

# FCC and ISED Test Report

Apple Inc  
Model: A3546



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

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## COMMERCIAL-IN-CONFIDENCE

Document 75967471-16 Issue 01



### SIGNATURE

| NAME         | JOB TITLE                   | RESPONSIBLE FOR      | ISSUE DATE   |
|--------------|-----------------------------|----------------------|--------------|
| Steven White | Senior Technical Specialist | Authorised Signatory | 29 July 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 Generation | George Capps | 29 July 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           | 29 July 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<br>ISED RSS-247: Issue 4 (2025-07)<br>ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02) |
| Start of Test                 | 06-June-2026                                                                                                   |
| Finish of Test                | 20-July-2026                                                                                                   |
| Name of Engineer(s)           | Gridi Bilali, Marius Vasii, Akhil Rajendran Bhaskaran Nair,<br>Thilanka Savirunath Liyanage, Obinna Eze        |
| 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, ISED RSS-247 and ISED 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 desktop computer

### 1.4.2 Test Modes

The EUT's 2.4 GHz Thread radio supports SISO operation on three different cores and has two power settings: Lower Power "iPA" & High Power "ePA, with operation on Core 2 limited to Lower Power "iPA"

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) | 2402                  | 1.2             | 0.71                      |
|              | 2441                  | 1.1             | 0.71                      |
|              | 2480                  | 0.7             | 0.71                      |
| Core 1 (WF3) | 2402                  | 1.4             | 0.71                      |
|              | 2441                  | 1.1             | 0.71                      |
|              | 2480                  | 0.4             | 0.71                      |
| Core 2 (WF2) | 2402                  | 1.0             | 0.71                      |
|              | 2441                  | 0.4             | 0.71                      |
|              | 2480                  | -0.3            | 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: A3546  |                  |                  |
| Serial Number | Hardware Version | Software Version |
| KMW4GY9740    | REV1.0           | 26A322           |
| JYKX4WQ023    | REV1.0           | 26A322           |

**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: A3546, Serial Number: KMW4GY9740 |                                                 |                        |                          |
| 0                                       | As supplied by the customer                     | Not Applicable         | Not Applicable           |
| Model: A3546, Serial Number: JYKX4WQ023 |                                                 |                        |                          |
| 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 |                                                                                          |               |
| Restricted Band Edges          | Gridi Bilali                                                                             | UKAS          |
| Emission Bandwidth             | Obinna Eze                                                                               | UKAS          |
| Maximum Conducted Output Power | Obinna Eze                                                                               | UKAS          |
| Authorised Band Edges          | Gridi Bilali                                                                             | UKAS          |
| Spurious Radiated Emissions    | Gridi Bilali, Marius Vasii, Akhil Rajendran Bhaskaran Nair, Thilanka Savirunath Liyanage | UKAS          |
| Power Spectral Density         | Obinna Eze                                                                               | UKAS          |

**Table 6**

Office Address:

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



## 2 Test Details

### 2.1 Restricted Band Edges

#### 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

A3546, S/N: KMW4GY9740 - Modification State 0

#### 2.1.3 Date of Test

06-June-2026

#### 2.1.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.10.5 and 11.12.1.

Plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

The following conversion can be applied to convert from dB $\mu$ V/m to  $\mu$ V/m:

$10^{(\text{Field Strength in dB}\mu\text{V/m}/20)}$ .

#### 2.1.5 Environmental Conditions

|                     |         |
|---------------------|---------|
| Ambient Temperature | 20.3 °C |
| Relative Humidity   | 41.5 %  |

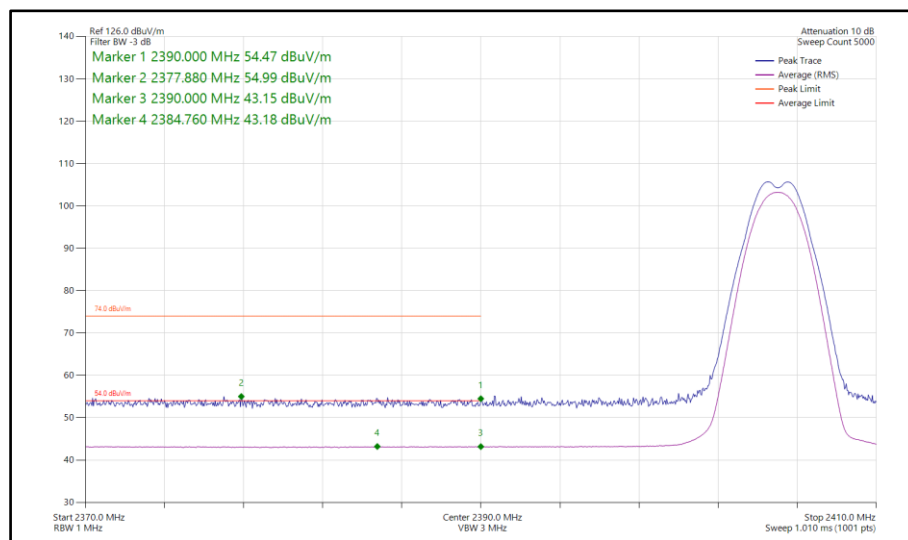
## 2.1.6 Test Results

### Thread

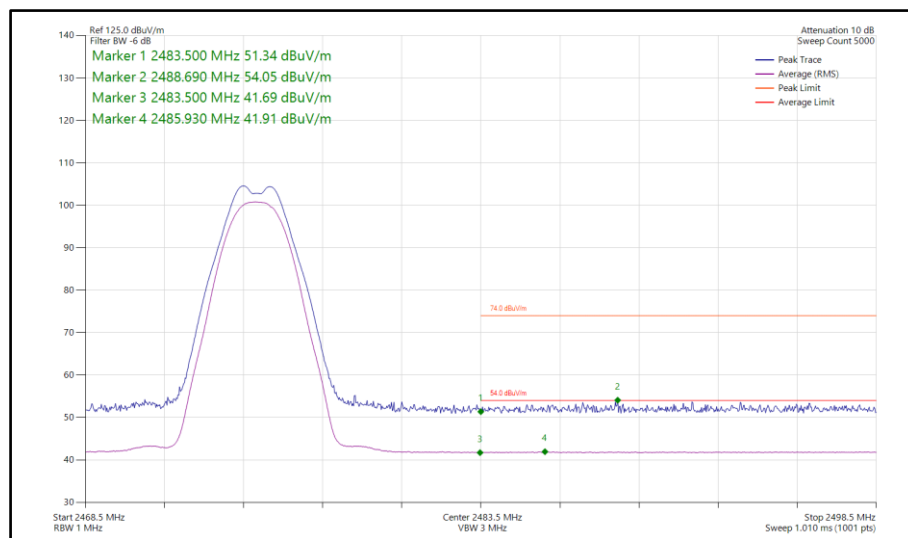
#### iPA - Core 0 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Peak Level (dBμV/m) | Average Level (dBμV/m) |
|--------|--------------------|---------------------------|---------------------|------------------------|
| Thread | 2405               | 2390                      | 54.99               | 43.18                  |
| Thread | 2475               | 2483.5                    | 54.05               | 41.91                  |

**Table 7 - iPA, Core 0, SISO Restricted Band Edge Results**



**Figure 1 - Thread, iPA, SISO, Core 0 - 2405 MHz  
Band Edge Frequency 2390 MHz**

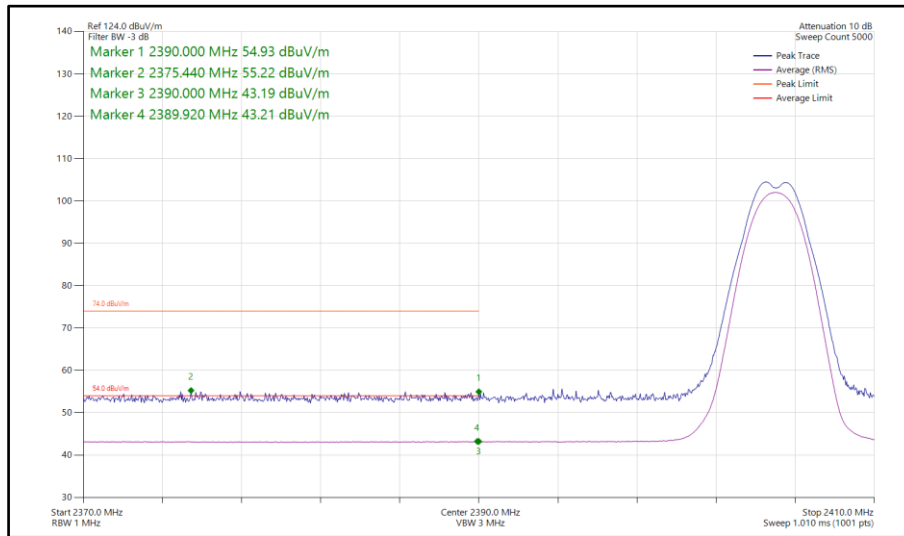


**Figure 2 - Thread, iPA, SISO, Core 0 - 2475 MHz  
Band Edge Frequency 2483.5 MHz**

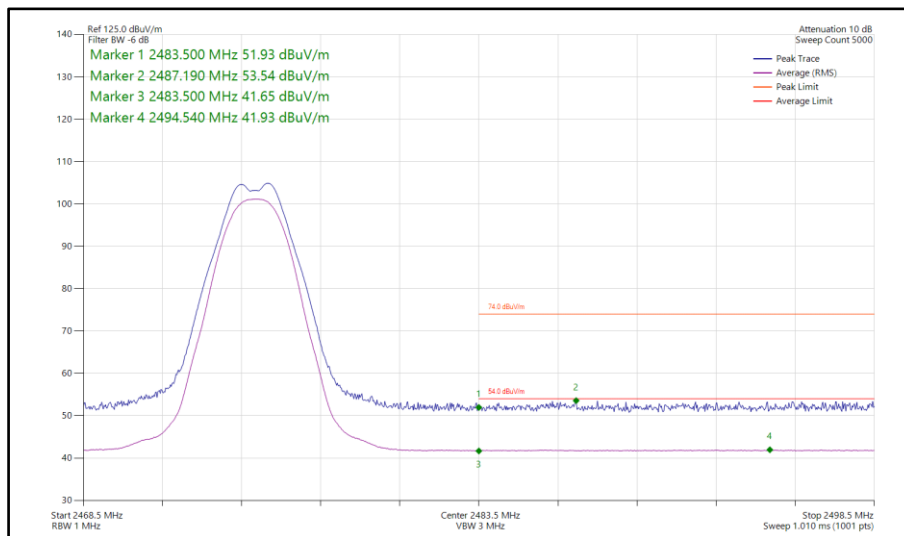
iPA - Core 1 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Peak Level (dB $\mu$ V/m) | Average Level (dB $\mu$ V/m) |
|--------|--------------------|---------------------------|---------------------------|------------------------------|
| Thread | 2405               | 2390                      | 55.22                     | 43.21                        |
| Thread | 2475               | 2483.5                    | 53.54                     | 41.93                        |

**Table 8 - iPA, Core 1, SISO Restricted Band Edge Results**



**Figure 3 - Thread, iPA, SISO, Core 1 - 2405 MHz  
Band Edge Frequency 2390 MHz**

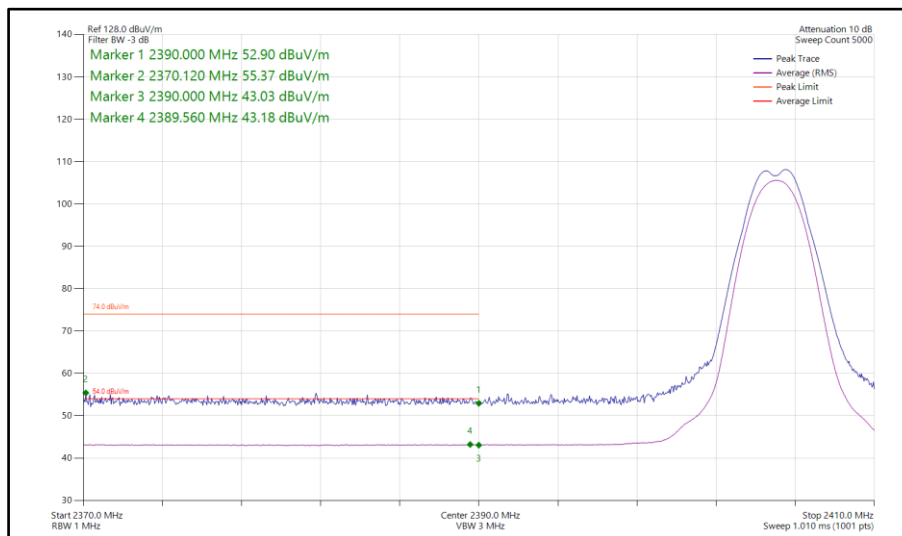


**Figure 4 - Thread, iPA, SISO, Core 1 - 2475 MHz  
Band Edge Frequency 2483.5 MHz**

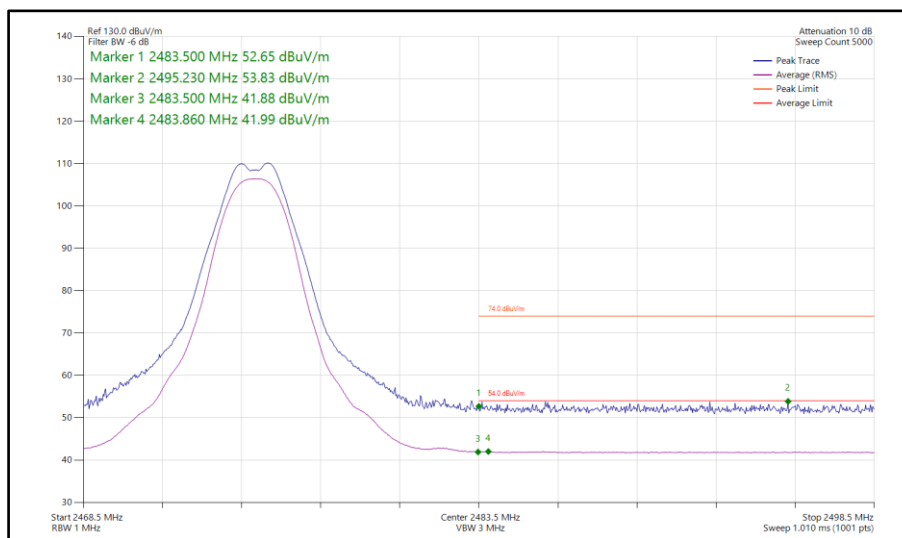
iPA - Core 2 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Peak Level (dBμV/m) | Average Level (dBμV/m) |
|--------|--------------------|---------------------------|---------------------|------------------------|
| Thread | 2405               | 2390                      | 55.37               | 43.18                  |
| Thread | 2475               | 2483.5                    | 53.83               | 41.99                  |

**Table 9 - iPA, Core 2, SISO Restricted Band Edge Results**



**Figure 5 - Thread, iPA, SISO, Core 2 - 2405 MHz  
Band Edge Frequency 2390 MHz**

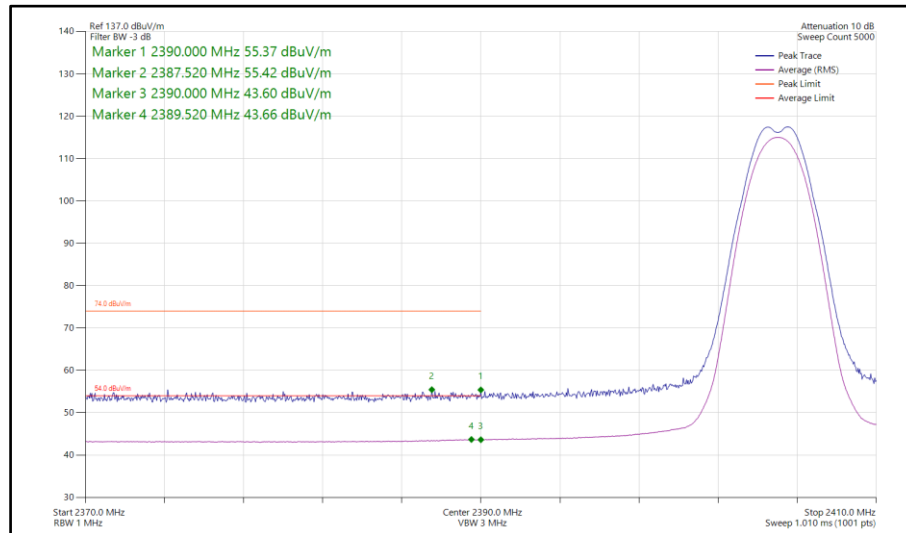


**Figure 6 - Thread, iPA, SISO, Core 2 - 2475 MHz  
Band Edge Frequency 2483.5 MHz**

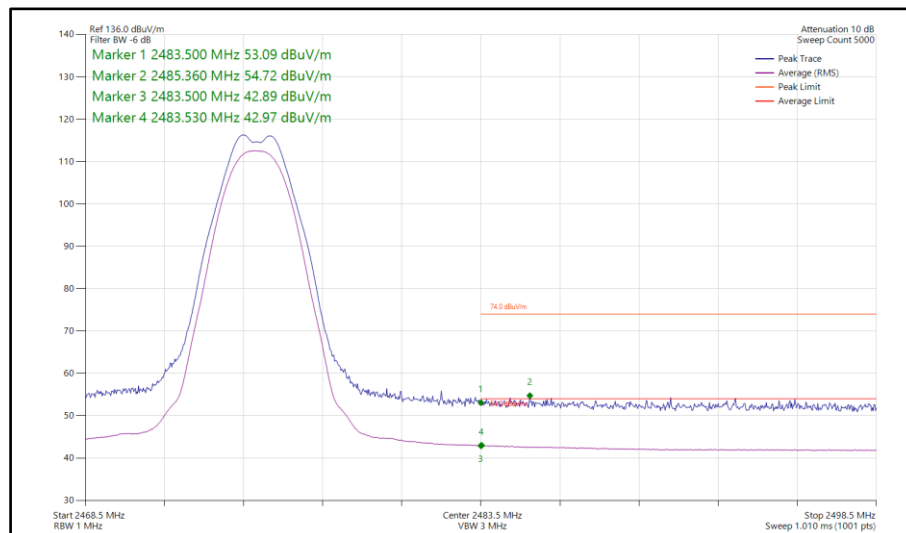
ePA - Core 0 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Peak Level (dB $\mu$ V/m) | Average Level (dB $\mu$ V/m) |
|--------|--------------------|---------------------------|---------------------------|------------------------------|
| Thread | 2405               | 2390                      | 55.42                     | 43.66                        |
| Thread | 2475               | 2483.5                    | 54.72                     | 42.97                        |

**Table 10 - ePA, Core 0, SISO Restricted Band Edge Results**



**Figure 7 - Thread, ePA, SISO, Core 0 - 2405 MHz  
Band Edge Frequency 2390 MHz**



**Figure 8 - Thread, ePA, SISO, Core 0 - 2475 MHz  
Band Edge Frequency 2483.5 MHz**



ePA - Core 1 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Peak Level (dBμV/m) | Average Level (dBμV/m) |
|--------|--------------------|---------------------------|---------------------|------------------------|
| Thread | 2405               | 2390                      | 56.27               | 43.70                  |
| Thread | 2475               | 2483.5                    | 54.61               | 42.97                  |

Table 11 - ePA, Core 1, SISO Restricted Band Edge Results

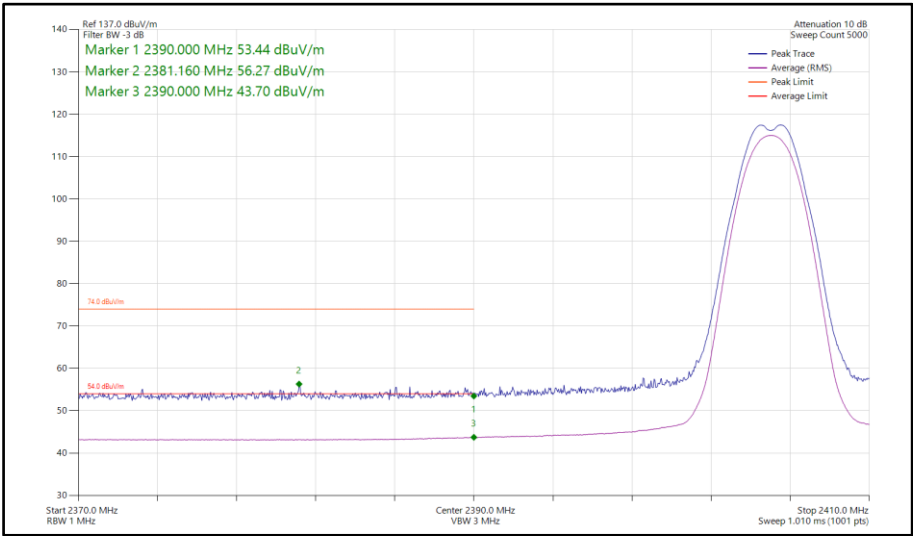


Figure 9 - Thread, ePA, SISO, Core 1 - 2405 MHz  
Band Edge Frequency 2390 MHz

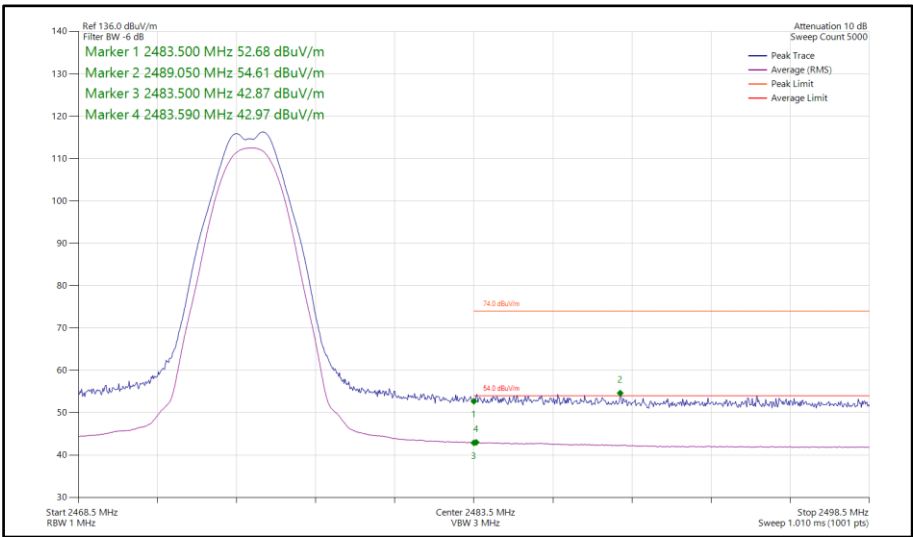


Figure 10 - Thread, ePA, SISO, Core 1 - 2475 MHz  
Band Edge Frequency 2483.5 MHz



FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength ( $\mu\text{V}/\text{m}$ at 3 m) |
|-----------------|-------------------------------------------------|
| 30 to 88        | 100                                             |
| 88 to 216       | 150                                             |
| 216 to 960      | 200                                             |
| Above 960       | 500                                             |

**Table 12**

ISED RSS-GEN, Limit Clause 8.9

| Frequency (MHz) | Field Strength ( $\mu\text{V}/\text{m}$ at 3 m) |
|-----------------|-------------------------------------------------|
| 30 to 88        | 100                                             |
| 88 to 216       | 150                                             |
| 216 to 960      | 200                                             |
| Above 960*      | 500                                             |

**Table 13**

\*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.



### 2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 16.

| Instrument                          | Manufacturer       | Type No.             | TE No. | Calibration Period (months) | Calibration Expiry Date |
|-------------------------------------|--------------------|----------------------|--------|-----------------------------|-------------------------|
| Emissions Software                  | TUV SUD            | EmX V3.6.3 V.        | 5125   | -                           | TU                      |
| 1500W (300V 12A) AC Power Supply    | iTech              | IT7324               | 5957   | -                           | O/P Mon                 |
| 3m Semi-Anechoic Chamber, Chamber16 | Albatross Projects | RF Chamber 16        | 5972   | 36                          | 07-May-2028             |
| Mast & Turntable Controller         | Maturo Gmbh        | FCU3.0               | 5973   | -                           | TU                      |
| Tilt Antenna Mast                   | Maturo Gmbh        | BAM4.5-P             | 5974   | -                           | TU                      |
| Turntable                           | Maturo Gmbh        | TT1.5SI              | 5975   | -                           | TU                      |
| Horn Antenna (1-10 GHz)             | Schwarzbeck        | BBHA9120B            | 6142   | 12                          | 14-Sep-2026             |
| Digital Multimeter                  | Fluke              | 115                  | 6145   | 12                          | 02-Jun-2027             |
| SAC Switch Unit                     | TUV SUD            | TUV_SSU_001          | 6191   | 12                          | 18-Dec-2026             |
| EMI Test Receiver                   | Rohde & Schwarz    | ESW44                | 6805   | 12                          | 24-Jul-2026             |
| Handheld Hygrometer                 | Fluke              | 971                  | 6837   | 12                          | 16-Sep-2026             |
| 1m SMA-Type Cable                   | Junkosha           | MWX221-01000AMSAMS/B | 6844   | 12                          | 06-Sep-2026             |
| 8m SMA-Type Cable                   | Junkosha           | MWX221-08000AMSAMS/B | 6849   | 12                          | 06-Nov-2026             |

**Table 14**

TU - Traceability Unscheduled

O/P Mon - Output Monitored using calibrated equipment



## **2.2 Emission Bandwidth**

### **2.2.1 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

### **2.2.2 Equipment Under Test and Modification State**

A3546, S/N: JYKX4WQ023 - Modification State 0

### **2.2.3 Date of Test**

11-July-2026 to 20-July-2026

### **2.2.4 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.

### **2.2.5 Environmental Conditions**

|                     |                |
|---------------------|----------------|
| Ambient Temperature | 22.1 - 23.1 °C |
| Relative Humidity   | 46.4 - 47.3 %  |

## 2.2.6 Test Results

### Thread

| Protocol   | 6 dB Bandwidth (MHz) |         |
|------------|----------------------|---------|
|            | Minimum              | Maximum |
| Thread ePA | 1.608                | 1.616   |
| Thread iPA | 1.632                | 1.640   |

Table 15 - 6 dB Bandwidth Summary Results - SISO

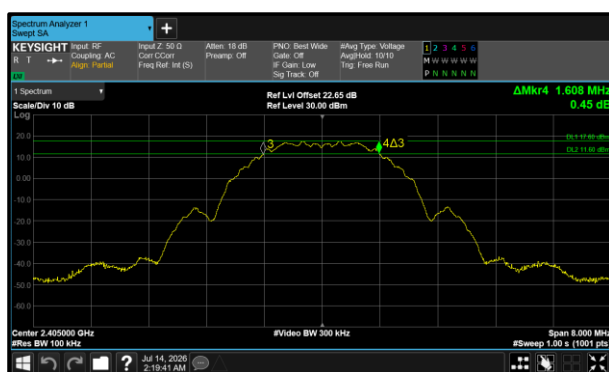


Figure 11 - Thread ePA  
Minimum 6 dB EBW



Figure 12 - Thread ePA  
Maximum 6 dB EBW

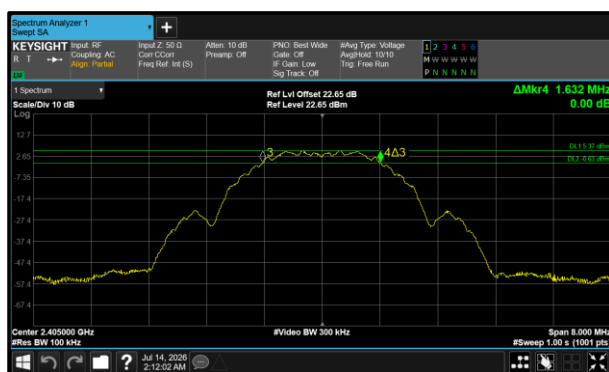


Figure 13 - Thread iPA  
Minimum 6 dB EBW

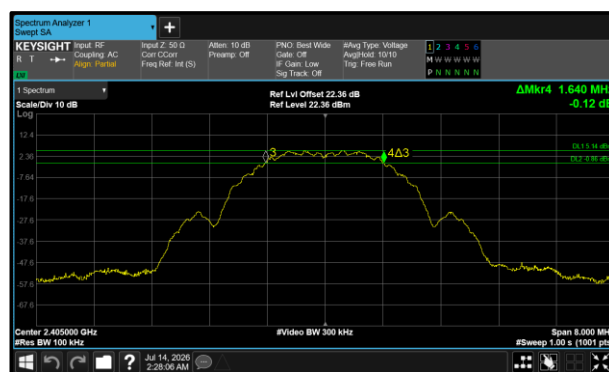
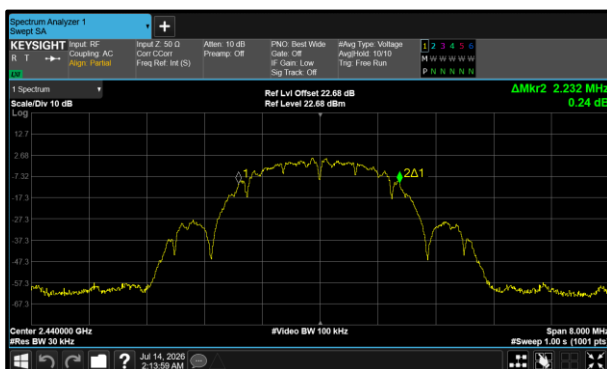


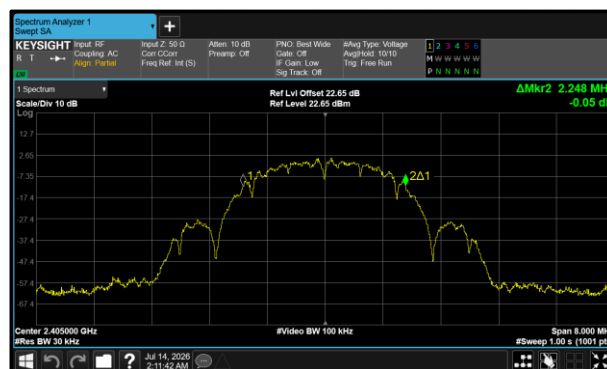
Figure 14 - Thread iPA  
Maximum 6 dB EBW

| Protocol   | 99% Bandwidth (MHz) |         |
|------------|---------------------|---------|
|            | Minimum             | Maximum |
| Thread iPA | 2.232               | 2.248   |
| Thread ePA | 2.200               | 2.208   |

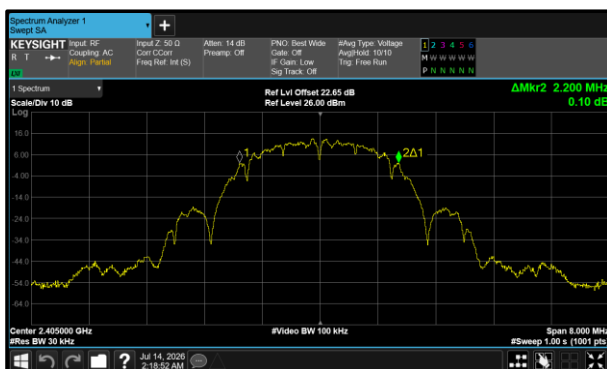
**Table 16 - 99% Bandwidth Summary Results - SISO**



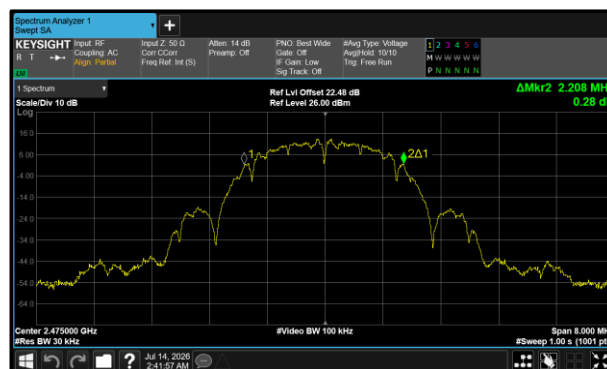
**Figure 15 - Thread iPA  
Minimum 99% OBW**



**Figure 16 - Thread iPA  
Maximum 99% OBW**



**Figure 17 - Thread ePA  
Minimum 99% OBW**



**Figure 18 - Thread ePA  
Maximum 99% OBW**



| Test Configuration       |                                |                 |                              |
|--------------------------|--------------------------------|-----------------|------------------------------|
| Frequency Range:         | 2400-2483.5 MHz                | Band:           | 2.4 GHz                      |
| Limit Clause(s):         | 15.247 (a)(2)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 6.9.3<br>C63.10 6.9.2 |
| Additional Reference(s): | -                              |                 |                              |

| DUT Configuration      |            |                          |   |
|------------------------|------------|--------------------------|---|
| Mode:                  | Thread     | Duty Cycle (%):          | - |
| -:                     | Thread ePA | DCCF (dB):               | - |
| 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 17 - 6 dB Bandwidth Results**

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

**Table 18 - 99% Bandwidth Results**



| Test Configuration       |                                |                 |                              |
|--------------------------|--------------------------------|-----------------|------------------------------|
| Frequency Range:         | 2400-2483.5 MHz                | Band:           | 2.4 GHz                      |
| Limit Clause(s):         | 15.247 (a)(2)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 6.9.3<br>C63.10 6.9.2 |
| Additional Reference(s): | -                              |                 |                              |

| DUT Configuration      |            |                          |   |
|------------------------|------------|--------------------------|---|
| Mode:                  | Thread     | Duty Cycle (%):          | - |
| -:                     | Thread iPA | DCCF (dB):               | - |
| 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                 | 1.632                | - | - | - | ≥500.0      |
| 2440                 | 1.640                | - | - | - | ≥500.0      |
| 2475                 | 1.640                | - | - | - | ≥500.0      |

**Table 19 - 6 dB Bandwidth Results**

| Test Frequency (MHz) | 99% Bandwidth (MHz) |   |   |   | Limit (kHz) |
|----------------------|---------------------|---|---|---|-------------|
|                      | A                   | B | C | D |             |
| 2405                 | 2.248               | - | - | - | -           |
| 2440                 | 2.232               | - | - | - | -           |
| 2475                 | 2.232               | - | - | - | -           |

**Table 20 - 99% Bandwidth Results**



| Test Configuration       |                                |                 |                              |
|--------------------------|--------------------------------|-----------------|------------------------------|
| Frequency Range:         | 2400-2483.5 MHz                | Band:           | 2.4 GHz                      |
| Limit Clause(s):         | 15.247 (a)(2)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 6.9.3<br>C63.10 6.9.2 |
| Additional Reference(s): | -                              |                 |                              |

| DUT Configuration      |            |                          |   |
|------------------------|------------|--------------------------|---|
| Mode:                  | Thread     | Duty Cycle (%):          | - |
| -:                     | Thread ePA | DCCF (dB):               | - |
| 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                 | -                    | 1.616 | - | - | ≥500.0      |
| 2440                 | -                    | 1.608 | - | - | ≥500.0      |
| 2475                 | -                    | 1.608 | - | - | ≥500.0      |

**Table 21 - 6 dB Bandwidth Results**

| Test Frequency (MHz) | 99% Bandwidth (MHz) |       |   |   | Limit (kHz) |
|----------------------|---------------------|-------|---|---|-------------|
|                      | A                   | B     | C | D |             |
| 2405                 | -                   | 2.200 | - | - | -           |
| 2440                 | -                   | 2.200 | - | - | -           |
| 2475                 | -                   | 2.208 | - | - | -           |

**Table 22 - 99% Bandwidth Results**



| Test Configuration       |                                |                 |                              |
|--------------------------|--------------------------------|-----------------|------------------------------|
| Frequency Range:         | 2400-2483.5 MHz                | Band:           | 2.4 GHz                      |
| Limit Clause(s):         | 15.247 (a)(2)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 6.9.3<br>C63.10 6.9.2 |
| Additional Reference(s): | -                              |                 |                              |

| DUT Configuration      |            |                          |   |
|------------------------|------------|--------------------------|---|
| Mode:                  | Thread     | Duty Cycle (%):          | - |
| -:                     | Thread iPA | DCCF (dB):               | - |
| 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 23 - 6 dB Bandwidth Results**

| Test Frequency (MHz) | 99% Bandwidth (MHz) |       |   |   | Limit (kHz) |
|----------------------|---------------------|-------|---|---|-------------|
|                      | A                   | B     | C | D |             |
| 2405                 | -                   | 2.240 | - | - | -           |
| 2440                 | -                   | 2.232 | - | - | -           |
| 2475                 | -                   | 2.232 | - | - | -           |

**Table 24 - 99% Bandwidth Results**



| Test Configuration       |                                |                 |                              |
|--------------------------|--------------------------------|-----------------|------------------------------|
| Frequency Range:         | 2400-2483.5 MHz                | Band:           | 2.4 GHz                      |
| Limit Clause(s):         | 15.247 (a)(2)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 6.9.3<br>C63.10 6.9.2 |
| Additional Reference(s): | -                              |                 |                              |

| DUT Configuration      |            |                          |   |
|------------------------|------------|--------------------------|---|
| Mode:                  | Thread     | Duty Cycle (%):          | - |
| -:                     | Thread iPA | DCCF (dB):               | - |
| 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                 | -                    | - | 1.632 | - | ≥500.0      |
| 2440                 | -                    | - | 1.632 | - | ≥500.0      |
| 2475                 | -                    | - | 1.632 | - | ≥500.0      |

**Table 25 - 6 dB Bandwidth Results**

| Test Frequency (MHz) | 99% Bandwidth (MHz) |   |       |   | Limit (kHz) |
|----------------------|---------------------|---|-------|---|-------------|
|                      | A                   | B | C     | D |             |
| 2405                 | -                   | - | 2.240 | - | -           |
| 2440                 | -                   | - | 2.240 | - | -           |
| 2475                 | -                   | - | 2.240 | - | -           |

**Table 26 - 99% Bandwidth Results**

FCC 47 CFR Part 15, Limit Clause 15.247(a)(2) and ISSED RSS-247, Clause 6.3.1(a)

The minimum 6 dB bandwidth shall be at least 500 kHz.



## 2.2.7 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 |
|--------------------------------|-----------------------|------------------------|--------|-----------------------------|-------------------------|
| AC Programmable Power Supply   | iTech                 | IT7324                 | 5225   | -                           | O/P Mon                 |
| MXA Signal Analyser            | Keysight Technologies | N9020B                 | 5529   | 24                          | 02-Jan-2027             |
| USB Power Sensor               | Boonton               | RTP5008                | 5820   | 12                          | 16-Mar-2027             |
| USB Power Sensor               | Boonton               | RTP5008                | 5821   | 12                          | 16-Mar-2027             |
| Modular Power System mainframe | Keysight Technologies | N6701C                 | 6151   | -                           | O/P Mon                 |
| DC Power Module                | Keysight Technologies | N6754A                 | 6152   | -                           | O/P Mon                 |
| Climatic Chamber               | Weiss Technik         | ClimeEvent C/340/70a/3 | 6386   | 12                          | O/P Mon                 |
| Signal Conditioning Unit       | TUV SUD               | SPECTRUM_SCU001        | 6426   | 12                          | 16-Mar-2027             |
| USB Wideband Power Sensor      | Boonton               | RTP5008                | 6591   | 12                          | 16-Mar-2027             |
| Digital Thermometer            | R.S Components        | RS 5511                | 6739   | 12                          | 02-Mar-2027             |
| SCU Cable Assembly             | TUV SUD               | SPECTRUM_SCU_CA        | 6752   | 12                          | 16-Mar-2027             |
| SCU Cable Assembly             | TUV SUD               | SPECTRUM_SCU_CA        | 6753   | 12                          | 16-Mar-2027             |
| SCU Cable Assembly SCU         | TUV SUD               | SPECTRUM_SCU_CA        | 6754   | 0                           | 16-Mar-2027             |
| Humidity & Temperature meter   | Fluke                 | 971                    | 7103   | 12                          | 05-Aug-2026             |
| Multimeter                     | Fluke                 | 115                    | 7115   | 12                          | 13-Aug-2026             |

**Table 27**

O/P Mon - Output Monitored using calibrated equipment



## **2.3 Maximum Conducted Output Power**

### **2.3.1 Specification Reference**

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

### **2.3.2 Equipment Under Test and Modification State**

A3546, S/N: JYKX4WQ023 - Modification State 0

### **2.3.3 Date of Test**

11-July-2026 to 20-July-2026

### **2.3.4 Test Method**

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

### **2.3.5 Environmental Conditions**

|                     |                |
|---------------------|----------------|
| Ambient Temperature | 22.1 - 23.1 °C |
| Relative Humidity   | 46.4 - 47.3 %  |



### 2.3.6 Test Results

#### Thread

| Test Configuration       |                                |                 |                   |
|--------------------------|--------------------------------|-----------------|-------------------|
| Frequency Range:         | 2400-2483.5 MHz                | Band:           | 2.4 GHz           |
| Limit Clause(s):         | 15.247 (b)(3)<br>RSS-247 6.3.2 | Test Method(s): | C63.10 11.9.2.3.2 |
| Additional Reference(s): | -                              |                 |                   |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread iPA | DCCF (dB):               | -     |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.20  |
| 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                 | 8.76                                 | - | - | - | - | 30.00       | -21.24      |
| 2440                 | 8.72                                 | - | - | - | - | 30.00       | -21.28      |
| 2475                 | 8.98                                 | - | - | - | - | 30.00       | -21.02      |

**Table 28- 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                 | 8.76                                 | - | - | - | - | 30.00       | -21.24      | 9.96       | 36.00            | -26.04           |
| 2440                 | 8.72                                 | - | - | - | - | 30.00       | -21.28      | 9.92       | 36.00            | -26.08           |
| 2475                 | 8.98                                 | - | - | - | - | 30.00       | -21.02      | 10.18      | 36.00            | -25.82           |

**Table 29- ISED 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)<br>RSS-247 6.3.2 | Test Method(s): | C63.10 11.9.2.3.2 |
| Additional Reference(s): | -                              |                 |                   |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread ePA | DCCF (dB):               | -     |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.20  |
| 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 | $\Sigma$ |             |             |
| 2405                 | 20.73                                | - | - | - | -        | 30.00       | -9.27       |
| 2440                 | 20.59                                | - | - | - | -        | 30.00       | -9.41       |
| 2475                 | 20.59                                | - | - | - | -        | 30.00       | -9.41       |

**Table 30- 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 | $\Sigma$ |             |             |            |                  |                  |
| 2405                 | 20.73                                | - | - | - | -        | 30.00       | -9.27       | 21.93      | 36.00            | -14.07           |
| 2440                 | 20.59                                | - | - | - | -        | 30.00       | -9.41       | 21.79      | 36.00            | -14.21           |
| 2475                 | 20.59                                | - | - | - | -        | 30.00       | -9.41       | 21.79      | 36.00            | -14.21           |

**Table 31- 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)<br>RSS-247 6.3.2 | Test Method(s): | C63.10 11.9.2.3.2 |
| Additional Reference(s): | -                              |                 |                   |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread iPA | DCCF (dB):               | -     |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.40  |
| 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 | $\Sigma$ |             |             |
| 2405                 | -                                    | 8.60 | - | - | -        | 30.00       | -21.40      |
| 2440                 | -                                    | 8.59 | - | - | -        | 30.00       | -21.41      |
| 2475                 | -                                    | 8.58 | - | - | -        | 30.00       | -21.52      |

**Table 32- 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 | $\Sigma$ |             |             |            |                  |                  |
| 2405                 | -                                    | 8.60 | - | - | -        | 30.00       | -21.40      | 10.00      | 36.00            | -26.00           |
| 2440                 | -                                    | 8.59 | - | - | -        | 30.00       | -21.41      | 9.99       | 36.00            | -26.01           |
| 2475                 | -                                    | 8.58 | - | - | -        | 30.00       | -21.52      | 9.98       | 36.00            | -26.02           |

**Table 33- 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)<br>RSS-247 6.3.2 | Test Method(s): | C63.10 11.9.2.3.2 |
| Additional Reference(s): | -                              |                 |                   |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread ePA | DCCF (dB):               | -     |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.40  |
| 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 | $\Sigma$ |             |             |
| 2405                 | -                                    | 20.80 | - | - | -        | 30.00       | -9.20       |
| 2440                 | -                                    | 20.74 | - | - | -        | 30.00       | -9.26       |
| 2475                 | -                                    | 20.52 | - | - | -        | 30.00       | -9.48       |

**Table 34- 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 | $\Sigma$ |             |             |            |                  |                  |
| 2405                 | -                                    | 20.80 | - | - | -        | 30.00       | -9.20       | 22.20      | 36.00            | -13.80           |
| 2440                 | -                                    | 20.74 | - | - | -        | 30.00       | -9.26       | 22.14      | 36.00            | -13.86           |
| 2475                 | -                                    | 20.52 | - | - | -        | 30.00       | -9.48       | 21.92      | 36.00            | -14.08           |

**Table 35- 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)<br>RSS-247 6.3.2 | Test Method(s): | C63.10 11.9.2.3.2 |
| Additional Reference(s): | -                              |                 |                   |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread iPA | DCCF (dB):               | -     |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.00  |
| 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 | $\Sigma$ |             |             |
| 2405                 | -                                    | - | 12.57 | - | -        | 30.00       | -17.43      |
| 2440                 | -                                    | - | 12.69 | - | -        | 30.00       | -17.31      |
| 2475                 | -                                    | - | 12.60 | - | -        | 30.00       | -17.40      |

**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 | $\Sigma$ |             |             |            |                  |                  |
| 2405                 | -                                    | - | 12.57 | - | -        | 30.00       | -17.43      | 13.57      | 36.00            | -22.43           |
| 2440                 | -                                    | - | 12.69 | - | -        | 30.00       | -17.31      | 13.69      | 36.00            | -22.31           |
| 2475                 | -                                    | - | 12.60 | - | -        | 30.00       | -17.40      | 13.60      | 36.00            | -22.40           |

**Table 37- ISSED 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.

ISSED 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.



### 2.3.7 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 |
|--------------------------------|-----------------------|------------------------|--------|-----------------------------|-------------------------|
| AC Programmable Power Supply   | iTech                 | IT7324                 | 5225   | -                           | O/P Mon                 |
| MXA Signal Analyser            | Keysight Technologies | N9020B                 | 5529   | 24                          | 02-Jan-2027             |
| USB Power Sensor               | Boonton               | RTP5008                | 5820   | 12                          | 16-Mar-2027             |
| USB Power Sensor               | Boonton               | RTP5008                | 5821   | 12                          | 16-Mar-2027             |
| Modular Power System mainframe | Keysight Technologies | N6701C                 | 6151   | -                           | O/P Mon                 |
| DC Power Module                | Keysight Technologies | N6754A                 | 6152   | -                           | O/P Mon                 |
| Climatic Chamber               | Weiss Technik         | ClimeEvent C/340/70a/3 | 6386   | 12                          | O/P Mon                 |
| Signal Conditioning Unit       | TUV SUD               | SPECTRUM_SCU001        | 6426   | 12                          | 16-Mar-2027             |
| USB Wideband Power Sensor      | Boonton               | RTP5008                | 6591   | 12                          | 16-Mar-2027             |
| Digital Thermometer            | R.S Components        | RS 5511                | 6739   | 12                          | 02-Mar-2027             |
| SCU Cable Assembly             | TUV SUD               | SPECTRUM_SCU_CA        | 6752   | 12                          | 16-Mar-2027             |
| SCU Cable Assembly             | TUV SUD               | SPECTRUM_SCU_CA        | 6753   | 12                          | 16-Mar-2027             |
| SCU Cable Assembly SCU         | TUV SUD               | SPECTRUM_SCU_CA        | 6754   | 12                          | 16-Mar-2027             |
| Humidity & Temperature meter   | Fluke                 | 971                    | 7103   | 12                          | 05-Aug-2026             |
| Multimeter                     | Fluke                 | 115                    | 7115   | 12                          | 13-Aug-2026             |

**Table 38**

O/P Mon - Output Monitored using calibrated equipment



## **2.4 Authorised Band Edges**

### **2.4.1 Specification Reference**

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

### **2.4.2 Equipment Under Test and Modification State**

A3546, S/N: KMW4GY9740 - Modification State 0

### **2.4.3 Date of Test**

06-June-2026

### **2.4.4 Test Method**

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

### **2.4.5 Environmental Conditions**

|                     |         |
|---------------------|---------|
| Ambient Temperature | 20.3 °C |
| Relative Humidity   | 41.5 %  |



2.4.6 Test Results

Thread

iPA - Core 0 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBc) |
|--------|--------------------|---------------------------|-------------|
| Thread | 2405               | 2400                      | -57.15      |

Table 39 - iPA, Core 0, SISO Authorised Band Edge Results

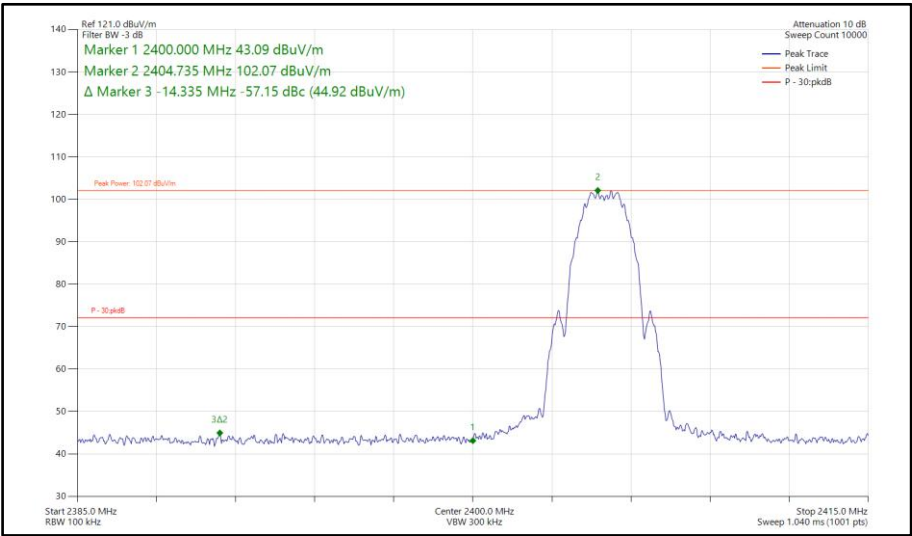


Figure 19 - Thread, iPA, SISO, Core 0 - 2405 MHz  
Band Edge Frequency 2400 MHz



iPA - Core 1 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBc) |
|--------|--------------------|---------------------------|-------------|
| Thread | 2405               | 2400                      | -55.78      |

Table 40 - iPA, Core 1, SISO Authorised Band Edge Results

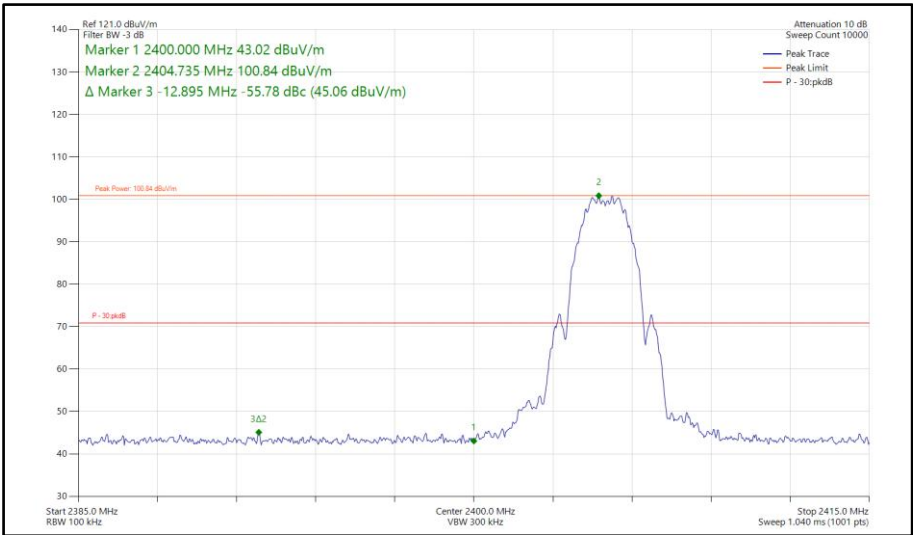


Figure 20 - Thread, iPA, SISO, Core 1 - 2405 MHz  
Band Edge Frequency 2400 MHz



iPA - Core 2 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBc) |
|--------|--------------------|---------------------------|-------------|
| Thread | 2405               | 2400                      | -58.54      |

Table 41 - iPA, Core 2, SISO Authorised Band Edge Results

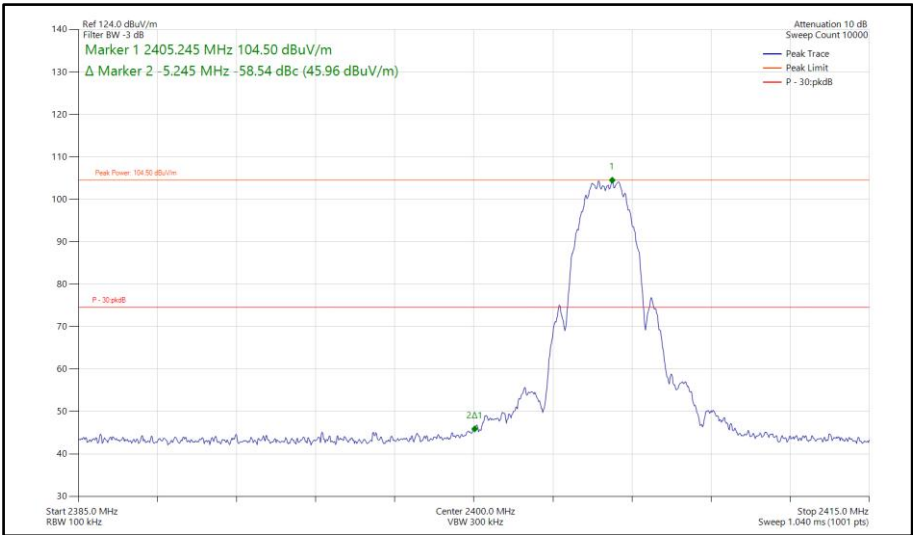


Figure 21 - Thread, iPA, SISO, Core 2 - 2405 MHz  
Band Edge Frequency 2400 MHz



ePA - Core 0 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBc) |
|--------|--------------------|---------------------------|-------------|
| Thread | 2405               | 2400                      | -67.06      |

Table 42 - ePA, Core 0, SISO Authorised Band Edge Results

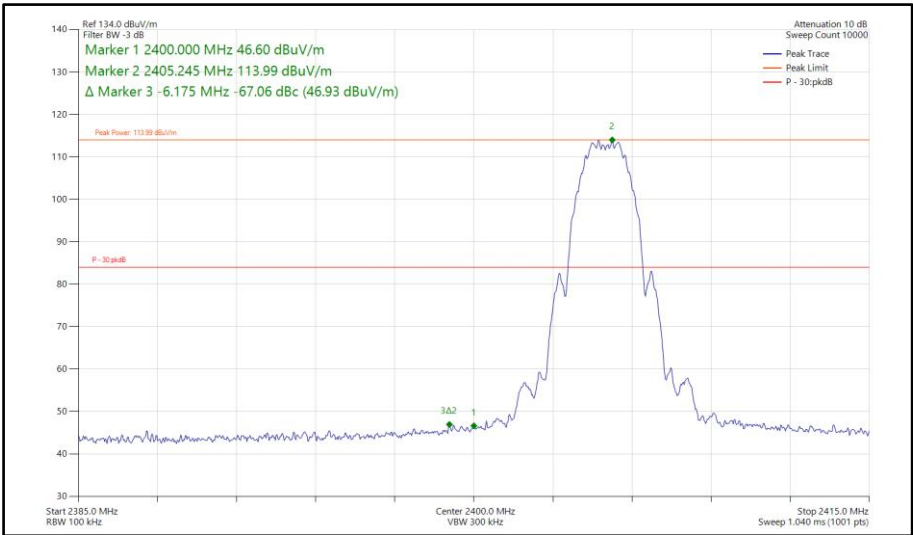
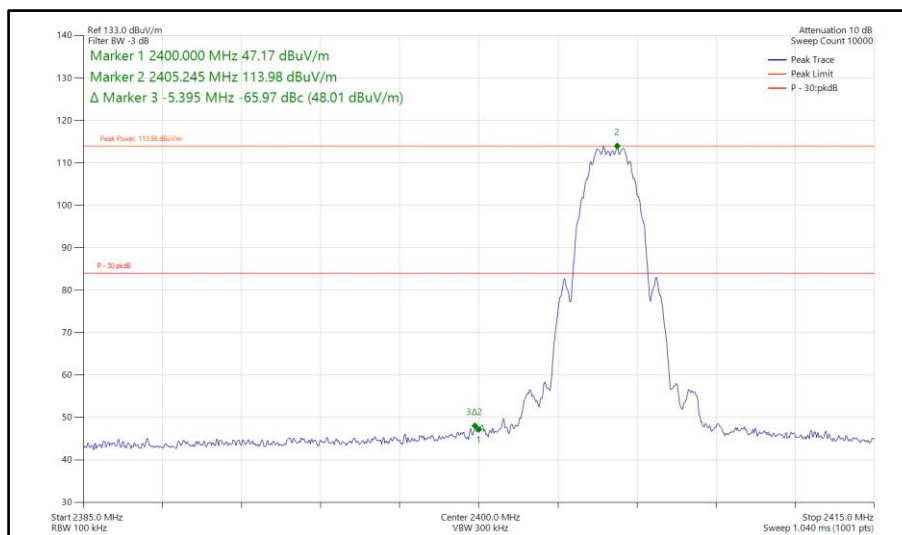


Figure 22 - Thread, ePA, SISO, Core 0 - 2405 MHz  
Band Edge Frequency 2400 MHz

ePA - Core 1 (SISO)

| Mode   | TX Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBc) |
|--------|--------------------|---------------------------|-------------|
| Thread | 2405               | 2400                      | -65.97      |

**Table 43 - ePA, Core 1, SISO Authorised Band Edge Results**



**Figure 23 - Thread, ePA, SISO, Core 1 - 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.



#### 2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 16.

| Instrument                          | Manufacturer       | Type No.             | TE No. | Calibration Period (months) | Calibration Expiry Date |
|-------------------------------------|--------------------|----------------------|--------|-----------------------------|-------------------------|
| Emissions Software                  | TUV SUD            | EmX V3.6.3 V.        | 5125   | -                           | TU                      |
| 1500W (300V 12A) AC Power Supply    | iTech              | IT7324               | 5957   | -                           | O/P Mon                 |
| 3m Semi-Anechoic Chamber, Chamber16 | Albatross Projects | RF Chamber 16        | 5972   | 36                          | 07-May-2028             |
| Mast & Turntable Controller         | Maturo Gmbh        | FCU3.0               | 5973   | -                           | TU                      |
| Tilt Antenna Mast                   | Maturo Gmbh        | BAM4.5-P             | 5974   | -                           | TU                      |
| Turntable                           | Maturo Gmbh        | TT1.5SI              | 5975   | -                           | TU                      |
| Horn Antenna (1-10 GHz)             | Schwarzbeck        | BBHA9120B            | 6142   | 12                          | 14-Sep-2026             |
| Digital Multimeter                  | Fluke              | 115                  | 6145   | 12                          | 02-Jun-2027             |
| SAC Switch Unit                     | TUV SUD            | TUV_SSU_001          | 6191   | 12                          | 18-Dec-2026             |
| EMI Test Receiver                   | Rohde & Schwarz    | ESW44                | 6805   | 12                          | 24-Jul-2026             |
| Handheld Hygrometer                 | Fluke              | 971                  | 6837   | 12                          | 16-Sep-2026             |
| 1m SMA-Type Cable                   | Junkosha           | MWX221-01000AMSAMS/B | 6844   | 12                          | 06-Sep-2026             |
| 8m SMA-Type Cable                   | Junkosha           | MWX221-08000AMSAMS/B | 6849   | 12                          | 06-Nov-                 |

**Table 44**

TU - Traceability Unscheduled

O/P Mon - Output Monitored using calibrated equipment



## **2.5 Spurious Radiated Emissions**

### **2.5.1 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

### **2.5.2 Equipment Under Test and Modification State**

A3546, S/N: KMW4GY9740 - Modification State 0

### **2.5.3 Date of Test**

06-June-2026 to 13-June-2026

### **2.5.4 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.

Pre-scans in the 30 MHz to 1 GHz & 18 GHz to 26GHz range were limited to 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 dB $\mu$ V/m) when compared to 30 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 dB $\mu$ V/m to  $\mu$ V/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.

### 2.5.5 Example Test Setup Diagram

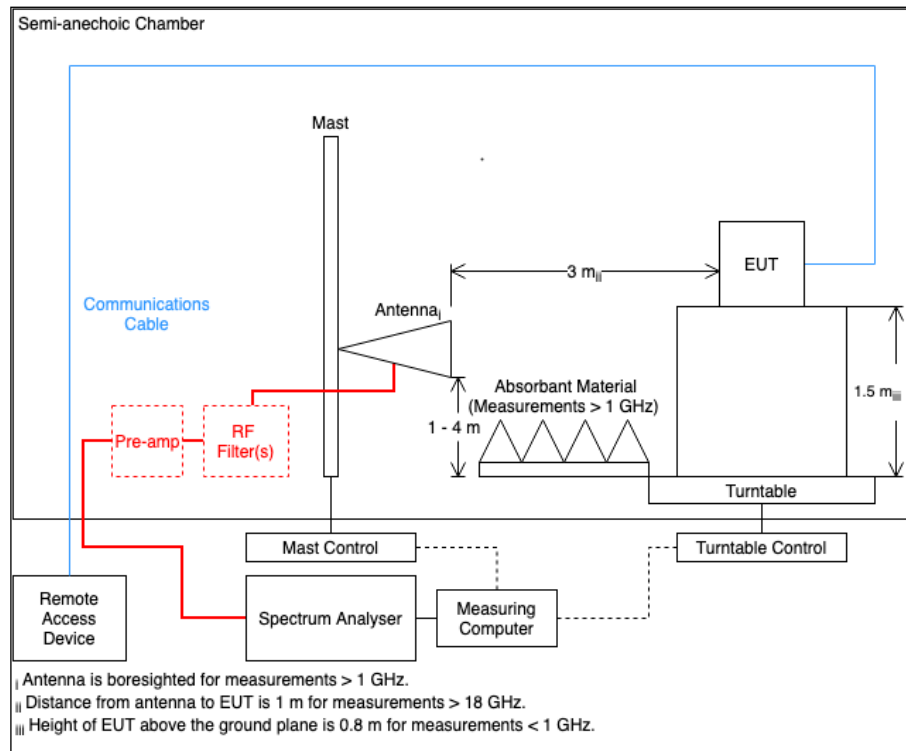


Figure 24

### 2.5.6 Environmental Conditions

|                     |                |
|---------------------|----------------|
| Ambient Temperature | 19.4 - 23.5 °C |
| Relative Humidity   | 23.5 - 41.8 %  |



2.5.7 Test Results

Thread

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

Table 45 - 2405 MHz (CH11), Thread, ePA, Core 0, 1 GHz to 18 GHz

\*No emissions found within 20 dB of the limit.

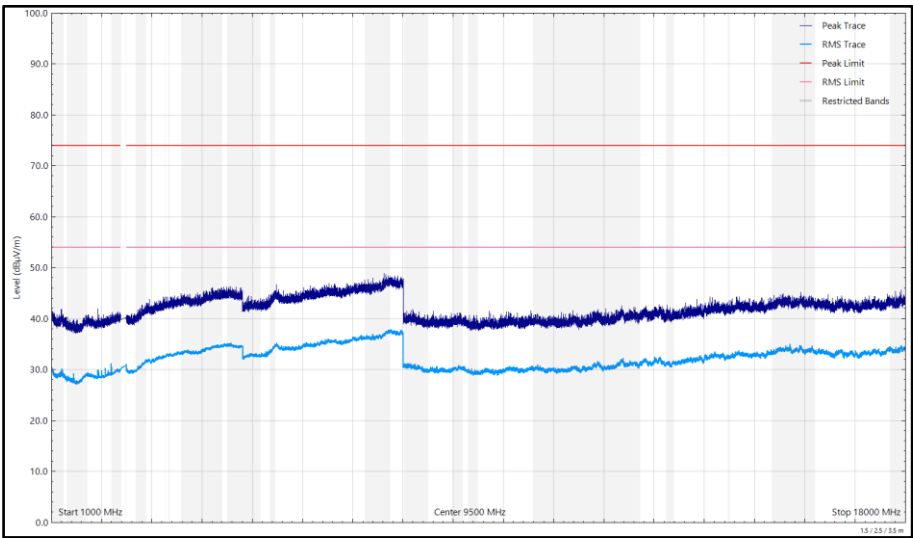


Figure 25 - 2405 MHz (CH11), Thread, ePA, Core 0, 1 GHz to 18 GHz, Horizontal

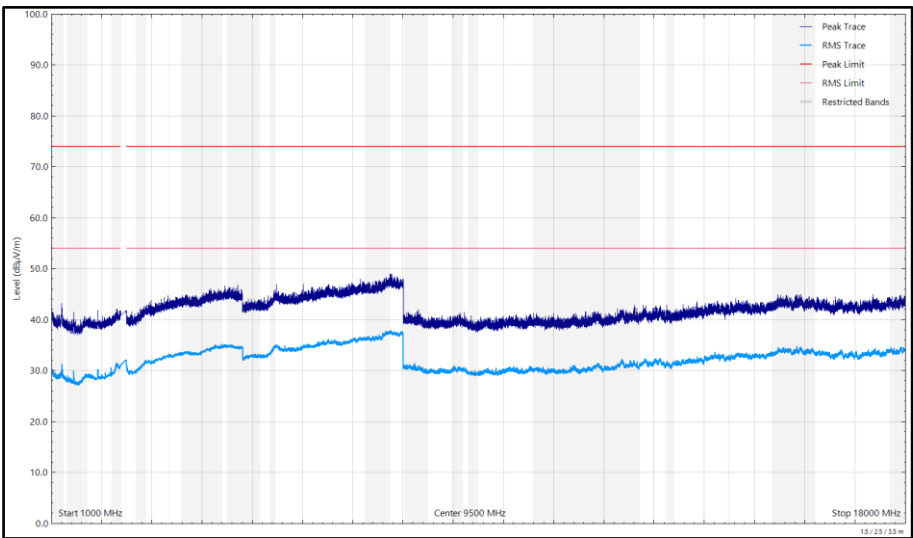
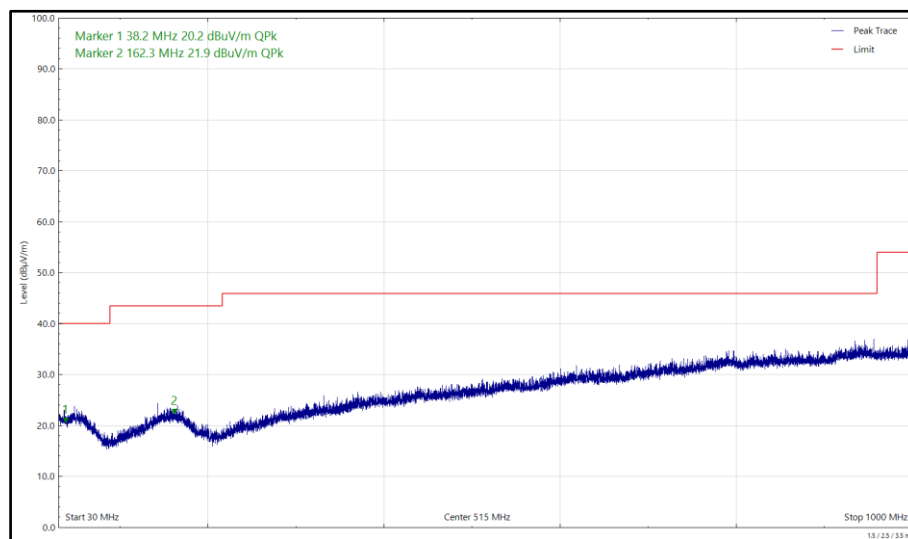


Figure 26 - 2405 MHz (CH11), Thread, ePA, Core 0, 1 GHz to 18 GHz, Vertical

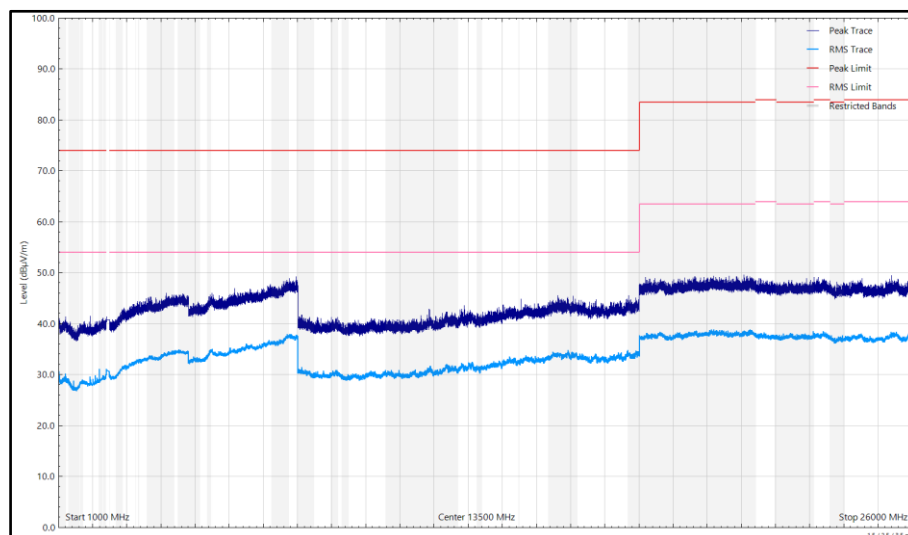
| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 37.893          | 20.09          | 40.00          | -19.91      | Q-Peak   | 245       | 394         | Vertical     |
| 38.213          | 20.23          | 40.00          | -19.77      | Q-Peak   | 15        | 353         | Horizontal   |
| 151.797         | 21.53          | 43.50          | -21.97      | Q-Peak   | 246       | 400         | Vertical     |
| 162.277         | 21.91          | 43.50          | -21.59      | Q-Peak   | 217       | 344         | Horizontal   |

**Table 46 - 2440 MHz (CH18), Thread, ePA, Core 0, 30 MHz to 26 GHz**

No other emissions found within 20 dB of the limit.



**Figure 27 - 2440 MHz (CH18), Thread, ePA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 28 - 2440 MHz (CH18), Thread, ePA, Core 0, 1 GHz to 26 GHz, Horizontal**

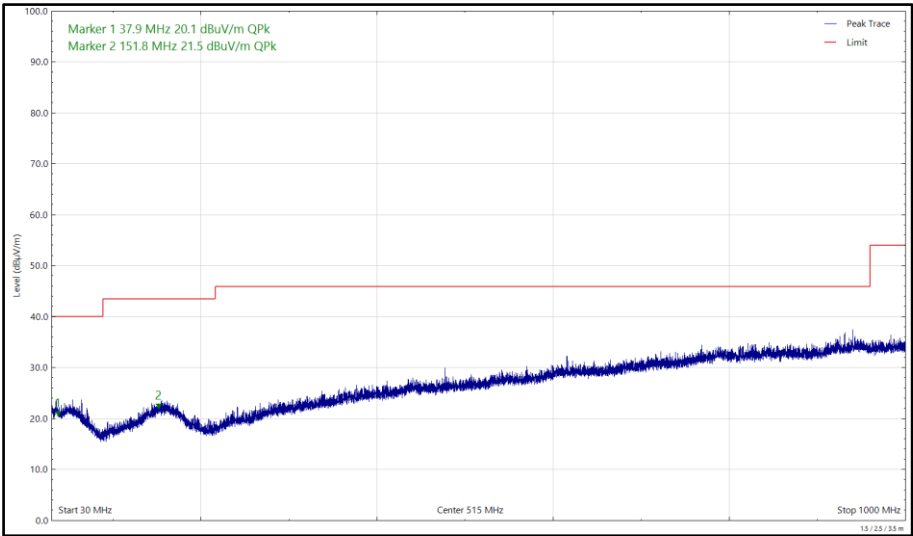


Figure 29 - 2440 MHz (CH18), Thread, ePA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

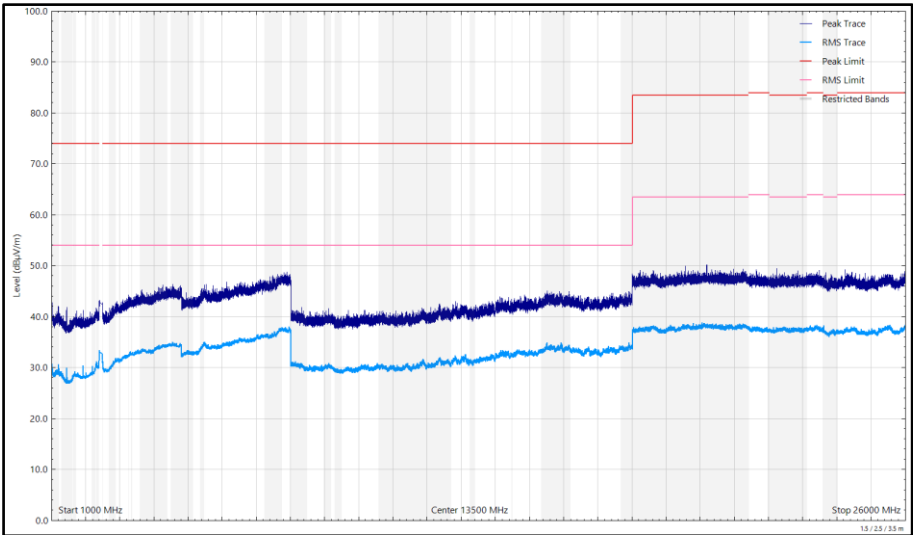


Figure 30 - 2440 MHz (CH18), Thread, ePA, Core 0, 1 GHz to 26 GHz, Vertical



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

Table 47 - 2475 MHz (CH25), Thread, ePA, Core 0, 1 GHz to 18 GHz

\*No emissions found within 20 dB of the limit.

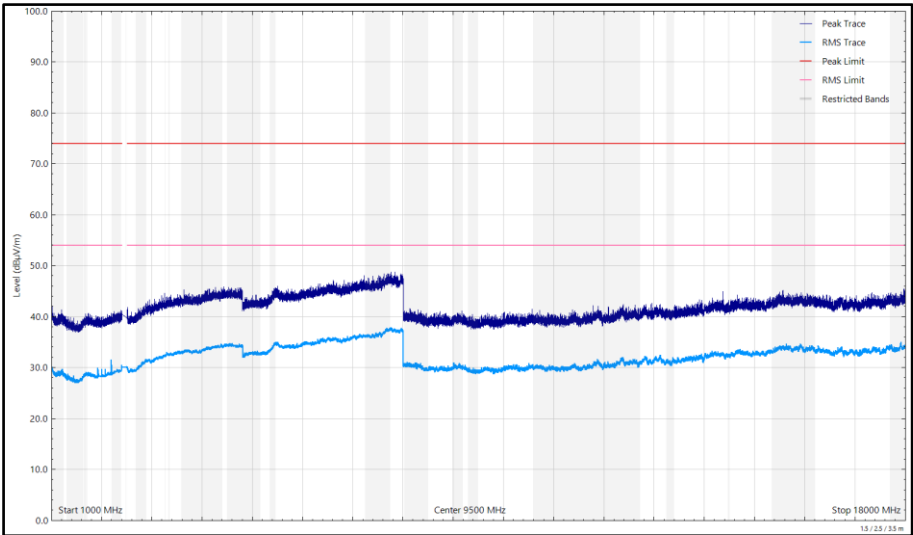


Figure 31 - 2475 MHz (CH25), Thread, ePA, Core 0, 1 GHz to 18 GHz, Horizontal

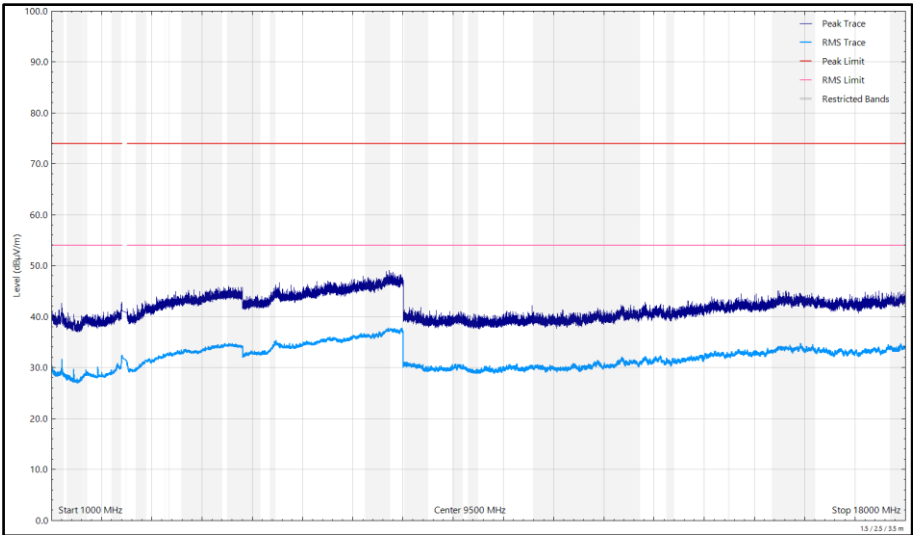


Figure 32 - 2475 MHz (CH25), Thread, ePA, Core 0, 1 GHz to 18 GHz, Vertical



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

Table 48 - 2405 MHz (CH11), Thread, ePA, Core 1, 1 GHz to 18 GHz

\*No emissions found within 20 dB of the limit.

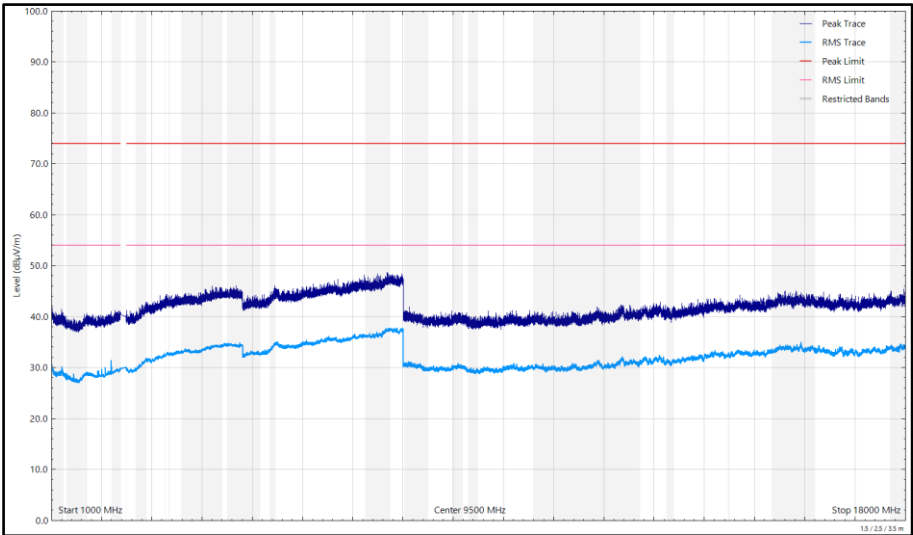


Figure 33 - 2405 MHz (CH11), Thread, ePA, Core 1, 1 GHz to 18 GHz, Horizontal

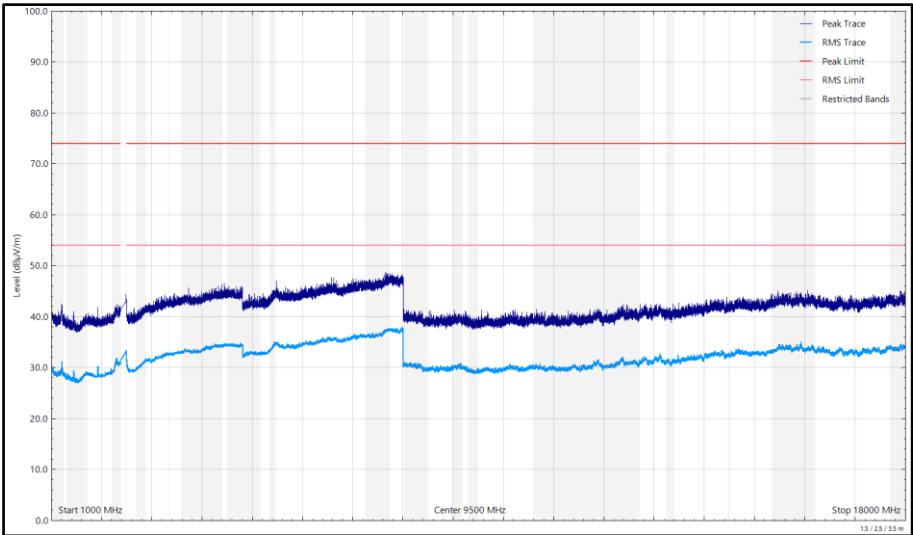
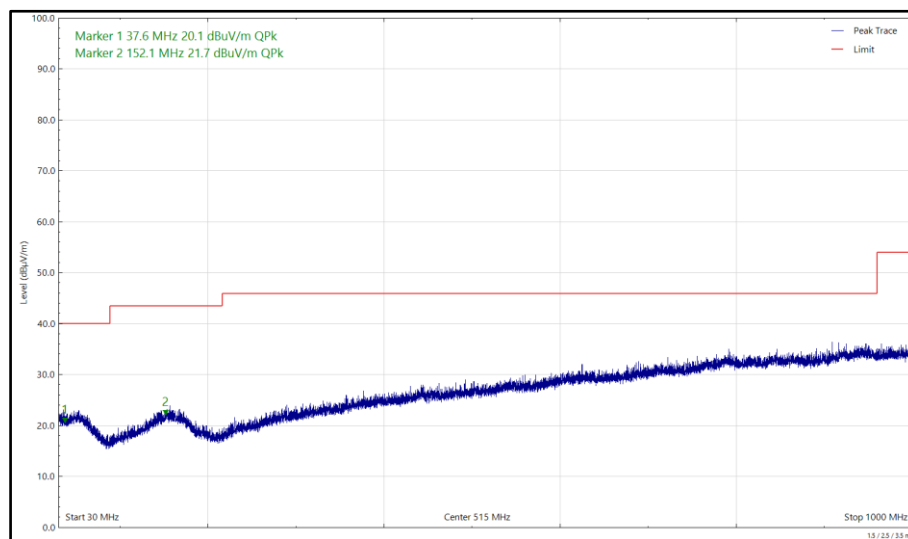


Figure 34 - 2405 MHz (CH11), Thread, ePA, Core 1, 1 GHz to 18 GHz, Vertical

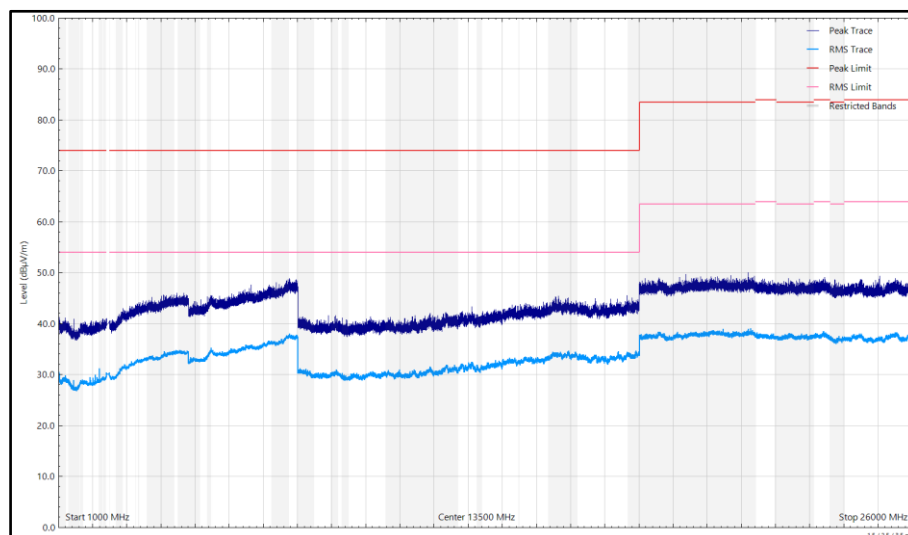
| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 37.554          | 20.14          | 40.00          | -19.86      | Q-Peak   | 0         | 257         | Horizontal   |
| 38.248          | 20.13          | 40.00          | -19.87      | Q-Peak   | 322       | 336         | Vertical     |
| 152.136         | 21.66          | 43.50          | -21.84      | Q-Peak   | 350       | 110         | Horizontal   |
| 157.359         | 21.87          | 43.50          | -21.63      | Q-Peak   | 270       | 313         | Vertical     |

**Table 49 - 2440 MHz (CH18), Thread, ePA, Core 1, 30 MHz to 26 GHz**

No other emissions found within 20 dB of the limit.



**Figure 35 - 2440 MHz (CH18), Thread, ePA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 36 - 2440 MHz (CH18), Thread, ePA, Core 1, 1 GHz to 26 GHz, Horizontal**

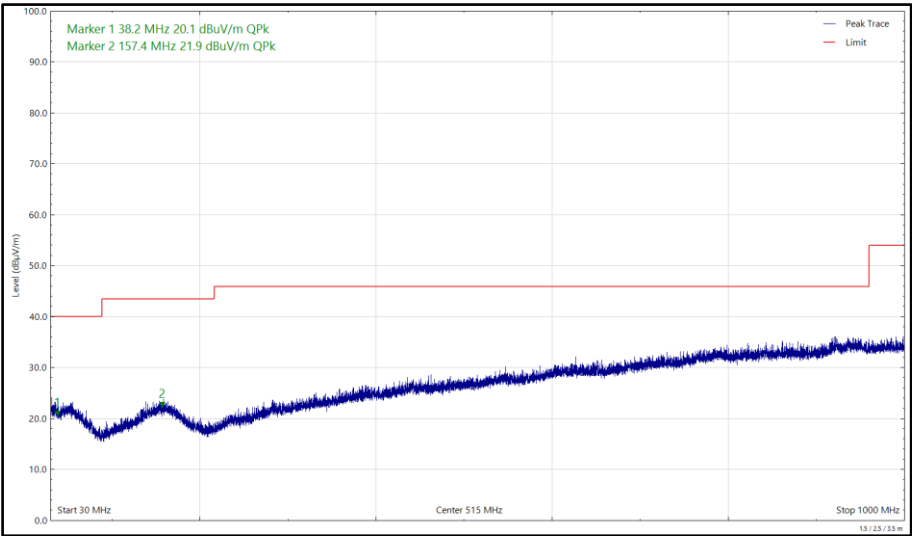


Figure 37 - 2440 MHz (CH18), Thread, ePA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

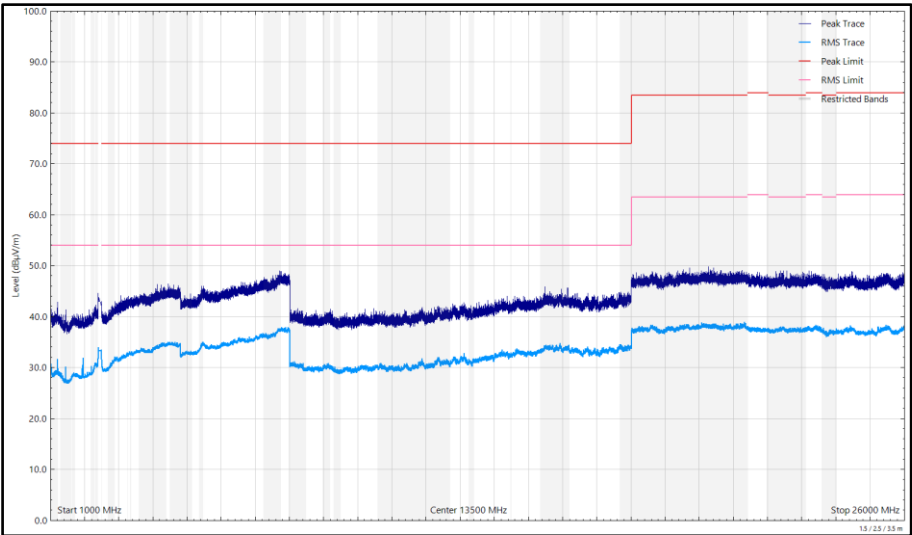
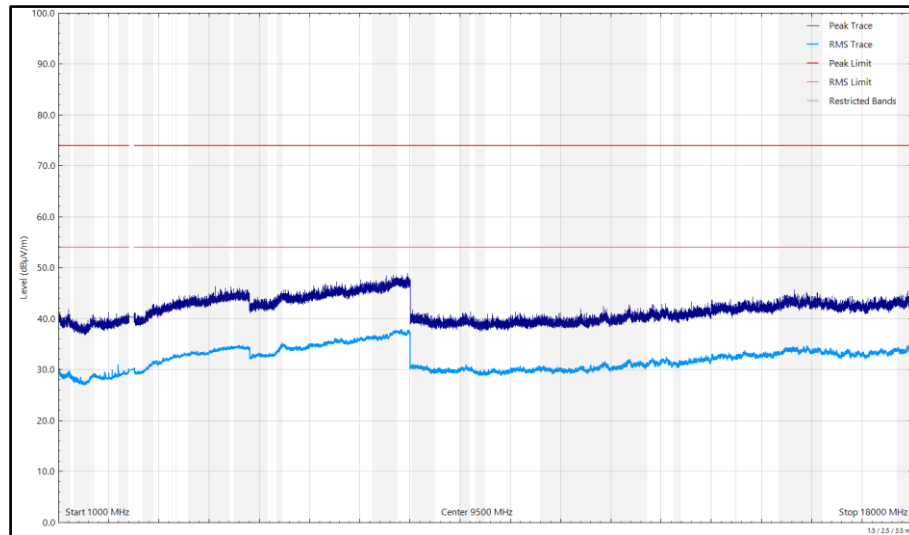


Figure 38 - 2440 MHz (CH18), Thread, ePA, Core 1, 1 GHz to 26 GHz, Vertical

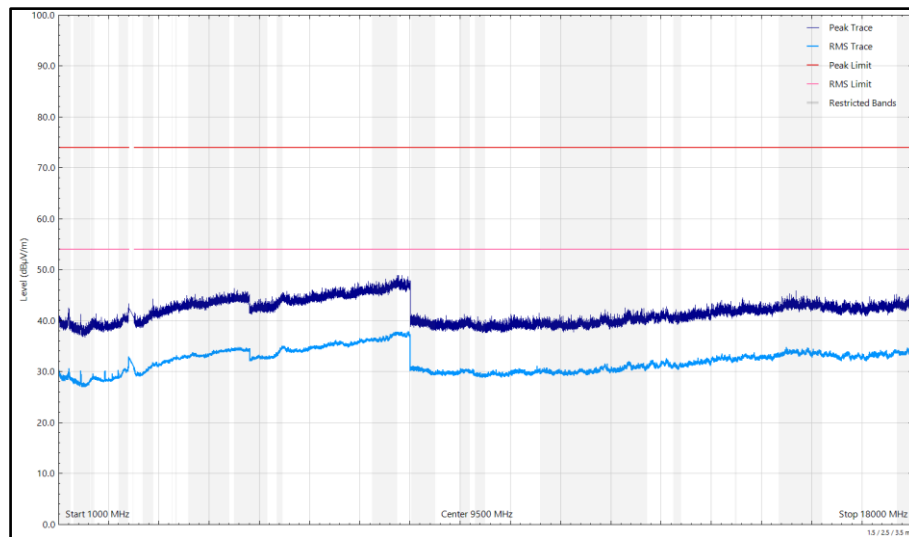
| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| *               |                |                |       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

**Table 50 - 2475 MHz (CH25), Thread, ePA, Core 1, 1 GHz to 18 GHz**

\*No emissions found within 20 dB of the limit.



**Figure 39 - 2475 MHz (CH25), Thread, ePA, Core 1, 1 GHz to 18 GHz, Horizontal**



**Figure 40 - 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 51 - 2405 MHz (CH11), Thread, iPA, Core 0, 1 GHz to 18 GHz

\*No emissions found within 20 dB of the limit.

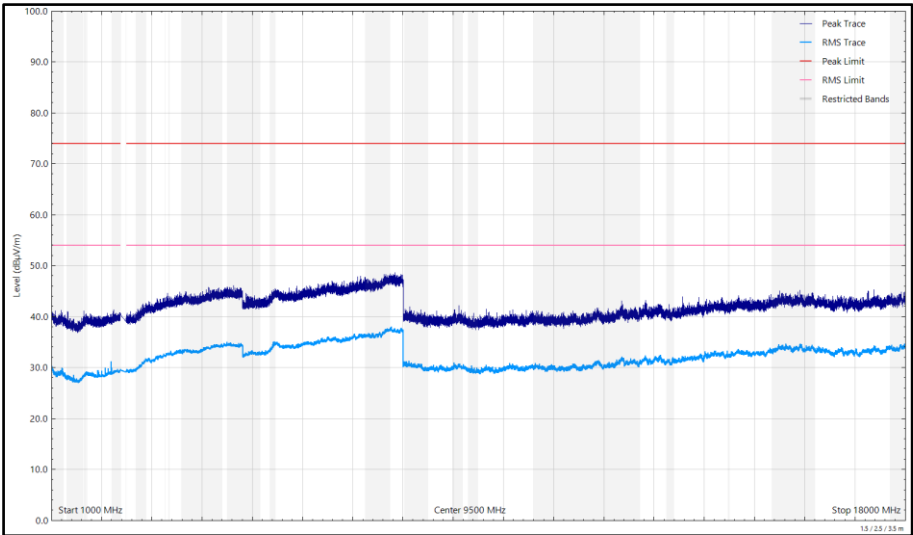


Figure 41 - 2405 MHz (CH11), Thread, iPA, Core 0, 1 GHz to 18 GHz, Horizontal

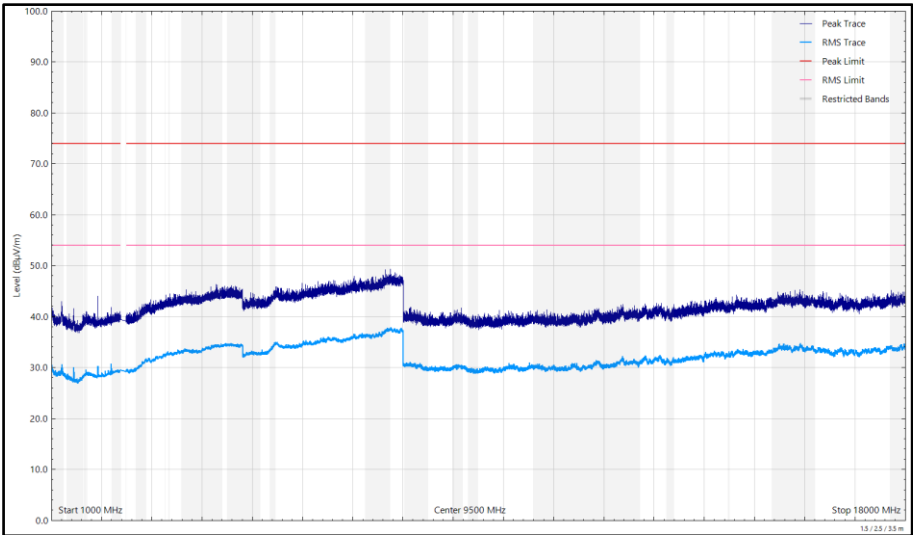
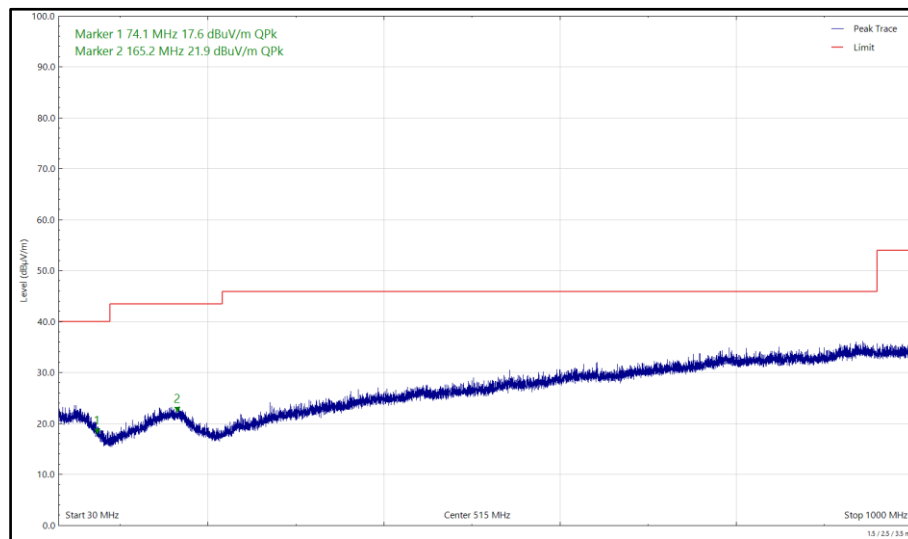


Figure 42 - 2405 MHz (CH11), Thread, iPA, Core 0, 1 GHz to 18 GHz, Vertical

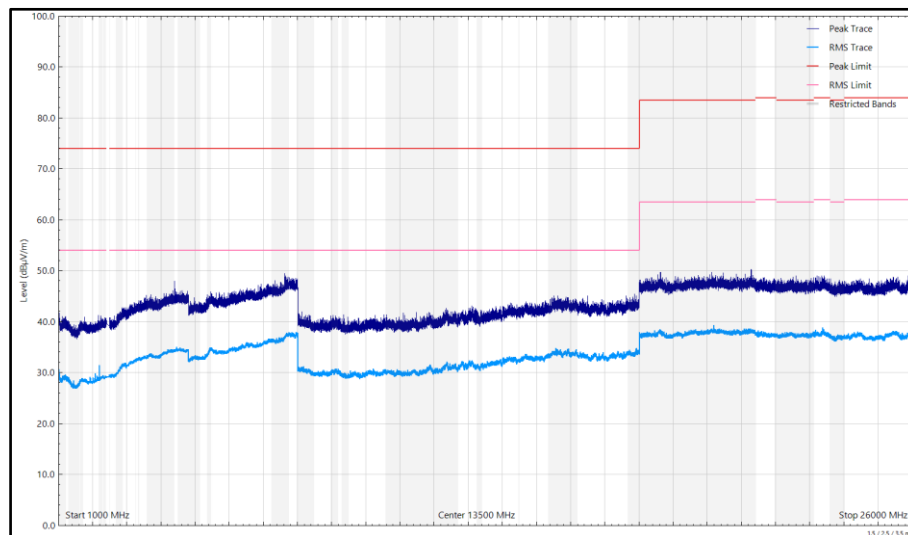
| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 38.218          | 20.12          | 40.00          | -19.88      | Q-Peak   | 246       | 340         | Vertical     |
| 74.094          | 17.62          | 40.00          | -22.38      | Q-Peak   | 80        | 111         | Horizontal   |
| 159.815         | 21.96          | 43.50          | -21.54      | Q-Peak   | 146       | 400         | Vertical     |
| 165.156         | 21.87          | 43.50          | -21.63      | Q-Peak   | 247       | 347         | Horizontal   |

**Table 52 - 2440 MHz (CH18), Thread, iPA, Core 0, 30 MHz to 26 GHz**

No other emissions found within 20 dB of the limit.



**Figure 43 - 2440 MHz (CH18), Thread, iPA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 44 - 2440 MHz (CH18), Thread, iPA, Core 0, 1 GHz to 26 GHz, Horizontal**

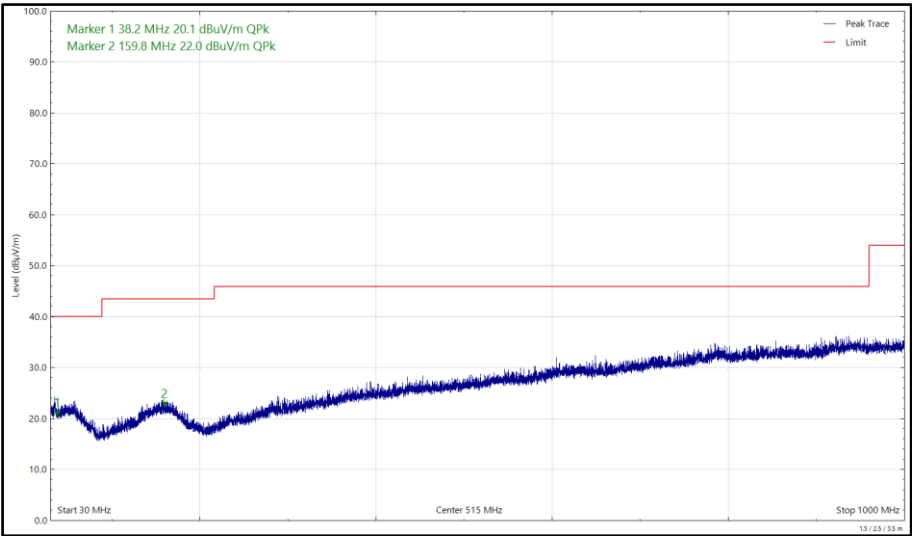


Figure 45 - 2440 MHz (CH18), Thread, iPA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

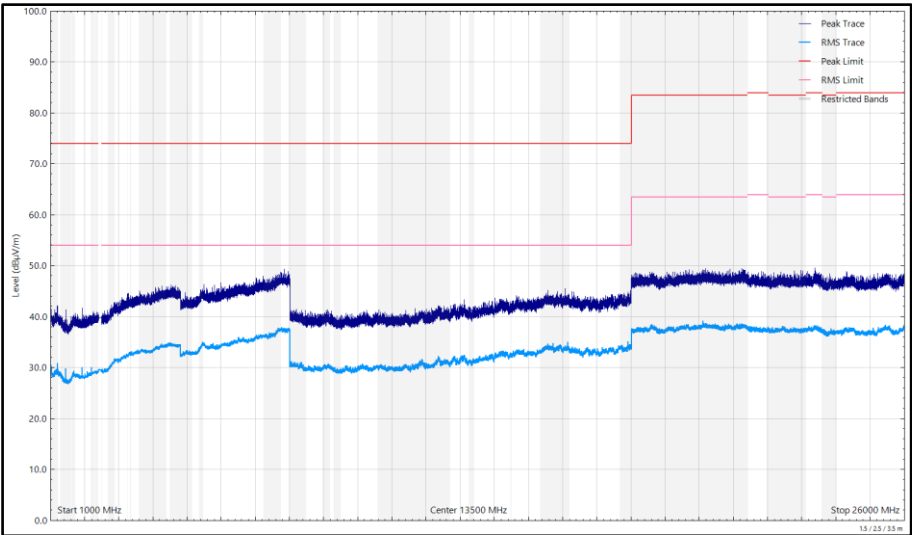


Figure 46 - 2440 MHz (CH18), Thread, iPA, Core 0, 1 GHz to 26 GHz, Vertical



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

Table 53 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz

\*No emissions found within 20 dB of the limit.

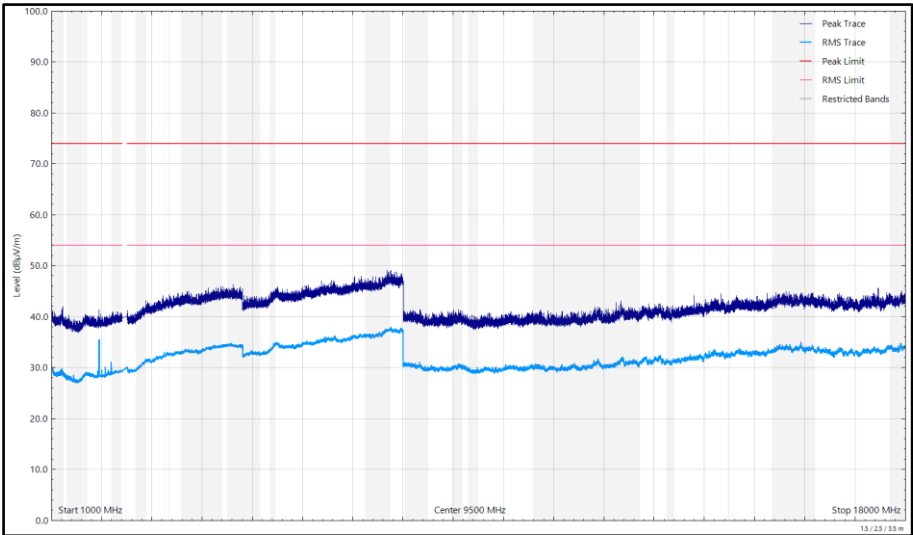


Figure 47 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz, Horizontal

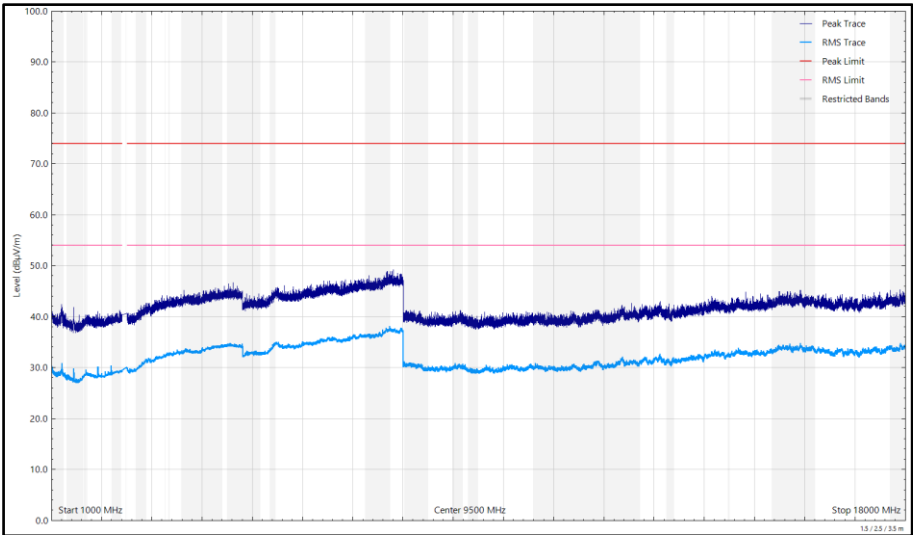


Figure 48 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz, Vertical



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

Table 54 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz

\*No emissions found within 20 dB of the limit.

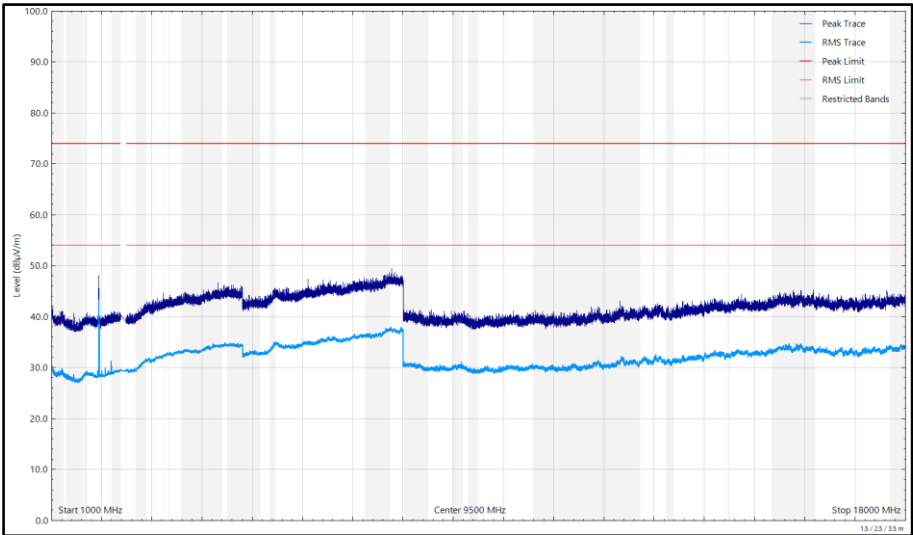


Figure 49 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz, Horizontal

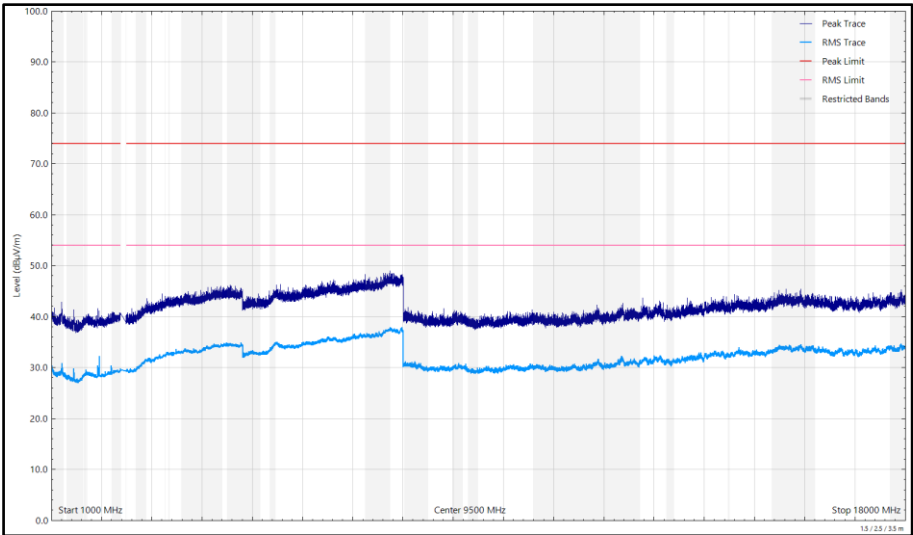
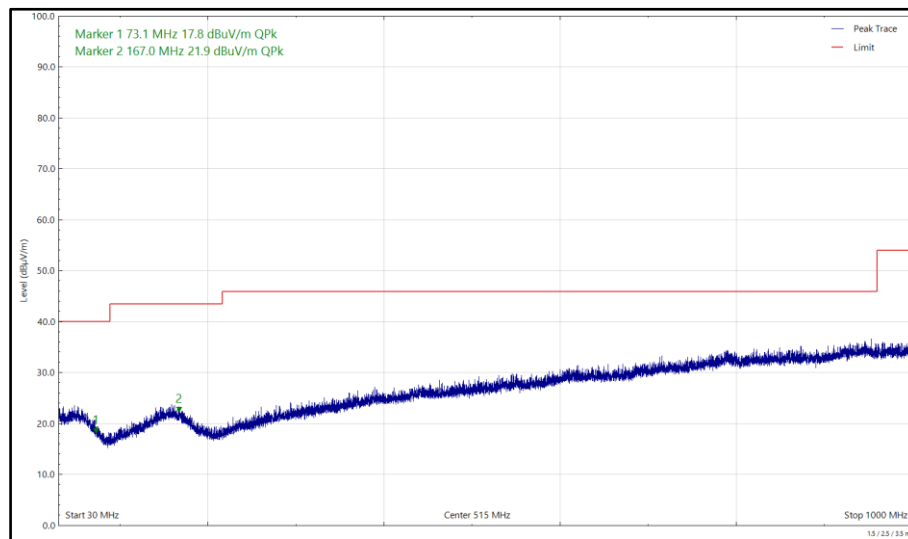


Figure 50 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz, Vertical

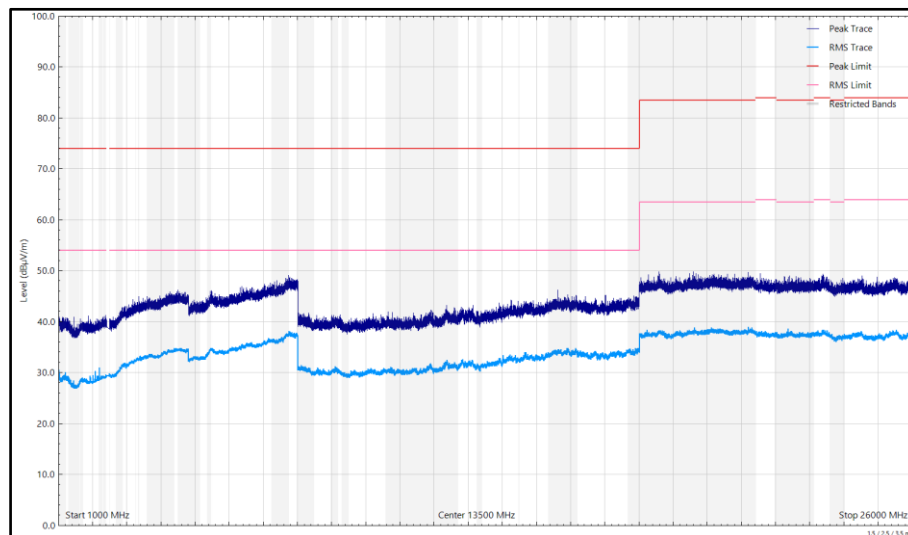
| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 73.080          | 17.80          | 40.00          | -22.20      | Q-Peak   | 106       | 400         | Horizontal   |
| 74.052          | 17.60          | 40.00          | -22.40      | Q-Peak   | 89        | 348         | Vertical     |
| 163.220         | 21.93          | 43.50          | -21.57      | Q-Peak   | 356       | 365         | Vertical     |
| 167.012         | 21.86          | 43.50          | -21.64      | Q-Peak   | 108       | 358         | Horizontal   |

**Table 55 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 26 GHz**

No other emissions found within 20 dB of the limit.



**Figure 51 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 52 - 2440 MHz (CH18), Thread, iPA, Core 1, 1 GHz to 26 GHz, Horizontal**

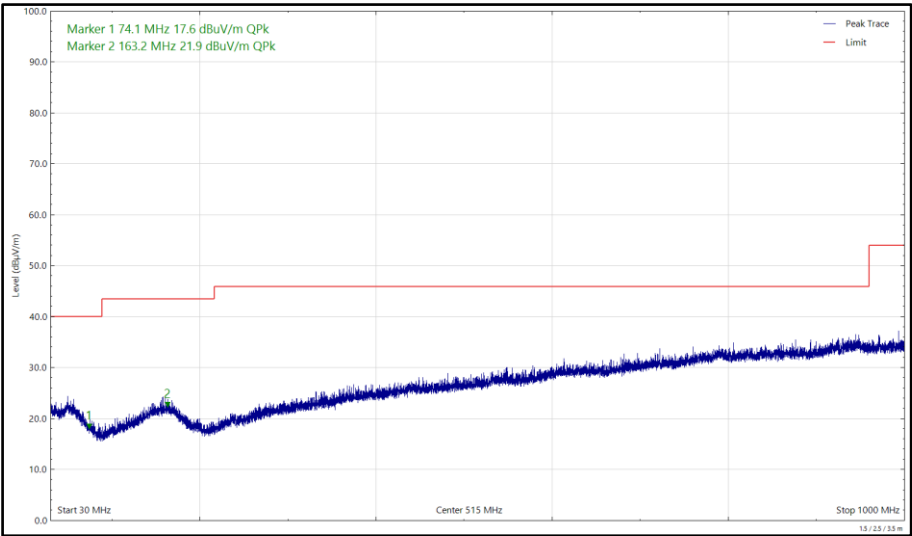


Figure 53 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

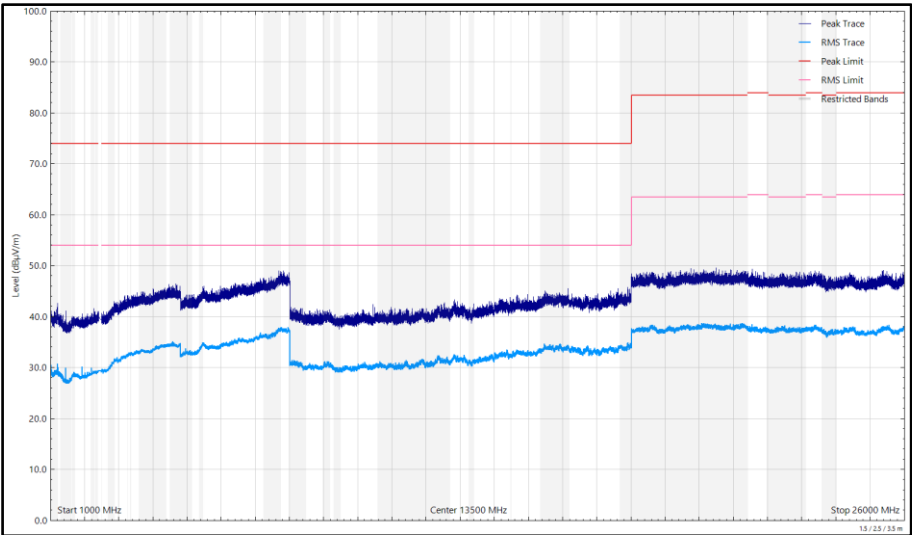


Figure 54 - 2440 MHz (CH18), Thread, iPA, Core 1, 1 GHz to 26 GHz, Vertical



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

Table 56 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz

\*No emissions found within 20 dB of the limit.

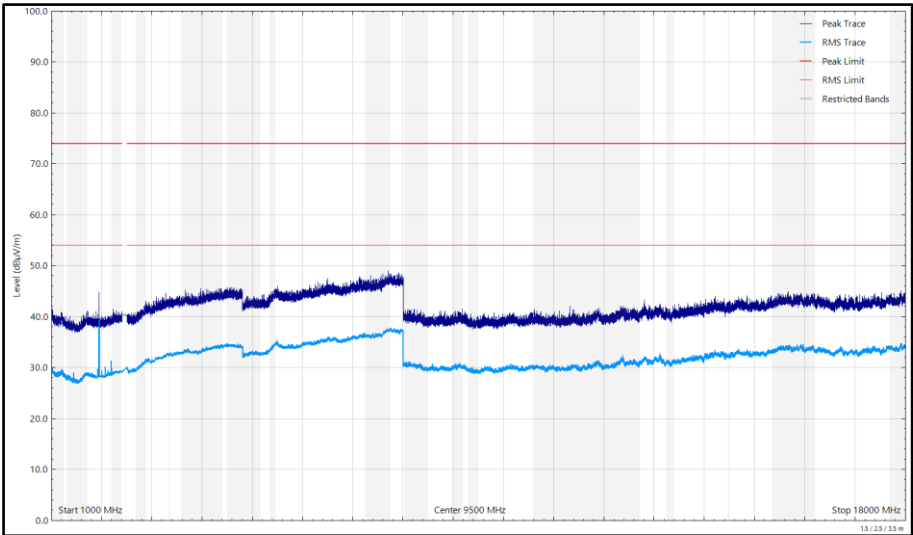


Figure 55 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz, Horizontal

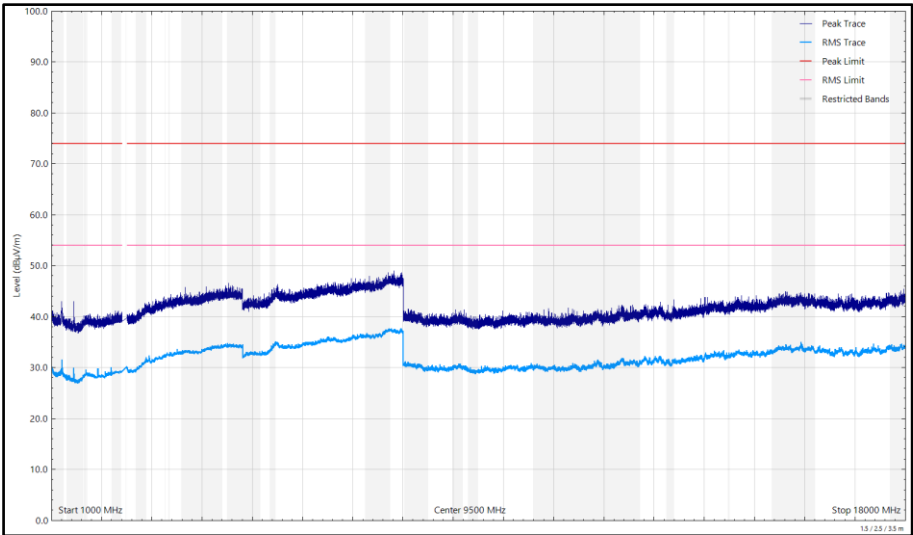


Figure 56 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz, Vertical



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

Table 57 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz

\*No emissions found within 20 dB of the limit.

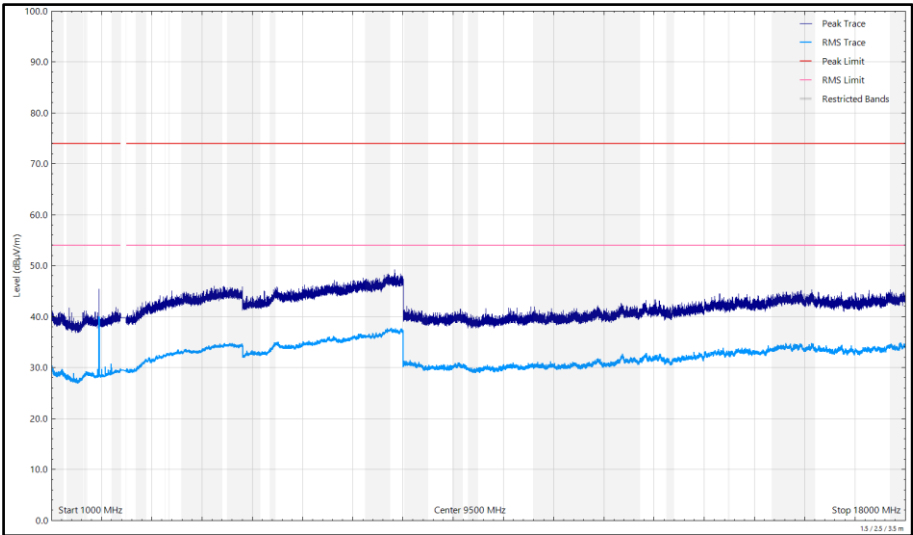


Figure 57 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz, Horizontal

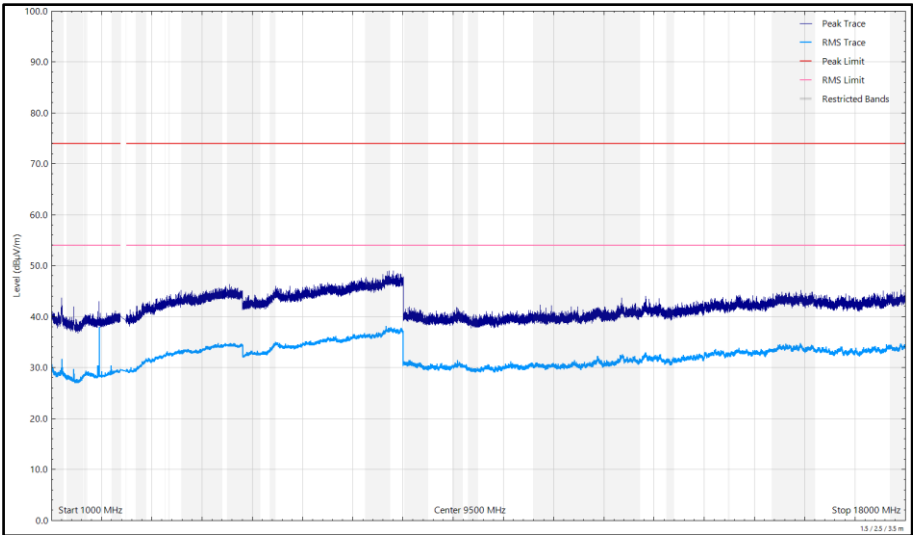
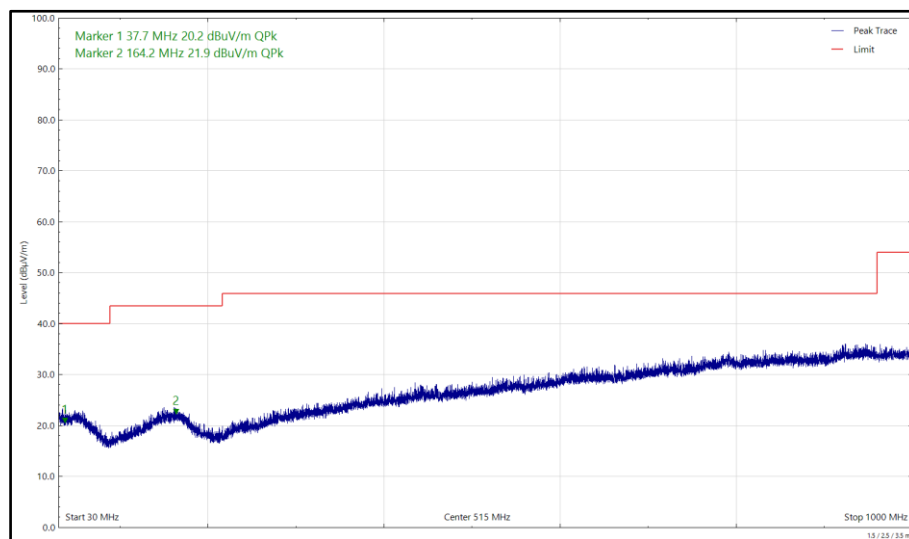


Figure 58 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz, Vertical

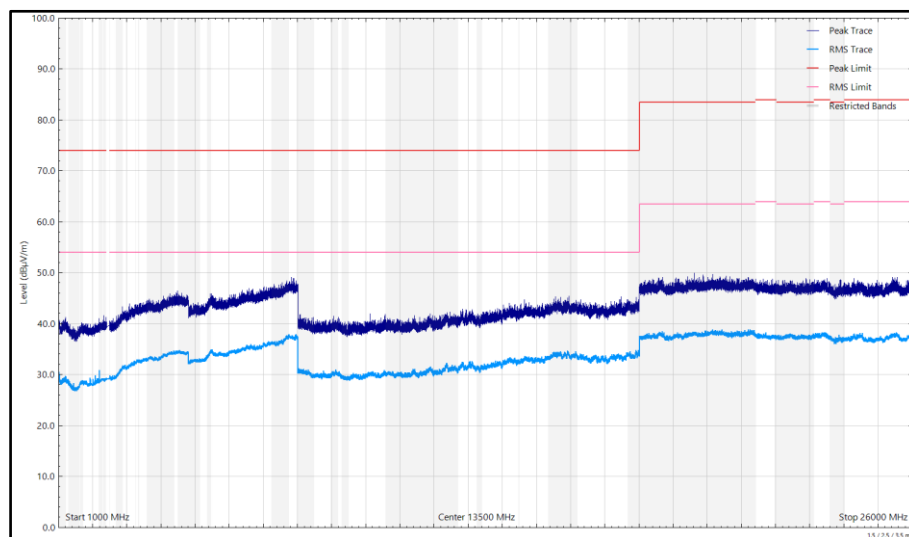
| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 37.725          | 20.16          | 40.00          | -19.84      | Q-Peak   | 336       | 160         | Horizontal   |
| 38.209          | 20.17          | 40.00          | -19.83      | Q-Peak   | 192       | 255         | Vertical     |
| 156.751         | 21.85          | 43.50          | -21.65      | Q-Peak   | 73        | 399         | Vertical     |
| 164.249         | 21.90          | 43.50          | -21.60      | Q-Peak   | 171       | 390         | Horizontal   |

**Table 58 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 26 GHz**

No other emissions found within 20 dB of the limit.



**Figure 59 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 60 - 2440 MHz (CH18), Thread, iPA, Core 2, 1 GHz to 26 GHz, Horizontal**

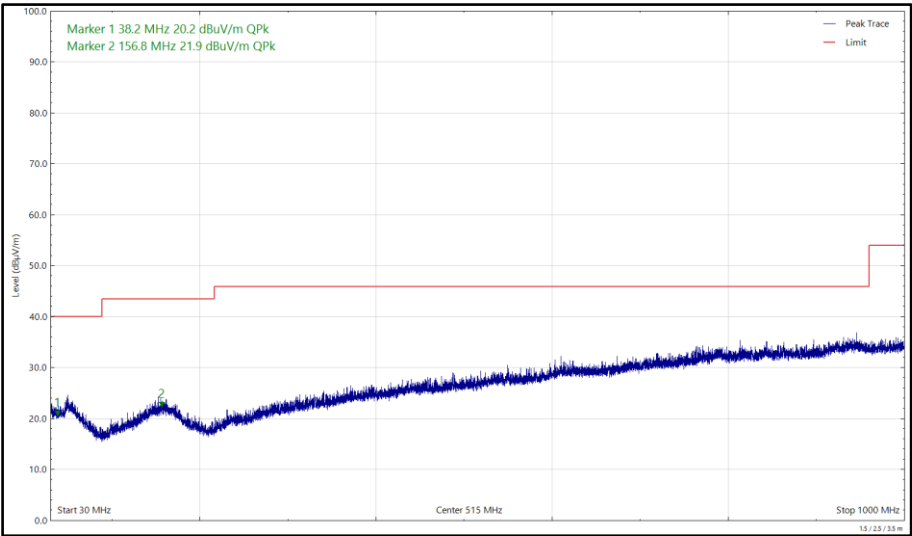


Figure 61 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 1 GHz, Vertical (Peak)

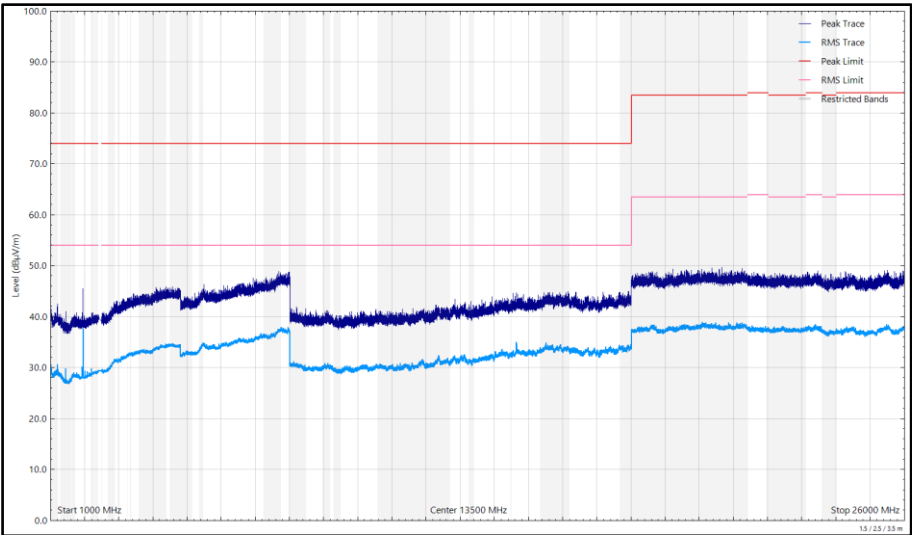
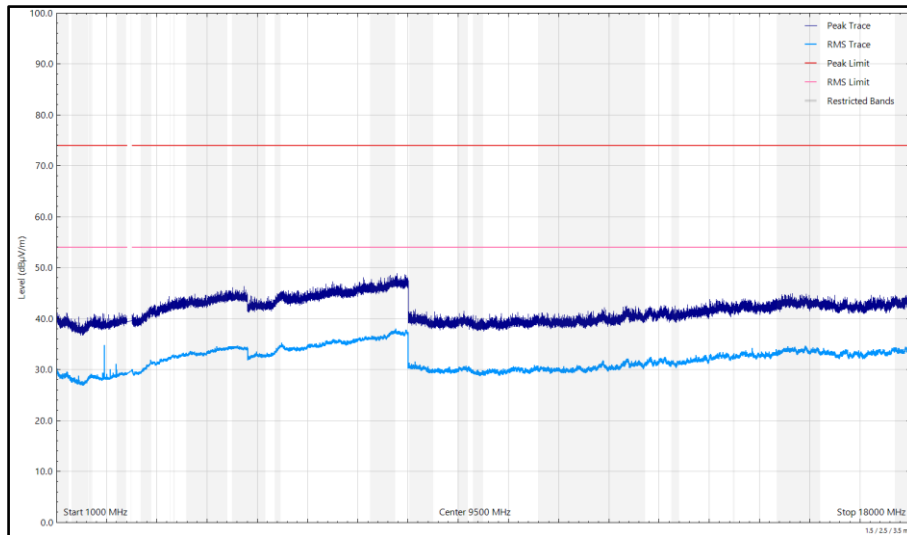


Figure 62 - 2440 MHz (CH18), Thread, iPA, Core 2, 1 GHz to 26 GHz, Vertical

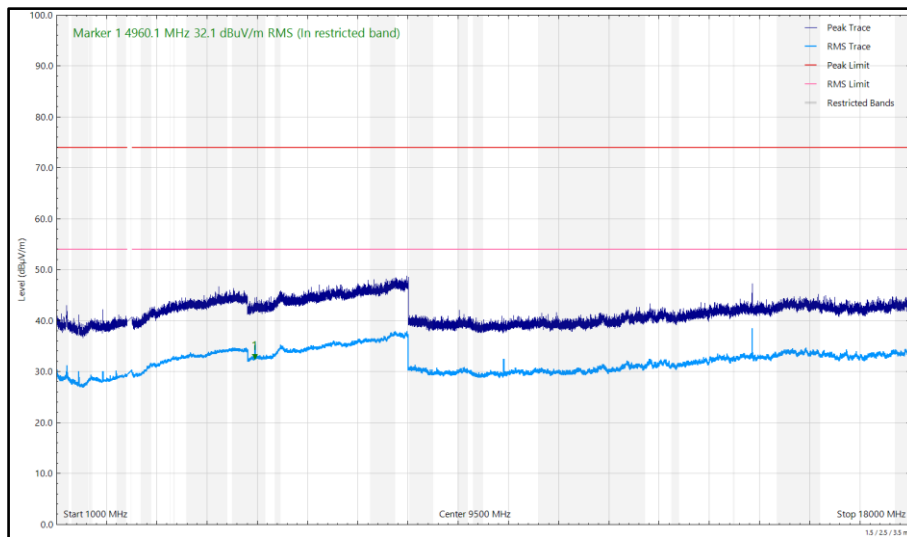
| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 4960.134        | 32.06          | 54.00          | -21.94      | RMS      | 191       | 318         | Vertical     |

**Table 59 - 2475 MHz (CH25), Thread, iPA, Core 2, 1 GHz to 18 GHz**

No other emissions found within 20 dB of the limit.



**Figure 63 - 2475 MHz (CH25), Thread, iPA, Core 2, 1 GHz to 18 GHz, Horizontal**



**Figure 64 - 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.



## 2.5.8 Test Location and Test Equipment Used

This test was carried out in RF Chamber 14 & RF Chamber 16.

| Instrument                                   | Manufacturer        | Type No.                  | TE No. | Calibration Period (months) | Calibration Expiry Date |
|----------------------------------------------|---------------------|---------------------------|--------|-----------------------------|-------------------------|
| Emissions Software                           | TUV SUD             | EmX V3.6.1                | 5125   | -                           | TU                      |
| EMI Test Receiver                            | Rohde & Schwarz     | ESW44                     | 5912   | 12                          | 04-Sep-2026             |
| DRG Horn Antenna (7.5-18GHz)                 | Schwarzbeck         | HWRD750                   | 5939   | 12                          | 23-May-2027             |
| 1500W (300V 12A) AC Power Supply             | iTech               | IT7324                    | 5955   | -                           | TU                      |
| 1500W (300V 12A) AC Power Supply             | iTech               | IT7324                    | 5957   | -                           | TU                      |
| 5m Semi-Anechoic Chamber (Dual-Axis)         | Albatross Projects  | RF Chamber 14             | 5958   | 36                          | 23-Apr-2028             |
| Compact Antenna Mast                         | Maturo Gmbh         | CAM4.0-P                  | 5959   | -                           | TU                      |
| Turntable                                    | Maturo Gmbh         | TT1.5SI                   | 5962   | -                           | TU                      |
| 3m Semi-Anechoic Chamber, Chamber16          | Albatross Projects  | RF Chamber 16             | 5972   | 36                          | 07-May-2028             |
| Mast & Turntable Controller                  | Maturo Gmbh         | FCU3.0                    | 5973   | -                           | TU                      |
| Tilt Antenna Mast                            | Maturo Gmbh         | BAM4.5-P                  | 5974   | -                           | TU                      |
| Turntable                                    | Maturo Gmbh         | TT1.5SI                   | 5975   | -                           | TU                      |
| Cable (N-Type to N-Type, 8 m)                | Junkosha            | MWX221-08000NMSMS/A       | 6017   | 12                          | 12-Sep-2026             |
| Horn Antenna (1-10 GHz)                      | Schwarzbeck         | BBHA9120B                 | 6142   | 12                          | 14-Sep-2026             |
| Digital Multimeter                           | Fluke               | 115                       | 6145   | 12                          | 02-Jun-2027             |
| Digital Multimeter                           | Fluke               | 115                       | 6147   | 12                          | 03-Jun-2027             |
| Double Ridge Active Horn Antenna (18-40 GHz) | Com-Power           | AHA-840                   | 6189   | 24                          | 26-Sep-2026             |
| SAC Switch Unit                              | TUV SUD             | TUV_SSU_001               | 6190   | 12                          | 11-Dec-2026             |
| SAC Switch Unit                              | TUV SUD             | TUV_SSU_001               | 6191   | 12                          | 18-Dec-2026             |
| 8GHz Highpass Filter                         | Wainwright          | WHKX 7150 8000 18000 50SS | 6194   | 12                          | 23-Apr-2027             |
| Pre Amp 8 - 18 GHz                           | Wright Technologies | APS06 0061                | 6200   | 12                          | 23-Apr-2027             |
| Attenuator 4dB                               | Pasternack          | PE7074-4                  | 6204   | 24                          | 13-Mar-2027             |
| Cable (SMA to SMA 20cm)                      | TUV SUD             | MH-FH 8-18                | 6215   | 12                          | 23-Apr-2027             |
| Cable (K Type 2m)                            | Junkosha            | MWX241-02000KMSKMS/B      | 6323   | 12                          | 27-Apr-2027             |
| Trilog Super Broadband Test Antenna          | Schwarzbeck         | VULB 9168                 | 6456   | 24                          | 13-Mar-2027             |
| Mast & Turntable Controller                  | Maturo Gmbh         | FCU3.0                    | 6795   | -                           | TU                      |



| Instrument          | Manufacturer    | Type No.             | TE No. | Calibration Period (months) | Calibration Expiry Date |
|---------------------|-----------------|----------------------|--------|-----------------------------|-------------------------|
| Tilt Antenna Mast   | Maturo Gmbh     | BAM4.5-P             | 6796   | -                           | TU                      |
| EMI Test Receiver   | Rohde & Schwarz | ESW44                | 6805   | 12                          | 24-Jul-2026             |
| 1M SMA Cable        | Junkosha        | MWX221-01000AMSAMS/B | 6832   | 12                          | 18-Aug-2026             |
| Handheld Hygrometer | Fluke           | 971                  | 6837   | 12                          | 16-Sep-2026             |
| Handheld Hygrometer | Fluke           | 971                  | 6838   | 12                          | 16-Sep-2026             |
| 1m SMA-Type Cable   | Junkosha        | MWX221-01000AMSAMS/B | 6842   | 12                          | 23-Sep-2026             |
| 1m SMA-Type Cable   | Junkosha        | MWX221-01000AMSAMS/B | 6843   | 12                          | 06-Sep-2026             |
| 1m SMA-Type Cable   | Junkosha        | MWX221-01000AMSAMS/B | 6844   | 12                          | 06-Sep-2026             |
| 8m SMA-Type Cable   | Junkosha        | MWX221-08000AMSAMS/B | 6847   | 12                          | 06-Nov-2026             |
| 8m SMA-Type Cable   | Junkosha        | MWX221-08000AMSAMS/B | 6848   | 12                          | 23-Oct-2026             |
| 8m SMA-Type Cable   | Junkosha        | MWX221-08000AMSAMS/B | 6849   | 12                          | 06-Nov-2026             |

**Table 60**

TU - Traceability Unscheduled



## **2.6 Power Spectral Density**

### **2.6.1 Specification Reference**

FCC 47 CFR Part 15C, Clause 15.247 (e)  
ISED RSS-247, Clause 6.3.1  
ISED RSS-GEN, Clause 6.12

### **2.6.2 Equipment Under Test and Modification State**

A3546, S/N: JYKX4WQ023 - Modification State 0

### **2.6.3 Date of Test**

11-July-2026 to 20-July-2026

### **2.6.4 Test Method**

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

Where the EUT duty cycle was < 98 % and repeatable within 2 %, the spectrum analyser was set to trace (power) averaging and a duty cycle correction was added as calculated in the result tables below (Method AVGPS-2).

### **2.6.5 Environmental Conditions**

|                     |                |
|---------------------|----------------|
| Ambient Temperature | 22.1 - 23.1 °C |
| Relative Humidity   | 46.4 - 47.3 %  |



## 2.6.6 Test Results

### Thread

| Test Configuration       |                             |                 |                |
|--------------------------|-----------------------------|-----------------|----------------|
| Frequency Range:         | 2400-2483.5 MHz             | Band:           | 2.4 GHz        |
| Limit Clause(s):         | 15.247 (e)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 11.10.5 |
| Additional Reference(s): | -                           |                 |                |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread ePA | DCCF (dB):               | 0.00  |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.20  |
| 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 | $\Sigma$ |                   |             |
| 2405                 | 3.0       | -2.90         | - | - | - | -2.90    | 8.00              | -10.90      |
| 2440                 | 3.0       | -3.31         | - | - | - | -3.31    | 8.00              | -11.31      |
| 2475                 | 3.0       | -3.30         | - | - | - | -3.30    | 8.00              | -11.30      |

**Table 61 - Maximum Power Spectral Density Results**

| Test Frequency (MHz) | RBW (kHz) | PSD (dBm/3 kHz) |   |   |   |          | Limit (dBm) | Margin (dB) |
|----------------------|-----------|-----------------|---|---|---|----------|-------------|-------------|
|                      |           | A               | B | C | D | $\Sigma$ |             |             |
| 2405                 | 3.0       | -2.90           | - | - | - | -2.90    | 8.00        | -10.90      |
| 2440                 | 3.0       | -3.31           | - | - | - | -3.31    | 8.00        | -11.31      |
| 2475                 | 3.0       | -3.30           | - | - | - | -3.30    | 8.00        | -11.30      |

**Table 62 - ISED Maximum Power Spectral Density Results**



| Test Configuration       |                             |                 |                |
|--------------------------|-----------------------------|-----------------|----------------|
| Frequency Range:         | 2400-2483.5 MHz             | Band:           | 2.4 GHz        |
| Limit Clause(s):         | 15.247 (e)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 11.10.5 |
| Additional Reference(s): | -                           |                 |                |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread iPA | DCCF (dB):               | 0.00  |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.20  |
| 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 | $\Sigma$ |                   |             |
| 2405                 | 3.0       | -15.22        | - | - | - | -15.22   | 8.00              | -23.22      |
| 2440                 | 3.0       | -14.43        | - | - | - | -14.43   | 8.00              | -22.43      |
| 2475                 | 3.0       | -14.86        | - | - | - | -14.86   | 8.00              | -22.86      |

**Table 63 - Maximum Power Spectral Density Results**

| Test Frequency (MHz) | RBW (kHz) | PSD (dBm/3 kHz) |   |   |   |          | Limit (dBm) | Margin (dB) |
|----------------------|-----------|-----------------|---|---|---|----------|-------------|-------------|
|                      |           | A               | B | C | D | $\Sigma$ |             |             |
| 2405                 | 3.0       | -15.22          | - | - | - | -15.22   | 8.00        | -23.22      |
| 2440                 | 3.0       | -14.43          | - | - | - | -14.43   | 8.00        | -22.43      |
| 2475                 | 3.0       | -14.86          | - | - | - | -14.86   | 8.00        | -22.86      |

**Table 64 - ISED Maximum Power Spectral Density Results**



| Test Configuration       |                             |                 |                |
|--------------------------|-----------------------------|-----------------|----------------|
| Frequency Range:         | 2400-2483.5 MHz             | Band:           | 2.4 GHz        |
| Limit Clause(s):         | 15.247 (e)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 11.10.5 |
| Additional Reference(s): | -                           |                 |                |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread iPA | DCCF (dB):               | 0.00  |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.40  |
| 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 | $\Sigma$ |                   |             |
| 2405                 | 3.0       | -             | -15.36 | - | - | -15.36   | 8.00              | -23.36      |
| 2440                 | 3.0       | -             | -15.22 | - | - | -15.22   | 8.00              | -23.22      |
| 2475                 | 3.0       | -             | -15.24 | - | - | -15.24   | 8.00              | -23.24      |

**Table 65 - Maximum Power Spectral Density Results**

| Test Frequency (MHz) | RBW (kHz) | PSD (dBm/3 kHz) |        |   |   |          | Limit (dBm) | Margin (dB) |
|----------------------|-----------|-----------------|--------|---|---|----------|-------------|-------------|
|                      |           | A               | B      | C | D | $\Sigma$ |             |             |
| 2405                 | 3.0       | -               | -15.36 | - | - | -15.36   | 8.00        | -23.36      |
| 2440                 | 3.0       | -               | -15.22 | - | - | -15.22   | 8.00        | -23.22      |
| 2475                 | 3.0       | -               | -15.24 | - | - | -15.14   | 8.00        | -23.14      |

**Table 66 - ISED Maximum Power Spectral Density Results**



| Test Configuration       |                             |                 |                |
|--------------------------|-----------------------------|-----------------|----------------|
| Frequency Range:         | 2400-2483.5 MHz             | Band:           | 2.4 GHz        |
| Limit Clause(s):         | 15.247 (e)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 11.10.5 |
| Additional Reference(s): | -                           |                 |                |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread ePA | DCCF (dB):               | 0.00  |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.40  |
| 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 | $\Sigma$ |                   |             |
| 2405                 | 3.0       | -             | -3.09 | - | - | -3.09    | 8.00              | -11.09      |
| 2440                 | 3.0       | -             | -3.20 | - | - | -3.20    | 8.00              | -11.20      |
| 2475                 | 3.0       | -             | -3.11 | - | - | -3.11    | 8.00              | -11.11      |

**Table 67 - Maximum Power Spectral Density Results**

| Test Frequency (MHz) | RBW (kHz) | PSD (dBm/3 kHz) |       |   |   |          | Limit (dBm) | Margin (dB) |
|----------------------|-----------|-----------------|-------|---|---|----------|-------------|-------------|
|                      |           | A               | B     | C | D | $\Sigma$ |             |             |
| 2405                 | 3.0       | -               | -3.09 | - | - | -3.09    | 8.00        | -11.09      |
| 2440                 | 3.0       | -               | -3.20 | - | - | -3.20    | 8.00        | -11.20      |
| 2475                 | 3.0       | -               | -3.11 | - | - | -3.11    | 8.00        | -11.11      |

**Table 68 - ISED Maximum Power Spectral Density Results**



| Test Configuration       |                             |                 |                |
|--------------------------|-----------------------------|-----------------|----------------|
| Frequency Range:         | 2400-2483.5 MHz             | Band:           | 2.4 GHz        |
| Limit Clause(s):         | 15.247 (e)<br>RSS-247 6.3.1 | Test Method(s): | C63.10 11.10.5 |
| Additional Reference(s): | -                           |                 |                |

| DUT Configuration      |            |                          |       |
|------------------------|------------|--------------------------|-------|
| Mode:                  | Thread     | Duty Cycle (%):          | 100.0 |
| -:                     | Thread iPA | DCCF (dB):               | 0.00  |
| Antenna Configuration: | SISO       | Peak Antenna Gain (dBi): | 1.00  |
| 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 | $\Sigma$ |                   |             |
| 2405                 | 3.0       | -             | - | -10.96 | - | -10.96   | 8.00              | -18.96      |
| 2440                 | 3.0       | -             | - | -11.26 | - | -11.26   | 8.00              | -19.26      |
| 2475                 | 3.0       | -             | - | -11.30 | - | -11.30   | 8.00              | -19.30      |

**Table 69 - Maximum Power Spectral Density Results**

| Test Frequency (MHz) | RBW (kHz) | PSD (dBm/3 kHz) |   |        |   |          | Limit (dBm) | Margin (dB) |
|----------------------|-----------|-----------------|---|--------|---|----------|-------------|-------------|
|                      |           | A               | B | C      | D | $\Sigma$ |             |             |
| 2405                 | 3.0       | -               | - | -10.96 | - | -10.96   | 8.00        | -18.96      |
| 2440                 | 3.0       | -               | - | -11.26 | - | -11.26   | 8.00        | -19.26      |
| 2475                 | 3.0       | -               | - | -11.30 | - | -11.30   | 8.00        | -19.30      |

**Table 70 - ISED 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(b)

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



## 2.6.7 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 |
|--------------------------------|-----------------------|------------------------|--------|-----------------------------|-------------------------|
| AC Programmable Power Supply   | iTech                 | IT7324                 | 5225   | -                           | O/P Mon                 |
| MXA Signal Analyser            | Keysight Technologies | N9020B                 | 5529   | 24                          | 02-Jan-2027             |
| USB Power Sensor               | Boonton               | RTP5008                | 5820   | 12                          | 16-Mar-2027             |
| USB Power Sensor               | Boonton               | RTP5008                | 5821   | 12                          | 16-Mar-2027             |
| Modular Power System mainframe | Keysight Technologies | N6701C                 | 6151   | -                           | O/P Mon                 |
| DC Power Module                | Keysight Technologies | N6754A                 | 6152   | -                           | O/P Mon                 |
| Climatic Chamber               | Weiss Technik         | ClimeEvent C/340/70a/3 | 6386   | 12                          | O/P Mon                 |
| Signal Conditioning Unit       | TUV SUD               | SPECTRUM_SCU001        | 6426   | 12                          | 16-Mar-2027             |
| USB Wideband Power Sensor      | Boonton               | RTP5008                | 6591   | 12                          | 16-Mar-2027             |
| Digital Thermometer            | R.S Components        | RS 5511                | 6739   | 12                          | 02-Mar-2027             |
| SCU Cable Assembly             | TUV SUD               | SPECTRUM_SCU_CA        | 6752   | 12                          | 16-Mar-2027             |
| SCU Cable Assembly             | TUV SUD               | SPECTRUM_SCU_CA        | 6753   | 12                          | 16-Mar-2027             |
| SCU Cable Assembly SCU         | TUV SUD               | SPECTRUM_SCU_CA        | 6754   | 0                           | 16-Mar-2027             |
| Humidity & Temperature meter   | Fluke                 | 971                    | 7103   | 12                          | 05-Aug-2026             |
| Multimeter                     | Fluke                 | 115                    | 7115   | 12                          | 13-Aug-2026             |

**Table 71**

O/P Mon - Output Monitored using calibrated equipment



### 3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

| Test Name                      | Measurement Uncertainty                                        |
|--------------------------------|----------------------------------------------------------------|
| Restricted Band Edges          | 30 MHz to 1 GHz: $\pm 5.2$ dB<br>1 GHz to 40 GHz: $\pm 6.3$ dB |
| Emission Bandwidth             | $\pm 61.54$ kHz                                                |
| Maximum Conducted Output Power | Method PM: $\pm 0.65$ dB<br>Method SA: $\pm 1.05$ dB           |
| Authorised Band Edges          | 30 MHz to 1 GHz: $\pm 5.2$ dB<br>1 GHz to 40 GHz: $\pm 6.3$ dB |
| Spurious Radiated Emissions    | 30 MHz to 1 GHz: $\pm 5.2$ dB<br>1 GHz to 40 GHz: $\pm 6.3$ dB |
| Power Spectral Density         | $\pm 1.00$ dB                                                  |

**Table 72**

#### Measurement Uncertainty Decision Rule – Accuracy Method

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, Clause 4.4.3 (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.