TUV SUD Limited Digitally signed by TUV SUD Limited Date: 2024.10.14 16:35:16 +01'00'

Protocol	6 dB Bandwidth (MHz)	
	Minimum	Maximum
802.11n HT20	15.300	17.700
802.11ax HE20 SU	17.820	19.080

Table 22 - 6 dB Bandwidth Summary Results - MIMO CDD

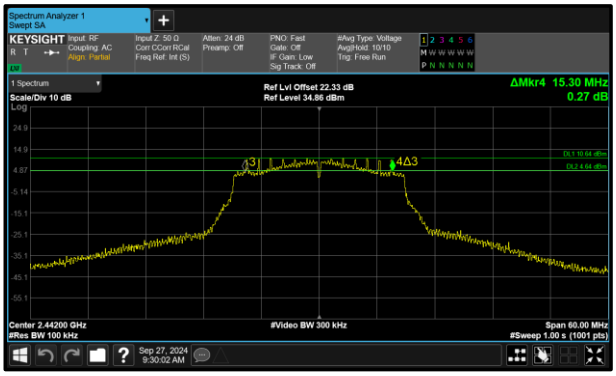

Figure 68 - 802.11n HT20 Minimum 6 dB EBW

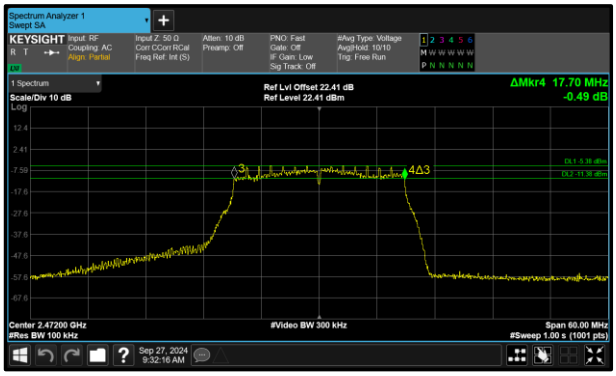

Figure 69 - 802.11n HT20 Maximum 6 dB EBW

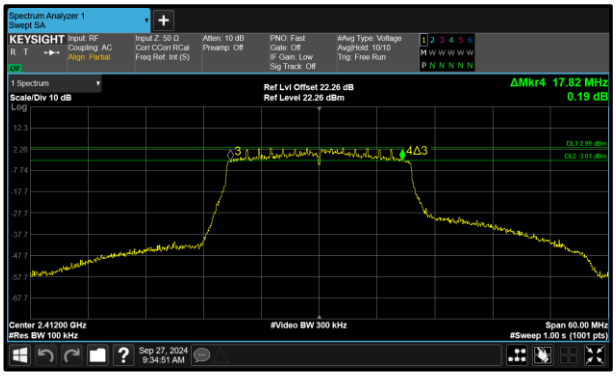

Figure 70 - 802.11ax HE20 SU Minimum 6 dB EBW

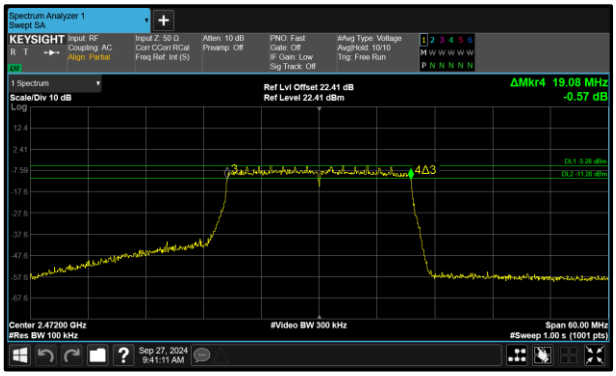

Figure 71 - 802.11ax HE20 SU Maximum 6 dB EBW

Protocol	99% Bandwidth (MHz)	
	Minimum	Maximum
802.11n HT20	17.580	17.700
802.11ax HE20 SU	18.900	19.020

Table 23 - 99% Bandwidth Summary Results - MIMO CDD

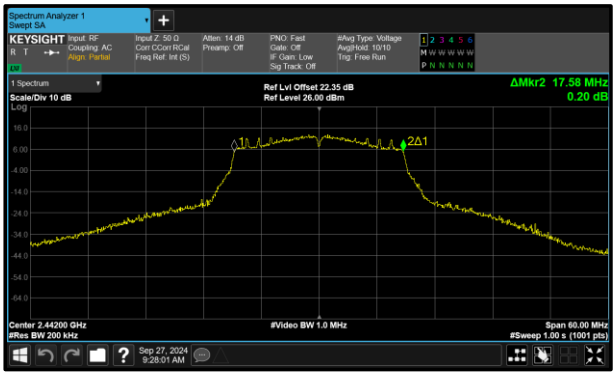

Figure 72 - 802.11n HT20 Minimum 99% OBW

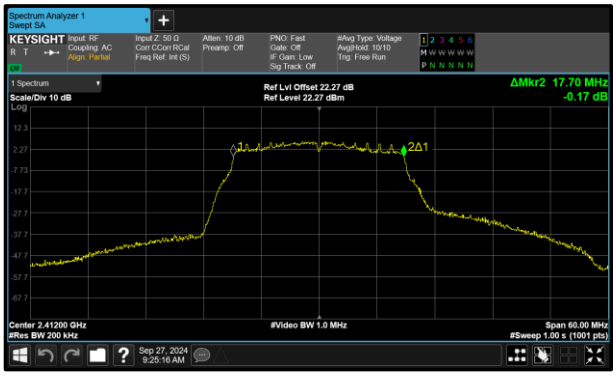

Figure 73 - 802.11n HT20 Maximum 99% OBW

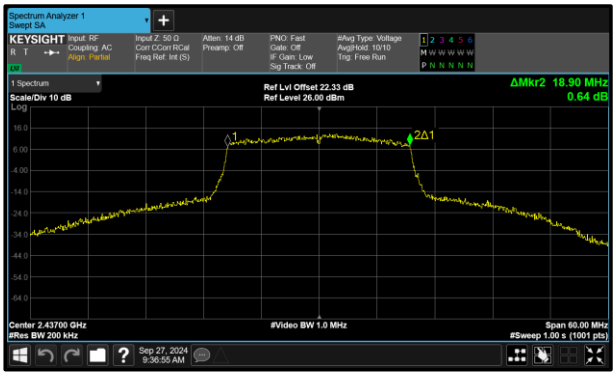

Figure 74 - 802.11ax HE20 SU Minimum 99% OBW

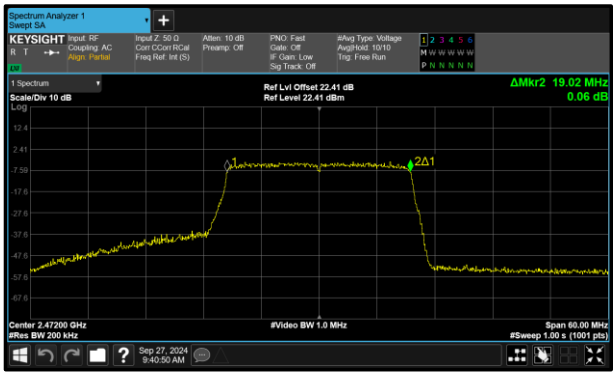

Figure 75 - 802.11ax HE20 SU Maximum 99% OBW

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11n HT20	Duty Cycle (%):	-
Modulation Coding Scheme:	MCS2	DCCF (dB):	-
Antenna Configuration:	MIMO CDD	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (Core 0 + Core 1)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2412	16.380	16.020	-	-	≥500.0
2442	15.780	15.300	-	-	≥500.0
2472	17.100	17.700	-	-	≥500.0

Table 24 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2412	17.700	17.700	-	-	-
2442	17.580	17.580	-	-	-
2472	17.700	17.700	-	-	-

Table 25 - 99% Bandwidth Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11ax HE20 SU	Duty Cycle (%):	-
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	MIMO CDD	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (Core 0 + Core 1)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2412	18.840	17.820	-	-	≥500.0
2437	18.840	18.900	-	-	≥500.0
2472	19.020	19.080	-	-	≥500.0

Table 26 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2412	18.960	18.960	-	-	-
2437	18.900	18.960	-	-	-
2472	18.960	19.020	-	-	-

Table 27 - 99% Bandwidth Results

FCC 47 CFR Part 15, Limit Clause 15.247(a)(2)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Hygrometer	Rotronic	I-1000	3068	12	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
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

Table 28

O/P Mon - Output Monitored using calibrated equipment

2.3 Maximum Conducted Output Power

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b)

2.3.2 Equipment Under Test and Modification State

A3401, S/N: HHJTCJ96L9 - Modification State 0

2.3.3 Date of Test

27-September-2024 to 04-October-2024

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 11.9.2.3.2 Method AVGPM-G.

MIMO output port summing was performed in accordance with KDB 662911 D01 v02r01 F)2)f)(i) and 662911 D01 v02r01 E)1).

2.3.5 Environmental Conditions

Ambient Temperature	21.5 - 22.1 °C
Relative Humidity	52.6 - 58.6 %

2.3.6 Test Results

2.4 GHz WLAN

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11b	Duty Cycle (%):	99.7
Data Rate:	1 Mbps	DCCF (dB):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	-	18.80	-	-	18.80	30.00	-11.20
2442	-	18.98	-	-	18.98	30.00	-11.02
2472	-	14.99	-	-	14.99	30.00	-15.01

Table 29 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11g	Duty Cycle (%):	97.7
Data Rate:	12 Mbps	DCCF (dB):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	-	17.82	-	-	17.82	30.00	-12.18
2442	-	22.01	-	-	22.01	30.00	-7.99
2472	-	6.68	-	-	6.68	30.00	-23.32

Table 30 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11n HT20	Duty Cycle (%):	96.5
Modulation Coding Scheme:	MCS2	DCCF (dB):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	-	16.72	-	-	16.72	30.00	-13.28
2442	-	22.43	-	-	22.43	30.00	-7.57
2472	-	6.08	-	-	6.08	30.00	-23.92

Table 31 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11ax HE20 SU	Duty Cycle (%):	95.9
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	-	15.92	-	-	15.92	30.00	-14.08
2442	-	22.39	-	-	22.39	30.00	-7.61
2472	-	6.06	-	-	6.06	30.00	-23.94

Table 32 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11ax HE20 RU26	Duty Cycle (%):	96.5
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	-	14.36	-	-	14.36	30.00	-15.64
2442	-	14.22	-	-	14.22	30.00	-15.78
2472	-	-5.33	-	-	-5.33	30.00	-35.33

Table 33 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11ax HE20 RU52	Duty Cycle (%):	96.4
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	-	17.11	-	-	17.11	30.00	-12.89
2442	-	17.44	-	-	17.44	30.00	-12.56
2472	-	-2.50	-	-	-2.50	30.00	-32.50

Table 34 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	802.11ax HE20 RU106	Duty Cycle (%):	97.9
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	-	17.07	-	-	17.07	30.00	-12.93
2442	-	20.41	-	-	20.41	30.00	-9.59
2472	-	-1.31	-	-	-1.31	30.00	-31.31

Table 35 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)f)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	802.11n HT20	Duty Cycle (%):	96.3
Modulation Coding Scheme:	MCS2	DCCF (dB):	-
Antenna Configuration:	MIMO CDD	Peak Antenna Gain (dBi):	4.80
Active Port(s):	A+B (Core 0 + Core 1)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	15.34	15.45	-	-	18.40	30.00	-11.60
2442	21.60	22.23	-	-	24.94	30.00	-5.06
2472	5.82	5.89	-	-	8.87	30.00	-21.13

Table 36 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)f)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	802.11ax HE20 SU	Duty Cycle (%):	95.6
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	MIMO CDD	Peak Antenna Gain (dBi):	4.80
Active Port(s):	A+B (Core 0 + Core 1)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	13.83	14.02	-	-	16.94	30.00	-13.06
2437	22.33	22.39	-	-	25.37	30.00	-4.63
2472	5.62	5.90	-	-	8.77	30.00	-21.23

Table 37 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)f)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	802.11ax HE20 RU26	Duty Cycle (%):	96.5
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	MIMO CDD	Peak Antenna Gain (dBi):	4.80
Active Port(s):	A+B (Core 0 + Core 1)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	13.80	14.10	-	-	16.96	30.00	-13.04
2442	14.14	14.24	-	-	17.20	30.00	-12.80
2472	-8.66	-8.81	-	-	-5.73	30.00	-35.73

Table 38 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)f)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	802.11ax HE20 RU52	Duty Cycle (%):	96.5
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	MIMO CDD	Peak Antenna Gain (dBi):	4.80
Active Port(s):	A+B (Core 0 + Core 1)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	17.30	17.27	-	-	20.29	30.00	-9.71
2442	17.29	17.05	-	-	20.18	30.00	-9.82
2472	-8.47	-8.63	-	-	-5.54	30.00	-35.54

Table 39 - FCC Maximum Conducted (average) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)f)(i), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	802.11ax HE20 RU106	Duty Cycle (%):	97.8
Modulation Coding Scheme:	MCS2x1	DCCF (dB):	-
Antenna Configuration:	MIMO CDD	Peak Antenna Gain (dBi):	4.80
Active Port(s):	A+B (Core 0 + Core 1)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	∑		
2412	15.12	15.26	-	-	18.20	30.00	-11.80
2442	20.12	20.18	-	-	23.16	30.00	-6.84
2472	-5.26	-5.55	-	-	-2.40	30.00	-32.40

Table 40 - FCC Maximum Conducted (average) Output Power Results

FCC 47 CFR Part 15, Limit Clause 15.247 (b)(3)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

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
USB Power Sensors, 50MHz to 8GHz	Boonton	RTP5008	5921	12	05-Feb-2025
USB Power Sensors, 50MHz to 8GHz	Boonton	RTP5008	5922	12	05-Feb-2025
Digital Multimeter	Fluke	115	6145	12	06-Jun-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6517	12	22-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	6526	12	22-Feb-2025
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6527	12	05-Mar-2025
USB Wideband Power Sensor	Boonton	RTP5008	6585	12	20-Feb-2025
USB Wideband Power Sensor	Boonton	RTP5008	6586	12	20-Feb-2025
AC Programmable Power Supply	iTech	IT7324	6665	-	O/P Mon

Table 41

O/P Mon - Output Monitored using calibrated equipment

2.4 Authorised Band Edges

2.4.1 Specification Reference

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

2.4.2 Equipment Under Test and Modification State

A3401, S/N: JVJC362FKV - Modification State 0

2.4.3 Date of Test

04-September-2024 to 22-September-2024

2.4.4 Test Method

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

2.4.5 Environmental Conditions

Ambient Temperature	22.5 - 23.1 °C
Relative Humidity	44.4 - 49.4 %

2.4.6 Test Results

2.4 GHz WLAN

20 MHz Bandwidth - Core 0 (SISO)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
802.11b	1 Mbps	-	-	2412	2400	-50.62
802.11g	54 Mbps	-	-	2412	2400	-43.78
802.11n HT20	MCS 7	-	-	2412	2400	-44.23
802.11ax HE20	MCS 9x1	SU	-	2412	2400	-43.30
802.11ax HE20	MCS 9x1	52	37	2412	2400	-46.01

Table 42 - SISO Authorised Band Edge Results

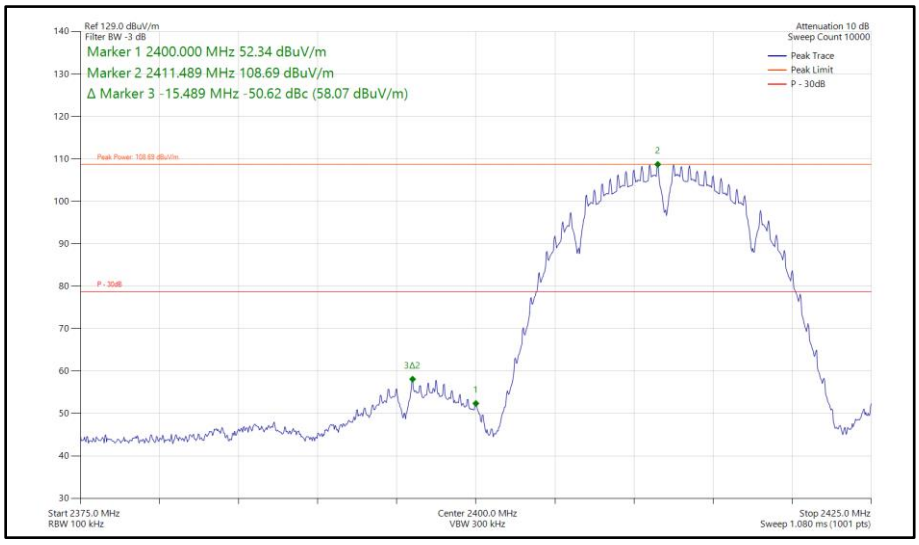

Figure 76 - 802.11b, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2400 MHz

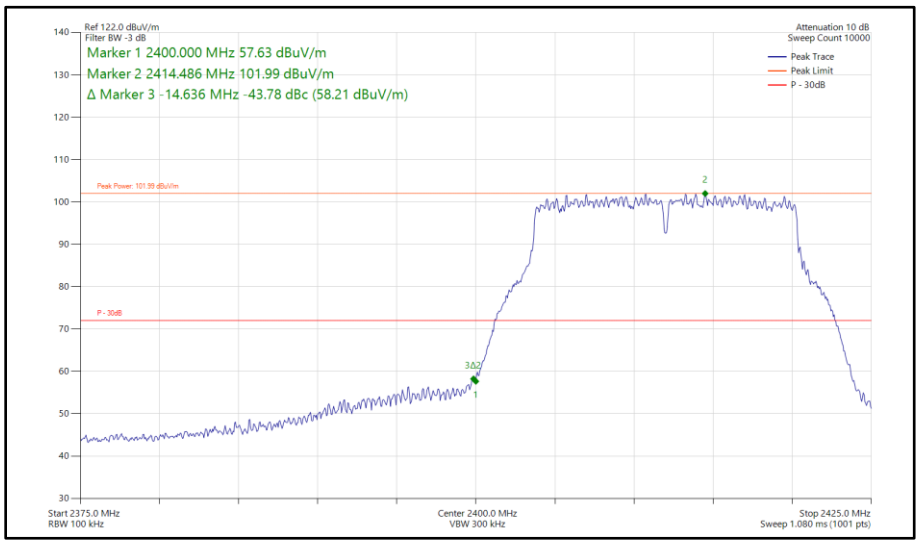

Figure 77 - 802.11g, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2400 MHz

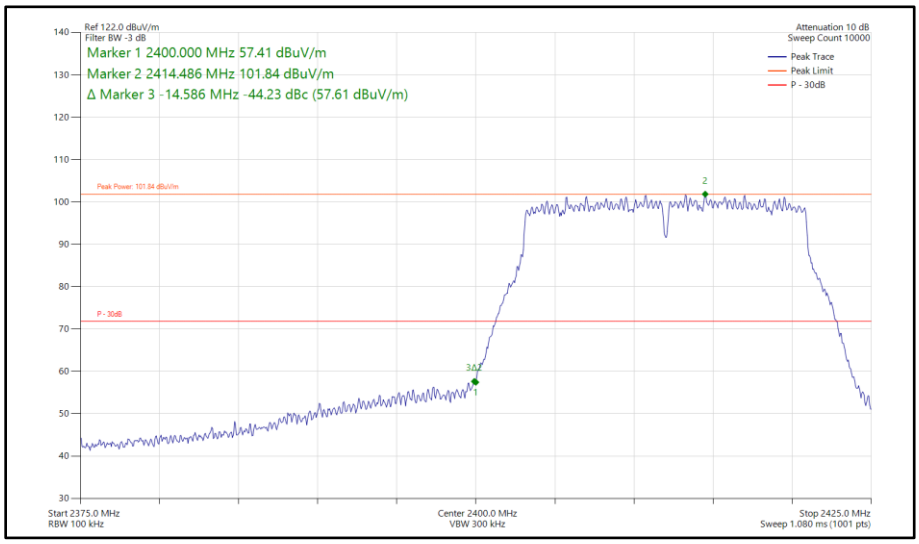

Figure 78 - 802.11n HT20, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2400 MHz

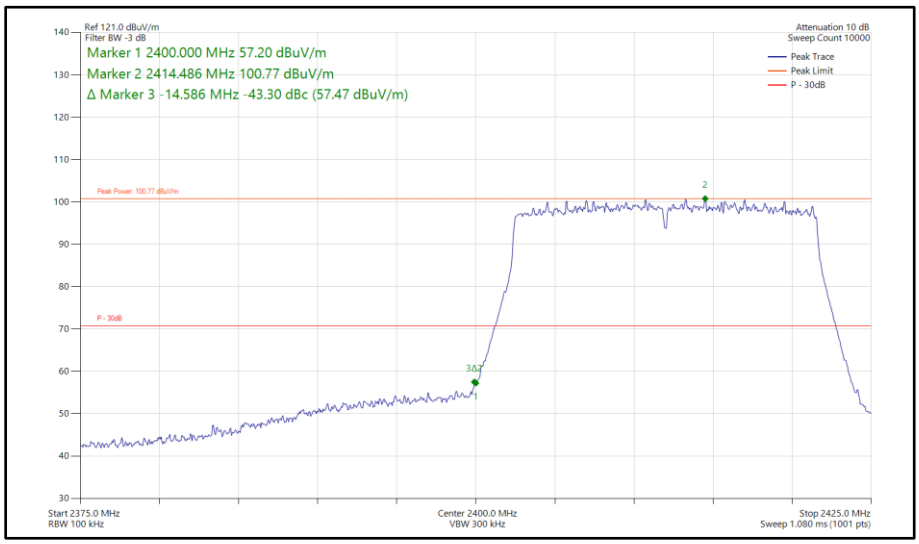

Figure 79 - 802.11ax HE20, SU, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2400 MHz

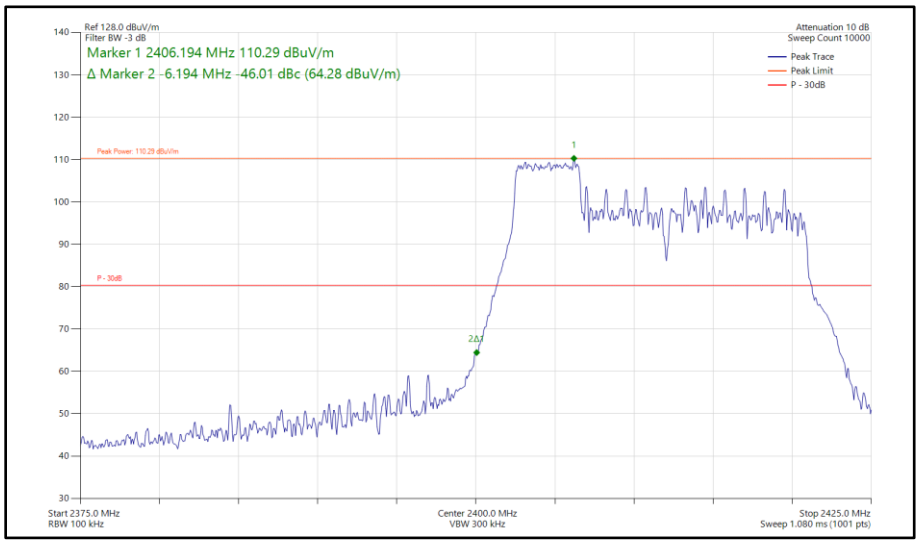

Figure 80 - 802.11ax HE20, RU 52-37, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2400 MHz

20 MHz Bandwidth - Core 1 (SISO)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
802.11b	1 Mbps	-	-	2412	2400	-52.34
802.11g	54 Mbps	-	-	2412	2400	-43.15
802.11n HT20	MCS 7	-	-	2412	2400	-44.31
802.11ax HE20	MCS 2x1	SU	-	2412	2400	-44.23
802.11ax HE20	MCS 9x1	106	53	2412	2400	-45.71

Table 43 - SISO Authorised Band Edge Results

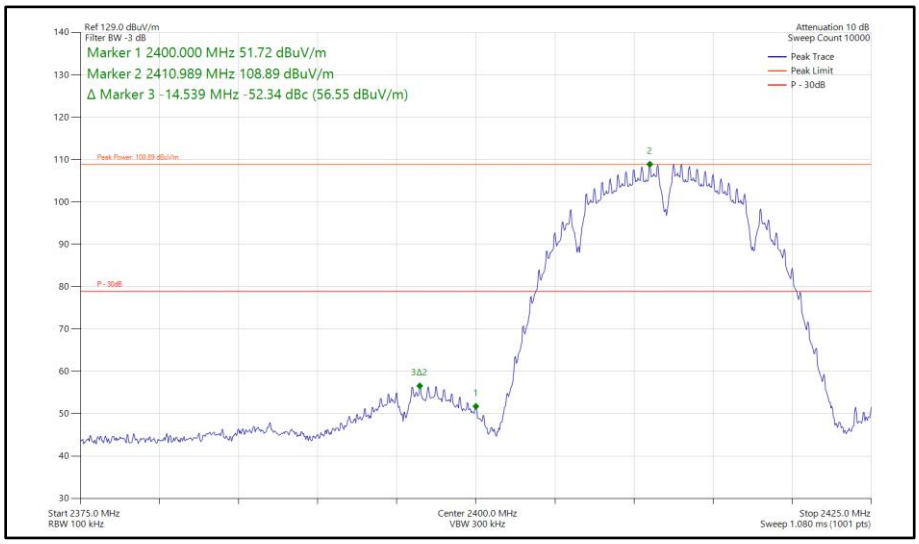

Figure 81 - 802.11b, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2400 MHz

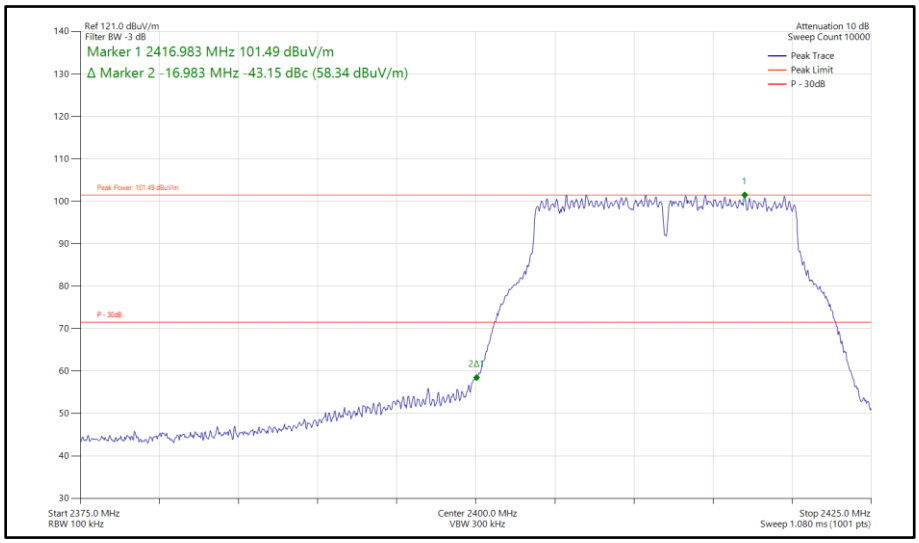

Figure 82 - 802.11g, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2400 MHz

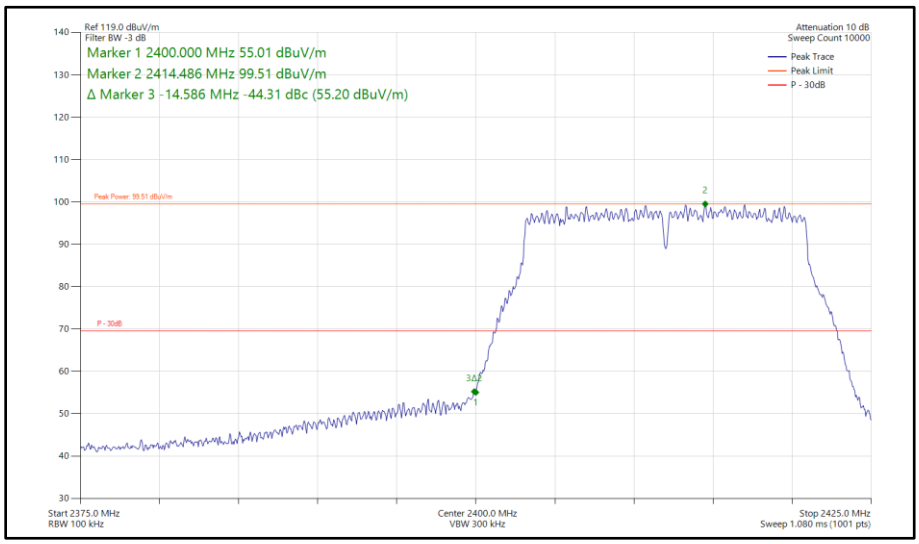

Figure 83 - 802.11n HT20, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2400 MHz

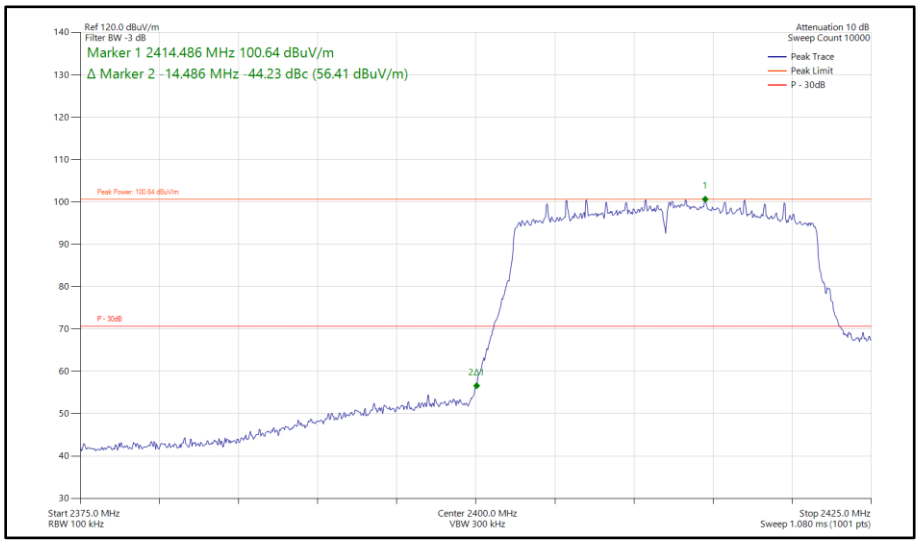

Figure 84 - 802.11ax HE20, SU, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2400 MHz

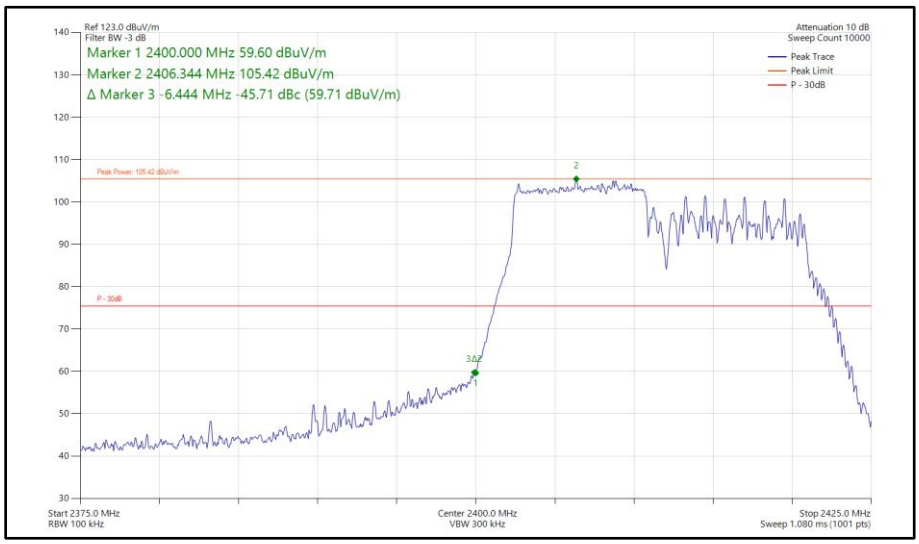

Figure 85 - 802.11ax HE20, RU 106-53, SISO, Core 1 - 2412 MHz Band Edge Frequency 2400 MHz

20 MHz Bandwidth - Core 0 - Core 1 (CDD)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
802.11n HT20	MCS 7	-	-	2412	2400	-45.76
802.11ax HE20	MCS 2x1	SU	-	2412	2400	-43.16
802.11ax HE20	MCS 9x1	106	53	2412	2400	-48.03

Table 44 - CDD Authorised Band Edge Results

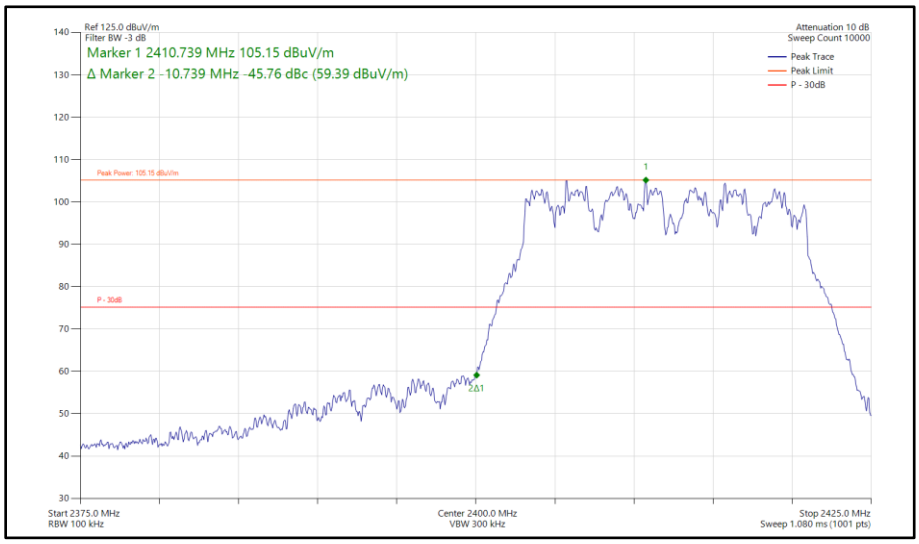

Figure 86 - 802.11n HT20, CDD, Core 0 - Core 1 - 2412 MHz Band Edge Frequency 2400 MHz

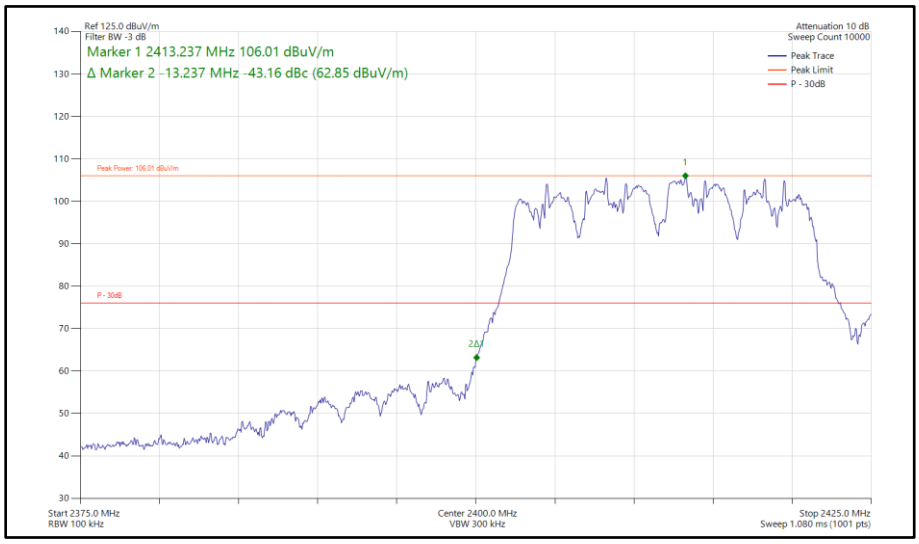

Figure 87 - 802.11ax HE20, SU, CDD, Core 0 - Core 1 - 2412 MHz Band Edge Frequency 2400 MHz

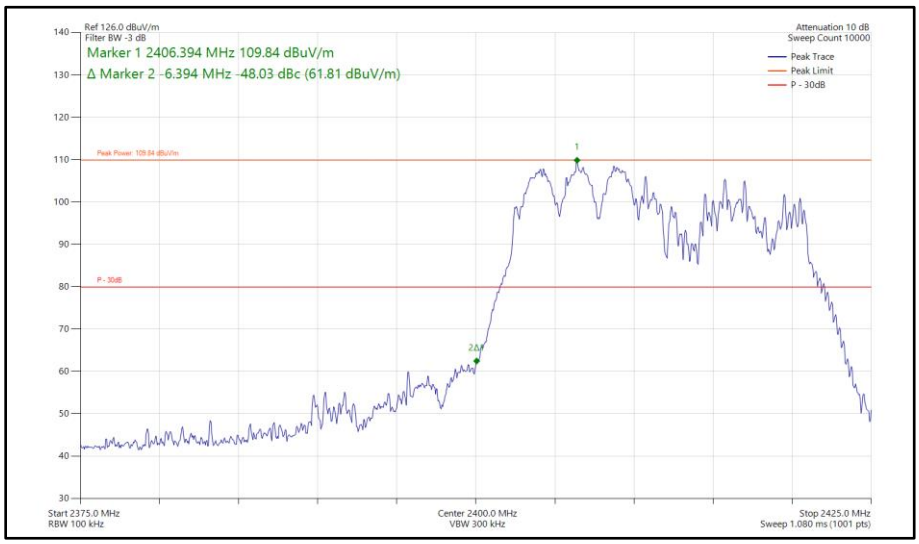

Figure 88 - 802.11ax HE20, RU 106-53, CDD, Core 0 - Core 1 - 2412 MHz Band Edge Frequency 2400 MHz

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

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

2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 14.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.4.2.	5125	-	Software
Test Receiver	Rohde & Schwarz	ESW44	5914	12	24-May-2025
1500W (300V 12A) AC Power Supply	iTech	IT7324	5956	-	O/P Mon
5m Semi-Anechoic Chamber (Dual-Axis)	Albatross Projects	RF Chamber 14	5958	36	26-Apr-2025
Compact Antenna Mast	Maturo Gmbh	CAM4.0-P	5959	-	TU
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5960	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5961	-	TU
Turntable	Maturo Gmbh	TT1.5SI	5962	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	6007	12	20-May-2025
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6141	12	05-May-2025
Digital Multimeter	Fluke	115	6145	12	06-Jun-2025
Humidity & Temperature meter	R.S Components	1364	6149	12	12-Aug-2025
SAC Switch Unit	TUV SUD	TUV_SSU_001	6190	12	22-Dec-2024
1m Cable	Junkosha	MWX241-01000AMSAMS/B	6741	12	01-Feb-2025
8M SMA Cable	Junkosha	MWX221-08000AMSAMS/B	6834	12	14-Aug-2025

Table 45

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

2.5 Spurious Radiated Emissions

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.209 and 15.247 (d)

2.5.2 Equipment Under Test and Modification State

A3401, S/N: JVJC362FKV - Modification State 0

2.5.3 Date of Test

01-September-2024 to 21-September-2024

2.5.4 Test Method

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

Ports on the EUT were terminated with loads as described in ANSI C63.10 clause 6.2.3.

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 (2442 MHz) only.

For frequencies > 1 GHz, plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

The plots shown are the characterisation of the EUT. The limits on the plots represent the most stringent case for restricted bands, (74/54 dBuV/m) when compared to 30 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dBµV/m to µV/m:
10^(Field Strength in dBµV/m/20).

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

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

2.5.5 Example Test Setup Diagram

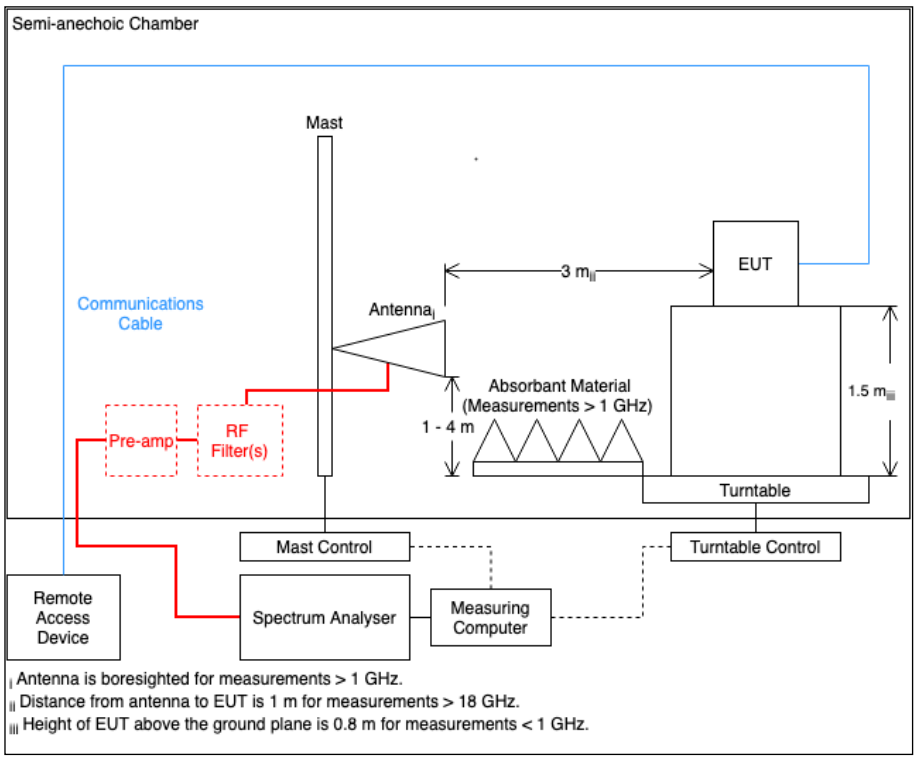

Figure 89

2.5.6 Environmental Conditions

Ambient Temperature	21.9 - 23.6 °C
Relative Humidity	43.7 - 59.3 %

2.5.7 Test Results

2.4 GHz WLAN

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2353.756	35.34	54.00	-18.66	RMS	0	301	Vertical
4824.023	38.05	54.00	-15.95	RMS	326	266	Vertical

Table 46 - 2412 MHz (CH1), 802.11b, Core 0, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

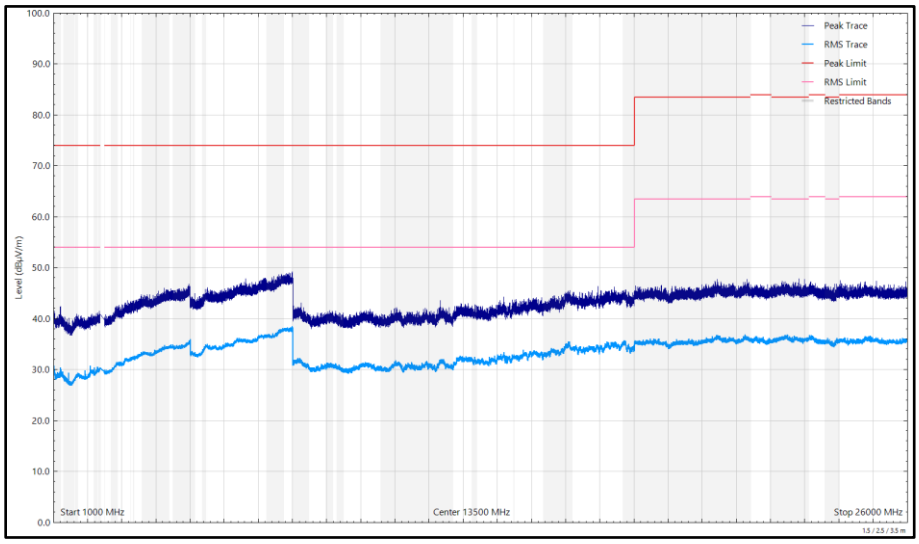

Figure 90 - 2412 MHz (CH1), 802.11b, Core 0, 1 GHz to 26 GHz, Horizontal

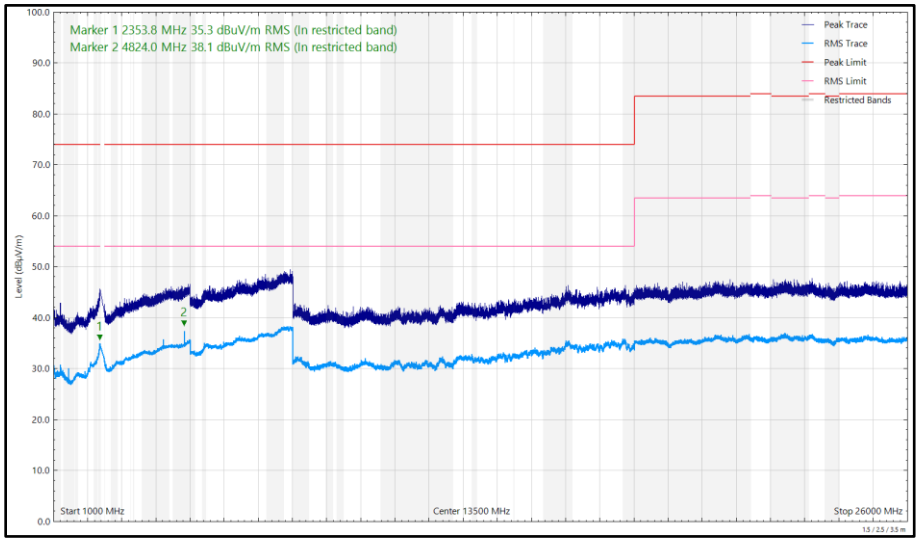

Figure 91 - 2412 MHz (CH1), 802.11b, Core 0, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.996	36.87	54.00	-17.13	RMS	357	323	Vertical
2483.618	35.65	54.00	-18.35	RMS	19	384	Vertical
2485.391	56.88	74.00	-17.12	Peak	360	293	Vertical

Table 47 - 2442 MHz (CH7), 802.11b, Core 0, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

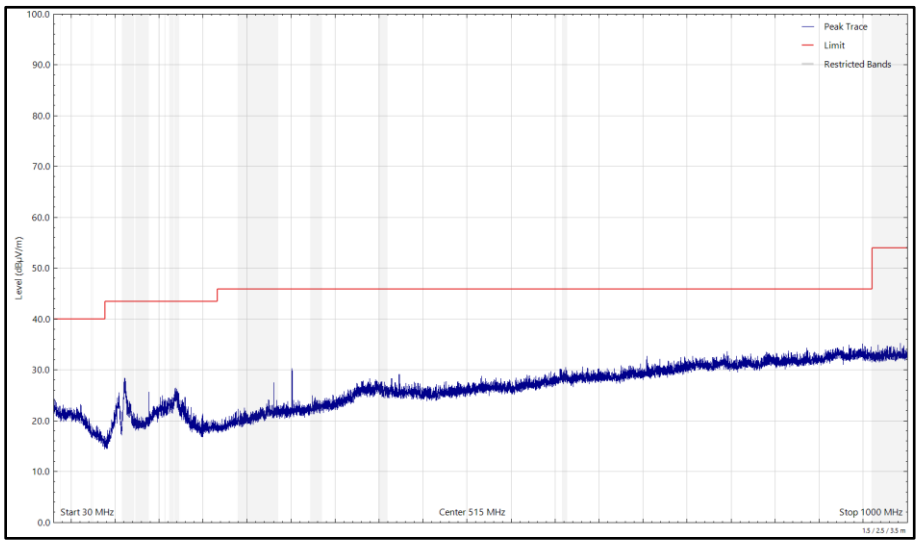

Figure 92 - 2442 MHz (CH7), 802.11b, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

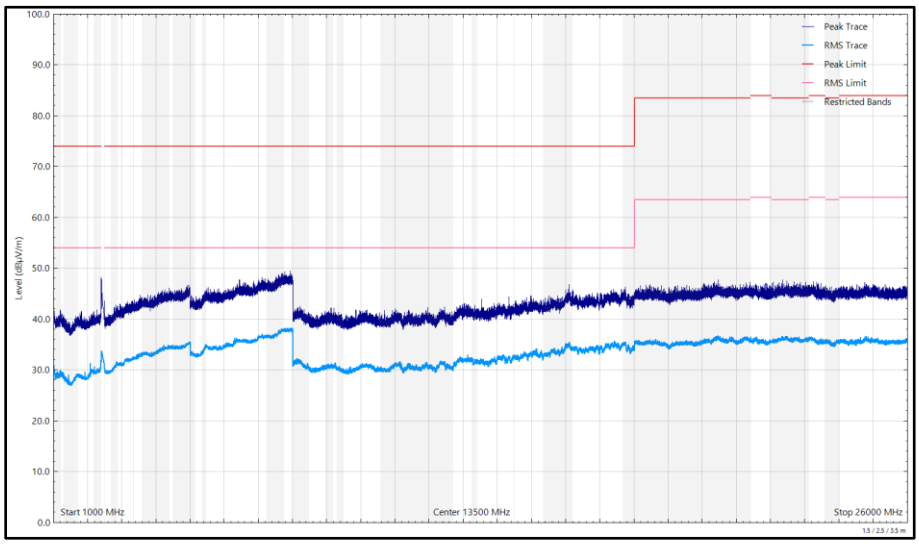

Figure 93 - 2442 MHz (CH7), 802.11b, Core 0, 1 GHz to 26 GHz, Horizontal

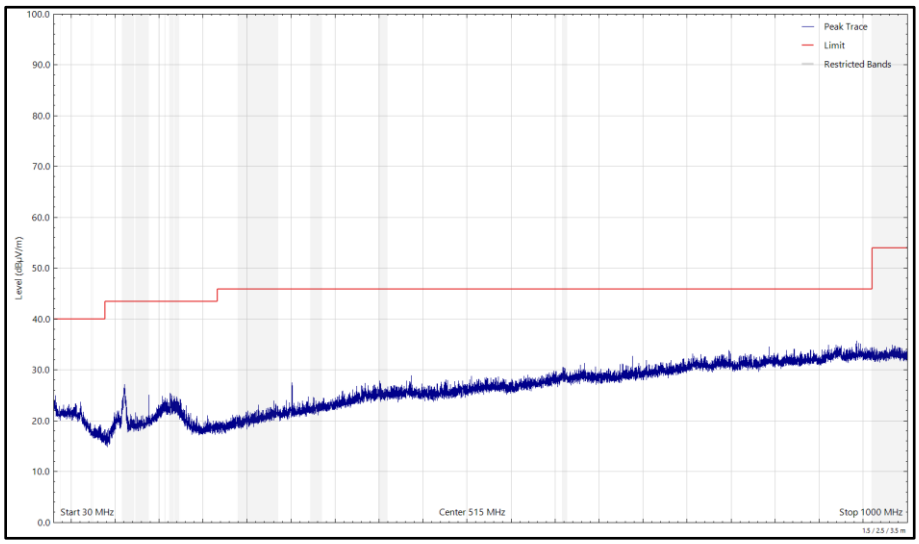

Figure 94 - 2442 MHz (CH7), 802.11b, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

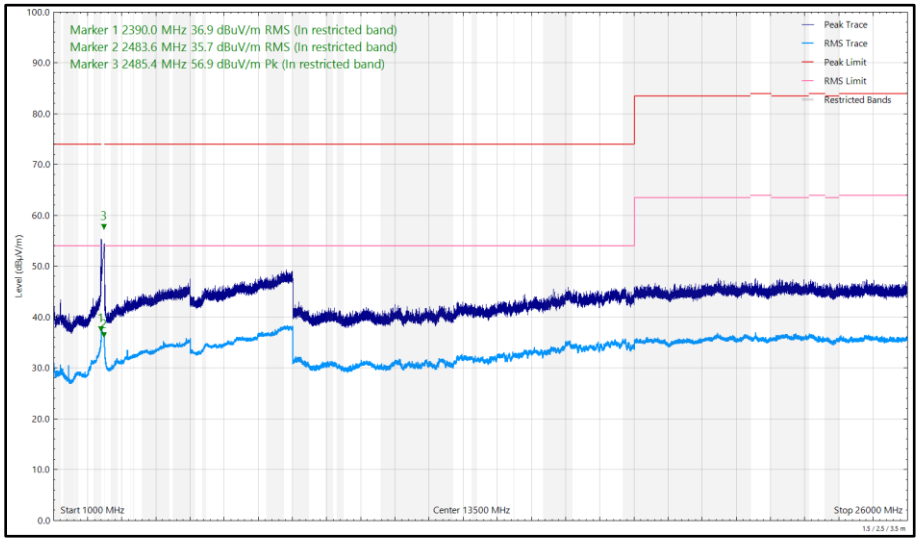

Figure 95 - 2442 MHz (CH7), 802.11b, Core 0, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.234	34.24	54.00	-19.76	RMS	358	273	Vertical

Table 48 - 2472 MHz (CH13), 802.11b, Core 0, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

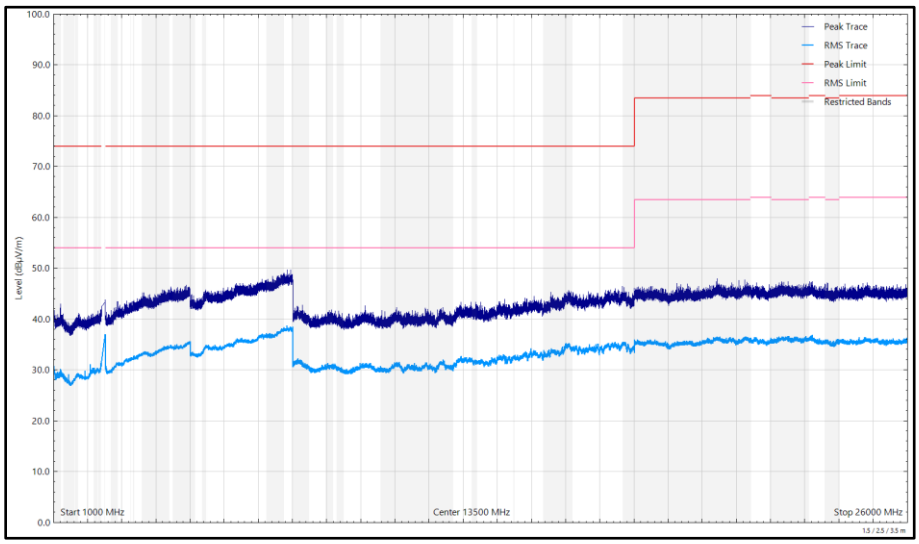

Figure 96 - 2472 MHz (CH13), 802.11b, Core 0, 1 GHz to 26 GHz, Horizontal

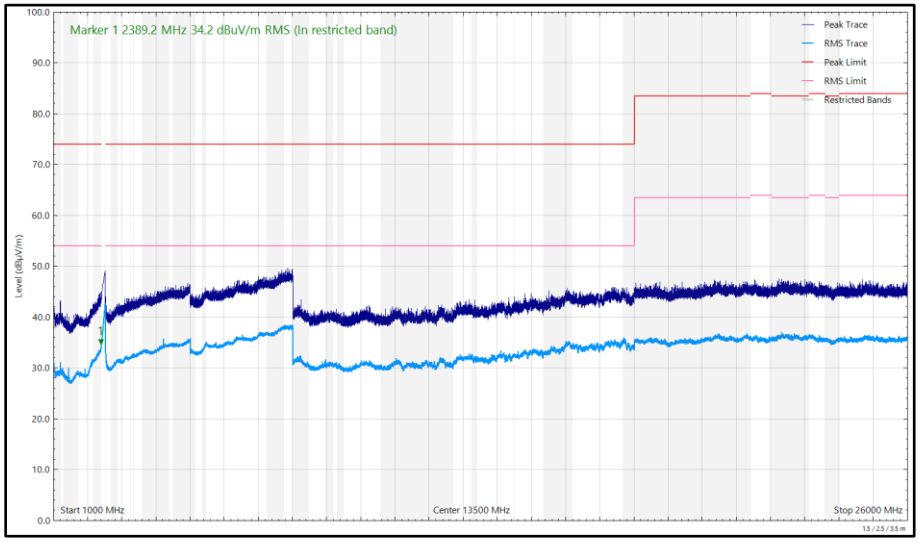

Figure 97 - 2472 MHz (CH13), 802.11b, Core 0, 1 GHz to 26 GHz, Vertical

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

Table 49 - 2412 MHz (CH1), 802.11b, Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

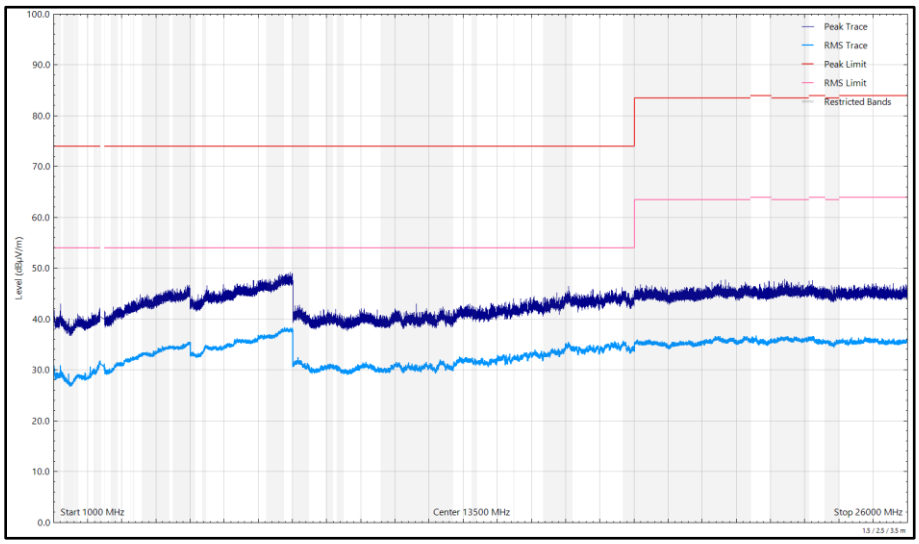

Figure 98 - 2412 MHz (CH1), 802.11b, Core 1, 1 GHz to 26 GHz, Horizontal

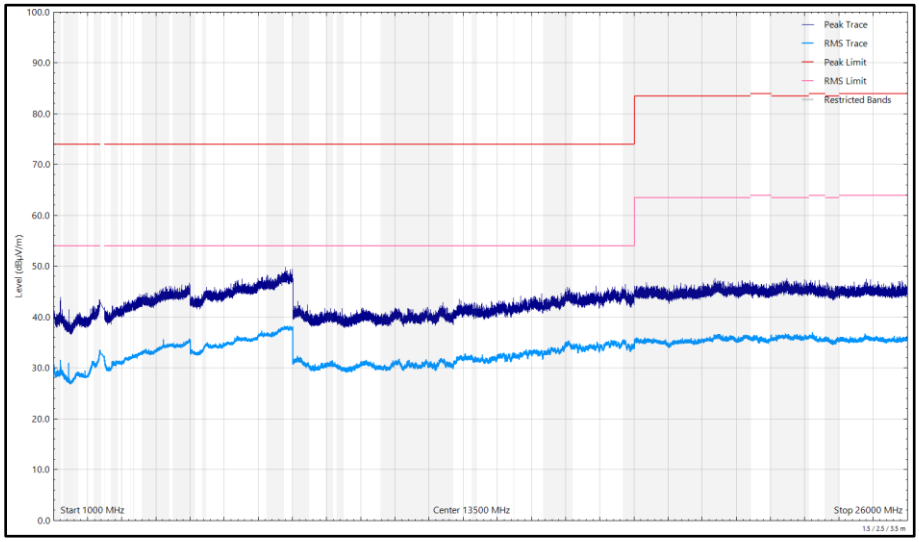

Figure 99 - 2412 MHz (CH1), 802.11b, Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.959	34.28	54.00	-19.72	RMS	11	293	Vertical
2483.586	35.70	54.00	-18.30	RMS	44	390	Vertical
2483.646	56.48	74.00	-17.52	Peak	51	397	Vertical

Table 50 - 2442 MHz (CH7), 802.11b, Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

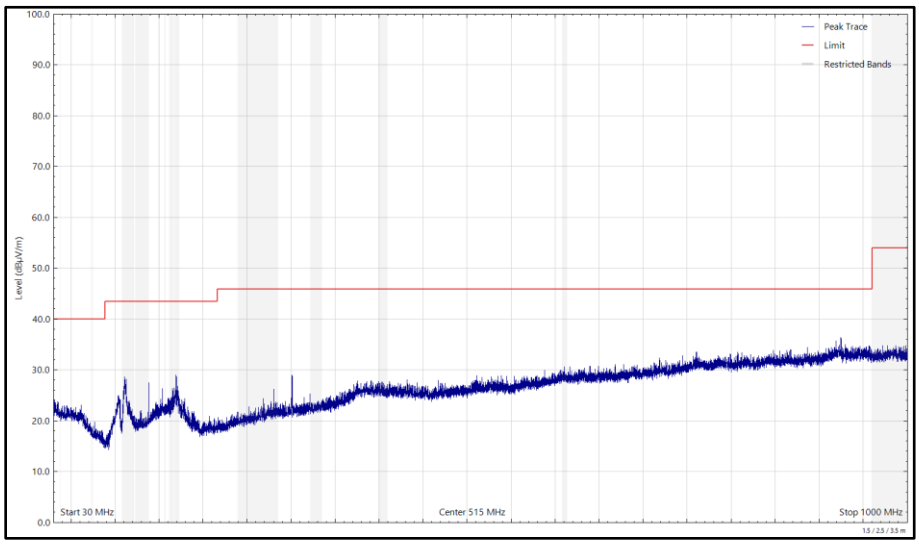

Figure 100 - 2442 MHz (CH7), 802.11b, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

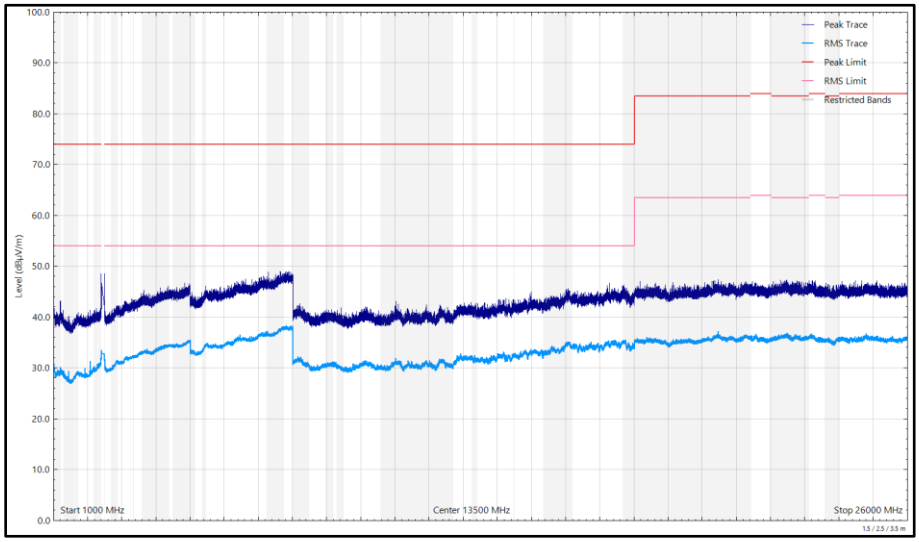

Figure 101 - 2442 MHz (CH7), 802.11b, Core 1, 1 GHz to 26 GHz, Horizontal

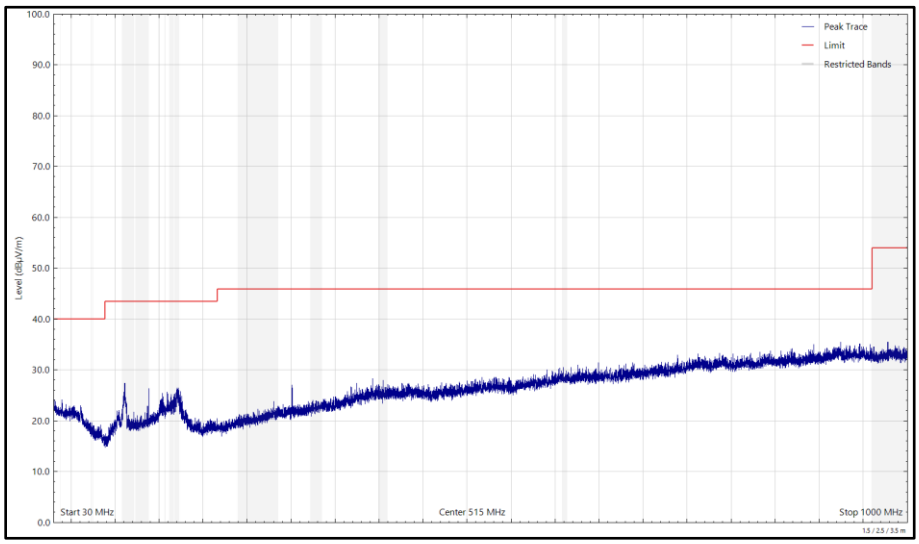

Figure 102 - 2442 MHz (CH7), 802.11b, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

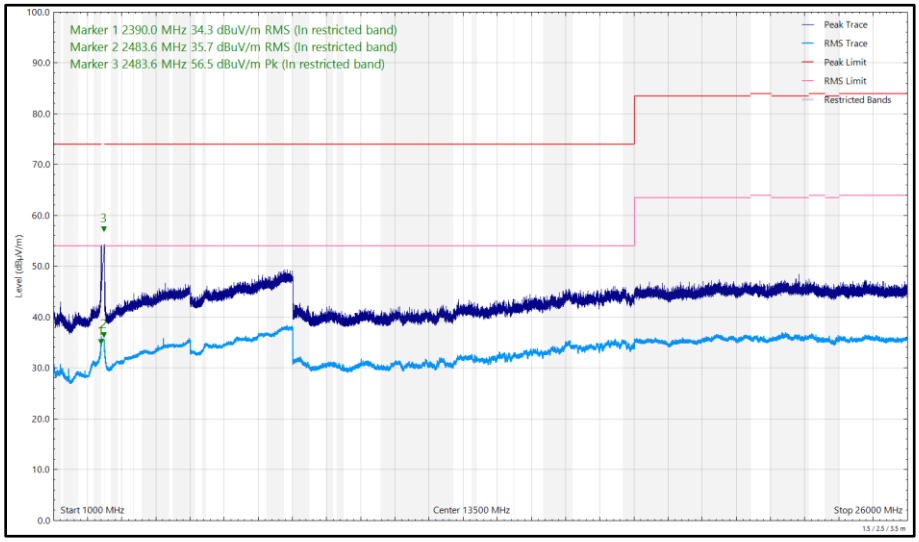

Figure 103 - 2442 MHz (CH7), 802.11b, Core 1, 1 GHz to 26 GHz, Vertical

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

Table 51 - 2472 MHz (CH13), 802.11b, Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

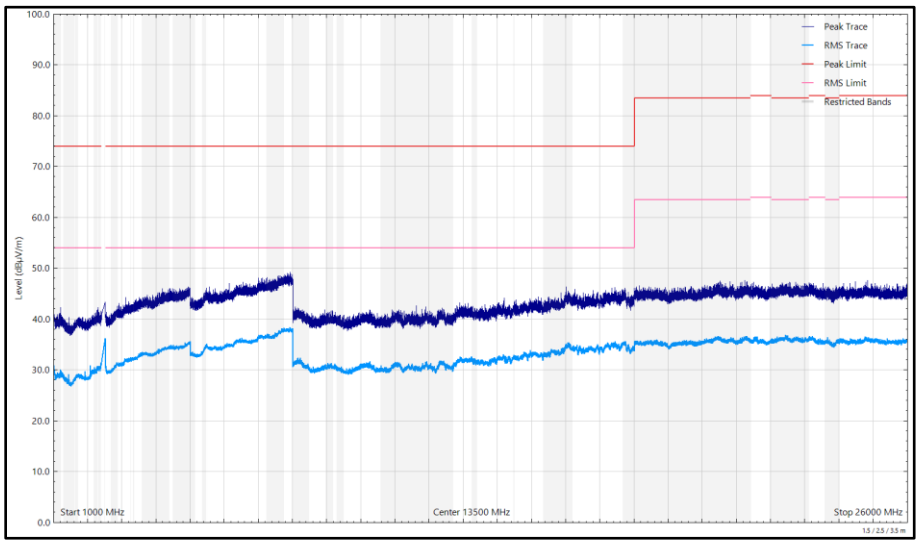

Figure 104 - 2472 MHz (CH13), 802.11b, Core 1, 1 GHz to 26 GHz, Horizontal

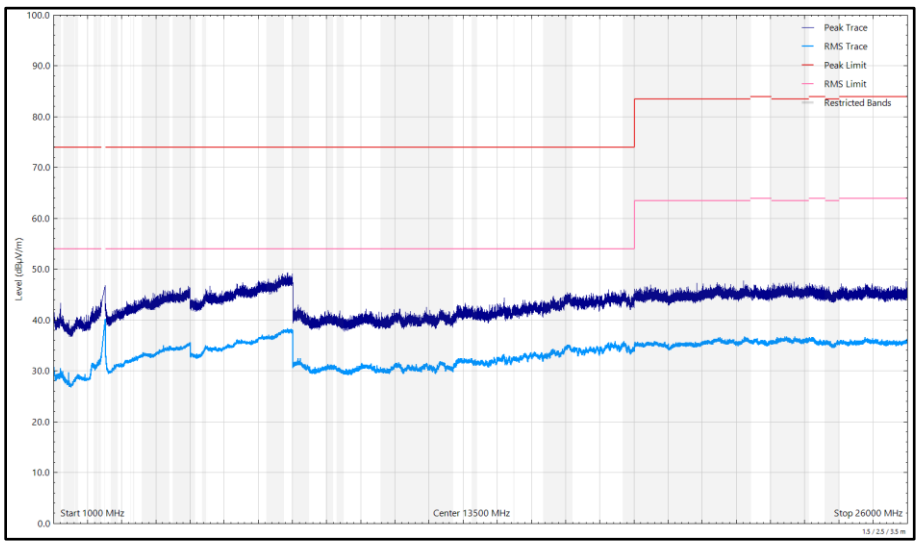

Figure 105 - 2472 MHz (CH13), 802.11b, Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2354.867	39.67	54.00	-14.33	RMS	3	306	Vertical
2483.744	34.86	54.00	-19.14	RMS	26	338	Vertical

Table 52 - 2412 MHz (CH1), 802.11g, Core 0, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

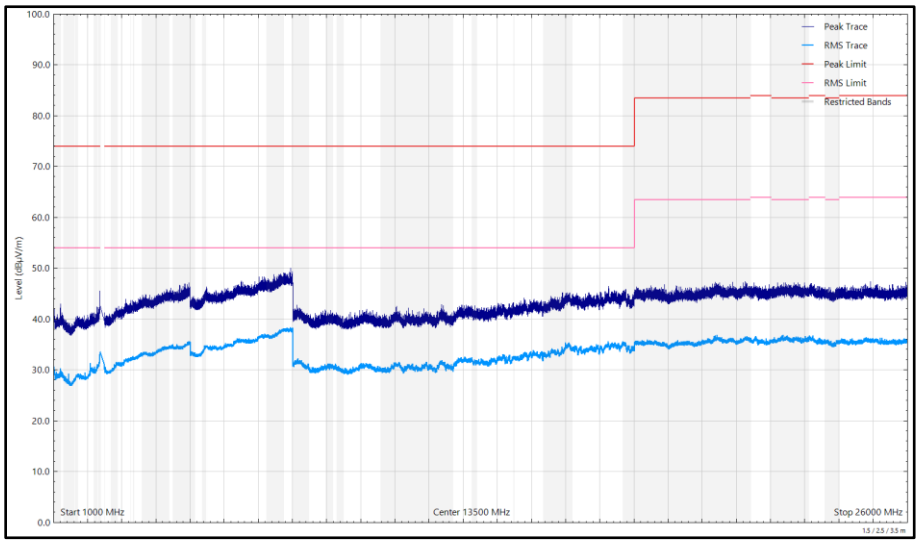

Figure 106 - 2412 MHz (CH1), 802.11g, Core 0, 1 GHz to 26 GHz, Horizontal

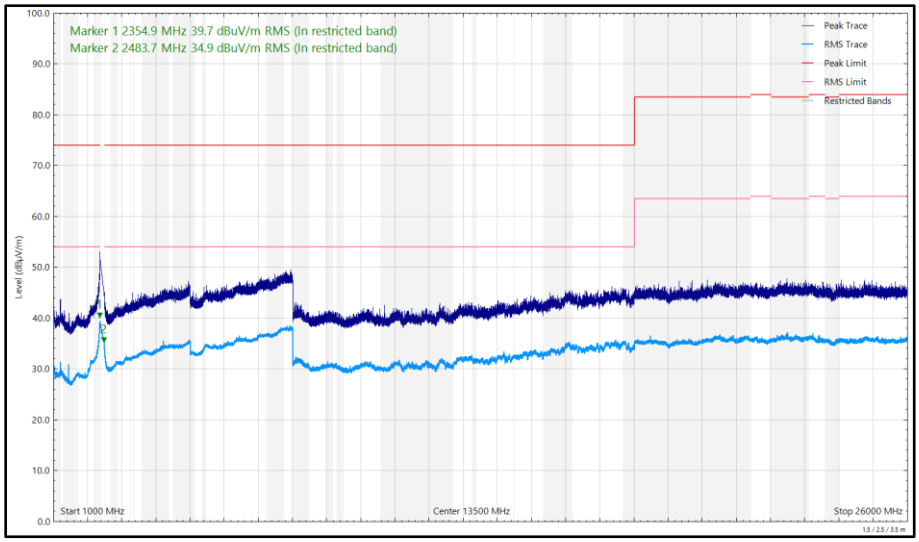

Figure 107 - 2412 MHz (CH1), 802.11g, Core 0, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.946	36.14	54.00	-17.86	RMS	302	400	Horizontal
2389.986	40.99	54.00	-13.01	RMS	356	279	Vertical
2483.504	45.66	54.00	-8.34	RMS	0	347	Vertical
2483.785	40.46	54.00	-13.54	RMS	54	367	Horizontal
2484.282	61.27	74.00	-12.73	Peak	0	267	Vertical

Table 53 - 2442 MHz (CH7), 802.11g, Core 0, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

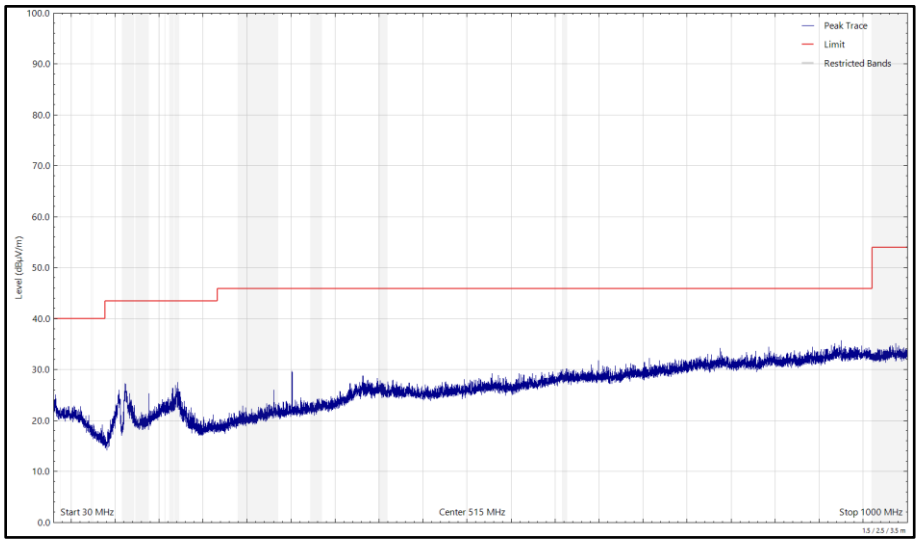

Figure 108 - 2442 MHz (CH7), 802.11g, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

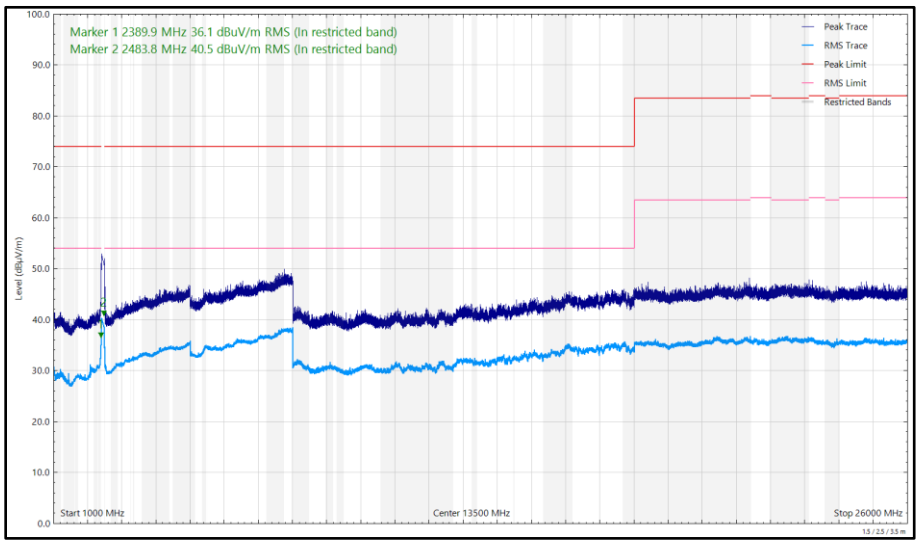

Figure 109 - 2442 MHz (CH7), 802.11g, Core 0, 1 GHz to 26 GHz, Horizontal

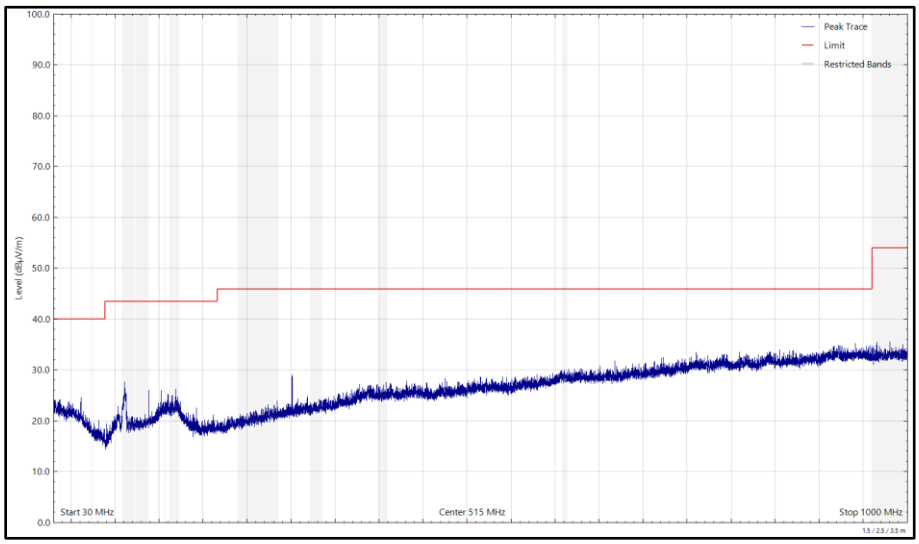

Figure 110 - 2442 MHz (CH7), 802.11g, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

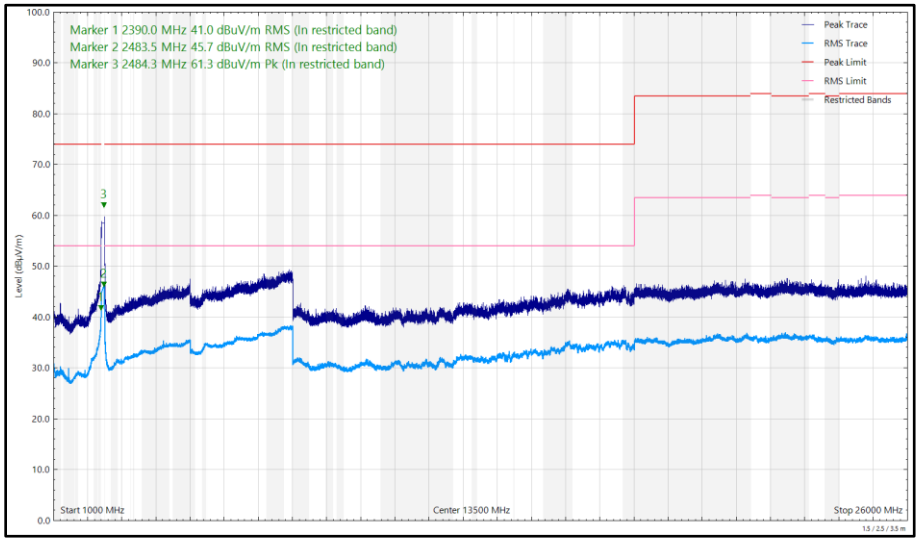

Figure 111 - 2442 MHz (CH7), 802.11g, Core 0, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.773	37.45	54.00	-16.55	RMS	359	302	Vertical
4211.908	34.19	54.00	-19.81	RMS	28	342	Vertical

Table 54 - 2472 MHz (CH13), 802.11g, Core 0, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

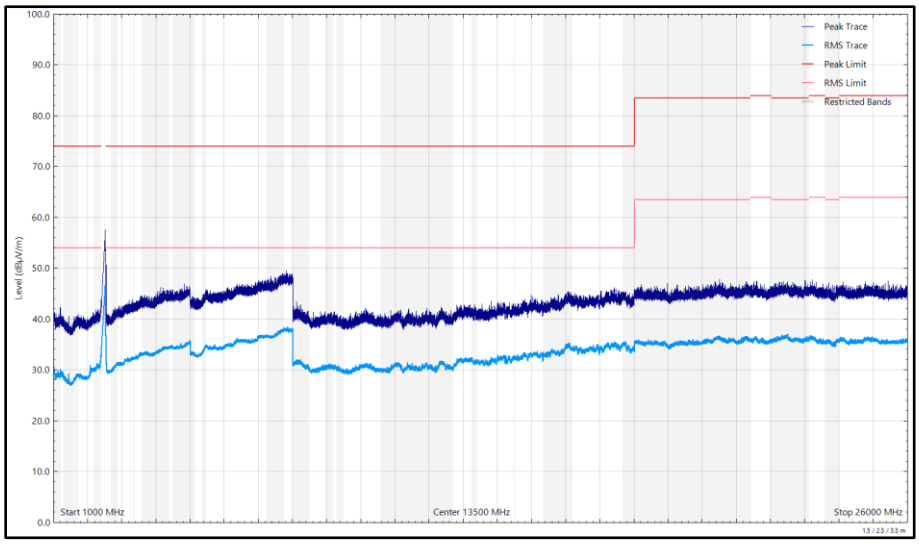

Figure 112 - 2472 MHz (CH13), 802.11g, Core 0, 1 GHz to 26 GHz, Horizontal

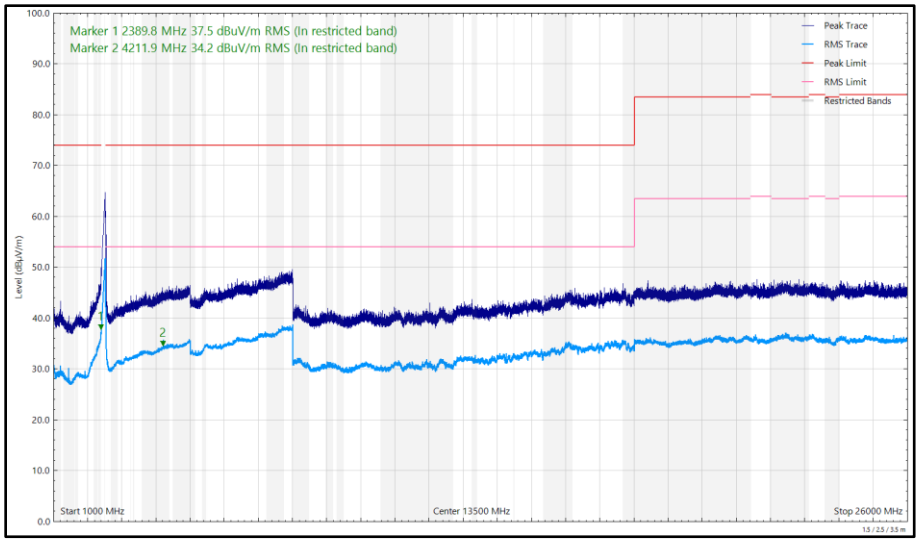

Figure 113 - 2472 MHz (CH13), 802.11g, Core 0, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2354.889	39.23	54.00	-14.77	RMS	41	383	Vertical
2483.599	36.32	54.00	-17.68	RMS	47	388	Vertical

Table 55 - 2412 MHz (CH1), 802.11g, Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

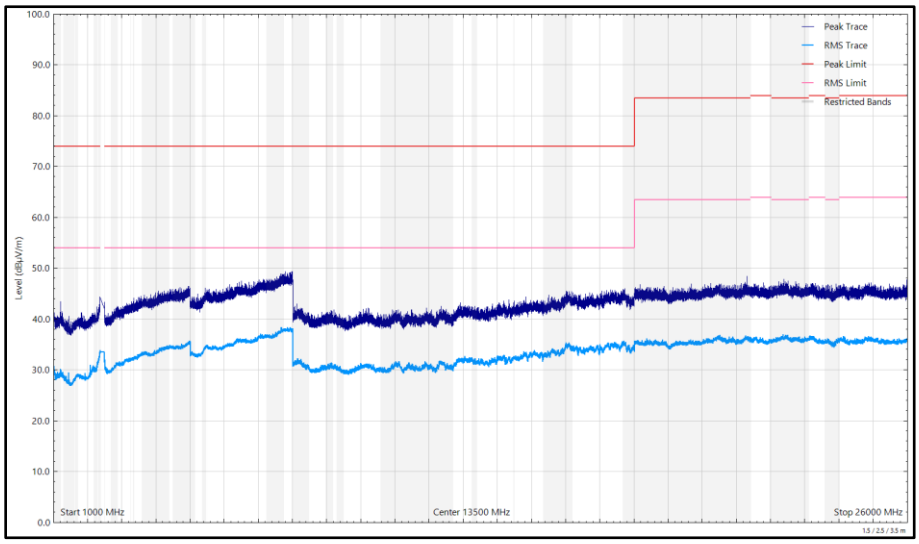

Figure 114 - 2412 MHz (CH1), 802.11g, Core 1, 1 GHz to 26 GHz, Horizontal

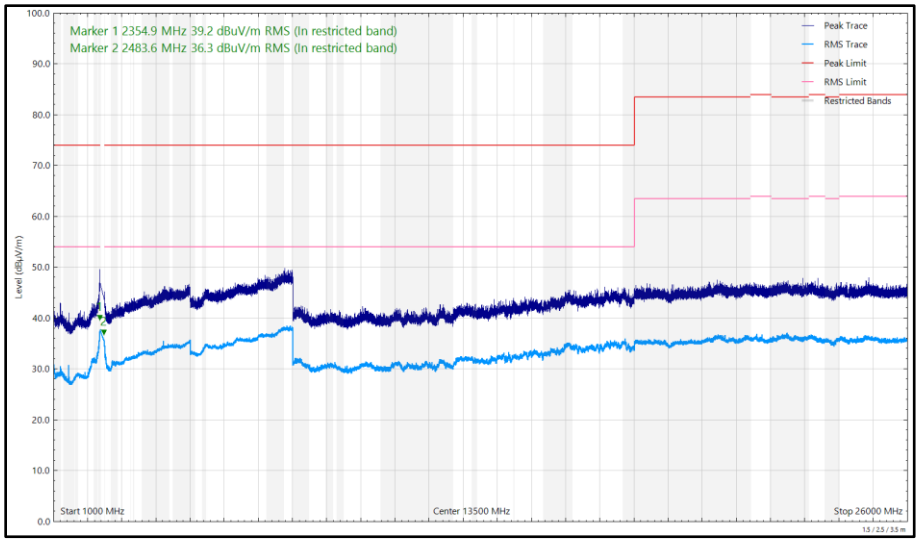

Figure 115 - 2412 MHz (CH1), 802.11g, Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.696	36.86	54.00	-17.14	RMS	58	377	Horizontal
2389.761	39.45	54.00	-14.55	RMS	36	384	Vertical
2483.501	64.28	74.00	-9.72	Peak	46	385	Vertical
2483.520	44.36	54.00	-9.64	RMS	50	392	Vertical
2483.544	41.01	54.00	-12.99	RMS	60	373	Horizontal
2483.569	61.01	74.00	-12.99	Peak	55	379	Horizontal

Table 56 - 2442 MHz (CH7), 802.11g, Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

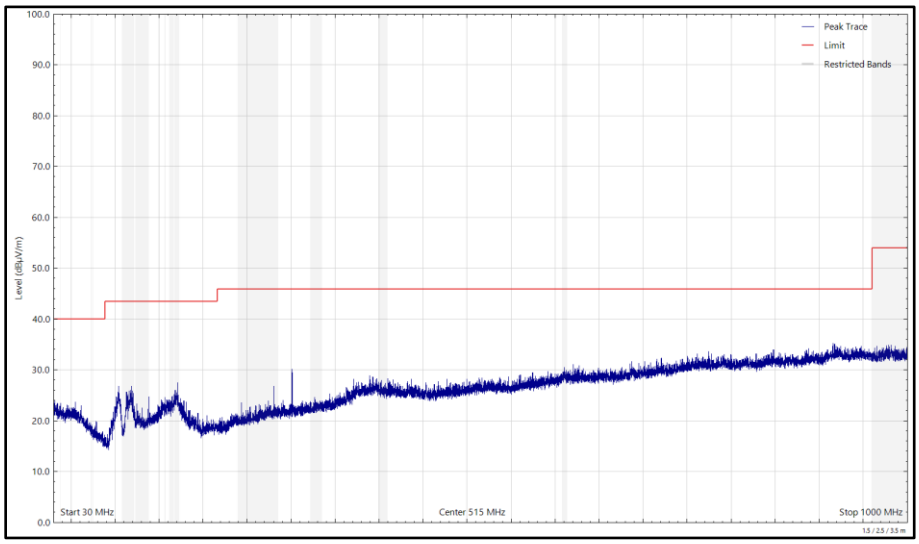

Figure 116 - 2442 MHz (CH7), 802.11g, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

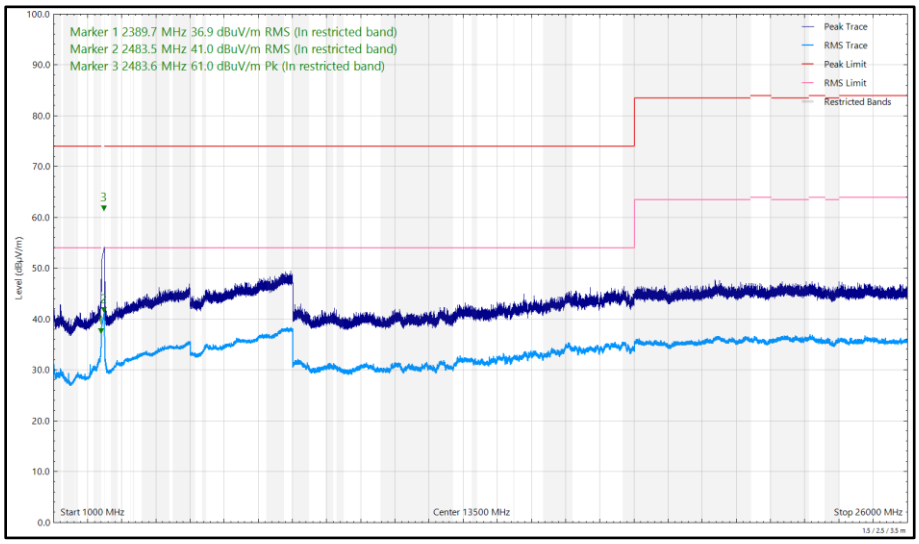

Figure 117 - 2442 MHz (CH7), 802.11g, Core 1, 1 GHz to 26 GHz, Horizontal

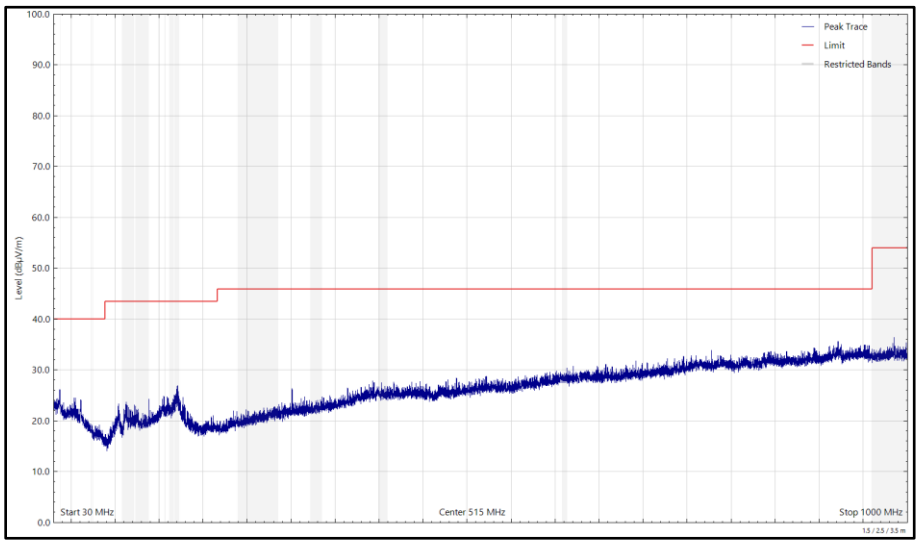

Figure 118 - 2442 MHz (CH7), 802.11g, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

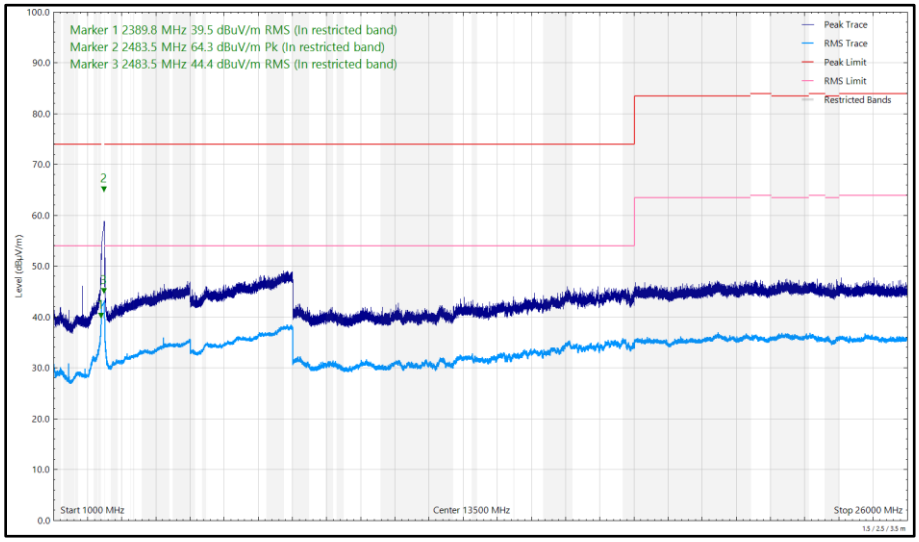

Figure 119 - 2442 MHz (CH7), 802.11g, Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2509.020	67.56	76.00	-8.44	Peak	36	383	Vertical

Table 57 - 2472 MHz (CH13), 802.11g, Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

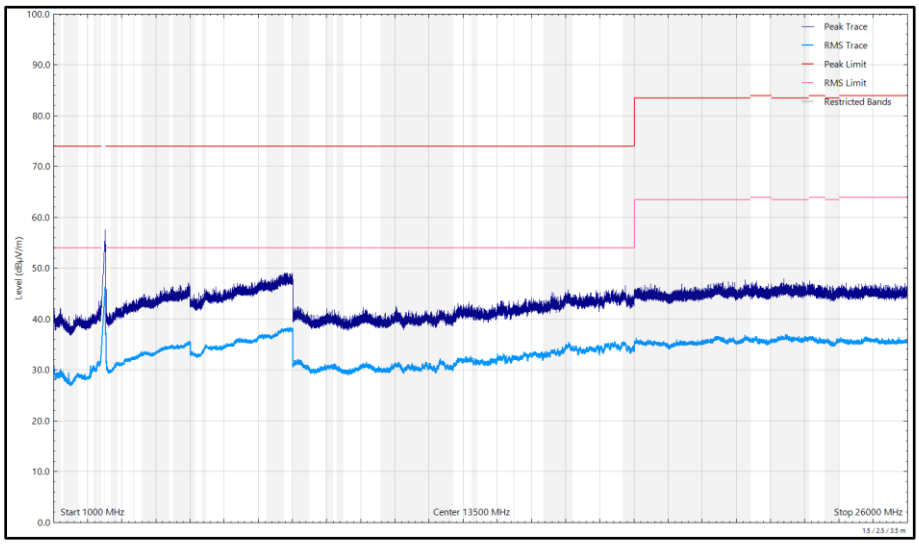

Figure 120 - 2472 MHz (CH13), 802.11g, Core 1, 1 GHz to 26 GHz, Horizontal

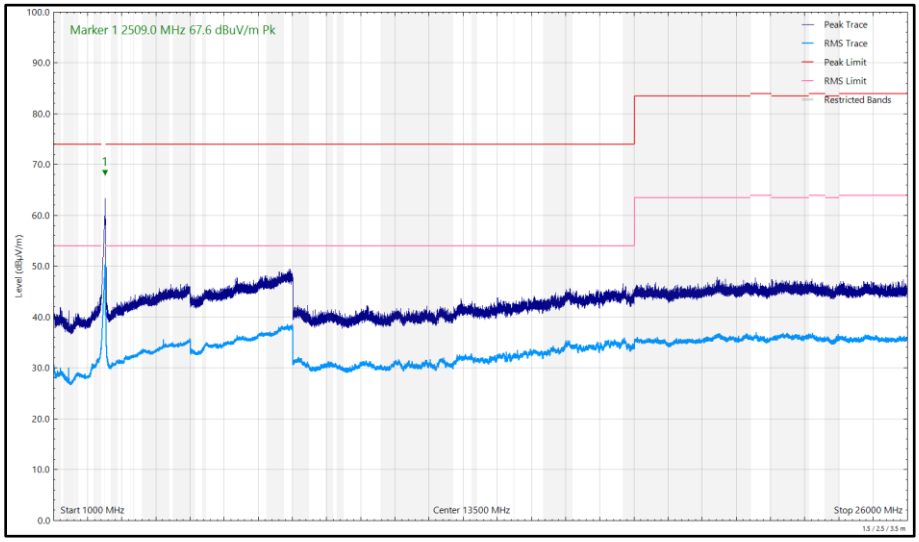

Figure 121 - 2472 MHz (CH13), 802.11g, Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2353.997	41.40	54.00	-12.60	RMS	1	304	Vertical
2354.959	56.17	74.00	-17.83	Peak	355	297	Vertical
2354.981	37.72	54.00	-16.28	RMS	57	380	Horizontal
2483.571	36.72	54.00	-17.28	RMS	25	392	Vertical

Table 58 - 2412 MHz (CH1), HT20, CDD, Core 0 + Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

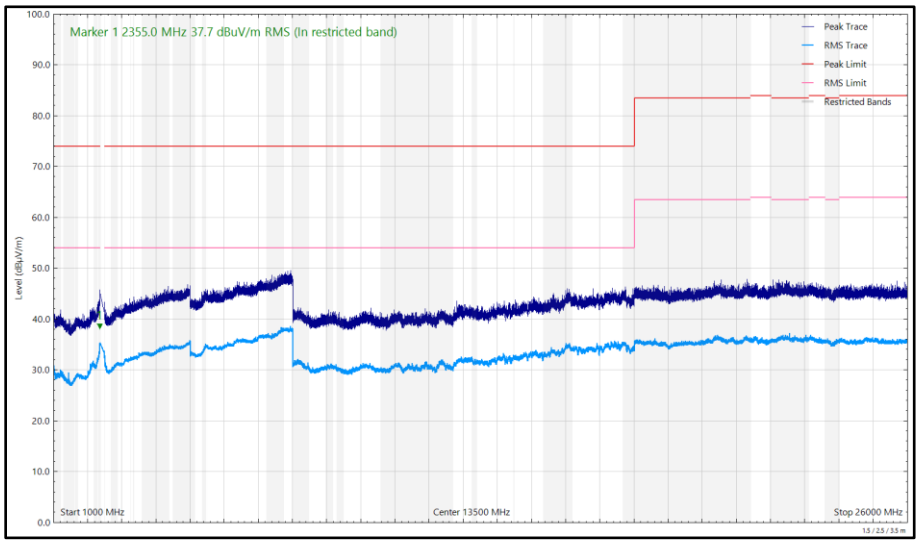

Figure 122 - 2412 MHz (CH1), HT20, CDD, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

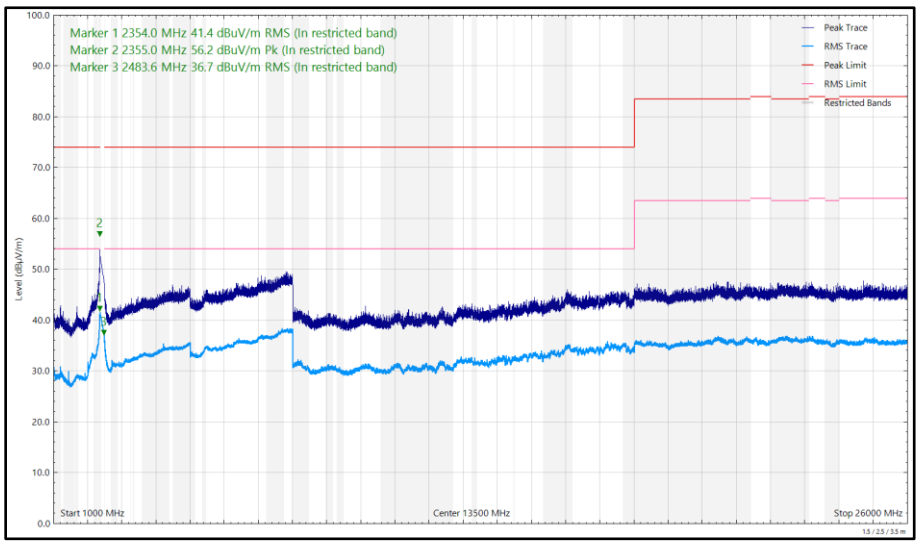

Figure 123 - 2412 MHz (CH1), HT20, CDD, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2389.032	38.59	54.00	-15.41	RMS	50	397	Horizontal
2389.646	59.00	74.00	-15.00	Peak	358	320	Vertical
2389.989	43.10	54.00	-10.90	RMS	2	277	Vertical
2398.982	63.17	76.00	-12.83	Peak	350	284	Vertical
2483.639	66.37	74.00	-7.63	Peak	19	310	Vertical
2483.806	44.40	54.00	-9.60	RMS	48	370	Horizontal
2484.399	63.58	74.00	-10.42	Peak	58	384	Horizontal
2484.529	47.53	54.00	-6.47	RMS	349	332	Vertical

Table 59 - 2442 MHz (CH7), HT20, CDD, Core 0 + Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

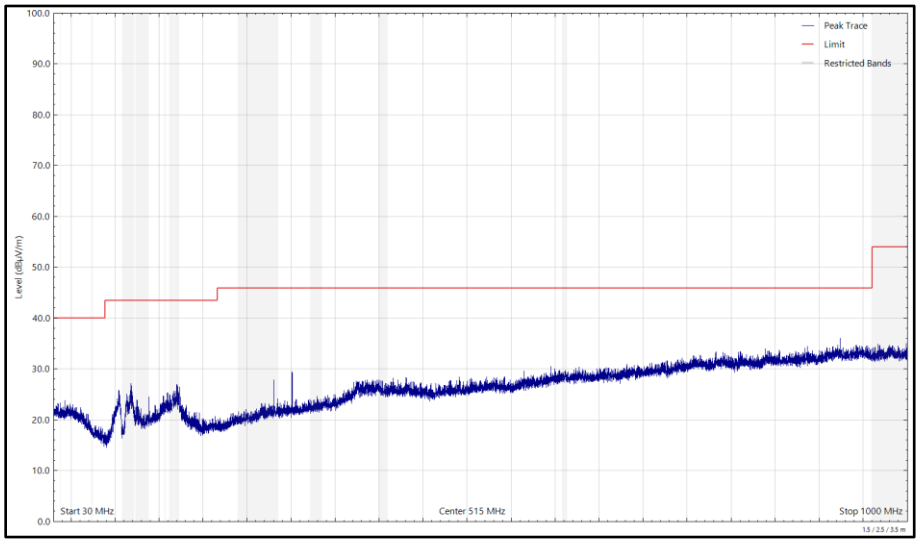

Figure 124 - 2442 MHz (CH7), HT20, CDD, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

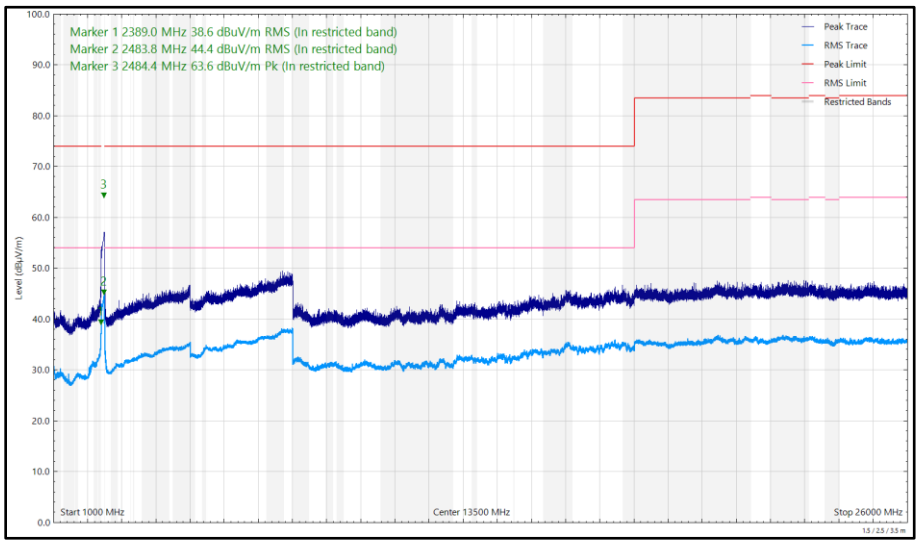

Figure 125 - 2442 MHz (CH7), HT20, CDD, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

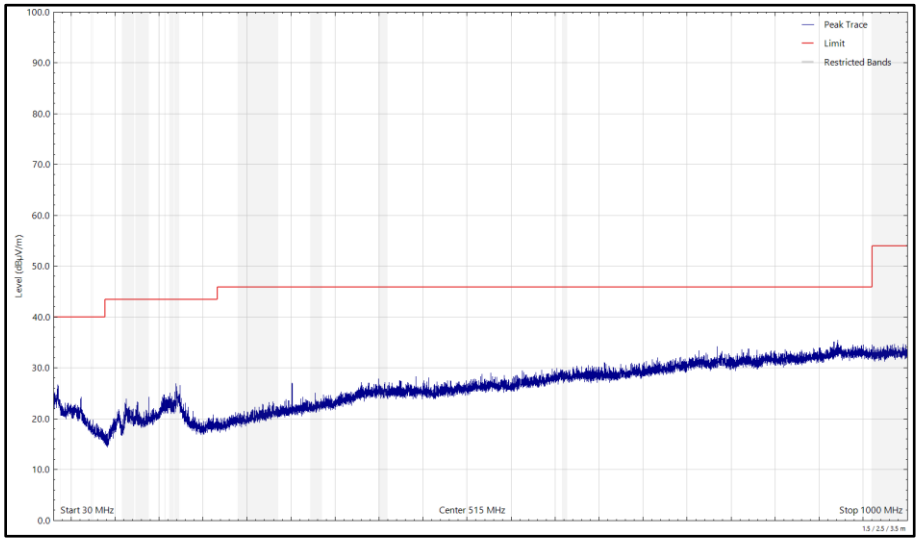

Figure 126 - 2442 MHz (CH7), HT20, CDD, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

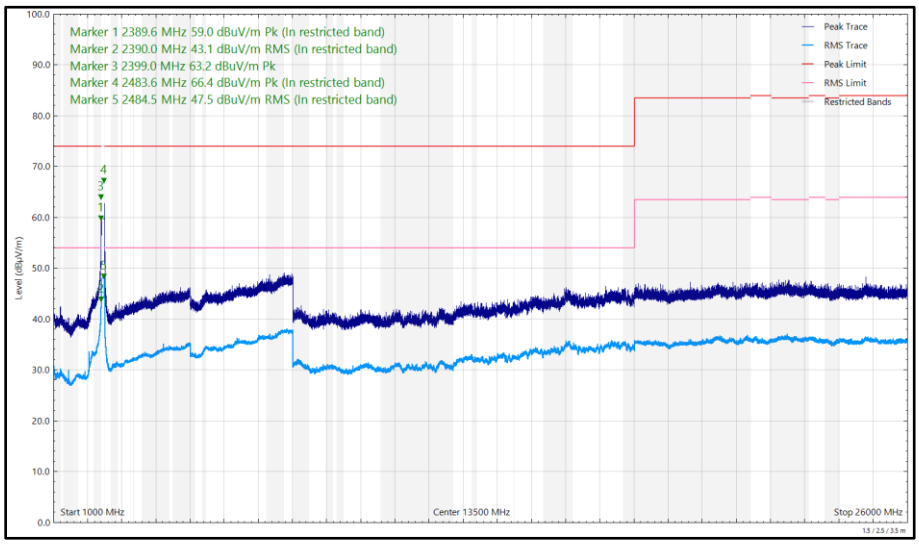

Figure 127 - 2442 MHz (CH7), HT20, CDD, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2388.827	38.97	54.00	-15.03	RMS	0	318	Vertical
2508.534	70.13	76.00	-5.87	Peak	0	370	Vertical
2508.873	69.11	76.00	-6.89	Peak	54	380	Horizontal

Table 60 - 2472 MHz (CH13), HT20, CDD, Core 0 + Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

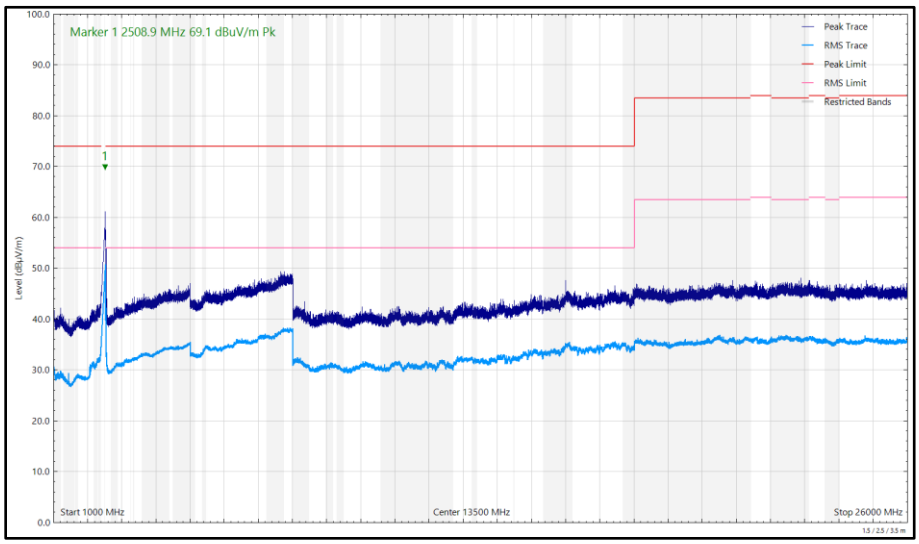

Figure 128 - 2472 MHz (CH13), HT20, CDD, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

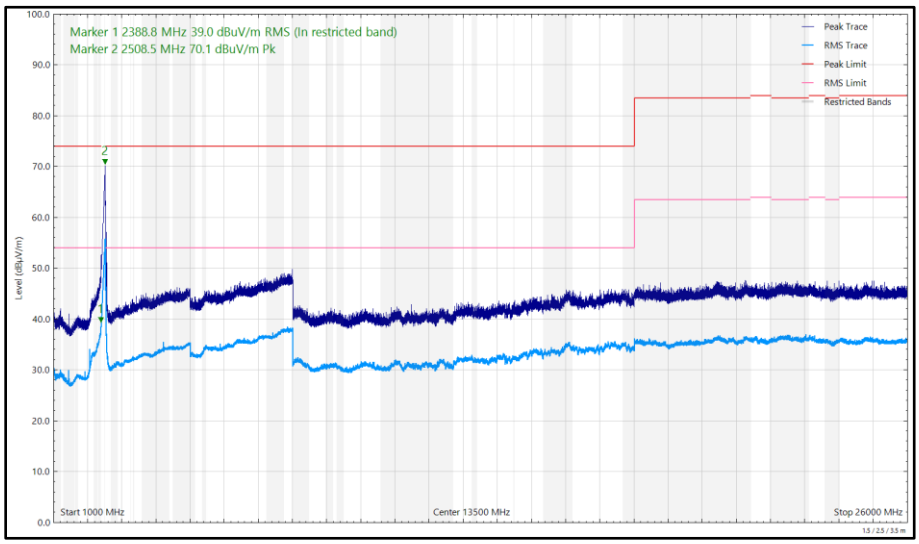

Figure 129 - 2472 MHz (CH13), HT20, CDD, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2348.940	56.17	74.00	-17.83	Peak	359	296	Vertical
2354.159	35.86	54.00	-18.14	RMS	56	388	Horizontal
2354.478	39.56	54.00	-14.44	RMS	7	295	Vertical
2484.432	35.69	54.00	-18.31	RMS	352	346	Vertical
4806.508	35.98	54.00	-18.02	RMS	328	333	Vertical

Table 61 - 2412 MHz (CH1), HE20, RU26-0, CDD, Core 0 + Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

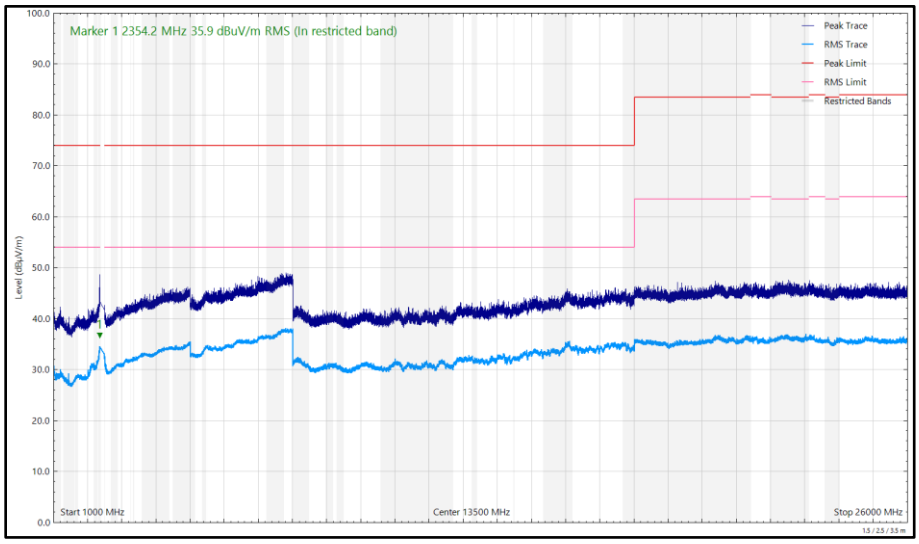

Figure 130 - 2412 MHz (CH1), HE20, RU26-0, CDD, Core 0 + Core 1, 1 GHz to 26 GHz, Horizontal

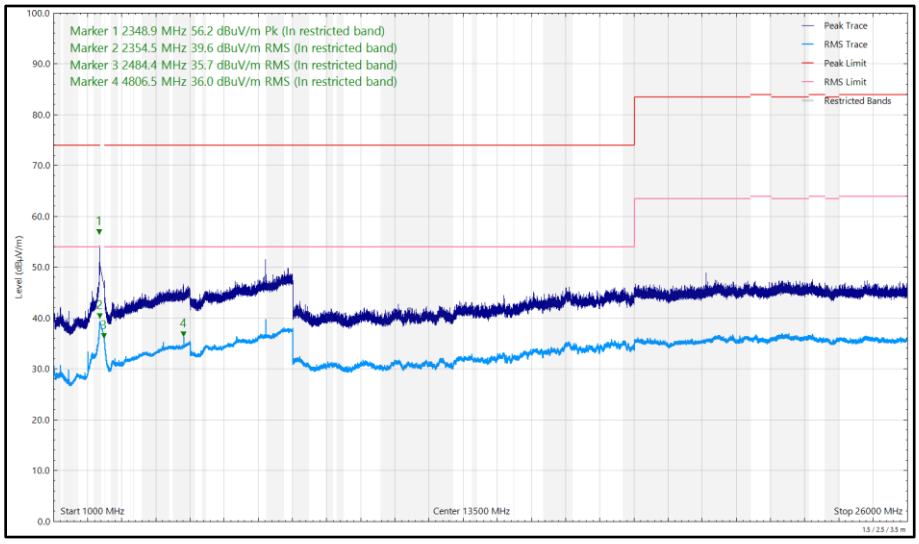

Figure 131 - 2412 MHz (CH1), HE20, RU26-0, CDD, Core 0 + Core 1, 1 GHz to 26 GHz, Vertical