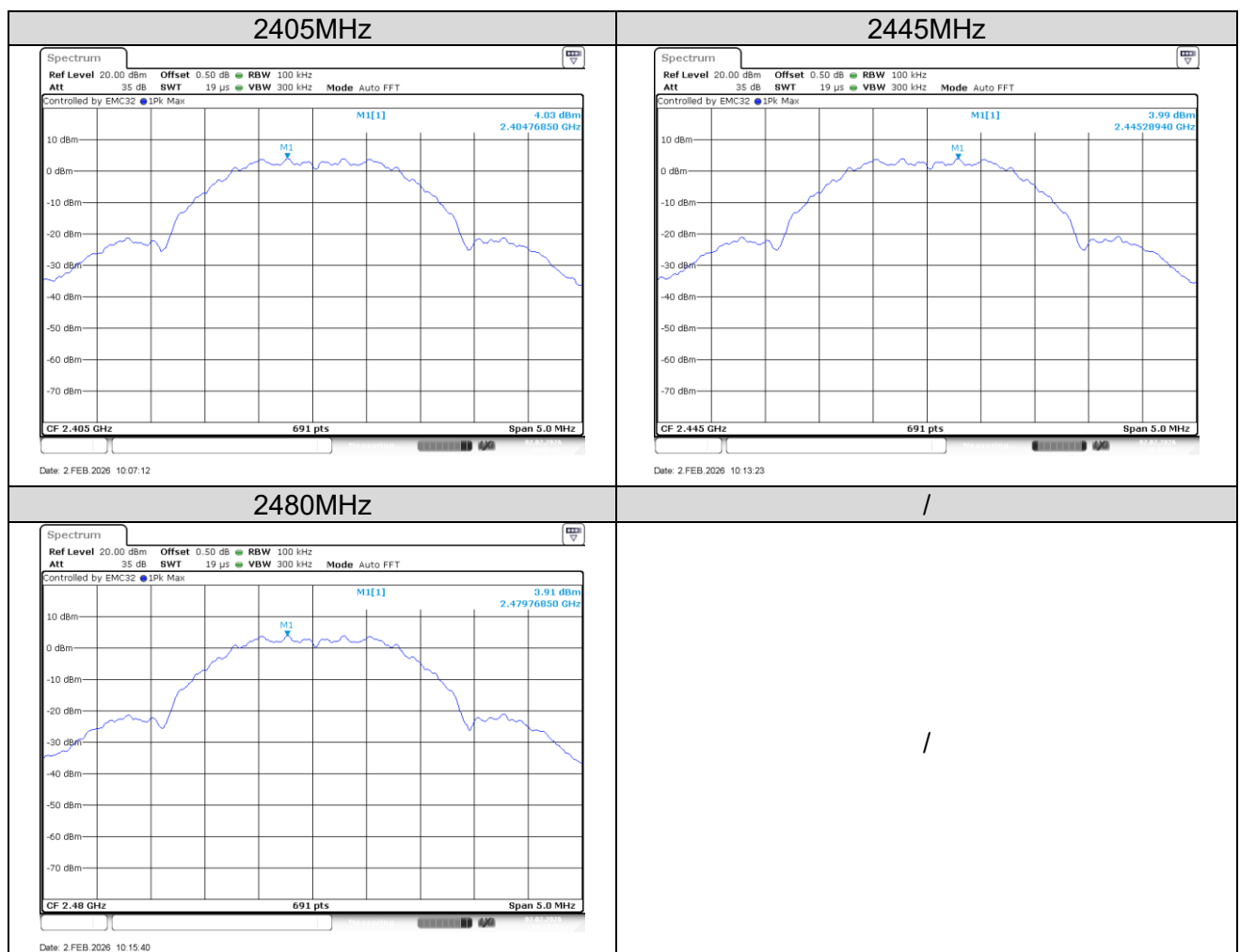
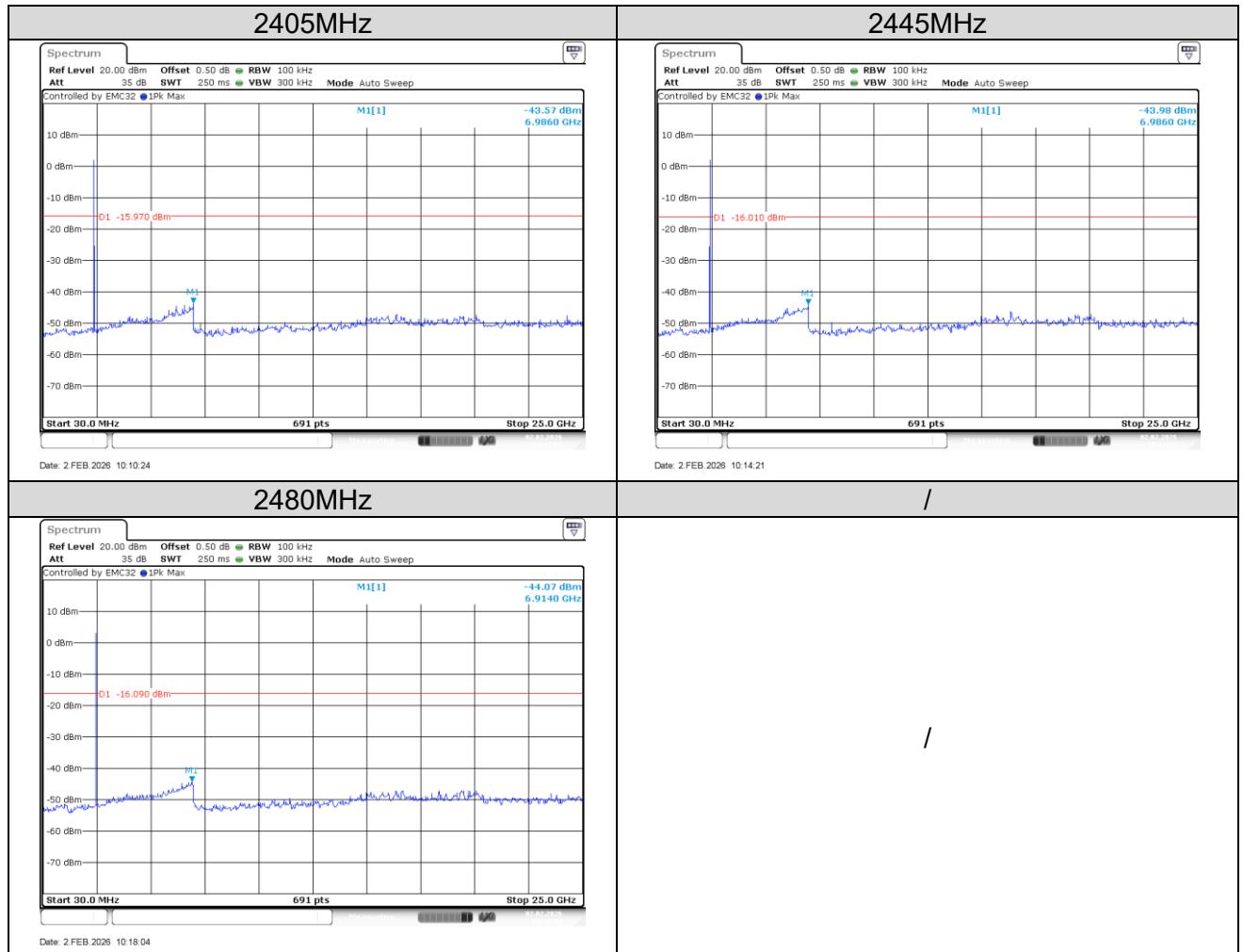
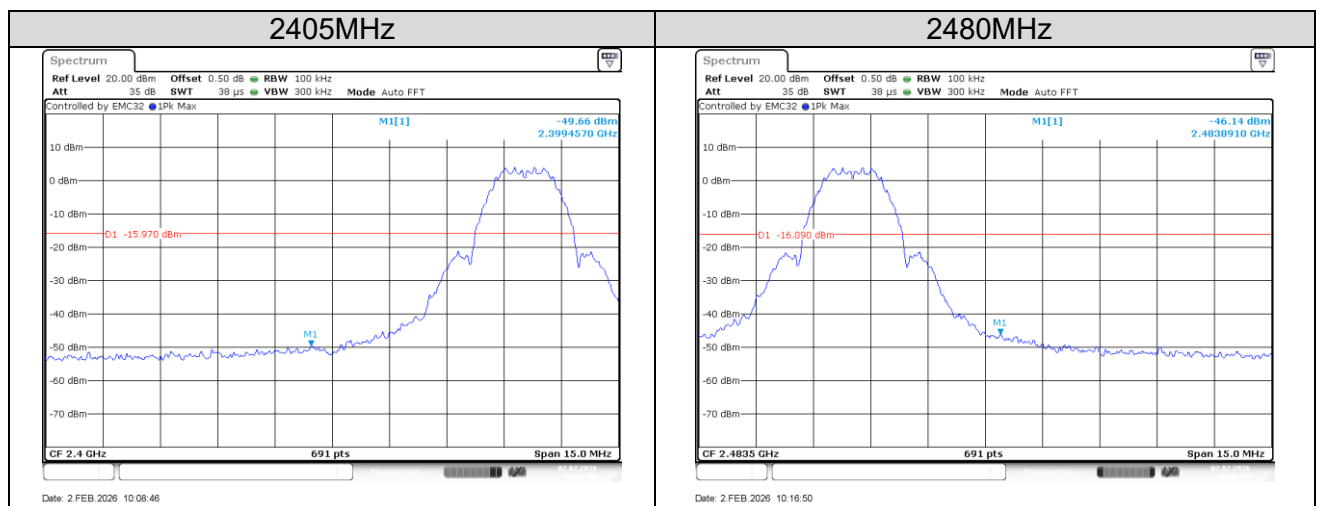


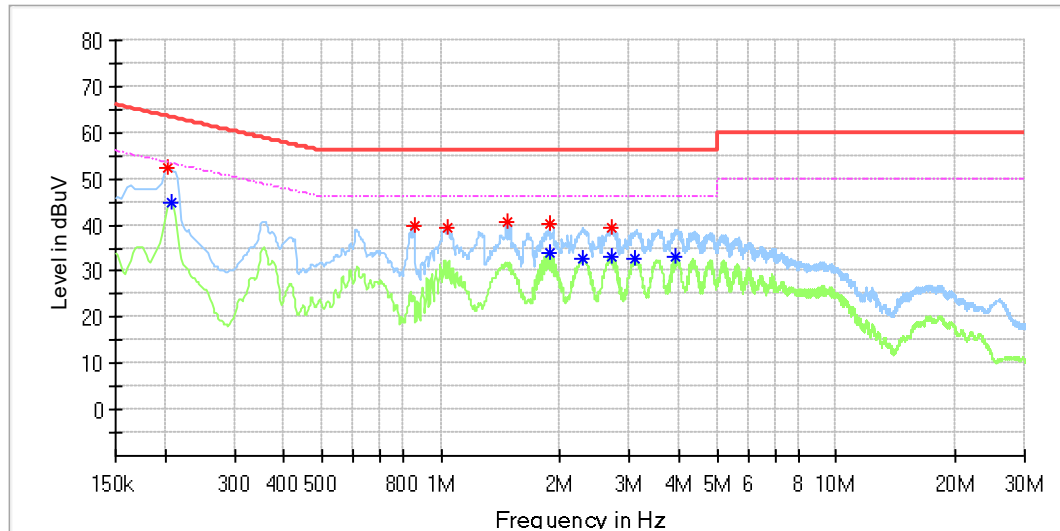
Figure 2: Conducted Spurious Emission

Figure 3: Conducted Band Edge


5.2 Emission in the Frequency Range up to 30MHz

5.2.1 Conducted Emission

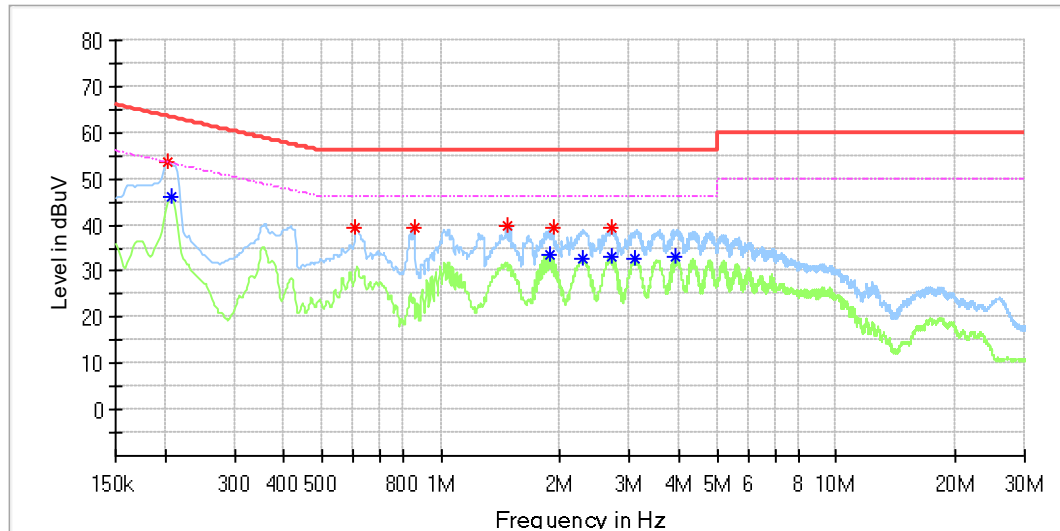
RESULT:**Pass**

Date of testing	:	2025-12-29
Ambient temperature	:	19.3°C
Relative humidity	:	52.2%
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
0.204000	52.46	---	63.45	10.98	L1
0.208500	---	44.92	53.27	8.35	L1
0.854250	39.74	---	56.00	16.26	L1
1.041000	39.37	---	56.00	16.63	L1
1.464000	40.48	---	56.00	15.52	L1
1.880250	40.27	---	56.00	15.73	L1
1.880250	---	33.91	46.00	12.09	L1
2.283000	---	32.79	46.00	13.21	L1
2.703750	---	33.20	46.00	12.80	L1
2.706000	39.23	---	56.00	16.77	L1
3.106500	---	32.65	46.00	13.35	L1
3.930000	---	33.12	46.00	12.88	L1

Figure 5: Conducted Emission, N


Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line
0.204000	53.70	---	63.45	9.74	N
0.208500	---	46.11	53.27	7.15	N
0.606750	39.31	---	56.00	16.69	N
0.854250	39.25	---	56.00	16.75	N
1.464000	40.00	---	56.00	16.00	N
1.878000	---	33.57	46.00	12.43	N
1.925250	39.20	---	56.00	16.80	N
2.280750	---	32.69	46.00	13.31	N
2.701500	---	33.14	46.00	12.86	N
2.701500	39.25	---	56.00	16.75	N
3.104250	---	32.64	46.00	13.36	N
3.925500	---	33.10	46.00	12.90	N

5.3 Emission in the Frequency Range above 30MHz

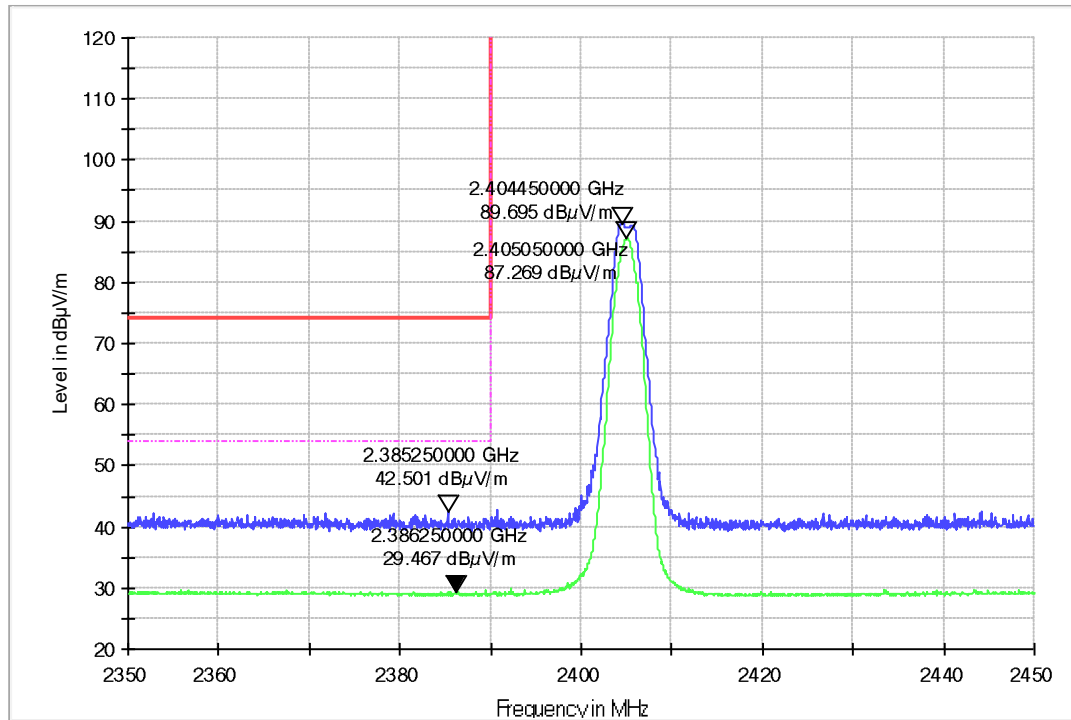
5.3.1 Radiated Band-Edge

RESULT:**Pass**

Date of testing	:	2026-02-28
Ambient temperature	:	21.6°C
Relative humidity	:	41.1%
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_H L050_FSV40_Pre-10-YUNFANG


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

XXY- 2310` 2410 BE 1-18GHz_H L050_FSV40_Pre-10-YUNFANG

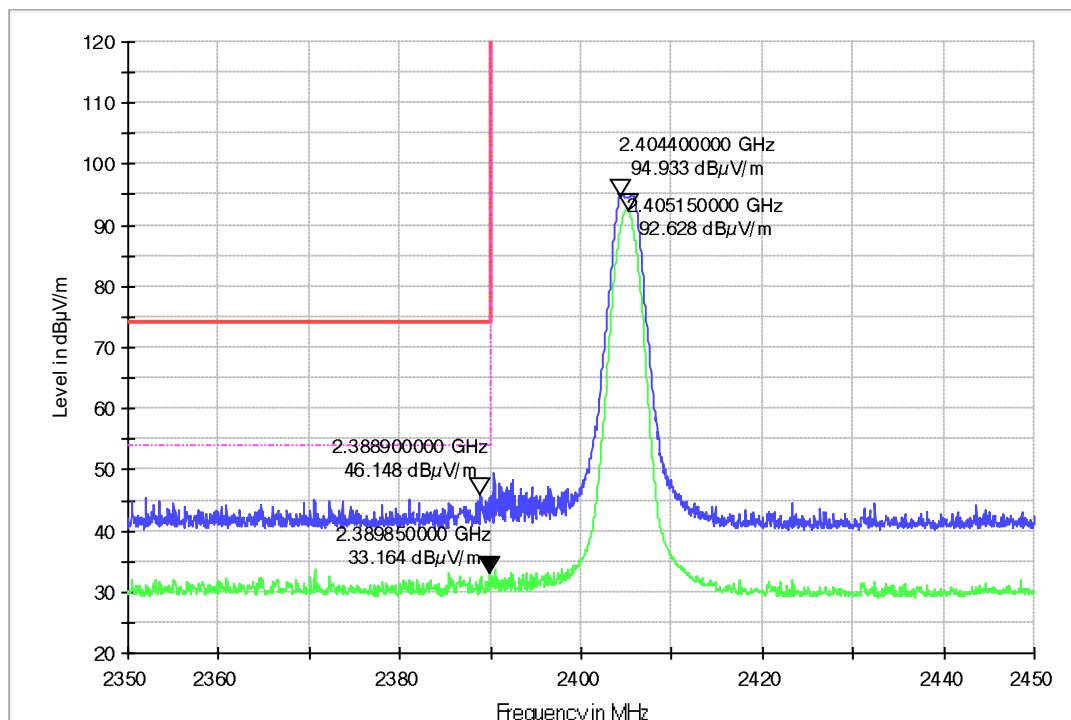
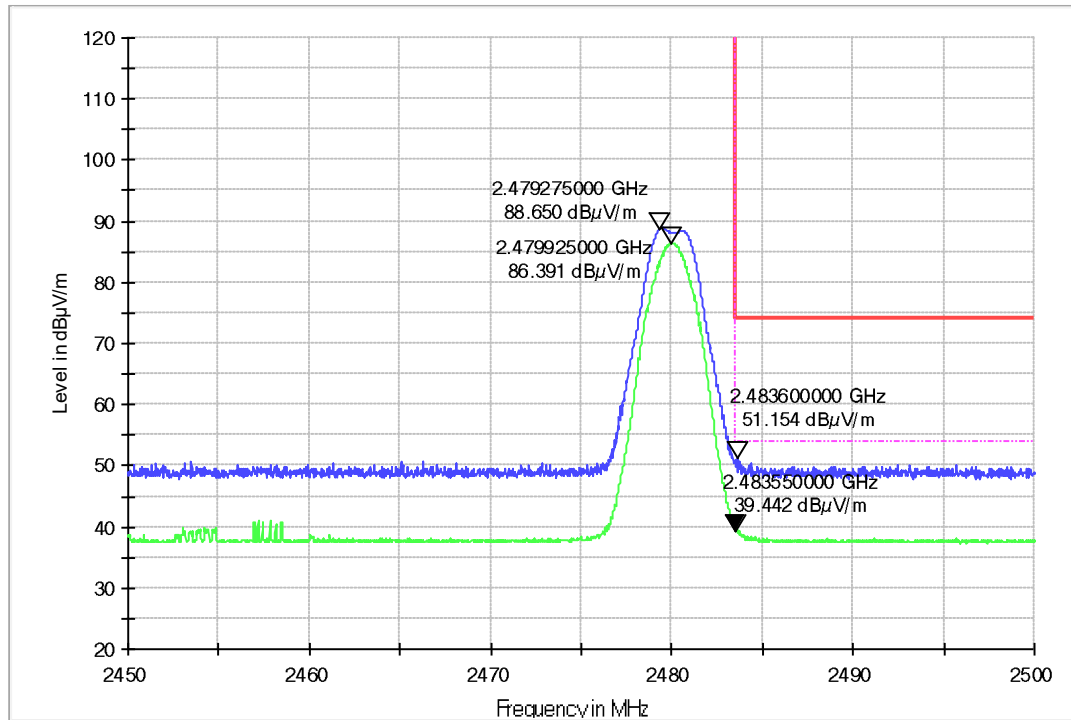
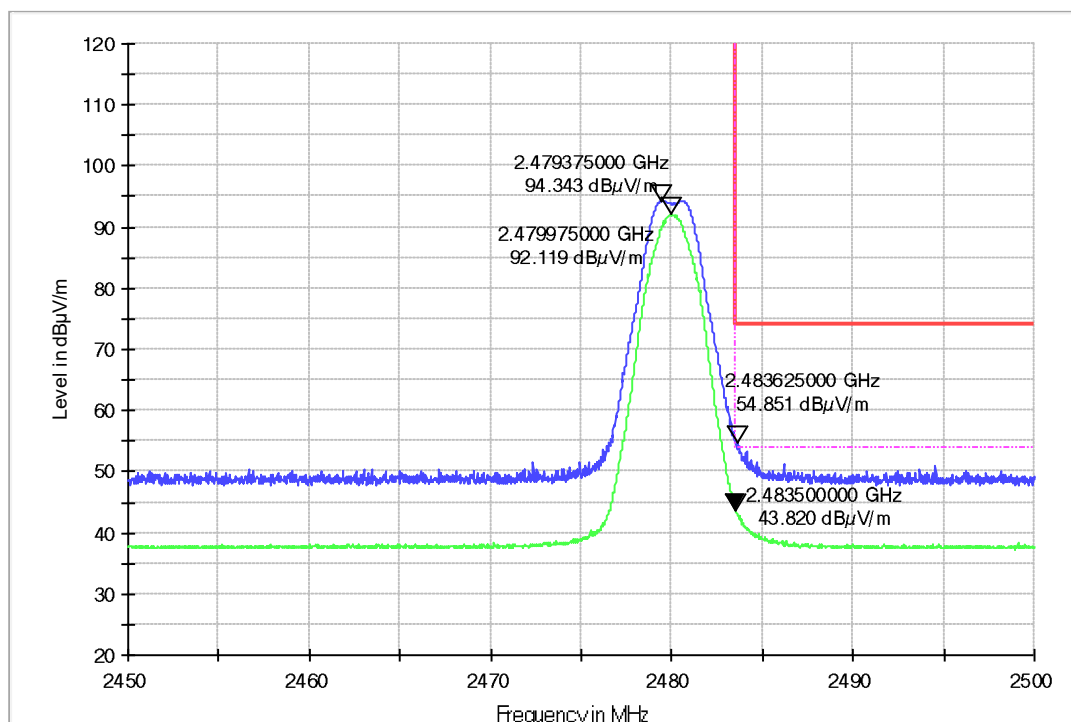


Figure 8: Radiated Band-Edge, 2480MHz, H

XXY-2470` 2500 BE_1-18GHz_H L050_FSV40_Pre-10-YUNFANG


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

XXY-2470` 2500 BE_1-18GHz_H L050_FSV40_Pre-10-YUNFANG

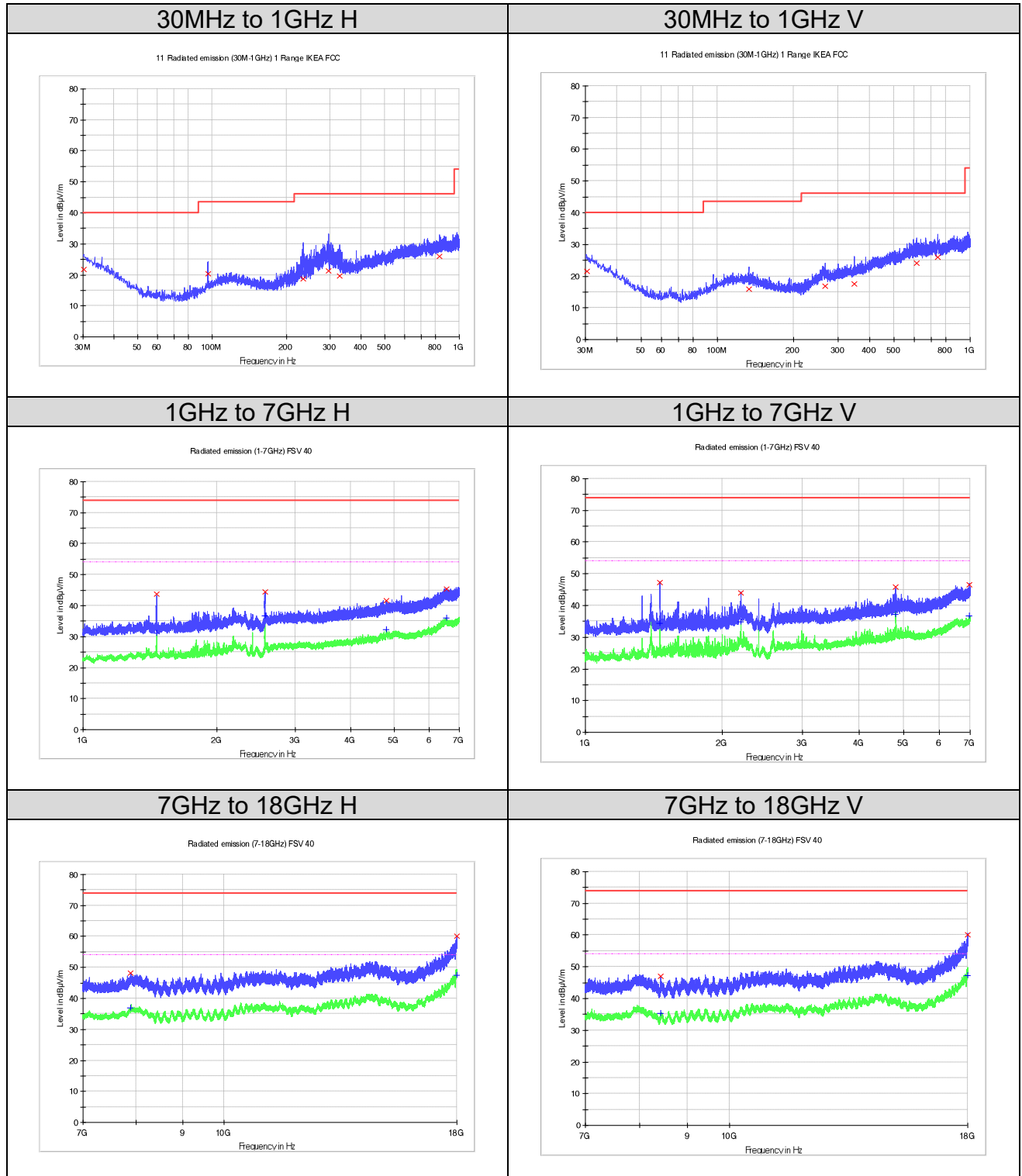


5.3.2 Radiated Spurious Emission**RESULT:****Pass**

Date of testing	:	2026-02-28
Ambient temperature	:	21.8°C
Relative humidity	:	41.4%
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

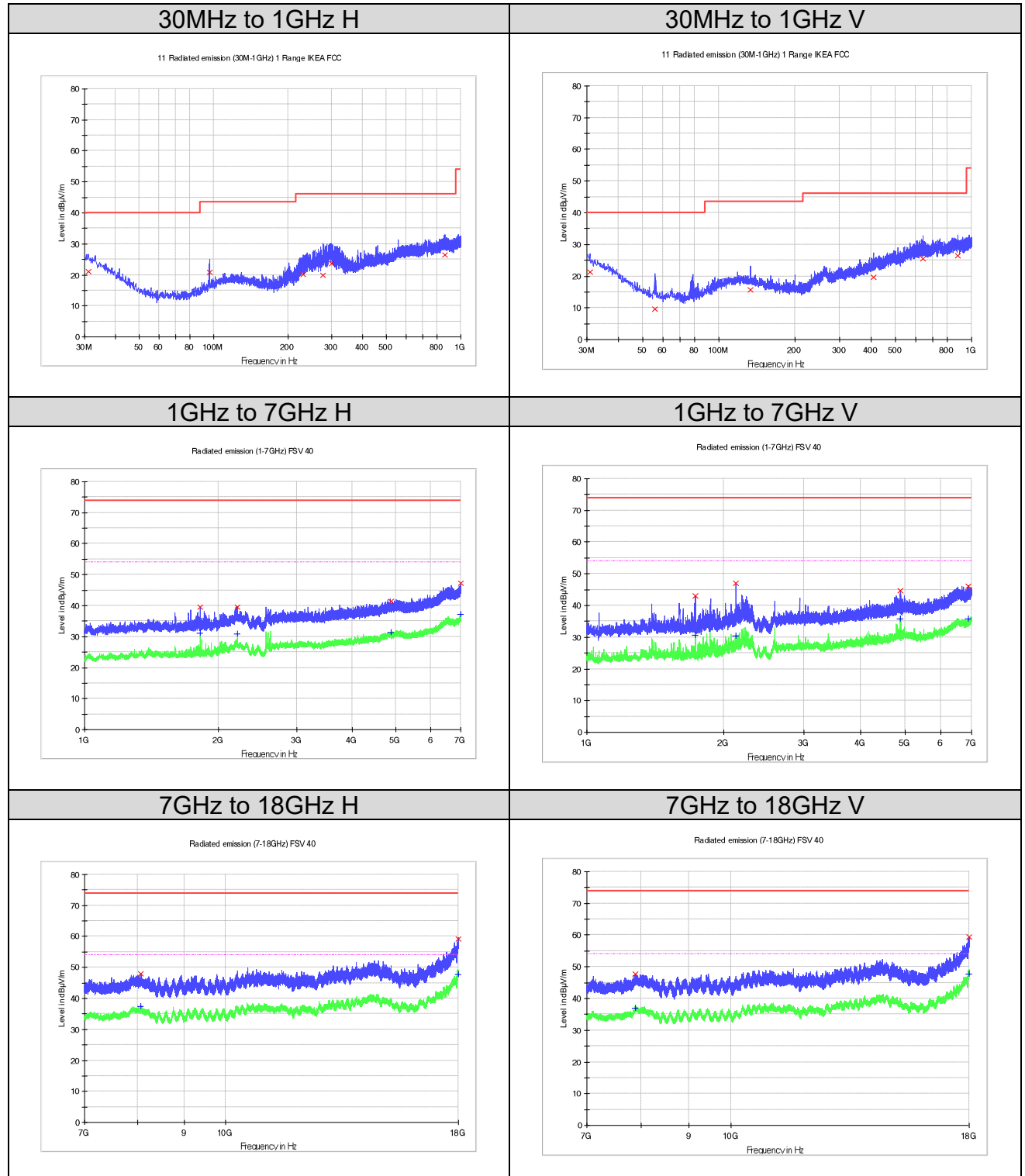
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
30.121250	21.7	H	25.3	18.4	40.0
95.960000	20.3	H	16.6	23.2	43.5
233.942500	18.6	H	17.9	27.4	46.0
294.931250	21.2	H	20.4	24.8	46.0
328.638750	19.6	H	21.4	26.4	46.0
834.493750	25.9	H	28.8	20.2	46.0
30.363750	21.5	V	25.2	18.5	40.0
132.820000	15.9	V	18.4	27.6	43.5
266.437500	16.9	V	21.0	29.1	46.0
348.281250	17.5	V	21.4	28.5	46.0
615.758750	24.1	V	26.6	21.9	46.0
744.526250	25.9	V	29.0	20.1	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1462.272727	43.9	H	-18.6	30.2	74.0
2560.545455	44.3	H	-15.9	29.7	74.0
4810.545455	41.6	H	-11.2	32.5	74.0
6553.272727	45.5	H	-7.3	28.5	74.0
7891.000000	48.3	H	-3.9	25.7	74.0
17987.968750	60.2	H	11.9	13.9	74.0
1460.363636	47.3	V	-18.6	26.7	74.0
2195.090909	44.0	V	-15.8	30.0	74.0
4809.181818	45.8	V	-11.2	28.2	74.0
6976.272727	46.5	V	-6.4	27.5	74.0
8438.937500	46.9	V	-5.5	27.1	74.0
17991.062500	60.1	V	12.0	13.9	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1462.272727	31.0	H	-18.6	23.0	54.0
2560.545455	36.8	H	-15.9	17.2	54.0
4810.545455	32.4	H	-11.2	21.6	54.0
6553.272727	36.1	H	-7.3	17.9	54.0
7891.000000	36.9	H	-3.9	17.1	54.0
17987.968750	47.6	H	11.9	6.4	54.0
1460.363636	34.3	V	-18.6	19.7	54.0
2195.090909	34.9	V	-15.8	19.1	54.0
4809.181818	37.3	V	-11.2	16.7	54.0
6976.272727	36.8	V	-6.4	17.2	54.0
8438.937500	35.3	V	-5.5	18.8	54.0
17991.062500	47.3	V	12.0	6.7	54.0

Figure 11: Radiated Spurious Emission, 2445MHz


Limit and Margin
QP

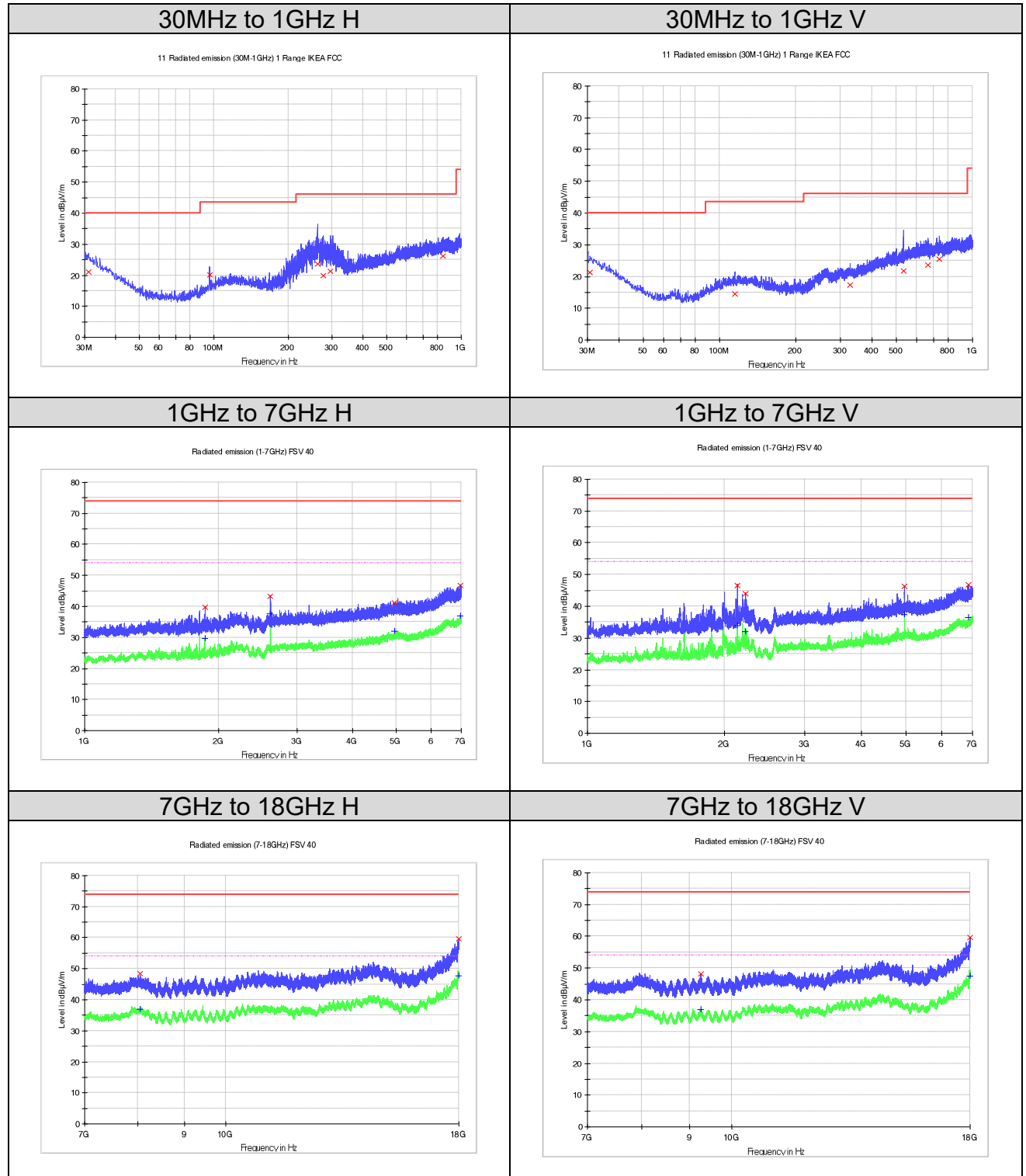
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
31.091250	21.1	H	24.8	18.9	40.0
95.960000	20.8	H	16.6	22.7	43.5
229.577500	20.1	H	17.2	25.9	46.0
276.865000	20.0	H	19.8	26.0	46.0
300.872500	23.5	H	20.9	22.5	46.0
862.866250	26.4	H	29.1	19.6	46.0
30.848750	21.2	V	25.0	18.8	40.0
55.947500	9.6	V	13.1	30.4	40.0
132.941250	15.7	V	18.4	27.8	43.5
407.936250	19.6	V	23.5	26.4	46.0
641.706250	25.4	V	26.9	20.6	46.0
884.327500	26.4	V	29.4	19.6	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1821.181818	39.5	H	-18.6	34.5	74.0
2204.636364	39.6	H	-15.7	34.4	74.0
4889.636364	41.4	H	-11.1	32.6	74.0
6995.090909	47.2	H	-6.2	26.8	74.0
8071.468750	47.9	H	-3.7	26.1	74.0
17985.562500	59.3	H	11.9	14.7	74.0
1729.818182	43.2	V	-18.8	30.9	74.0
2126.909091	47.0	V	-16.5	27.0	74.0
4891.272727	44.6	V	-11.1	29.4	74.0
6881.363636	46.0	V	-7.3	28.0	74.0
7894.781250	47.6	V	-3.8	26.4	74.0
17988.656250	59.5	V	11.9	14.5	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1821.181818	31.0	H	-18.6	23.0	54.0
2204.636364	30.9	H	-15.7	23.1	54.0
4889.636364	31.4	H	-11.1	22.6	54.0
6995.090909	37.2	H	-6.2	16.8	54.0
8071.468750	37.4	H	-3.7	16.6	54.0
17985.562500	47.8	H	11.9	6.2	54.0
1729.818182	30.7	V	-18.8	23.3	54.0
2126.909091	30.5	V	-16.5	23.5	54.0
4891.272727	35.8	V	-11.1	18.2	54.0
6881.363636	35.8	V	-7.3	18.2	54.0
7894.781250	37.0	V	-3.8	17.0	54.0
17988.656250	47.8	V	11.9	6.3	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)
31.091250	21.1	H	24.8	18.9	40.0
95.960000	20.1	H	16.6	23.4	43.5
261.951250	23.6	H	21.7	22.4	46.0
275.895000	20.0	H	19.8	26.0	46.0
296.628750	21.3	H	20.5	24.7	46.0
845.042500	26.3	H	29.0	19.7	46.0
30.727500	21.3	V	25.0	18.7	40.0
114.632500	14.6	V	18.8	28.9	43.5
329.002500	17.4	V	21.4	28.6	46.0
531.975000	21.7	V	25.0	24.3	46.0
667.775000	23.7	V	26.6	22.4	46.0
740.888750	25.6	V	28.3	20.4	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1860.454546	39.8	H	-18.5	34.2	74.0
2613.181818	43.3	H	-15.7	30.7	74.0
4958.909091	41.3	H	-11.0	32.8	74.0
6980.090909	46.8	H	-6.4	27.2	74.0
8046.031250	48.4	H	-3.5	25.6	74.0
17989.000000	59.6	H	11.9	14.4	74.0
2130.727273	46.5	V	-16.4	27.5	74.0
2222.909091	44.0	V	-15.6	30.0	74.0
4959.727273	46.4	V	-11.0	27.6	74.0
6859.000000	46.8	V	-7.4	27.3	74.0
9261.875000	48.3	V	-4.0	25.7	74.0
17991.062500	59.7	V	12.0	14.4	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1860.454546	29.6	H	-18.5	24.4	54.0
2613.181818	37.7	H	-15.7	16.3	54.0
4958.909091	32.1	H	-11.0	21.9	54.0
6980.090909	37.0	H	-6.4	17.0	54.0
8046.031250	36.9	H	-3.5	17.1	54.0
17989.000000	47.8	H	11.9	6.2	54.0
2130.727273	33.9	V	-16.4	20.1	54.0
2222.909091	32.1	V	-15.6	21.9	54.0
4959.727273	37.5	V	-11.0	16.5	54.0
6859.000000	36.4	V	-7.4	17.6	54.0
9261.875000	36.9	V	-4.0	17.2	54.0
17991.062500	47.4	V	12.0	6.6	54.0

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