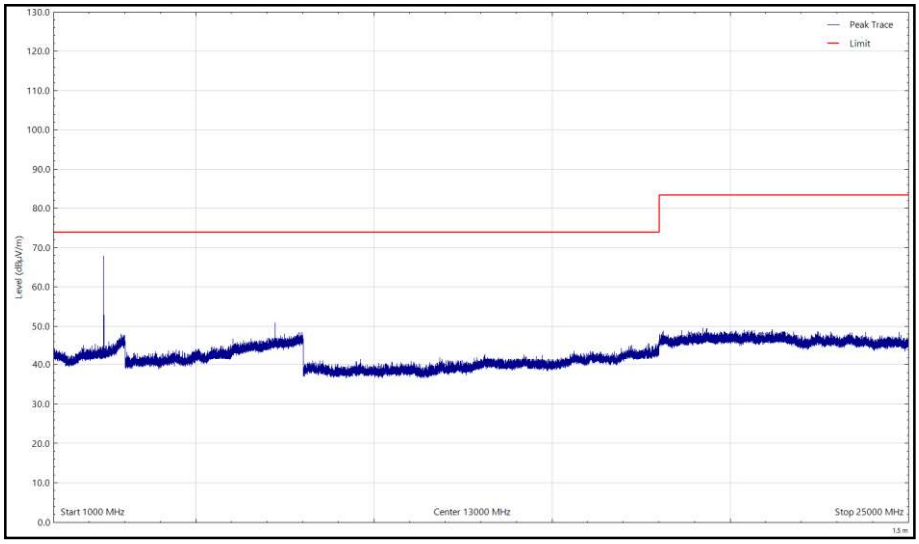

Figure 54 - DTS_Bot_2Mbps_Z, 2404 MHz, 1 GHz to 25 GHz, Vertical (Peak)

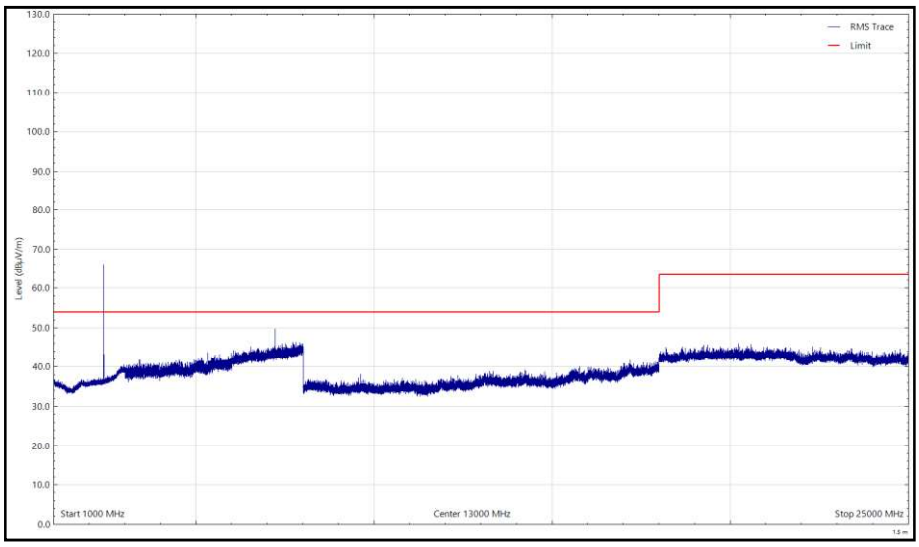

Figure 55 - DTS_Bot_2Mbps_Z, 2404 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 39 - DTS_Mid_2Mbps_Z, 2442 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

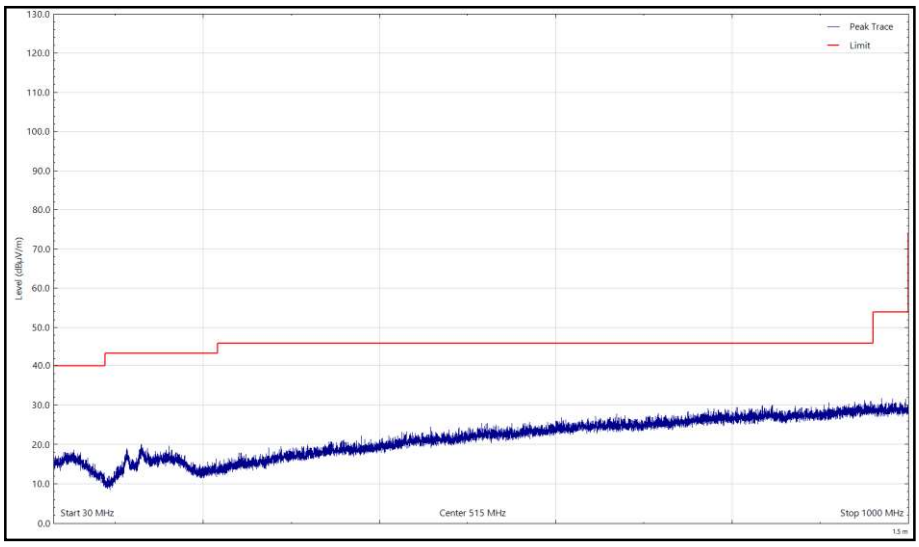

Figure 56 - DTS_Mid_2Mbps_Z, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

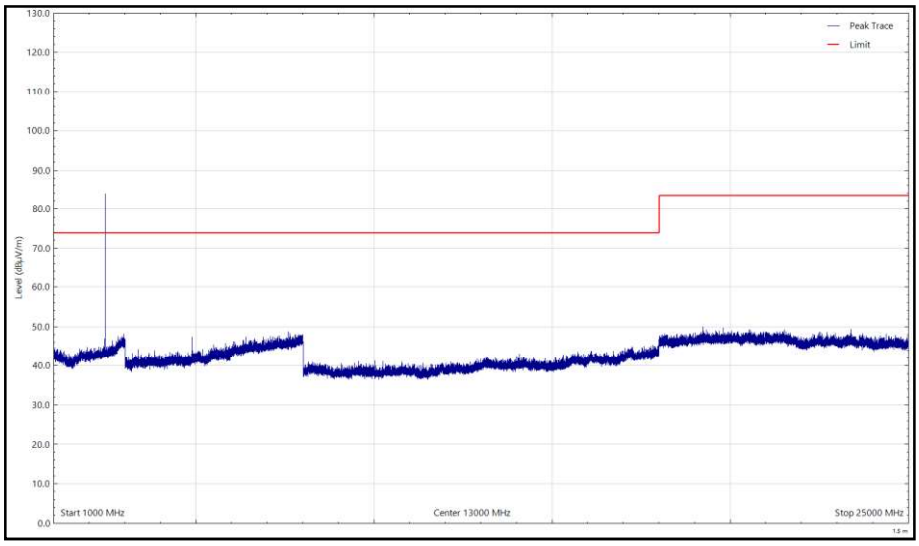

Figure 57 - DTS_Mid_2Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

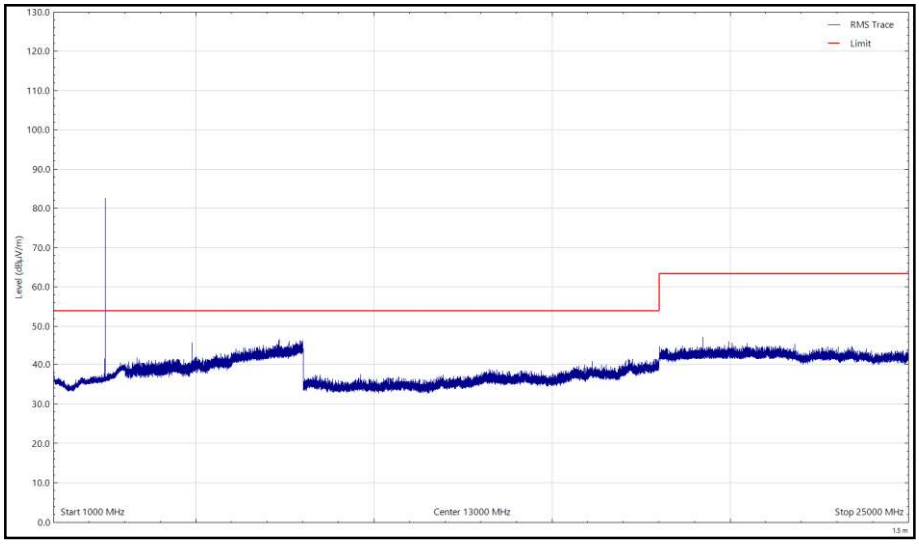

Figure 58 - DTS_Mid_2Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Horizontal (rms)

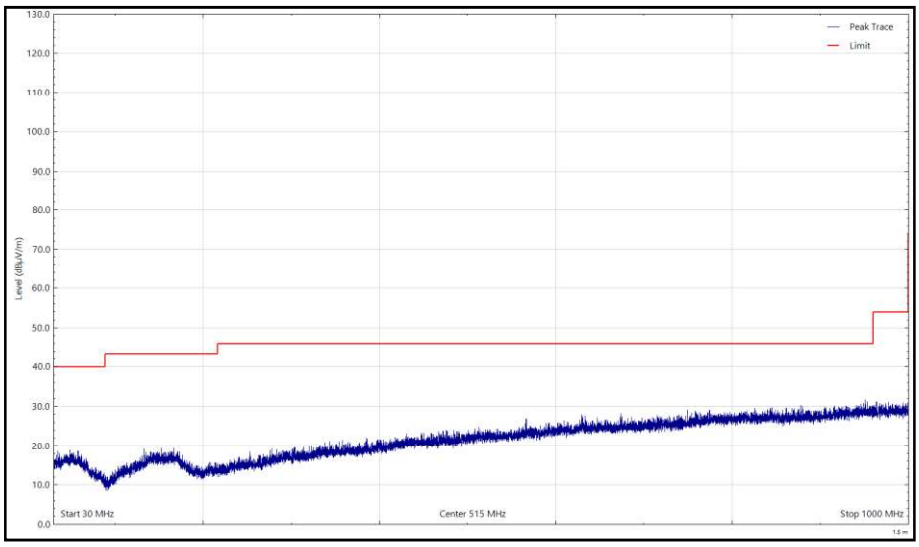

Figure 59 - DTS_Mid_2Mbps_Z, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)

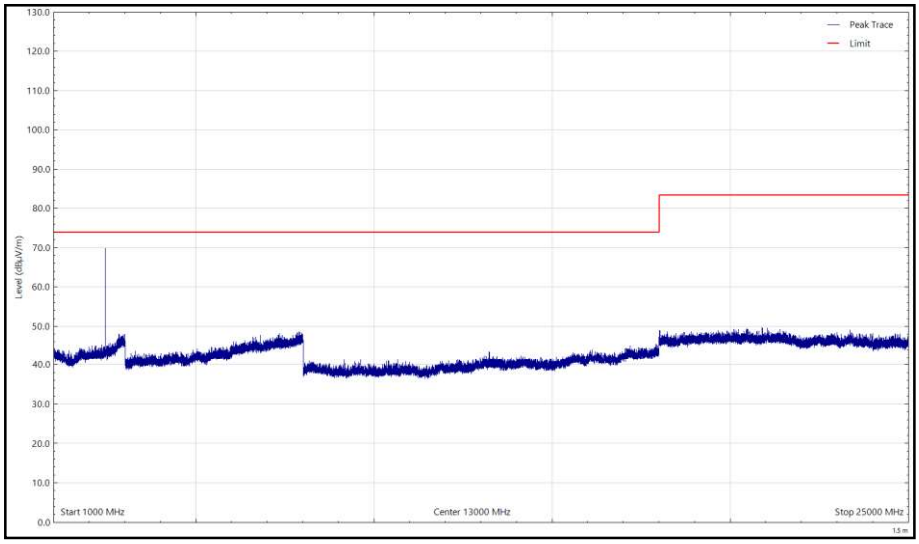

Figure 60 - DTS_Mid_2Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Vertical (Peak)

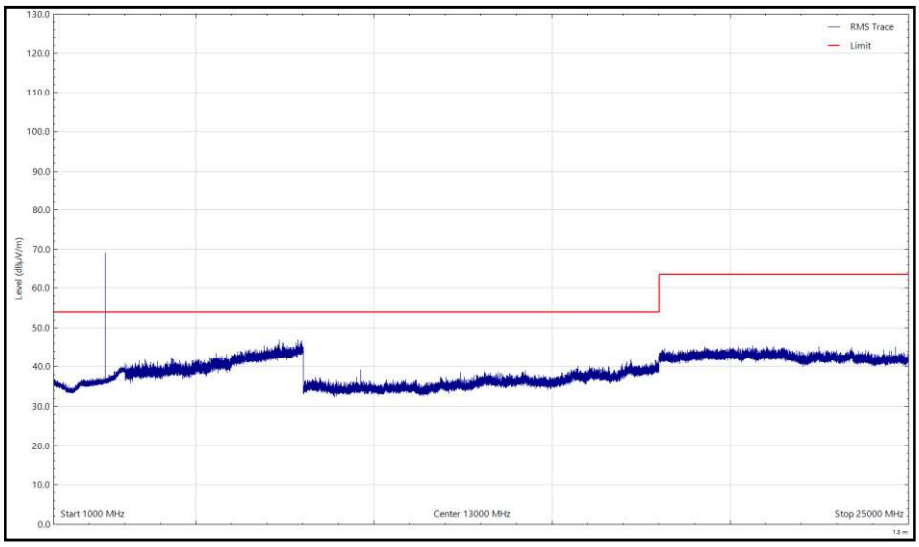

Figure 61 - DTS_Mid_2Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 40 - DTS_Top_2Mbps_Z, 2480 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

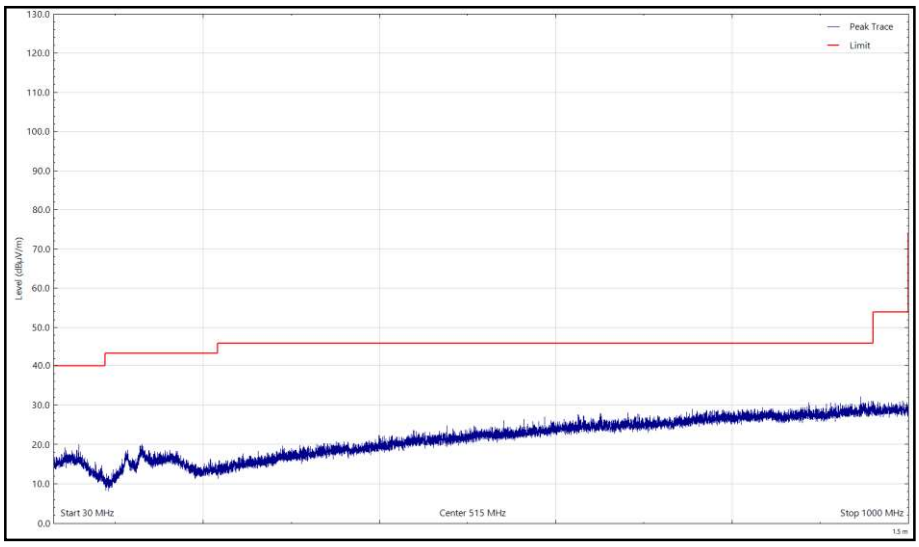

Figure 62 - DTS_Top_2Mbps_Z, 2480 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

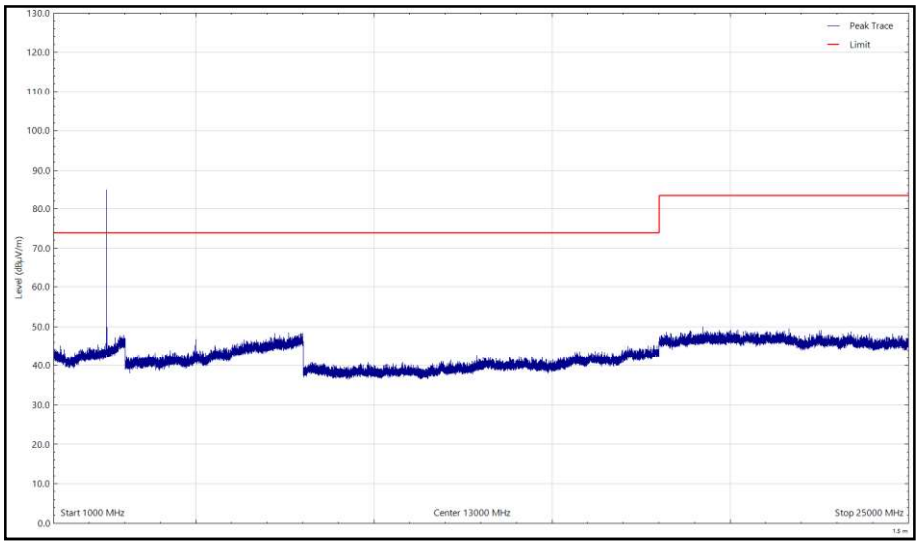

Figure 63 - DTS_Top_2Mbps_Z, 2480 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

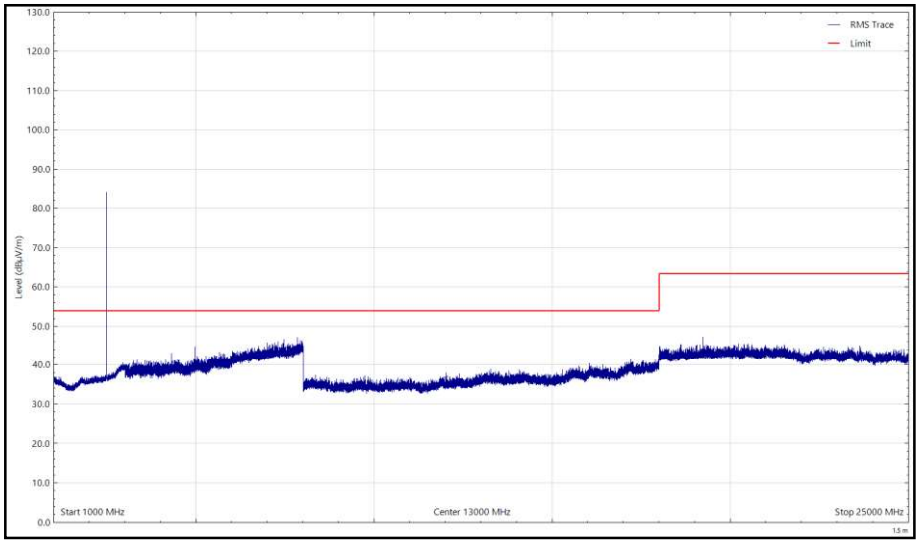

Figure 64 - DTS_Top_2Mbps_Z, 2480 MHz, 1 GHz to 25 GHz, Horizontal (rms)

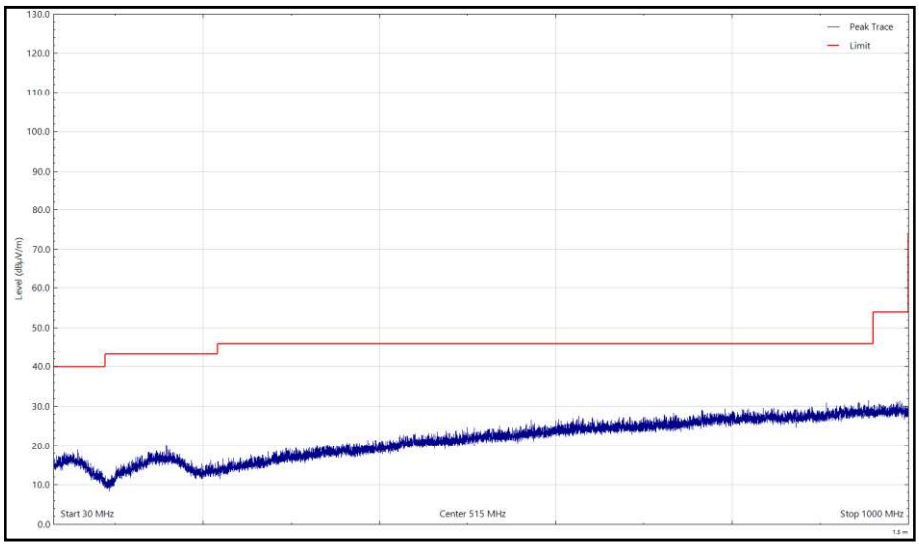

Figure 65 - DTS_Top_2Mbps_Z, 2480 MHz, 30 MHz to 1 GHz, Vertical (Peak)

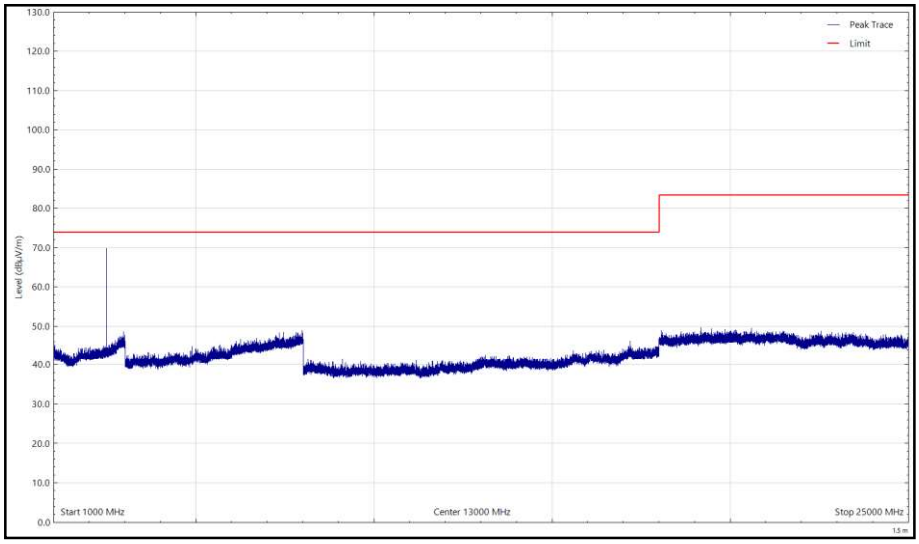

Figure 66 - DTS_Top_2Mbps_Z, 2480 MHz, 1 GHz to 25 GHz, Vertical (Peak)

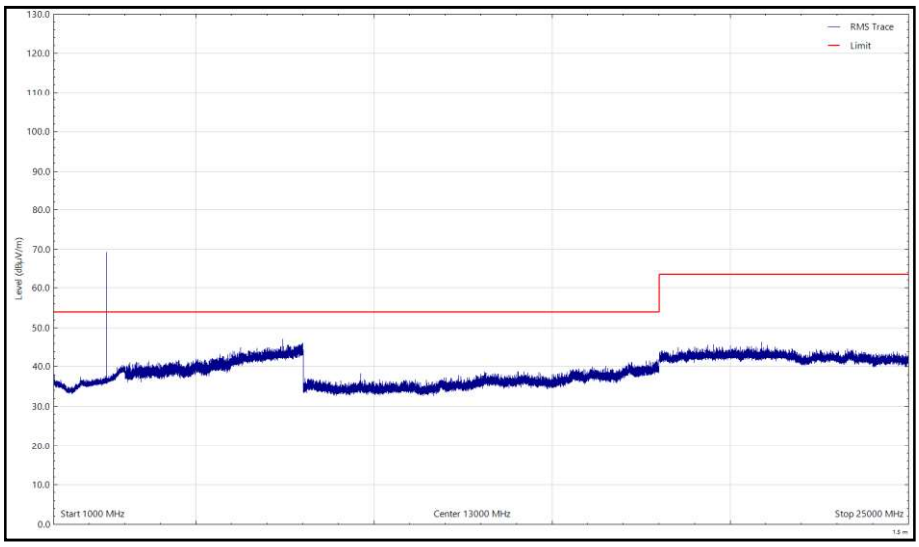

Figure 67 - DTS_Top_2Mbps_Z, 2480 MHz, 1 GHz to 25 GHz, Vertical (rms)

2.4 GHz Transceiver - 1 Mbps (FHSS)

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

Table 41 - FHSS_Bot_1Mbps_X, 2403 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

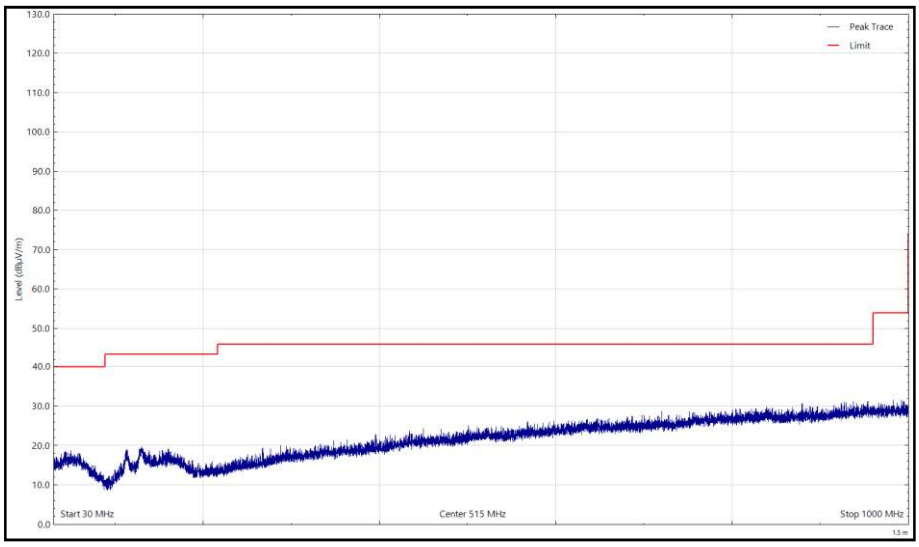

Figure 68 - FHSS_Bot_1Mbps_X, 2403 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

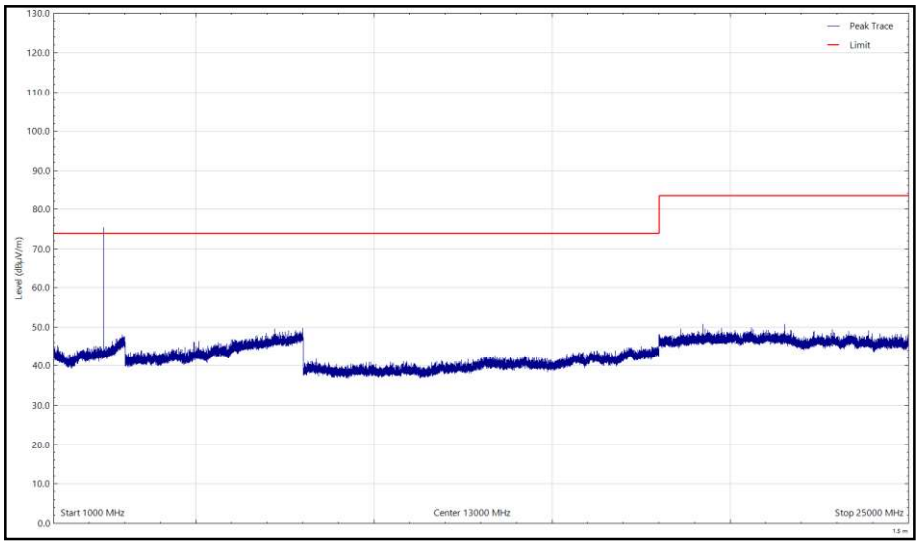

Figure 69 - FHSS_Bot_1Mbps_X, 2403 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

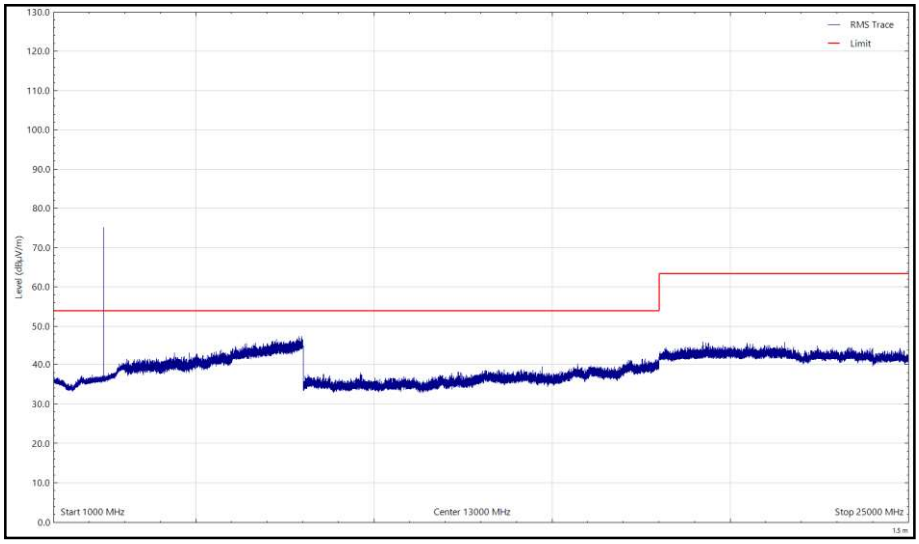

Figure 70 - FHSS_Bot_1Mbps_X, 2403 MHz, 1 GHz to 25 GHz, Horizontal (rms)

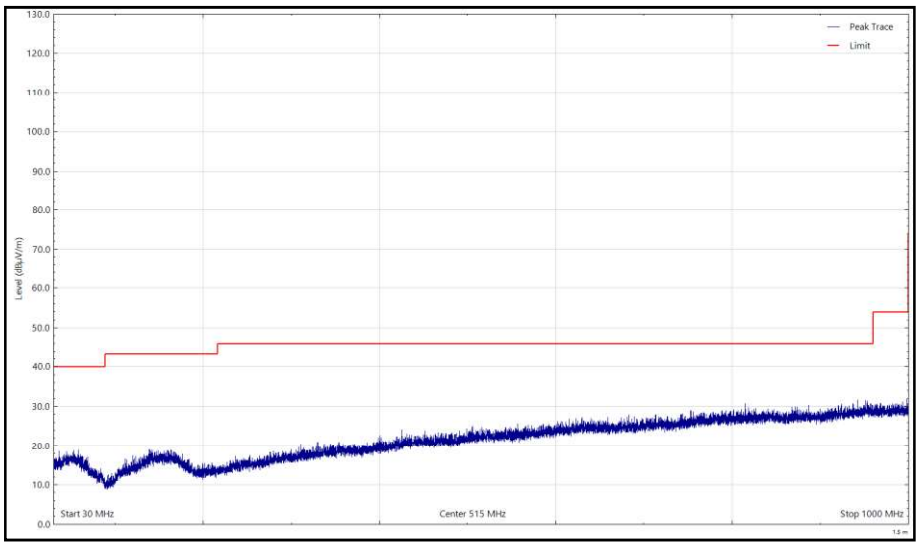

Figure 71 - FHSS_Bot_1Mbps_X, 2403 MHz, 30 MHz to 1 GHz, Vertical (Peak)

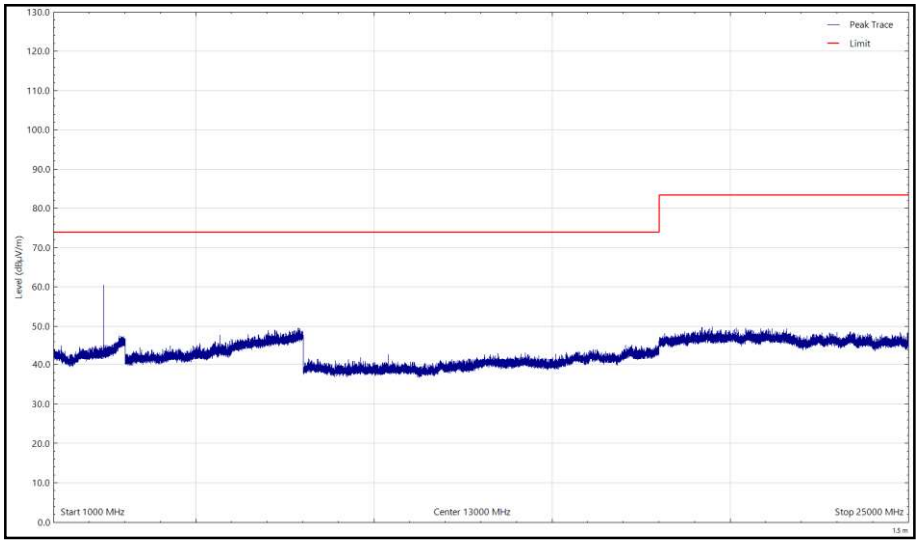

Figure 72 - FHSS_Bot_1Mbps_X, 2403 MHz, 1 GHz to 25 GHz, Vertical (Peak)

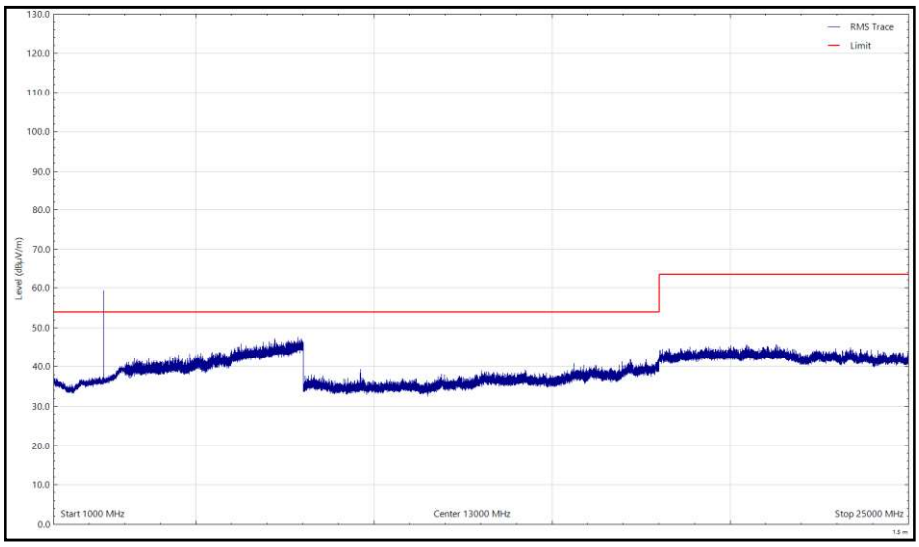

Figure 73 - FHSS_Bot_1Mbps_X, 2403 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 42 - FHSS_Mid_1Mbps_X, 2442 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

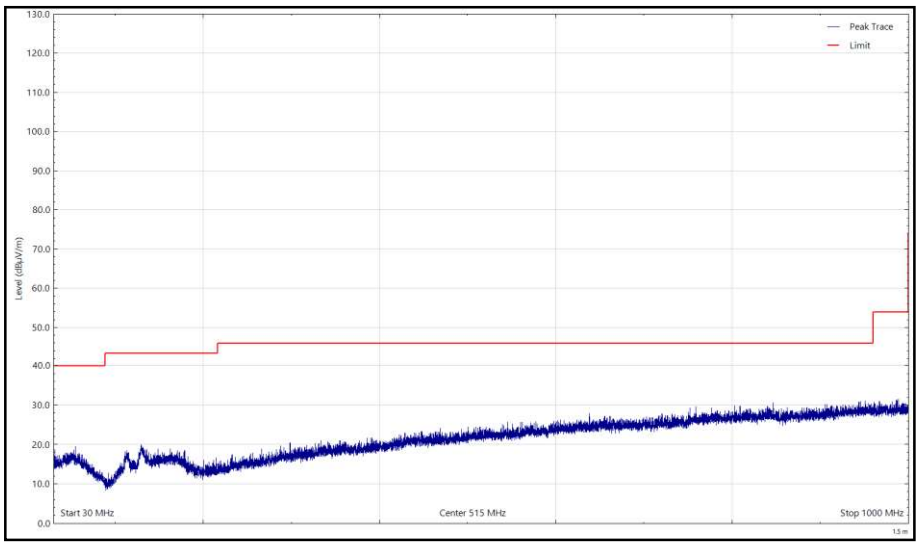

Figure 74 - FHSS_Mid_1Mbps_X, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

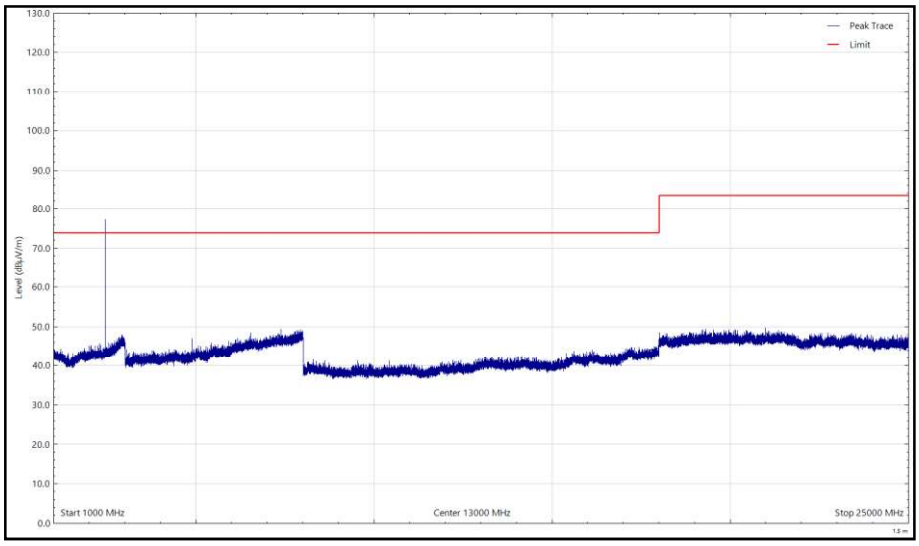

Figure 75 - FHSS_Mid_1Mbps_X, 2442 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

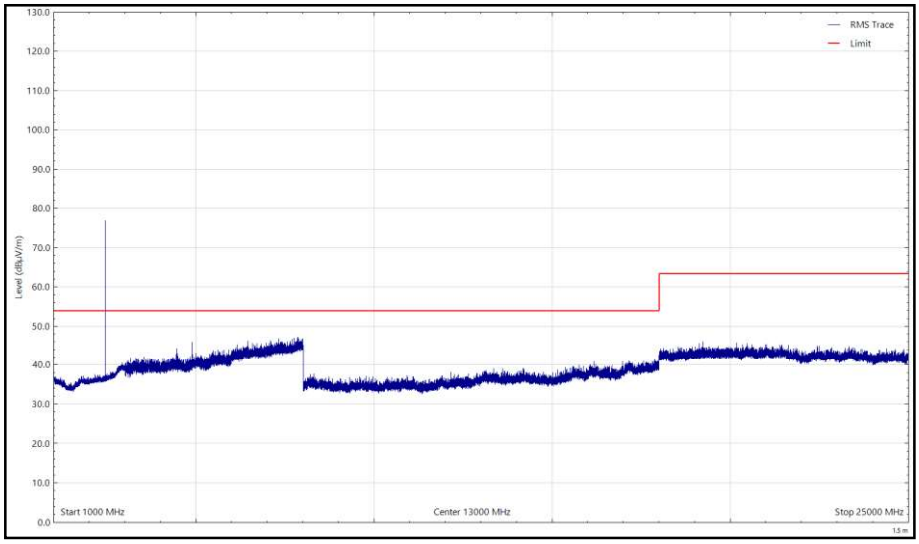

Figure 76 - FHSS_Mid_1Mbps_X, 2442 MHz, 1 GHz to 25 GHz, Horizontal (rms)

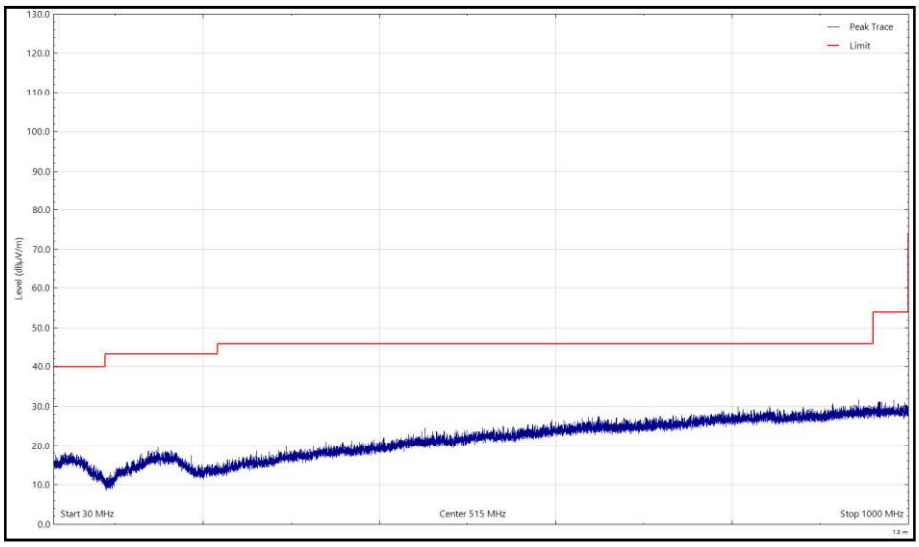

Figure 77 - FHSS_Mid_1Mbps_X, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)

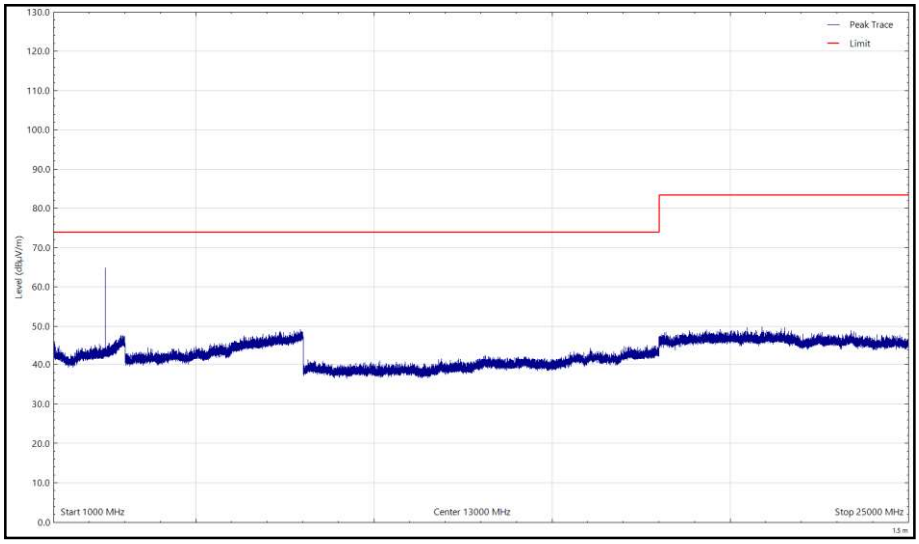

Figure 78 - FHSS_Mid_1Mbps_X, 2442 MHz, 1 GHz to 25 GHz, Vertical (Peak)

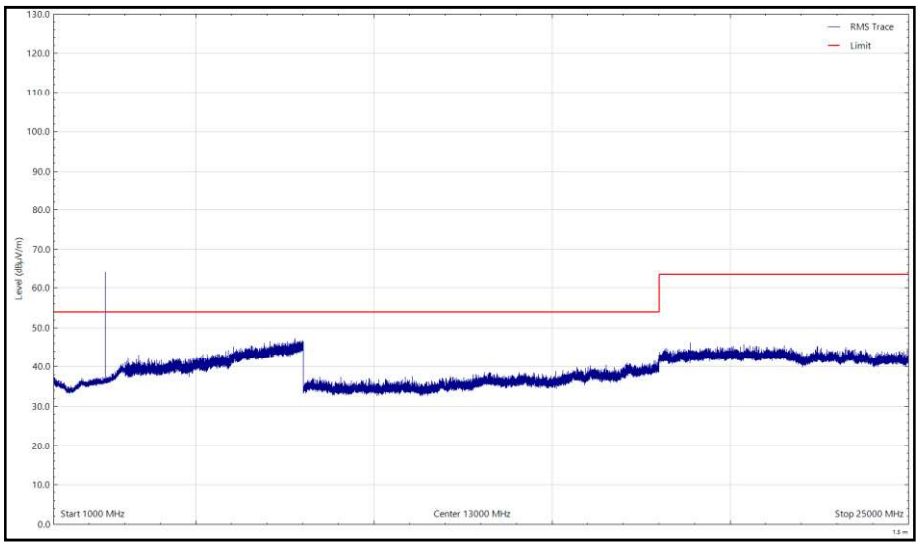

Figure 79 - FHSS_Mid_1Mbps_X, 2442 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 43 - FHSS_Top_1Mbps_X, 2481 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

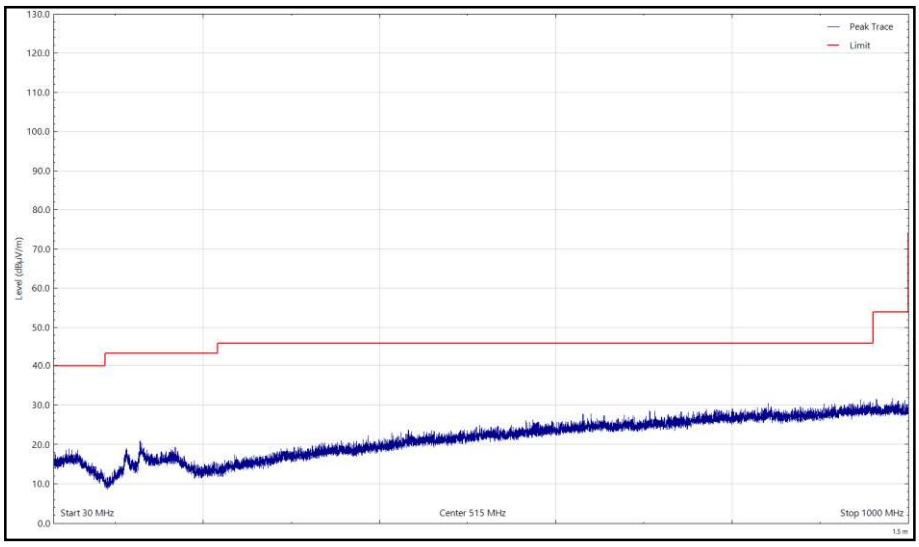

Figure 80 - FHSS_Top_1Mbps_X, 2481 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

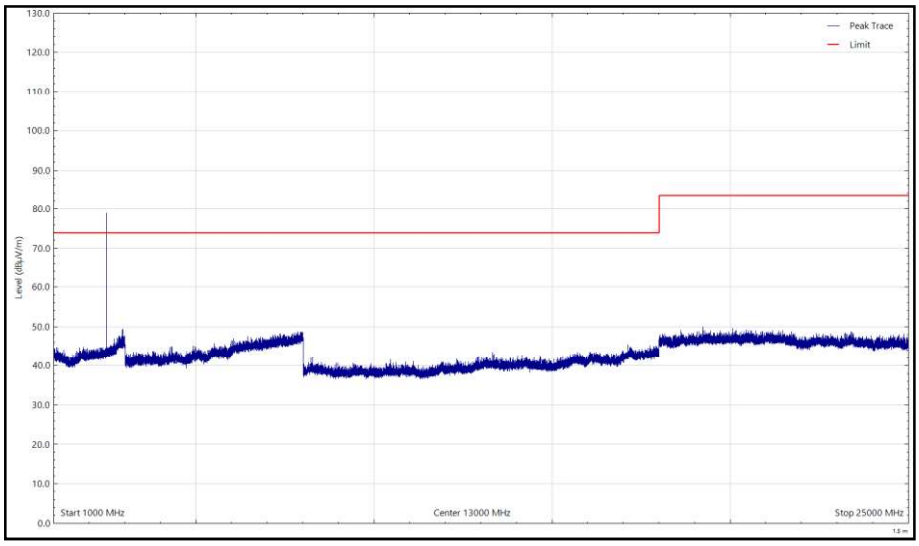

Figure 81 - FHSS_Top_1Mbps_X, 2481 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

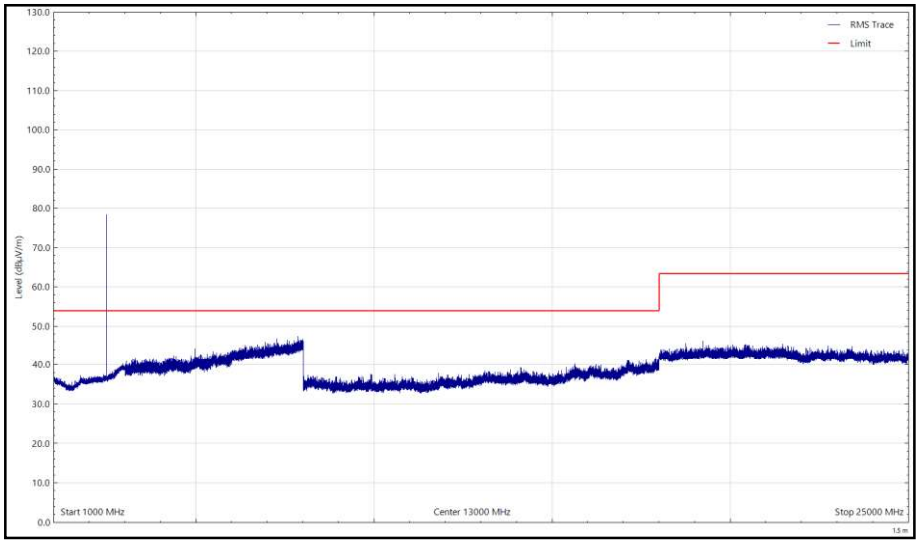

Figure 82 - FHSS_Top_1Mbps_X, 2481 MHz, 1 GHz to 25 GHz, Horizontal (rms)

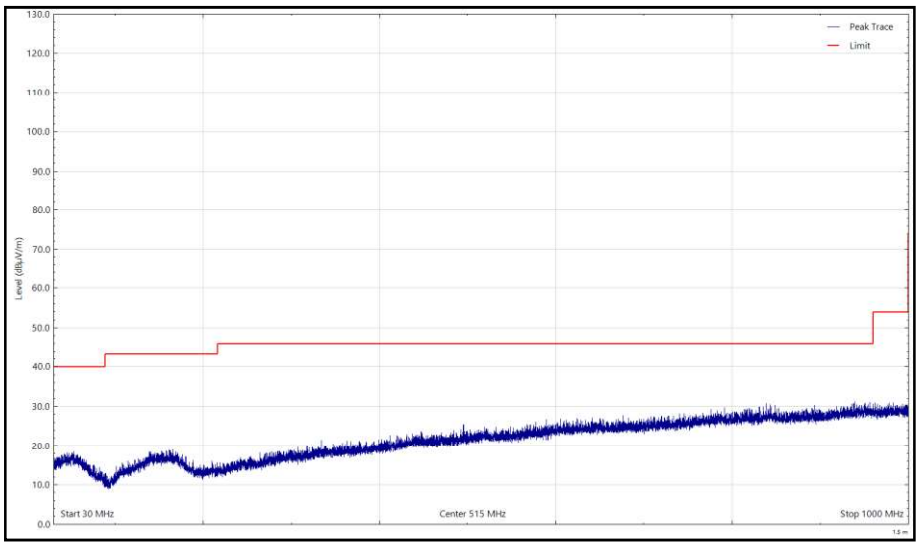

Figure 83 - FHSS_Top_1Mbps_X, 2481 MHz, 30 MHz to 1 GHz, Vertical (Peak)

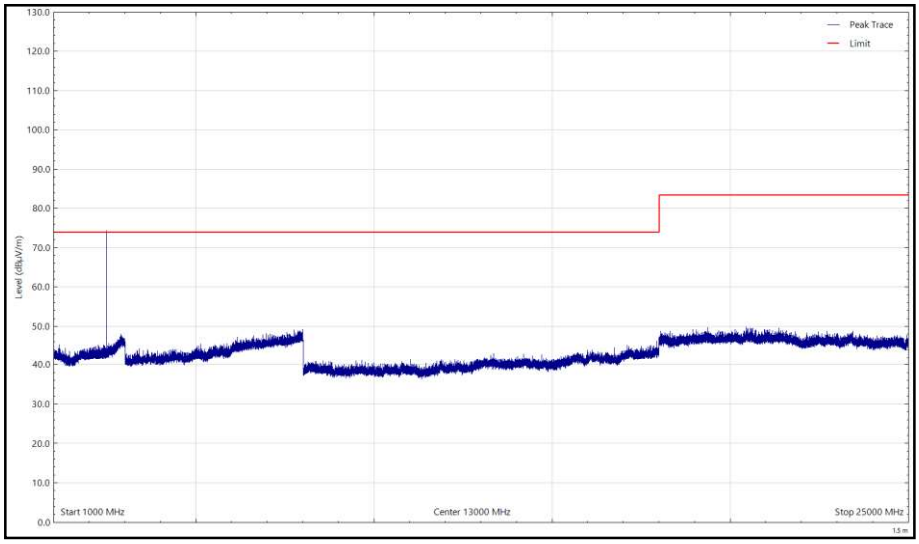

Figure 84 - FHSS_Top_1Mbps_X, 2481 MHz, 1 GHz to 25 GHz, Vertical (Peak)

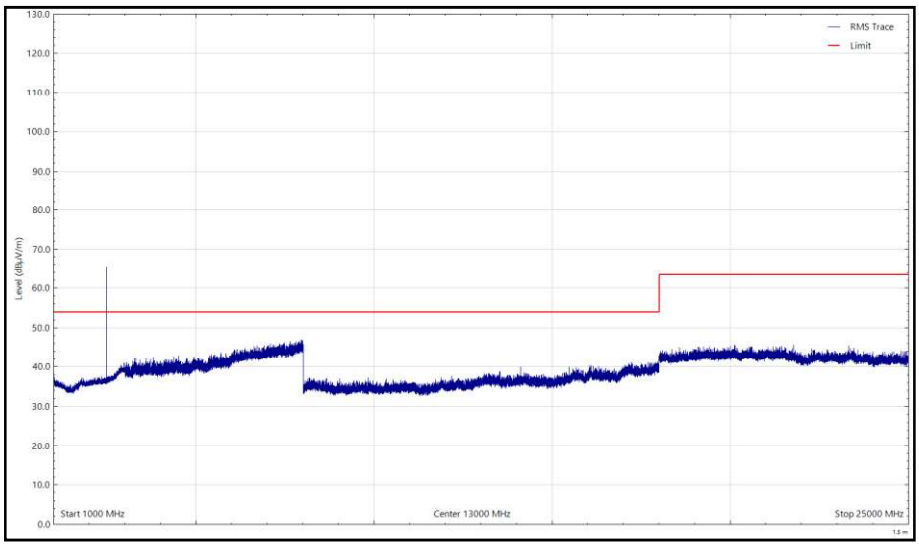

Figure 85 - FHSS_Top_1Mbps_X, 2481 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 44 - FHSS_Bot_1Mbps_Y, 2403 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

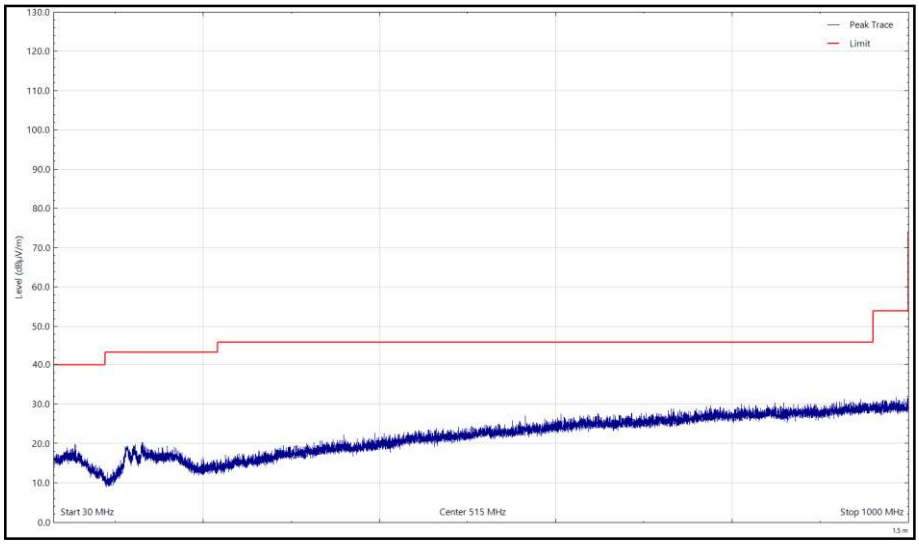

Figure 86 - FHSS_Bot_1Mbps_Y, 2403 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

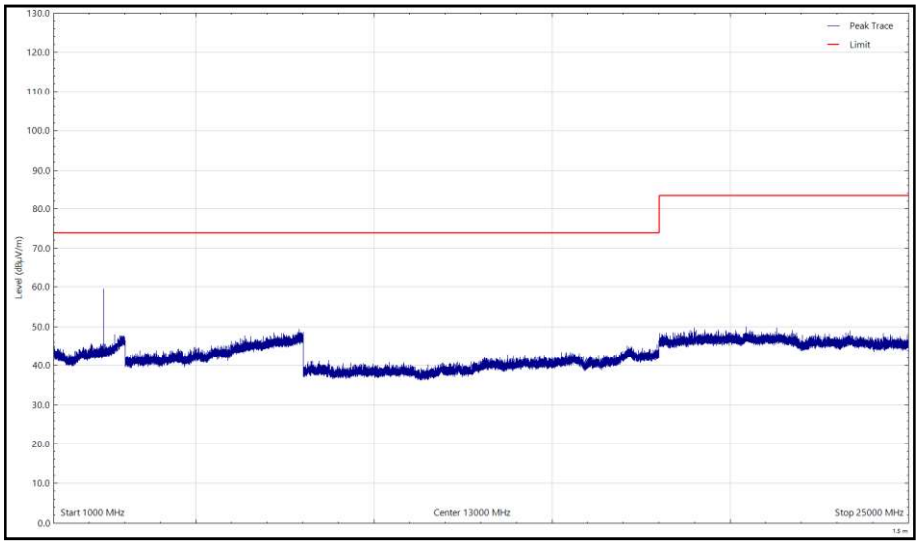

Figure 87 - FHSS_Bot_1Mbps_Y, 2403 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

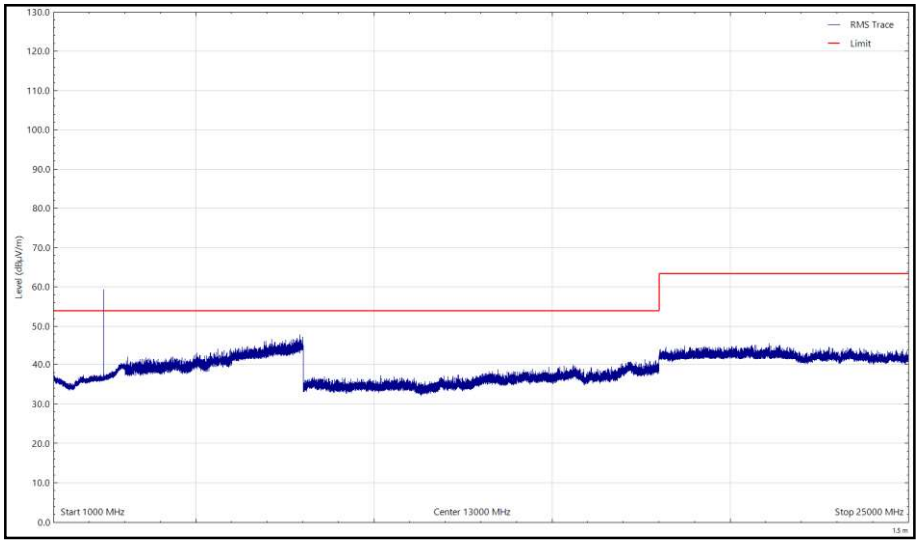

Figure 88 - FHSS_Bot_1Mbps_Y, 2403 MHz, 1 GHz to 25 GHz, Horizontal (rms)

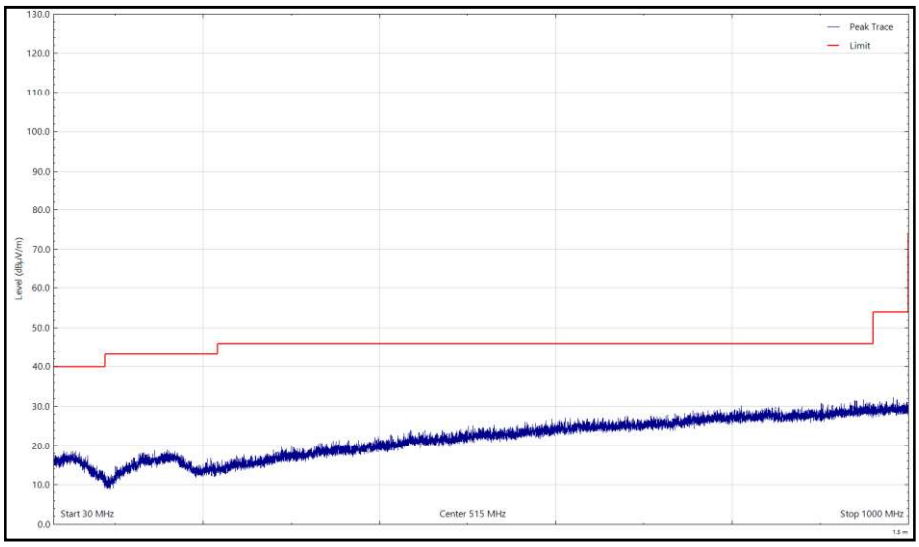

Figure 89 - FHSS_Bot_1Mbps_Y, 2403 MHz, 30 MHz to 1 GHz, Vertical (Peak)

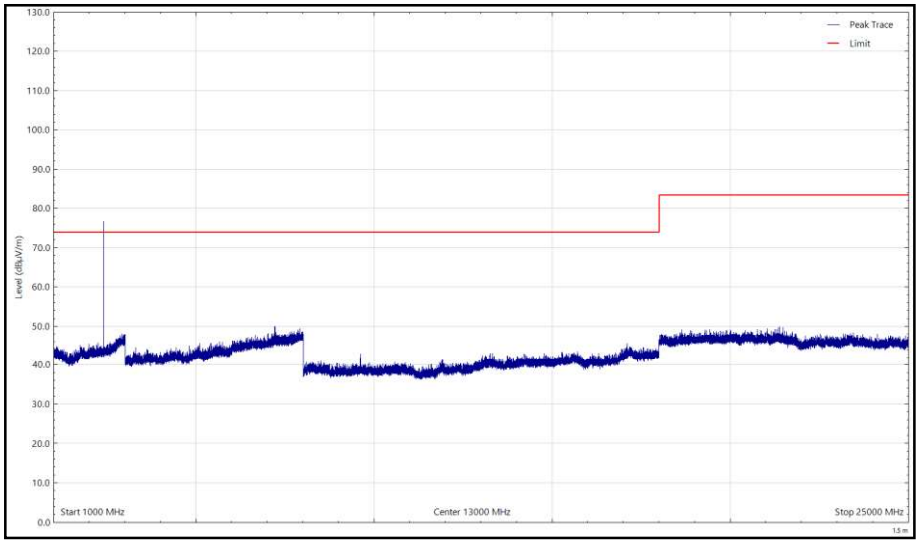

Figure 90 - FHSS_Bot_1Mbps_Y, 2403 MHz, 1 GHz to 25 GHz, Vertical (Peak)

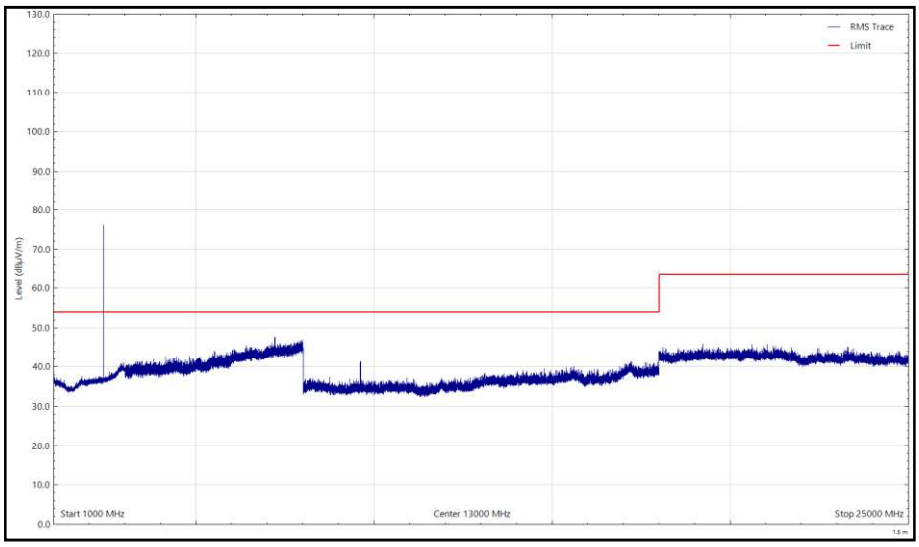

Figure 91 - FHSS_Bot_1Mbps_Y, 2403 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 45 - FHSS_Mid_1Mbps_Y, 2442 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

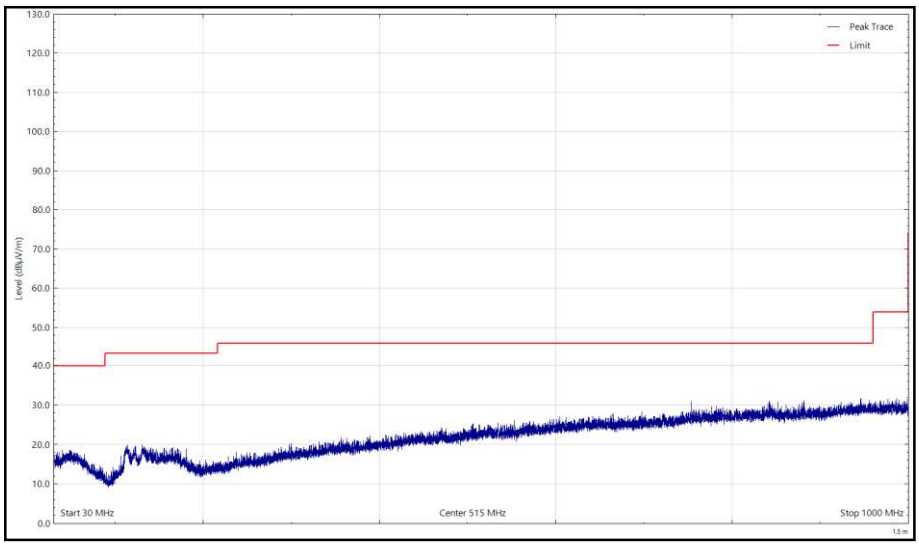

Figure 92 - FHSS_Mid_1Mbps_Y, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

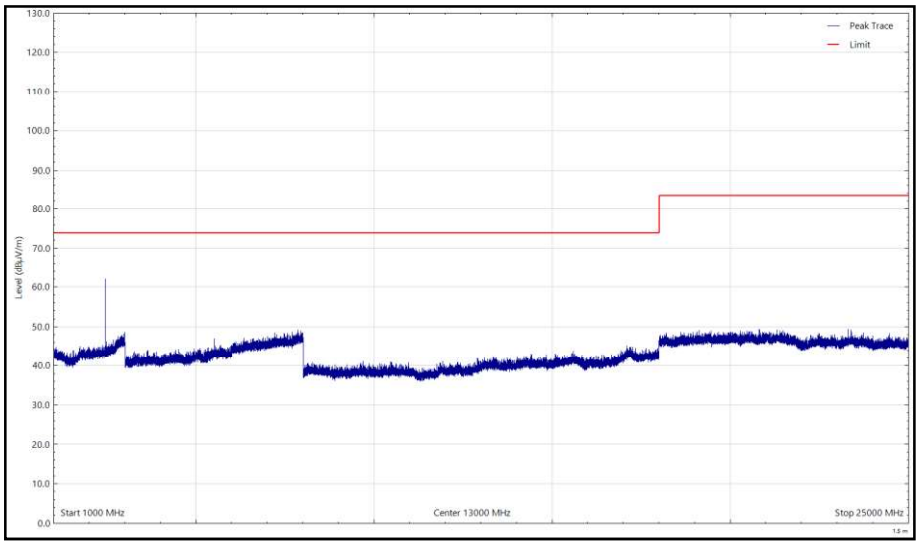

Figure 93 - FHSS_Mid_1Mbps_Y, 2442 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

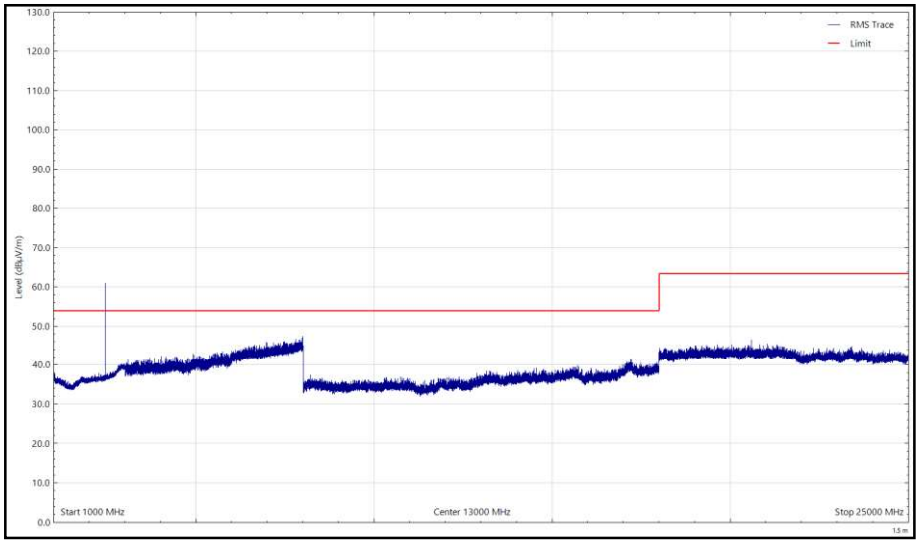

Figure 94 - FHSS_Mid_1Mbps_Y, 2442 MHz, 1 GHz to 25 GHz, Horizontal (rms)

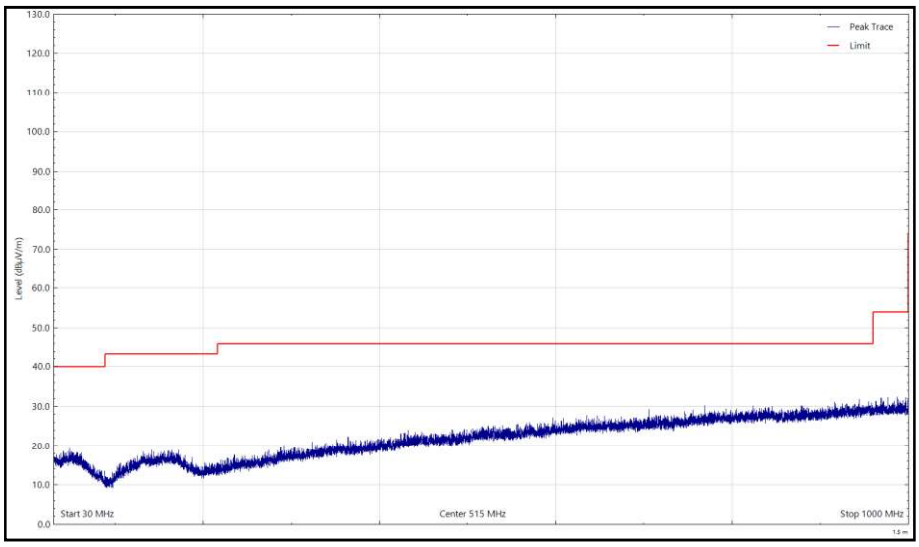

Figure 95 - FHSS_Mid_1Mbps_Y, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)

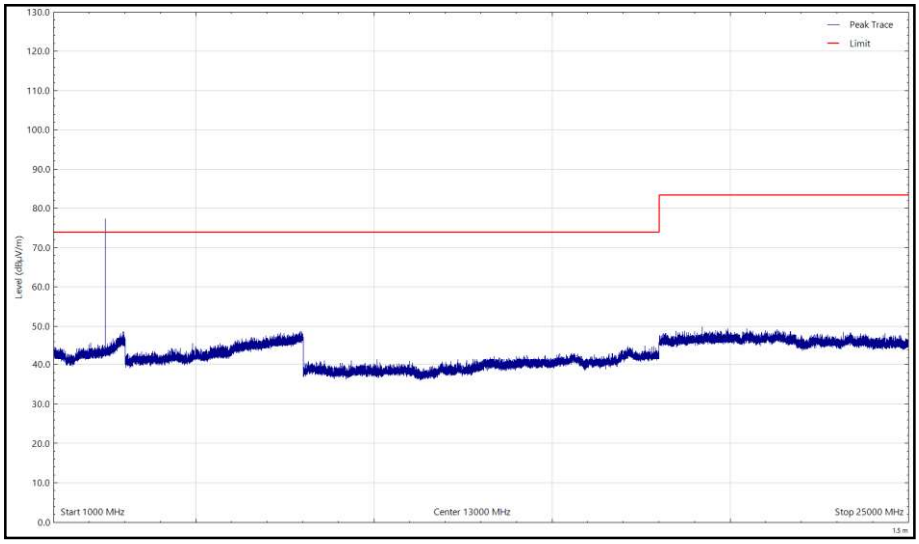

Figure 96 - FHSS_Mid_1Mbps_Y, 2442 MHz, 1 GHz to 25 GHz, Vertical (Peak)

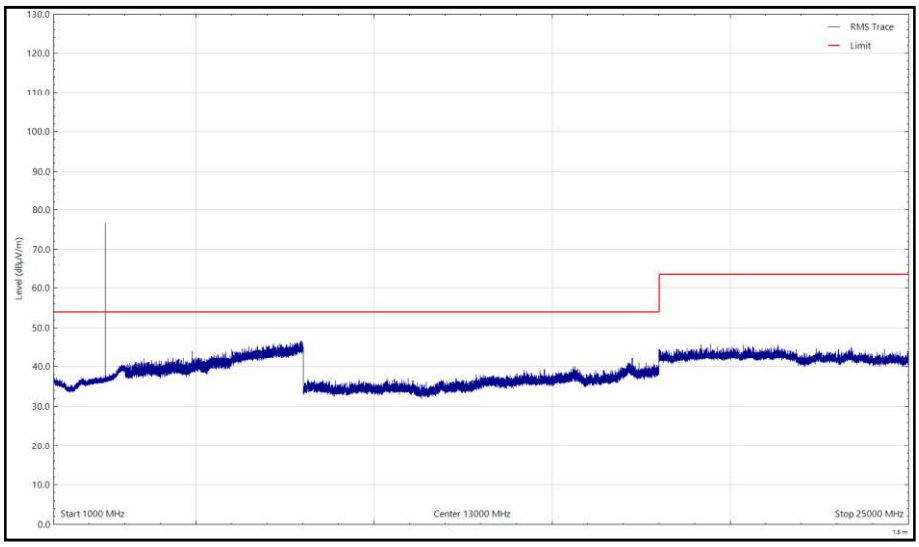

Figure 97 - FHSS_Mid_1Mbps_Y, 2442 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 46 - FHSS_Top_1Mbps_Y, 2481 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

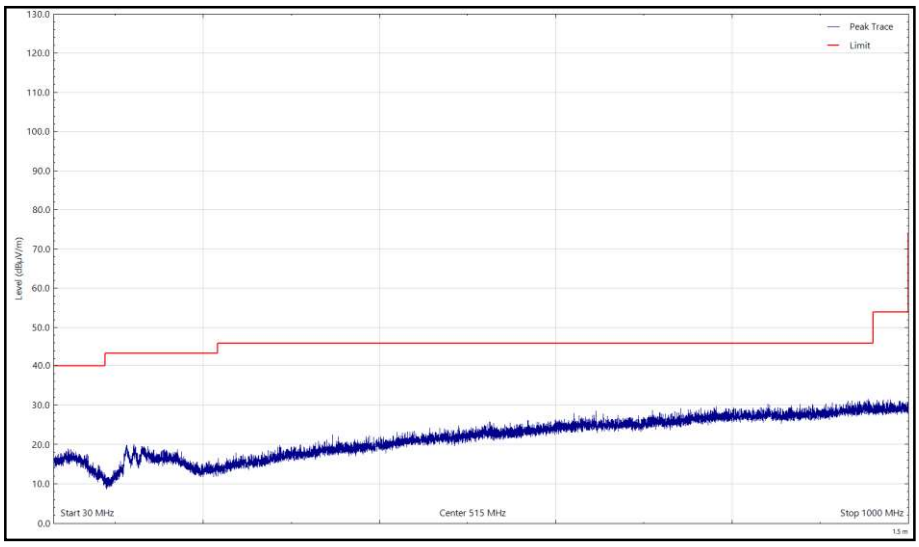

Figure 98 - FHSS_Top_1Mbps_Y, 2481 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

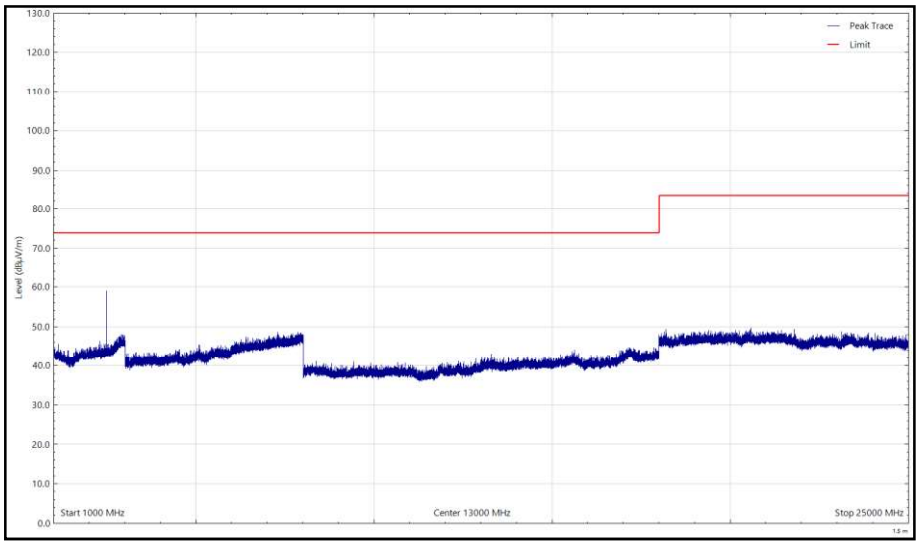

Figure 99 - FHSS_Top_1Mbps_Y, 2481 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

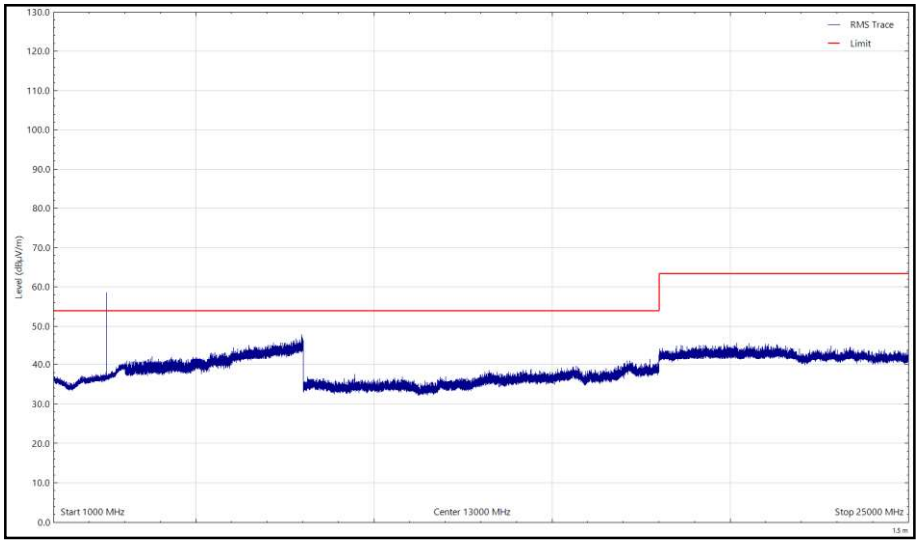

Figure 100 - FHSS_Top_1Mbps_Y, 2481 MHz, 1 GHz to 25 GHz, Horizontal (rms)

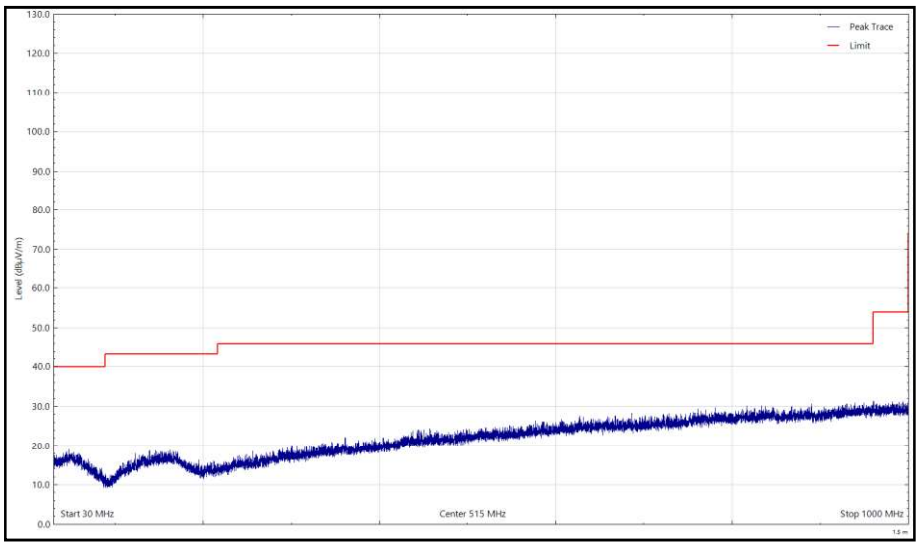

Figure 101 - FHSS_Top_1Mbps_Y, 2481 MHz, 30 MHz to 1 GHz, Vertical (Peak)

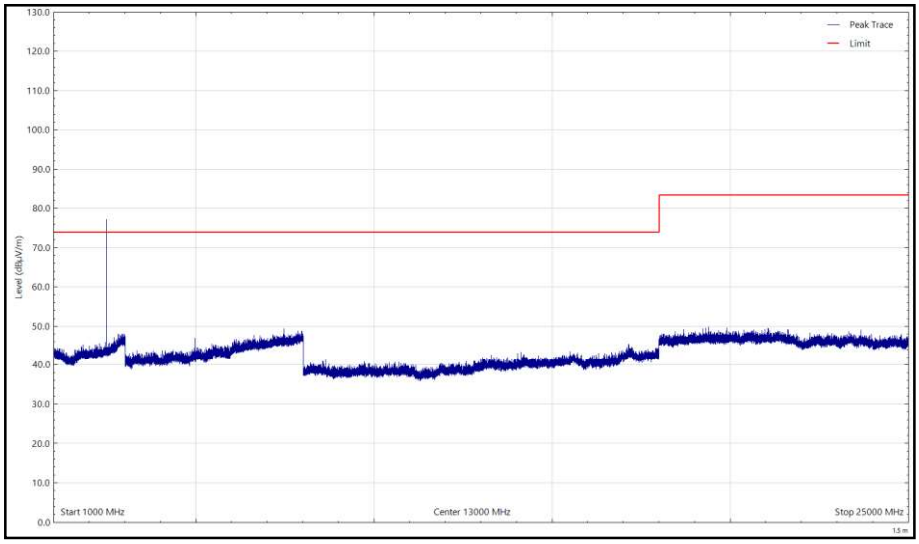

Figure 102 - FHSS_Top_1Mbps_Y, 2481 MHz, 1 GHz to 25 GHz, Vertical (Peak)

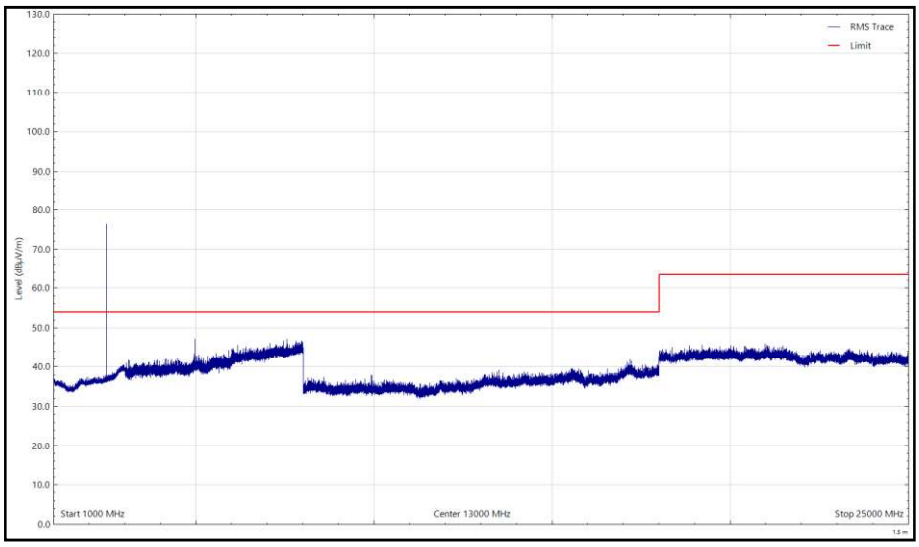

Figure 103 - FHSS_Top_1Mbps_Y, 2481 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 47 - FHSS_Bot_1Mbps_Z, 2403 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

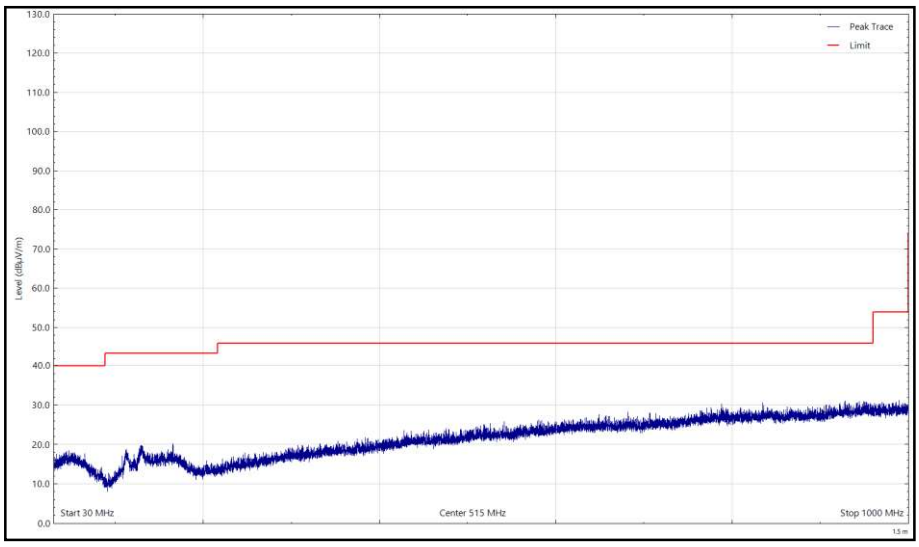

Figure 104 - FHSS_Bot_1Mbps_Z, 2403 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

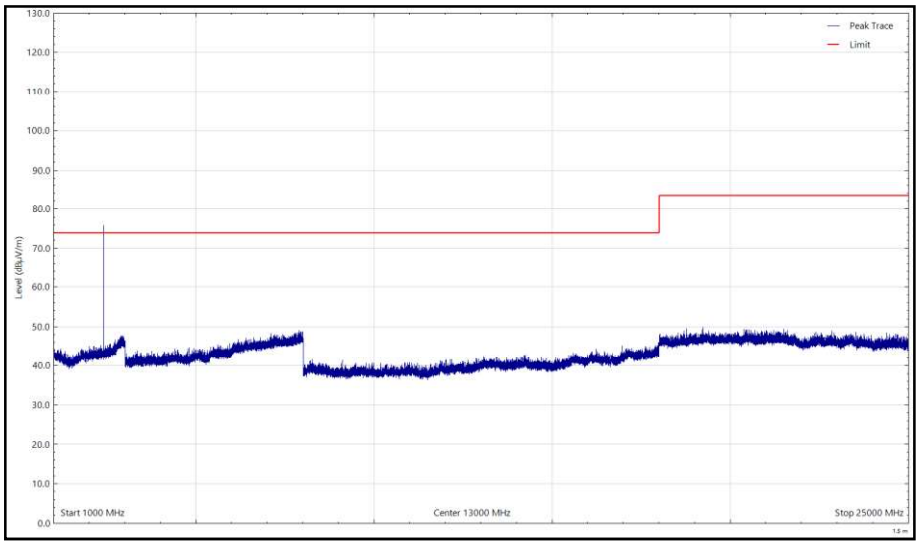

Figure 105 - FHSS_Bot_1Mbps_Z, 2403 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

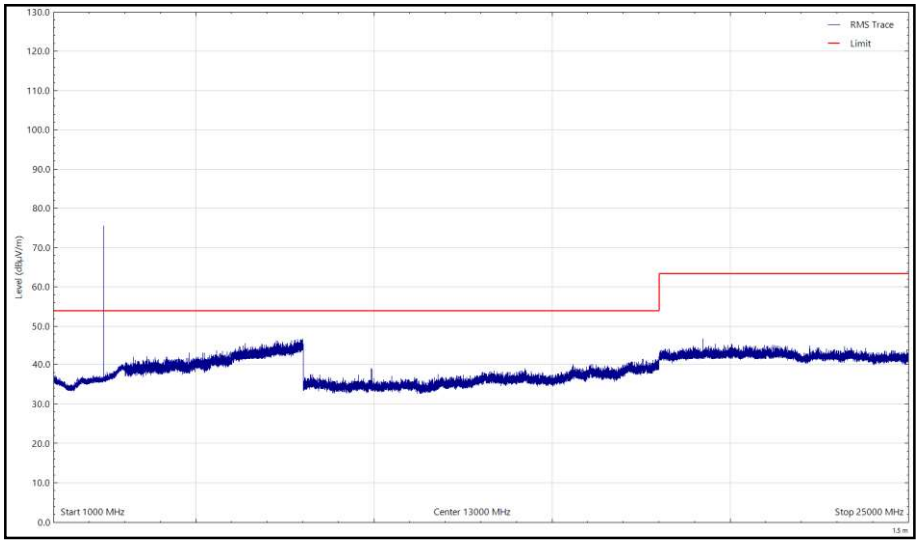

Figure 106 - FHSS_Bot_1Mbps_Z, 2403 MHz, 1 GHz to 25 GHz, Horizontal (rms)

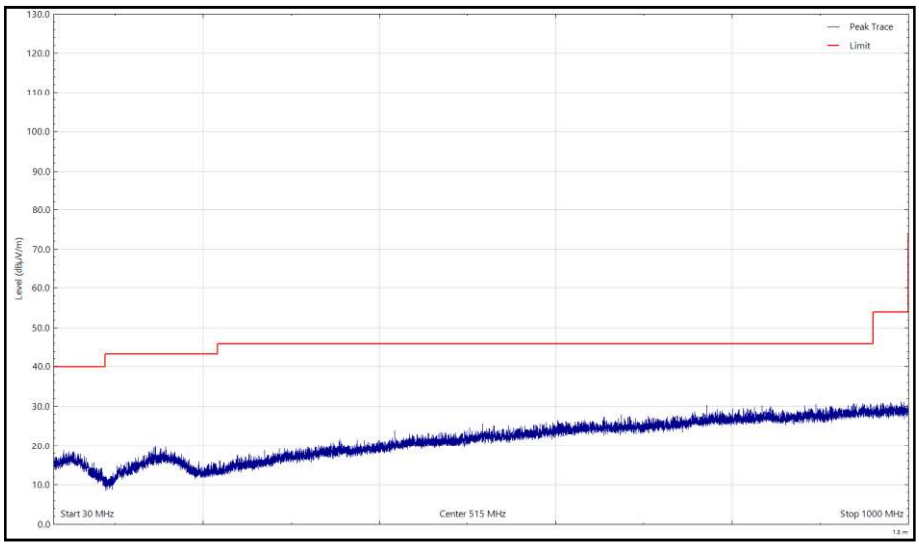

Figure 107 - FHSS_Bot_1Mbps_Z, 2403 MHz, 30 MHz to 1 GHz, Vertical (Peak)

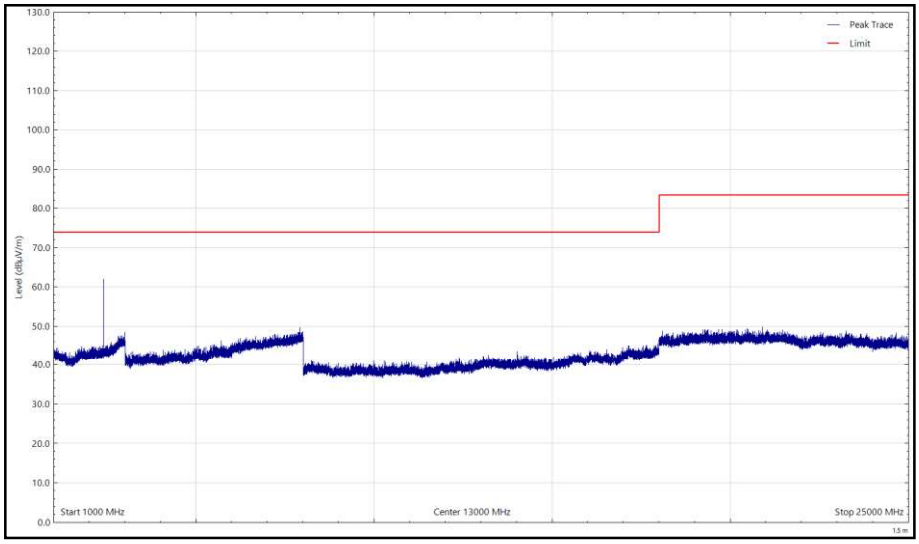

Figure 108 - FHSS_Bot_1Mbps_Z, 2403 MHz, 1 GHz to 25 GHz, Vertical (Peak)

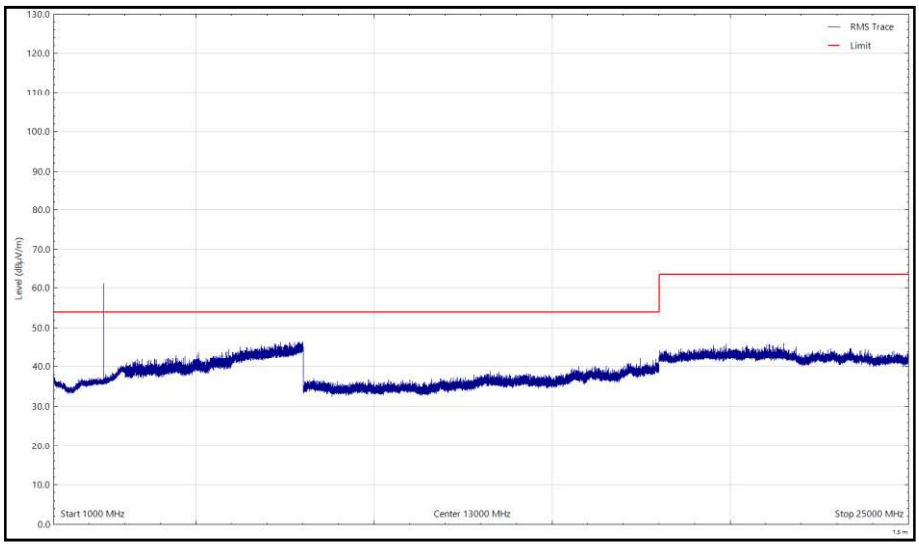

Figure 109 - FHSS_Bot_1Mbps_Z, 2403 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 48 - FHSS_Mid_1Mbps_Z, 2442 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

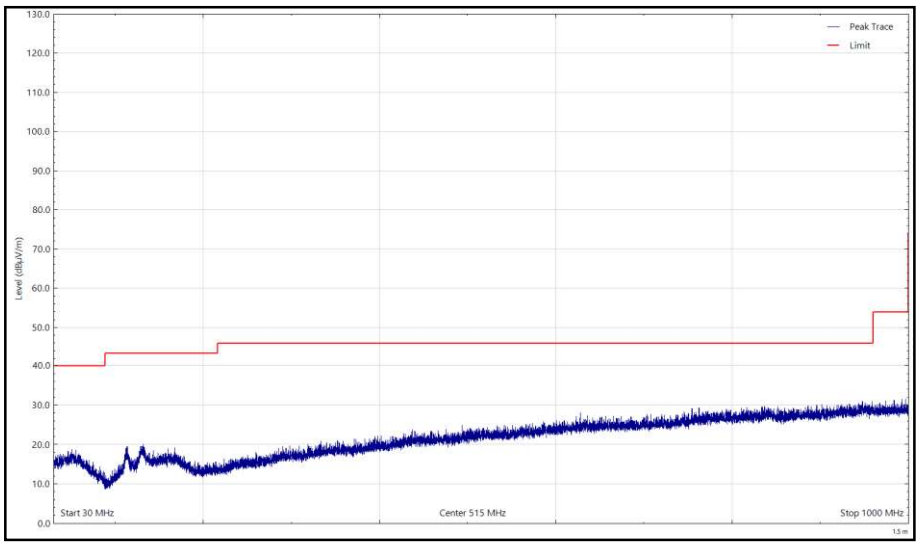

Figure 110 - FHSS_Mid_1Mbps_Z, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

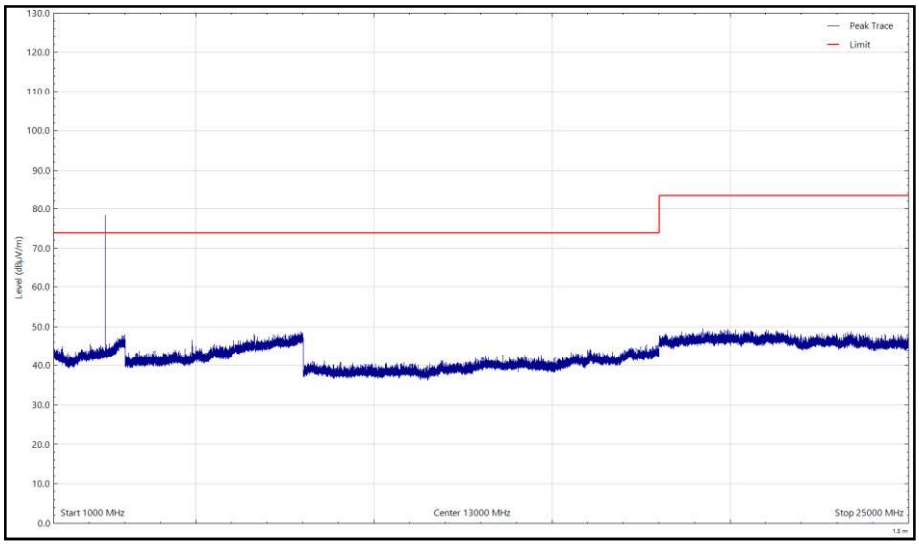

Figure 111 - FHSS_Mid_1Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

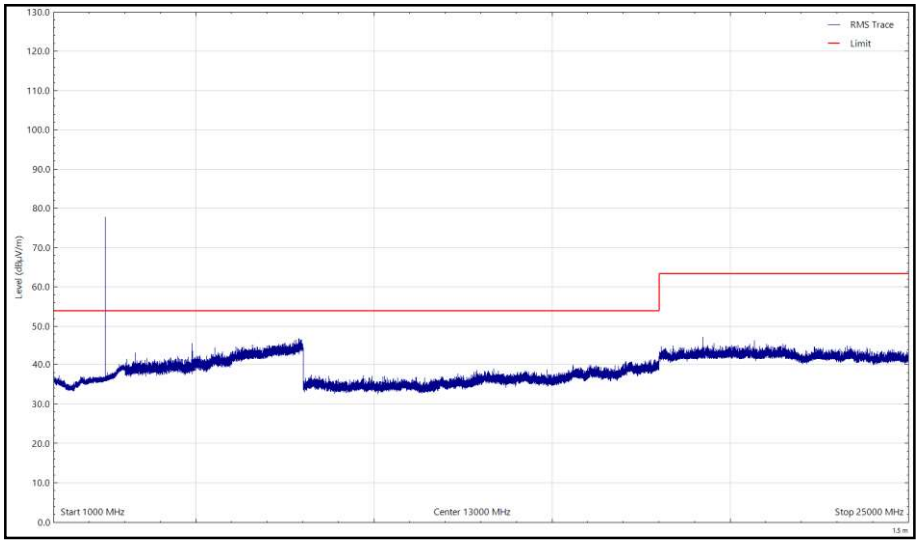

Figure 112 - FHSS_Mid_1Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Horizontal (rms)

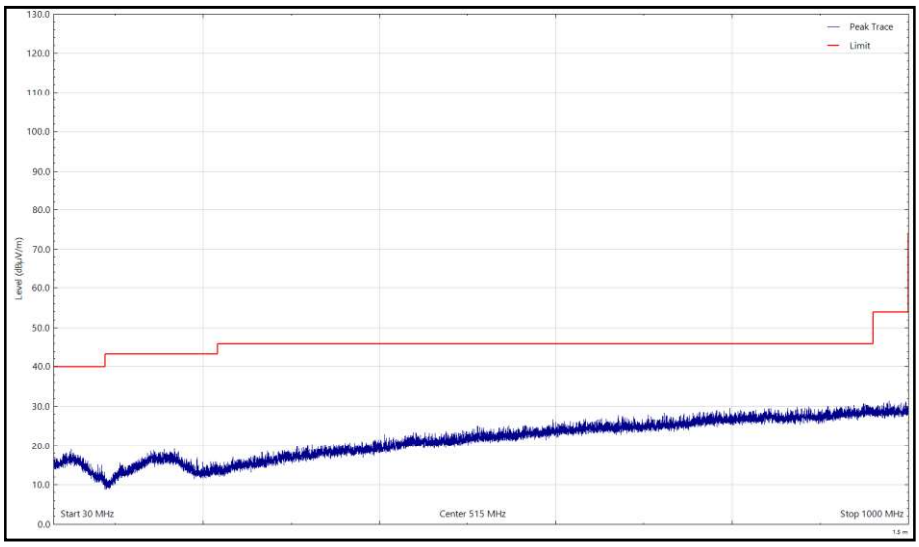

Figure 113 - FHSS_Mid_1Mbps_Z, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)

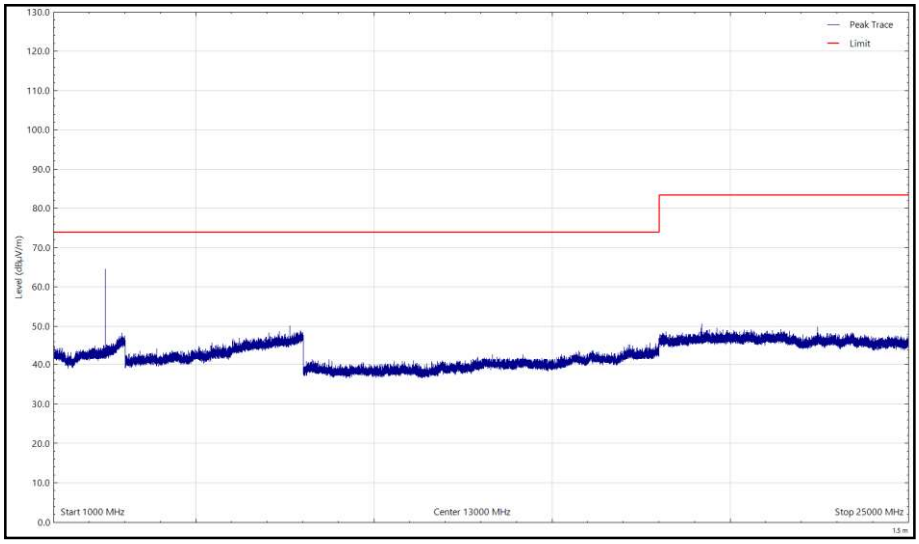

Figure 114 - FHSS_Mid_1Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Vertical (Peak)

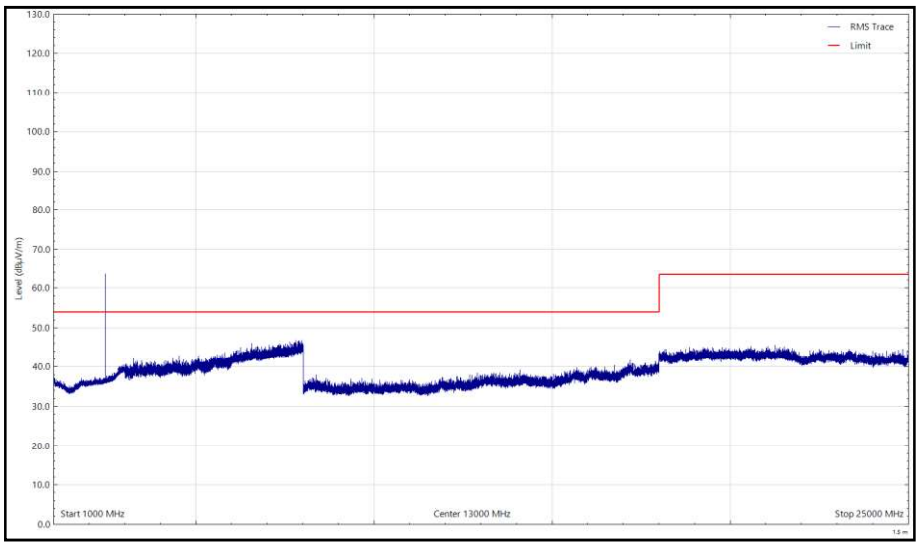

Figure 115 - FHSS_Mid_1Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Vertical (rms)

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

Table 49 - FHSS_Top_1Mbps_Z, 2481 MHz, 30 MHz to 25 GHz

*No emissions found within 10 dB of the limit.

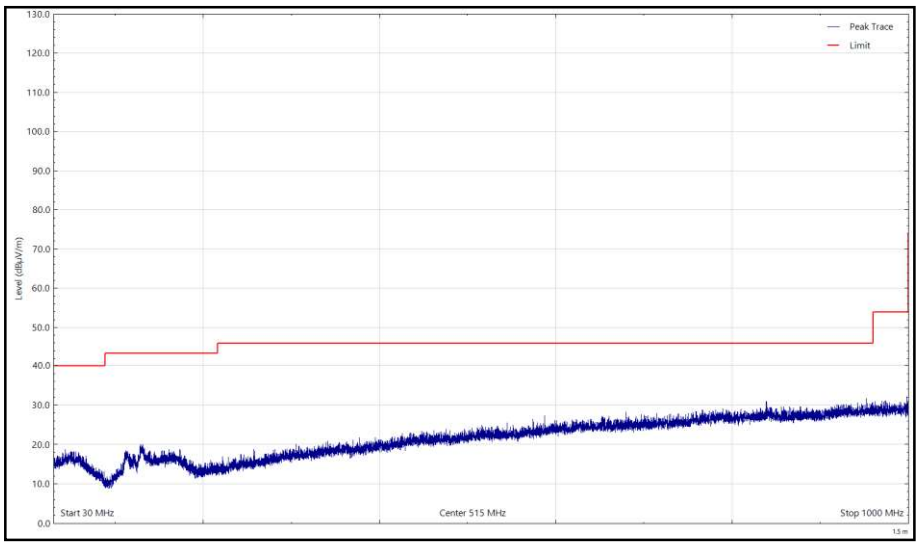

Figure 116 - FHSS_Top_1Mbps_Z, 2481 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

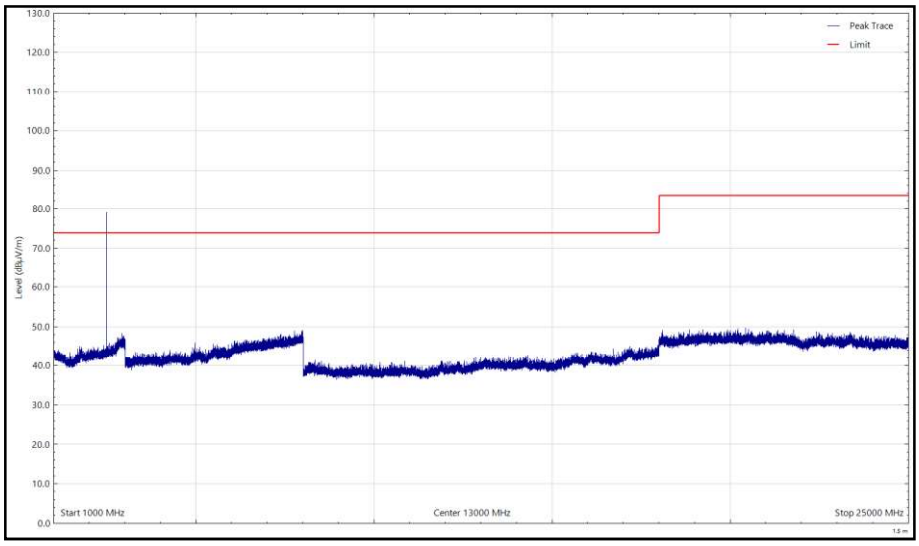

Figure 117 - FHSS_Top_1Mbps_Z, 2481 MHz, 1 GHz to 25 GHz, Horizontal (Peak)

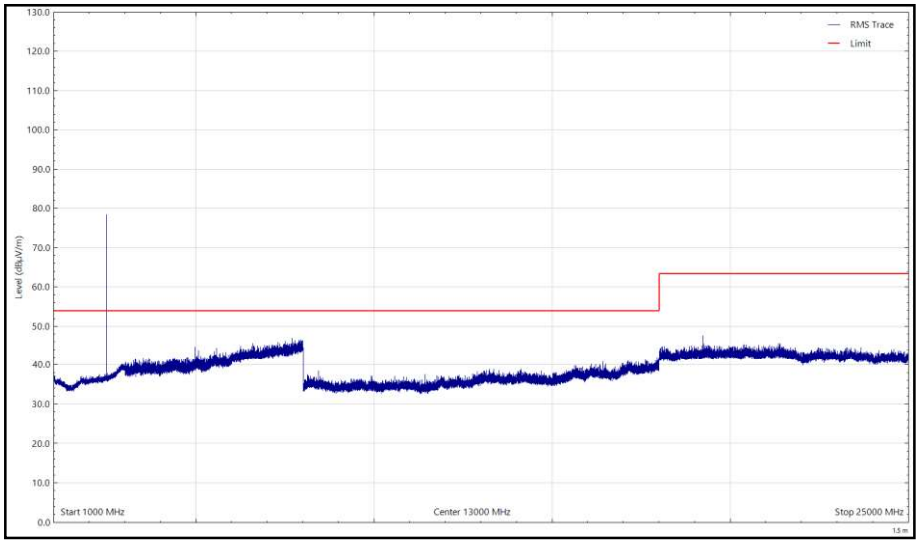

Figure 118 - FHSS_Top_1Mbps_Z, 2481 MHz, 1 GHz to 25 GHz, Horizontal (rms)

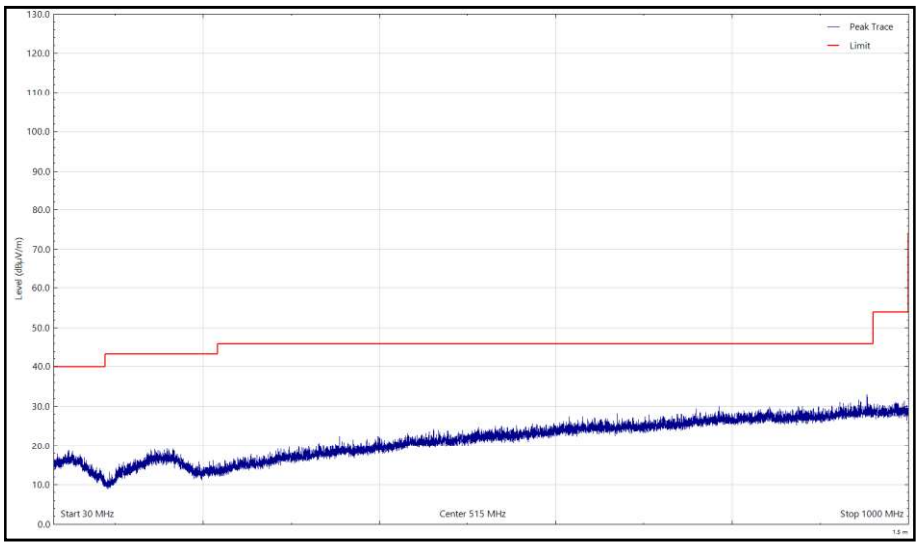

Figure 119 - FHSS_Top_1Mbps_Z, 2481 MHz, 30 MHz to 1 GHz, Vertical (Peak)

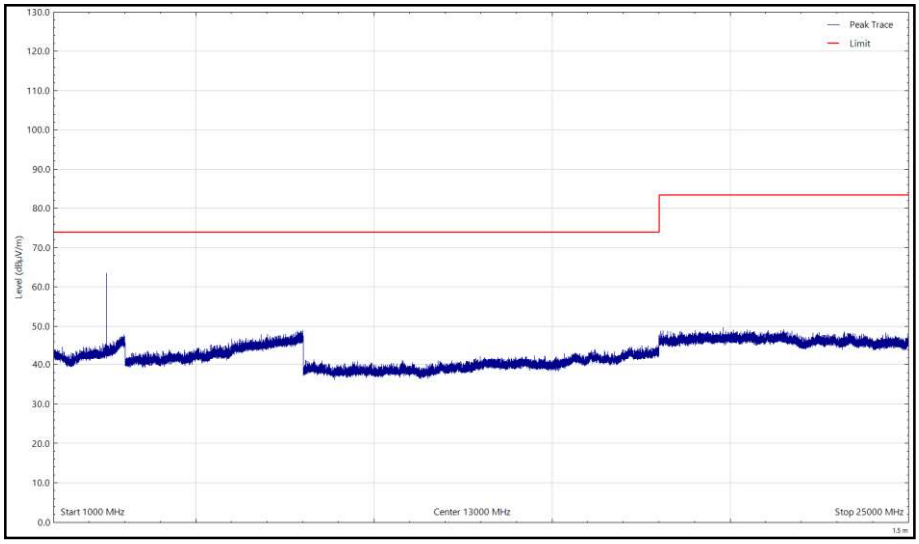

Figure 120 - FHSS_Top_1Mbps_Z, 2481 MHz, 1 GHz to 25 GHz, Vertical (Peak)

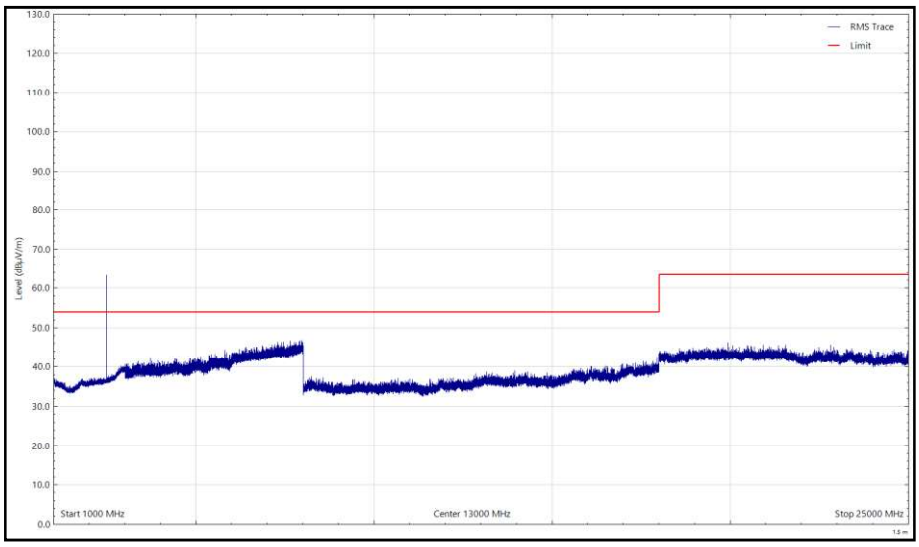

Figure 121 - FHSS_Top_1Mbps_Z, 2481 MHz, 1 GHz to 25 GHz, Vertical (rms)

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.

2.5.8 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Test Receiver	Rohde & Schwarz	ESW44	5084	12	31-Aug-2024
Emissions Software	TUV SUD	EmX V3.1.12	5125	-	Software
3m Semi-Anechoic Chamber	Rainford	RF Chamber 11	5136	36	24-Nov-2024
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Antenna (DRG, 1 GHz to 10.5 GHz)	Schwarzbeck	BBHA9120B	5215	12	09-Jul-2024
Antenna (DRG, 7.5 GHz to 18 GHz)	Schwarzbeck	HWRD750	5216	12	09-Jul-2024
3 GHz High pass filter	Wainwright	WHKX12-2580-3000-18000-80SS	5220	12	28-Mar-2024
Pre-Amplifier (1 GHz to 26.5 GHz)	Agilent Technologies	8449B	5445	12	25-May-2024
Thermo-Hygro-Barometer	PCE Instruments	OCE-THB-40	5470	12	20-Apr-2024
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5512	12	21-May-2024
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-02000AMSAMS/A	5518	12	14-Apr-2024
Cable (N-Type to N-Type, 8 m)	Junkosha	MWX221-08000NMSNMS/B	5522	12	14-Apr-2024
7 GHz High pass Filter	Wainwright	WHKX12-5850-6800-18000-80SS	5550	12	30-May-2024
Pre-Amplifier (8 GHz to 18 GHz)	Wright Technologies	APS06-0061	5595	12	26-Oct-2024
Cable (K-Type to K-Type, 2 m)	Junkosha	MWX241-02000KMSKMS/B	5934	12	18-Jun-2024
Antenna (Tri-log, 30 MHz to 1 GHz)	Schwarzbeck	VULB 9168	5942	24	03-Feb-2024
Double Ridge Active Horn Antenna (18-40 GHz)	Com-Power	AHA-840	6189	24	02-Jun-2024
Attenuator (4 dB)	Pasternack	PE7074-4	6202	24	16-Jul-2024

Table 50

TU - Traceability Unscheduled

2.6 Frequency Hopping Systems - Average Time of Occupancy

2.6.1 Specification Reference

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

2.6.2 Equipment Under Test and Modification State

RMP24MICQE, S/N: 5RGC00 - Modification State 0

2.6.3 Date of Test

09-January-2024

2.6.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 7.8.4.

2.6.5 Environmental Conditions

Ambient Temperature	22.4 °C
Relative Humidity	21.2 %

2.6.6 Test Results

2.4 GHz Transceiver - 1 Mbps (FHSS)

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247 (a)(1)(iii) RSS-247 5.1 d)	Test Method(s):	C63.10 7.8.4
Additional Reference(s):	-		

DUT Configuration			
Mode:	1 MBit/s FHSS GFSK	Duty Cycle (%):	10.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	Time of Occupancy			Limit (ms)
	Dwell Time (ms)	Number of Transmissions	Time of Occupancy (ms)	
2403	0.105	395	41.6	400.0
2481	0.105	395	41.6	400.0

Table 51 - Time of Occupancy Results

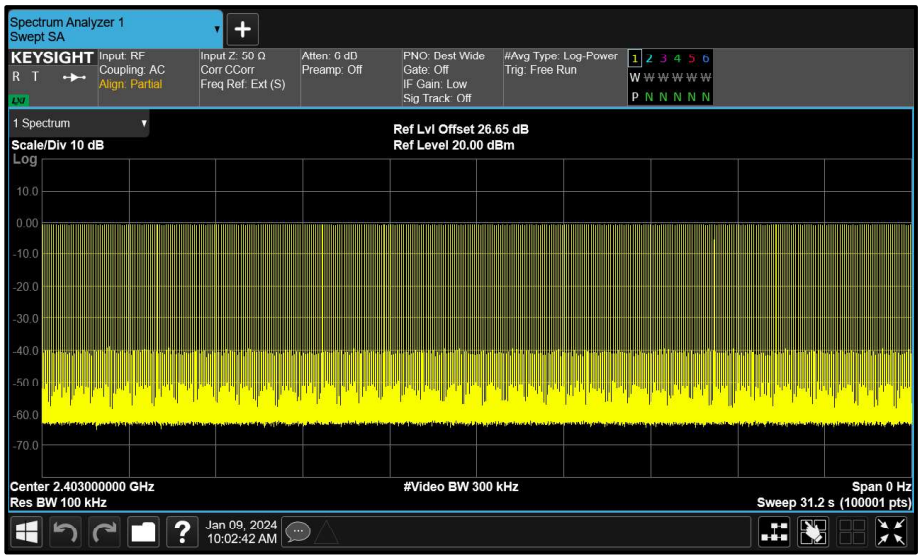

Figure 122 - 1 MBit/s GFSK - 2403 MHz Accumulated Transmit Time

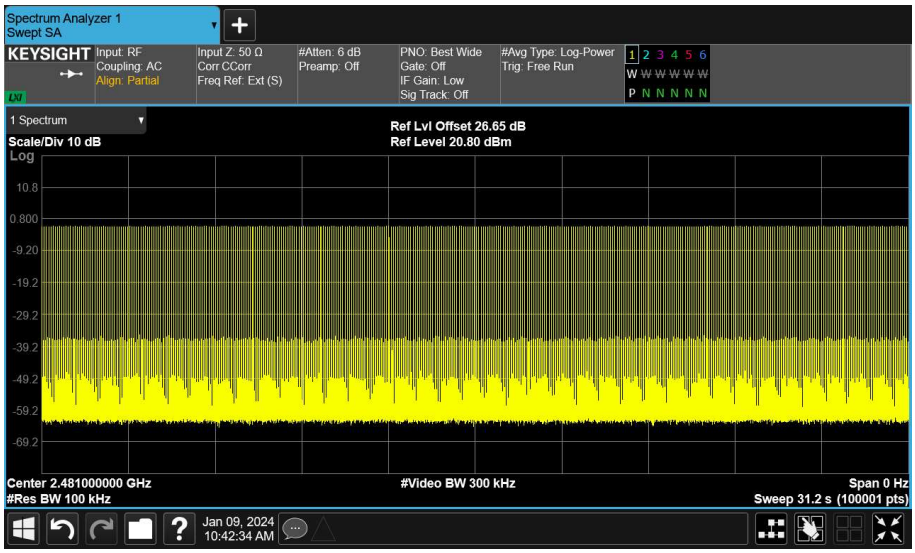

Figure 123 - 1 MBit/s GFSK - 2481 MHz Accumulated Transmit Time

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

Frequency hopping systems operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Transmissions on particular hopping frequencies may be avoided or suppressed provided that a minimum of 15 hopping channels are used.

Industry Canada RSS-247, Limit Clause 5.1 (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds, multiplied by the number of hopping channels employed.

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 Expires
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024

Table 52

2.7 Frequency Hopping Systems - Channel Separation

2.7.1 Specification Reference

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

2.7.2 Equipment Under Test and Modification State

RMP24MICQE, S/N: 5RGC00 - Modification State 0

2.7.3 Date of Test

09-January-2024

2.7.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 7.8.2.

2.7.5 Environmental Conditions

Ambient Temperature	22.4 °C
Relative Humidity	21.2 %

2.7.6 Test Results

2.4 GHz Transceiver - 1 Mbps (FHSS)

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	FCC 15.247(a)(1) RSS-247 5.1 b)	Test Method(s):	C63.10 7.8.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	1 MBit/s FHSS GFSK	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	20 dB Bandwidth (MHz)	Carrier Frequency Separation (MHz)			Limit (kHz)
		F1C	F2C	FHS	
2442	1.035	2442.070	2443.071	1.001	≥690.0

Table 53 - Carrier Frequency Separation Results

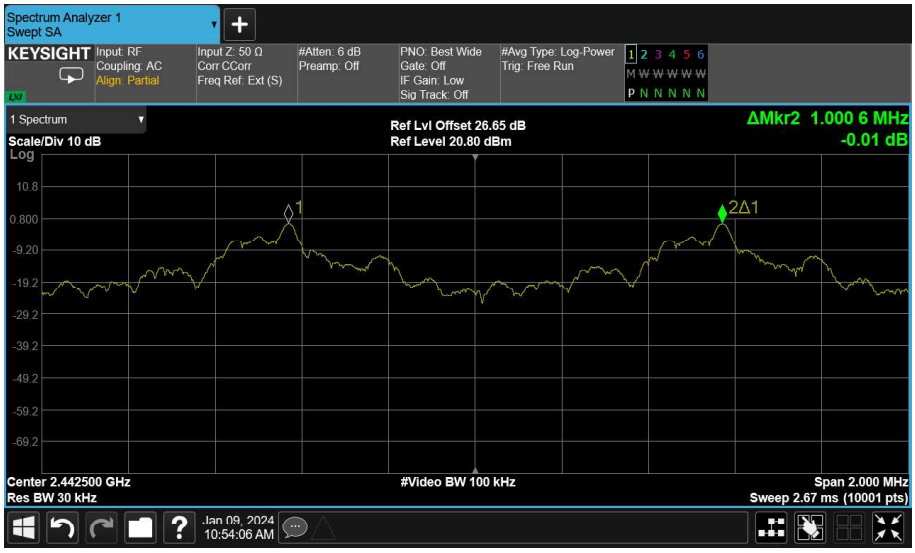

Figure 124 - 1 MBit/s GFSK - 2442 MHz

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

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

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

ISED RSS-247, Limit Clause 5.1 (b)

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

2.7.7 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 Expires
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024

Table 54

2.8 Frequency Hopping Systems - Number of Hopping Channels

2.8.1 Specification Reference

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

2.8.2 Equipment Under Test and Modification State

RMP24MICQE, S/N: 5RGC00 - Modification State 0

2.8.3 Date of Test

09-January-2024

2.8.4 Test Method

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

2.8.5 Environmental Conditions

Ambient Temperature	22.4 °C
Relative Humidity	21.2 %

2.8.6 Test Results

2.4 GHz Transceiver - 1 Mbps (FHSS)

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

DUT Configuration			
Mode:	1 MBit/s FHSS GFSK	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-

Number of Hopping Frequencies	Limit
79	≥15.0

Table 55 - Number of Hopping Frequencies Results

Figure 125 - 1 MBit/s GFSK - Number of Hopping Channels

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

≥ 15 channels

ISED RSS-247, Limit Clause 5.1 (d)

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

2.8.7 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 Expires
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024

Table 56

2.9 Frequency Hopping Systems - 20 dB Bandwidth

2.9.1 Specification Reference

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

2.9.2 Equipment Under Test and Modification State

RMP24MICQE, S/N: 5RGC00 - Modification State 0

2.9.3 Date of Test

09-January-2024

2.9.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.9.2.

2.9.5 Environmental Conditions

Ambient Temperature	22.4 °C
Relative Humidity	21.2 %

2.9.6 Test Results

2.4 GHz Transceiver - 1 Mbps (FHSS)

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

DUT Configuration			
Mode:	1 MBit/s FHSS GFSK	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	20 dB Bandwidth (MHz)			
	A	B	C	D
2403	0.879	-	-	-
2442	1.035	-	-	-
2481	0.855	-	-	-

Table 57 - 20 dB Bandwidth Results

Figure 126 - 2403 MHz 20 dB Bandwidth

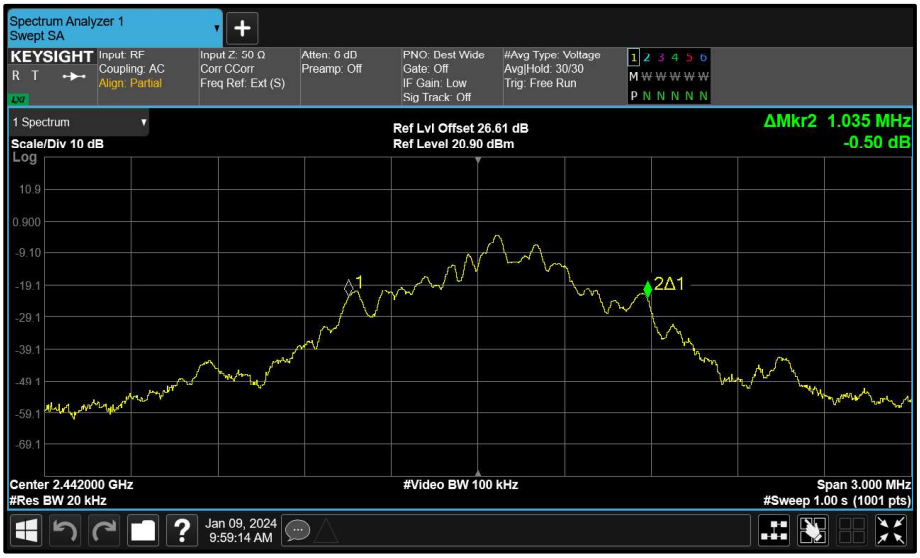

Figure 127 - 2442 MHz 20 dB Bandwidth

Figure 128 - 2481 MHz 20 dB Bandwidth

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

None specified.

2.9.7 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 Expires
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024

Table 58

2.10 Power Spectral Density

2.10.1 Specification Reference

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

2.10.2 Equipment Under Test and Modification State

RMP24MICQE, S/N: 5RGC00 - Modification State 0

2.10.3 Date of Test

09-January-2024

2.10.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.5.

Where the EUT duty cycle was < 98 % and repeatable within 2 %, the spectrum analyser was set to trace (power) averaging and a duty cycle correction was added as calculated in the result tables below (Method AVGPSD-2).

2.10.5 Environmental Conditions

Ambient Temperature	22.4 °C
Relative Humidity	21.2 %

2.10.6 Test Results

2.4 GHz Transceiver - 2 Mbps (DTS)

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	2 MBit/s DTS GFSK	Duty Cycle (%):	19.3
Antenna Configuration:	SISO	DCCF (dB):	7.16
Active Port(s):	-	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	-10.94	-	-	-	-	8.00	-18.94
2442	3.0	-10.31	-	-	-	-	8.00	-18.31
2480	3.0	-9.25	-	-	-	-	8.00	-17.25

Table 59 - 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

2.10.7 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 Expires
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024

Table 60

O/P Mon – Output Monitored using calibrated equipment

3 Photographs

3.1 Test Setup Photographs

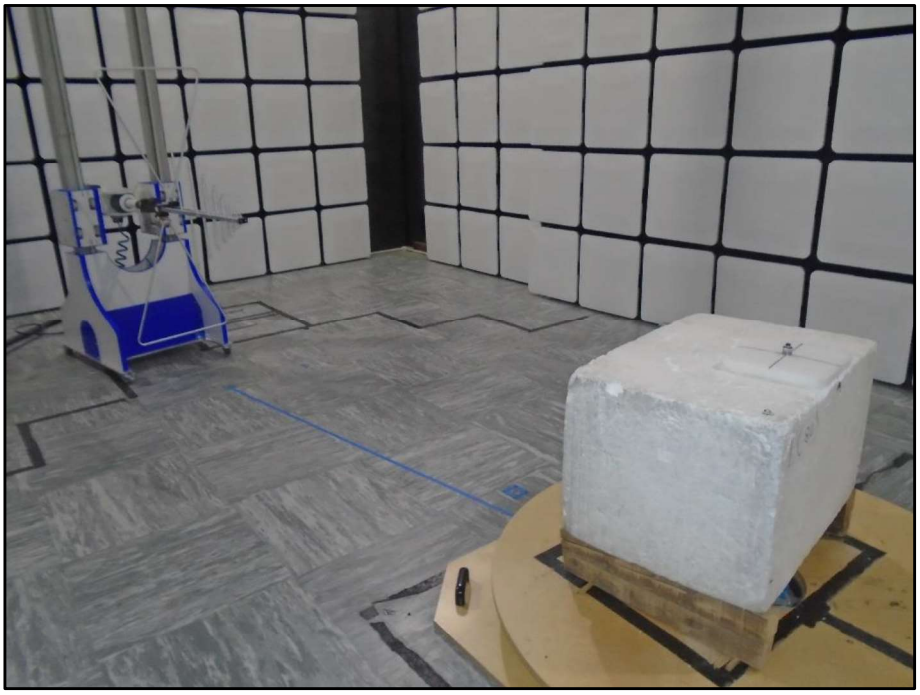

Figure 129 – 30 MHz to 1 GHz

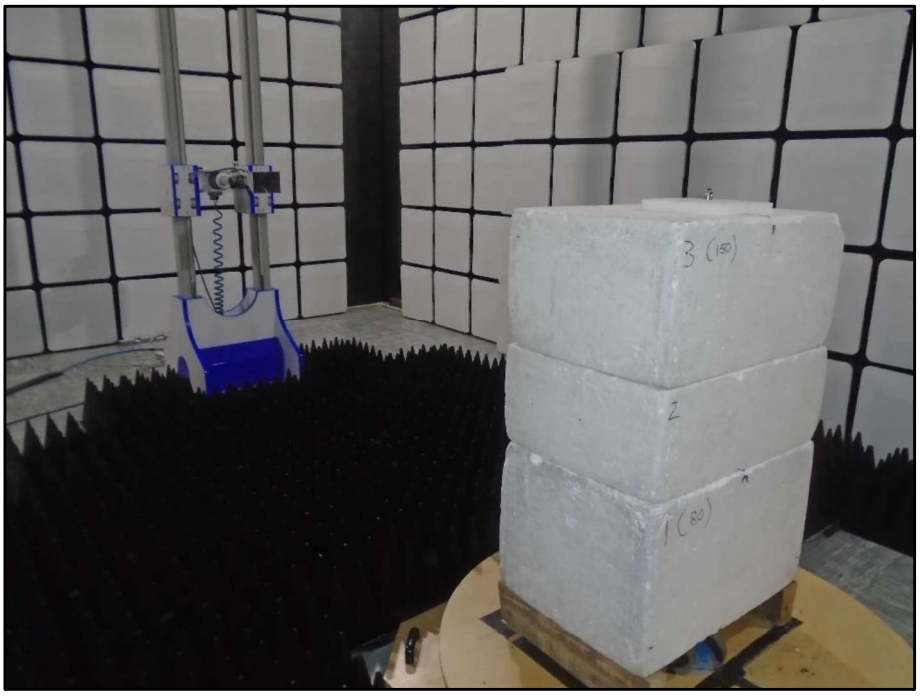

Figure 130 – 1 GHz to 18 GHz

Figure 131 – 18 GHz to 25 GHz

4 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	± 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
Power Spectral Density	± 1.49 dB
Frequency Hopping Systems - Average Time of Occupancy	-
Frequency Hopping Systems - Channel Separation	± 14.72 kHz
Frequency Hopping Systems - Number of Hopping Channels	-
Frequency Hopping Systems - 20 dB Bandwidth	± 14.72 kHz

Table 61

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.