FCC and ISED Test Report

Apple Inc, Model: A2442

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

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

FCC ID: BCGA2442 IC: 579C-A2442

Add value.
Inspire trust.

COMMERCIAL-IN-CONFIDENCE

Document 75952057-10 Issue 01

Stephen Marshall Digitally signed by Stephen Marshall Date: 2021.10.07 14:31:51 +01'00'

SIGNATURE			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Steve Marshall	Senior Engineer	Authorised Signatory	24 September 2021

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
Testing	Mohammad Malik	24 September 2021	
Testing	George Porter	24 September 2021	
Testing	Jason Hicks	24 September 2021	
Testing	Taha Shafique	24 September 2021	
Testing	Jaiyanth Balendrarajah	24 September 2021	
Testing	Ahmad Javid	24 September 2021	
Testing	Ian Hart	24 September 2021	
Testing	Liang Tian	24 September 2021	

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

ISED Accreditation
12669A Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15C: 2020, ISED RSS-247: Issue 2 (02-2017) and ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021) for the tests detailed in section 1.3.

TÜV SÜD
is a trading name of TUV SUD Ltd
Registered in Scotland at East Kilbride,
Glasgow G75 0QF, United Kingdom
Registered number: SC215164

TUV SUD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuvsud.com/en

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire PO15 5RL
United Kingdom

Contents

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	23-September-2021

Table 1

1.2 Introduction

Applicant	Apple Inc
Manufacturer	Apple Inc
Model Number(s)	A2442
Serial Number(s)	DNQHW6Y3WY and XH2DGXFKY6
Hardware Version(s)	REV1.0
Software Version(s)	DNQHW6Y3WY: 21A102280p XH2DGXFKY6: 21A102281b
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 15C: 2020 ISED RSS-247: Issue 2 (02-2017) ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021)
Order Number Date	0540218229 22-April-2021
Date of Receipt of EUT	31-March-2021 and 16-July-2021
Start of Test	29-June-2021
Finish of Test	22-September-2021
Name of Engineer(s)	Mohammad Malik, Jason Hicks, George Porter, Taha Shafique, Jaiyanth Balendrarajah, Ahmad Javid, Ian Hart and Liang Tian
Related Document(s)	ANSI C63.4 (2014) ANSI C63.10 (2013) KDB 662911 D01 v02r01

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	-	8.10	Restricted Band Edges	Pass	
2.2	15.247 (a)(2)	5.2	6.7	Emission Bandwidth	Pass	
2.3	15.247 (b)	5.4	6.12	Maximum Conducted Output Power	Pass	
2.4	15.247 (d) and 15.209	3.3 and 5.5	6.13 and 8.9	Spurious Radiated Emissions	Pass	
2.5	15.247 (d)	5.5	-	Authorised Band Edges	Pass	
2.6	15.247 (e)	5.2	6.12	Power Spectral Density	Pass	

Table 2

1.4 Product Information

1.4.1 Technical Description

The Equipment under test (EUT) was a laptop computer with Bluetooth, Bluetooth Low Energy and 802.11 a/b/g/n/ac/ax capabilities in the 2.4 GHz and 5 GHz bands.

1.4.1 Test Set-up

For conducted tests, a conducted test point was provided by the manufacturer via a flex strip and UFL connector and cable. The loss of these test cables were known and compensated for in any conducted measurements.

For tests in SISO operation, conducted tests were performed on the BT Dedicated Core (Core 2) as well as the Core with the highest antenna gain as Core 0 and Core 1 are identical but with unequal antenna gains. The EUT supports TxBF on Core 0 + Core 1.

Bluetooth LE + HDR was assessed as a DTS system. The EUT supports Bluetooth on the following mode of operations across its antenna ports:

BT Dedicated Core (Core 2) – SISO (iPA)
BT Core 0 – SISO (iPA and ePA), TxBF (iPA and ePA)
BT Core 1 – SISO (iPA and ePA), TxBF (iPA and ePA)

For all tests, the EUT was put into a continuous transmit test mode with the manufacturer's test commands via a script running in the EUTs terminal application. The EUT then transmitted the required type of modulation/packet type on a static channel selected within the test script.

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

1.4.2 Antenna Gain Table

Antenna Port	Frequency Range (MHz)	Peak Gain (dBi)	Conducted Cable Loss (dB)
BT Dedicated Core (Core 2)	2400 to 2480	6.10	1.00
BT Core 0	2400 to 2480	7.60	1.00
BT Core 1	2400 to 2480	6.70	1.00

Table 3

1.5 Deviations from the Standard

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

1.6 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: A2442, Serial Number: DNQHW6Y3WY			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A2442, Serial Number: XH2DGXFKY6			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 4

1.7 Test Location

TÜV SÜD conducted the following tests at our Fareham Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: 2.4 GHz Bluetooth - DTS		
Restricted Band Edges	Mohammad Malik, Taha Shafique, Jaiyanth Balendrarajah and Ahmad Javid	UKAS
Emission Bandwidth	Jason Hicks	UKAS
Maximum Conducted Output Power	George Porter and Jason Hicks	UKAS
Spurious Radiated Emissions	Mohammad Malik, Ian Hart and Liang Tian	UKAS
Authorised Band Edges	Mohammad Malik, Taha Shafique, Jaiyanth Balendrarajah and Ahmad Javid	UKAS
Power Spectral Density	Jason Hicks	UKAS

Table 5

Office Address:

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire
PO15 5RL
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-GEN, Clause 8.10

2.1.2 Equipment Under Test and Modification State

A2442, S/N: DNQHW6Y3WY - Modification State 0

2.1.3 Date of Test

29-June-2021 to 08-July-2021

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.

2.1.5 Environmental Conditions

Ambient Temperature	19.6 - 23.6 °C
Relative Humidity	43.2 - 58.8 %

2.1.6 Test Results

2.4 GHz Bluetooth – DTS

Bluetooth LE - LE1M iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0	2390.0	53.17	41.20
GFSK/DH1	2480	Core 0	2483.5	54.72	42.62

Table 6 - Restricted Band Edge Results

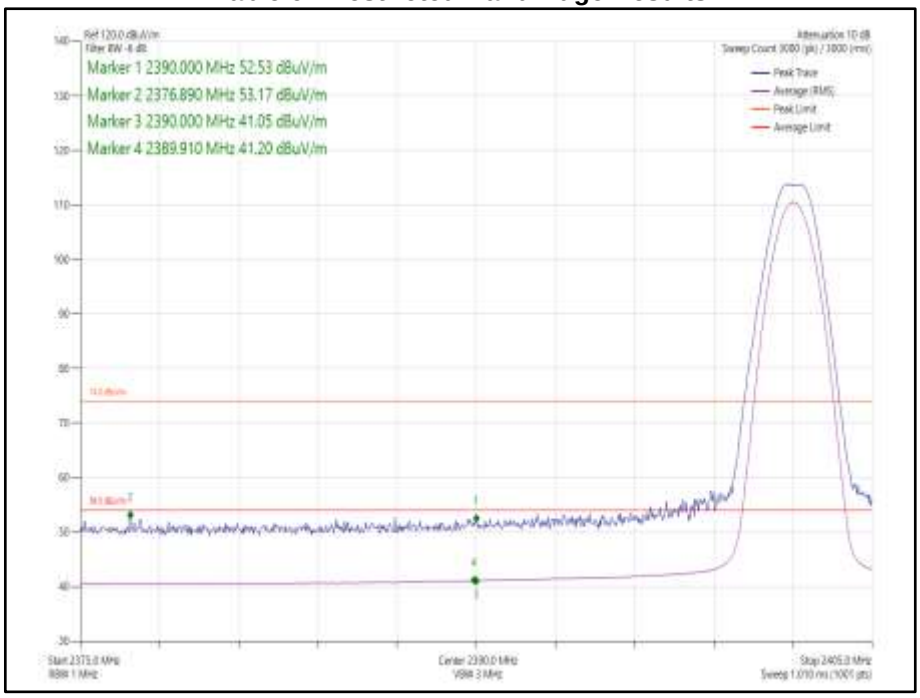

Figure 1 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

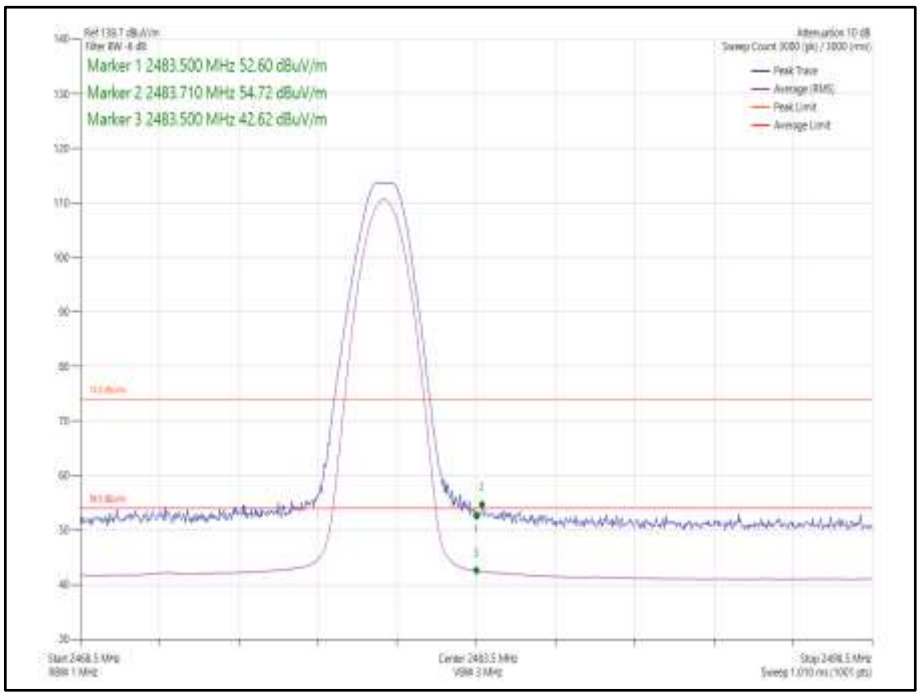

Figure 2 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE - LE1M ePA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0	2390.0	54.04	42.28
GFSK/DH1	2480	Core 0	2483.5	58.24	44.96

Table 7 - Restricted Band Edge Results

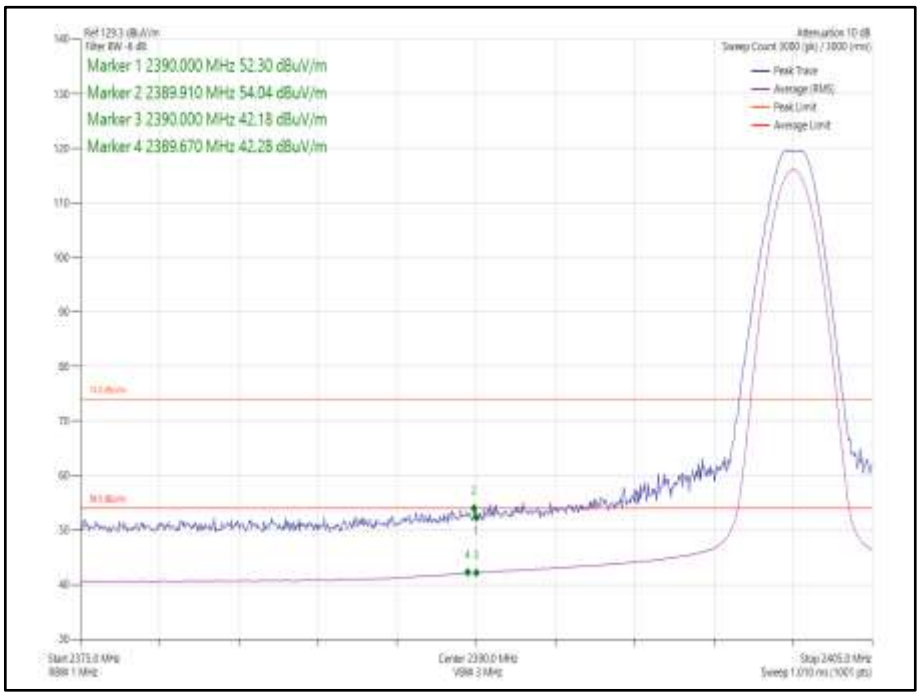

Figure 3 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

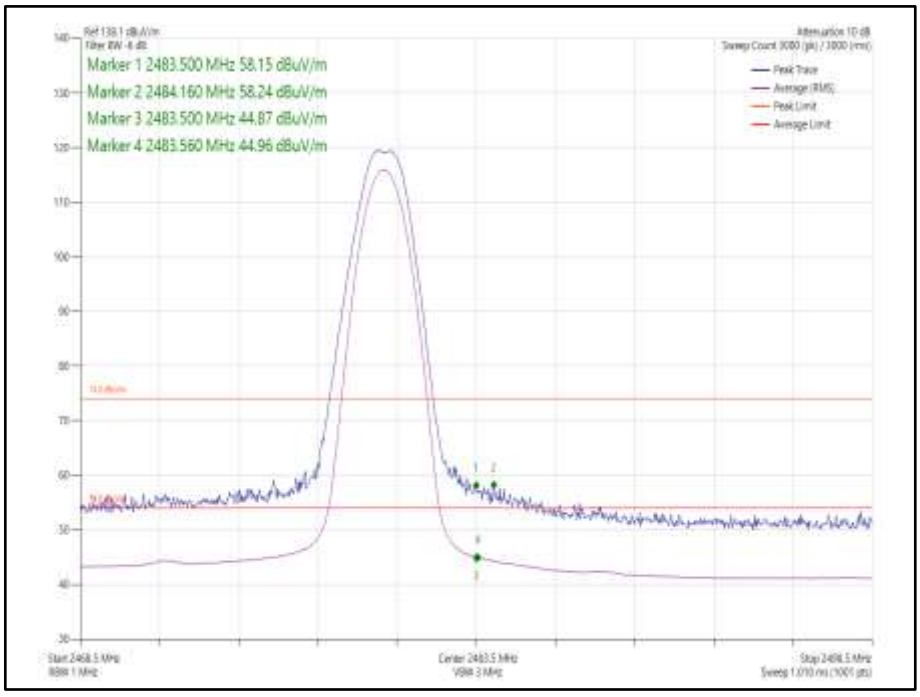

Figure 4 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE - LE1M iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 2	2390.0	52.77	40.84
GFSK/DH1	2480	Core 2	2483.5	53.63	41.76

Table 8 - Restricted Band Edge Results

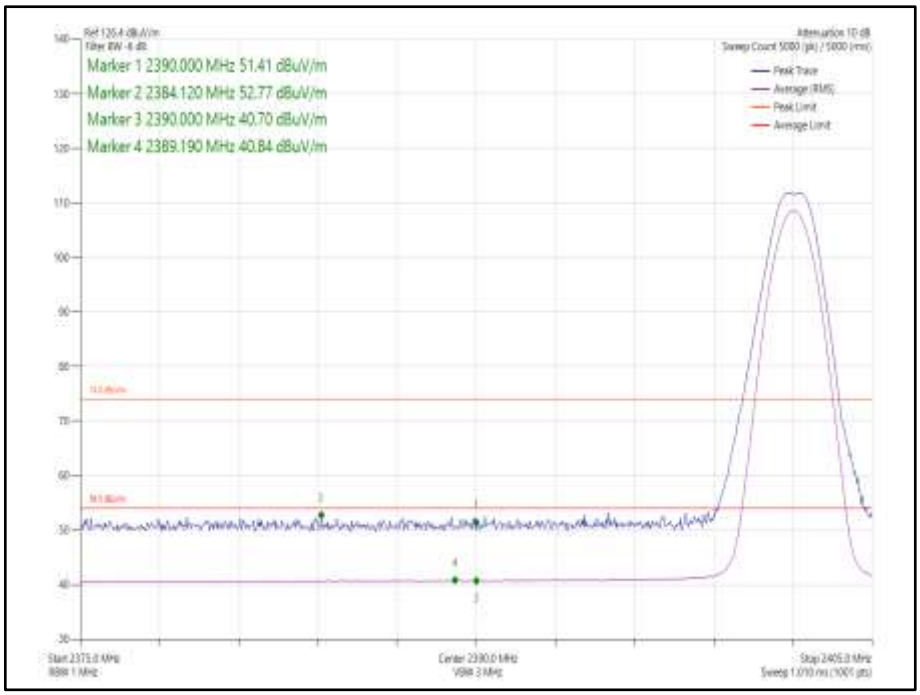

Figure 5 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

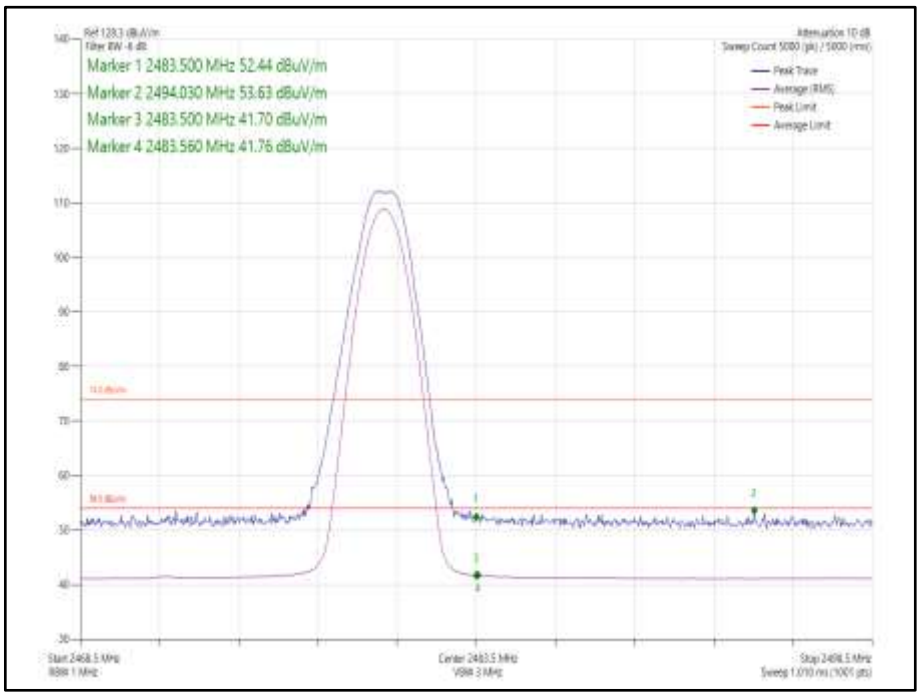

Figure 6 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE - LE1M iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0-1	2390.0	54.35	41.55
GFSK/DH1	2480	Core 0-1	2483.5	60.65	44.03

Table 9 - Restricted Band Edge Results

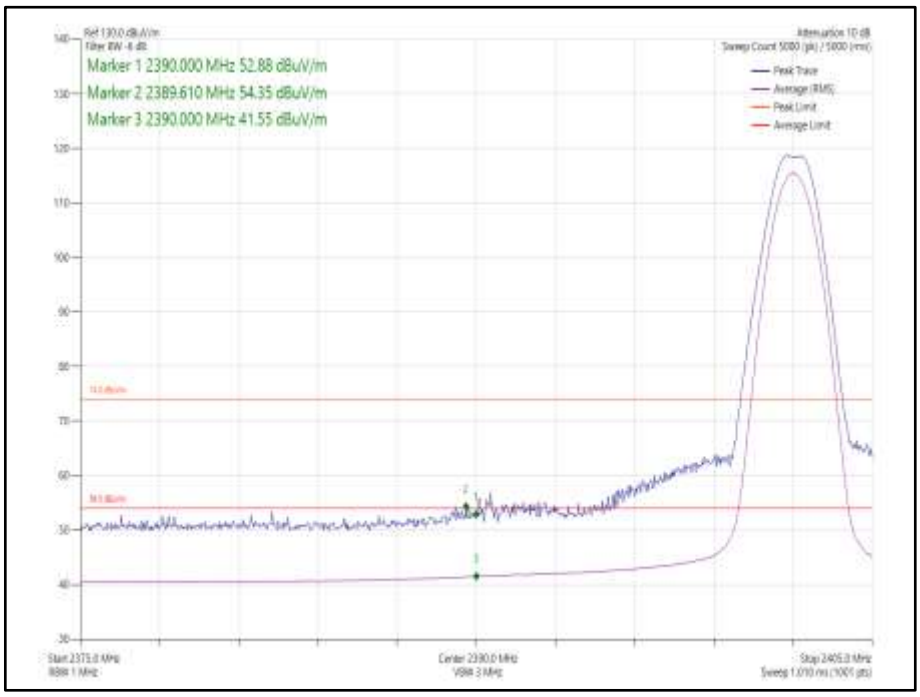

Figure 7 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

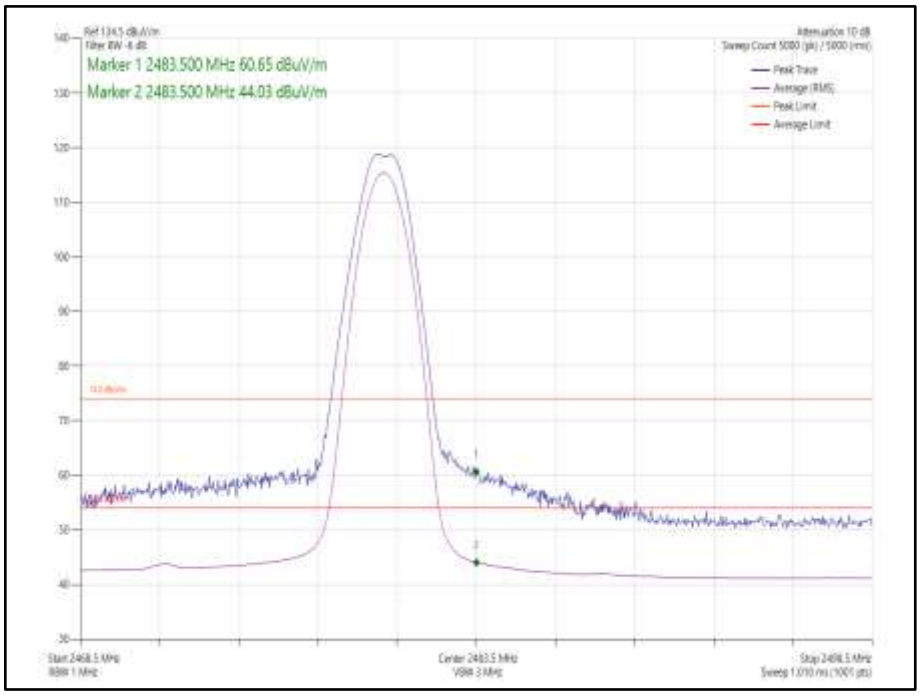

Figure 8 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE - LE1M ePA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0-1	2390.0	60.35	43.55
GFSK/DH1	2480	Core 0-1	2483.5	66.17	48.17

Table 10 - Restricted Band Edge Results

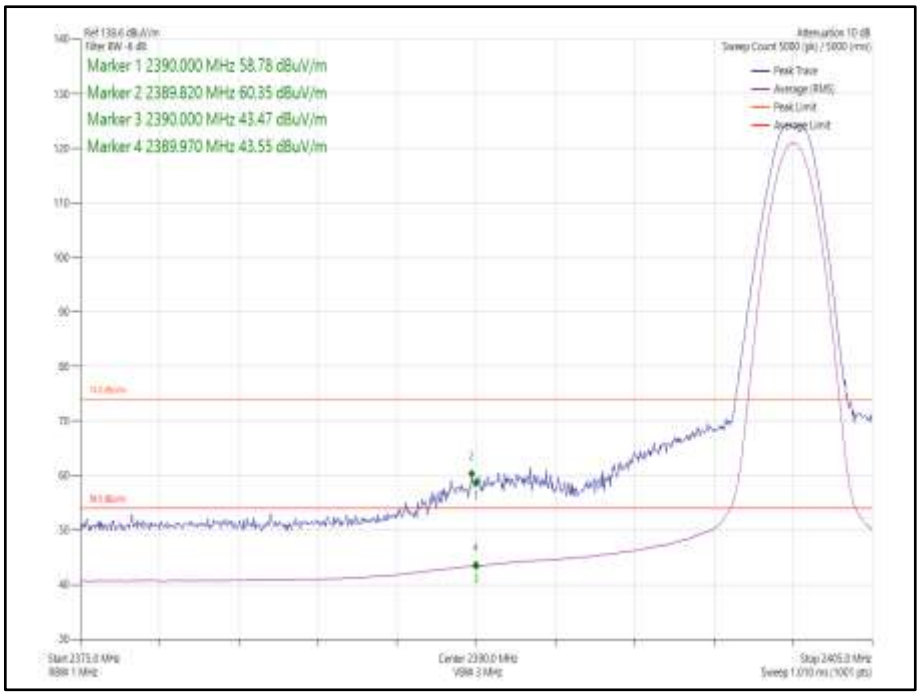

Figure 9 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

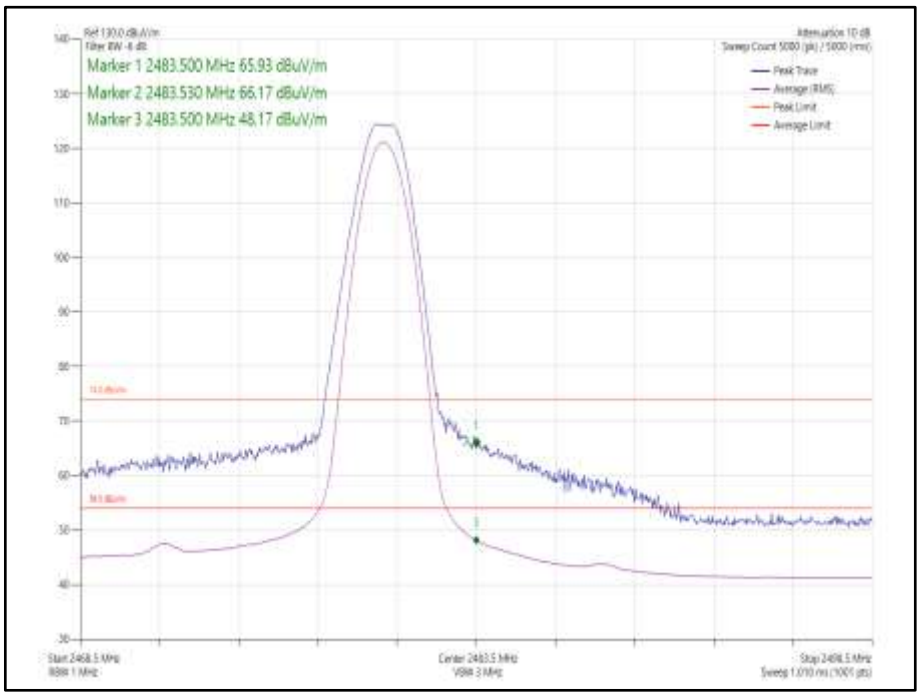

Figure 10 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE – LE2M iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0	2390.0	53.53	40.99
GFSK/DH1	2480	Core 0	2483.5	56.34	42.84

Table 11 - Restricted Band Edge Results

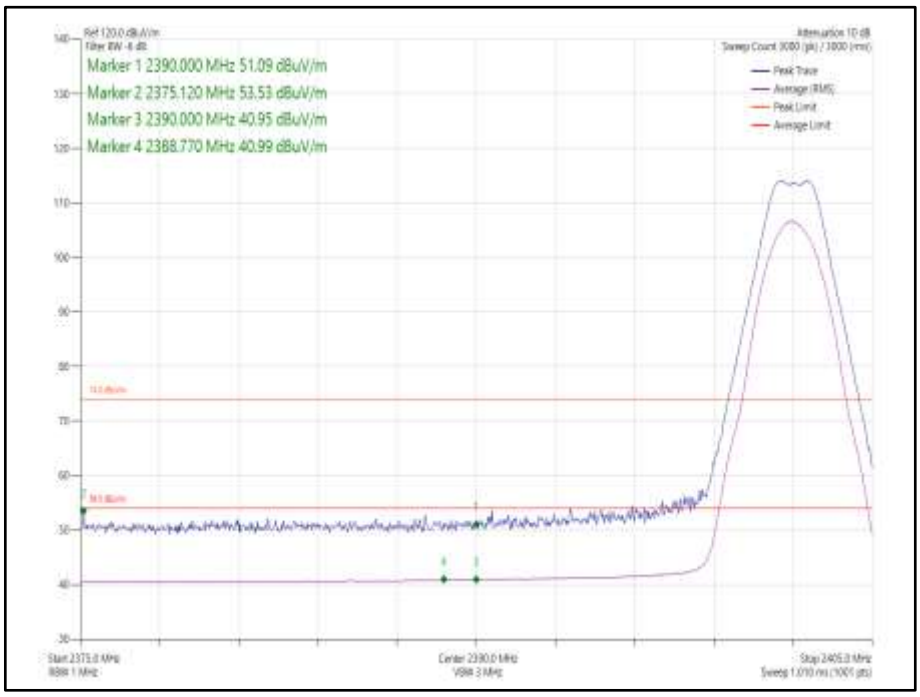

Figure 11 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

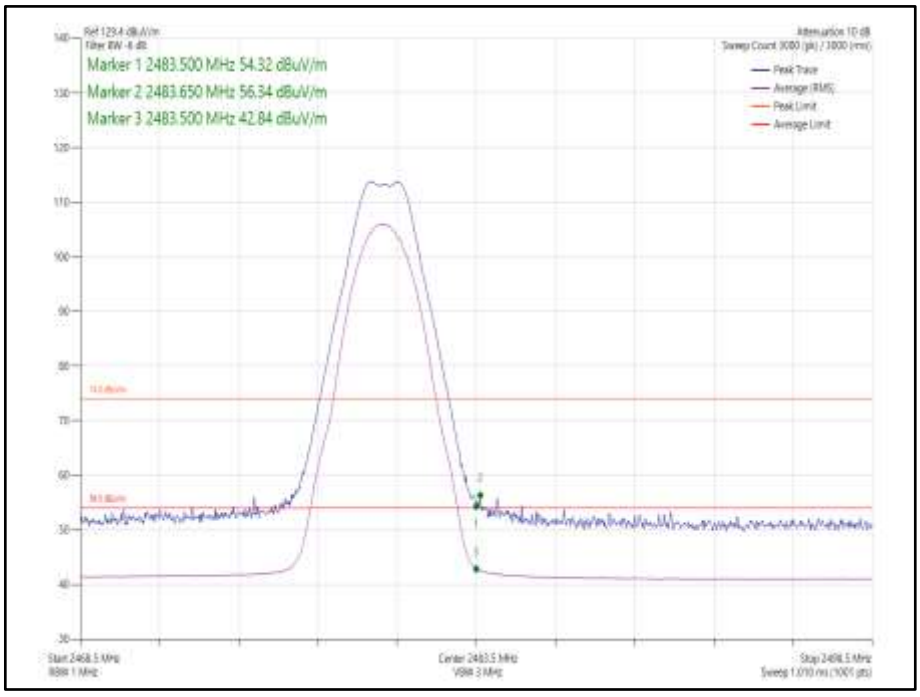

Figure 12 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE – LE2M ePA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0	2390.0	53.49	41.66
GFSK/DH1	2480	Core 0	2483.5	59.46	45.68

Table 12 - Restricted Band Edge Results

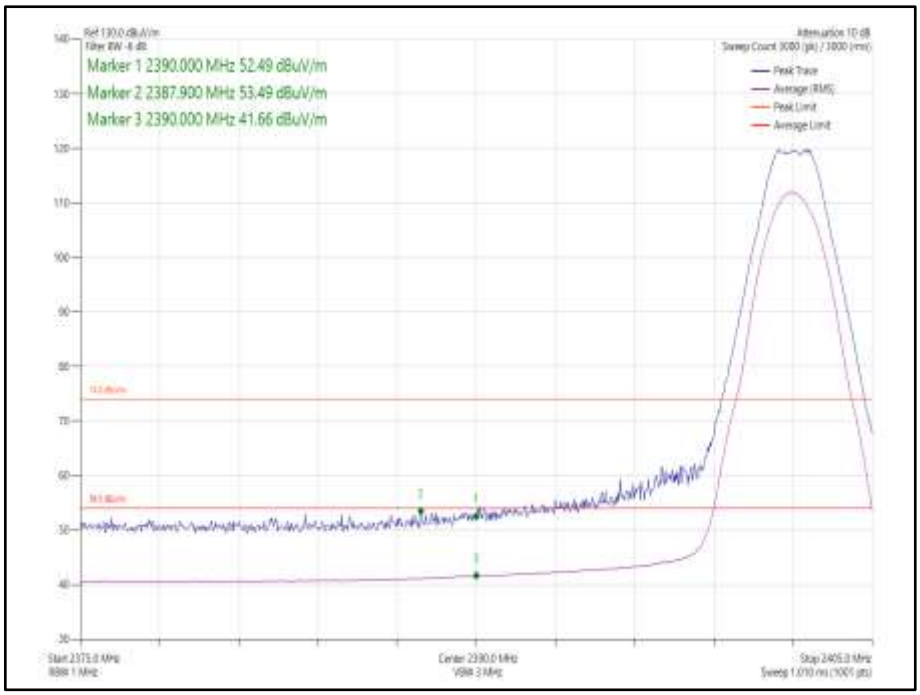

Figure 13 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

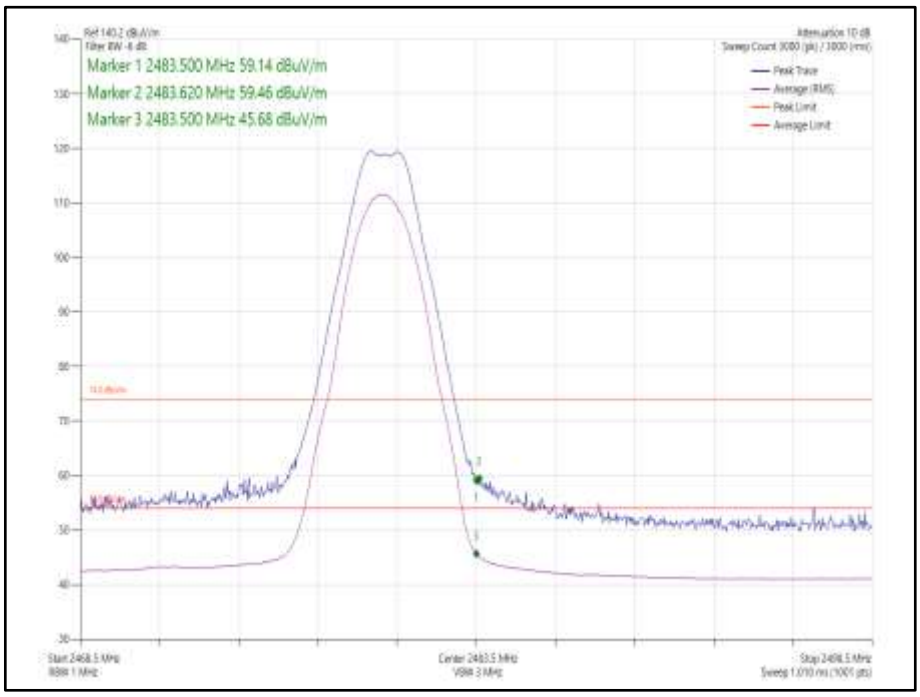

Figure 14 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE – LE2M iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 2	2390.0	53.28	40.80
GFSK/DH1	2480	Core 2	2483.5	55.08	43.21

Table 13 - Restricted Band Edge Results

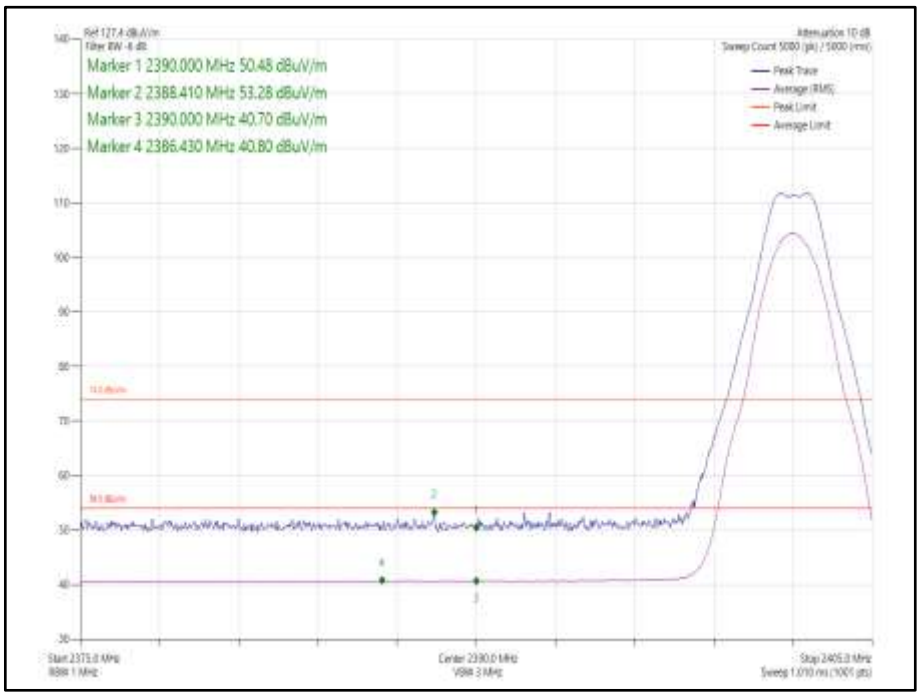

Figure 15 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

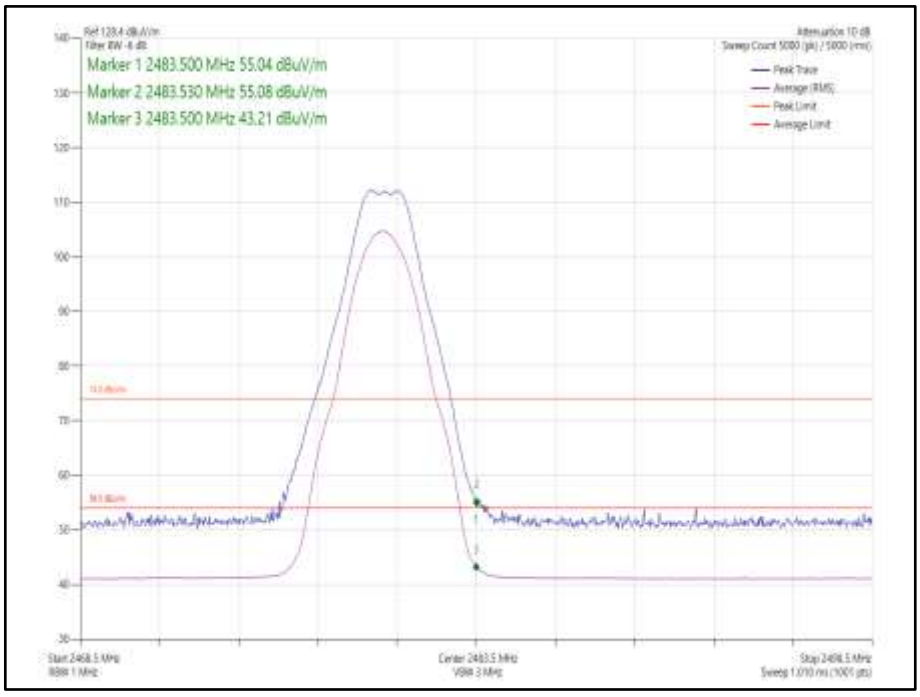

Figure 16 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE – LE2M iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0-1	2390.0	54.36	41.52
GFSK/DH1	2480	Core 0-1	2483.5	62.45	45.65

Table 14 - Restricted Band Edge Results

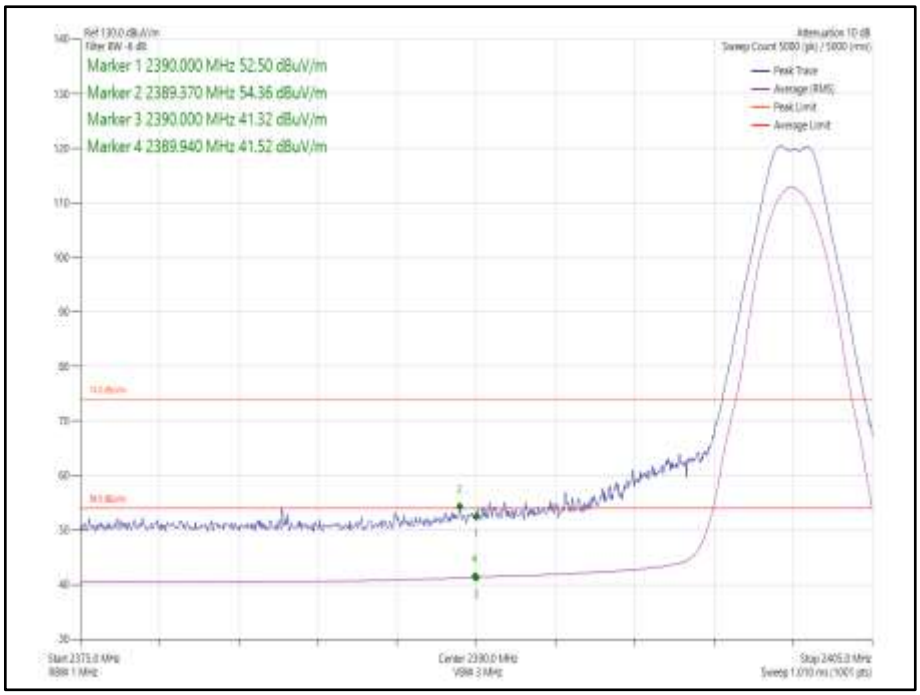

Figure 17 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

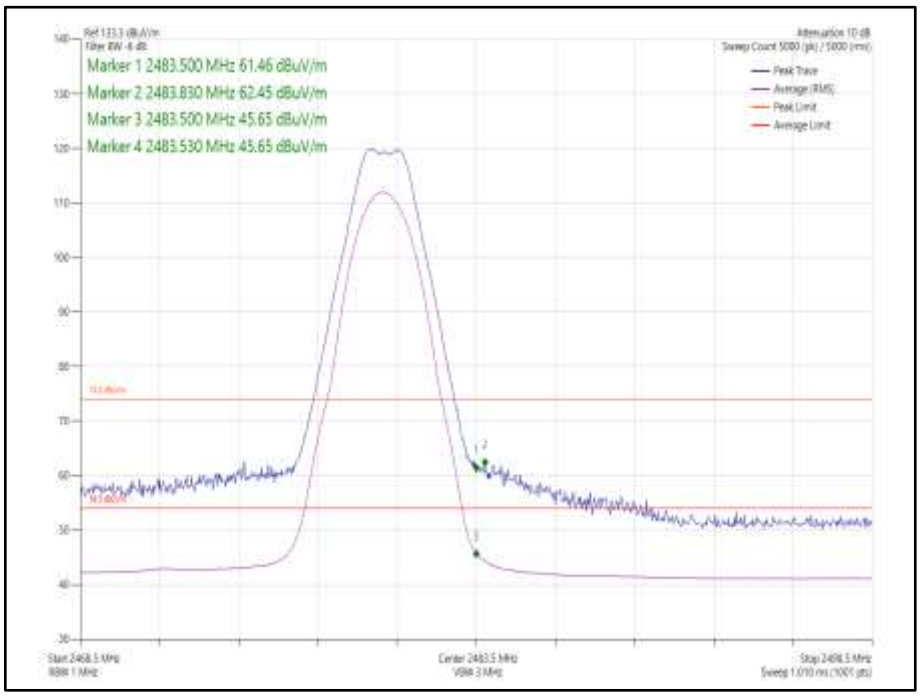

Figure 18 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Bluetooth LE – LE2M ePA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0-1	2390.0	58.29	43.29
GFSK/DH1	2480	Core 0-1	2483.5	67.89	50.13

Table 15 - Restricted Band Edge Results

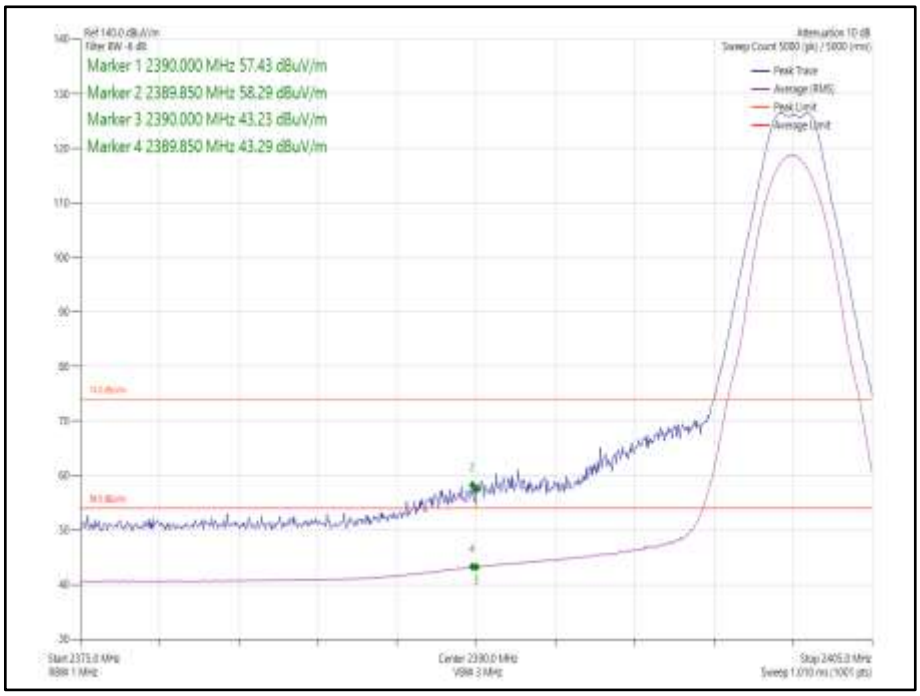

Figure 19 – GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

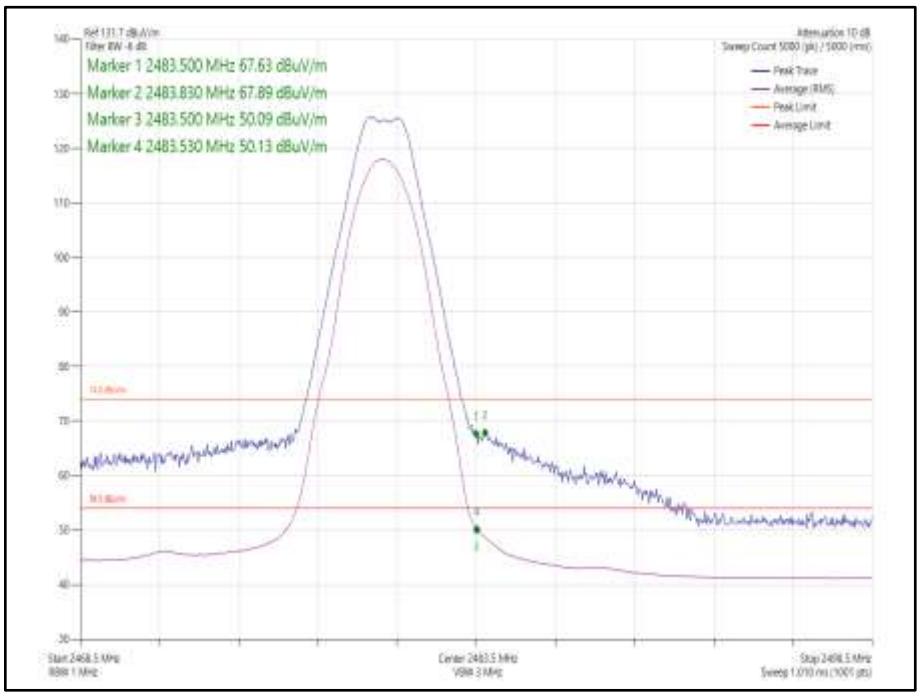

Figure 20 – GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR4 iPA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 0	4DH5	2404	2390.0	53.96	42.33
Static	GFSK	Core 0	4DH5	2476	2483.5	53.34	41.35

Table 16 - Restricted Band Edge Results

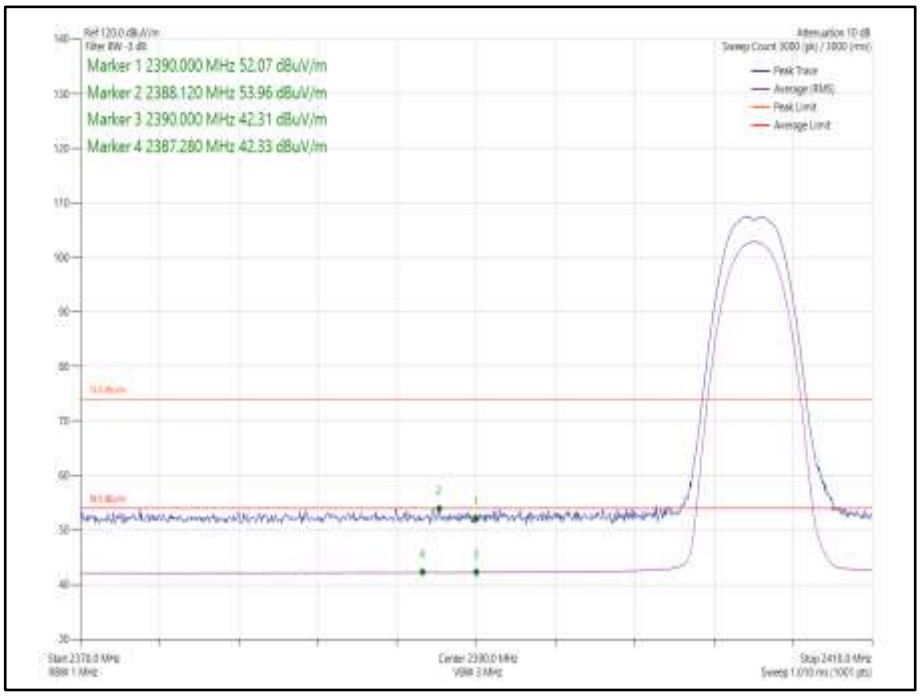

Figure 21 - Static - GFSK/4DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

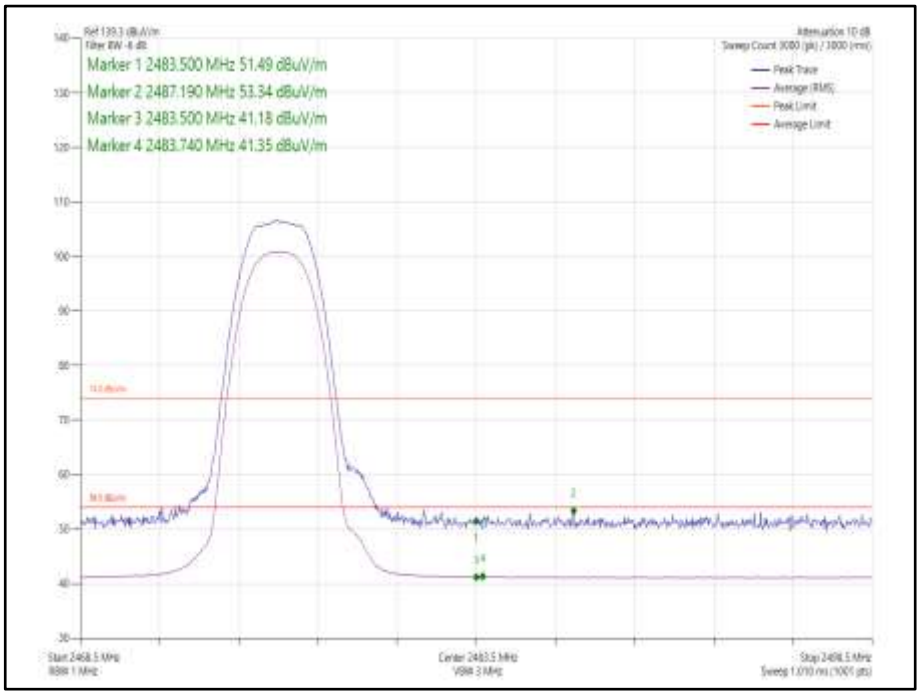

Figure 22 - Static - GFSK/4DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR4 ePA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 0	4DH5	2404	2390.0	54.27	43.21
Static	GFSK	Core 0	4DH5	2476	2483.5	53.88	42.47

Table 17 - Restricted Band Edge Results

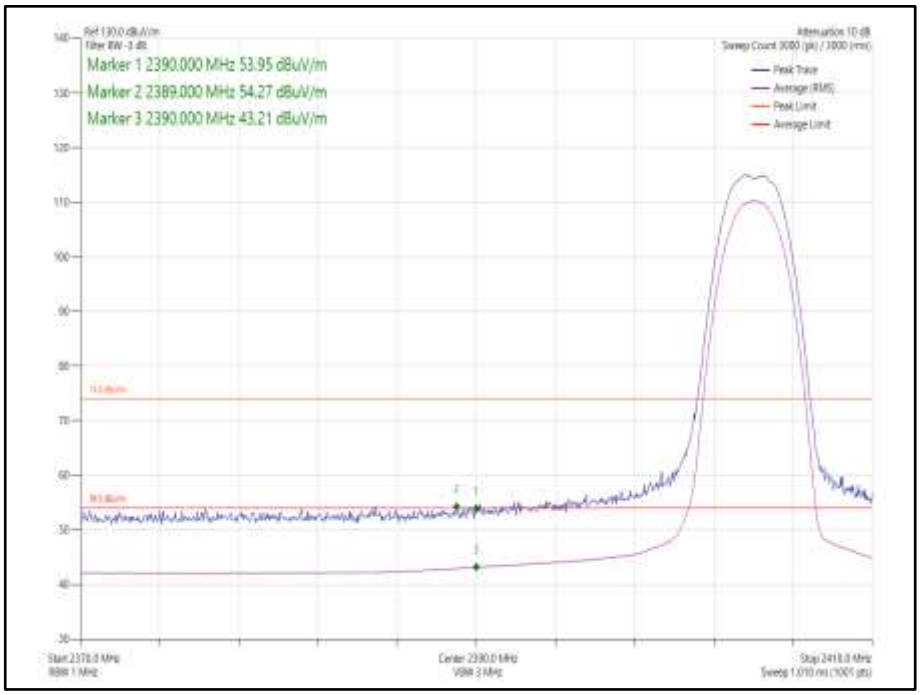

Figure 23 - Static - GFSK/4DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

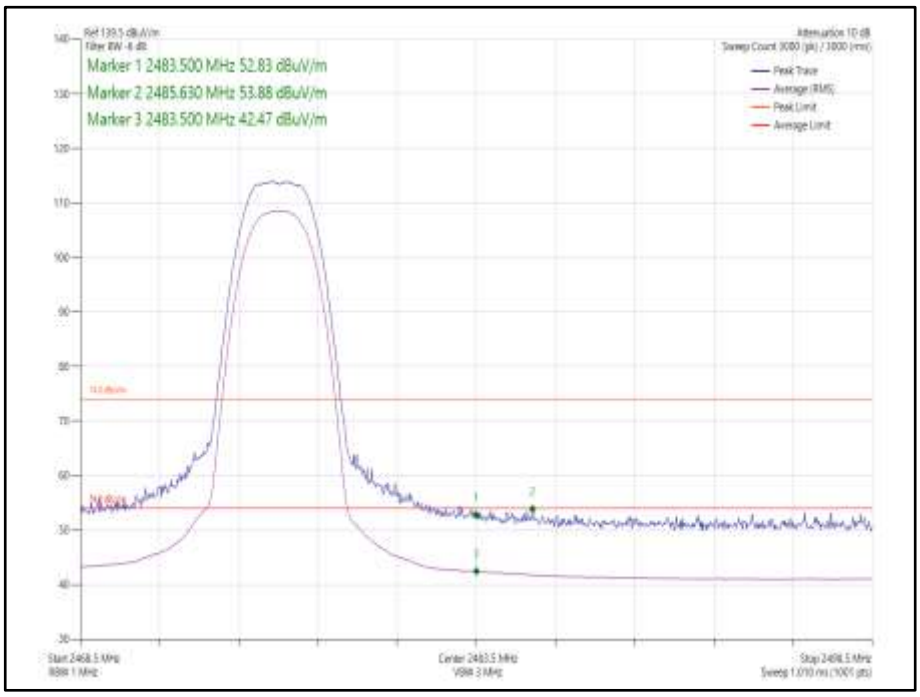

Figure 24 - Static - GFSK/4DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR8 iPA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 0	8DH5	2404	2390.0	54.27	42.59
Static	GFSK	Core 0	8DH5	2476	2483.5	53.82	41.81

Table 18 - Restricted Band Edge Results

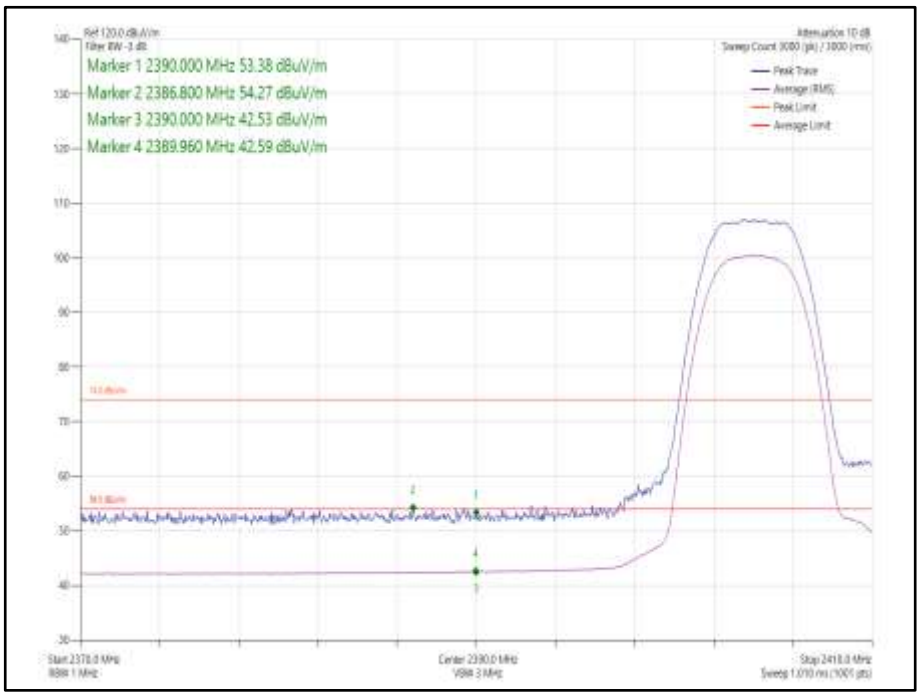

Figure 25- Static - GFSK/8DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

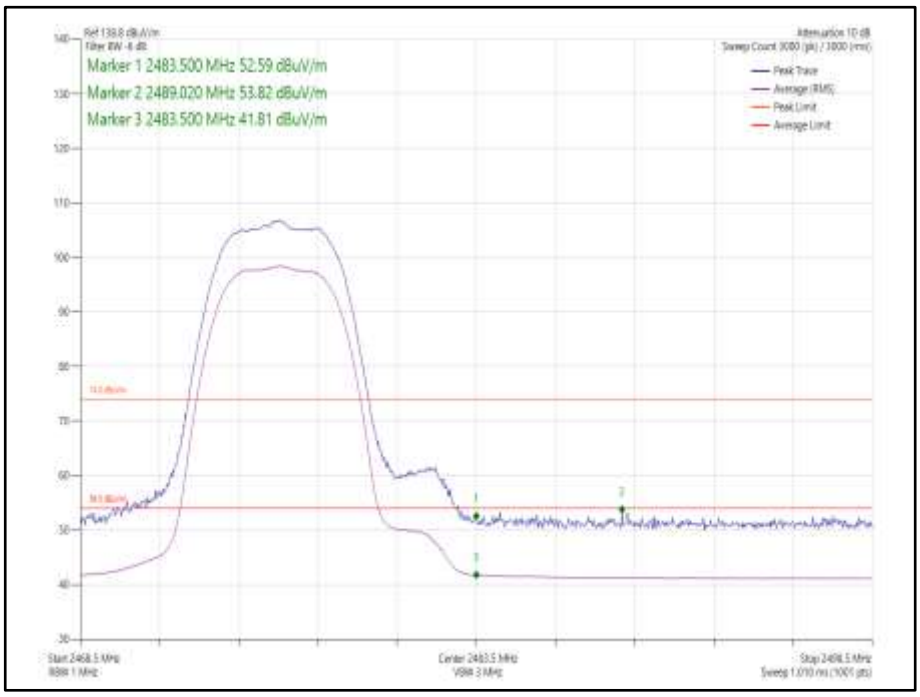

Figure 26 - Static - GFSK/8DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR8 ePA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 0	8DH5	2404	2390.0	54.86	43.88
Static	GFSK	Core 0	8DH5	2476	2483.5	55.39	44.45

Table 19 - Restricted Band Edge Results

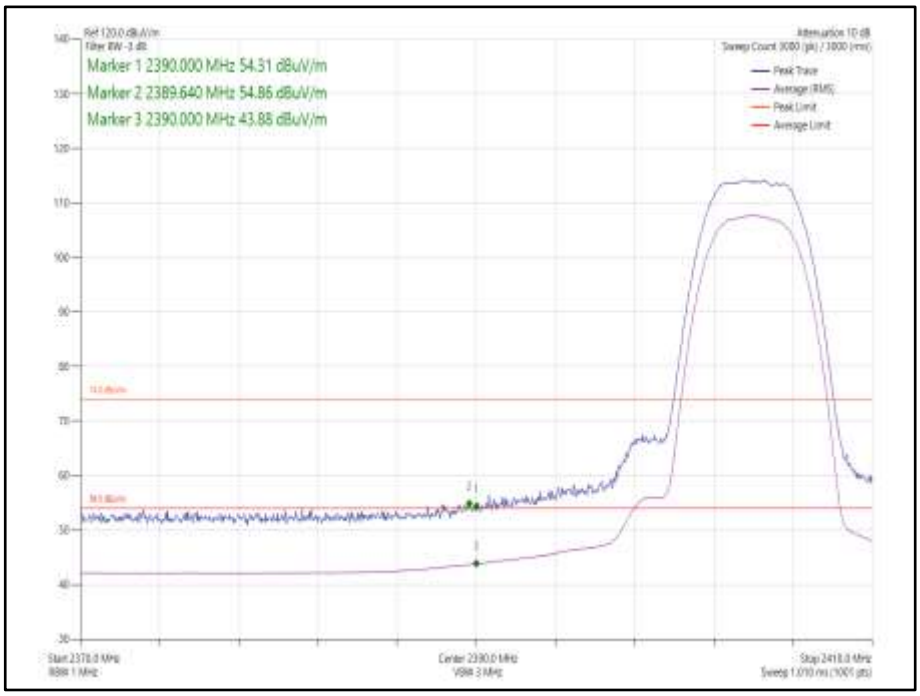

Figure 27- Static - GFSK/8DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

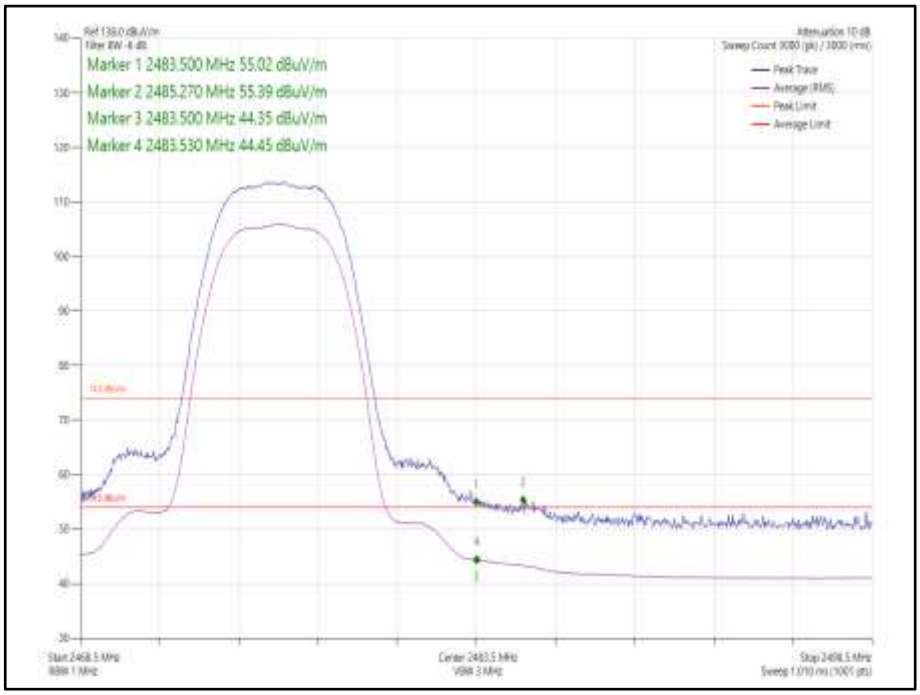

Figure 28 - Static - GFSK/8DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR4 iPA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 2	4DH5	2404	2390.0	54.93	42.31
Static	GFSK	Core 2	4DH5	2476	2483.5	53.03	41.28

Table 20 - Restricted Band Edge Results

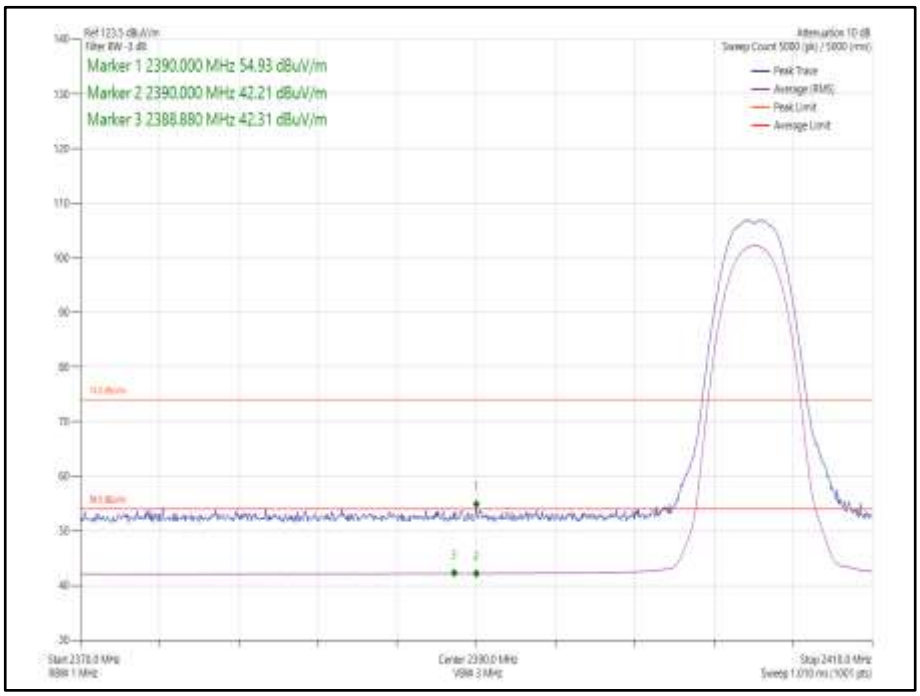

Figure 29 - Static - GFSK/4DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

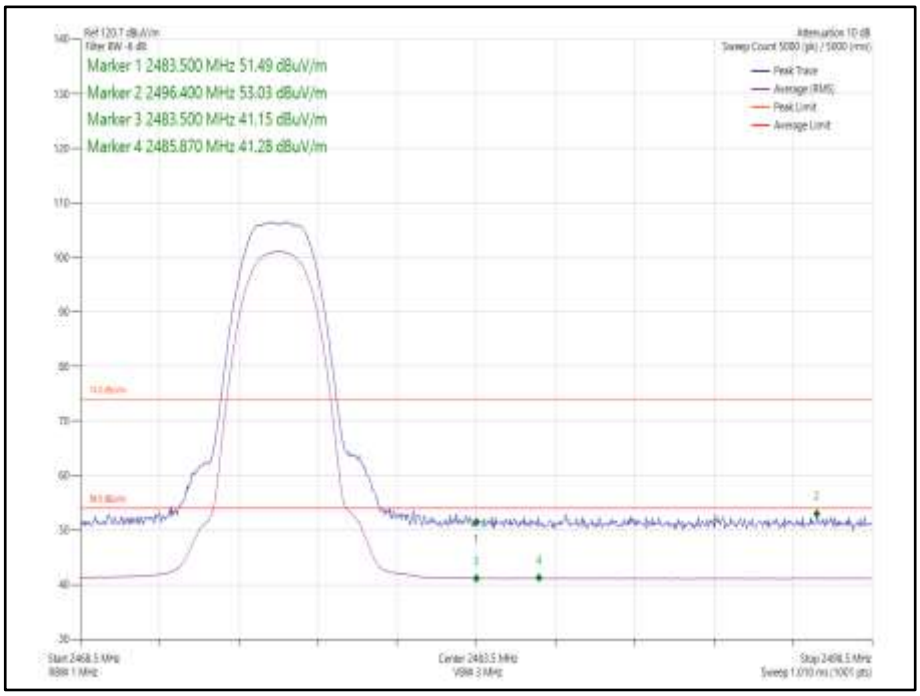

Figure 30 - Static - GFSK/4DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR8 iPA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 2	8DH5	2404	2390.0	54.04	42.41
Static	GFSK	Core 2	8DH5	2476	2483.5	53.77	42.02

Table 21 - Restricted Band Edge Results

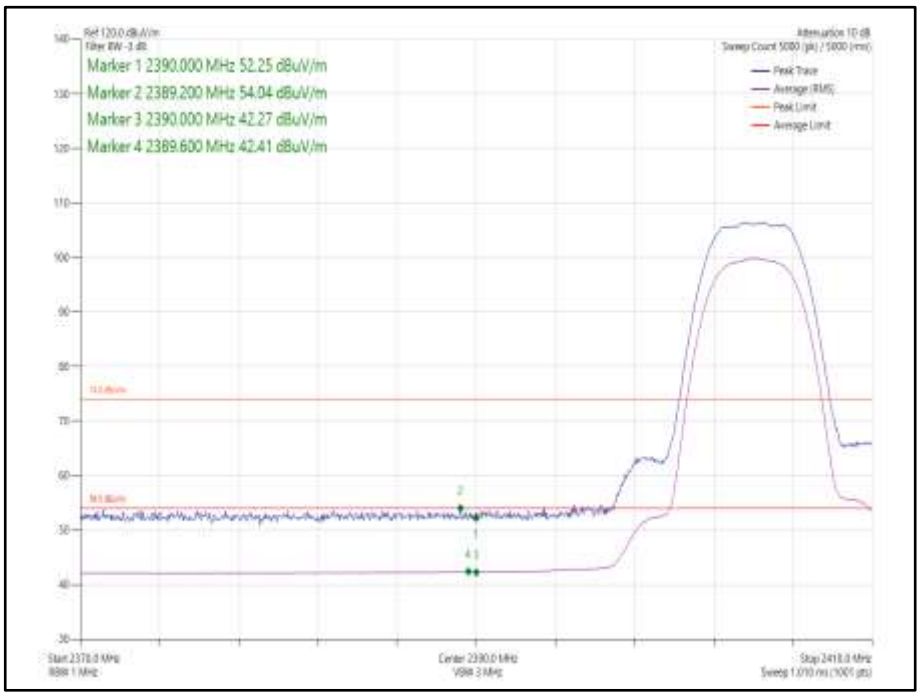

Figure 31 - Static - GFSK/8DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

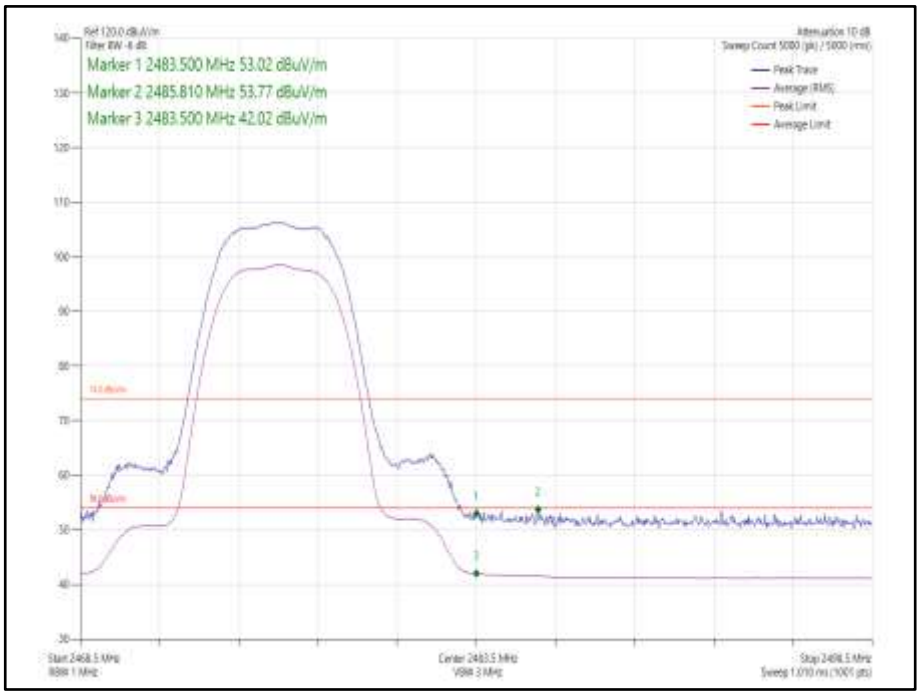

Figure 32 - Static - GFSK/8DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR4 iPA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 0-1	4DH5	2404	2390.0	54.56	42.44
Static	GFSK	Core 0-1	4DH5	2476	2483.5	54.02	41.69

Table 22 - Restricted Band Edge Results

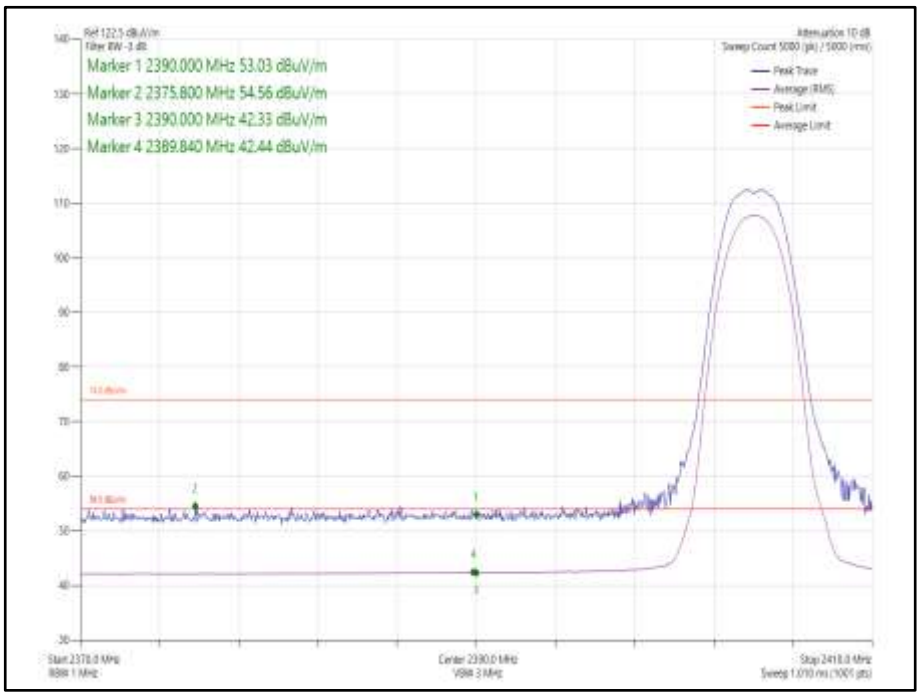

Figure 33 - Static - GFSK/4DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

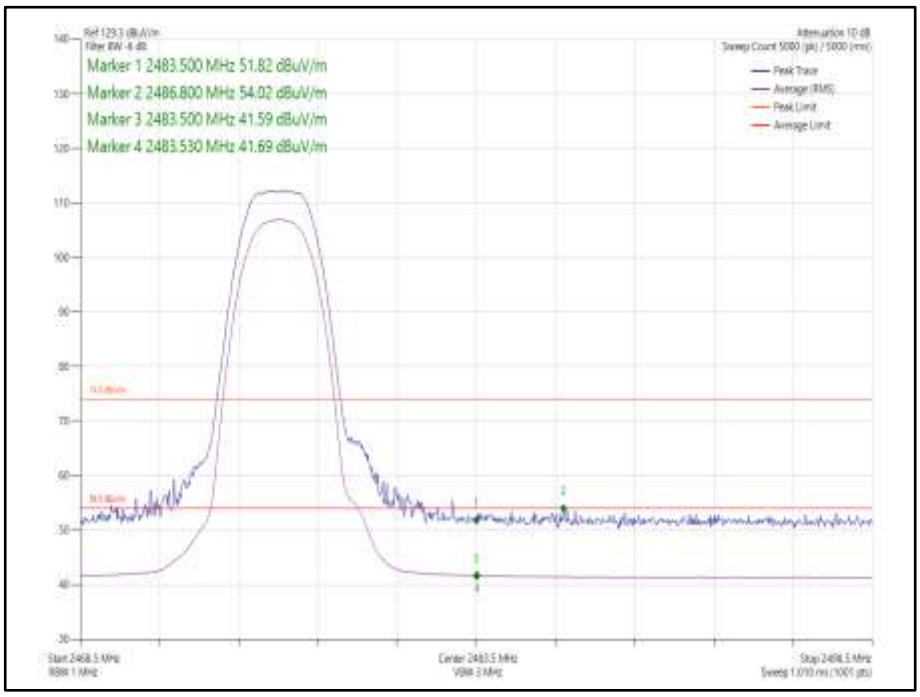

Figure 34 - Static - GFSK/4DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR4 ePA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 0-1	4DH5	2404	2390.0	56.57	43.81
Static	GFSK	Core 0-1	4DH5	2476	2483.5	56.58	43.6

Table 23 - Restricted Band Edge Results

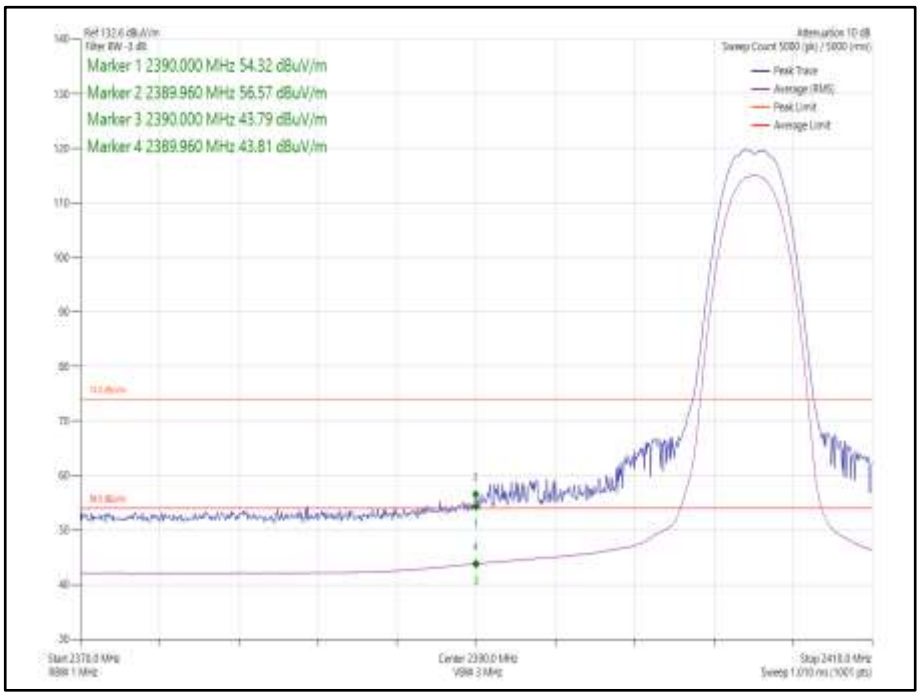

Figure 35 - Static - GFSK/4DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

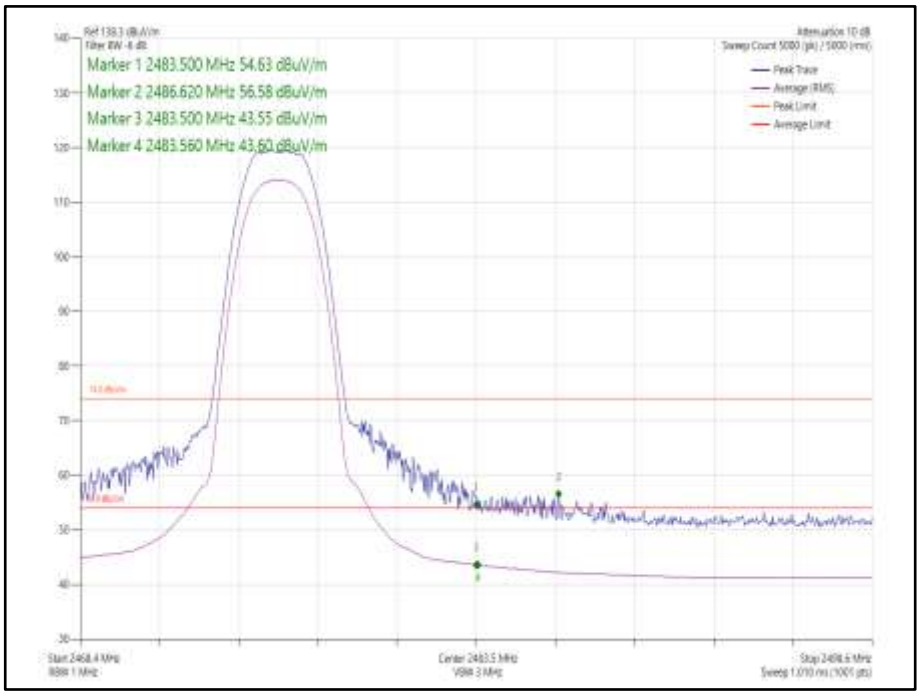

Figure 36 - Static - GFSK/4DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR8 iPA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 0-1	8DH5	2404	2390.0	54.83	42.70
Static	GFSK	Core 0-1	8DH5	2476	2483.5	54.27	42.66

Table 24 - Restricted Band Edge Results

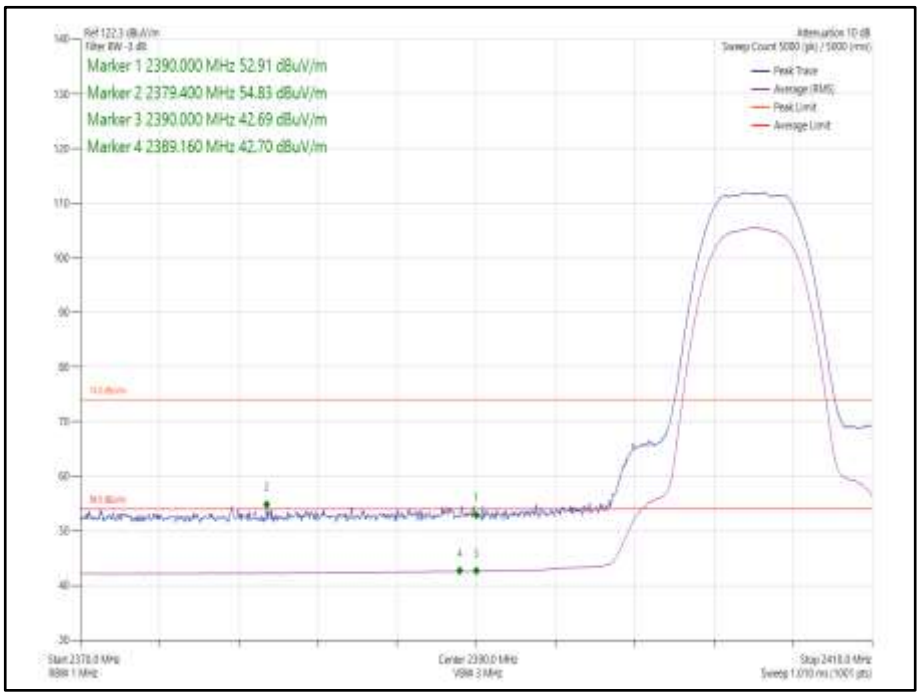

Figure 37- Static - GFSK/8DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

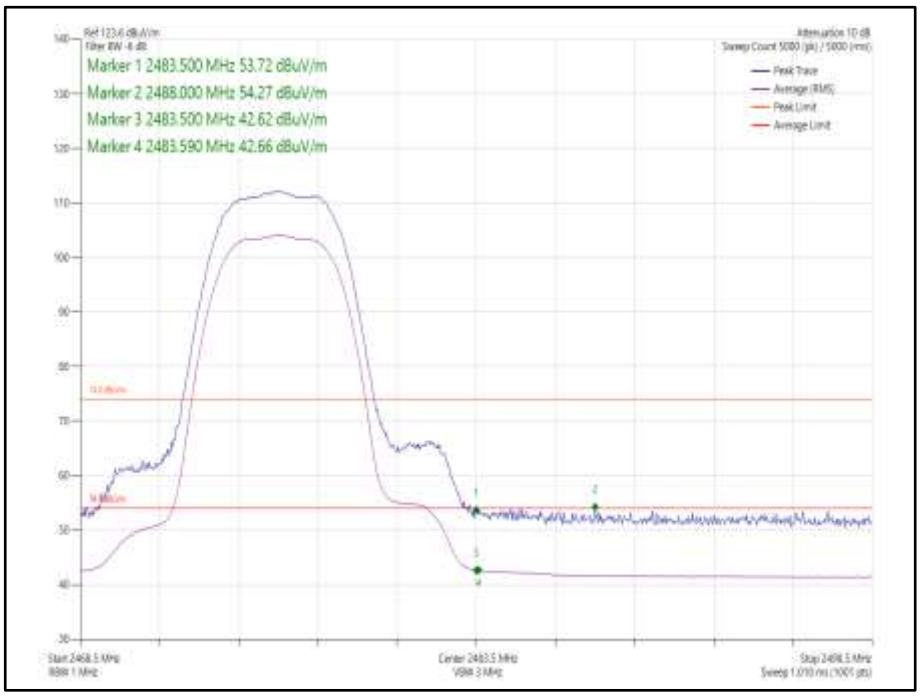

Figure 38 - Static - GFSK/8DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth – HDR8 ePA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	GFSK	Core 0-1	8DH5	2404	2390.0	57.39	44.81
Static	GFSK	Core 0-1	8DH5	2476	2483.5	58.39	45.86

Table 25 - Restricted Band Edge Results

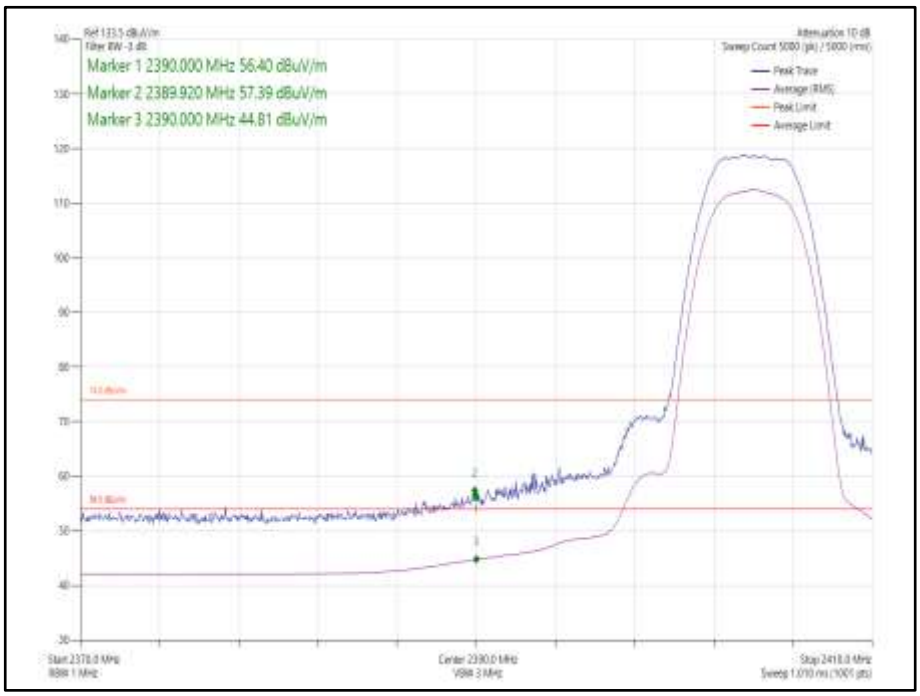

Figure 39- Static - GFSK/8DH5 - 2404 MHz - Band Edge Frequency 2390.0 MHz

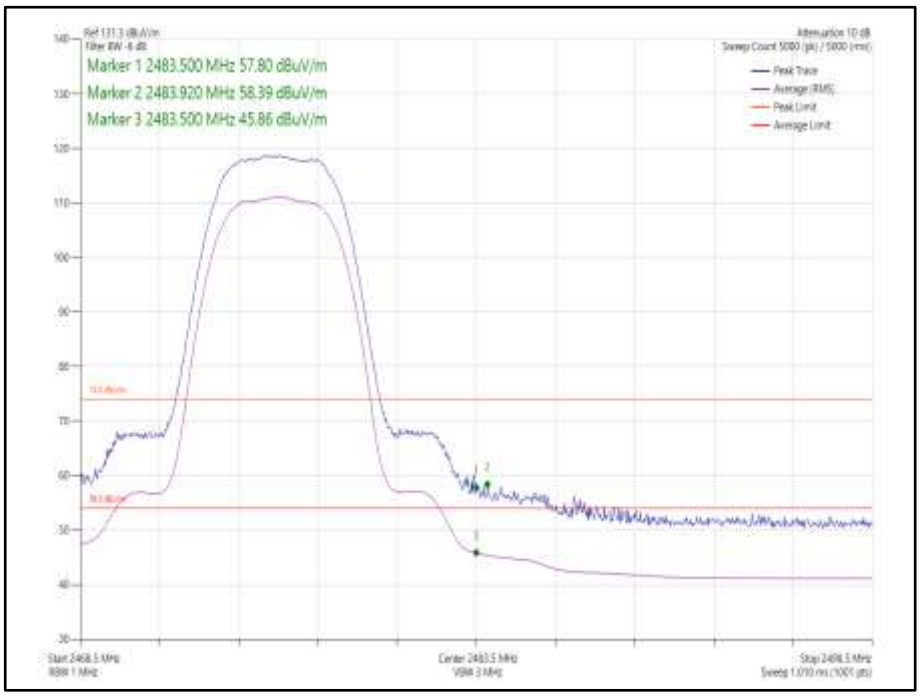

Figure 40 - Static - GFSK/8DH5 - 2476 MHz - Band Edge Frequency 2483.5 MHz

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 26

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 27

*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 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
True RMS Multimeter	Fluke	179	4007	12	29-Oct-2021
EMI Test Receiver	Rohde & Schwarz	ESW44	5084	12	08-Mar-2022
Cable (18 GHz)	Rosenberger	LU7-071-2000	5107	12	09-Jul-2022
EmX Emissions Software	TUV SUD	V2.1.11	5125	-	Software
Screened Room (11)	Rainford	Rainford	5136	36	01-Nov-2021
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Horn Antenna (1-10GHz)	Schwarzbeck	BBHA 9120 B	5215	12	01-Apr-2022
8m N Type Cable	Junkosha	MWX221-08000NMSNMS/B	5522	12	24-Mar-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	08-Sep-2021

Table 28

TU - Traceability Unscheduled

2.2 Emission Bandwidth

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(2)
ISED RSS-247 Clause 5.2
ISED RSS-GEN, Clause 6.7

2.2.2 Equipment Under Test and Modification State

A2442, S/N: XH2DGXFKY6 - Modification State 0

2.2.3 Date of Test

07-September-2021 to 22-September-2021

2.2.4 Test Method

This test was performed in accordance with ANSI C63.10, clauses 6.9.3 and 11.8.1.

2.2.5 Environmental Conditions

Ambient Temperature	21.5 - 23.5 °C
Relative Humidity	48.4 - 66.9 %

2.2.6 Test Results

2.4 GHz Bluetooth - DTS

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (4-DH5)	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	Minimum	
2404	1.904	-	-	-	1.904	≥500.0
2441	1.904	-	-	-	1.904	≥500.0
2476	1.904	-	-	-	1.904	≥500.0

Table 29 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	2.328	-	-	-	2.328	-
2441	2.328	-	-	-	2.328	-
2476	2.320	-	-	-	2.320	-

Table 30 - 99% Bandwidth Results

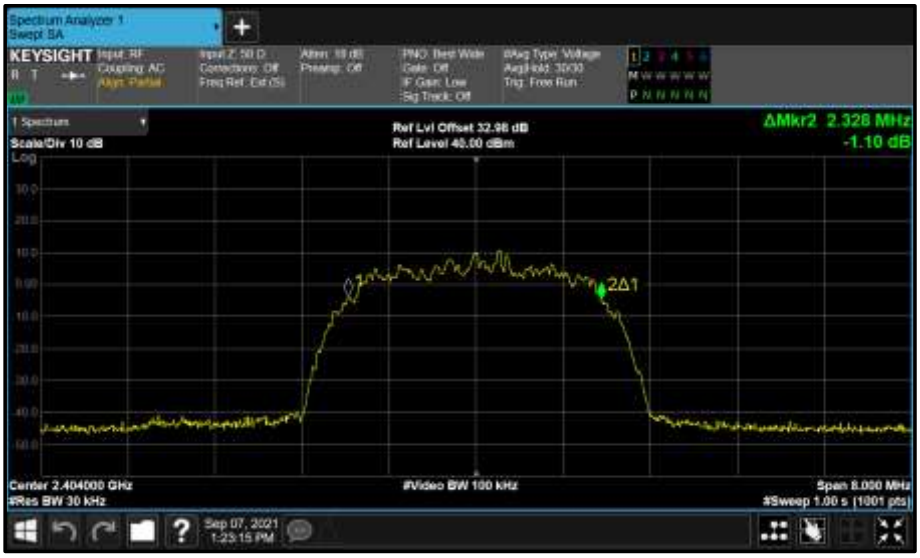

Figure 41 - Core 0 (A) 2404 MHz (CH2) 99% Bandwidth

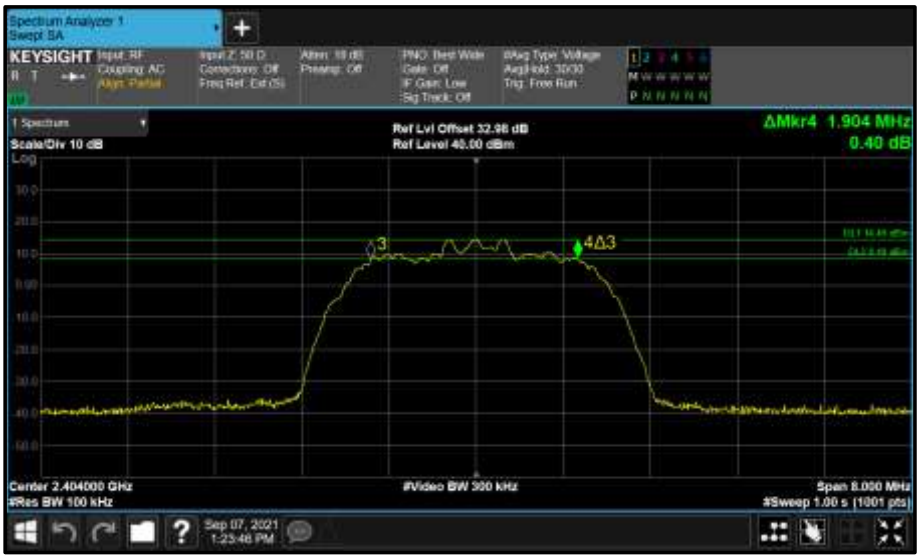

Figure 42 - Core 0 (A) 2404 MHz (CH2) 6 dB Bandwidth

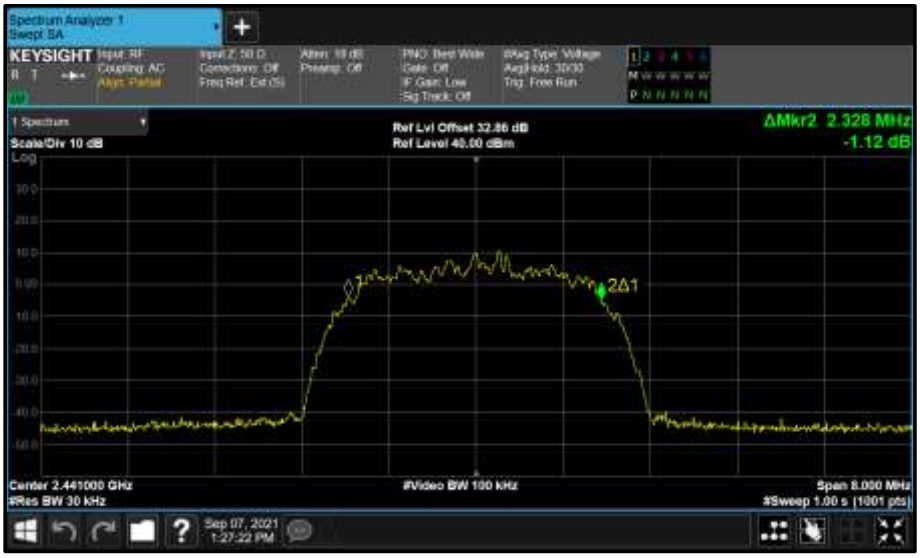

Figure 43 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

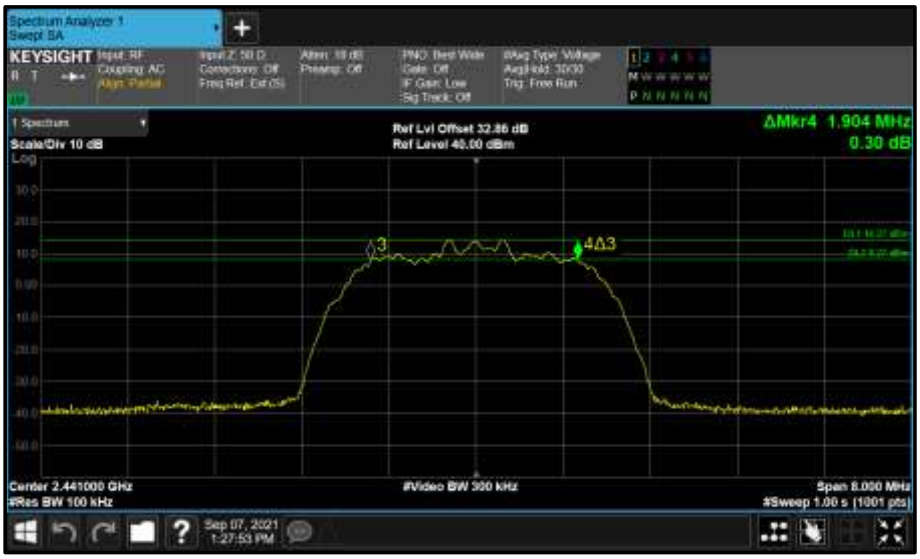

Figure 44 - Core 0 (A) 2441 MHz (CH39) 6 dB Bandwidth

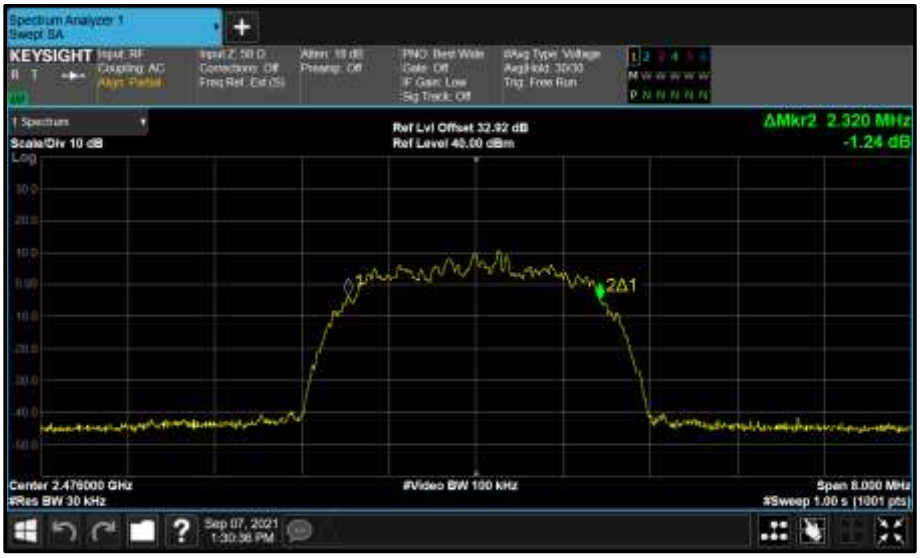

Figure 45 - Core 0 (A) 2476 MHz (CH74) 99% Bandwidth

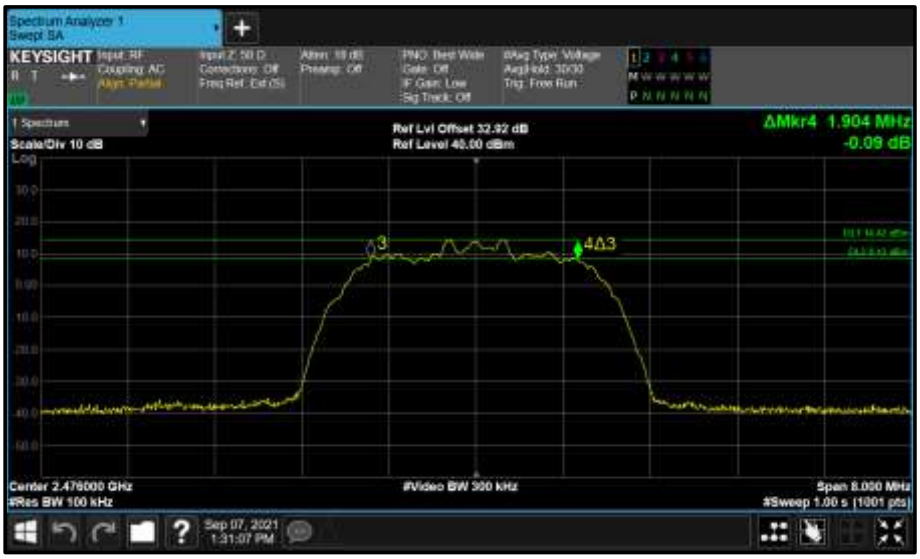

Figure 46 - Core 0 (A) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (8-DH5)	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	Minimum	
2404	1.005	-	-	-	1.005	≥500.0
2441	1.005	-	-	-	1.005	≥500.0
2476	1.020	-	-	-	1.020	≥500.0

Table 31 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	4.440	-	-	-	4.440	-
2441	4.440	-	-	-	4.440	-
2476	4.440	-	-	-	4.440	-

Table 32 - 99% Bandwidth Results

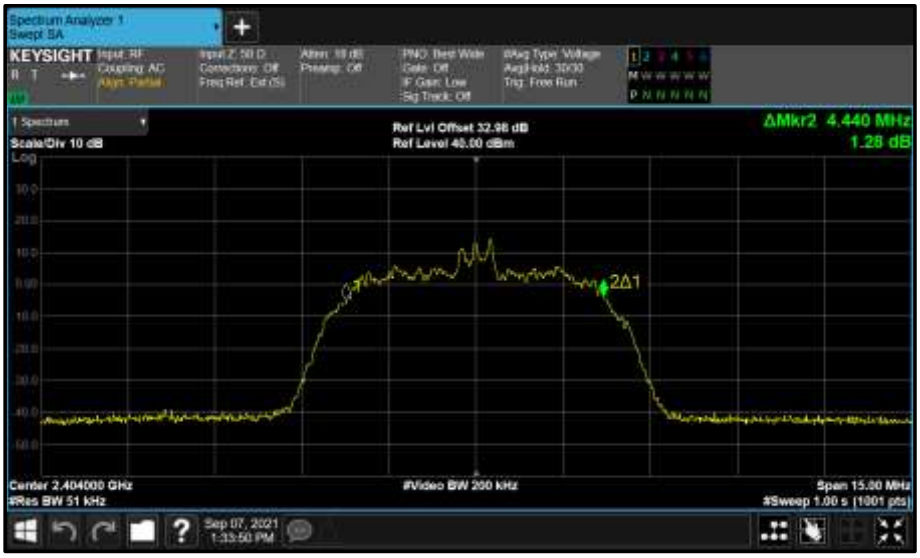

Figure 47 - Core 0 (A) 2404 MHz (CH2) 99% Bandwidth

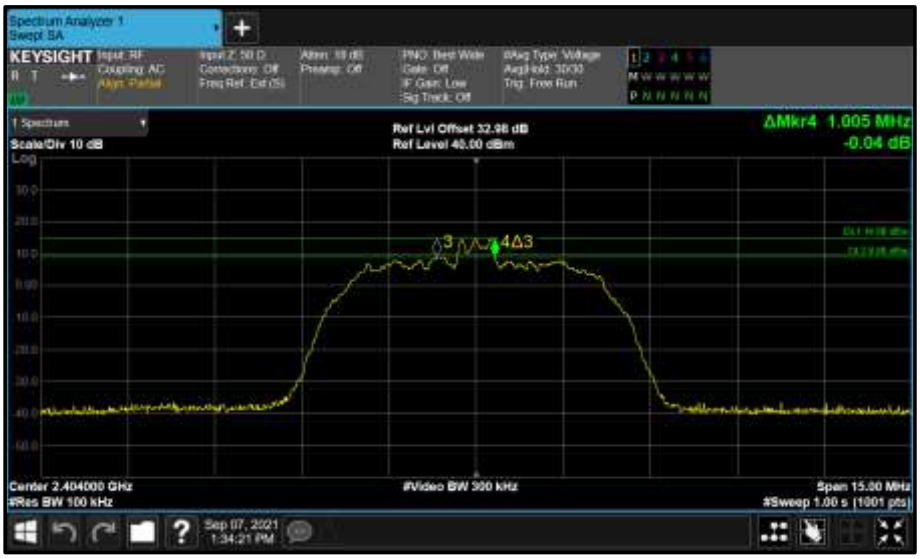

Figure 48 - Core 0 (A) 2404 MHz (CH2) 6 dB Bandwidth

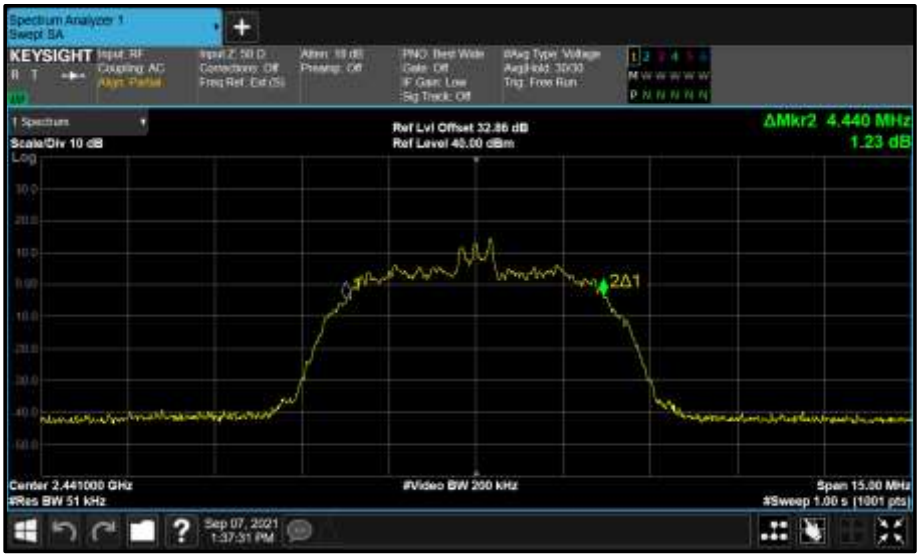

Figure 49 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

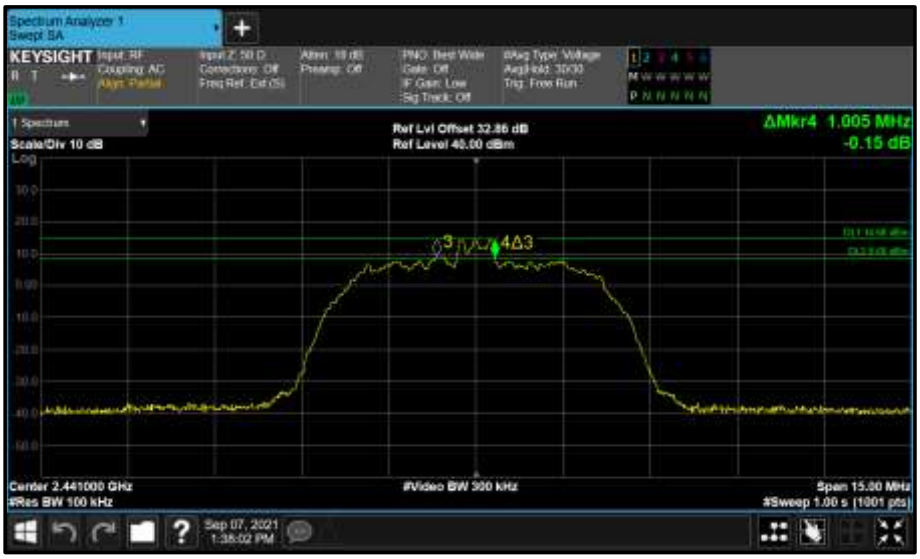

Figure 50 - Core 0 (A) 2441 MHz (CH39) 6 dB Bandwidth

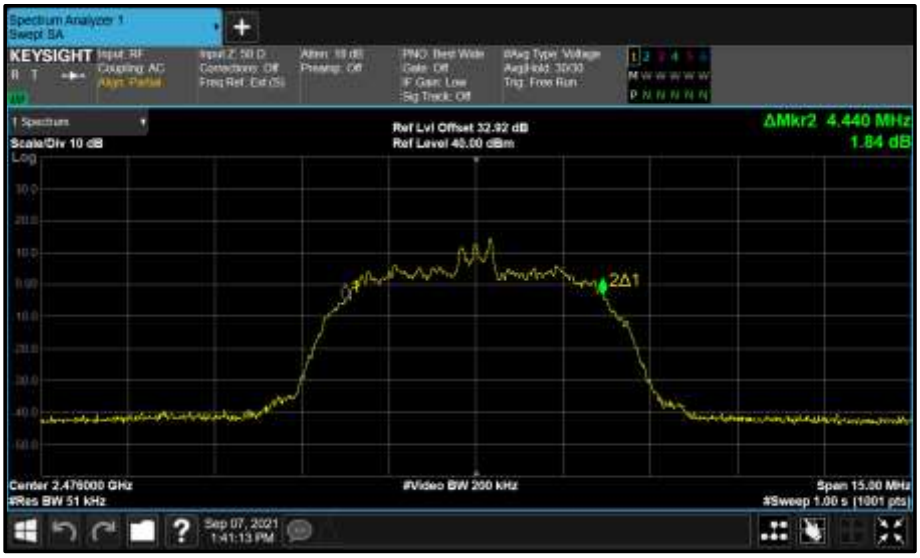

Figure 51 - Core 0 (A) 2476 MHz (CH74) 99% Bandwidth

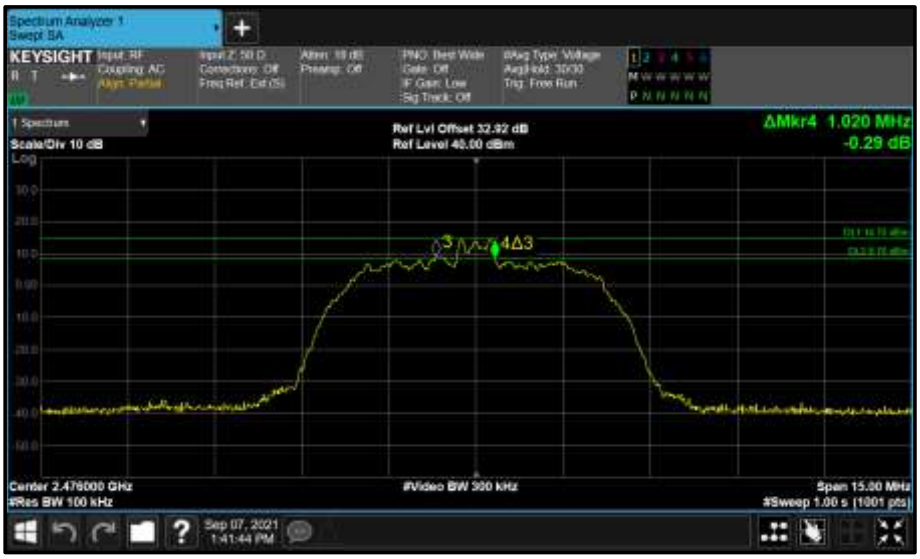

Figure 52 - Core 0 (A) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (4-DH5)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	1.896	1.904	-	-	1.896	≥500.0
2441	1.904	1.904	-	-	1.904	≥500.0
2476	1.896	1.896	-	-	1.896	≥500.0

Table 33 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	2.328	2.328	-	-	2.328	-
2441	2.328	2.328	-	-	2.328	-
2476	2.328	2.328	-	-	2.328	-

Table 34 - 99% Bandwidth Results

Figure 53 - Core 0 (A) 2404 MHz (CH2) 99% Bandwidth

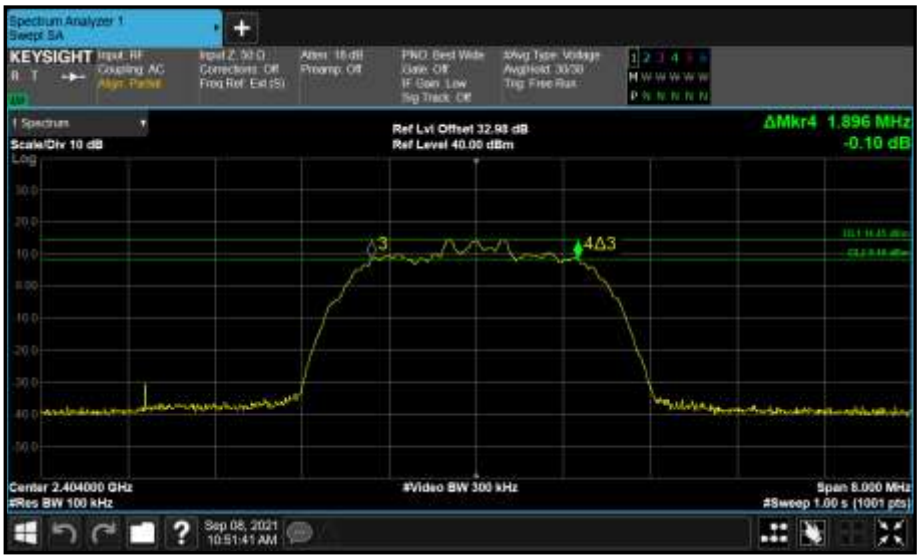

Figure 54 - Core 0 (A) 2404 MHz (CH2) 6 dB Bandwidth

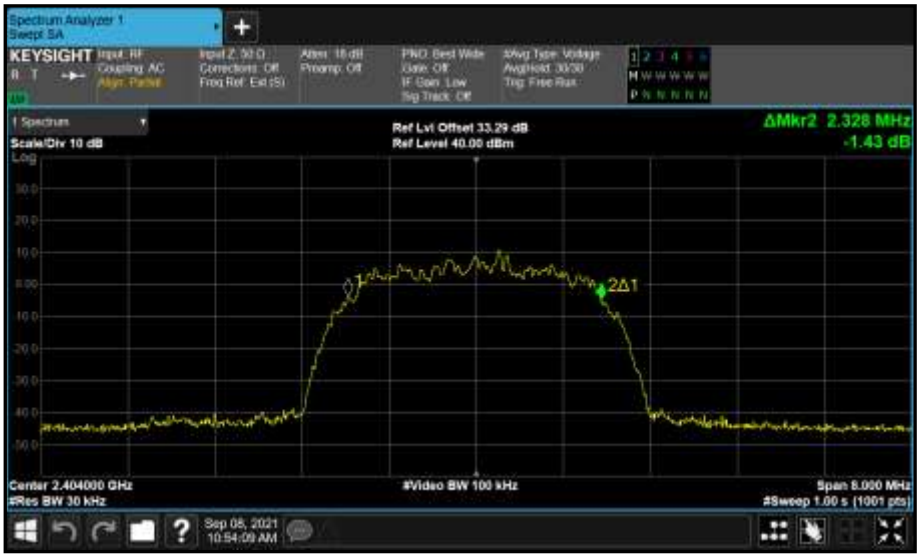

Figure 55 - Core 1 (B) 2404 MHz (CH2) 99% Bandwidth

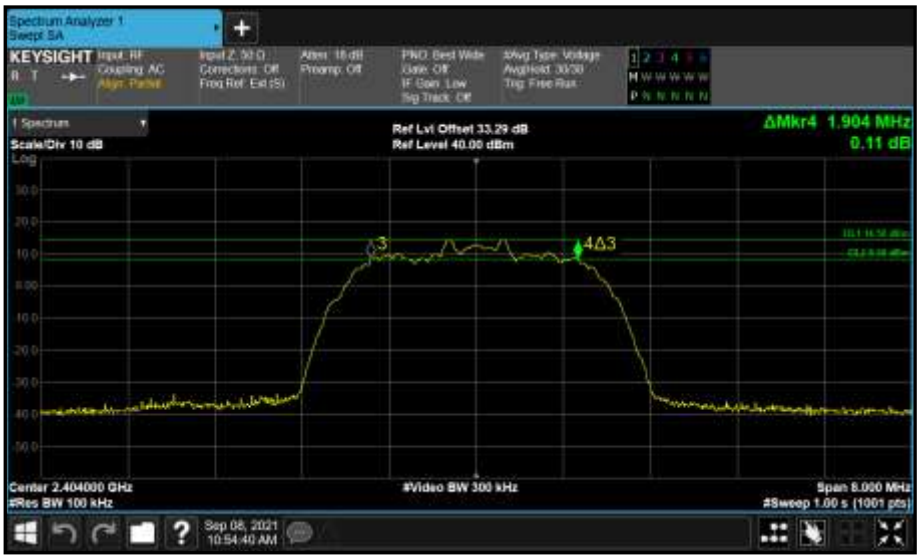

Figure 56 - Core 1 (B) 2404 MHz (CH2) 6 dB Bandwidth

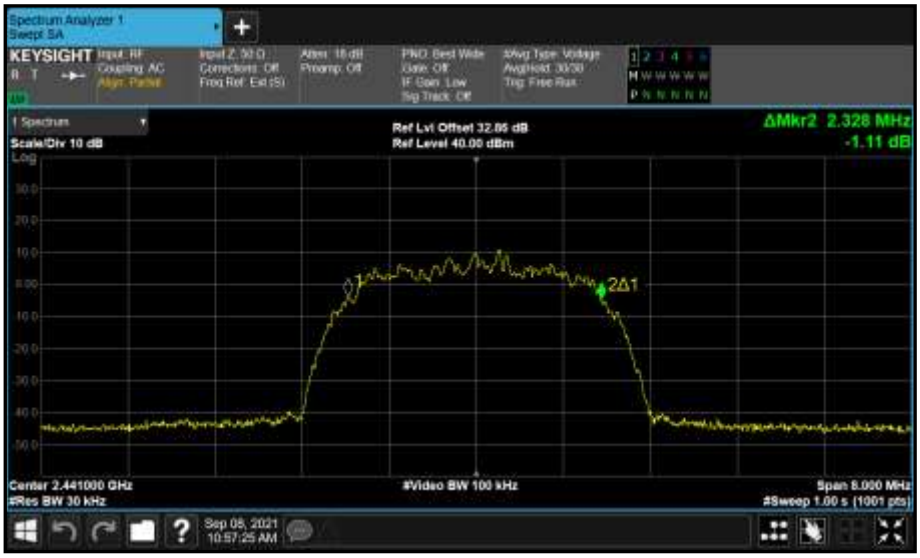

Figure 57 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

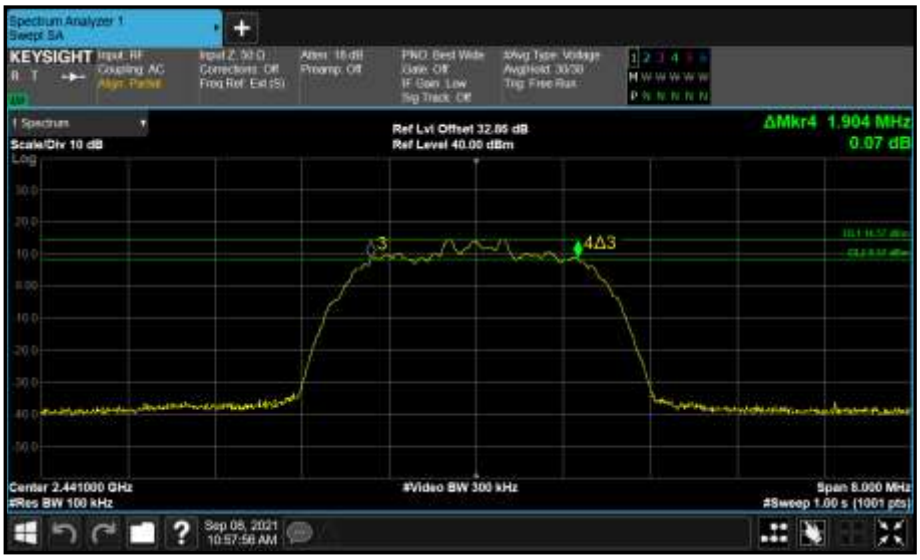

Figure 58 - Core 0 (A) 2441 MHz (CH39) 6 dB Bandwidth

Figure 59 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

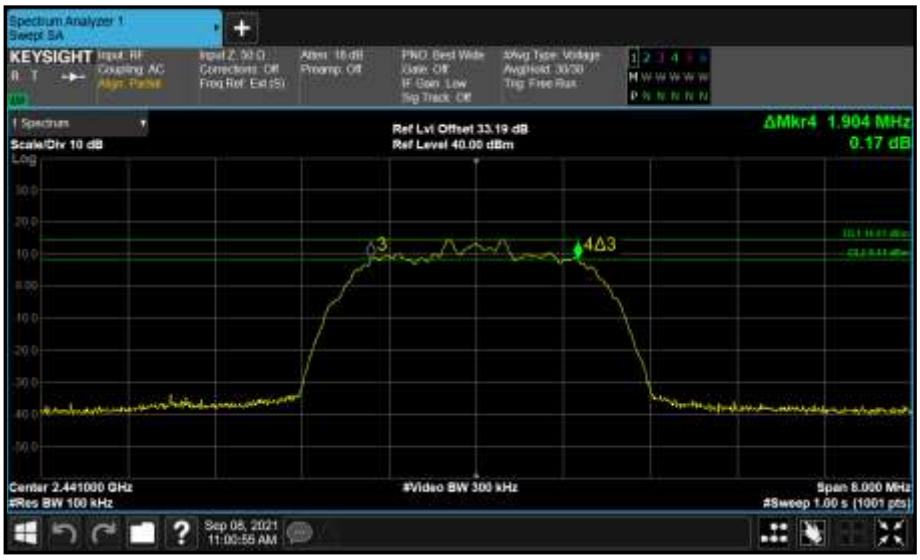

Figure 60 - Core 1 (B) 2441 MHz (CH39) 6 dB Bandwidth

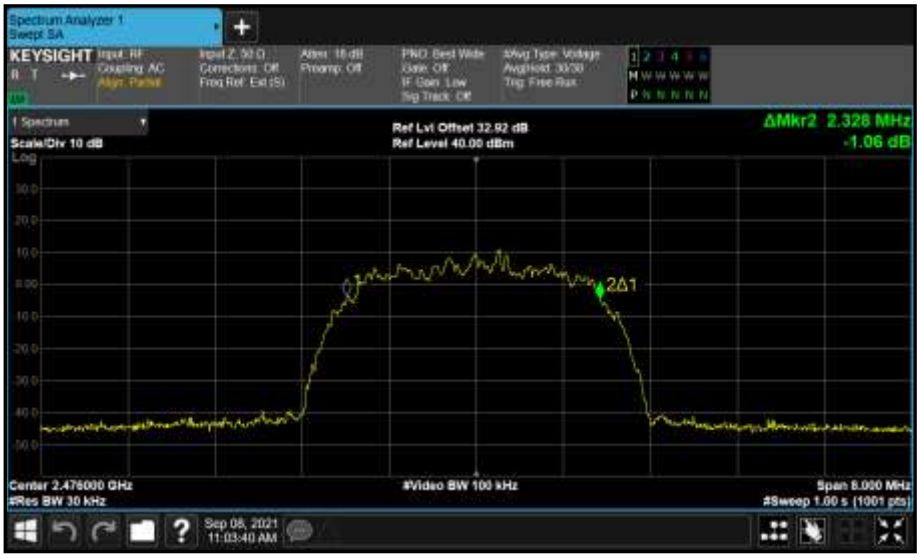

Figure 61 - Core 0 (A) 2476 MHz (CH74) 99% Bandwidth

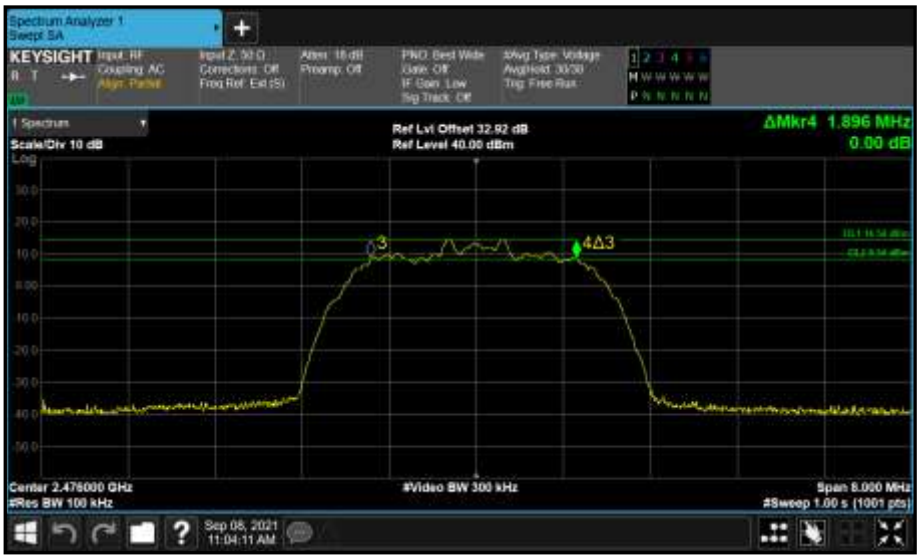

Figure 62 - Core 0 (A) 2476 MHz (CH74) 6 dB Bandwidth

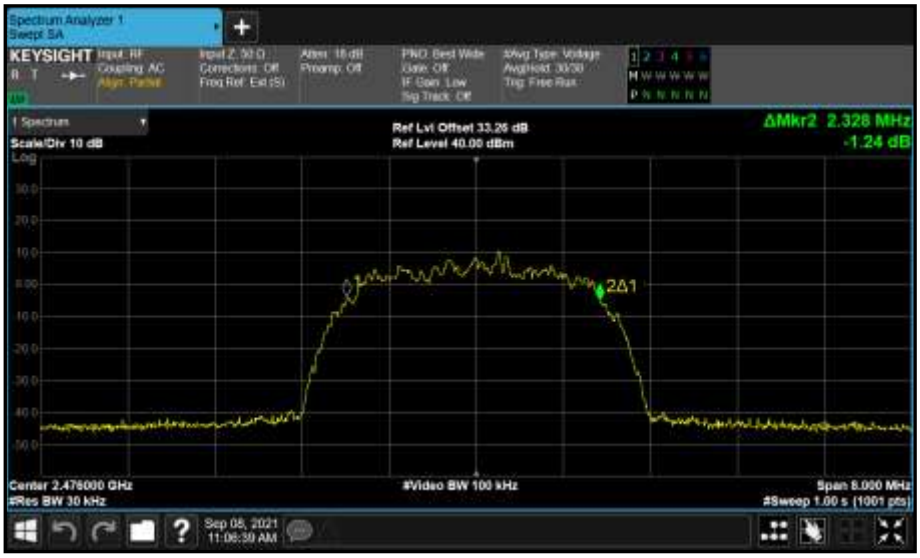

Figure 63 - Core 1 (B) 2476 MHz (CH74) 99% Bandwidth

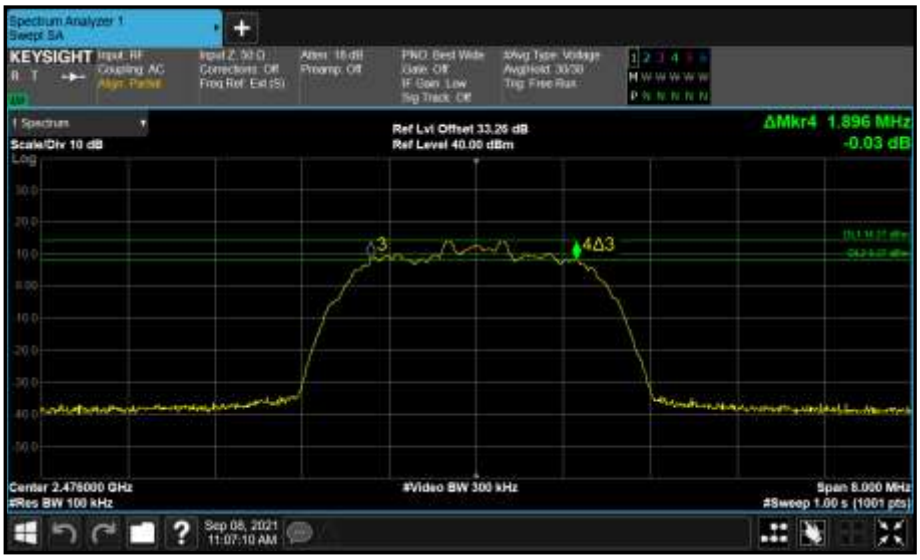

Figure 64 - Core 1 (B) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (8-DH5)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	1.020	1.035	-	-	1.020	≥500.0
2441	1.020	1.020	-	-	1.020	≥500.0
2476	1.020	1.020	-	-	1.020	≥500.0

Table 35 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	4.440	4.455	-	-	4.440	-
2441	4.440	4.440	-	-	4.440	-
2476	4.440	4.455	-	-	4.440	-

Table 36 - 99% Bandwidth Results

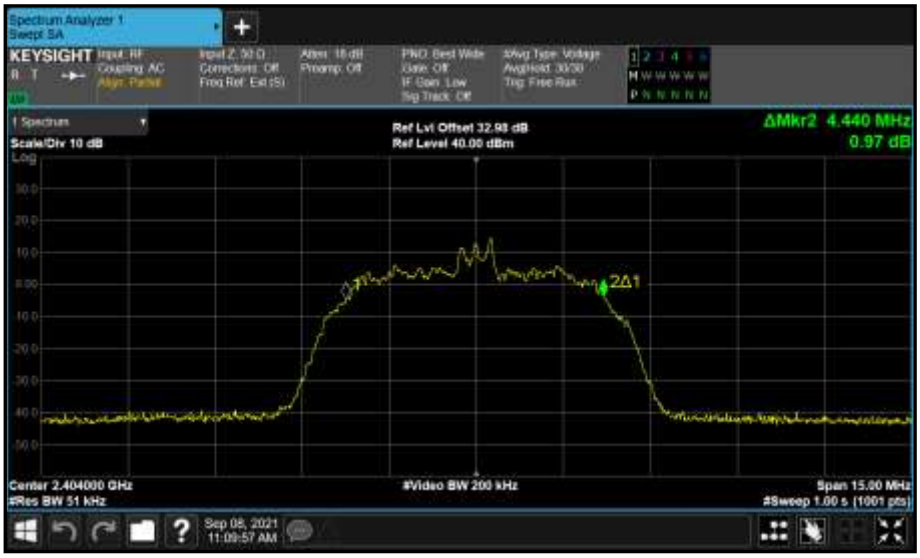

Figure 65 - Core 0 (A) 2404 MHz (CH2) 99% Bandwidth

Figure 66 - Core 0 (A) 2404 MHz (CH2) 6 dB Bandwidth

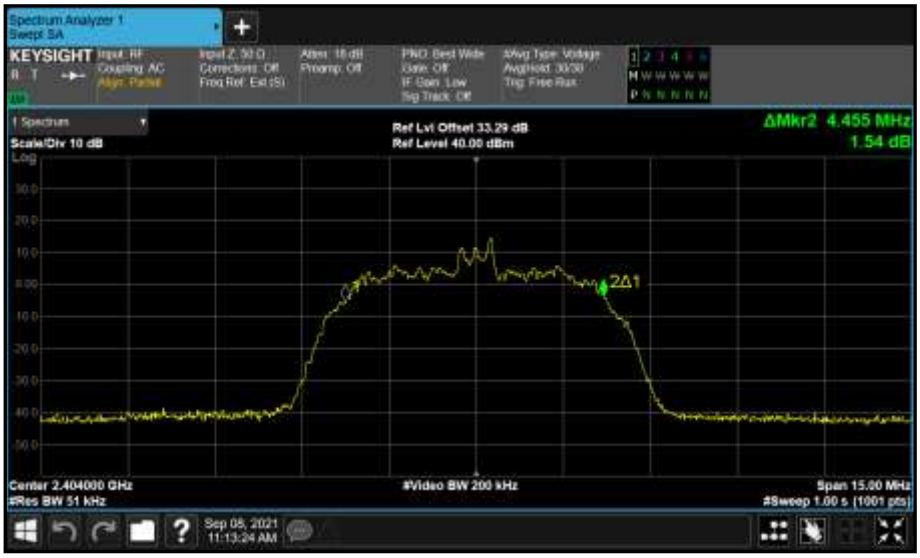

Figure 67 - Core 1 (B) 2404 MHz (CH2) 99% Bandwidth

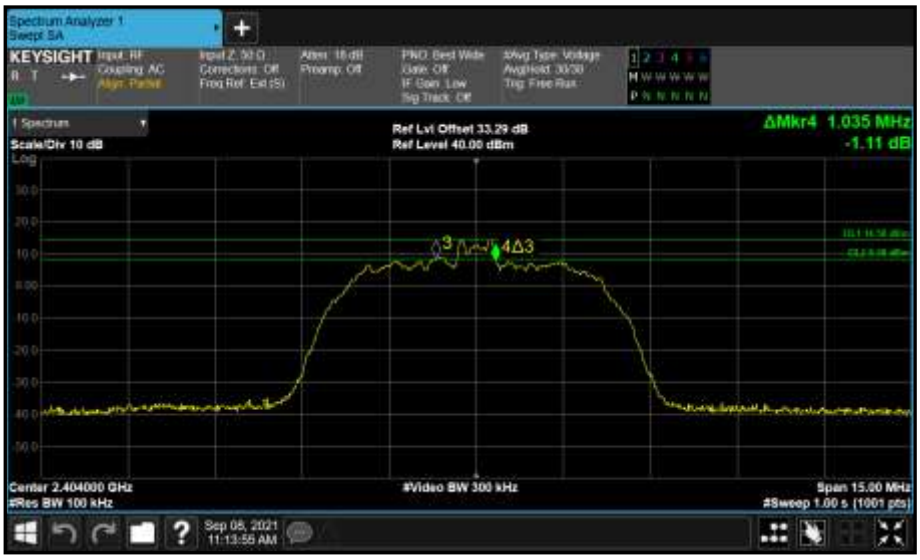

Figure 68 - Core 1 (B) 2404 MHz (CH2) 6 dB Bandwidth

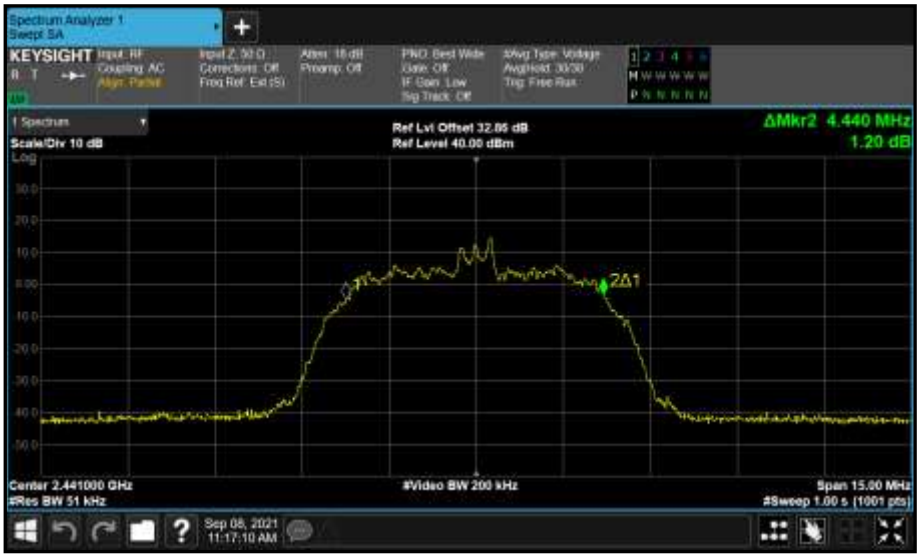

Figure 69 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

Figure 70 - Core 0 (A) 2441 MHz (CH39) 6 dB Bandwidth

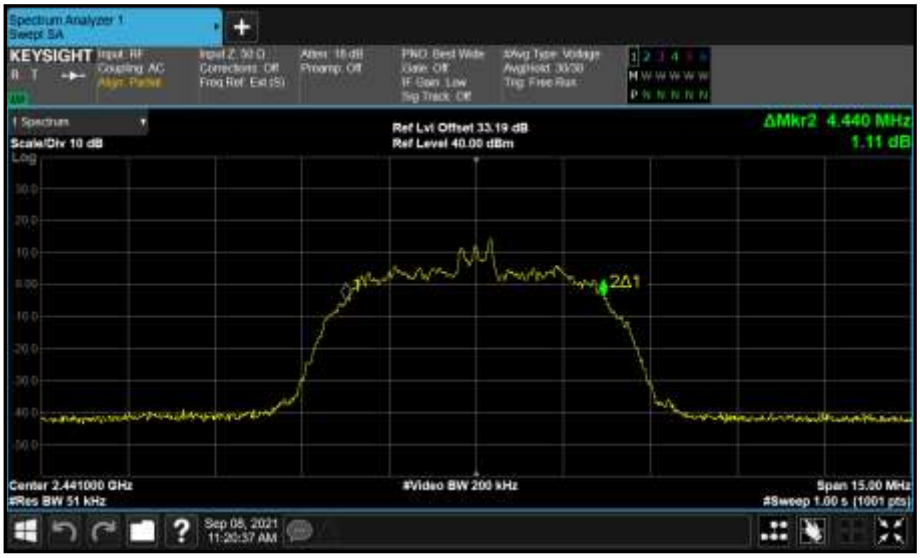

Figure 71 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

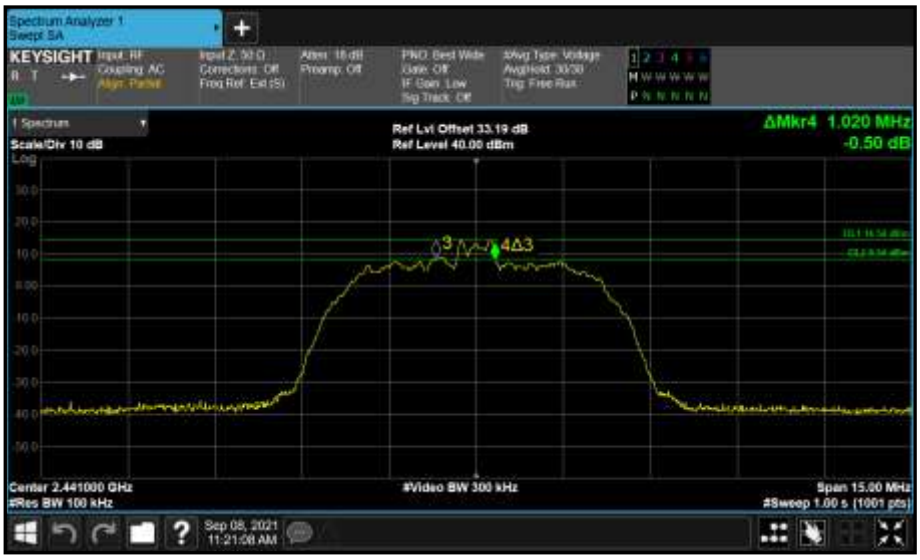

Figure 72 - Core 1 (B) 2441 MHz (CH39) 6 dB Bandwidth

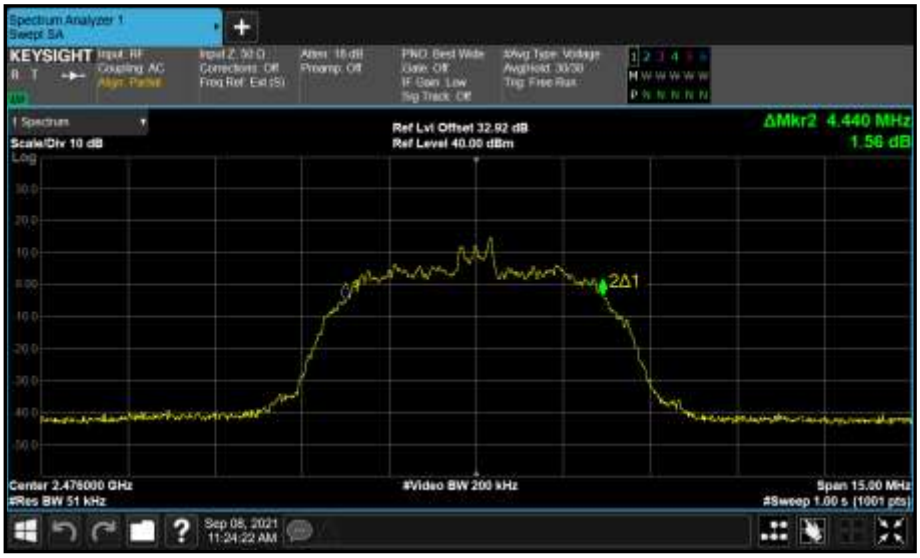

Figure 73 - Core 0 (A) 2476 MHz (CH74) 99% Bandwidth

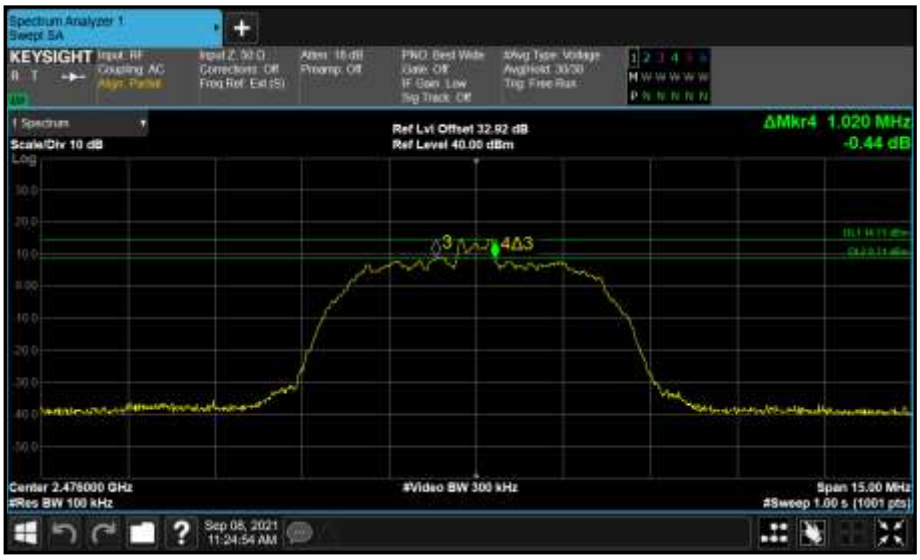

Figure 74 - Core 0 (A) 2476 MHz (CH74) 6 dB Bandwidth

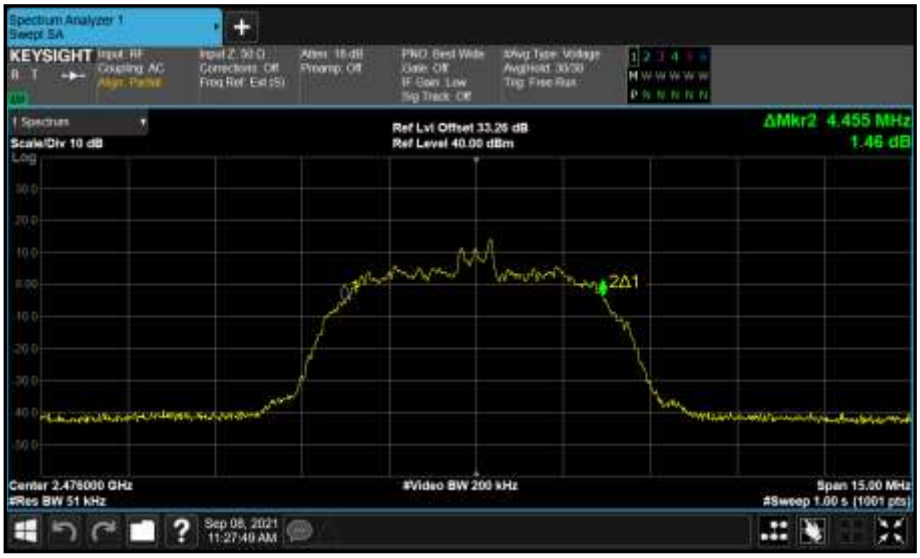

Figure 75 - Core 1 (B) 2476 MHz (CH74) 99% Bandwidth

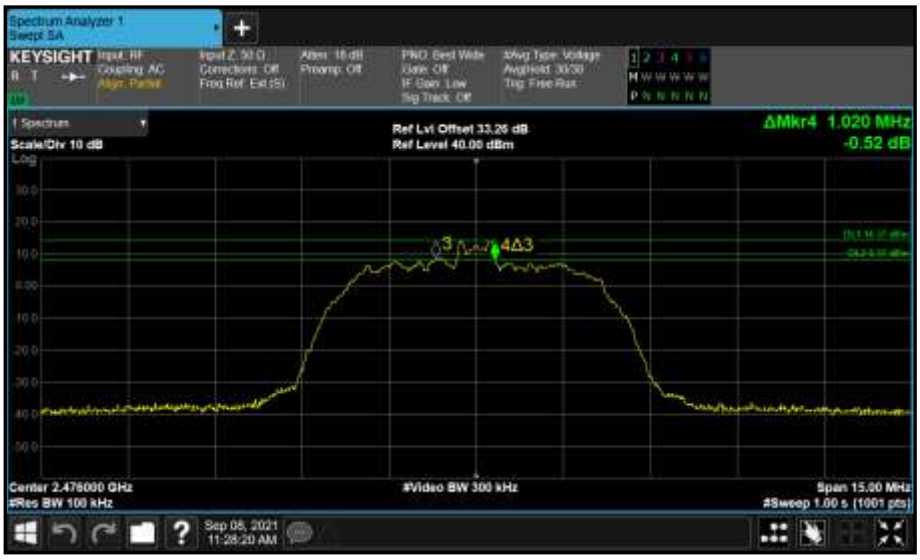

Figure 76 - Core 1 (B) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA 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	Minimum	
2402	0.724	-	-	-	0.724	≥500.0
2440	0.728	-	-	-	0.728	≥500.0
2480	0.724	-	-	-	0.724	≥500.0

Table 37 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	1.032	-	-	-	1.032	-
2440	1.032	-	-	-	1.032	-
2480	1.032	-	-	-	1.032	-

Table 38 - 99% Bandwidth Results

Figure 77 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

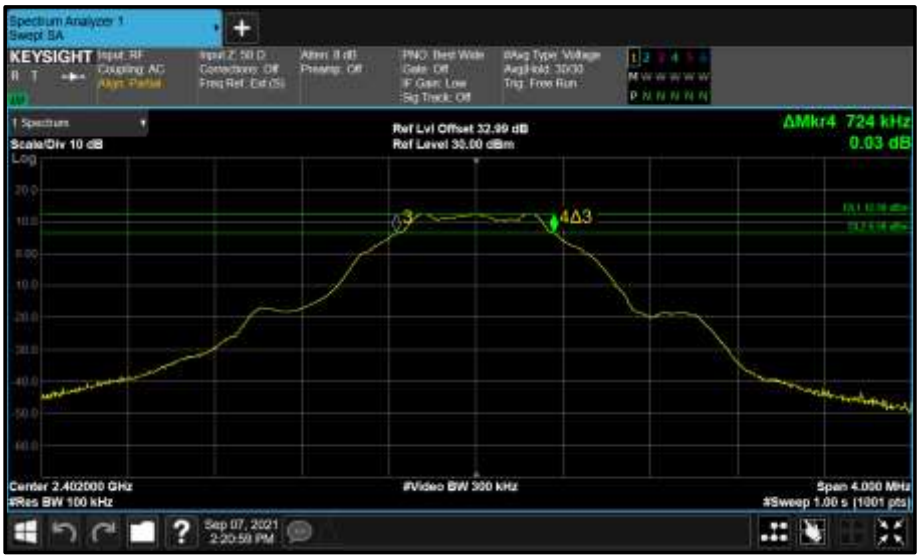

Figure 78 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

Figure 79 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

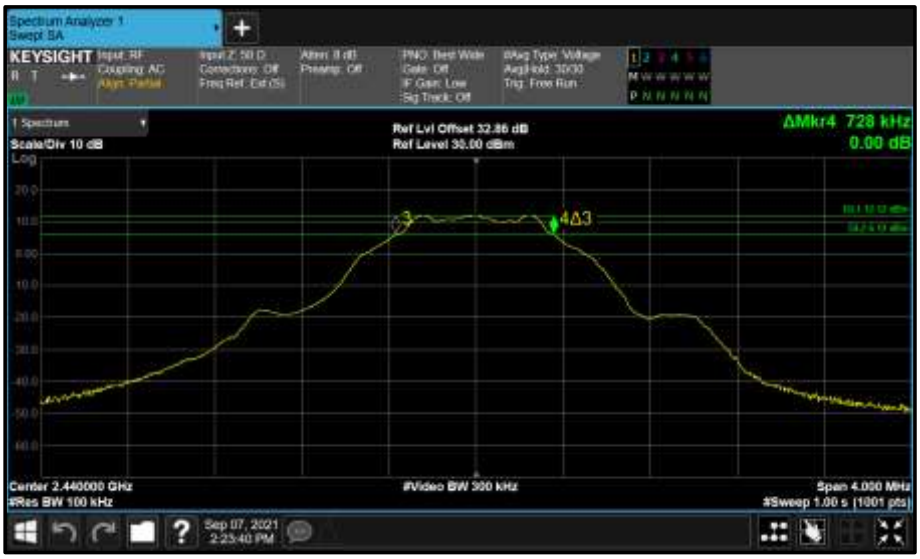

Figure 80 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

Figure 81 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

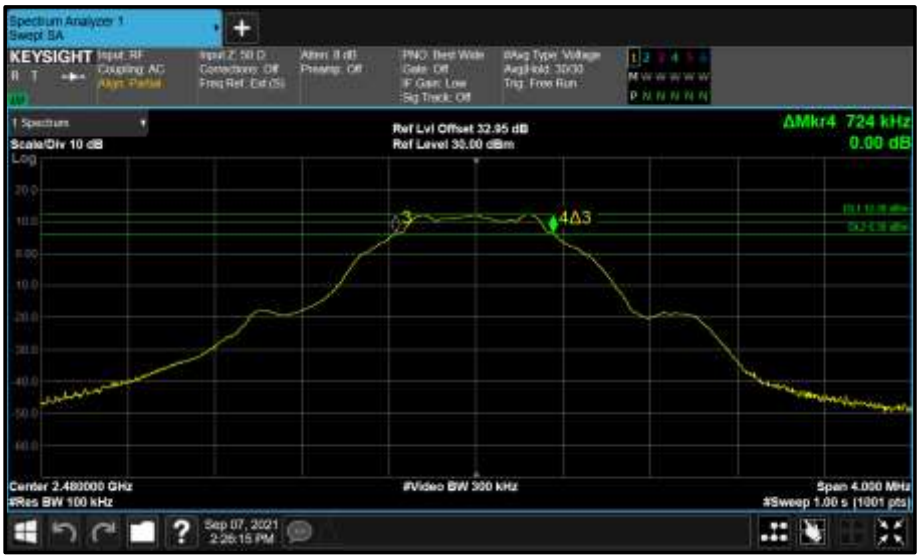

Figure 82 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA 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	Minimum	
2402	1.168	-	-	-	1.168	≥500.0
2440	1.160	-	-	-	1.160	≥500.0
2480	1.176	-	-	-	1.176	≥500.0

Table 39 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	2.056	-	-	-	2.056	-
2440	2.048	-	-	-	2.048	-
2480	2.048	-	-	-	2.048	-

Table 40 - 99% Bandwidth Results

Figure 83 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

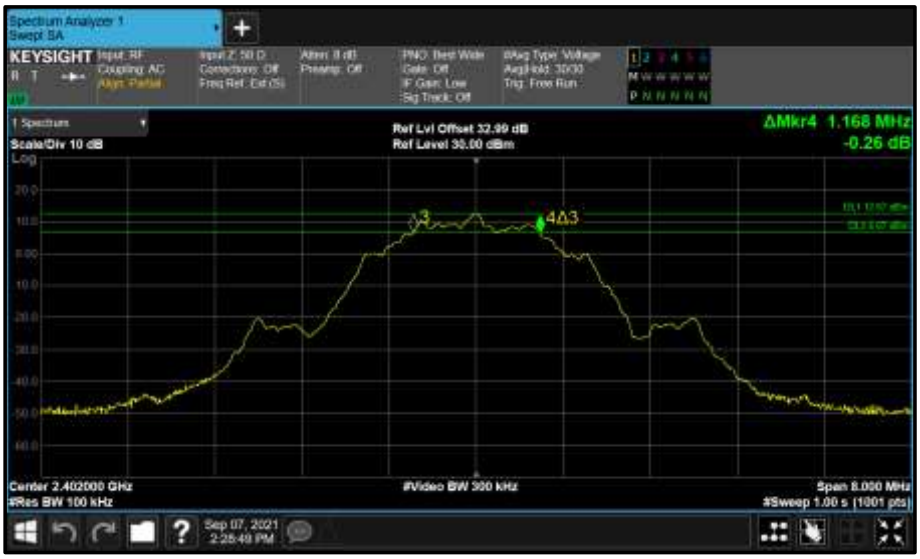

Figure 84 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

Figure 85 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

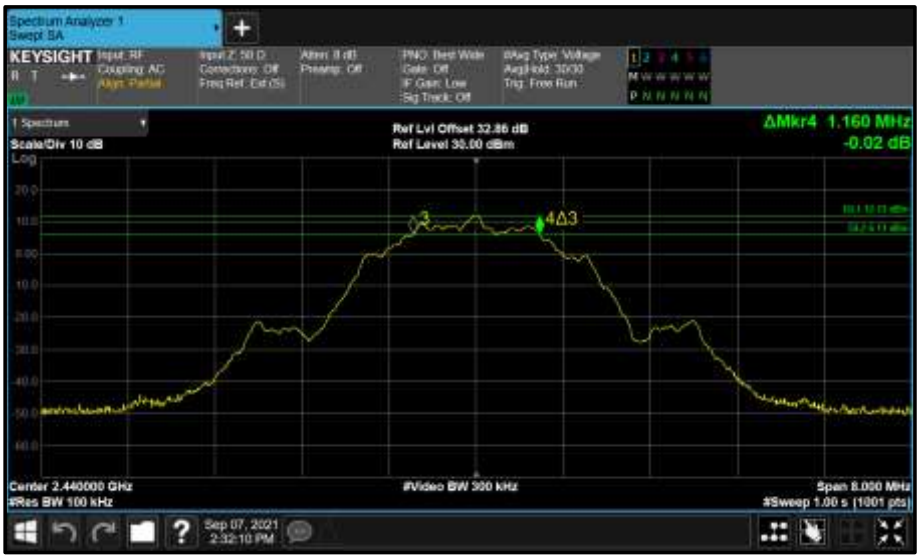

Figure 86 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

Figure 87 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

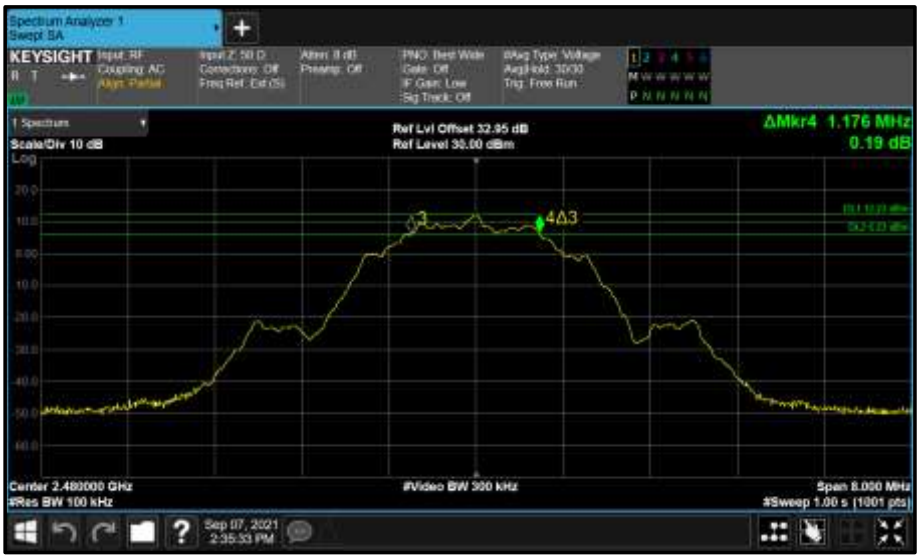

Figure 88 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

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

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	0.724	0.724	-	-	0.724	≥500.0
2440	0.724	0.724	-	-	0.724	≥500.0
2480	0.724	0.724	-	-	0.724	≥500.0

Table 41 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	1.032	1.036	-	-	1.032	-
2440	1.032	1.032	-	-	1.032	-
2480	1.032	1.036	-	-	1.032	-

Table 42 - 99% Bandwidth Results

Figure 89 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

Figure 90 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

Figure 91 - Core 1 (B) 2402 MHz (CH37) 99% Bandwidth

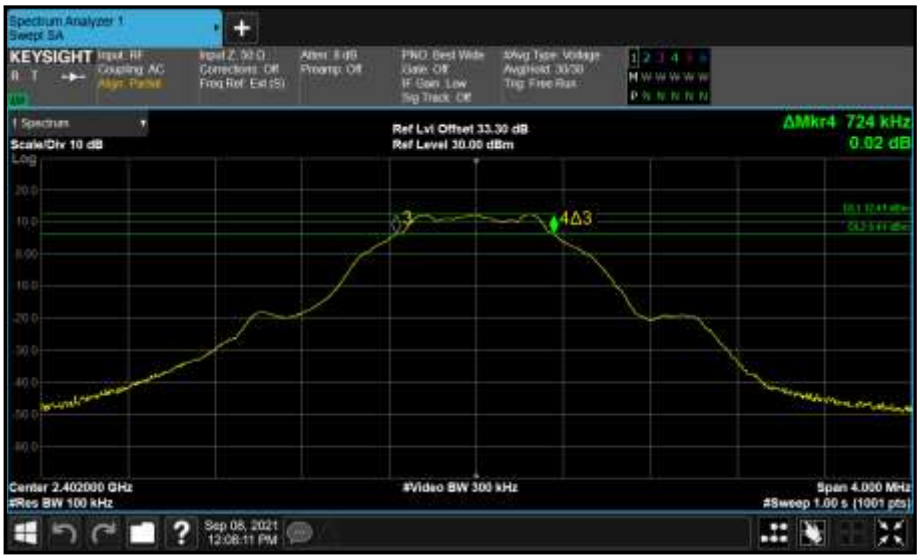

Figure 92 - Core 1 (B) 2402 MHz (CH37) 6 dB Bandwidth

Figure 93 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

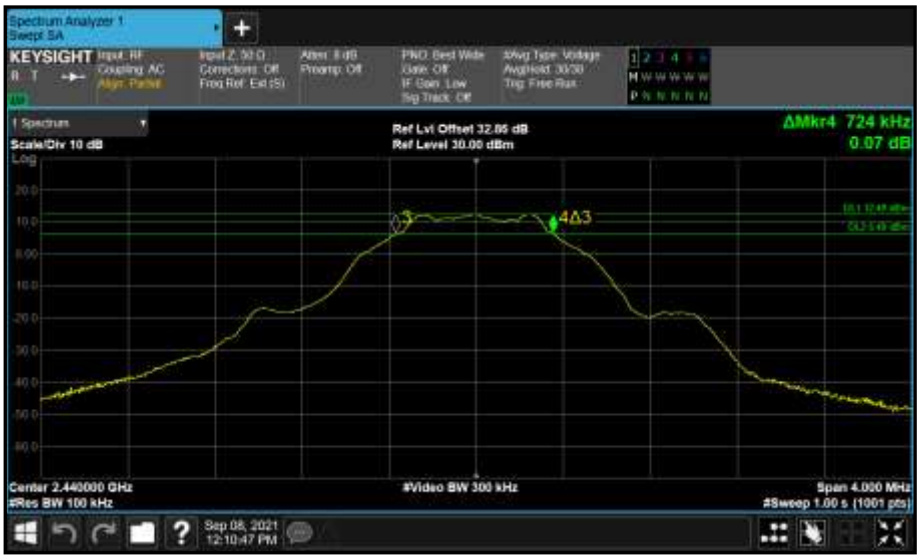

Figure 94 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

Figure 95 - Core 1 (B) 2440 MHz (CH17) 99% Bandwidth

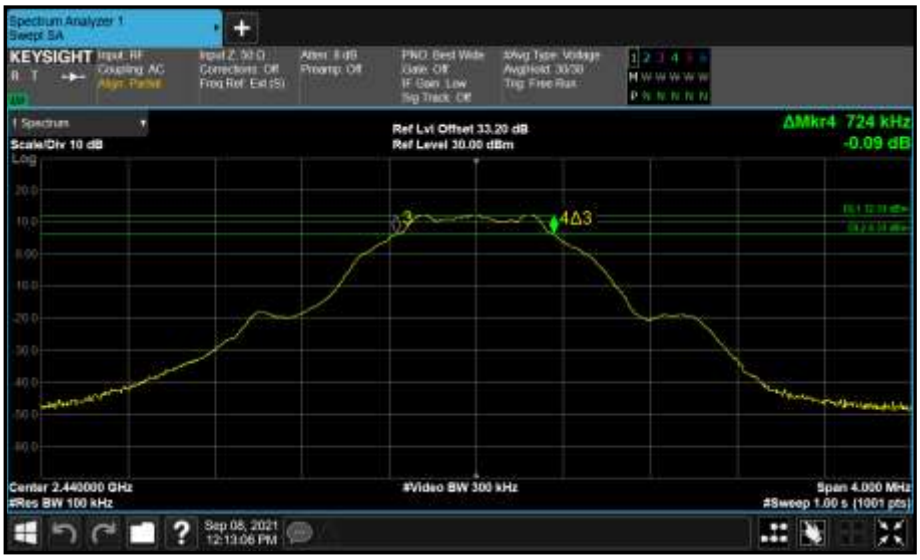

Figure 96 - Core 1 (B) 2440 MHz (CH17) 6 dB Bandwidth

Figure 97 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

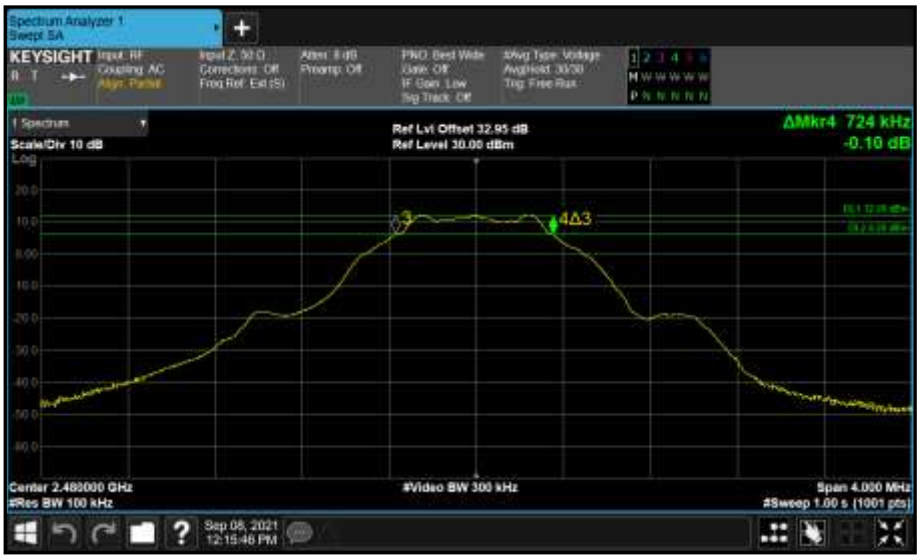

Figure 98 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

Figure 99 - Core 1 (B) 2480 MHz (CH39) 99% Bandwidth

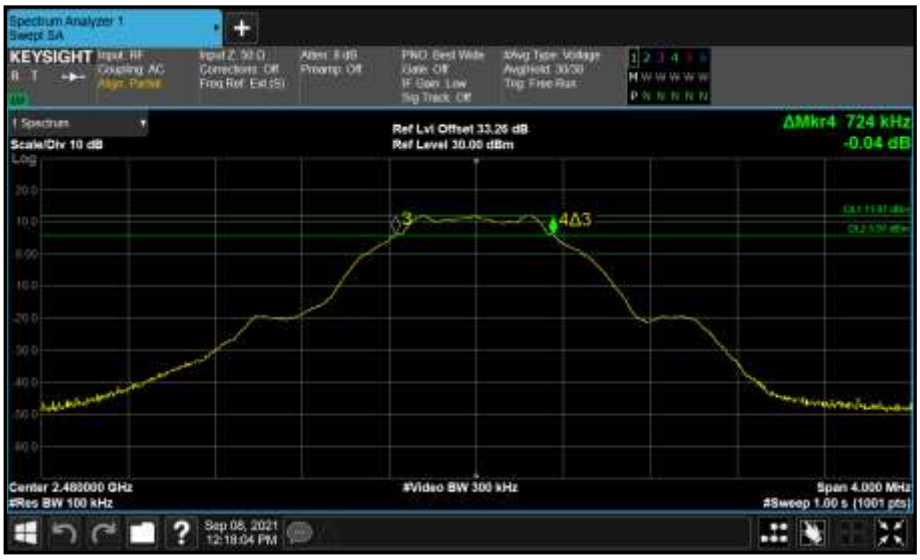

Figure 100 - Core 1 (B) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA GFSK (LE 2M)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	1.160	1.368	-	-	1.160	≥500.0
2440	1.168	1.368	-	-	1.168	≥500.0
2480	1.184	1.360	-	-	1.184	≥500.0

Table 43 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	2.056	2.064	-	-	2.056	-
2440	2.048	2.064	-	-	2.048	-
2480	2.056	2.056	-	-	2.056	-

Table 44 - 99% Bandwidth Results

Figure 101 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

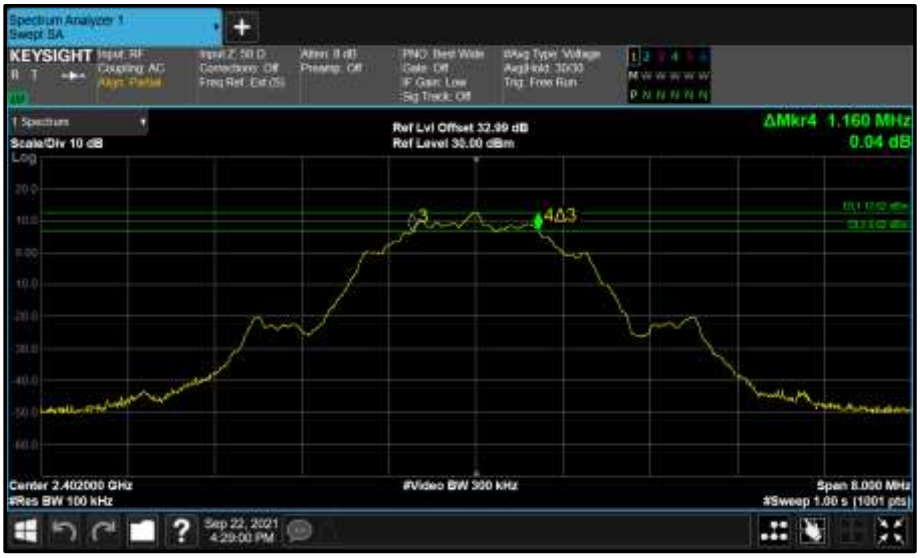

Figure 102 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

Figure 103 - Core 1 (B) 2402 MHz (CH37) 99% Bandwidth

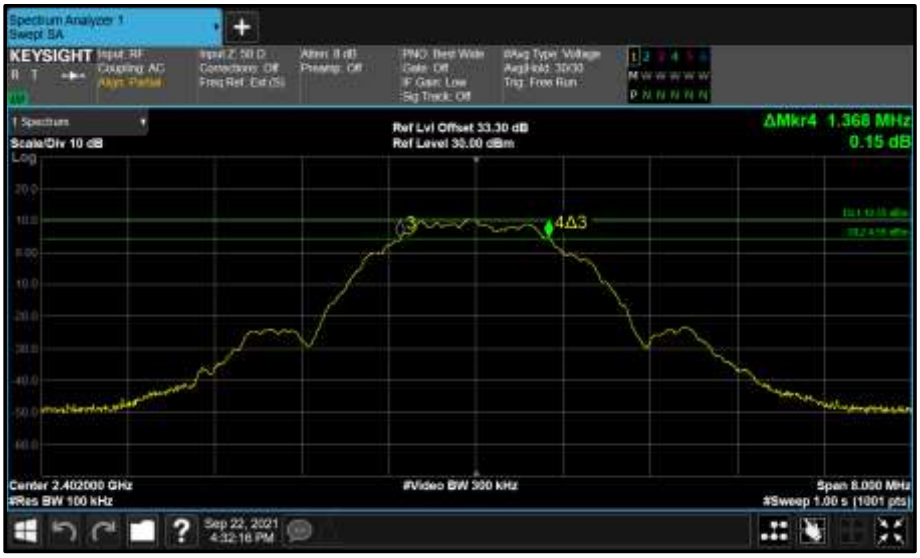

Figure 104 - Core 1 (B) 2402 MHz (CH37) 6 dB Bandwidth

Figure 105 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

Figure 106 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

Figure 107 - Core 1 (B) 2440 MHz (CH17) 99% Bandwidth

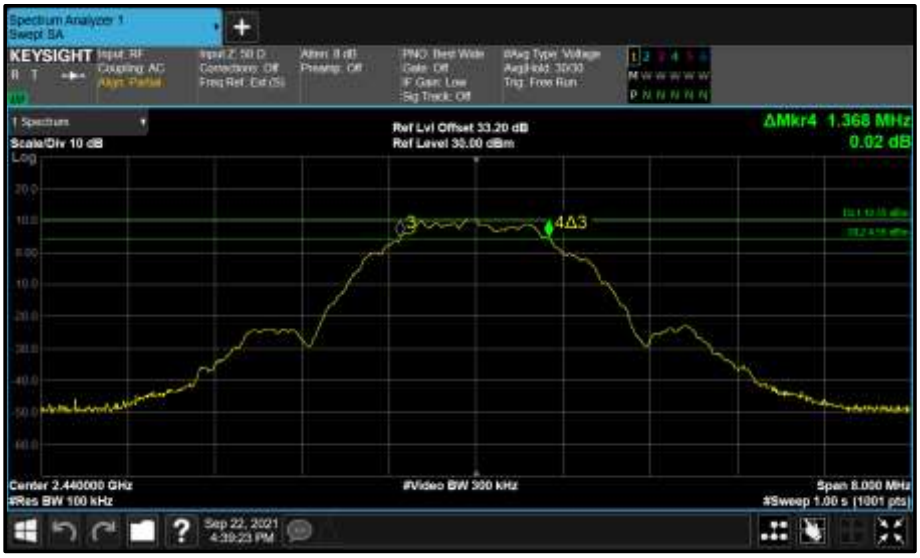

Figure 108 - Core 1 (B) 2440 MHz (CH17) 6 dB Bandwidth

Figure 109 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

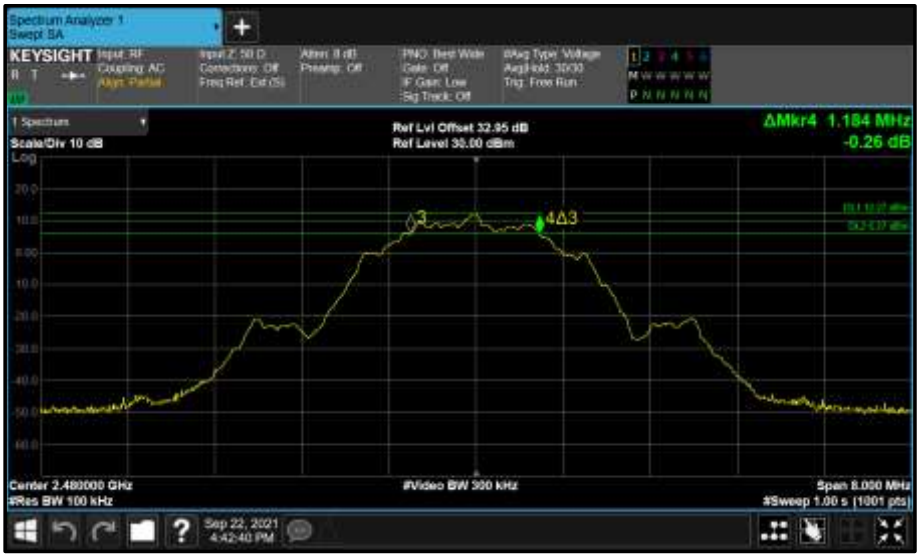

Figure 110 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

Figure 111 - Core 1 (B) 2480 MHz (CH39) 99% Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	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	Minimum	
2404	1.896	-	-	-	1.896	≥500.0
2441	1.896	-	-	-	1.896	≥500.0
2476	1.888	-	-	-	1.888	≥500.0

Table 45 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	2.320	-	-	-	2.320	-
2441	2.320	-	-	-	2.320	-
2476	2.320	-	-	-	2.320	-

Table 46 - 99% Bandwidth Results

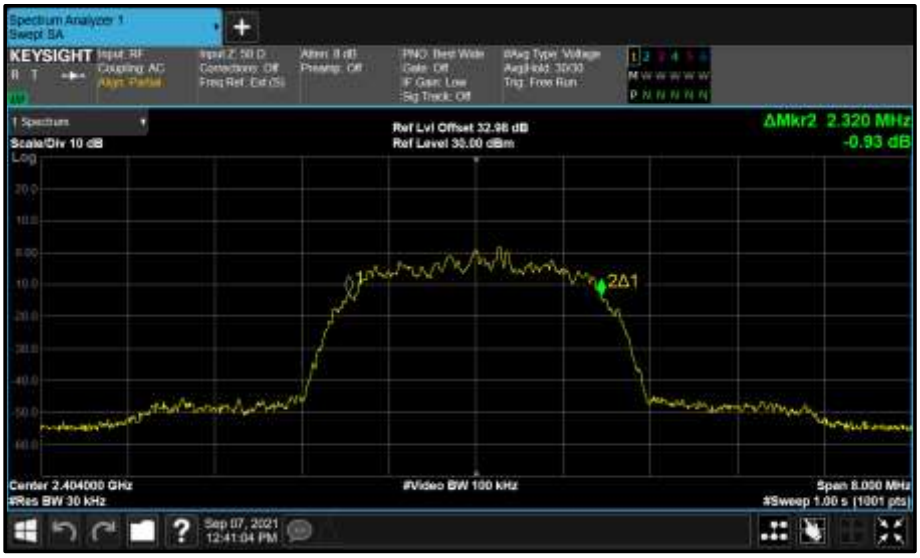

Figure 112 - Core 0 (A) 2404 MHz (CH2) 99% Bandwidth

Figure 113 - Core 0 (A) 2404 MHz (CH2) 6 dB Bandwidth

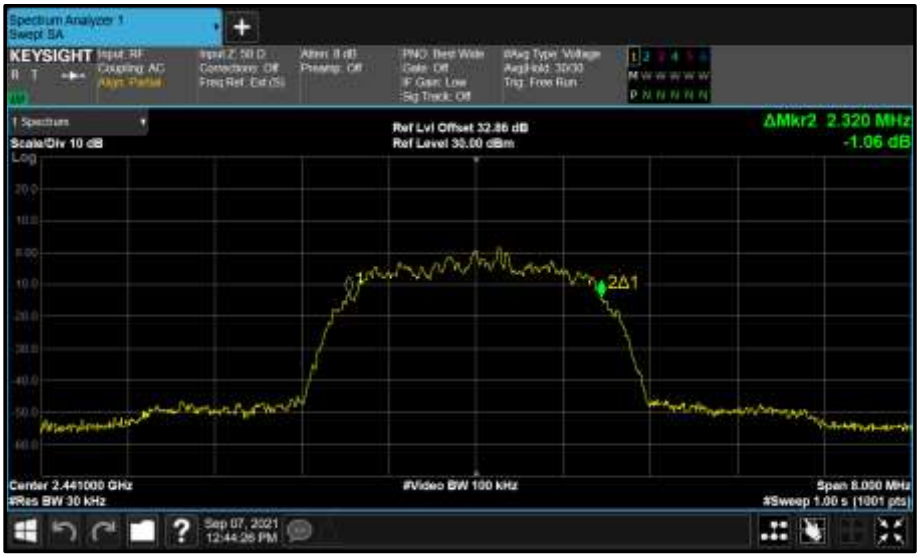

Figure 114 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

Figure 115 - Core 0 (A) 2441 MHz (CH39) 6 dB Bandwidth

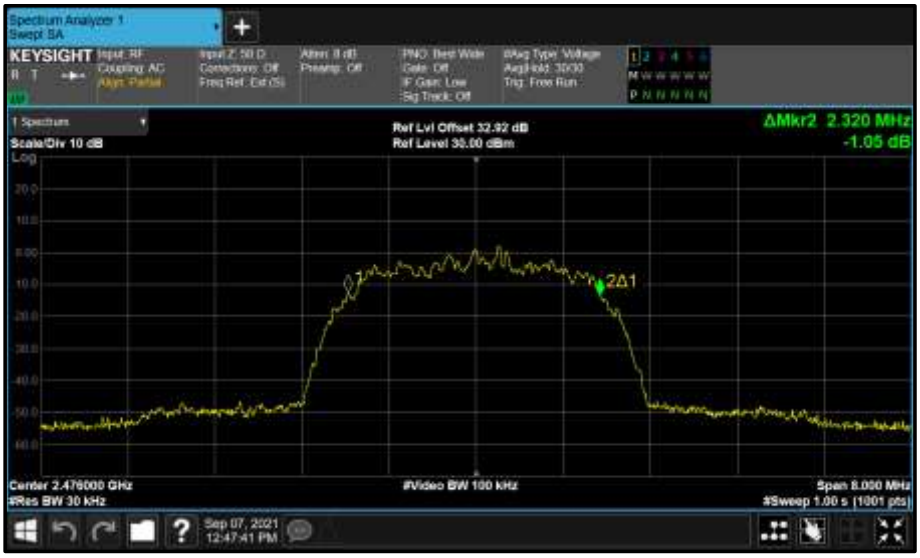

Figure 116 - Core 0 (A) 2476 MHz (CH74) 99% Bandwidth

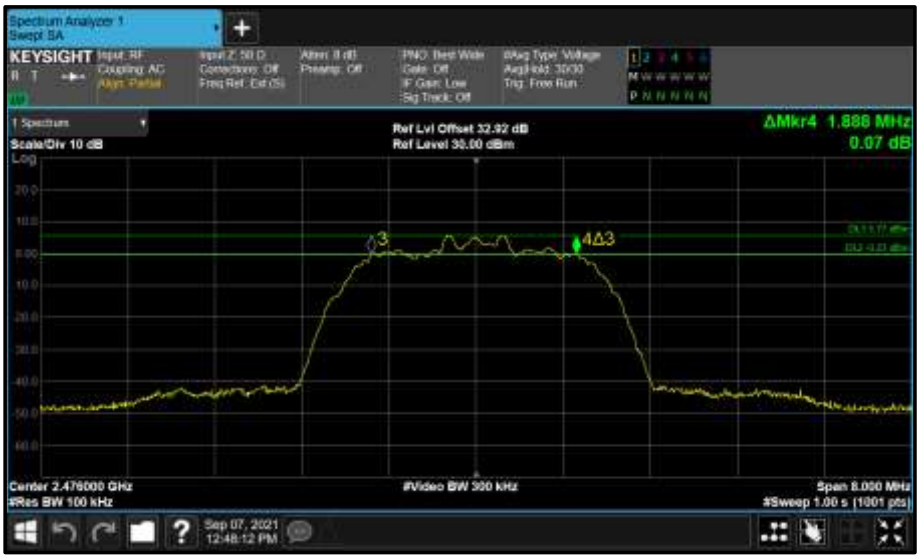

Figure 117 - Core 0 (A) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	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	Minimum	
2404	1.020	-	-	-	1.020	≥500.0
2441	1.005	-	-	-	1.005	≥500.0
2476	1.005	-	-	-	1.005	≥500.0

Table 47 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	4.440	-	-	-	4.440	-
2441	4.440	-	-	-	4.440	-
2476	4.455	-	-	-	4.455	-

Table 48 - 99% Bandwidth Results

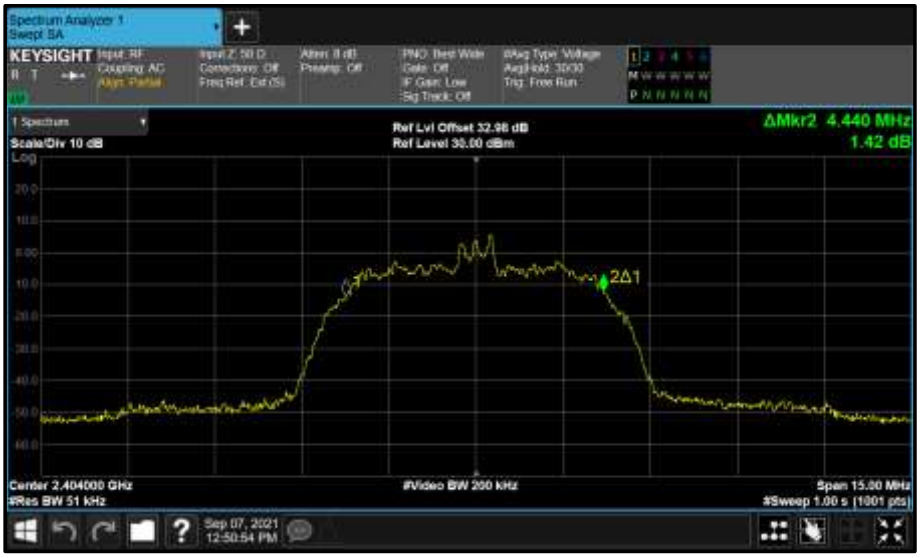

Figure 118 - Core 0 (A) 2404 MHz (CH2) 99% Bandwidth

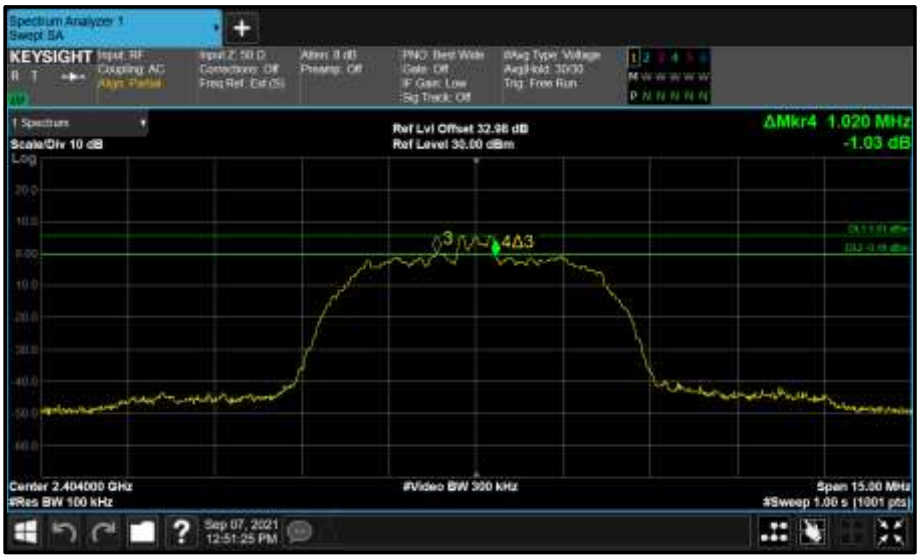

Figure 119 - Core 0 (A) 2404 MHz (CH2) 6 dB Bandwidth

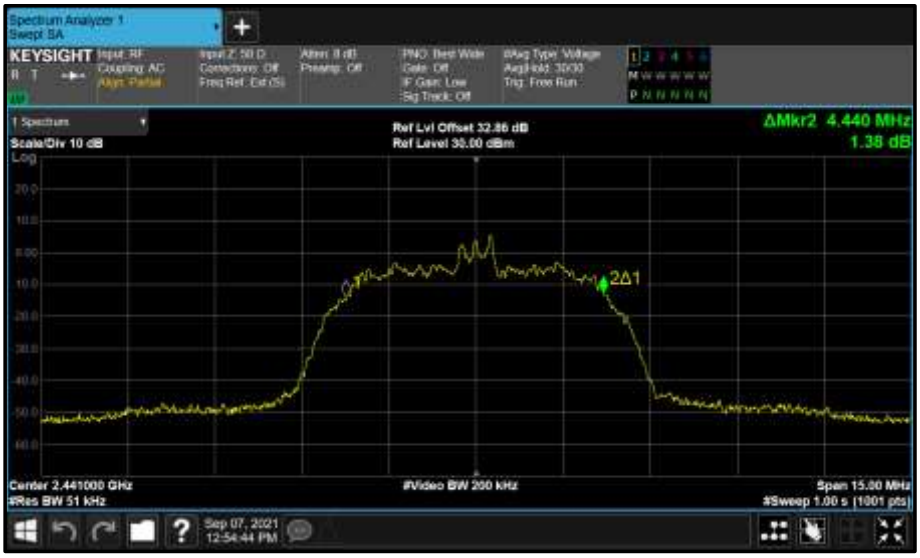

Figure 120 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

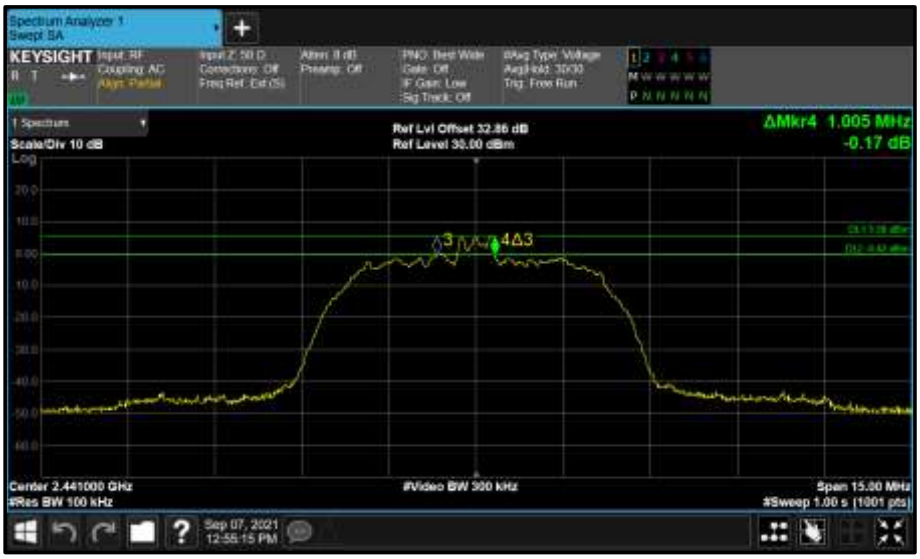

Figure 121 - Core 0 (A) 2441 MHz (CH39) 6 dB Bandwidth

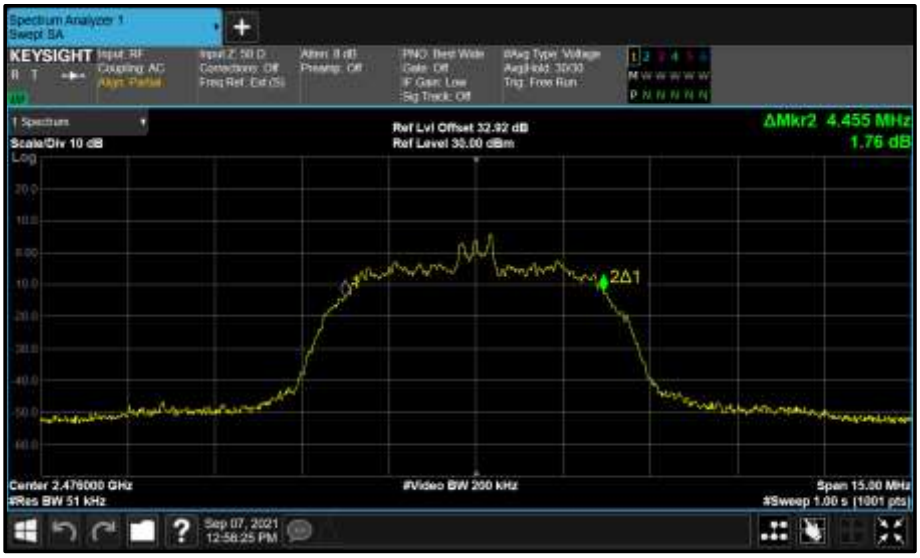

Figure 122 - Core 0 (A) 2476 MHz (CH74) 99% Bandwidth

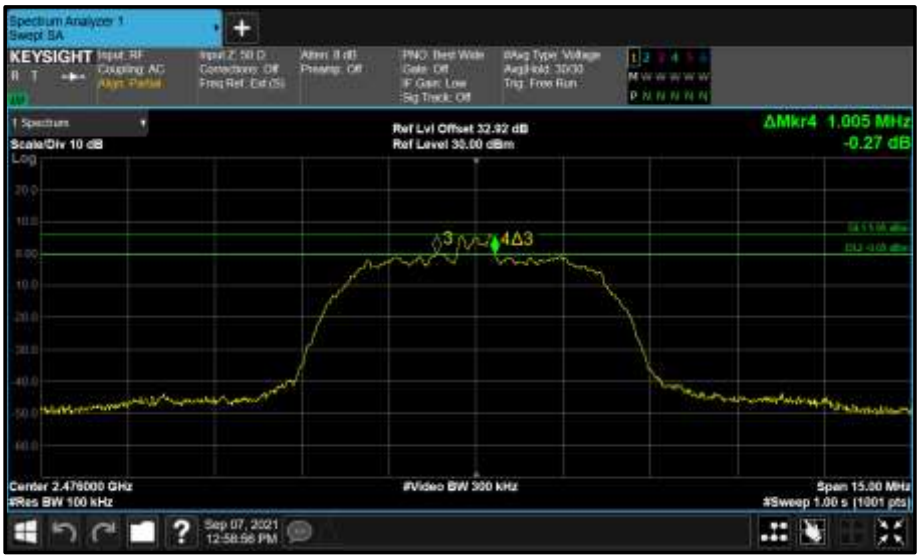

Figure 123 - Core 0 (A) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	-	-	1.888	-	1.888	≥500.0
2441	-	-	1.896	-	1.896	≥500.0
2476	-	-	1.896	-	1.896	≥500.0

Table 49 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	-	-	2.320	-	2.320	-
2441	-	-	2.320	-	2.320	-
2476	-	-	2.320	-	2.320	-

Table 50 - 99% Bandwidth Results

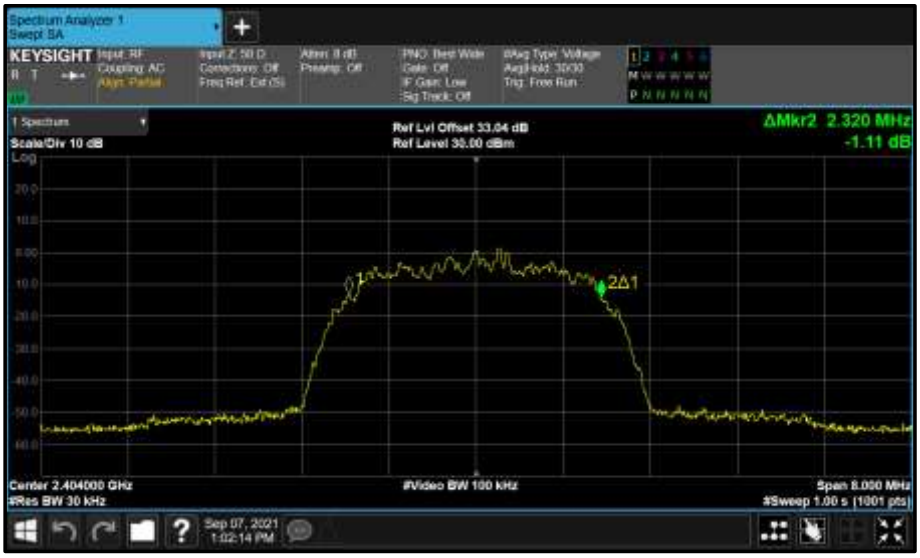

Figure 124 - Core 2 (C) 2404 MHz (CH2) 99% Bandwidth

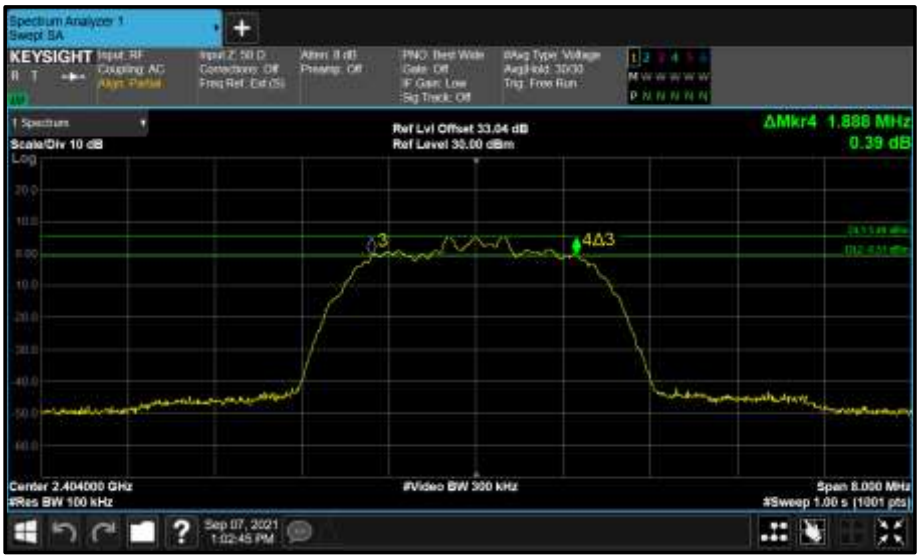

Figure 125 - Core 2 (C) 2404 MHz (CH2) 6 dB Bandwidth

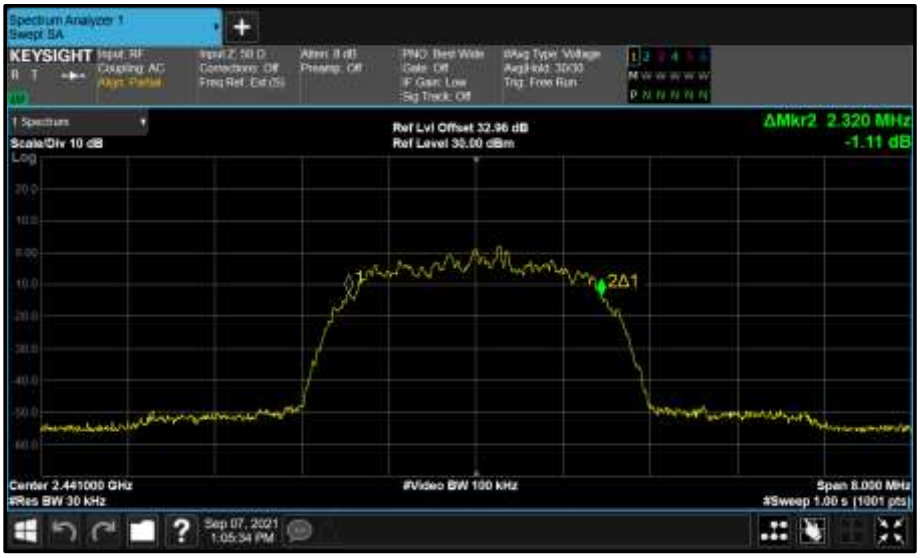

Figure 126 - Core 2 (C) 2441 MHz (CH39) 99% Bandwidth

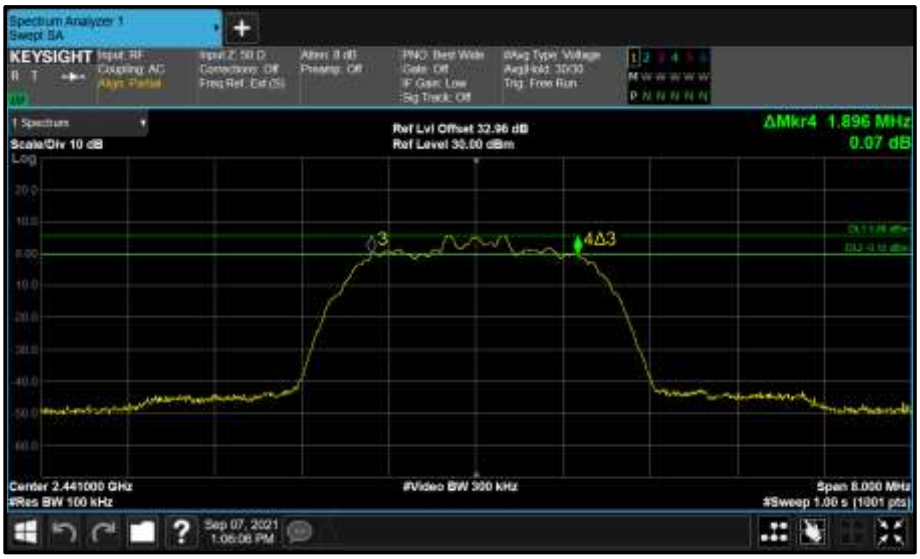

Figure 127 - Core 2 (C) 2441 MHz (CH39) 6 dB Bandwidth

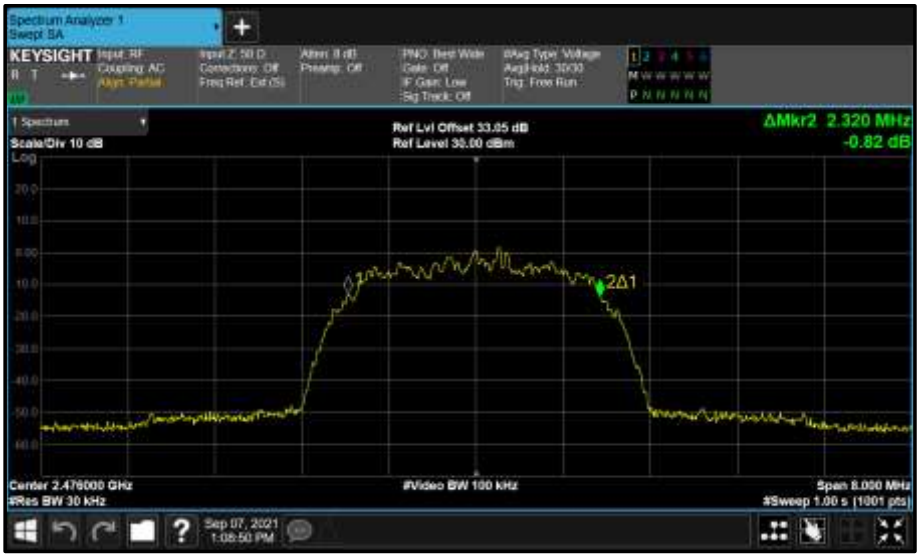

Figure 128 - Core 2 (C) 2476 MHz (CH74) 99% Bandwidth

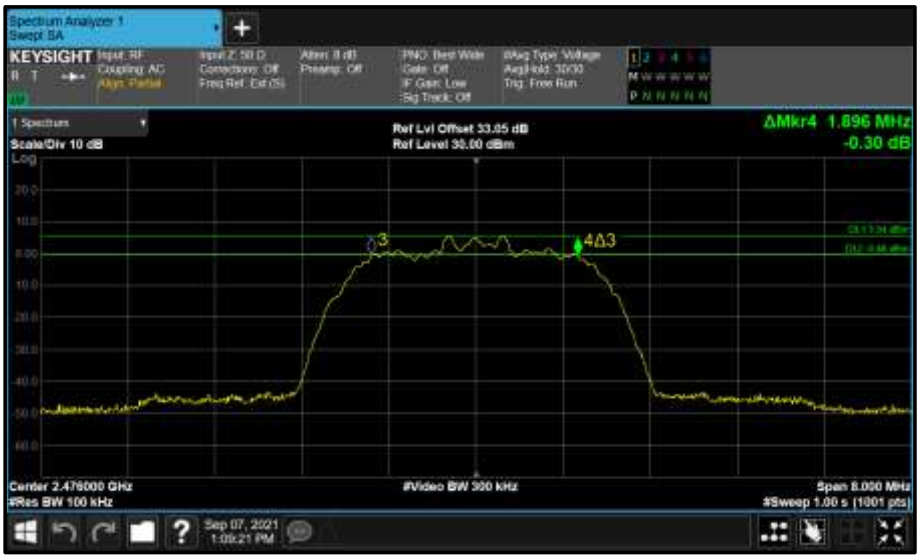

Figure 129 - Core 2 (C) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	-	-	1.020	-	1.020	≥500.0
2441	-	-	0.945	-	0.945	≥500.0
2476	-	-	1.020	-	1.020	≥500.0

Table 51 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	-	-	4.455	-	4.455	-
2441	-	-	4.455	-	4.455	-
2476	-	-	4.470	-	4.470	-

Table 52 - 99% Bandwidth Results

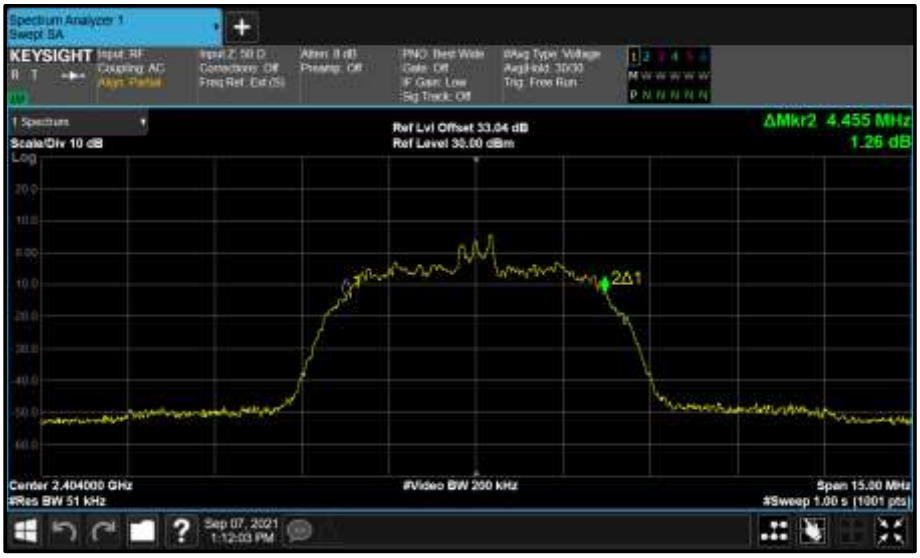

Figure 130 - Core 2 (C) 2404 MHz (CH2) 99% Bandwidth

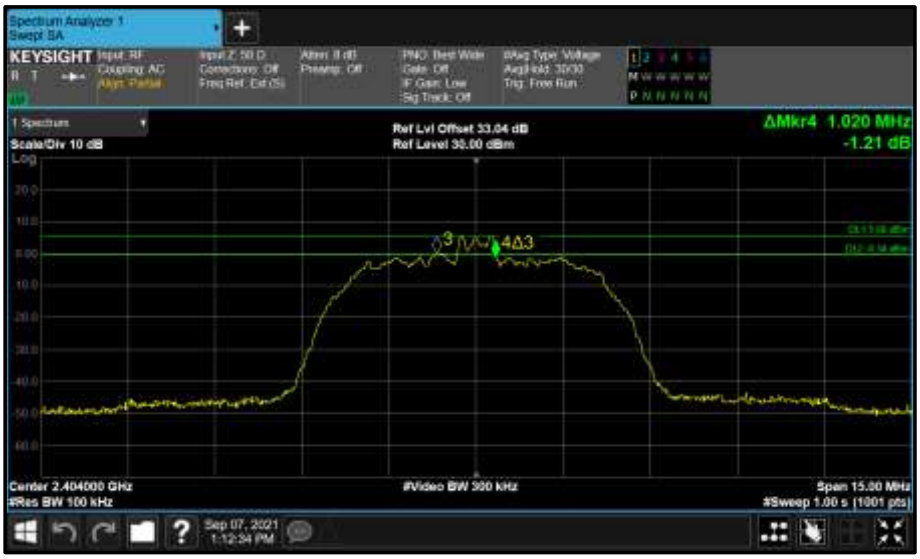

Figure 131 - Core 2 (C) 2404 MHz (CH2) 6 dB Bandwidth

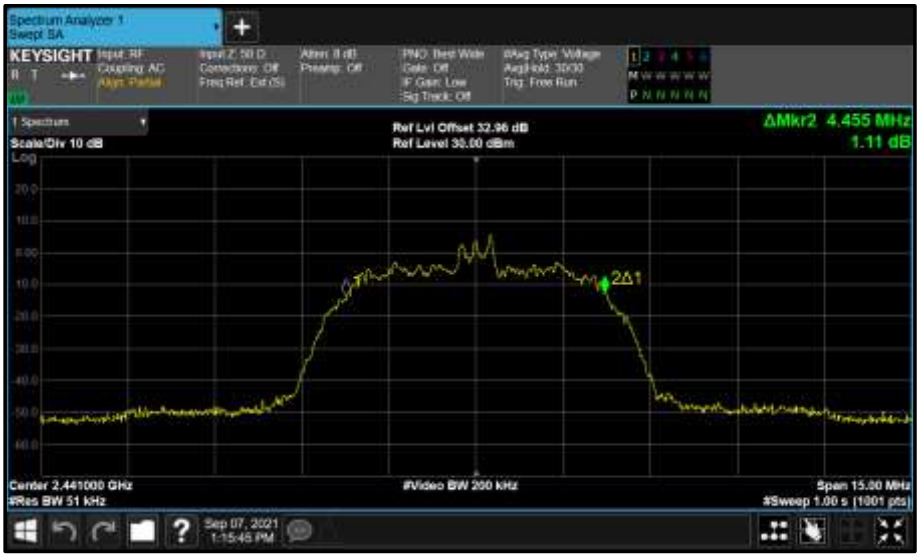

Figure 132 - Core 2 (C) 2441 MHz (CH39) 99% Bandwidth

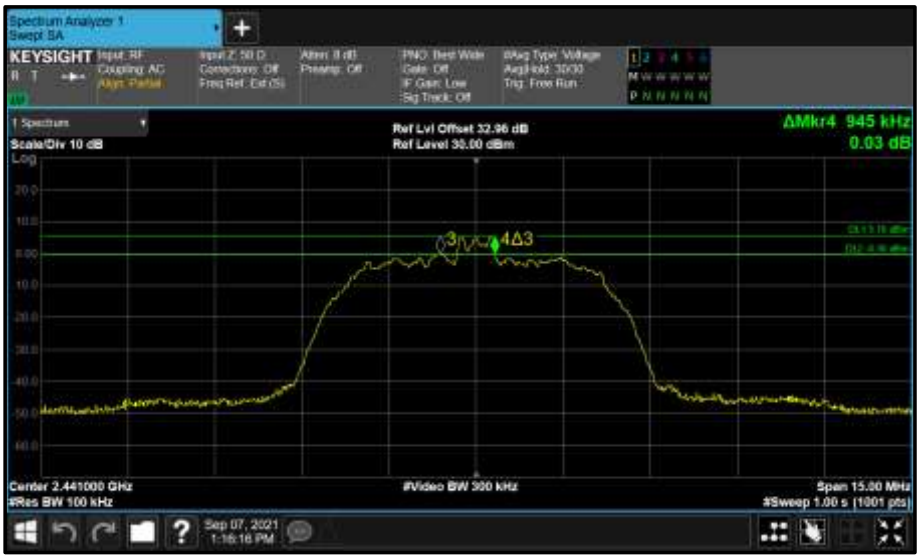

Figure 133 - Core 2 (C) 2441 MHz (CH39) 6 dB Bandwidth

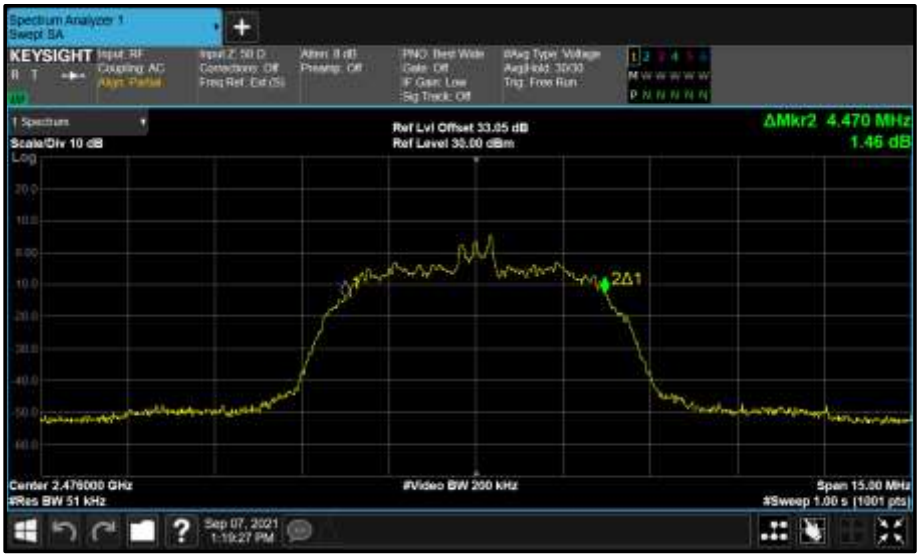

Figure 134 - Core 2 (C) 2476 MHz (CH74) 99% Bandwidth

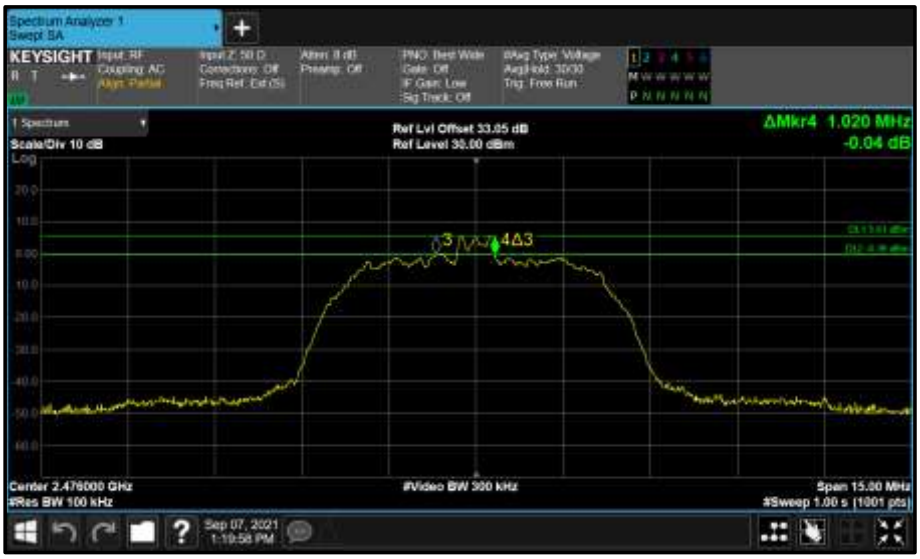

Figure 135 - Core 2 (C) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	1.896	1.976	-	-	1.896	≥500.0
2441	1.896	1.896	-	-	1.896	≥500.0
2476	1.896	1.888	-	-	1.888	≥500.0

Table 53 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	2.312	2.320	-	-	2.312	-
2441	2.312	2.320	-	-	2.312	-
2476	2.320	2.320	-	-	2.320	-

Table 54 - 99% Bandwidth Results

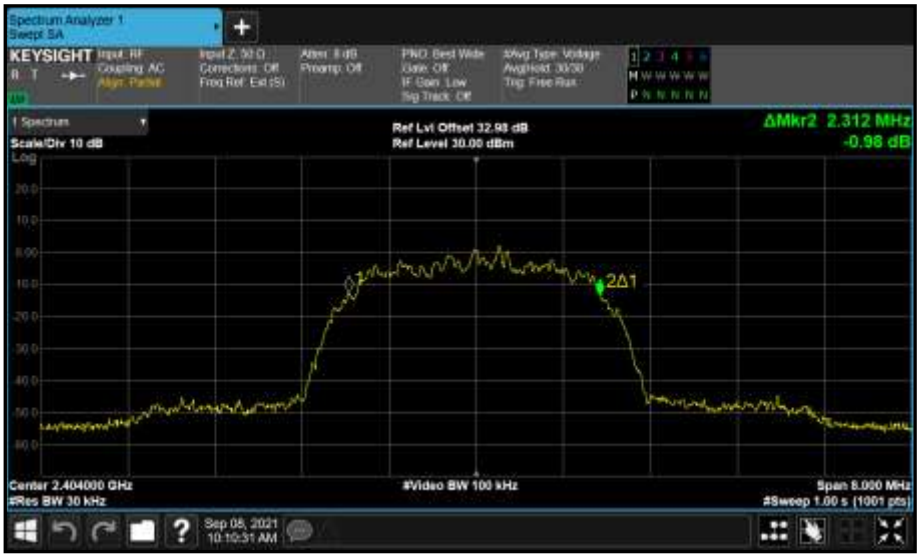

Figure 136 - Core 0 (A) 2404 MHz (CH2) 99% Bandwidth

Figure 137 - Core 0 (A) 2404 MHz (CH2) 6 dB Bandwidth

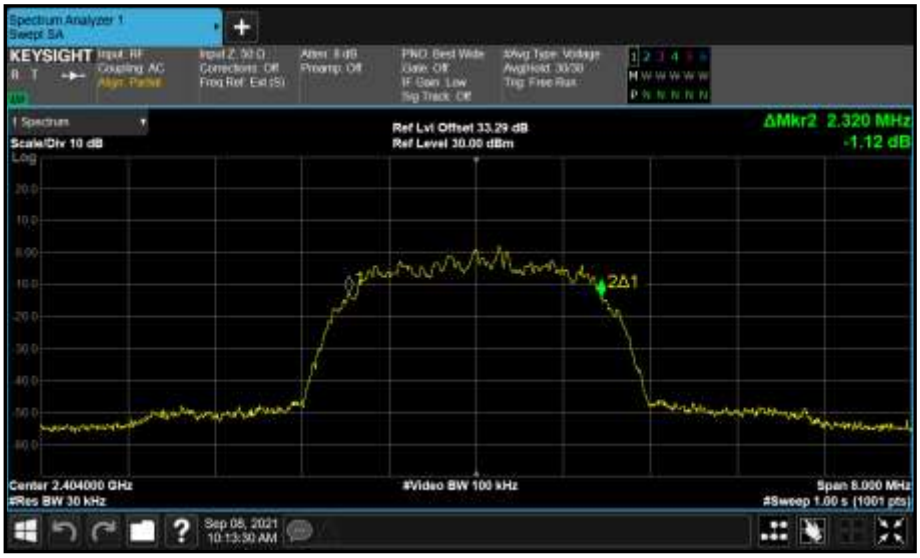

Figure 138 - Core 1 (B) 2404 MHz (CH2) 99% Bandwidth

Figure 139 - Core 1 (B) 2404 MHz (CH2) 6 dB Bandwidth

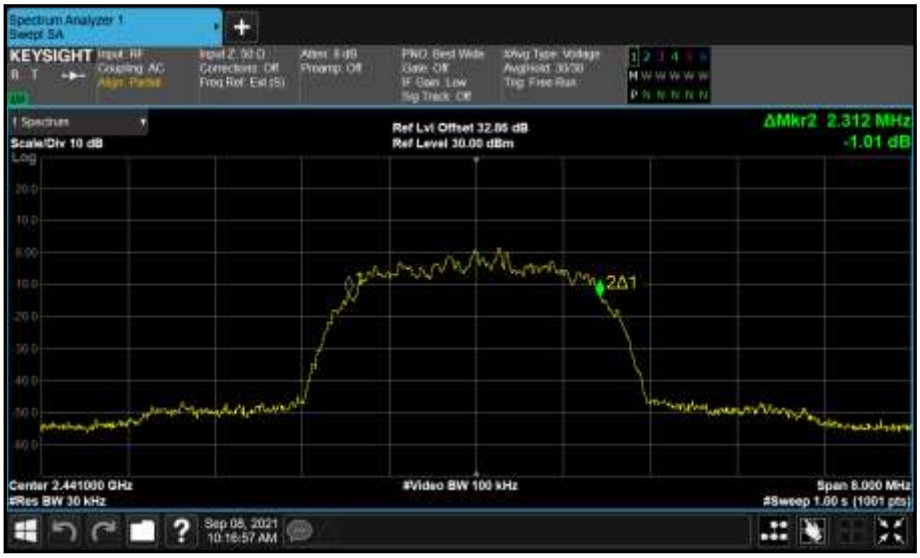

Figure 140 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

Figure 141 - Core 0 (A) 2441 MHz (CH39) 6 dB Bandwidth

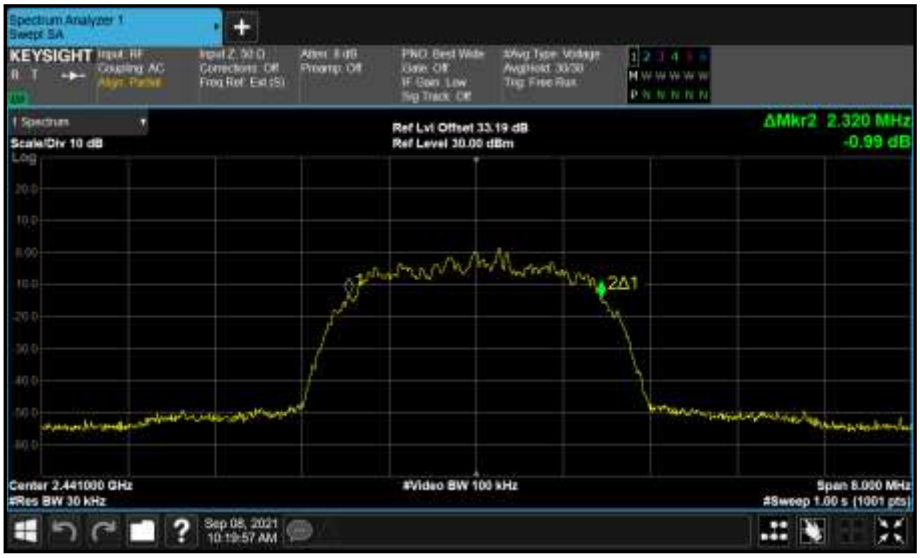

Figure 142 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

Figure 143 - Core 1 (B) 2441 MHz (CH39) 6 dB Bandwidth

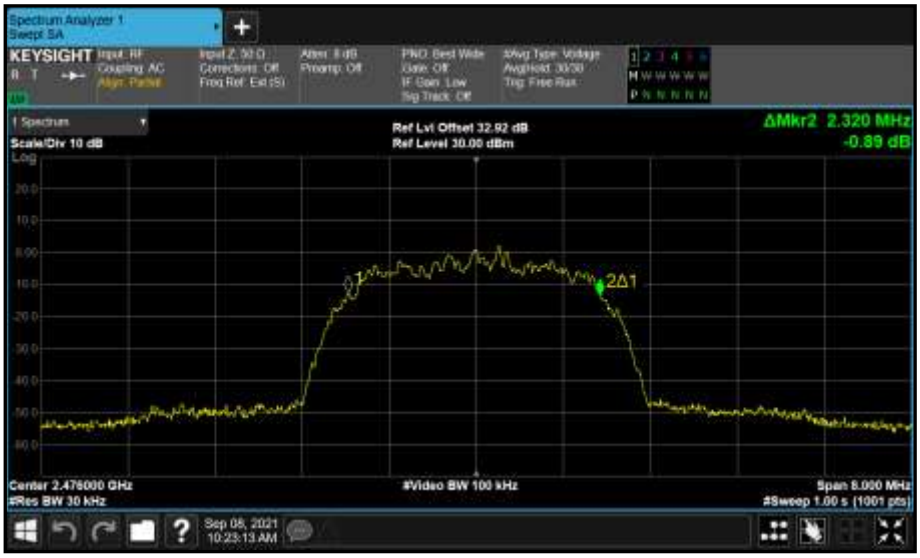

Figure 144 - Core 0 (A) 2476 MHz (CH74) 99% Bandwidth

Figure 145 - Core 0 (A) 2476 MHz (CH74) 6 dB Bandwidth

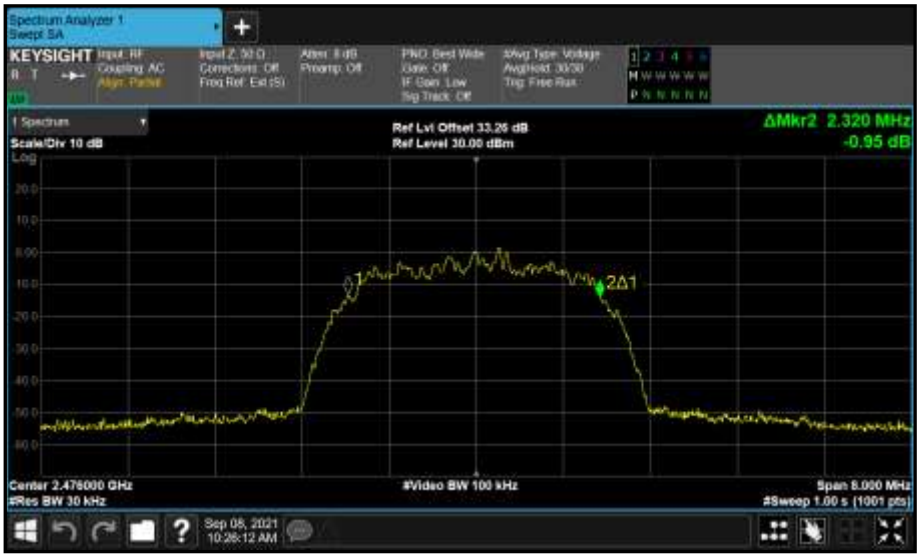

Figure 146 - Core 1 (B) 2476 MHz (CH74) 99% Bandwidth

Figure 147 - Core 1 (B) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	1.020	1.005	-	-	1.005	≥500.0
2441	1.005	1.005	-	-	1.005	≥500.0
2476	1.005	1.020	-	-	1.005	≥500.0

Table 55 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2404	4.455	4.455	-	-	4.455	-
2441	4.440	4.455	-	-	4.440	-
2476	4.455	4.470	-	-	4.455	-

Table 56 - 99% Bandwidth Results

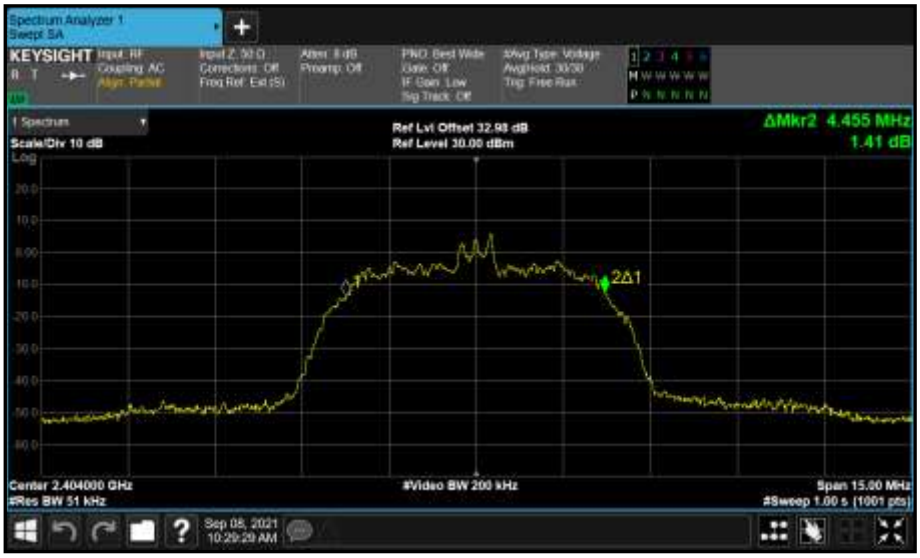

Figure 148 - Core 0 (A) 2404 MHz (CH2) 99% Bandwidth

Figure 149 - Core 0 (A) 2404 MHz (CH2) 6 dB Bandwidth

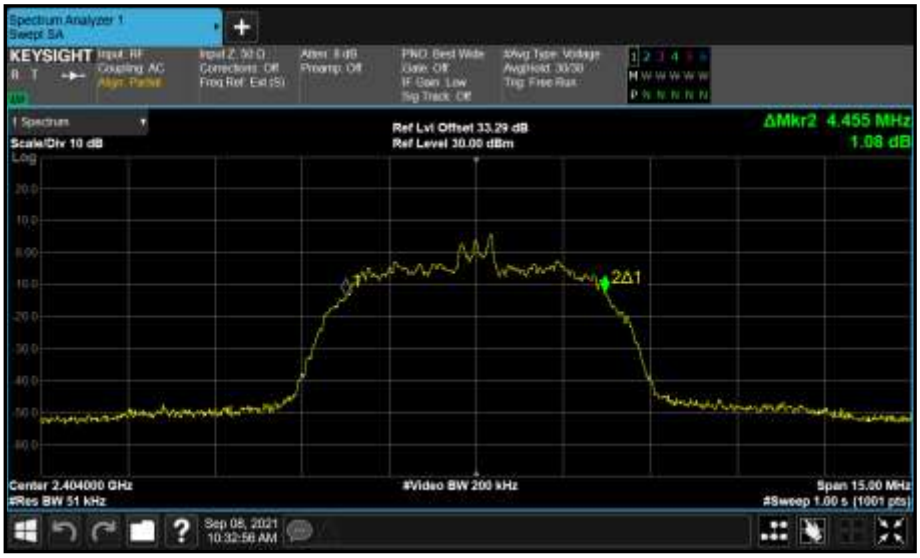

Figure 150 - Core 1 (B) 2404 MHz (CH2) 99% Bandwidth

Figure 151 - Core 1 (B) 2404 MHz (CH2) 6 dB Bandwidth

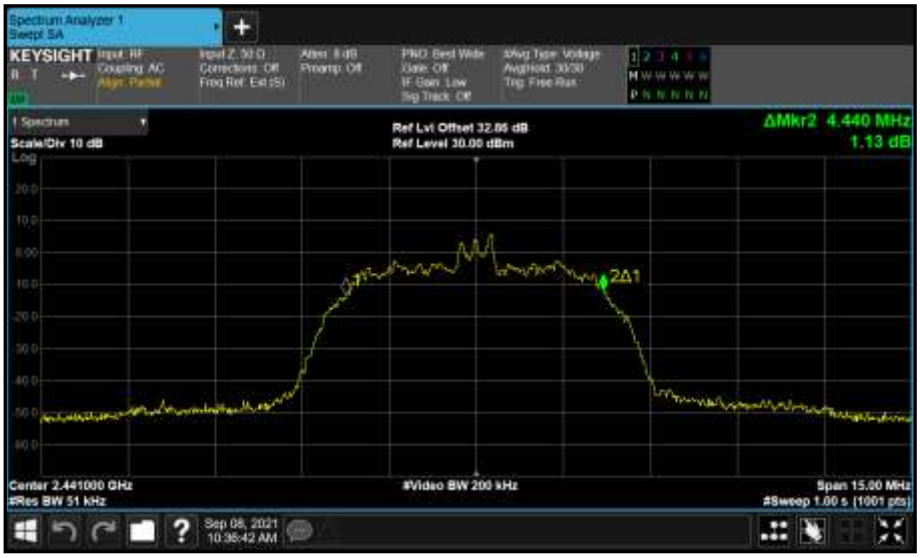

Figure 152 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

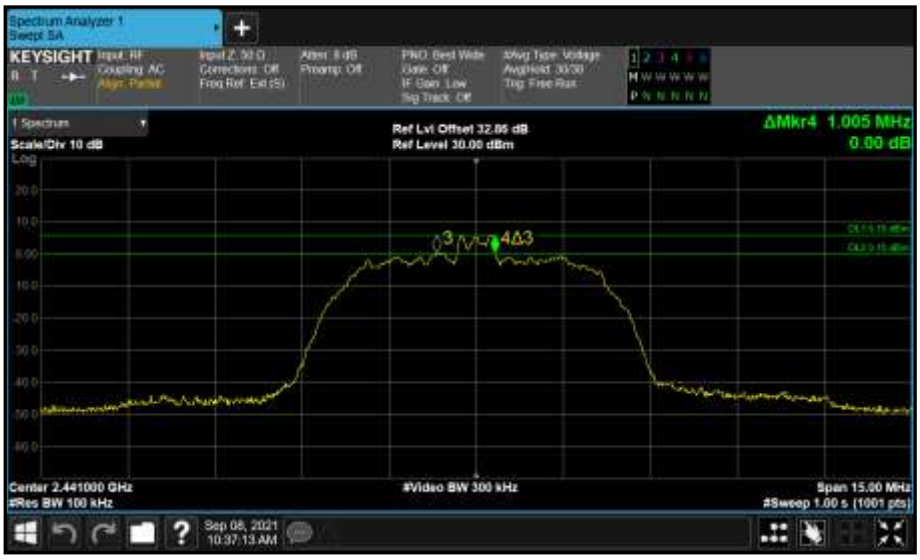

Figure 153 - Core 0 (A) 2441 MHz (CH39) 6 dB Bandwidth

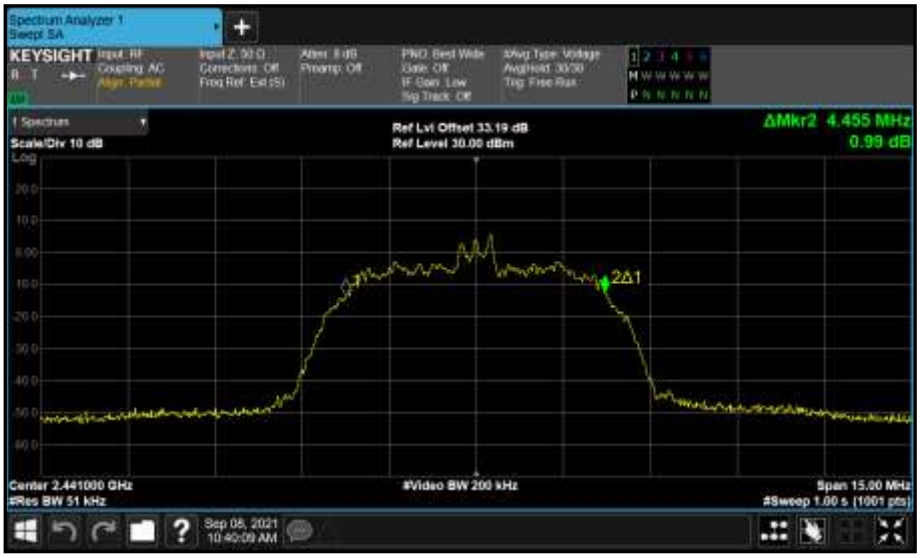

Figure 154 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

Figure 155 - Core 1 (B) 2441 MHz (CH39) 6 dB Bandwidth

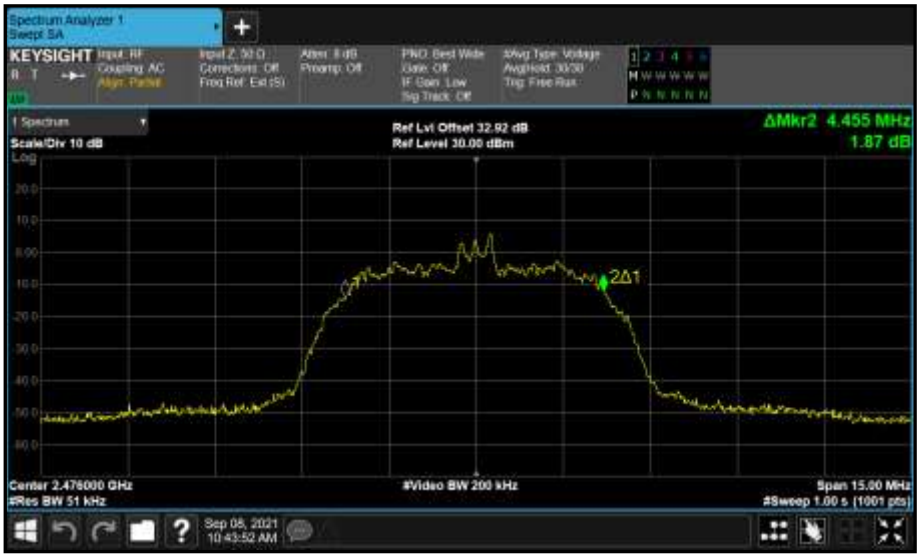

Figure 156 - Core 0 (A) 2476 MHz (CH74) 99% Bandwidth

Figure 157 - Core 0 (A) 2476 MHz (CH74) 6 dB Bandwidth

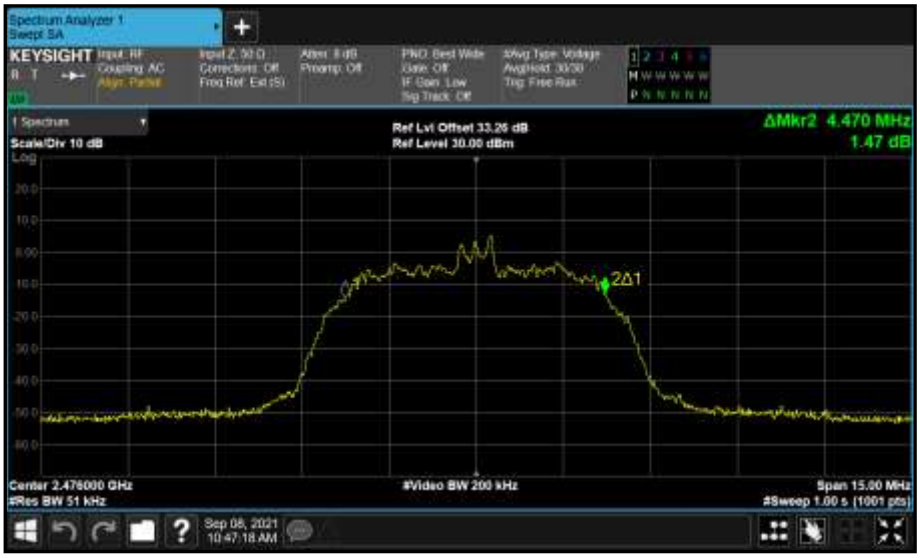

Figure 158 - Core 1 (B) 2476 MHz (CH74) 99% Bandwidth

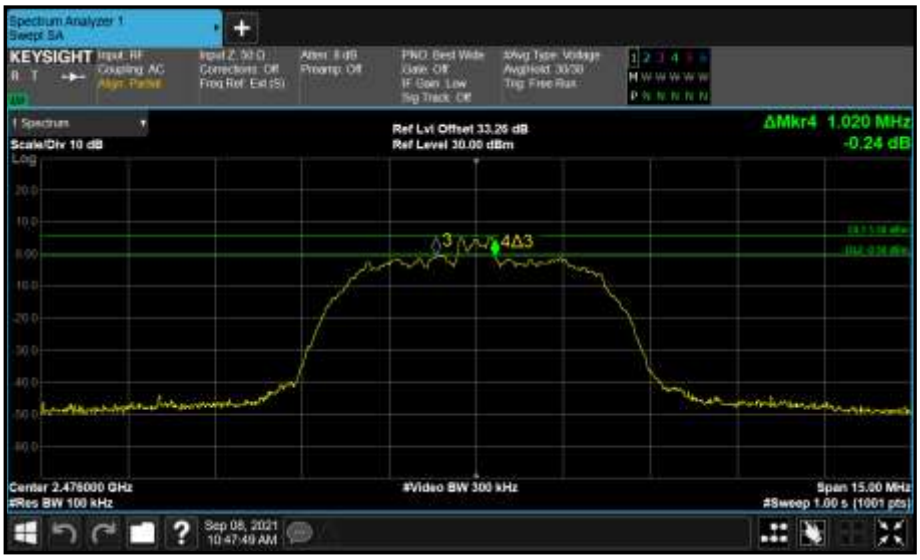

Figure 159 - Core 1 (B) 2476 MHz (CH74) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
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	Minimum	
2402	0.712	-	-	-	0.712	≥500.0
2440	0.724	-	-	-	0.724	≥500.0
2480	0.724	-	-	-	0.724	≥500.0

Table 57 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	1.032	-	-	-	1.032	-
2440	1.032	-	-	-	1.032	-
2480	1.032	-	-	-	1.032	-

Table 58 - 99% Bandwidth Results

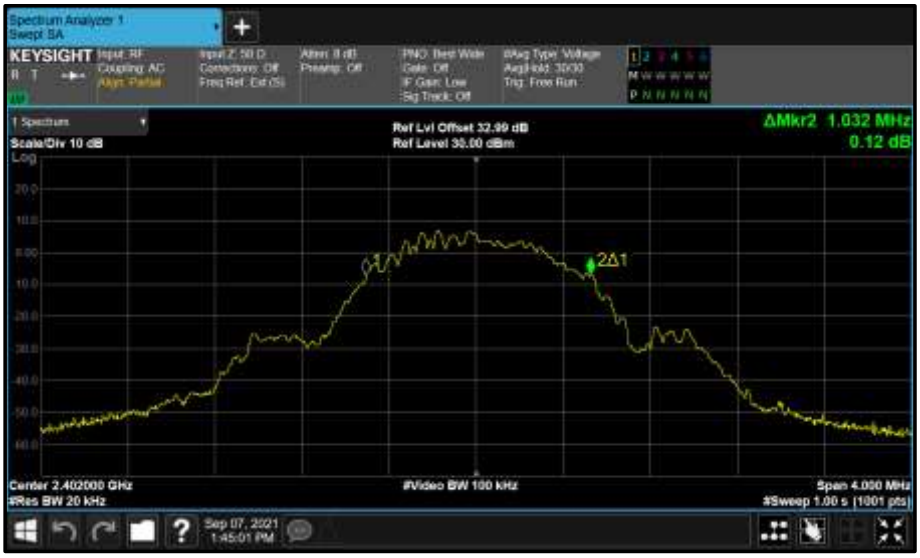

Figure 160 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

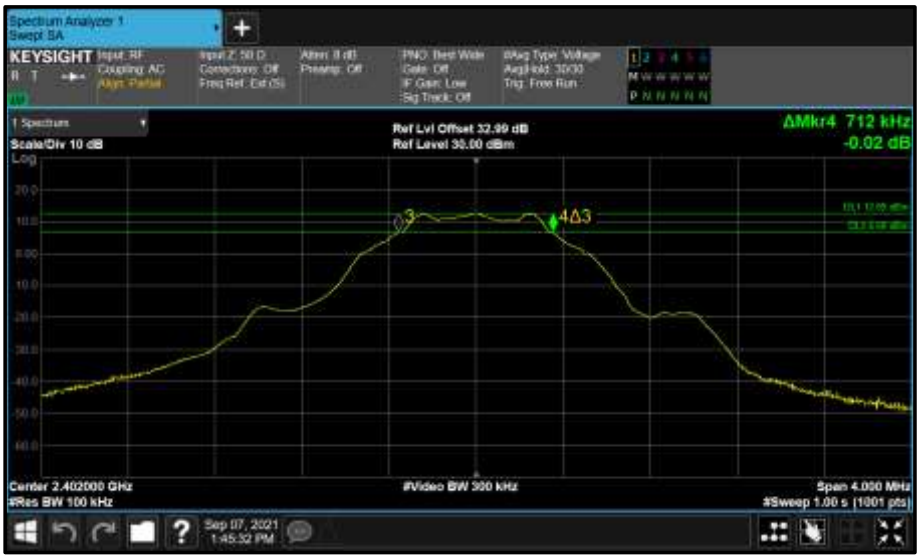

Figure 161 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

Figure 162 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

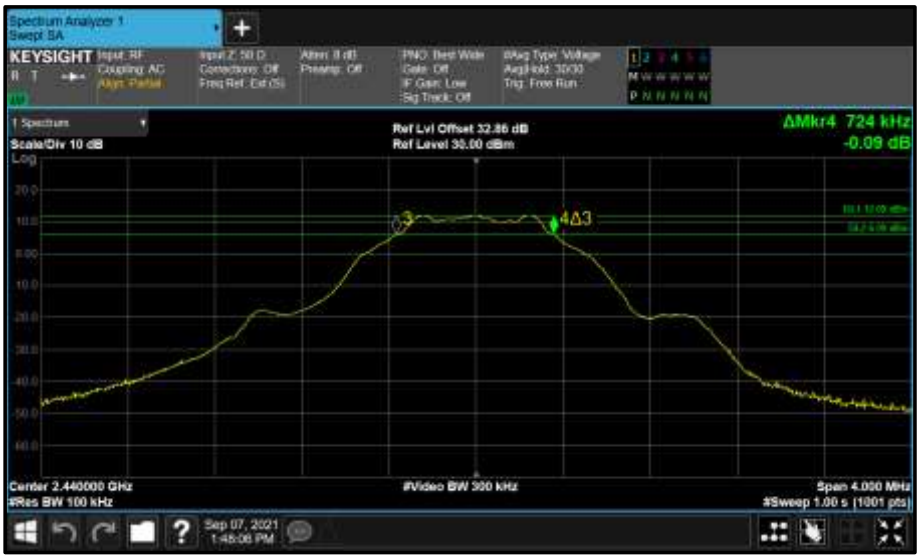

Figure 163 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

Figure 164 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

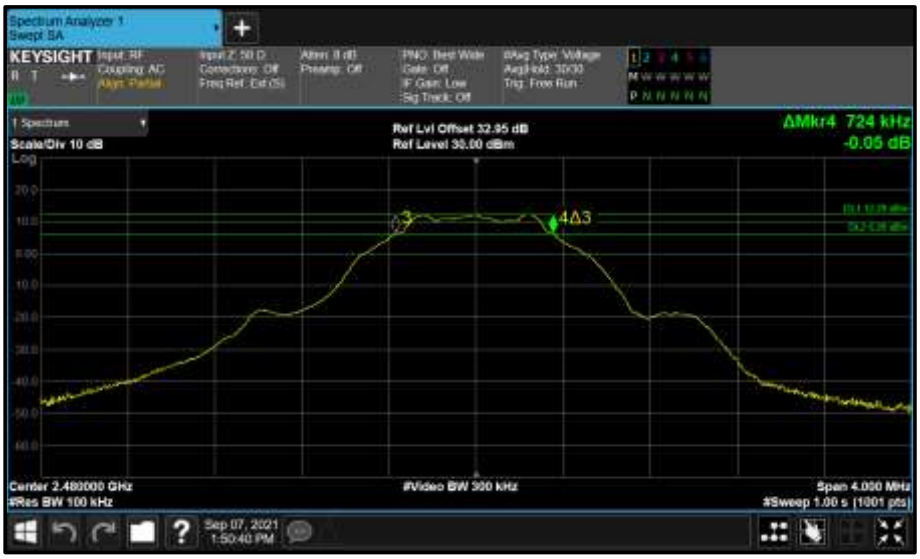

Figure 165 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
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	Minimum	
2402	1.168	-	-	-	1.168	≥500.0
2440	1.176	-	-	-	1.176	≥500.0
2480	1.184	-	-	-	1.184	≥500.0

Table 59 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	2.056	-	-	-	2.056	-
2440	2.048	-	-	-	2.048	-
2480	2.048	-	-	-	2.048	-

Table 60 - 99% Bandwidth Results

Figure 166 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

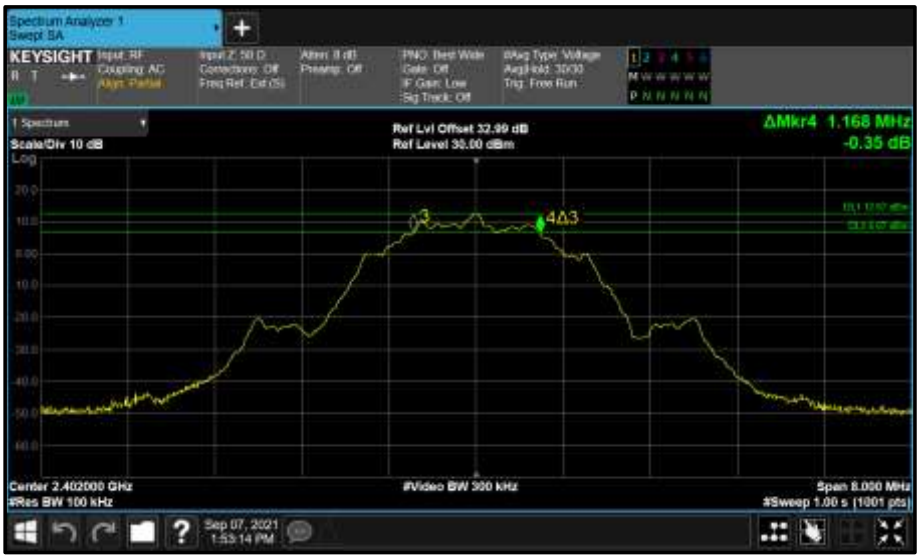

Figure 167 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

Figure 168 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

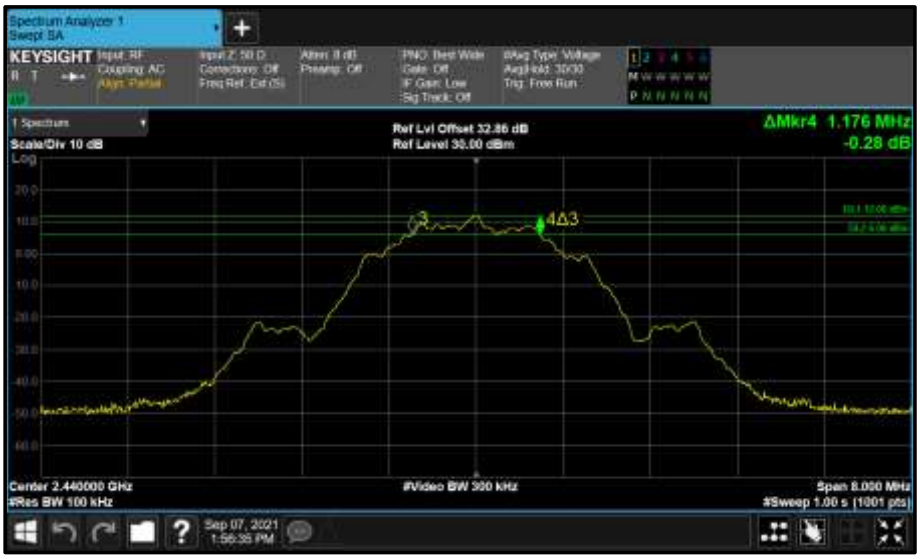

Figure 169 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

Figure 170 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

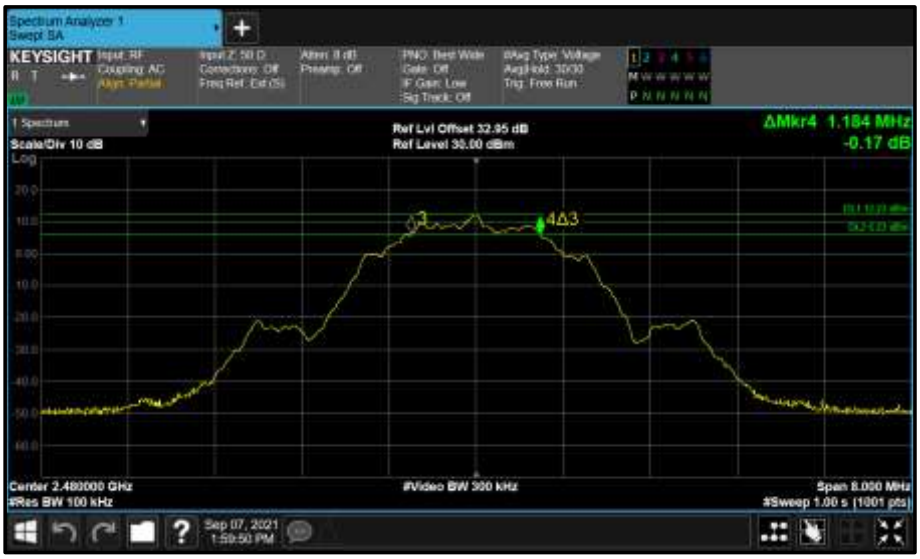

Figure 171 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	-	0.724	-	0.724	≥500.0
2440	-	-	0.728	-	0.728	≥500.0
2480	-	-	0.724	-	0.724	≥500.0

Table 61 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	-	1.040	-	1.040	-
2440	-	-	1.040	-	1.040	-
2480	-	-	1.040	-	1.040	-

Table 62 - 99% Bandwidth Results

Figure 172 - Core 2 (C) 2402 MHz (CH37) 99% Bandwidth

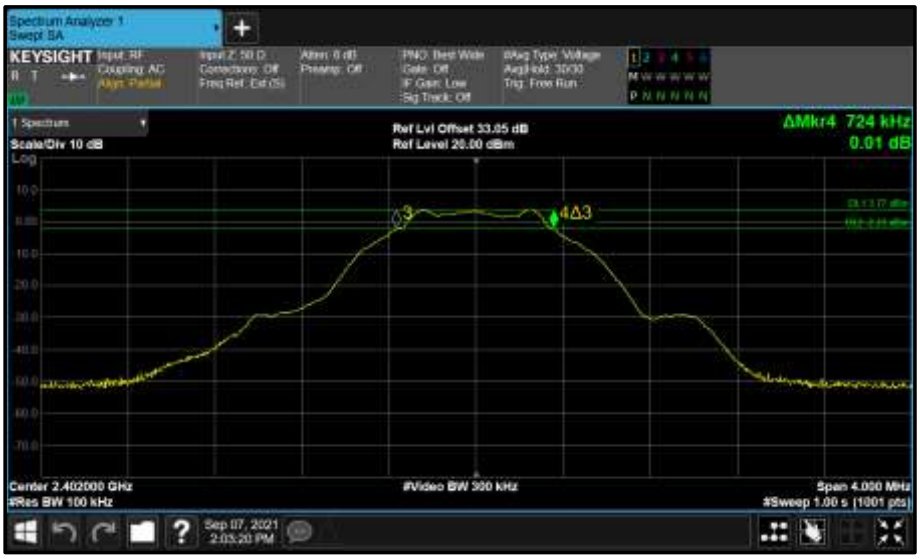

Figure 173 - Core 2 (C) 2402 MHz (CH37) 6 dB Bandwidth

Figure 174 - Core 2 (C) 2440 MHz (CH17) 99% Bandwidth

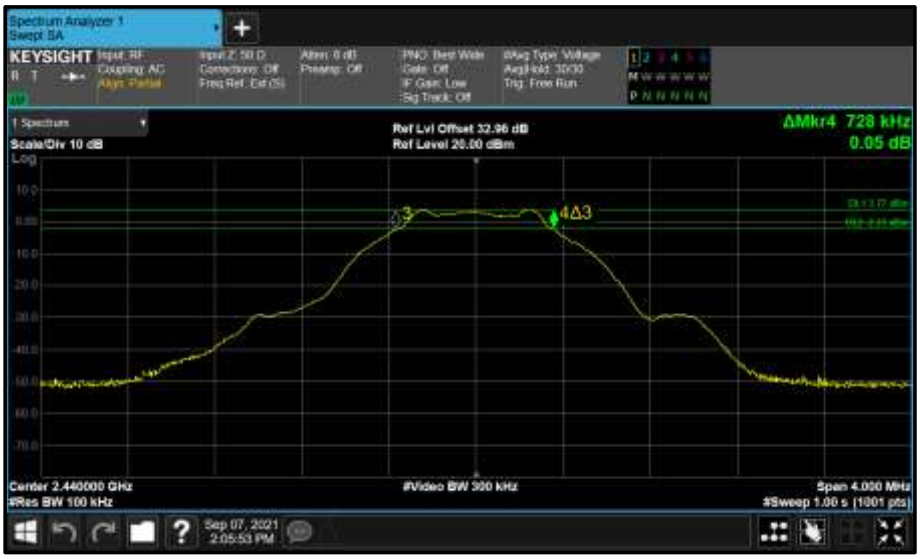

Figure 175 - Core 2 (C) 2440 MHz (CH17) 6 dB Bandwidth

Figure 176 - Core 2 (C) 2480 MHz (CH39) 99% Bandwidth

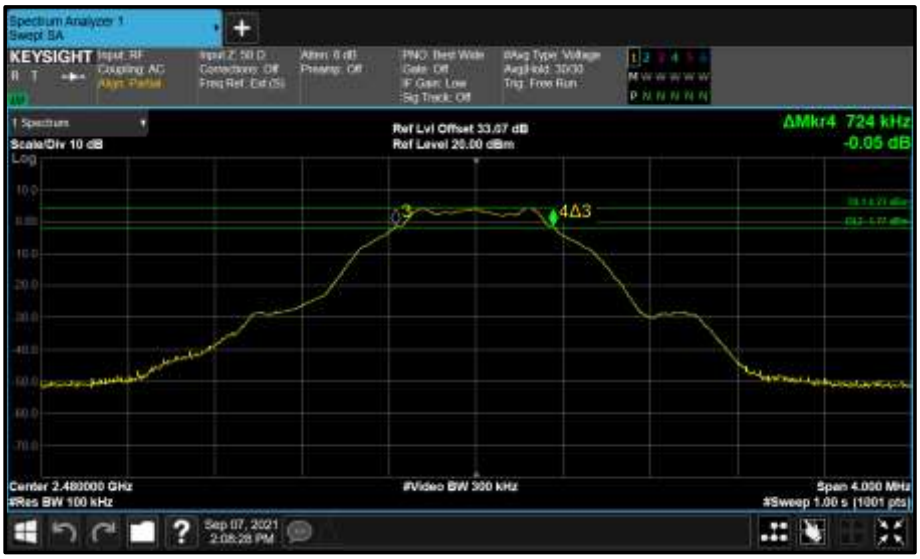

Figure 177 - Core 2 (C) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

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

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	-	1.256	-	1.256	≥500.0
2440	-	-	1.248	-	1.248	≥500.0
2480	-	-	1.176	-	1.176	≥500.0

Table 63 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	-	2.056	-	2.056	-
2440	-	-	2.056	-	2.056	-
2480	-	-	2.064	-	2.064	-

Table 64 - 99% Bandwidth Results

Figure 178 - Core 2 (C) 2402 MHz (CH37) 99% Bandwidth

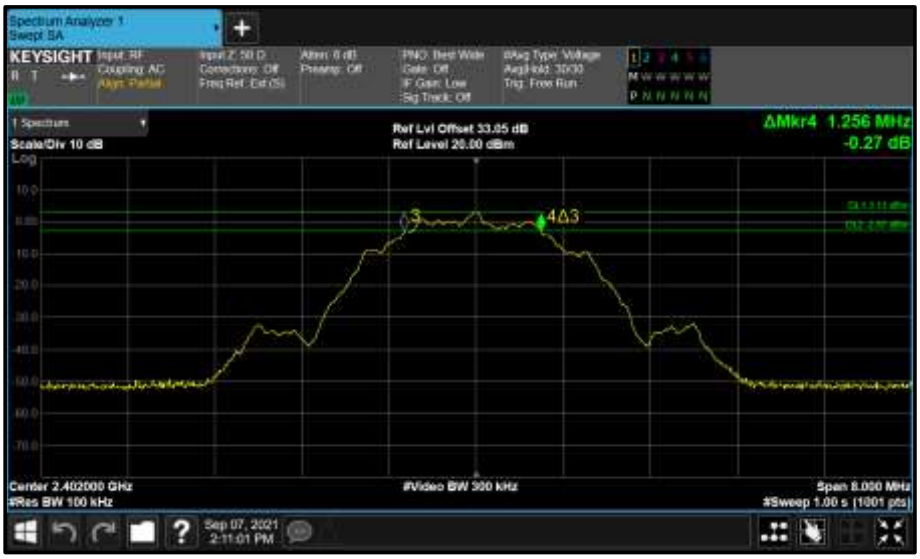

Figure 179 - Core 2 (C) 2402 MHz (CH37) 6 dB Bandwidth

Figure 180 - Core 2 (C) 2440 MHz (CH17) 99% Bandwidth

Figure 181 - Core 2 (C) 2440 MHz (CH17) 6 dB Bandwidth

Figure 182 - Core 2 (C) 2480 MHz (CH39) 99% Bandwidth

Figure 183 - Core 2 (C) 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 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

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

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	0.724	0.724	-	-	0.724	≥500.0
2440	0.728	0.728	-	-	0.728	≥500.0
2480	0.724	0.728	-	-	0.724	≥500.0

Table 65 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	1.032	1.036	-	-	1.032	-
2440	1.032	1.032	-	-	1.032	-
2480	1.028	1.036	-	-	1.028	-

Table 66 - 99% Bandwidth Results

Figure 184 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

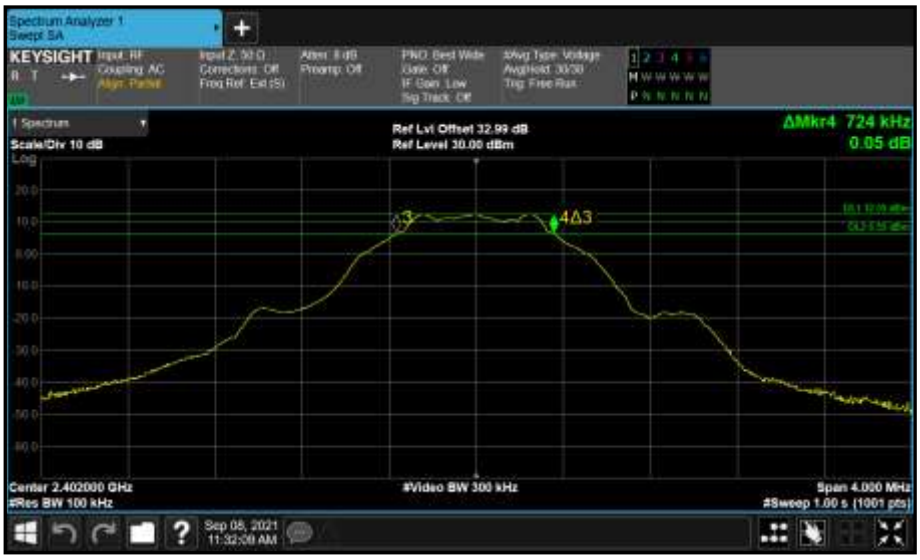

Figure 185 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

Figure 186 - Core 1 (B) 2402 MHz (CH37) 99% Bandwidth

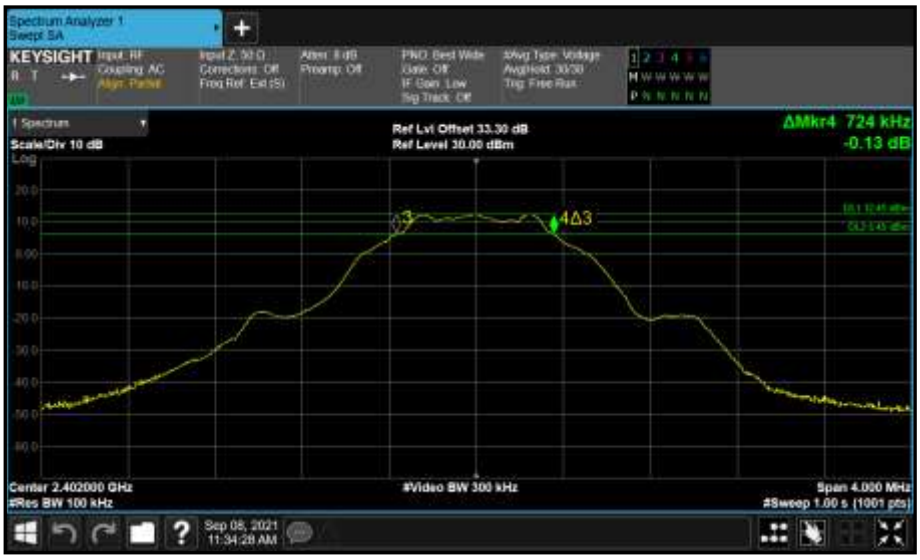

Figure 187 - Core 1 (B) 2402 MHz (CH37) 6 dB Bandwidth

Figure 188 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

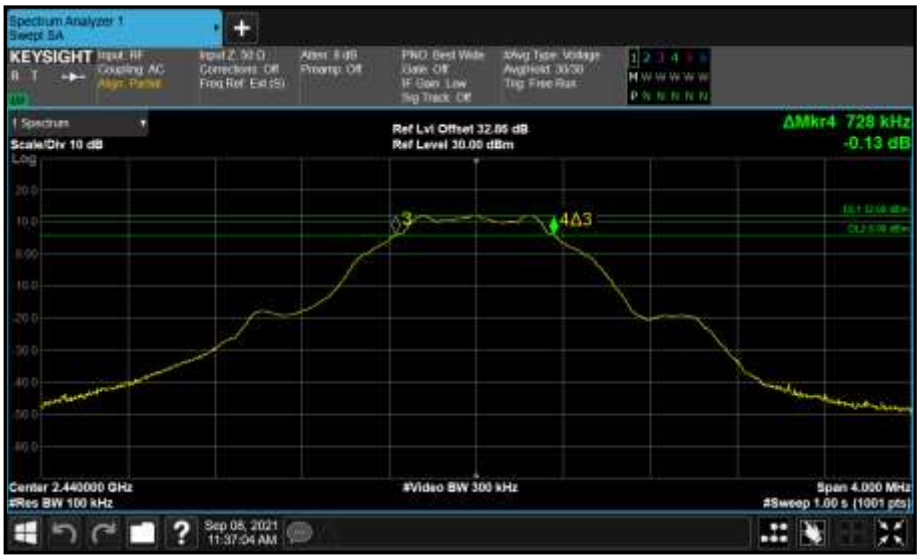

Figure 189 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

Figure 190 - Core 1 (B) 2440 MHz (CH17) 99% Bandwidth

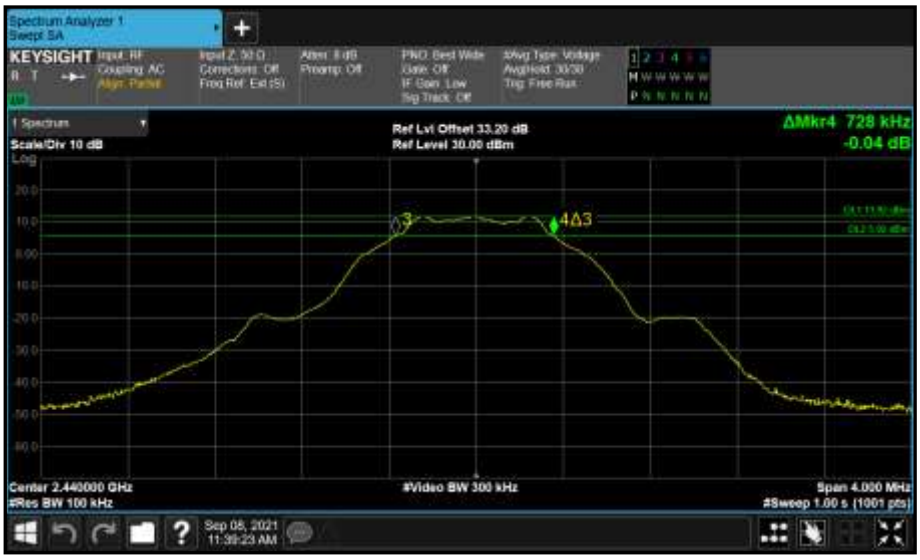

Figure 191 - Core 1 (B) 2440 MHz (CH17) 6 dB Bandwidth

Figure 192 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

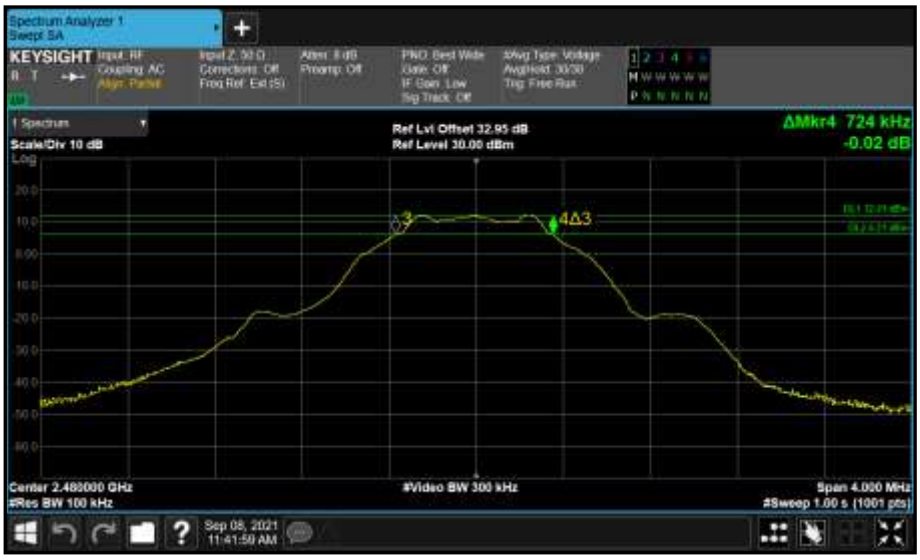

Figure 193 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

Figure 194 - Core 1 (B) 2480 MHz (CH39) 99% Bandwidth

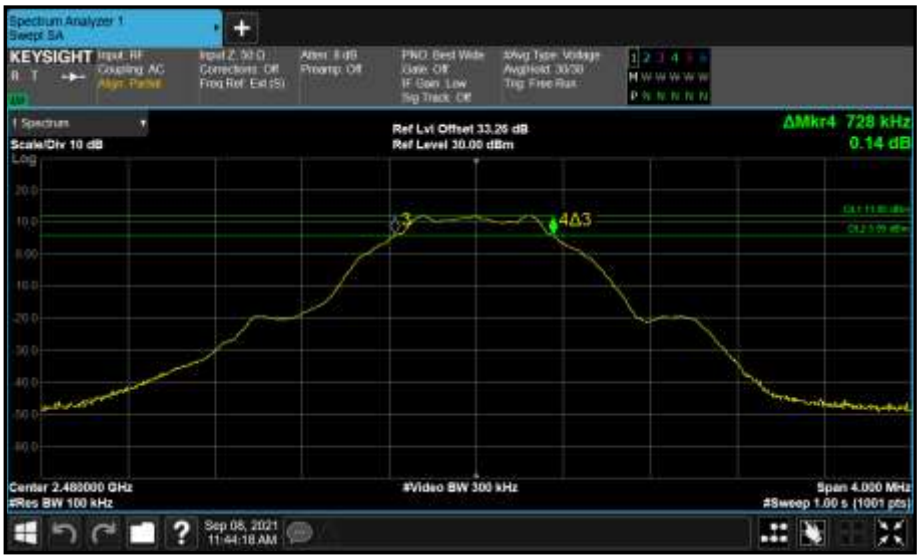

Figure 195 - Core 1 (B) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	1.176	1.368	-	-	1.176	≥500.0
2440	1.168	1.360	-	-	1.168	≥500.0
2480	1.184	1.360	-	-	1.184	≥500.0

Table 67 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	2.056	2.064	-	-	2.056	-
2440	2.048	2.064	-	-	2.048	-
2480	2.048	2.056	-	-	2.048	-

Table 68 - 99% Bandwidth Results

Figure 196 - Core 0 (A) 2402 MHz (CH37) 99% Bandwidth

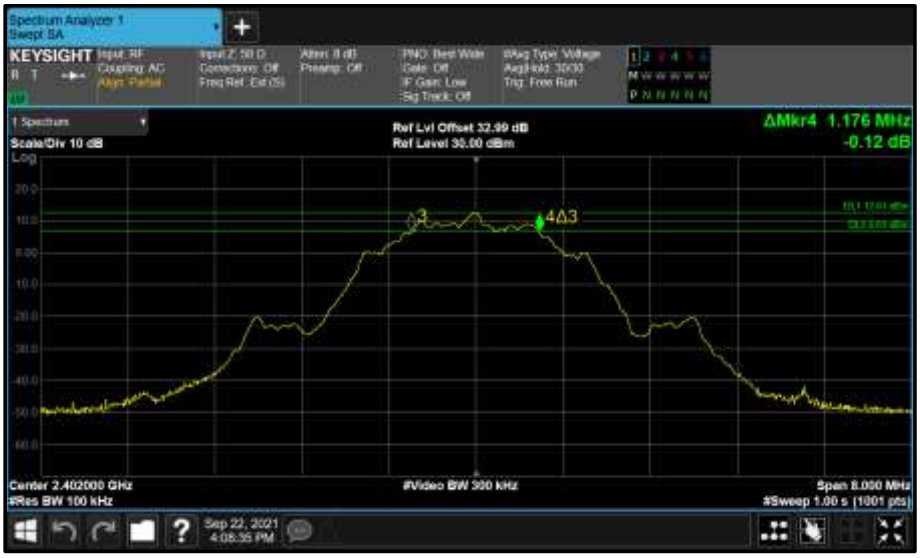

Figure 197 - Core 0 (A) 2402 MHz (CH37) 6 dB Bandwidth

Figure 198 - Core 1 (B) 2402 MHz (CH37) 99% Bandwidth

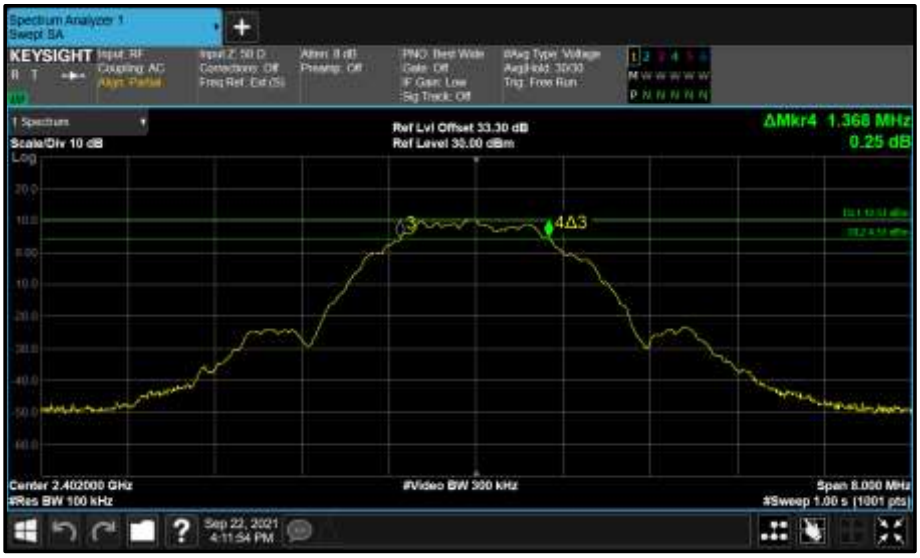

Figure 199 - Core 1 (B) 2402 MHz (CH37) 6 dB Bandwidth

Figure 200 - Core 0 (A) 2440 MHz (CH17) 99% Bandwidth

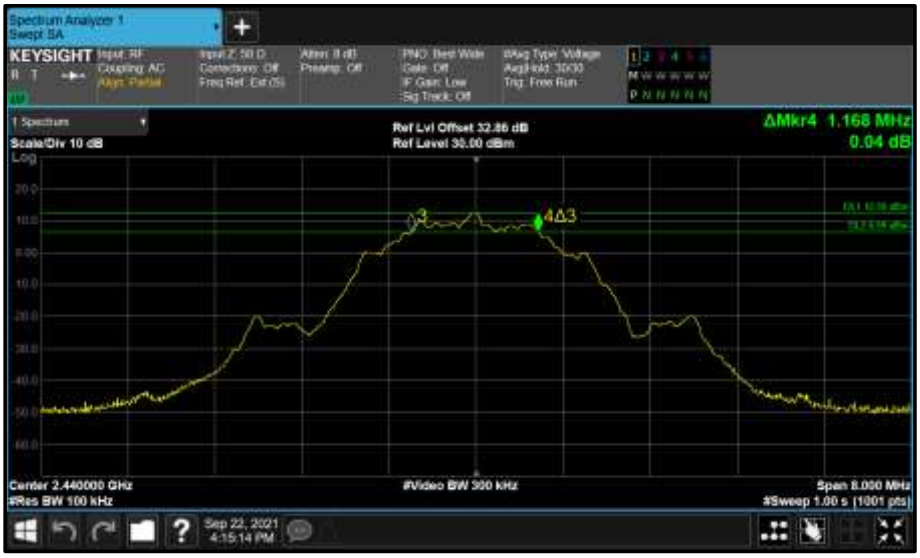

Figure 201 - Core 0 (A) 2440 MHz (CH17) 6 dB Bandwidth

Figure 202 - Core 1 (B) 2440 MHz (CH17) 99% Bandwidth

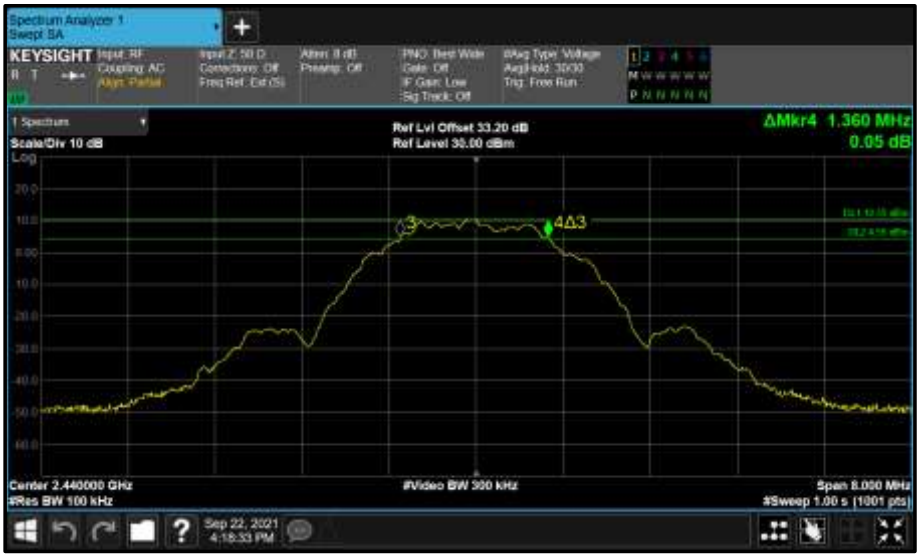

Figure 203 - Core 1 (B) 2440 MHz (CH17) 6 dB Bandwidth

Figure 204 - Core 0 (A) 2480 MHz (CH39) 99% Bandwidth

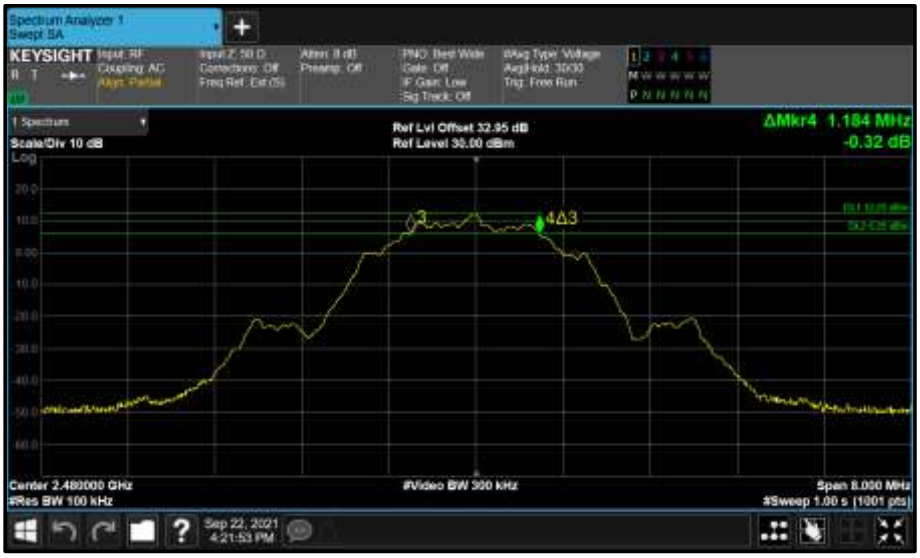

Figure 205 - Core 0 (A) 2480 MHz (CH39) 6 dB Bandwidth

Figure 206 - Core 1 (B) 2480 MHz (CH39) 99% Bandwidth

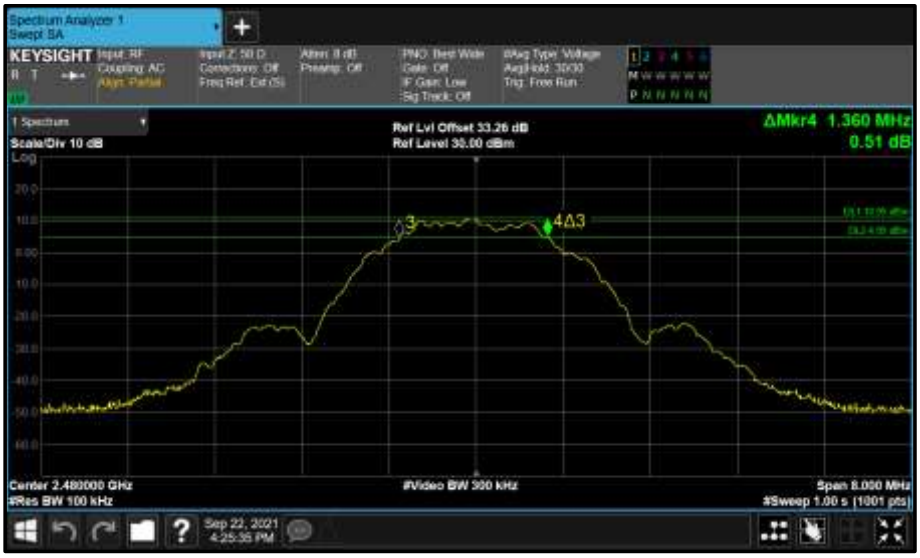

Figure 207 - Core 1 (B) 2480 MHz (CH39) 6 dB Bandwidth

FCC 47 CFR Part 15, Limit Clause 15.247(a)(2) and ISED RSS-247, Clause 5.2(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 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	03-Dec-2021
Multimeter	Iso-tech	IDM101	2421	12	30-Oct-2021
Hygrometer	Rotronic	I-1000	3220	12	16-Oct-2021
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	03-Dec-2021
Climatic Chamber	Aralab	FitoTerm 300E45	4823	12	12-Apr-2022
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
MXA Signal Analyser	Keysight Technologies	N9020B	5529	24	04-Mar-2022
Signal Commissioniong Unit	TUV SUD	SCU002	5759	12	30-Jun-2022

Table 69

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 5.4
ISED RSS-GEN, Clause 6.12

2.3.2 Equipment Under Test and Modification State

A2442, S/N: XH2DGXFKY6 - Modification State 0

2.3.3 Date of Test

07-September-2021 to 22-September-2021

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 11.9.1.3 (PKPM1).

MIMO output port summing was performed in accordance with KDB 662911 D01.

2.3.5 Environmental Conditions

Ambient Temperature	21.5 - 23.5 °C
Relative Humidity	48.4 - 66.9 %

2.3.6 Test Results

2.4 GHz Bluetooth - DTS

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	7.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	18.20	-	-	-	-	28.40	-10.20
2441	17.51	-	-	-	-	28.40	-10.89
2476	18.06	-	-	-	-	28.40	-10.34

Table 70 - 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	∑					
2404	18.20	-	-	-	-	30.00	-11.80	25.80	36.00	-10.20
2441	17.51	-	-	-	-	30.00	-12.49	25.11	36.00	-10.89
2476	18.06	-	-	-	-	30.00	-11.94	25.66	36.00	-10.34

Table 71 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	7.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	18.22	-	-	-	-	28.40	-10.18
2441	18.56	-	-	-	-	28.40	-9.84
2476	18.44	-	-	-	-	28.40	-9.96

Table 72 - 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	∑					
2404	18.22	-	-	-	-	30.00	-11.78	25.82	36.00	-10.18
2441	18.56	-	-	-	-	30.00	-11.44	26.16	36.00	-9.84
2476	18.44	-	-	-	-	30.00	-11.56	26.04	36.00	-9.96

Table 73 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	ePA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	10.17

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	17.85	18.03	-	-	20.92	25.83	-4.91
2441	18.06	17.89	-	-	20.92	25.83	-4.90
2476	18.09	17.88	-	-	20.97	25.83	-4.86

Table 74 - 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	∑					
2404	17.85	18.03	-	-	20.92	30.00	-9.08	31.09	36.00	-4.91
2441	18.06	17.89	-	-	20.92	30.00	-9.08	31.10	36.00	-4.90
2476	18.09	17.88	-	-	20.97	30.00	-9.03	31.14	36.00	-4.86

Table 75 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	ePA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	10.17

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	18.45	18.18	-	-	21.31	25.83	-4.52
2441	18.51	18.25	-	-	21.37	25.83	-4.45
2476	18.31	18.59	-	-	21.44	25.83	-4.39

Table 76 - 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	∑					
2404	18.45	18.18	-	-	21.31	30.00	-8.69	31.48	36.00	-4.52
2441	18.51	18.25	-	-	21.37	30.00	-8.63	31.55	36.00	-4.45
2476	18.31	18.59	-	-	21.44	30.00	-8.56	31.61	36.00	-4.39

Table 77 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA GFSK (LE 1M)	Duty Cycle (%):	60.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	7.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	13.70	-	-	-	-	28.40	-14.70
2440	13.36	-	-	-	-	28.40	-15.04
2480	13.26	-	-	-	-	28.40	-15.14

Table 78 - 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	13.70	-	-	-	-	30.00	-16.30	21.30	36.00	-14.70
2440	13.36	-	-	-	-	30.00	-16.64	20.96	36.00	-15.04
2480	13.26	-	-	-	-	30.00	-16.74	20.86	36.00	-15.14

Table 79 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	7.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	13.95	-	-	-	-	28.40	-14.45
2440	13.61	-	-	-	-	28.40	-14.79
2480	13.55	-	-	-	-	28.40	-14.85

Table 80 - 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	13.95	-	-	-	-	30.00	-16.05	21.55	36.00	-14.45
2440	13.61	-	-	-	-	30.00	-16.39	21.21	36.00	-14.79
2480	13.55	-	-	-	-	30.00	-16.45	21.15	36.00	-14.85

Table 81 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	ePA GFSK (LE 1M)	Duty Cycle (%):	60.5
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	10.17

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	13.70	13.53	-	-	16.62	25.83	-9.21
2440	13.68	13.53	-	-	16.61	25.83	-9.22
2480	13.15	12.79	-	-	15.96	25.83	-9.87

Table 82 - 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	13.70	13.53	-	-	16.62	30.00	-13.38	26.79	36.00	-9.21
2440	13.68	13.53	-	-	16.61	30.00	-13.39	26.78	36.00	-9.22
2480	13.15	12.79	-	-	15.96	30.00	-14.04	26.13	36.00	-9.87

Table 83 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	ePA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	10.17

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	13.88	13.27	-	-	17.38	25.83	-8.45
2440	13.94	13.32	-	-	17.44	25.83	-8.39
2480	13.53	13.50	-	-	17.12	25.83	-8.71

Table 84 - 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	13.88	13.27	-	-	17.38	30.00	-12.62	27.55	36.00	-8.45
2440	13.94	13.32	-	-	17.44	30.00	-12.56	27.61	36.00	-8.39
2480	13.53	13.50	-	-	17.12	30.00	-12.88	27.29	36.00	-8.71

Table 85 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	7.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	9.03	-	-	-	-	28.40	-19.37
2441	8.84	-	-	-	-	28.40	-19.56
2476	8.99	-	-	-	-	28.40	-19.41

Table 86 - 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	∑					
2404	9.03	-	-	-	-	30.00	-20.97	16.63	36.00	-19.37
2441	8.84	-	-	-	-	30.00	-21.16	16.44	36.00	-19.56
2476	8.99	-	-	-	-	30.00	-21.01	16.59	36.00	-19.41

Table 87 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	7.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	9.45	-	-	-	-	28.40	-18.95
2441	9.29	-	-	-	-	28.40	-19.11
2476	9.42	-	-	-	-	28.40	-18.98

Table 88 - 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	∑					
2404	9.45	-	-	-	-	30.00	-20.55	17.05	36.00	-18.95
2441	9.29	-	-	-	-	30.00	-20.71	16.89	36.00	-19.11
2476	9.42	-	-	-	-	30.00	-20.58	17.02	36.00	-18.98

Table 89 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	6.10

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	-	8.95	-	-	29.90	-20.95
2441	-	-	9.20	-	-	29.90	-20.70
2476	-	-	8.71	-	-	29.90	-21.19

Table 90 - 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	∑					
2404	-	-	8.95	-	-	30.00	-21.05	15.05	36.00	-20.95
2441	-	-	9.20	-	-	30.00	-20.80	15.30	36.00	-20.70
2476	-	-	8.71	-	-	30.00	-21.29	14.81	36.00	-21.19

Table 91 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	6.10

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	-	9.32	-	-	29.90	-20.58
2441	-	-	9.24	-	-	29.90	-20.66
2476	-	-	9.12	-	-	29.90	-20.78

Table 92 - 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	∑					
2404	-	-	9.32	-	-	30.00	-20.68	15.42	36.00	-20.58
2441	-	-	9.24	-	-	30.00	-20.76	15.34	36.00	-20.66
2476	-	-	9.12	-	-	30.00	-20.88	15.22	36.00	-20.78

Table 93 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	10.17

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	9.01	9.04	-	-	12.02	25.83	-13.81
2441	8.92	8.46	-	-	11.67	25.83	-14.16
2476	8.93	8.68	-	-	11.78	25.83	-14.04

Table 94 - 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	∑					
2404	9.01	9.04	-	-	12.02	30.00	-17.98	22.19	36.00	-13.81
2441	8.92	8.46	-	-	11.67	30.00	-18.33	21.84	36.00	-14.16
2476	8.93	8.68	-	-	11.78	30.00	-18.22	21.96	36.00	-14.04

Table 95 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	10.17

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	9.46	9.52	-	-	12.46	25.83	-13.37
2441	9.62	9.48	-	-	12.54	25.83	-13.28
2476	9.34	9.12	-	-	12.21	25.83	-13.61

Table 96 - 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	∑					
2404	9.46	9.52	-	-	12.46	30.00	-17.54	22.63	36.00	-13.37
2441	9.62	9.48	-	-	12.54	30.00	-17.46	22.72	36.00	-13.28
2476	9.34	9.12	-	-	12.21	30.00	-17.79	22.39	36.00	-13.61

Table 97 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	60.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	7.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	13.77	-	-	-	-	28.40	-14.63
2440	13.36	-	-	-	-	28.40	-15.04
2480	13.24	-	-	-	-	28.40	-15.16

Table 98 - 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	13.77	-	-	-	-	30.00	-16.23	21.37	36.00	-14.63
2440	13.36	-	-	-	-	30.00	-16.64	20.96	36.00	-15.04
2480	13.24	-	-	-	-	30.00	-16.76	20.84	36.00	-15.16

Table 99 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	7.60

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	13.92	-	-	-	-	28.40	-14.48
2440	13.56	-	-	-	-	28.40	-14.84
2480	13.54	-	-	-	-	28.40	-14.86

Table 100 - 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	13.92	-	-	-	-	30.00	-16.08	21.52	36.00	-14.48
2440	13.56	-	-	-	-	30.00	-16.44	21.16	36.00	-14.84
2480	13.54	-	-	-	-	30.00	-16.46	21.14	36.00	-14.86

Table 101 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	60.4
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	6.10

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	-	-	4.68	-	-	29.90	-25.22
2440	-	-	4.66	-	-	29.90	-25.24
2480	-	-	4.94	-	-	29.90	-24.96

Table 102 - 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	-	-	4.68	-	-	30.00	-25.32	10.78	36.00	-25.22
2440	-	-	4.66	-	-	30.00	-25.34	10.76	36.00	-25.24
2480	-	-	4.94	-	-	30.00	-25.06	11.04	36.00	-24.96

Table 103 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	6.10

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	-	-	4.38	-	-	29.90	-25.52
2440	-	-	4.78	-	-	29.90	-25.12
2480	-	-	4.60	-	-	29.90	-25.30

Table 104 - 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	-	-	4.38	-	-	30.00	-25.62	10.48	36.00	-25.52
2440	-	-	4.78	-	-	30.00	-25.22	10.88	36.00	-25.12
2480	-	-	4.60	-	-	30.00	-25.40	10.70	36.00	-25.30

Table 105 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	60.5
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	10.17

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	13.65	13.51	-	-	16.57	25.83	-9.26
2440	13.32	13.10	-	-	16.19	25.83	-9.64
2480	13.15	12.77	-	-	15.95	25.83	-9.88

Table 106 - 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	13.65	13.51	-	-	16.57	30.00	-13.43	26.74	36.00	-9.26
2440	13.32	13.10	-	-	16.19	30.00	-13.81	26.36	36.00	-9.64
2480	13.15	12.77	-	-	15.95	30.00	-14.05	26.12	36.00	-9.88

Table 107 - 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 5.4 d)	Test Method(s):	C63.10 11.9.1.3
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	10.17

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	13.87	13.25	-	-	17.38	25.83	-8.45
2440	13.93	13.32	-	-	17.46	25.83	-8.37
2480	13.53	13.46	-	-	17.12	25.83	-8.71

Table 108 - 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	13.87	13.25	-	-	17.38	30.00	-12.62	27.55	36.00	-8.45
2440	13.93	13.32	-	-	17.46	30.00	-12.54	27.63	36.00	-8.37
2480	13.53	13.46	-	-	17.12	30.00	-12.88	27.29	36.00	-8.71

Table 109 - 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 5.4 (b)

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 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Iso-tech	IDM101	2421	12	30-Oct-2021
Hygrometer	Rotronic	I-1000	3220	12	16-Oct-2021
Climatic Chamber	Aralab	FitoTerm 300E45	4823	12	12-Apr-2022
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
Signal Commissioniong Unit	TUV SUD	SCU002	5759	12	30-Jun-2022
USB Power Sensor	Boonton	RTP5008	5830	12	10-May-2022
USB Power Sensor	Boonton	RTP5008	5832	12	10-May-2022
USB Power Sensor	Boonton	RTP5008	5833	12	10-May-2022

Table 110

O/P Mon – Output Monitored using calibrated equipment

2.4 Spurious Radiated Emissions

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause: 15.247 (d) and 15.209
ISED RSS-247, Clause: 3.3 and 5.5
ISED RSS-GEN, Clause 6.13 and 8.9

2.4.2 Equipment Under Test and Modification State

A2442, S/N: DNQHW6Y3WY - Modification State 0

2.4.3 Date of Test

04-August-2021 to 06-August-2021

2.4.4 Test Method

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

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. One port of each type was loaded with a suitable ancillary/accessory.

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

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

At a measurement distance of 1 meter 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.

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

2.4.5 Example Test Setup Diagram

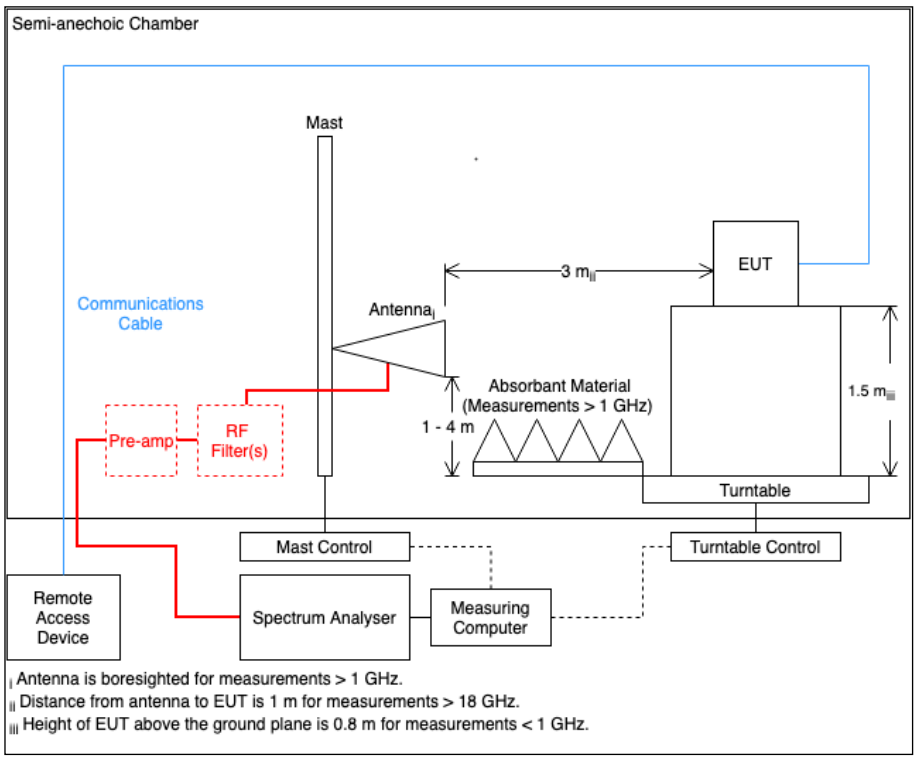

Figure 208

2.4.6 Environmental Conditions

Ambient Temperature	19.9 - 23.4 °C
Relative Humidity	50.5 - 60.9 %

2.4.7 Test Results

2.4 GHz Bluetooth - DTS

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

Table 111 - 2402 MHz (CH37), LE1M, ePA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

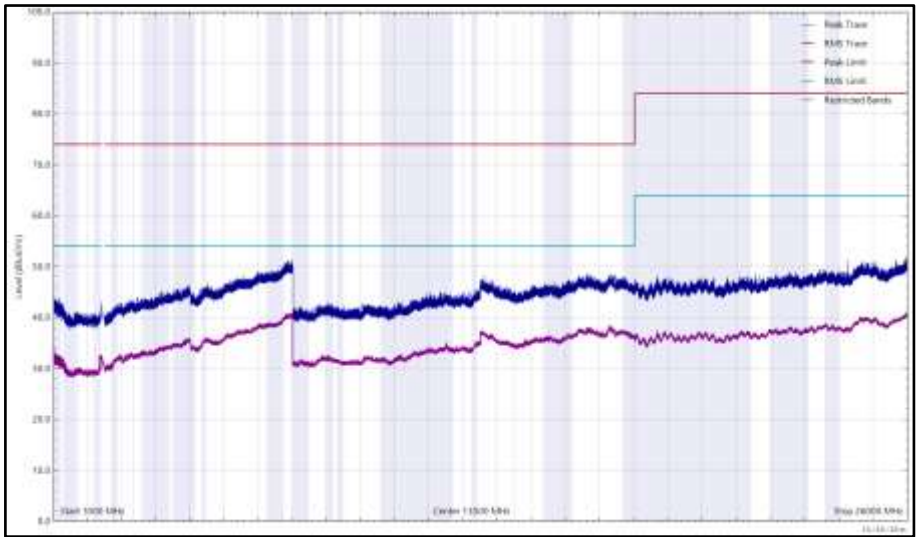

Figure 209 - 2402 MHz (CH37), LE1M, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

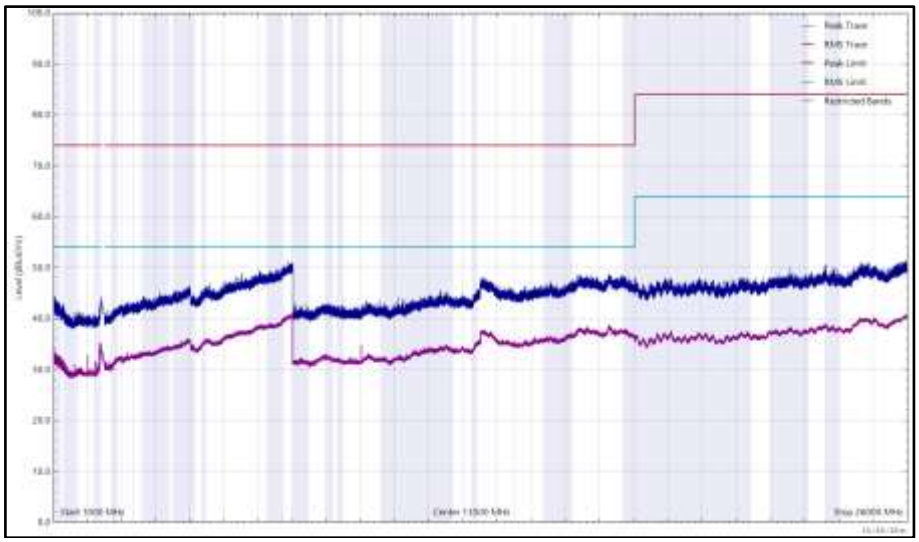

Figure 210 - 2402 MHz (CH37), LE1M, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 112 - 2402 MHz (CH37), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

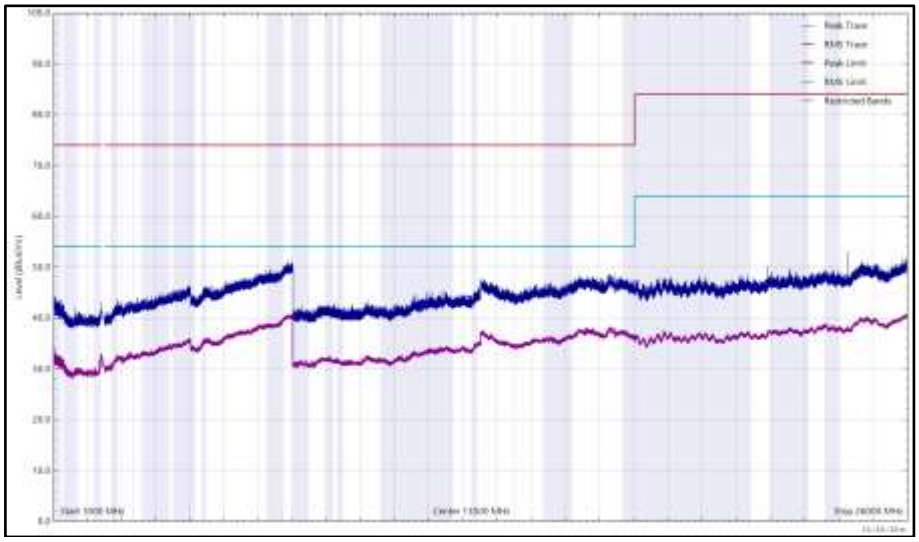

Figure 211 - 2402 MHz (CH37), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

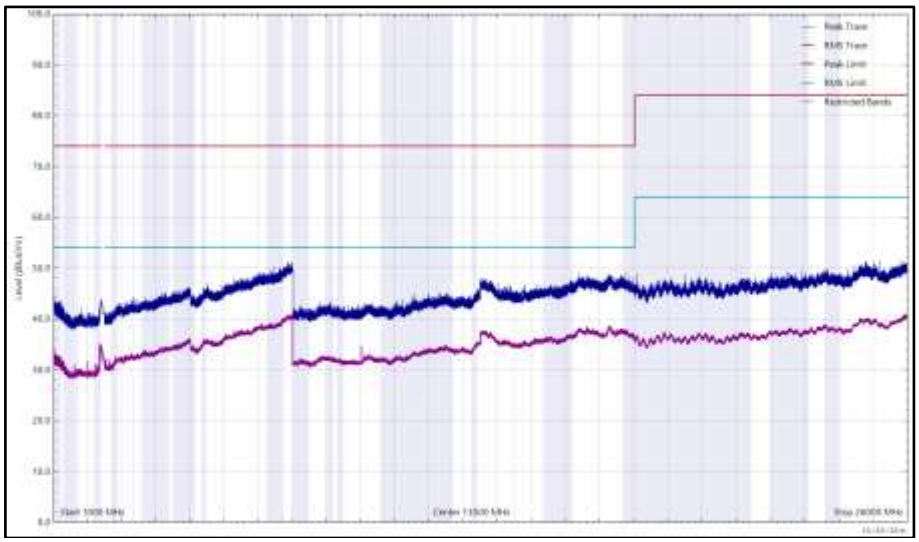

Figure 212 - 2402 MHz (CH37), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 113 - 2402 MHz (CH37), LE1M, iPA, Core 2, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

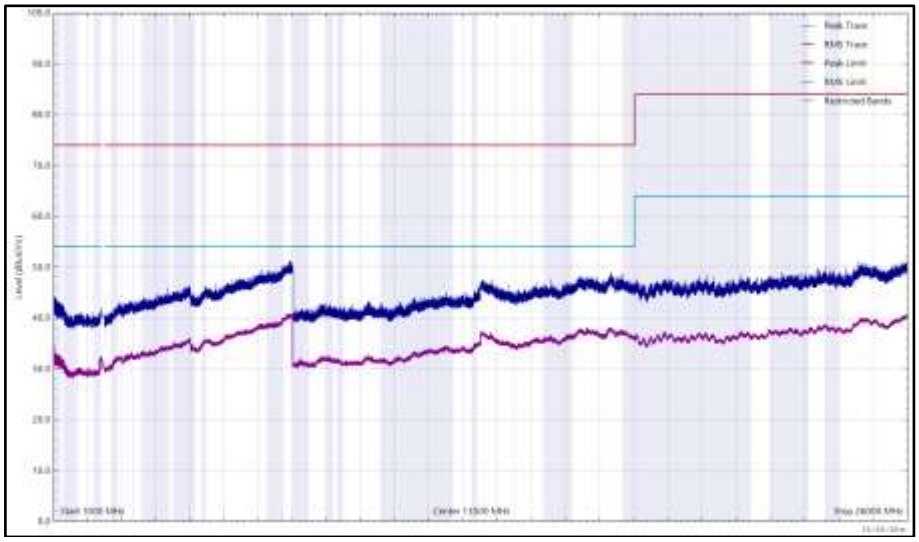

Figure 213 - 2402 MHz (CH37), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal

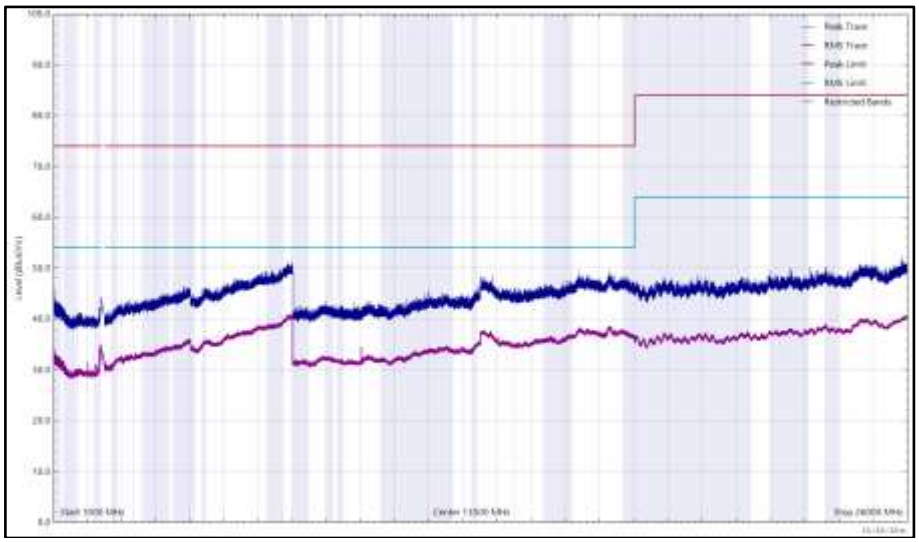

Figure 214 - 2402 MHz (CH37), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical

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

Table 114 - 2404 MHz (CH2), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

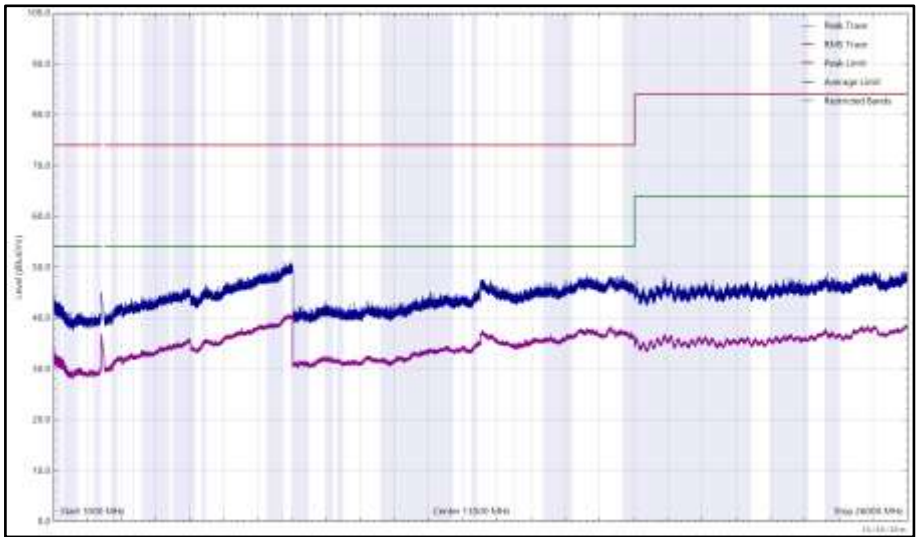

Figure 215 - 2404 MHz (CH2), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

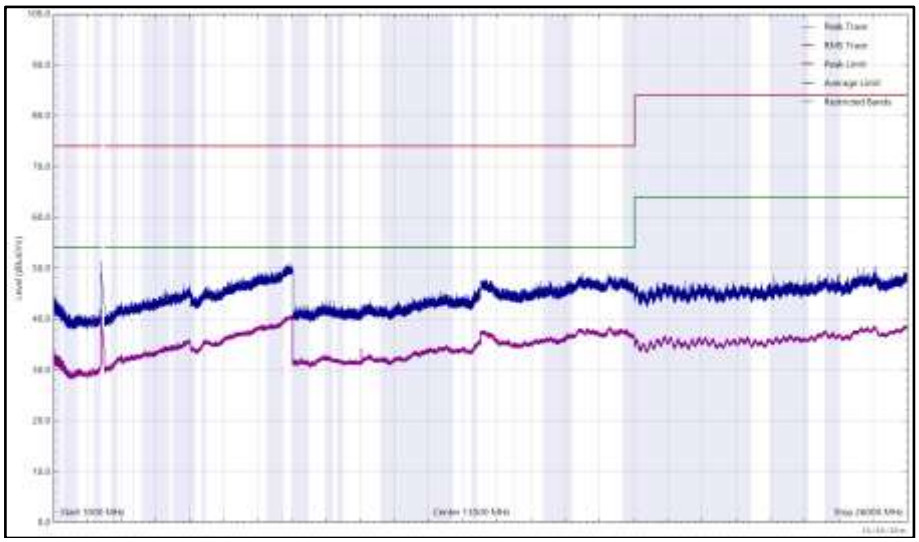

Figure 216 - 2404 MHz (CH2), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 115 - 2440 MHz (CH17), LE1M, ePA, Core 0 + Core 1, 30 MHz to 26 GHz

*No emissions found within 6 dB of the limit.

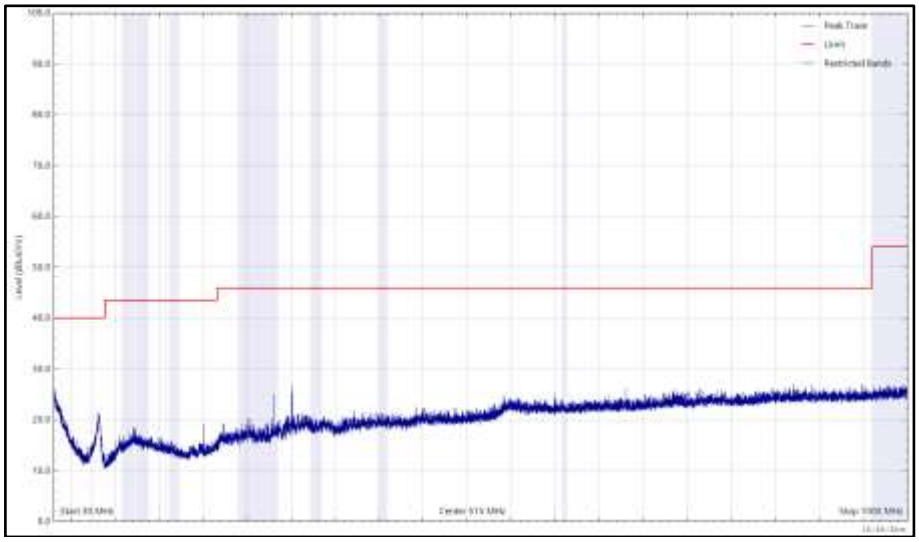

Figure 217 - 2440 MHz (CH17), LE1M, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

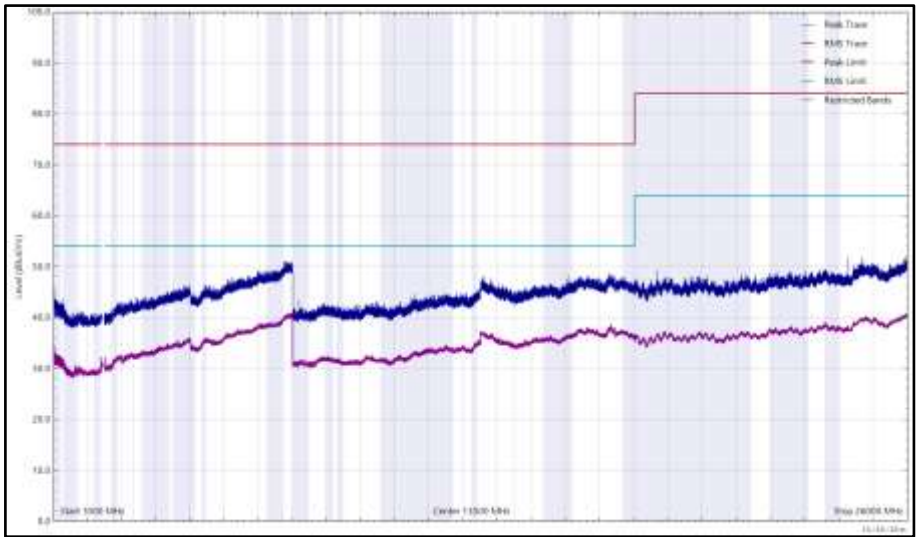

Figure 218 - 2440 MHz (CH17), LE1M, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

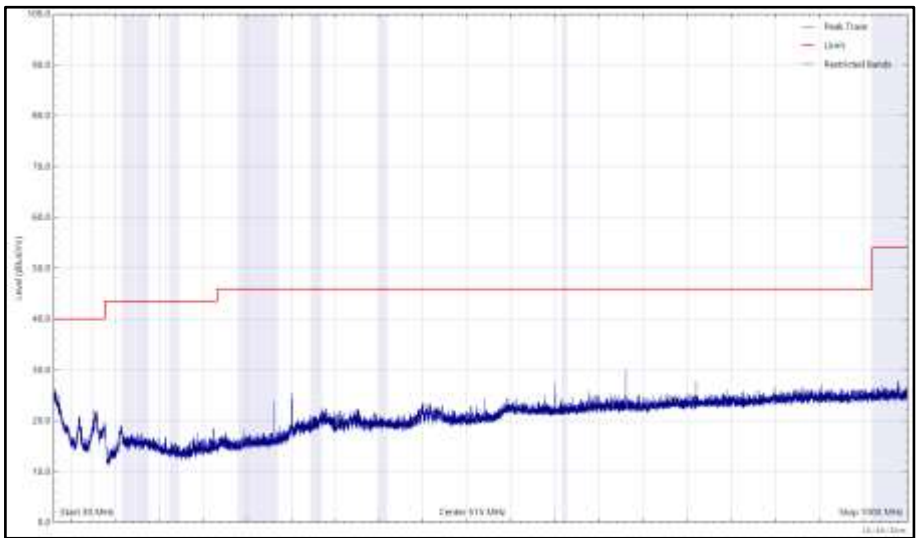

Figure 219 - 2440 MHz (CH17), LE1M, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

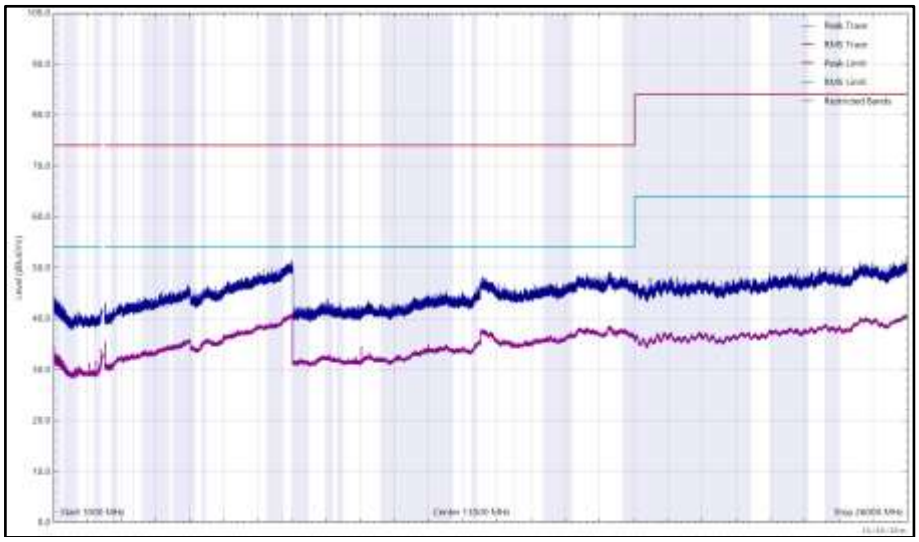

Figure 220 - 2440 MHz (CH17), LE1M, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 116 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 30 MHz to 26 GHz

*No emissions found within 6 dB of the limit.

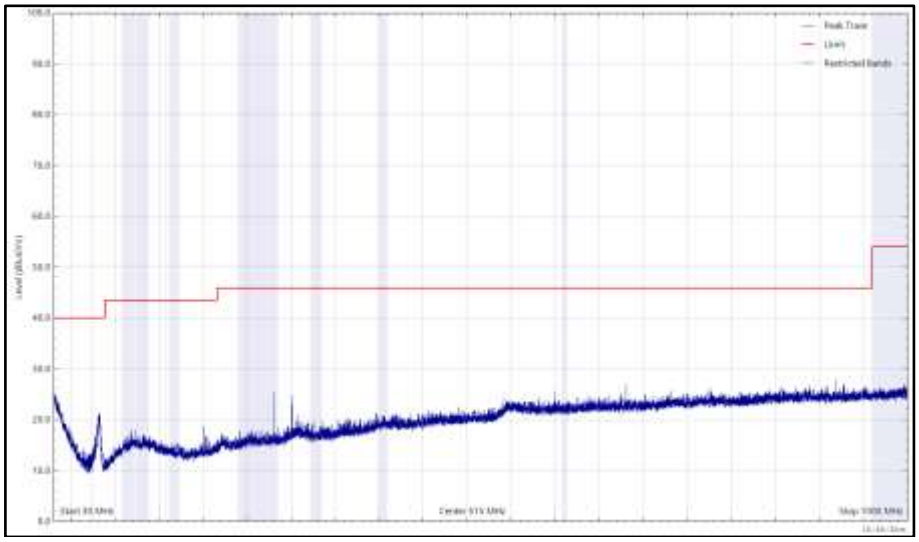

Figure 221 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

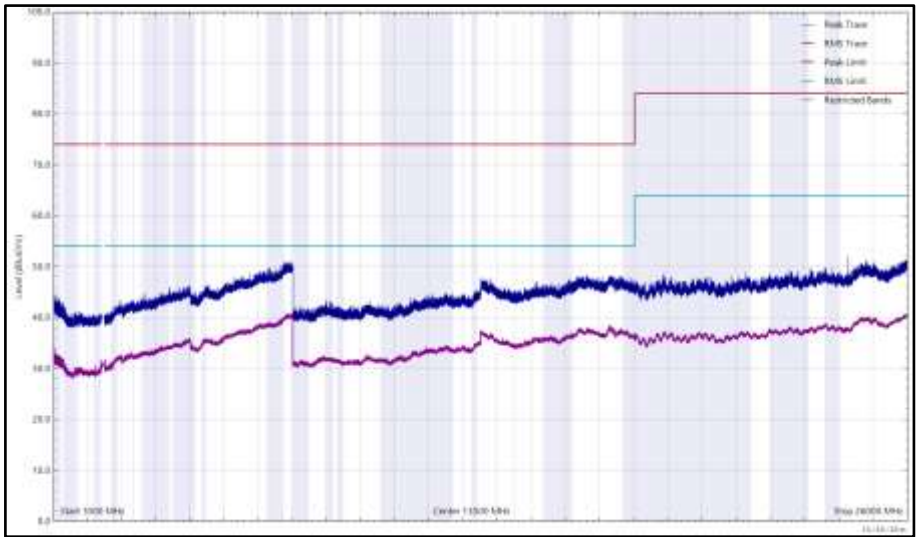

Figure 222 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

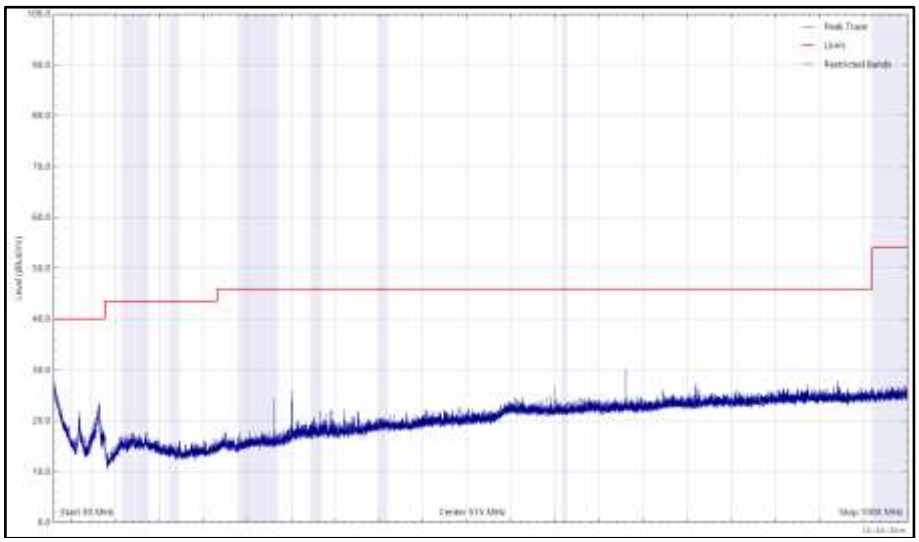

Figure 223 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

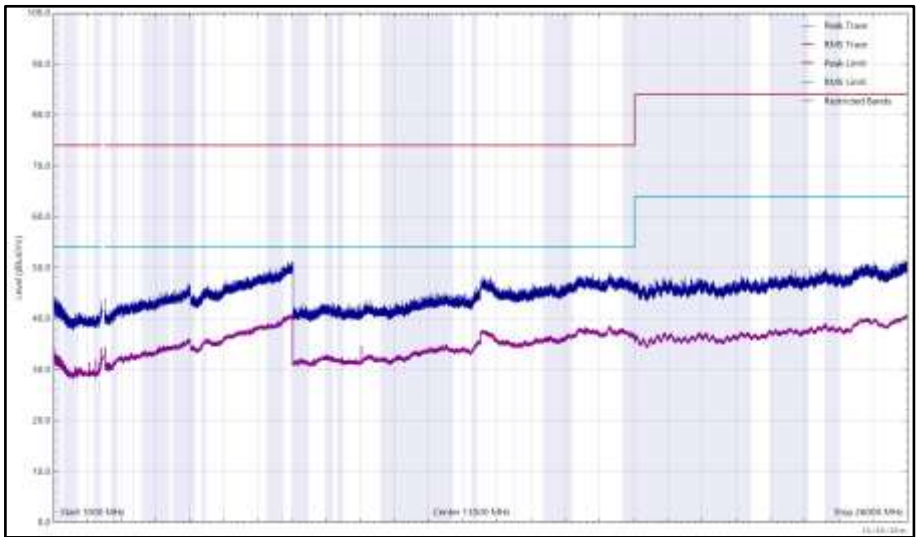

Figure 224 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 117 - 2440 MHz (CH17), LE1M, iPA, Core 2, 30 MHz to 26 GHz

*No emissions found within 6 dB of the limit.

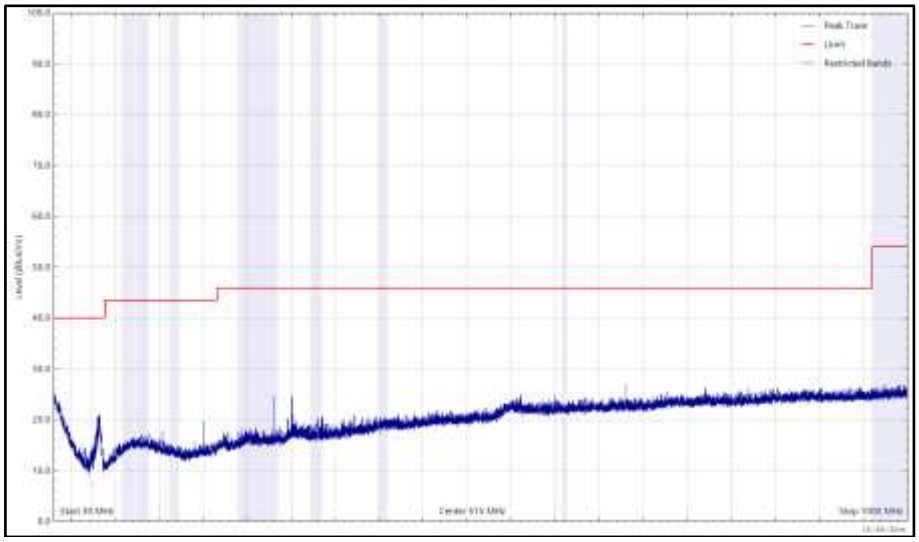

Figure 225 - 2440 MHz (CH17), LE1M, iPA, Core 2, 30 MHz to 1 GHz, Horizontal (Peak)

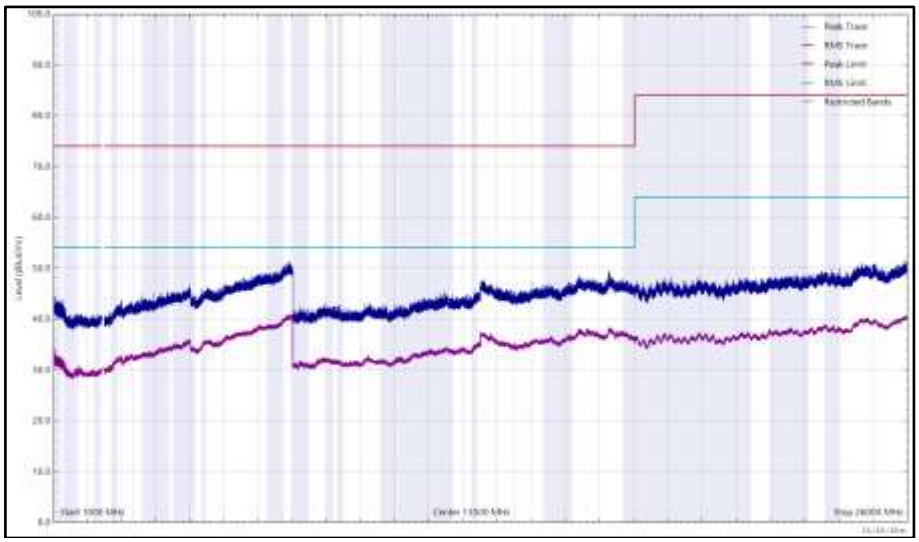

Figure 226 - 2440 MHz (CH17), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal

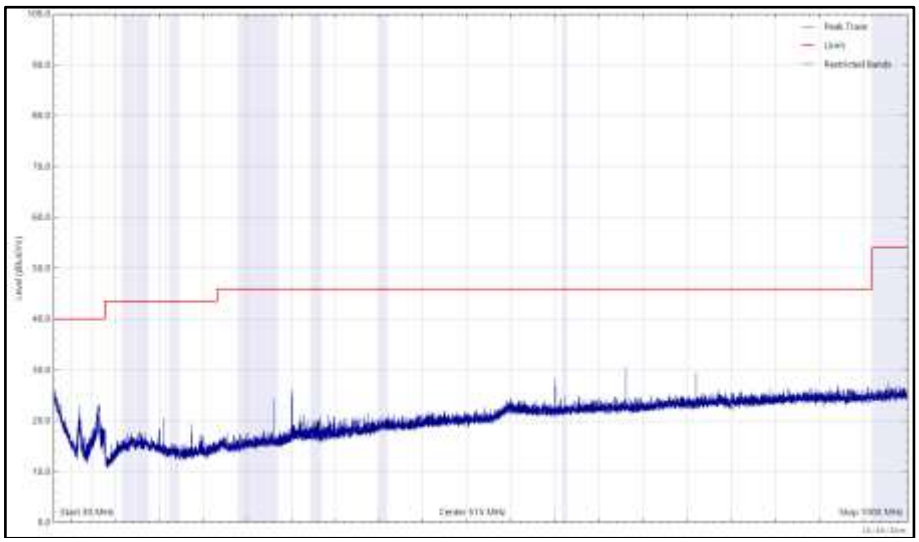

Figure 227 - 2440 MHz (CH17), LE1M, iPA, Core 2, 30 MHz to 1 GHz, Vertical (Peak)

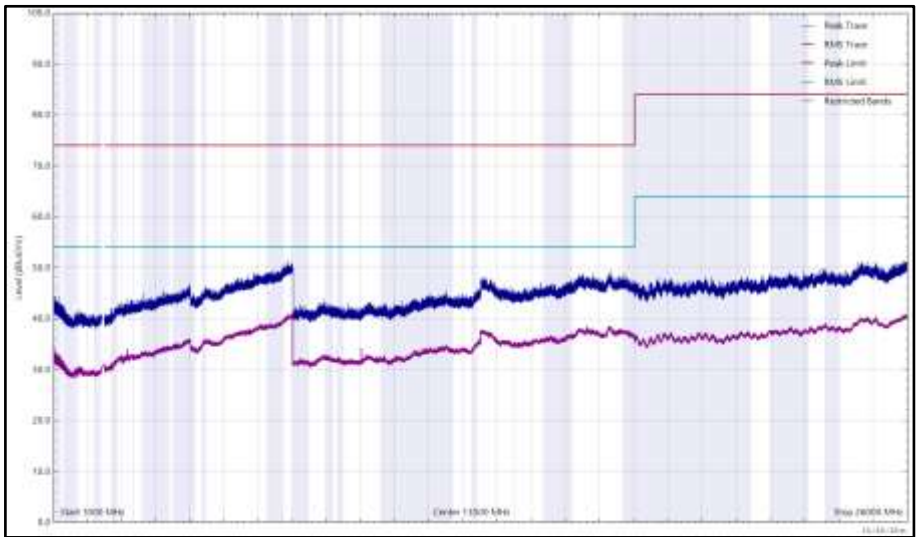

Figure 228 - 2440 MHz (CH17), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical

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

Table 118 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 30 MHz to 26 GHz

*No emissions found within 6 dB of the limit.

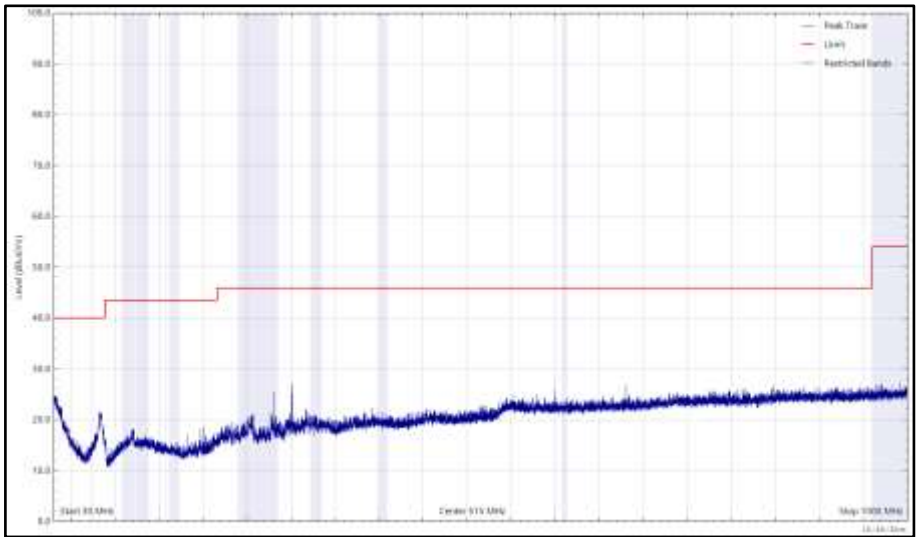

Figure 229 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

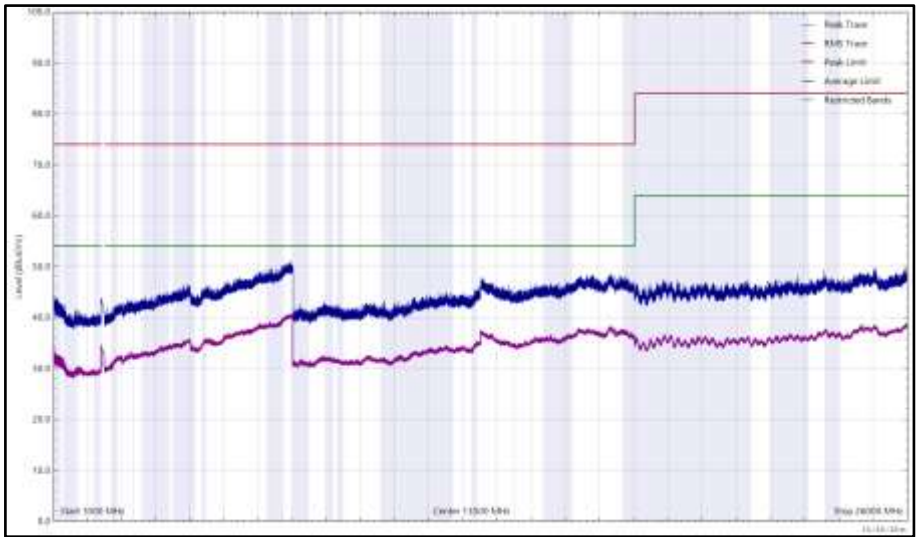

Figure 230 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

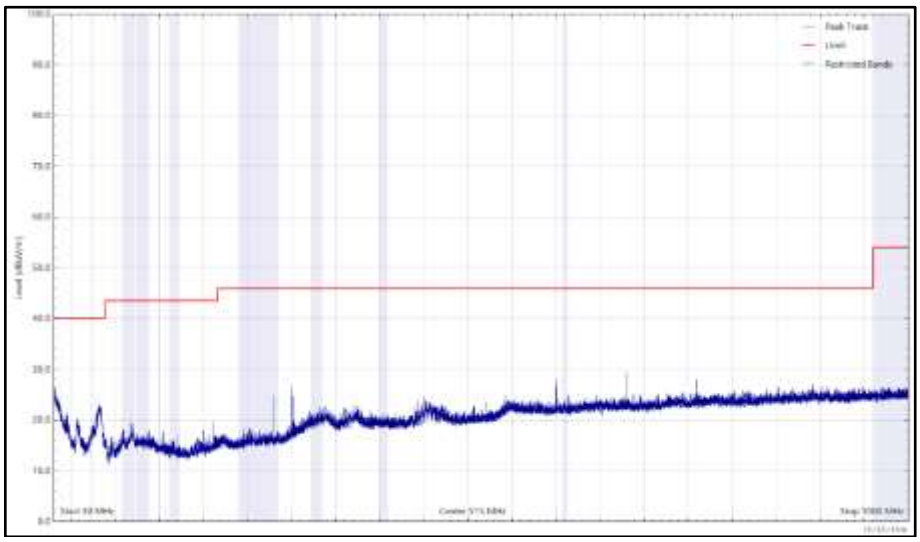

Figure 231- 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

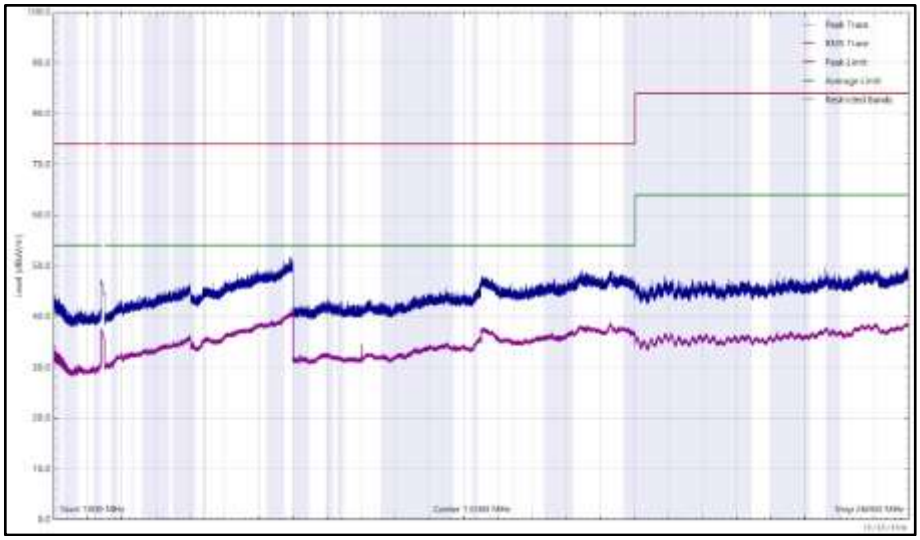

Figure 232 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 119 - 2480 MHz (CH39), LE1M, ePA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

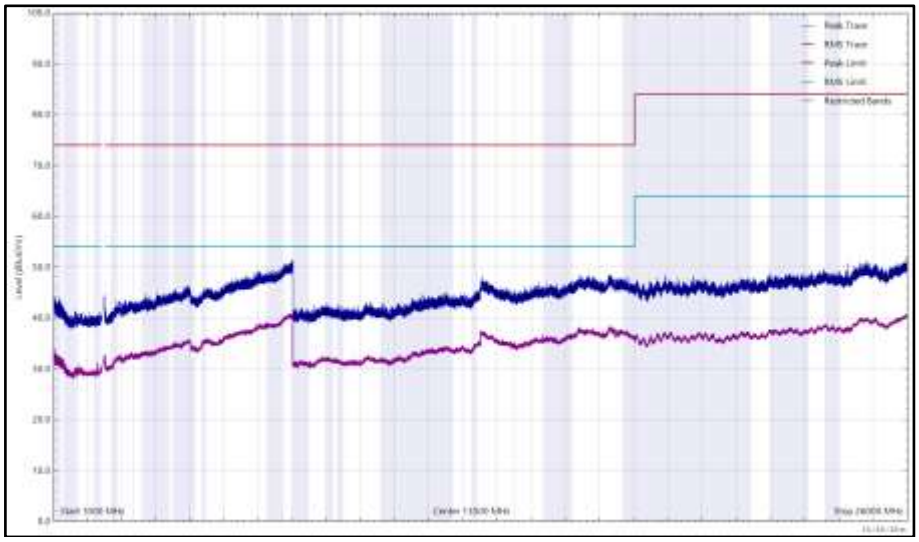

Figure 233 - 2480 MHz (CH39), LE1M, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

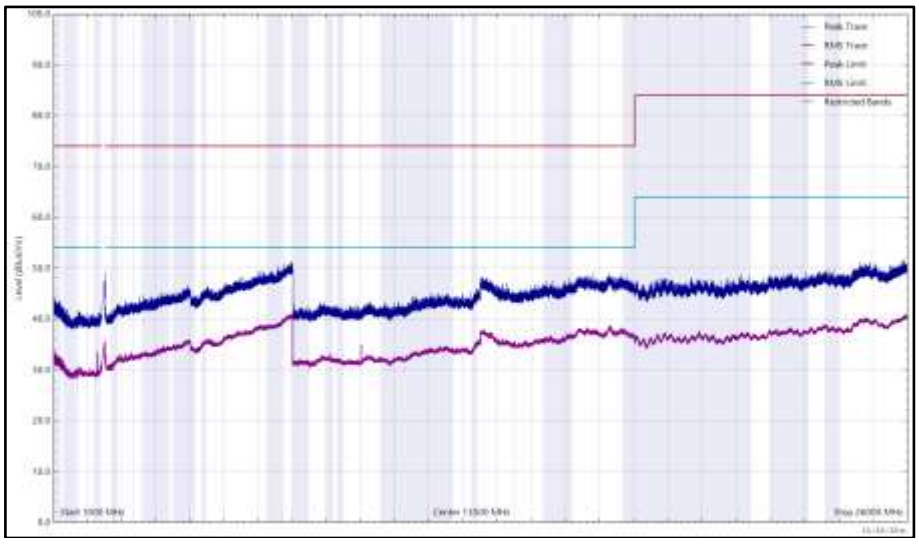

Figure 234 - 2480 MHz (CH39), LE1M, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 120 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

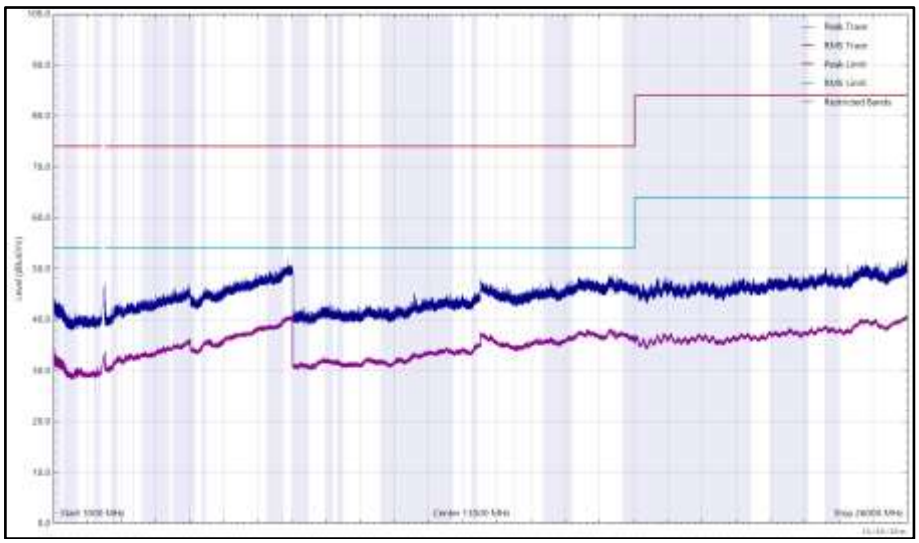

Figure 235 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

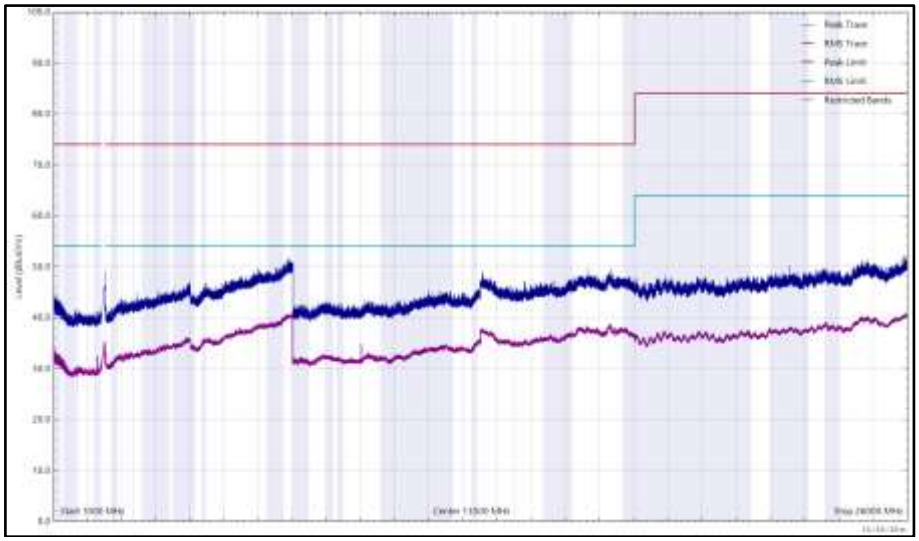

Figure 236 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 121 - 2480 MHz (CH39), LE1M, iPA, Core 2, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

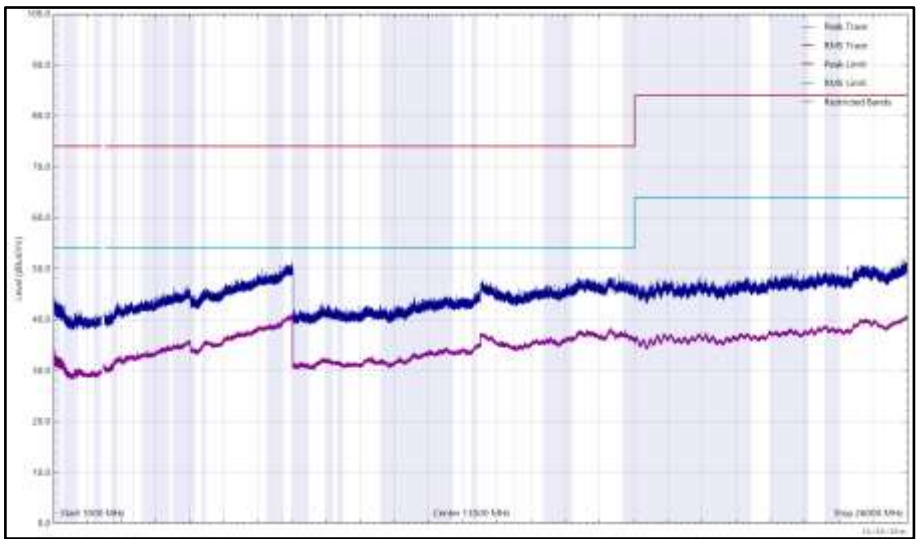

Figure 237 - 2480 MHz (CH39), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal

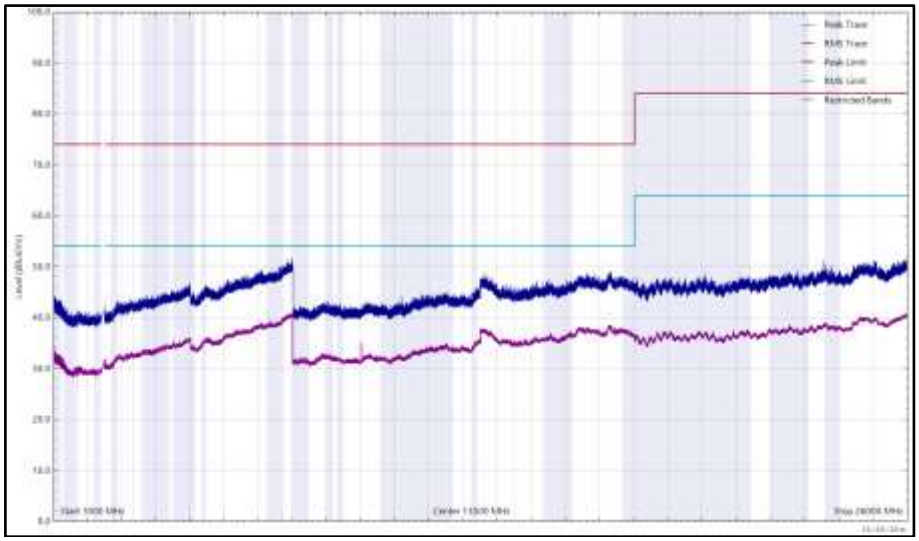

Figure 238 - 2480 MHz (CH39), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical

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

Table 122 - 2476 MHz (CH74), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

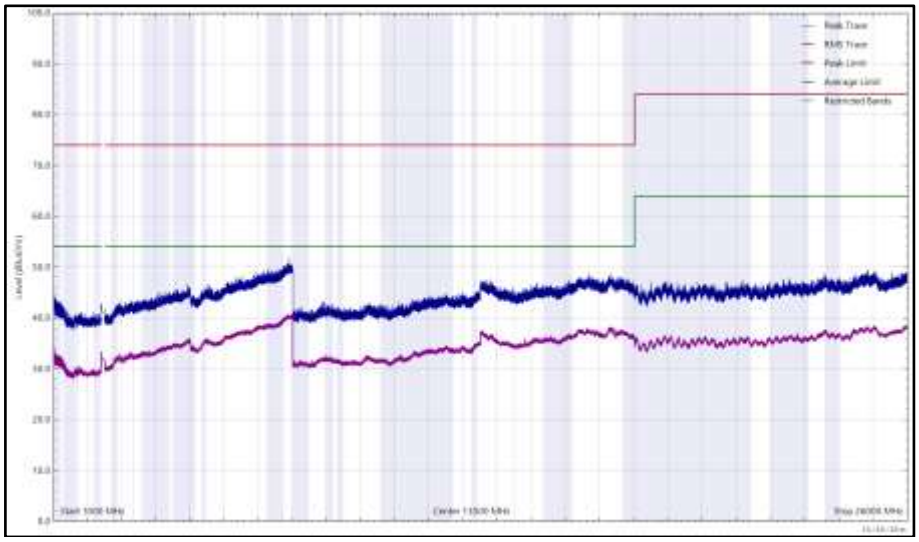

Figure 239 - 2476 MHz (CH74), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

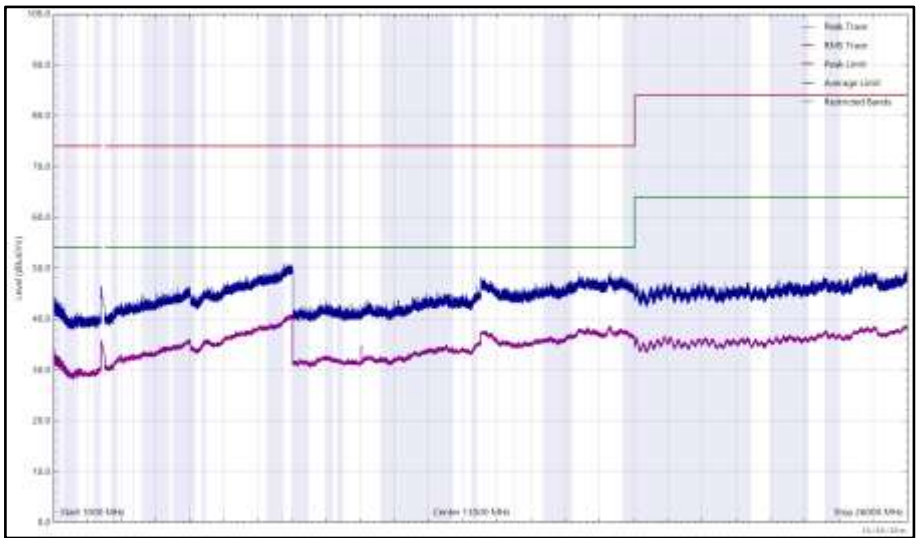

Figure 240 - 2476 MHz (CH74), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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 5.5

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 EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Screened Room (5)	Rainford	Rainford	1545	36	15-Apr-2024
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Programmable Power Supply	Iso-tech	IPS 2010	2437	-	O/P Mon
Antenna with permanent attenuator (Bilog)	Chase	CBL6143	2904	24	30-Sep-2021
Tilt Antenna Mast	Maturo Gmbh	TAM 4.0-P	3916	-	TU
Mast Controller	Maturo Gmbh	NCD	3917	-	TU
True RMS Multimeter	Fluke	179	4007	12	29-Oct-2021
Cable 1503 2M 2.92(P)m 2.92(P)m	Rhophase	KPS-1503A-2000-KPS	4293	12	16-Nov-2021
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	01-Apr-2022
4dB Attenuator	Pasternack	PE7047-4	4935	24	30-Sep-2021
8 - 18 GHz pre amp	Wright Technologies	PS06-0061/PS06-0060	4971	6	04-Nov-2021
Band Reject Filter - 2.425 GHz	Wainwright	WRCGV14-2390-2400-2450-2460-50SS	5067	12	02-Oct-2021
Band Reject Filter - 2.4585 GHz	Wainwright	WRCGV14-2423.5-2433.5-2483.5-2493.5-50SS	5069	12	12-Oct-2021
EmX Emissions Software	TUV SUD	V2.1.11	5125	-	Software
3 GHz High pass filter	Wainwright	WHKX12-2580-3000-18000-80SS	5220	12	26-Mar-2022
Preamplifier (30dB 1GHz to 18GHz)	Schwarzbeck	BBV 9718 C	5261	12	08-Apr-2022
Antenna (DRG Horn 7.5-18GHz)	Schwarzbeck	HWRD750	5348	12	22-Sep-2021
1m -SMA Cable	Junkosha	MWX221-01000AMSAMS/A	5513	12	09-Apr-2022
1m -SMA Cable	Junkosha	MWX221-01000AMSAMS/A	5514	12	09-Apr-2022
2m SMA Cable	Junkosha	MWX221-02000AMSAMS/A	5517	12	09-Apr-2022
8m N-Type Cable	Junkosha	MWX221-08000NMSNMS/B	5520	12	24-Mar-2022
EMI Test Receiver	Rohde & Schwarz	ESW44	5527	12	15-Apr-2022
7 GHz High pass Filter	Wainwright	WHKX12-5850-6800-18000-80SS	5549	12	20-May-2022
1200 MHz Low Pass Filter (01)	Mini-Circuits	VLF-1200+	5559	12	24-May-2022

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Preamplifier (30dB 18-40GHz)	Schwarzbeck	BBV 9721	5608	12	14-Oct-2021
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	5609	12	14-Oct-2021

Table 123

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

2.5 Authorised Band Edges

2.5.1 Specification Reference

CC 47 CFR Part 15C, Clause 15.247 (d)
ISED RSS-247 Clause 5.5

2.5.2 Equipment Under Test and Modification State

A2442, S/N: DNQHW6Y3WY - Modification State 0

2.5.3 Date of Test

29-June-2021 to 08-July-2021

2.5.4 Test Method

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

2.5.5 Environmental Conditions

Ambient Temperature	19.6 - 23.6 °C
Relative Humidity	43.2 - 58.8 %

2.5.6 Test Results

2.4 GHz Bluetooth - DTS

ePA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-66.78

Table 124 - Authorised Band Edge Results

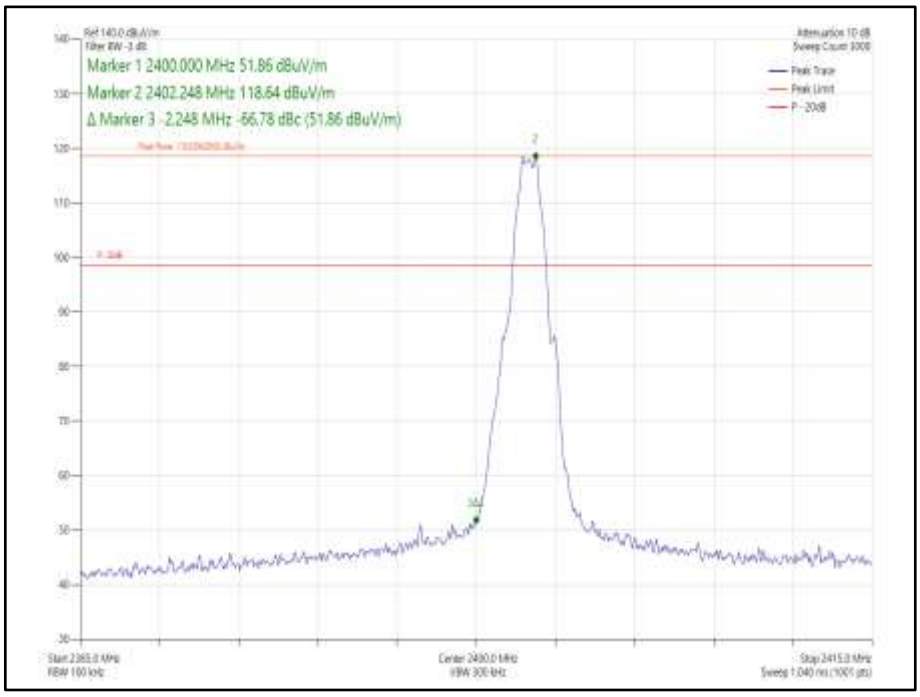

Figure 241 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

iPA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-66.27

Table 125 - Authorised Band Edge Results

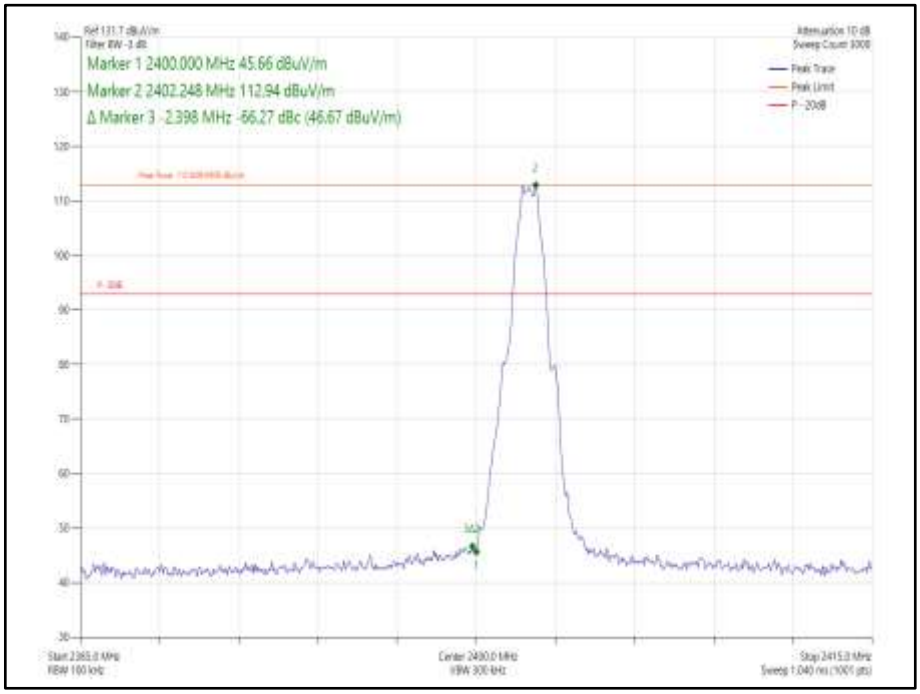

Figure 242 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

iPA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	2	2402	2400.0	-59.83

Table 126 - Authorised Band Edge Results

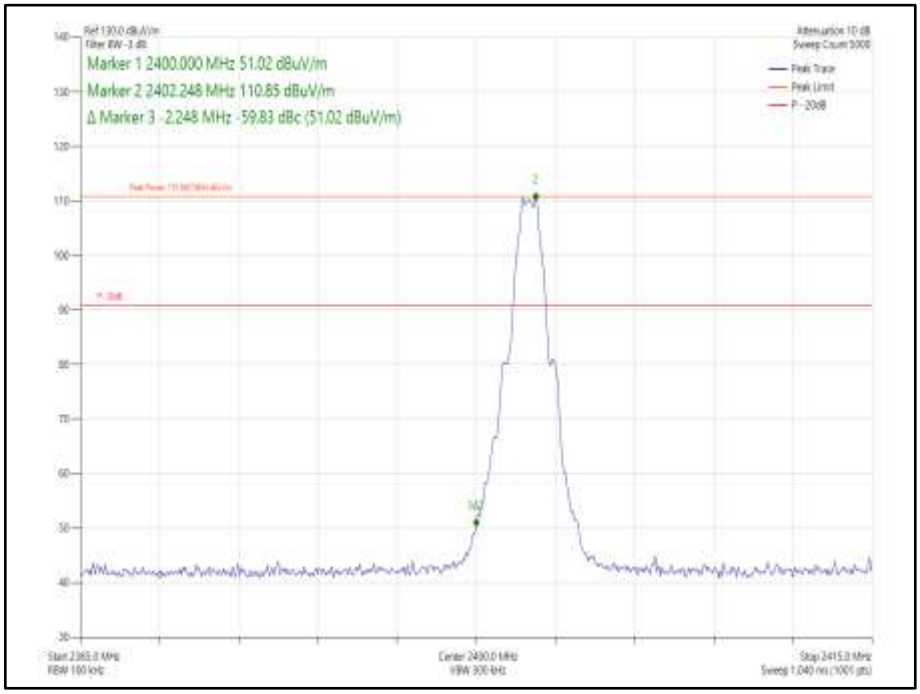

Figure 243 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

ePA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-65.35

Table 127 - Authorised Band Edge Results

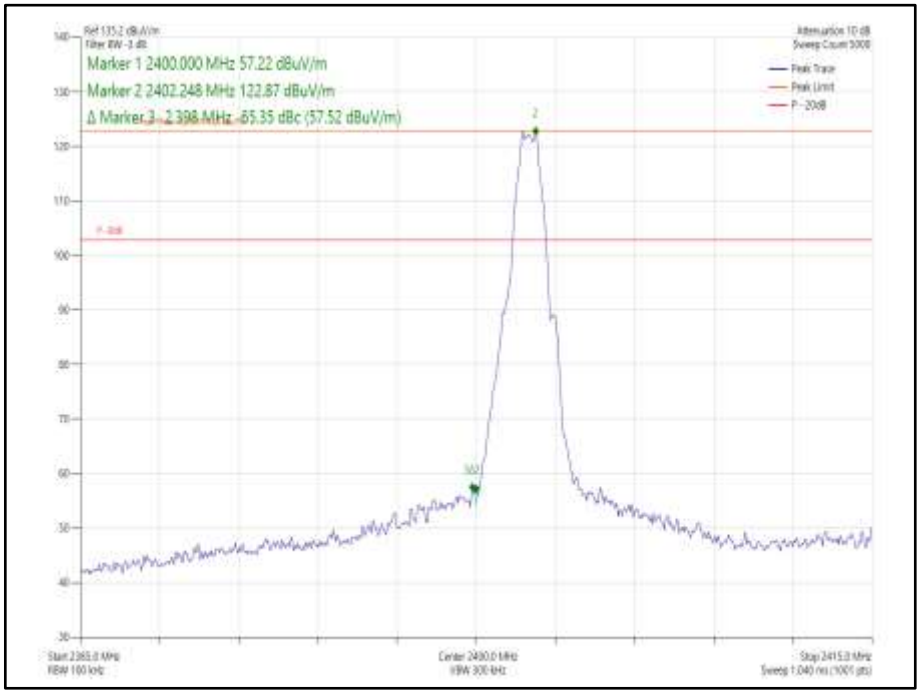

Figure 244 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

iPA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-66.01

Table 128 - Authorised Band Edge Results

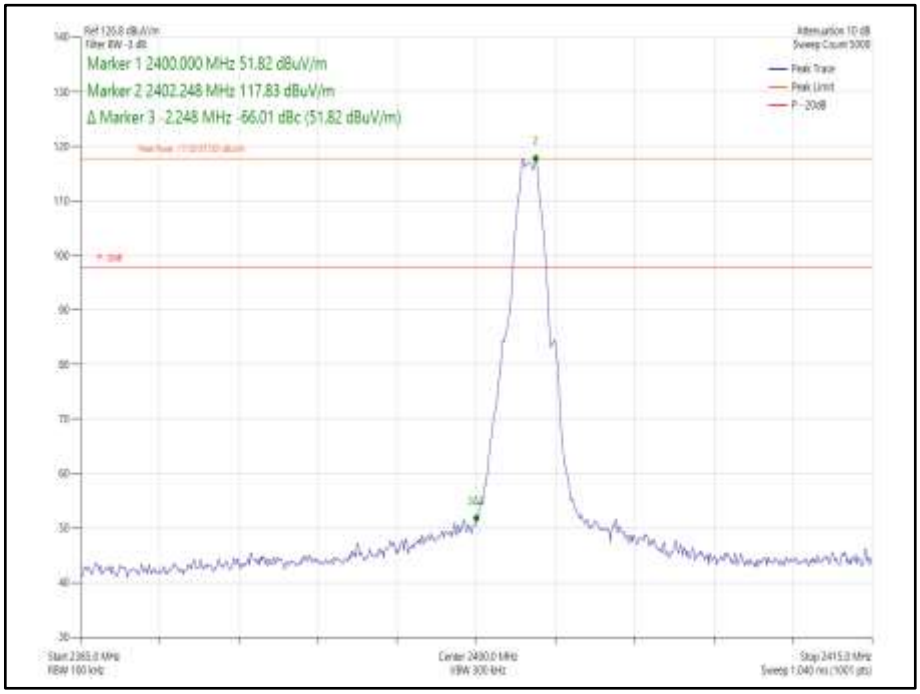

Figure 245 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

ePA – LE2M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-36.29

Table 129 - Authorised Band Edge Results

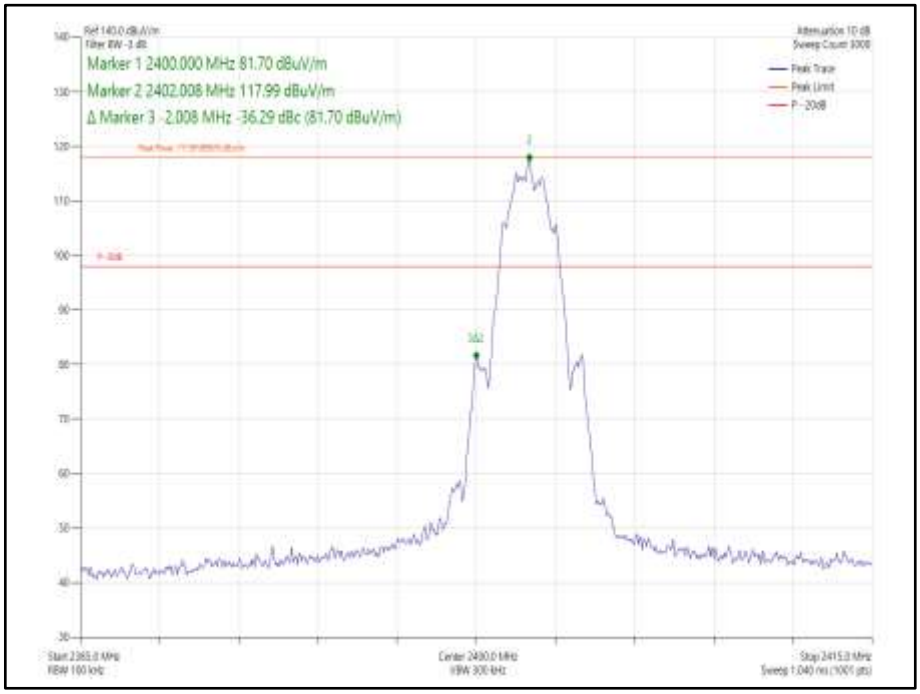

Figure 246 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

iPA – LE2M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-35.38

Table 130 - Authorised Band Edge Results

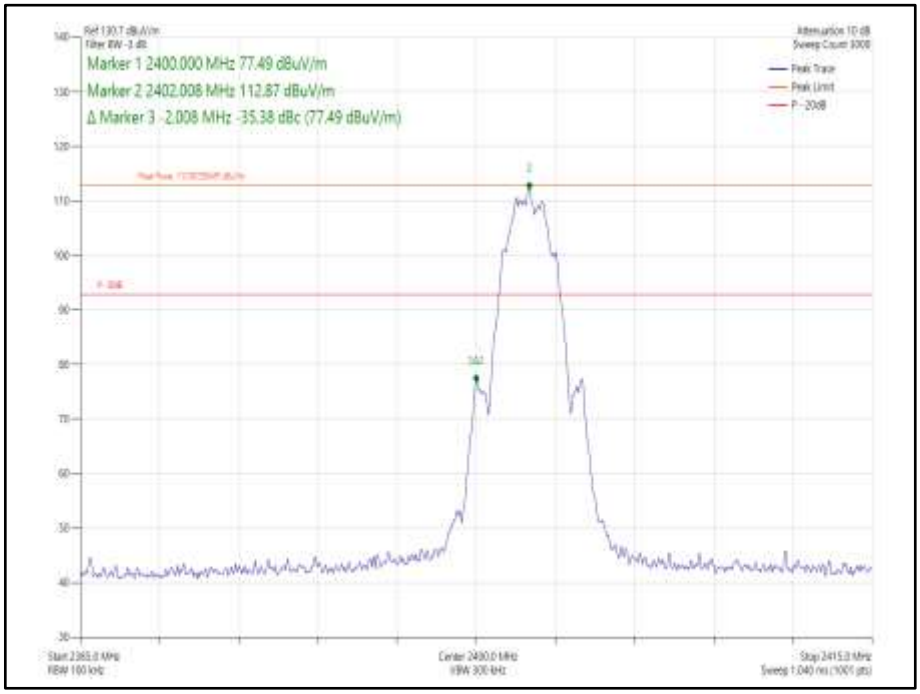

Figure 247 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

iPA – LE2M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	2	2402	2400.0	-32.67

Table 131 - Authorised Band Edge Results

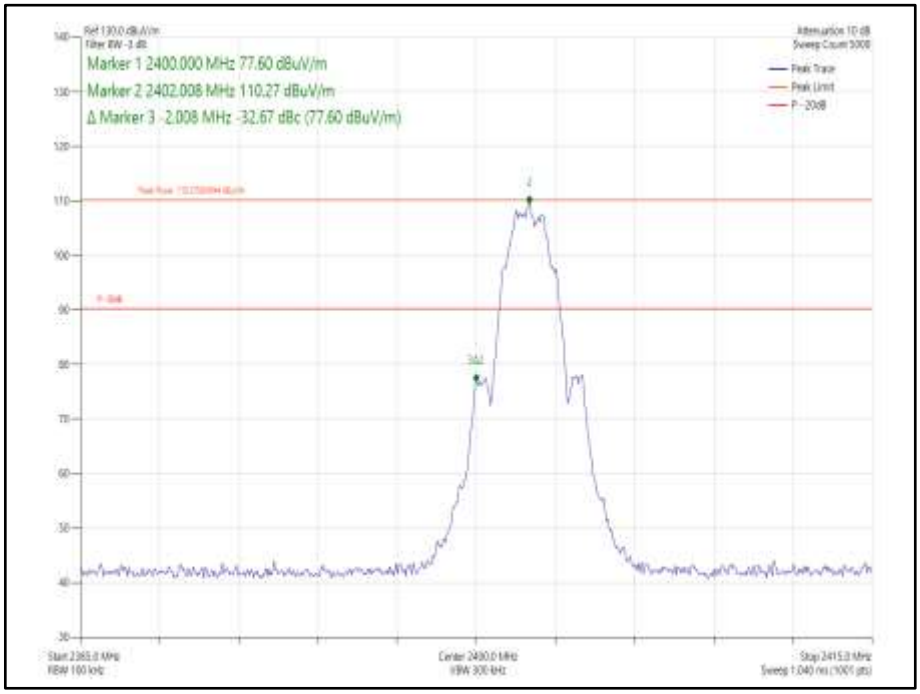

Figure 248 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

ePA – LE2M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-36.41

Table 132 - Authorised Band Edge Results

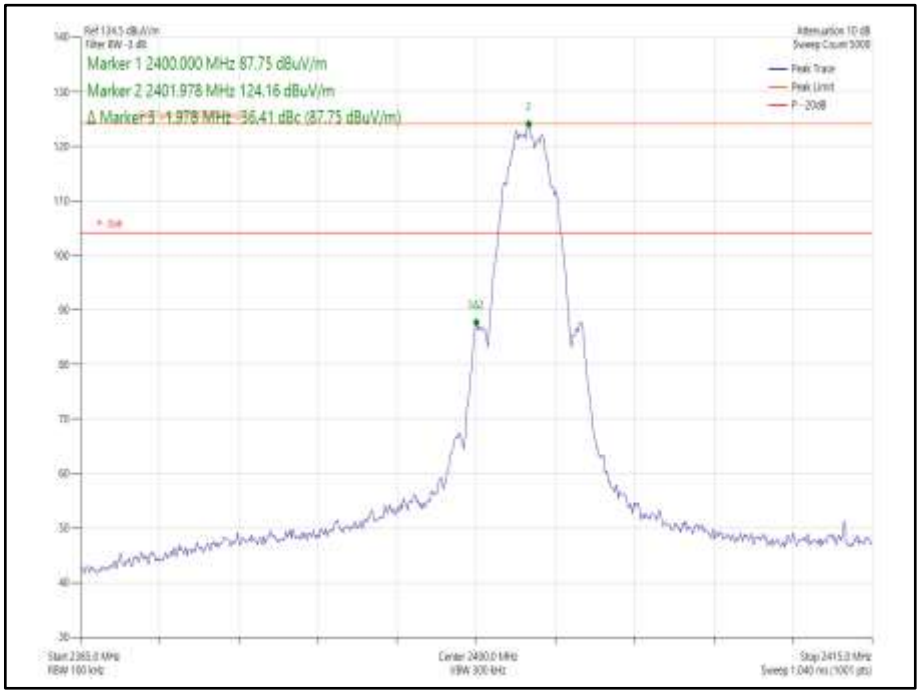

Figure 249 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

iPA – LE2M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-35.86

Table 133 - Authorised Band Edge Results

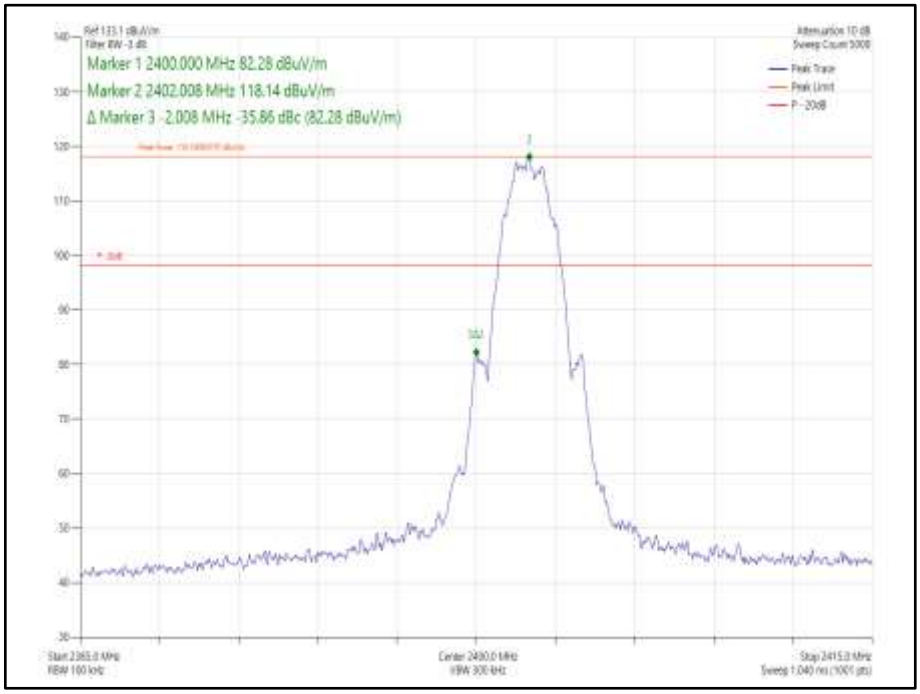

Figure 250 - GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

ePA - HDR4

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	4DH5	0	2404	2400.0	-63.32

Table 134 - Authorised Band Edge Results

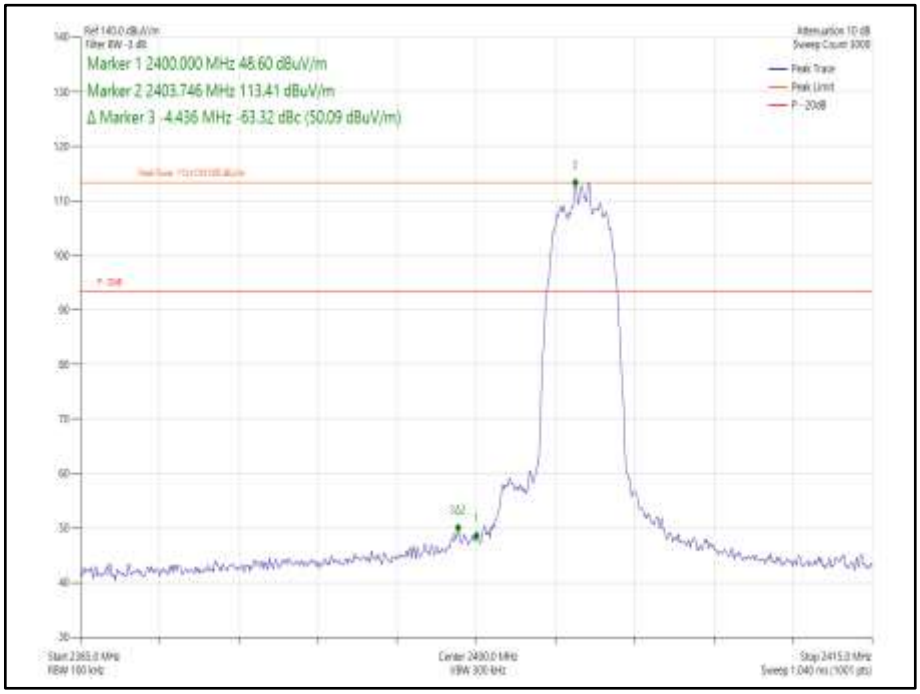

Figure 251 GFSK/4DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

iPA - HDR4

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	4DH5	0	2404	2400.0	-61.85

Table 135 - Authorised Band Edge Results

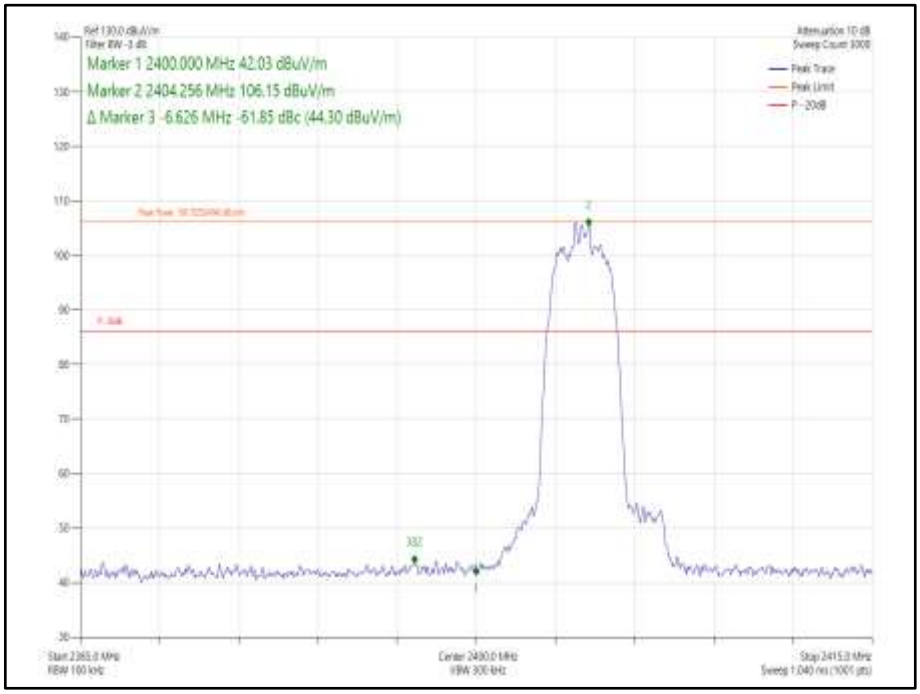

Figure 252 GFSK/4DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

iPA - HDR4

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	4DH5	2	2404	2400.0	-60.90

Table 136 - Authorised Band Edge Results

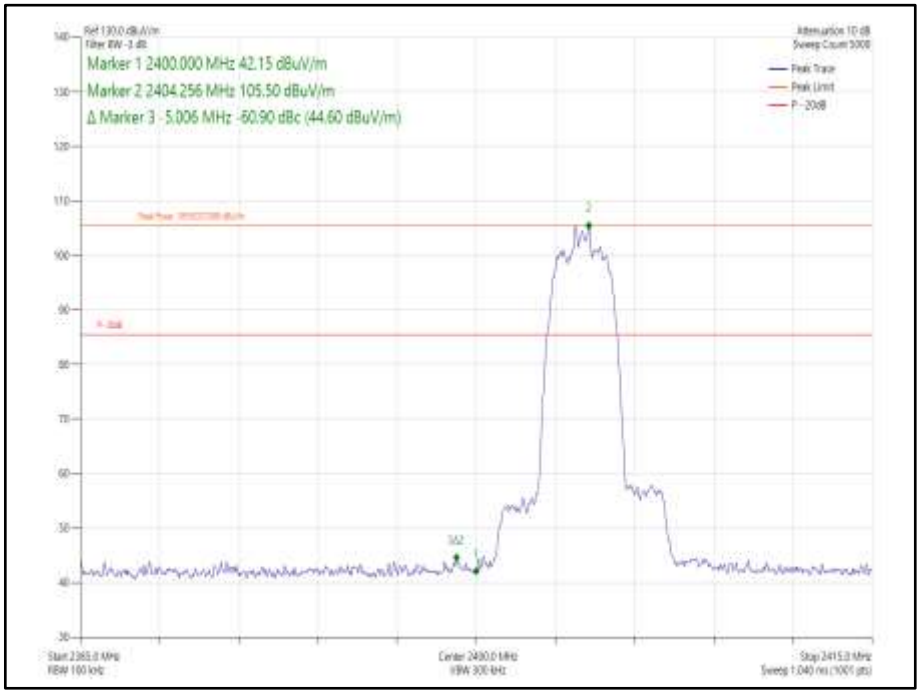

Figure 253 GFSK/4DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

ePA - HDR4

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	4DH5	0-1	2404	2400.0	-65.59

Table 137 - Authorised Band Edge Results

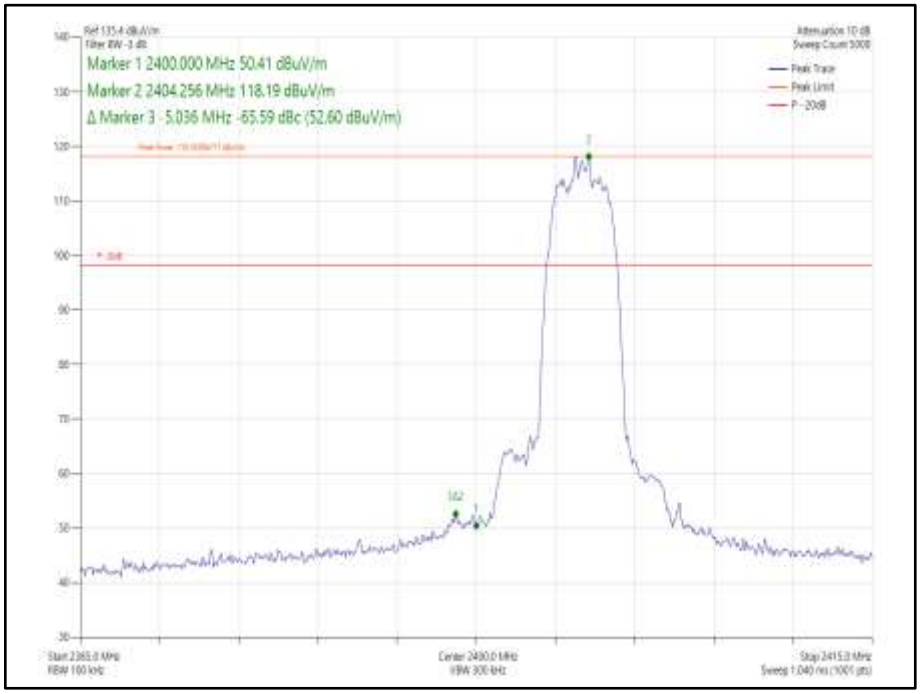

Figure 254 GFSK/4DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

iPA - HDR4

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	4DH5	0-1	2404	2400.0	-66.01

Table 138 - Authorised Band Edge Results

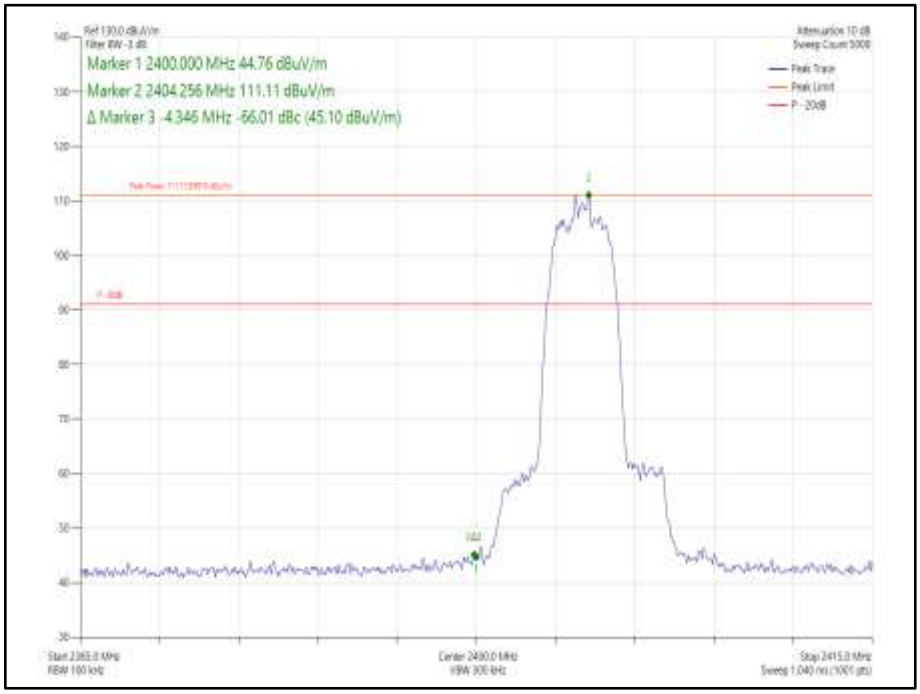

Figure 255 GFSK/4DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

ePA – HDR8

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	8DH5	0	2404	2400.0	-56.40

Table 139 - Authorised Band Edge Results

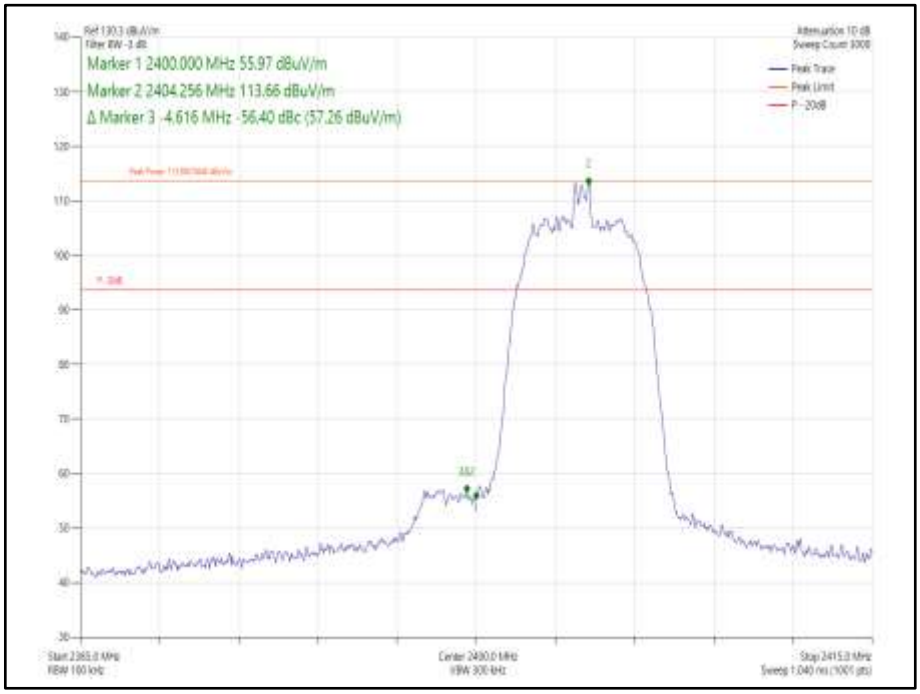

Figure 256 GFSK/8DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

iPA – HDR8

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	8DH5	0	2404	2400.0	-55.09

Table 140 - Authorised Band Edge Results

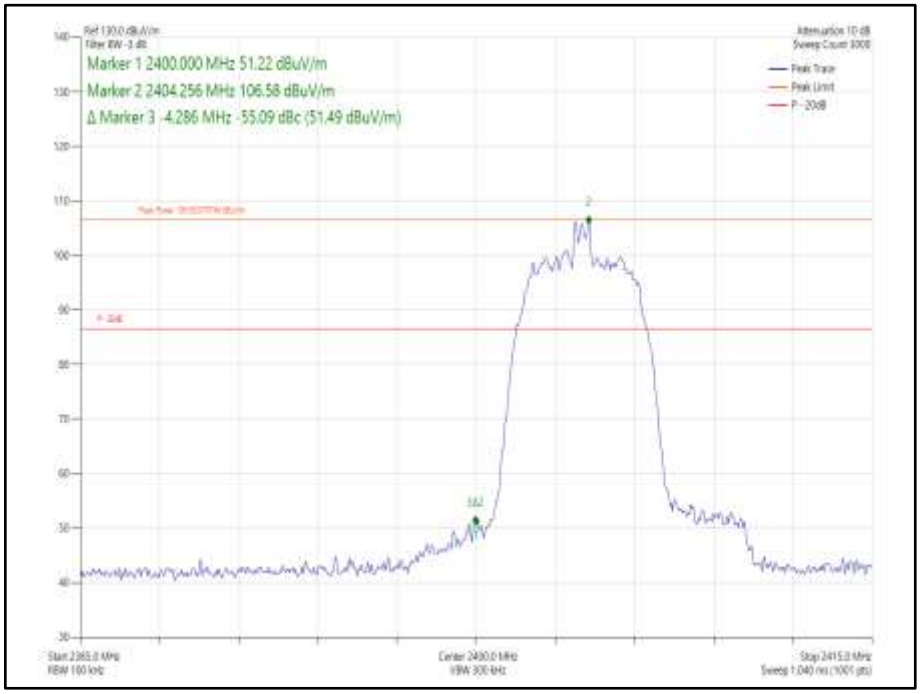

Figure 257 GFSK/8DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

iPA – HDR8

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	8DH5	2	2404	2400.0	-51.78

Table 141 - Authorised Band Edge Results

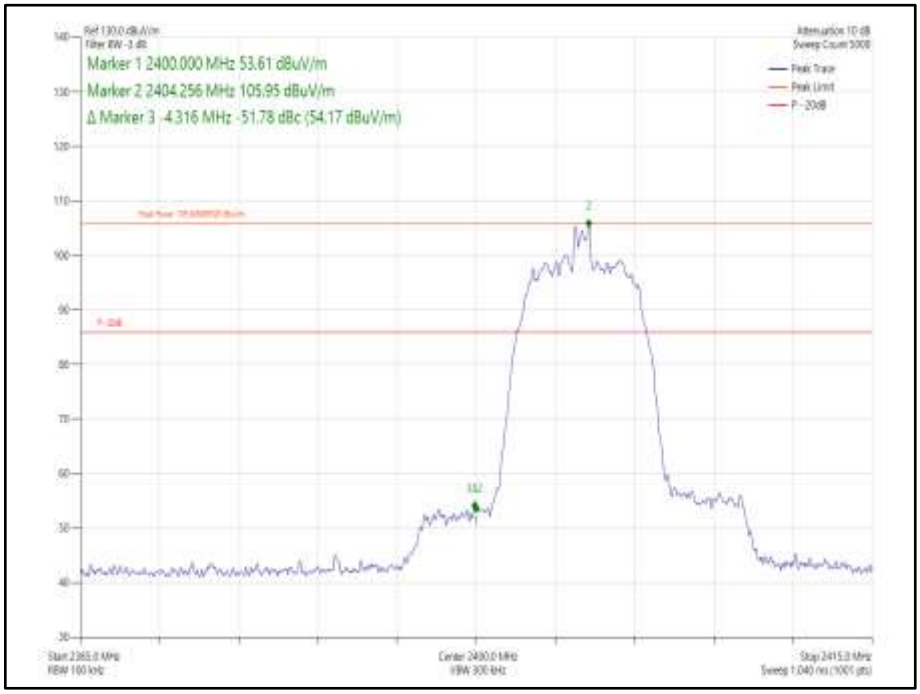

Figure 258 GFSK/8DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

ePA – HDR8

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	8DH5	0-1	2404	2400.0	-55.82

Table 142 - Authorised Band Edge Results

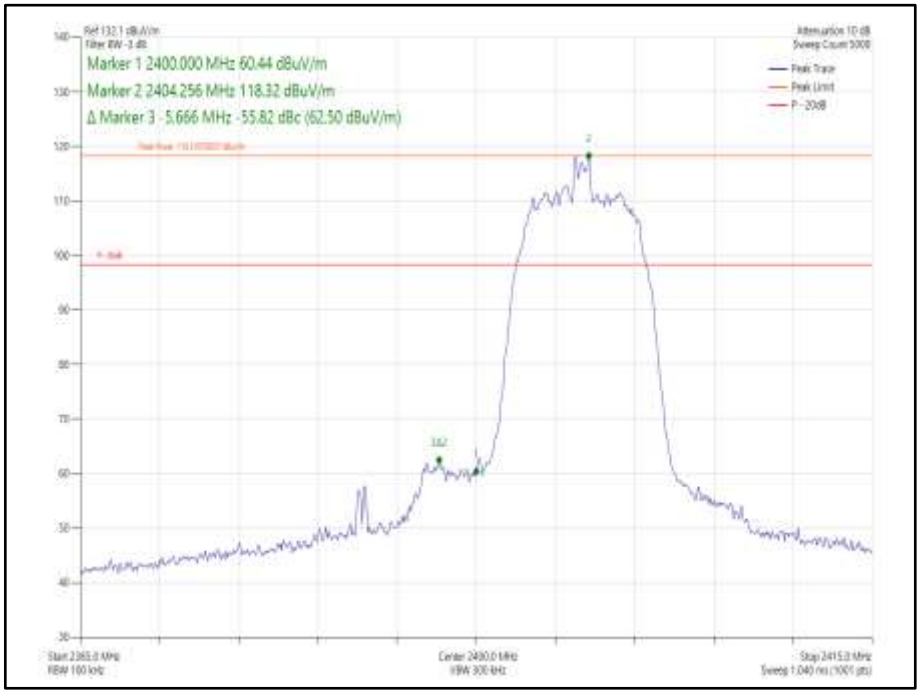

Figure 259 GFSK/8DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

iPA – HDR8

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	8DH5	0-1	2404	2400.0	-53.07

Table 143 - Authorised Band Edge Results

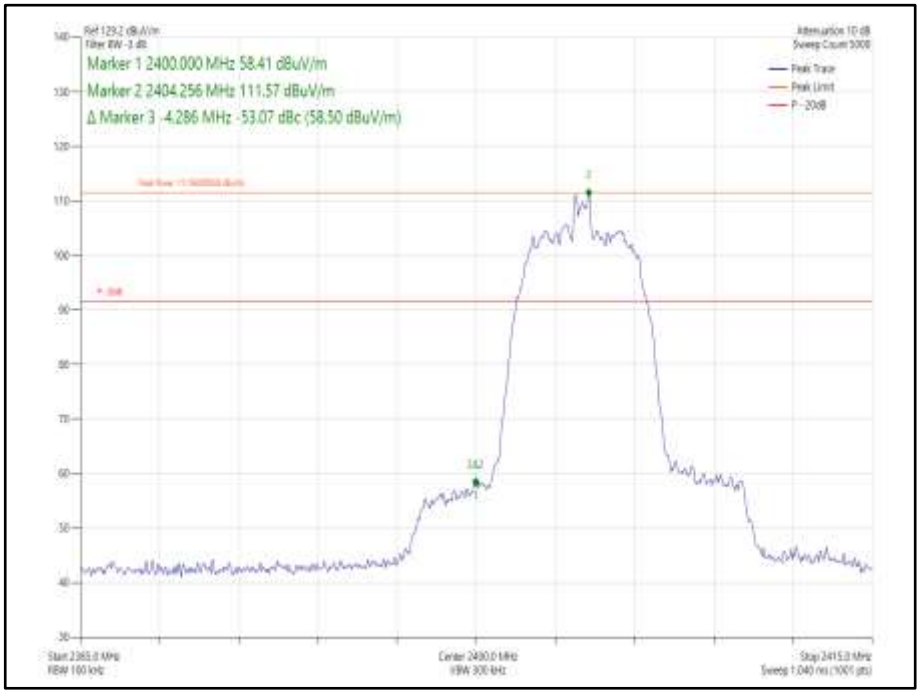

Figure 260 GFSK/8DH5- 2404 MHz – Band Edge Frequency 2400.0 MHz

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 5.5

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.

2.5.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
True RMS Multimeter	Fluke	179	4007	12	29-Oct-2021
EMI Test Receiver	Rohde & Schwarz	ESW44	5084	12	08-Mar-2022
Cable (18 GHz)	Rosenberger	LU7-071-2000	5107	12	09-Jul-2022
EmX Emissions Software	TUV SUD	V2.1.11	5125	-	Software
Screened Room (11)	Rainford	Rainford	5136	36	01-Nov-2021
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Horn Antenna (1-10GHz)	Schwarzbeck	BBHA 9120 B	5215	12	01-Apr-2022
8m N Type Cable	Junkosha	MWX221-08000NMSNMS/B	5522	12	24-Mar-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	08-Sep-2021

Table 144

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 5.2
ISED RSS-GEN, Clause 6.12

2.6.2 Equipment Under Test and Modification State

A2442, S/N: XH2DGXFKY6 - Modification State 0

2.6.3 Date of Test

07-September-2021 to 22-September-2021

2.6.4 Test Method

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

MIMO output port summing was performed in accordance with KDB 662911 D01.

2.6.5 Environmental Conditions

Ambient Temperature	21.5 - 23.5 °C
Relative Humidity	48.4 - 66.9 %

2.6.6 Test Results

2.4 GHz Bluetooth - DTS

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-1.61	-	-	-	-	8.00	-9.61
2441	3.0	-1.69	-	-	-	-	8.00	-9.69
2476	3.0	-1.39	-	-	-	-	8.00	-9.39

Table 145 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-1.54	-	-	-	-	8.00	-9.54
2441	3.0	-1.72	-	-	-	-	8.00	-9.72
2476	3.0	-1.33	-	-	-	-	8.00	-9.33

Table 146 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	ePA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-1.50	-1.32	-	-	1.60	8.00	-6.40
2441	3.0	-1.35	-1.67	-	-	1.51	8.00	-6.49
2476	3.0	-1.57	-1.48	-	-	1.49	8.00	-6.51

Table 147 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	ePA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-1.24	-1.59	-	-	1.60	8.00	-6.40
2441	3.0	-1.31	-1.61	-	-	1.55	8.00	-6.45
2476	3.0	-1.09	-2.24	-	-	1.39	8.00	-6.61

Table 148 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA GFSK (LE 1M)	Duty Cycle (%):	60.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-1.85	-	-	-	-	8.00	-9.85
2440	3.0	-2.24	-	-	-	-	8.00	-10.24
2480	3.0	-2.12	-	-	-	-	8.00	-10.12

Table 149 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-3.90	-	-	-	-	8.00	-11.90
2440	3.0	-4.51	-	-	-	-	8.00	-12.51
2480	3.0	-4.24	-	-	-	-	8.00	-12.24

Table 150 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	ePA GFSK (LE 1M)	Duty Cycle (%):	60.5
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-1.79	-2.03	-	-	1.10	8.00	-6.90
2440	3.0	-1.87	-2.04	-	-	1.06	8.00	-6.94
2480	3.0	-2.17	-2.47	-	-	0.69	8.00	-7.31

Table 151 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	ePA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-3.93	-4.51	-	-	-1.20	8.00	-9.20
2440	3.0	-3.98	-4.57	-	-	-1.25	8.00	-9.25
2480	3.0	-4.14	-4.14	-	-	-1.13	8.00	-9.13

Table 152 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-10.42	-	-	-	-	8.00	-18.42
2441	3.0	-10.64	-	-	-	-	8.00	-18.64
2476	3.0	-10.37	-	-	-	-	8.00	-18.37

Table 153 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-10.13	-	-	-	-	8.00	-18.13
2441	3.0	-10.40	-	-	-	-	8.00	-18.40
2476	3.0	-10.21	-	-	-	-	8.00	-18.21

Table 154 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-	-	-10.78	-	-	8.00	-18.78
2441	3.0	-	-	-10.46	-	-	8.00	-18.46
2476	3.0	-	-	-10.78	-	-	8.00	-18.78

Table 155 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-	-	-11.30	-	-	8.00	-19.30
2441	3.0	-	-	-10.40	-	-	8.00	-18.40
2476	3.0	-	-	-10.72	-	-	8.00	-18.72

Table 156 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.1
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-10.55	-10.86	-	-	-7.69	8.00	-15.69
2441	3.0	-10.62	-10.98	-	-	-7.78	8.00	-15.78
2476	3.0	-10.20	-10.72	-	-	-7.44	8.00	-15.44

Table 157 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2404	3.0	-11.07	-10.16	-	-	-7.58	8.00	-15.58
2441	3.0	-9.95	-10.67	-	-	-7.29	8.00	-15.29
2476	3.0	-9.99	-10.52	-	-	-7.24	8.00	-15.24

Table 158 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	60.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-1.88	-	-	-	-	8.00	-9.88
2440	3.0	-2.26	-	-	-	-	8.00	-10.26
2480	3.0	-2.08	-	-	-	-	8.00	-10.08

Table 159 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-3.90	-	-	-	-	8.00	-11.90
2440	3.0	-4.39	-	-	-	-	8.00	-12.39
2480	3.0	-4.17	-	-	-	-	8.00	-12.17

Table 160 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	60.4
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-	-	-10.77	-	-	8.00	-18.77
2440	3.0	-	-	-10.77	-	-	8.00	-18.77
2480	3.0	-	-	-10.24	-	-	8.00	-18.24

Table 161 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-	-	-13.21	-	-	8.00	-21.21
2440	3.0	-	-	-12.91	-	-	8.00	-20.91
2480	3.0	-	-	-12.74	-	-	8.00	-20.74

Table 162 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	60.5
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-1.86	-2.17	-	-	1.00	8.00	-7.00
2440	3.0	-2.33	-2.48	-	-	0.61	8.00	-7.39
2480	3.0	-2.20	-2.46	-	-	0.68	8.00	-7.32

Table 163 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	∑		
2402	3.0	-3.99	-4.52	-	-	-1.24	8.00	-9.24
2440	3.0	-3.97	-4.55	-	-	-1.24	8.00	-9.24
2480	3.0	-4.18	-4.21	-	-	-1.18	8.00	-9.18

Table 164 - 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 5.2(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 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	03-Dec-2021
Multimeter	Iso-tech	IDM101	2421	12	30-Oct-2021
Hygrometer	Rotronic	I-1000	3220	12	16-Oct-2021
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	03-Dec-2021
Climatic Chamber	Aralab	FitoTerm 300E45	4823	12	12-Apr-2022
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
MXA Signal Analyser	Keysight Technologies	N9020B	5529	24	04-Mar-2022
Signal Commissioniong Unit	TUV SUD	SCU002	5759	12	30-Jun-2022

Table 165

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
Emission Bandwidth	± 73.601 kHz
Maximum Conducted Output Power	± 3.2 dB
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Authorised Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Power Spectral Density	± 3.2 dB

Table 166

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2007, clause 4.4.3 and 4.5.1.