

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

Table 96 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

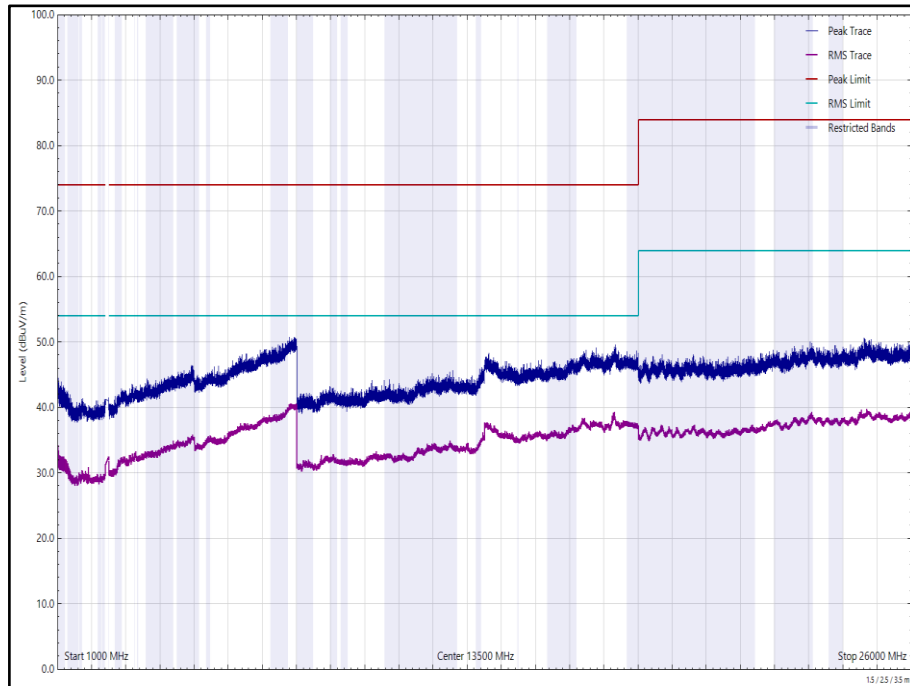


Figure 192 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

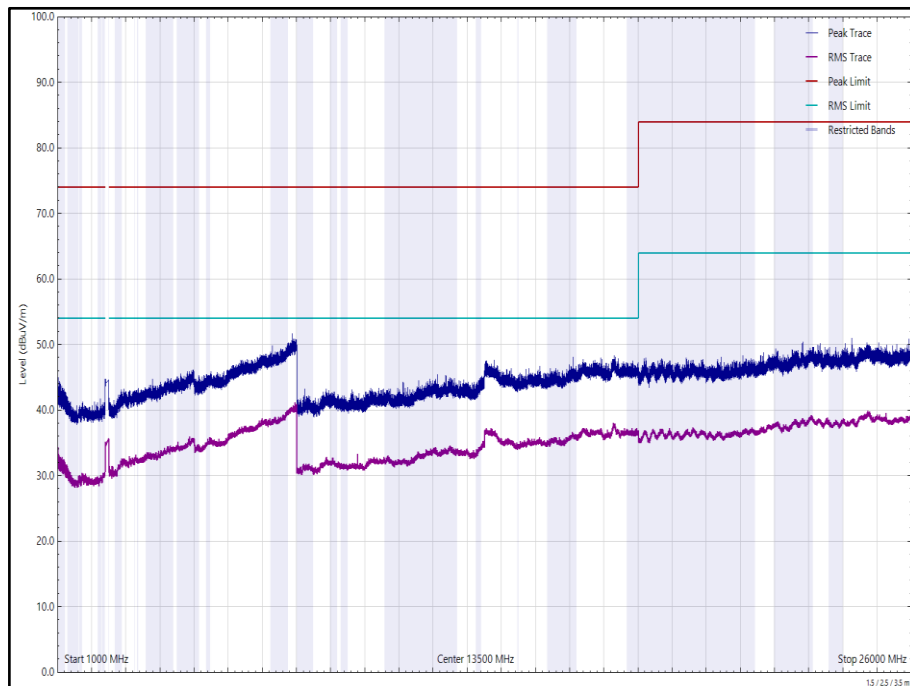


Figure 193 - 2480 MHz (CH39), LE1M, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 97 - 2404 MHz (CH2), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

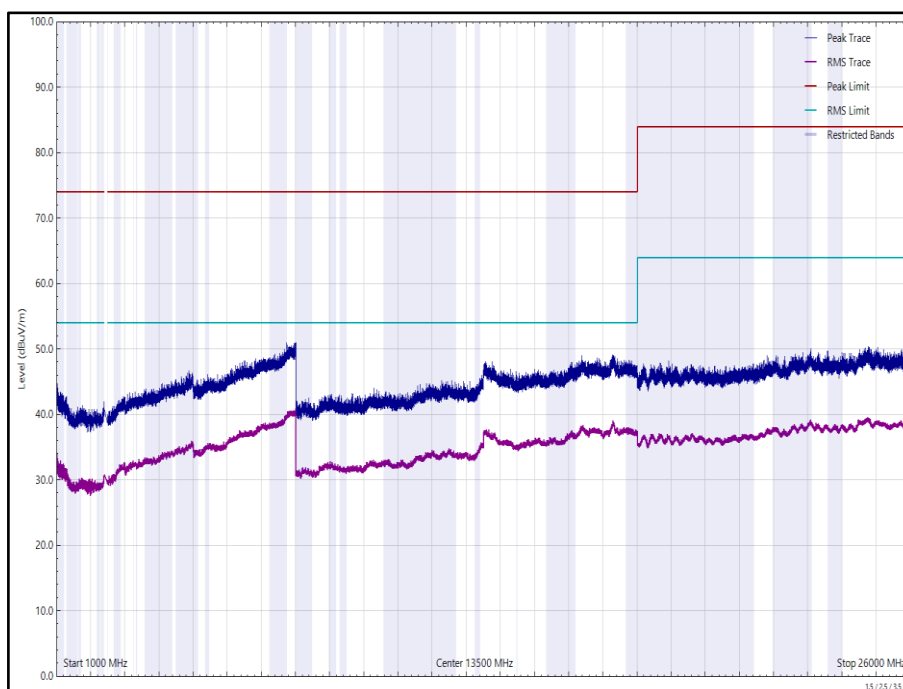


Figure 194 - 2404 MHz (CH2), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

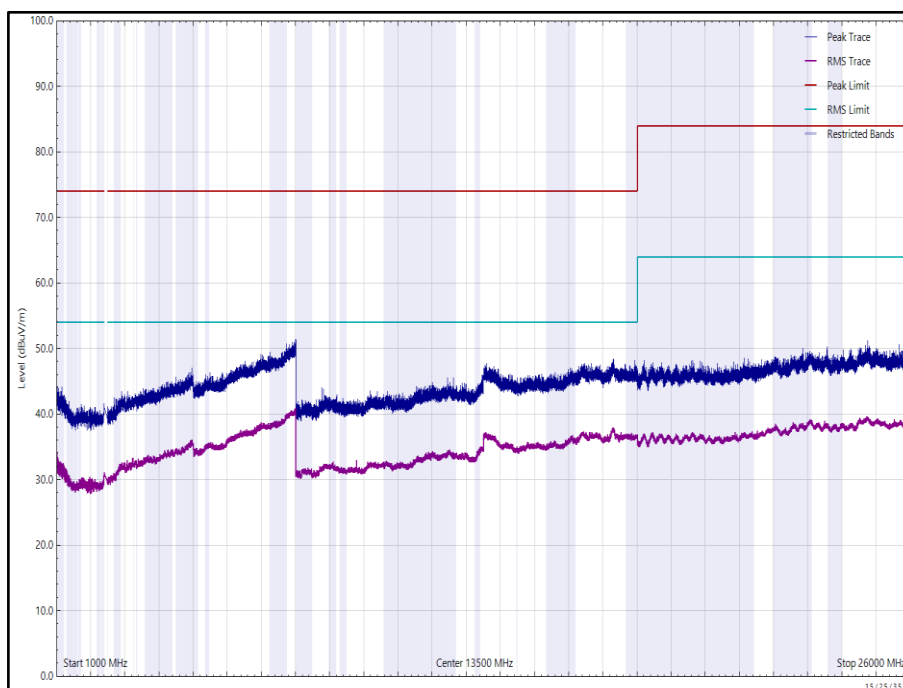


Figure 195 - 2404 MHz (CH2), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical



Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
73.799	28.1	40.0	-11.9	Q-Peak	1	217	Horizontal
73.804	27.5	40.0	-12.6	Q-Peak	0	144	Vertical
111.151	33.5	43.5	-10.0	Q-Peak	96	104	Vertical
117.135	34.0	43.5	-9.5	Q-Peak	335	246	Horizontal
164.547	28.8	43.5	-14.7	Q-Peak	248	101	Vertical
164.592	23.9	43.5	-19.6	Q-Peak	254	238	Horizontal

Table 98 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 30 MHz to 26 GHz

No other emissions found within 6 dB of the limit.

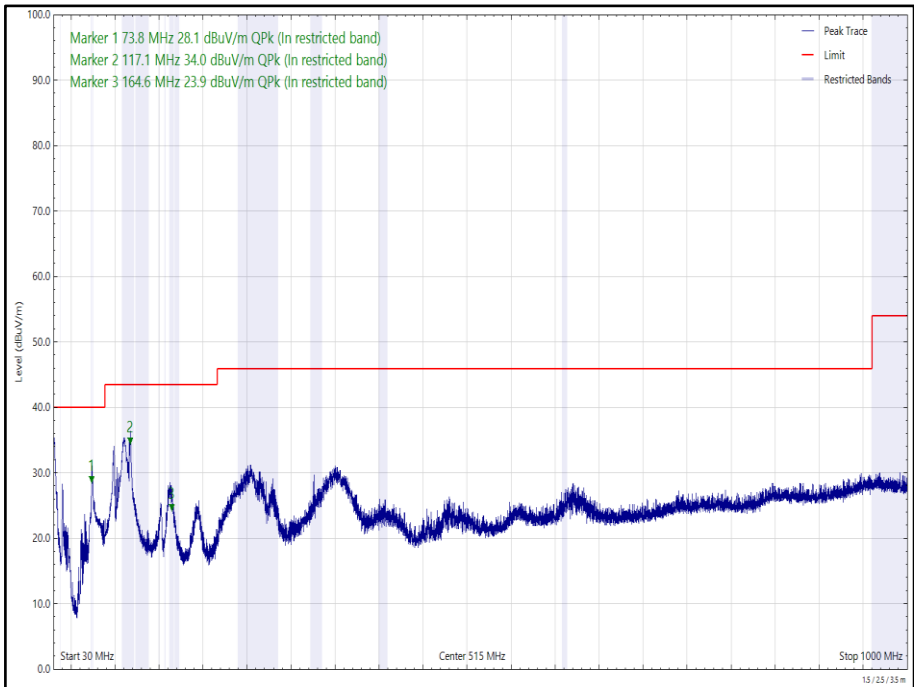


Figure 196 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

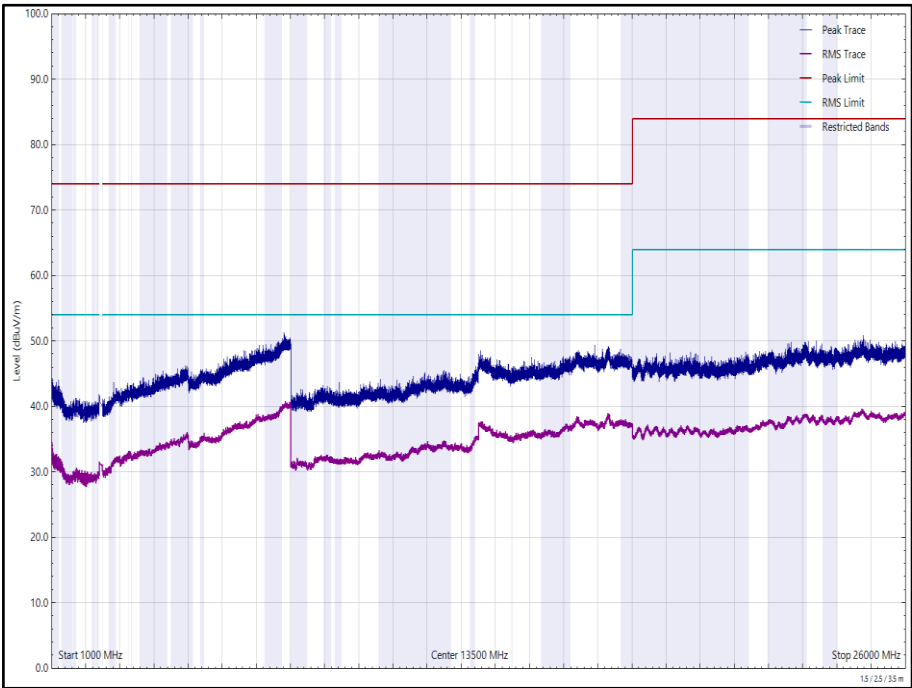


Figure 197 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

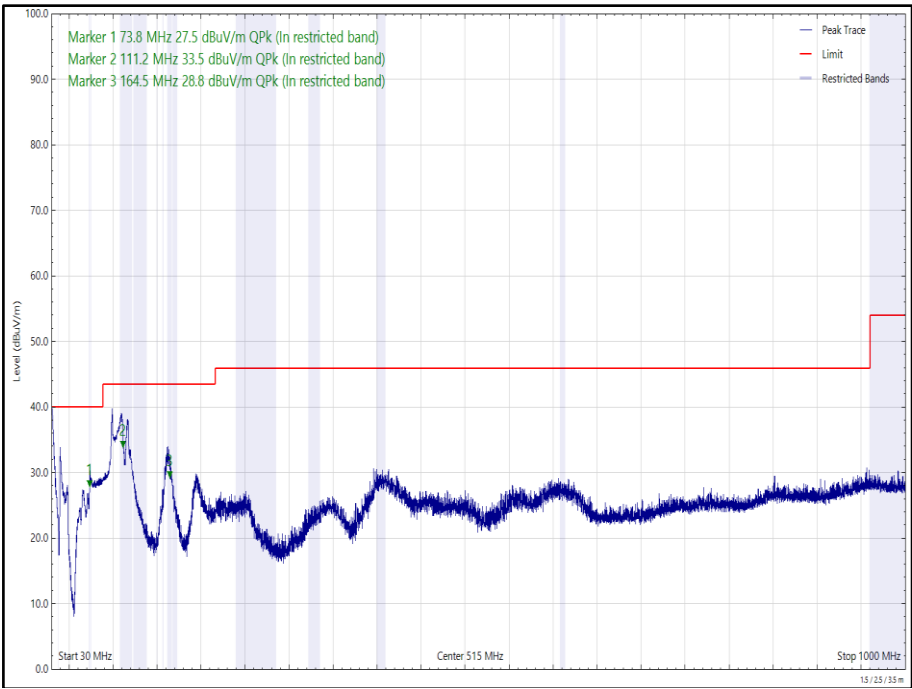


Figure 198 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

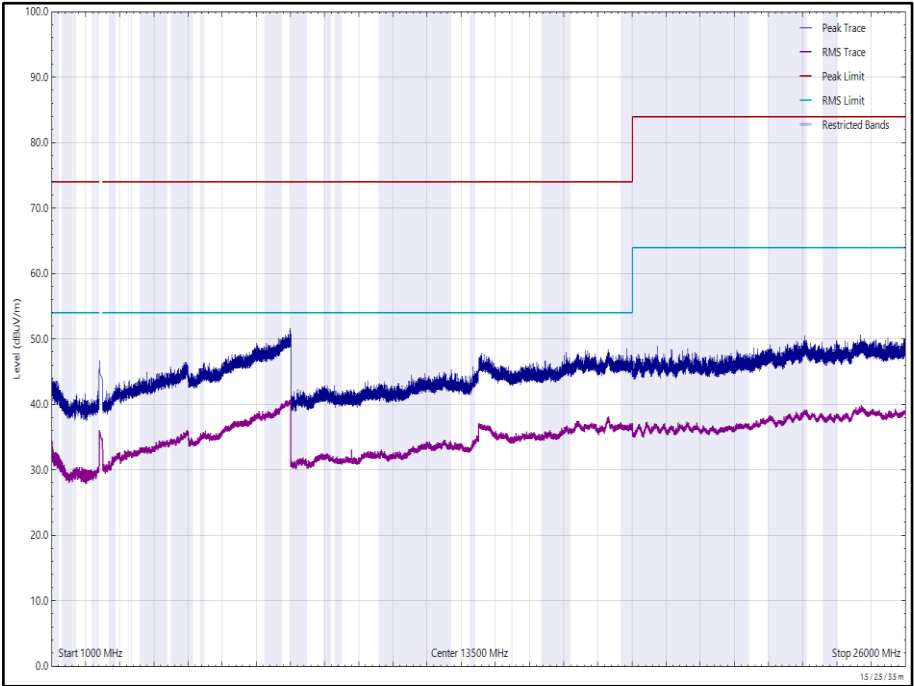


Figure 199 - 2440 MHz (CH38), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 99 - 2476 MHz (CH74), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

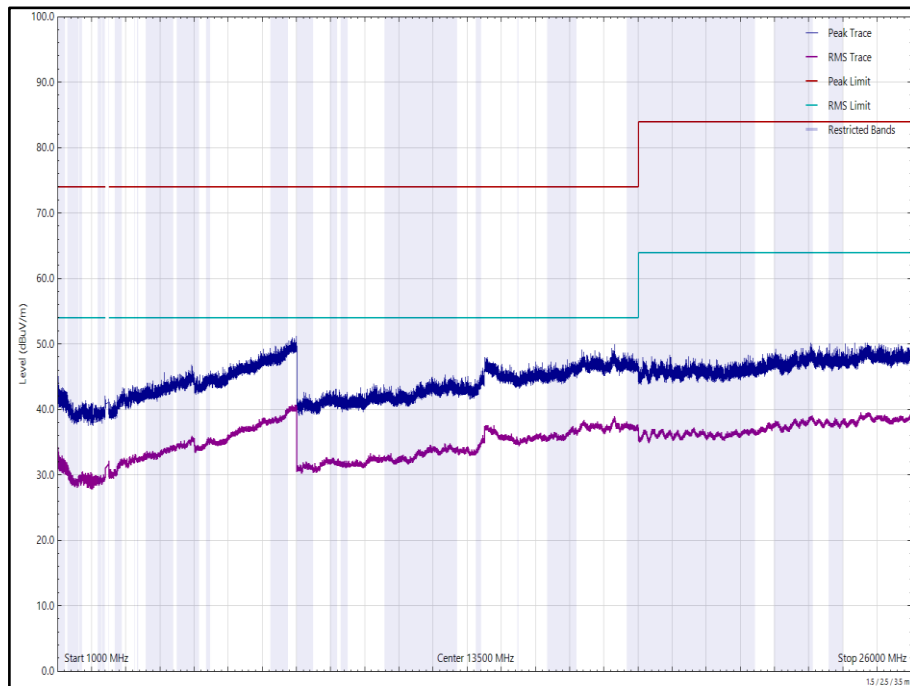


Figure 200 - 2476 MHz (CH74), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

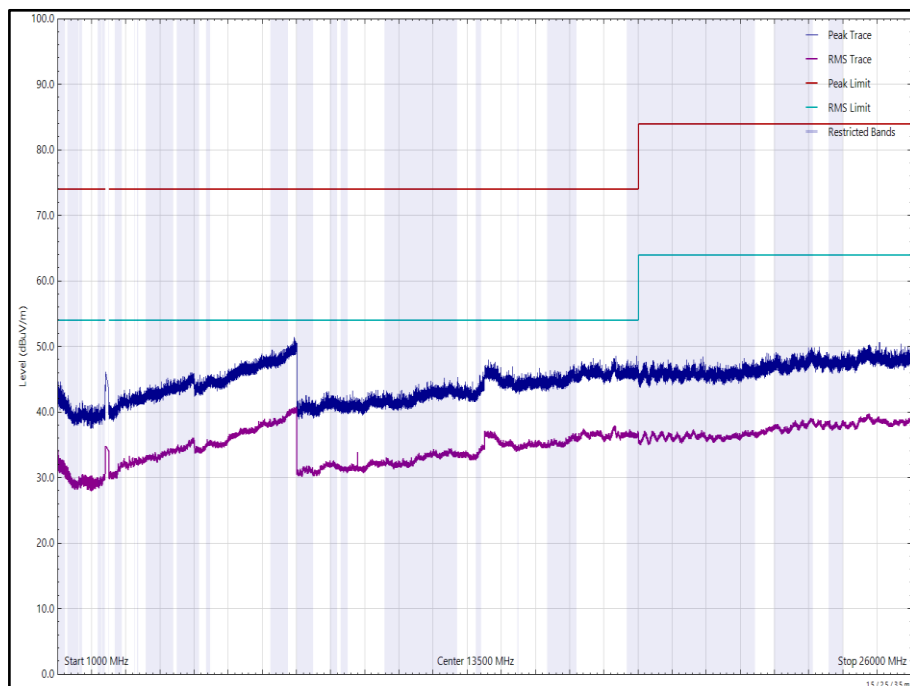


Figure 201 - 2476 MHz (CH74), HDR4, ePA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

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

Table 100 - 2404 MHz (CH2), HDR4, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

*No emissions found within 6 dB of the limit.

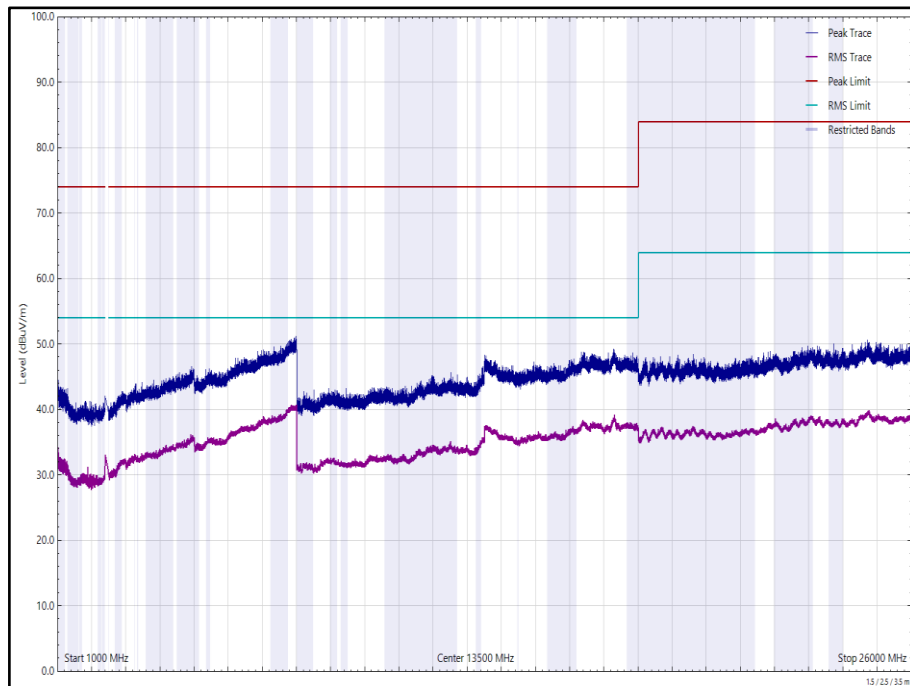


Figure 202 - 2404 MHz (CH2), HDR4, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

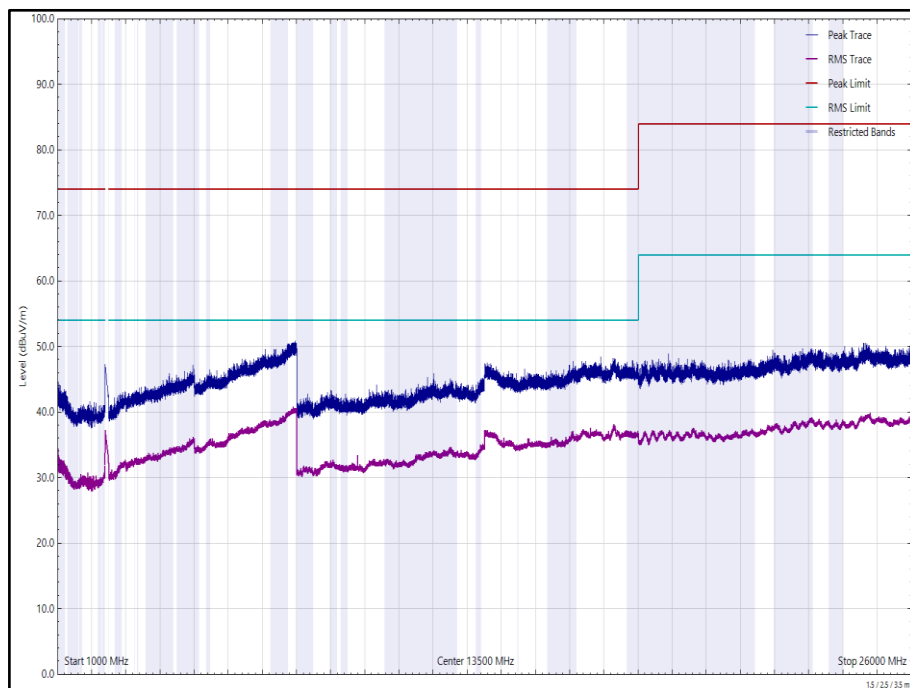


Figure 203 - 2404 MHz (CH2), HDR4, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
73.803	28.3	40.0	-11.7	Q-Peak	0	224	Horizontal
110.517	35.6	43.5	-7.9	Q-Peak	104	102	Vertical
117.110	34.5	43.5	-9.0	Q-Peak	340	259	Horizontal
164.581	29.0	43.5	-14.5	Q-Peak	257	100	Vertical

Table 101 - 2440 MHz (CH38), HDR4, iPA, Core 0 + Core 1, 30 MHz to 26 GHz

No other emissions found within 6 dB of the limit.

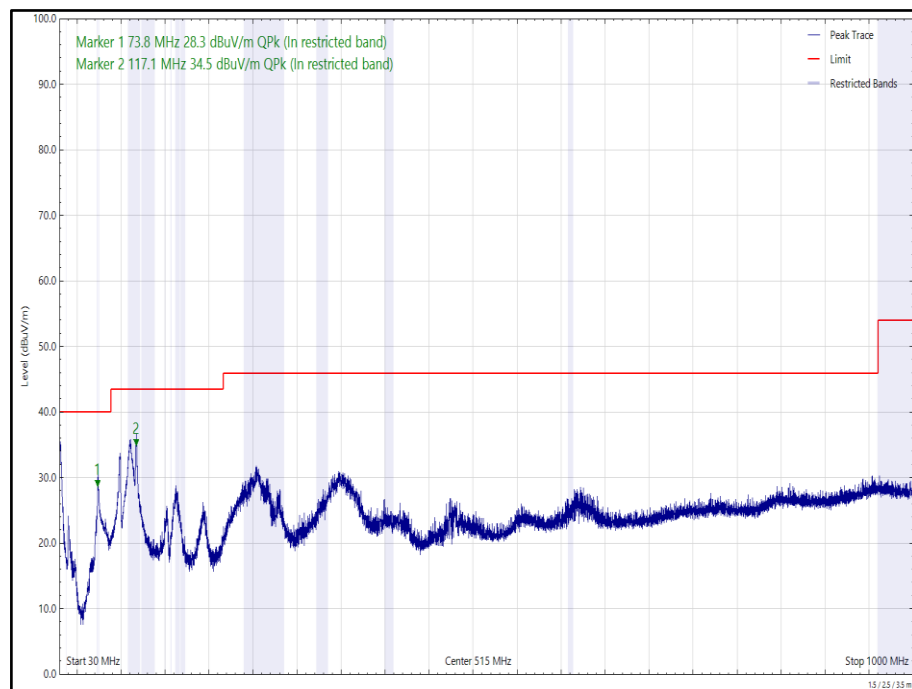


Figure 204 - 2440 MHz (CH38), HDR4, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

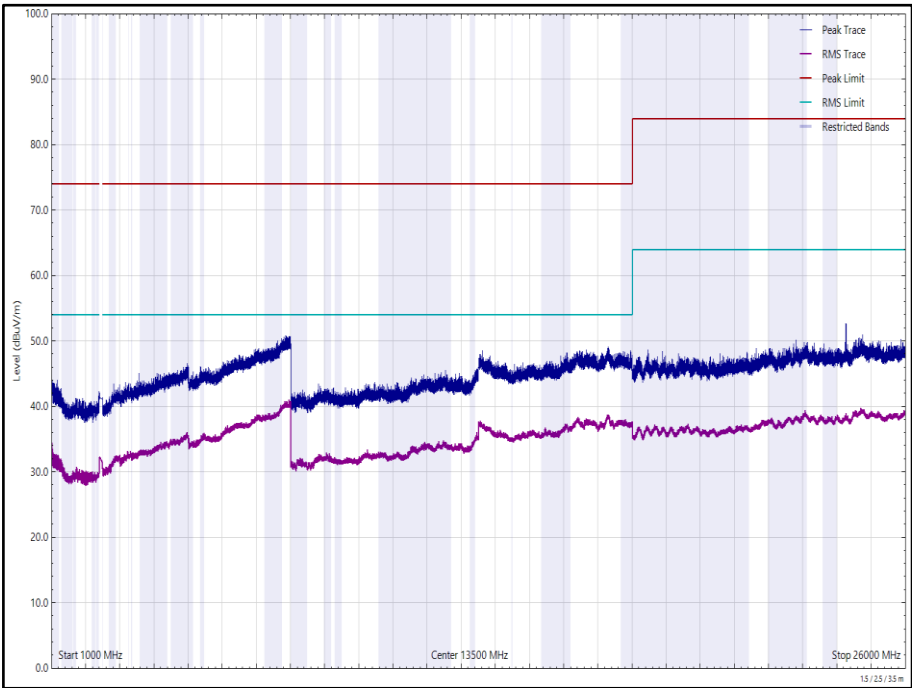


Figure 205 - 2440 MHz (CH38), HDR4, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

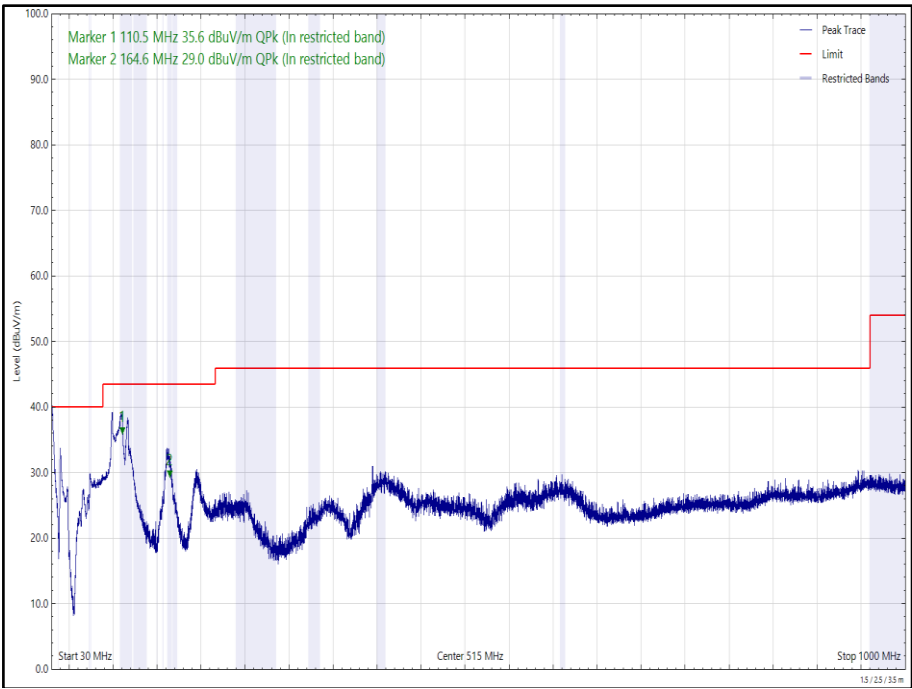


Figure 206 - 2440 MHz (CH38), HDR4, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

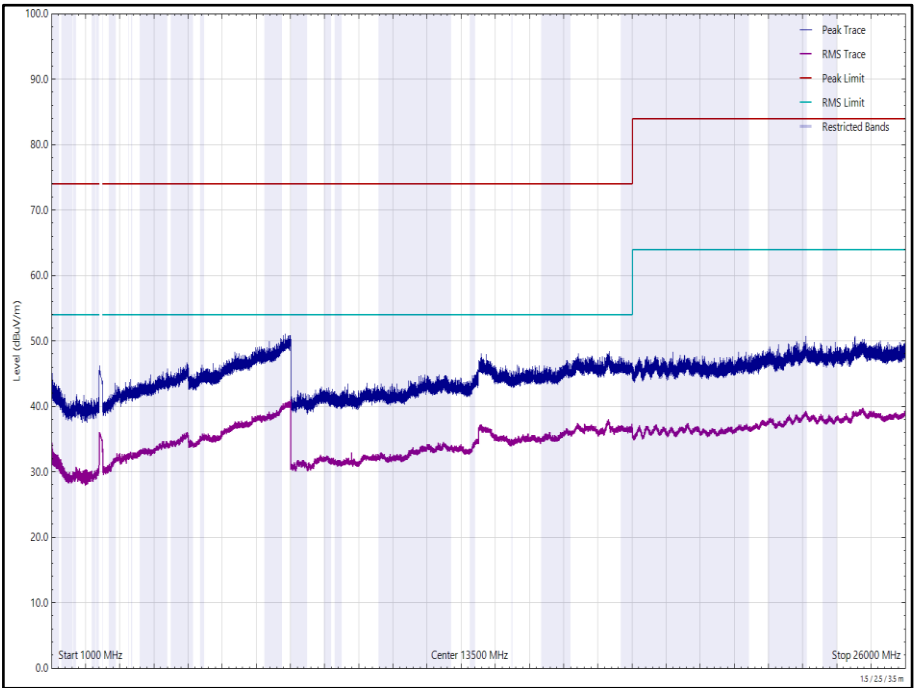


Figure 207 - 2440 MHz (CH38), HDR4, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical



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

Table 102 - 2476 MHz (CH74), HDR4, iPA, Core 0 + Core 1, 1 GHz to 26 GHz

No other emissions found within 6 dB of the limit.

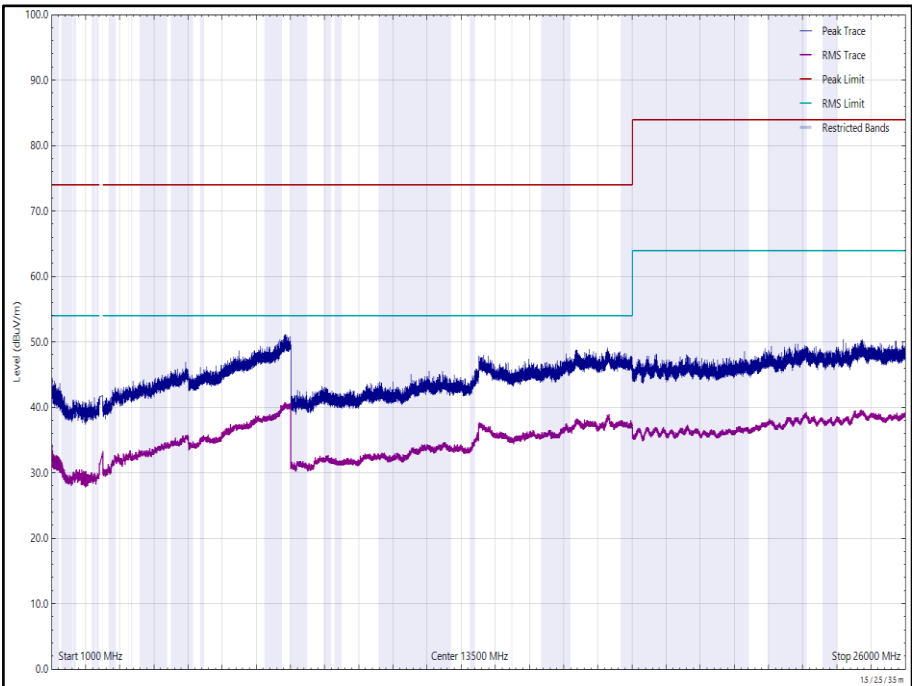


Figure 208 - 2476 MHz (CH74), HDR4, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

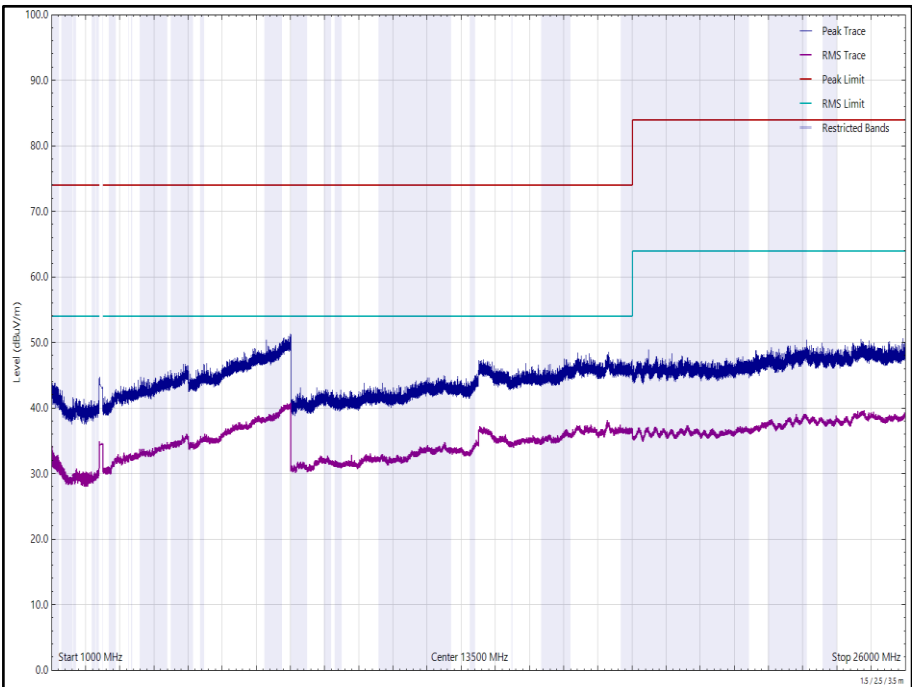


Figure 209 - 2476 MHz (CH74), HDR4, iPA, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical



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

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a)

ISED RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

In addition, radiated emissions which fall in the restricted bands, as defined in RSS-GEN, clause 8.10, must also comply with the radiated emission limits specified in RSS-GEN clause 8.9.

2.4.8 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
LISN	Rohde & Schwarz	ESH3-Z5	1390	12	31-Jan-2023
Screened Room (5)	Rainford	Rainford	1545	36	15-Apr-2024
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Multimeter	Fluke	79 Series II	3057	12	23-Aug-2022
Mast Controller	Maturo GmbH	NCD	4810	-	TU
Tilt Antenna Mast	Maturo GmbH	TAM 4.0-P	4811	-	TU
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	01-Apr-2022
8 - 18 GHz pre amp	Wright Technologies	PS06-0061/PS06-0060	4971	6	09-Nov-2022
Band Reject Filter - 2.425 GHz	Wainwright	WRCGV14-2390-2400-2450-2460-50SS	5067	12	29-Sep-2022
Band Reject Filter - 2.4585 GHz	Wainwright	WRCGV14-2423.5-2433.5-2483.5-2493.5-50SS	5069	12	11-Oct-2022



Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Emissions Software	TUV SUD	EmX V2.1.12	5125	-	Software
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	5217	12	25-Jan-2023
Preamplifier (30dB 18-40GHz)	Schwarzbeck	BBV 9721	5218	12	25-Jan-2023
3 GHz High pass filter	Wainwright	WHKX12-2580-3000-18000-80SS	5220	12	23-Mar-2023
Preamplifier (30dB 1GHz to 18GHz)	Schwarzbeck	BBV 9718 C	5261	12	08-Apr-2022
Antenna (DRG Horn 7.5-18GHz)	Schwarzbeck	HWRD750	5348	12	15-Oct-2022
1m -SMA Cable	Junkosha	MWX221-01000AMSAMS/A	5513	12	09-Apr-2022
1m -SMA Cable	Junkosha	MWX221-01000AMSAMS/A	5514	12	09-Apr-2022
2m SMA Cable	Junkosha	MWX221-02000AMSAMS/A	5517	12	09-Apr-2022
8m N Type Cable	Junkosha	MWX221-08000NMSNMS/B	5519	12	07-Mar-2023
8m N-Type Cable	Junkosha	MWX221-08000NMSNMS/B	5520	12	24-Mar-2023
Cable (K-Type to K-Type, 2 m)	Junkosha	MWX241-02000KMSKMS/A	5524	12	24-Mar-2022
EMI Test Receiver	Rohde & Schwarz	ESW44	5527	12	15-Apr-2022
7 GHz High pass Filter	Wainwright	WHKX12-5850-6800-18000-80SS	5549	12	20-May-2022
1200 MHz Low Pass Filter (01)	Mini-Circuits	VLF-1200+	5559	12	24-May-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5605	12	23-Sep-2022
Antenna (Bi-Log, 30 MHz to 1 GHz)	Teseq	CBL6111D	5615	24	16-Oct-2022

Table 103



2.5 Authorised Band Edges

2.5.1 Specification Reference

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

2.5.2 Equipment Under Test and Modification State

A2681, S/N: FMWFWQ0N1W - Modification State 0

2.5.3 Date of Test

22-February-2022 to 23-February-2022

2.5.4 Test Method

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

2.5.5 Environmental Conditions

Ambient Temperature	20.4 - 20.6 °C
Relative Humidity	33.4 - 32.8 %



2.5.6 Test Results

2.4 GHz Bluetooth - DTS

ePA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-65.79

Table 104 - Authorised Band Edge Results

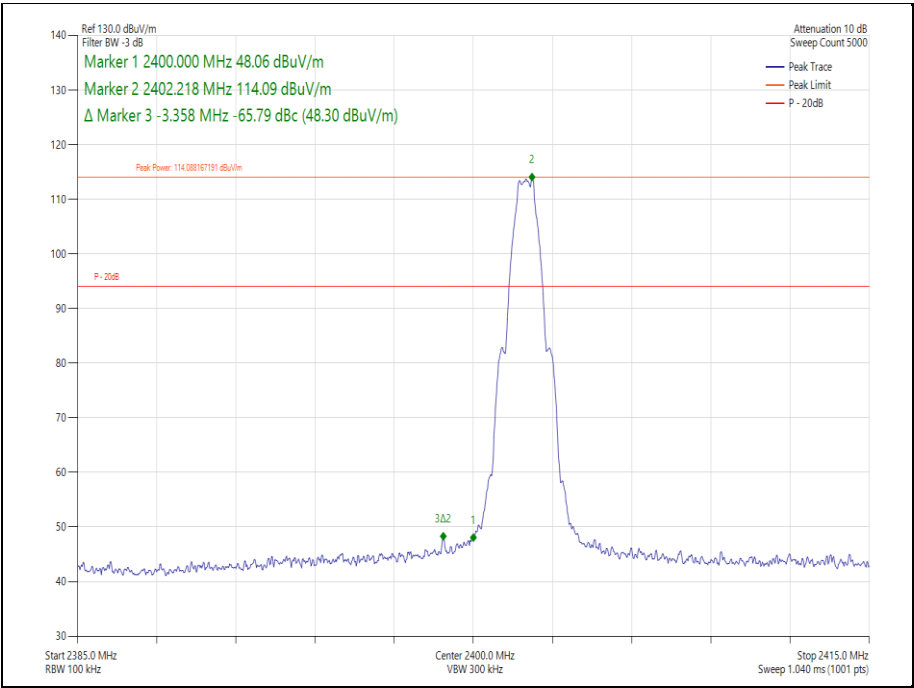


Figure 210 Core 0- GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz



iPA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-64.46

Table 105 - Authorised Band Edge Results

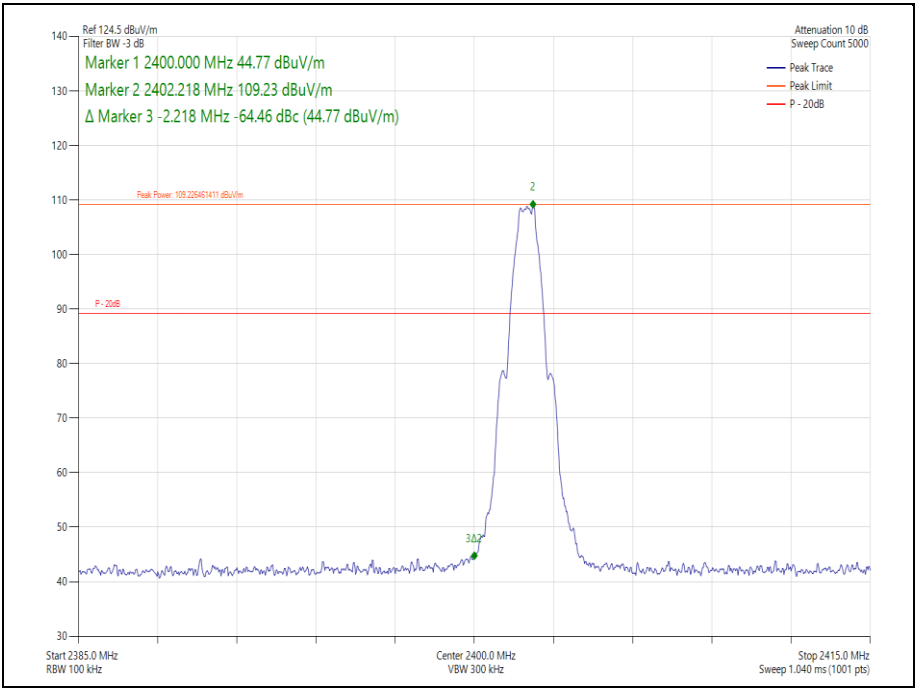


Figure 211 Core 0- GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz



ePA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-64.82

Table 106 - Authorised Band Edge Results

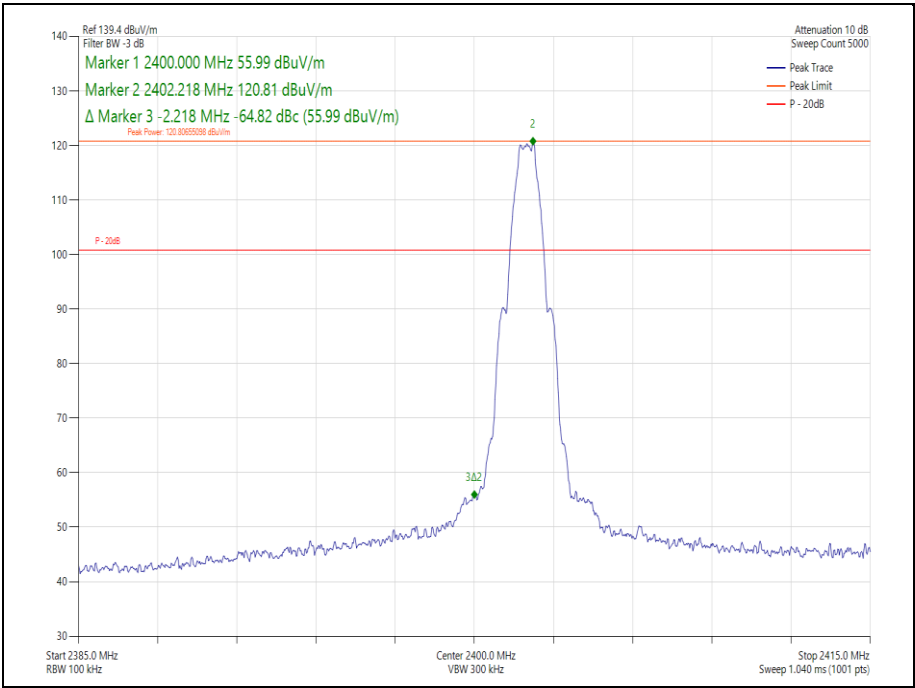


Figure 212 Core 0-1- GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

iPA - LE1M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-65.68

Table 107 - Authorised Band Edge Results

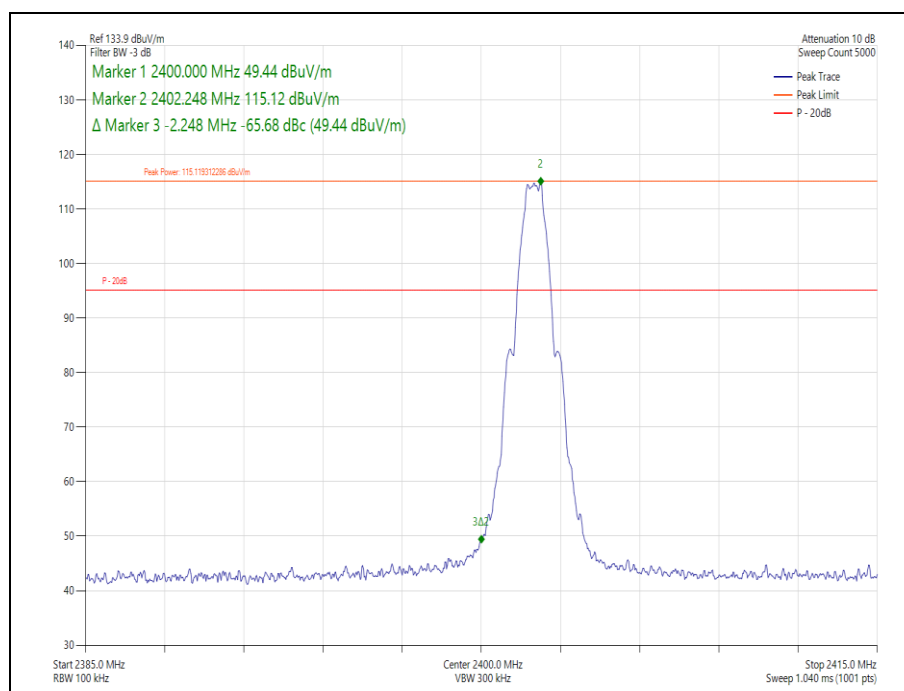


Figure 213 Core 0-1- GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

ePA – LE2M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-35.83

Table 108 - Authorised Band Edge Results

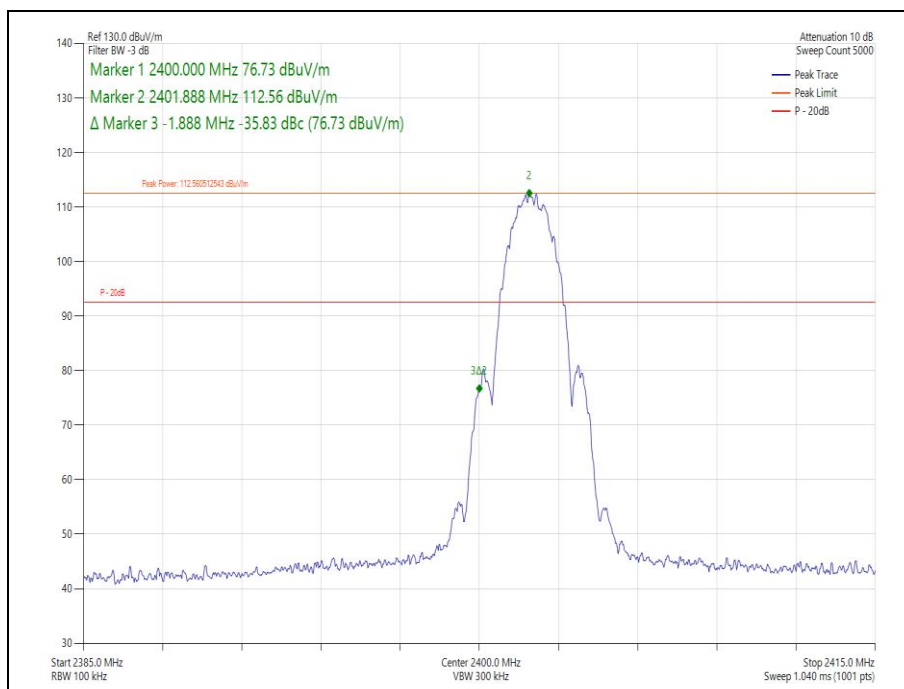


Figure 214 Core 0- GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-34.08

Ref 122.7 dBuV/m
Filter BW -3 dB

Marker 1 2400.000 MHz 73.61 dBuV/m
Marker 2 2401.918 MHz 107.69 dBuV/m
Δ Marker 3 -1.918 MHz -34.08 dBc (73.61 dBuV/m)

Attenuation 10 dB
Sweep Count 5000

Peak Trace
Peak Limit
P -20dB

Peak Power 107.6989367 dBuV/m

P -20dB

34.2

2

Start 2385.0 MHz
RBW 100 kHz

Center 2400.0 MHz
VBW 300 kHz

Stop 2415.0 MHz
Sweep 1.040 ms (1001 pts)

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ePA – LE2M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-35.78

Table 110 - Authorised Band Edge Results

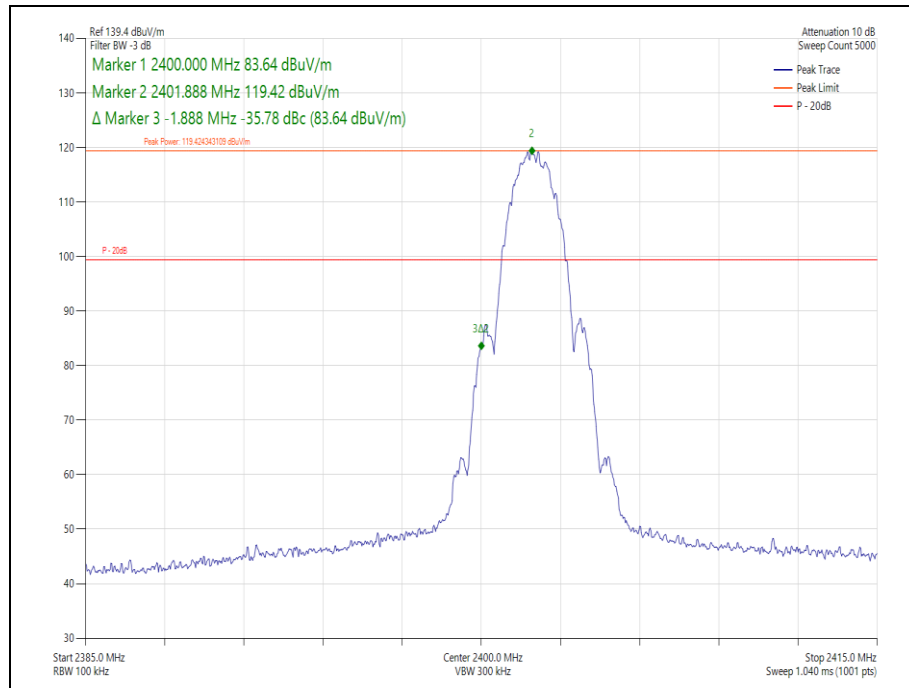


Figure 216 Core 0-1- GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz



iPA – LE2M

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-34.46

Table 111 - Authorised Band Edge Results

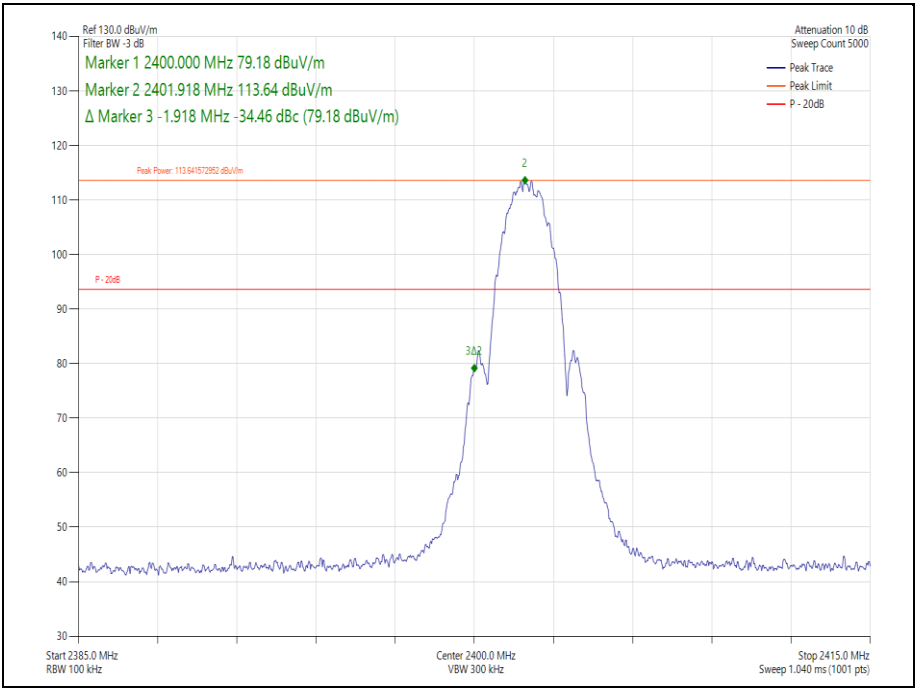


Figure 217 Core 0-1- GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
$\pi/4$ DQPSK	HDR4	0	2404	2400.0	-60.34

[illegible]

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Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
$\pi/4$ DQPSK	HDR4	0	2404	2400.0	-58.13

Ref 120.3 dBuV/m
Filter BW -3 dB

Marker 1 2400.000 MHz 43.88 dBuV/m
Marker 2 2404.316 MHz 102.40 dBuV/m
Δ Marker 3 -7.856 MHz -58.13 dBc (44.27 dBuV/m)

Attenuation 10 dB
Sweep Count 5000

Peak Trace
Peak Limit
P - 20dB

Peak Power 102.386693388 dBuV/m

Start 2385.0 MHz
RBW 100 kHz
Center 2400.0 MHz
VBW 300 kHz
Stop 2415.0 MHz
Sweep 1.040 ms (1001 pts)

Figure 219 Core 0- GFSK/DH1- 2404 MHz – Band Edge Frequency 2400.0 MHz



ePA - HDR4

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
$\pi/4$ DQPSK	HDR4	0-1	2404	2400.0	-64.44

Table 114 - Authorised Band Edge Results

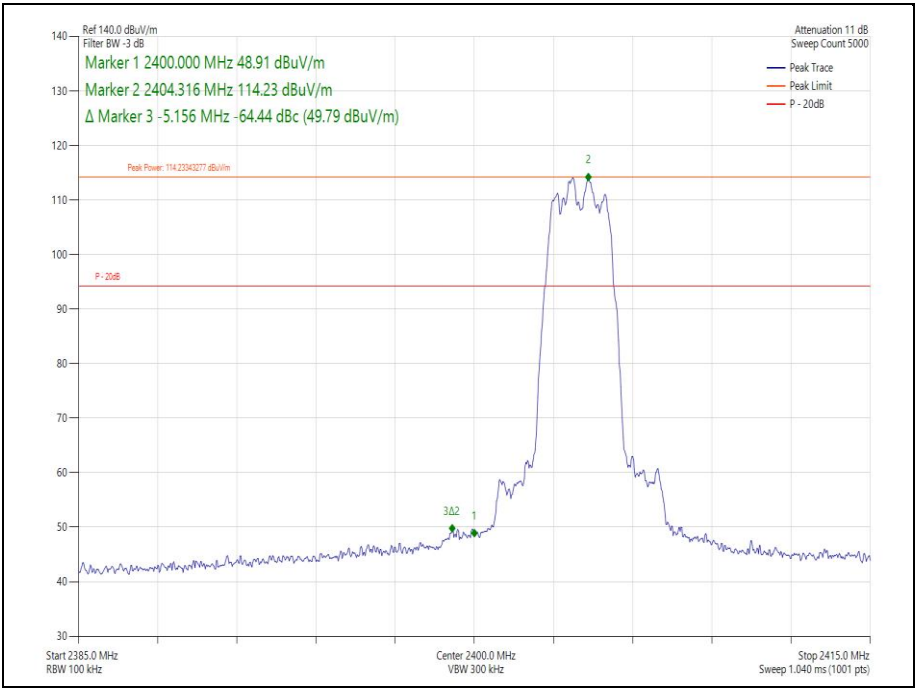


Figure 220 Core 0-1- GFSK/DH1- 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
$\pi/4$ DQPSK	HDR4	0-1	2404	2400.0	-63.29

Table 115 - Authorised Band Edge Results

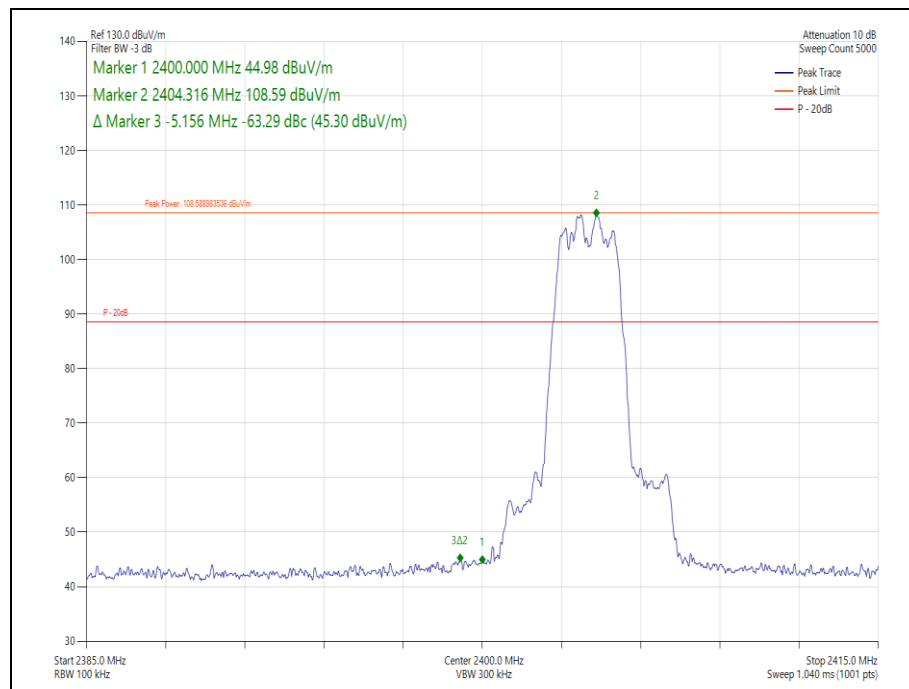


Figure 221 Core 0-1- GFSK/DH1- 2404 MHz – Band Edge Frequency 2400.0 MHz



ePA – HDR8

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
$\pi/4$ DQPSK	HDR8	0	2404	2400.0	-52.67

Table 116 - Authorised Band Edge Results

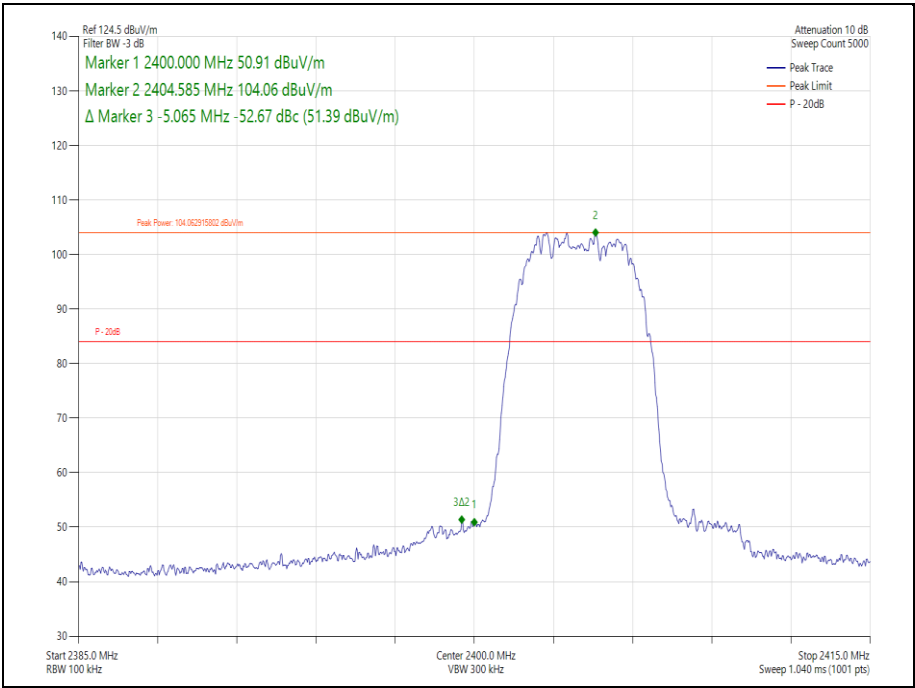


Figure 222 Core 0- GFSK/DH1- 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
$\pi/4$ DQPSK	HDR8	0	2404	2400.0	-47.02

Table 117 - Authorised Band Edge Results

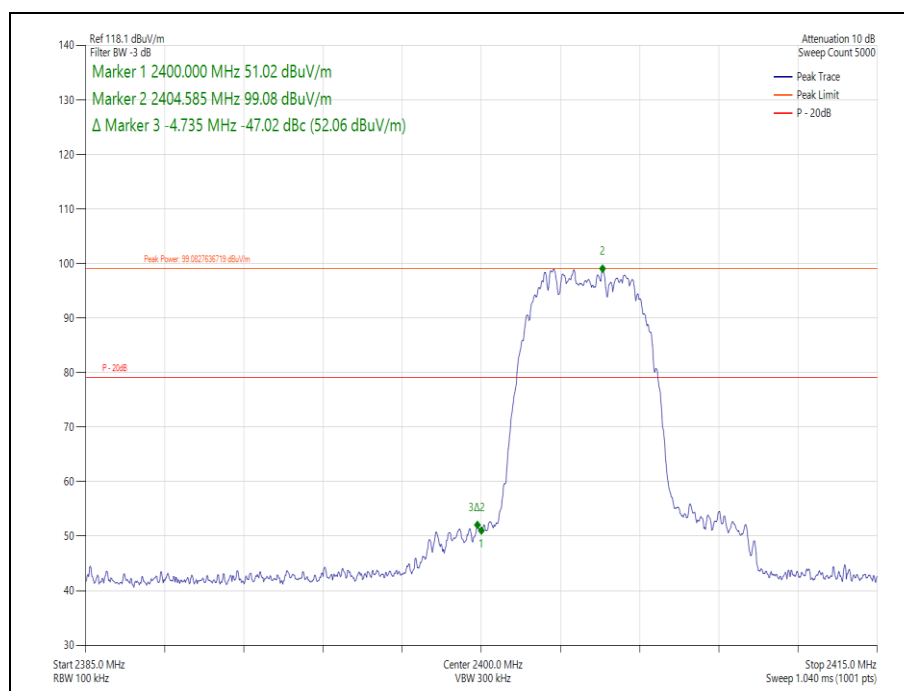


Figure 223 Core 0- GFSK/DH1- 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
$\pi/4$ DQPSK	HDR8	0-1	2404	2400.0	-53.45

Ref 139.4 dBuV/m
Filter BW -3 dB

Marker 1 2400.000 MHz 56.12 dBuV/m
Marker 2 2404.585 MHz 110.61 dBuV/m
Δ Marker 3 -5.425 MHz -53.45 dBc (57.16 dBuV/m)

Peak Power 110.60871315 dBuV/m
P = -20dB

Attenuation 10 dB
Sweep Count 5000

Peak Trace
Peak Limit
P = -20dB

Start 2385.0 MHz
Center 2400.0 MHz
Stop 2415.0 MHz
RBW 100 kHz
VBW 300 kHz
Sweep 1.040 ms (1001 pts)

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iPA – HDR8

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
$\pi/4$ DQPSK	HDR8	0-1	2404	2400.0	-48.46

Table 119 - Authorised Band Edge Results

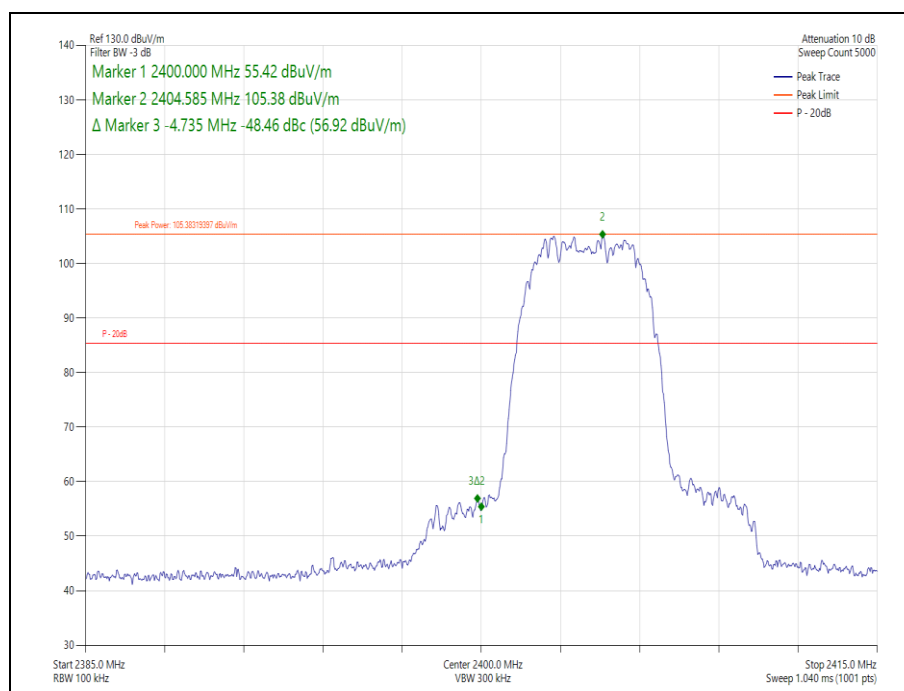


Figure 225 Core 0-1- GFSK/DH1- 2404 MHz – Band Edge Frequency 2400.0 MHz

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

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

ISED RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.



2.5.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Screened Room (5)	Rainford	Rainford	1545	36	15-Apr-2024
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	01-Apr-2022
2m SMA Cable	Junkosha	MWX221-02000AMSAMS/A	5517	12	09-Apr-2022
8m N-Type Cable	Junkosha	MWX221-08000NMSNMS/B	5520	12	24-Mar-2023
EMI Test Receiver	Rohde & Schwarz	ESW44	5527	12	15-Apr-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	22-Sep-2022
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5605	12	23-Sep-2022
EMI Test Receiver	Rohde & Schwarz	ESW44	5911	12	24-Feb-2023

Table 120



2.6 Power Spectral Density

2.6.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (e)
ISED RSS-247, Clause 5.2
ISED RSS-GEN, Clause 6.12

2.6.2 Equipment Under Test and Modification State

A2681, S/N: TN4J7KWW5H - Modification State 0

2.6.3 Date of Test

08-April-2022 to 13-April-2022

2.6.4 Test Method

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

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

2.6.5 Environmental Conditions

Ambient Temperature	22.9 - 24.4 °C
Relative Humidity	27.0 – 44.9 %



2.6.6 Test Results

2.4 GHz Bluetooth - DTS

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404	3.0	-1.38	-	-	-	-	8.00	-9.38
2441	3.0	-1.29	-	-	-	-	8.00	-9.29
2476	3.0	-0.83	-	-	-	-	8.00	-8.83

Table 121 - Maximum Power Spectral Density Results

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404	3.0	-0.30	-	-	-	-	8.00	-8.30
2441	3.0	-1.71	-	-	-	-	8.00	-9.71
2476	3.0	-0.96	-	-	-	-	8.00	-8.96

Table 122 - Maximum Power Spectral Density Results



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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404	3.0	-1.07	-1.92	-	-	1.53	8.00	-6.47
2441	3.0	-1.21	-1.83	-	-	1.50	8.00	-6.50
2476	3.0	-1.08	-1.52	-	-	1.72	8.00	-6.28

Table 123 - Maximum Power Spectral Density Results

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404	3.0	0.05	-0.87	-	-	2.63	8.00	-5.37
2441	3.0	-0.98	-1.94	-	-	1.58	8.00	-6.42
2476	3.0	-0.51	-1.61	-	-	1.99	8.00	-6.01

Table 124 - Maximum Power Spectral Density Results



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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-2.49	-	-	-	-	8.00	-10.49
2440	3.0	-1.68	-	-	-	-	8.00	-9.68
2480	3.0	-0.67	-	-	-	-	8.00	-8.67

Table 125 - Maximum Power Spectral Density Results

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-1.56	-1.74	-	-	1.36	8.00	-6.64
2440	3.0	-1.55	-2.09	-	-	1.20	8.00	-6.80
2480	3.0	-0.74	-1.45	-	-	1.93	8.00	-6.07

Table 126 - Maximum Power Spectral Density Results



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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-6.77	-	-	-	-	8.00	-14.77
2440	3.0	-3.27	-	-	-	-	8.00	-11.27
2480	3.0	-3.59	-	-	-	-	8.00	-11.59

Table 127 - Maximum Power Spectral Density Results

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-7.58	-4.20	-	-	-2.56	8.00	-10.56
2440	3.0	-3.22	-3.55	-	-	-0.38	8.00	-8.38
2480	3.0	-3.49	-3.86	-	-	-0.66	8.00	-8.66

Table 128 - Maximum Power Spectral Density Results



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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404	3.0	-10.30	-	-	-	-	8.00	-18.30
2441	3.0	-9.49	-	-	-	-	8.00	-17.49
2476	3.0	-9.08	-	-	-	-	8.00	-17.08

Table 129 - Maximum Power Spectral Density Results

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404	3.0	-9.66	-	-	-	-	8.00	-17.66
2441	3.0	-9.25	-	-	-	-	8.00	-17.25
2476	3.0	-9.67	-	-	-	-	8.00	-17.67

Table 130 - Maximum Power Spectral Density Results



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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404	3.0	-10.22	-10.46	-	-	-7.33	8.00	-15.33
2441	3.0	-9.43	-9.91	-	-	-6.65	8.00	-14.65
2476	3.0	-9.08	-9.66	-	-	-6.35	8.00	-14.35

Table 131 - Maximum Power Spectral Density Results

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404	3.0	-9.44	-9.79	-	-	-6.60	8.00	-14.60
2441	3.0	-9.44	-9.85	-	-	-6.63	8.00	-14.63
2476	3.0	-9.45	-9.98	-	-	-6.70	8.00	-14.70

Table 132 - Maximum Power Spectral Density Results



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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-2.22	-	-	-	-	8.00	-10.22
2440	3.0	-1.12	-	-	-	-	8.00	-9.12
2480	3.0	-0.70	-	-	-	-	8.00	-8.70

Table 133 - Maximum Power Spectral Density Results

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-1.93	-2.31	-	-	0.89	8.00	-7.11
2440	3.0	-1.19	-1.58	-	-	1.63	8.00	-6.37
2480	3.0	-0.88	-1.44	-	-	1.86	8.00	-6.14

Table 134 - Maximum Power Spectral Density Results



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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-6.77	-	-	-	-	8.00	-14.77
2440	3.0	-3.33	-	-	-	-	8.00	-11.33
2480	3.0	-3.06	-	-	-	-	8.00	-11.06

Table 135 - Maximum Power Spectral Density Results

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

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

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-7.20	-3.94	-	-	-2.26	8.00	-10.26
2440	3.0	-3.30	-3.64	-	-	-0.46	8.00	-8.46
2480	3.0	-2.97	-3.47	-	-	-0.20	8.00	-8.20

Table 136 - Maximum Power Spectral Density Results



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

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

ISED RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

2.6.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Hygrometer	Rotronic	I-1000	3220	12	05-Nov-2022
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	30-Jun-2022
Climatic Chamber	Aralab	FitoTerm 300E45	4823	12	12-Apr-2022
AC Programmable Power Supply	iTech	IT7324	5226	-	O/P Mon
MXA Signal Analyser	Keysight Technologies	N9020B	5529	24	06-Jun-2022
Signal Commissioning Unit	TUV SUD	SCU002	5759	12	30-Jun-2022

Table 137

O/P Mon – Output Monitored using calibrated equipment



3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Restricted Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Emission Bandwidth	± 42.87 kHz
Maximum Conducted Output Power	± 3.2 dB
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Authorised Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Power Spectral Density	± 3.2 dB

Table 138

Measurement Uncertainty Decision Rule – Accuracy Method

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