

Prüfbericht-Nr.: Test report no.:	CN268TBJ 001	Auftrags-Nr.: Order no.:	326175872	Seite 1 von 44 Page 1 of 44
Kunden-Referenz-Nr.: Client reference no.:	1288983	Auftragsdatum: Order date:	2026-03-10	
Auftraggeber: Client:	IKEA of Sweden AB Box 702, SE-343 81 Älmhult, Sweden			
Prüfgegenstand: Test item:	LED CLASS 2 POWER SUPPLY			
Bezeichnung / Typ-Nr.: Identification / Type no.:	E2513			
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:	2026-03-09 2026-03-10	Refer to photo document.		
Prüfmuster-Nr.: Test sample no:	A004220221-007~008 A004221247-001			
Prüfzeitraum: Testing period:	2026-03-24 ~ 2026-04-09			
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:	x <u>Hongfei Wu</u> Signed by: Hongfei Wu		genehmigt von: authorized by:	x <u>Yanli Fan</u> Signed by: Yanli Fan
Datum: Date:	2026-04-27		Datum: Date:	2026-04-27
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert
Sonstiges / Other:	FCC ID: FHO-E2513 IC: 10912A-E2513 HVIN: E2513 PMN: DUBBELKISEL 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.

Workshop 14, 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	2029-03-03
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 a LED power supply 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 CLASS 2 POWER SUPPLY
Model No.:	E2513
Operation Voltage:	AC 100~130V, 50/60Hz
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:	0.57 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	80

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
Remote control	IKEA	E2002
LED lighting strip	IKEA	L1911
Incandescent bulb	/	40W

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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 0.57 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:	0.57 dBi

Verdict: PASS

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

Date of testing	:	2026-04-09
Ambient temperature	:	21.1°C
Relative humidity	:	47.5%
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

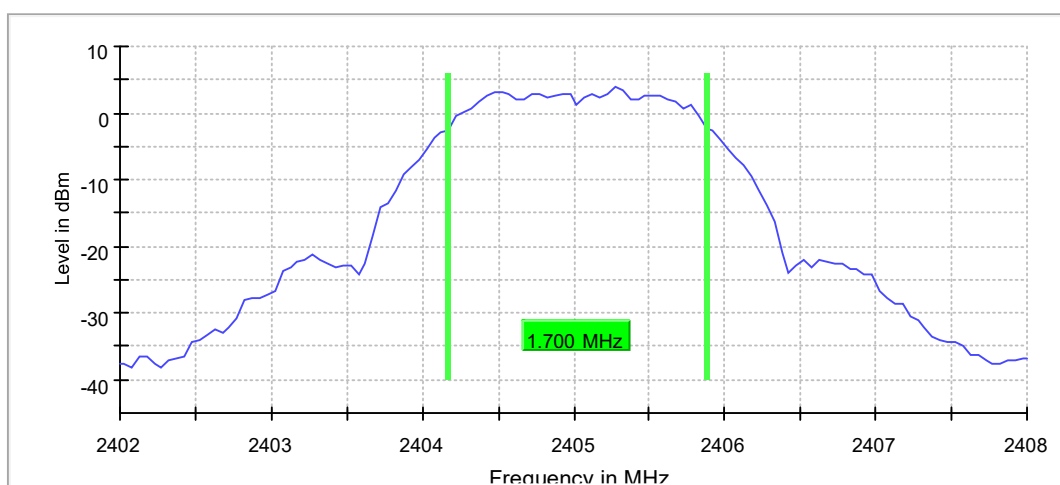
6dB Bandwidth, 2405MHz

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	3.9	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
Sweptime	18.984 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 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	0.50 dB	0.50 dB
Run	16 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.44 dB	0.50 dB

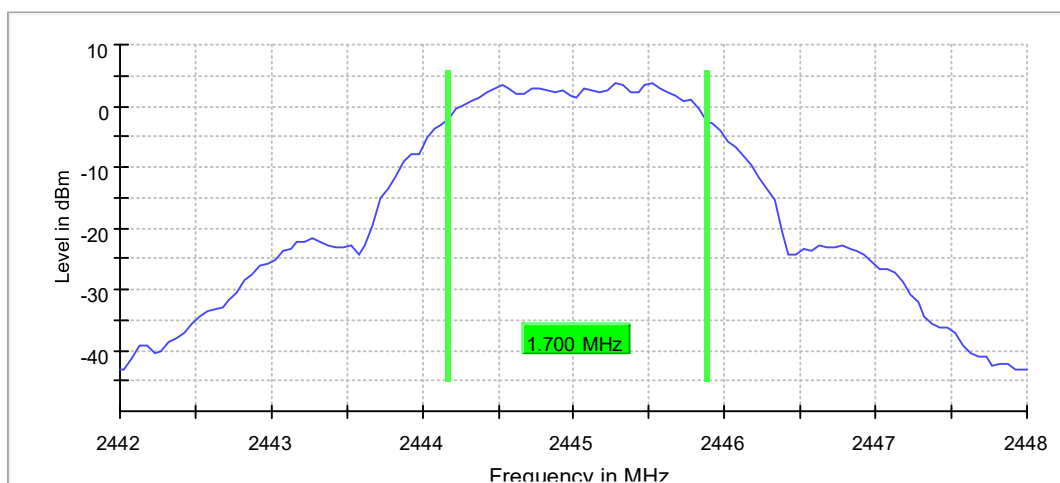
6dB Bandwidth, 2445MHz

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	3.8	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	24 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.11 dB	0.50 dB

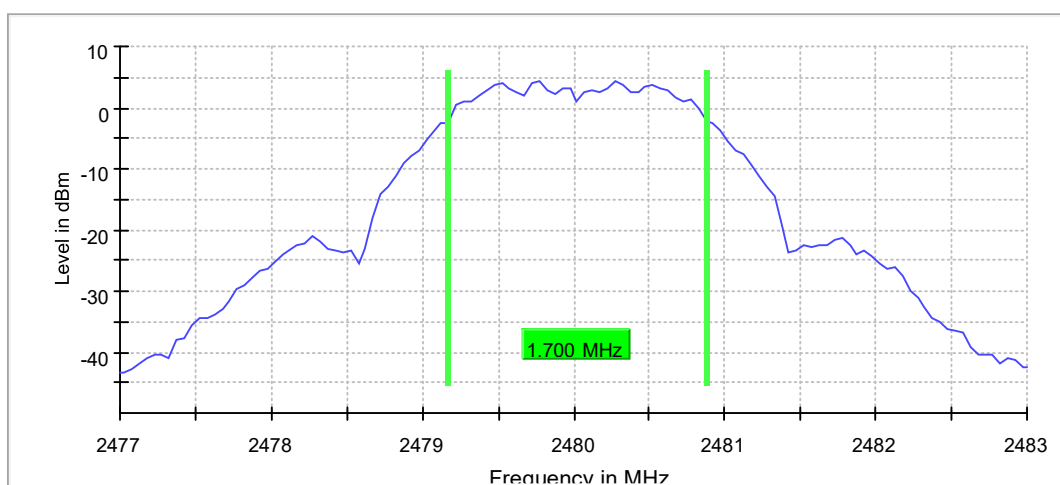
6dB Bandwidth, 2480MHz

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	4.3	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
Sweptime	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	15 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.09 dB	0.50 dB

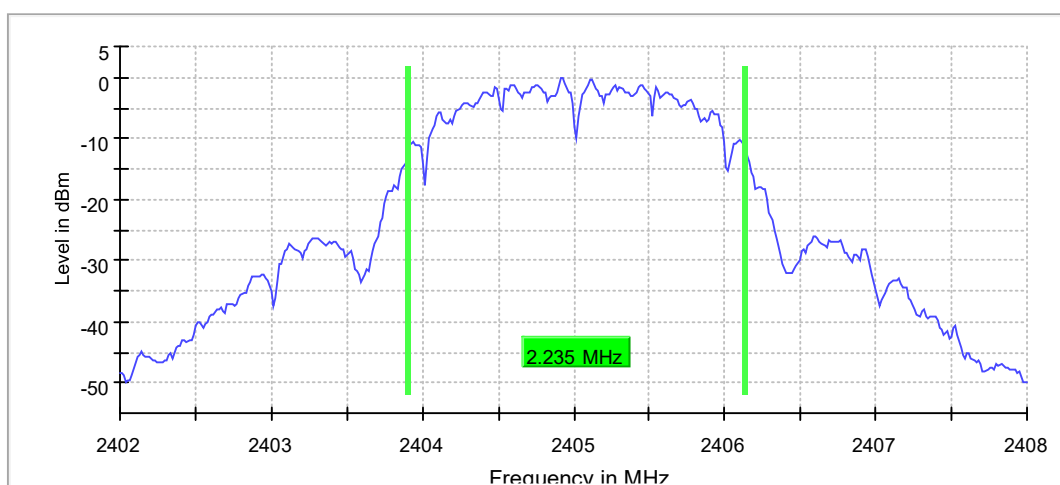
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99% Occupied Channel Bandwidth, 2405MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	2.235000	---	---	2403.897500	2406.132500

(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	25 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.26 dB	0.30 dB

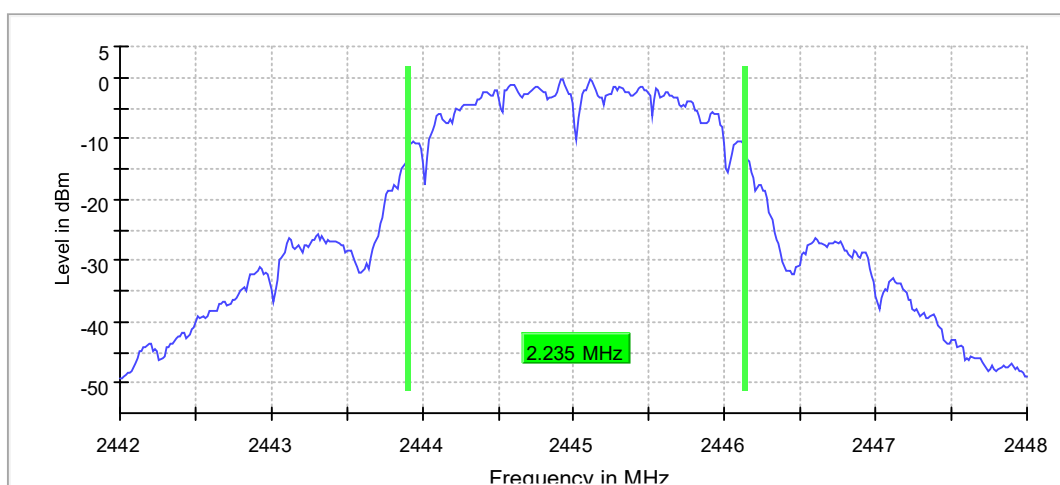
99% Occupied Channel Bandwidth, 2445MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2445.000000	2.235000	---	---	2443.897500	2446.132500

(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
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	0.14 dB	0.30 dB

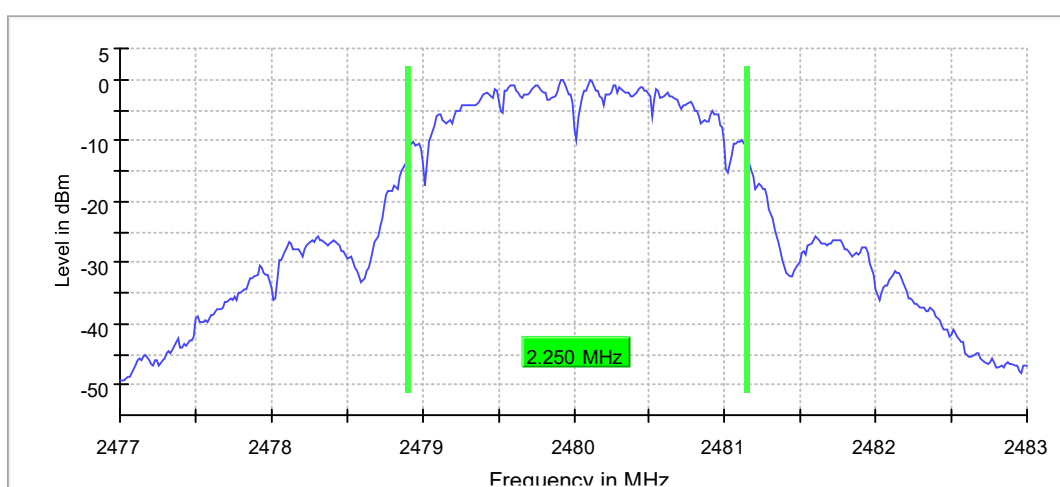
99% Occupied Channel Bandwidth, 2480MHz

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	2.250000	---	---	2478.897500	2481.147500

(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
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
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	24 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.15 dB	0.30 dB

5.1.3 Output Power

RESULT:**Pass**

Date of testing : 2026-04-09
Ambient temperature : 21.1°C
Relative humidity : 47.5%
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	8.4	30
2445	8.2	30
2480	8.6	30

Note:

EIRP=Conducted Output Power + Antenna Gain (0.57 dBi), which is far below the 4 W (36dBm).

5.1.4 Power Spectral Density

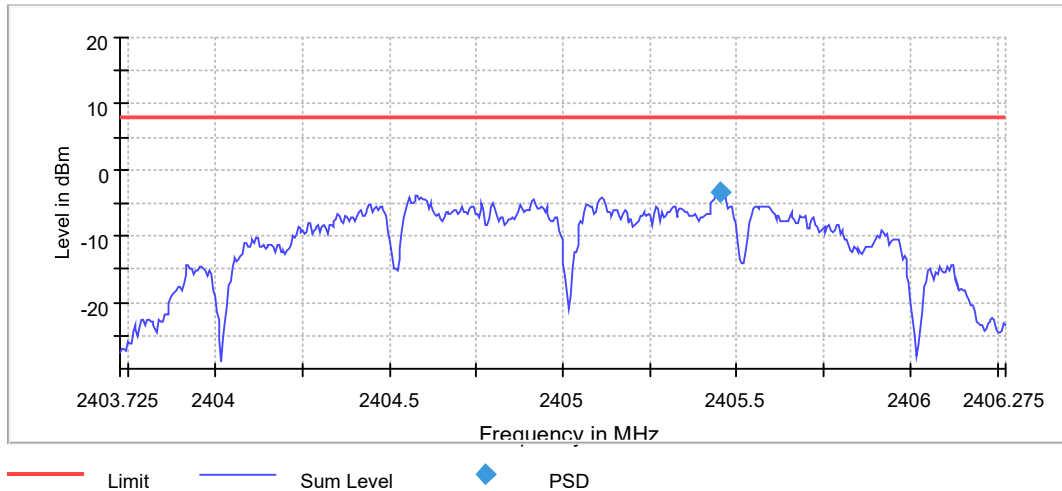
RESULT:**Pass**

Date of testing	:	2026-04-09
Ambient temperature	:	21.1°C
Relative humidity	:	47.5%
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 3.3V
Test modes applied	:	A

Power Spectral Density, 2405MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2405.000000	2405.452500	-3.326	8.0	PASS

Peak Power Spectral Density

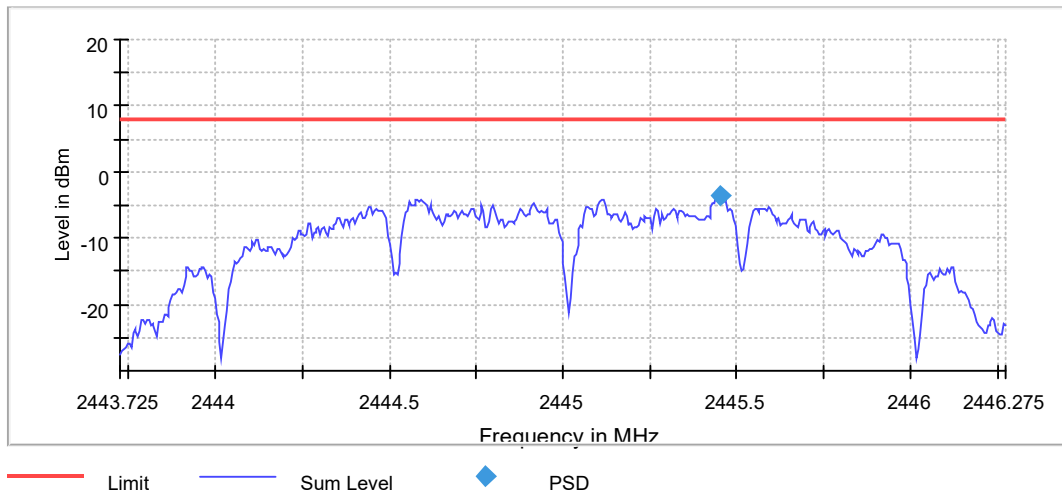

Measurement

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
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	11 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.30 dB	0.50 dB

Power Spectral Density, 2445MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2445.000000	2445.452500	-3.507	8.0	PASS

Peak Power Spectral Density

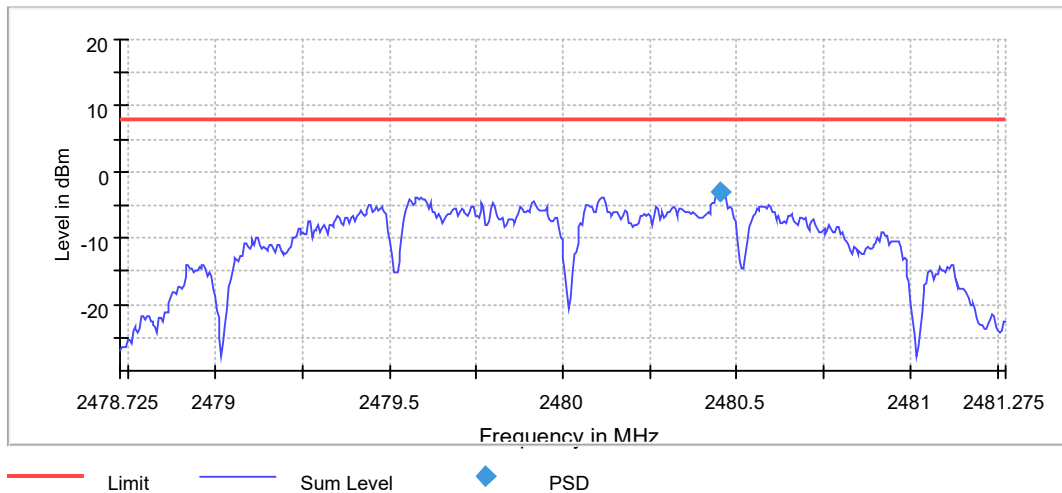

Measurement

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	14 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.46 dB	0.50 dB

Power Spectral Density, 2480MHz

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.452500	-3.190	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	15 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.08 dB	0.50 dB

5.1.5 Conducted Band Edge and out-of Band Emissions

RESULT:

Pass

Date of testing	:	2026-04-09
Ambient temperature	:	21.1°C
Relative humidity	:	47.5%
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

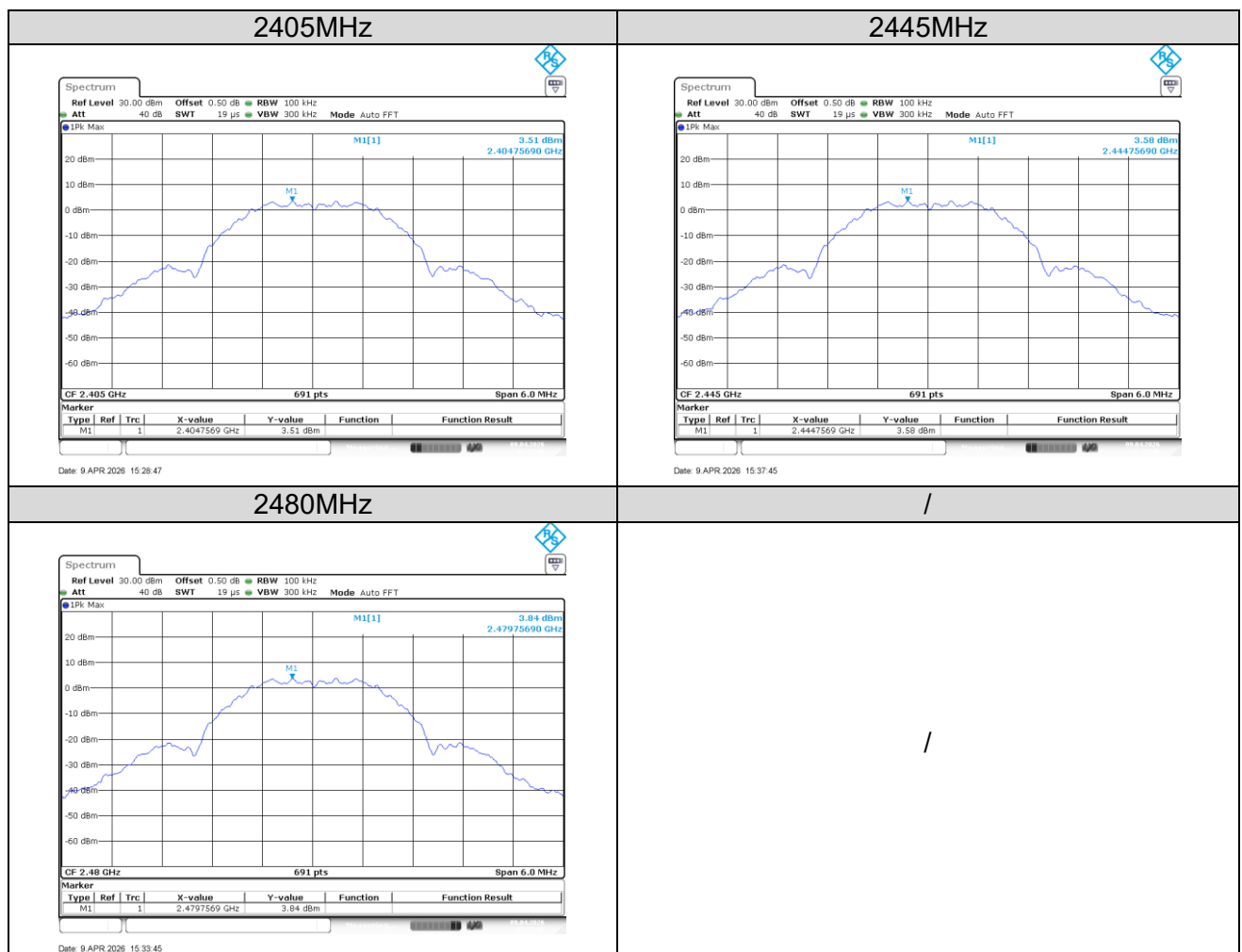
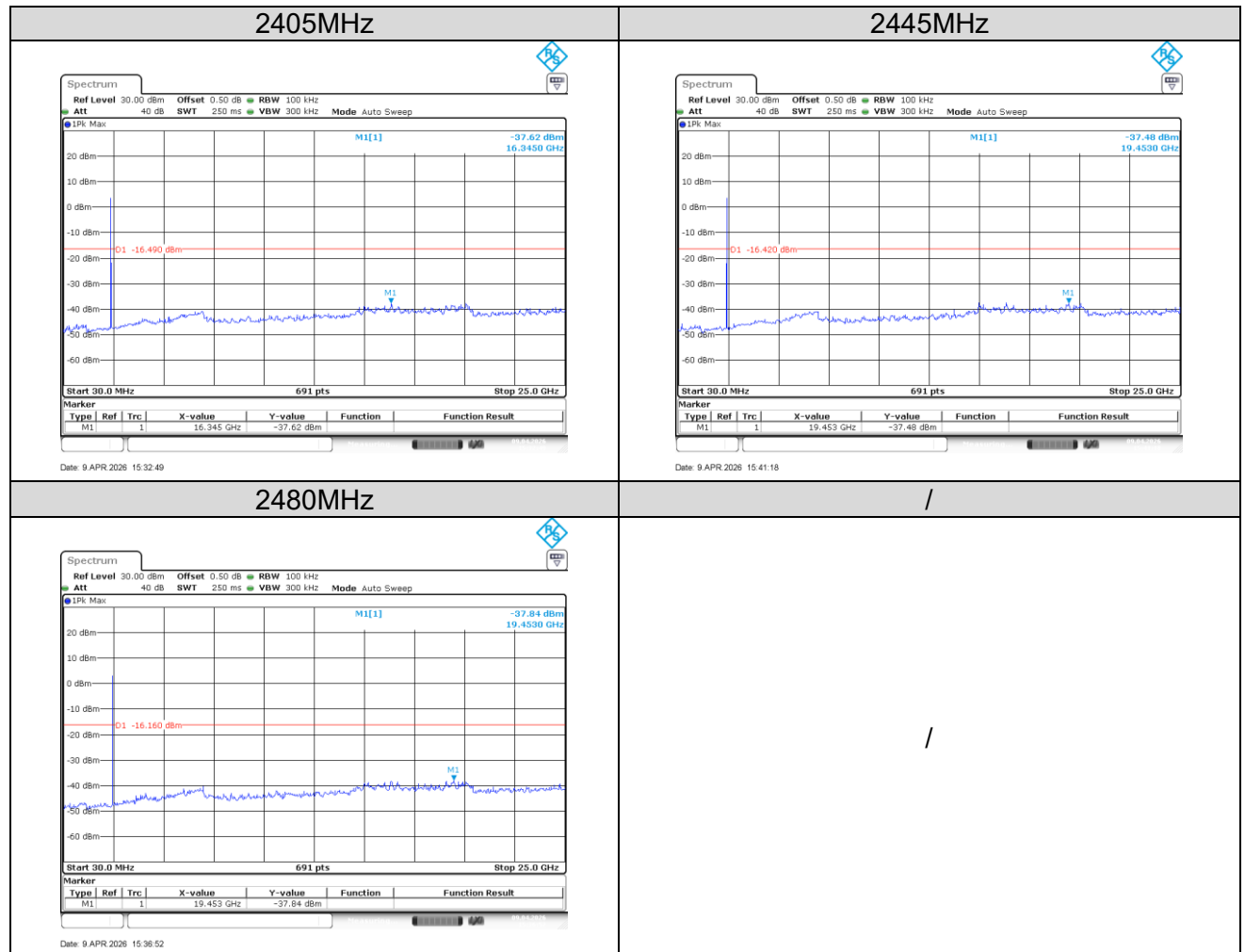
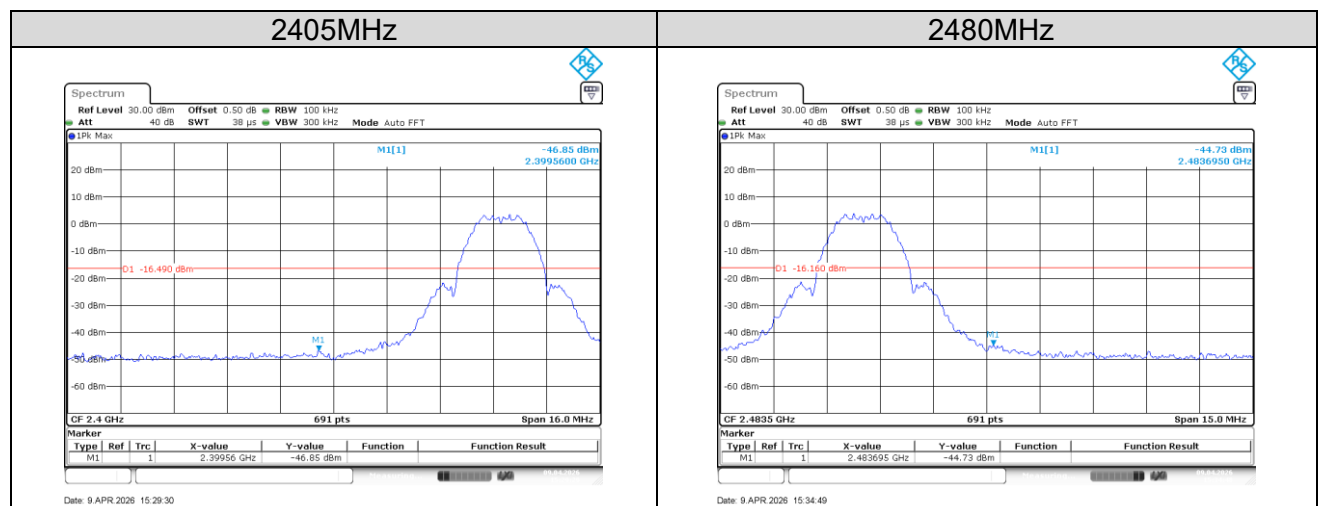


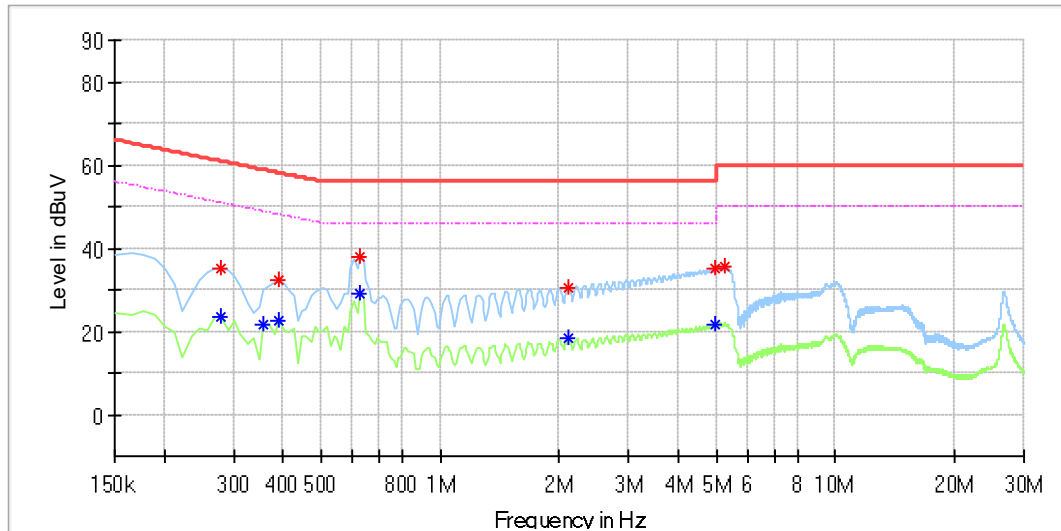
Figure 2: Conducted Spurious Emission

Figure 3: Conducted Band Edge


5.2 Emission in the Frequency Range up to 30MHz

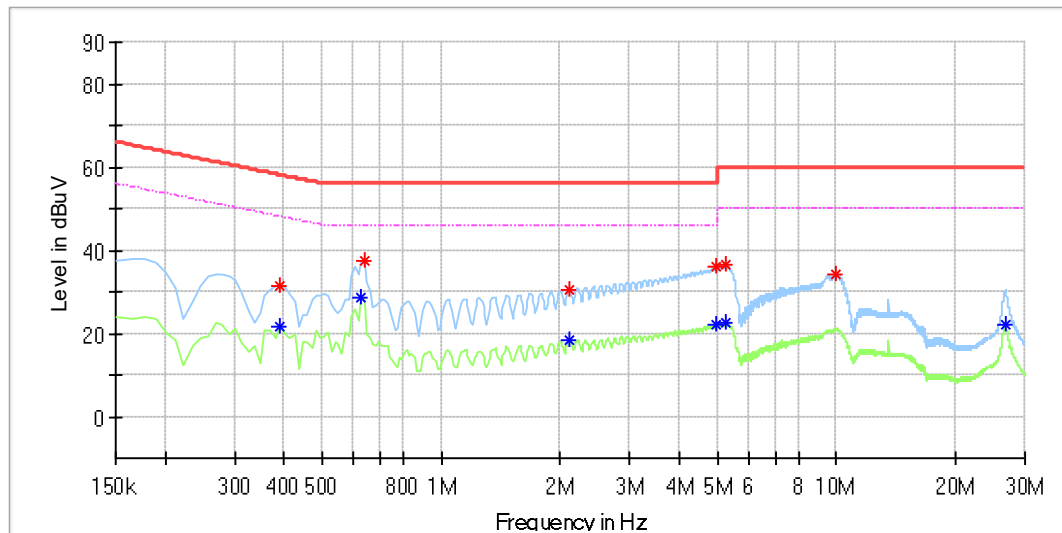
5.2.1 Conducted Emission

RESULT:**Pass**

Date of testing	:	2026-03-24
Ambient temperature	:	24.6°C
Relative humidity	:	43.4%
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
0.279375	35.06	---	60.83	25.78	L1
0.279375	---	23.34	50.83	27.49	L1
0.358125	---	21.76	48.77	27.01	L1
0.391875	---	22.72	48.02	25.30	L1
0.391875	32.21	---	58.02	25.81	L1
0.628125	---	29.05	46.00	16.95	L1
0.628125	38.02	---	56.00	17.98	L1
2.101875	30.58	---	56.00	25.42	L1
2.101875	---	18.37	46.00	27.63	L1
4.936875	35.20	---	56.00	20.80	L1
4.948125	---	21.69	46.00	24.31	L1
5.240625	35.73	---	60.00	24.27	L1

Figure 5: Conducted Emission, N

Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line
0.391875	31.61	---	58.02	26.41	N
0.391875	---	21.84	48.02	26.19	N
0.628125	---	28.65	46.00	17.35	N
0.639375	37.40	---	56.00	18.60	N
2.101875	30.49	---	56.00	25.51	N
2.101875	---	18.46	46.00	27.54	N
4.936875	35.81	---	56.00	20.19	N
4.948125	---	22.07	46.00	23.93	N
5.240625	36.43	---	60.00	23.57	N
5.251875	---	22.46	50.00	27.54	N
9.988125	34.13	---	60.00	25.87	N
26.683125	---	22.24	50.00	27.76	N

5.3 Emission in the Frequency Range above 30MHz

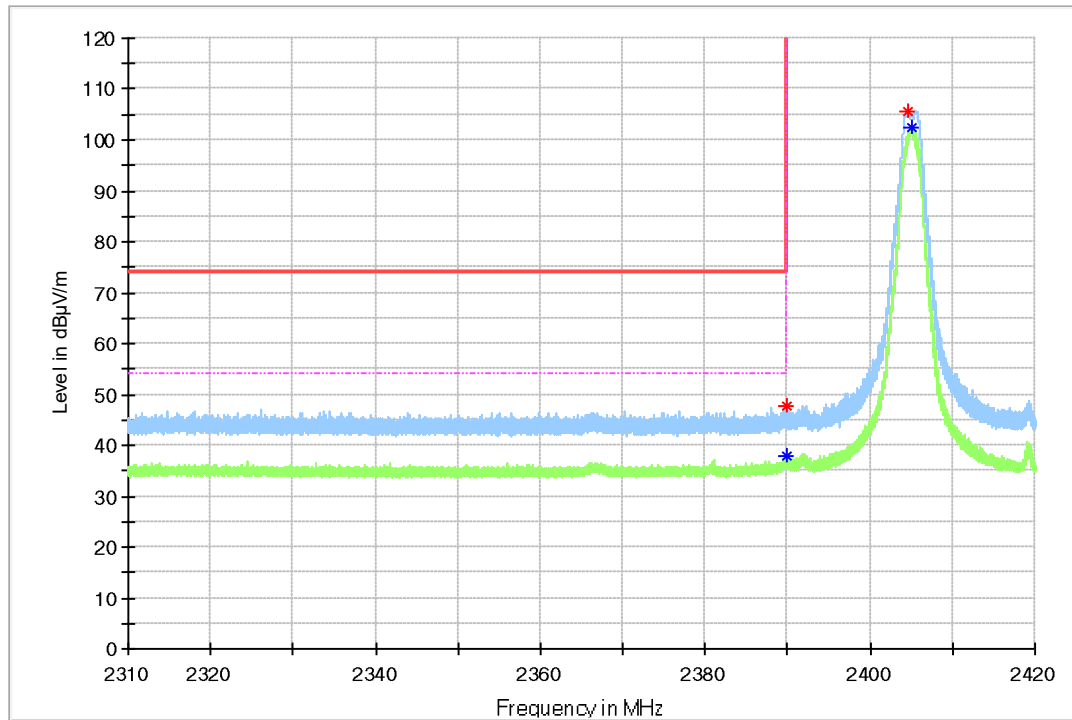
5.3.1 Radiated Band-Edge

RESULT:**Pass**

Date of testing	:	2026-04-07
Ambient temperature	:	20.5°C
Relative humidity	:	48.5%
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

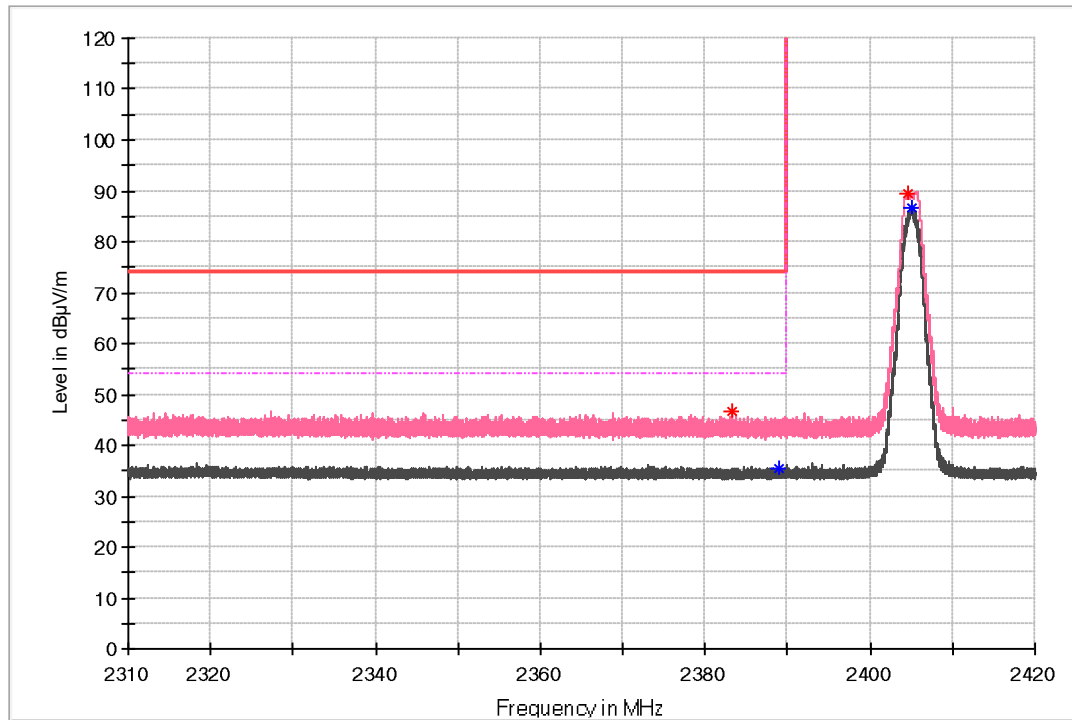
Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Margin (dB)	Pol
2389.774063	47.73	---	27.28	H
2389.897813	---	38.01	18.49	H
2404.500313	105.66	---	60.37	H
2405.112188	---	102.52	63.31	H

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

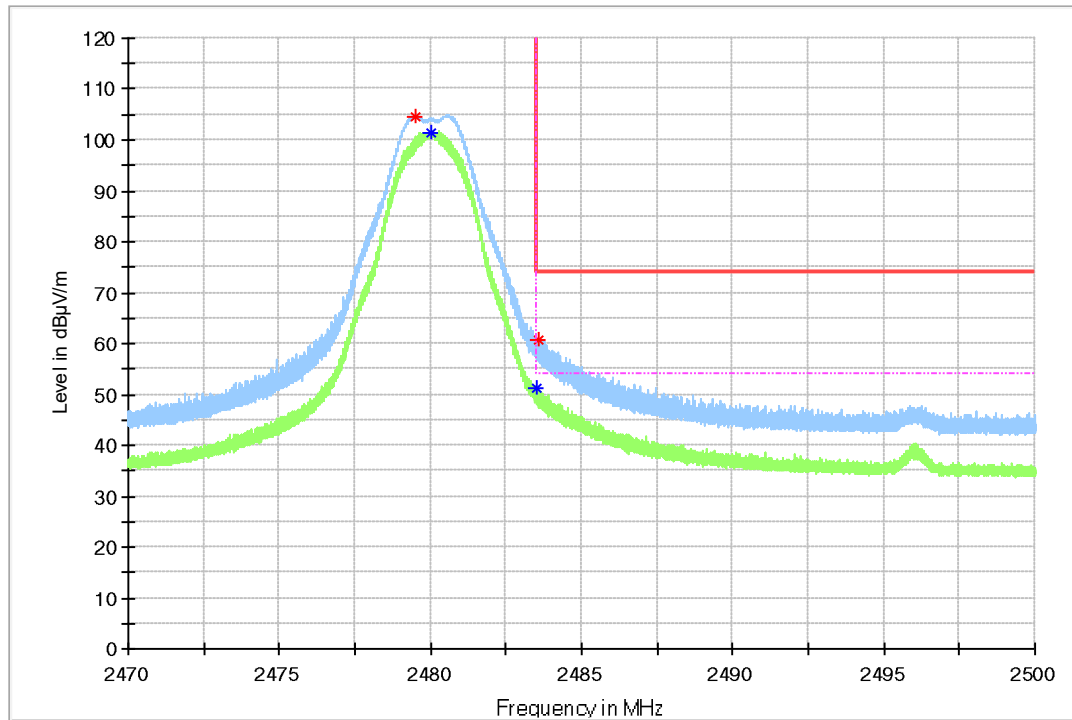
Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Margin (dB)	Pol
2383.150000	46.72	---	27.28	V
2389.024688	---	35.51	18.49	V
2404.500313	89.63	---	60.37	V
2405.177500	---	86.69	63.31	V

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

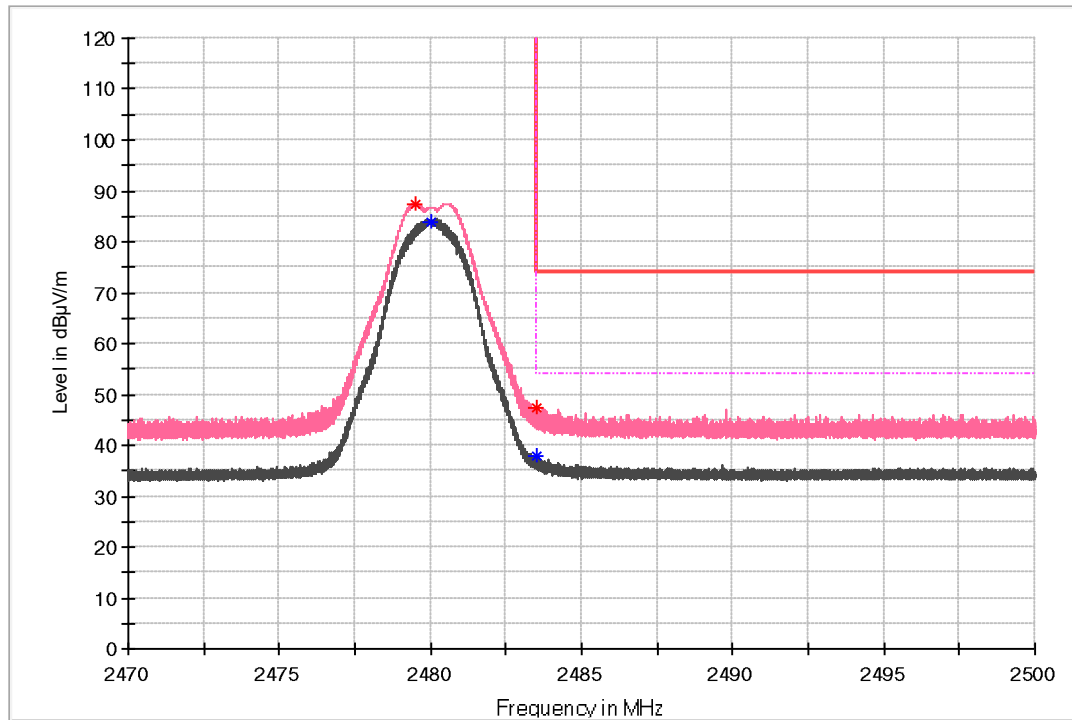
Full Spectrum



Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Margin (dB)	Pol
2479.503438	104.69	---	45.31	H
2480.052813	---	101.31	48.69	H
2483.504688	---	51.87	2.13	H
2483.556250	60.83	---	13.17	H

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

Full Spectrum



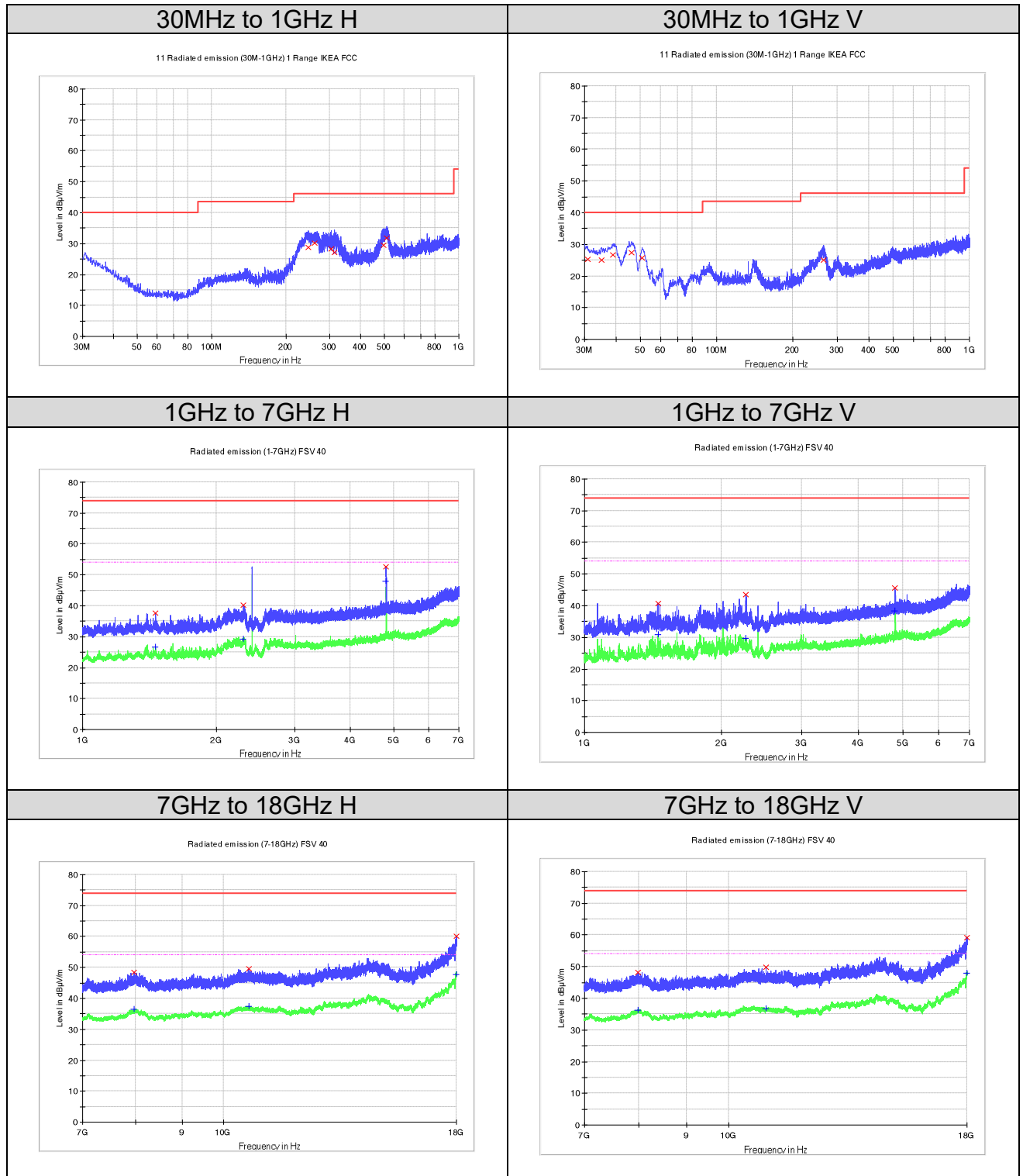
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Margin (dB)	Pol
2479.504375	87.34	---	62.66	V
2479.999375	---	83.87	66.13	V
2483.506563	---	38.33	15.67	V
2483.515938	47.43	---	26.57	V

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

Date of testing	:	2026-04-07
Ambient temperature	:	20.5°C
Relative humidity	:	48.5%
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

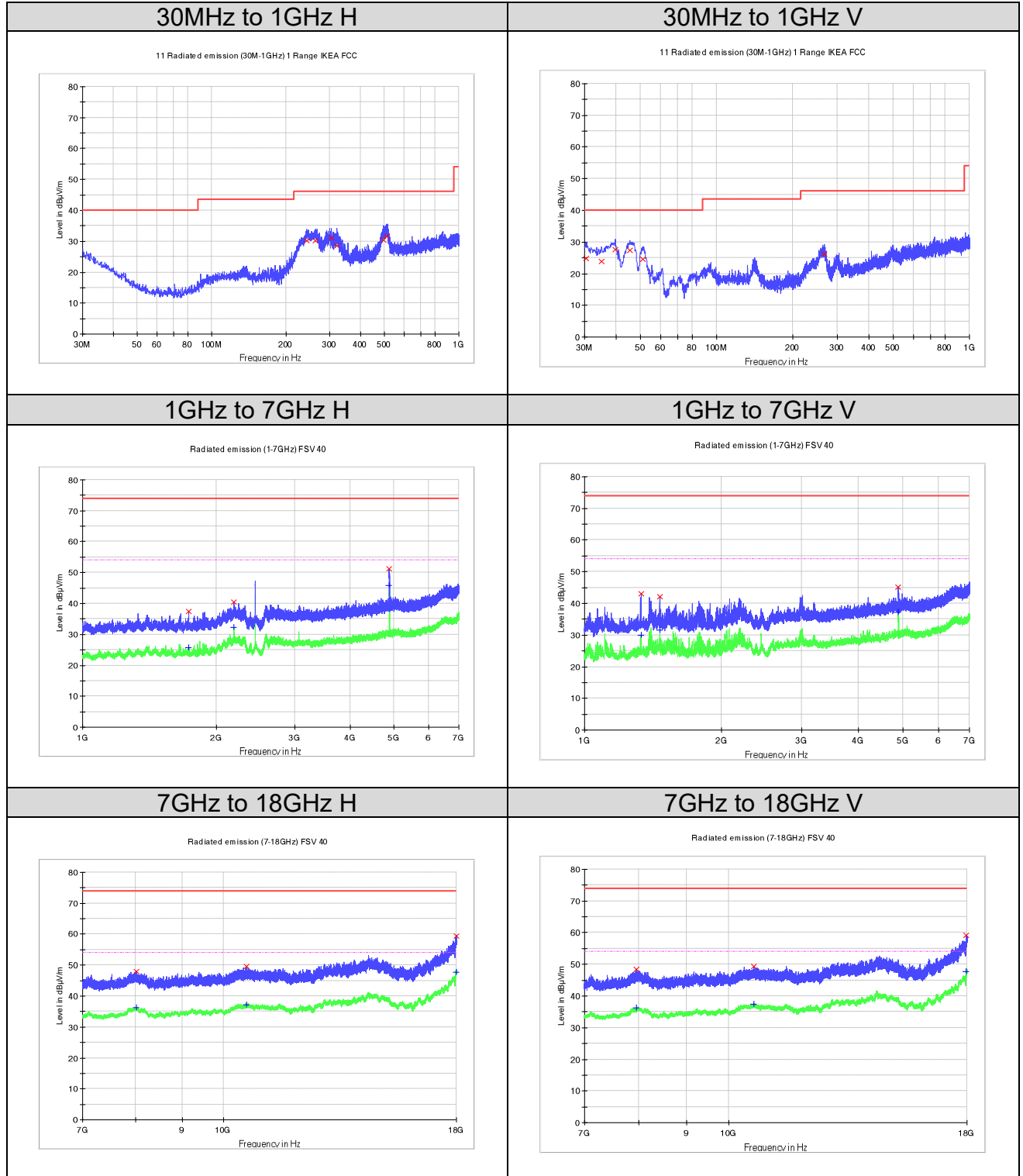
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
245.340000	28.9	H	19.2	17.1	46.0
261.830000	30.1	H	21.7	15.9	46.0
304.146250	28.4	H	20.6	17.6	46.0
314.452500	27.1	H	20.4	18.9	46.0
497.176250	29.5	H	25.0	16.5	46.0
509.907500	31.7	H	25.0	14.3	46.0
30.848750	25.2	V	25.0	14.8	40.0
35.092500	25.0	V	22.6	15.0	40.0
38.851250	26.8	V	20.4	13.2	40.0
46.126250	27.3	V	16.5	12.7	40.0
50.733750	25.7	V	14.5	14.3	40.0
265.710000	25.0	V	21.2	21.0	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1460.636364	37.7	H	-18.6	36.3	74.0
2297.090909	40.2	H	-15.7	33.8	74.0
4808.909091	52.5	H	-11.2	21.5	74.0
7977.281250	48.5	H	-3.4	25.5	74.0
10646.843750	49.5	H	-1.3	24.5	74.0
17992.437500	60.1	H	12.0	13.9	74.0
1452.454546	40.8	V	-18.6	33.2	74.0
2258.363636	43.4	V	-15.6	30.6	74.0
4811.090909	45.6	V	-11.2	28.4	74.0
7991.375000	48.2	V	-3.3	25.8	74.0
10967.906250	49.9	V	-1.5	24.2	74.0
17983.156250	59.3	V	11.8	14.7	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1460.636364	26.6	H	-18.6	27.4	54.0
2297.090909	29.3	H	-15.7	24.7	54.0
4808.909091	48.0	H	-11.2	6.0	54.0
7977.281250	36.5	H	-3.4	17.5	54.0
10646.843750	37.5	H	-1.3	16.5	54.0
17992.437500	47.8	H	12.0	6.2	54.0
1452.454546	30.9	V	-18.6	23.1	54.0
2258.363636	29.6	V	-15.6	24.4	54.0
4811.090909	38.4	V	-11.2	15.6	54.0
7991.375000	36.2	V	-3.3	17.8	54.0
10967.906250	36.8	V	-1.5	17.2	54.0
17983.156250	47.9	V	11.8	6.1	54.0

Figure 11: Radiated Spurious Emission, 2445MHz


Limit and Margin
QP

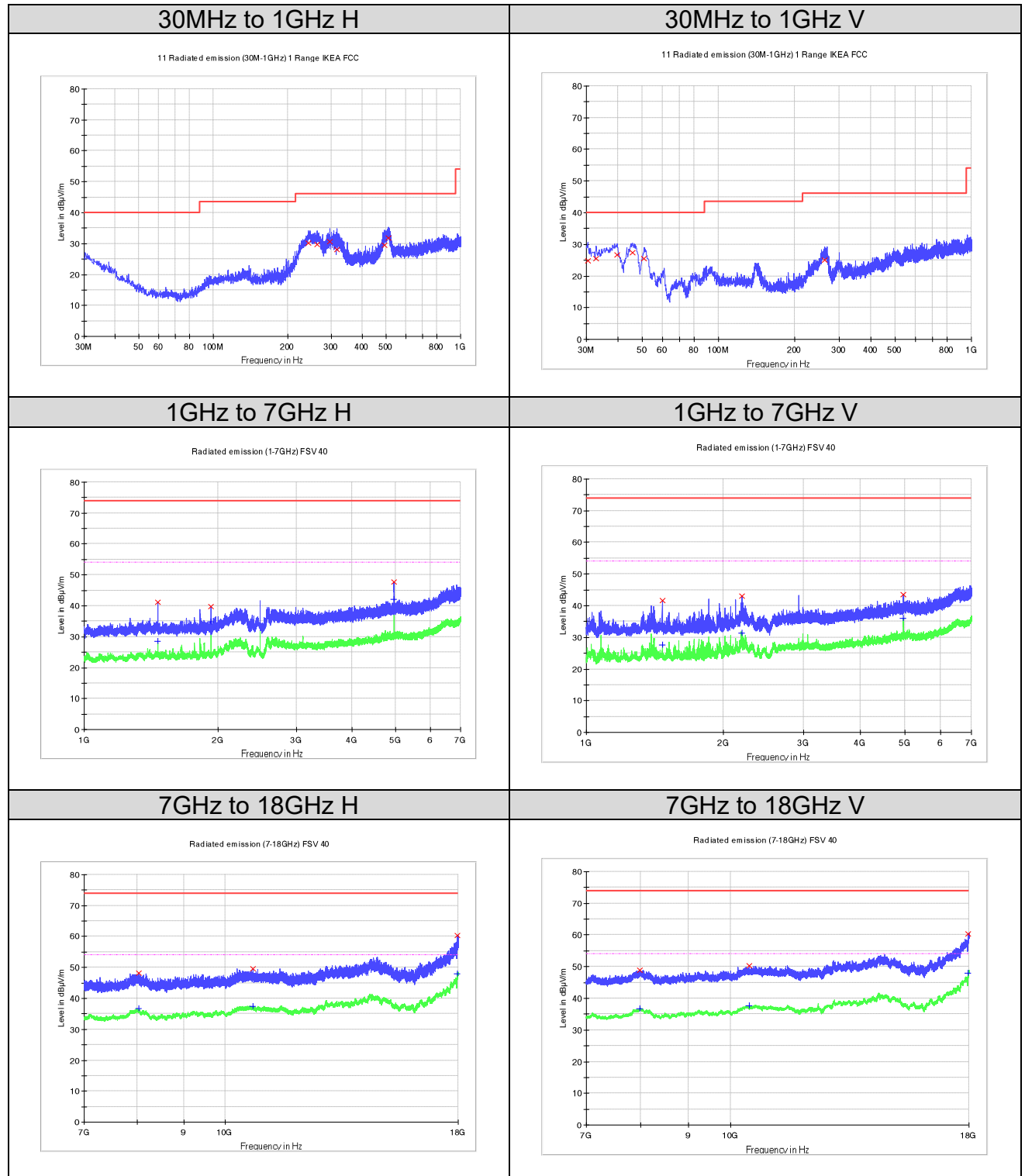
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
241.460000	30.2	H	19.1	15.9	46.0
262.678750	30.1	H	21.6	15.9	46.0
304.510000	31.2	H	20.6	14.8	46.0
321.848750	28.5	H	21.2	17.5	46.0
494.145000	30.4	H	25.4	15.6	46.0
510.150000	31.6	H	25.0	14.4	46.0
30.363750	24.9	V	25.2	15.1	40.0
34.971250	23.9	V	22.6	16.1	40.0
39.700000	27.7	V	20.0	12.4	40.0
45.398750	27.5	V	16.9	12.5	40.0
51.097500	24.7	V	14.4	15.3	40.0
266.680000	26.2	V	21.0	19.8	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1732.545455	37.5	H	-18.8	36.5	74.0
2187.454546	40.4	H	-15.8	33.6	74.0
4889.090909	51.3	H	-11.1	22.7	74.0
8018.531250	47.9	H	-3.4	26.1	74.0
10592.531250	49.6	H	-1.1	24.4	74.0
17993.125000	59.3	H	12.0	14.7	74.0
1329.727273	43.0	V	-18.7	31.0	74.0
1460.909091	42.2	V	-18.6	31.8	74.0
4889.090909	45.2	V	-11.1	28.8	74.0
7951.843750	48.4	V	-3.5	25.6	74.0
10633.093750	49.3	V	-1.2	24.7	74.0
17967.343750	59.1	V	11.6	14.9	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1732.545455	25.8	H	-18.8	28.2	54.0
2187.454546	32.3	H	-15.8	21.8	54.0
4889.090909	45.8	H	-11.1	8.2	54.0
8018.531250	36.4	H	-3.4	17.7	54.0
10592.531250	37.3	H	-1.1	16.7	54.0
17993.125000	47.8	H	12.0	6.2	54.0
1329.727273	29.9	V	-18.7	24.1	54.0
1460.909091	31.6	V	-18.6	22.4	54.0
4889.090909	37.2	V	-11.1	16.8	54.0
7951.843750	36.3	V	-3.5	17.8	54.0
10633.093750	37.3	V	-1.2	16.7	54.0
17967.343750	47.8	V	11.6	6.2	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)
242.066250	30.1	H	19.1	15.9	46.0
263.042500	29.7	H	21.6	16.4	46.0
295.780000	30.5	H	20.4	15.5	46.0
315.180000	28.2	H	20.4	17.8	46.0
493.660000	29.5	H	25.5	16.5	46.0
509.907500	31.8	H	25.0	14.2	46.0
30.363750	24.8	V	25.2	15.2	40.0
32.788750	25.6	V	23.8	14.4	40.0
39.700000	26.7	V	20.0	13.3	40.0
45.641250	27.4	V	16.8	12.6	40.0
50.612500	25.5	V	14.6	14.5	40.0
263.042500	25.0	V	21.6	21.0	46.0

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1462.000000	41.3	H	-18.6	32.7	74.0
1928.909091	39.9	H	-18.1	34.1	74.0
4959.181818	47.8	H	-11.0	26.2	74.0
8028.843750	48.2	H	-3.4	25.8	74.0
10715.593750	49.7	H	-2.0	24.3	74.0
17967.000000	60.3	H	11.6	13.7	74.0
1466.909091	41.6	V	-18.6	32.4	74.0
2192.636364	43.2	V	-15.8	30.8	74.0
4958.909091	43.5	V	-11.0	30.5	74.0
7987.593750	49.0	V	-3.3	25.0	74.0
10455.718750	50.3	V	-1.9	23.7	74.0
17965.625000	60.4	V	11.5	13.6	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1462.000000	28.6	H	-18.6	25.4	54.0
1928.909091	35.0	H	-18.1	19.1	54.0
4959.181818	42.2	H	-11.0	11.8	54.0
8028.843750	36.8	H	-3.4	17.2	54.0
10715.593750	37.4	H	-2.0	16.7	54.0
17967.000000	48.0	H	11.6	6.0	54.0
1466.909091	27.5	V	-18.6	26.5	54.0
2192.636364	31.3	V	-15.8	22.7	54.0
4958.909091	35.9	V	-11.0	18.1	54.0
7987.593750	36.8	V	-3.3	17.2	54.0
10455.718750	37.6	V	-1.9	16.4	54.0
17965.625000	47.9	V	11.5	6.1	54.0

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