



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):	5.40

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	19.59	-	-	-	19.59	30.00	-10.41
2441	19.43	-	-	-	19.43	30.00	-10.57
2480	19.45	-	-	-	19.45	30.00	-10.55

Table 73 - 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	19.59	-	-	-	19.59	30.00	-10.41	24.99	36.00	-11.01
2441	19.43	-	-	-	19.43	30.00	-10.57	24.83	36.00	-11.17
2480	19.45	-	-	-	19.45	30.00	-10.55	24.85	36.00	-11.15

Table 74 - 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:	ePA $\pi/4$ 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):	8.26

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	16.09	16.17	-	-	19.14	27.74	-8.60
2441	16.06	16.20	-	-	19.14	27.74	-8.60
2480	16.12	16.30	-	-	19.22	27.74	-8.52

Table 75 - 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	16.09	16.17	-	-	19.14	30.00	-10.86	27.40	36.00	-8.60
2441	16.06	16.20	-	-	19.14	30.00	-10.86	27.40	36.00	-8.60
2480	16.12	16.30	-	-	19.22	30.00	-10.78	27.48	36.00	-8.52

Table 76 - 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:	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):	8.26

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	16.59	16.62	-	-	19.61	27.74	-8.13
2441	16.64	16.66	-	-	19.66	27.74	-8.08
2480	16.60	16.73	-	-	19.68	27.74	-8.06

Table 77 - 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	16.59	16.62	-	-	19.61	30.00	-10.39	27.87	36.00	-8.13
2441	16.64	16.66	-	-	19.66	30.00	-10.34	27.92	36.00	-8.08
2480	16.60	16.73	-	-	19.68	30.00	-10.32	27.94	36.00	-8.06

Table 78 - 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 GFSK (DH5)	Duty Cycle (%):	76.7
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	5.40

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	13.58	-	-	-	13.58	30.00	-16.42
2441	13.68	-	-	-	13.68	30.00	-16.32
2480	13.48	-	-	-	13.48	30.00	-16.52

Table 79 - 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	13.58	-	-	-	13.58	30.00	-16.42	18.98	36.00	-17.02
2441	13.68	-	-	-	13.68	30.00	-16.32	19.08	36.00	-16.92
2480	13.48	-	-	-	13.48	30.00	-16.52	18.88	36.00	-17.12

Table 80 - 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:	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):	8.26

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	13.56	13.45	-	-	16.52	27.74	-11.22
2441	13.67	13.39	-	-	16.54	27.74	-11.19
2480	13.50	13.31	-	-	16.42	27.74	-11.32

Table 81 - 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	13.56	13.45	-	-	16.52	30.00	-13.48	24.78	36.00	-11.22
2441	13.67	13.39	-	-	16.54	30.00	-13.46	24.81	36.00	-11.19
2480	13.50	13.31	-	-	16.42	30.00	-13.58	24.68	36.00	-11.32

Table 82 - 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 (%):	76.8
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	5.40

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	12.06	-	-	-	12.06	30.00	-17.94
2441	12.07	-	-	-	12.07	30.00	-17.93
2480	12.08	-	-	-	12.08	30.00	-17.92

Table 83 - 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	12.06	-	-	-	12.06	30.00	-17.94	17.46	36.00	-18.54
2441	12.07	-	-	-	12.07	30.00	-17.93	17.47	36.00	-18.53
2480	12.08	-	-	-	12.08	30.00	-17.92	17.48	36.00	-18.52

Table 84 - 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 (%):	76.9
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (Core 0)	Peak Antenna Gain (dBi):	5.40

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	12.53	-	-	-	12.53	30.00	-17.47
2441	12.59	-	-	-	12.59	30.00	-17.41
2480	12.52	-	-	-	12.52	30.00	-17.48

Table 85 - 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	12.53	-	-	-	12.53	30.00	-17.47	17.93	36.00	-18.07
2441	12.59	-	-	-	12.59	30.00	-17.41	17.99	36.00	-18.01
2480	12.52	-	-	-	12.52	30.00	-17.48	17.92	36.00	-18.08

Table 86 - 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:	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):	8.26

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	12.06	11.88	-	-	14.98	27.74	-12.76
2441	12.06	11.81	-	-	14.95	27.74	-12.79
2480	12.03	11.56	-	-	14.81	27.74	-12.93

Table 87 - 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	12.06	11.88	-	-	14.98	30.00	-15.02	23.24	36.00	-12.76
2441	12.06	11.81	-	-	14.95	30.00	-15.05	23.21	36.00	-12.79
2480	12.03	11.56	-	-	14.81	30.00	-15.19	23.07	36.00	-12.93

Table 88 - 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 (%):	77.2
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Port(s):	A+B (Core 0 + Core 1)	Peak Antenna Gain (dBi):	8.26

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	12.44	12.20	-	-	15.33	27.74	-12.40
2441	12.50	12.19	-	-	15.36	27.74	-12.38
2480	12.53	12.09	-	-	15.32	27.74	-12.41

Table 89 - 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	12.44	12.20	-	-	15.33	30.00	-14.67	23.60	36.00	-12.40
2441	12.50	12.19	-	-	15.36	30.00	-14.64	23.62	36.00	-12.38
2480	12.53	12.09	-	-	15.32	30.00	-14.68	23.59	36.00	-12.41

Table 90 - ISSED 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.

ISSED 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 Laboratory 2.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
True RMS Multimeter	Fluke	79 Series III	411	12	12-Jan-2025
Hygrometer	Rotronic	Hygropalm 0	3028	12	12-Aug-2025
AC Programmable Power Supply	iTech	IT7324	5226	-	O/P Mon
USB Power Sensor	Boonton	RTP5008	5833	12	26-Jul-2025
USB Power Sensor	Boonton	RTP5008	5834	12	26-Jul-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6530	12	16-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6638	12	02-Aug-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6639	12	02-Aug-2025

Table 91

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

A3241, S/N: HJKCRQM3K9 - Modification State 0

2.7.3 Date of Test

28-September-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	21.6 °C
Relative Humidity	41.5 %

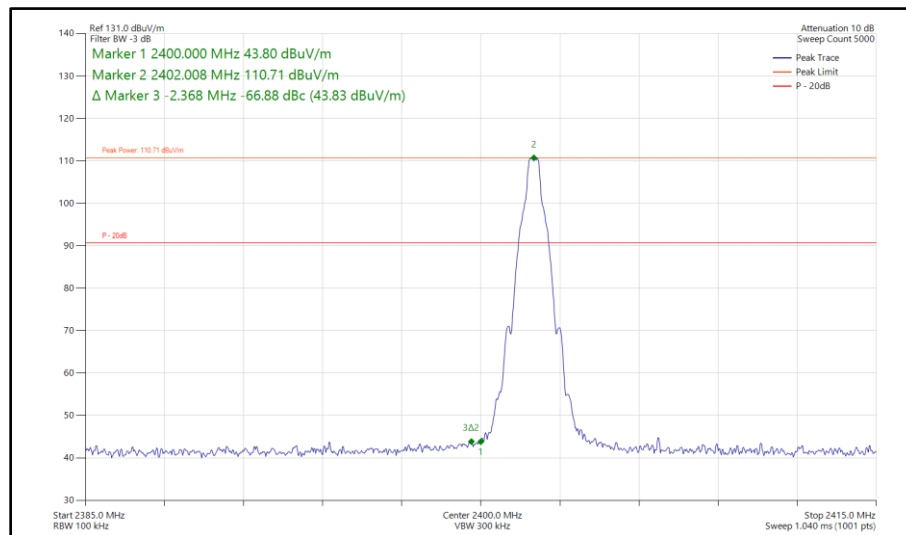
2.7.6 Test Results

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	-66.88
Static	2-DH5	2402	2400	-61.68
Static	3-DH5	2402	2400	-61.70
Hopping	DH5	Hopping	2400	-70.19
Hopping	2-DH5	Hopping	2400	-65.96
Hopping	3-DH5	Hopping	2400	-65.91

Table 92 - SISO Authorised Band Edge Results



**Figure 151 - Bluetooth DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz**

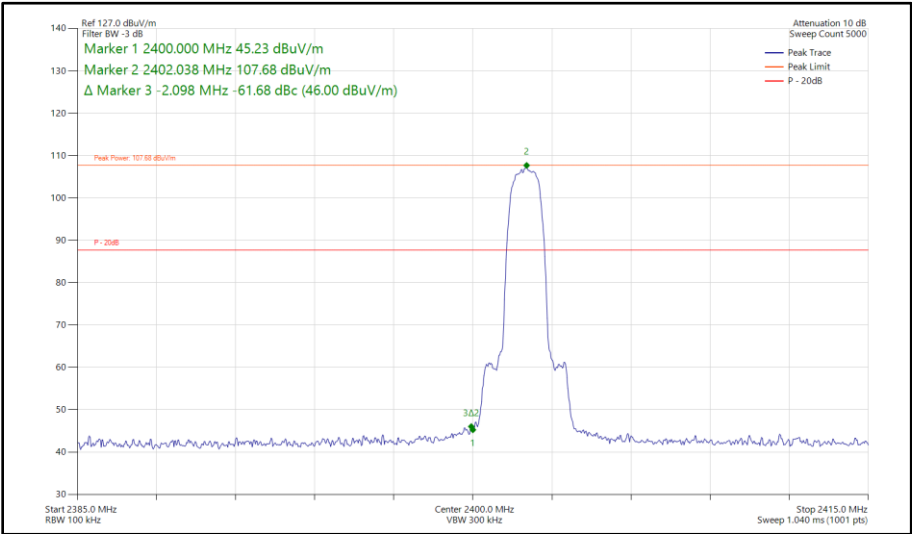


Figure 152 - Bluetooth 2-DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz

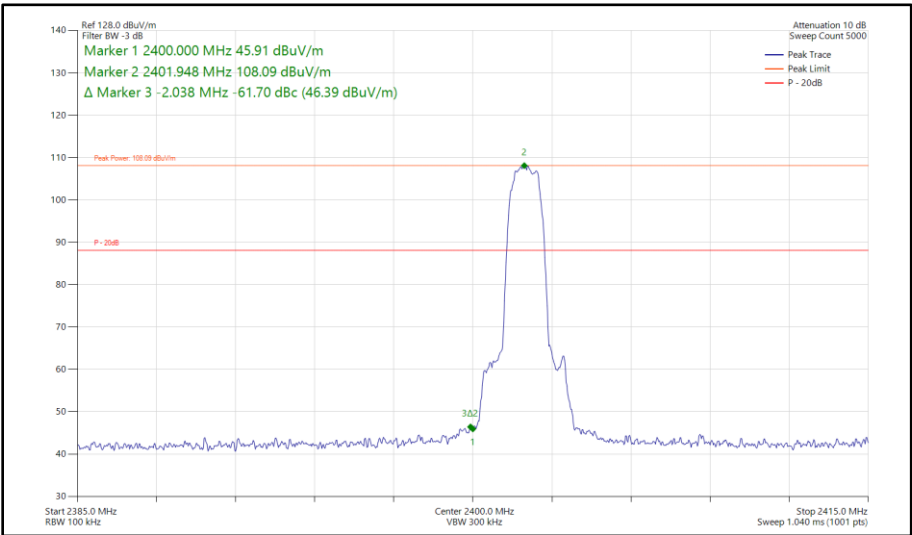
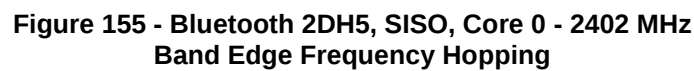
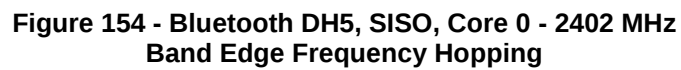
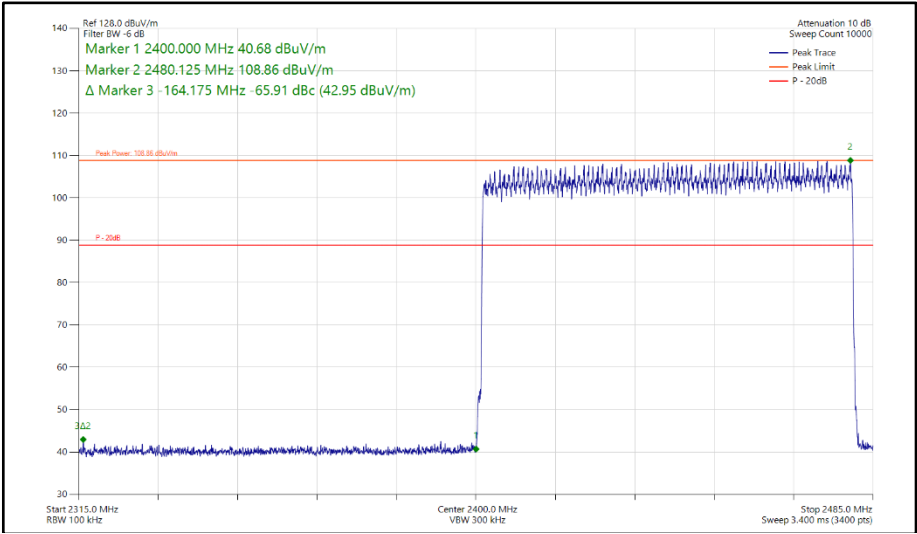


Figure 153 - Bluetooth 3-DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz





**Figure 156 - Bluetooth 3DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency Hopping**

iPA - Core 1 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	DH5	2402	2400	-65.84
Static	2-DH5	2402	2400	-58.22
Static	3-DH5	2402	2400	-56.63
Hopping	DH5	Hopping	2400	-64.73
Hopping	2-DH5	Hopping	2400	-66.78
Hopping	3-DH5	Hopping	2400	-68.00

Table 93 - SISO Authorised Band Edge Results

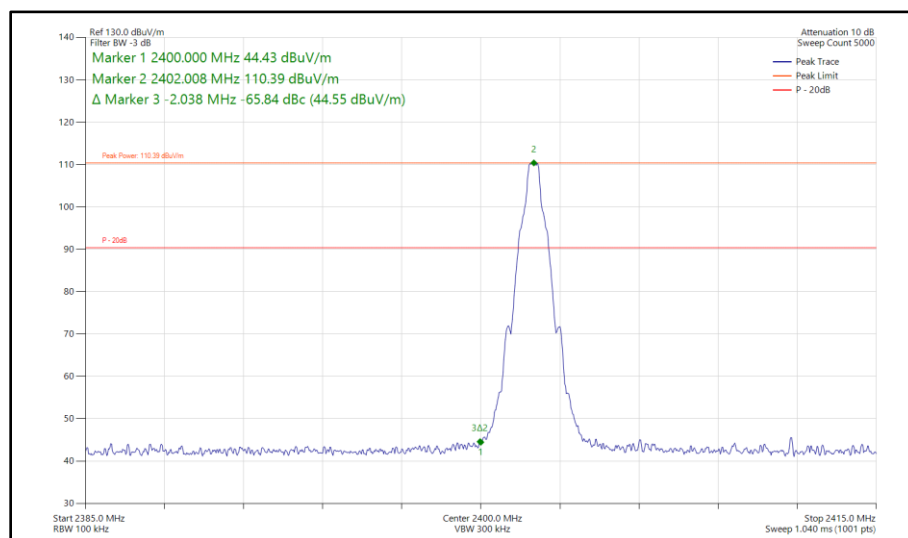


Figure 157 - Bluetooth DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

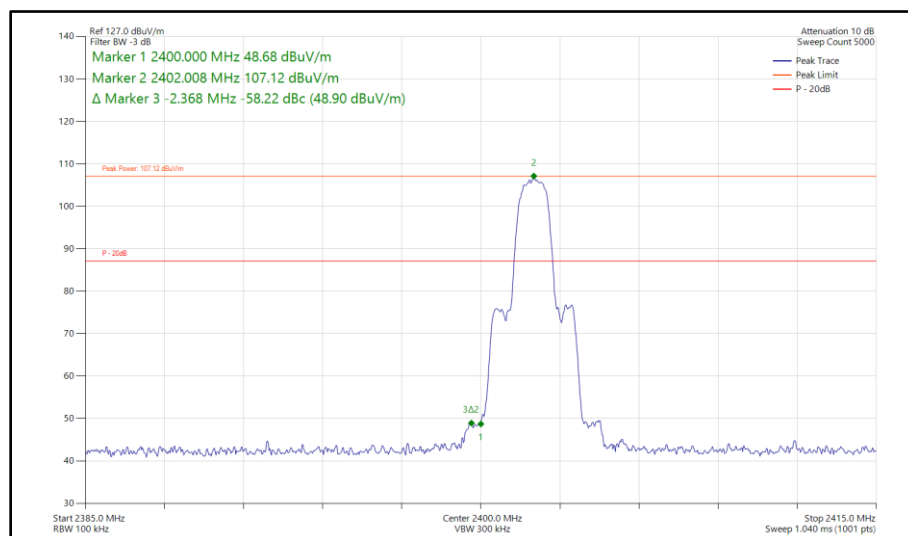


Figure 158 - Bluetooth 2-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

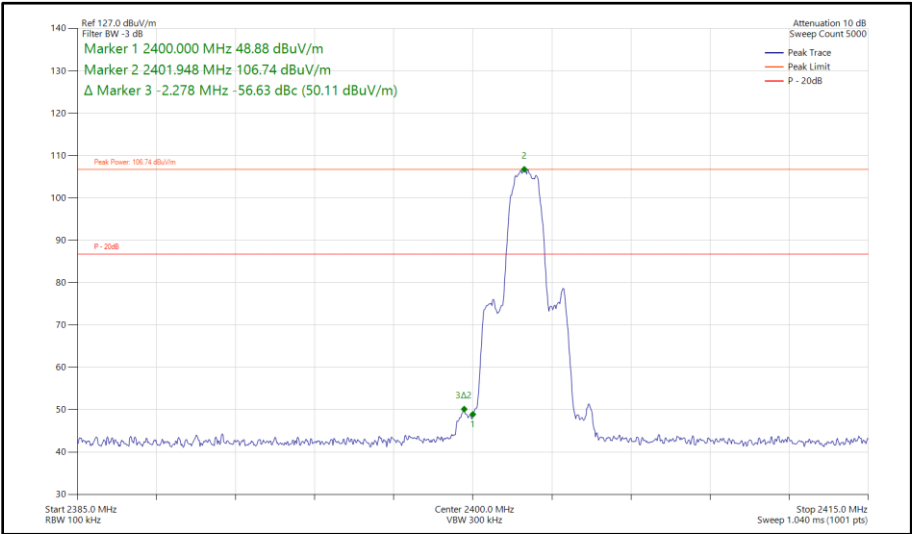


Figure 159 - Bluetooth 3-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

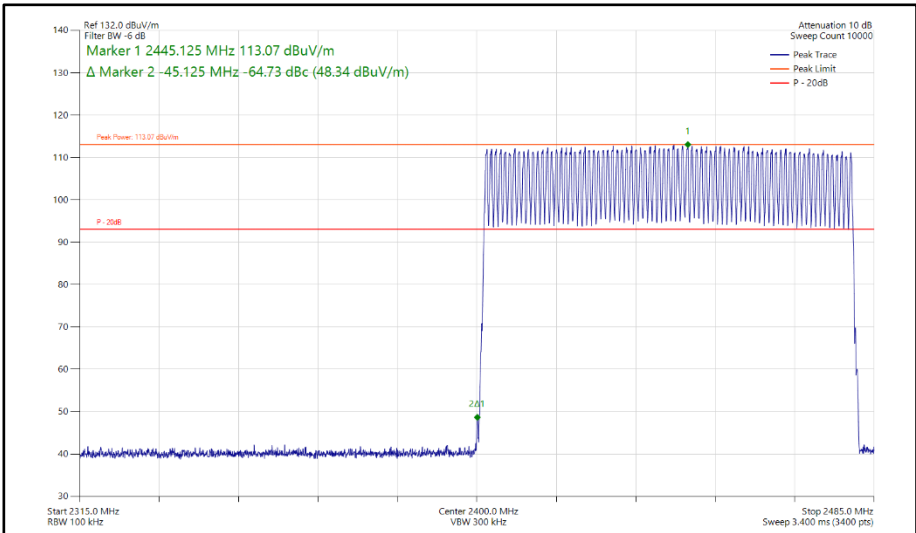


Figure 160 - Bluetooth DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency Hopping

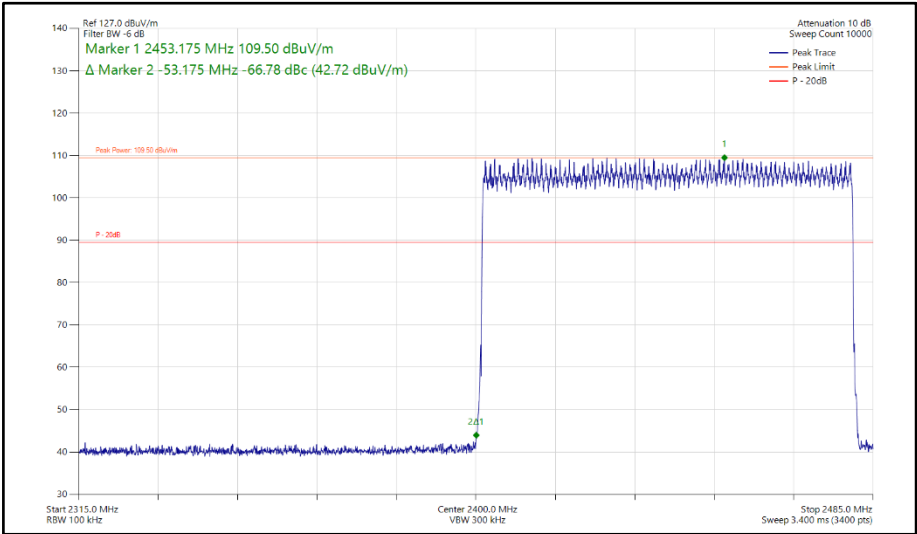


Figure 161 - Bluetooth 2DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency Hopping

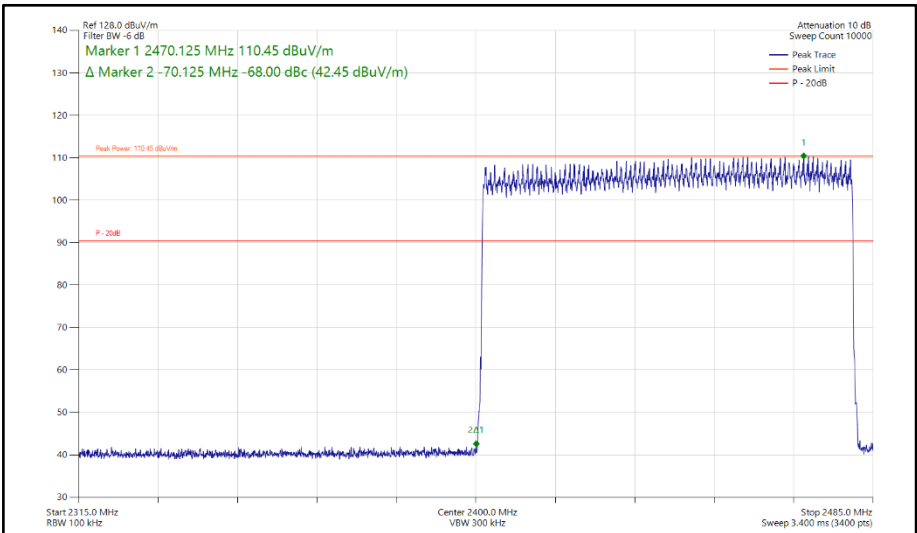


Figure 162 - Bluetooth 3DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency Hopping

iPA - Core 0 - Core 1 (MIMO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	DH5	2402	2400	-57.23
Static	2-DH5	2402	2400	-57.98
Static	3-DH5	2402	2400	-57.02
Hopping	DH5	Hopping	2400	-66.23
Hopping	2-DH5	Hopping	2400	-69.75
Hopping	3-DH5	Hopping	2400	-69.13

Table 94 - MIMO Authorised Band Edge Results

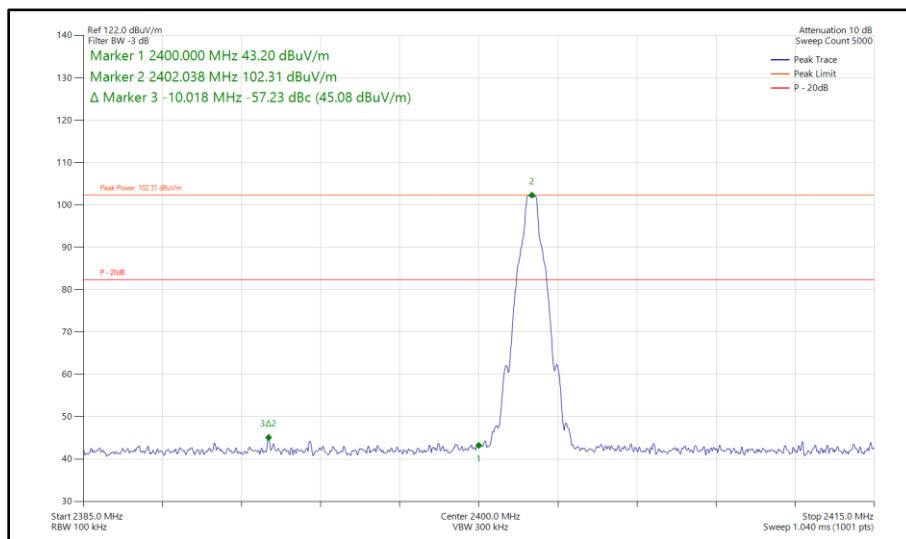


Figure 163 - Bluetooth DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

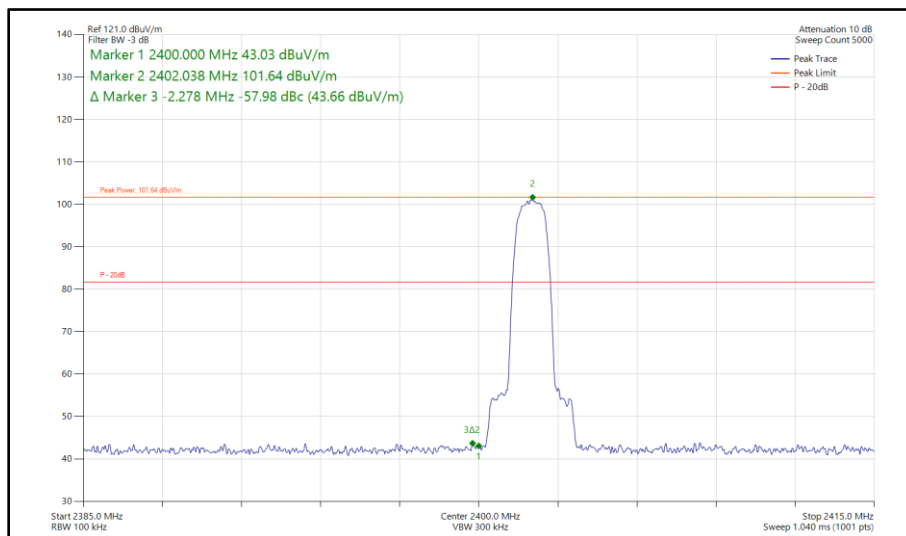
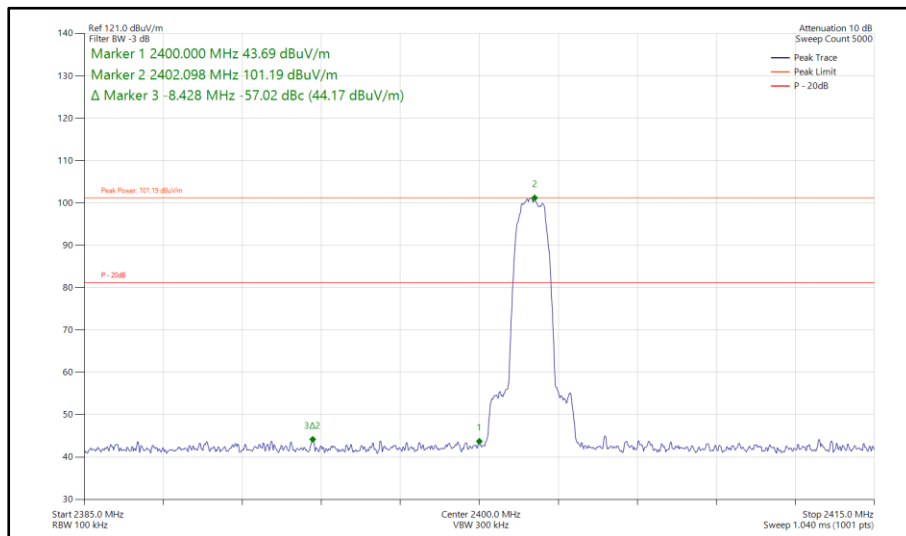
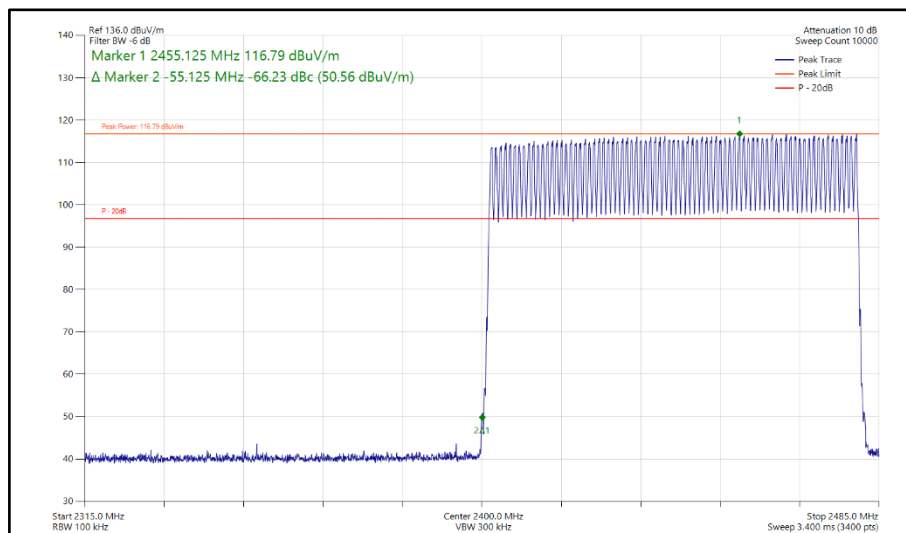


Figure 164 - Bluetooth 2-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz



**Figure 165 - Bluetooth 3-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz**



**Figure 166 - Bluetooth DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency Hopping**

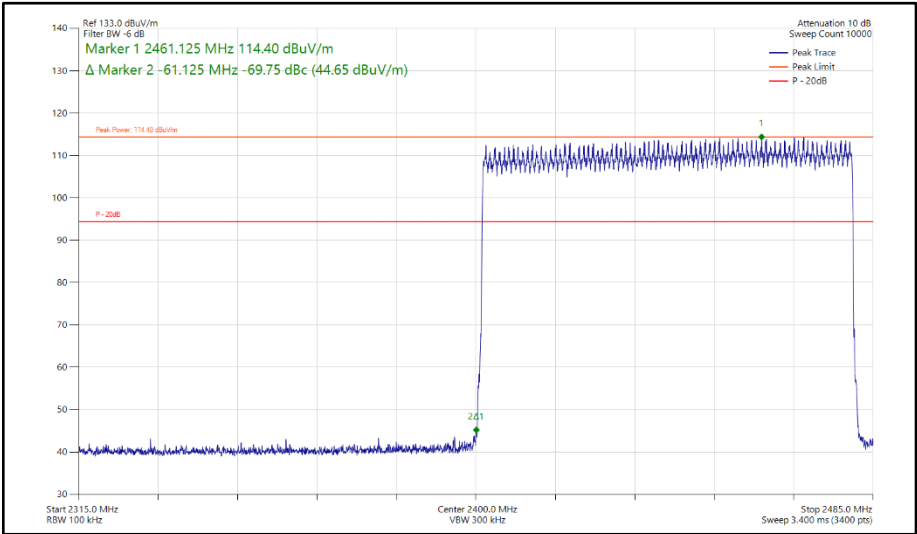


Figure 167 - Bluetooth 2DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency Hopping

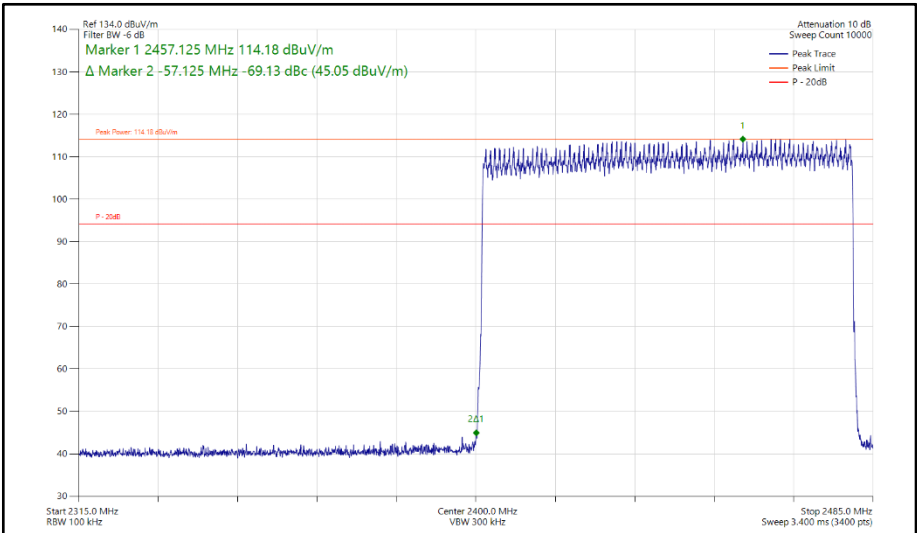


Figure 168 - Bluetooth 3DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency Hopping

ePA - Core 0 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	2-DH5	2402	2400	-55.66
Static	3-DH5	2402	2400	-53.43
Hopping	2-DH5	Hopping	2400	-64.01
Hopping	3-DH5	Hopping	2400	-63.68

Table 95 - SISO Authorised Band Edge Results

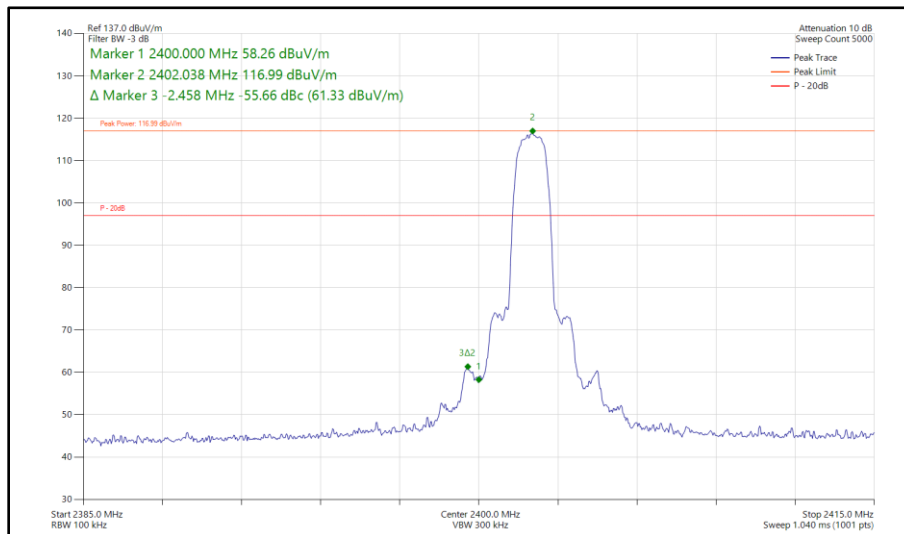


Figure 169 - Bluetooth 2-DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz

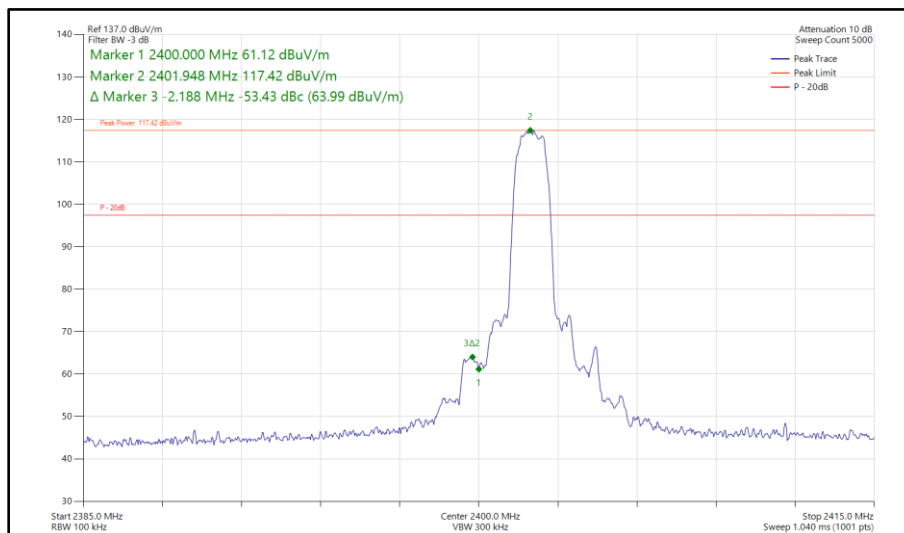
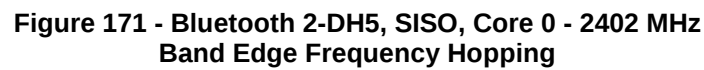


Figure 170 - Bluetooth 3-DH5, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2400 MHz



ePA - Core 1 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	2-DH5	2402	2400	-60.76
Static	3-DH5	2402	2400	-58.75
Static	2-DH5	Hopping	2400	-67.00
Static	3-DH5	Hopping	2400	-68.67

Table 96 - SISO Authorised Band Edge Results

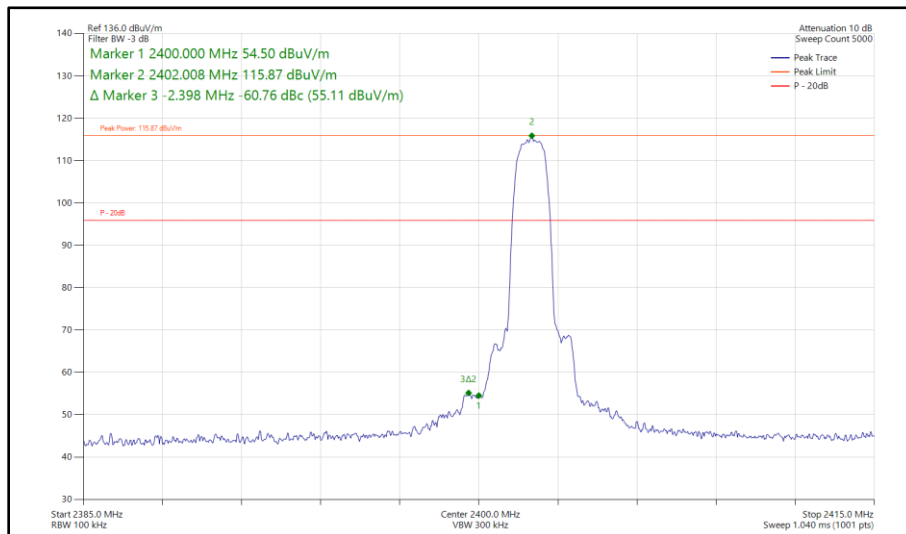


Figure 173 - Bluetooth 2-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

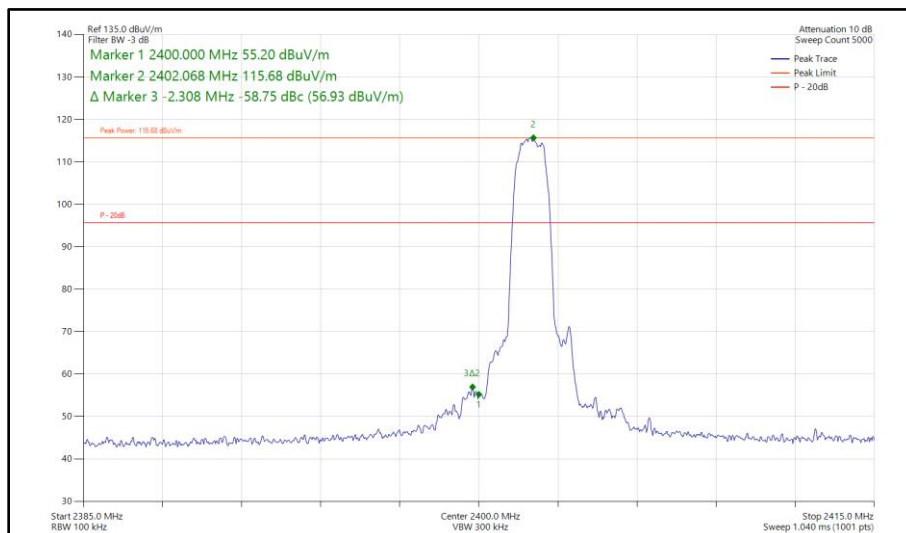


Figure 174 - Bluetooth 3-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz

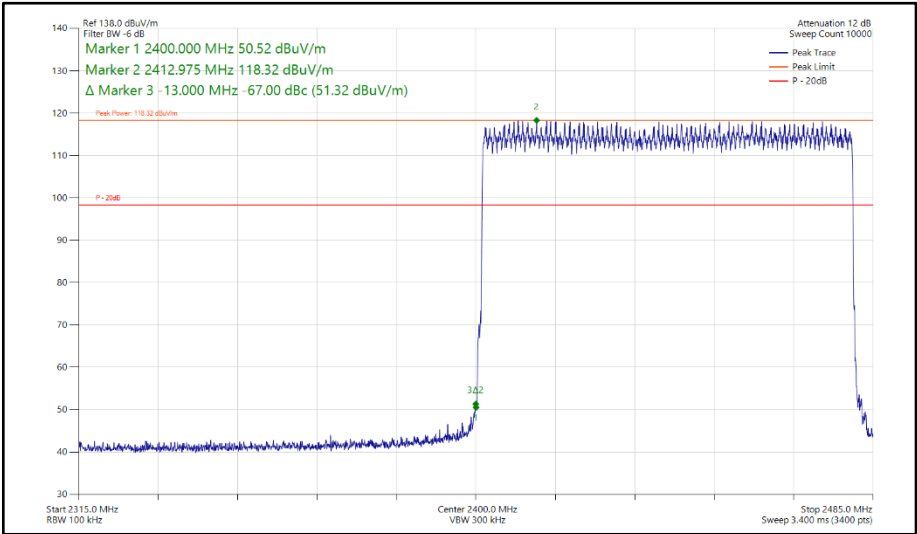


Figure 175 - Bluetooth 2-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency Hopping

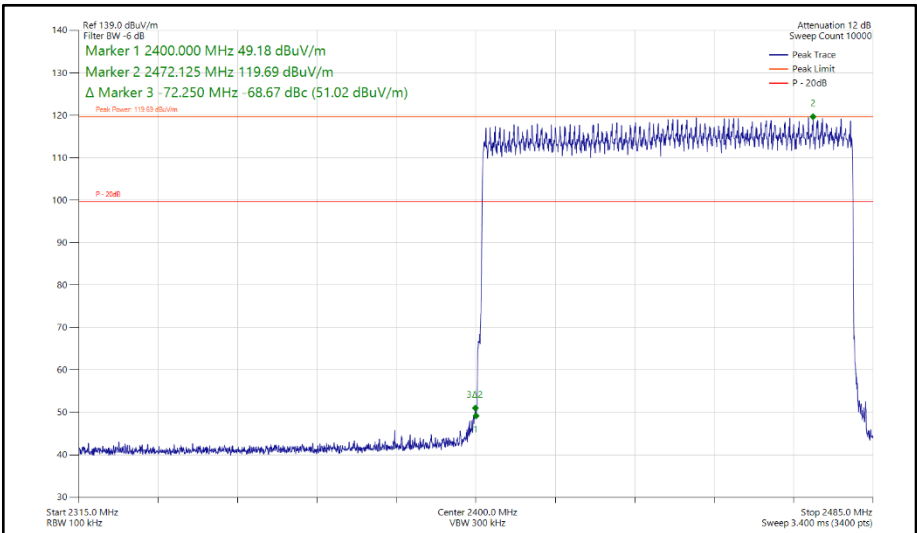
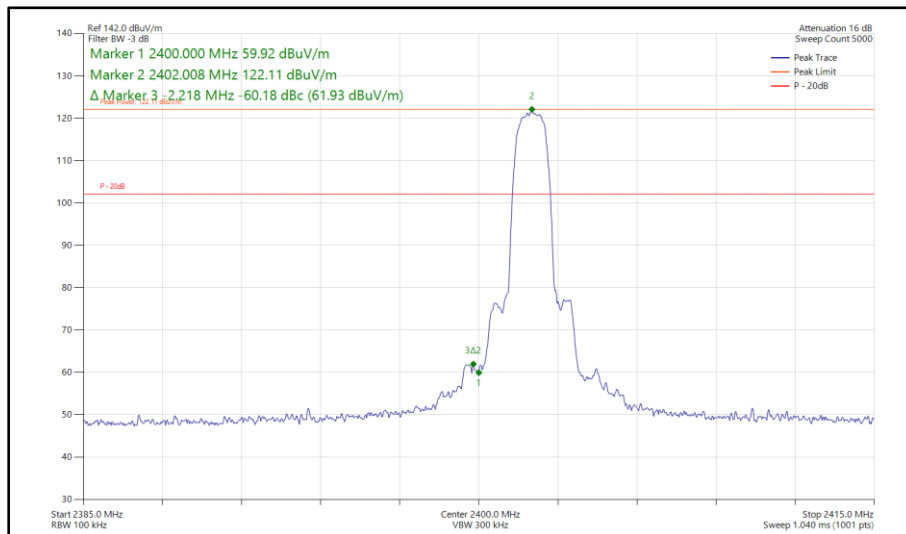


Figure 176 - Bluetooth 3-DH5, SISO, Core 1 - 2402 MHz
Band Edge Frequency Hopping

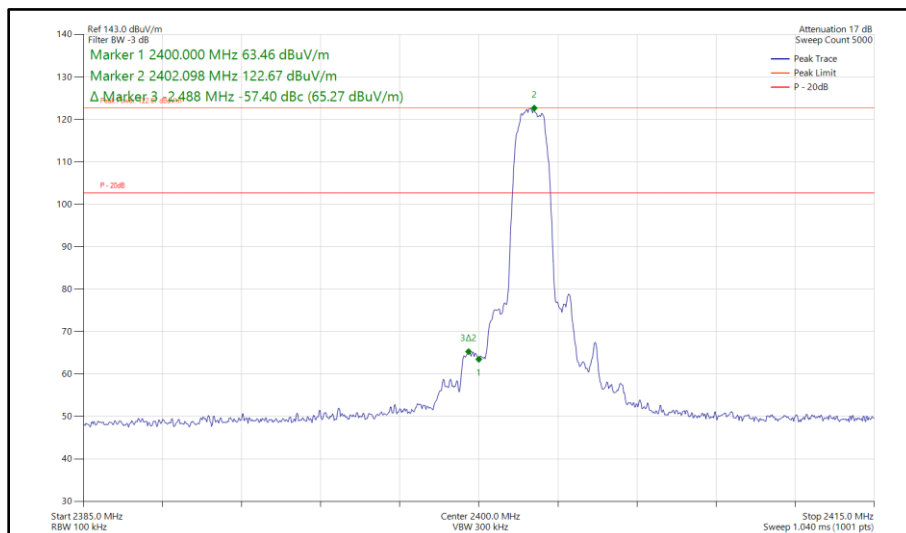
ePA - Core 0 - Core 1 (MIMO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
Static	2-DH5	2402	2400	-60.18
Static	3-DH5	2402	2400	-57.40
Hopping	2-DH5	Hopping	2400	-65.42
Hopping	3-DH5	Hopping	2400	-65.24

Table 97 - MIMO Authorised Band Edge Results



**Figure 177 - Bluetooth 2-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz**



**Figure 178 - Bluetooth 3-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2400 MHz**

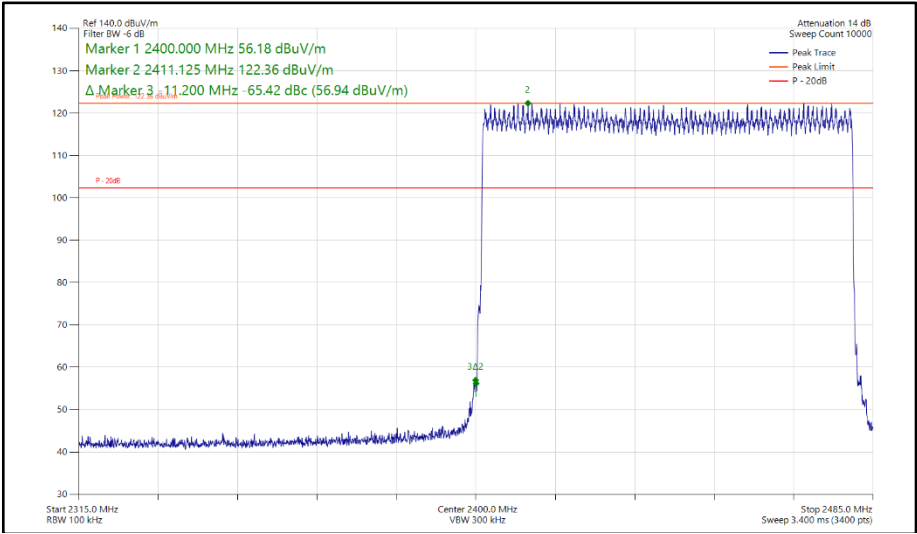


Figure 179 - Bluetooth 2-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency Hopping

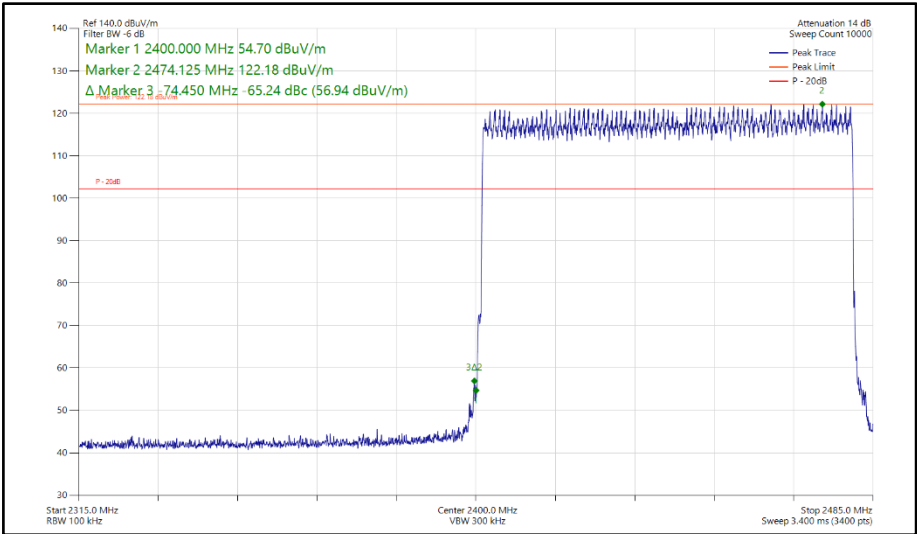


Figure 180 - Bluetooth 3-DH5, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency Hopping



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 16.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.4.2	5125	-	Software
Cable 2.92m	Junkosha	MWX241-01000KMS	5413	12	23-May-2025
EMI Test Receiver	Rohde & Schwarz	ESW44	5912	12	07-Aug-2025
1500W (300V 12A) AC Power Supply	iTech	IT7324	5957	-	O/P Mon
3m Semi-Anechoic Chamber, Chamber16	Albatross Projects	RF Chamber 16	5972	36	24-May-2025
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5973	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5974	-	TU
Turntable	Maturo Gmbh	TT1.5SI	5975	-	TU
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6142	12	05-May-2025
Digital Multimeter	Fluke	115	6147	12	06-Jun-2025
SAC Switch Unit	TUV SUD	TUV_SSU_004 PLC	6349	12	07-May-2025
USB Spectrum Analyser	Signal Hound	SA124B	6383	-	TU
8M SMA Cable	Junkosha	MWX221-08000AMSAMS/B	6833	12	14-Aug-2025
Handheld Hygrometer	Fluke	971	6838	12	27-Aug-2025
Cable Assembly	SpecTech	PE300-60	6857	-	TU
Cable Assembly	SpecTech	PE300-60	6858	-	TU

Table 98

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

A3241, S/N: K2K9N270NG - Modification State 0
A3241, S/N: DT7LYX5QXT - Modification State 0

2.8.3 Date of Test

10-October-2024 to 15-October-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 dB μ V/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 dB μ V/m to μ V/m:
 $10^{(\text{Field Strength in dB}\mu\text{V/m}/20)}$.

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.

2.8.5 Example Test Setup Diagram

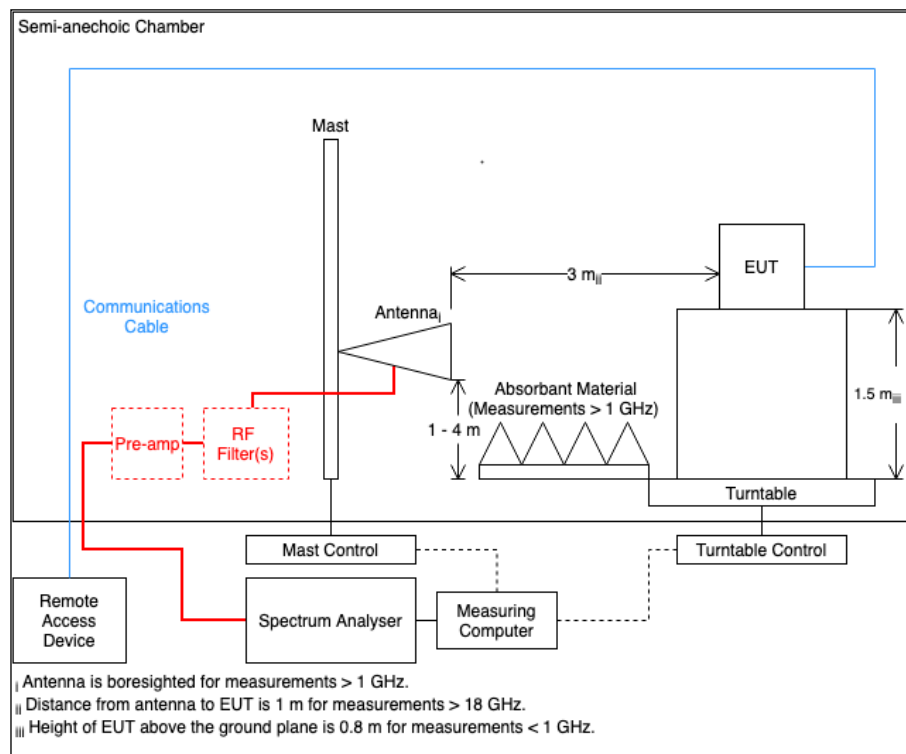


Figure 181

2.8.6 Environmental Conditions

Ambient Temperature	21.8 - 23.0 °C
Relative Humidity	45.1 - 50.7 %

2.8.7 Test Results

2.4 GHz Bluetooth BDR/EDR

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2374.506	35.94	54.00	-18.06	CISPR Avg	349	352	Vertical

Table 99 - 2402 MHz (CH0), 2-DH5, ePA, Core 0 + Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

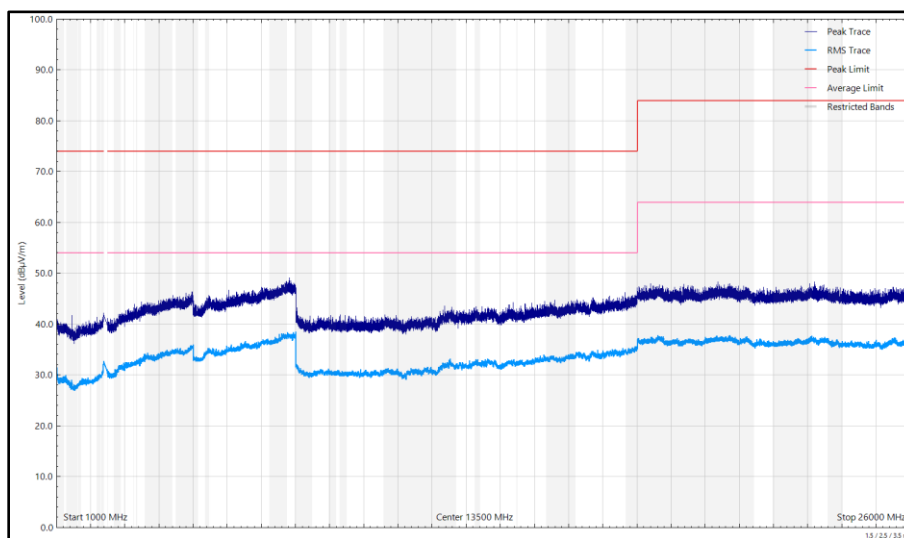


Figure 182 - 2402 MHz (CH0), 2-DH5, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

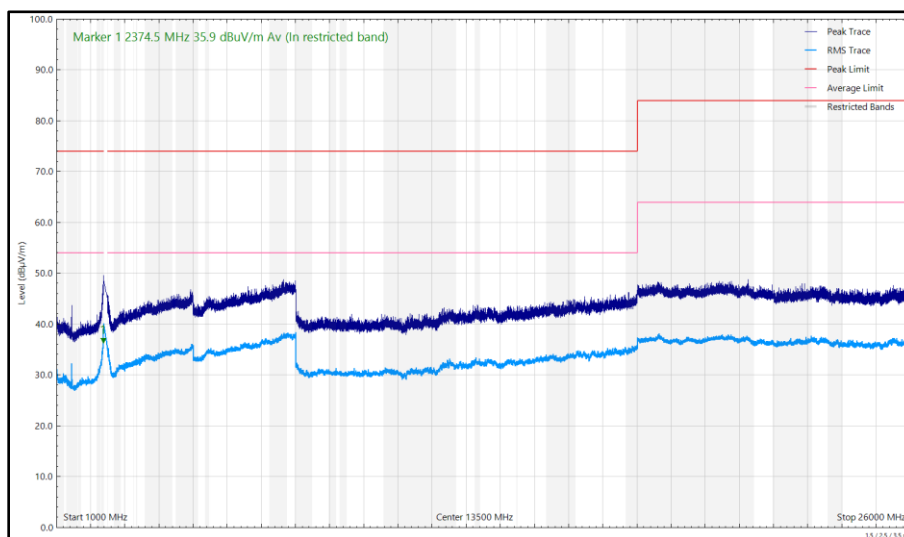


Figure 183 - 2402 MHz (CH0), 2-DH5, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
74.453	33.64	40.00	-6.36	Q-Peak	286	202	Vertical
74.808	22.29	40.00	-17.71	Q-Peak	342	351	Horizontal
137.478	30.48	43.50	-13.02	Q-Peak	360	257	Horizontal
162.526	29.23	43.50	-14.27	Q-Peak	308	260	Horizontal
162.877	30.23	43.50	-13.27	Q-Peak	266	242	Vertical
257.225	26.66	46.00	-19.34	Q-Peak	79	100	Horizontal
331.794	27.85	46.00	-18.15	Q-Peak	272	100	Horizontal
400.413	26.95	46.00	-19.05	Q-Peak	344	105	Vertical
2386.503	33.30	54.00	-20.70	CISPR Avg	352	336	Vertical
2484.388	35.77	54.00	-18.23	CISPR Avg	357	320	Vertical

Table 100 - 2441 MHz (CH39), 2-DH5, ePA, Core 0 + Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

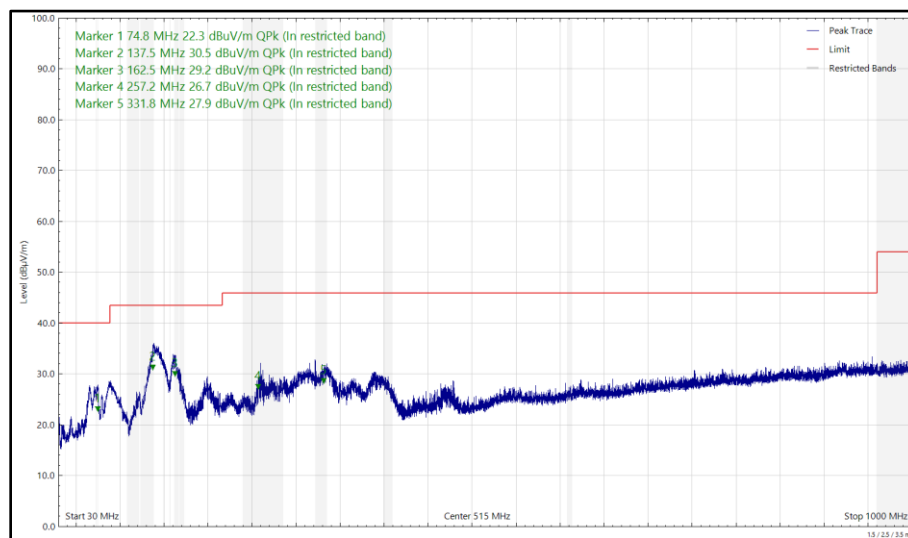


Figure 184 - 2441 MHz (CH39), 2-DH5, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

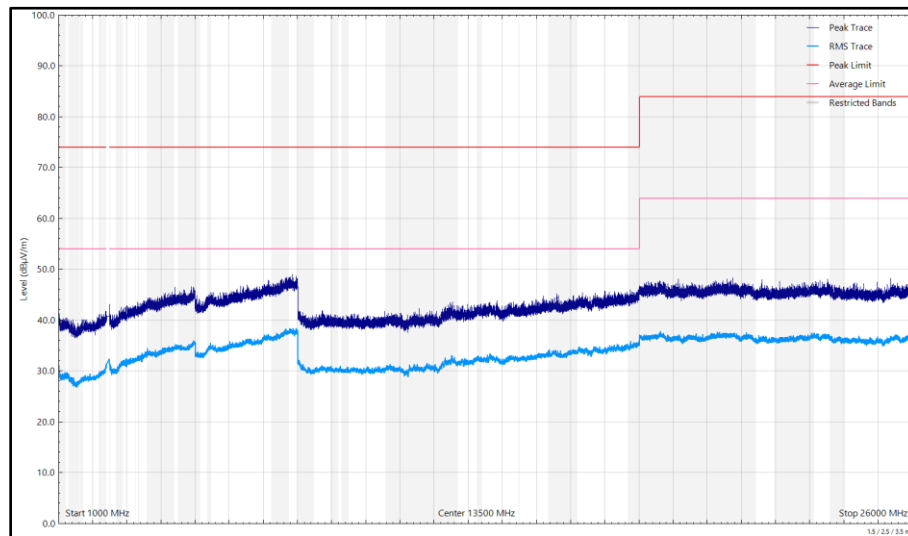


Figure 185 - 2441 MHz (CH39), 2-DH5, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

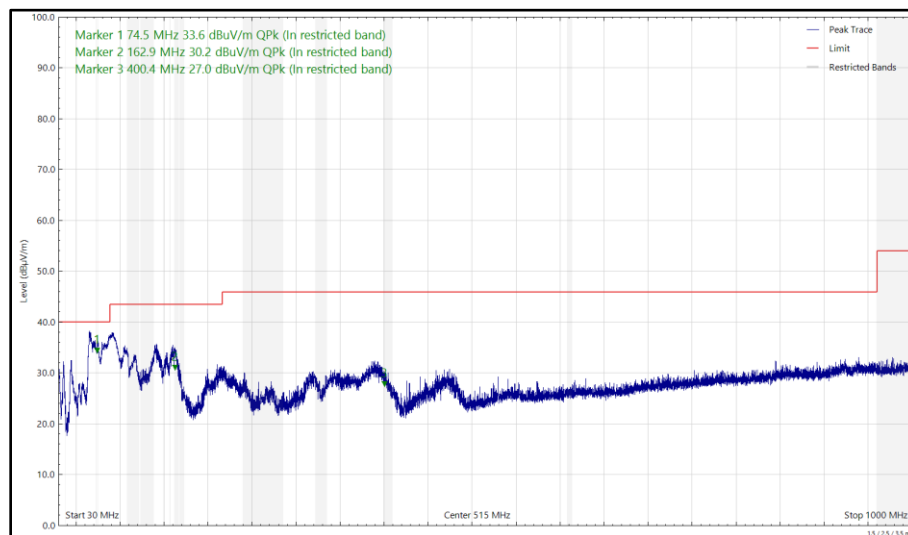


Figure 186 - 2441 MHz (CH39), 2-DH5, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

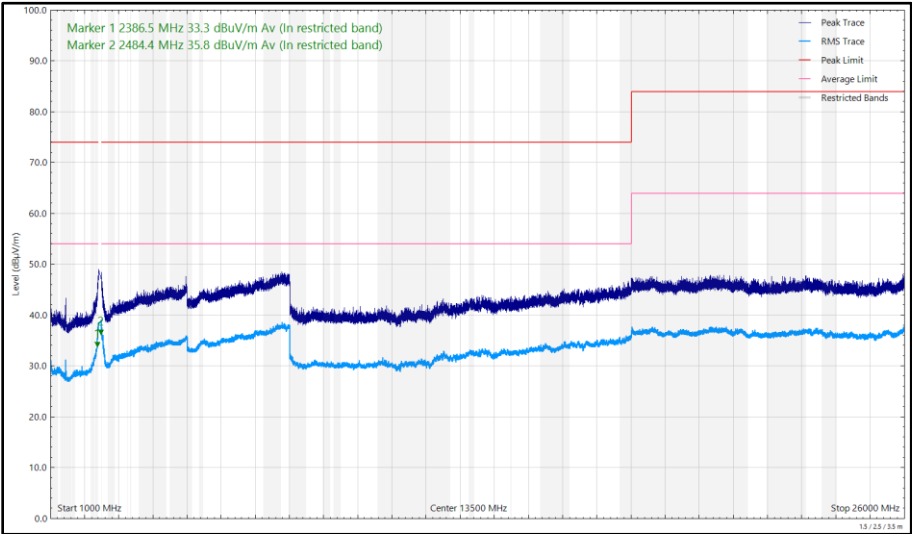


Figure 187 - 2441 MHz (CH39), 2-DH5, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical



Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2384.186	31.83	54.00	-22.17	CISPR Avg	2	369	Vertical
2499.161	39.12	54.00	-14.88	CISPR Avg	358	376	Vertical

Table 101 - 2480 MHz (CH78), 2-DH5, ePA, Core 0 + Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

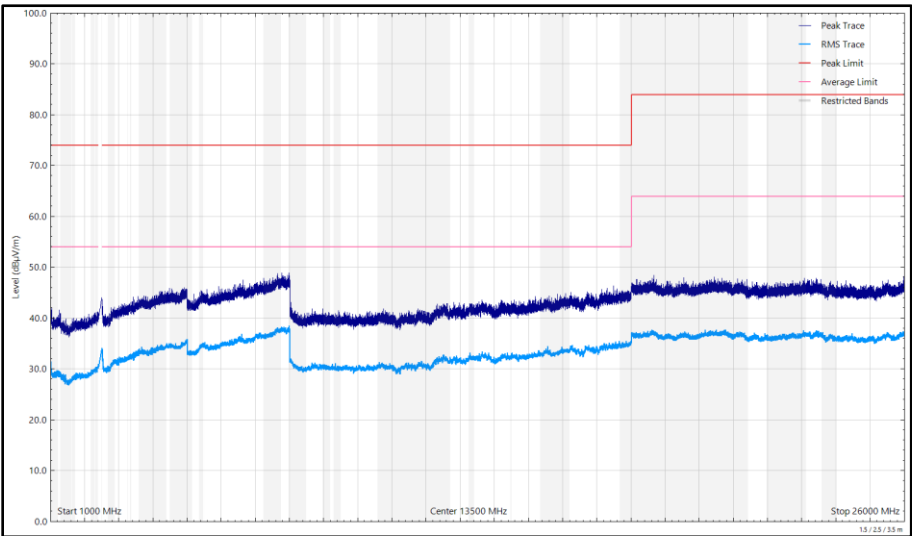


Figure 188 - 2480 MHz (CH78), 2-DH5, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

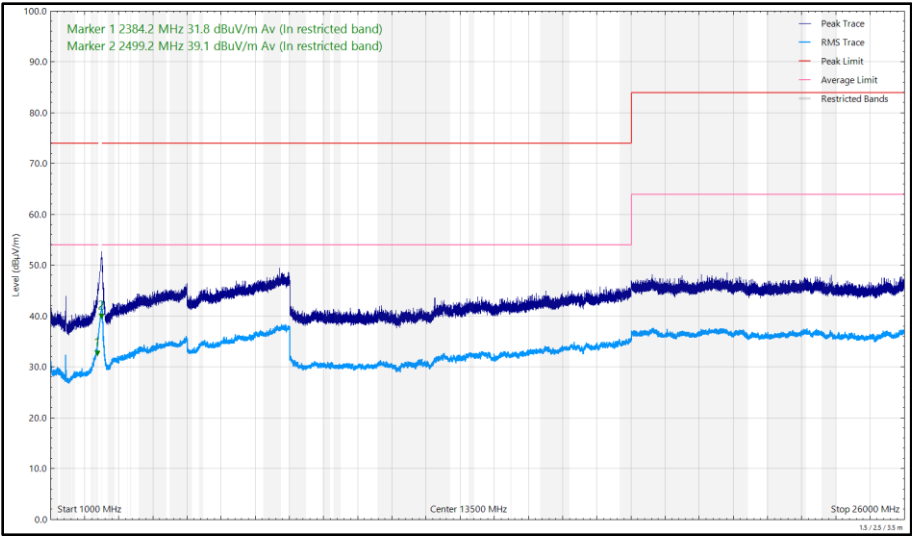


Figure 189 - 2480 MHz (CH78), 2-DH5, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4803.633	35.96	54.00	-18.04	CISPR Avg	6	344	Vertical

Table 102 - 2402 MHz (CH0), DH5, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

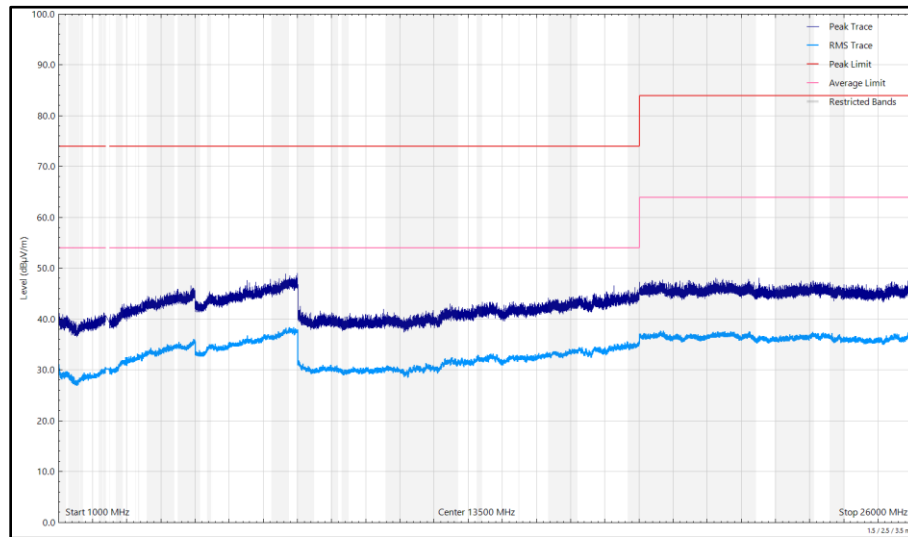


Figure 190 - 2402 MHz (CH0), DH5, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

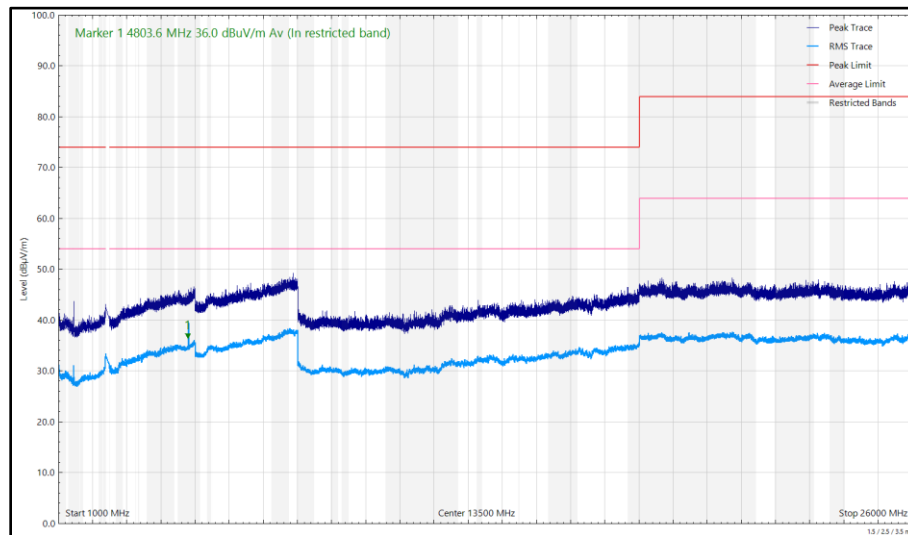


Figure 191 - 2402 MHz (CH0), DH5, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
73.930	24.54	40.00	-15.46	Q-Peak	338	242	Horizontal
74.845	32.83	40.00	-7.17	Q-Peak	285	175	Vertical
137.550	30.06	43.50	-13.44	Q-Peak	360	100	Vertical
137.963	32.89	43.50	-10.61	Q-Peak	169	242	Horizontal
400.913	26.32	46.00	-19.68	Q-Peak	348	110	Vertical
4881.588	34.58	54.00	-19.42	CISPR Avg	1	292	Vertical

Table 103 - 2441 MHz (CH39), DH5, iPA, Core 0 + Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

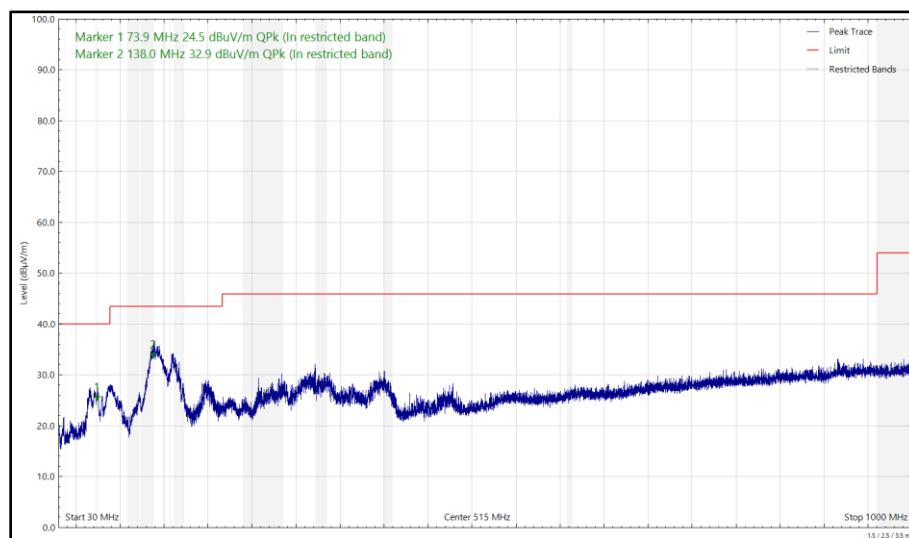


Figure 192 - 2441 MHz (CH39), DH5, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

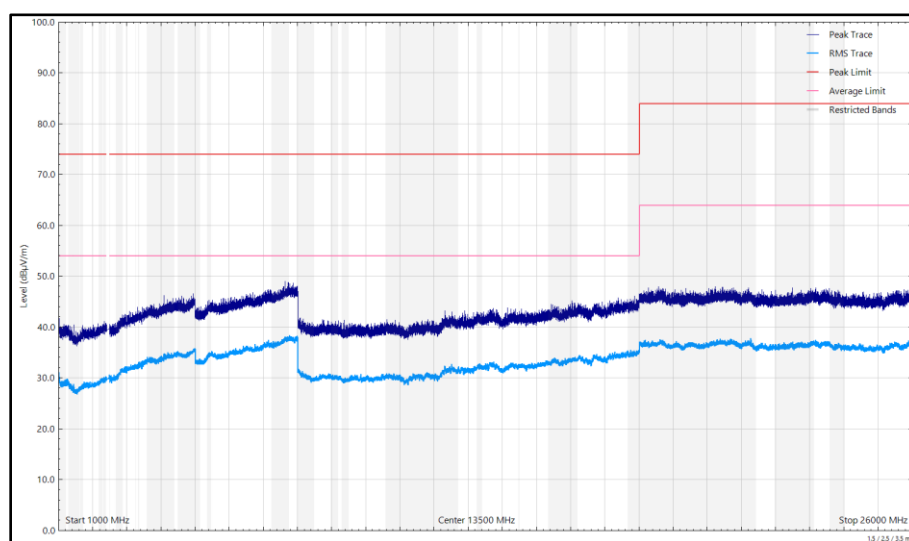


Figure 193 - 2441 MHz (CH39), DH5, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

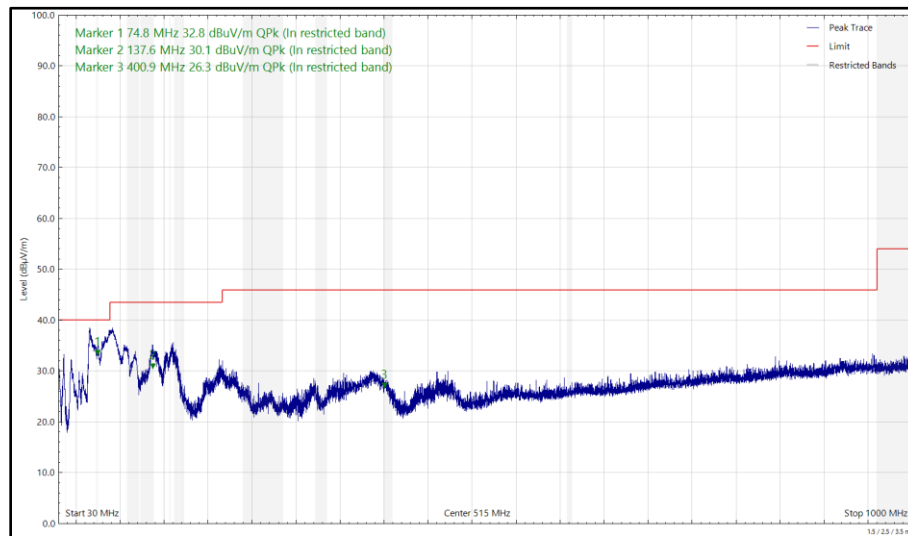


Figure 194 - 2441 MHz (CH39), DH5, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

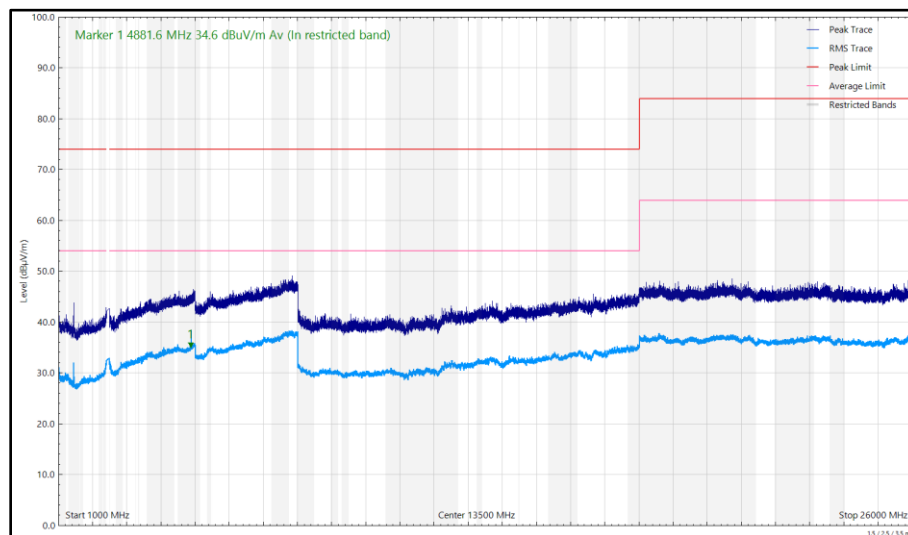


Figure 195 - 2441 MHz (CH39), DH5, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4962.507	31.20	54.00	-22.80	CISPR Avg	221	341	Vertical

Table 104 - 2480 MHz (CH78), DH5, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

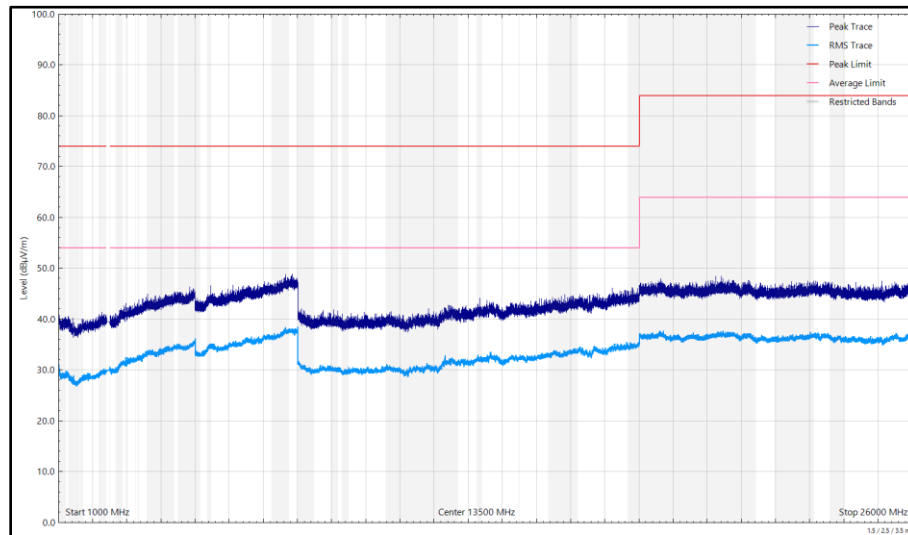


Figure 196 - 2480 MHz (CH78), DH5, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

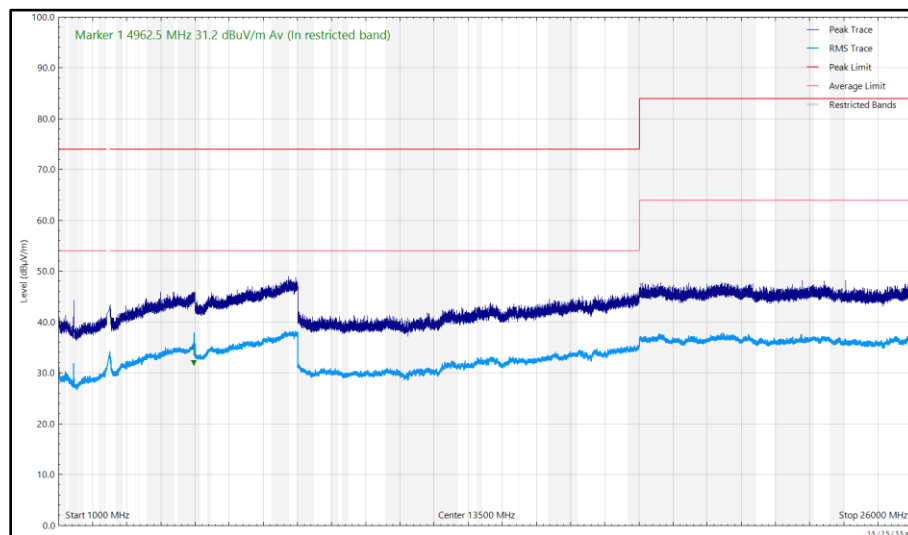


Figure 197 - 2480 MHz (CH78), DH5, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical



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.

2.8.8 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 V3.4.2	5125	-	Software
DRG Horn Antenna (7.5-18GHz)	Schwarzbeck	HWRD750	5940	12	05-May-2025
TRILOG Super Broadband Test Antenna	Schwarzbeck	VULB 9168	5943	24	24-May-2026
1500W (300V 12A) AC Power Supply	iTech	IT7324	5956	-	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



Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/A	6006	12	20-May-2025
Cable (N to N 3m)	Junkosha	MWX221-03000NMSNMS/A	6025	12	20-May-2025
Horn Antenna (1-10.5 GHz)	Schwarzbeck	BBHA9120B	6140	12	05-May-2025
Digital Multimeter	Fluke	115	6147	12	06-Jun-2025
Double Ridge Active Horn Antenna (18-40 GHz)	Com-Power	AHA-840	6188	24	31-Jul-2026
SAC Switch Unit	TUV SUD	TUV_SSU_001	6191	12	18-Dec-2024
8GHz Highpass Filter	Wainwright	WHKX 7150 8000 18000 50SS	6194	12	23-Apr-2025
Pre-Amp 8 - 18 GHz	Wright Technologies	APS06 0061	6200	12	03-Jun-2025
Attenuator 4dB	Pasternack	PE7074-4	6201	24	24-May-2026
Cable (SMA to SMA 20cm)	TUV SUD	MH-FH 8-18	6214	12	23-Apr-2025
Cable (SMA to SMA 20cm)	TUV SUD	MH-FH 8-18	6215	12	23-Apr-2025
USB Spectrum Analyser	Signal Hound	SA124B	6297	-	TU
Cable (K Type 2m)	Junkosha	MWX241-02000KMSKMS/B	6323	12	04-Feb-2025
DRG Horn Antenna (8-18 GHz)	Schwarzbeck	HWRD750	6458	12	05-May-2025
1m Cable	Junkosha	MWX241-01000AMSAMS/B	6740	12	01-Feb-2025
6.5m Cable	Junkosha	MWX221-06500AMSAMS/B	6744	12	01-Feb-2025
EMI Test Receiver	Rohde & Schwarz	ESW44	6805	12	29-May-2025
1M SMA Cable	Junkosha	MWX221-01000AMSAMS/B	6832	12	14-Aug-2025
8M SMA Cable	Junkosha	MWX221-08000AMSAMS/B	6834	12	14-Aug-2025
Handheld Hygrometer	Fluke	971	6837	12	27-Aug-2025
Cable Assembly	SpecTech	PE300-60	6856	-	TU
Cable Assembly	SpecTech	PE300-60	6868	-	TU

Table 105

TU - Traceability Unscheduled
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
Frequency Hopping Systems - Average Time of Occupancy	-
Frequency Hopping Systems - Channel Separation	± 42.31 kHz
Frequency Hopping Systems - Number of Hopping Channels	-
Frequency Hopping Systems - 99% & 20 dB Bandwidth	± 46.0 kHz
Maximum Conducted Output Power	± 1.38 dB
Authorised Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB

Table 106

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.