



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

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively, frequency hopping systems operating in the band 2400-2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 0.125 W.

ISED RSS-247, Limit Clause 5.1 (b)

FHSs shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the -20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, FHSs operating in the band 2400-2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided that the systems operate with an output power no greater than 0.125 W.

2.3.7 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
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
MXA Signal Analyser	Keysight Technologies	N9020B	6417	24	26-Feb-2025
MXA Signal Analyser	Keysight Technologies	N9020B	6419	24	28-Feb-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6517	12	22-Feb-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6518	12	16-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	6526	12	22-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6527	12	05-Mar-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6528	12	22-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6529	12	16-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6530	12	16-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6531	12	16-Feb-2025
AC Programmable Power Supply	iTech	IT7324	6662	-	O/P Mon
AC Programmable Power Supply	iTech	IT7324	6665	-	O/P Mon

Table 48

O/P Mon - Output Monitored using calibrated equipment



2.4 Frequency Hopping Systems - Number of Hopping Channels

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(1)
ISED RSS-247, Clause 5.1

2.4.2 Equipment Under Test and Modification State

A3137, S/N: H6D001F73D - Modification State 0

2.4.3 Date of Test

26-June-2024 to 03-July-2024

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 7.8.3.

2.4.5 Environmental Conditions

Ambient Temperature	22.0 - 22.2 °C
Relative Humidity	45.1 - 52.5 %



2.4.6 Test Results

2.4 GHz Bluetooth BDR/EDR

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPA GFSK (DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 1)	Peak Antenna Gain (dBi):	-

Number of Hopping Frequencies		Limit
79		≥15.0

Table 49 - Number of Hopping Frequencies Results

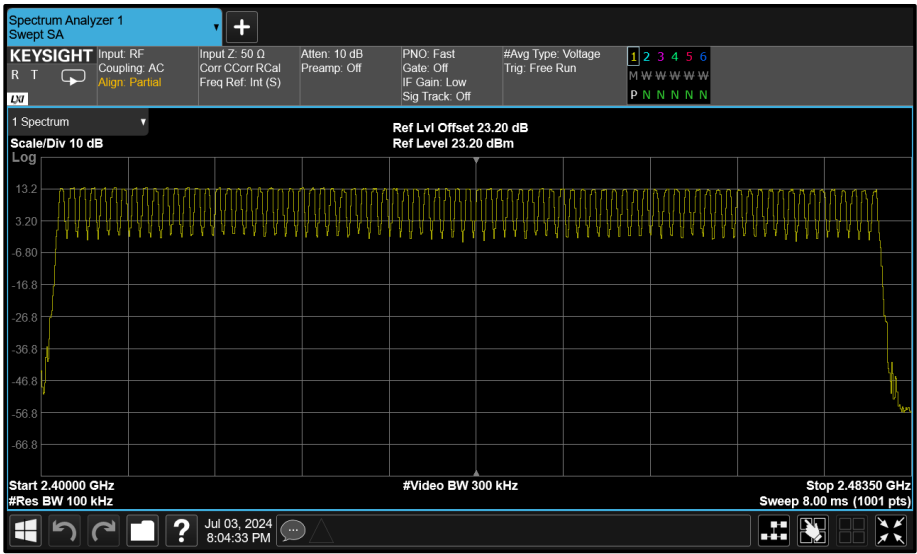


Figure 73 - GFSK (DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies	Limit
79	≥ 15.0

Table 50 - Number of Hopping Frequencies Results

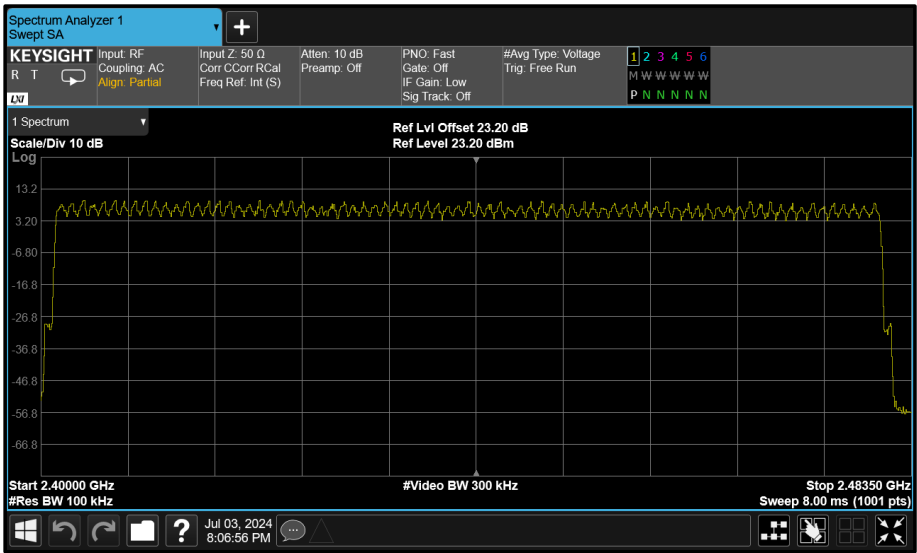


Figure 74 - $\pi/4$ DQPSK (2-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies	Limit
79	≥15.0

Table 51 - Number of Hopping Frequencies Results

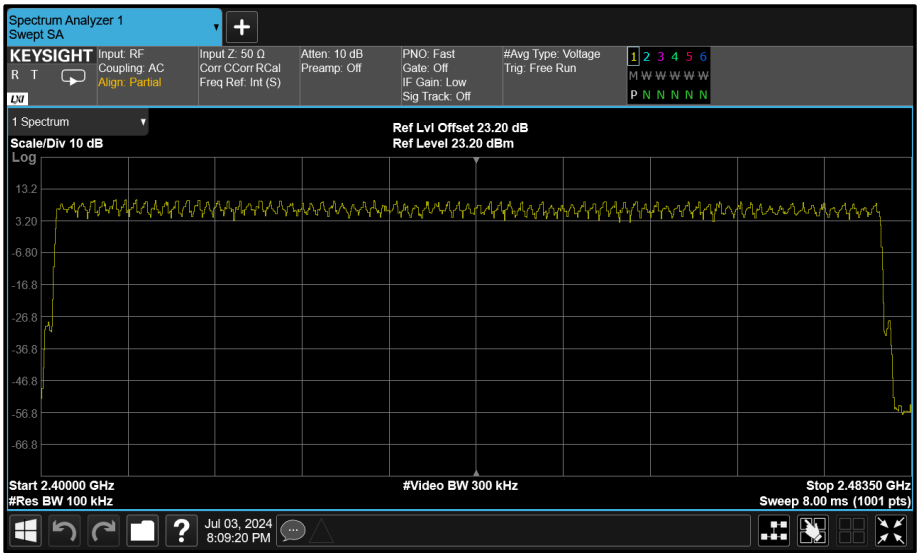


Figure 75 - 8-DPSK (3-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies		Limit
79		≥15.0

Table 52 - Number of Hopping Frequencies Results

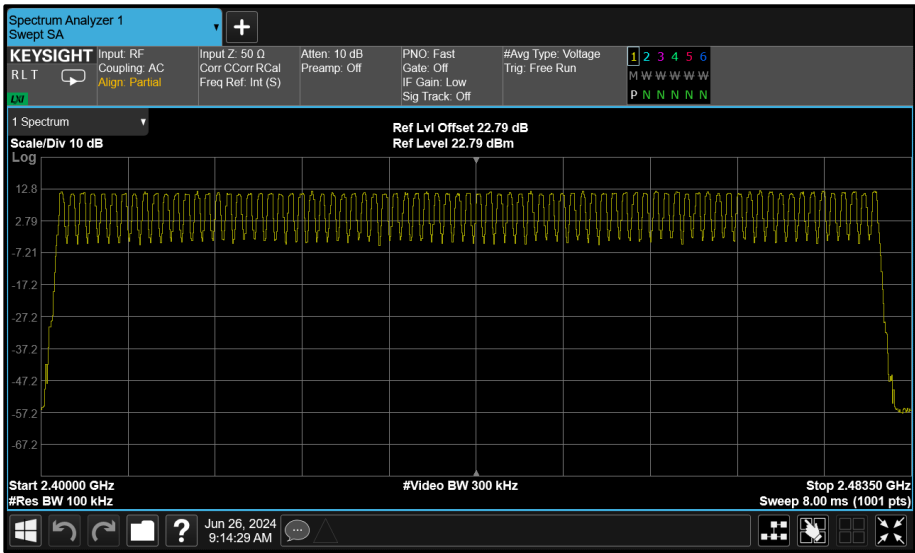


Figure 76 - GFSK (DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies	Limit
79	≥ 15.0

Table 53 - Number of Hopping Frequencies Results

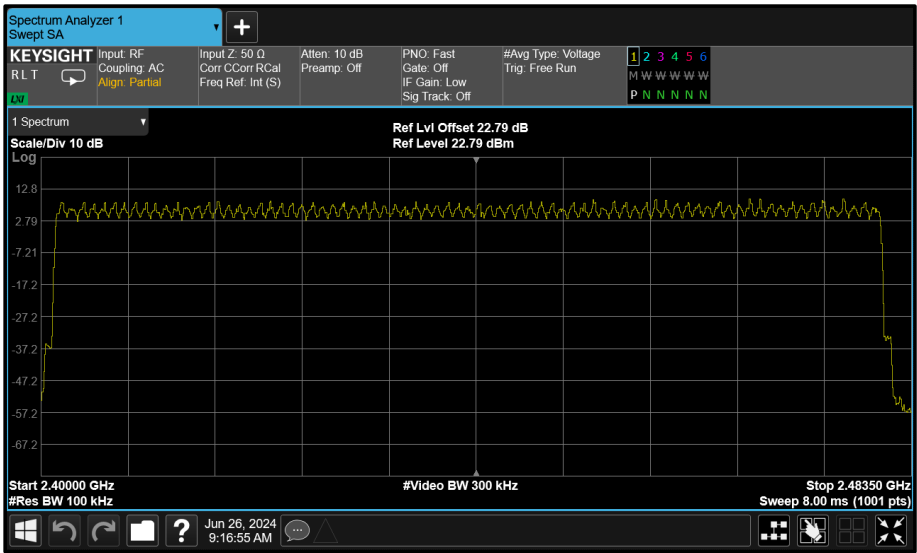


Figure 77 - $\pi/4$ DQPSK (2-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies	Limit
79	≥15.0

Table 54 - Number of Hopping Frequencies Results

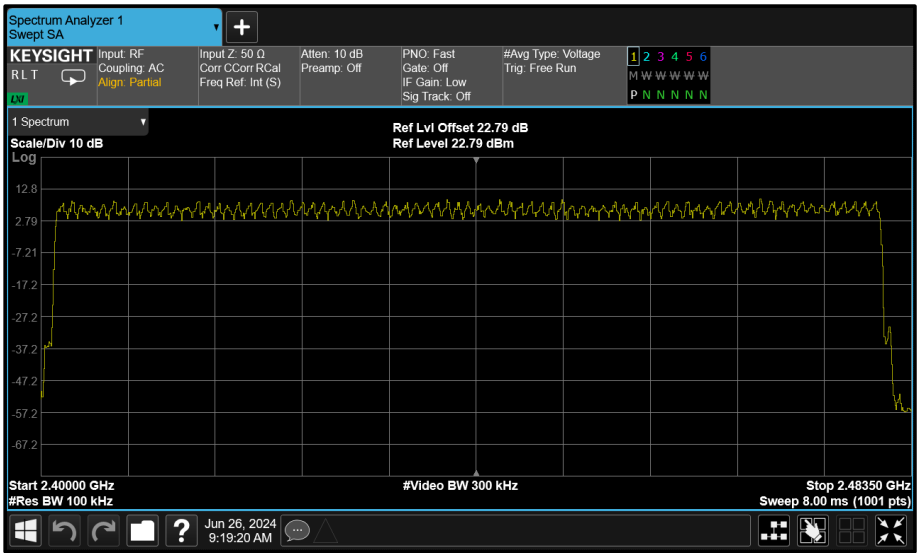


Figure 78 - 8-DPSK (3-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

DUT Configuration			
Mode:	ePA GFSK (DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 1)	Peak Antenna Gain (dBi):	-

Number of Hopping Frequencies	Limit
79	≥15.0

Table 55 - Number of Hopping Frequencies Results

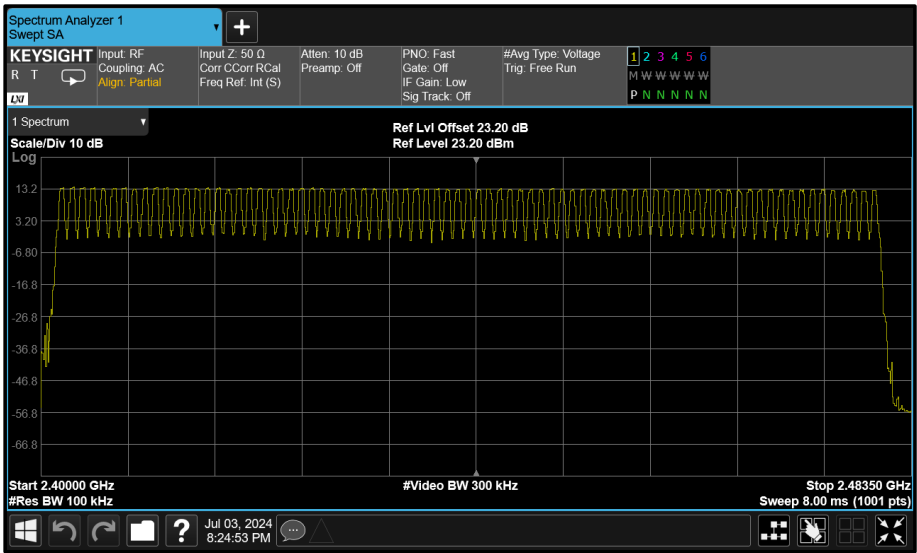


Figure 79 - GFSK (DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies	Limit
79	≥ 15.0

Table 56 - Number of Hopping Frequencies Results

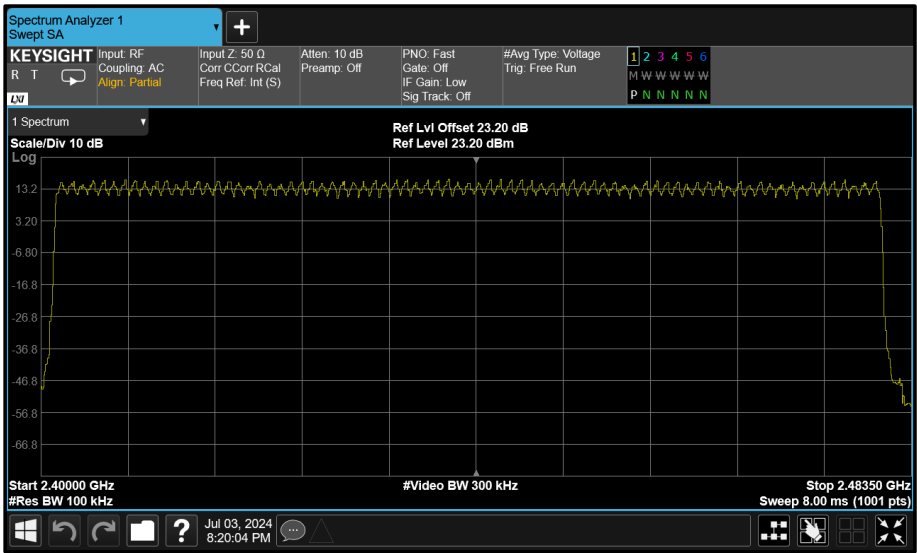


Figure 80 - $\pi/4$ DQPSK (2-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies	Limit
79	≥15.0

Table 57 - Number of Hopping Frequencies Results

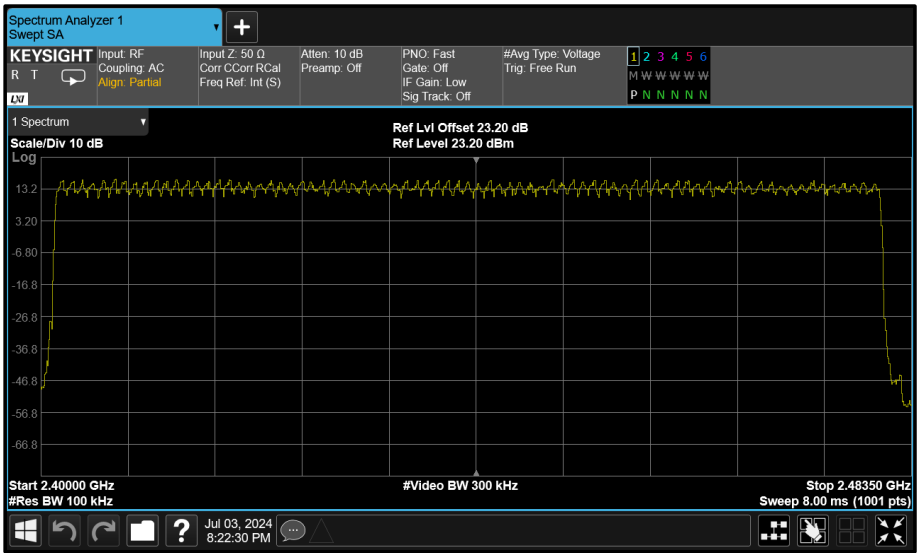


Figure 81 - 8-DPSK (3-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies		Limit
79		≥15.0

Table 58 - Number of Hopping Frequencies Results

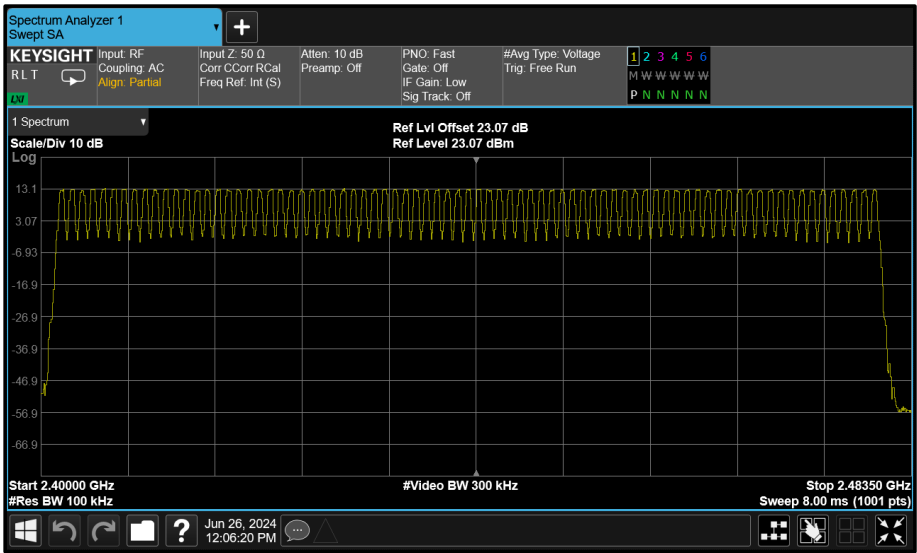


Figure 82 - GFSK (DH5) - Number of Hopping Channels

Number of Hopping Frequencies	Limit
79	≥15.0

Table 59 - Number of Hopping Frequencies Results

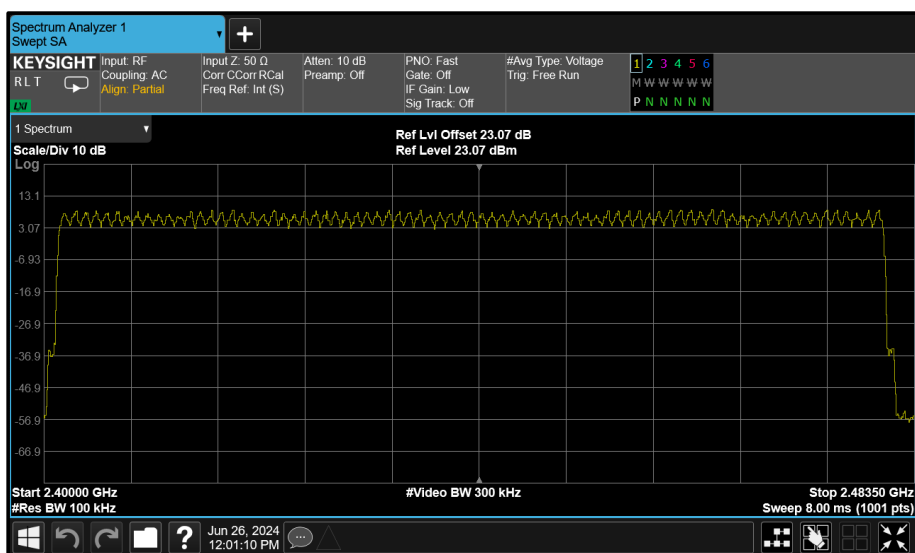


Figure 83 - $\pi/4$ DQPSK (2-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
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):	-

Number of Hopping Frequencies	Limit
79	≥15.0

Table 60 - Number of Hopping Frequencies Results

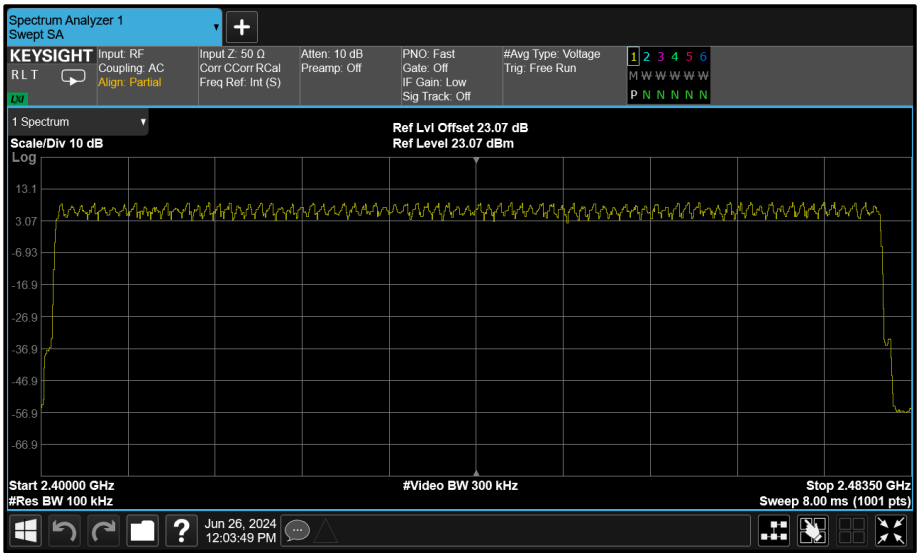


Figure 84 - 8-DPSK (3-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
Additional Reference(s):	-		

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

Number of Hopping Frequencies	Limit
79	≥15.0

Table 61 - Number of Hopping Frequencies Results

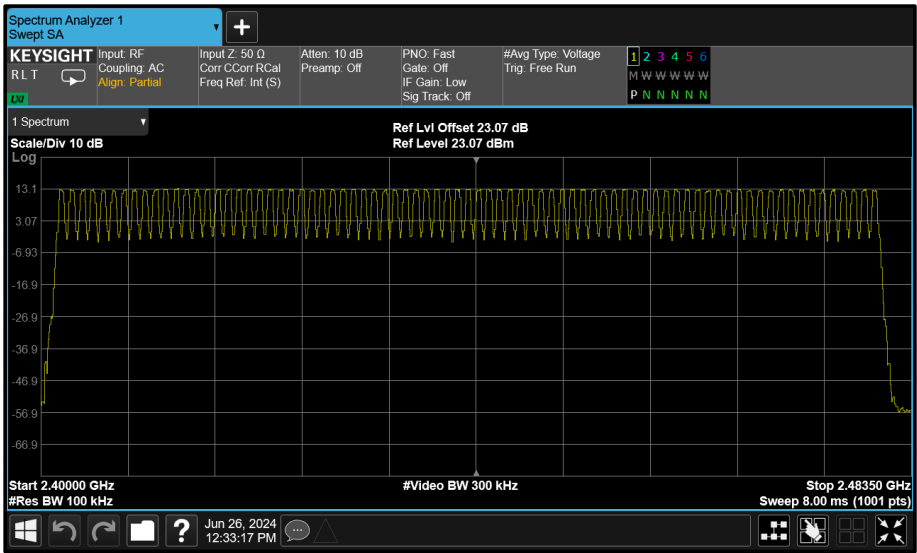


Figure 85 - GFSK (DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
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):	-

Number of Hopping Frequencies	Limit
79	≥ 15.0

Table 62 - Number of Hopping Frequencies Results

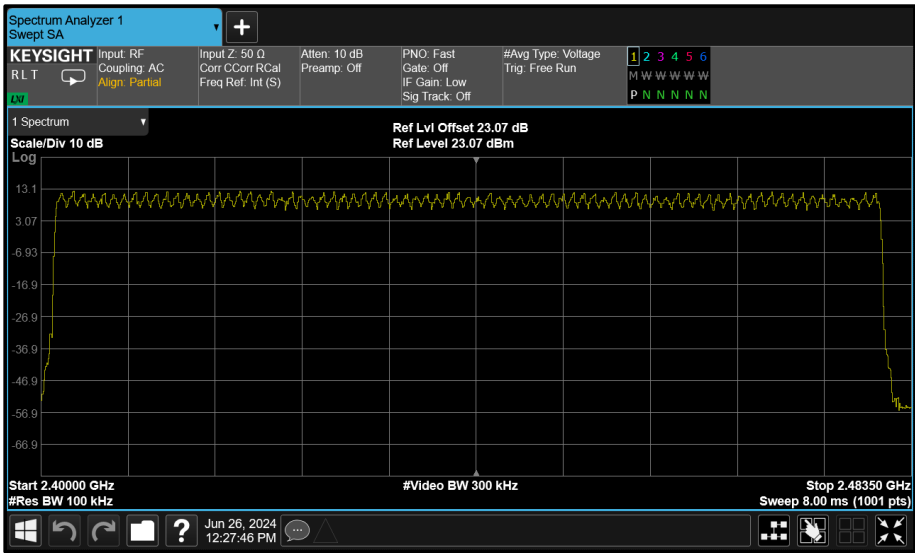


Figure 86 - $\pi/4$ DQPSK (2-DH5) - Number of Hopping Channels



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.3
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):	-

Number of Hopping Frequencies	Limit
79	≥15.0

Table 63 - Number of Hopping Frequencies Results

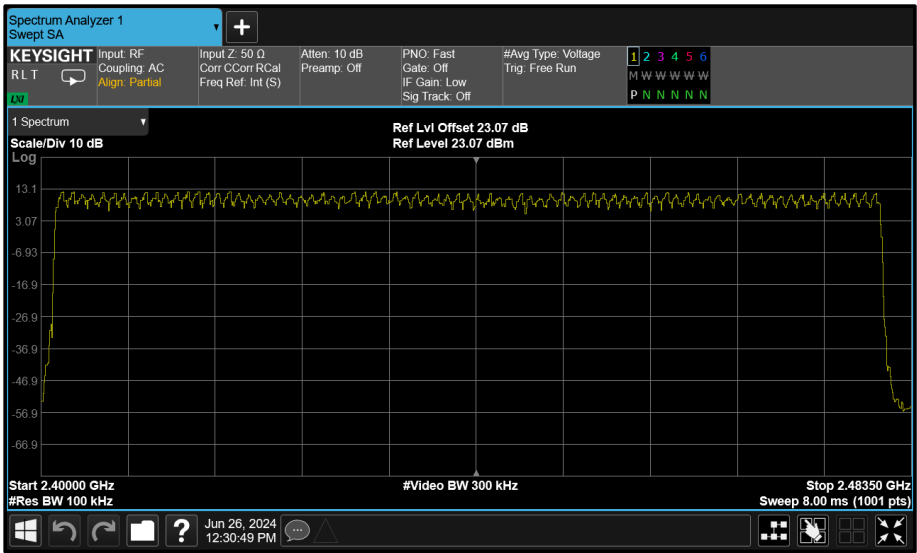


Figure 87 - 8-DPSK (3-DH5) - Number of Hopping Channels

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

≥ 15 channels

ISED RSS-247, Limit Clause 5.1 (d)

FHSSs operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels.



2.4.7 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
Digital Multimeter	Fluke	115	6145	12	06-Jun-2025
MXA Signal Analyser	Keysight Technologies	N9020B	6417	24	26-Feb-2025
MXA Signal Analyser	Keysight Technologies	N9020B	6419	24	28-Feb-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6517	12	22-Feb-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6518	12	16-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6526	12	22-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6527	12	05-Mar-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6528	12	22-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6529	12	16-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6530	12	16-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6531	12	16-Feb-2025
AC Programmable Power Supply	iTech	IT7324	6662	-	O/P Mon
AC Programmable Power Supply	iTech	IT7324	6665	-	O/P Mon

Table 64

O/P Mon - Output Monitored using calibrated equipment



2.5 Frequency Hopping Systems - 99% & 20 dB Bandwidth

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(1)
ISED RSS-247, Clause 5.1
ISED RSS-GEN, Clause 6.7

2.5.2 Equipment Under Test and Modification State

A3137, S/N: H6D001F73D - Modification State 0
A3137, S/N: G5022YM6RR - Modification State 0

2.5.3 Date of Test

26-June-2024 to 10-July-2024

2.5.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.9.2 for 20 dB Bandwidth and ANSI C63.10, clause 6.9.3 for 99% Bandwidth.

2.5.5 Environmental Conditions

Ambient Temperature	22.0 - 22.5 °C
Relative Humidity	45.1 - 52.5 %



2.5.6 Test Results

2.4 GHz Bluetooth BDR/EDR

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 GFSK (DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	20 dB Bandwidth (MHz)			
	A	B	C	D
2402	-	0.858	-	-
2441	-	0.855	-	-
2480	-	0.855	-	-

Table 65 - 20 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	0.870	-	-	-
2441	-	0.867	-	-	-
2480	-	0.870	-	-	-

Table 66 - 99% Bandwidth Results

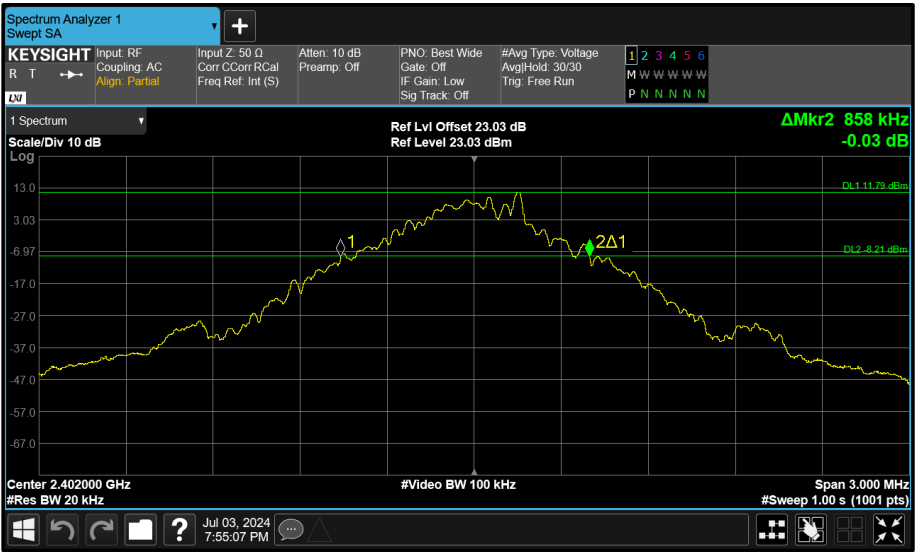


Figure 88 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

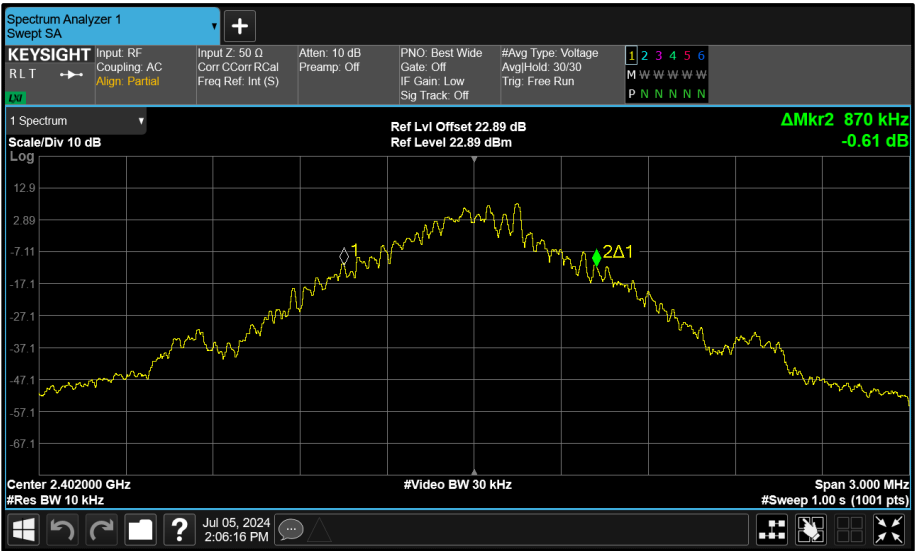


Figure 89 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

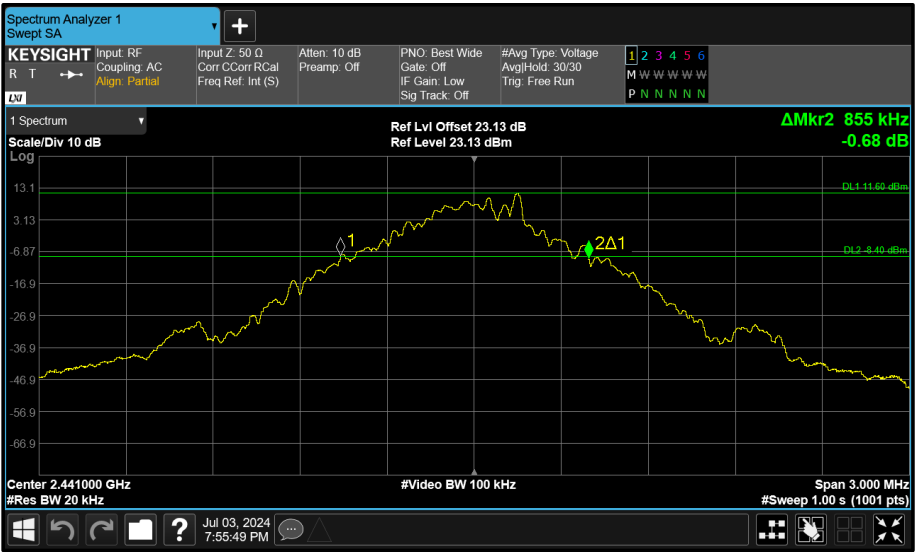


Figure 90 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

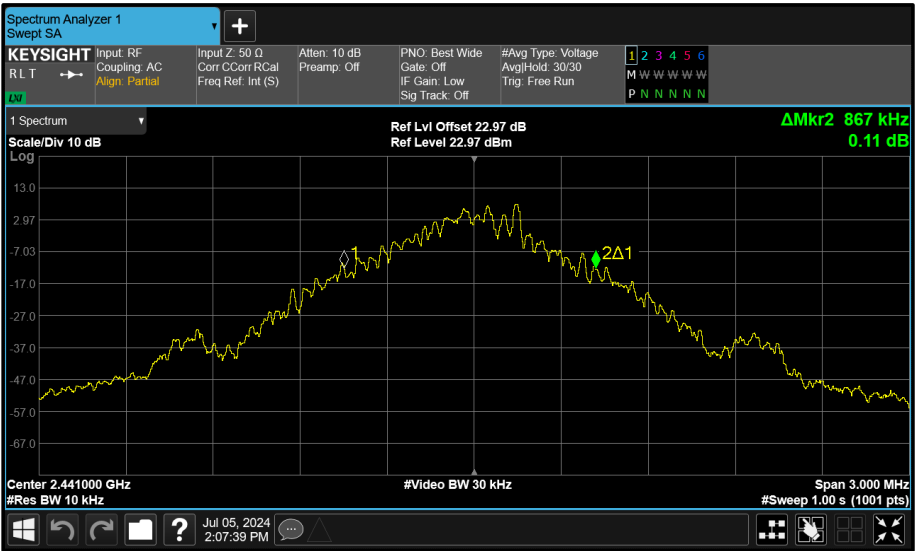


Figure 91 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

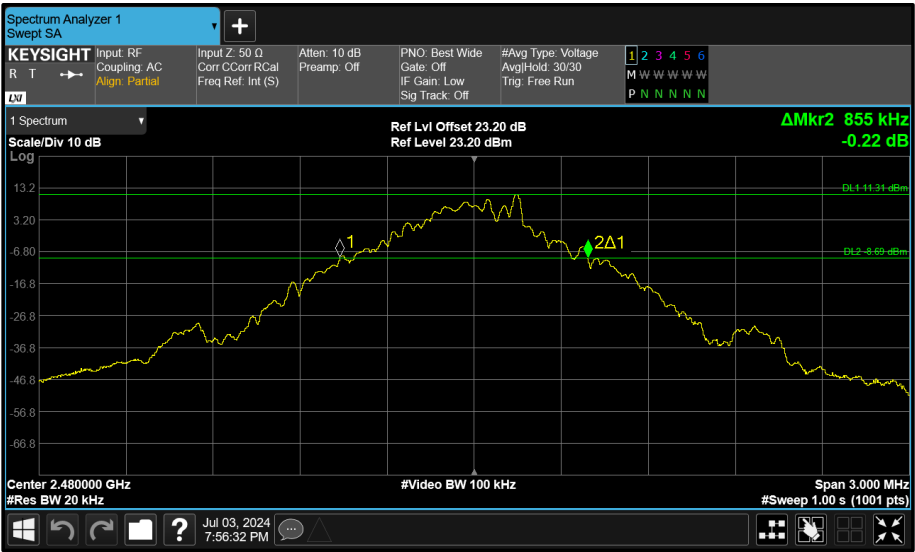


Figure 92 - Core 1 (B) 2480 MHz (CH78) 20 dB Bandwidth

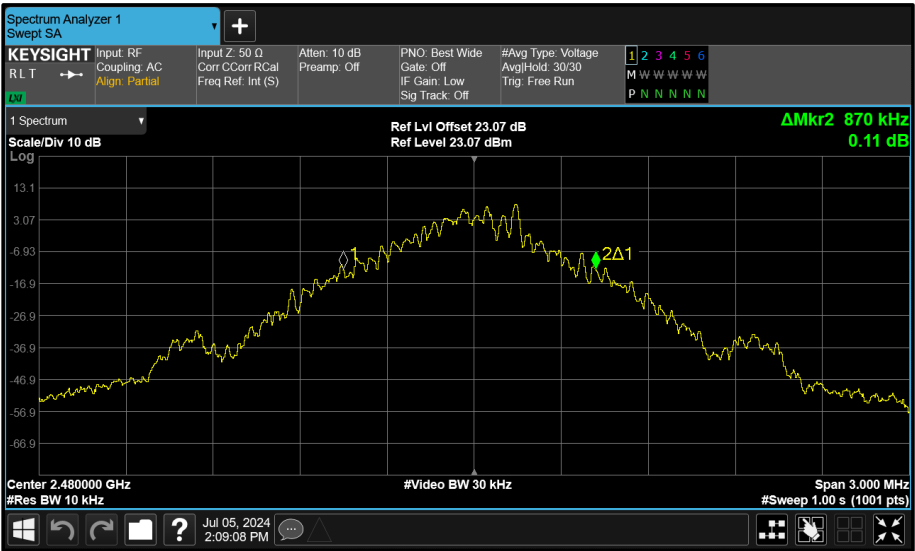


Figure 93 - Core 1 (B) 2480 MHz (CH78) 99% Bandwidth



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 $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 1)	Peak Antenna Gain (dBi):	-

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

Table 67 - 20 dB Bandwidth Results

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

Table 68 - 99% Bandwidth Results

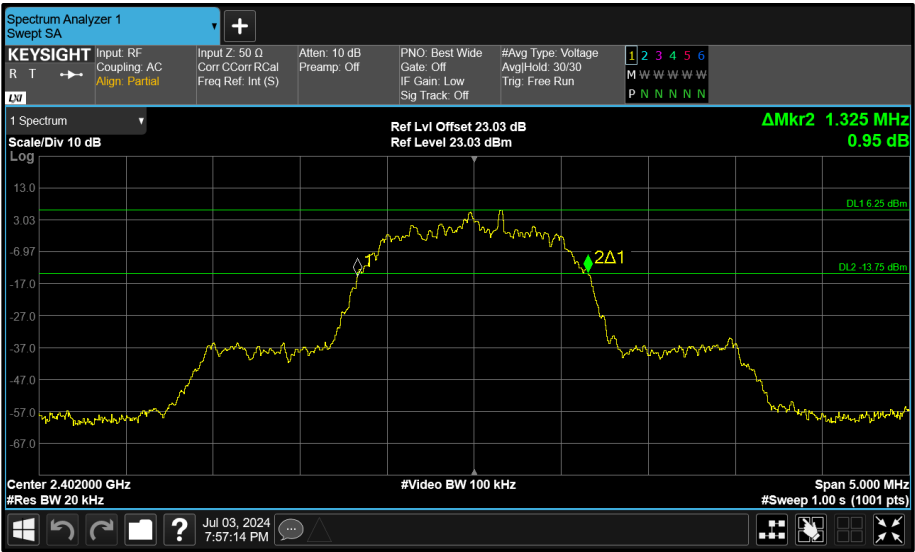


Figure 94 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

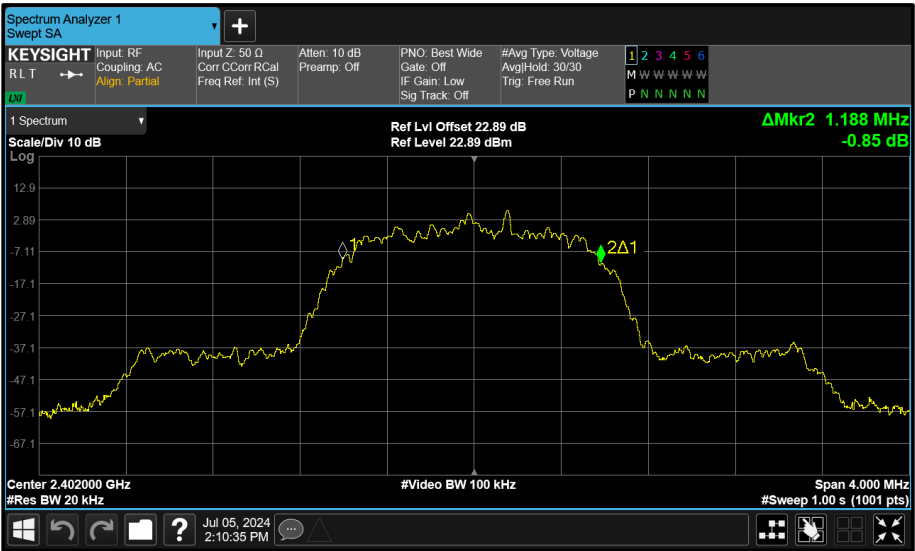


Figure 95 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

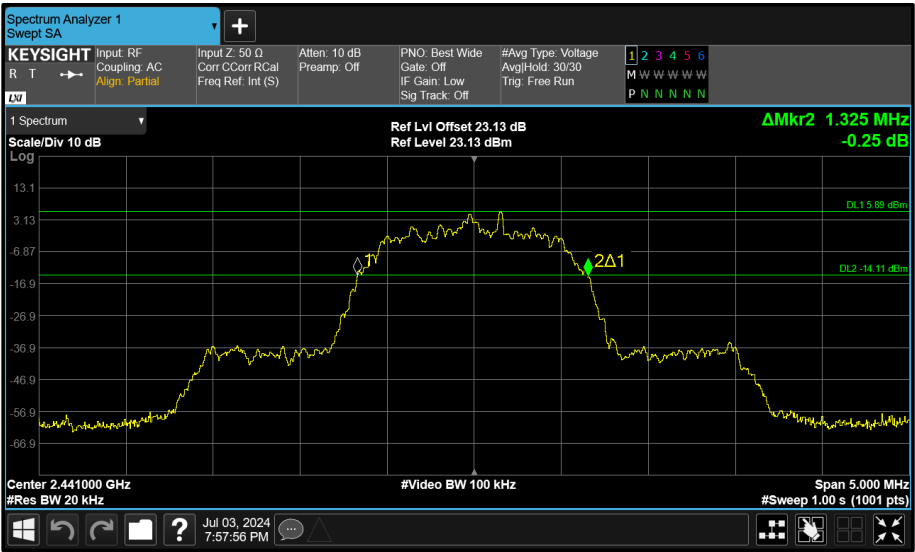


Figure 96 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

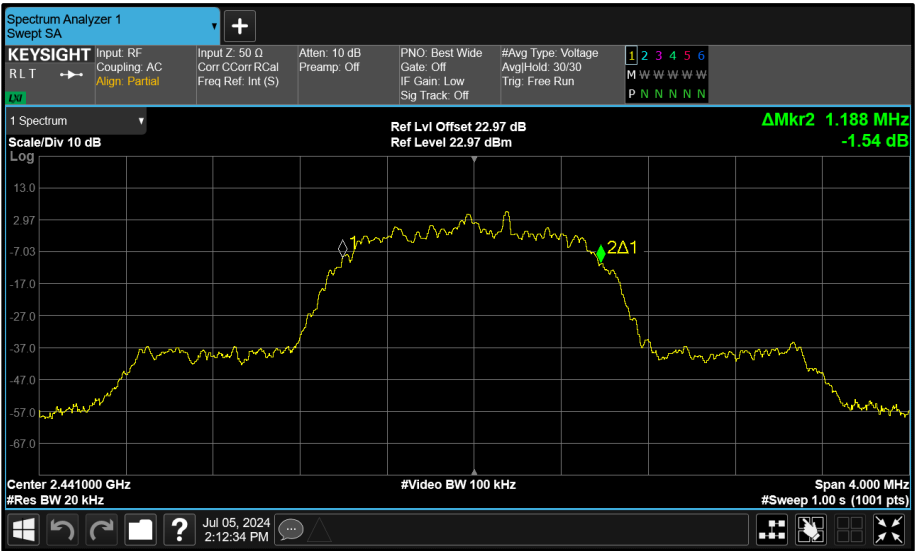


Figure 97 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth





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:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 1)	Peak Antenna Gain (dBi):	-

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

Table 69 - 20 dB Bandwidth Results

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

Table 70 - 99% Bandwidth Results

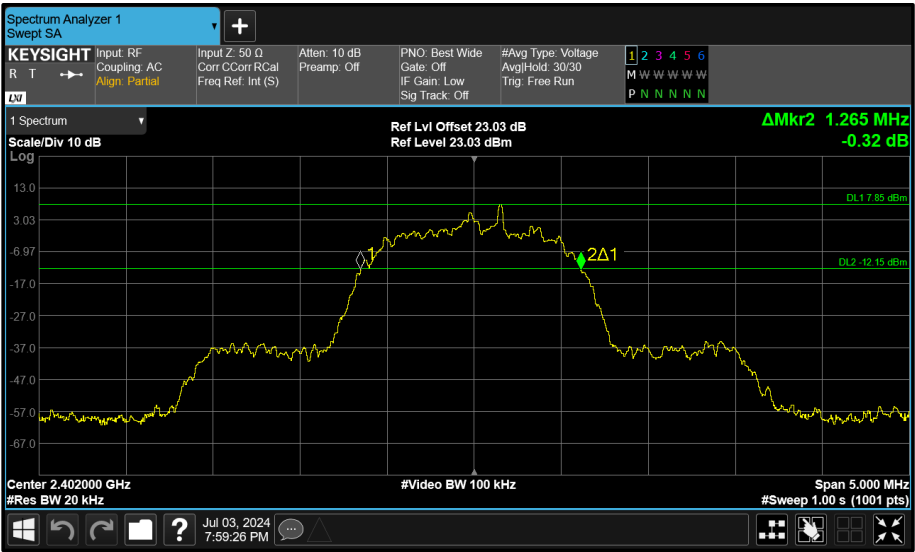


Figure 100 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

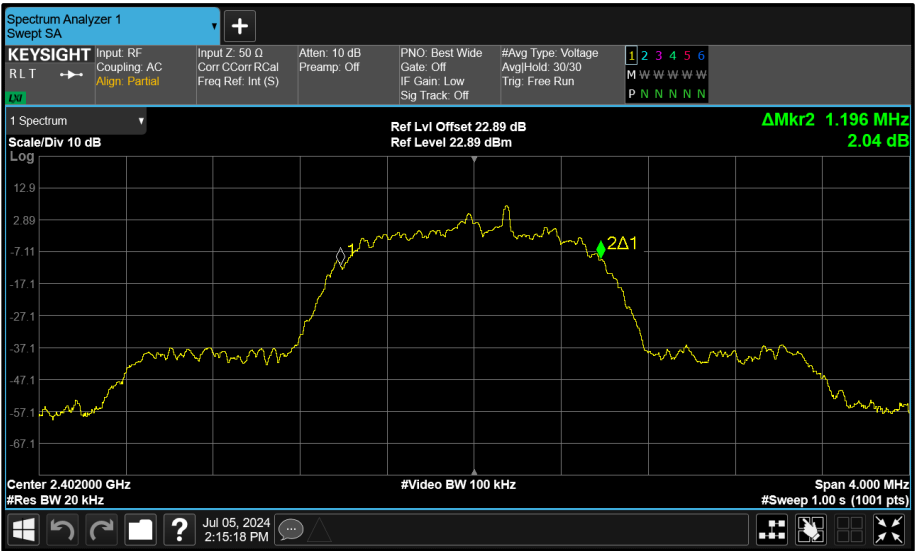


Figure 101 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

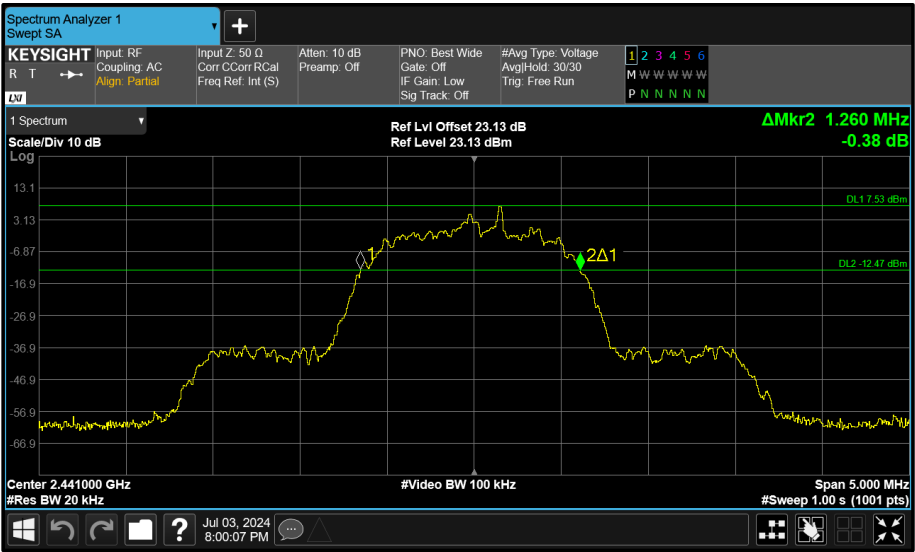


Figure 102 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

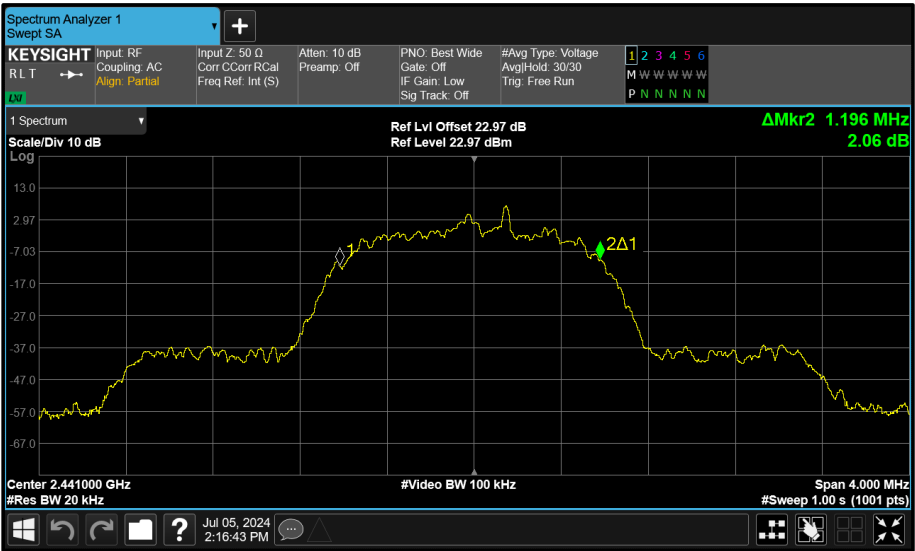


Figure 103 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth





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

Test Frequency (MHz)	20 dB Bandwidth (MHz)			
	A	B	C	D
2402	-	-	0.858	-
2441	-	-	0.855	-
2480	-	-	0.855	-

Table 71 - 20 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	-	0.858	-	-
2441	-	-	0.858	-	-
2480	-	-	0.858	-	-

Table 72 - 99% Bandwidth Results

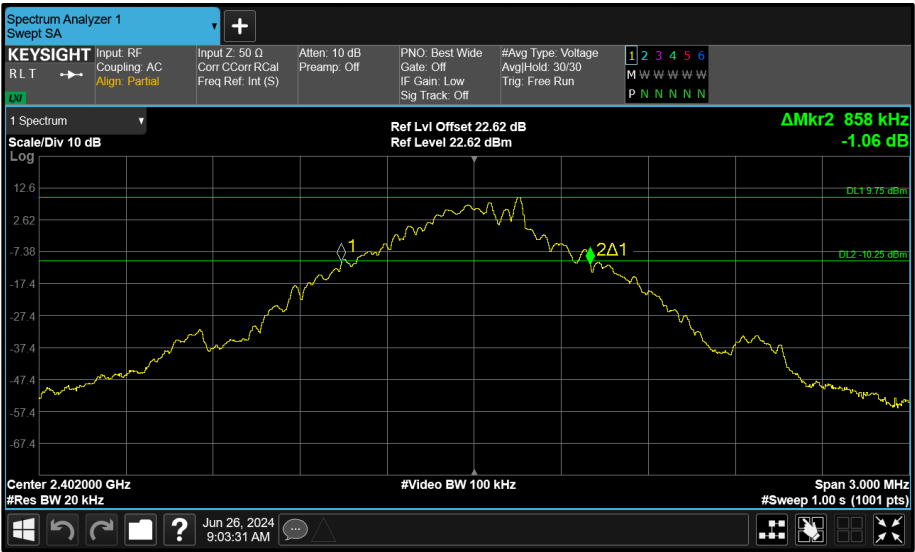


Figure 106 - Core 2 (C) 2402 MHz (CH0) 20 dB Bandwidth

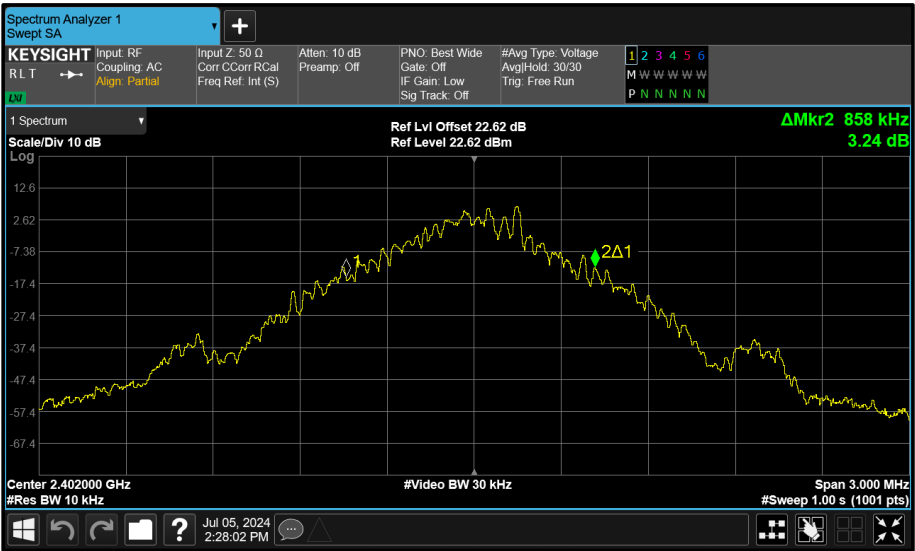


Figure 107 - Core 2 (C) 2402 MHz (CH0) 99% Bandwidth

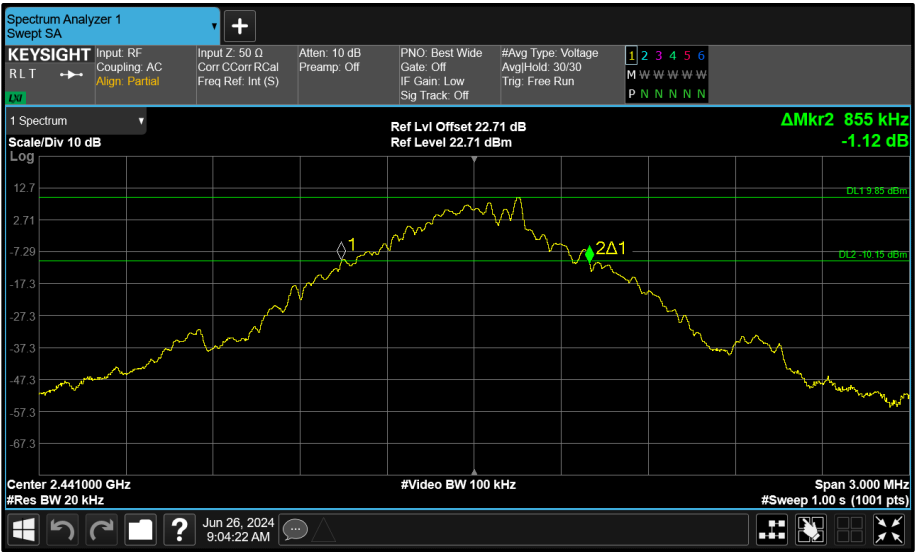


Figure 108 - Core 2 (C) 2441 MHz (CH39) 20 dB Bandwidth

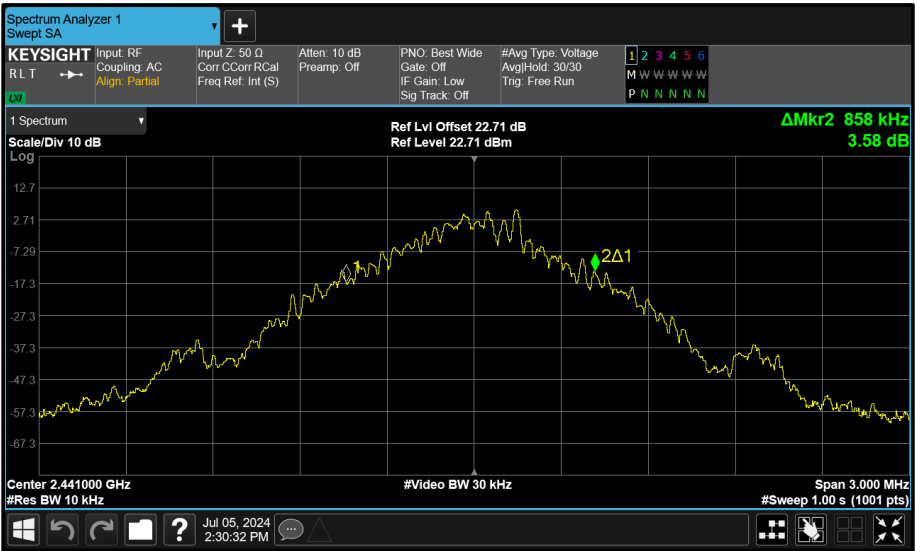


Figure 109 - Core 2 (C) 2441 MHz (CH39) 99% Bandwidth

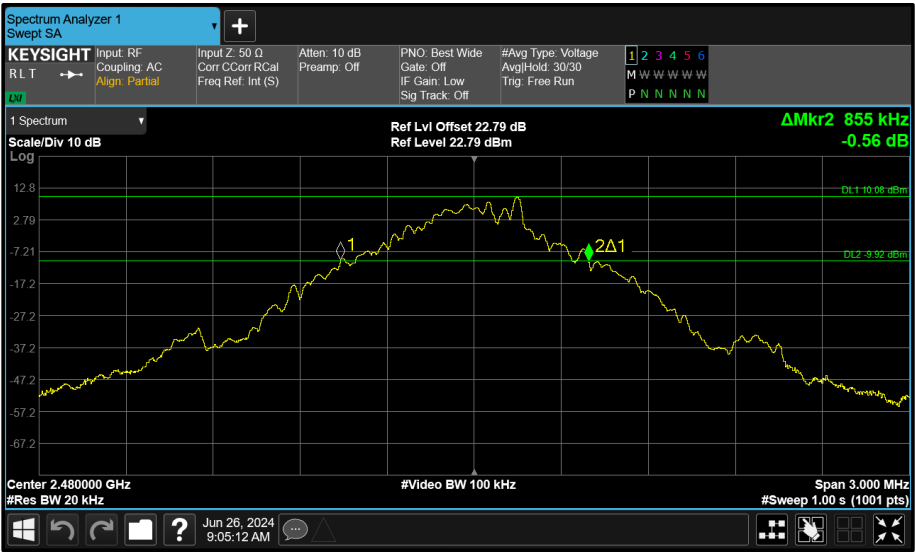


Figure 110 - Core 2 (C) 2480 MHz (CH78) 20 dB Bandwidth

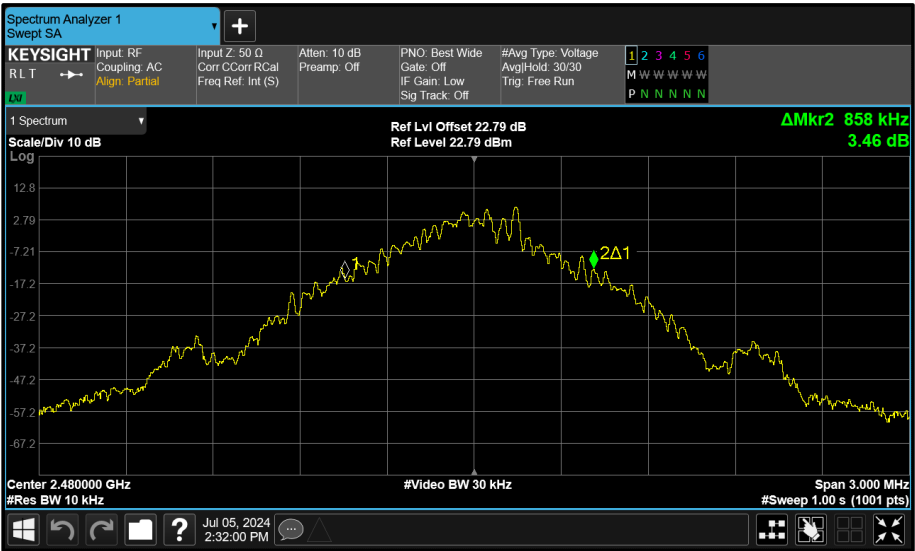


Figure 111 - Core 2 (C) 2480 MHz (CH78) 99% Bandwidth



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):	-		

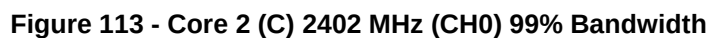
DUT Configuration			
Mode:	iPA $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

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

Table 73 - 20 dB Bandwidth Results

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

Table 74 - 99% Bandwidth Results



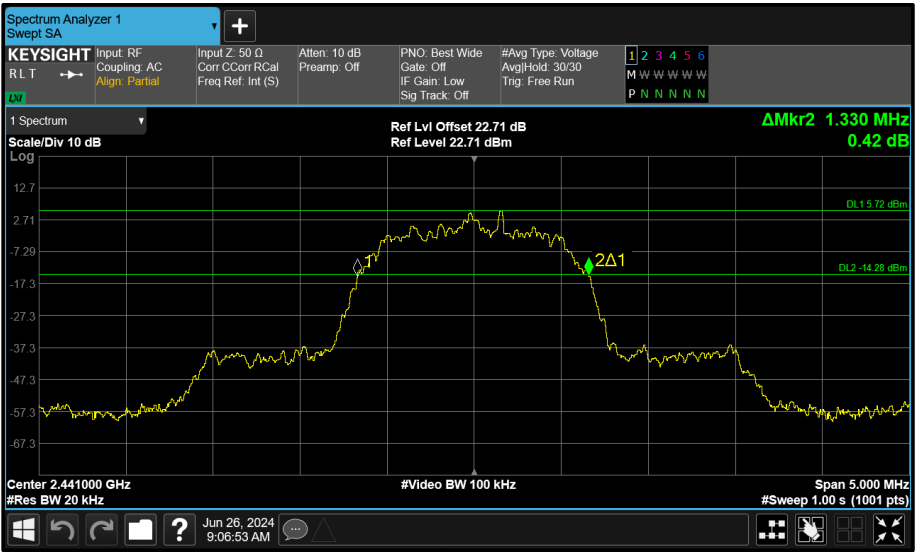


Figure 114 - Core 2 (C) 2441 MHz (CH39) 20 dB Bandwidth

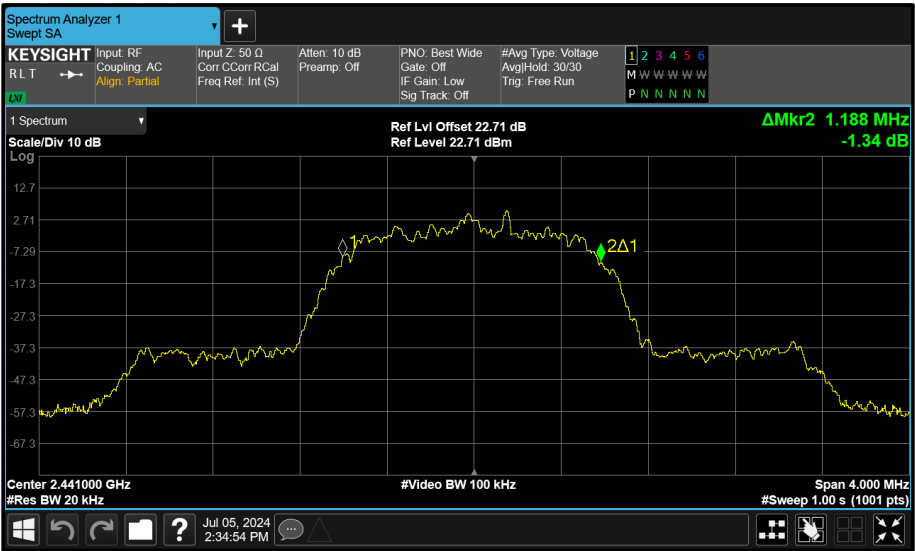


Figure 115 - Core 2 (C) 2441 MHz (CH39) 99% Bandwidth

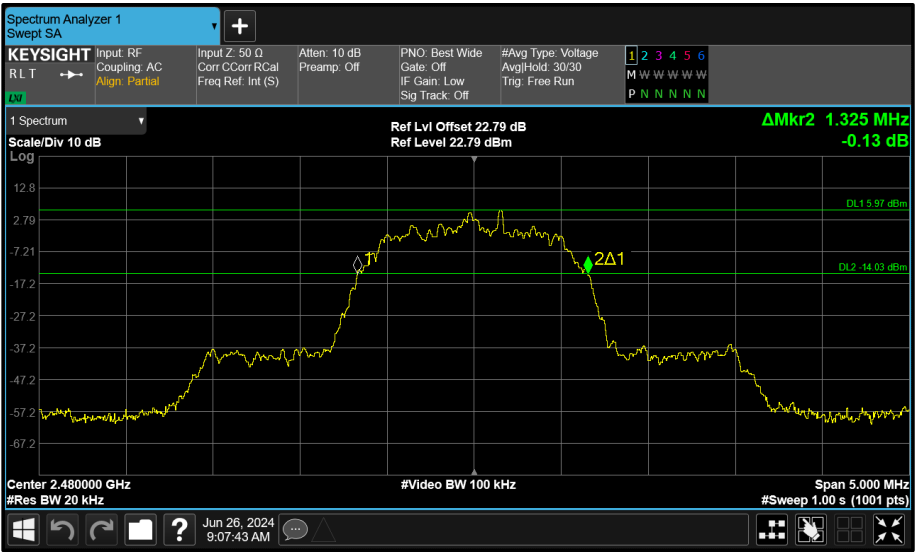


Figure 116 - Core 2 (C) 2480 MHz (CH78) 20 dB Bandwidth

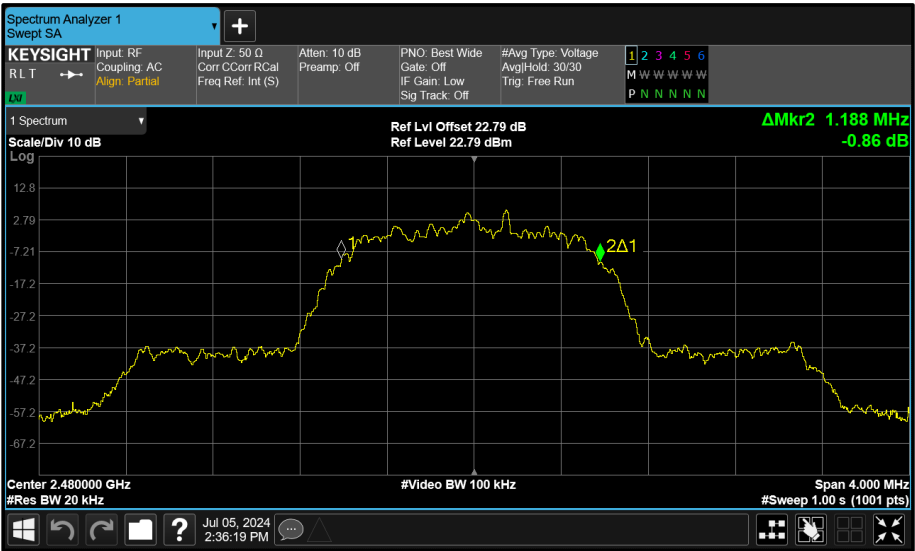


Figure 117 - Core 2 (C) 2480 MHz (CH78) 99% Bandwidth



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:	SISO	DCCF (dB):	-
Active Port(s):	C (Core 2)	Peak Antenna Gain (dBi):	-

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

Table 75 - 20 dB Bandwidth Results

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

Table 76 - 99% Bandwidth Results

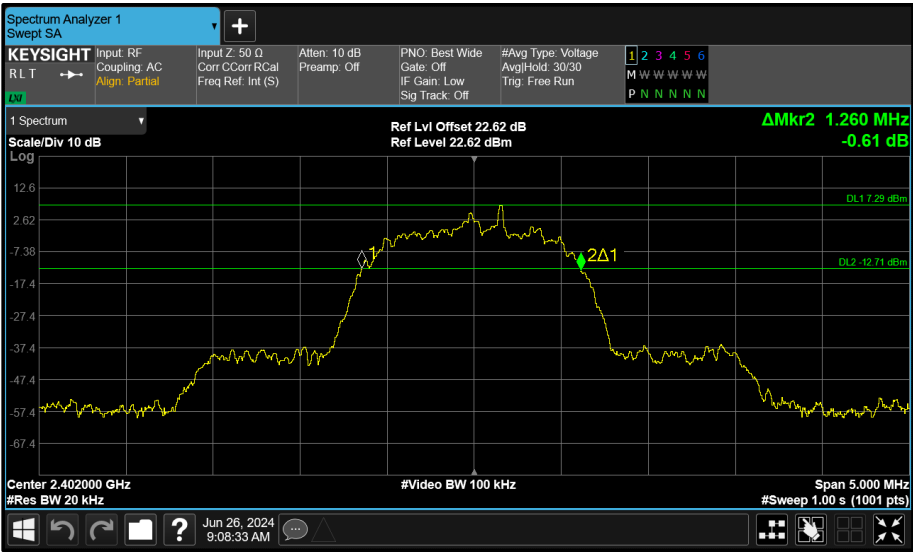


Figure 118 - Core 2 (C) 2402 MHz (CH0) 20 dB Bandwidth

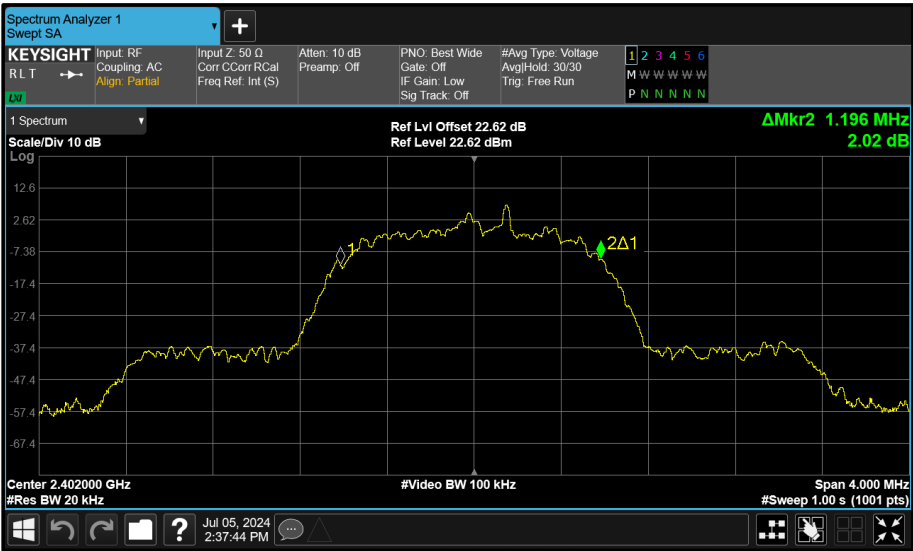


Figure 119 - Core 2 (C) 2402 MHz (CH0) 99% Bandwidth

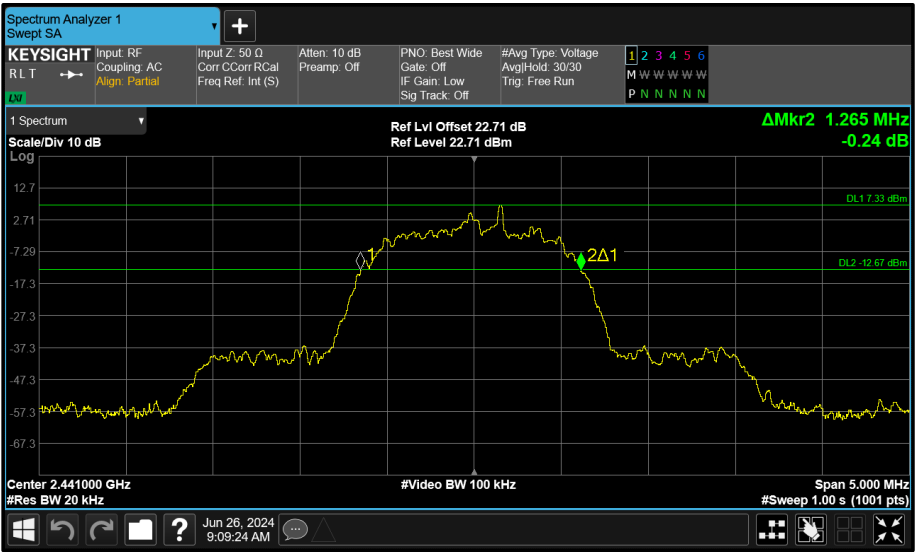


Figure 120 - Core 2 (C) 2441 MHz (CH39) 20 dB Bandwidth

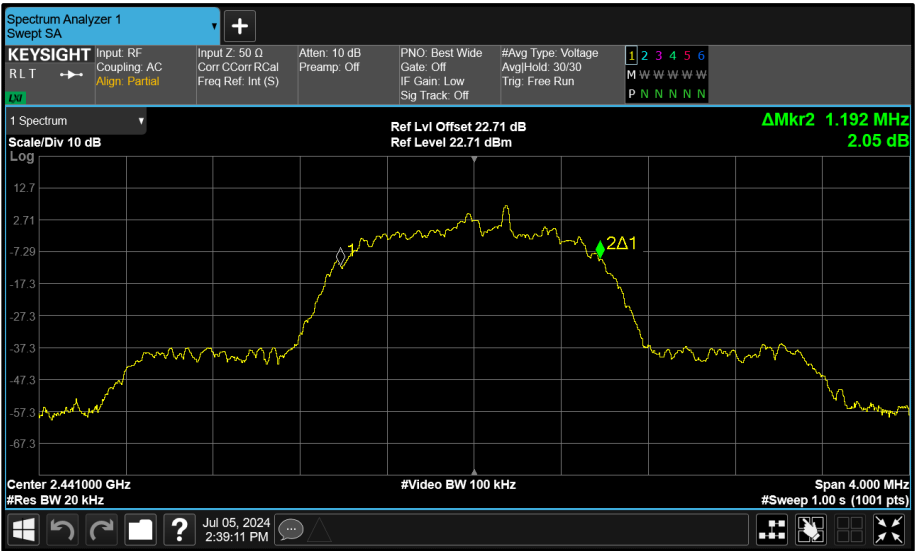


Figure 121 - Core 2 (C) 2441 MHz (CH39) 99% Bandwidth

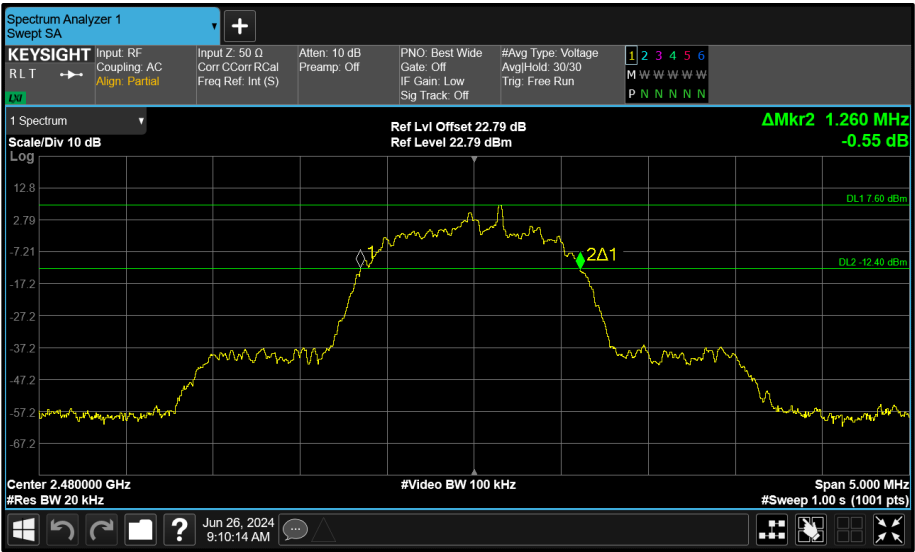


Figure 122 - Core 2 (C) 2480 MHz (CH78) 20 dB Bandwidth

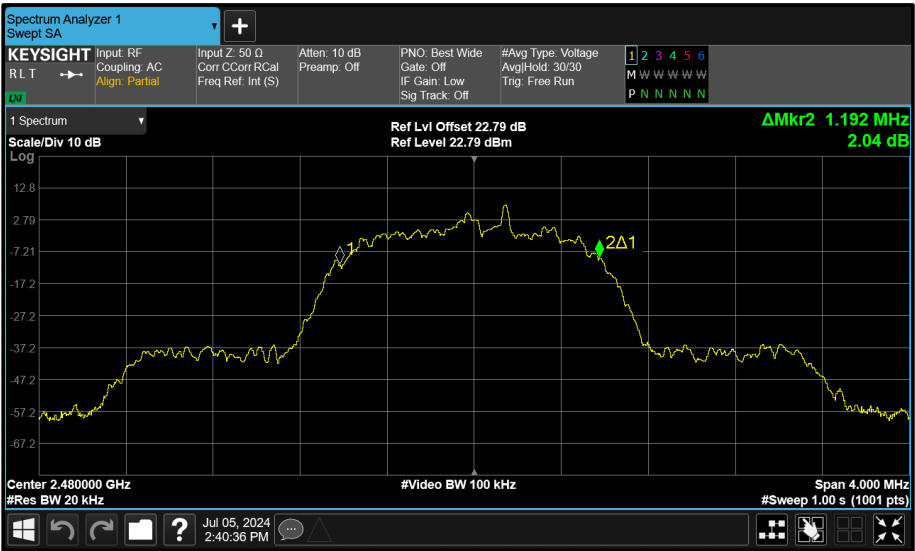


Figure 123 - Core 2 (C) 2480 MHz (CH78) 99% Bandwidth



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 GFSK (DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 1)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	20 dB Bandwidth (MHz)			
	A	B	C	D
2402	-	0.858	-	-
2441	-	0.858	-	-
2480	-	0.855	-	-

Table 77 - 20 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	-	0.868	-	-	-
2441	-	0.870	-	-	-
2480	-	0.870	-	-	-

Table 78 - 99% Bandwidth Results

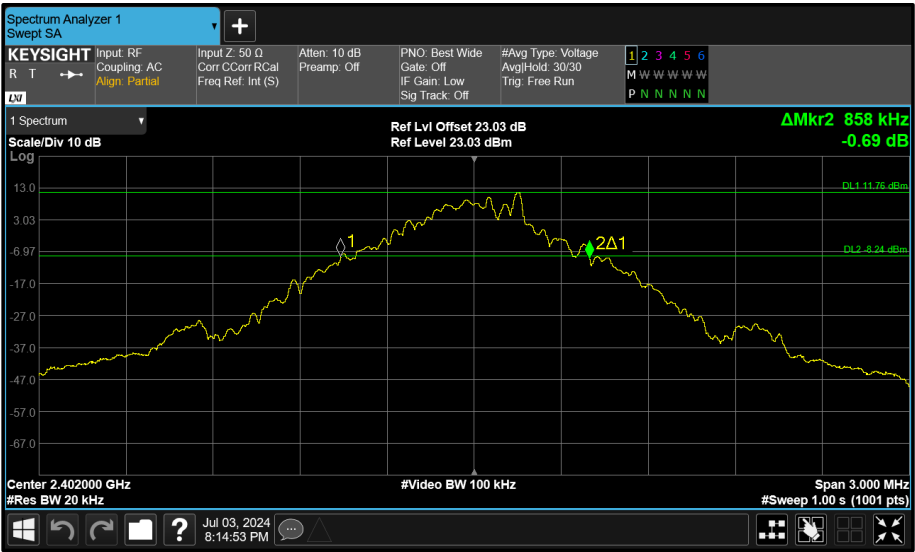


Figure 124 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

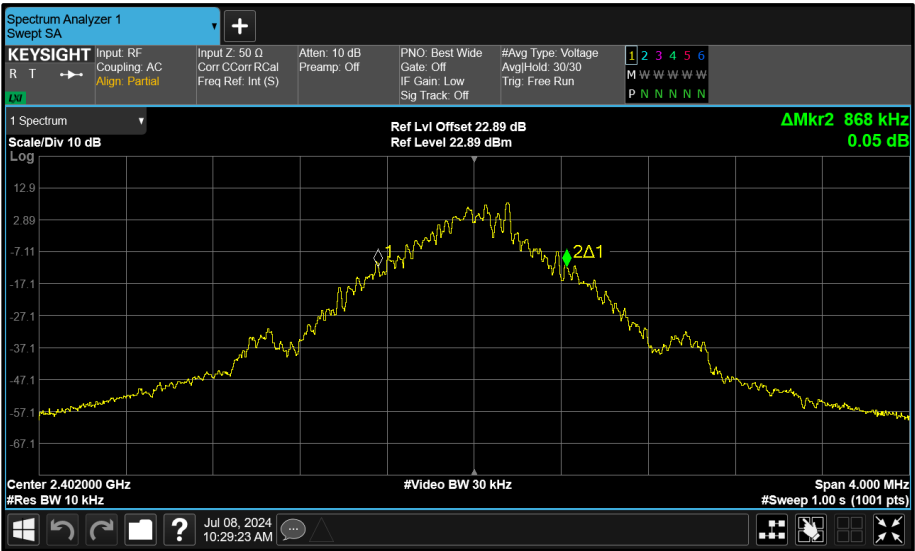


Figure 125 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

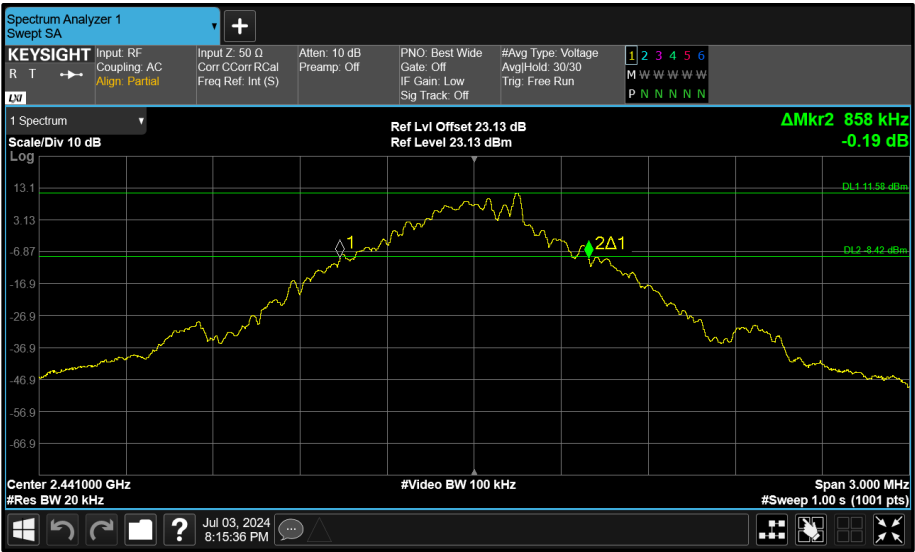


Figure 126 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

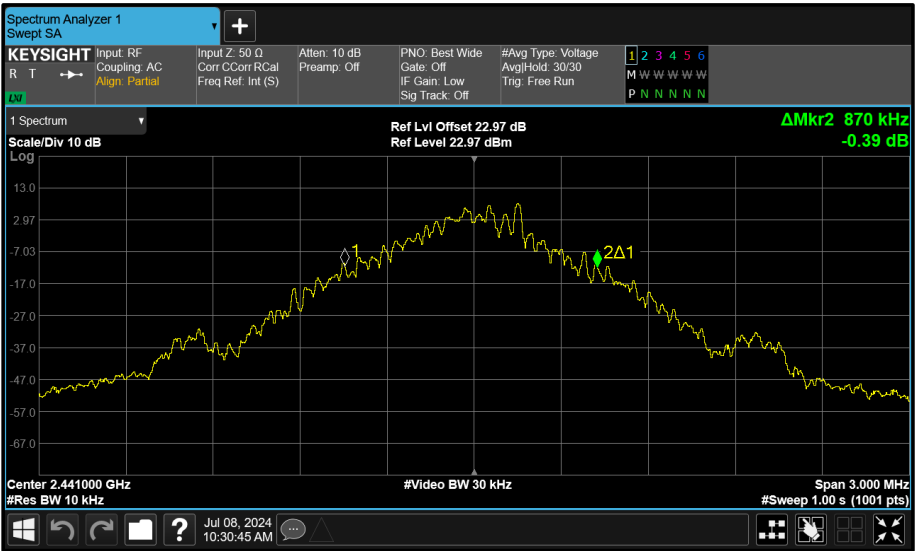


Figure 127 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

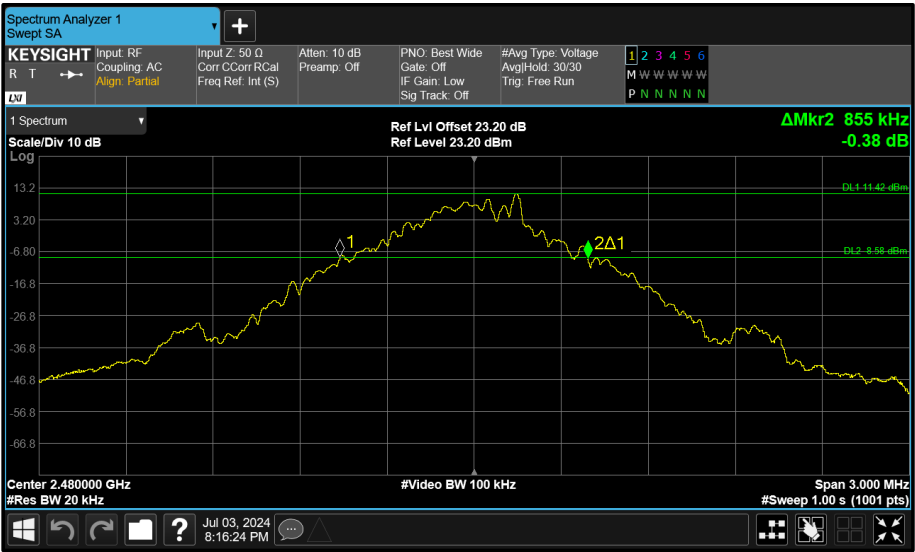


Figure 128 - Core 1 (B) 2480 MHz (CH78) 20 dB Bandwidth

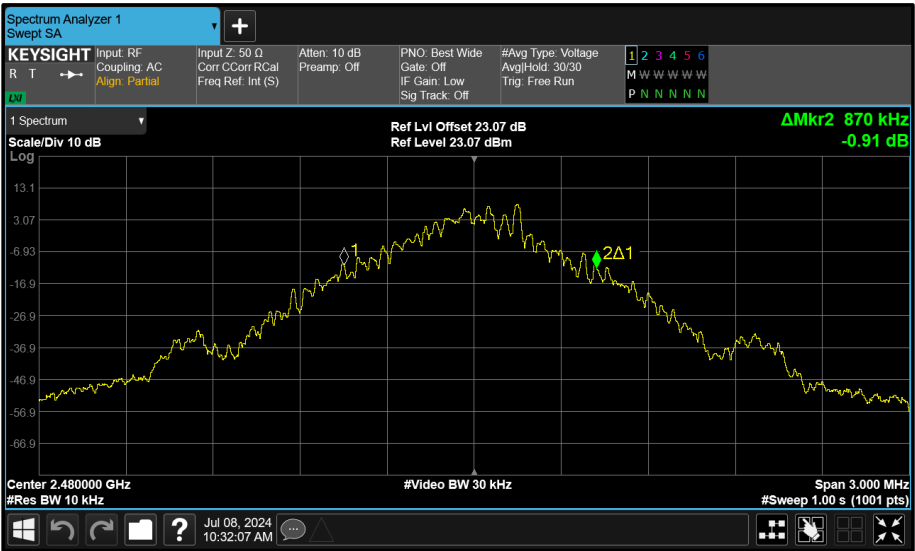


Figure 129 - Core 1 (B) 2480 MHz (CH78) 99% Bandwidth



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):	-		

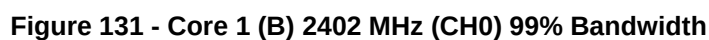
DUT Configuration			
Mode:	ePA $\pi/4$ DQPSK (2-DH5)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 1)	Peak Antenna Gain (dBi):	-

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

Table 79 - 20 dB Bandwidth Results

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

Table 80 - 99% Bandwidth Results



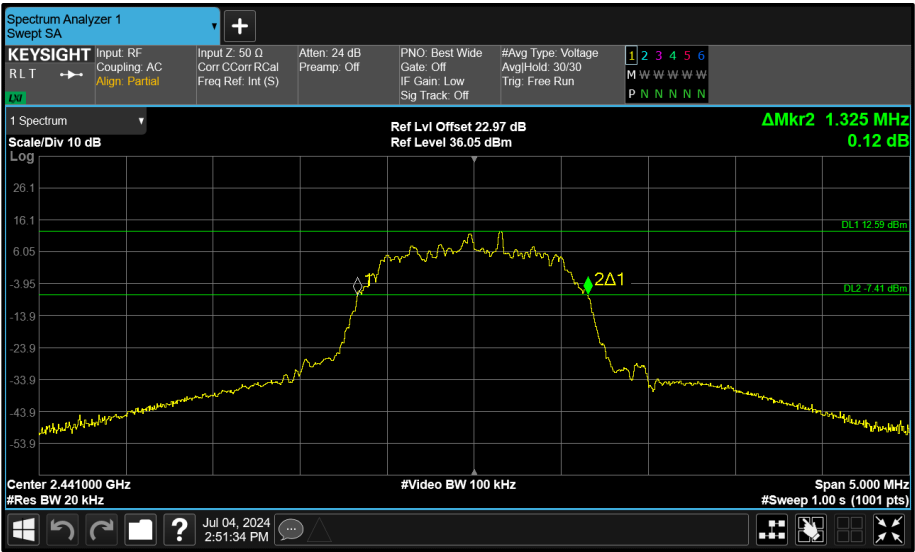


Figure 132 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

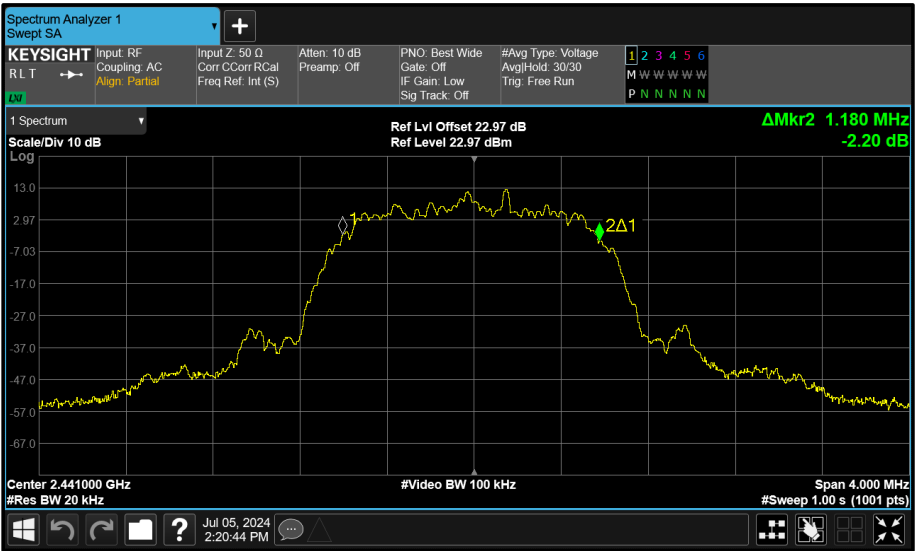


Figure 133 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

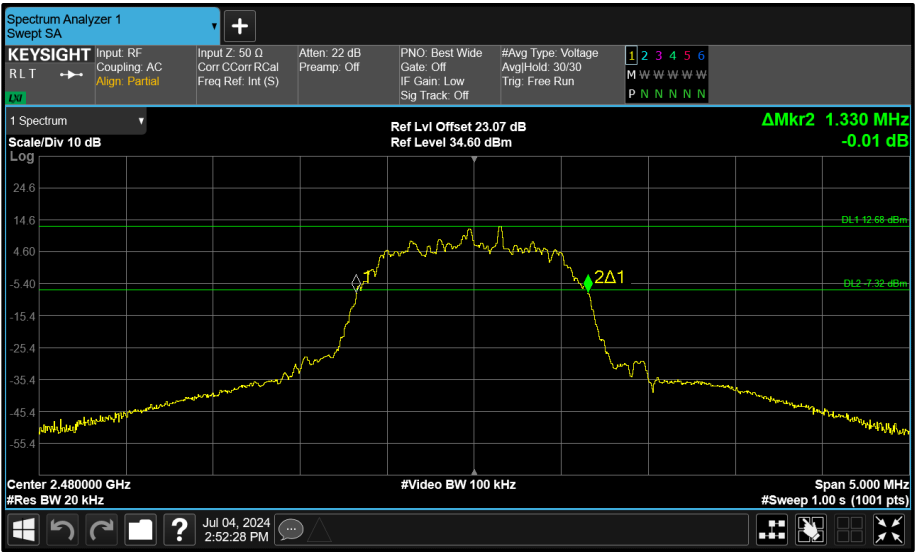


Figure 134 - Core 1 (B) 2480 MHz (CH78) 20 dB Bandwidth

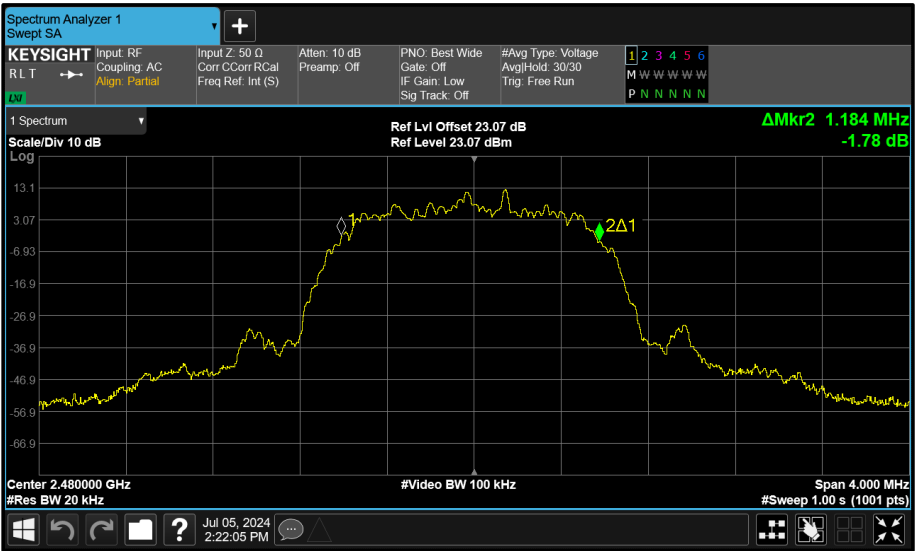


Figure 135 - Core 1 (B) 2480 MHz (CH78) 99% Bandwidth



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:	SISO	DCCF (dB):	-
Active Port(s):	B (Core 1)	Peak Antenna Gain (dBi):	-

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

Table 81 - 20 dB Bandwidth Results

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

Table 82 - 99% Bandwidth Results

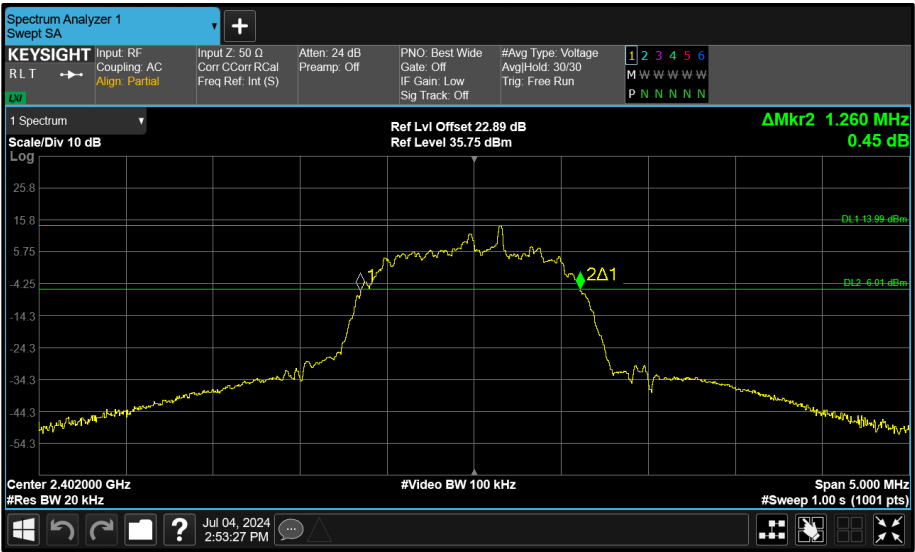


Figure 136 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

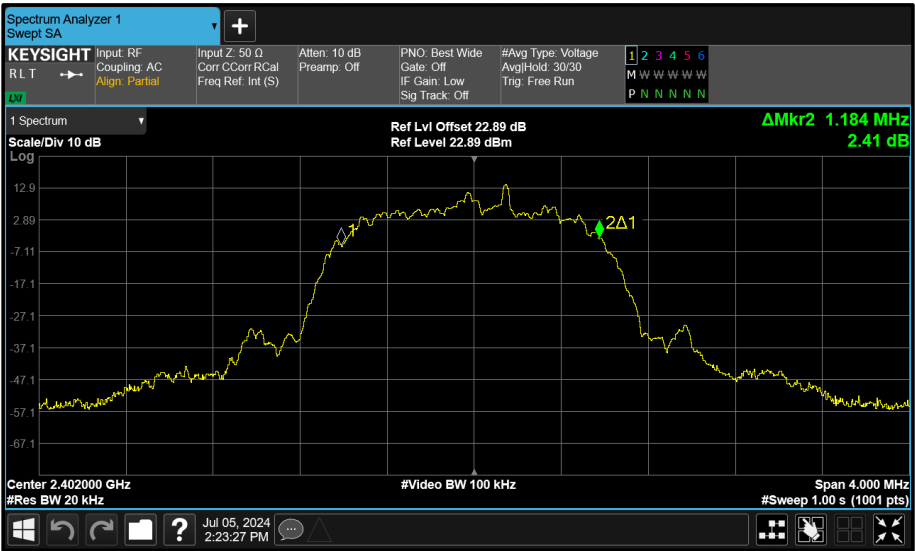


Figure 137 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

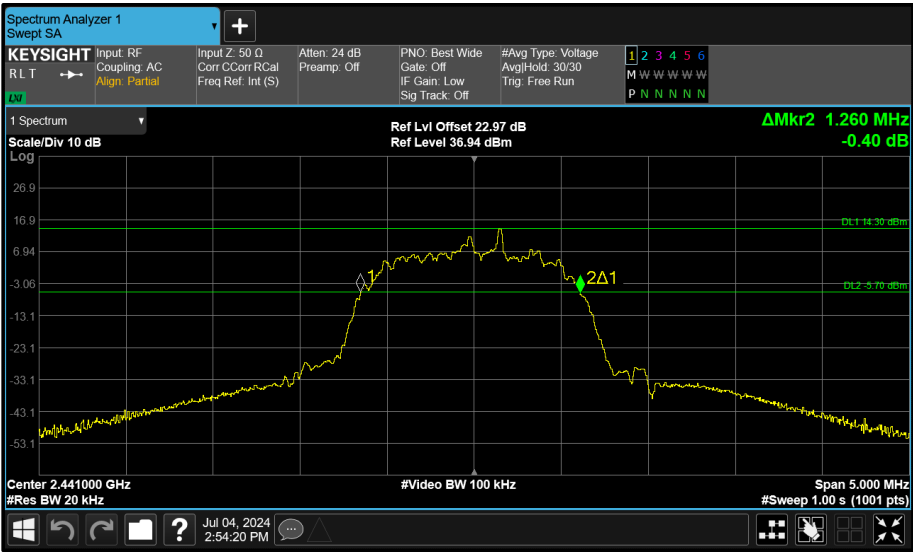


Figure 138 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

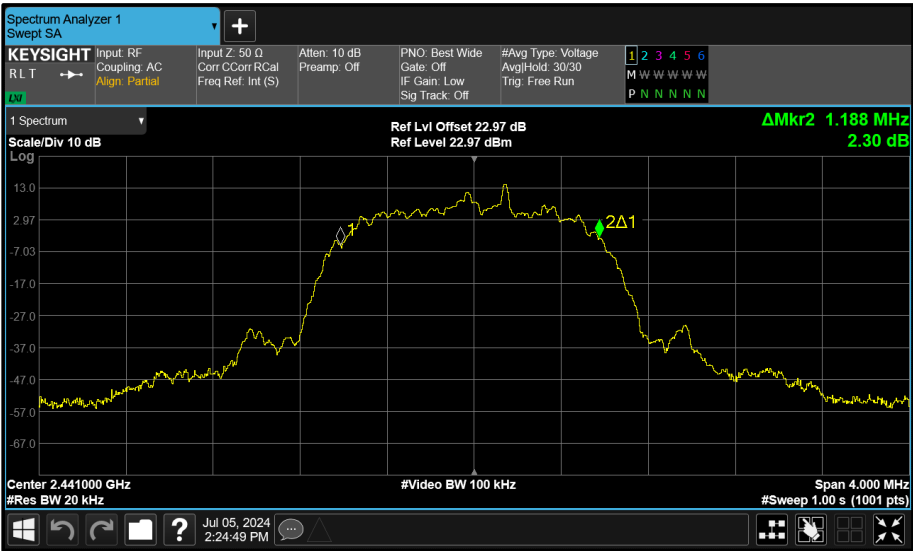


Figure 139 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

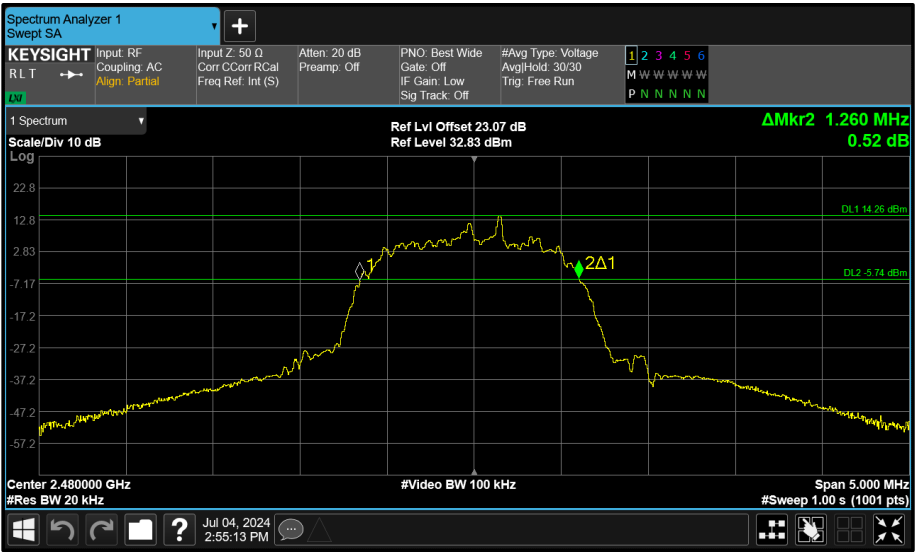


Figure 140 - Core 1 (B) 2480 MHz (CH78) 20 dB Bandwidth

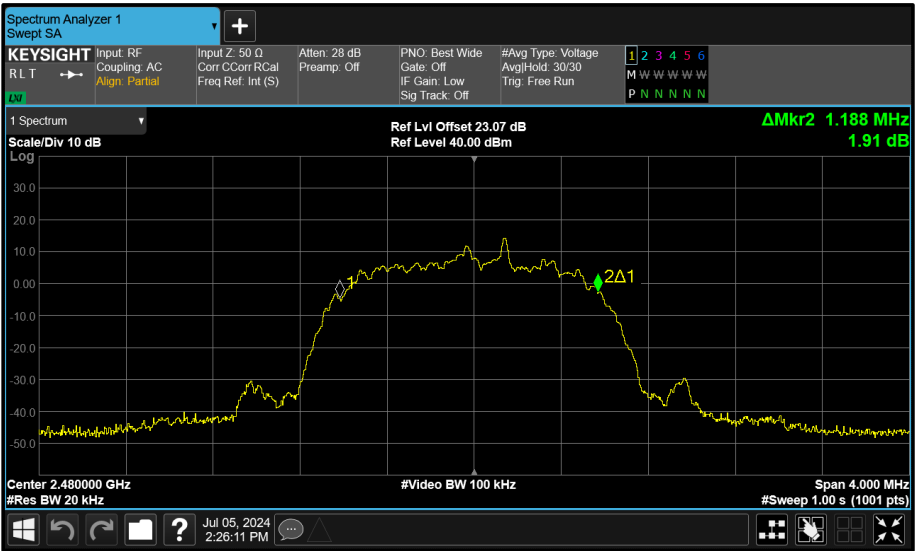


Figure 141 - Core 1 (B) 2480 MHz (CH78) 99% Bandwidth



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 GFSK (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	0.855	0.855	-	-
2441	0.855	0.858	-	-
2480	0.858	0.858	-	-

Table 83 - 20 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	0.855	0.873	-	-	-
2441	0.858	0.870	-	-	-
2480	0.855	0.864	-	-	-

Table 84 - 99% Bandwidth Results

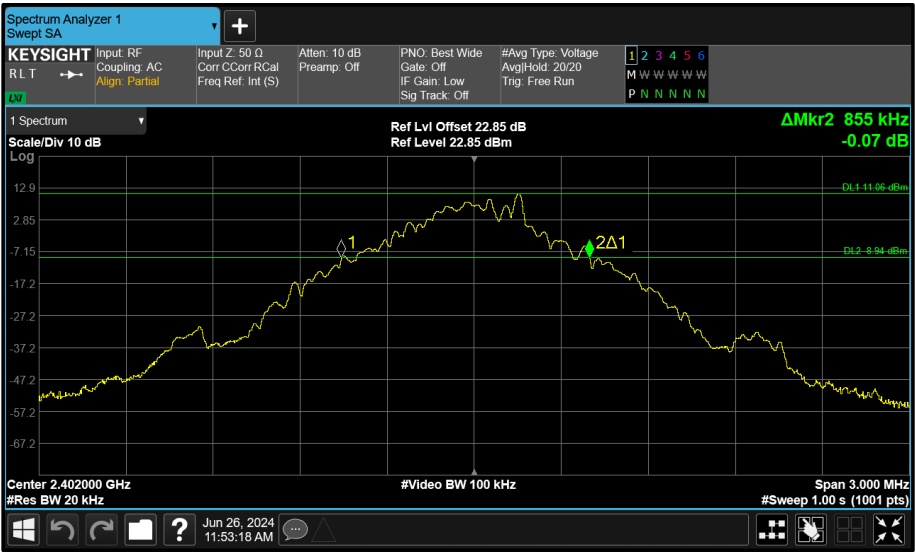


Figure 142 - Core 0 (A) 2402 MHz (CH0) 20 dB Bandwidth

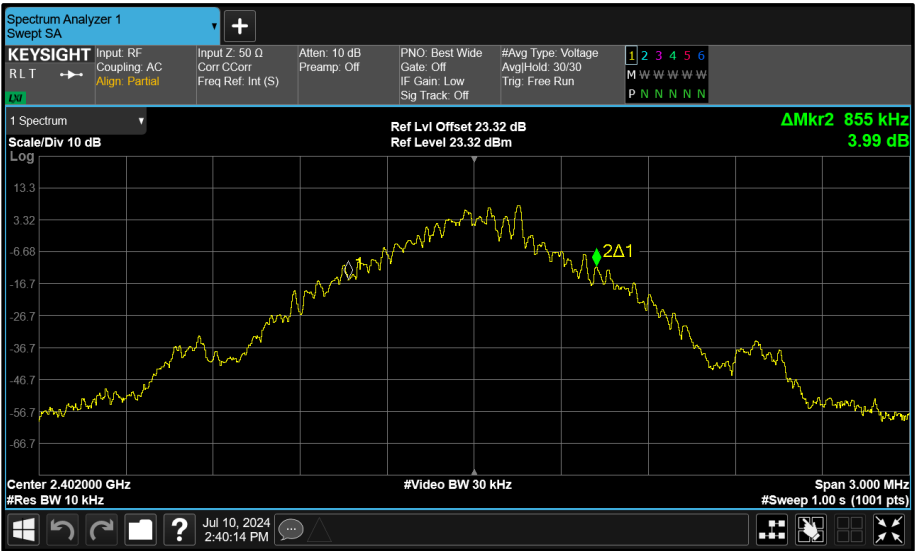


Figure 143 - Core 0 (A) 2402 MHz (CH0) 99% Bandwidth

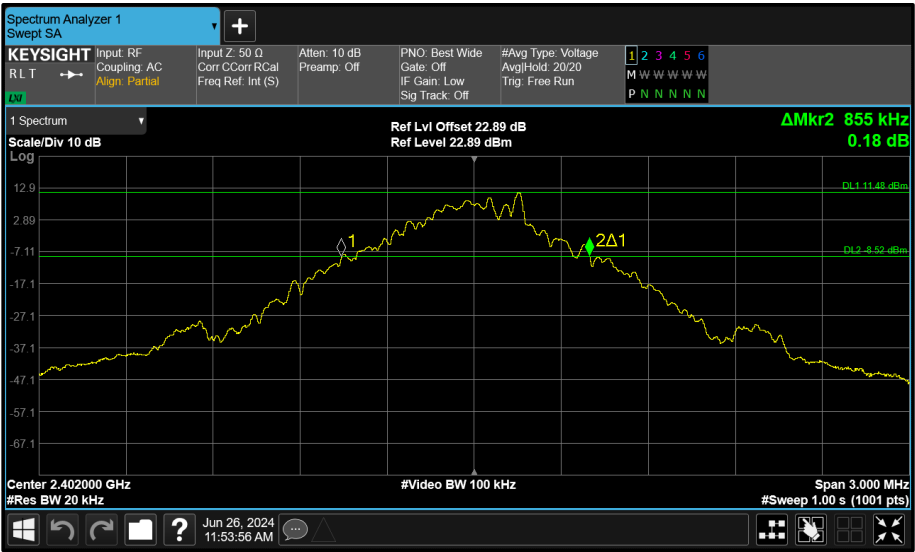


Figure 144 - Core 1 (B) 2402 MHz (CH0) 20 dB Bandwidth

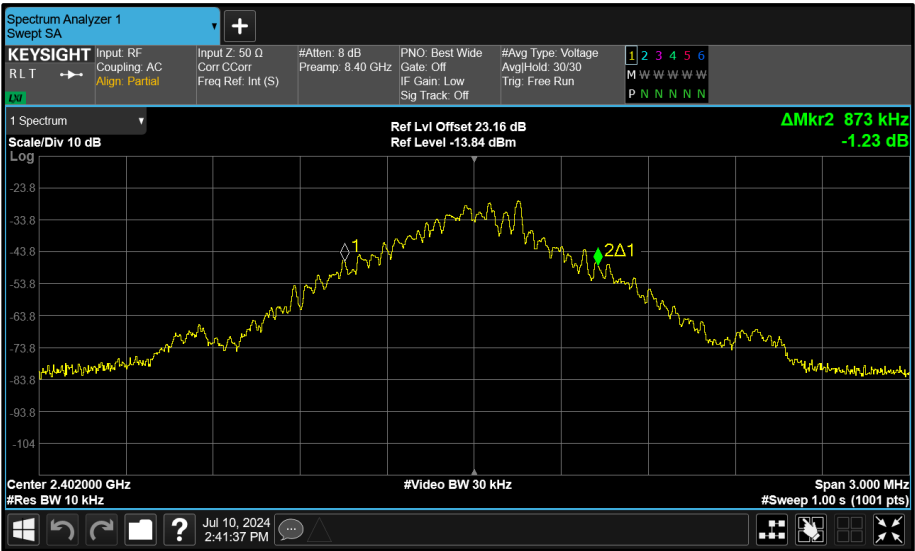


Figure 145 - Core 1 (B) 2402 MHz (CH0) 99% Bandwidth

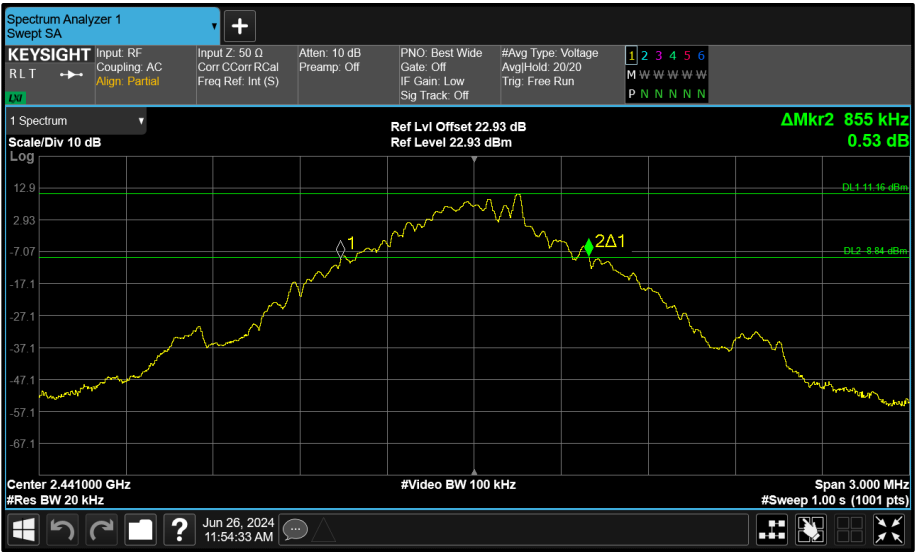


Figure 146 - Core 0 (A) 2441 MHz (CH39) 20 dB Bandwidth

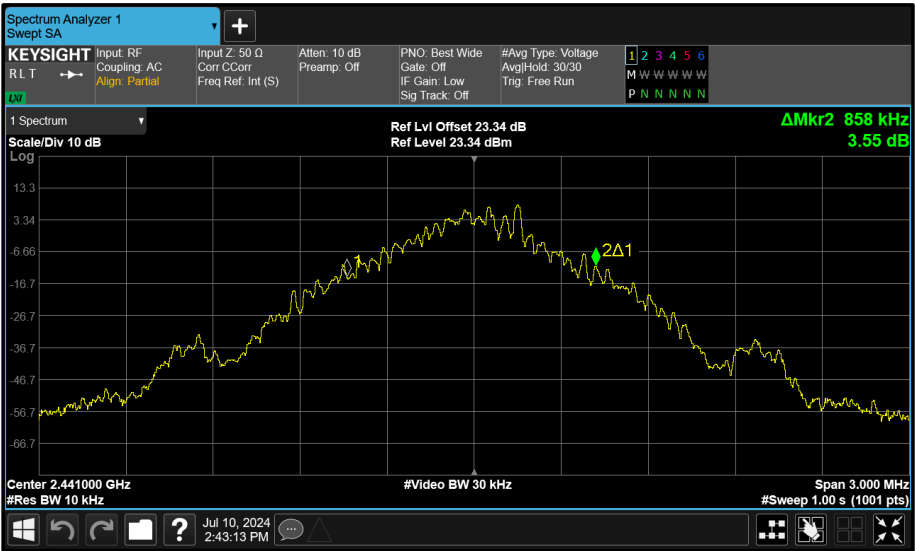
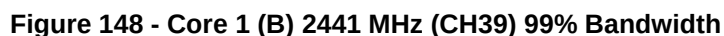


Figure 147 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth



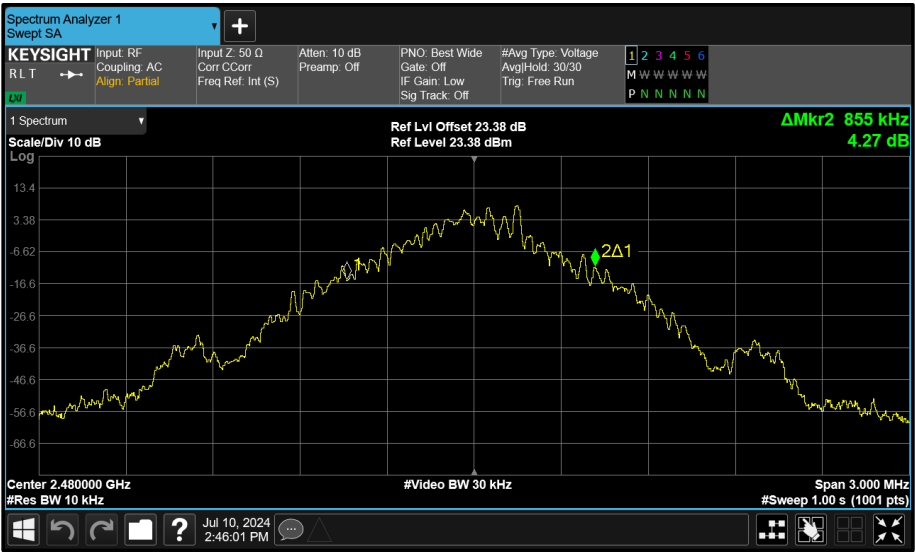


Figure 150 - Core 0 (A) 2480 MHz (CH78) 99% Bandwidth

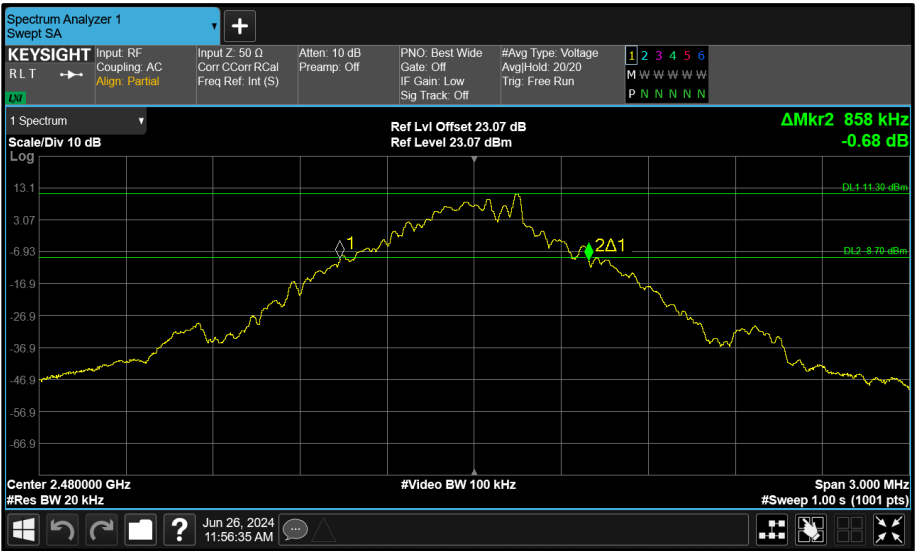


Figure 151 - Core 1 (B) 2480 MHz (CH78) 20 dB Bandwidth

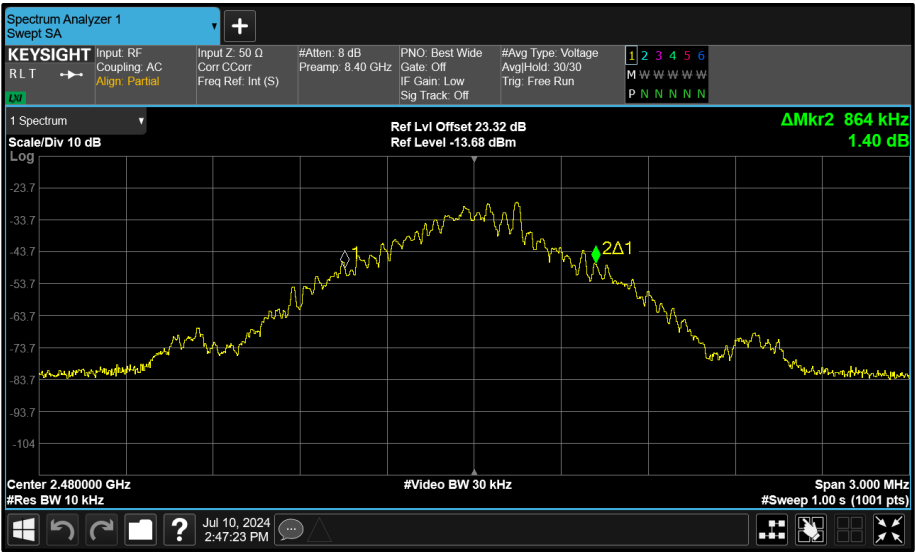


Figure 152 - Core 1 (B) 2480 MHz (CH78) 99% Bandwidth



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 $\pi/4$ 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	1.330	-	-
2441	1.330	1.325	-	-
2480	1.325	1.330	-	-

Table 85 - 20 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	1.188	1.188	-	-	-
2441	1.188	1.188	-	-	-
2480	1.184	1.192	-	-	-

Table 86 - 99% Bandwidth Results

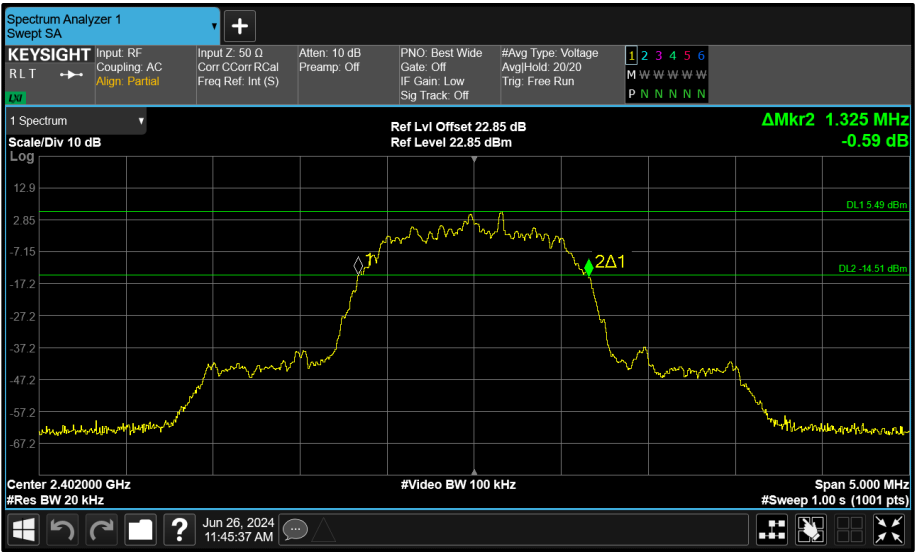


Figure 153 - Core 0 (A) 2402 MHz (CH0) 20 dB Bandwidth

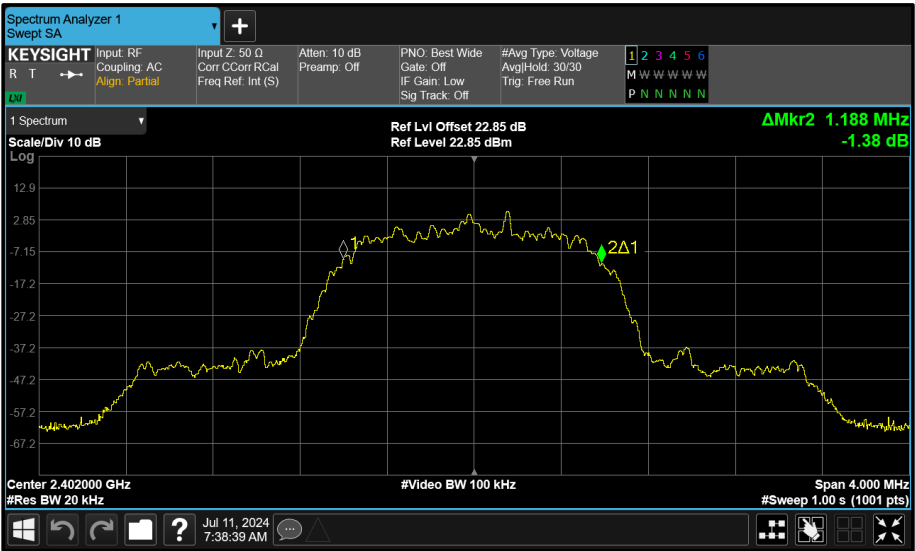
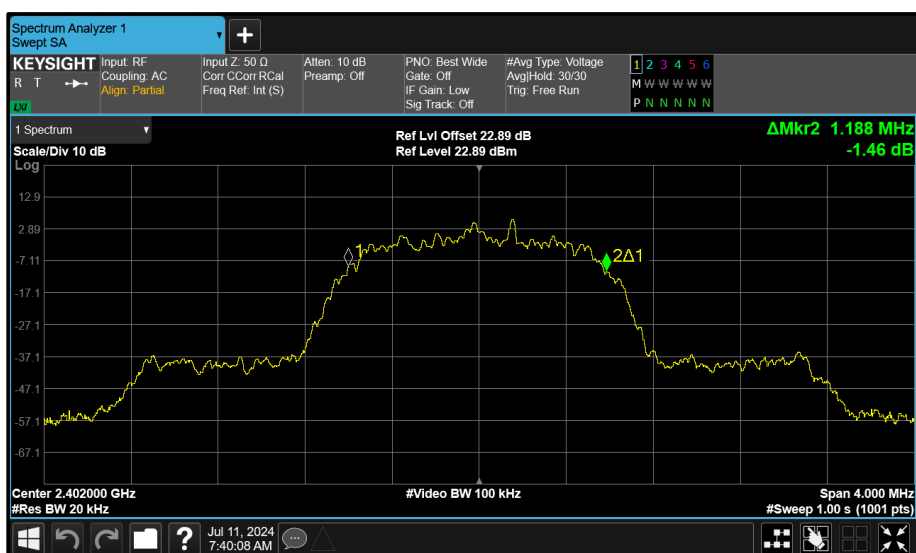
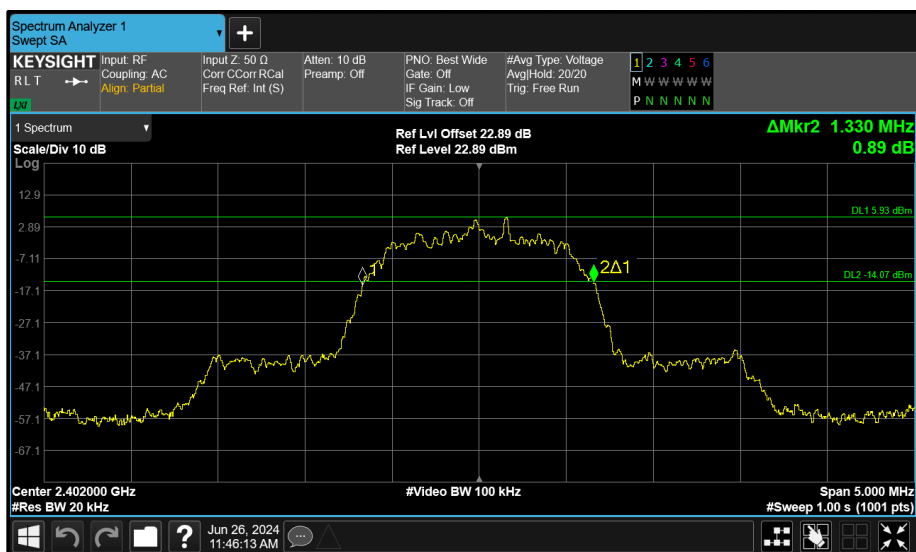


Figure 154 - Core 0 (A) 2402 MHz (CH0) 99% Bandwidth



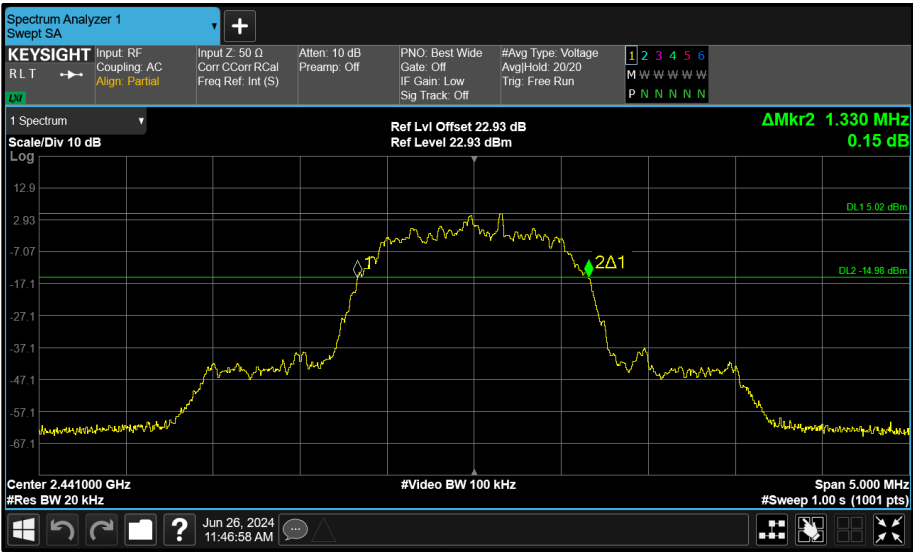


Figure 157 - Core 0 (A) 2441 MHz (CH39) 20 dB Bandwidth

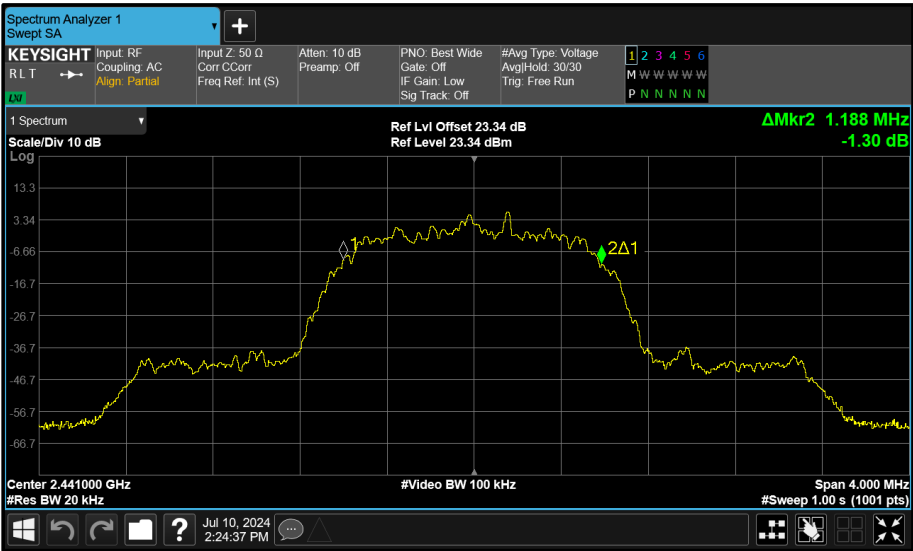


Figure 158 - Core 0 (A) 2441 MHz (CH39) 99% Bandwidth

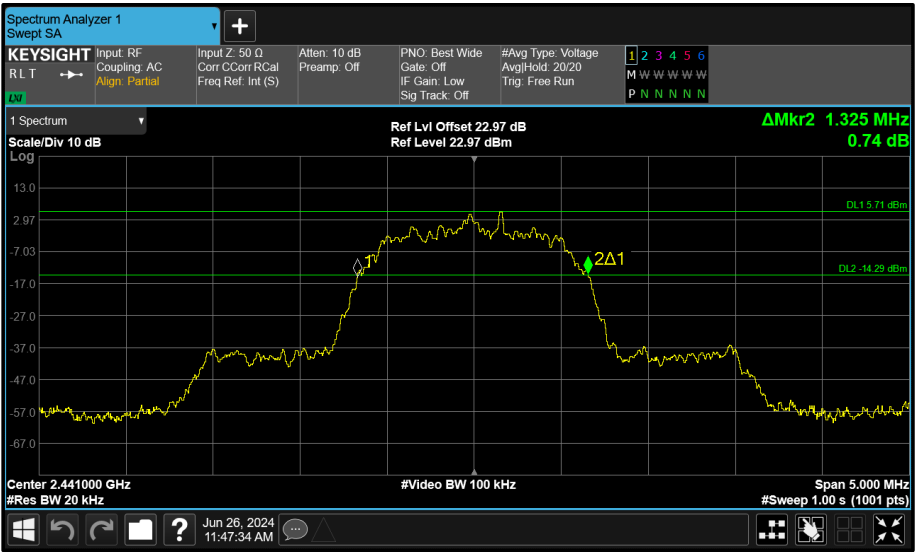


Figure 159 - Core 1 (B) 2441 MHz (CH39) 20 dB Bandwidth

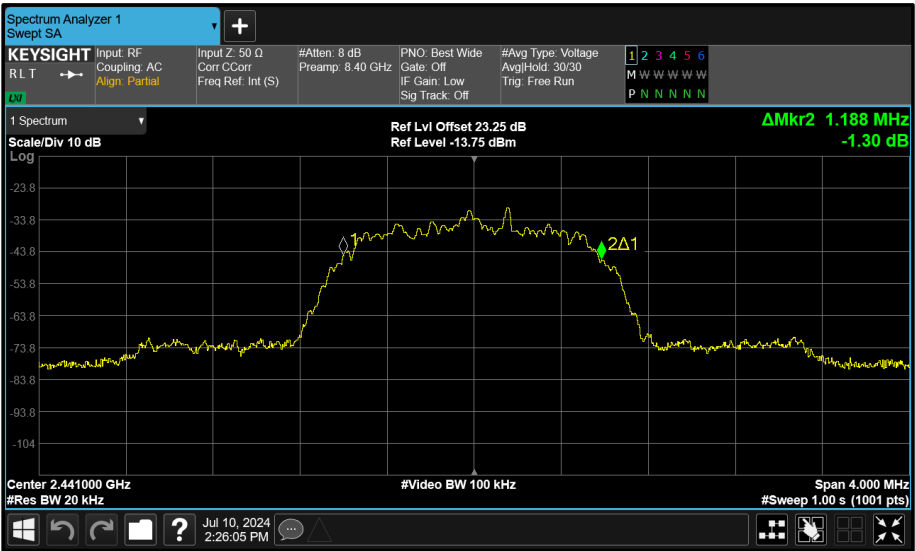


Figure 160 - Core 1 (B) 2441 MHz (CH39) 99% Bandwidth

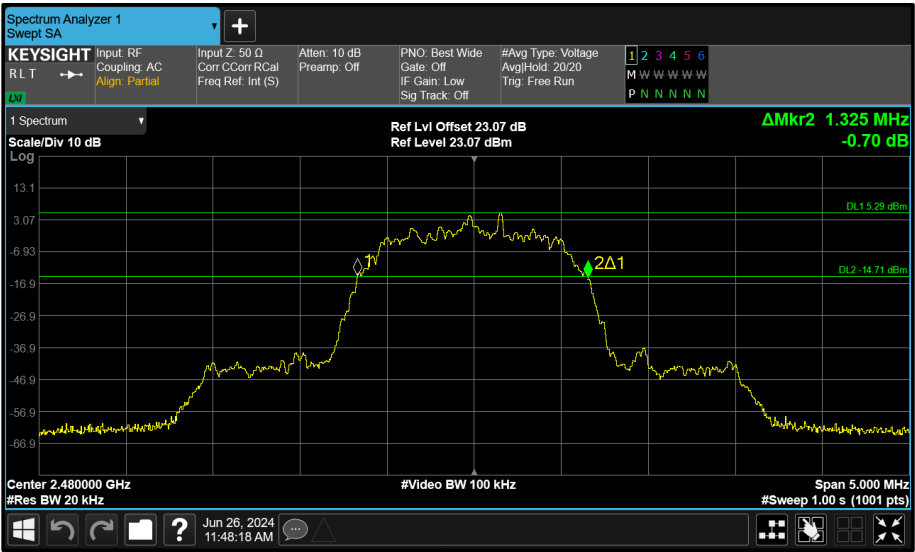


Figure 161 - Core 0 (A) 2480 MHz (CH78) 20 dB Bandwidth

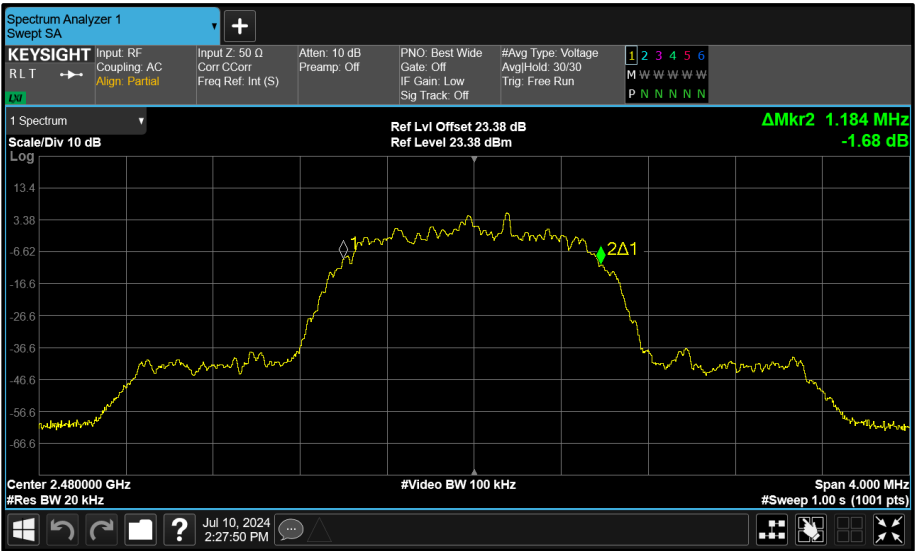


Figure 162 - Core 0 (A) 2480 MHz (CH78) 99% Bandwidth