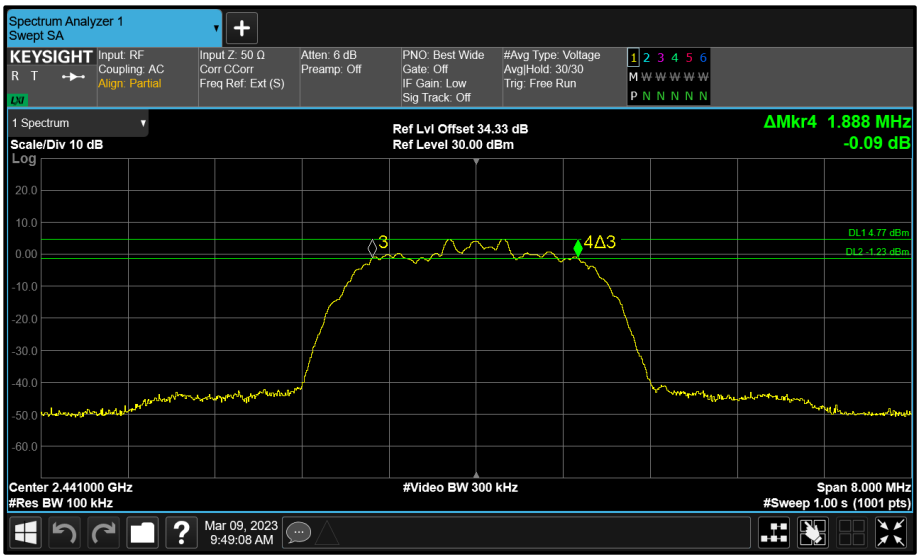

Figure 90 - Core 0 (B) 2441 MHz (CH39) 6 dB Bandwidth

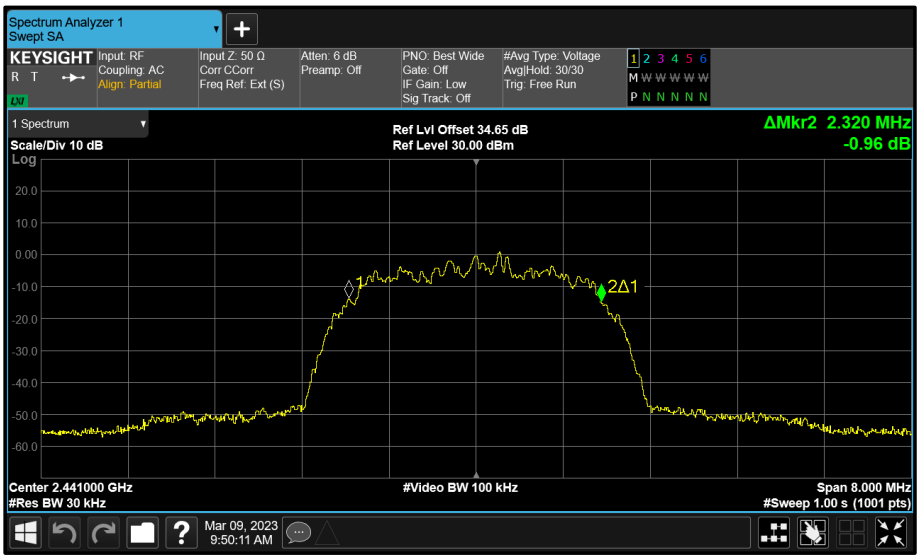

Figure 91 - Core 1 (C) 2441 MHz (CH39) 99% Bandwidth

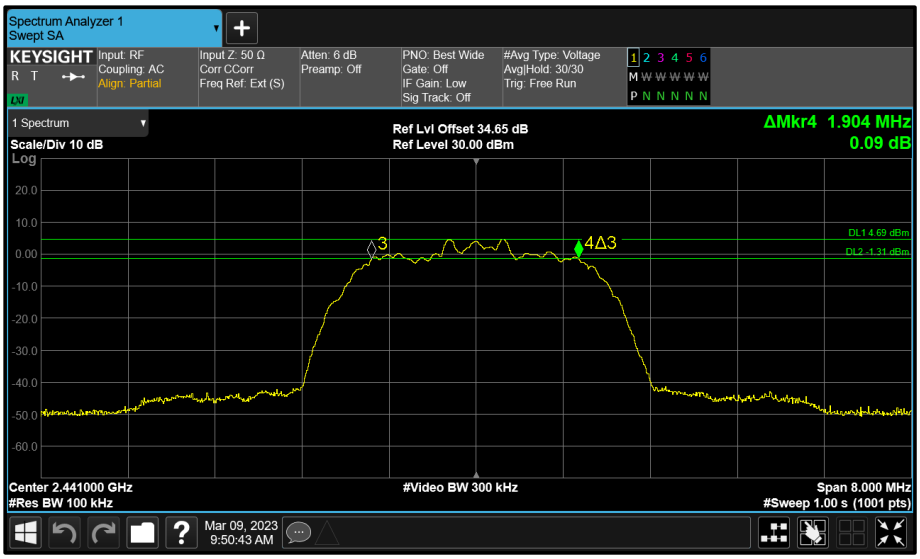

Figure 92 - Core 1 (C) 2441 MHz (CH39) 6 dB Bandwidth

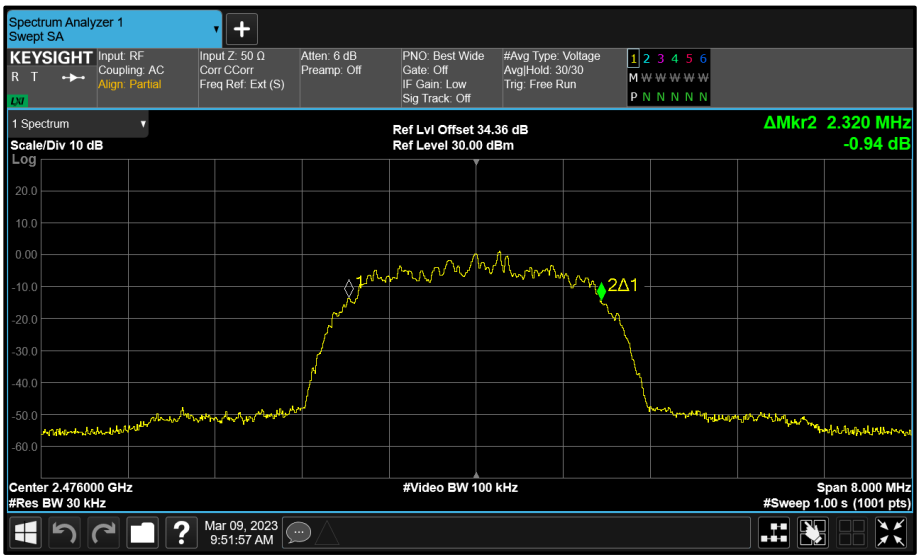

Figure 93 - Core 0 (B) 2476 MHz (CH74) 99% Bandwidth

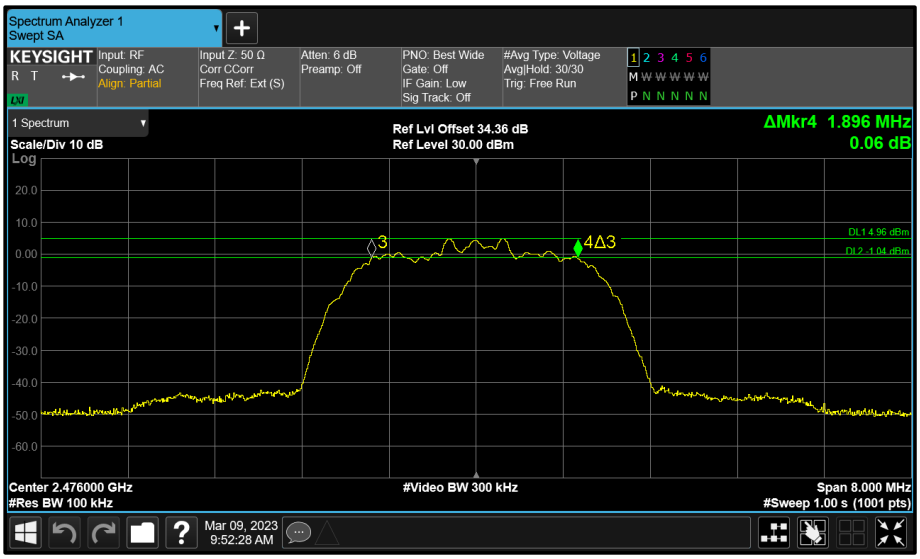

Figure 94 - Core 0 (B) 2476 MHz (CH74) 6 dB Bandwidth

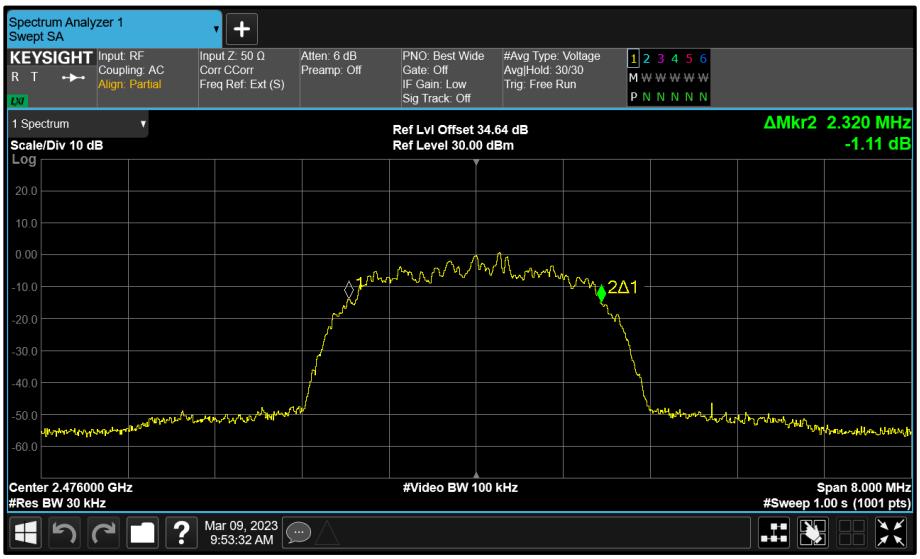

Figure 95 - Core 1 (C) 2476 MHz (CH74) 99% Bandwidth

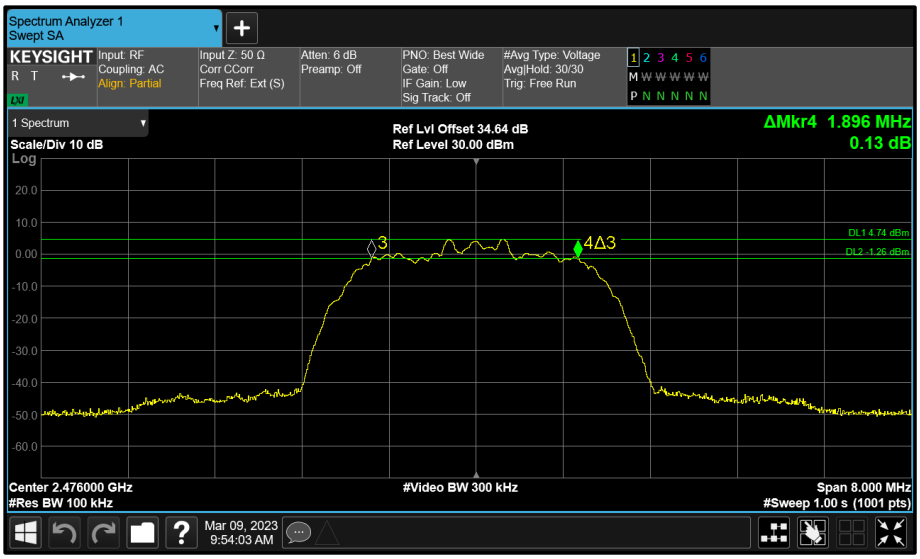

Figure 96 - Core 1 (C) 2476 MHz (CH74) 6 dB Bandwidth

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:	Beamforming	DCCF (dB):	-
Active Port(s):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2404	-	1.005	1.695	-	≥500.0
2441	-	0.960	1.020	-	≥500.0
2476	-	1.020	1.020	-	≥500.0

Table 27 - 6 dB Bandwidth Results

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

Table 28 - 99% Bandwidth Results

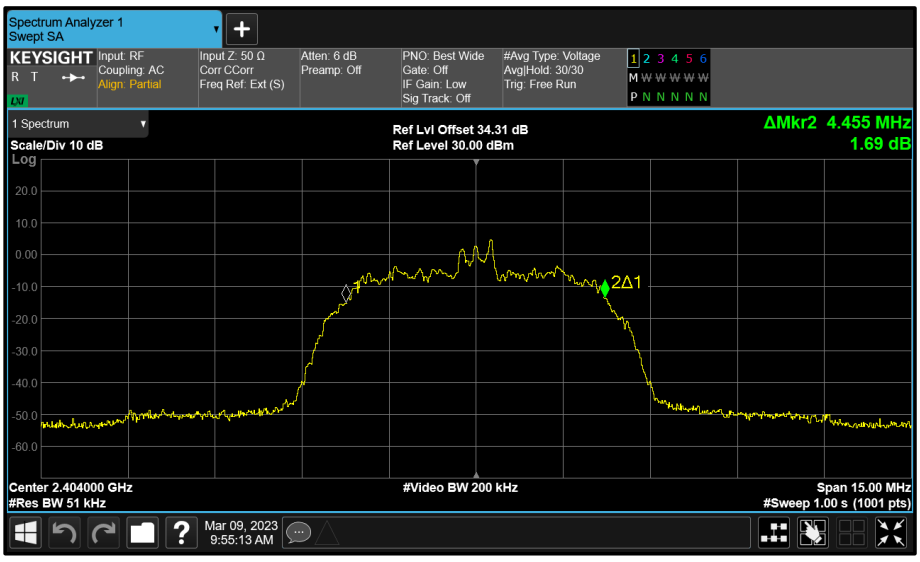

Figure 97 - Core 0 (B) 2404 MHz (CH2) 99% Bandwidth

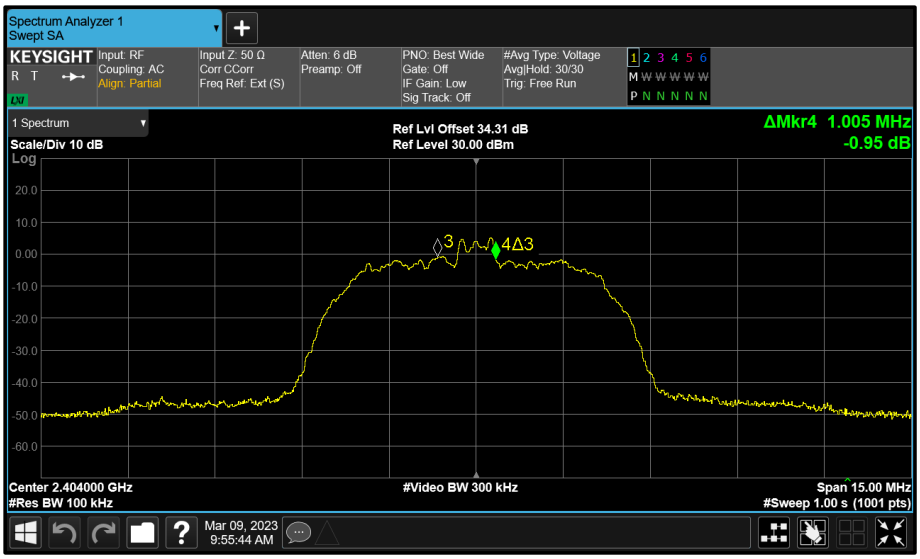

Figure 98 - Core 0 (B) 2404 MHz (CH2) 6 dB Bandwidth

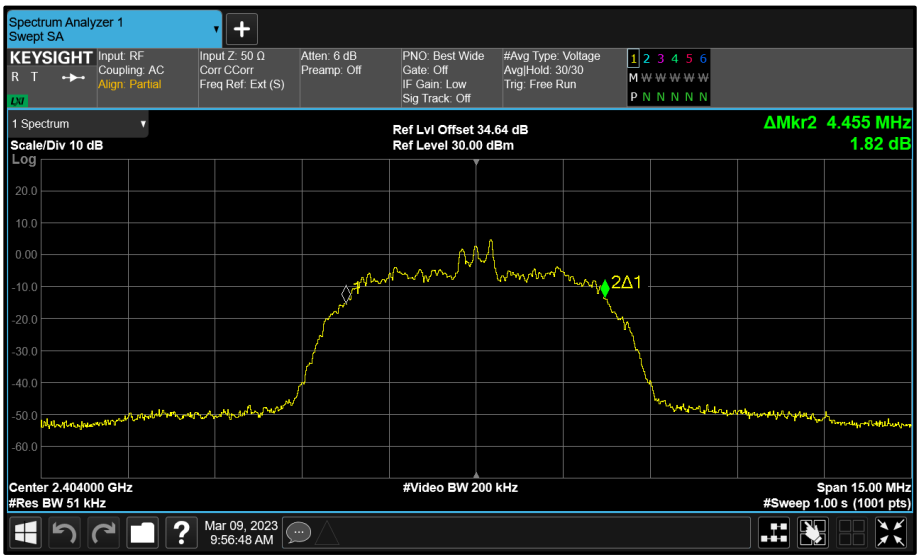

Figure 99 - Core 1 (C) 2404 MHz (CH2) 99% Bandwidth

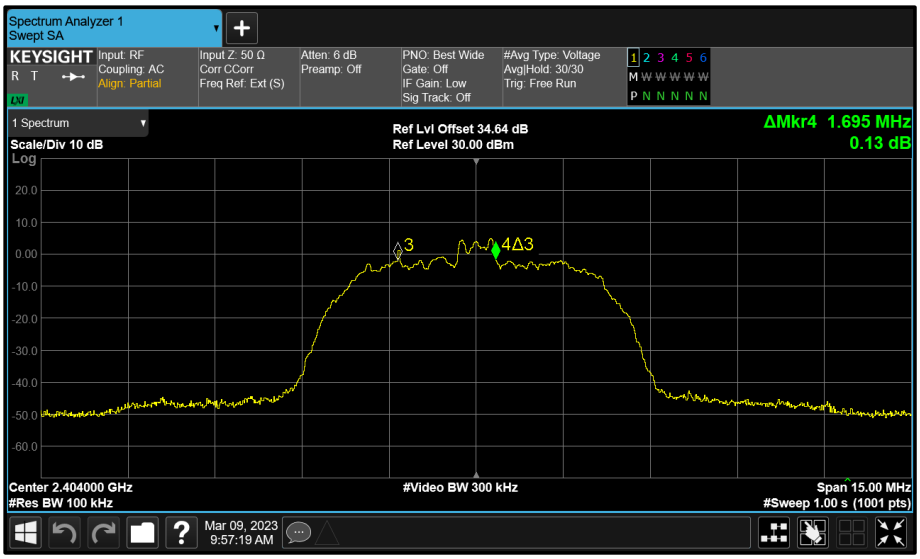

Figure 100 - Core 1 (C) 2404 MHz (CH2) 6 dB Bandwidth

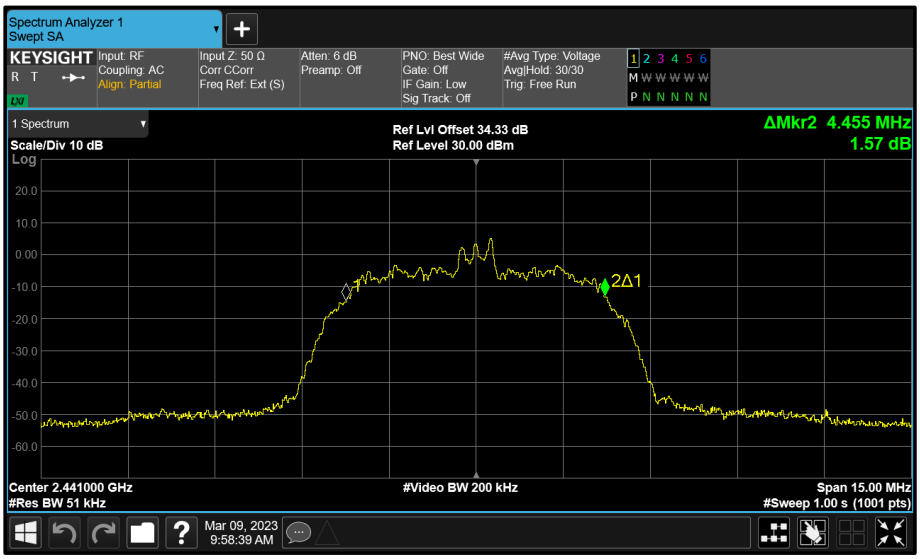

Figure 101 - Core 0 (B) 2441 MHz (CH39) 99% Bandwidth

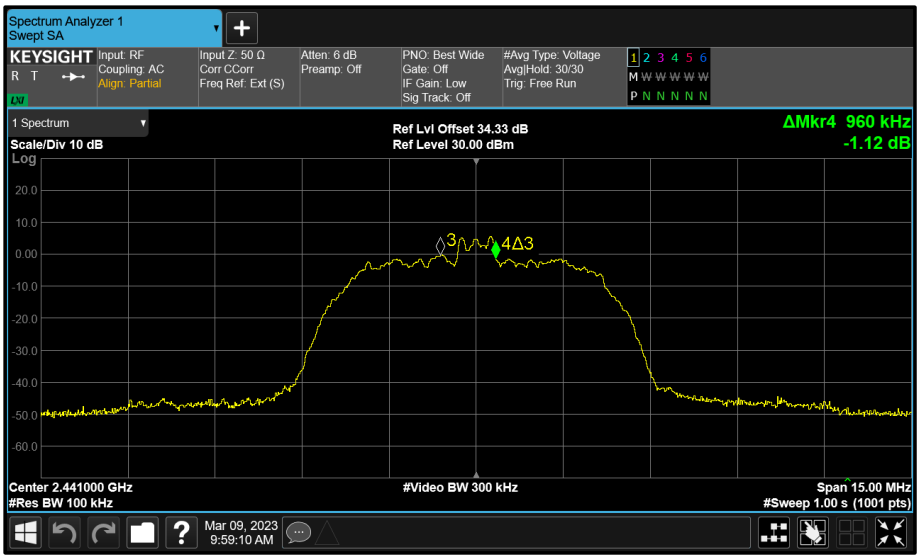

Figure 102 - Core 0 (B) 2441 MHz (CH39) 6 dB Bandwidth

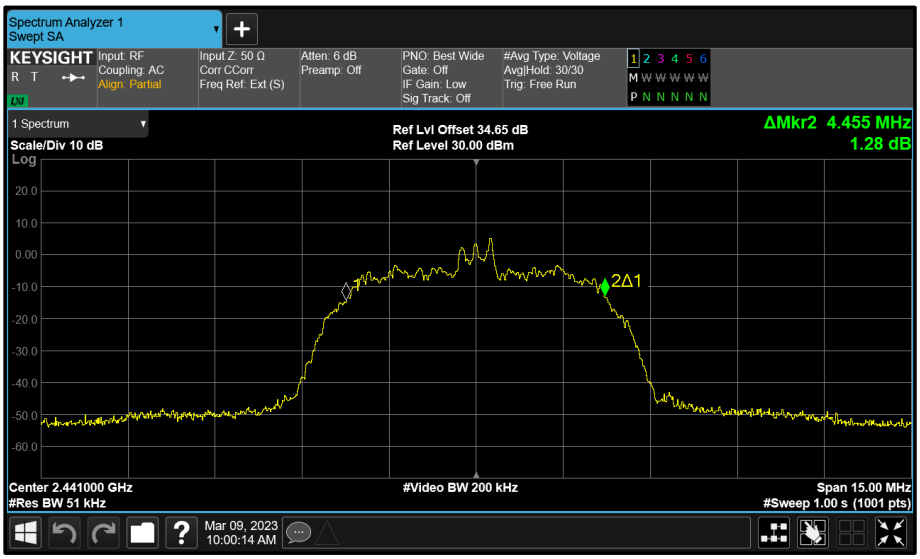

Figure 103 - Core 1 (C) 2441 MHz (CH39) 99% Bandwidth

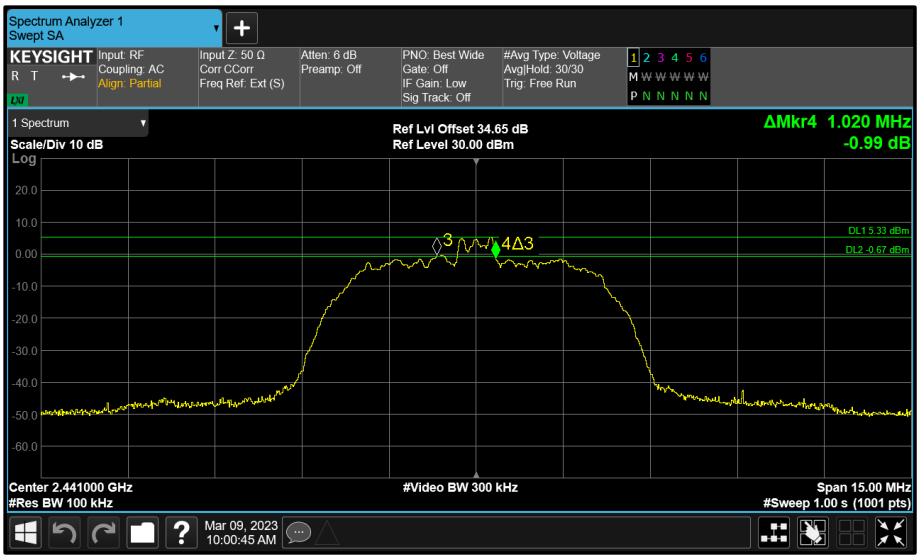

Figure 104 - Core 1 (C) 2441 MHz (CH39) 6 dB Bandwidth

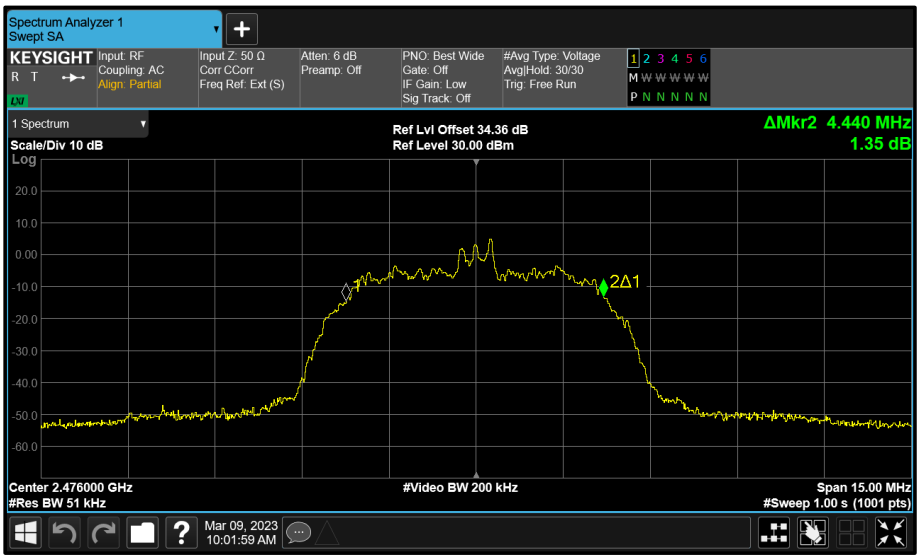

Figure 105 - Core 0 (B) 2476 MHz (CH74) 99% Bandwidth

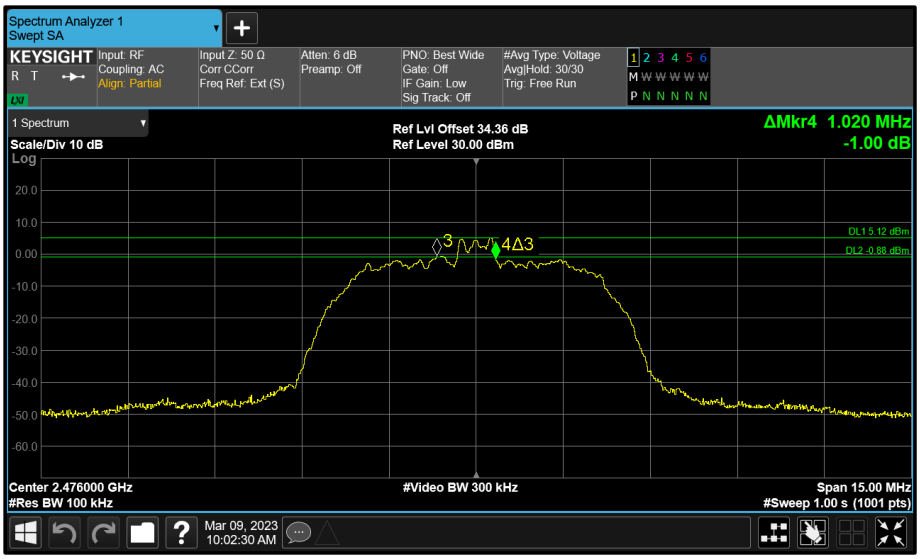

Figure 106 - Core 0 (B) 2476 MHz (CH74) 6 dB Bandwidth

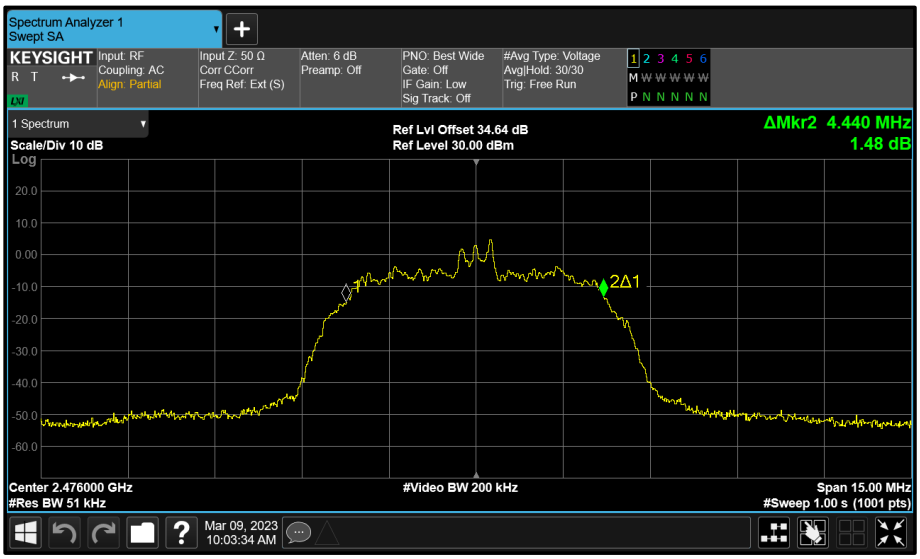

Figure 107 - Core 1 (C) 2476 MHz (CH74) 99% Bandwidth

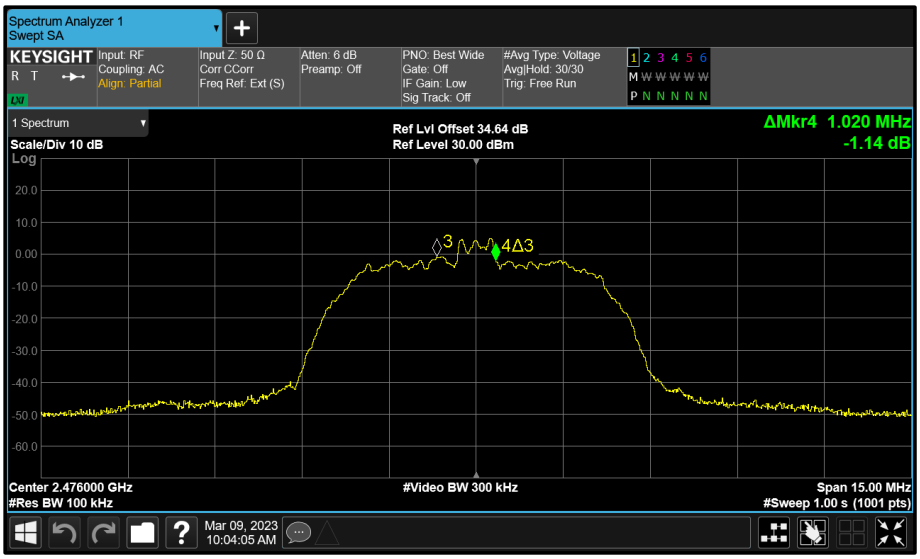

Figure 108 - Core 1 (C) 2476 MHz (CH74) 6 dB Bandwidth

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

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	-	0.728	-	≥500.0
2440	-	-	0.728	-	≥500.0
2480	-	-	0.720	-	≥500.0

Table 29 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	-	1.040	-	-
2440	-	-	1.040	-	-
2480	-	-	1.036	-	-

Table 30 - 99% Bandwidth Results

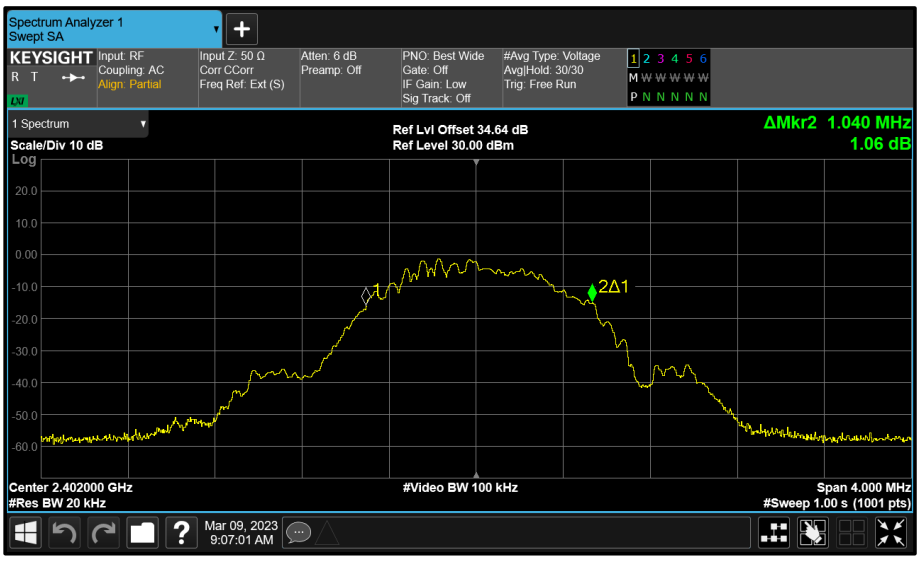

Figure 109 - Core 1 (C) 2402 MHz (CH37) 99% Bandwidth

Figure 110 - Core 1 (C) 2402 MHz (CH37) 6 dB Bandwidth

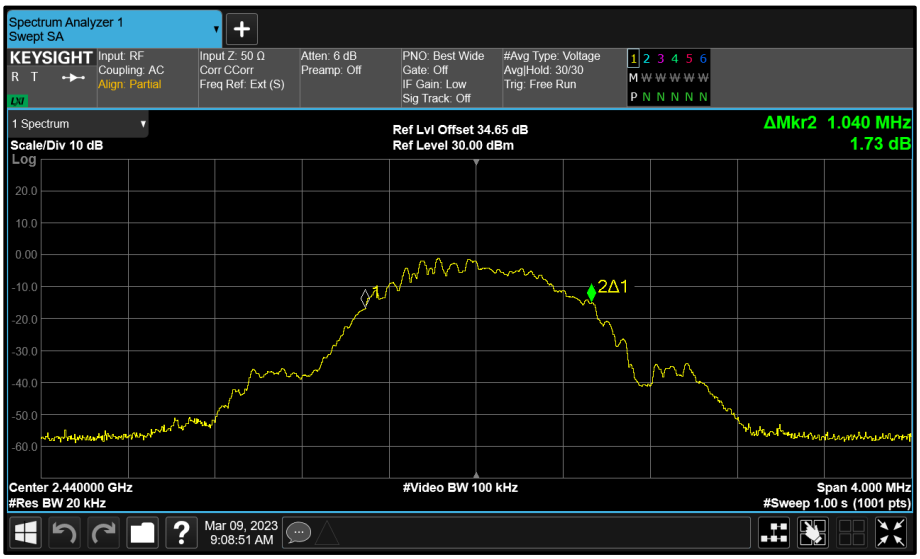

Figure 111 - Core 1 (C) 2440 MHz (CH17) 99% Bandwidth

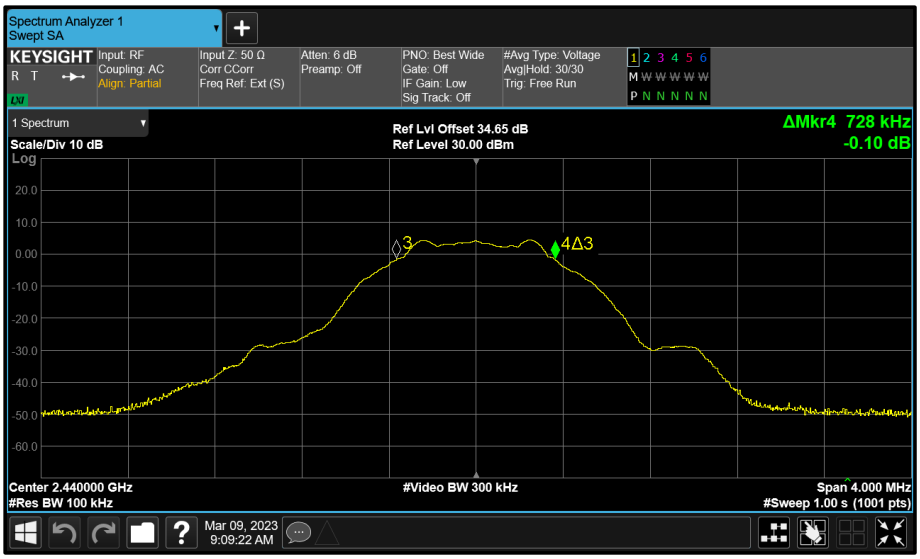

Figure 112 - Core 1 (C) 2440 MHz (CH17) 6 dB Bandwidth

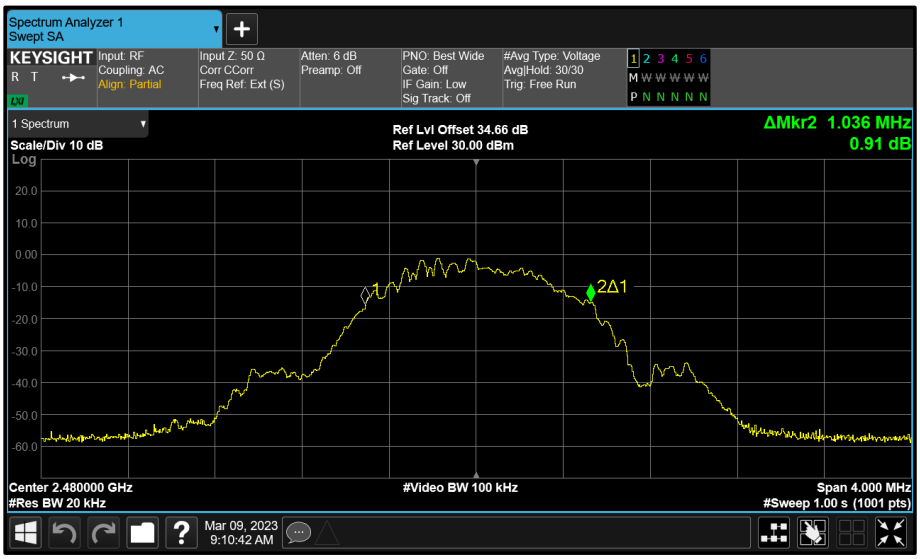

Figure 113 - Core 1 (C) 2480 MHz (CH39) 99% Bandwidth

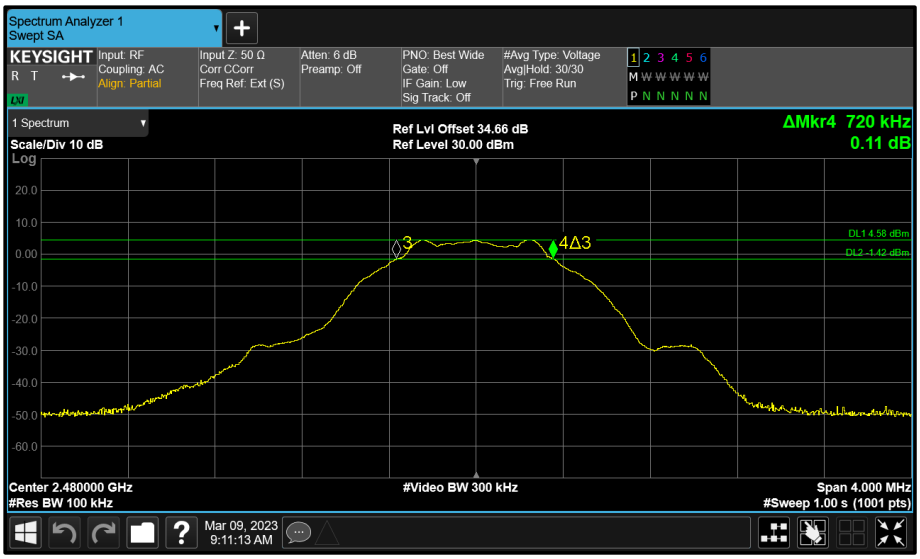

Figure 114 - Core 1 (C) 2480 MHz (CH39) 6 dB Bandwidth

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 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	-	1.256	-	≥500.0
2440	-	-	1.240	-	≥500.0
2480	-	-	1.184	-	≥500.0

Table 31 - 6 dB Bandwidth Results

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

Table 32 - 99% Bandwidth Results

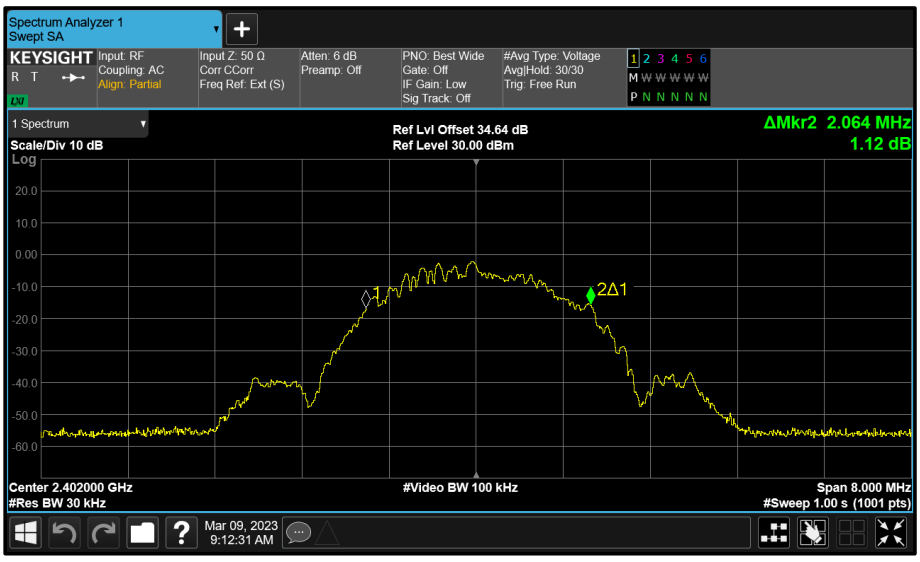

Figure 115 - Core 1 (C) 2402 MHz (CH37) 99% Bandwidth

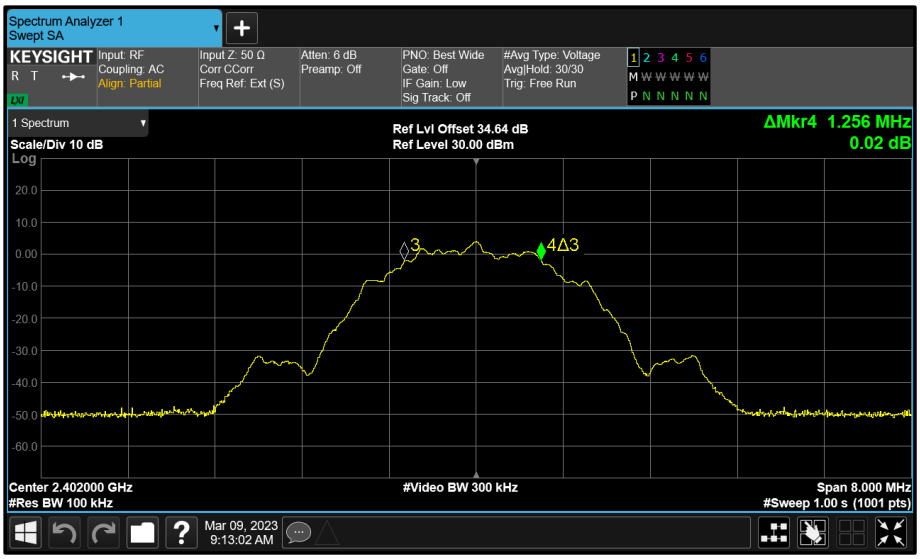

Figure 116 - Core 1 (C) 2402 MHz (CH37) 6 dB Bandwidth

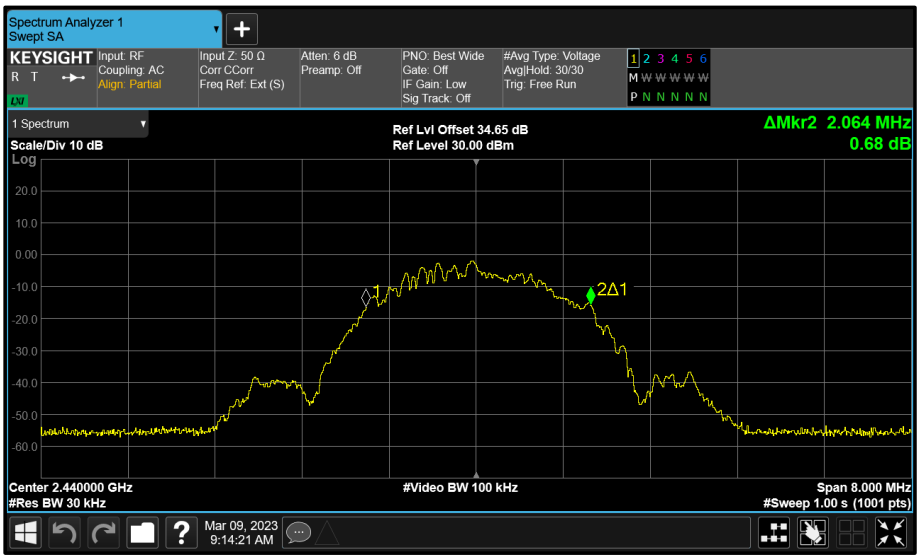

Figure 117 - Core 1 (C) 2440 MHz (CH17) 99% Bandwidth

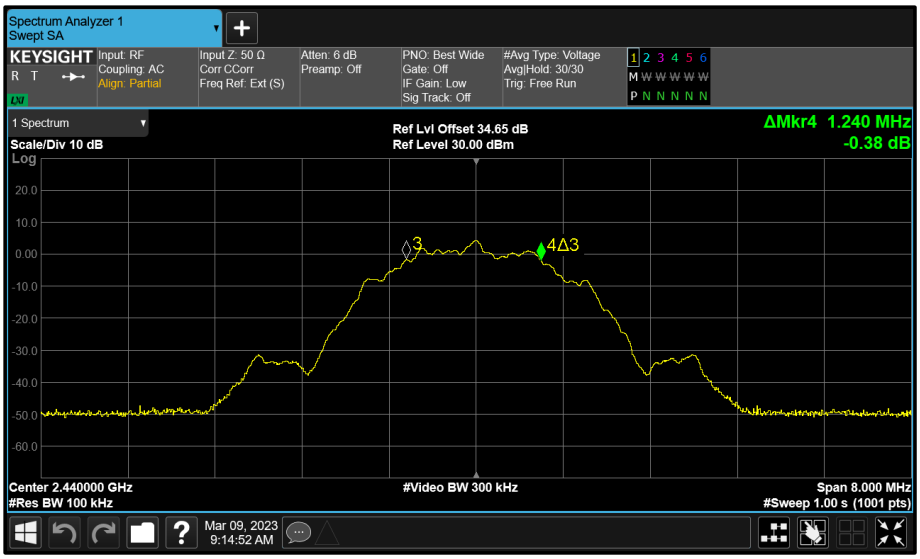

Figure 118 - Core 1 (C) 2440 MHz (CH17) 6 dB Bandwidth

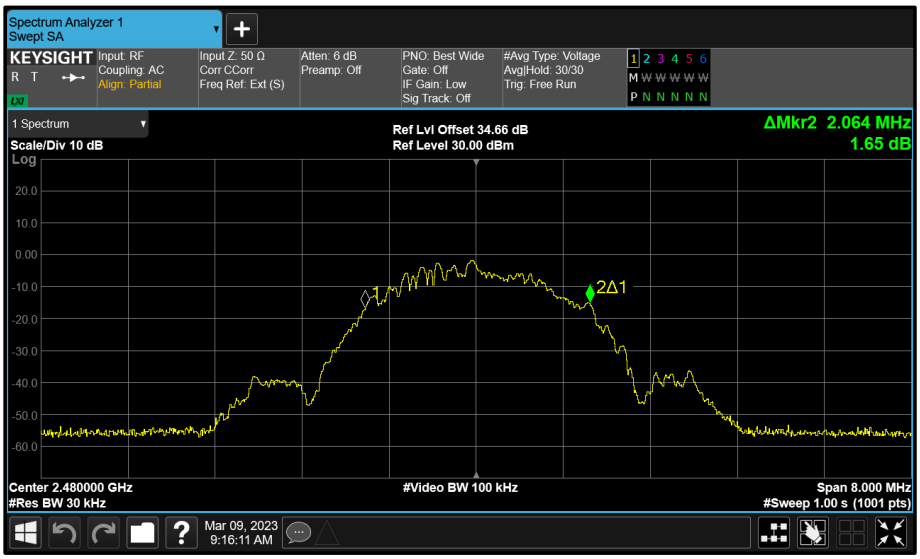

Figure 119 - Core 1 (C) 2480 MHz (CH39) 99% Bandwidth

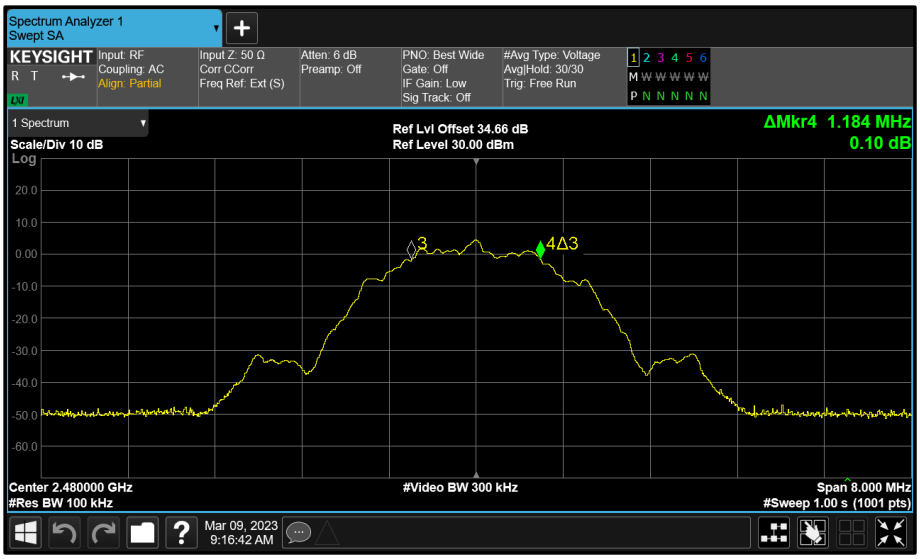

Figure 120 - Core 1 (C) 2480 MHz (CH39) 6 dB Bandwidth

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):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	0.728	0.724	-	≥500.0
2440	-	0.728	0.712	-	≥500.0
2480	-	0.728	0.716	-	≥500.0

Table 33 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	1.036	1.040	-	-
2440	-	1.040	1.040	-	-
2480	-	1.036	1.040	-	-

Table 34 - 99% Bandwidth Results

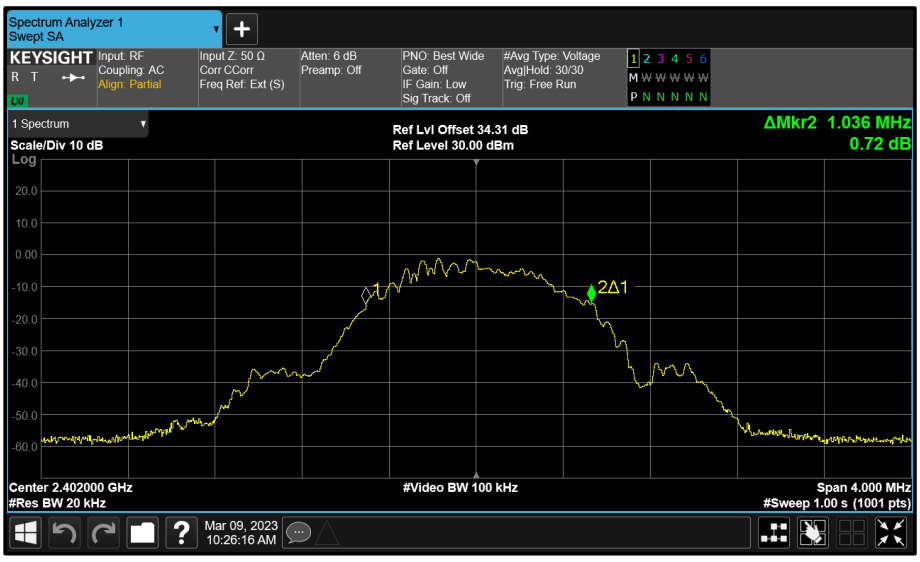

Figure 121 - Core 0 (B) 2402 MHz (CH37) 99% Bandwidth

Figure 122 - Core 0 (B) 2402 MHz (CH37) 6 dB Bandwidth

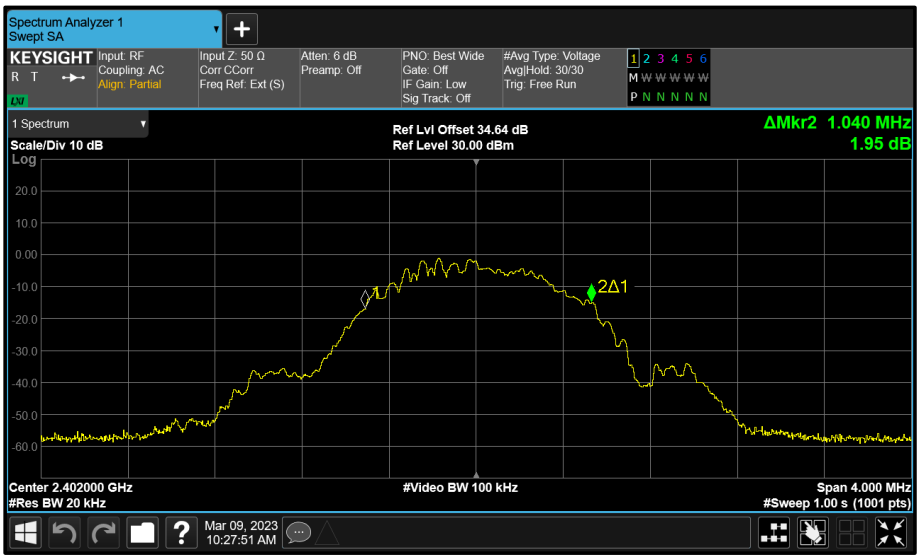

Figure 123 - Core 1 (C) 2402 MHz (CH37) 99% Bandwidth

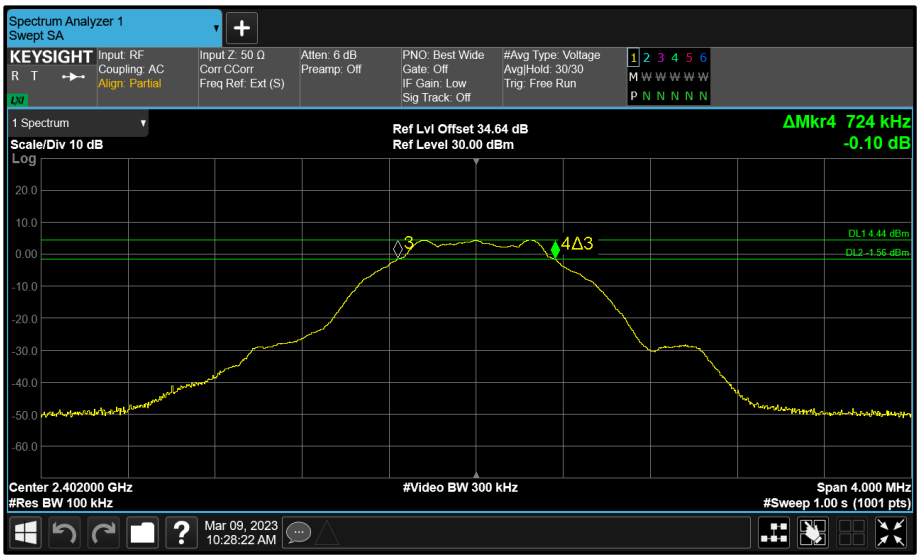

Figure 124 - Core 1 (C) 2402 MHz (CH37) 6 dB Bandwidth

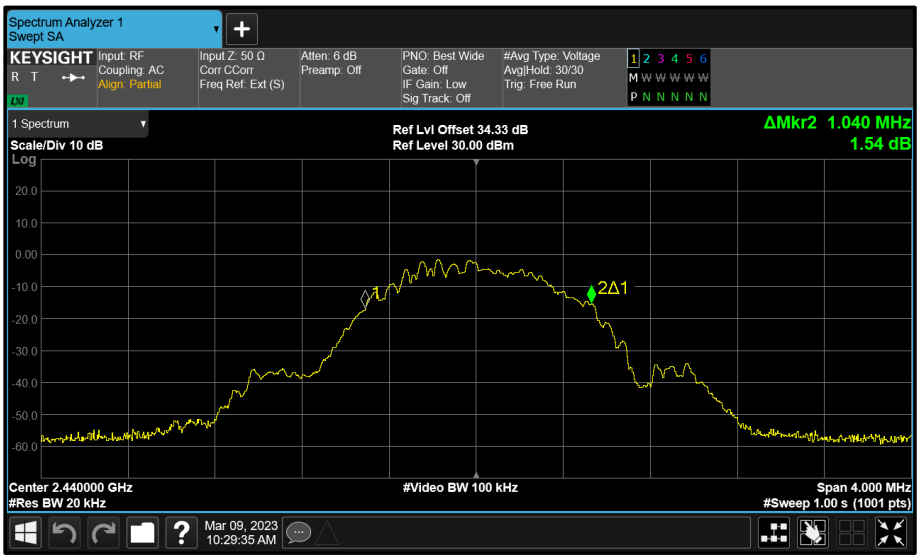

Figure 125 - Core 0 (B) 2440 MHz (CH17) 99% Bandwidth

Figure 126 - Core 0 (B) 2440 MHz (CH17) 6 dB Bandwidth

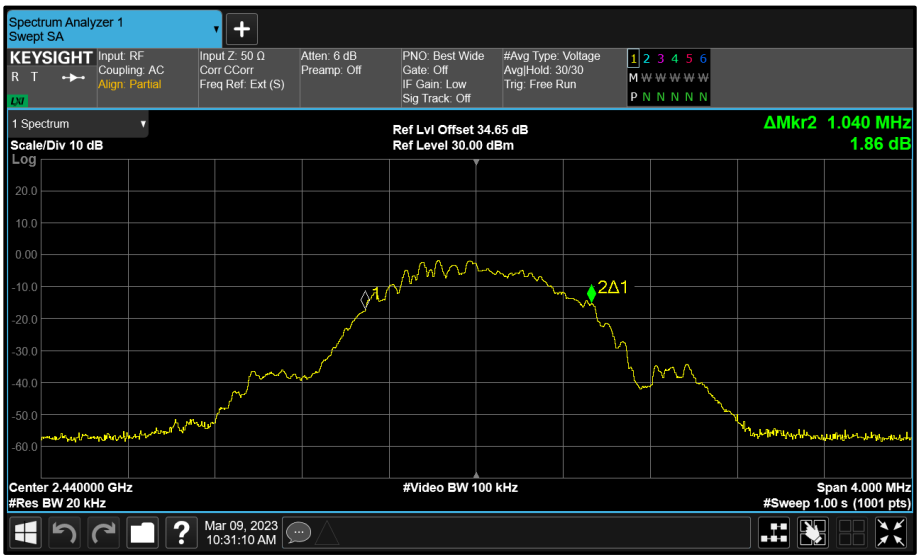

Figure 127 - Core 1 (C) 2440 MHz (CH17) 99% Bandwidth

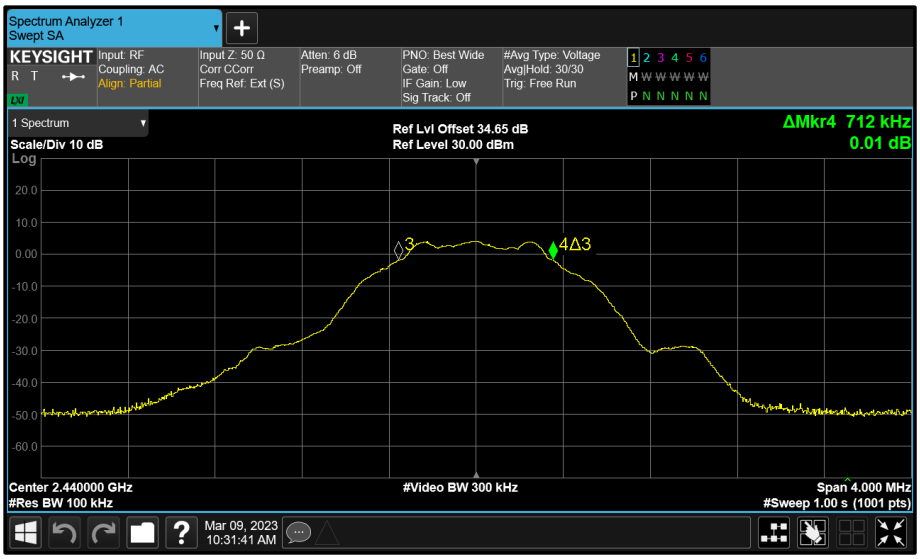

Figure 128 - Core 1 (C) 2440 MHz (CH17) 6 dB Bandwidth

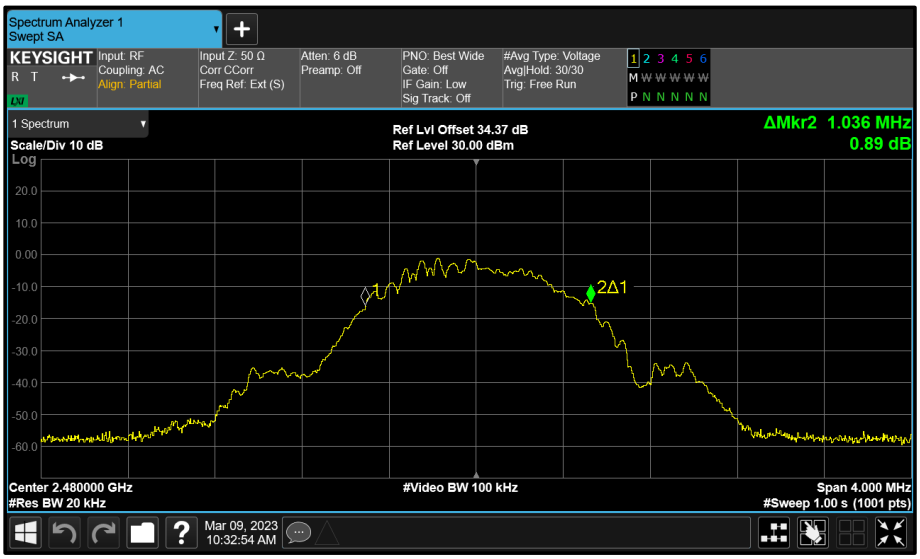

Figure 129 - Core 0 (B) 2480 MHz (CH39) 99% Bandwidth

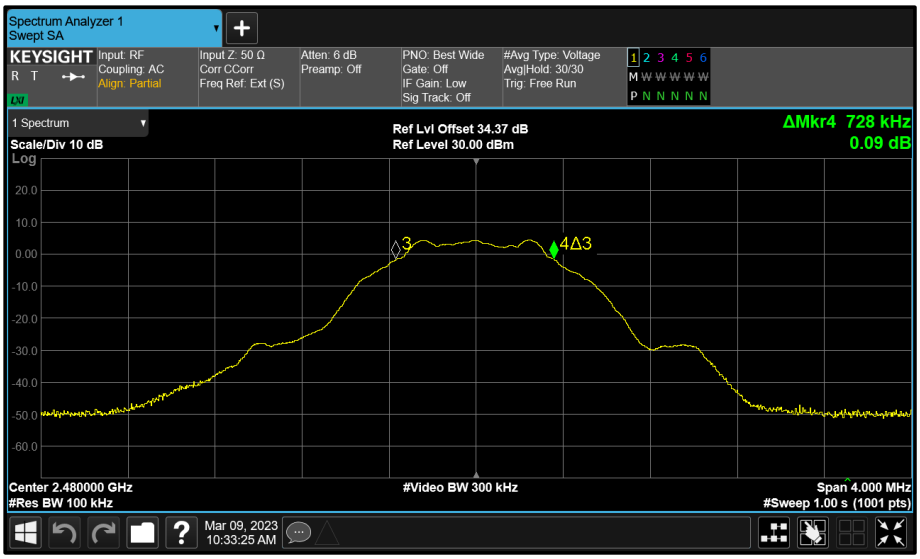

Figure 130 - Core 0 (B) 2480 MHz (CH39) 6 dB Bandwidth

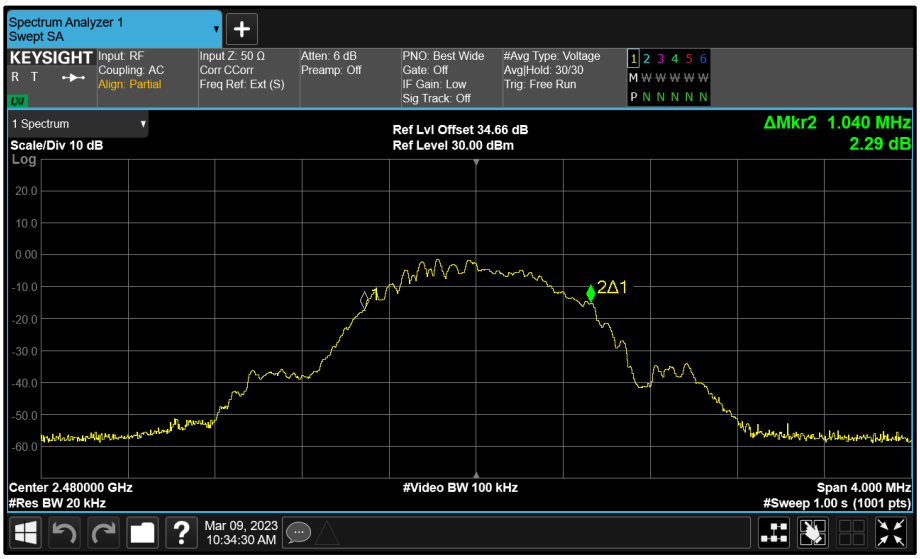

Figure 131 - Core 1 (C) 2480 MHz (CH39) 99% Bandwidth

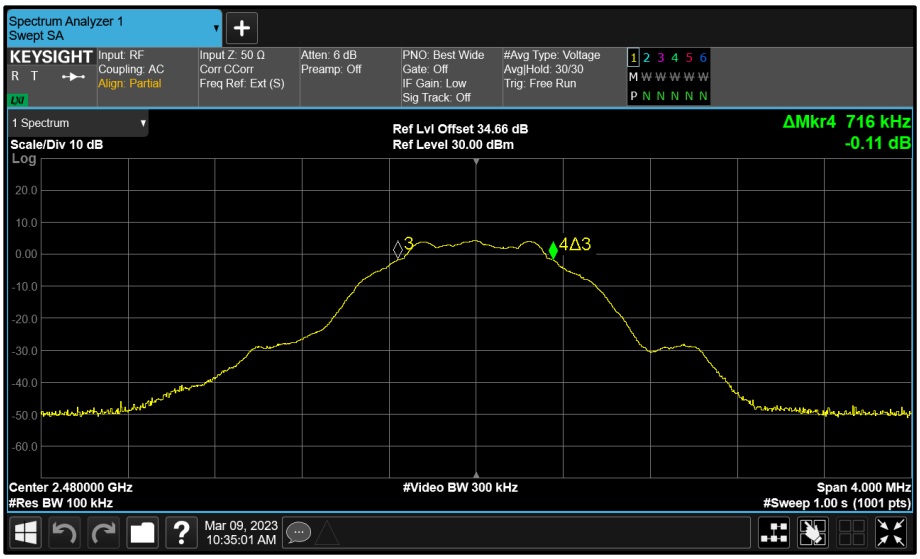

Figure 132 - Core 1 (C) 2480 MHz (CH39) 6 dB Bandwidth

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:	Beamforming	DCCF (dB):	-
Active Port(s):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	1.248	1.176	-	≥500.0
2440	-	1.152	1.160	-	≥500.0
2480	-	1.160	1.160	-	≥500.0

Table 35 - 6 dB Bandwidth Results

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

Table 36 - 99% Bandwidth Results

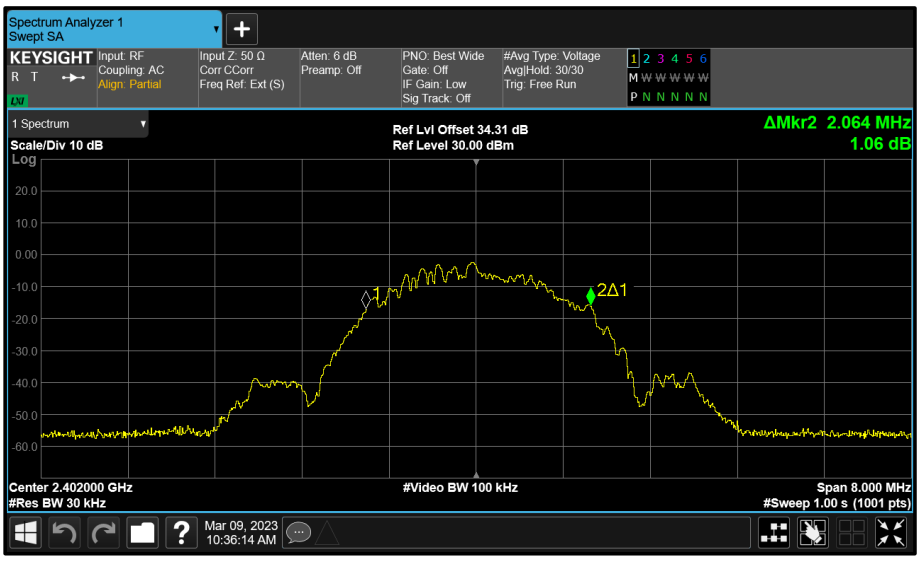

Figure 133 - Core 0 (B) 2402 MHz (CH37) 99% Bandwidth

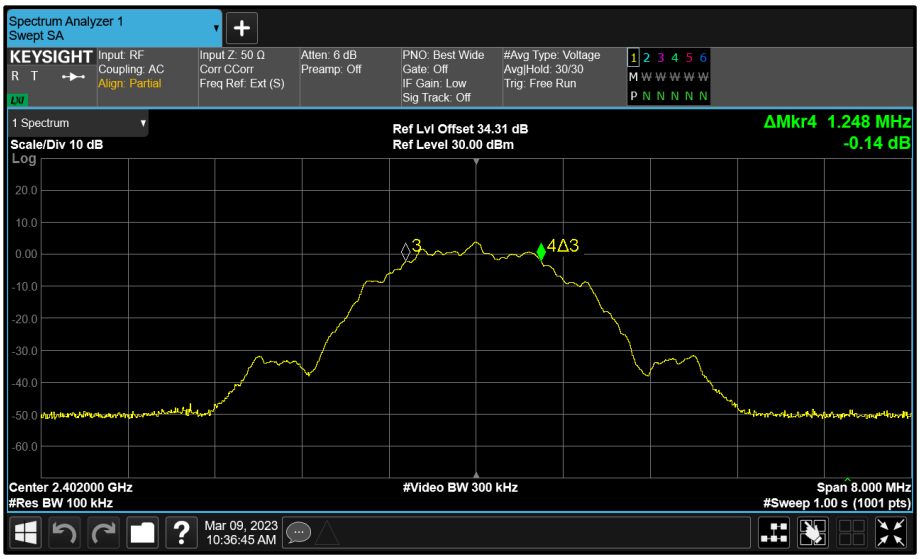

Figure 134 - Core 0 (B) 2402 MHz (CH37) 6 dB Bandwidth

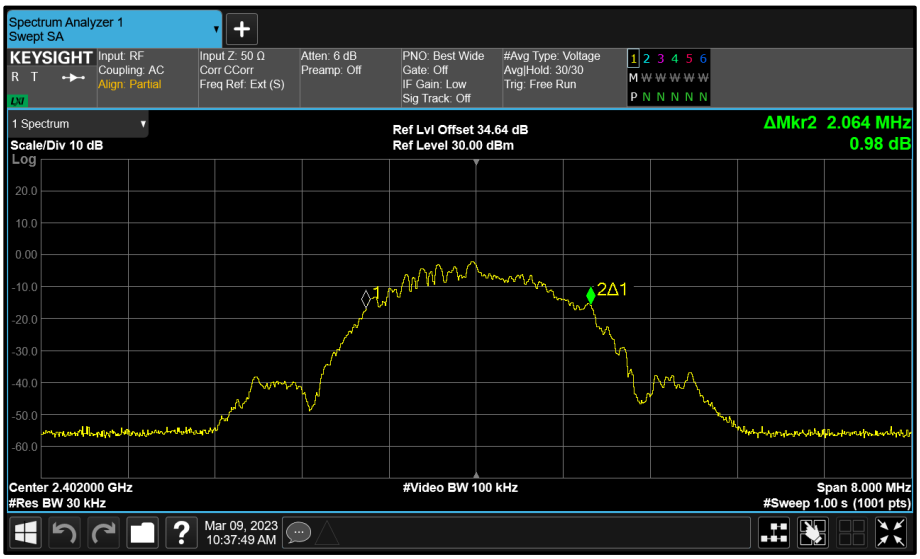

Figure 135 - Core 1 (C) 2402 MHz (CH37) 99% Bandwidth

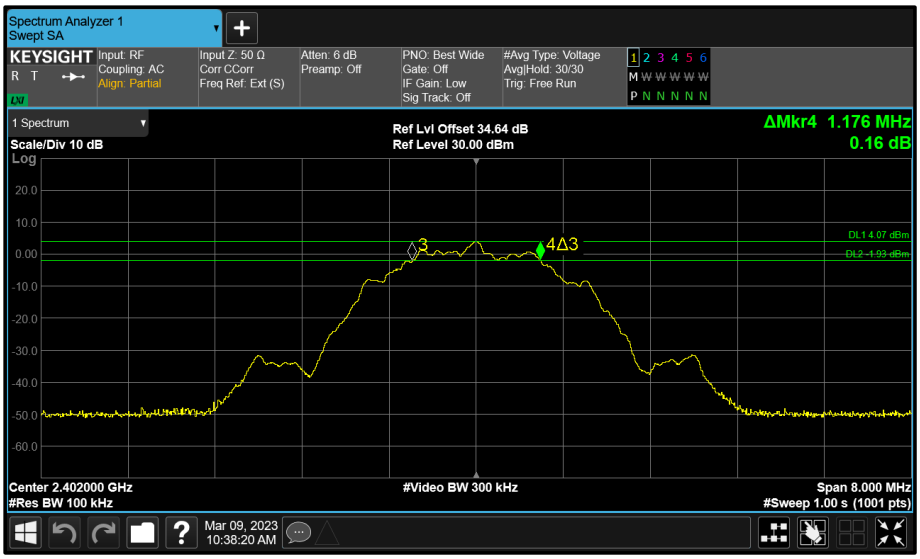

Figure 136 - Core 1 (C) 2402 MHz (CH37) 6 dB Bandwidth

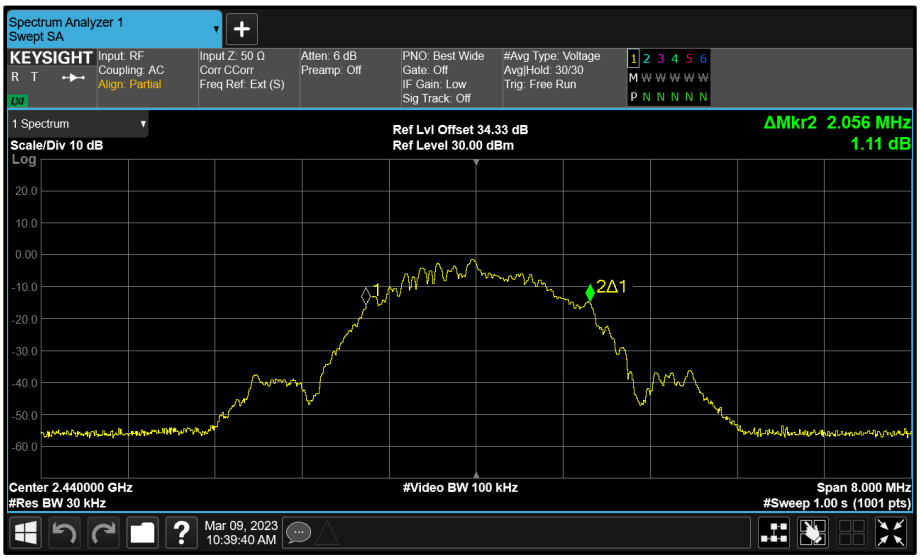

Figure 137 - Core 0 (B) 2440 MHz (CH17) 99% Bandwidth

Figure 138 - Core 0 (B) 2440 MHz (CH17) 6 dB Bandwidth

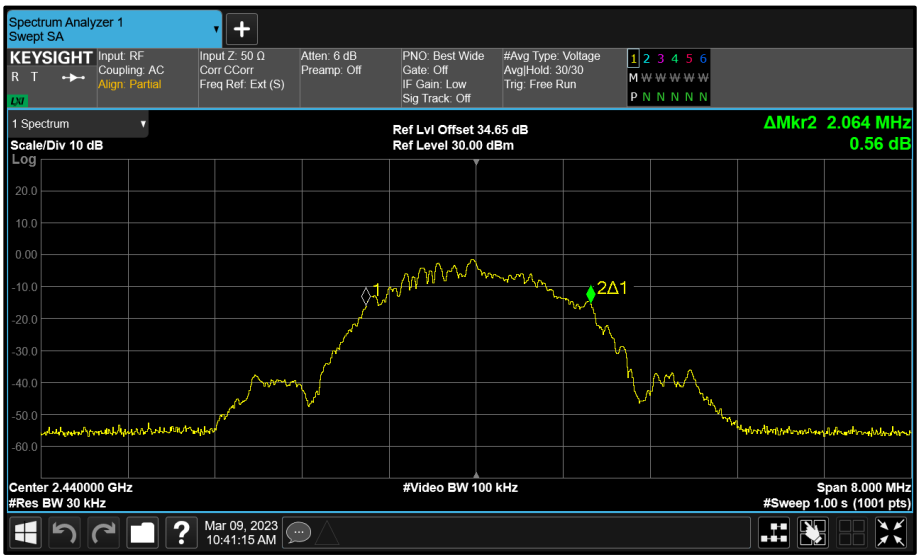

Figure 139 - Core 1 (C) 2440 MHz (CH17) 99% Bandwidth

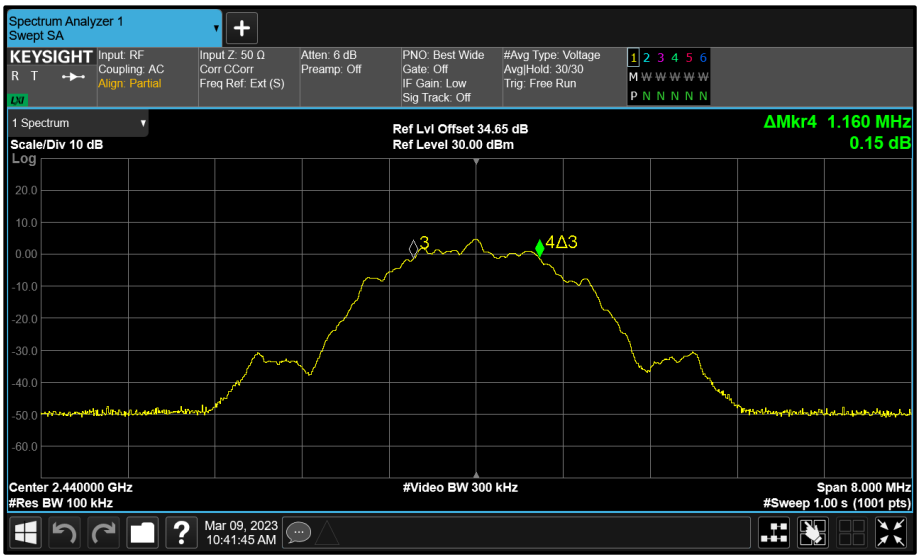

Figure 140 - Core 1 (C) 2440 MHz (CH17) 6 dB Bandwidth

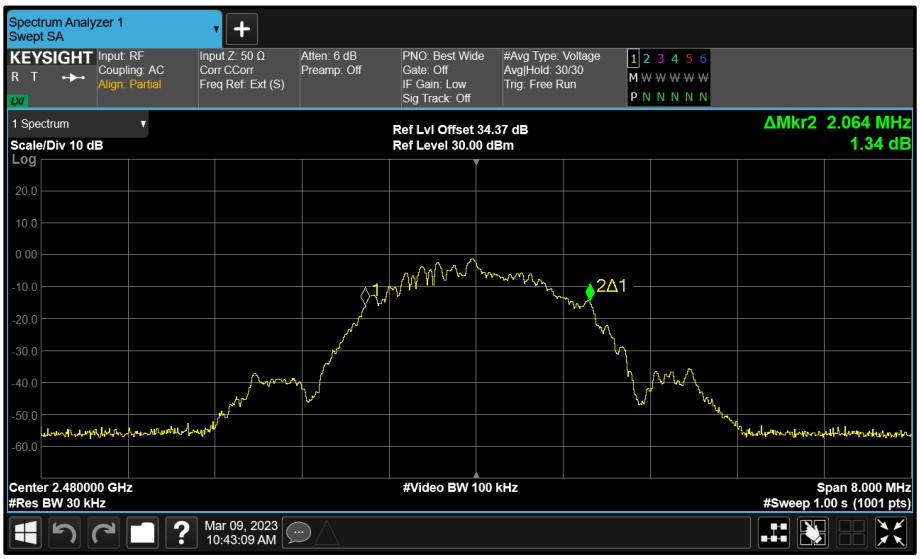

Figure 141 - Core 0 (B) 2480 MHz (CH39) 99% Bandwidth

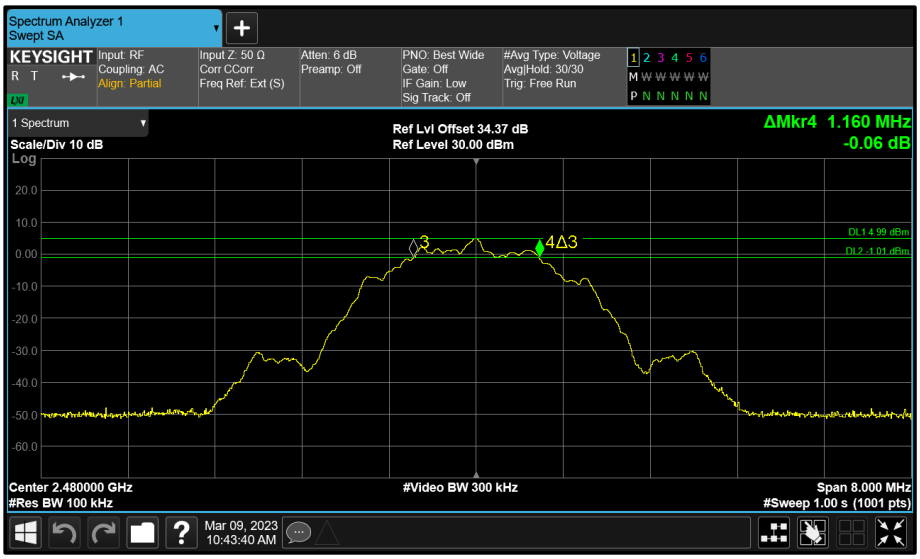

Figure 142 - Core 0 (B) 2480 MHz (CH39) 6 dB Bandwidth

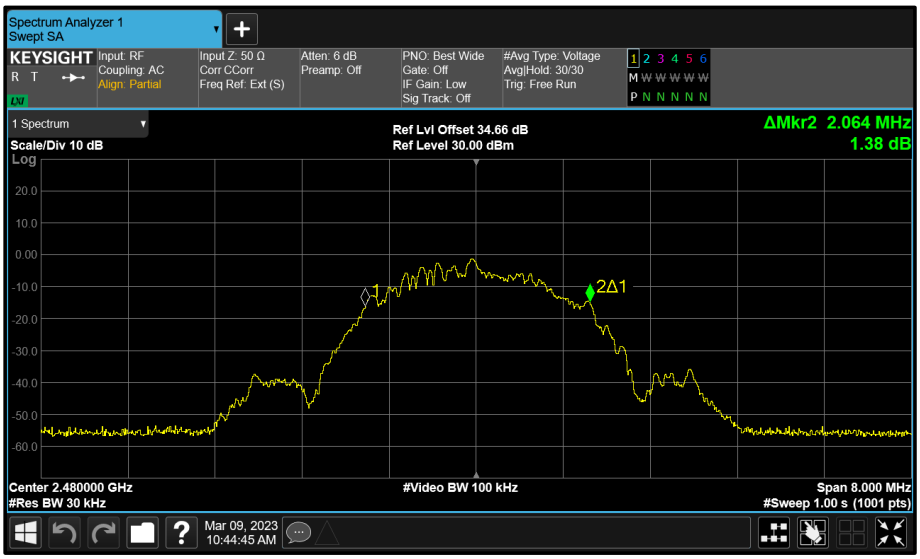

Figure 143 - Core 1 (C) 2480 MHz (CH39) 99% Bandwidth

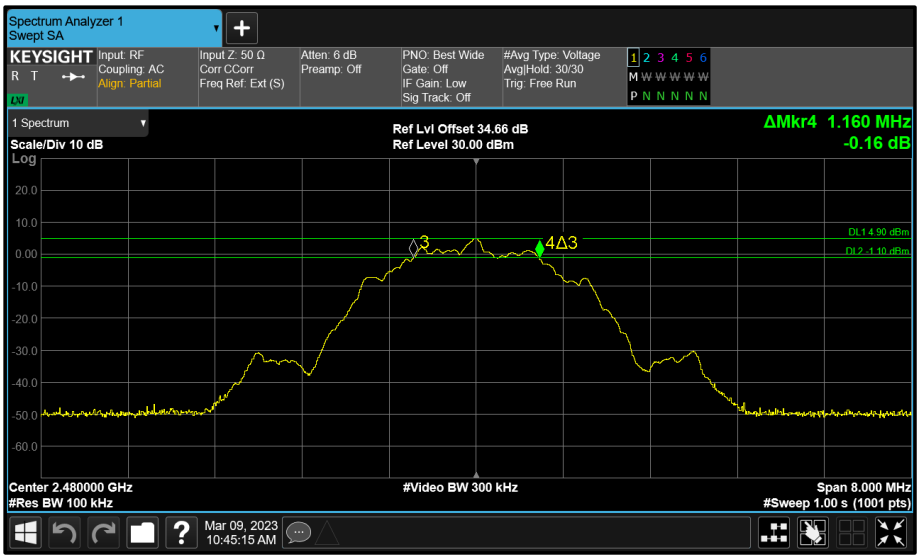

Figure 144 - Core 1 (C) 2480 MHz (CH39) 6 dB Bandwidth

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 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Hygrometer	Rotronic	I-1000	3068	12	21-Sep-2023
Multi-GNSS Simulator (GPS)	Spirent	GSS6700	4596	12	22-Aug-2023
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
MXA Signal Analyser	Keysight Technologies	N9020B	5529	24	13-Dec-2024
Signal Conditioning Unit	TUV SUD	SPECTRUM SCU001	5546	12	06-Apr-2023
Digital Multimeter	Fluke	115	6147	12	16-Jun-2023

Table 37

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

A2941, S/N: GF6K93M959 - Modification State 0

2.3.3 Date of Test

09-March-2023

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10 2013 clause 11.9.1.3 Method PKPM1 for FCC testing and ANSI C63.10 2020, clause 11.9.1.2 for ISED testing.

MIMO output port summing was performed in accordance with KDB 662911 D01. For the CDD results, the Directional Gain was calculated in accordance with clause F)2)f)(ii) using the calculations from F)2)f)(i) with worst-case individual gain and an array gain of zero.

2.3.5 Environmental Conditions

Ambient Temperature	21.8 °C
Relative Humidity	32.6 %

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 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.4
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 0)	Peak Antenna Gain (dBi):	4.85

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	18.03	-	-	-	30.00	-11.97
2441	-	18.18	-	-	-	30.00	-11.82
2476	-	17.69	-	-	-	30.00	-12.31

Table 38 - 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	-	18.03	-	-	-	30.00	-11.97	22.88	36.00	-13.12
2441	-	18.18	-	-	-	30.00	-11.82	23.03	36.00	-12.97
2476	-	17.69	-	-	-	30.00	-12.31	22.54	36.00	-13.46

Table 39 - 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 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.2
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 0)	Peak Antenna Gain (dBi):	4.85

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	18.28	-	-	-	30.00	-11.72
2441	-	18.63	-	-	-	30.00	-11.37
2476	-	18.64	-	-	-	30.00	-11.36

Table 40 - 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	-	18.28	-	-	-	30.00	-11.72	23.13	36.00	-12.87
2441	-	18.63	-	-	-	30.00	-11.37	23.48	36.00	-12.52
2476	-	18.64	-	-	-	30.00	-11.36	23.49	36.00	-12.51

Table 41 - 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 11.9.1.2
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):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	7.69

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	17.66	17.63	-	20.61	28.31	-7.70
2441	-	17.75	17.84	-	20.78	28.31	-7.54
2476	-	17.33	17.79	-	20.55	28.31	-7.76

Table 42 - 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	-	17.66	17.63	-	20.61	30.00	-9.39	28.30	36.00	-7.70
2441	-	17.75	17.84	-	20.78	30.00	-9.22	28.46	36.00	-7.54
2476	-	17.33	17.79	-	20.55	30.00	-9.45	28.24	36.00	-7.76

Table 43 - 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 11.9.1.2
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):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	7.69

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	17.85	18.24	-	21.03	28.31	-7.28
2441	-	18.11	18.20	-	21.14	28.31	-7.17
2476	-	17.85	18.27	-	21.02	28.31	-7.29

Table 44 - 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	18.24	-	21.03	30.00	-8.97	28.72	36.00	-7.28
2441	-	18.11	18.20	-	21.14	30.00	-8.86	28.83	36.00	-7.17
2476	-	17.85	18.27	-	21.02	30.00	-8.98	28.71	36.00	-7.29

Table 45 - 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 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (4-DH5)	Duty Cycle (%):	78.4
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 0)	Peak Antenna Gain (dBi):	4.85

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	8.88	-	-	-	30.00	-21.12
2441	-	8.86	-	-	-	30.00	-21.14
2476	-	8.91	-	-	-	30.00	-21.09

Table 46 - 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	-	8.88	-	-	-	30.00	-21.12	13.73	36.00	-22.27
2441	-	8.86	-	-	-	30.00	-21.14	13.71	36.00	-22.29
2476	-	8.91	-	-	-	30.00	-21.09	13.76	36.00	-22.24

Table 47 - 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 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA π/4 DQPSK (8-DH5)	Duty Cycle (%):	78.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 0)	Peak Antenna Gain (dBi):	4.85

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	9.40	-	-	-	30.00	-20.60
2441	-	9.41	-	-	-	30.00	-20.59
2476	-	9.33	-	-	-	30.00	-20.67

Table 48 - 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	-	9.40	-	-	-	30.00	-20.60	14.25	36.00	-21.75
2441	-	9.41	-	-	-	30.00	-20.59	14.26	36.00	-21.74
2476	-	9.33	-	-	-	30.00	-20.67	14.18	36.00	-21.82

Table 49 - 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 11.9.1.2
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):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	7.69

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	8.36	8.81	-	11.50	28.31	-16.81
2441	-	8.40	8.70	-	11.44	28.31	-16.87
2476	-	8.21	8.72	-	11.43	28.31	-16.88

Table 50 - 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	-	8.36	8.81	-	11.50	30.00	-18.50	19.19	36.00	-16.81
2441	-	8.40	8.70	-	11.44	30.00	-18.56	19.13	36.00	-16.87
2476	-	8.21	8.72	-	11.43	30.00	-18.57	19.12	36.00	-16.88

Table 51 - 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 11.9.1.2
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 (%):	78.5
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	7.69

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2404	-	8.71	9.24	-	11.90	28.31	-16.41
2441	-	9.25	9.53	-	12.36	28.31	-15.96
2476	-	8.68	9.18	-	11.90	28.31	-16.41

Table 52 - 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	-	8.71	9.24	-	11.90	30.00	-18.10	19.59	36.00	-16.41
2441	-	9.25	9.53	-	12.36	30.00	-17.64	20.04	36.00	-15.96
2476	-	8.68	9.18	-	11.90	30.00	-18.10	19.59	36.00	-16.41

Table 53 - 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 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	60.4
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 1)	Peak Antenna Gain (dBi):	4.50

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	-	-	5.52	-	-	30.00	-24.48
2440	-	-	5.63	-	-	30.00	-24.37
2480	-	-	5.68	-	-	30.00	-24.32

Table 54 - FCC Maximum Conducted (peak) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	∑					
2402	-	-	5.52	-	-	30.00	-24.48	10.02	36.00	-25.98
2440	-	-	5.63	-	-	30.00	-24.37	10.13	36.00	-25.87
2480	-	-	5.68	-	-	30.00	-24.32	10.18	36.00	-25.82

Table 55 - 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 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	31.3
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 1)	Peak Antenna Gain (dBi):	4.50

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	-	-	5.67	-	-	30.00	-24.33
2440	-	-	5.77	-	-	30.00	-24.23
2480	-	-	5.74	-	-	30.00	-24.26

Table 56 - FCC Maximum Conducted (peak) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	∑					
2402	-	-	5.67	-	-	30.00	-24.33	10.17	36.00	-25.83
2440	-	-	5.77	-	-	30.00	-24.23	10.27	36.00	-25.73
2480	-	-	5.74	-	-	30.00	-24.26	10.24	36.00	-25.76

Table 57 - 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 11.9.1.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA GFSK (LE 1M)	Duty Cycle (%):	60.4
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	7.69

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	-	5.44	5.77	-	8.57	28.31	-19.75
2440	-	5.34	5.49	-	8.40	28.31	-19.91
2480	-	5.54	5.68	-	8.58	28.31	-19.73

Table 58 - FCC Maximum Conducted (peak) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	∑					
2402	-	5.44	5.77	-	8.57	30.00	-21.43	16.25	36.00	-19.75
2440	-	5.34	5.49	-	8.40	30.00	-21.60	16.09	36.00	-19.91
2480	-	5.54	5.68	-	8.58	30.00	-21.42	16.27	36.00	-19.73

Table 59 - 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 11.9.1.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA GFSK (LE 2M)	Duty Cycle (%):	31.2
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	B+C (Core 0 + Core 1)	Peak Antenna Gain (dBi):	7.69

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2402	-	5.30	5.44	-	8.37	28.31	-19.94
2440	-	5.98	6.31	-	9.11	28.31	-19.21
2480	-	6.13	6.54	-	9.34	28.31	-18.97

Table 60 - FCC Maximum Conducted (peak) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	∑					
2402	-	5.30	5.44	-	8.37	30.00	-21.63	16.06	36.00	-19.94
2440	-	5.98	6.31	-	9.11	30.00	-20.89	16.79	36.00	-19.21
2480	-	6.13	6.54	-	9.34	30.00	-20.66	17.03	36.00	-18.97

Table 61 - 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 (d)

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

2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Hygrometer	Rotronic	I-1000	3068	12	21-Sep-2023
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
Signal Conditioning Unit	TUV SUD	SPECTRUM SCU001	5546	12	06-Apr-2023
USB Power Sensor	Boonton	RTP5008	5821	12	06-Apr-2023
USB Power Sensor	Boonton	RTP5008	5831	12	06-Apr-2023
Digital Multimeter	Fluke	115	6147	12	16-Jun-2023

Table 62

O/P Mon - Output Monitored using calibrated equipment

2.4 Spurious Radiated Emissions

2.4.1 Specification Reference

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

2.4.2 Equipment Under Test and Modification State

A2941, S/N: HGQQL724XY - Modification State 0

2.4.3 Date of Test

28-February-2023 to 01-March-2023

2.4.4 Test Method

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

For frequencies > 1 GHz, plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.1.

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

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

The 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).

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

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.

2.4.5 Example Test Setup Diagram

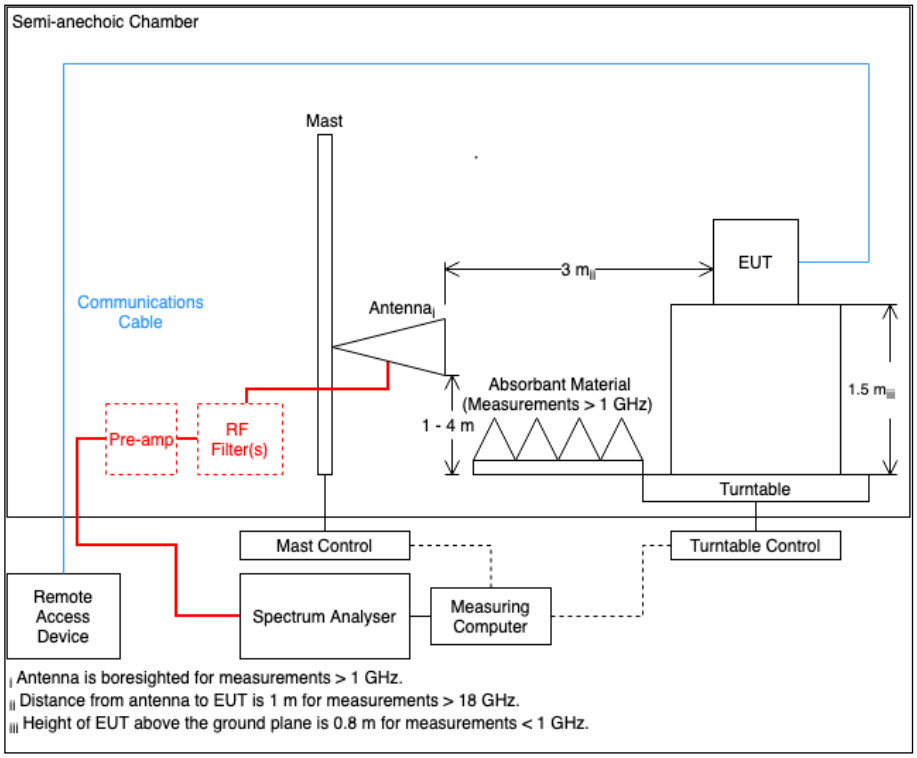

Figure 145

2.4.6 Environmental Conditions

Ambient Temperature	21.2 - 22.5 °C
Relative Humidity	37.9 - 43.0 %

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 63 - 2402 MHz (CH37), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

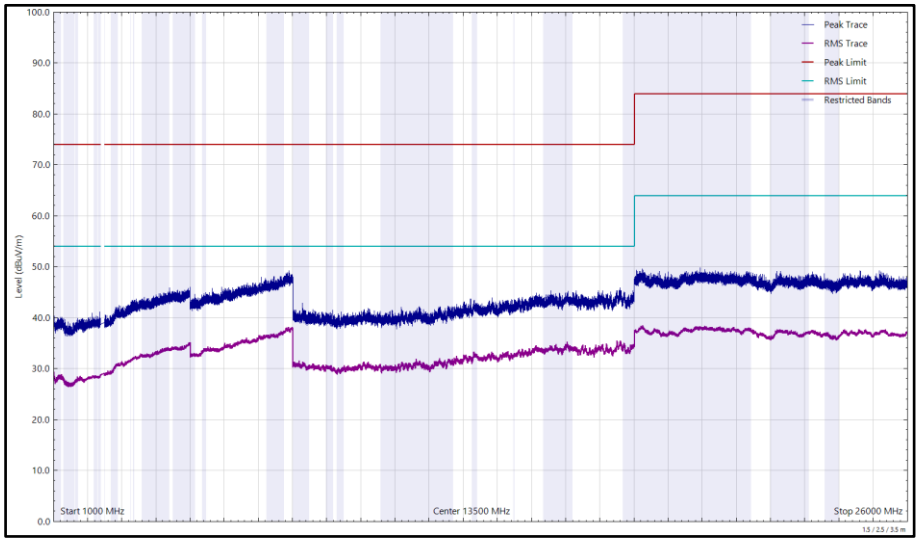

Figure 146 - 2402 MHz (CH37), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

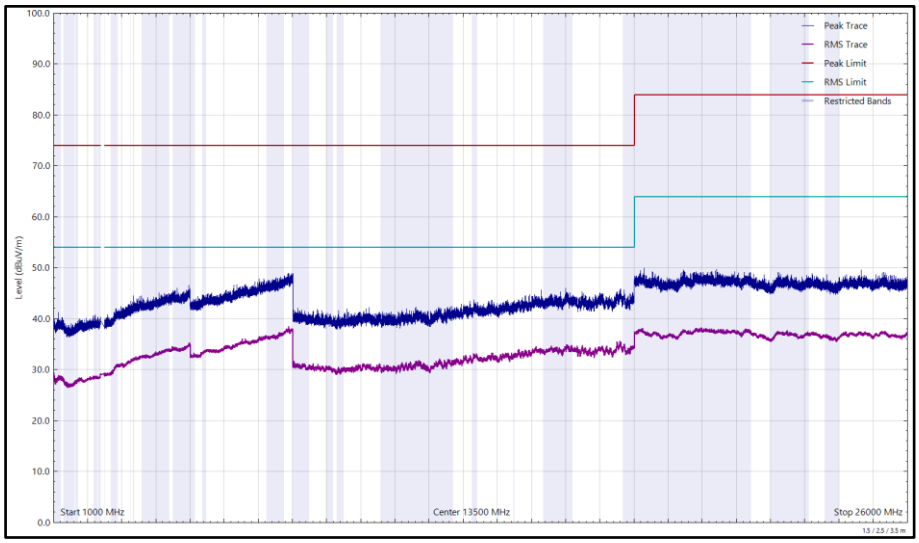

Figure 147 - 2402 MHz (CH37), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
32.326	21.42	40.00	-18.58	Q-Peak	7	131	Vertical

Table 64 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

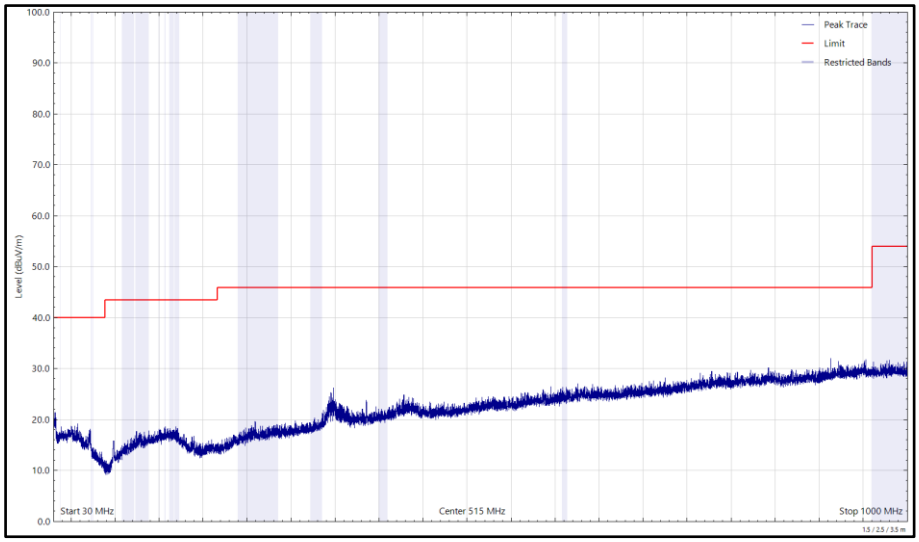

Figure 148 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

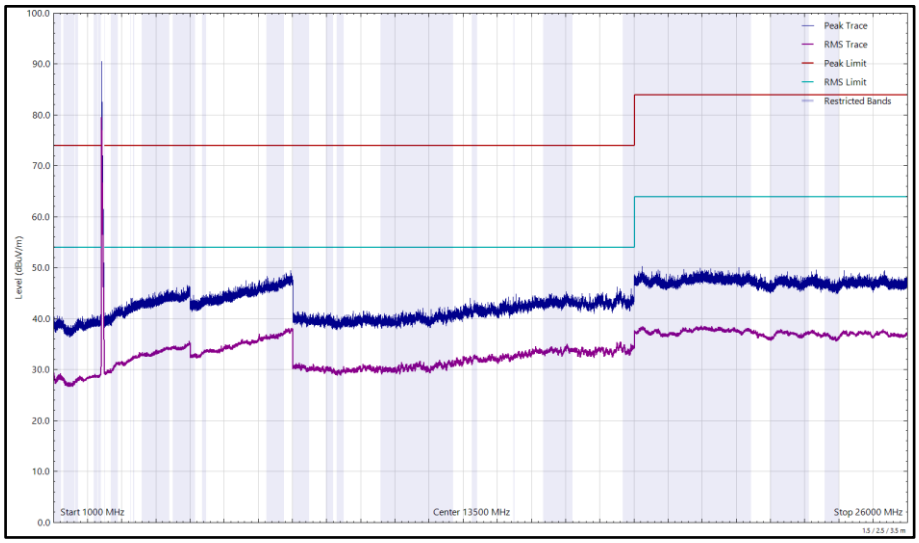

Figure 149 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

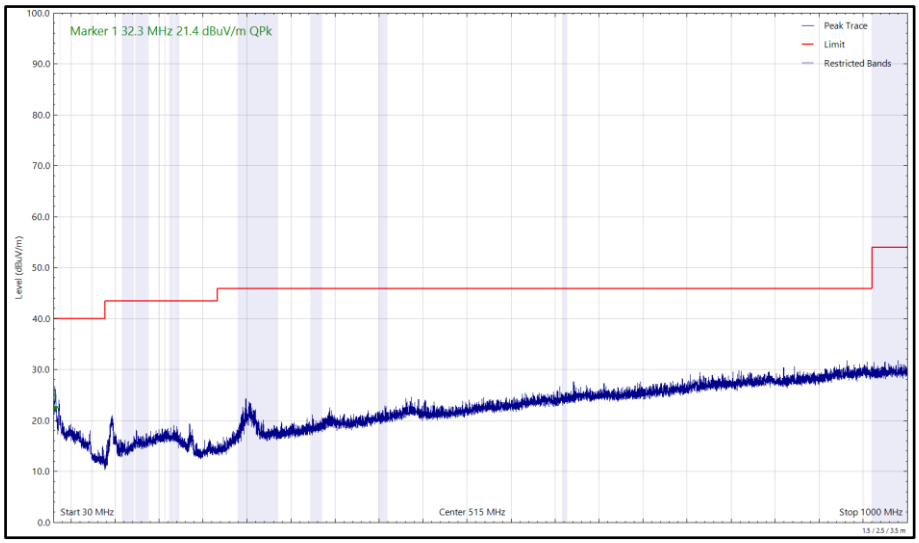

Figure 150 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

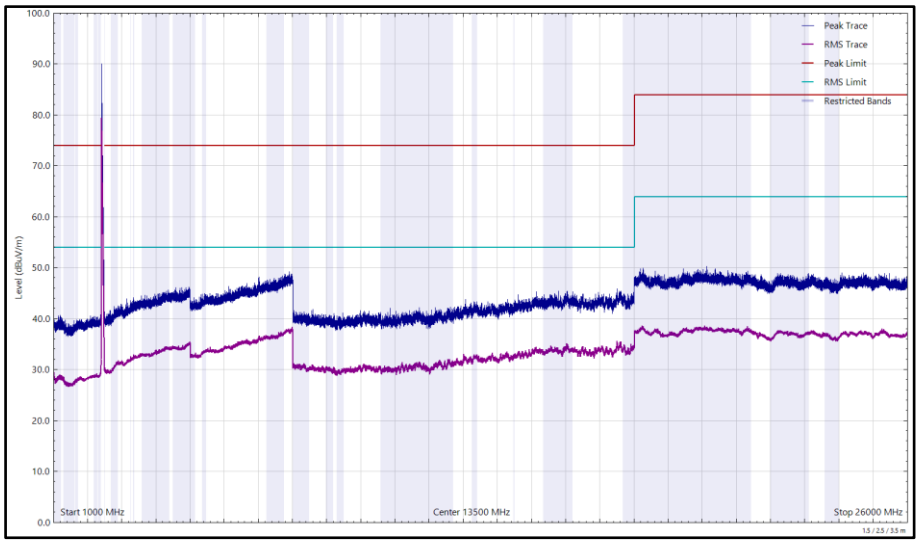

Figure 151 - 2440 MHz (CH17), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 65 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

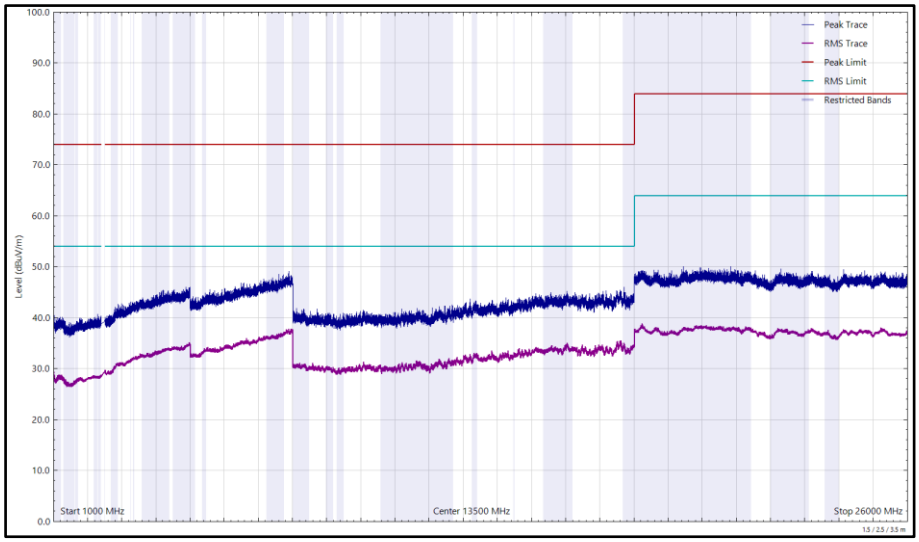

Figure 152 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

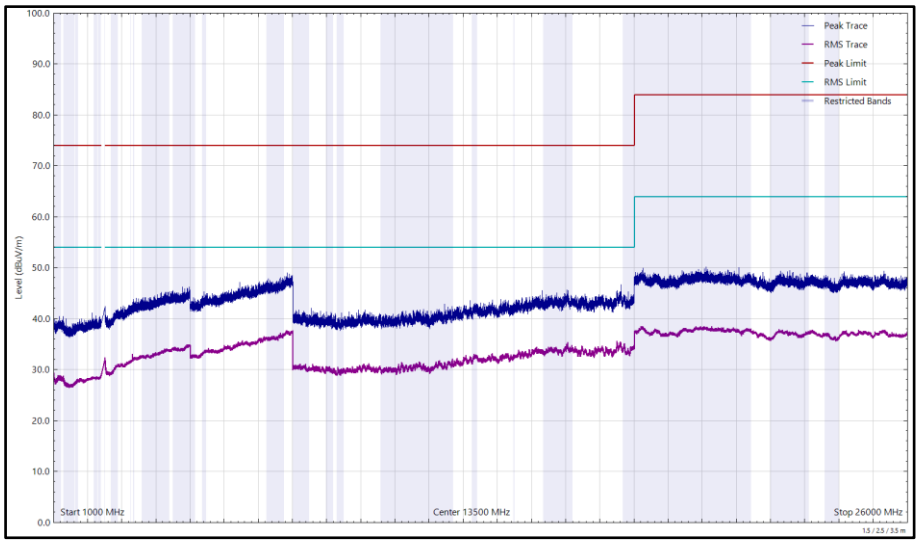

Figure 153 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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 RF Chamber 15.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.1.10	5125	-	Software
EMI Test Receiver	Rohde & Schwarz	ESW44	5911	12	24-Mar-2023
Cable (K Type 2m)	Junkosha	MWX241-02000KMSKMS/B	5935	12	14-May-2023
DRG Horn Antenna (7.5-18GHz)	Schwarzbeck	HWRD750	5939	12	29-May-2023
TRILOG Super Broadband Test Antenna	Schwarzbeck	VULB 9168	5944	24	03-Feb-2024
1500W (300V 12A) AC Power Supply	iTech	IT7324	5956	-	O/P Mon
5m Semi-Anechoic Chamber (Dual-Axis)	Albatross Projects	RF Chamber 15	5963	36	28-Apr-2025
Compact Antenna Mast	Maturo Gmbh	CAM4.0-P	5964	-	TU
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5966	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5967	-	TU
Turntable	Maturo Gmbh	TT1.5SI	5968	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5996	12	06-Jun-2023
Cable (N to N 1m)	Junkosha	MWX221-01000NMSNMS/B	5999	12	05-Jun-2023
Cable (N to N 7m)	Junkosha	MWX221-07000NMSNMS/B	6005	12	05-Jun-2023
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/A	6006	12	05-Jun-2023
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6007	12	06-Jun-2023
Cable (SMA to SMA 6.5m)	Junkosha	MWX221-06500AMSAMS/B	6014	12	07-Jun-2023
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/B	6019	12	07-Jun-2023
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6140	12	21-Jun-2023
Digital Multimeter	Fluke	115	6147	12	16-Jun-2023
Humidity & Temperature meter	R.S Components	1364	6150	12	17-Jun-2023
Double Ridge Active Horn Antenna (18-40 GHz)	Com-Power	AHA-840	6187	24	02-Jun-2024
SAC Switch Unit	TUV SUD	TUV_SSU_001	6191	12	12-Dec-2023
8 GHz Highpass Filter	Wainwright	WHKX 7150 8000 18000 50SS	6195	12	15-Jul-2023
Pre Amp 8 - 18 GHz	Wright Technologies	APS06 0061	6198	12	19-Jul-2023
Attenuator 4dB	Pasternack	PE7074-4	6203	24	16-Jul-2024
Cable (SMA to SMA 20cm)	TUV SUD	MH-FH 8-18	6214	12	25-Jul-2023

Table 66

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

2.5 Authorised Band Edges

2.5.1 Specification Reference

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

2.5.2 Equipment Under Test and Modification State

A2941, S/N: F91VYD72Q5 - Modification State 0

2.5.3 Date of Test

16-January-2023 to 17-January-2023

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	21.0 - 23.8 °C
Relative Humidity	41.4 - 43.0 %

2.5.6 Test Results

2.4 GHz Bluetooth - DTS

iPA - BT HDR Core 0, BTLE Core 1 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	HDR4	2404	2400	-57.70
Static	HDR8	2404	2400	-48.63
Static	LE1M	2402	2400	-61.58
Static	LE2M	2402	2400	-34.89

Table 67 - SISO Authorised Band Edge Results

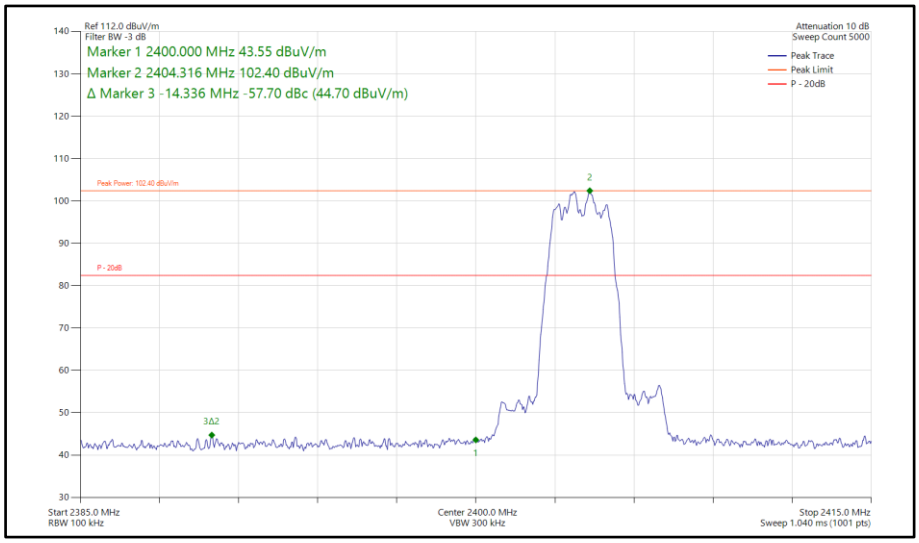

Figure 154 - Bluetooth HDR4, SISO, Core 0 - 2404 MHz, Band Edge Frequency 2400 MHz

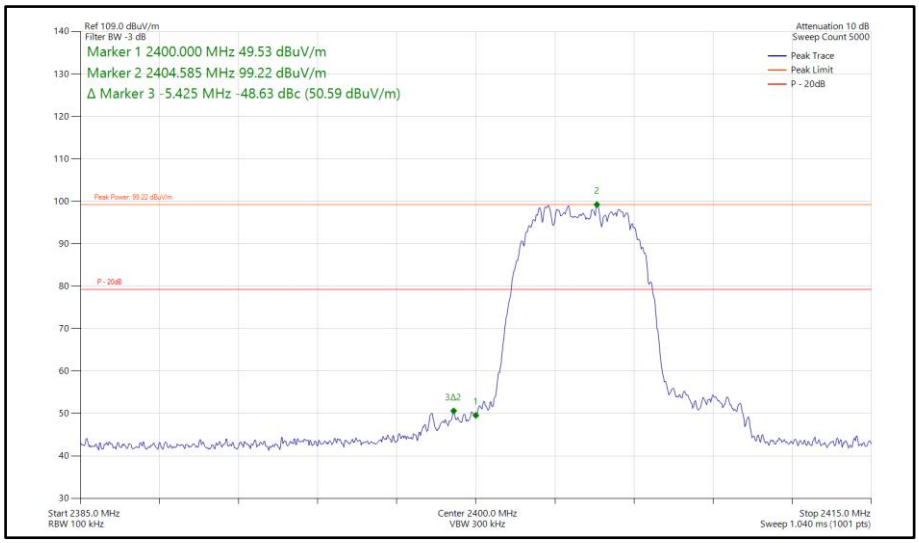

Figure 155 - Bluetooth HDR8, SISO, Core 0 - 2404 MHz, Band Edge Frequency 2400 MHz

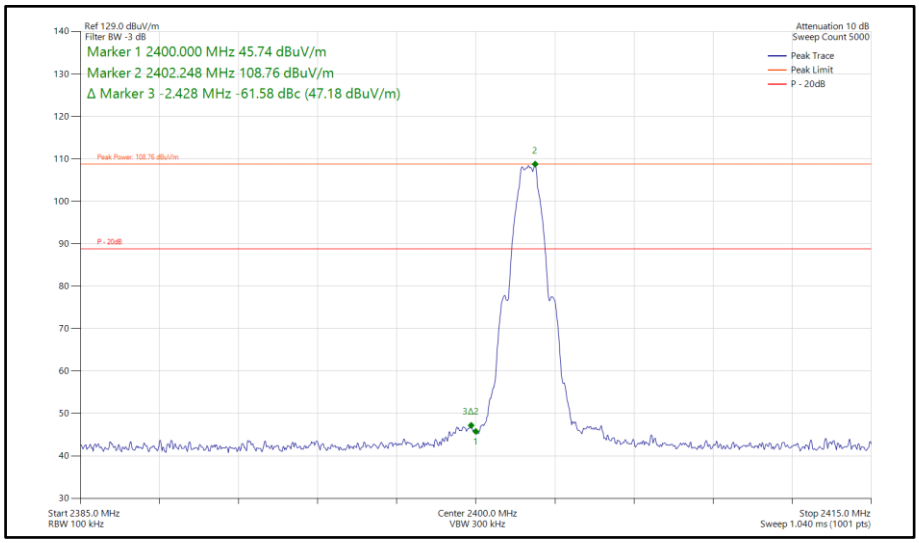

Figure 156 - Bluetooth LE1M, SISO, Core 1 - 2402 MHz Band Edge Frequency 2400 MHz

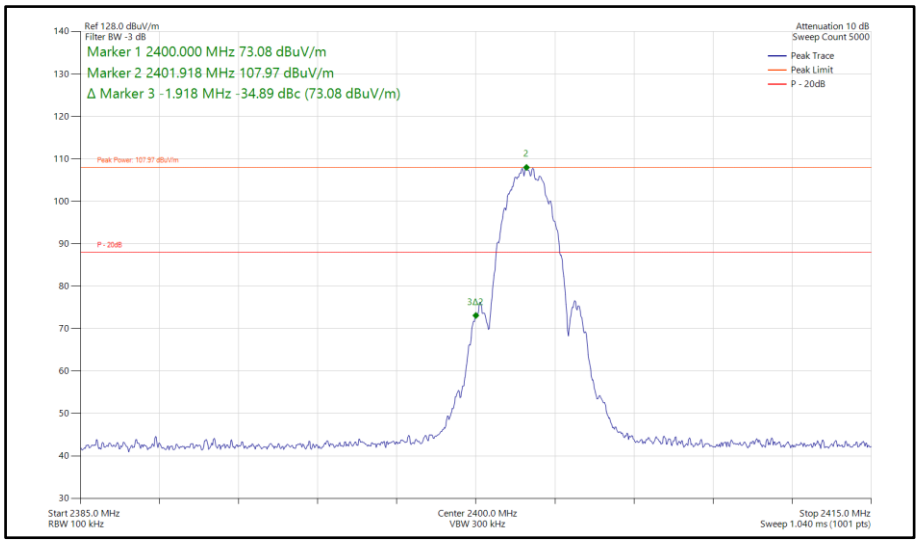

Figure 157 - Bluetooth LE2M, SISO, Core 1 - 2402 MHz Band Edge Frequency 2400 MHz

iPA - Core 0-1 (MIMO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	HDR4	2404	2400	-60.66
Static	HDR8	2404	2400	-50.45

Table 68 - MIMO Authorised Band Edge Results

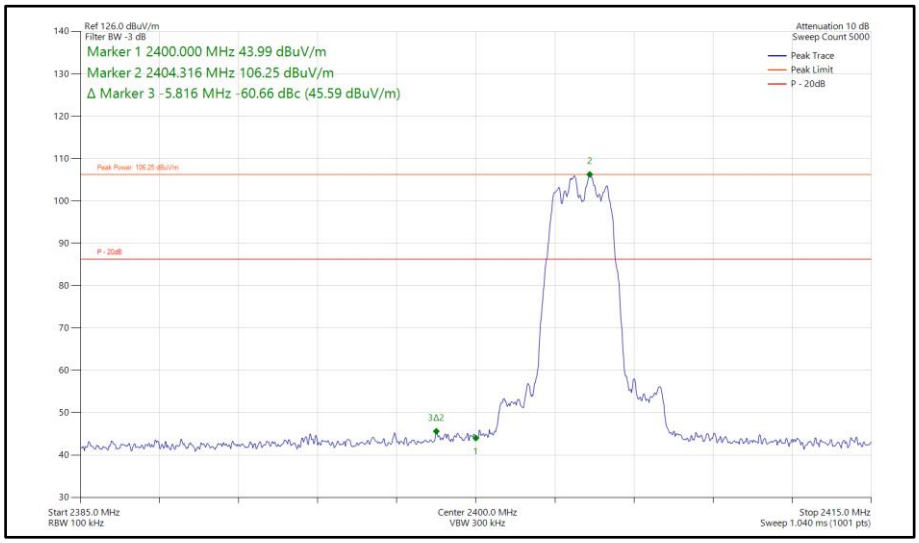

Figure 158 - Bluetooth HDR4, MIMO, Core 0-1 - 2404 MHz, Band Edge Frequency 2400 MHz

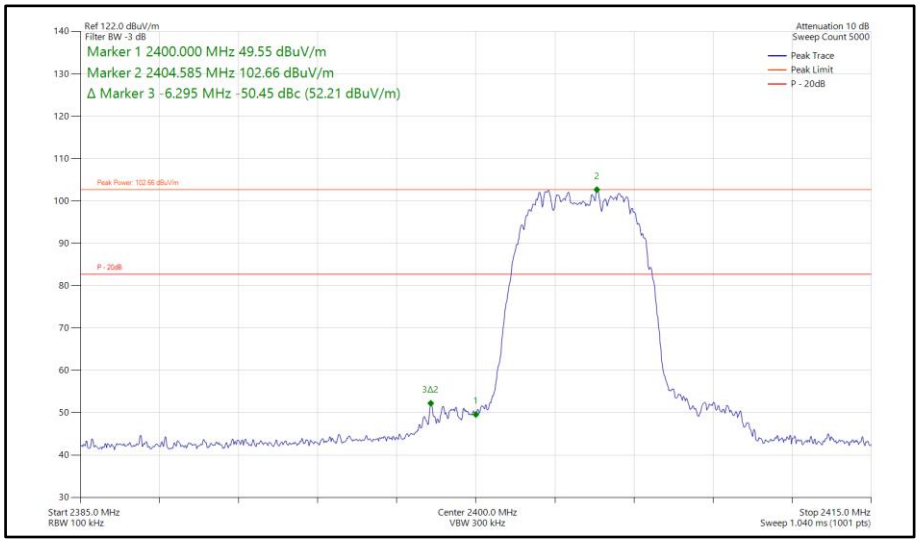

Figure 159 - Bluetooth HDR8, MIMO, Core 0-1 - 2404 MHz, Band Edge Frequency 2400 MHz

ePA - Core 0 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	HDR4	2404	2400	-61.18
Static	HDR8	2404	2400	-49.45

Table 69 - SISO Authorised Band Edge Results

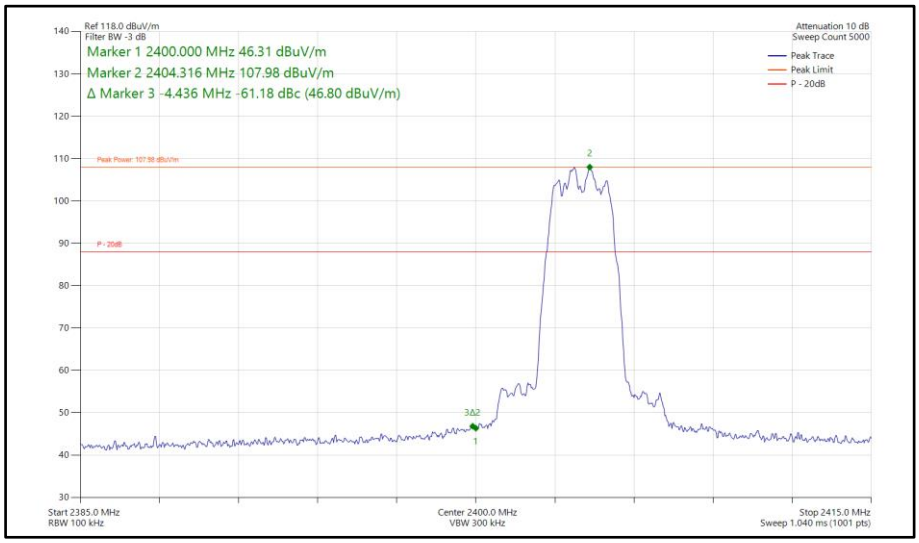

Figure 160 - Bluetooth HDR4, SISO, Core 0 - 2404 MHz, Band Edge Frequency 2400 MHz

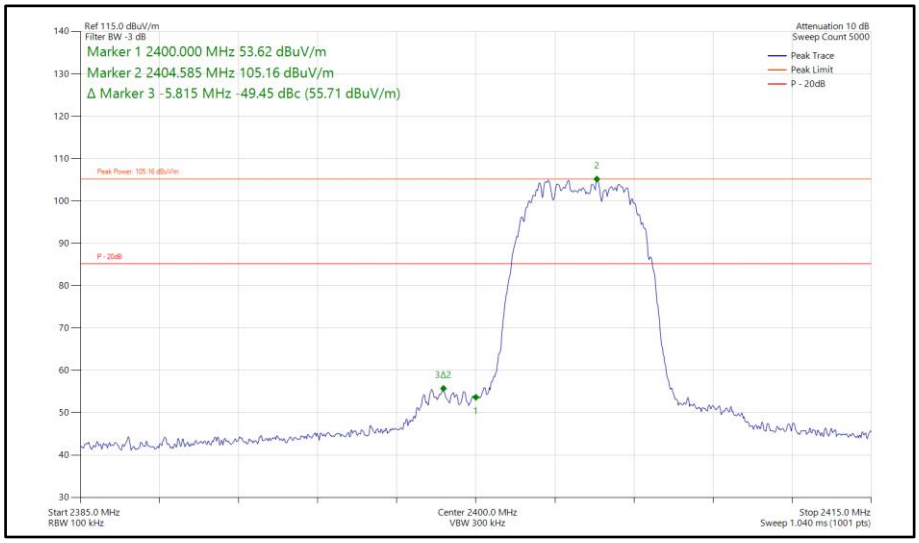

Figure 161 - Bluetooth HDR8, SISO, Core 0 - 2404 MHz, Band Edge Frequency 2400 MHz

ePA - Core 0-1 (MIMO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	HDR4	2404	2400	-62.81
Static	HDR8	2404	2400	-49.78

Table 70 - MIMO Authorised Band Edge Results

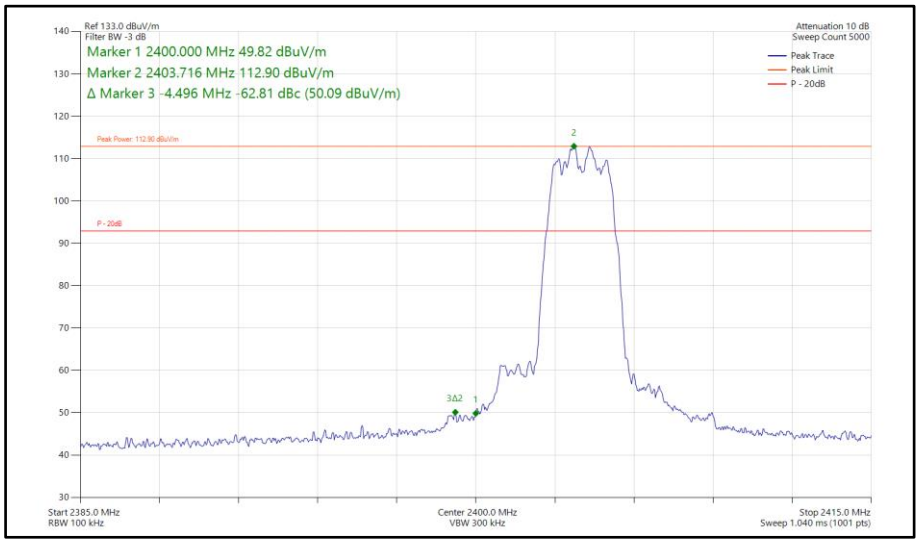

Figure 162 - Bluetooth HDR4, MIMO, Core 0-1 - 2404 MHz, Band Edge Frequency 2400 MHz

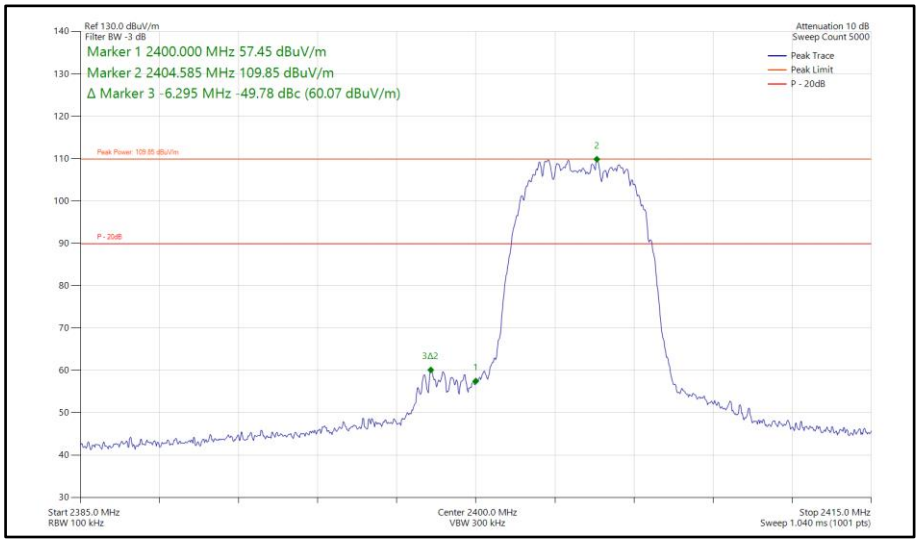

Figure 163 - Bluetooth HDR8, MIMO, Core 0-1 - 2404 MHz, Band Edge Frequency 2400 MHz

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

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

ISED RSS-247, Limit Clause 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 15.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.1.10	5125	-	Software
EMI Test Receiver	Rohde & Schwarz	ESW44	5911	12	24-Mar-2023
1500W (300V 12A) AC Power Supply	iTech	IT7324	5956	-	O/P Mon
5m Semi-Anechoic Chamber (Dual-Axis)	Albatross Projects	RF Chamber 15	5963	36	28-Apr-2025
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5966	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5967	-	TU
Turntable	Maturo Gmbh	TT1.5SI	5968	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5996	12	06-Jun-2023
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6007	12	06-Jun-2023
Cable (SMA to SMA 6.5m)	Junkosha	MWX221-06500AMSAMS/B	6014	12	07-Jun-2023
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6140	12	21-Jun-2023
Digital Multimeter	Fluke	115	6147	12	16-Jun-2023
Humidity & Temperature meter	R.S Components	1364	6150	12	17-Jun-2023
SAC Switch Unit	TUV SUD	TUV_SSU_001	6191	12	12-Dec-2023

Table 71

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

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

A2941, S/N: GF6K93M959 - Modification State 0

2.6.3 Date of Test

09-March-2023

2.6.4 Test Method

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

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

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

2.6.5 Environmental Conditions

Ambient Temperature	21.8 °C
Relative Humidity	32.6 %

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 (%):	78.4
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (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	-	-2.10	-	-	-	8.00	-10.10
2441	3.0	-	-1.59	-	-	-	8.00	-9.59
2476	3.0	-	-1.91	-	-	-	8.00	-9.91

Table 72 - 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):	B (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	-	-1.72	-	-	-	8.00	-9.72
2441	3.0	-	-1.50	-	-	-	8.00	-9.50
2476	3.0	-	-1.59	-	-	-	8.00	-9.59

Table 73 - 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):	B+C (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	-	-1.85	-2.21	-	0.98	8.00	-7.02
2441	3.0	-	-2.51	-2.41	-	0.55	8.00	-7.45
2476	3.0	-	-2.15	-1.98	-	0.95	8.00	-7.05

Table 74 - 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):	B+C (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	-	-2.22	-2.29	-	0.75	8.00	-7.25
2441	3.0	-	-2.03	-1.86	-	1.06	8.00	-6.94
2476	3.0	-	-2.06	-2.01	-	0.98	8.00	-7.02

Table 75 - 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 (%):	78.4
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (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	-	-10.90	-	-	-	8.00	-18.90
2441	3.0	-	-10.88	-	-	-	8.00	-18.88
2476	3.0	-	-10.76	-	-	-	8.00	-18.76

Table 76 - 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 (%):	78.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (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	-	-10.85	-	-	-	8.00	-18.85
2441	3.0	-	-10.81	-	-	-	8.00	-18.81
2476	3.0	-	-10.52	-	-	-	8.00	-18.52

Table 77 - 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):	B+C (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	-	-11.34	-11.43	-	-8.37	8.00	-16.37
2441	3.0	-	-11.36	-11.47	-	-8.40	8.00	-16.40
2476	3.0	-	-11.19	-11.35	-	-8.26	8.00	-16.26

Table 78 - 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 (%):	78.5
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	B+C (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	-	-11.21	-11.51	-	-8.35	8.00	-16.35
2441	3.0	-	-10.63	-10.71	-	-7.66	8.00	-15.66
2476	3.0	-	-11.11	-11.14	-	-8.11	8.00	-16.11

Table 79 - 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 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	-	-	-10.20	-	-	8.00	-18.20
2440	3.0	-	-	-10.11	-	-	8.00	-18.11
2480	3.0	-	-	-9.97	-	-	8.00	-17.97

Table 80 - 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 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	-	-	-12.33	-	-	8.00	-20.33
2440	3.0	-	-	-12.20	-	-	8.00	-20.20
2480	3.0	-	-	-11.99	-	-	8.00	-19.99

Table 81 - 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 (%):	60.4
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	B+C (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	-	-10.11	-10.14	-	-7.11	8.00	-15.11
2440	3.0	-	-10.30	-10.61	-	-7.44	8.00	-15.44
2480	3.0	-	-10.06	-10.44	-	-7.23	8.00	-15.23

Table 82 - 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 (%):	31.2
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	B+C (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	-	-12.51	-12.52	-	-9.50	8.00	-17.50
2440	3.0	-	-12.02	-12.01	-	-9.00	8.00	-17.00
2480	3.0	-	-11.73	-11.94	-	-8.82	8.00	-16.82

Table 83 - 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 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Hygrometer	Rotronic	I-1000	3068	12	21-Sep-2023
Multi-GNSS Simulator (GPS)	Spirent	GSS6700	4596	12	22-Aug-2023
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
MXA Signal Analyser	Keysight Technologies	N9020B	5529	24	13-Dec-2024
Signal Conditioning Unit	TUV SUD	SPECTRUM SCU001	5546	12	06-Apr-2023
Digital Multimeter	Fluke	115	6147	12	16-Jun-2023

Table 84

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	± 42.87 kHz
Maximum Conducted Output Power	± 1.38 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	± 1.49 dB

Table 85

Measurement Uncertainty Decision Rule – Accuracy Method

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

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