

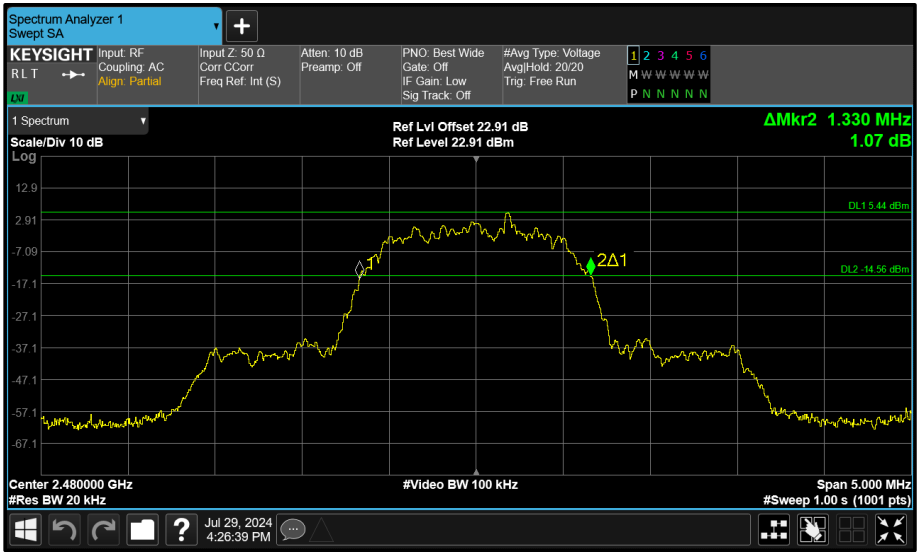


Figure 146 - Core 1 (B) 2480 MHz (CH78) 20 dB Bandwidth

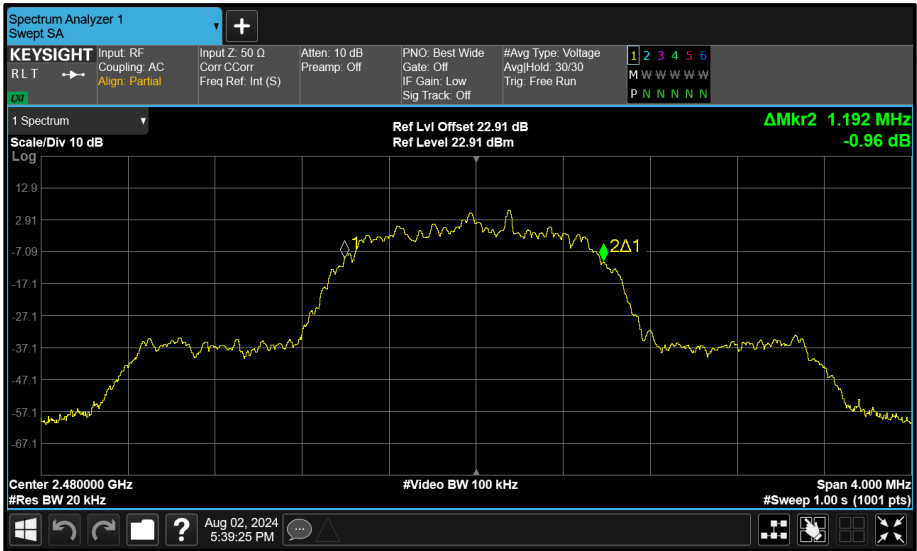


Figure 147 - Core 1 (B) 2480 MHz (CH78) 99% Bandwidth



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247 (a)(1) RSS-247 5.1	Test Method(s):	C63.10 6.9.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA 8-DPSK (3-DH5)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	20 dB Bandwidth (MHz)			
	A	B	C	D
2402	1.260	1.265	-	-
2441	1.265	1.270	-	-
2480	1.260	1.265	-	-

Table 79 - 20 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	1.188	1.200	-	-	-
2441	1.192	1.196	-	-	-
2480	1.192	1.200	-	-	-

Table 80 - 99% Bandwidth Results

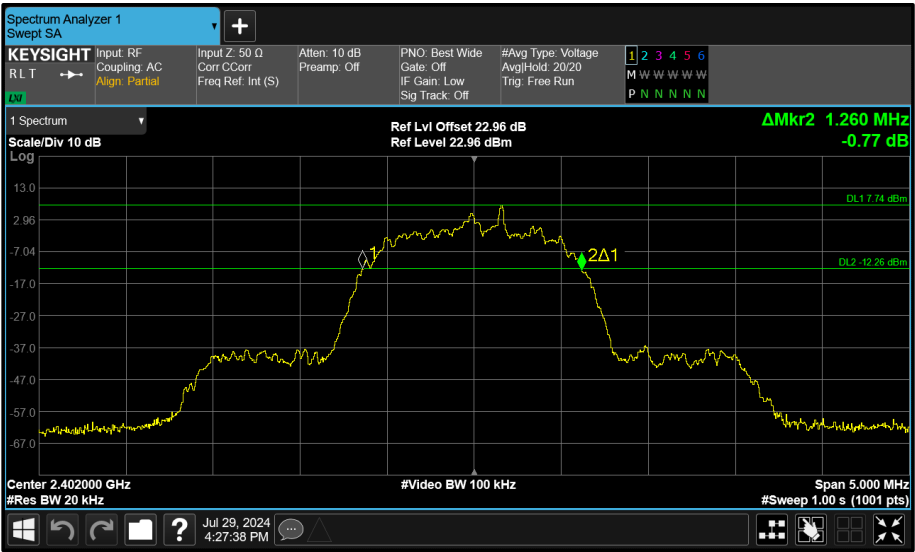


Figure 148 - Core 0 (A) 2402 MHz (CH0) 20 dB Bandwidth

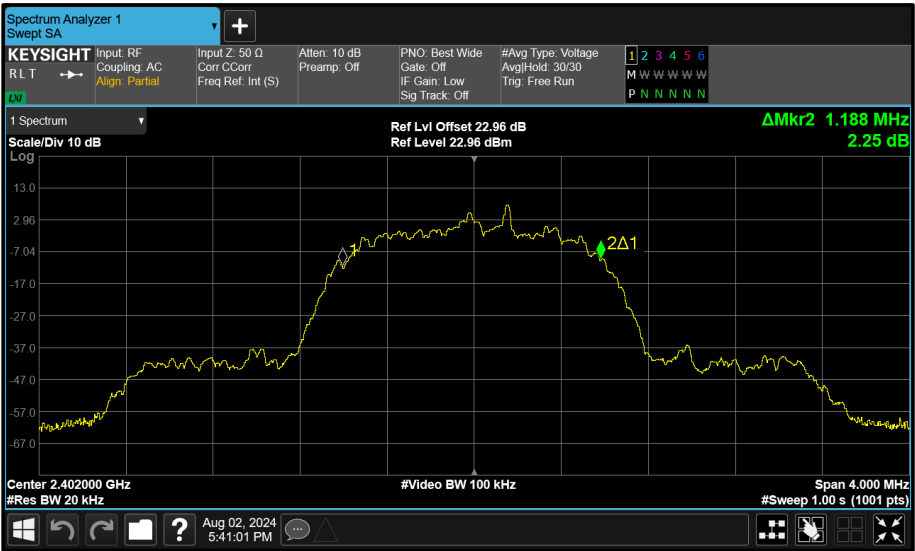


Figure 149 - Core 0 (A) 2402 MHz (CH0) 99% Bandwidth

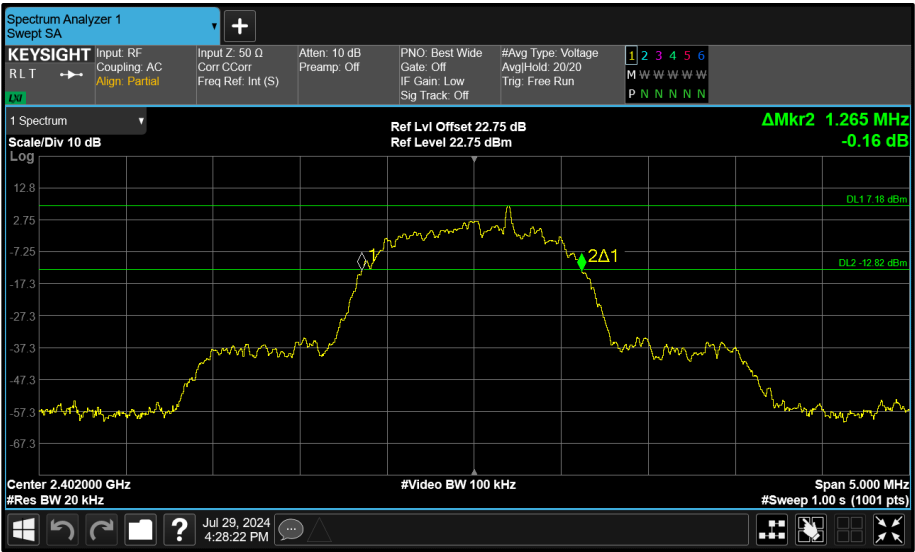


Figure 150 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

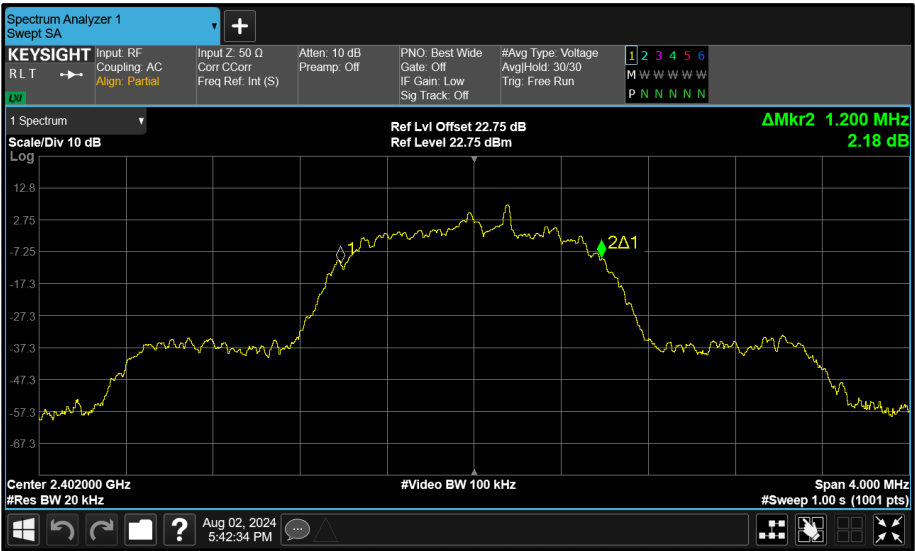


Figure 151 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

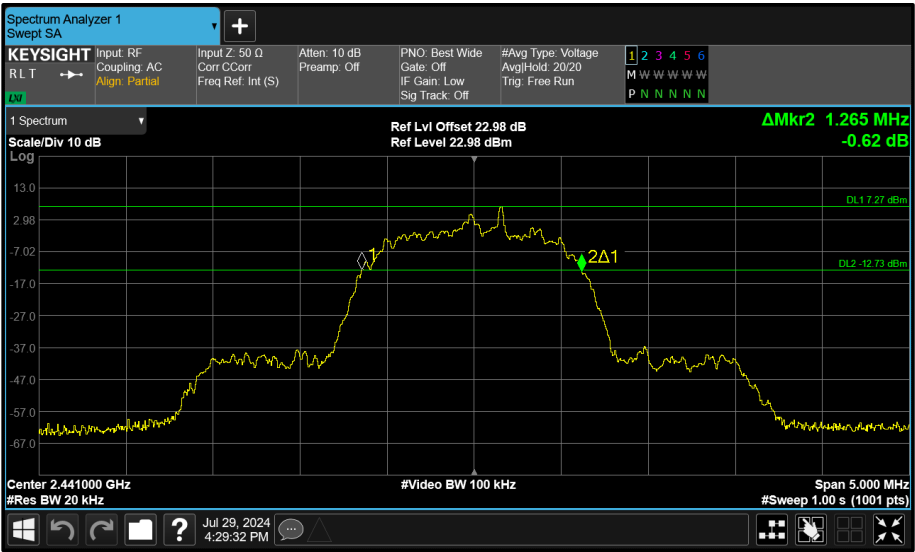


Figure 152 - Core 0 (A) 2441 MHz (CH39) 20 dB Bandwidth

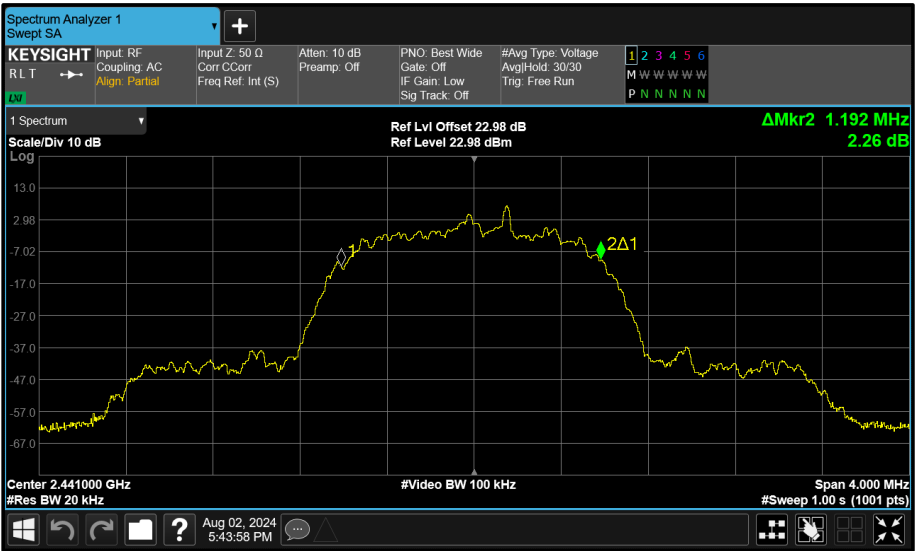


Figure 153 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

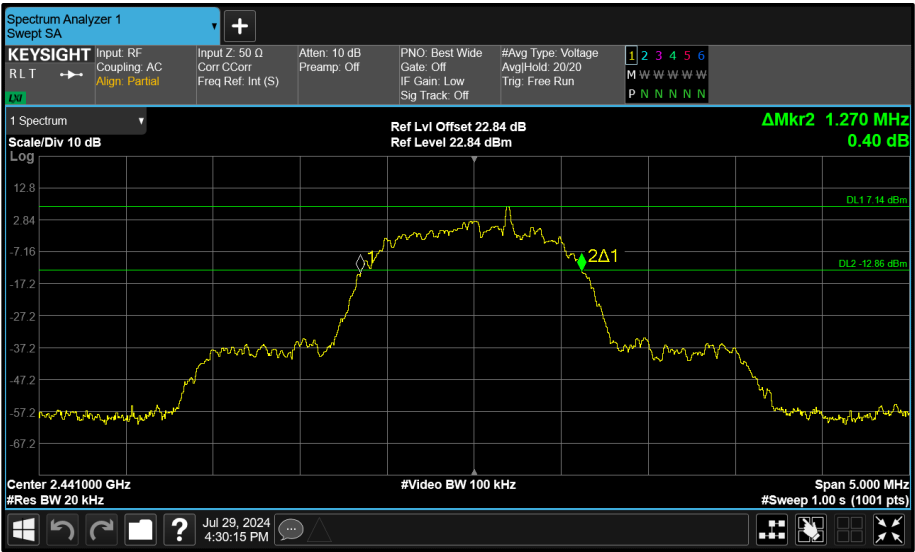


Figure 154 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

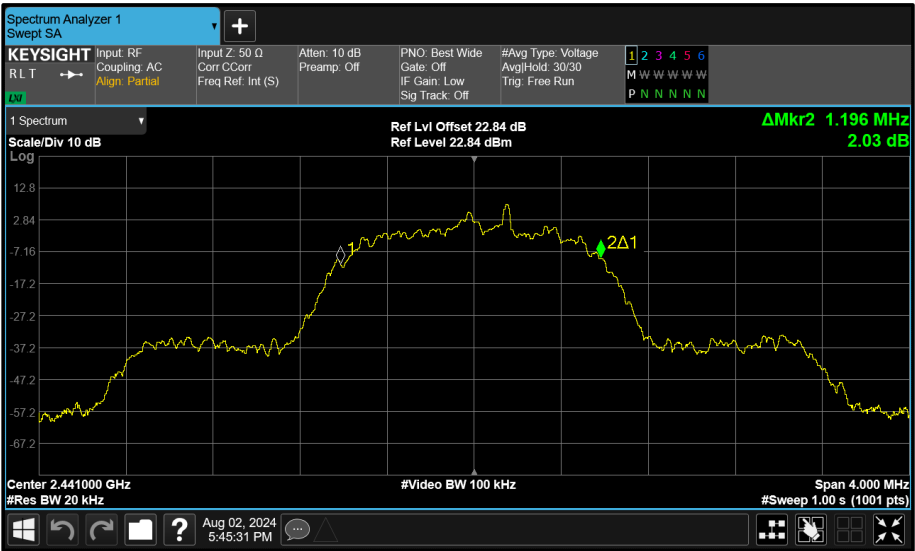


Figure 155 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

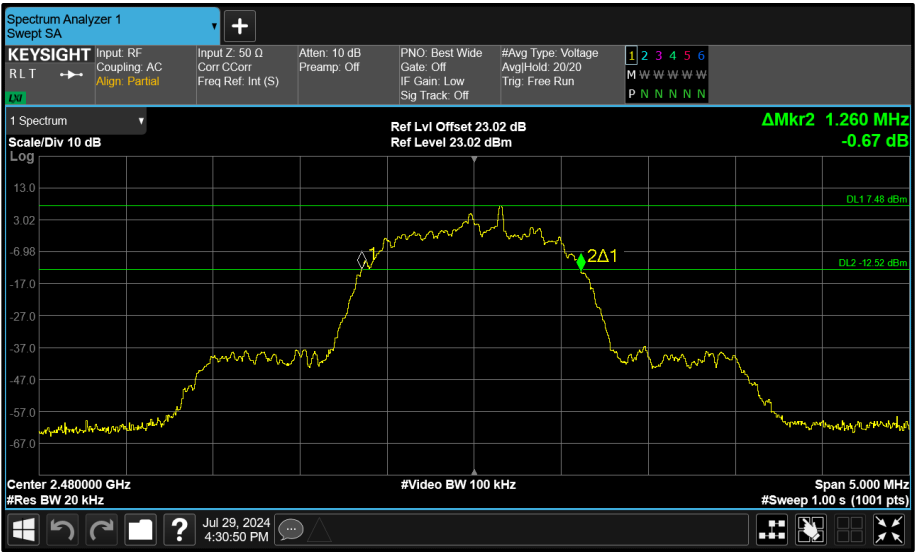


Figure 156 - Core 0 (A) 2480 MHz (CH78) 20 dB Bandwidth

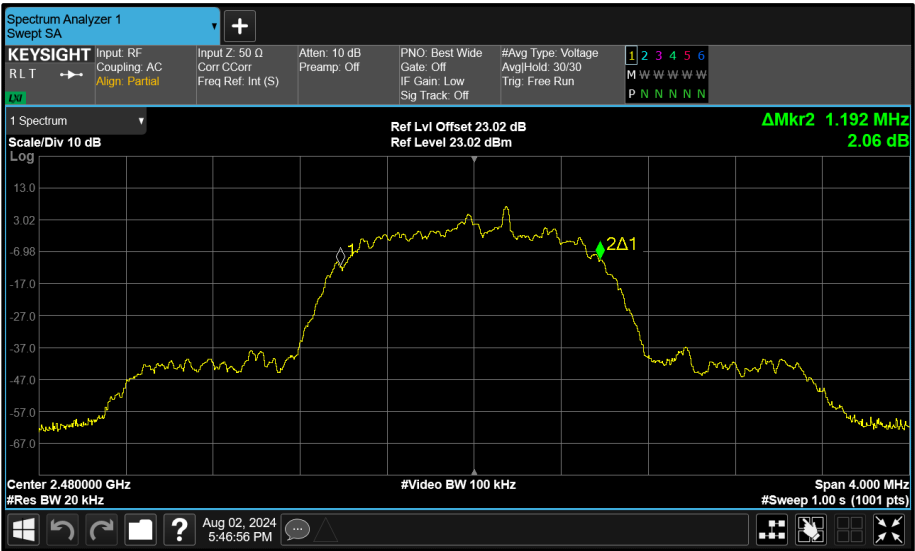


Figure 157 - Core 0 (A) 2480 MHz (CH78) 99% Bandwidth





Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247 (a)(1) RSS-247 5.1	Test Method(s):	C63.10 6.9.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	20 dB Bandwidth (MHz)			
	A	B	C	D
2402	1.325	1.325	-	-
2441	1.330	1.330	-	-
2480	1.325	1.325	-	-

Table 81 - 20 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	1.184	1.184	-	-	-
2441	1.184	1.184	-	-	-
2480	1.180	1.184	-	-	-

Table 82 - 99% Bandwidth Results

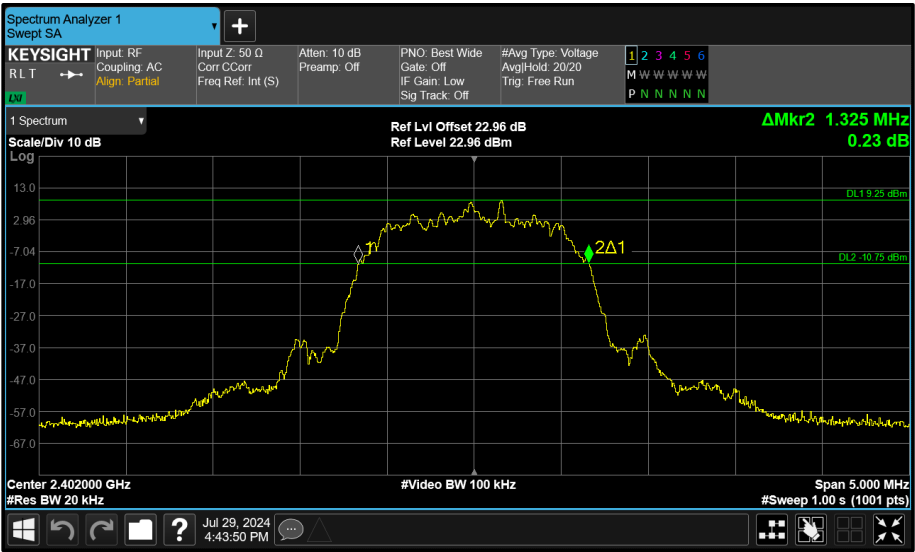


Figure 160 - Core 0 (A) 2402 MHz (CH0) 20 dB Bandwidth

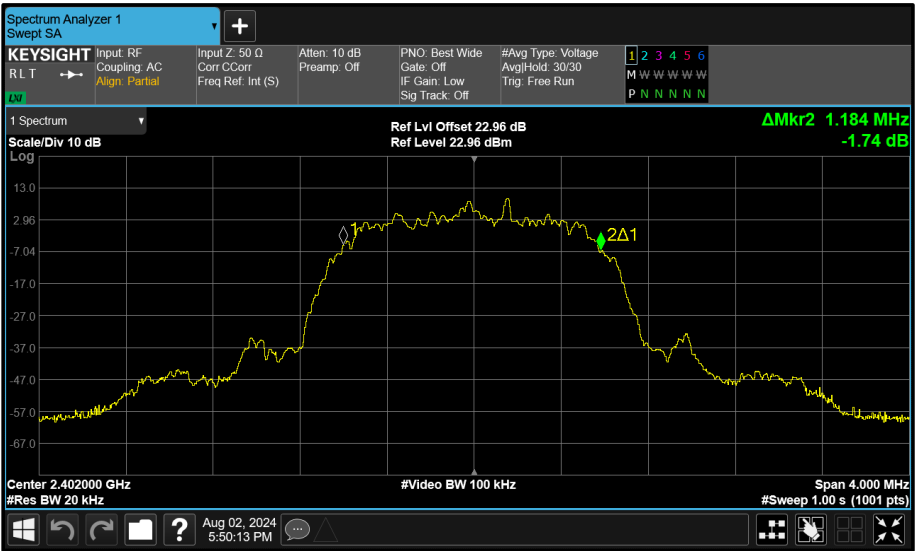


Figure 161 - Core 0 (A) 2402 MHz (CH0) 99% Bandwidth

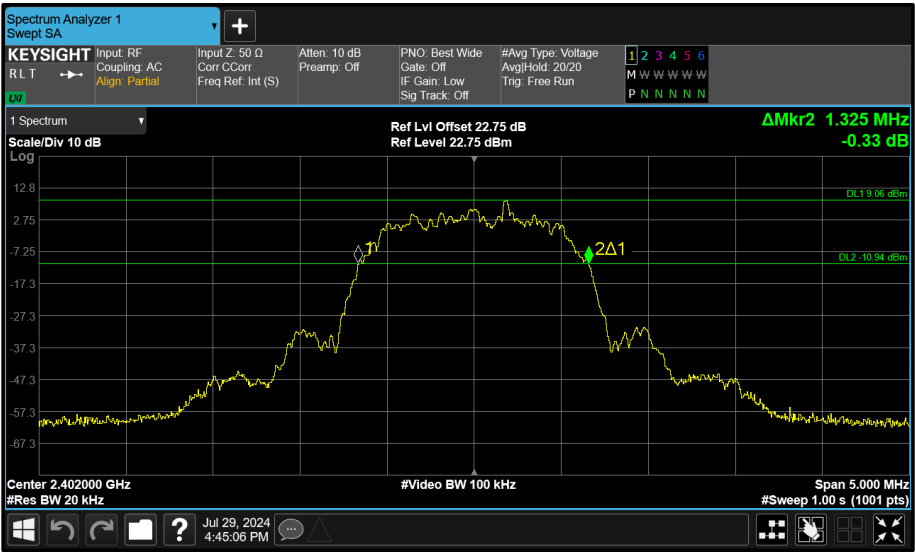


Figure 162 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

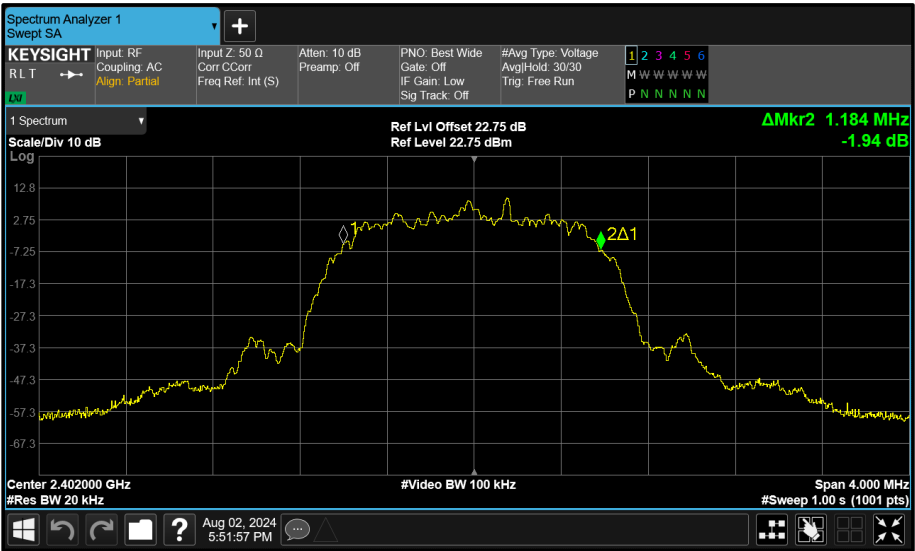


Figure 163 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

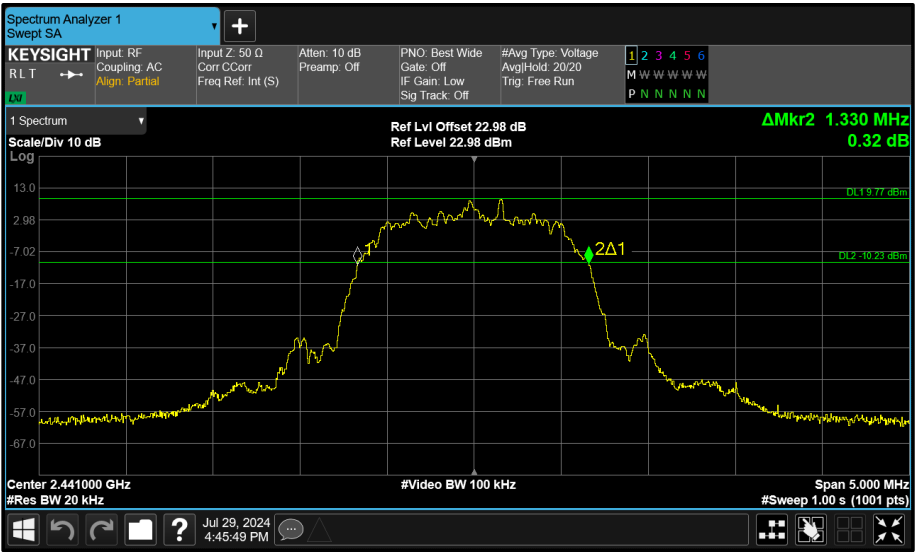


Figure 164 - Core 0 (A) 2441 MHz (CH39) 20 dB Bandwidth

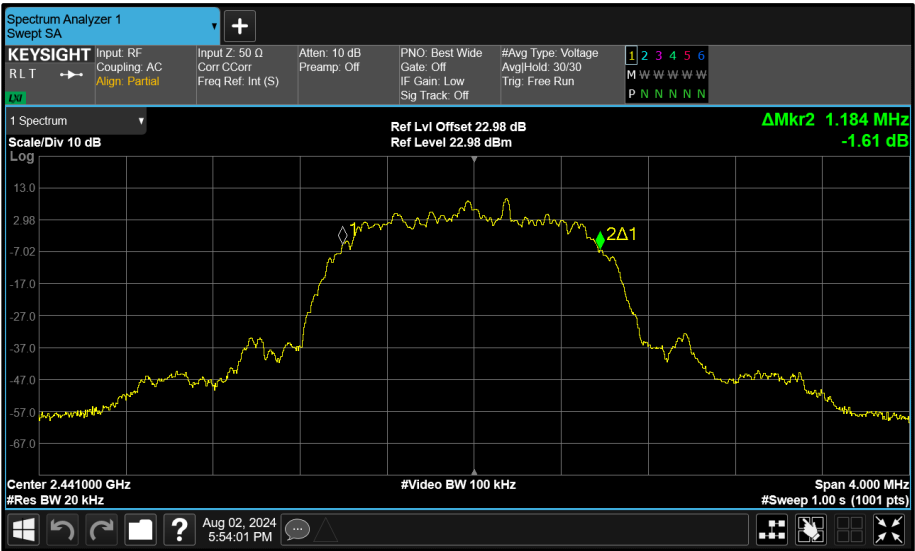


Figure 165 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

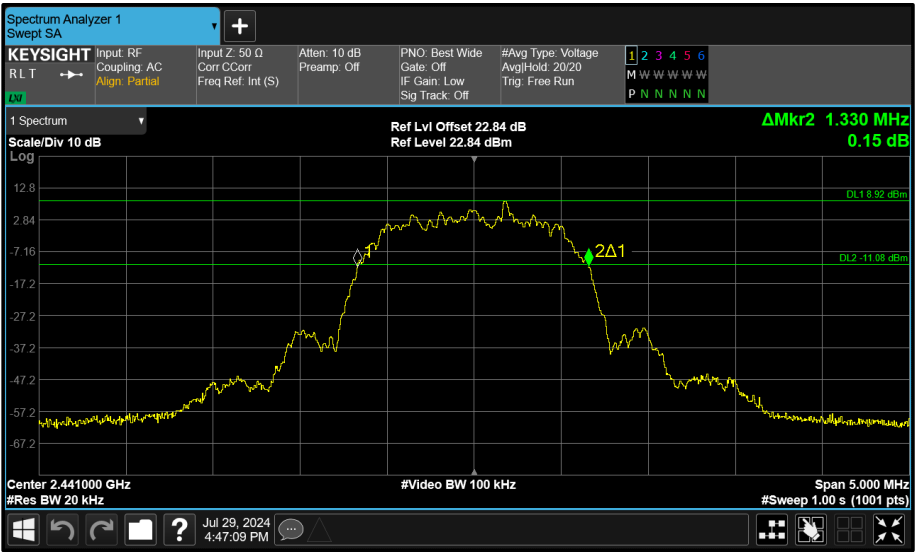


Figure 166 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

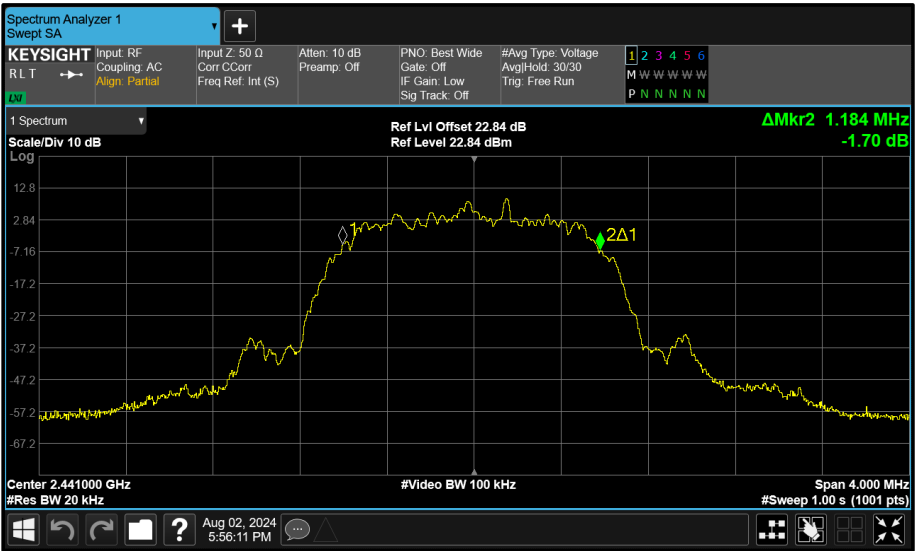


Figure 167 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

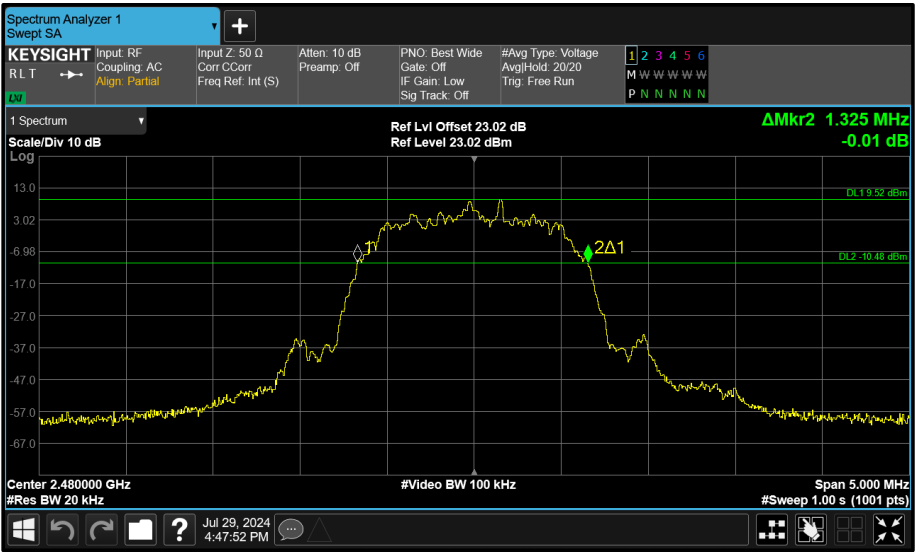


Figure 168 - Core 0 (A) 2480 MHz (CH78) 20 dB Bandwidth

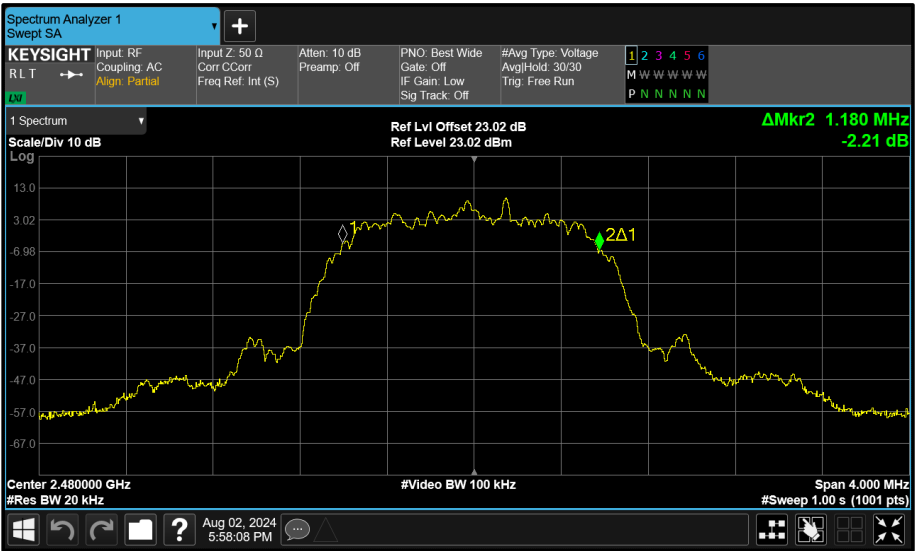


Figure 169 - Core 0 (A) 2480 MHz (CH78) 99% Bandwidth

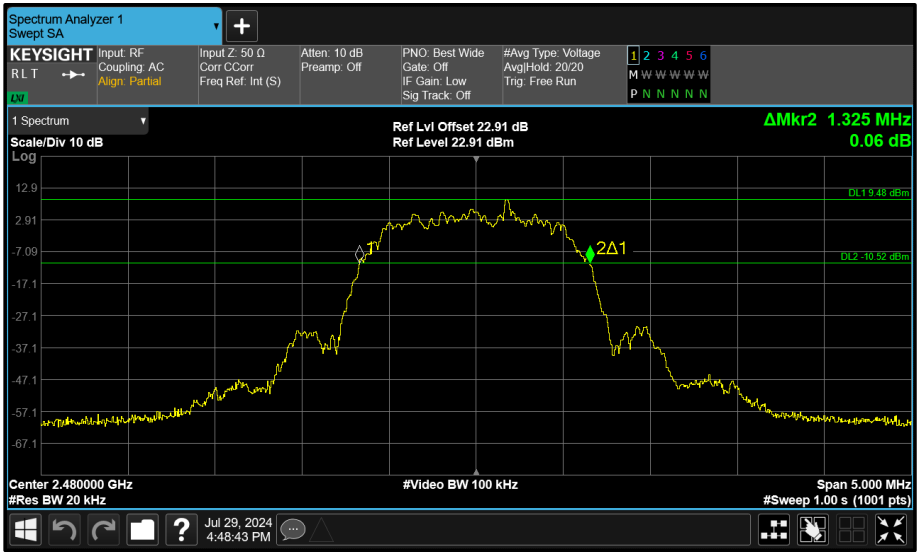


Figure 170 - Core 1 (B) 2480 MHz (CH78) 20 dB Bandwidth

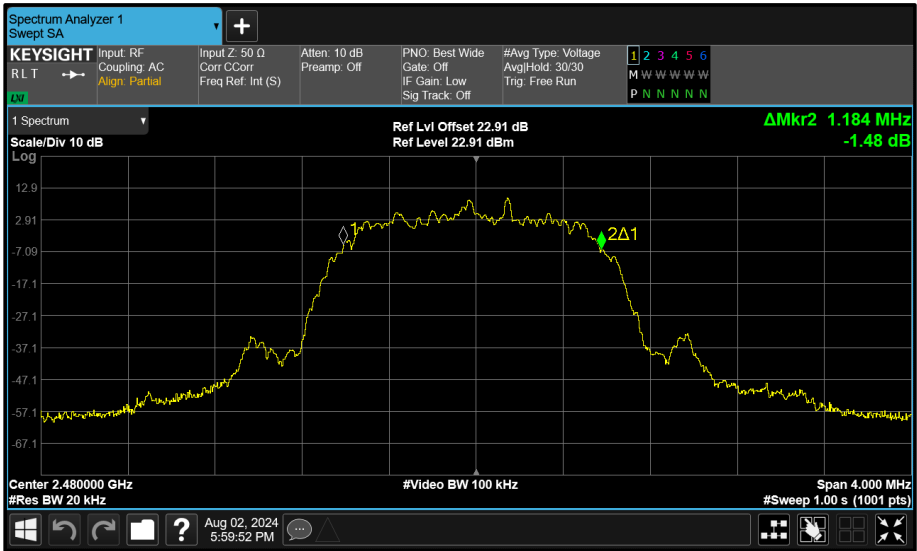


Figure 171 - Core 1 (B) 2480 MHz (CH78) 99% Bandwidth



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247 (a)(1) RSS-247 5.1	Test Method(s):	C63.10 6.9.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA 8-DPSK (3-DH5)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	20 dB Bandwidth (MHz)			
	A	B	C	D
2402	1.260	1.260	-	-
2441	1.260	1.265	-	-
2480	1.260	1.260	-	-

Table 83 - 20 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	1.184	1.180	-	-	-
2441	1.184	1.184	-	-	-
2480	1.184	1.188	-	-	-

Table 84 - 99% Bandwidth Results

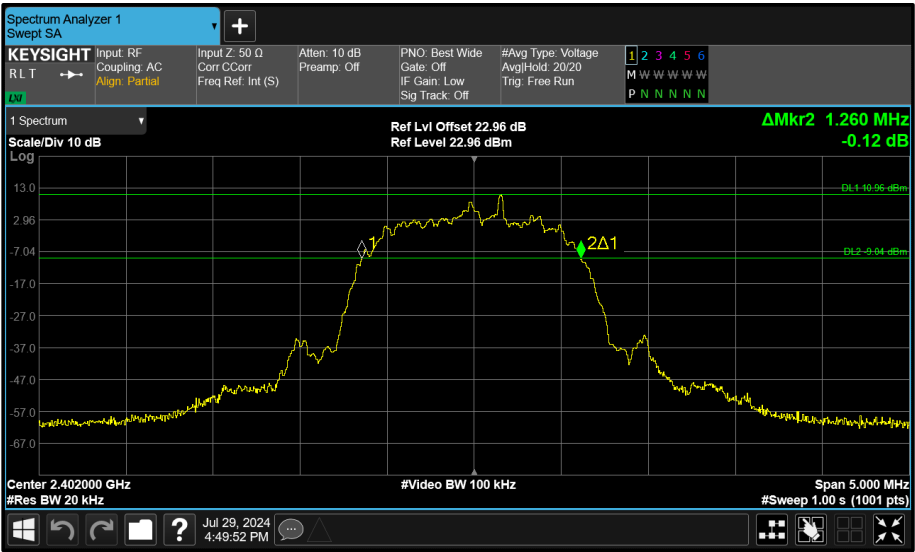


Figure 172 - Core 0 (A) 2402 MHz (CH0) 20 dB Bandwidth

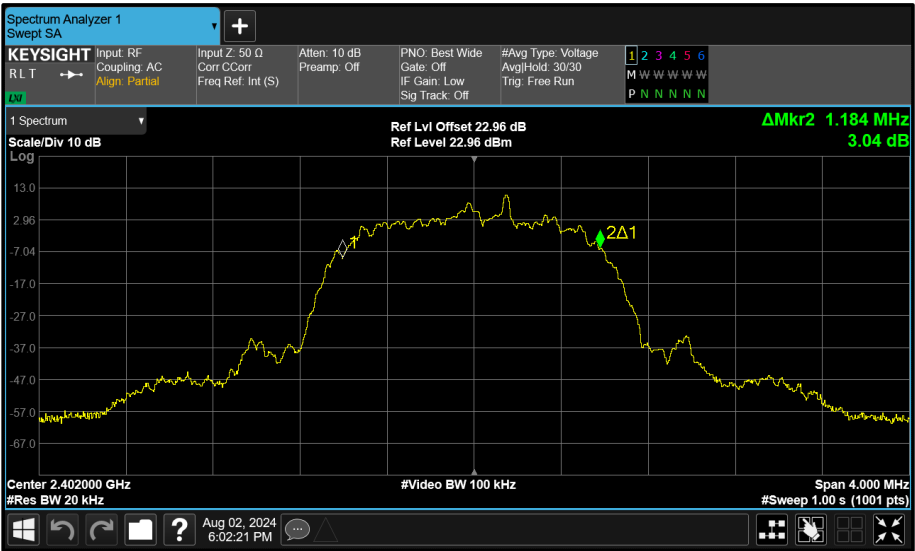


Figure 173 - Core 0 (A) 2402 MHz (CH0) 99% Bandwidth

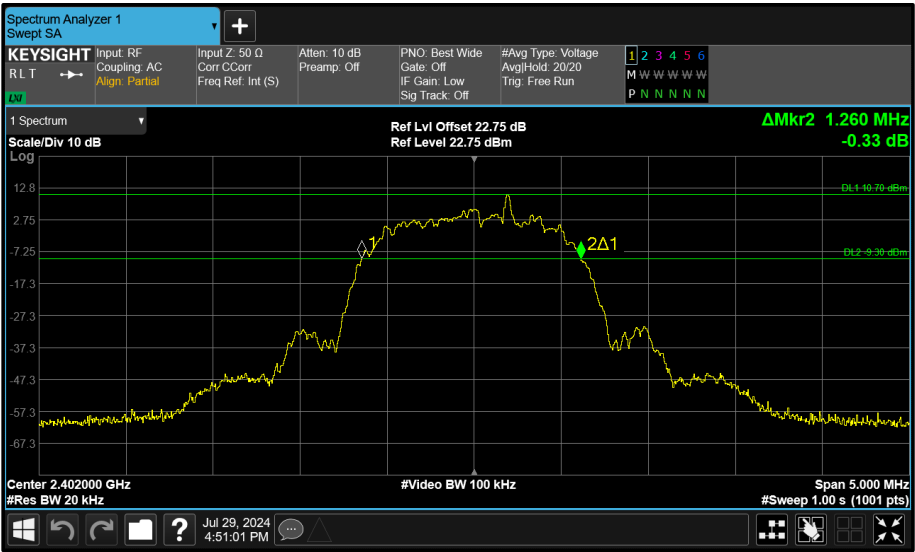


Figure 174 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

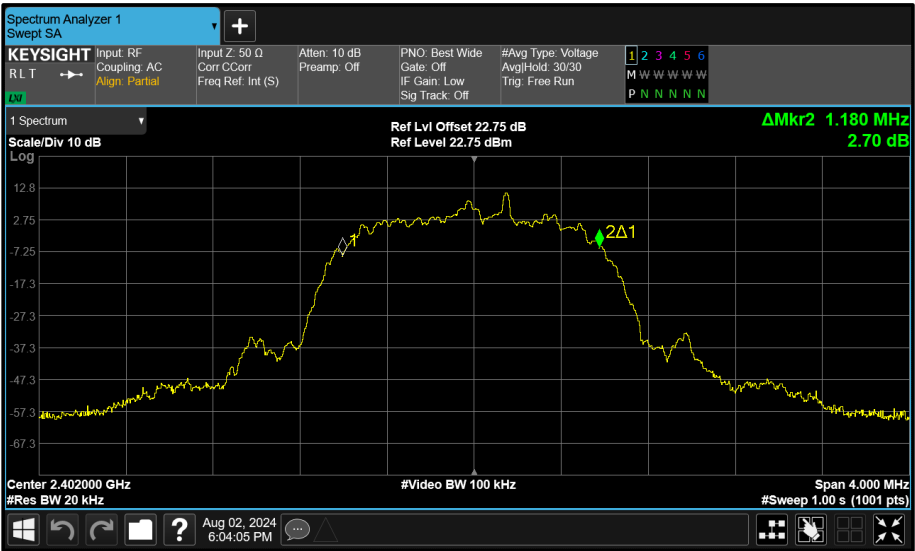


Figure 175 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

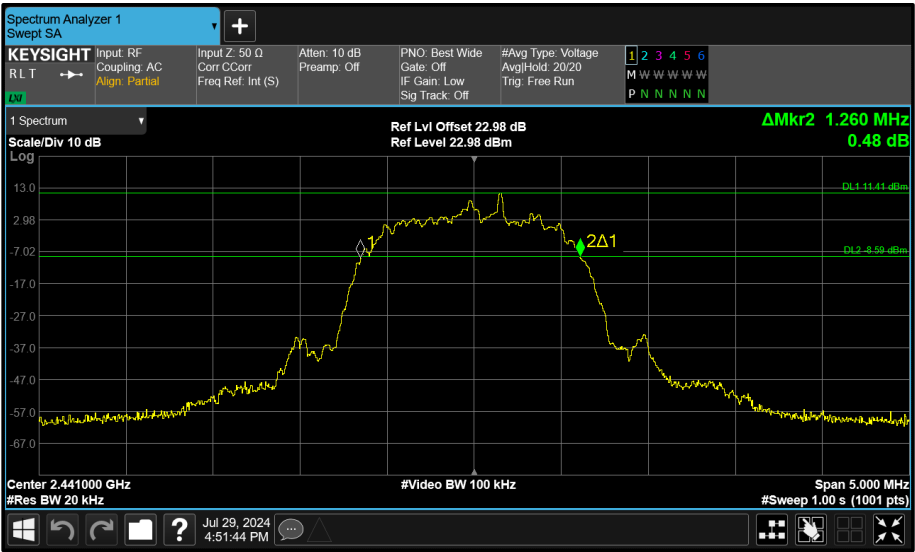


Figure 176 - Core 0 (A) 2441 MHz (CH39) 20 dB Bandwidth

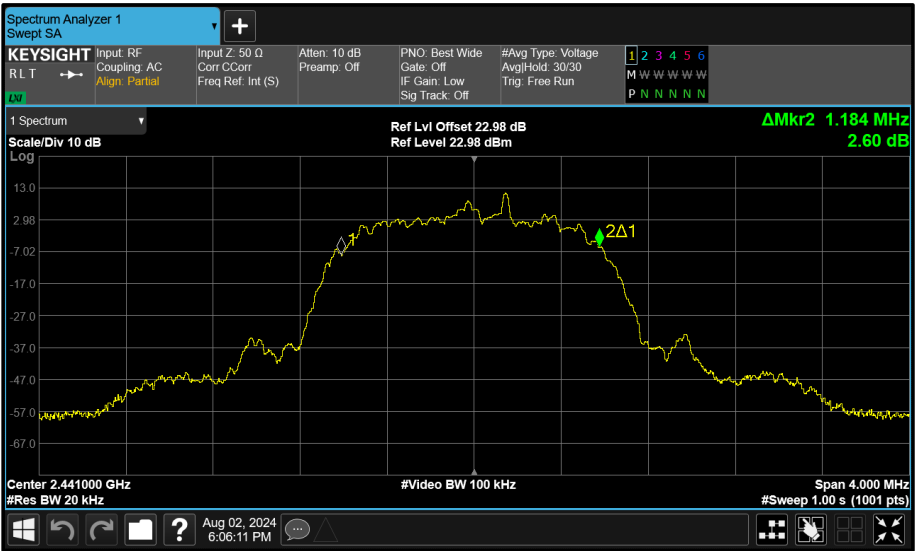


Figure 177 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

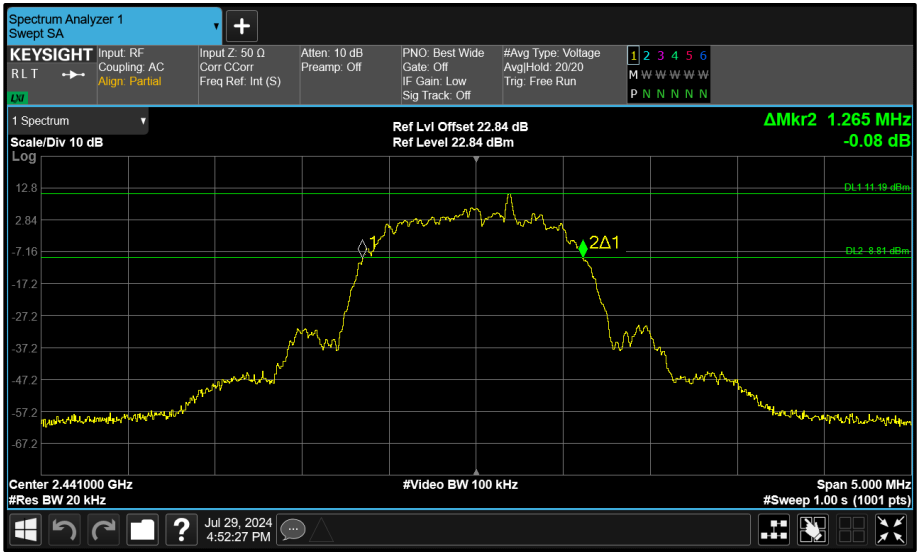


Figure 178 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

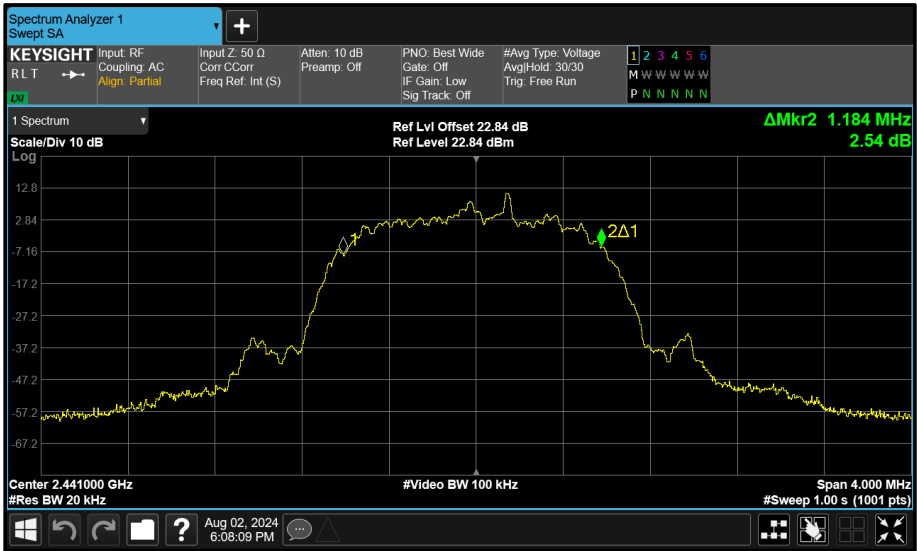


Figure 179 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

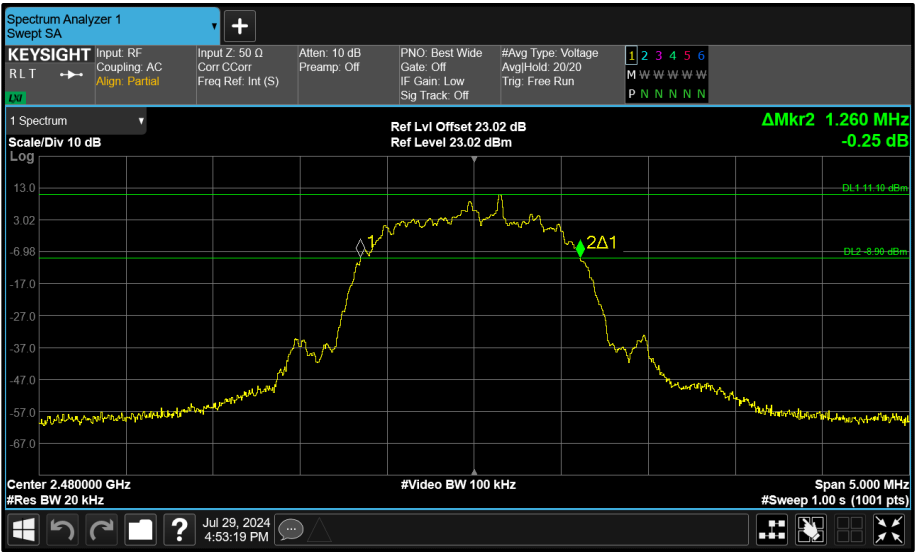


Figure 180 - Core 0 (A) 2480 MHz (CH78) 20 dB Bandwidth

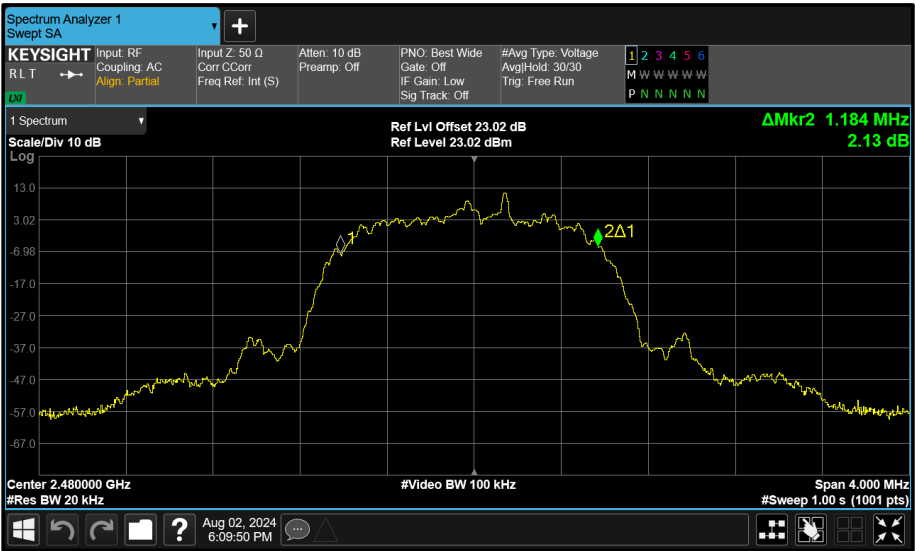


Figure 181 - Core 0 (A) 2480 MHz (CH78) 99% Bandwidth

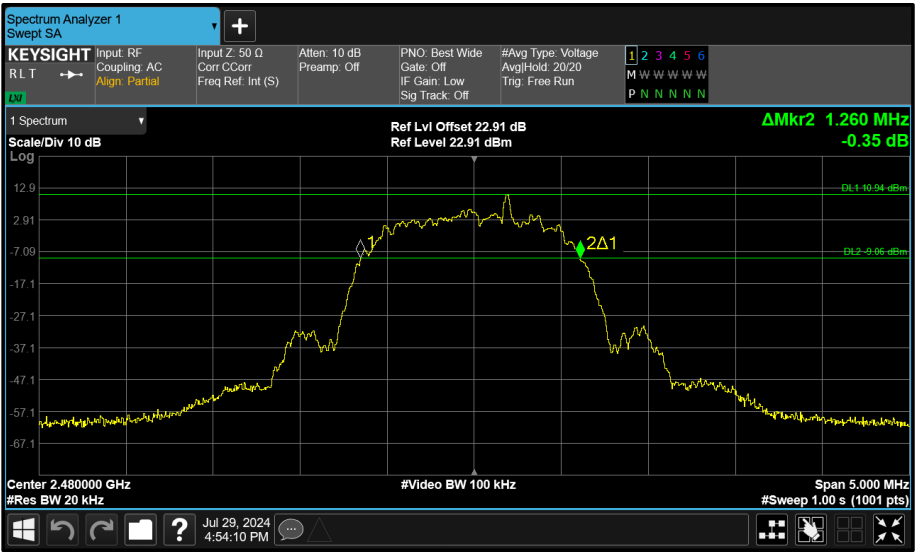


Figure 182 - Core 1 (B) 2480 MHz (CH78) 20 dB Bandwidth

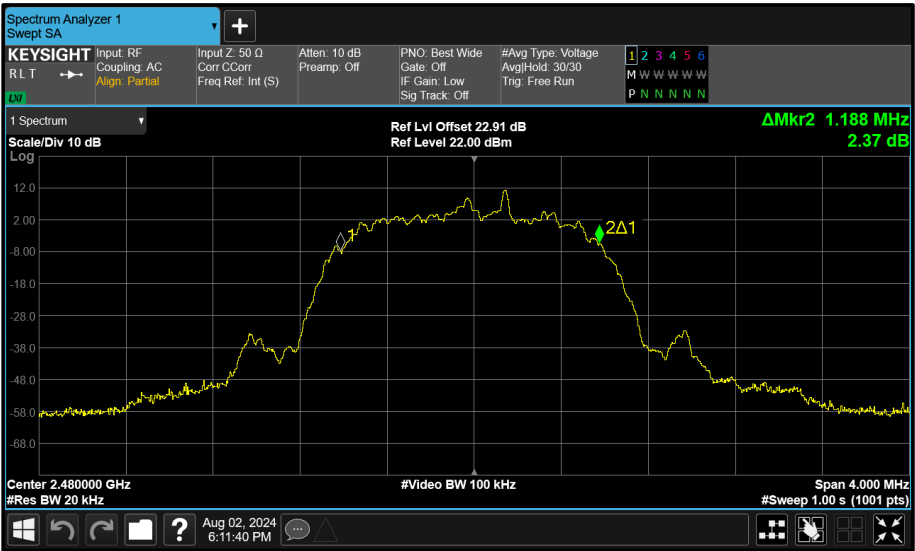


Figure 183 - Core 1 (B) 2480 MHz (CH78) 99% Bandwidth

FCC 47 CFR Part 15 and ISCED RSS-247 Limit Clause

None specified.



2.5.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 18 and RF Laboratory 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Hygrometer	Rotronic	I-1000	3068	12	07-Nov-2024
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
MXA Signal Analyser	Keysight Technologies	N9020B	5529	24	13-Dec-2024
1500VA AC Power Supply	iTech	IT7324	5907	-	O/P Mon
MXA Signal Analyser	Keysight Technologies	N9020B	5919	24	18-Mar-2026
Digital Multimeter	Fluke	115	6145	12	06-Jun-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6426	12	07-Feb-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6519	12	08-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6520	12	09-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6521	12	09-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6522	12	09-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6752	12	06-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6753	12	06-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6754	12	06-Feb-2025

Table 85

O/P Mon - Output Monitored using calibrated equipment



2.6 Maximum Conducted Output Power

2.6.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b)
ISED RSS-247, Clause 5.4
ISED RSS-GEN, Clause 6.12

2.6.2 Equipment Under Test and Modification State

A3238, S/N: G76H79FX4L - Modification State 0

2.6.3 Date of Test

26-July-2024 to 29-July-2024

2.6.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 7.8.5 using a power meter.

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.

2.6.5 Environmental Conditions

Ambient Temperature	20.0 - 21.0 °C
Relative Humidity	58.2 - 60.8 %



2.6.6 Test Results

2.4 GHz Bluetooth BDR/EDR

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (DH5)	Duty Cycle (%):	76.7
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	1.80

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	13.90	-	-	-	-	30.00	-16.10
2441	13.52	-	-	-	-	30.00	-16.48
2480	13.45	-	-	-	-	30.00	-16.55

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	Σ					
2402	13.90	-	-	-	-	30.00	-16.10	15.70	36.00	-20.30
2441	13.52	-	-	-	-	30.00	-16.48	15.32	36.00	-20.68
2480	13.45	-	-	-	-	30.00	-16.55	15.25	36.00	-20.75

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)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	77.1
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	1.80

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	11.90	-	-	-	-	30.00	-18.10
2441	11.91	-	-	-	-	30.00	-18.09
2480	11.99	-	-	-	-	30.00	-18.01

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	Σ					
2402	11.90	-	-	-	-	30.00	-18.10	13.70	36.00	-22.30
2441	11.91	-	-	-	-	30.00	-18.09	13.71	36.00	-22.29
2480	11.99	-	-	-	-	30.00	-18.01	13.79	36.00	-22.21

Table 89 - ISSED Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA 8-DPSK (3-DH5)	Duty Cycle (%):	77.0
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	1.80

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	12.24	-	-	-	-	30.00	-17.76
2441	12.33	-	-	-	-	30.00	-17.67
2480	12.35	-	-	-	-	30.00	-17.65

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	Σ					
2402	12.24	-	-	-	-	30.00	-17.76	14.04	36.00	-21.96
2441	12.33	-	-	-	-	30.00	-17.67	14.13	36.00	-21.87
2480	12.35	-	-	-	-	30.00	-17.65	14.15	36.00	-21.85

Table 91 - ISSED Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (DH5)	Duty Cycle (%):	76.8
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	0.20

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	-	-	13.47	-	-	30.00	-16.53
2441	-	-	13.56	-	-	30.00	-16.44
2480	-	-	13.50	-	-	30.00	-16.50

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	Σ					
2402	-	-	13.47	-	-	30.00	-16.53	13.67	36.00	-22.33
2441	-	-	13.56	-	-	30.00	-16.44	13.76	36.00	-22.24
2480	-	-	13.50	-	-	30.00	-16.50	13.70	36.00	-22.30

Table 93 - ISSED Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	76.9
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	0.20

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	-	-	11.93	-	-	30.00	-18.07
2441	-	-	11.62	-	-	30.00	-18.38
2480	-	-	11.95	-	-	30.00	-18.05

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	Σ					
2402	-	-	11.93	-	-	30.00	-18.07	12.13	36.00	-23.87
2441	-	-	11.62	-	-	30.00	-18.38	11.82	36.00	-24.18
2480	-	-	11.95	-	-	30.00	-18.05	12.15	36.00	-23.85

Table 95 - ISSED Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA 8-DPSK (3-DH5)	Duty Cycle (%):	77.0
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	0.20

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	-	-	12.41	-	-	30.00	-17.59
2441	-	-	12.40	-	-	30.00	-17.60
2480	-	-	12.32	-	-	30.00	-17.68

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	Σ					
2402	-	-	12.41	-	-	30.00	-17.59	12.61	36.00	-23.39
2441	-	-	12.40	-	-	30.00	-17.60	12.60	36.00	-23.40
2480	-	-	12.32	-	-	30.00	-17.68	12.52	36.00	-23.48

Table 97 - ISSED Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	76.9
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	1.80

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	19.38	-	-	-	-	30.00	-10.62
2441	19.42	-	-	-	-	30.00	-10.58
2480	19.13	-	-	-	-	30.00	-10.87

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	Σ					
2402	19.38	-	-	-	-	30.00	-10.62	21.18	36.00	-14.82
2441	19.42	-	-	-	-	30.00	-10.58	21.22	36.00	-14.78
2480	19.13	-	-	-	-	30.00	-10.87	20.93	36.00	-15.07

Table 99 - ISSED Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA 8-DPSK (3-DH5)	Duty Cycle (%):	76.9
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	1.80

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	19.65	-	-	-	-	30.00	-10.35
2441	19.90	-	-	-	-	30.00	-10.10
2480	19.89	-	-	-	-	30.00	-10.11

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	Σ					
2402	19.65	-	-	-	-	30.00	-10.35	21.45	36.00	-14.55
2441	19.90	-	-	-	-	30.00	-10.10	21.70	36.00	-14.30
2480	19.89	-	-	-	-	30.00	-10.11	21.69	36.00	-14.31

Table 101 - ISD Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA GFSK (DH5)	Duty Cycle (%):	76.7
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	4.47

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	13.63	13.31	-	-	16.48	30.00	-13.52
2441	13.63	13.31	-	-	16.48	30.00	-13.52
2480	13.48	13.35	-	-	16.43	30.00	-13.57

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	Σ					
2402	13.63	13.31	-	-	16.48	30.00	-13.52	20.95	36.00	-15.05
2441	13.63	13.31	-	-	16.48	30.00	-13.52	20.95	36.00	-15.05
2480	13.48	13.35	-	-	16.43	30.00	-13.57	20.90	36.00	-15.10

Table 103 - ISD Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	76.8
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	4.47

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	11.62	11.76	-	-	14.70	30.00	-15.30
2441	11.72	11.69	-	-	14.72	30.00	-15.28
2480	11.91	11.55	-	-	14.74	30.00	-15.26

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	Σ					
2402	11.62	11.76	-	-	14.70	30.00	-15.30	19.17	36.00	-16.83
2441	11.72	11.69	-	-	14.72	30.00	-15.28	19.19	36.00	-16.81
2480	11.91	11.55	-	-	14.74	30.00	-15.26	19.21	36.00	-16.79

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)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	iPA 8-DPSK (3-DH5)	Duty Cycle (%):	76.9
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	4.47

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	12.41	12.09	-	-	15.26	30.00	-14.74
2441	12.19	11.96	-	-	15.09	30.00	-14.91
2480	12.36	12.13	-	-	15.26	30.00	-14.74

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	Σ					
2402	12.41	12.09	-	-	15.26	30.00	-14.74	19.73	36.00	-16.27
2441	12.19	11.96	-	-	15.09	30.00	-14.91	19.55	36.00	-16.45
2480	12.36	12.13	-	-	15.26	30.00	-14.74	19.73	36.00	-16.27

Table 107 - ISD Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	ePA $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	76.9
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	4.47

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	15.90	15.56	-	-	18.74	30.00	-11.26
2441	16.26	15.81	-	-	19.05	30.00	-10.95
2480	16.07	16.19	-	-	19.14	30.00	-10.86

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	Σ					
2402	15.90	15.56	-	-	18.74	30.00	-11.26	23.21	36.00	-12.79
2441	16.26	15.81	-	-	19.05	30.00	-10.95	23.52	36.00	-12.48
2480	16.07	16.19	-	-	19.14	30.00	-10.86	23.61	36.00	-12.39

Table 109 - ISSED Maximum Conducted (peak) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(1) RSS-247 5.4 b)	Test Method(s):	C63.10 7.8.5
Additional Reference(s):	662911 D01 v02r01 F)2)d)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	ePA 8-DPSK (3-DH5)	Duty Cycle (%):	76.9
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	4.47

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	16.50	16.19	-	-	19.36	30.00	-10.64
2441	16.81	16.92	-	-	19.88	30.00	-10.12
2480	16.62	16.73	-	-	19.69	30.00	-10.31

Table 110 - 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	Σ					
2402	16.50	16.19	-	-	19.36	30.00	-10.64	23.83	36.00	-12.17
2441	16.81	16.92	-	-	19.88	30.00	-10.12	24.34	36.00	-11.66
2480	16.62	16.73	-	-	19.69	30.00	-10.31	24.15	36.00	-11.85

Table 111 - ISED Maximum Conducted (peak) Output Power Results

FCC 47 CFR Part 15, Limit Clause 15.247 (b)(1)

For frequency Hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non overlapping Hopping channels, and all frequency Hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency Hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

ISED RSS-247, Limit Clause 5.4 (b)

For FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more Hopping channel; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 Hopping channel. The e.i.r.p. shall not exceed 4 W except as provided in section 5.4(e) of the specification.



2.6.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 18.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Hygrometer	Rotronic	I-1000	3068	12	07-Nov-2024
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
USB Power Sensor	Boonton	RTP5008	5820	12	07-Feb-2025
USB Power Sensor	Boonton	RTP5008	5821	12	07-Feb-2025
USB Power Sensor	Boonton	RTP5008	5822	12	08-Feb-2025
Digital Multimeter	Fluke	115	6145	12	06-Jun-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6426	12	07-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6752	12	06-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6753	12	06-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6754	0	06-Feb-2025

Table 112

O/P Mon - Output Monitored using calibrated equipment



2.7 Authorised Band Edges

2.7.1 Specification Reference

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

2.7.2 Equipment Under Test and Modification State

A3238, S/N: NQMK2V7Q9C - Modification State 0
A3238, S/N: N4N7KFP797 - Modification State 0

2.7.3 Date of Test

07-June-2024 to 12-June-2024

2.7.4 Test Method

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

2.7.5 Environmental Conditions

Ambient Temperature	22.1 - 23.7 °C
Relative Humidity	39.6 - 46.6 %

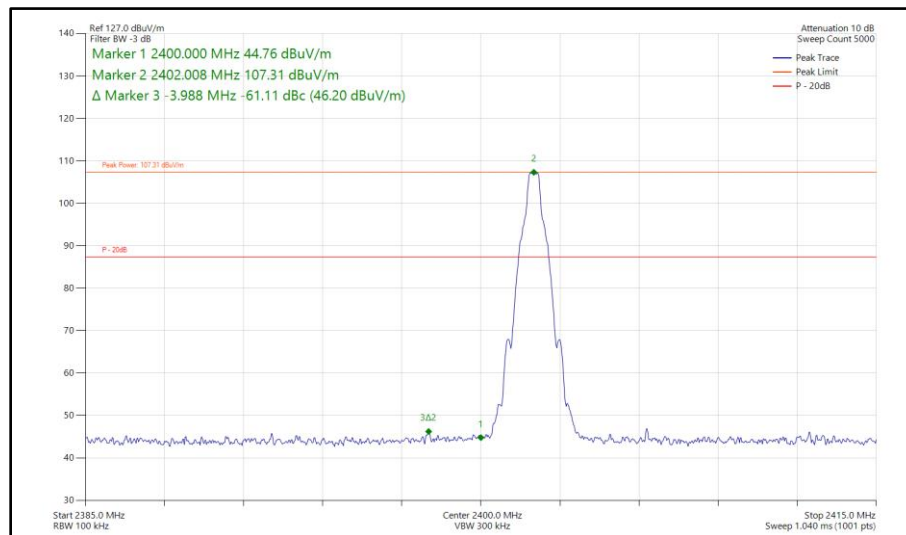
2.7.6 Test Results

2.4 GHz Bluetooth BDR/EDR

iPA - Core 0 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	DH5	2402	2400	-61.11
Static	2-DH5	2402	2400	-54.02
Static	3-DH5	2402	2400	-54.00
Hopping	DH5	Hopping	2400	-44.70
Hopping	2-DH5	Hopping	2400	-60.26
Hopping	3-DH5	Hopping	2400	-47.15

Table 113 - SISO Authorised Band Edge Results



**Figure 184 - Bluetooth DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz**

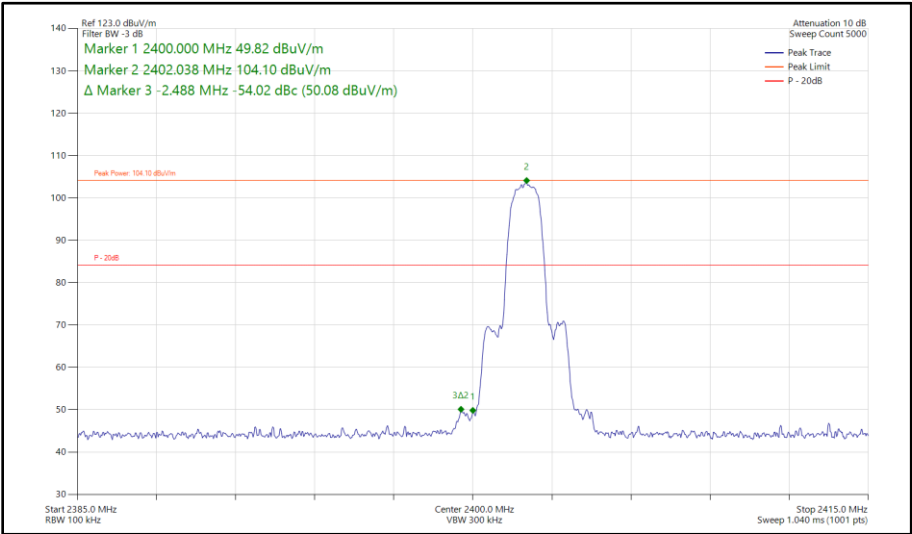


Figure 185 - Bluetooth 2-DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz

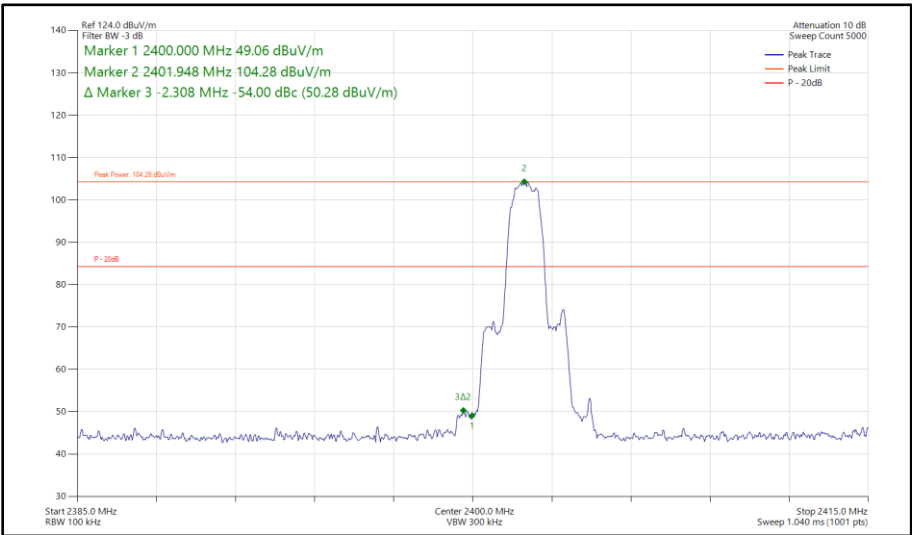
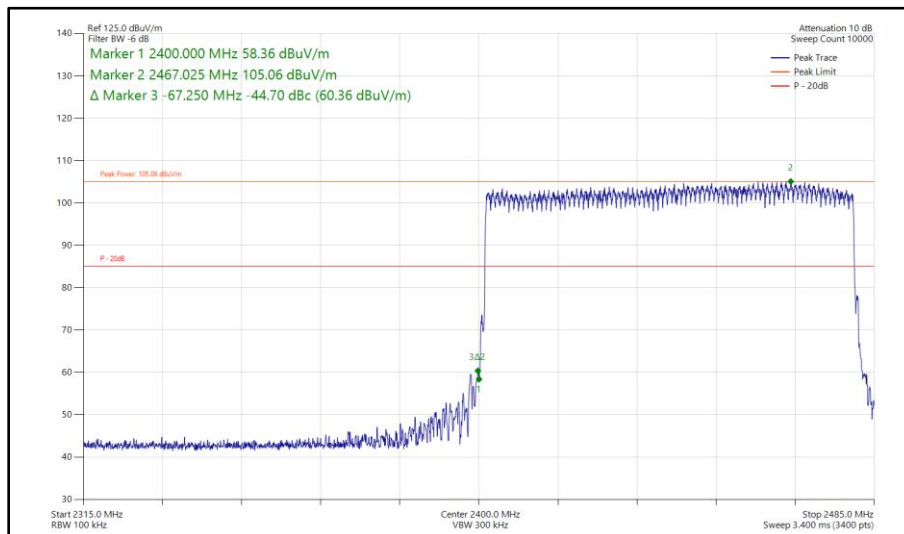
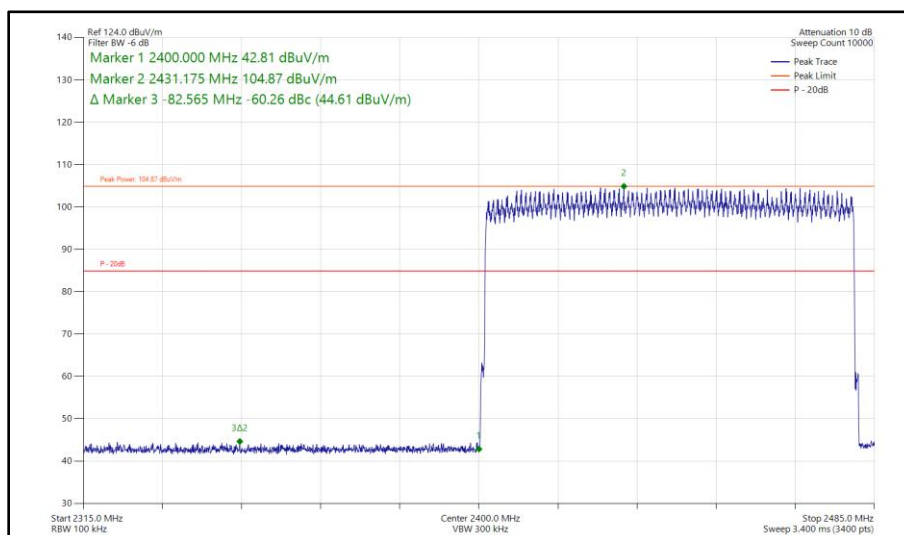


Figure 186 - Bluetooth 3-DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz



**Figure 187 - Bluetooth DH5, SISO, Core 0 - Hopping
Band Edge Frequency 2400 MHz**



**Figure 188 - Bluetooth 2-DH5, SISO, Core 0 - Hopping
Band Edge Frequency 2400 MHz**

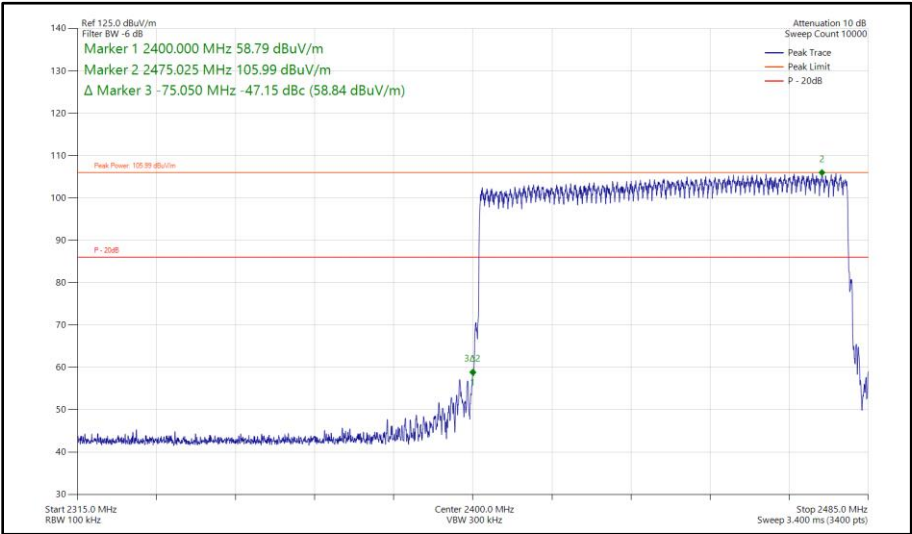


Figure 189 - Bluetooth 3-DH5, SISO, Core 0 - Hopping
Band Edge Frequency 2400 MHz

iPA - Core 1 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	DH5	2402	2400	-58.07
Static	2-DH5	2402	2400	-52.09
Static	3-DH5	2402	2400	-51.47
Hopping	DH5	Hopping	2400	-64.21
Hopping	2-DH5	Hopping	2400	-58.56
Hopping	3-DH5	Hopping	2400	-59.05

Table 114 - SISO Authorised Band Edge Results

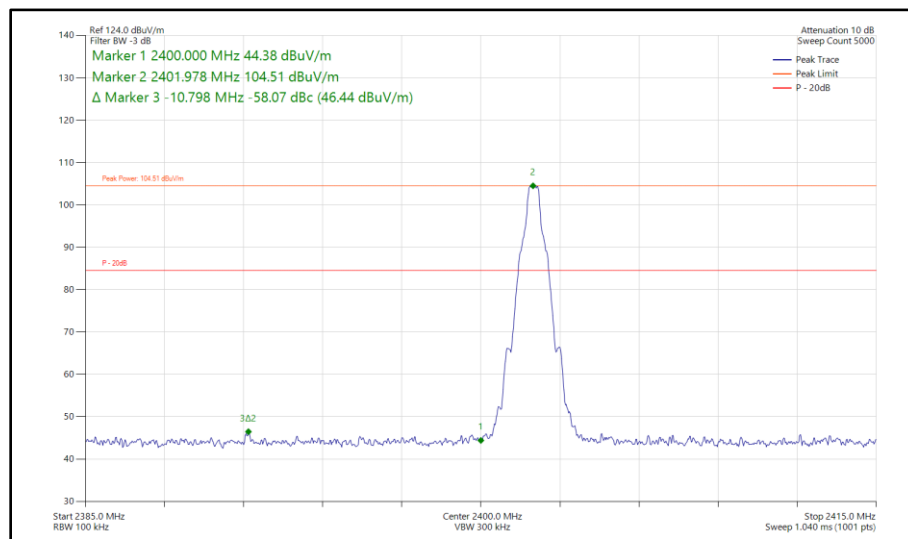


Figure 190 - Bluetooth DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

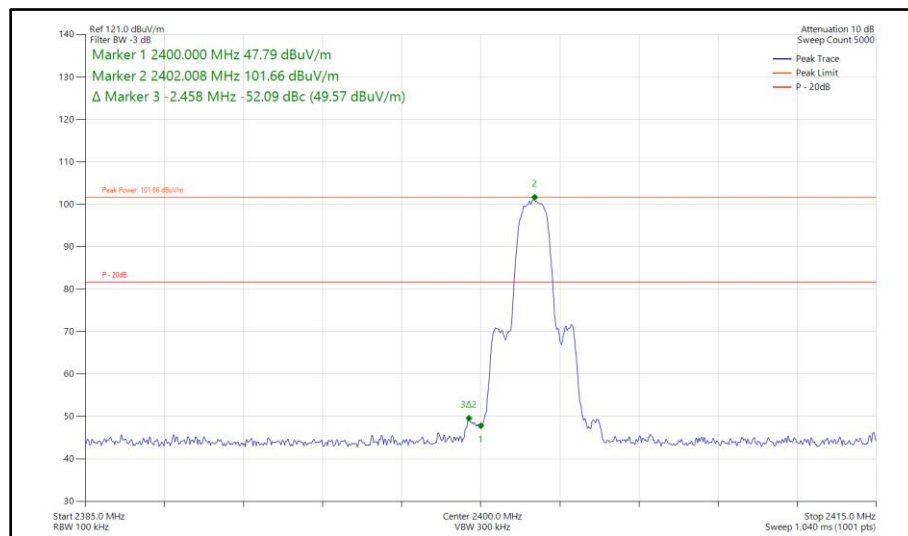
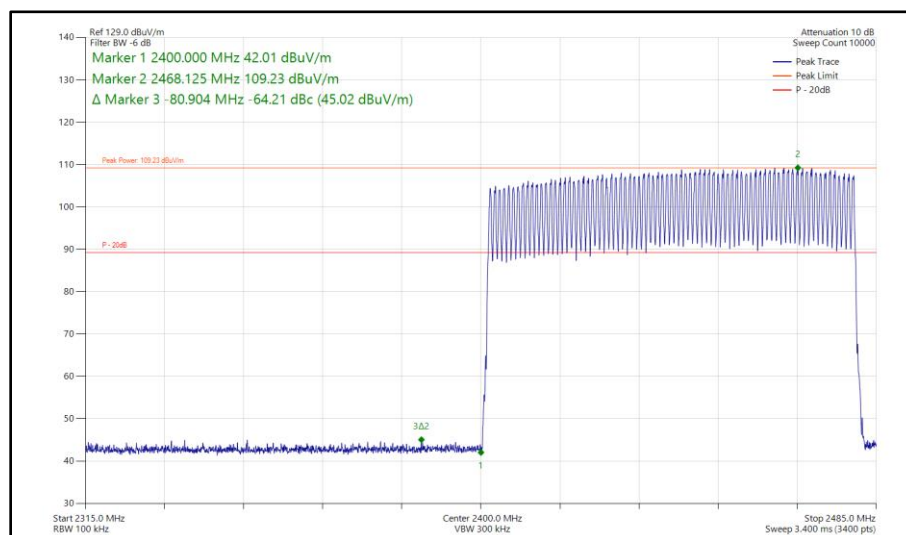
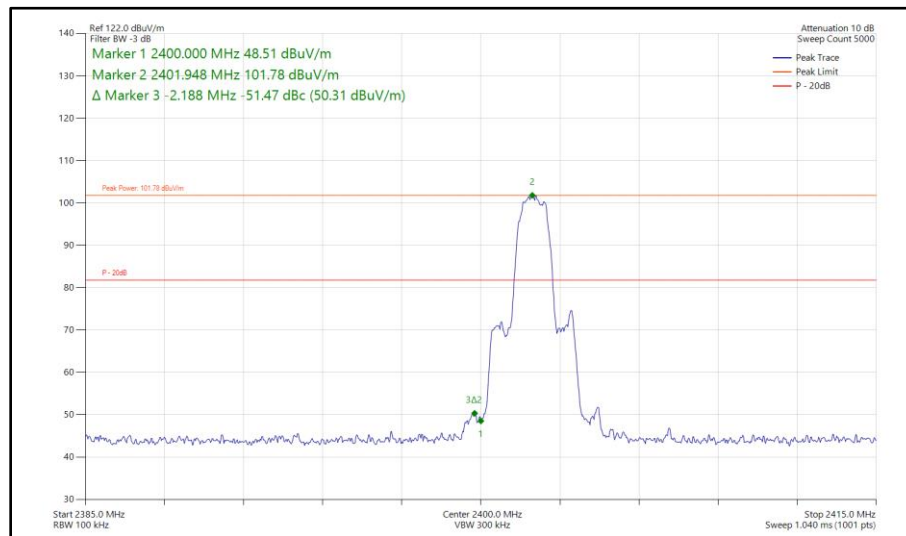


Figure 191 - Bluetooth 2-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz



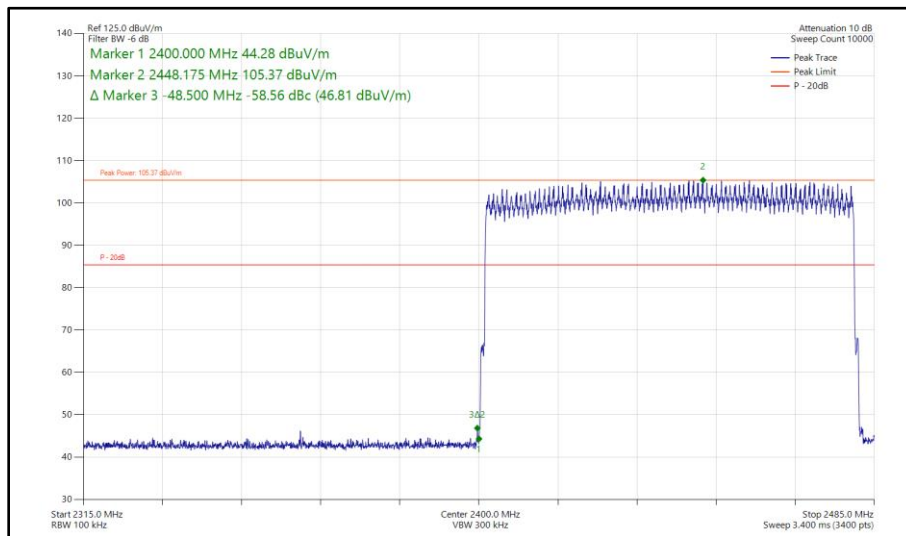


Figure 194 - Bluetooth 2-DH5, SISO, Core 1 - Hopping Band Edge Frequency 2400 MHz

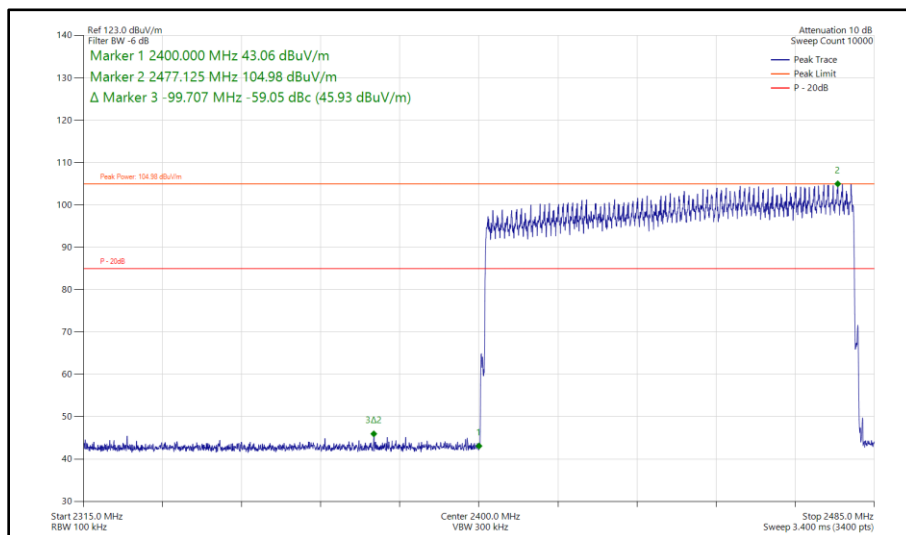


Figure 195 - Bluetooth 3-DH5, SISO, Core 1 - Hopping Band Edge Frequency 2400 MHz

iPA - Core 2 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	DH5	2402	2400	-60.20
Static	2-DH5	2402	2400	-55.27
Static	3-DH5	2402	2400	-54.32
Hopping	DH5	Hopping	2400	-61.58
Hopping	2-DH5	Hopping	2400	-58.70
Hopping	3-DH5	Hopping	2400	-56.30

Table 115 - SISO Authorised Band Edge Results

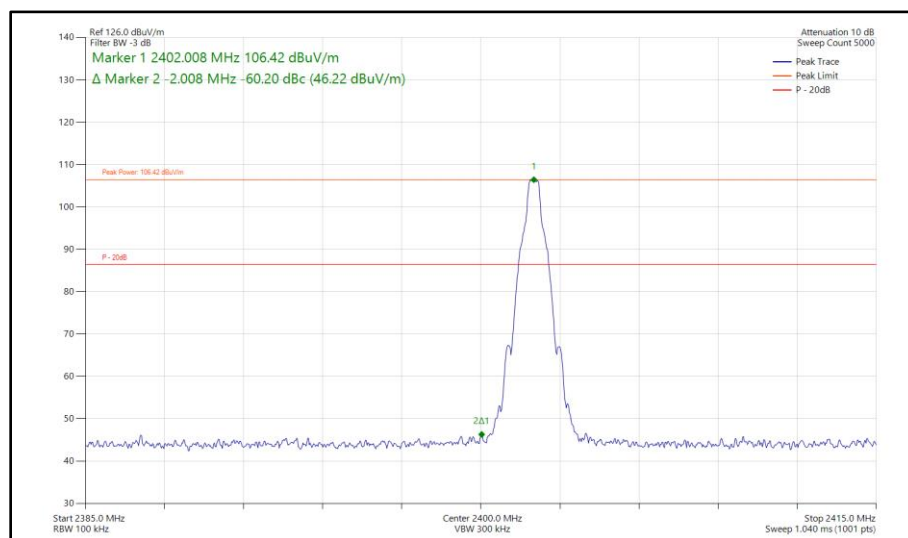


Figure 196 - Bluetooth DH5, SISO, Core 2 - 2402 MHz
Band Edge Frequency 2400 MHz

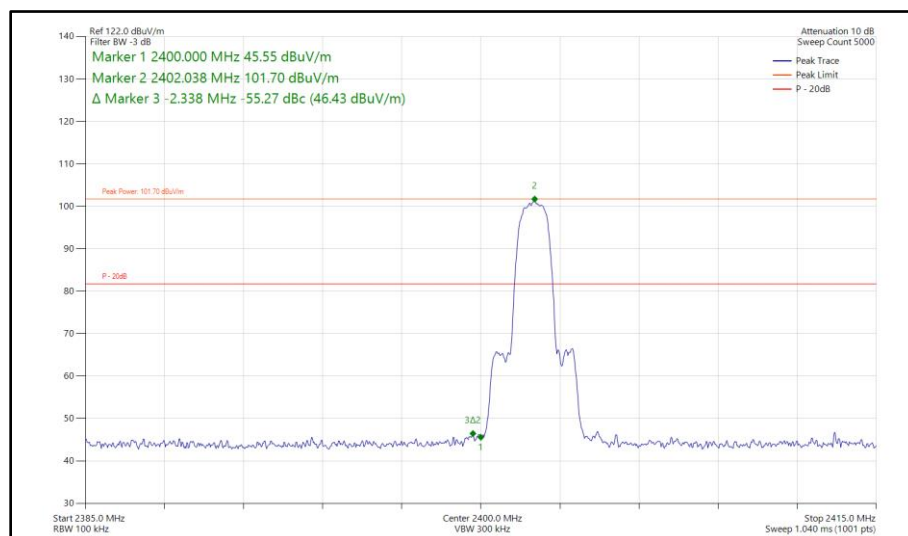
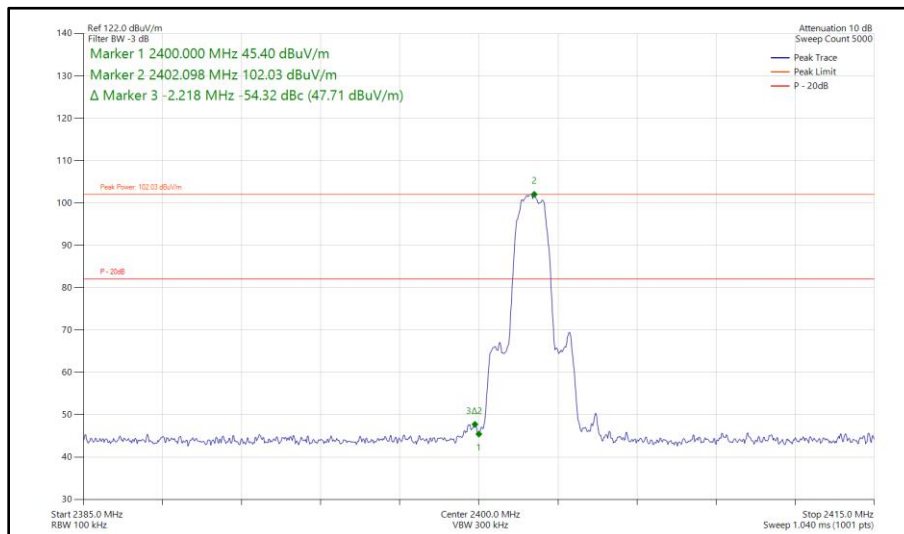
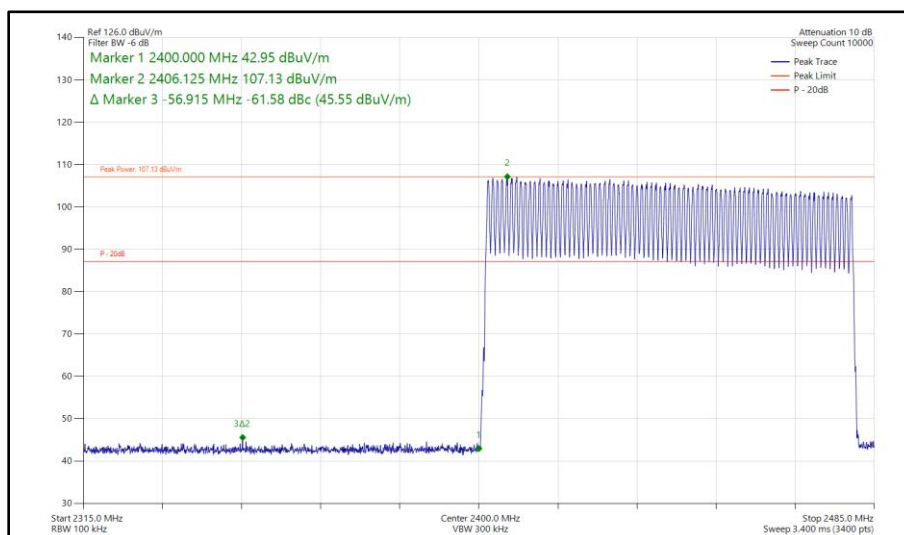


Figure 197 - Bluetooth 2-DH5, SISO, Core 2 - 2402 MHz
Band Edge Frequency 2400 MHz



**Figure 198 - Bluetooth 3-DH5, SISO, Core 2 - 2402 MHz
Band Edge Frequency 2400 MHz**



**Figure 199 - Bluetooth DH5, SISO, Core 2 - Hopping
Band Edge Frequency 2400 MHz**

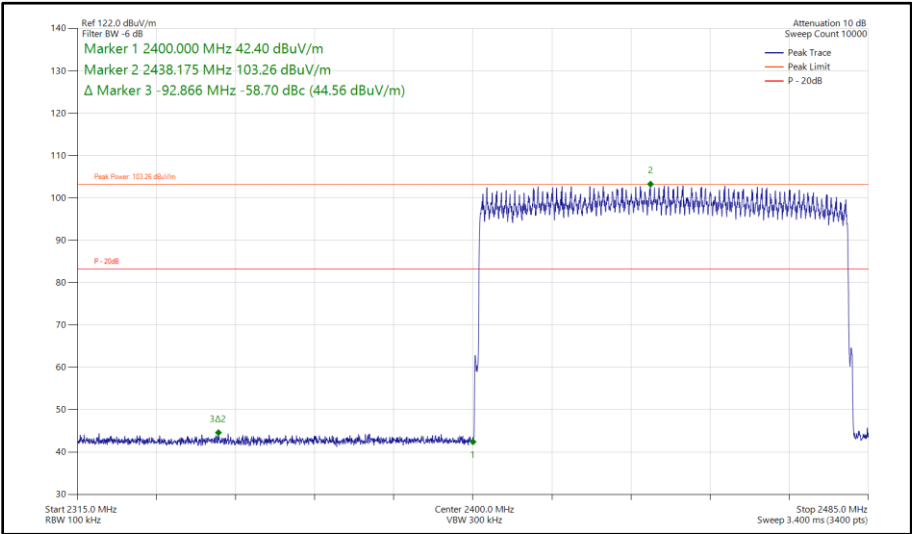


Figure 200 - Bluetooth 2-DH5, SISO, Core 2 - Hopping
Band Edge Frequency 2400 MHz

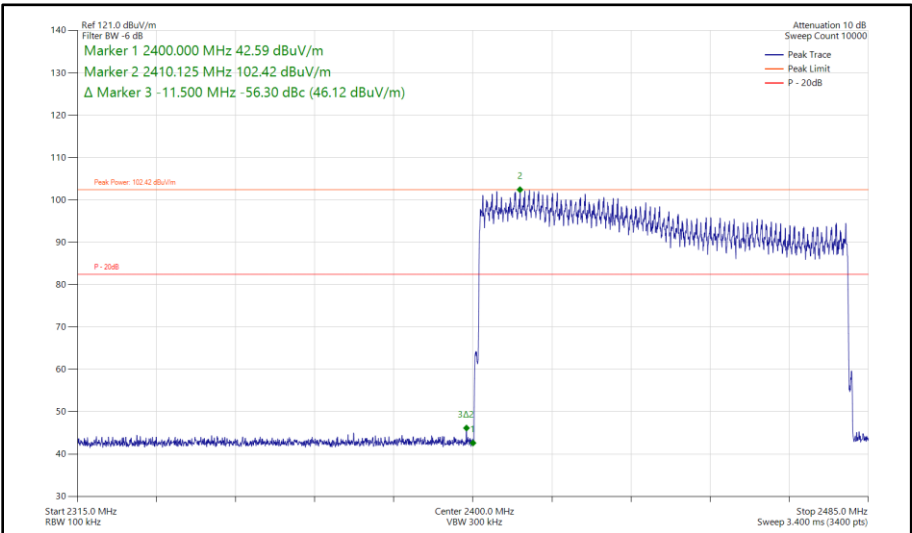


Figure 201 - Bluetooth 3-DH5, SISO, Core 2 - Hopping
Band Edge Frequency 2400 MHz

iPA - Core 0 - Core 1 (MIMO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	DH5	2402	2400	-63.94
Static	2-DH5	2402	2400	-55.51
Static	3-DH5	2402	2400	-55.36
Hopping	DH5	Hopping	2400	-65.89
Hopping	2-DH5	Hopping	2400	-61.04
Hopping	3-DH5	Hopping	2400	-61.29

Table 116 - MIMO Authorised Band Edge Results

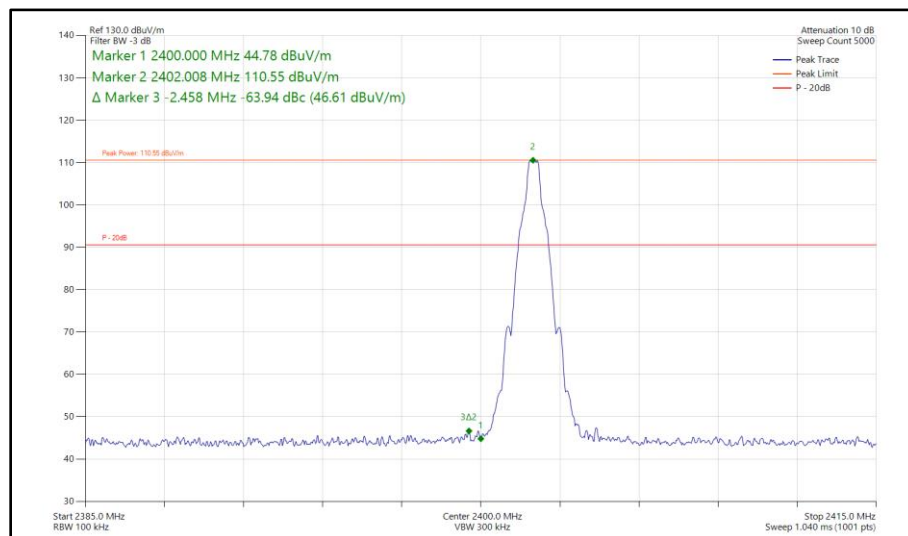


Figure 202 - Bluetooth DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

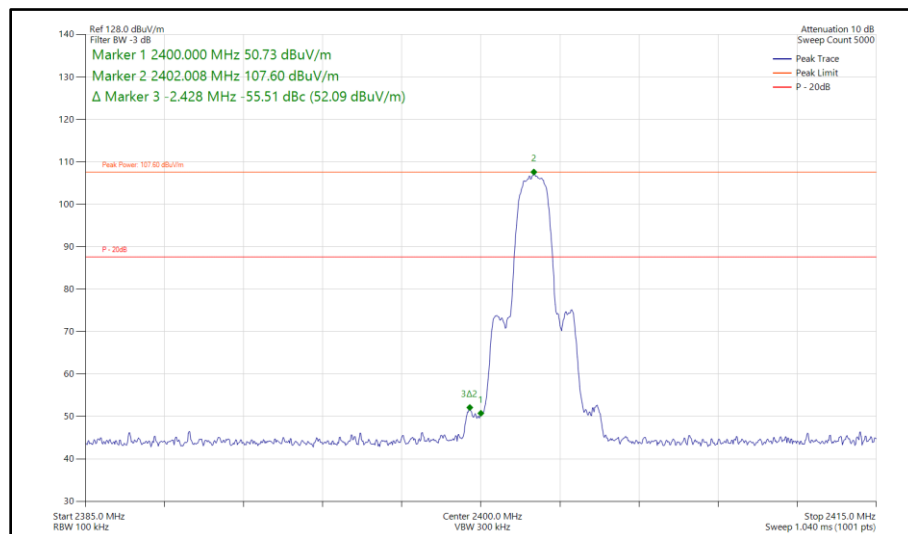
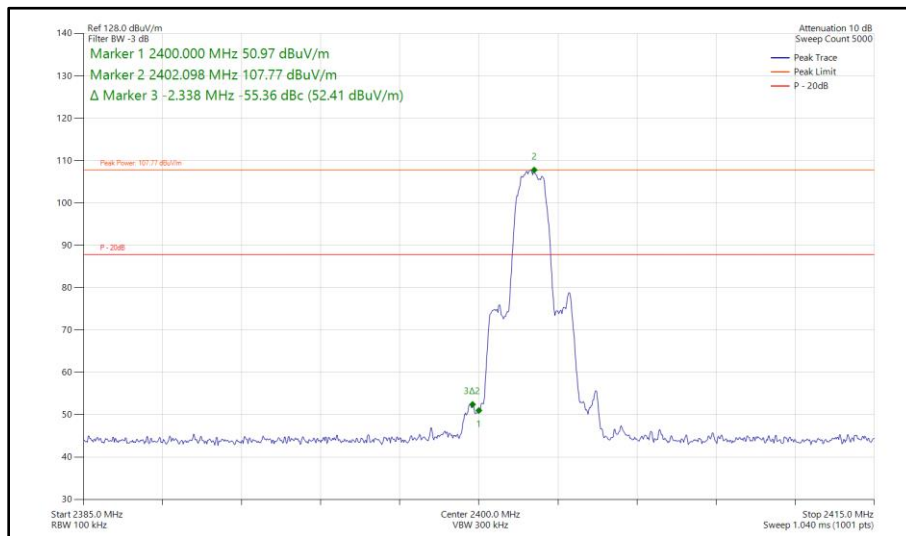


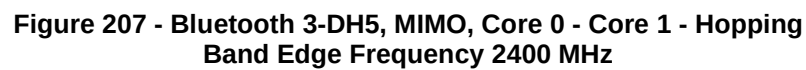
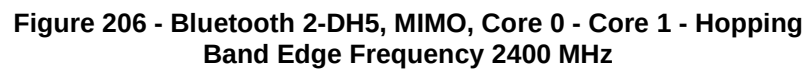
Figure 203 - Bluetooth 2-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz



**Figure 204 - Bluetooth 3-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz**



**Figure 205 - Bluetooth DH5, MIMO, Core 0 - Core 1 - Hopping
Band Edge Frequency 2400 MHz**



ePA - Core 0 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	2-DH5	2402	2400	-59.83
Static	3-DH5	2402	2400	-54.17
Hopping	2-DH5	Hopping	2400	-47.35
Hopping	3-DH5	Hopping	2400	-45.22

Table 117 - SISO Authorised Band Edge Results

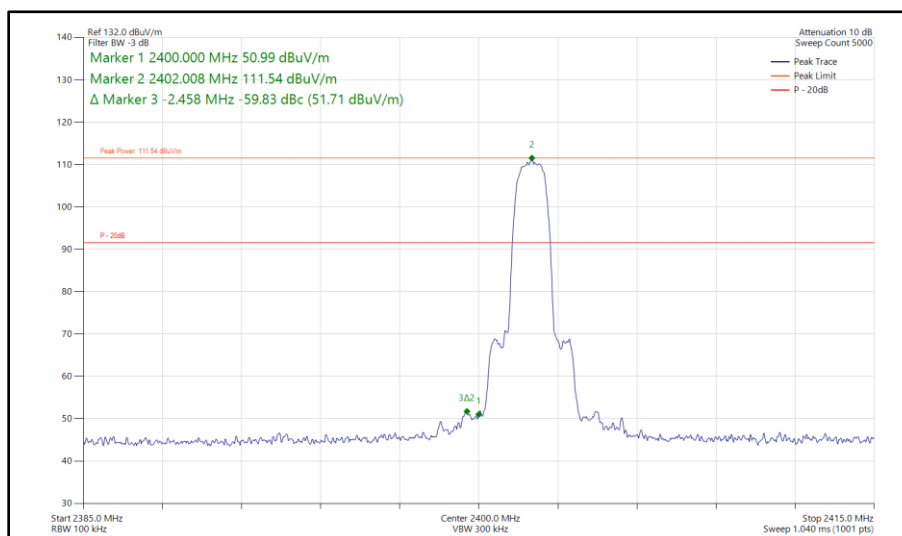


Figure 208 - Bluetooth 2-DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz

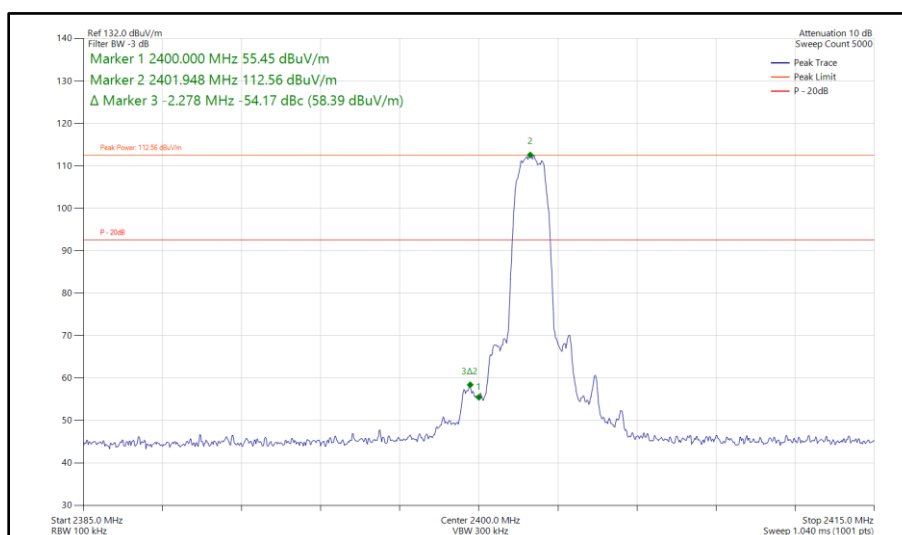
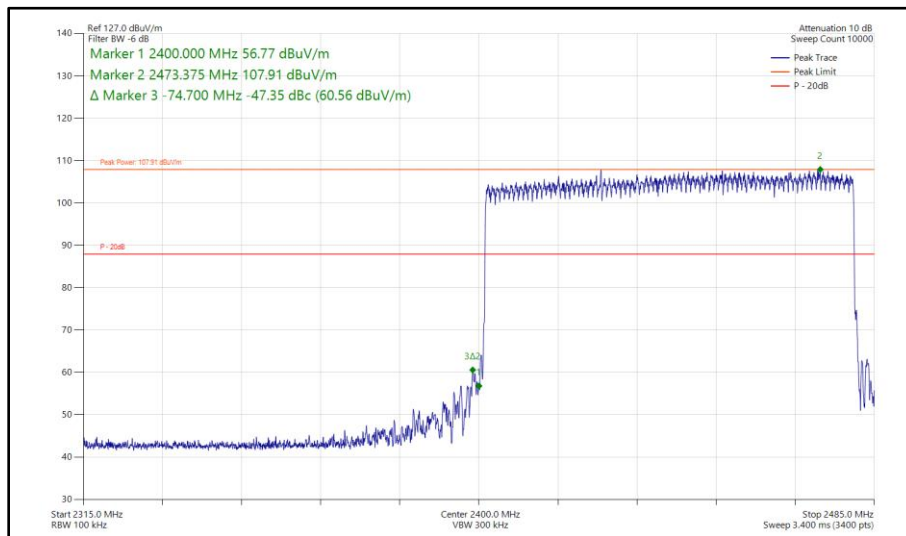
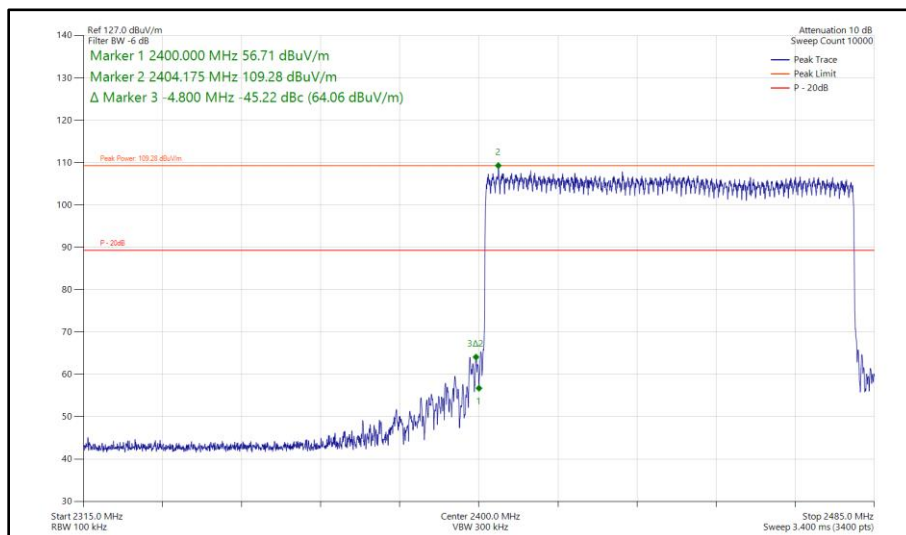


Figure 209 - Bluetooth 3-DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz



**Figure 210 - Bluetooth 2-DH5, SISO, Core 0 - Hopping
Band Edge Frequency 2400 MHz**



**Figure 211 - Bluetooth 3-DH5, SISO, Core 0 - Hopping
Band Edge Frequency 2400 MHz**

ePA - Core 1 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	2-DH5	2402	2400	-56.96
Static	3-DH5	2402	2400	-54.30
Hopping	2-DH5	Hopping	2400	-61.29
Hopping	3-DH5	Hopping	2400	-61.48

Table 118 - SISO Authorised Band Edge Results

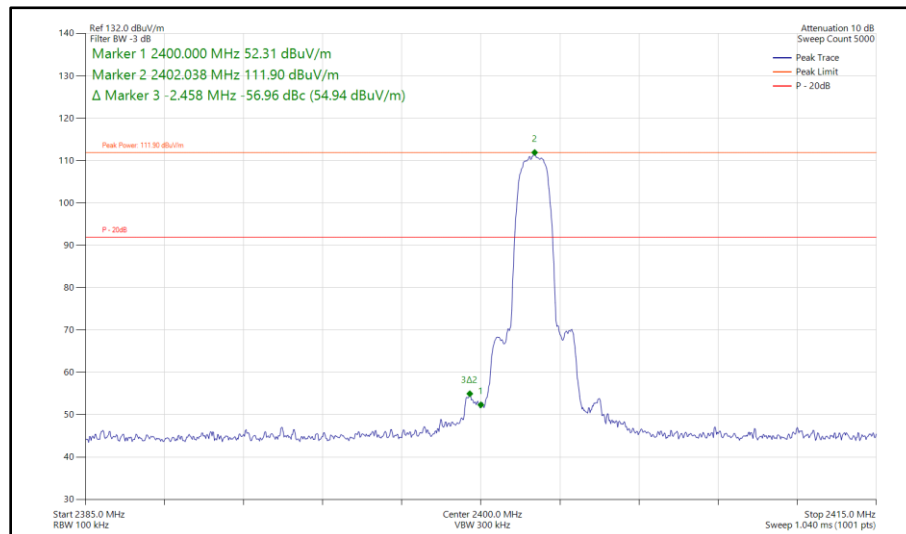


Figure 212 - Bluetooth 2-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

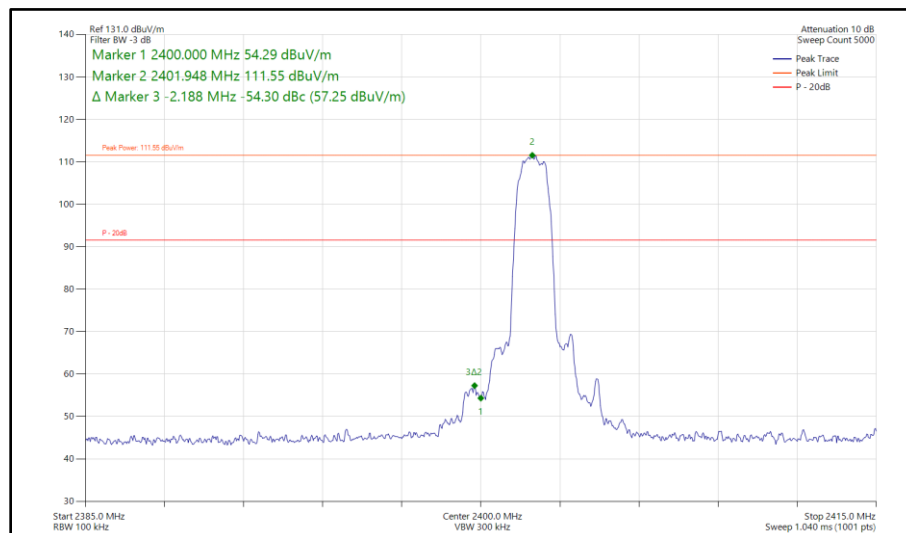


Figure 213 - Bluetooth 3-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

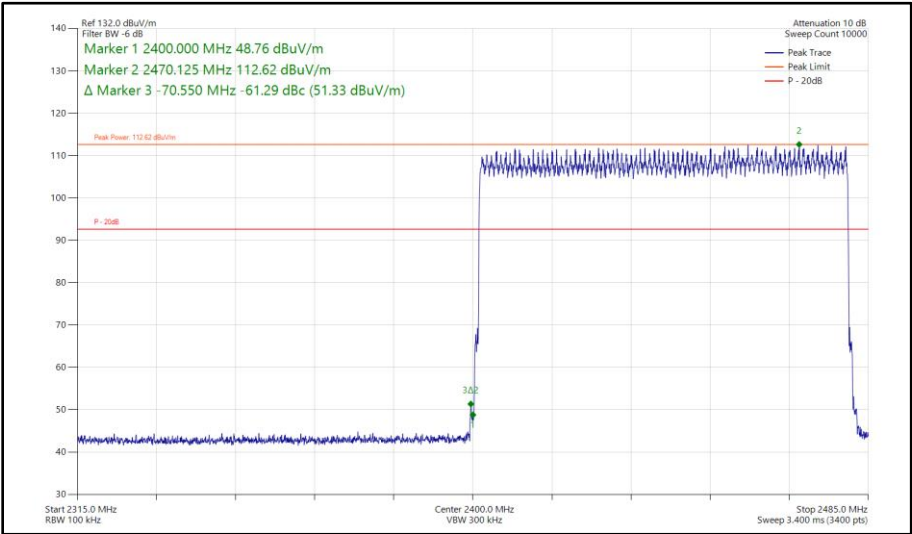


Figure 214 - Bluetooth 2-DH5, SISO, Core 1 - Hopping
Band Edge Frequency 2400 MHz

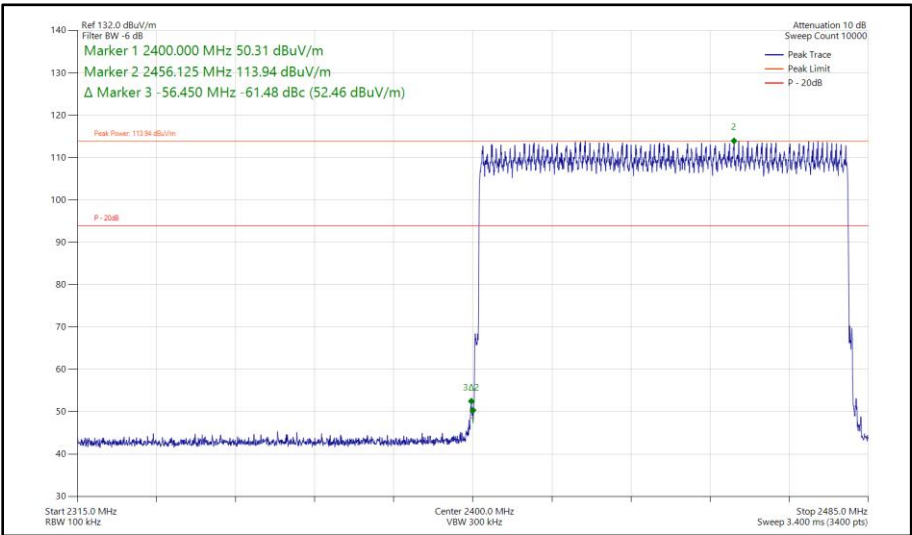


Figure 215 - Bluetooth 3-DH5, SISO, Core 1 - Hopping
Band Edge Frequency 2400 MHz

ePA - Core 0 - Core 1 (MIMO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	2-DH5	2402	2400	-58.22
Static	3-DH5	2402	2400	-54.34
Hopping	2-DH5	Hopping	2400	-65.89
Hopping	3-DH5	Hopping	2400	-62.47

Table 119 - MIMO Authorised Band Edge Results

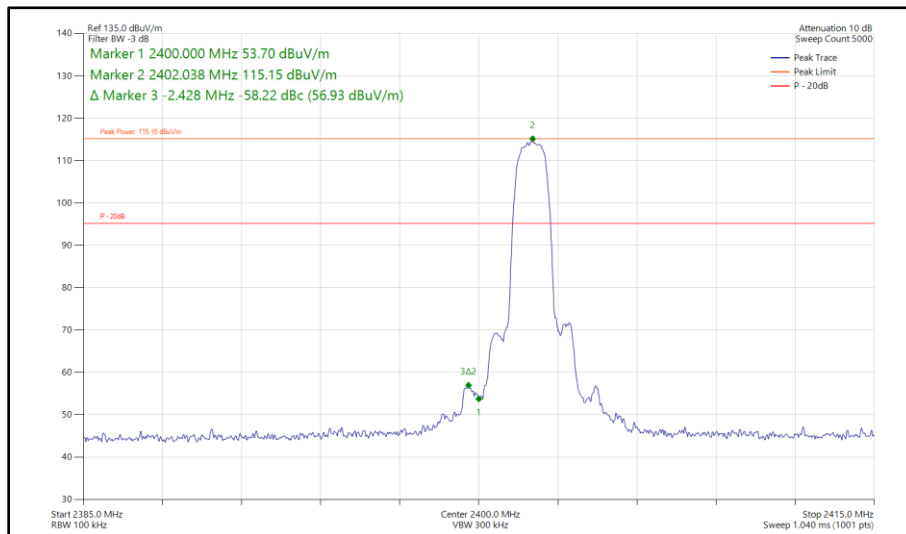


Figure 216 - Bluetooth 2-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

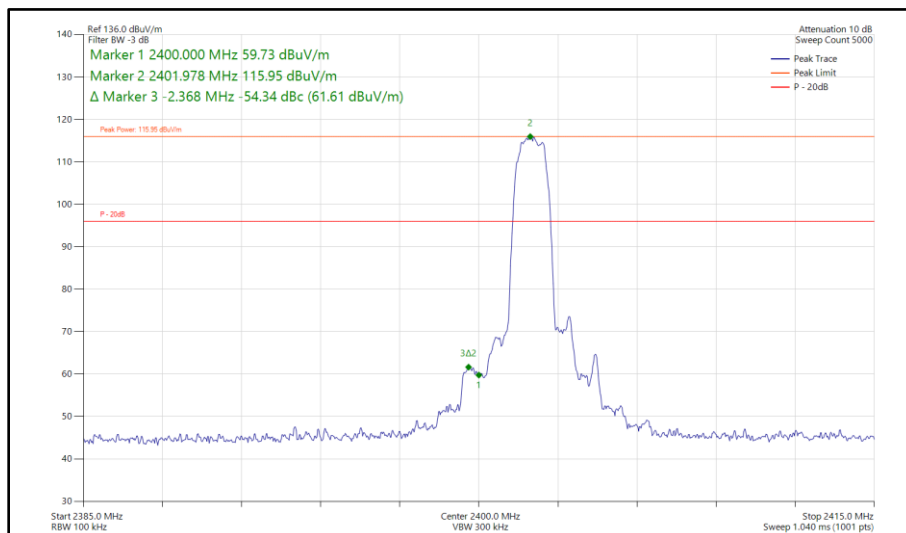


Figure 217 - Bluetooth 3-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

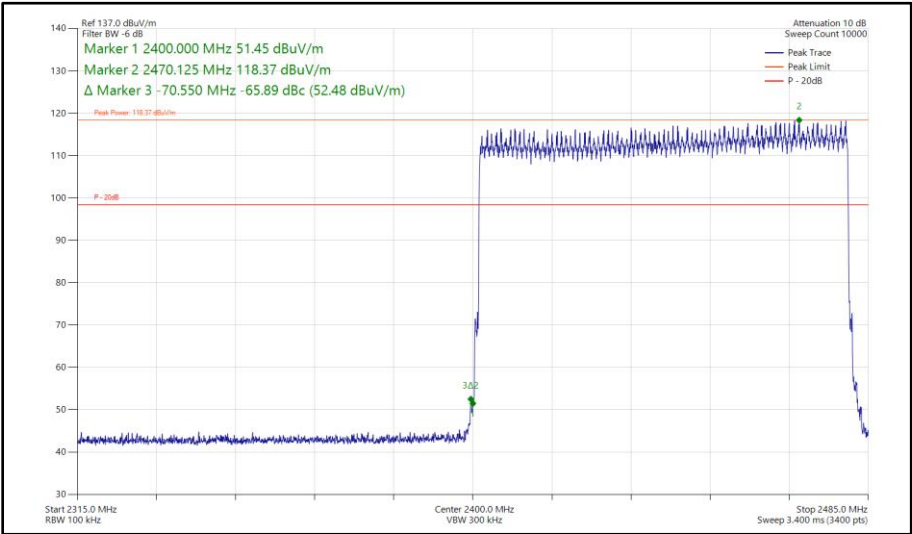


Figure 218 - Bluetooth 2-DH5, MIMO, Core 0 - Core 1 - Hopping Band Edge Frequency 2400 MHz

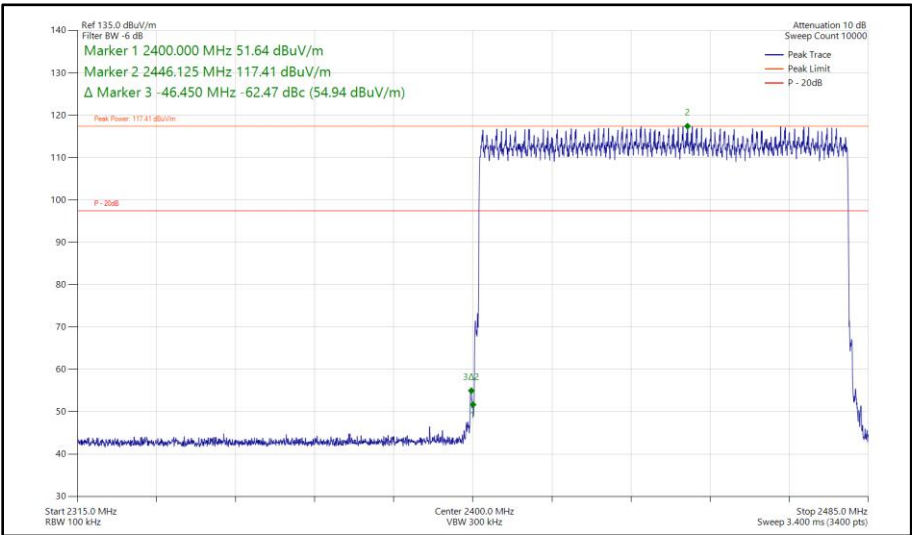


Figure 219 - Bluetooth 3-DH5, MIMO, Core 0 - Core 1 - Hopping Band Edge Frequency 2400 MHz



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.

2.7.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 14 and RF Chamber 15.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.2.0	5125	-	Software
EMI Test Receiver	Rohde & Schwarz	ESW44	5911	12	11-Sep-2024
EMI Test Receiver	Rohde & Schwarz	ESW44	5912	12	05-Jul-2024
1500W (300V 12A) AC Power Supply	iTech	IT7324	5955	-	O/P Mon
1500W (300V 12A) AC Power Supply	iTech	IT7324	5956	-	O/P Mon
5m Semi-Anechoic Chamber (Dual-Axis)	Albatross Projects	RF Chamber 14	5958	36	26-Apr-2025
Compact Antenna Mast	Maturo Gmbh	CAM4.0-P	5959	-	TU
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5960	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5961	-	TU
Turntable	Maturo Gmbh	TT1.5SI	5962	-	TU
5m Semi-Anechoic Chamber (Dual-Axis), Chamber 15	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	20-May-2025
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5997	12	14-Sep-2024
Cable (SMA to SMA 4.5m)	Junkosha	MWX221-04500AMSAMS/A	6002	12	14-Sep-2024
Cable (SMA to SMA 3m)	Junkosha	MWX221-03000AMSAMS/A	6021	12	14-Sep-2024
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6141	12	05-May-2025



Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6142	12	05-May-2025
Digital Multimeter	Fluke	115	6145	12	06-Jun-2025
Digital Multimeter	Fluke	115	6147	12	06-Jun-2025
Humidity & Temperature meter	R.S Components	1364	6149	12	07-Jul-2024
SAC Switch Unit	TUV SUD	TUV_SSU_001	6190	12	22-Dec-2024
Cable (SMA to SMA 3m)	Junkosha	MWX221-03000AMSAMS/A	6316	12	04-Feb-2025
Humidity and Temperature Meter	R.S Components	1364	6486	12	04-Jun-2025
1m Cable	Junkosha	MWX241-01000AMSAMS/B	6740	12	01-Feb-2025
1m Cable	Junkosha	MWX241-01000AMSAMS/B	6741	12	01-Feb-2025
6.5m Cable	Junkosha	MWX221-06500AMSAMS/B	6744	12	01-Feb-2025

Table 120

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



2.8 Spurious Radiated Emissions

2.8.1 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

2.8.2 Equipment Under Test and Modification State

A3238, S/N: NQMK2V7Q9C - Modification State 0
A3238, S/N: V4KFHR9J44 - Modification State 0

2.8.3 Date of Test

15-June-2024 to 20-June-2024

2.8.4 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.

In the 30 MHz to 1 GHz range pre-scans were only performed on the mid channel (2441 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 20 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

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.

The following conversion can be applied to convert from dBuV/m to uV/m:
 $10^{(\text{Field Strength in dBuV/m}/20)}$

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

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

Radiated spurious emissions tests have been conducted in DH5 (high power) mode as this represents worst case with respect to Power and PSD.

2.8.5 Example Test Setup Diagram

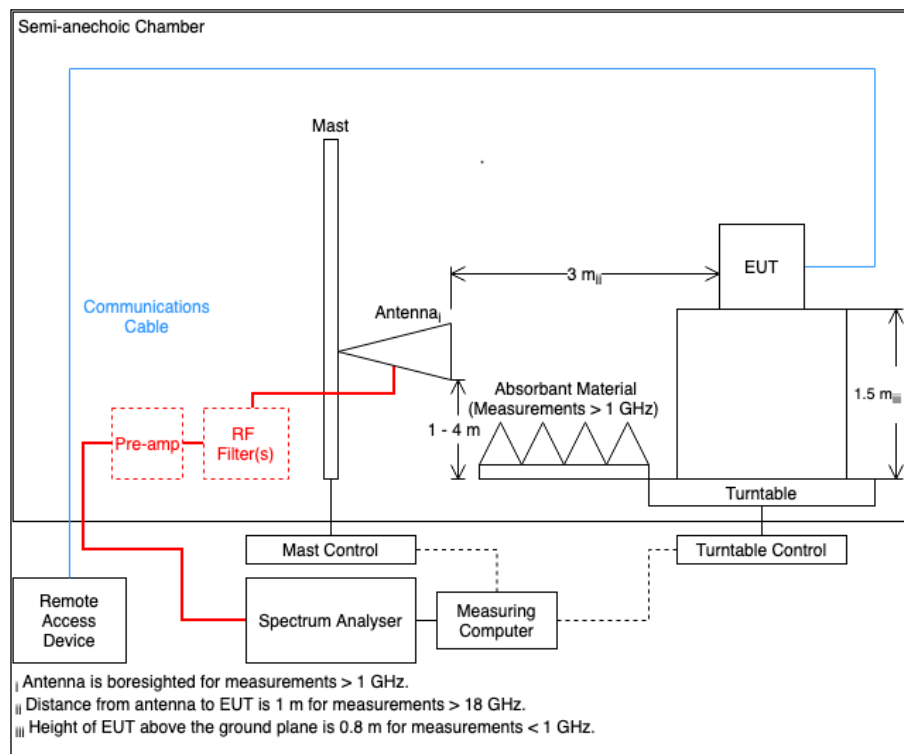


Figure 220

2.8.6 Environmental Conditions

Ambient Temperature	22.2 - 23.3 °C
Relative Humidity	38.6 - 48.0 %