

FCC and ISED Test Report

Apple Inc
Model: A3428



In accordance with FCC 47 CFR Part 15C and
ISED RSS-247 and ISED RSS-GEN
(Thread)

Prepared for: Apple Inc
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FCC ID: BCGA3428

IC: 579C-A3428

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Document 75963993-16 Issue 02

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Steven White	Senior Technical Specialist	Authorised Signatory	27 February 2026

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15C, ISED RSS-247 and ISED RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Report Generating	George Capps	27 February 2026	

FCC Accreditation

553713/UK2026 Concorde Park, Fareham Test Laboratory

ISED Accreditation

28798/UK0003 Concorde Park, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15C: 2024, ISED RSS-247: Issue 4 (2025-07), ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02) for the tests detailed in section 1.3.



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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	03 February 2026
2	Removal of draft watermark	27 February 2026

Table 1

1.2 Introduction

Applicant	Apple Inc
Manufacturer	Apple Inc
EUT/Sample Identification	Refer to section 1.6
Test Specification/Issue/Date	FCC 47 CFR Part 15C: 2024 ISED RSS-247: Issue 4 (2025-07) ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02)
Start of Test	27-October-2025
Finish of Test	15-January-2026
Name of Engineer(s)	Mahmud Chowdhury, Dulanjan Witharamalage, Ioan-Alexandru Bogatu, Manohar Thota, Ahmed Al Derdiri, Gridi Bilali, Marius Vasii,
Related Document(s)	ANSI C63.10-2020 +Cor.1-2023+C63.10a-2024



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C, ISSED RSS-247 and ISSED RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration and Mode: Thread						
-	15.203	-	-	Antenna Requirement	N/T	The device complies with the provisions of this section, as it uses permanently attached integral antennas.
2.1	15.205	2.4	8.10	Restricted Band Edges	Pass	ANSI C63.10 (2020) +Cor.1-2023+C63.10a-2024
2.2	15.247 (a)(2)	6.3.1	6.7	Emission Bandwidth	Pass	ANSI C63.10 (2020) +Cor.1-2023+C63.10a-2024
2.3	15.247 (b)	6.3.2	6.12	Maximum Conducted Output Power	Pass	ANSI C63.10 (2020) +Cor.1-2023+C63.10a-2024
2.4	15.247 (d)	6.6	-	Authorised Band Edges	Pass	ANSI C63.10 (2020) +Cor.1-2023+C63.10a-2024
2.5	15.209 and 15.247 (d)	2.4 and 6.6	6.13 and 8.9	Spurious Radiated Emissions	Pass	ANSI C63.10 (2020) +Cor.1-2023+C63.10a-2024
2.6	15.247 (e)	6.3.1	6.12	Power Spectral Density	Pass	ANSI C63.10 (2020) +Cor.1-2023+C63.10a-2024

Table 2



1.4 Product Information

1.4.1 Technical Description

The equipment under test (EUT) was a portable laptop computer.

1.4.2 Test Modes

The EUT's 2.4 GHz Thread radio supports SISO operation on two different cores and has two power settings: "iPA" & "ePA"

The EUT uses different output power per core, and the antenna gains vary, resulting in a different radiated powers per core.

The EUT was tested in the following modes:

SISO modes:

iPA/ePA - Core 0

iPA/ePA - Core 1

iPA - Core 2

1.4.3 Test Setup

For conducted tests the EUT antennas were disconnected and replaced with U. FL to SMA test cables to enable conducted testing on each core. The loss of these test cables were known and compensated for in any conducted measurements.

For all tests the EUT was put into a continuous transmit test mode with the chipset manufacturer's test commands to ensure the measured signals were representative.

All testing was performed with the EUT powered via a 120 V AC, 60 Hz source

1.4.4 Antenna Gain Table

Antenna Port	Frequency Range (MHz)	Peak Gain (dBi)	Conducted Cable Loss (dB)
Core 0 (WF1)	2412	4.9	0.71
	2442	5.8	0.71
	2472	5.7	0.71
Core 1 (WF2)	2412	1.8	0.71
	2442	2.0	0.71
	2472	2.2	0.71
Core 2 (WF3)	2412	4.7	0.71
	2442	5.0	0.71
	2472	4.5	0.71

Table 3

1.5 Deviations from the Standard

No deviations from the applicable test standard were made during testing.



1.6 Identification of the EUT

The table below details identification of the EUT(s) that have been used to carry out the testing within this report.

Model: A3428		
Serial Number	Hardware Version	Software Version
FF9MP4FP2G	REV1.0	25D36
GJM3XKXYGQ	REV1.0	25D36
G9F4Y6NJ31	REV1.0	25D36
DJLX49TWH4	REV1.0	25D30630a

Table 4

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: A3428, Serial Number: FF9MP4FP2G			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3428, Serial Number: GJM3XKXYGQ			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3428, Serial Number: G9F4Y6NJ31			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3428, Serial Number: DJLX49TWH4			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 5



1.8 Test Location

TÜV SÜD conducted the following tests at our Concorde Park Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: Thread		
Power Spectral Density	Mahmud Chowdhury	UKAS
Spurious Radiated Emissions	Dulanjan Witharamalage, Ioan-Alexandru Bogatu, Manohar Thota, Ahmed Al Derdiri, Gridi Bilali, Marius Vasii	UKAS
Authorised Band Edges	Manohar Thota	UKAS
Maximum Conducted Output Power	Ioan-Alexandru Bogatu, Gridi Bilali	UKAS
Emission Bandwidth	Mahmud Chowdhury	UKAS
Restricted Band Edges	Manohar Thota	UKAS

Table 6

Office Address:

TÜV SÜD
Concorde Park
Concorde Way
Fareham
Hampshire
PO15 5FG
United Kingdom



2 Test Details

2.1 Power Spectral Density

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205
ISED RSS-247, Clause 2.4
ISED RSS-GEN, Clause 8.10

2.1.2 Equipment Under Test and Modification State

A3428, S/N: DJLX49TWH4 - Modification State 0

2.1.3 Date of Test

10-January-2026 to 15-January-2026

2.1.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.5.

2.1.5 Environmental Conditions

Ambient Temperature	22.2 - 24.6 °C
Relative Humidity	24.6 - 44.9 %



2.1.6 Test Results

Thread

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	5.80
Active Port(s):	A (Core 0)	Active Chain(s):	0

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-14.79	-	-	-	-14.79	8.00	-22.79
2440	3.0	-14.67	-	-	-	-14.67	8.00	-22.67
2475	3.0	-14.47	-	-	-	-14.47	8.00	-22.47

Table 7 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	2.20
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-	-14.59	-	-	-14.59	8.00	-22.59
2440	3.0	-	-14.82	-	-	-14.82	8.00	-22.82
2475	3.0	-	-14.79	-	-	-14.79	8.00	-22.79

Table 8 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	5.00
Active Port(s):	C (Core 2)	Active Chain(s):	2

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-	-	-13.09	-	-13.09	8.00	-21.09
2440	3.0	-	-	-14.76	-	-14.76	8.00	-22.76
2475	3.0	-	-	-14.15	-	-14.15	8.00	-22.15

Table 9 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread ePA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	5.80
Active Port(s):	A (Core 0)	Active Chain(s):	0

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-2.49	-	-	-	-2.49	8.00	-10.49
2440	3.0	-2.47	-	-	-	-2.47	8.00	-10.47
2475	3.0	-2.44	-	-	-	-2.44	8.00	-10.44

Table 10 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread ePA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	2.20
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-	-2.33	-	-	-2.33	8.00	-10.33
2440	3.0	-	-3.15	-	-	-3.15	8.00	-11.15
2475	3.0	-	-2.43	-	-	-2.43	8.00	-10.43

Table 11 - Maximum Power Spectral Density Results

FCC 47 CFR Part 15, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

ISED RSS-247, Limit Clause 6.3.1

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission



2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Hygrometer	Rotronic	I-1000	3068	12	19-Nov-2025 Classed as expired at time of use
Climatic Chamber	Aralab	FitoTerm 300E45	4823	-	O/P Mon
USB Power Sensors, 50MHz to 8GHz	Boonton	RTP5008	5924	12	27-Feb-2026
Digital Multimeter	Fluke	115	6145	12	06-Jun-2026
MXA Signal Analyser	Keysight Technologies	N9020B	6417	24	14-Oct-2027
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6517	12	27-Feb-2026
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6518	12	23-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6526	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6527	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6528	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6529	12	13-Mar-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6530	12	23-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6531	12	23-Feb-2026
USB Wideband Power Sensor	Boonton	RTP5008	6585	12	27-Feb-2026
USB Wideband Power Sensor	Boonton	RTP5008	6586	12	27-Feb-2026
USB Wideband Power Sensor	Boonton	RTP5008	6587	12	23-Feb-2026
USB Wideband Power Sensor	Boonton	RTP5008	6588	12	23-Feb-2026
USB Wideband Power Sensor	Boonton	RTP5008	6589	12	23-Feb-2026
AC Programmable Power Supply	iTech	IT7324	6662	-	O/P Mon
AC Programmable Power Supply	iTech	IT7324	6665	-	O/P Mon
Digital Thermometer	R.S Components	RS 5511	6739	12	07-Feb-2026

Table 12

O/P Mon - Output Monitored using calibrated equipment



2.2 Spurious Radiated Emissions

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.209 and 15.247 (d)
ISED RSS-247, Clause 2.4 and 6.6
ISED RSS-GEN, Clause 6.13 and 8.9

2.2.2 Equipment Under Test and Modification State

A3428, S/N: FF9MP4FP2G - Modification State 0
A3428, S/N: GJM3XKXYGQ - Modification State 0

2.2.3 Date of Test

18-December-2025 to 21-December-2025

2.2.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6.

Ports on the EUT were terminated with loads as described in ANSI C63.10 clause 6.2.3.

In the 30 MHz to 1 GHz range pre-scans were only performed on the mid channel (2440 MHz).

The plots shown are the characterisation of the EUT. The limits on the plots represent the most stringent case for restricted bands, (74/54 dBuV/m) when compared to 20 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 20 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dBµV/m to µV/m:
 $10^{(\text{Field Strength in dB}\mu\text{V/m}/20)}$

To determine the emission characteristic of the EUT above 18 GHz, the test antenna was swept over all faces of the EUT whilst observing a spectral display. The frequency of any emissions of interest was noted for formal measurement at the correct measurement distance of 1m. This procedure was repeated for all relevant transmit operating channels.

Above 18 GHz, the measurement distance was reduced to 1 m. The limit line was increased by $20 \cdot \text{LOG}(3/1) = 9.54$ dB.

Where formal measurements have been necessary, the results have been presented in the emissions table.

2.2.5 Example Test Setup Diagram

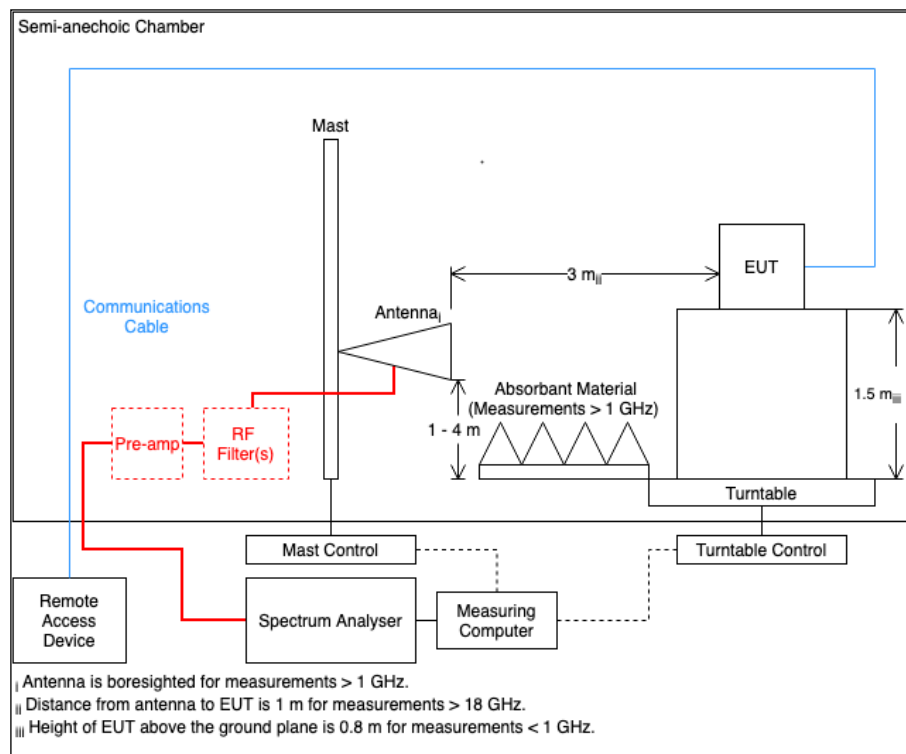


Figure 1

2.2.6 Environmental Conditions

Ambient Temperature	22.8 - 24.3 °C
Relative Humidity	39.5 - 48.1 %



2.2.7 Test Results

Thread

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2363.204	33.58	54.00	-20.42	RMS	4	319	Vertical
2483.607	34.59	54.00	-19.41	RMS	0	389	Vertical

Table 13 - 2405 MHz (CH11), Thread, ePA, Core 0, 1 GHz to 18 GHz

No other emissions found within 20 dB of the limit.

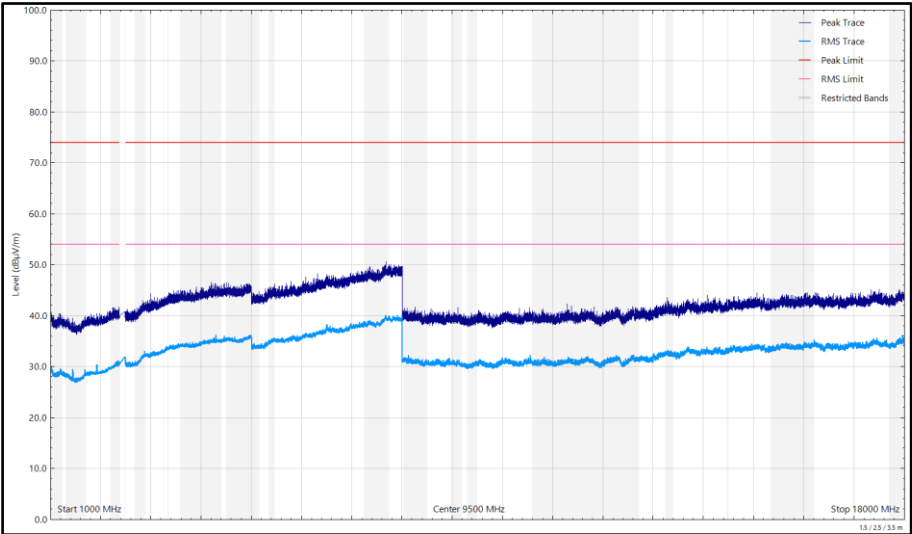


Figure 2 - 2405 MHz (CH11), Thread, ePA, Core 0, 1 GHz to 18 GHz, Horizontal

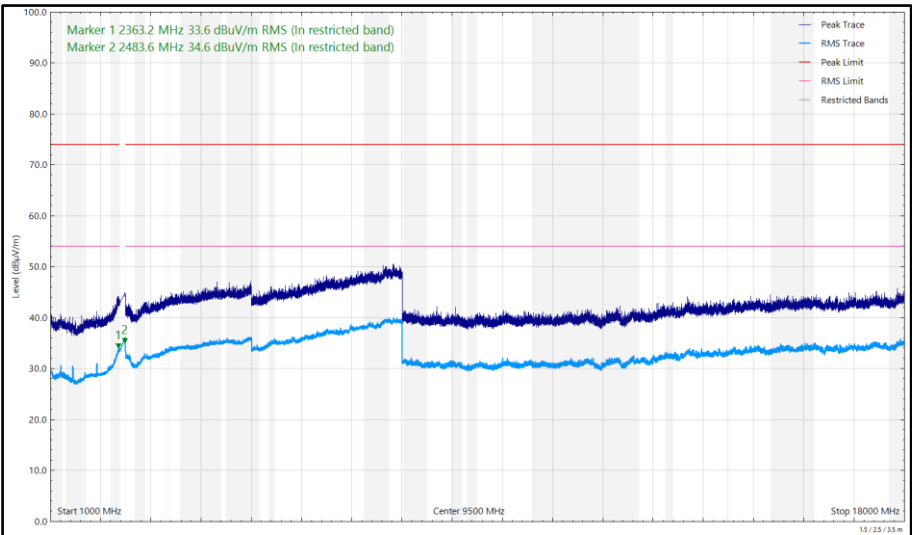


Figure 3 - 2405 MHz (CH11), Thread, ePA, Core 0, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
37.540	20.14	40.00	-19.86	Q-Peak	20	400	Vertical
37.791	20.41	40.00	-19.59	Q-Peak	311	282	Horizontal
73.130	17.24	40.00	-22.76	Q-Peak	165	394	Horizontal
73.448	18.25	40.00	-21.75	Q-Peak	243	100	Vertical
112.788	23.72	43.50	-19.78	Q-Peak	184	111	Vertical
129.571	20.53	43.50	-22.97	Q-Peak	2	362	Horizontal
168.954	20.10	43.50	-23.40	Q-Peak	203	268	Vertical
243.152	22.61	46.00	-23.39	Q-Peak	306	137	Horizontal
244.093	20.03	46.00	-25.97	Q-Peak	29	100	Vertical
2389.117	37.39	54.00	-16.61	RMS	360	360	Vertical
2483.594	36.93	54.00	-17.07	RMS	2	330	Vertical

Table 14 - 2440 MHz (CH18), Thread, ePA, Core 0, 30 MHz to 26 GHz

No other emissions found within 20 dB of the limit.

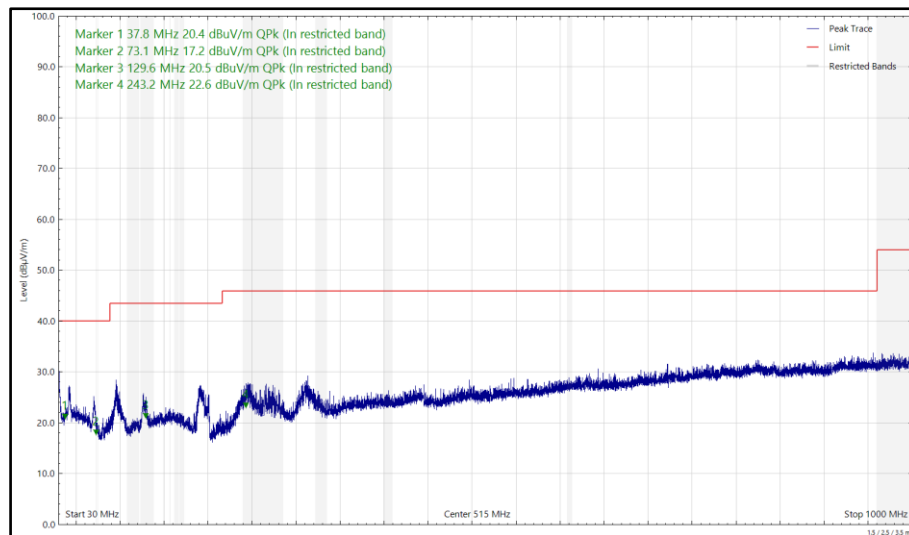


Figure 4 - 2440 MHz (CH18), Thread, ePA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

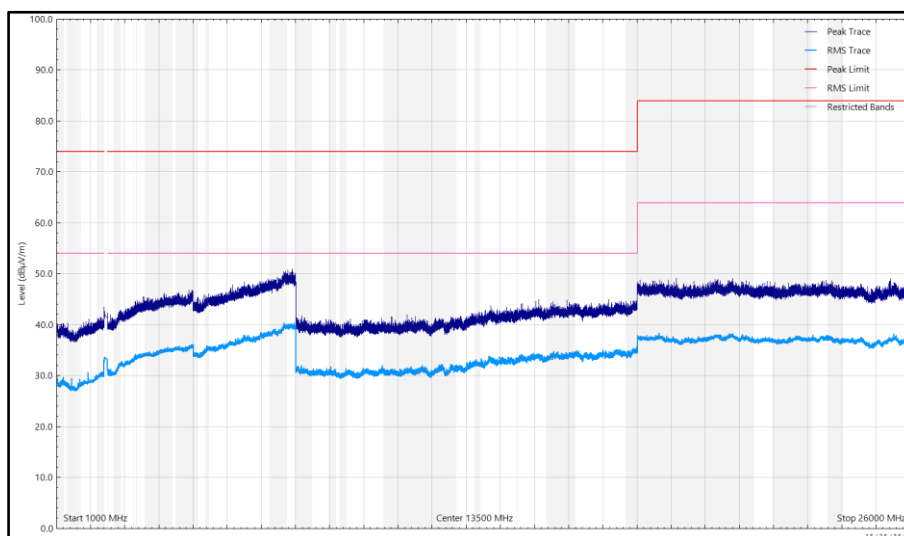


Figure 5 - 2440 MHz (CH18), Thread, ePA, Core 0, 1 GHz to 26 GHz, Horizontal

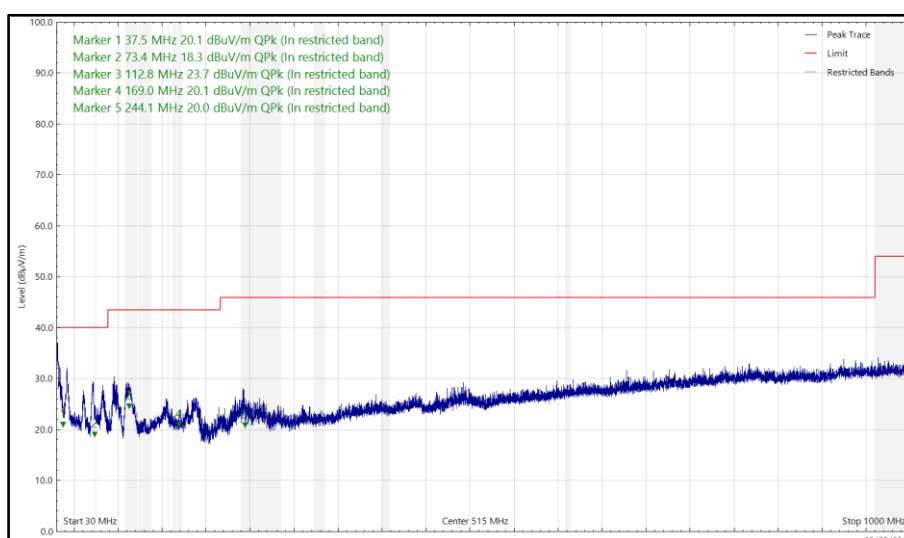


Figure 6 - 2440 MHz (CH18), Thread, ePA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

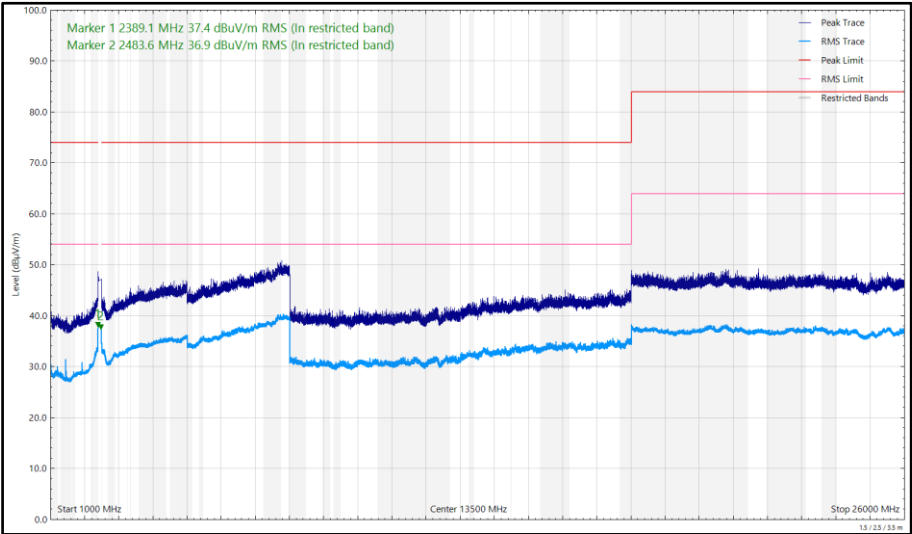


Figure 7 - 2440 MHz (CH18), Thread, ePA, Core 0, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.864	36.70	54.00	-17.30	RMS	30	265	Vertical
2498.790	34.46	54.00	-19.54	RMS	39	287	Vertical

Table 15 - 2475 MHz (CH25), Thread, ePA, Core 0, 1 GHz to 18 GHz

No other emissions found within 20 dB of the limit.

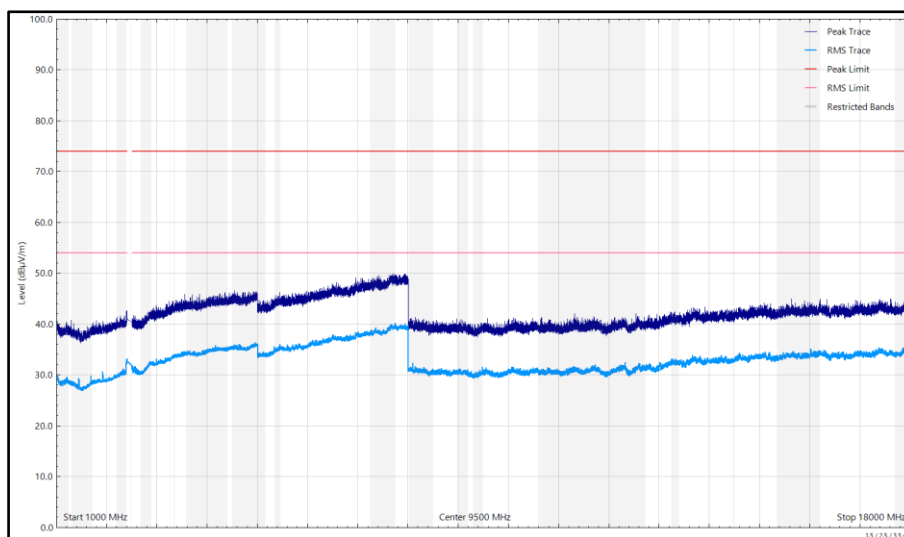


Figure 8 - 2475 MHz (CH25), Thread, ePA, Core 0, 1 GHz to 18 GHz, Horizontal

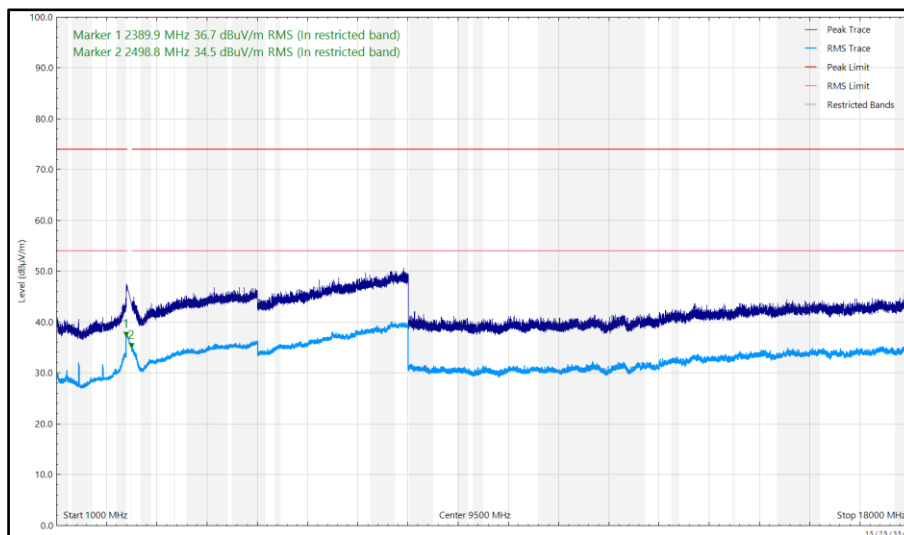


Figure 9 - 2475 MHz (CH25), Thread, ePA, Core 0, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2483.768	36.93	54.00	-17.07	RMS	17	314	Vertical

Table 16 - 2405 MHz (CH11), Thread, ePA, Core 1, 1 GHz to 18 GHz

No other emissions found within 20 dB of the limit.

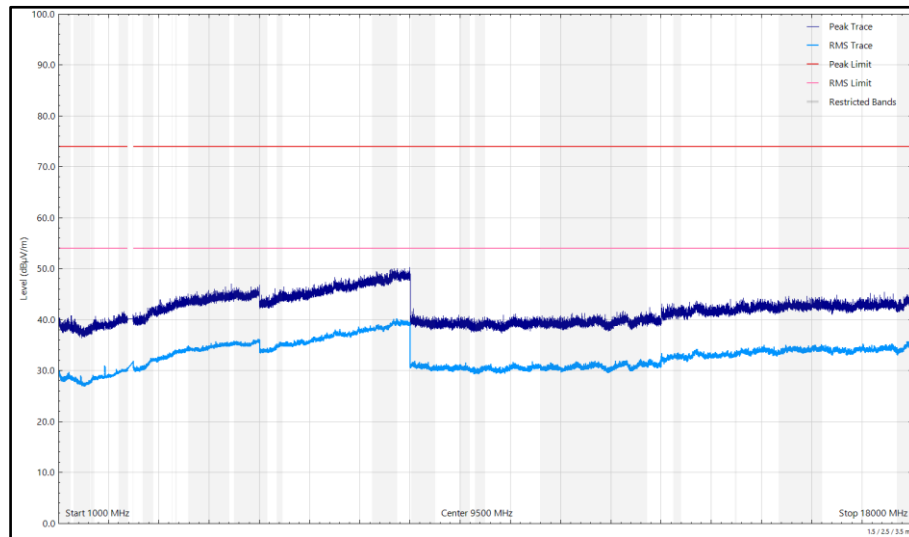


Figure 10 - 2405 MHz (CH11), Thread, ePA, Core 1, 1 GHz to 18 GHz, Horizontal

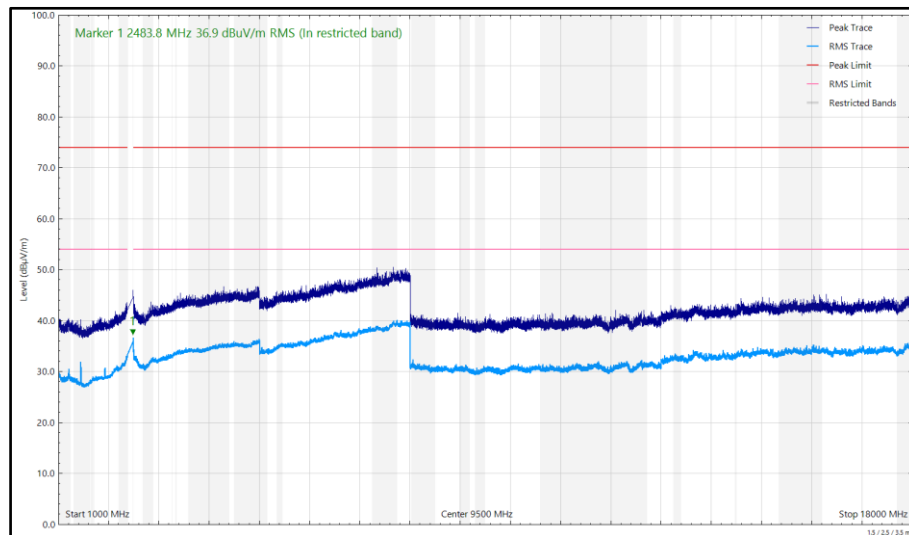


Figure 11 - 2405 MHz (CH11), Thread, ePA, Core 1, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
37.507	20.24	40.00	-19.76	Q-Peak	298	300	Vertical
37.547	20.11	40.00	-19.89	Q-Peak	199	390	Horizontal
74.001	17.57	40.00	-22.43	Q-Peak	64	263	Vertical
74.002	17.21	40.00	-22.79	Q-Peak	165	383	Horizontal
110.640	23.12	43.50	-20.38	Q-Peak	137	107	Vertical
129.805	22.09	43.50	-21.41	Q-Peak	59	370	Horizontal
156.892	20.31	43.50	-23.19	Q-Peak	2	352	Vertical
245.482	20.12	46.00	-25.88	Q-Peak	0	100	Vertical
247.561	22.35	46.00	-23.65	Q-Peak	136	150	Horizontal
323.662	20.95	46.00	-25.05	Q-Peak	120	395	Horizontal
2389.801	36.29	54.00	-17.71	RMS	337	357	Vertical
2483.846	37.77	54.00	-16.23	RMS	14	320	Vertical

Table 17 - 2440 MHz (CH18), Thread, ePA, Core 1, 30 MHz to 26 GHz

No other emissions found within 20 dB of the limit.

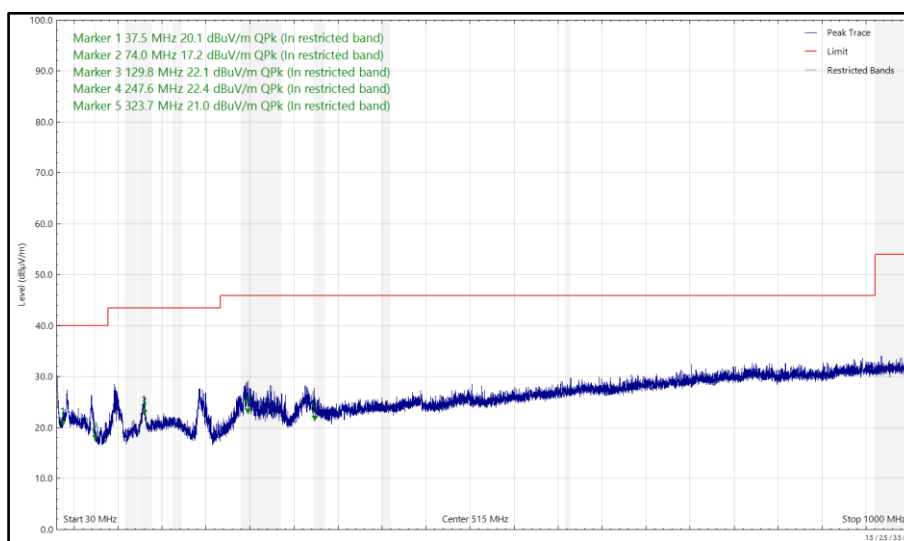


Figure 12 - 2440 MHz (CH18), Thread, ePA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

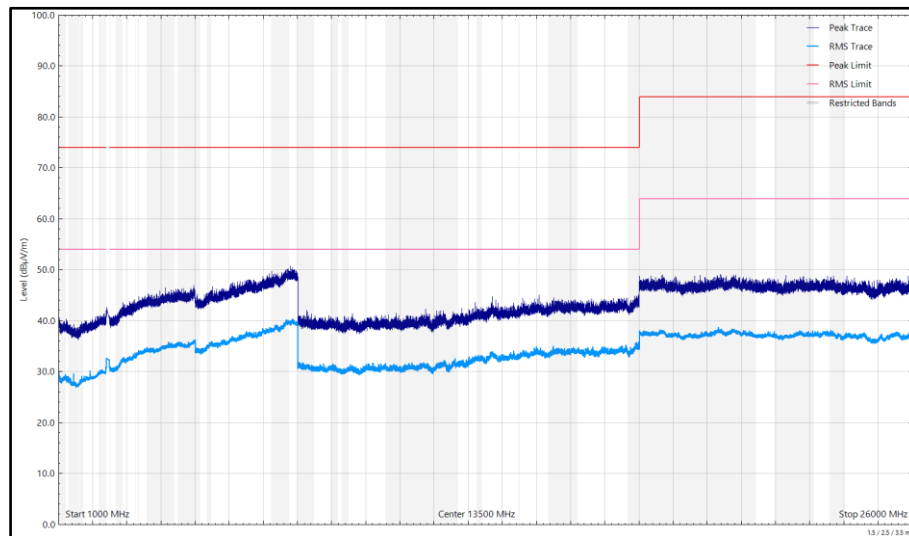


Figure 13 - 2440 MHz (CH18), Thread, ePA, Core 1, 1 GHz to 26 GHz, Horizontal

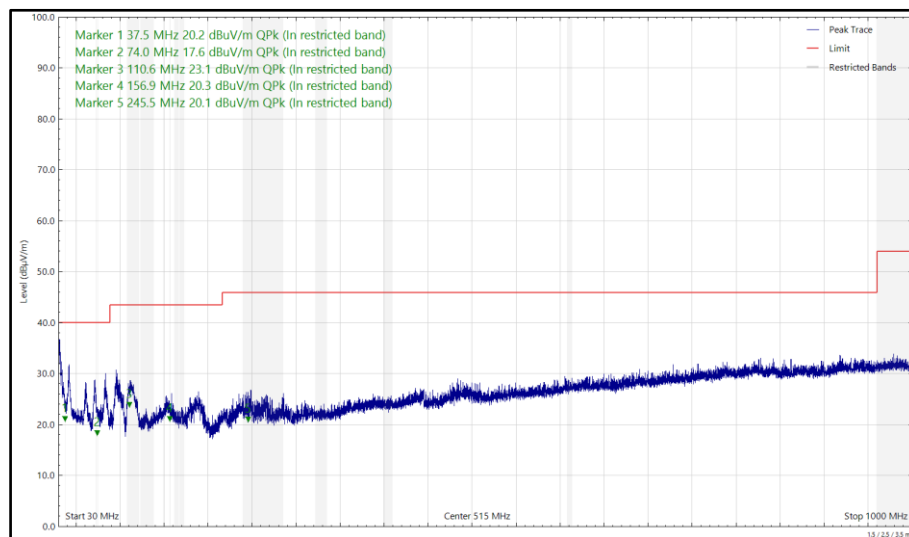


Figure 14 - 2440 MHz (CH18), Thread, ePA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

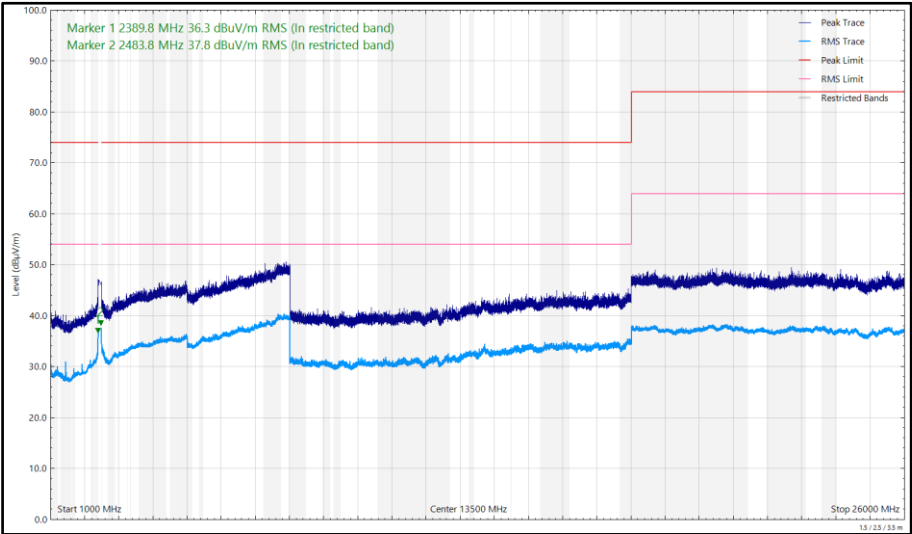


Figure 15 - 2440 MHz (CH18), Thread, ePA, Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.592	34.70	54.00	-19.30	RMS	351	376	Vertical

Table 18 - 2475 MHz (CH25), Thread, ePA, Core 1, 1 GHz to 18 GHz

No other emissions found within 20 dB of the limit.

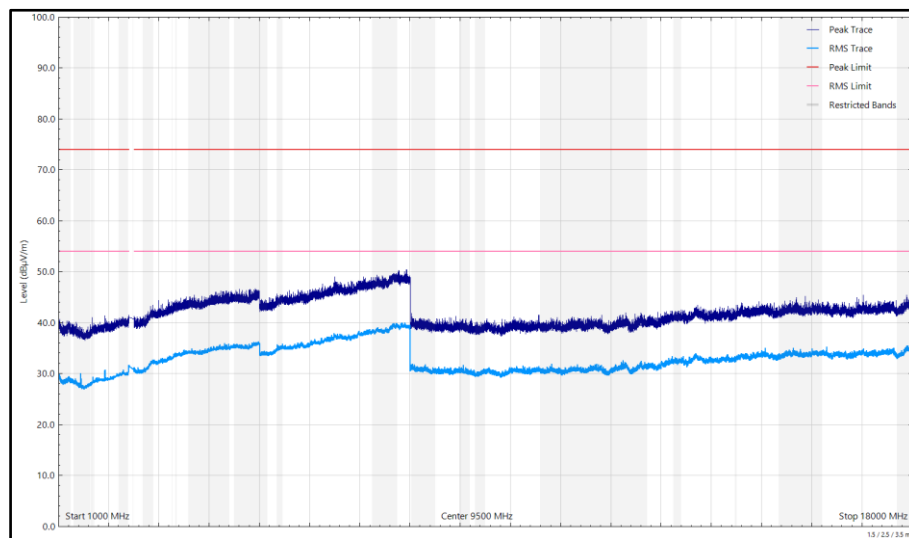


Figure 16 - 2475 MHz (CH25), Thread, ePA, Core 1, 1 GHz to 18 GHz, Horizontal

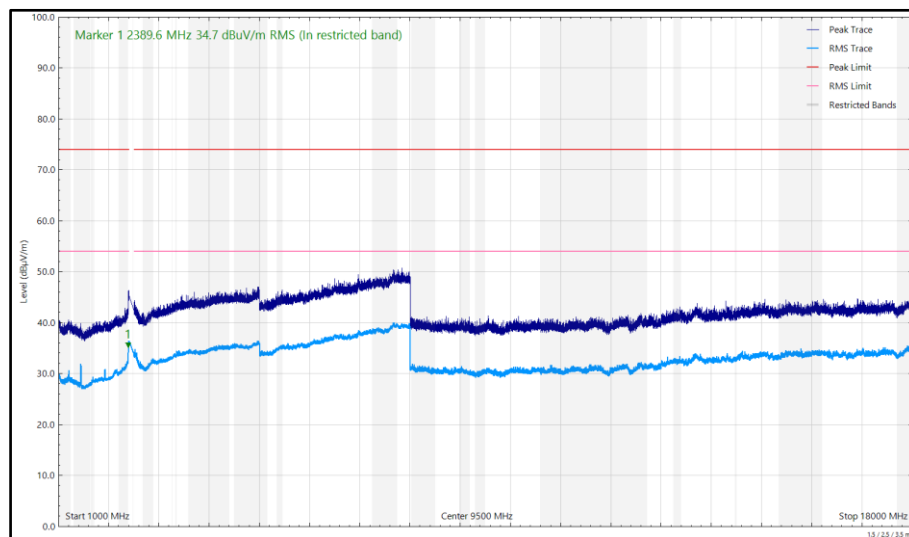


Figure 17 - 2475 MHz (CH25), Thread, ePA, Core 1, 1 GHz to 18 GHz, Vertical



Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 19 - 2405 MHz (CH11), Thread, iPA, Core 0, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

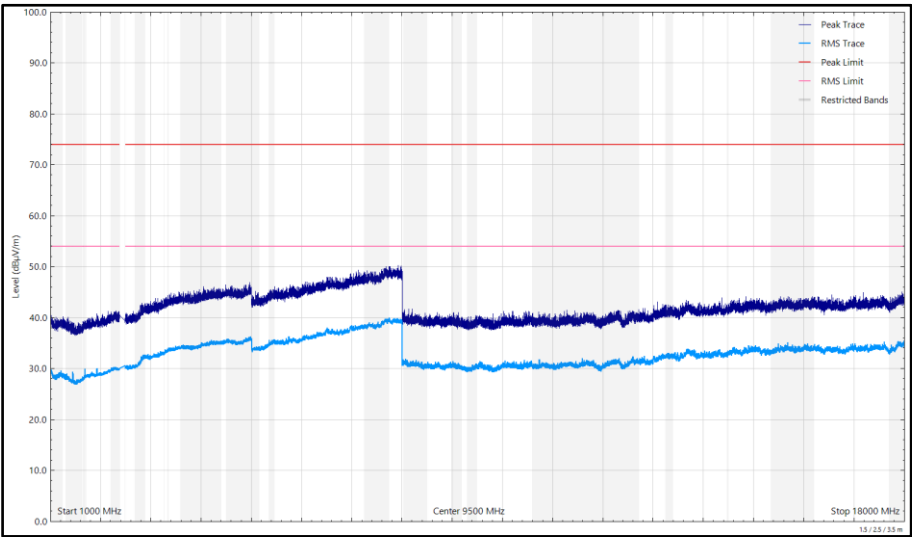


Figure 18 - 2405 MHz (CH11), Thread, iPA, Core 0, 1 GHz to 18 GHz, Horizontal

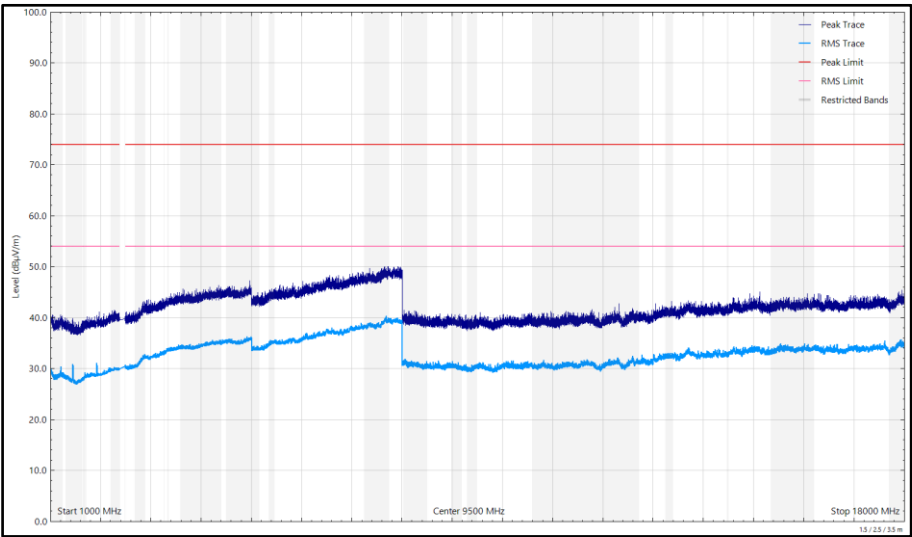


Figure 19 - 2405 MHz (CH11), Thread, iPA, Core 0, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
38.131	20.28	40.00	-19.72	Q-Peak	195	349	Horizontal
38.164	20.35	40.00	-19.65	Q-Peak	336	230	Vertical
73.347	18.23	40.00	-21.77	Q-Peak	190	111	Vertical
73.476	17.04	40.00	-22.96	Q-Peak	2	100	Horizontal
110.497	23.45	43.50	-20.05	Q-Peak	132	111	Vertical
132.255	19.33	43.50	-24.17	Q-Peak	28	391	Horizontal
137.090	19.27	43.50	-24.23	Q-Peak	4	306	Vertical
168.441	20.11	43.50	-23.39	Q-Peak	230	400	Vertical
249.406	21.66	46.00	-24.34	Q-Peak	180	149	Horizontal
328.239	21.25	46.00	-24.75	Q-Peak	70	306	Horizontal

Table 20 - 2440 MHz (CH18), Thread, iPA, Core 0, 30 MHz to 26 GHz

No other emissions found within 20 dB of the limit.

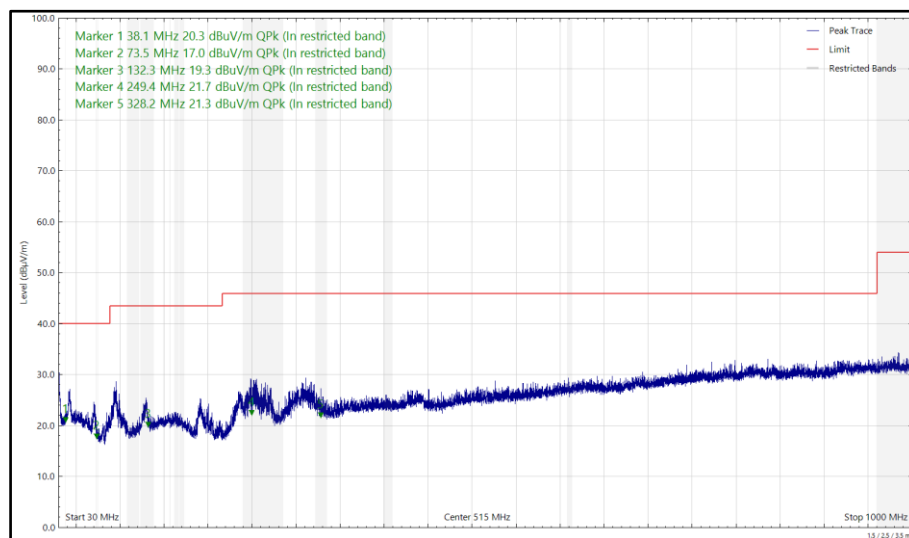


Figure 20 - 2440 MHz (CH18), Thread, iPA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

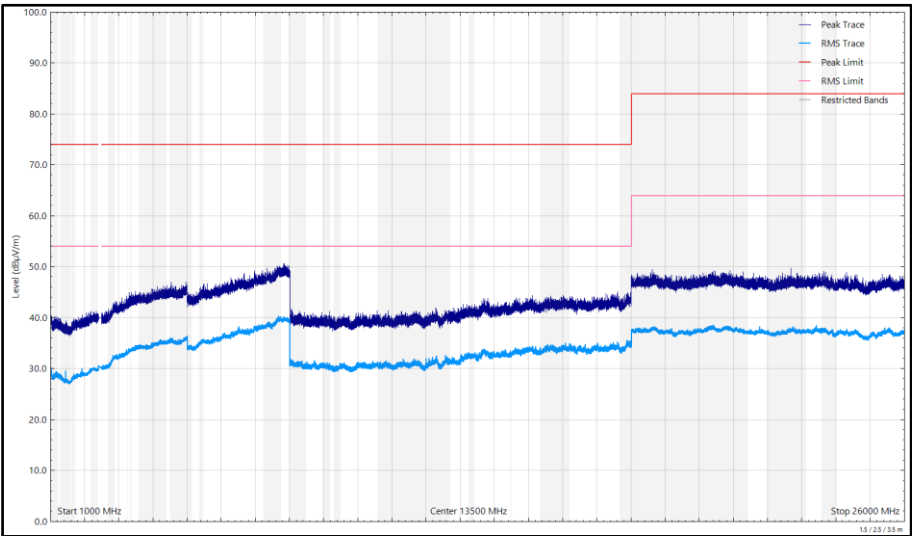


Figure 21 - 2440 MHz (CH18), Thread, iPA, Core 0, 1 GHz to 26 GHz, Horizontal

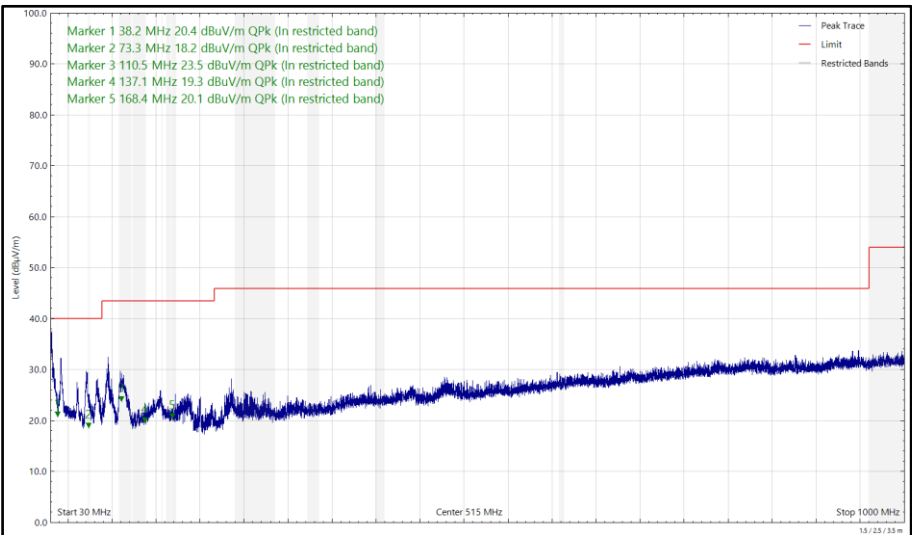


Figure 22 - 2440 MHz (CH18), Thread, iPA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

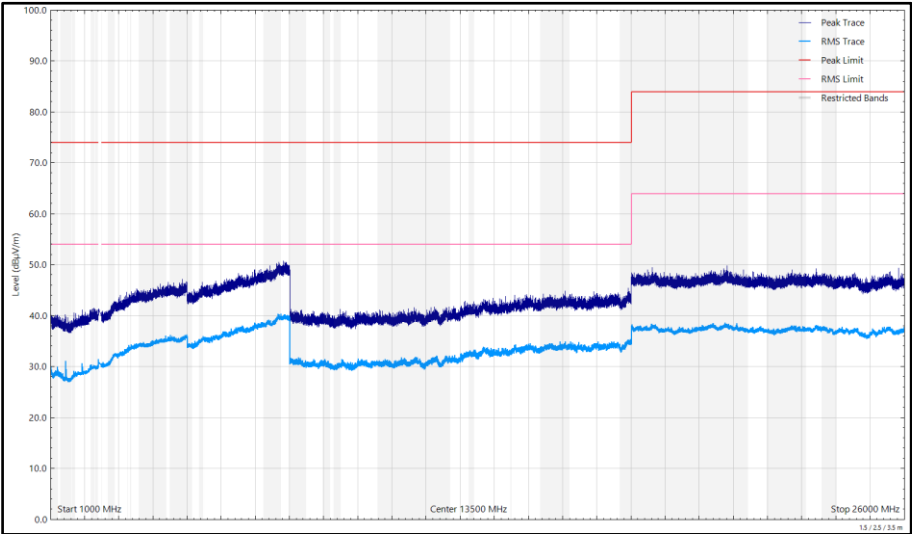


Figure 23 - 2440 MHz (CH18), Thread, iPA, Core 0, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 21 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

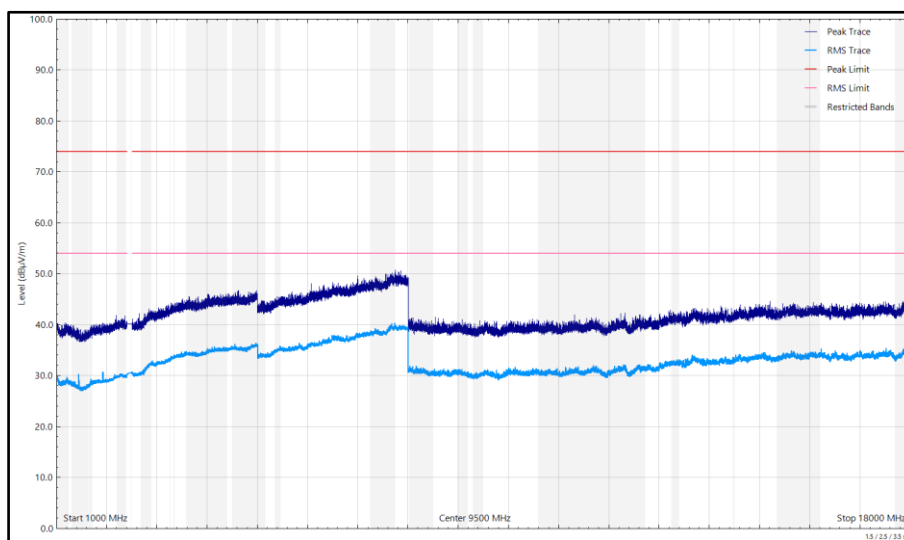


Figure 24 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz, Horizontal

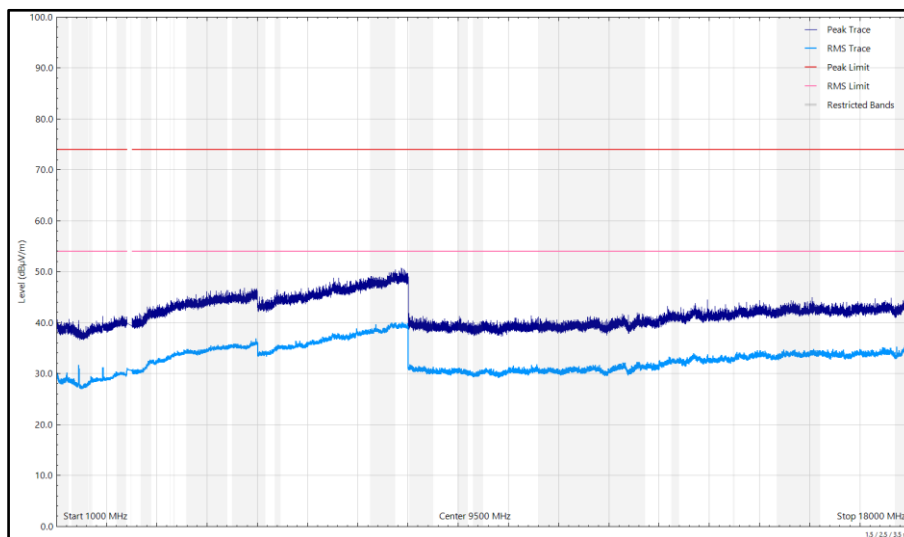


Figure 25 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 22 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

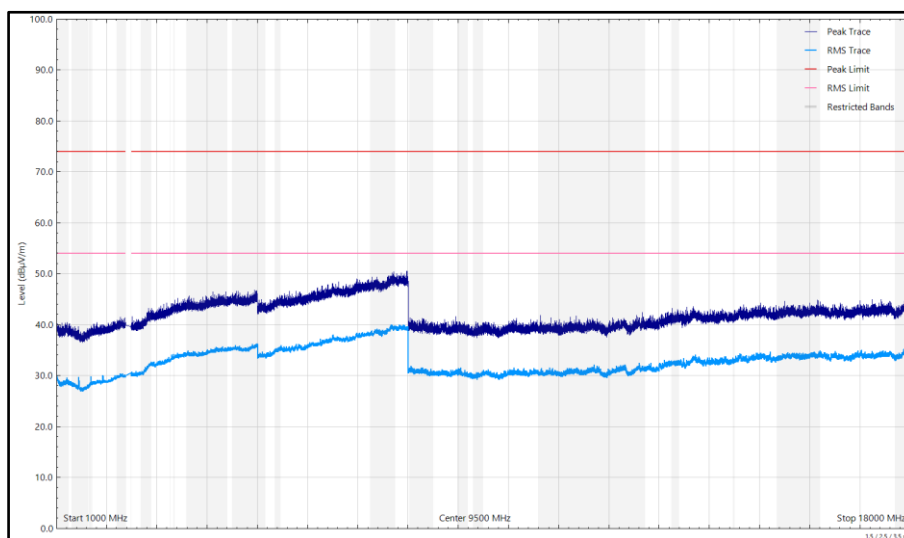


Figure 26 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz, Horizontal

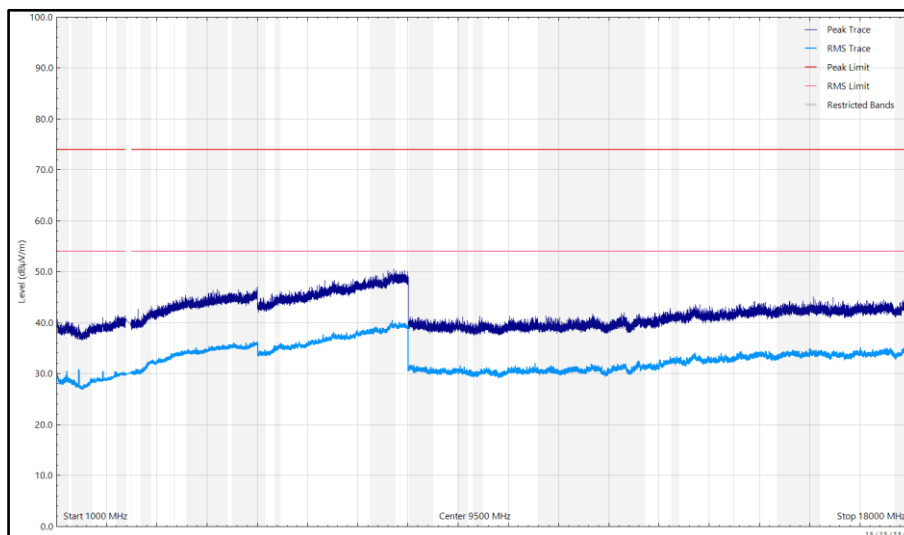


Figure 27 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
37.507	20.15	40.00	-19.85	Q-Peak	38	252	Horizontal
38.048	20.15	40.00	-19.85	Q-Peak	120	386	Vertical
73.670	18.66	40.00	-21.34	Q-Peak	243	157	Vertical
111.736	22.45	43.50	-21.05	Q-Peak	7	167	Vertical
129.181	21.67	43.50	-21.83	Q-Peak	34	389	Horizontal
169.644	20.25	43.50	-23.25	Q-Peak	98	118	Vertical
253.755	22.37	46.00	-23.63	Q-Peak	155	180	Horizontal
264.091	18.81	46.00	-27.19	Q-Peak	175	338	Vertical
331.082	21.25	46.00	-24.75	Q-Peak	289	385	Horizontal

Table 23 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 26 GHz

No other emissions found within 20 dB of the limit.

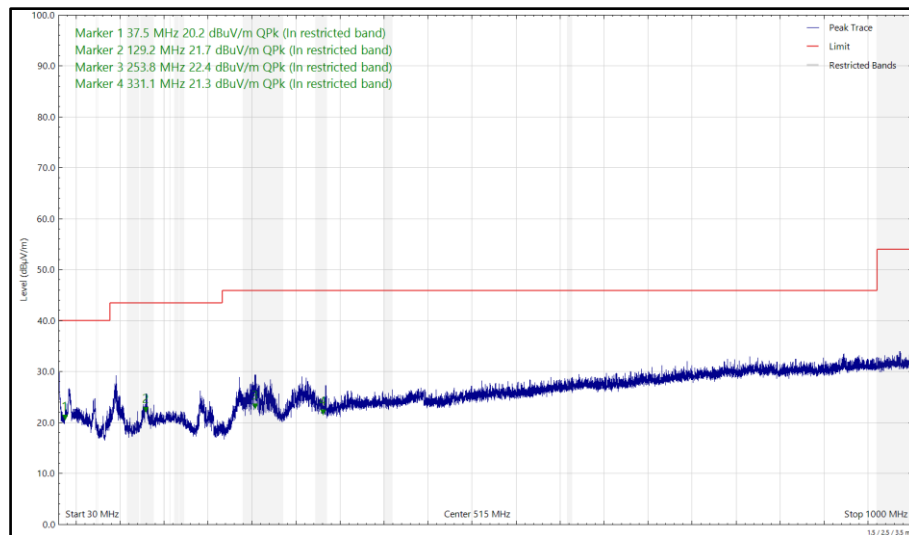


Figure 28 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

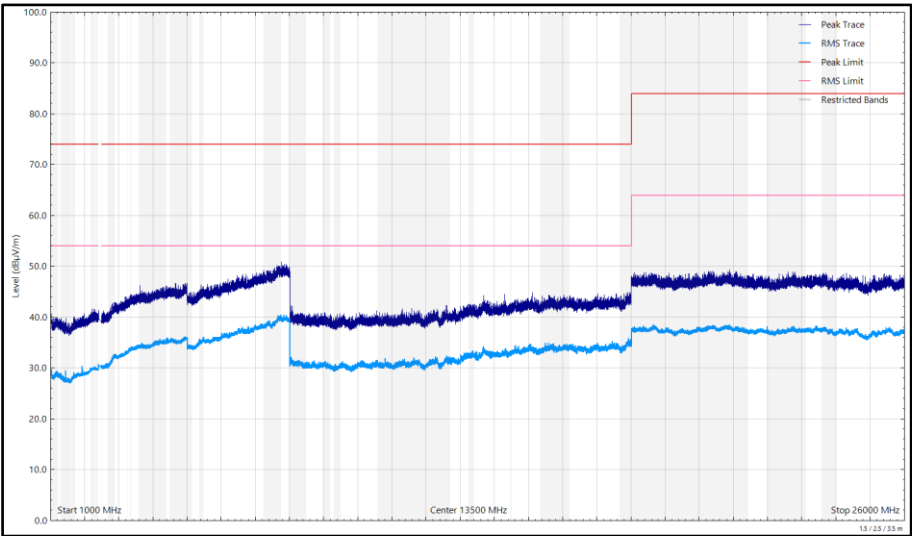


Figure 29 - 2440 MHz (CH18), Thread, iPA, Core 1, 1 GHz to 26 GHz, Horizontal

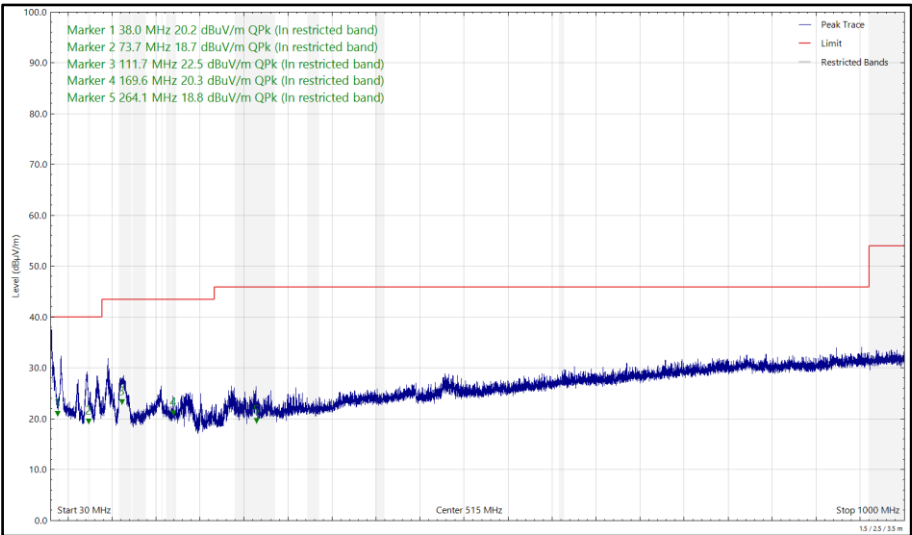
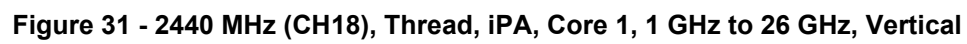


Figure 30 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)





Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 24 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

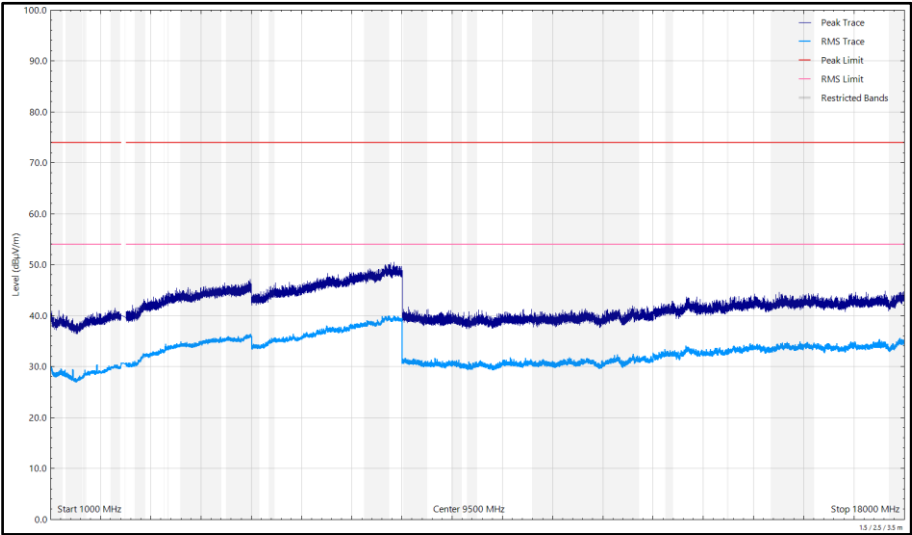


Figure 32 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz, Horizontal

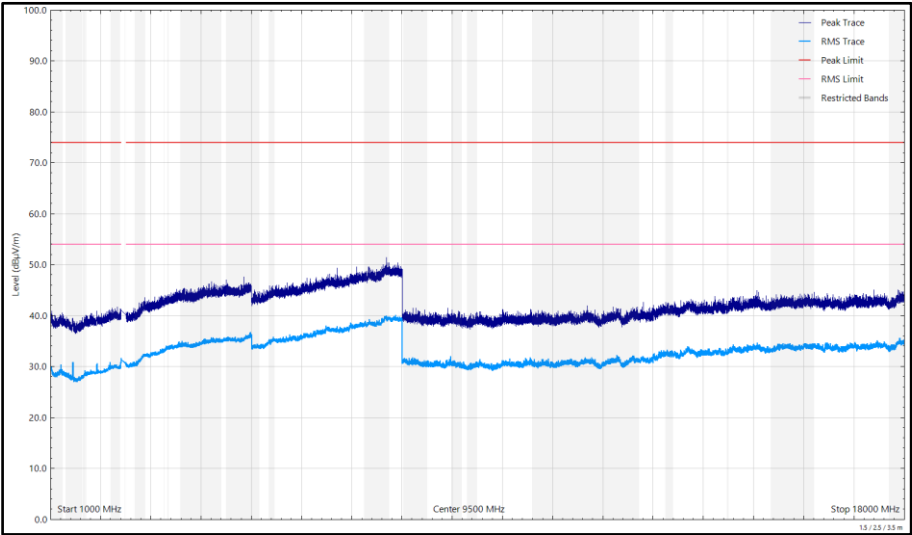


Figure 33 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz, Vertical



Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 25 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

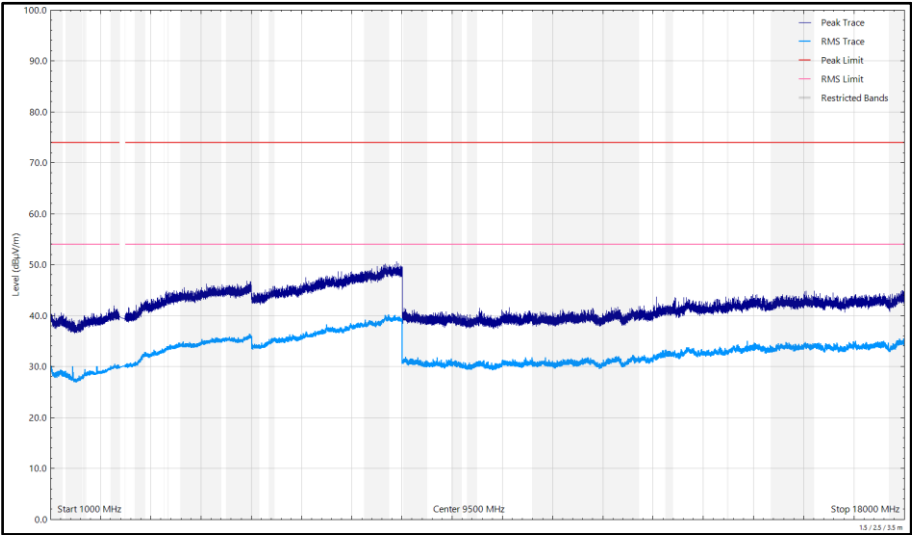


Figure 34 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz, Horizontal

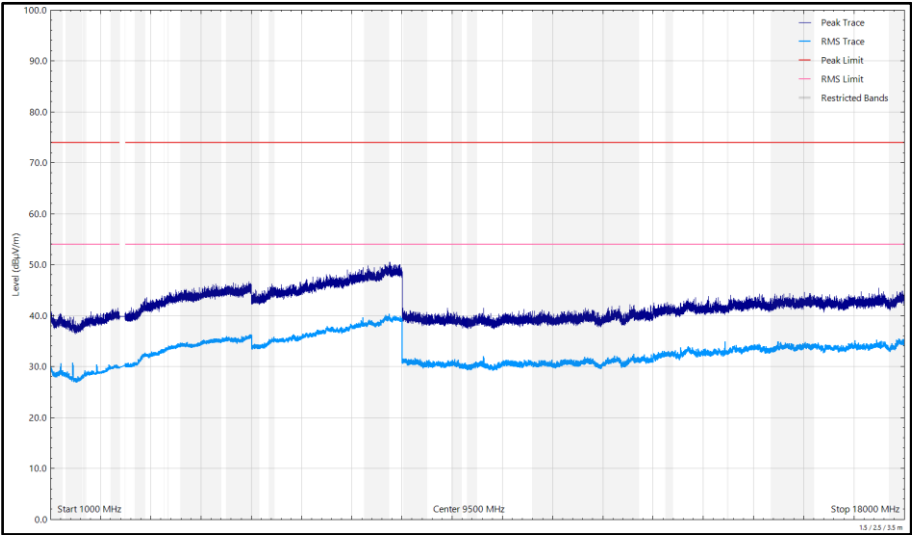


Figure 35 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
37.771	20.24	40.00	-19.76	Q-Peak	44	308	Horizontal
38.088	20.06	40.00	-19.94	Q-Peak	114	338	Vertical
73.392	17.26	40.00	-22.74	Q-Peak	140	342	Horizontal
73.913	18.09	40.00	-21.91	Q-Peak	282	102	Vertical
112.402	24.23	43.50	-19.27	Q-Peak	13	107	Vertical
134.071	19.13	43.50	-24.37	Q-Peak	196	381	Horizontal
251.385	20.96	46.00	-25.04	Q-Peak	196	156	Horizontal
263.652	20.74	46.00	-25.26	Q-Peak	163	103	Vertical
19515.780	47.06	63.50	-16.44	RMS	165	100	Vertical

Table 26 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 26 GHz

No other emissions found within 20 dB of the limit.

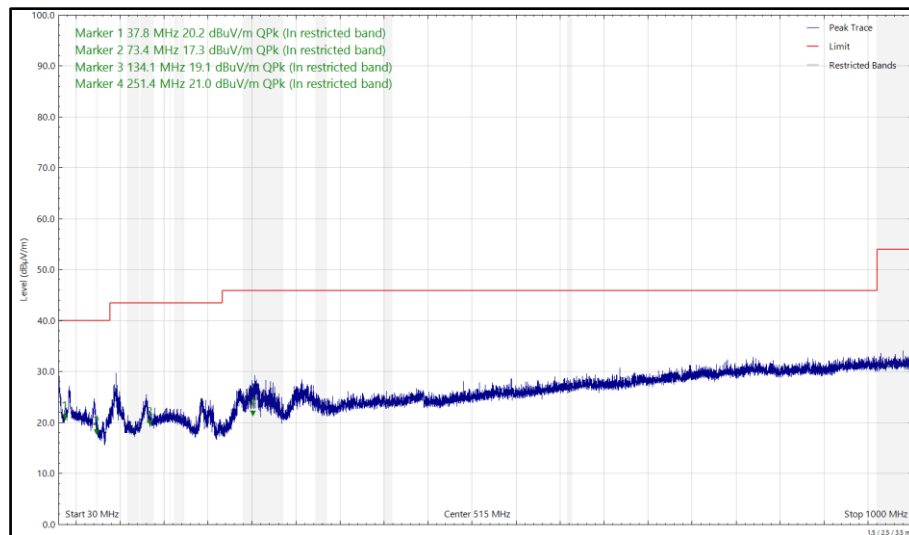


Figure 36 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 1 GHz, Horizontal (Peak)

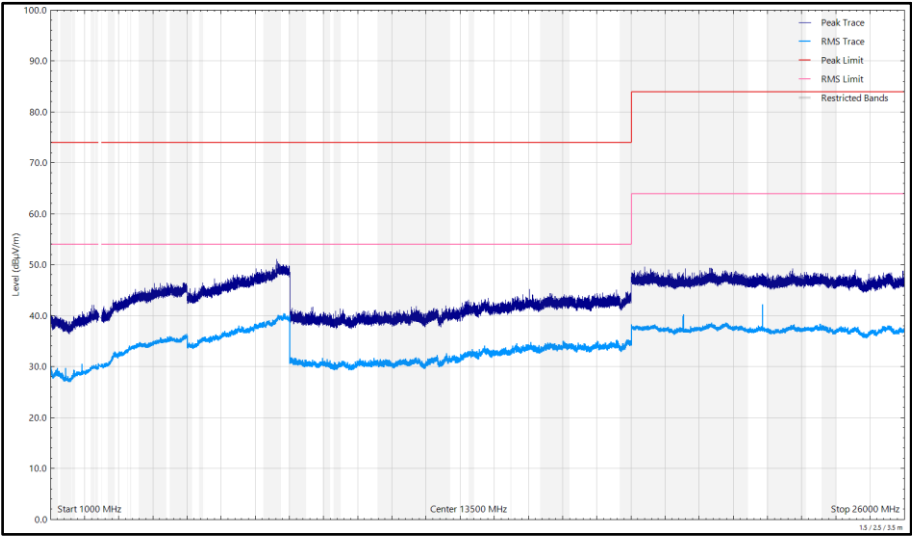


Figure 37 - 2440 MHz (CH18), Thread, iPA, Core 2, 1 GHz to 26 GHz, Horizontal

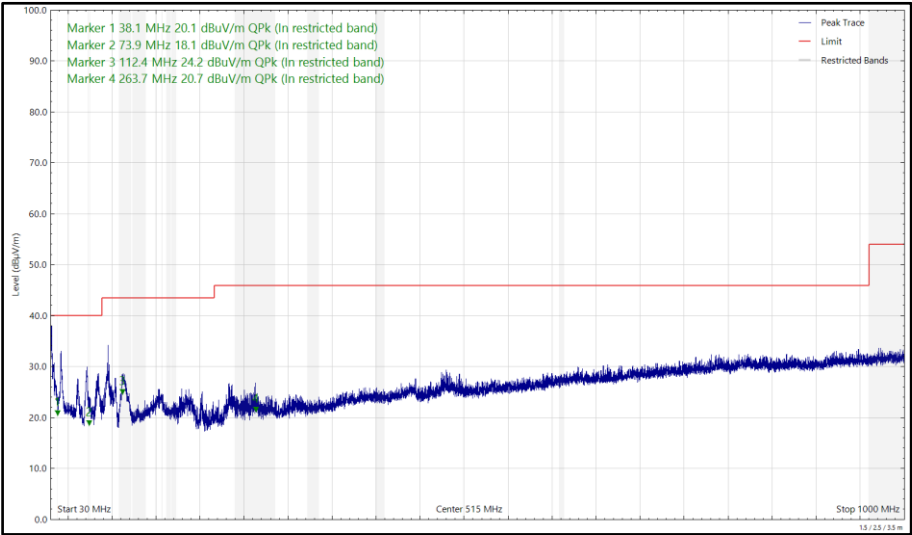


Figure 38 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 1 GHz, Vertical (Peak)

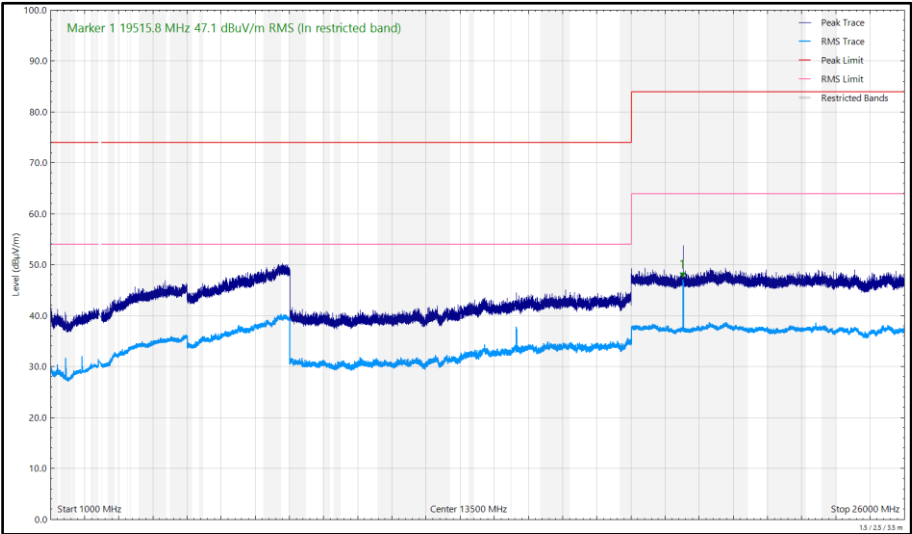


Figure 39 - 2440 MHz (CH18), Thread, iPA, Core 2, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 27 - 2475 MHz (CH25), Thread, iPA, Core 2, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

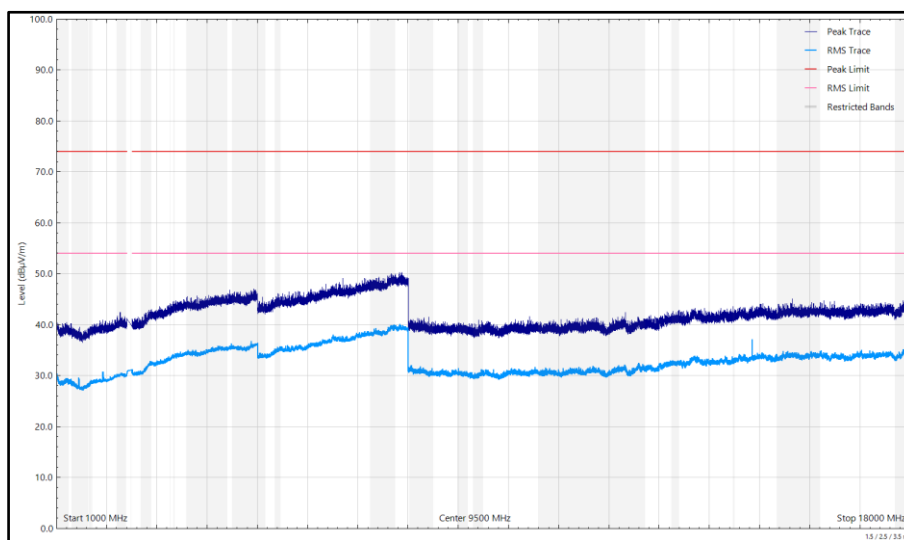


Figure 40 - 2475 MHz (CH25), Thread, iPA, Core 2, 1 GHz to 18 GHz, Horizontal

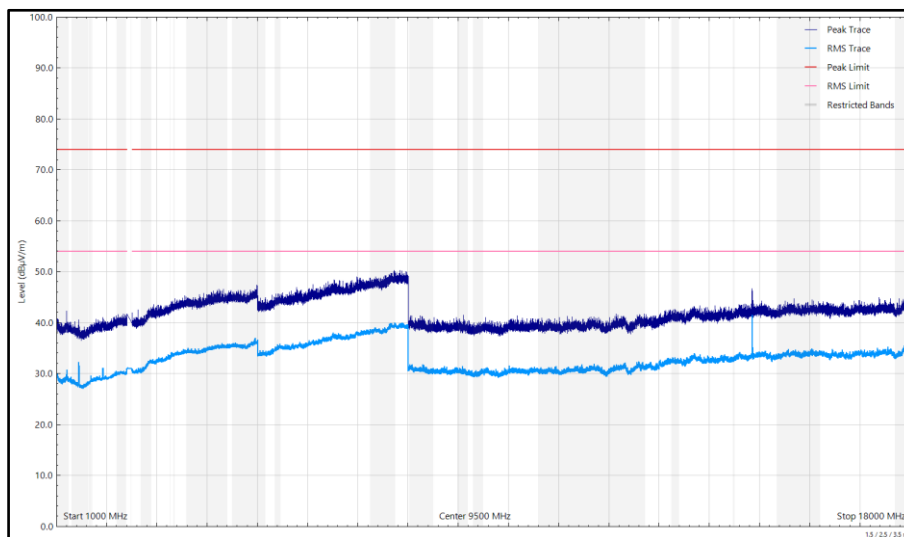


Figure 41 - 2475 MHz (CH25), Thread, iPA, Core 2, 1 GHz to 18 GHz, Vertical



FCC 47 CFR Part 15, Limit Clause 15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a)

ISED RSS-247, Limit Clause 6.6

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

In addition, radiated emissions which fall in the restricted bands, as defined in RSS-GEN, clause 8.10, must also comply with the radiated emission limits specified in RSS-GEN clause 8.9.

2.2.8 Test Location and Test Equipment Used

This test was carried out in RF Chamber 17 and RF Chamber 18.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.6	5125	-	TU
EMI Test Receiver	Rohde & Schwarz	ESW44	5911	12	29-Oct-2026
DRG Horn Antenna (7.5-18GHz)	Schwarzbeck	HWRD750	5940	12	18-May-2026
TRILOG Super Broadband Test Antenna	Schwarzbeck	VULB 9168	5943	24	05-Sep-2027
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5960	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5961	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6007	12	06-Jun-2026
Digital Multimeter	Fluke	115	6145	12	06-Jun-2026
Humidity & Temperature meter	R.S Components	1364	6149	12	28-Aug-2026
Double Ridge Active Horn Antenna (18-40 GHz)	Com-Power	AHA-840	6188	24	31-Jul-2026



Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
8GHz Highpass Filter	Wainwright	WHKX 7150 8000 18000 50SS	6195	12	23-Apr-2026
Pre Amp 8 - 18 GHz	Wright Technologies	APS06 0061	6198	12	09-Jun-2026
Attenuator 4dB	Pasternack	PE7074-4	6201	24	05-Sep-2027
Cable (SMA to SMA 20cm)	TUV SUD	MH-FH 8-18	6214	12	23-Apr-2026
EMI Test Receiver	Rohde & Schwarz	ESW44	6294	12	24-Feb-2026
USB Spectrum Analyser	Signal Hound	SA124B	6295	-	TU
USB Spectrum Analyser	Signal Hound	SA124B	6298	-	TU
Digital Multimeter	Fluke	115	6345	12	24-Jul-2026
Humidity and Temperature Meter	R.S Components	1364	6346	12	13-Mar-2026
1m Coaxial Cable Assy	Junkosha	MWX221-01000AMSAMS/A	6354	12	15-Apr-2026
3m Semi-Anechoic Chamber	Albatross Projects	Chamber 18	6597	36	08-May-2028
AC Power Supply	iTech	IT7324	6657	-	TU
3m Semi-Anechoic Chamber	Albatross Projects	RF Chamber 17	6658	36	07-May-2028
Mast and Turntable Controller	Maturo Gmbh	FCU3.0	6659	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	6660	-	TU
Turntable	Maturo Gmbh	TT1.5SI	6661	-	TU
2m Cable	Junkosha	MWX241-02000KMSKMS/B	6742	12	27-Apr-2026
Turntable	Maturo Gmbh	TT1.5SI	6797	-	TU
AC Programmable Power Supply	iTech	IT7324	6812	-	TU
Broad-Band Horn Antenna 1-10GHz N	Schwarzbeck	BBHA9120B	6825	12	14-Sep-2026
8m SMA-Type Cable	Junkosha	MWX221-08000AMSAMS/B	6846	12	23-Oct-2026
8m SMA-Type Cable	Junkosha	MWX221-08000AMSAMS/B	6850	12	23-Oct-2026
Cable Assembly	SpecTech	PE300-60	6859	-	TU
Cable Assembly	SpecTech	PE300-60	6860	-	TU
Cable Assembly	SpecTech	PE300-60	6861	-	TU
Cable Assembly	SpecTech	PE300-60	6863	-	TU
SAC Switch Unit	TUV SUD	TUV_SSU_004 PLC	6886	12	02-Dec-2026
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6975	12	05-Apr-2026
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6979	12	05-Apr-2026

Table 28

TU - Traceability Unscheduled



2.3 Authorised Band Edges

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d)
ISED RSS-247, Clause 6.6

2.3.2 Equipment Under Test and Modification State

A3428, S/N: FF9MP4FP2G - Modification State 0

2.3.3 Date of Test

27-October-2025

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.4.

2.3.5 Environmental Conditions

Ambient Temperature	22.3 °C
Relative Humidity	44.4 %



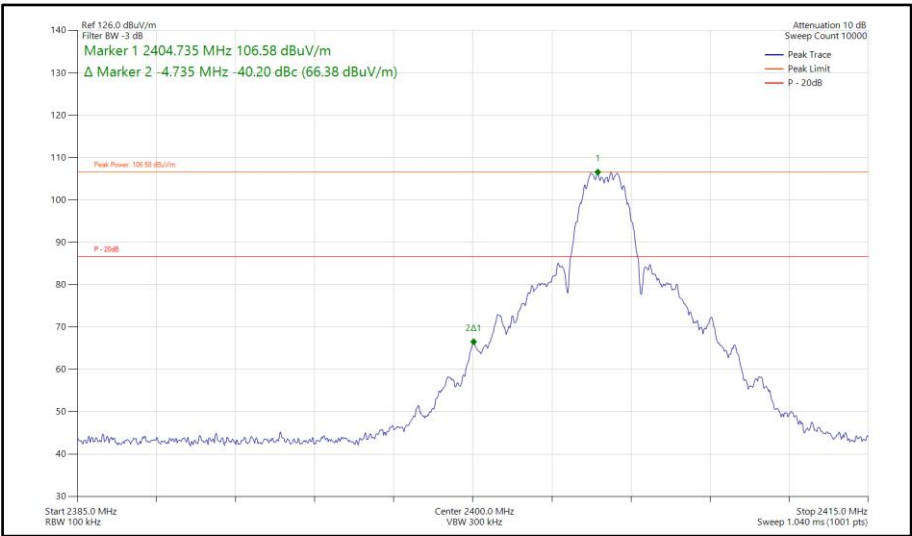
2.3.6 Test Results

Thread

iPA - Core 0 (SISO)

Mode	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Thread	2405	2400	-40.20

Table 29 - iPA, Core 0, SISO Authorised Band Edge Results



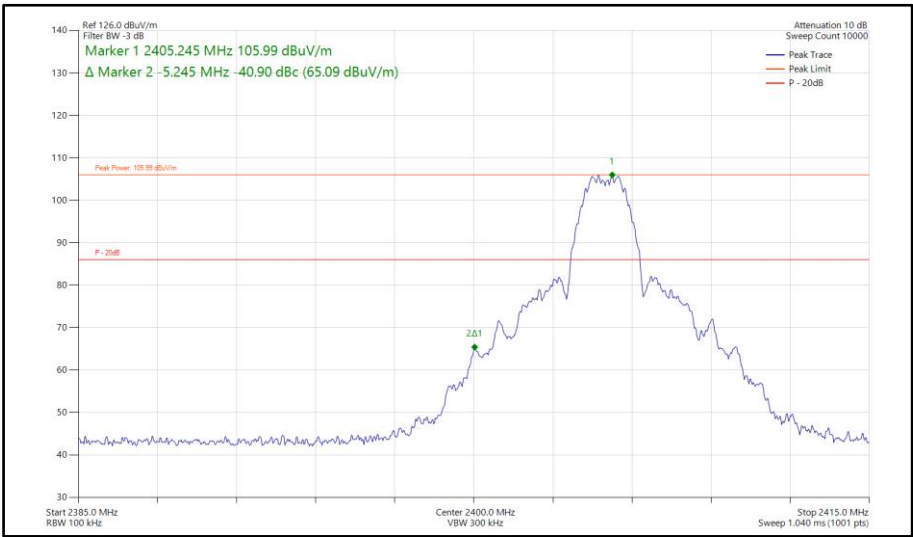
- Thread, iPA, SISO, Core 0 - 2405 MHz Band Edge Frequency 2400 MHz



iPA - Core 1 (SISO)

Mode	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Thread	2405	2400	-40.90

Table 30 - iPA, Core 1, SISO Authorised Band Edge Results



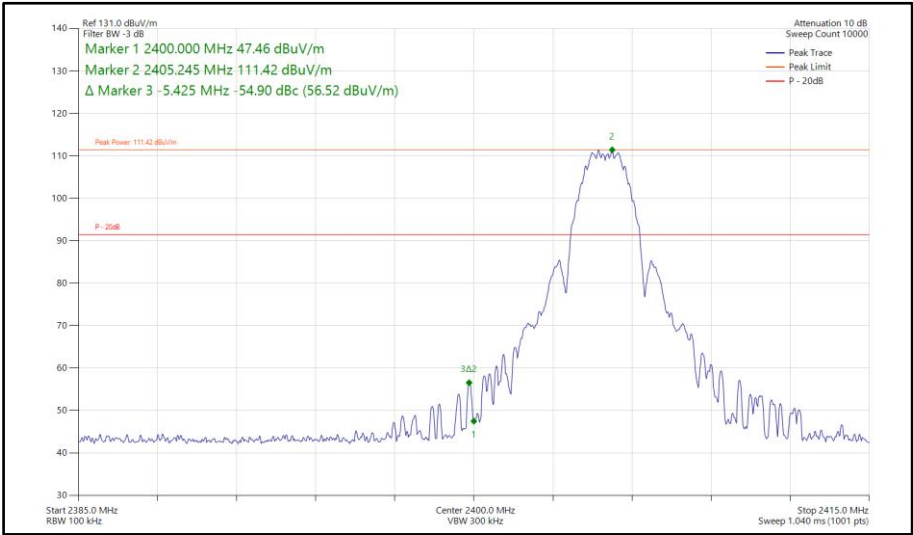
- Thread, iPA, SISO, Core 1 - 2405 MHz Band Edge Frequency 2400 MHz



iPA - Core 2 (SISO)

Mode	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Thread	2405	2400	-54.90

Table 31 - iPA, Core 2, SISO Authorised Band Edge Results



- Thread, iPA, SISO, Core 2 - 2405 MHz Band Edge Frequency 2400 MHz



ePA - Core 0 (SISO)

Mode	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Thread	2405	2400	-66.24

Table 32 - ePA, Core 0, SISO Authorised Band Edge Results

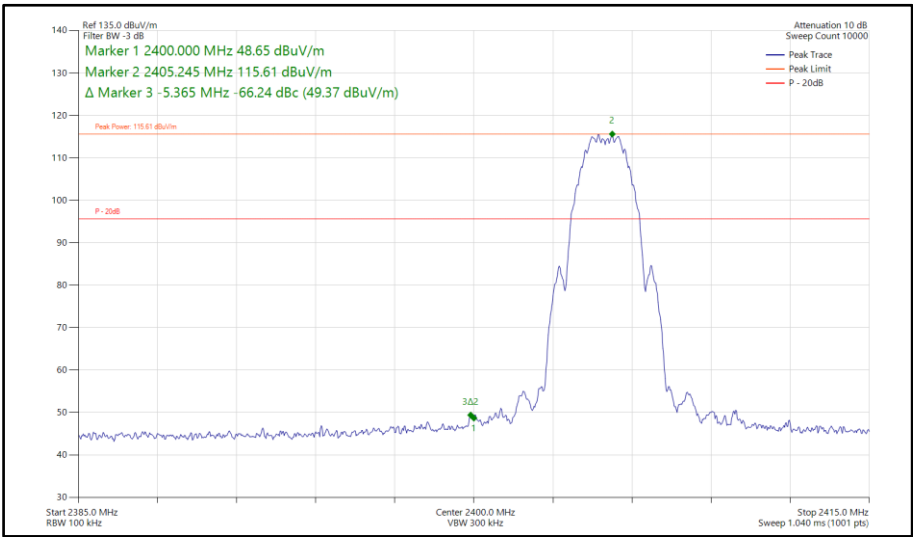


Figure 42 - Thread, ePA, SISO, Core 0 - 2405 MHz Band Edge Frequency 2400 MHz



ePA - Core 1 (SISO)

Mode	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Thread	2405	2400	-68.28

Table 33 - ePA, Core 1, SISO Authorised Band Edge Results

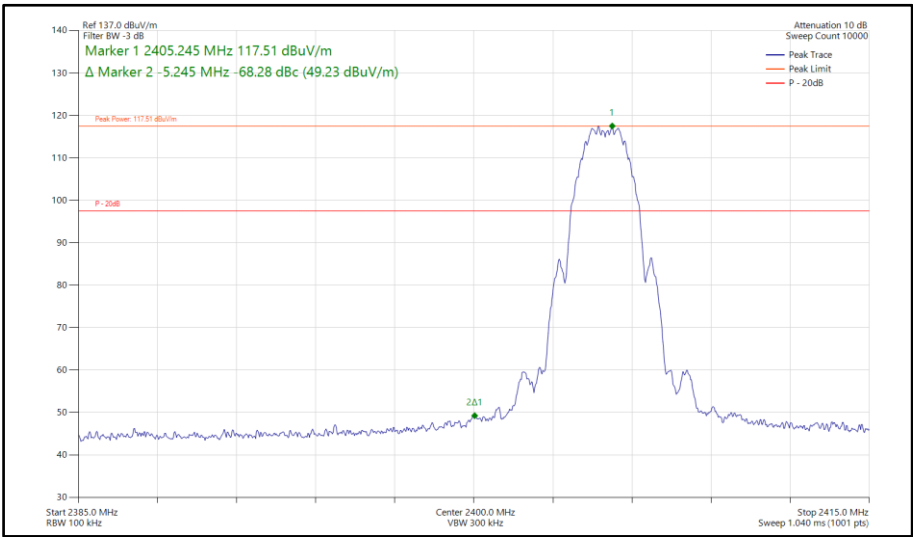


Figure 43 - Thread, ePA, SISO, Core 1 - 2405 MHz Band Edge Frequency 2400 MHz



ePA - Core 2 (SISO)

Mode	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Thread	2405	2400	-56.03

Table 34 - ePA, Core 2, SISO Authorised Band Edge Results

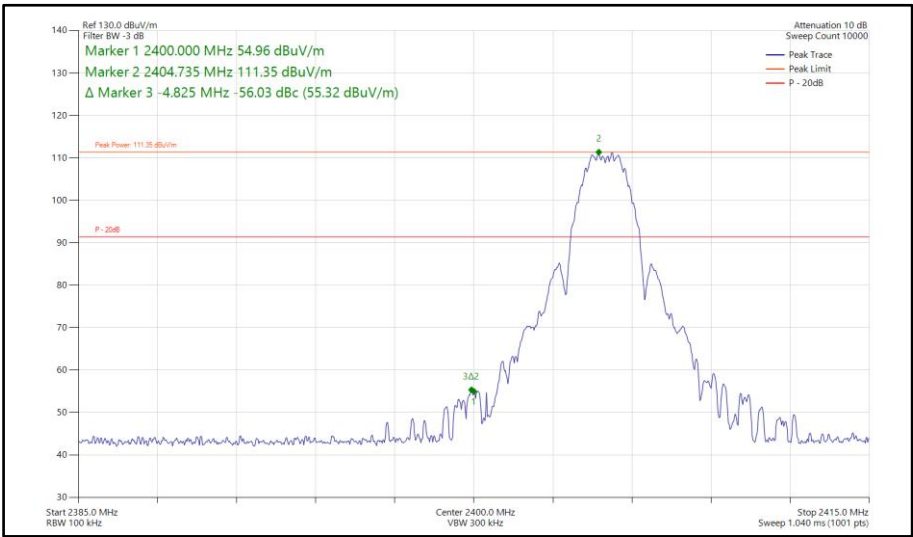


Figure 44 - Thread, ePA, SISO, Core 2 - 2405 MHz Band Edge Frequency 2400 MHz

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

ISED RSS-247, Limit Clause 6.6

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.



2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 15.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.6.1 V.	5125	-	O/P Mon
Test Receiver	Rohde & Schwarz	ESW44	5914	12	17-Jun-2026
1500W (300V 12A) AC Power Supply	iTech	IT7324	5956	-	O/P Mon
5m Semi-Anechoic Chamber (Dual-Axis), Chamber 15	Albatross Projects	RF Chamber 15	5963	36	23-Apr-2028
Compact Antenna Mast	Maturo Gmbh	CAM4.0-P	5964	-	TU
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5966	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5967	-	TU
Turntable	Maturo Gmbh	TT1.5SI	5968	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5996	12	23-May-2026
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6018	12	12-Jun-2026
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6141	12	14-Sep-2026
SAC Switch Unit	TUV SUD	TUV_SSU_001	6144	12	05-Dec-2026
Digital Multimeter	Fluke	115	6146	12	05-Jun-2026
EMI Test Receiver	Rohde & Schwarz	ESW44	6294	12	24-Feb-2026
USB Spectrum Analyser	Signal Hound	SA124B	6297	-	TU
USB Spectrum Analyser	Signal Hound	SA124B	6298	-	TU
Digital Multimeter	Fluke	115	6345	12	24-Jul-2026
Humidity and Temperature Meter	R.S Components	1364	6346	12	13-Mar-2026
SAC Switch Unit	TUV SUD	TUV_SSU_004 PLC	6349	12	16-May-2026
Horn Antenna (1–10.5 GHz)	Schwarzbeck	BBHA 9120 B	6457	12	14-Sep-2026
Humidity and Temperature Meter	R.S Components	1364	6486	12	01-Jul-2026
AC Power Supply	iTech	IT7324	6657	-	O/P Mon
3m Semi-Anechoic Chamber	Albatross Projects	RF Chamber 17	6658	36	07-May-2028
Mast and Turntable Controller	Maturo Gmbh	FCU3.0	6659	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	6660	-	TU
Turntable	Maturo Gmbh	TT1.5SI	6661	-	TU
1m Cable	Junkosha	MWX241-01000AMSAMS/B	6740	12	27-Apr-2026
8M SMA Cable	Junkosha	MWX221-08000AMSAMS/B	6833	12	18-Aug-2026
8m SMA-Type Cable	Junkosha	MWX221-08000AMSAMS/B	6846	12	23-Oct-2026



Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Cable Assembly	Pasternack	PE300-60	6856	-	TU
Cable Assembly	Pasternack	PE300-60	6859	-	TU
Cable Assembly	Pasternack	PE300-60	6860	-	TU
Cable Assembly	Pasternack	PE300-60	6862	-	TU
Cable Assembly	Pasternack	PE300-60	6868	-	TU
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6976	12	05-Apr-2026
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6979	12	05-Apr-2026

Table 35

TU - Traceability Unscheduled
O/P Mon - Output Monitored using calibrated equipment



2.4 Maximum Conducted Output Power

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b)
ISED RSS-247, Clause 6.3.2
ISED RSS-GEN, Clause 6.12

2.4.2 Equipment Under Test and Modification State

A3428, S/N: G9F4Y6NJ31 - Modification State 0

2.4.3 Date of Test

10-January-2026 to 15-January-2026

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 11.9.2.3.2 Method AVGPM-G

2.4.5 Environmental Conditions

Ambient Temperature	22.2 - 24.6 °C
Relative Humidity	31.6 - 44.9 %



2.4.6 Test Results

Thread

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	5.80
Active Port(s):	A (Core 0)	Active Chain(s):	0

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2405	8.89	-	-	-	8.89	30.00	-21.11
2440	8.98	-	-	-	8.98	30.00	-21.02
2475	8.76	-	-	-	8.76	30.00	-21.24

Table 36 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2405	8.89	-	-	-	8.89	30.00	-21.11	14.69	36.00	-21.31
2440	8.98	-	-	-	8.98	30.00	-21.02	14.78	36.00	-21.22
2475	8.76	-	-	-	8.76	30.00	-21.24	14.56	36.00	-21.44

Table 37 - ISSED Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	2.20
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2405	-	8.79	-	-	8.79	30.00	-21.21
2440	-	8.68	-	-	8.68	30.00	-21.32
2475	-	8.96	-	-	8.96	30.00	-21.04

Table 38 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2405	-	8.79	-	-	8.79	30.00	-21.21	10.99	36.00	-25.01
2440	-	8.68	-	-	8.68	30.00	-21.32	10.88	36.00	-25.12
2475	-	8.96	-	-	8.96	30.00	-21.04	11.16	36.00	-24.84

Table 39 - ISSED Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	5.00
Active Port(s):	C (Core 2)	Active Chain(s):	2

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2405	-	-	8.08	-	8.08	30.00	-21.92
2440	-	-	8.04	-	8.04	30.00	-21.96
2475	-	-	8.07	-	8.07	30.00	-21.93

Table 40 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2405	-	-	8.08	-	8.08	30.00	-21.92	13.08	36.00	-22.92
2440	-	-	8.04	-	8.04	30.00	-21.96	13.04	36.00	-22.96
2475	-	-	8.07	-	8.07	30.00	-21.93	13.07	36.00	-22.93

Table 41 - ISSED Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread ePA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	5.80
Active Port(s):	A (Core 0)	Active Chain(s):	0

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2405	20.92	-	-	-	20.92	30.00	-9.08
2440	20.55	-	-	-	20.55	30.00	-9.45
2475	20.89	-	-	-	20.89	30.00	-9.11

Table 42 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2405	20.92	-	-	-	20.92	30.00	-9.08	26.72	36.00	-9.28
2440	20.55	-	-	-	20.55	30.00	-9.45	26.35	36.00	-9.65
2475	20.89	-	-	-	20.89	30.00	-9.11	26.69	36.00	-9.31

Table 43 - ISSED Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread ePA	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	2.20
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2405	-	20.90	-	-	20.90	30.00	-9.10
2440	-	20.65	-	-	20.65	30.00	-9.35
2475	-	20.66	-	-	20.66	30.00	-9.34

Table 44 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2405	-	20.90	-	-	20.90	30.00	-9.10	23.10	36.00	-12.90
2440	-	20.65	-	-	20.65	30.00	-9.35	22.85	36.00	-13.15
2475	-	20.66	-	-	20.66	30.00	-9.34	22.86	36.00	-13.14

Table 45 - ISED Maximum Conducted (average) Output Power Results

FCC 47 CFR Part 15, Limit Clause 15.247 (b)(3)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

ISED RSS-247, Limit Clause 6.3.2

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e) of the specification.



2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.6.1	5125	-	TU
TRILOG Super Broadband Test Antenna	Schwarzbeck	VULB 9168	5944	24	03-Jan-2027
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6018	12	12-Jun-2026
Double Ridge Active Horn Antenna (18-40 GHz)	Com-Power	AHA-840	6188	24	31-Jul-2026
8GHz Highpass Filter	Wainwright	WHKX 7150 8000 18000 50SS	6194	12	23-Apr-2026
Pre Amp 8 - 18 GHz	Wright Technologies	APS06 0061	6200	12	24-Apr-2026
Attenuator 4dB	Pasternack	PE7074-4	6203	24	03-Jan-2027
Cable (SMA to SMA 20cm)	TUV SUD	MH-FH 8-18	6215	12	23-Apr-2026
EMI Test Receiver	Rohde & Schwarz	ESW44	6294	12	24-Feb-2026
USB Spectrum Analyser	Signal Hound	SA124B	6298	-	TU
Digital Multimeter	Fluke	115	6345	12	24-Jul-2026
Humidity and Temperature Meter	R.S Components	1364	6346	12	13-Mar-2026
SAC Switch Unit	TUV SUD	TUV_SSU_004 PLC	6349	12	16-May-2026
Horn Antenna (1–10.5 GHz)	Schwarzbeck	BBHA 9120 B	6457	12	14-Sep-2026
Digital Multimeter	R.S Components	RS-14	6485	12	TU
AC Power Supply	iTech	IT7324	6657	-	TU
3m Semi-Anechoic Chamber	Albatross Projects	RF Chamber 17	6658	36	07-May-2028
Mast and Turntable Controller	Maturo Gmbh	FCU3.0	6659	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	6660	-	TU
Turntable	Maturo Gmbh	TT1.5SI	6661	-	TU
2m Cable	Junkosha	MWX241-02000KMSKMS/B	6742	12	27-Apr-2026
8m SMA-Type Cable	Junkosha	MWX221-08000AMSAMS/B	6846	12	23-Oct-2026
Cable Assembly	Pasternack	PE300-60	6859	-	TU
Cable Assembly	Pasternack	PE300-60	6860	-	TU
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6979	12	05-Apr-2026

Table 46

TU - Traceability Unscheduled



2.5 Emission Bandwidth

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(2)
ISED RSS-247, Clause 6.3.1
ISED RSS-GEN, Clause 6.7

2.5.2 Equipment Under Test and Modification State

A3428, S/N: DJLX49TWH4 - Modification State 0

2.5.3 Date of Test

10-January-2026 to 15-January-2026

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.8.1 for 6 dB BW and 6.9.3 for 99% occupied bandwidth measurements.

2.5.5 Environmental Conditions

Ambient Temperature	22.2 - 24.6 °C
Relative Humidity	31.6 - 44.9 %



2.5.6 Test Results

Thread

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 (a)	Test Method(s):	C63.10 6.9.3 C63.10 6.9.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	-
Active Port(s):	A (Core 0)	Active Chain(s):	0

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405	1.640	-	-	-	≥500.0
2440	1.632	-	-	-	≥500.0
2475	1.648	-	-	-	≥500.0

Table 47 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405	2.224	-	-	-	-
2440	2.216	-	-	-	-
2475	2.224	-	-	-	-

Table 48 - 99% Bandwidth Results

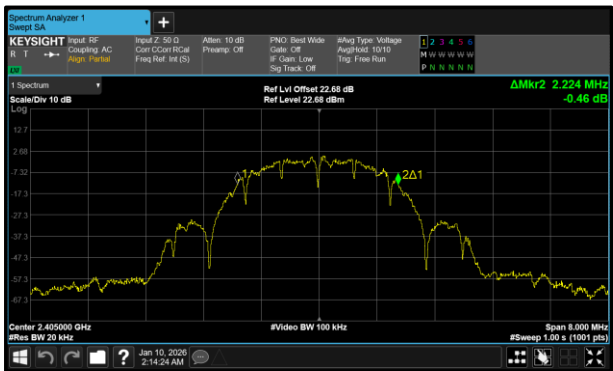


Figure 45 - Core 0 (A) 2405 MHz (CH11) 99% Bandwidth

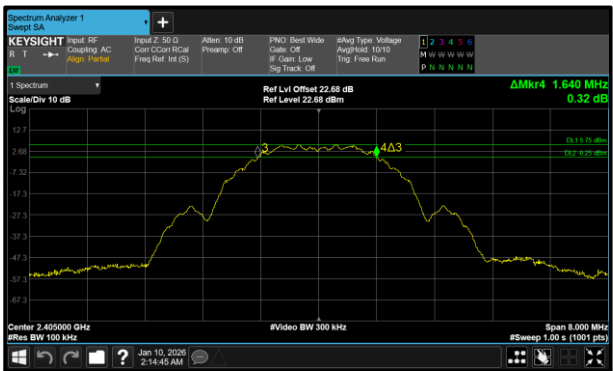


Figure 46 - Core 0 (A) 2405 MHz (CH11) 6 dB Bandwidth

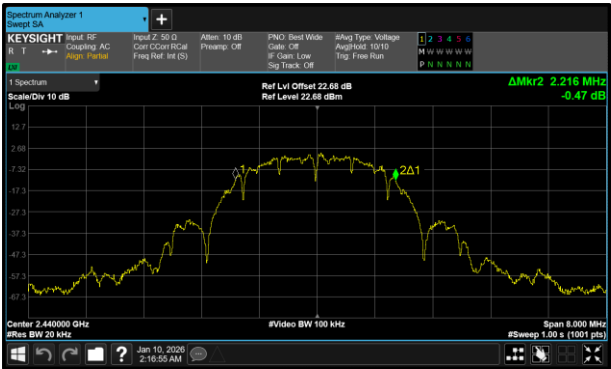


Figure 47 - Core 0 (A) 2440 MHz (CH18) 99% Bandwidth

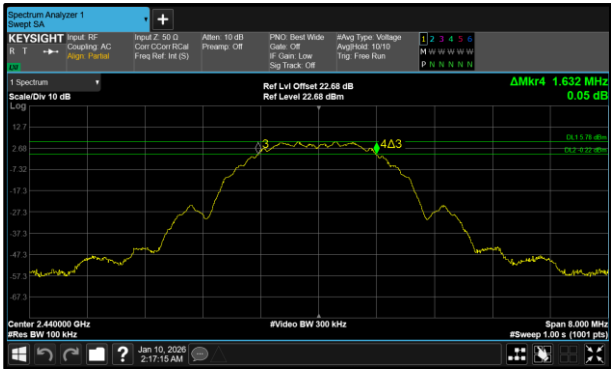


Figure 48 - Core 0 (A) 2440 MHz (CH18) 6 dB Bandwidth

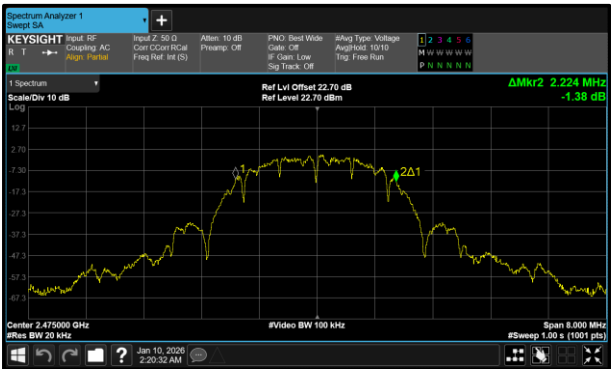


Figure 49 - Core 0 (A) 2475 MHz (CH25) 99% Bandwidth

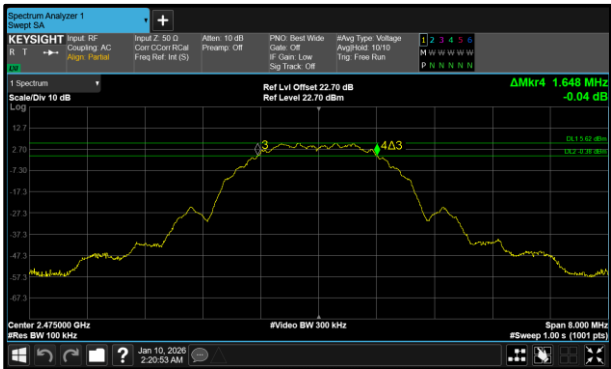


Figure 50 - Core 0 (A) 2475 MHz (CH25) 6 dB Bandwidth



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 (a)	Test Method(s):	C63.10 6.9.3 C63.10 6.9.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	-
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405	-	1.640	-	-	≥500.0
2440	-	1.640	-	-	≥500.0
2475	-	1.632	-	-	≥500.0

Table 49 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405	-	2.224	-	-	-
2440	-	2.216	-	-	-
2475	-	2.224	-	-	-

Table 50 - 99% Bandwidth Results

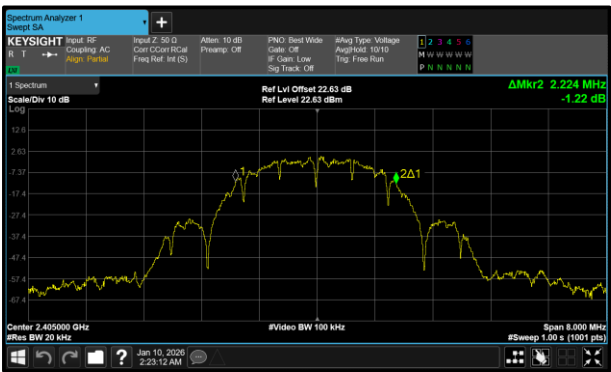


Figure 51 - Core 1 (B) 2405 MHz (CH11) 99% Bandwidth

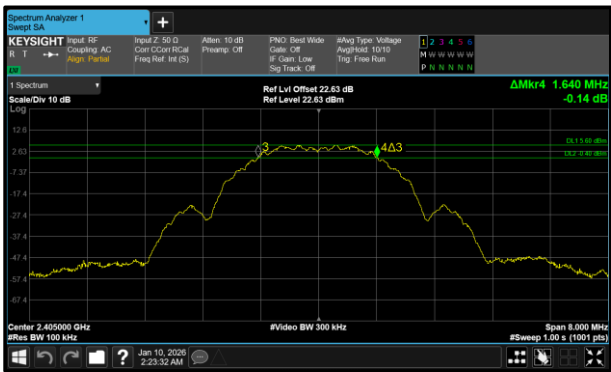


Figure 52 - Core 1 (B) 2405 MHz (CH11) 6 dB Bandwidth

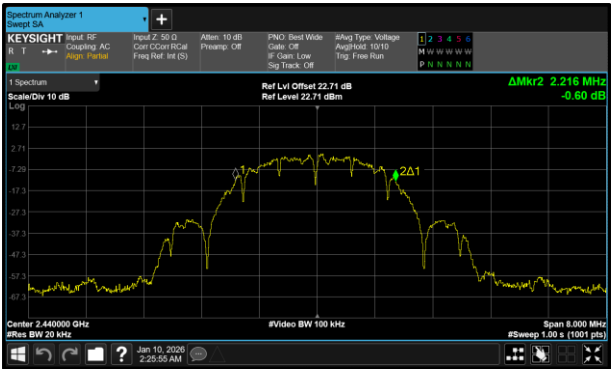


Figure 53 - Core 1 (B) 2440 MHz (CH18) 99% Bandwidth

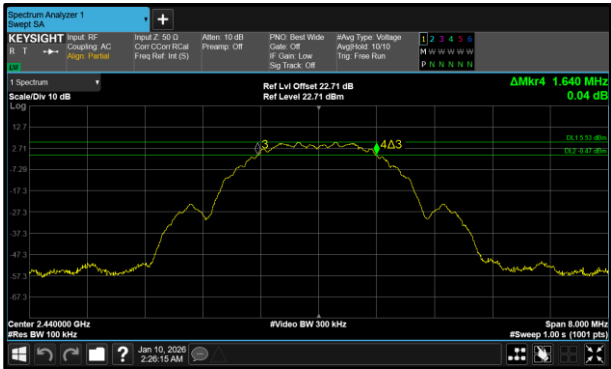


Figure 54 - Core 1 (B) 2440 MHz (CH18) 6 dB Bandwidth

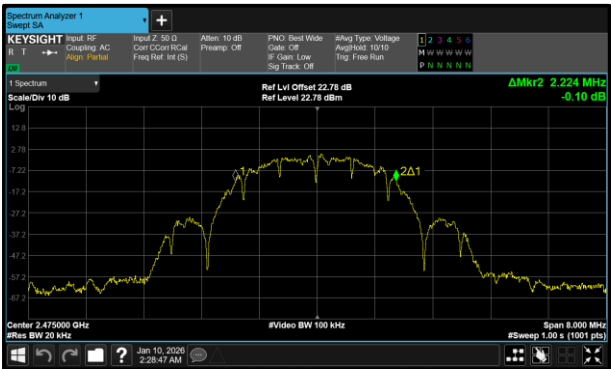


Figure 55 - Core 1 (B) 2475 MHz (CH25) 99% Bandwidth

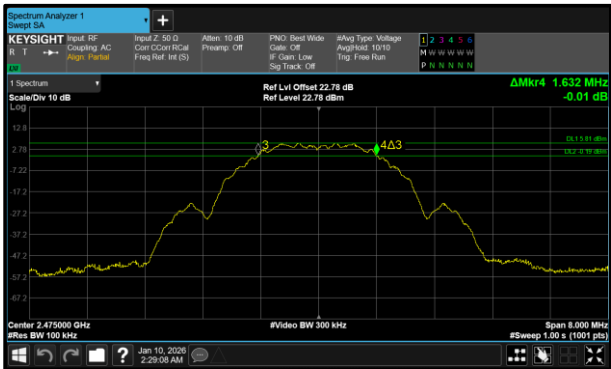


Figure 56 - Core 1 (B) 2475 MHz (CH25) 6 dB Bandwidth



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 (a)	Test Method(s):	C63.10 6.9.3 C63.10 6.9.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA	Duty Cycle (%):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	-
Active Port(s):	C (Core 2)	Active Chain(s):	2

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405	-	-	1.608	-	≥500.0
2440	-	-	1.616	-	≥500.0
2475	-	-	1.616	-	≥500.0

Table 51 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405	-	-	2.192	-	-
2440	-	-	2.200	-	-
2475	-	-	2.192	-	-

Table 52 - 99% Bandwidth Results

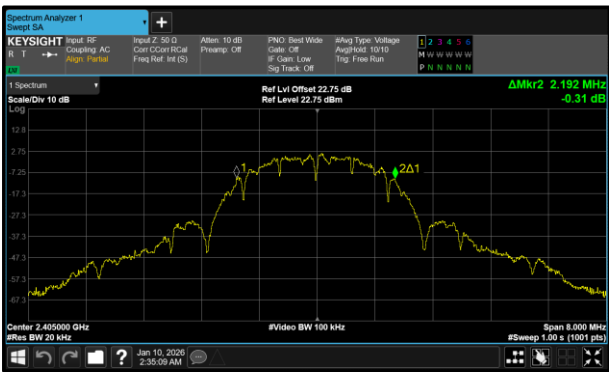


Figure 57 - Core 2 (C) 2405 MHz (CH11) 99% Bandwidth

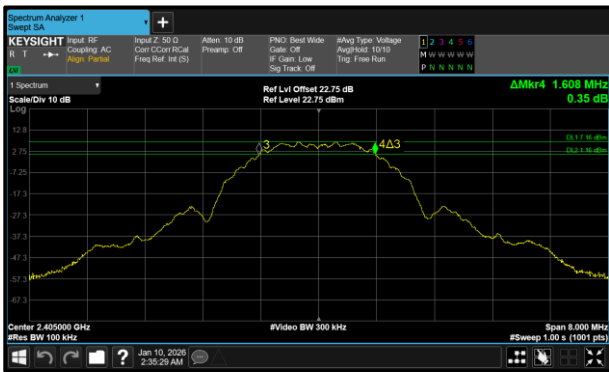


Figure 58 - Core 2 (C) 2405 MHz (CH11) 6 dB Bandwidth

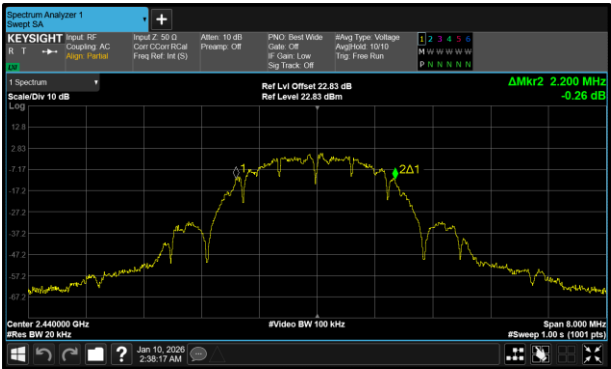


Figure 59 - Core 2 (C) 2440 MHz (CH18) 99% Bandwidth

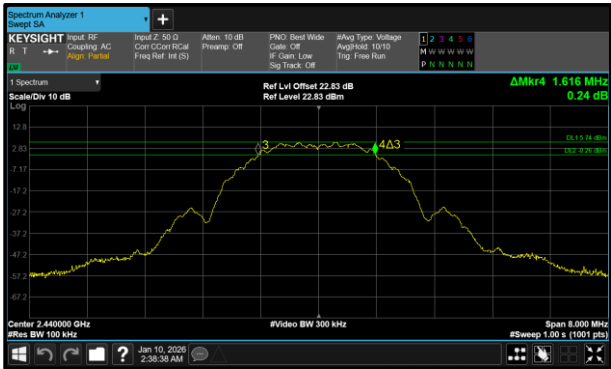


Figure 60 - Core 2 (C) 2440 MHz (CH18) 6 dB Bandwidth

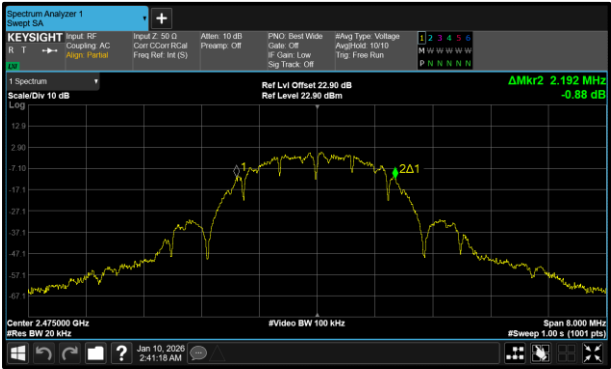


Figure 61 - Core 2 (C) 2475 MHz (CH25) 99% Bandwidth

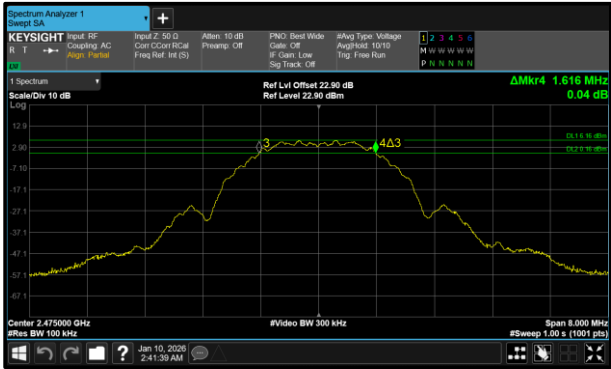


Figure 62 - Core 2 (C) 2475 MHz (CH25) 6 dB Bandwidth



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 (a)	Test Method(s):	C63.10 6.9.3 C63.10 6.9.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread ePA	Duty Cycle (%):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	-
Active Port(s):	A (Core 0)	Active Chain(s):	0

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405	1.608	-	-	-	≥500.0
2440	1.616	-	-	-	≥500.0
2475	1.608	-	-	-	≥500.0

Table 53 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405	2.184	-	-	-	-
2440	2.192	-	-	-	-
2475	2.200	-	-	-	-

Table 54 - 99% Bandwidth Results



Figure 63 - Core 0 (A) 2405 MHz (CH11) 99% Bandwidth

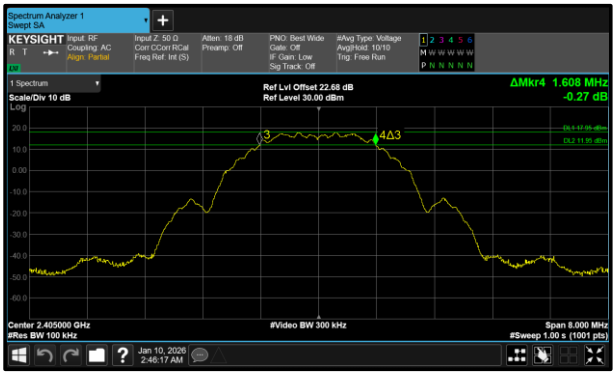


Figure 64 - Core 0 (A) 2405 MHz (CH11) 6 dB Bandwidth



Figure 65 - Core 0 (A) 2440 MHz (CH18) 99% Bandwidth

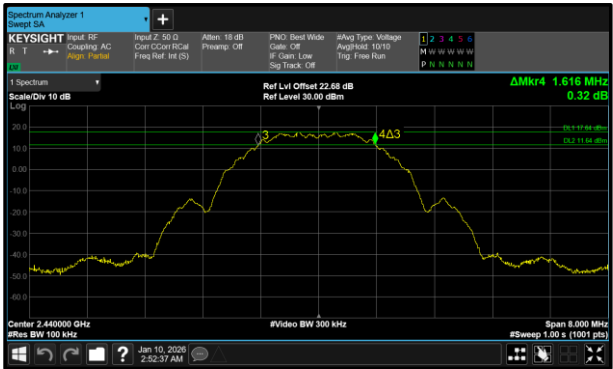


Figure 66 - Core 0 (A) 2440 MHz (CH18) 6 dB Bandwidth

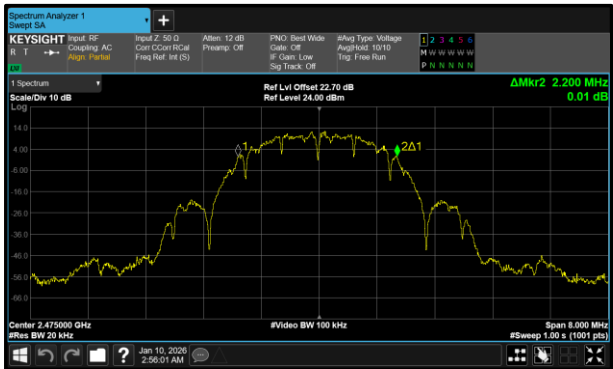


Figure 67 - Core 0 (A) 2475 MHz (CH25) 99% Bandwidth

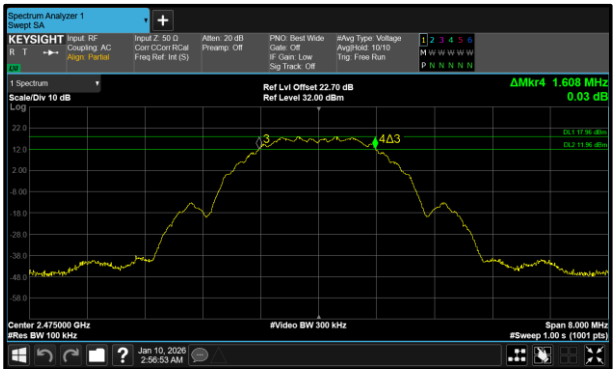


Figure 68 - Core 0 (A) 2475 MHz (CH25) 6 dB Bandwidth