FCC and ISED Test Report

Apple Inc
Model: A3404

In accordance with FCC 47 CFR Part 15C and ISED RSS-247 and ISED RSS-GEN (2.4 GHz Bluetooth DTS)

Prepared for: Apple Inc
One Apple Park Way
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California
95014
USA

TUV SUD SERVICES (UK) LIMITED
Digitally signed by TUV SUD SERVICES (UK) LIMITED
Date: 2026.02.18 16:08:01 Z

FCC ID: BCGA3404 IC: 579C-A3404

COMMERCIAL-IN-CONFIDENCE

Document 75963993-62 Issue 02

SIGNATURE			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Steve White	Senior Technical Specialist	Authorised Signatory	18 February 2026

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

ENGINEERING STATEMENT

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

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Report Generating	George Capps	18 February 2026	

FCC Accreditation
553713/UK2026 Concorde Park, Fareham Test Laboratory

ISED Accreditation
28798/UK0003 Concorde Park, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15C: 2024, ISED RSS-247: Issue 4 (2025-07) and 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	10 February 2026
2	Updated contents page	18 February 2026

Table 1

1.2 Introduction

Applicant	Apple Inc
Manufacturer	Apple Inc
EUT/Sample Identification	Refer to section 1.6
Test Specification/Issue/Date	FCC 47 CFR Part 15C: 2024 ISED RSS-247: Issue 4 (2025-07) ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02)
Start of Test	15-September-2025
Finish of Test	09-January-2026
Name of Engineer(s)	Marius Vasii, Mahmud Chowdhury, Vineeth Nagaraj, Marius Vasii, Manohar Thota
Related Document(s)	ANSI C63.4 (2014) 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: 2.4 GHz Bluetooth DTS						
-	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 C63.4 (2014) ANSI C63.10 (2020) +Cor.1-2023+C63.10a-2024
2.6	15.247 (e)	6.3.1	6.12	Power Spectral Density	Pass	ANSI C63.10 (2020) +Cor.1-2023+C63.10a-2024

Table 2

1.4 Product Information

1.4.1 Technical Description

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

1.4.2 Test Modes

The EUT's 2.4 GHz Bluetooth radio supports SISO (Single Input/Single Output) on a single core (Core 0)

The EUT supports LE1M and LE2M for DTS operation.

SISO (Single Input/Single Output) operation on one Core (Core 0) for two different paths between the radio module and the antenna: Common and Dedicated.

The power table and antenna gain for both Common and Dedicated mode are the same. Therefore, conducted tests were performed on only Dedicated mode. Band Edge and Spurious Radiated Emissions tests were performed for both paths.

Conducted tests on the EUT were performed in the following modes:

SISO modes on Core 0:

- LE1M – iPA
- LE2M – iPA

With Spurious Radiated Emissions tests performed, with the device configured to operate at maximum output power in the following modes, as these were deemed to be worst case.

SISO modes on Core 0:

- LE1M – iPA - Core 0 – Dedicated Path
- LE1M – iPA - Core 0 – Common Path

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/receive 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 (Common & Dedicated)	2412	3.4	0.71
	2442	3.6	0.71
	2472	3.3	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: A3404		
Serial Number	Hardware Version	Software Version
LTJGK16JDF	REV1.0	25A92880q
FF267P32M4	REV1.0	25A92880q
HWH7MHKN3X	REV1.0	25A92880q

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: A3404, Serial Number: FF267P32M4			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3404, Serial Number: LTJGK16JDF			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3404, Serial Number: HWH7MHKN3X			
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: 2.4GHz Bluetooth - LE		
Restricted Band Edges	Marius Vasii	UKAS
Maximum Conducted Output Power	Mahmud Chowdhury	UKAS
Authorised Band Edges	Marius Vasii	UKAS
Spurious Radiated Emissions	Vineeth Nagaraj, Marius Vasii, Manohar Thota	UKAS
Power Spectral Density	Mahmud Chowdhury	UKAS
Emission Bandwidth	Mahmud Chowdhury	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 6.6
ISED RSS-GEN, Clause 8.10

2.1.2 Equipment Under Test and Modification State

A3404, S/N: FF267P32M4 - Modification State 0

2.1.3 Date of Test

15-September-2025

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 dBµV/m to µV/m:

10^(Field Strength in dBµV/m/20).

Restricted band edge tests on LE2M, which operates (2404 MHz to 2478 MHz)
were performed in line with LE1M (2402 MHz & 2480 MHz) as this was deemed to be worst case.

2.1.5 Environmental Conditions

Ambient Temperature	21.2 °C
Relative Humidity	34.1 %

2.1.6 Test Results

2.4GHz Bluetooth - LE/HDR

Core 0 (Common) (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBuV/m)
Static	LE1M	2402	2390	54.92	42.86
Static	LE2M	2402	2390	54.66	42.84
Static	LE1M	2480	2483.5	53.77	41.92
Static	LE2M	2480	2483.5	56.03	45.28

Table 7 - SISO Restricted Band Edge Results

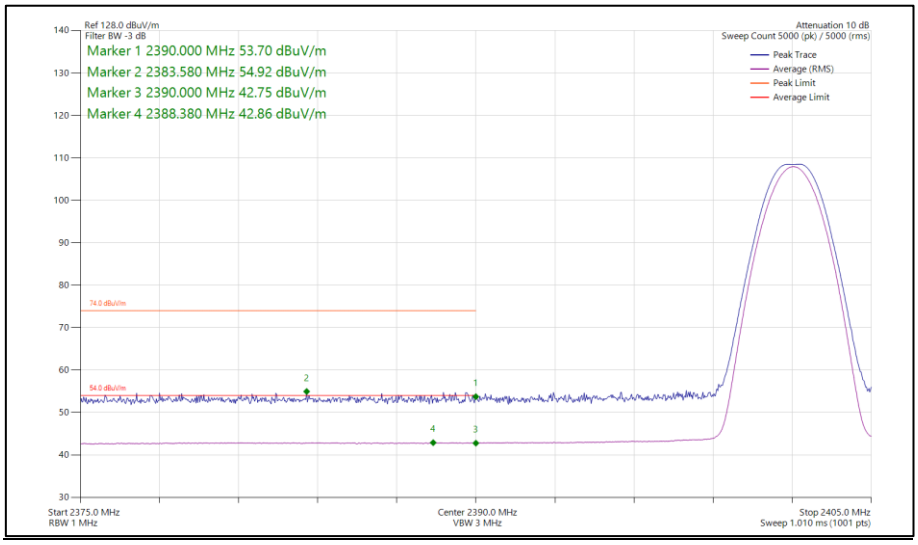

Figure 1 - Bluetooth LE1M, SISO, Core 0 (Common) - 2402 MHz Band Edge Frequency 2390 MHz

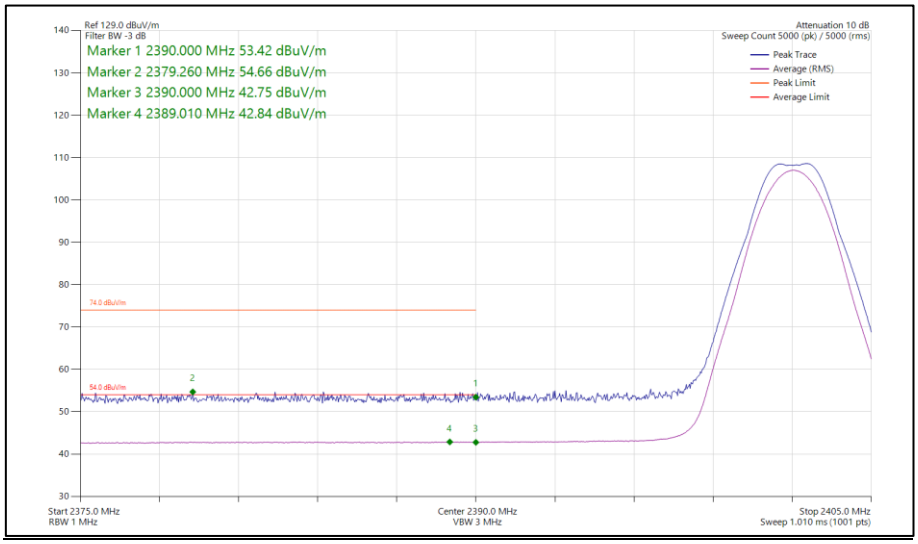

Figure 2 - Bluetooth LE2M, SISO, Core 0 (Common) - 2402 MHz Band Edge Frequency 2390 MHz

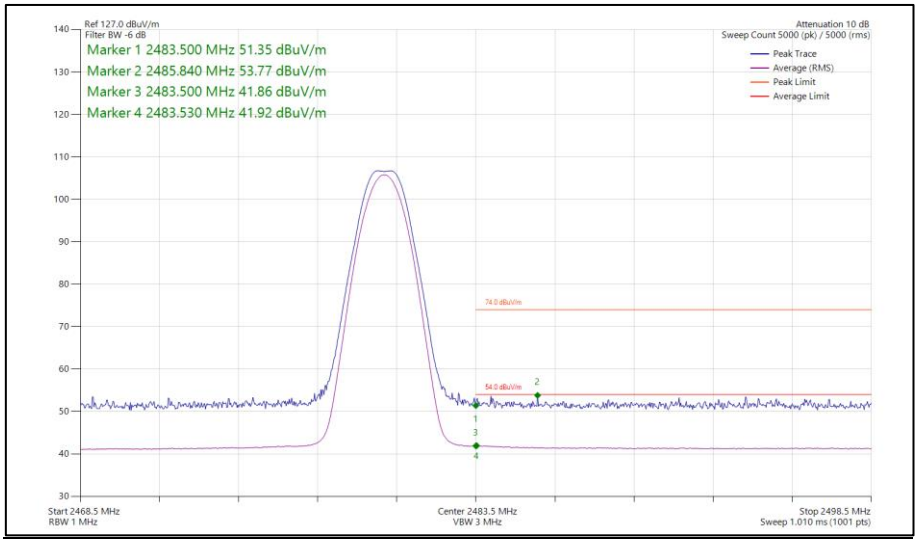

Figure 3 - Bluetooth LE1M, SISO, Core 0 (Common) - 2480 MHz Band Edge Frequency 2483.5 MHz

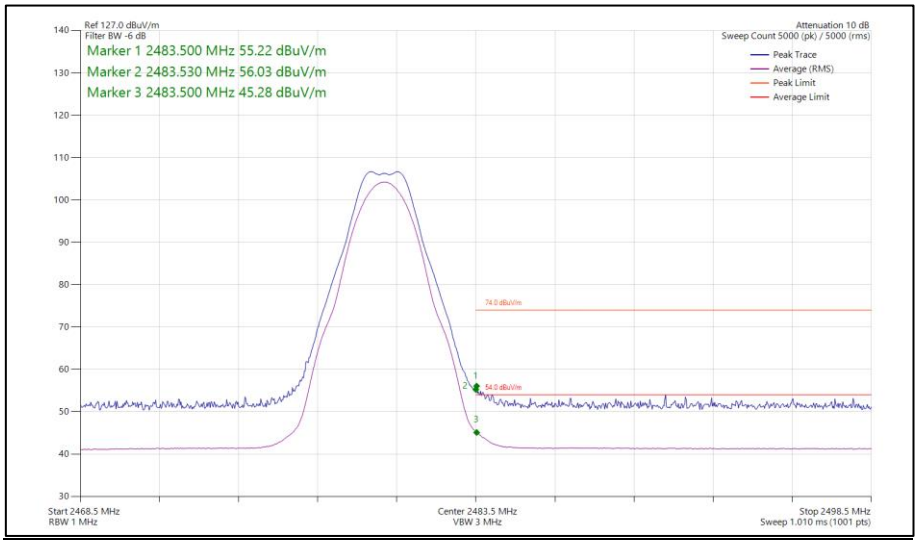

Figure 4 - Bluetooth LE2M, SISO, Core 0 (Common) - 2480 MHz Band Edge Frequency 2483.5 MHz

Core 0 (Dedicated) (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBuV/m)
Static	LE1M	2402	2390	55.14	43.30
Static	LE2M	2402	2390	54.91	43.22
Static	LE1M	2480	2483.5	53.96	42.81
Static	LE2M	2480	2483.5	57.22	46.85

Table 8 - SISO Restricted Band Edge Results

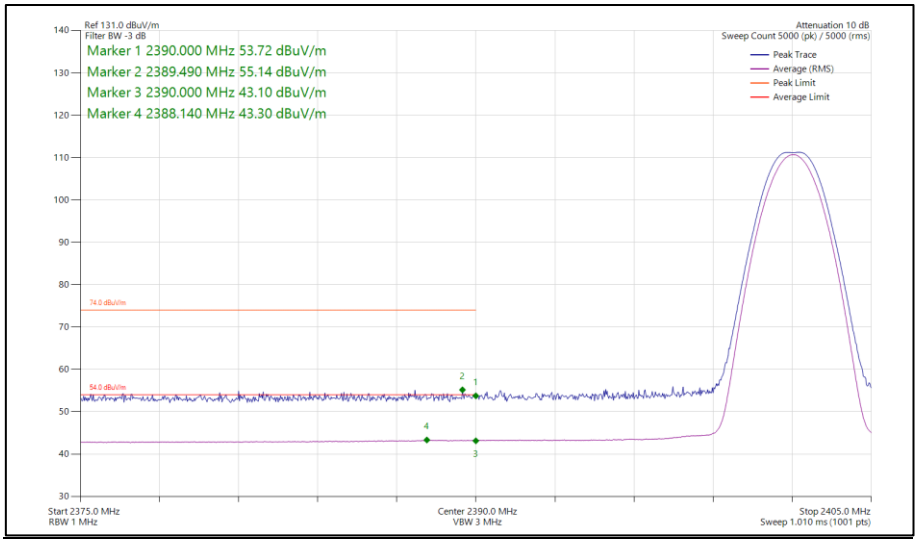

Figure 5 - Bluetooth LE1M, SISO, Core 0 (Dedicated) - 2402 MHz Band Edge Frequency 2390 MHz

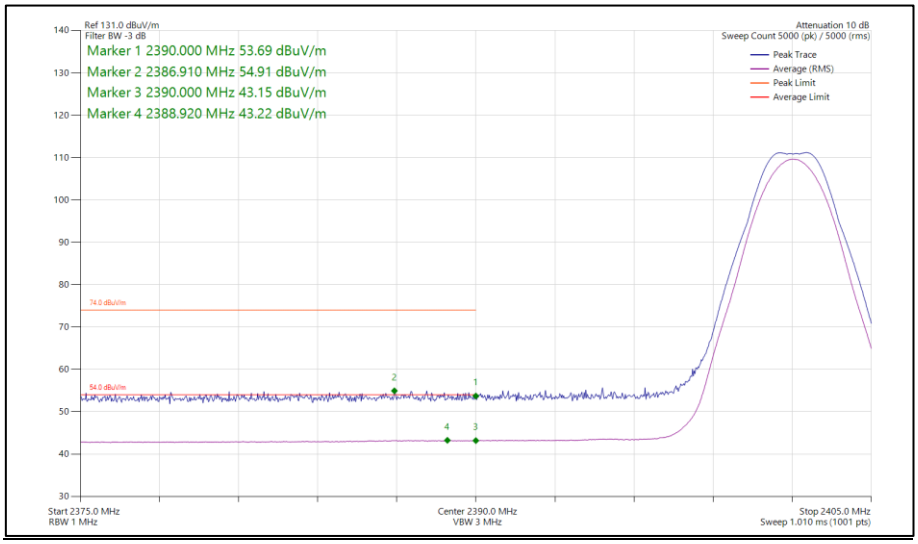

Figure 6 - Bluetooth LE2M, SISO, Core 0 (Dedicated) - 2402 MHz Band Edge Frequency 2390 MHz

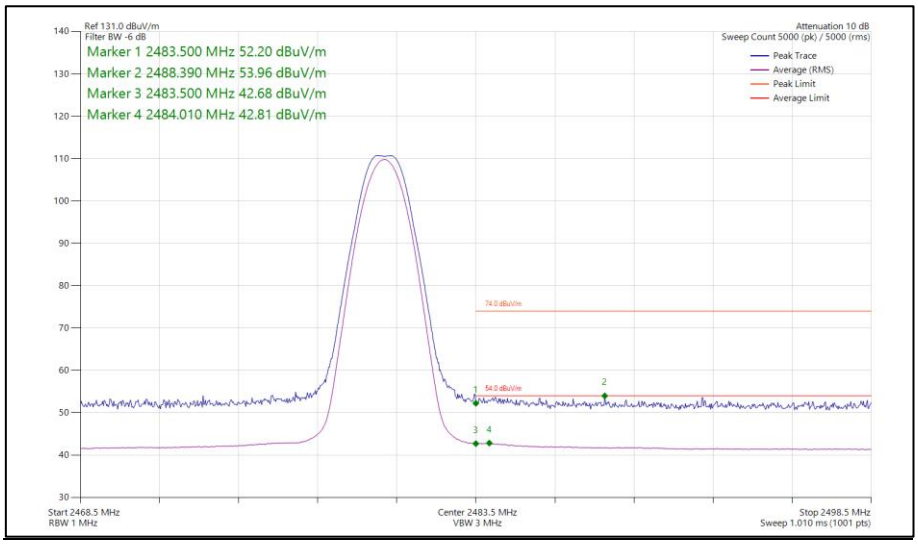

Figure 7 - Bluetooth LE1M, SISO, Core 0 (Dedicated) - 2480 MHz Band Edge Frequency 2483.5 MHz

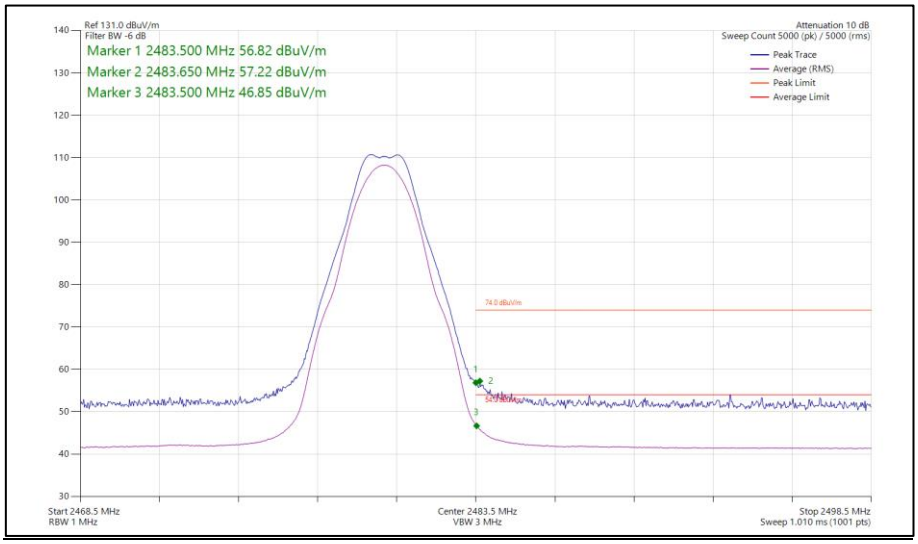

Figure 8 - Bluetooth LE2M, SISO, Core 0 (Dedicated) - 2480 MHz Band Edge Frequency 2483.5 MHz

FCC 47 CFR Part 15, Limit Clause 15.209

Frequency (MHz)	Field Strength (µV/m at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

Table 9

ISED RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength (µV/m at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960*	500

Table 10

*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 18.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.6.1 V.	5125	-	O/P Mon
Test Receiver	Rohde & Schwarz	ESW44	5379	12	25-Nov-2026
1500W (300V 12A) AC Power Supply	iTech	IT7324	5957	-	O/P Mon
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5960	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5961	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6007	12	6-Jun-2026
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6142	12	14-Sep-2026
Digital Multimeter	Fluke	115	6145	12	6-Jun-2026
Humidity & Temperature meter	R.S Components	1364	6148	12	28-Aug-2026
EMI Test Receiver	Rohde & Schwarz	ESW44	6294	12	24-Feb-2026
USB Spectrum Analyser	Signal Hound	SA124B	6295	-	TU
3m Semi-Anechoic Chamber	Albatross Projects	Chamber 18	6597	36	8-May-2028
Turntable	Maturo Gmbh	TT1.5SI	6797	-	TU
AC Programmable Power Supply	iTech	IT7324	6812	-	O/P Mon
Handheld Hygrometer	Fluke	971	6837	12	16-Sep-2026
Cable Assembly	Pasternack	PE300-60	6861	-	TU
Cable Assembly	Pasternack	PE300-60	6863	-	TU
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6975	12	5-Apr-2026

Table 11

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

2.2 Maximum Conducted Output Power

2.2.1 Specification Reference

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

2.2.2 Equipment Under Test and Modification State

A3404, S/N: HWH7MHKN3X - Modification State 0

2.2.3 Date of Test

09-January-2026

2.2.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 11.9.1.2 Method PKPM1.

2.2.5 Environmental Conditions

Ambient Temperature	22.1 °C
Relative Humidity	31.8 %

2.2.6 Test Results

2.4GHz Bluetooth - LE/HDR

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 6.3.2	Test Method(s):	C63.10 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	3.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	5.59	-	-	-	5.59	30.00	-24.41
2440	5.15	-	-	-	5.15	30.00	-24.85
2480	5.27	-	-	-	5.27	30.00	-24.73

Table 12 - FCC Maximum Conducted (peak) 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	∑					
2402	5.59	-	-	-	5.59	30.00	-24.41	9.19	36.00	-26.81
2440	5.15	-	-	-	5.15	30.00	-24.85	8.75	36.00	-27.25
2480	5.27	-	-	-	5.27	30.00	-24.73	8.87	36.00	-27.13

Table 13 - ISED Maximum Conducted (peak) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 6.3.2	Test Method(s):	C63.10 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	3.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	5.34	-	-	-	5.34	30.00	-24.66
2440	5.17	-	-	-	5.17	30.00	-24.83
2480	5.25	-	-	-	5.25	30.00	-24.75

Table 14 - FCC Maximum Conducted (peak) 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	∑					
2402	5.34	-	-	-	5.34	30.00	-24.66	8.94	36.00	-27.06
2440	5.17	-	-	-	5.17	30.00	-24.83	8.77	36.00	-27.23
2480	5.25	-	-	-	5.25	30.00	-24.75	8.85	36.00	-27.15

Table 15 - ISED Maximum Conducted (peak) Output Power Results

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

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

ISED RSS-247, Limit Clause 6.3.2

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

2.2.7 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
Climatic Chamber	Weiss Technik	ClimeEvent C/340/70a/3	6386	12	Class 1 (Int)
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6517	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6526	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6527	12	27-Feb-2026
USB Wideband Power Sensor	Boonton	RTP5008	6585	12	27-Feb-2026
USB Wideband Power Sensor	Boonton	RTP5008	6586	12	27-Feb-2026
AC Programmable Power Supply	iTech	IT7324	6665	-	O/P Mon
Humidity & Temperature meter	Fluke	971	7103	12	05-Aug-2026
Multimeter	Fluke	115	7115	12	13-Aug-2026

Table 16

O/P Mon - Output Monitored using calibrated equipment

2.3 Authorised Band Edges

2.3.1 Specification Reference

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

2.3.2 Equipment Under Test and Modification State

A3404, S/N: FF267P32M4 - Modification State 0

2.3.3 Date of Test

15-September-2025

2.3.4 Test Method

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

2.3.5 Environmental Conditions

Ambient Temperature	21.2 °C
Relative Humidity	34.1 %

2.3.6 Test Results

2.4GHz Bluetooth - LE

Core 0 (Common) (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	LE1M	2402	2400	-61.19
Static	LE2M	2404	2400	-32.31

Table 17 - SISO Authorised Band Edge Results

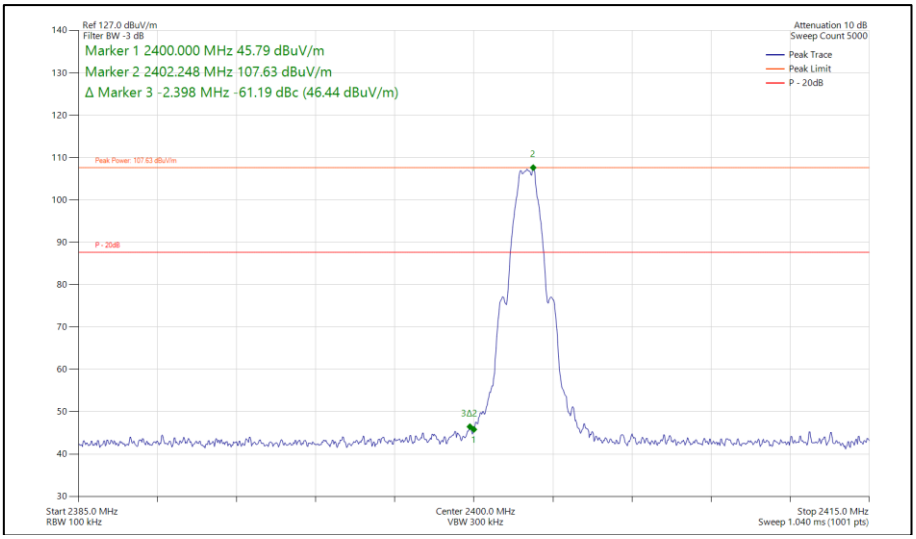

Figure 9 - Bluetooth LE1M, SISO, Core 0 (Common) - 2402 MHz Band Edge Frequency 2400 MHz

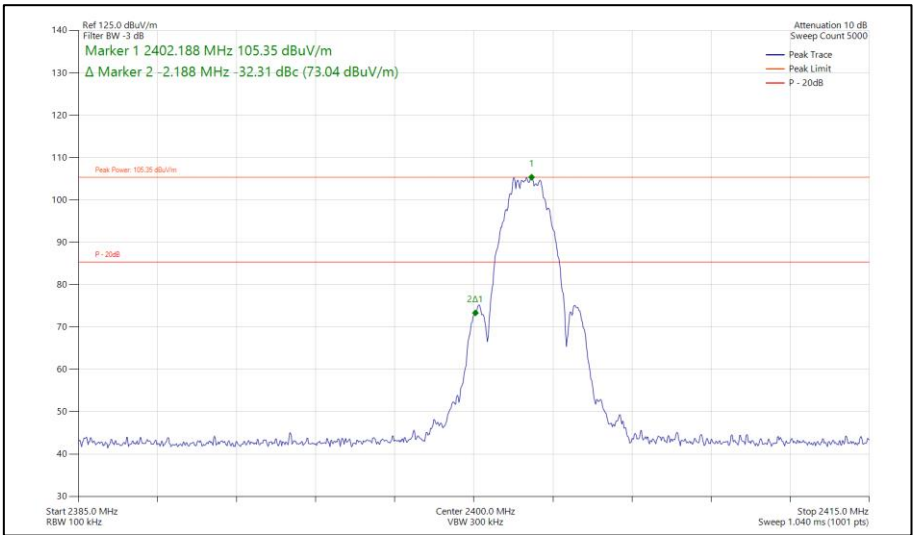

Figure 10 - Bluetooth LE2M, SISO, Core 0 (Common) - 2404 MHz Band Edge Frequency 2400 MHz

Core 0 (Dedicated) (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	LE1M	2402	2400	-62.26
Static	LE2M	2404	2400	-32.00

Table 18 - SISO Authorised Band Edge Results

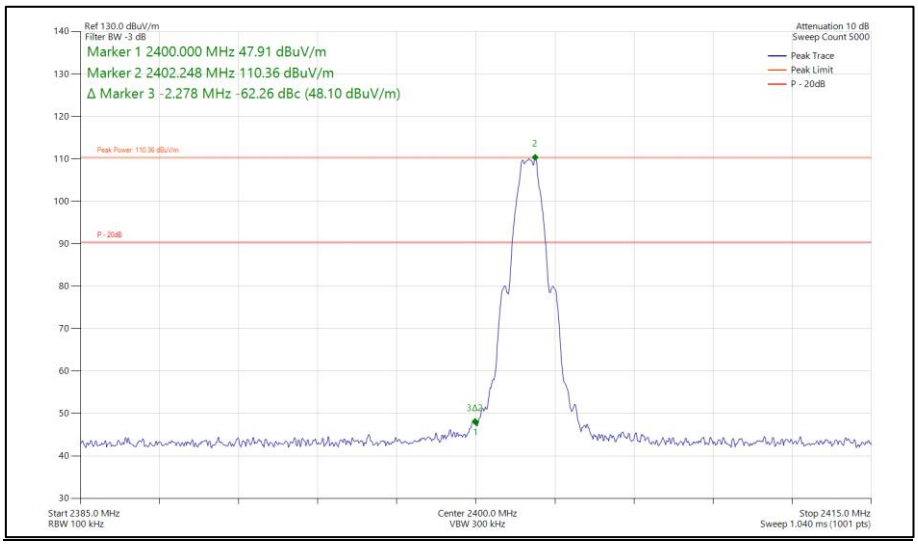

Figure 11 - Bluetooth LE1M, SISO, Core 0 (Dedicated) - 2402 MHz Band Edge Frequency 2400 MHz

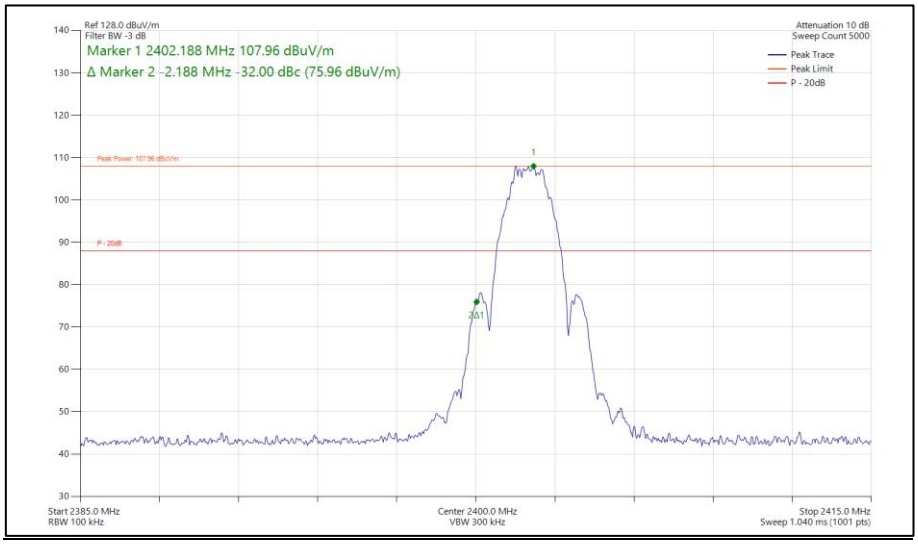

Figure 12 - Bluetooth LE2M, SISO, Core 0 (Dedicated) - 2404 MHz Band Edge Frequency 2400 MHz

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

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

ISED RSS-247, Limit Clause 6.6

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

2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 18.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.6.1 V.	5125	-	O/P Mon
Test Receiver	Rohde & Schwarz	ESW44	5379	12	25-Nov-2026
1500W (300V 12A) AC Power Supply	iTech	IT7324	5957	-	O/P Mon
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5960	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5961	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6007	12	6-Jun-2026
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6142	12	14-Sep-2026
Digital Multimeter	Fluke	115	6145	12	6-Jun-2026
Humidity & Temperature meter	R.S Components	1364	6148	12	28-Aug-2026
EMI Test Receiver	Rohde & Schwarz	ESW44	6294	12	24-Feb-2026
USB Spectrum Analyser	Signal Hound	SA124B	6295	-	TU
3m Semi-Anechoic Chamber	Albatross Projects	Chamber 18	6597	36	8-May-2028
Turntable	Maturo Gmbh	TT1.5SI	6797	-	TU
AC Programmable Power Supply	iTech	IT7324	6812	-	O/P Mon
Handheld Hygrometer	Fluke	971	6837	12	16-Sep-2026
Cable Assembly	Pasternack	PE300-60	6861	-	TU
Cable Assembly	Pasternack	PE300-60	6863	-	TU
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6975	12	5-Apr-2026

Table 19

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

2.4 Spurious Radiated Emissions

2.4.1 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

2.4.2 Equipment Under Test and Modification State

A3404, S/N: LTJGK16JDF - Modification State 0

2.4.3 Date of Test

20-November-2025 to 23-November-2025

2.4.4 Test Method

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

For frequencies > 1 GHz, plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

The EUT was placed on the non-conducting platform in a manner typical of a normal installation.

Ports on the EUT were terminated with loads as described in ANSI C63.4 clause 6.2.4. For EUT's with multiple connectors of the same type, additional interconnecting cables were connected, and pre-scans performed to determine whether the level of the emissions were increased by >2 dB.

In the 30 MHz to 1 GHz range pre-scans were only performed on the mid channel (2440 MHz) only. The tests were conducted in the frequency range and on the channels specified by the customer, ensuring coverage of the worst-case operating modes.

The plots shown are the characterisation of the EUT. The limits on the plots represent the most stringent case for restricted bands, (74/54 dBµV/m) when compared to 20 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dBµV/m to µV/m:
10^(Field Strength in dBµV/m/20).

Above 18 GHz, the measurement distance was reduced to 1 m. The limit line was increased by 20*LOG(3/1) = 9.54 dB.

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

2.4.5 Example Test Setup Diagram

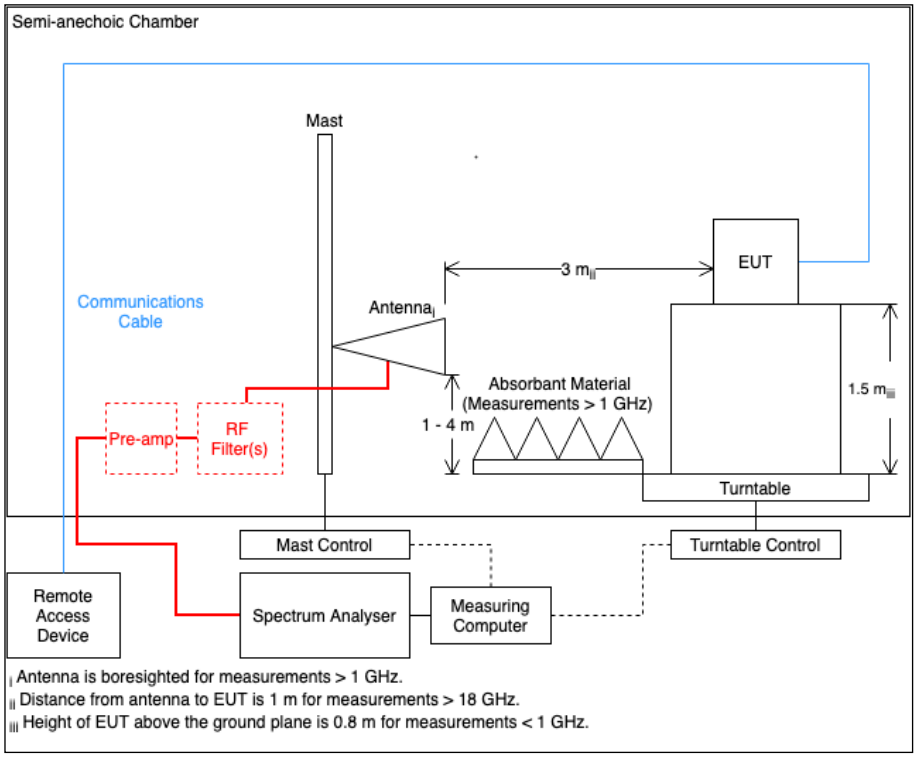

Figure 13

2.4.6 Environmental Conditions

Ambient Temperature	22.5 - 23.5 °C
Relative Humidity	35.4 - 48.2 %

2.4.7 Test Results

2.4GHz Bluetooth - LE/HDR

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4803.998	40.10	54.00	-13.91	RMS	356	340	Vertical

Table 20 - 2402 MHz (CH2402), LE1M, Core 0, 1 GHz to 18 GHz (Common)

No other emissions found within 20 dB of the limit.

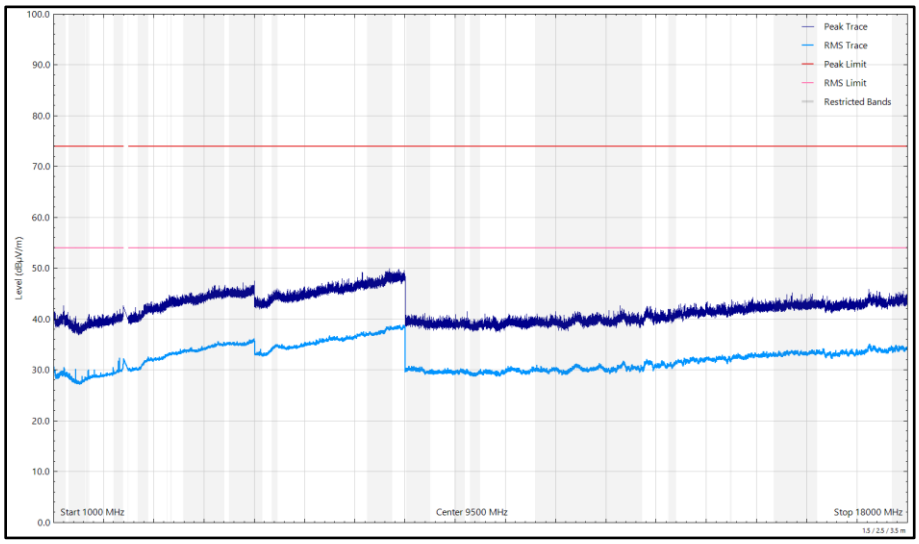

Figure 14 - 2402 MHz (CH2402), LE1M, Core 0, 1 GHz to 18 GHz (Common), Horizontal

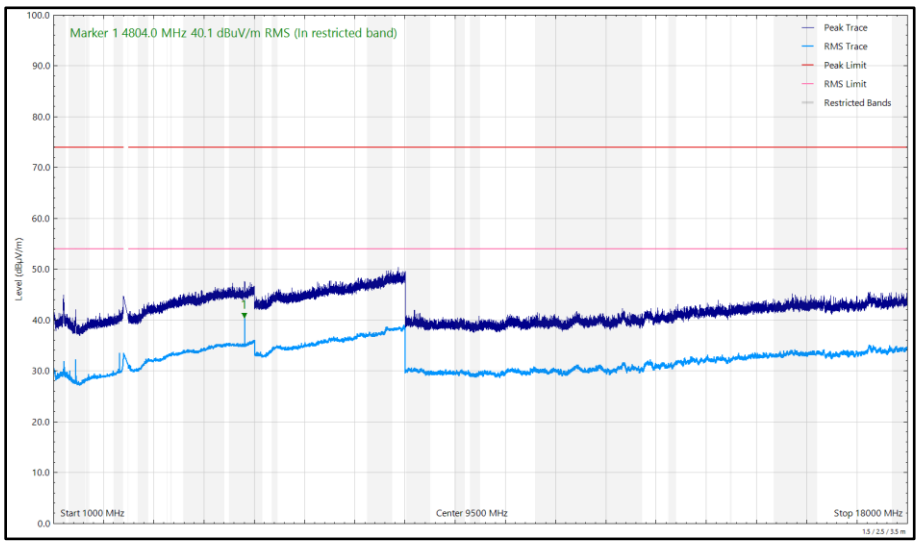

Figure 15 - 2402 MHz (CH2402), LE1M, Core 0, 1 GHz to 18 GHz (Common), Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.750	35.59	54.00	-18.42	RMS	334	390	Vertical
4803.975	40.43	54.00	-13.58	RMS	18	248	Vertical

Table 21 - 2402 MHz (CH2402), LE1M, Core 0, 1 GHz to 18 GHz (Dedicated)

No other emissions found within 20 dB of the limit.

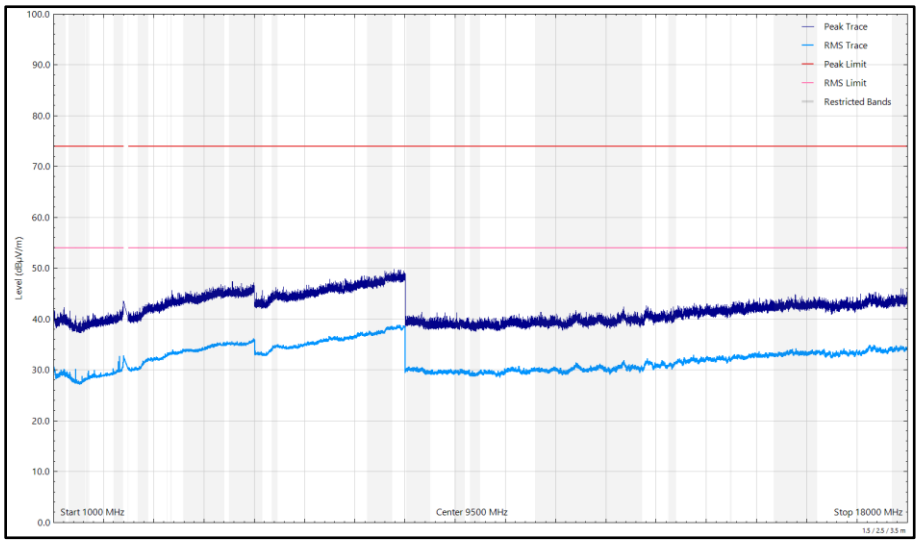

Figure 16 - 2402 MHz (CH2402), LE1M, Core 0, 1 GHz to 18 GHz (Dedicated), Horizontal

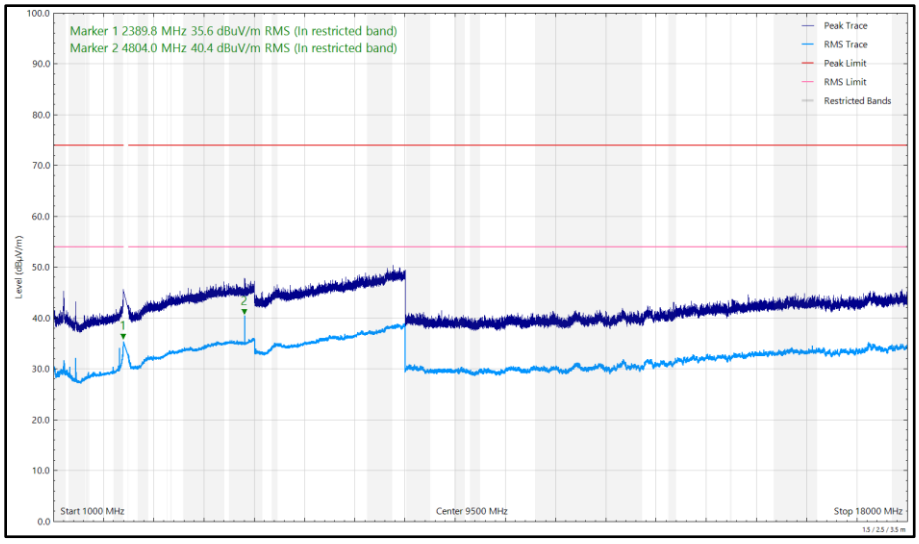

Figure 17 - 2402 MHz (CH2402), LE1M, Core 0, 1 GHz to 18 GHz (Dedicated), Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
73.160	18.15	40.00	-21.85	Q-Peak	281	183	Vertical
136.440	20.70	43.50	-22.80	Q-Peak	117	346	Horizontal
169.733	21.80	43.50	-21.70	Q-Peak	94	122	Vertical
4880.051	44.70	54.00	-9.30	RMS	4	281	Vertical
4889.677	34.11	54.00	-19.89	RMS	269	233	Horizontal

Table 22 - 2440 MHz (CH2440), LE1M, Core 0, 30 MHz to 26 GHz (Common)

No other emissions found within 20 dB of the limit.

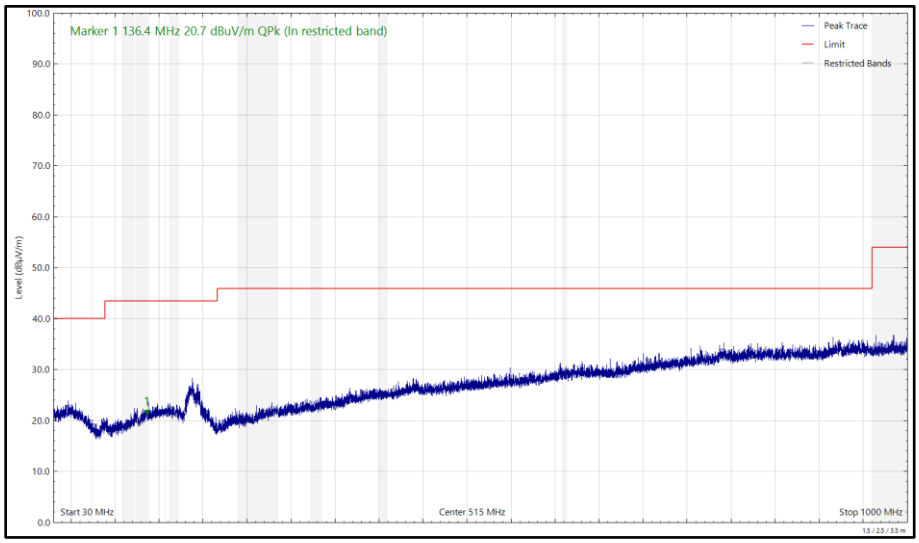

Figure 18 - 2440 MHz (CH2440), LE1M, Core 0, 30 MHz to 1 GHz (Common), Horizontal (Peak)

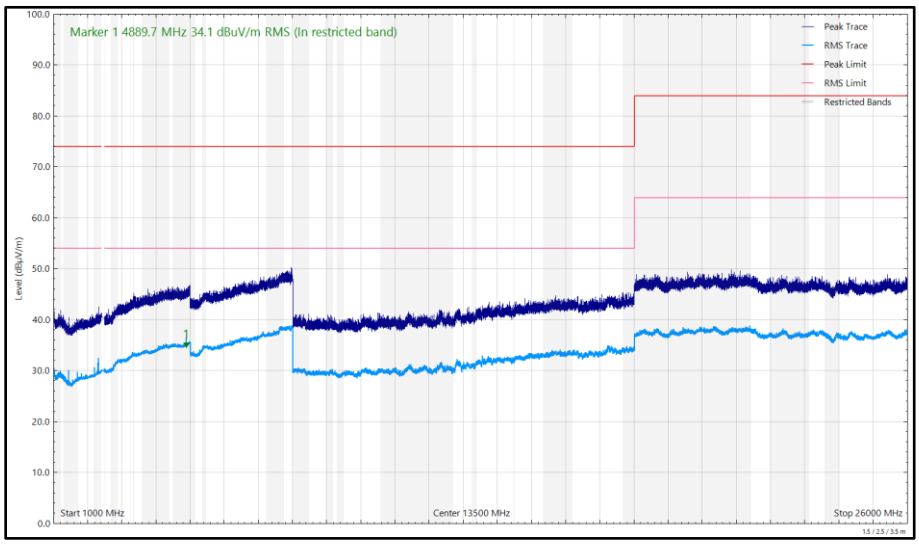

Figure 19 - 2440 MHz (CH2440), LE1M, Core 0, 1 GHz to 26 GHz (Common), Horizontal

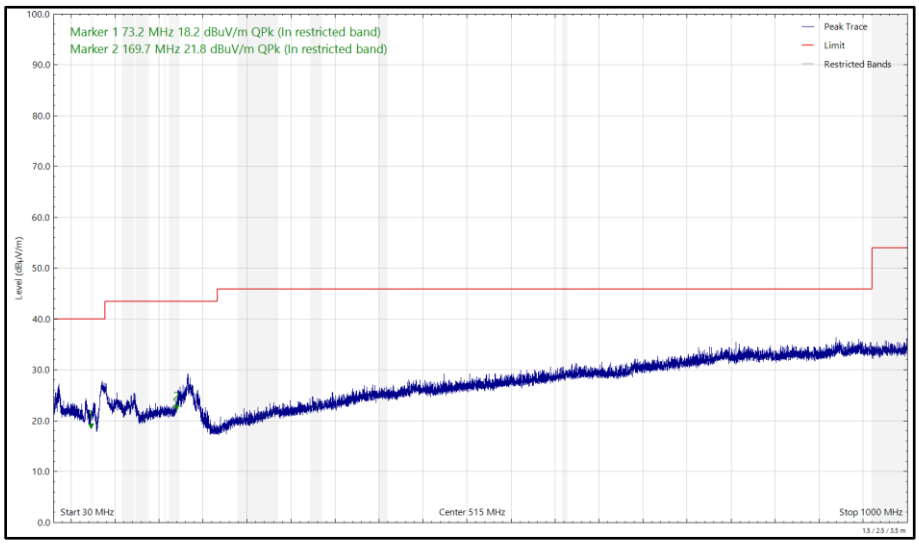

Figure 20 - 2440 MHz (CH2440), LE1M, Core 0, 30 MHz to 1 GHz (Common), Vertical (Peak)

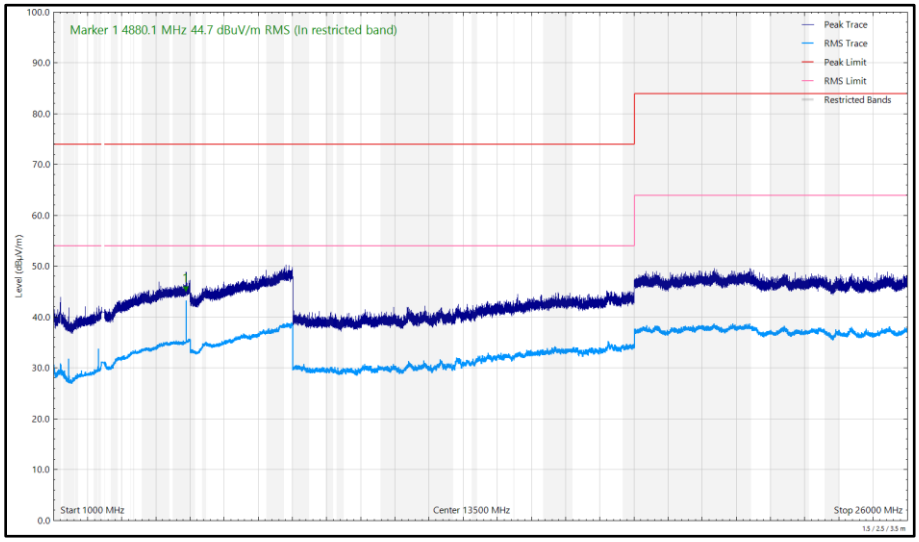

Figure 21 - 2440 MHz (CH2440), LE1M, Core 0, 1 GHz to 26 GHz (Common), Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
74.094	18.22	40.00	-21.78	Q-Peak	84	269	Vertical
118.031	19.32	43.50	-24.18	Q-Peak	128	165	Vertical
168.339	21.81	43.50	-21.69	Q-Peak	103	223	Vertical
4880.151	41.65	54.00	-12.35	RMS	4	282	Vertical

Table 23 - 2440 MHz (CH2440), LE1M, Core 0, 30 MHz to 26 GHz (Dedicated)

No other emissions found within 20 dB of the limit.

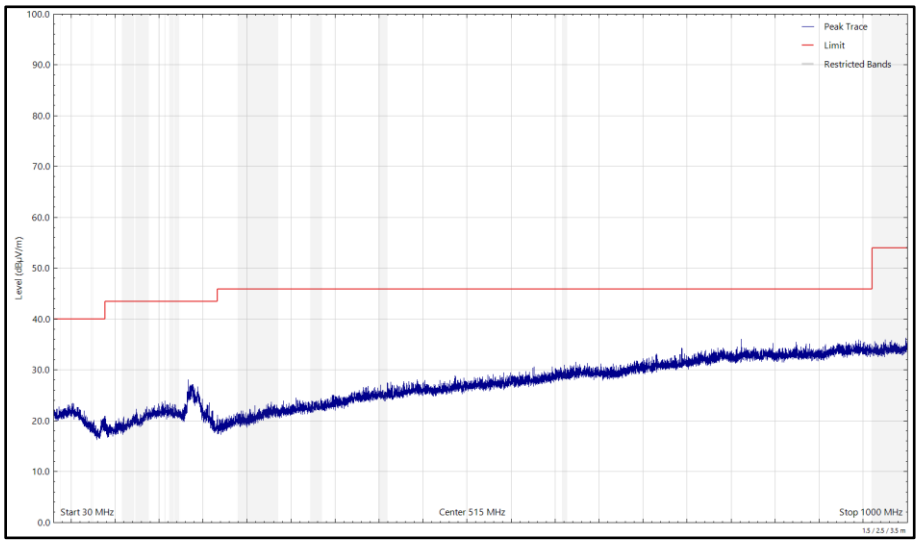

Figure 22 - 2440 MHz (CH2440), LE1M, Core 0, 30 MHz to 1 GHz (Dedicated), Horizontal (Peak)

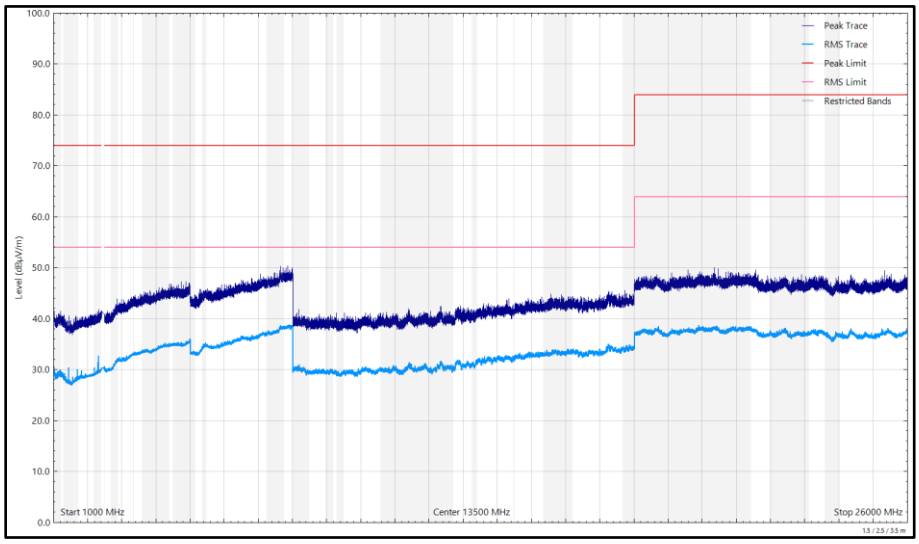

Figure 23 - 2440 MHz (CH2440), LE1M, Core 0, 1 GHz to 26 GHz (Dedicated), Horizontal

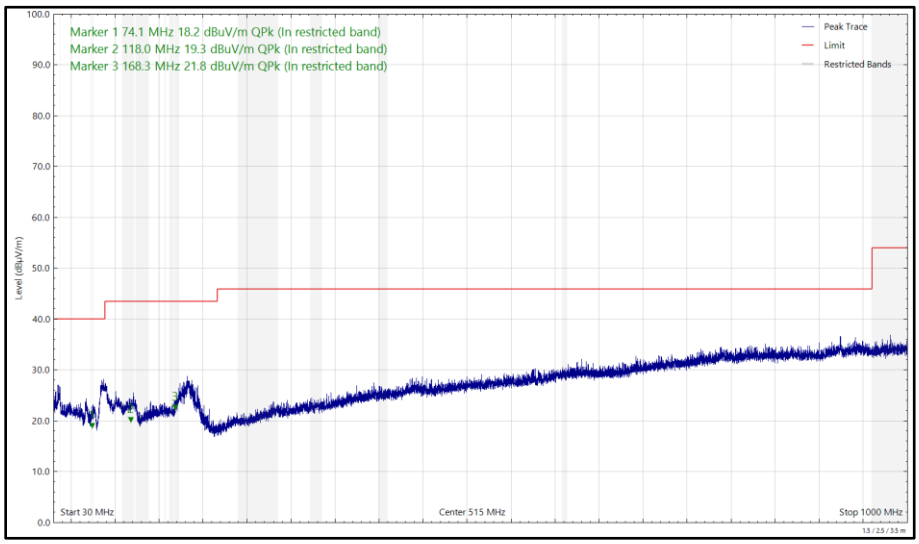

Figure 24 - 2440 MHz (CH2440), LE1M, Core 0, 30 MHz to 1 GHz (Dedicated), Vertical (Peak)

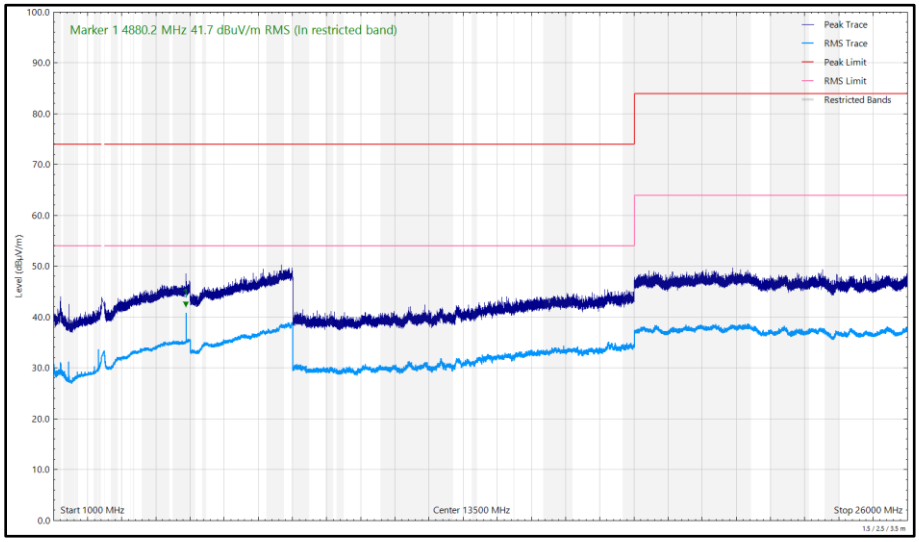

Figure 25 - 2440 MHz (CH2440), LE1M, Core 0, 1 GHz to 26 GHz (Dedicated), Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2312.742	31.44	54.00	-22.57	RMS	350	186	Vertical
4960.050	47.83	54.00	-6.18	RMS	2	271	Vertical
4968.022	34.67	54.00	-19.34	RMS	242	221	Horizontal

Table 24 - 2480 MHz (CH2480), LE1M, Core 0, 1 GHz to 18 GHz (Common)

No other emissions found within 20 dB of the limit.

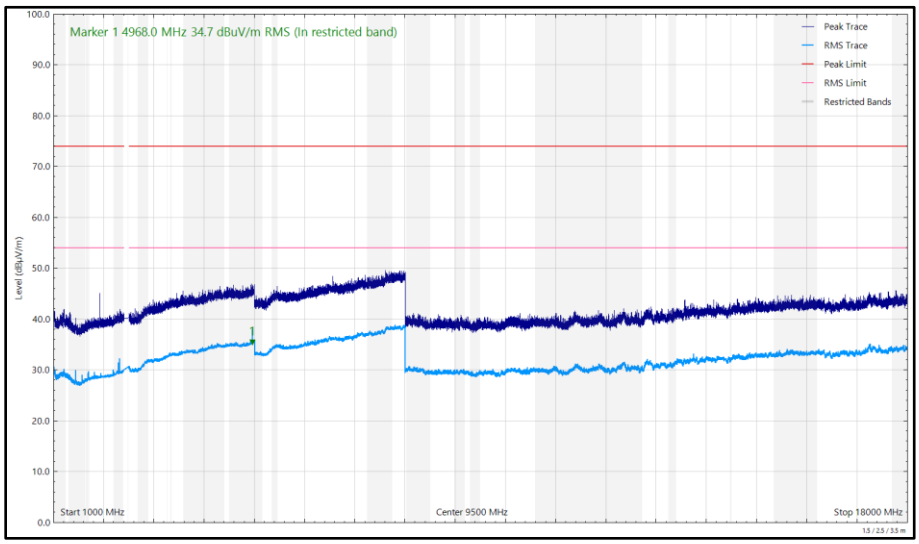

Figure 26 - 2480 MHz (CH2480), LE1M, Core 0, 1 GHz to 18 GHz (Common), Horizontal

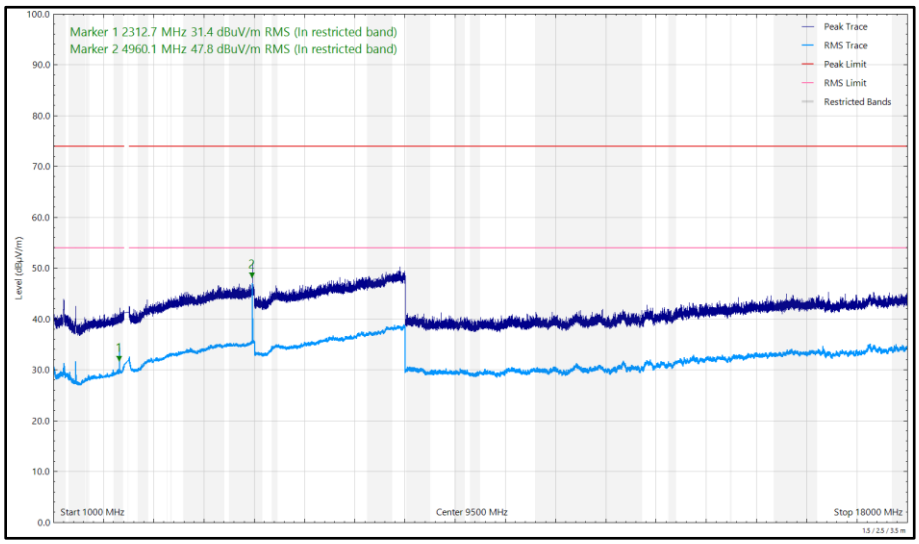

Figure 27 - 2480 MHz (CH2480), LE1M, Core 0, 1 GHz to 18 GHz (Common), Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4960.001	43.24	54.00	-10.77	RMS	5	283	Vertical

Table 25 - 2480 MHz (CH2480), LE1M, Core 0, 1 GHz to 18 GHz (Dedicated)

No other emissions found within 20 dB of the limit.

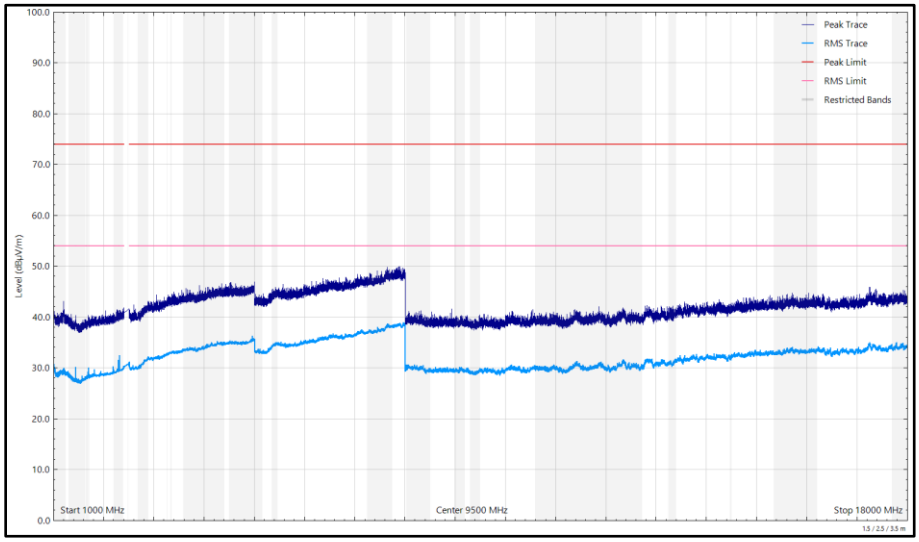

Figure 28 - 2480 MHz (CH2480), LE1M, Core 0, 1 GHz to 18 GHz (Dedicated), Horizontal

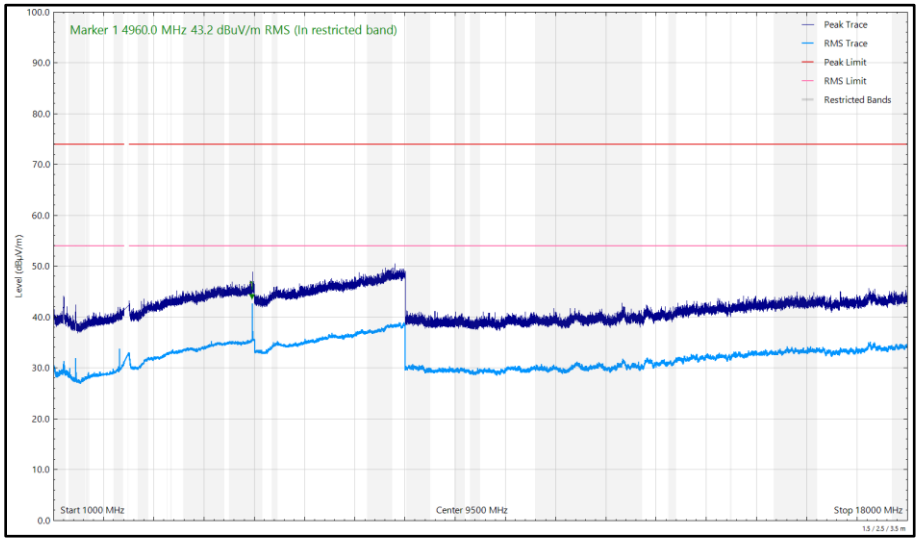

Figure 29 - 2480 MHz (CH2480), LE1M, Core 0, 1 GHz to 18 GHz (Dedicated), Vertical

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.

2.4.8 Test Location and Test Equipment Used

This test was carried out in RF Chamber 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.5.5	5125	-	TU
EMI Test Receiver	Rohde & Schwarz	ESW44	5912	12	04-Sep-2026
Cable (K Type 2m)	Junkosha	MWX241-02000KMSKMS/B	5937	12	12-Jun-2026
DRG Horn Antenna (7.5-18GHz)	Schwarzbeck	HWRD750	5940	12	18-May-2026
TRILOG Super Broadband Test Antenna	Schwarzbeck	VULB 9168	5943	24	05-Sep-2027
1500W (300V 12A) AC Power Supply	iTech	IT7324	5955	-	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

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/A	6006	12	29-May-2026
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6008	12	23-May-2026
Horn Antenna (1-10.5 GHz)	Schwarzbeck	BBHA9120B	6140	12	14-Sep-2026
Digital Multimeter	Fluke	115	6147	12	05-Jun-2026
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	17-Dec-2025
8GHz Highpass Filter	Wainwright	WHKX 7150 8000 18000 50SS	6195	12	23-Apr-2026
Pre Amp 8 - 18 GHz	Wright Technologies	APS06 0061	6198	12	09-Jun-2026
Attenuator 4dB	Pasternack	PE7074-4	6201	24	05-Sep-2027
Cable (SMA to SMA 20cm)	TUV SUD	MH-FH 8-18	6214	12	23-Apr-2026
USB Spectrum Analyser	Signal Hound	SA124B	6296	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221/B	6305	12	23-May-2026
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6315	12	27-Apr-2026
Humidity and Temperature Meter	R.S Components	1364	6346	12	13-Mar-2026
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	6795	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	6796	-	TU
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
Cable Assembly	SpecTech	PE300-60	6857	-	TU
Cable Assembly	SpecTech	PE300-60	6866	-	TU
Cable Assembly	SpecTech	PE300-60	6867	-	TU
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6977	12	05-Apr-2026

Table 26

TU - Traceability Unscheduled

2.5 Power Spectral Density

2.5.1 Specification Reference

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

2.5.2 Equipment Under Test and Modification State

A3404, S/N: HWH7MHKN3X - Modification State 0

2.5.3 Date of Test

09-January-2026

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.2.

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 AVGPSD-2).

MIMO output port summing was performed in accordance with KDB 662911 D01 E)2)b).

2.5.5 Environmental Conditions

Ambient Temperature	22.1 °C
Relative Humidity	31.8 %

2.5.6 Test Results

2.4GHz Bluetooth - LE/HDR

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 6.3.1	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	3.60

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-11.08	-	-	-	-	8.00	-19.08
2440	3.0	-11.49	-	-	-	-	8.00	-19.49
2480	3.0	-11.54	-	-	-	-	8.00	-19.54

Table 27 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 6.3.1	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	3.60

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-17.16	-	-	-	-	8.00	-25.16
2440	3.0	-17.20	-	-	-	-	8.00	-25.20
2480	3.0	-17.23	-	-	-	-	8.00	-25.23

Table 28 - Maximum Power Spectral Density Results

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

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

ISED RSS-247, Limit Clause 6.3.1

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

2.5.7 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
MXA Signal Analyser	Keysight Technologies	N9020B	6419	24	17-Mar-2027
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6517	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6526	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6527	12	27-Feb-2026
AC Programmable Power Supply	iTech	IT7324	6665	-	O/P Mon
Humidity & Temperature meter	Fluke	971	7103	12	05-Aug-2026
Multimeter	Fluke	115	7115	12	13-Aug-2026

Table 29

O/P Mon - Output Monitored using calibrated equipment

2.6 Emission Bandwidth

2.6.1 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

2.6.2 Equipment Under Test and Modification State

A3404, S/N: HWH7MHKN3X - Modification State 0

2.6.3 Date of Test

09-January-2026

2.6.4 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.

2.6.5 Environmental Conditions

Ambient Temperature	22.1 °C
Relative Humidity	31.8 %

2.6.6 Test Results

2.4GHz Bluetooth - LE/HDR

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

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	0.728	-	-	-	≥500.0
2440	0.732	-	-	-	≥500.0
2480	0.728	-	-	-	≥500.0

Table 30 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	1.044	-	-	-	-
2440	1.044	-	-	-	-
2480	1.044	-	-	-	-

Table 31 - 99% Bandwidth Results

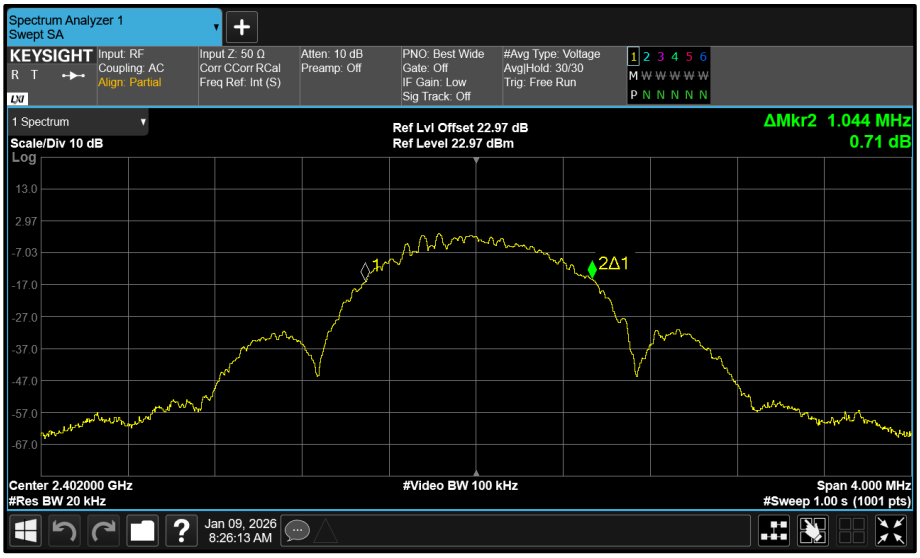

Figure 30 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

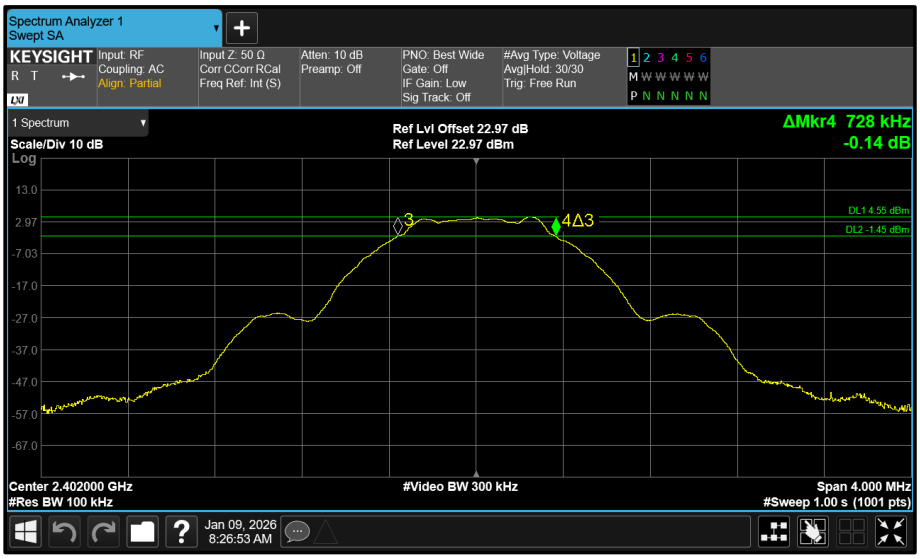

Figure 31 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

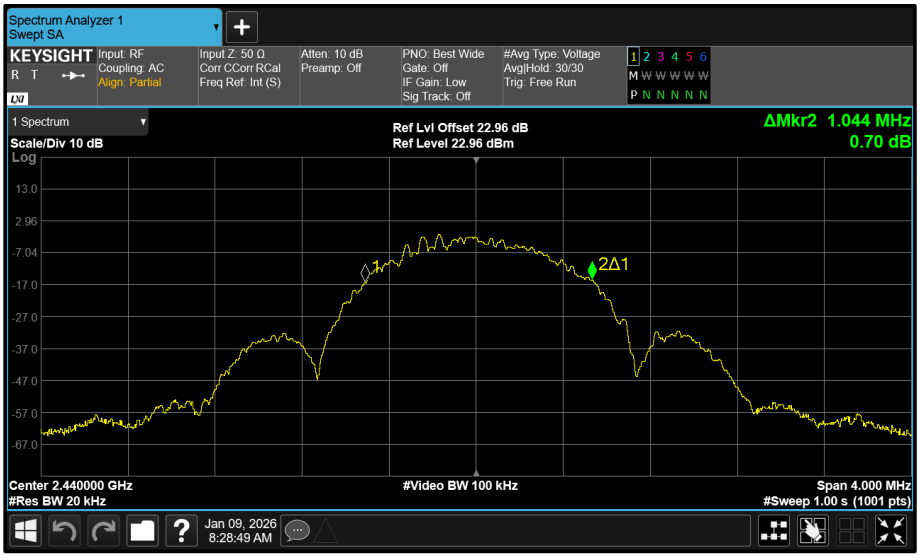

Figure 32 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

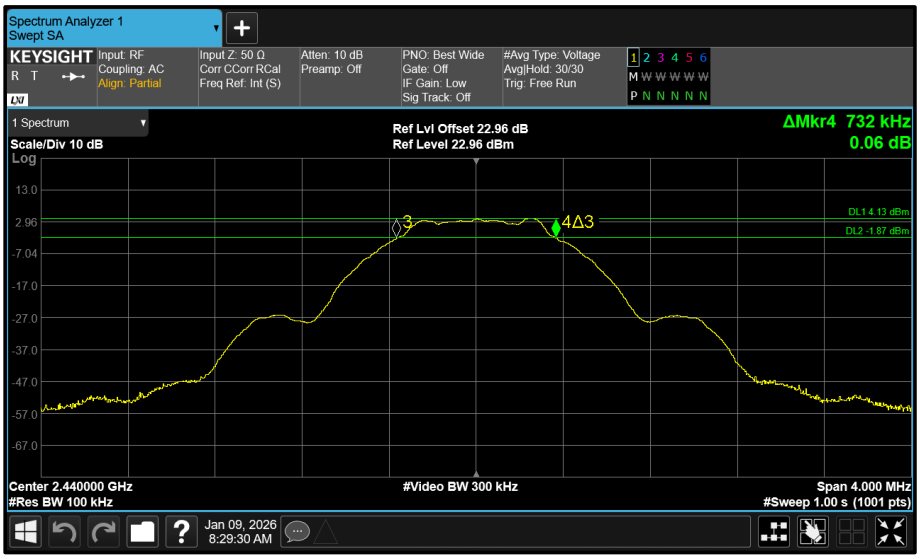

Figure 33 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

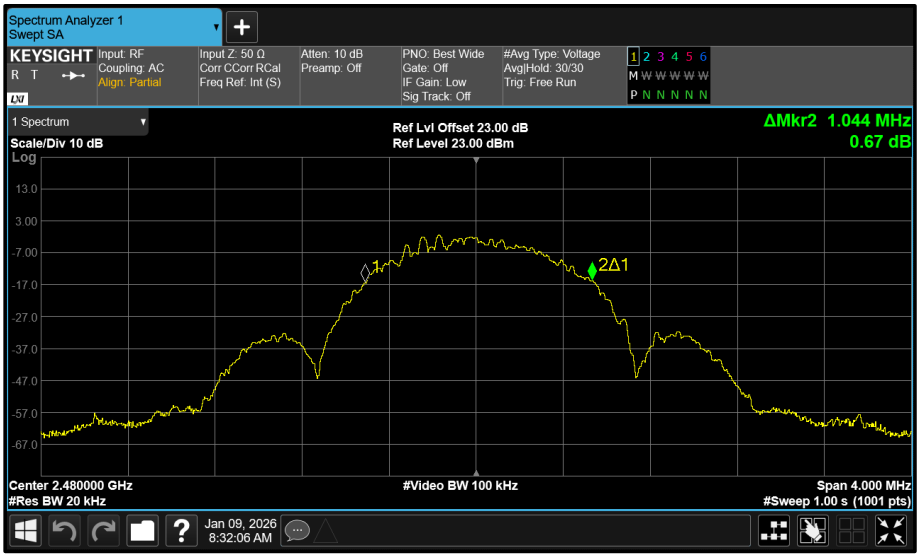

Figure 34 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

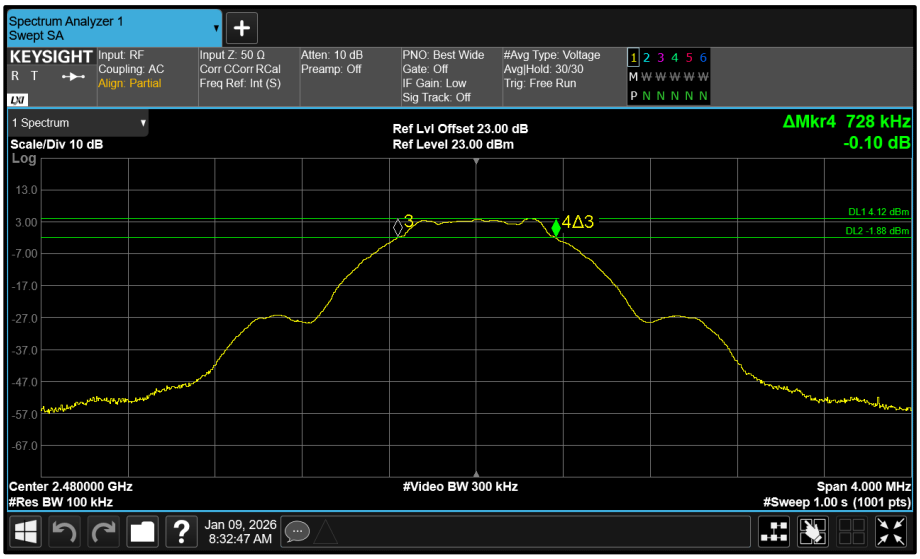

Figure 35 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

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

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	1.400	-	-	-	≥500.0
2440	1.400	-	-	-	≥500.0
2480	1.400	-	-	-	≥500.0

Table 32 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	2.072	-	-	-	-
2440	2.072	-	-	-	-
2480	2.072	-	-	-	-

Table 33 - 99% Bandwidth Results

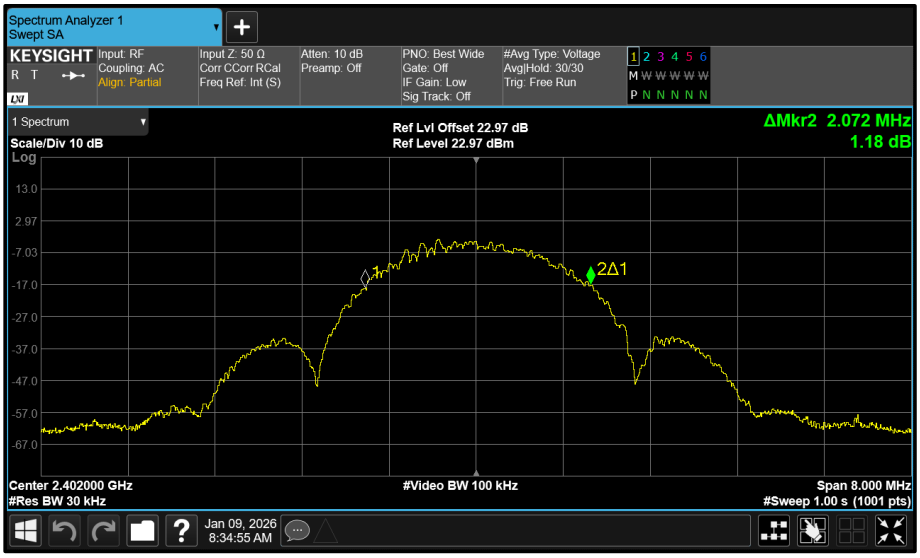

Figure 36 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

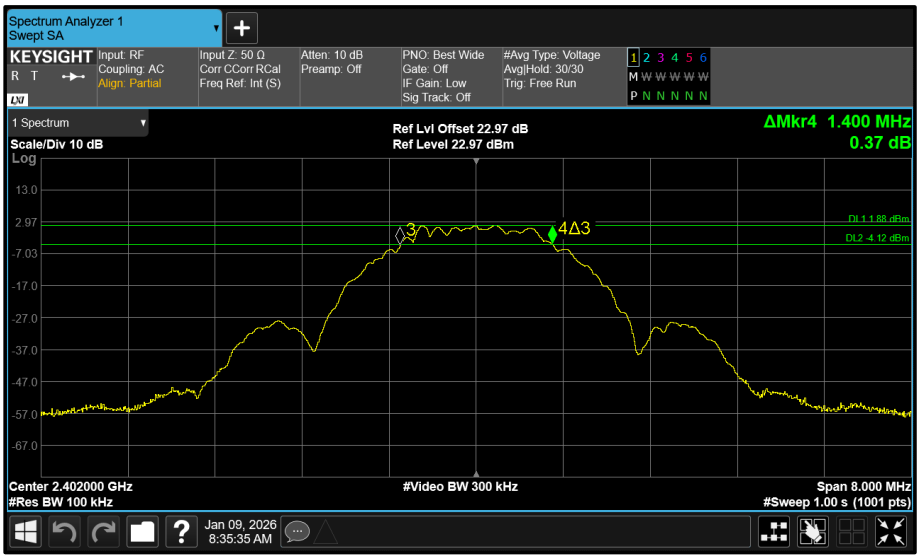

Figure 37 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

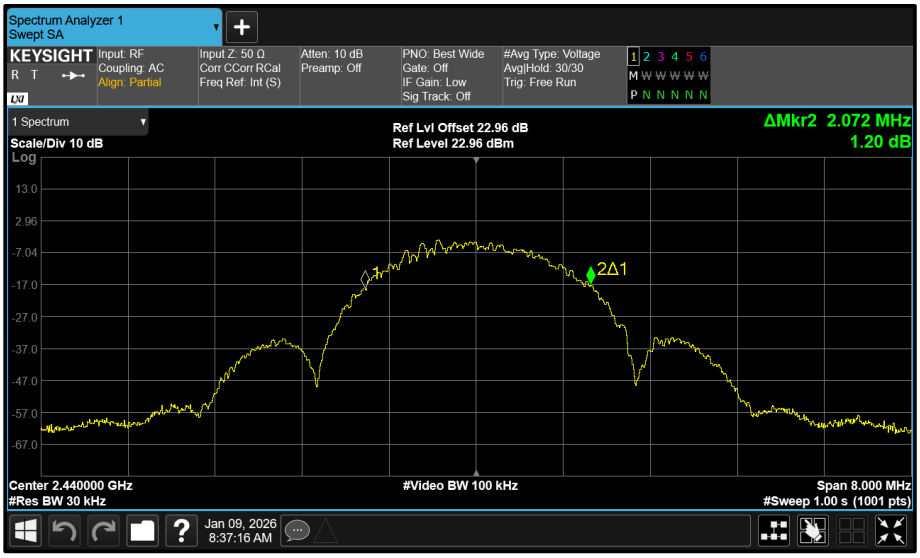

Figure 38 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

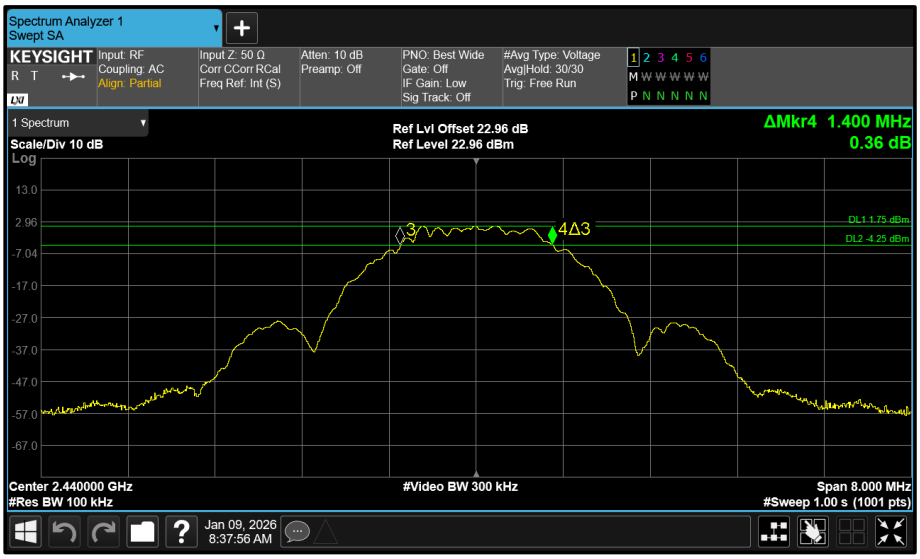

Figure 39 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

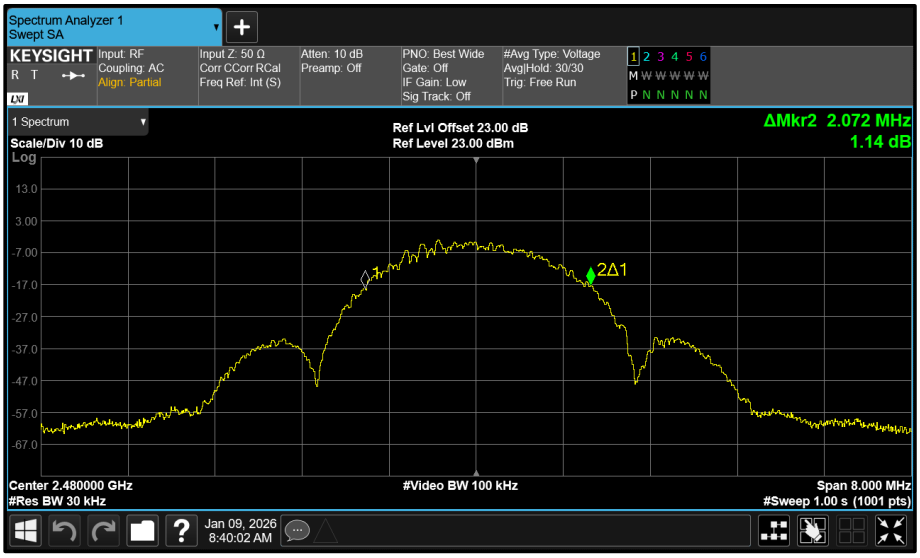

Figure 40 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

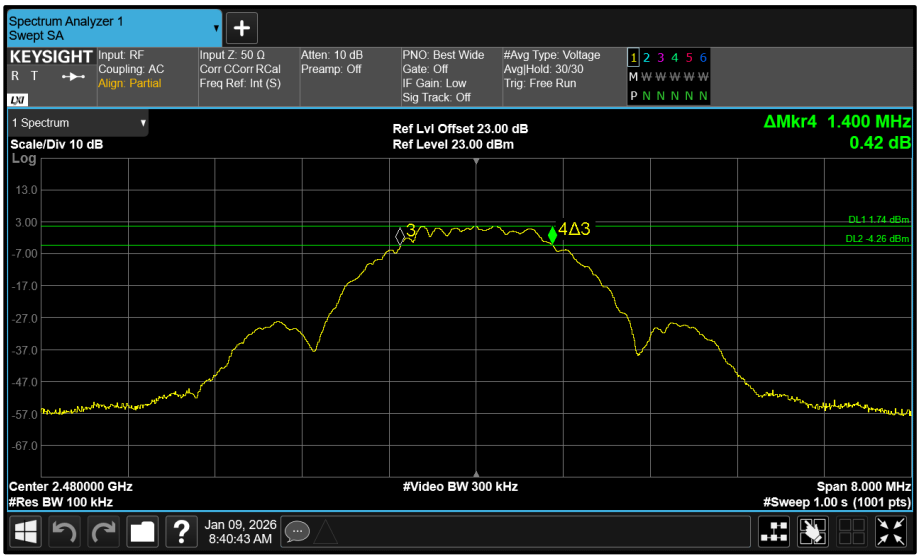

Figure 41 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

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

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

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
MXA Signal Analyser	Keysight Technologies	N9020B	6419	24	17-Mar-2027
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6517	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6526	12	27-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6527	12	27-Feb-2026
AC Programmable Power Supply	iTech	IT7324	6665	-	O/P Mon
Humidity & Temperature meter	Fluke	971	7103	12	05-Aug-2026
Multimeter	Fluke	115	7115	12	13-Aug-2026

Table 34

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: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Maximum Conducted Output Power	Method PM: ± 0.65 dB Method SA: ± 1.05 dB
Authorised Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Power Spectral Density	± 1.00 dB
Emission Bandwidth	± 36.41 kHz

Table 35

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.