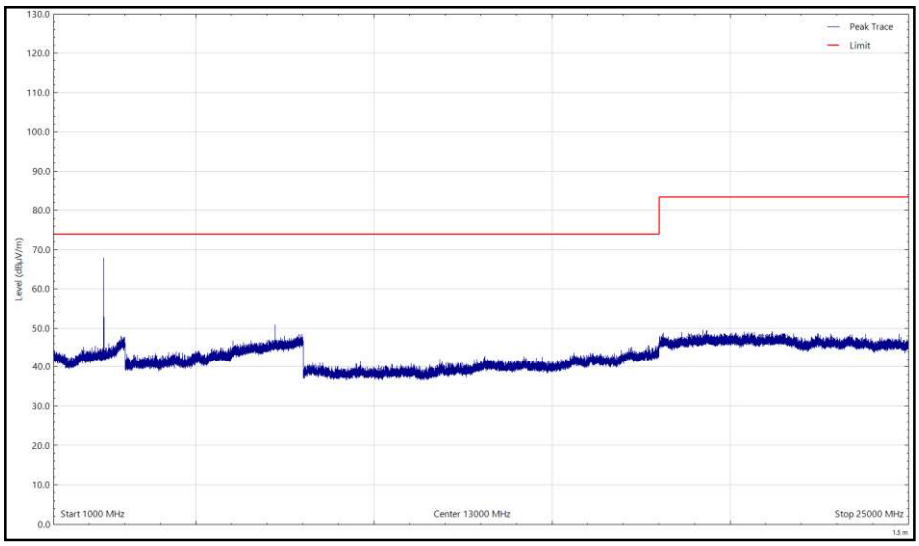


**Figure 54 - DTS_Bot_2Mbps_Z, 2404 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

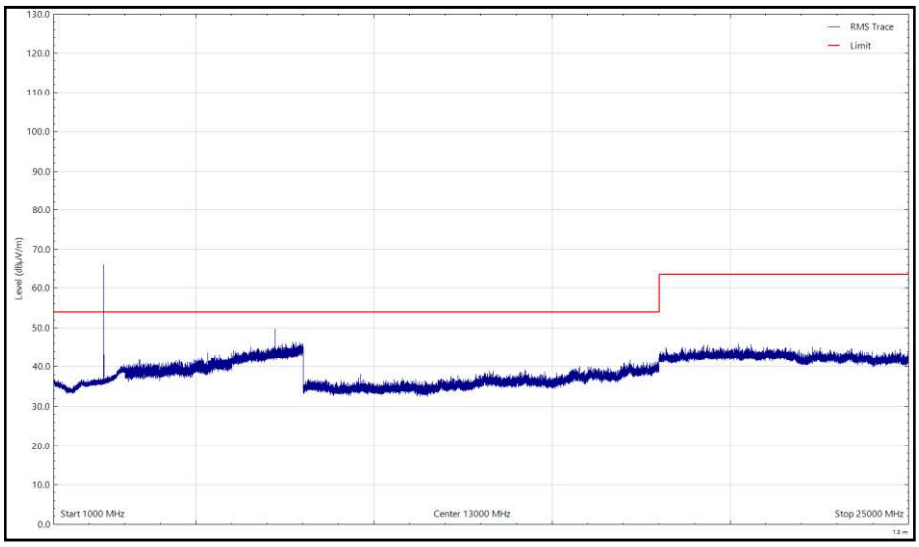


**Figure 55 - DTS_Bot_2Mbps_Z, 2404 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

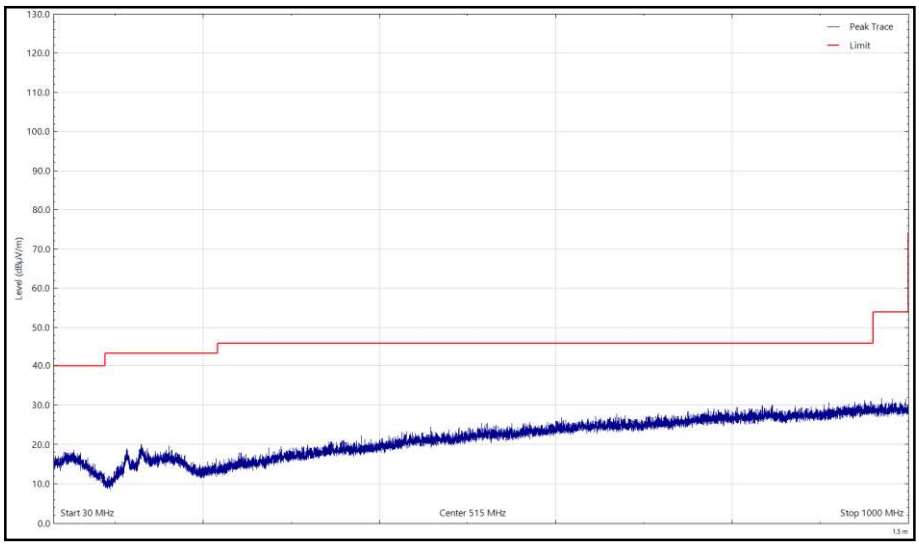


**Figure 56 - DTS_Mid_2Mbps_Z, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

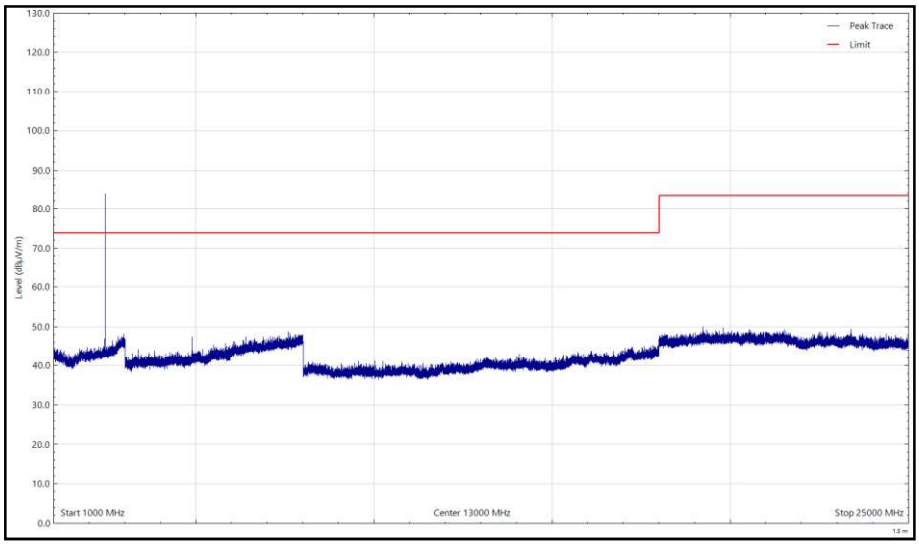


**Figure 57 - DTS_Mid_2Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

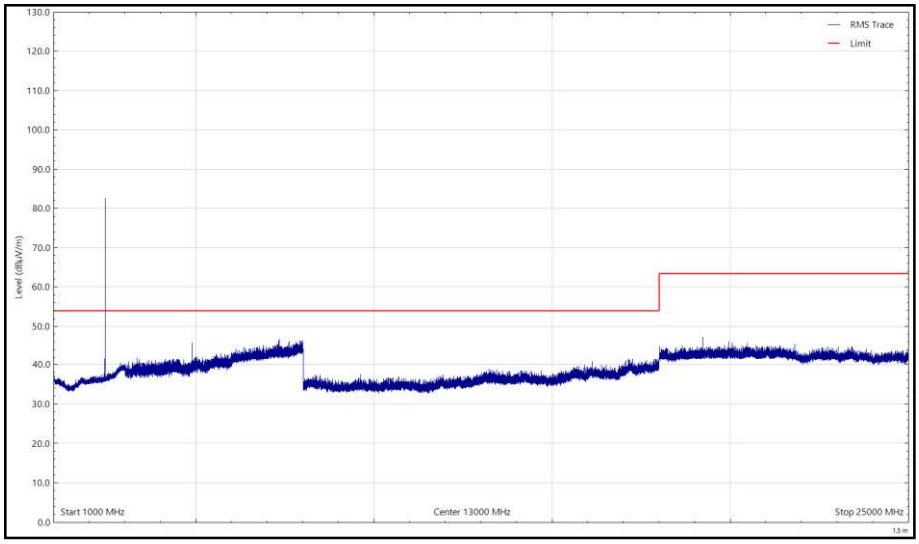


**Figure 58 - DTS_Mid_2Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

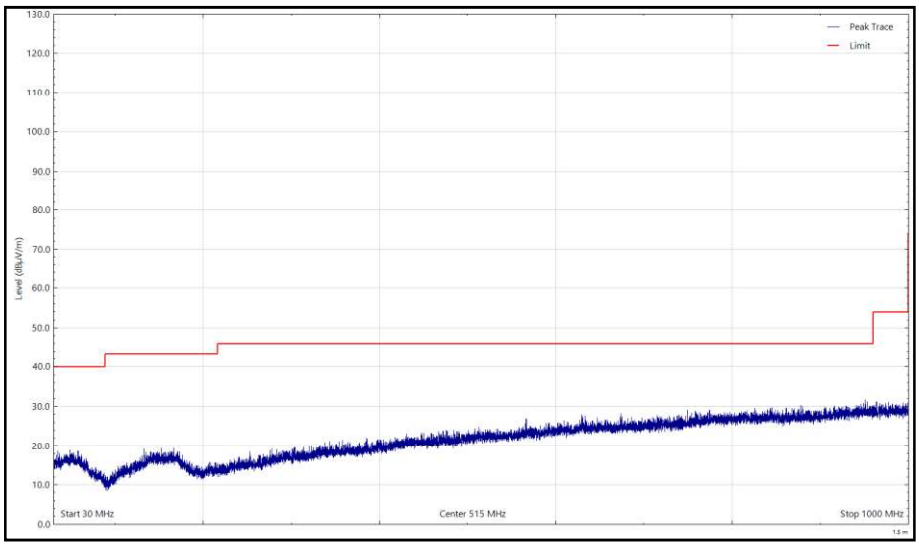


**Figure 59 - DTS_Mid_2Mbps_Z, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

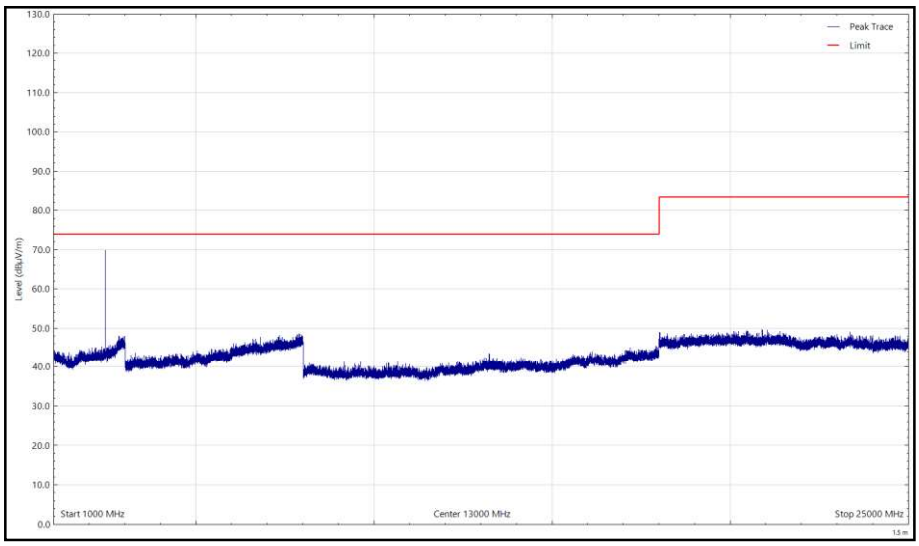


**Figure 60 - DTS_Mid_2Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

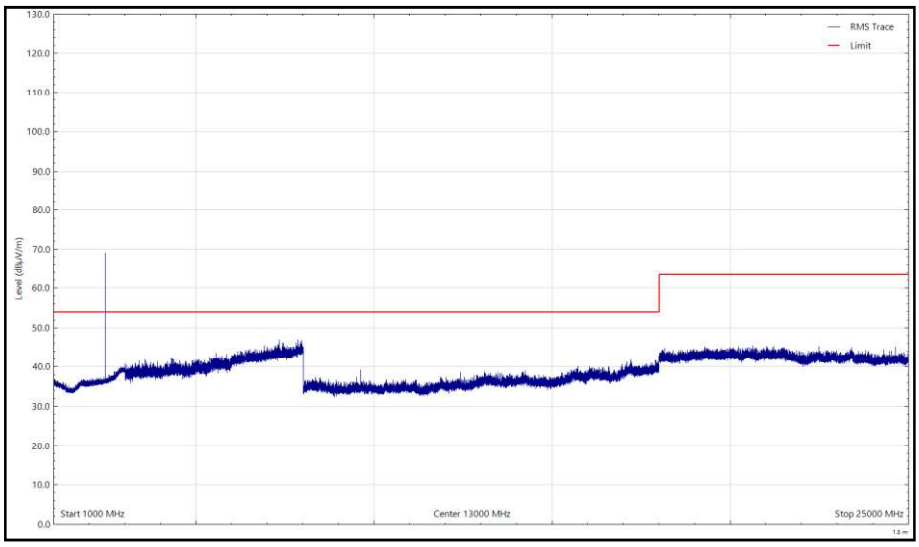


**Figure 61 - DTS_Mid_2Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

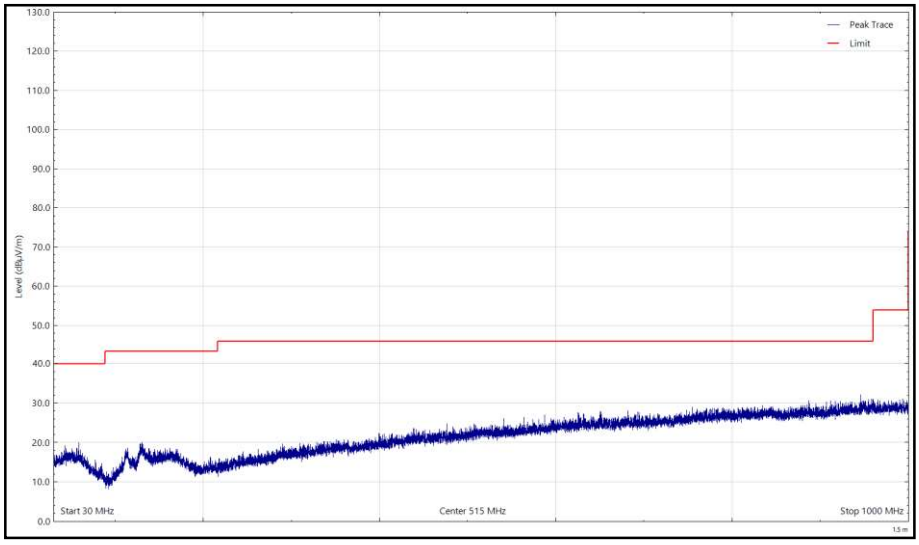


**Figure 62 - DTS_Top_2Mbps_Z, 2480 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

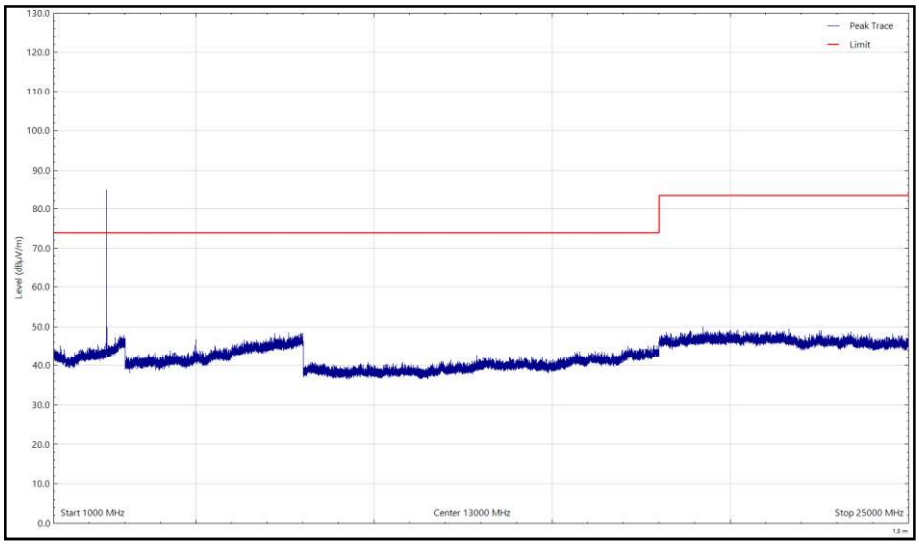


**Figure 63 - DTS_Top_2Mbps_Z, 2480 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

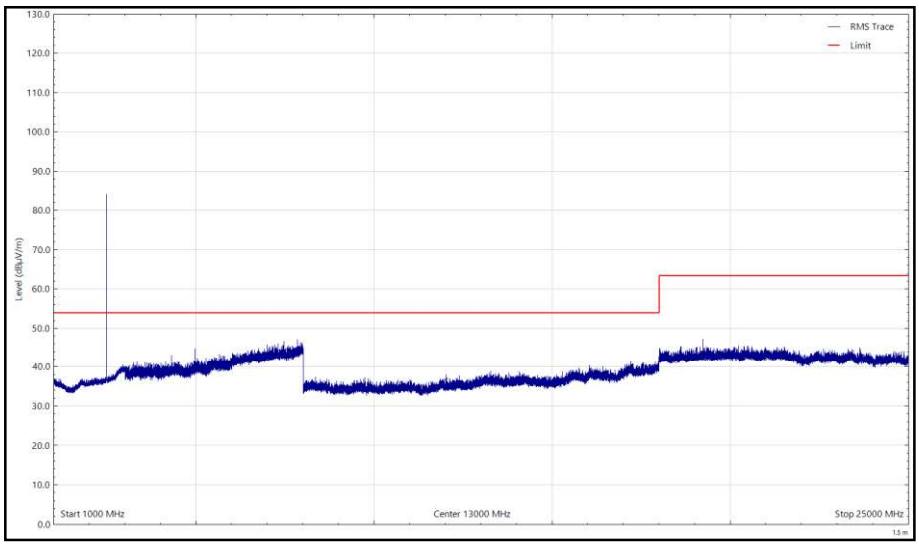


**Figure 64 - DTS_Top_2Mbps_Z, 2480 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

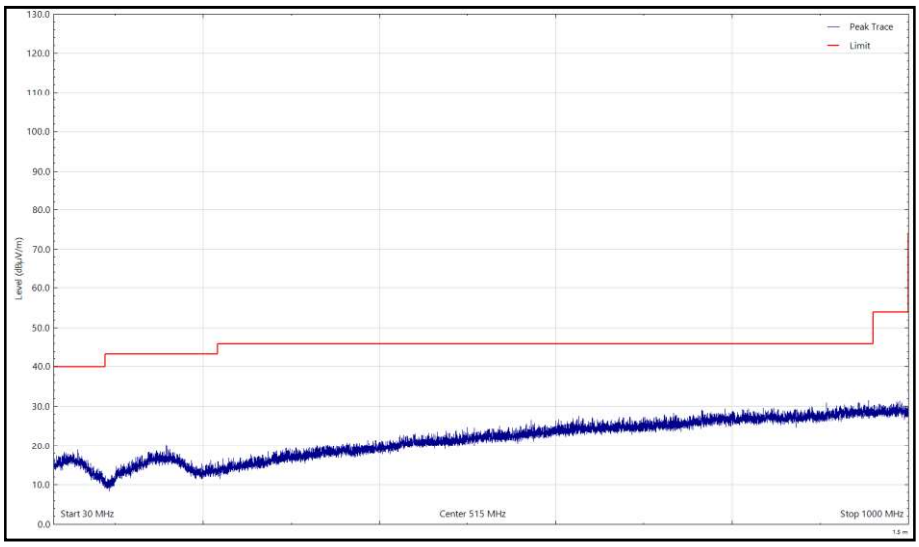


**Figure 65 - DTS_Top_2Mbps_Z, 2480 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

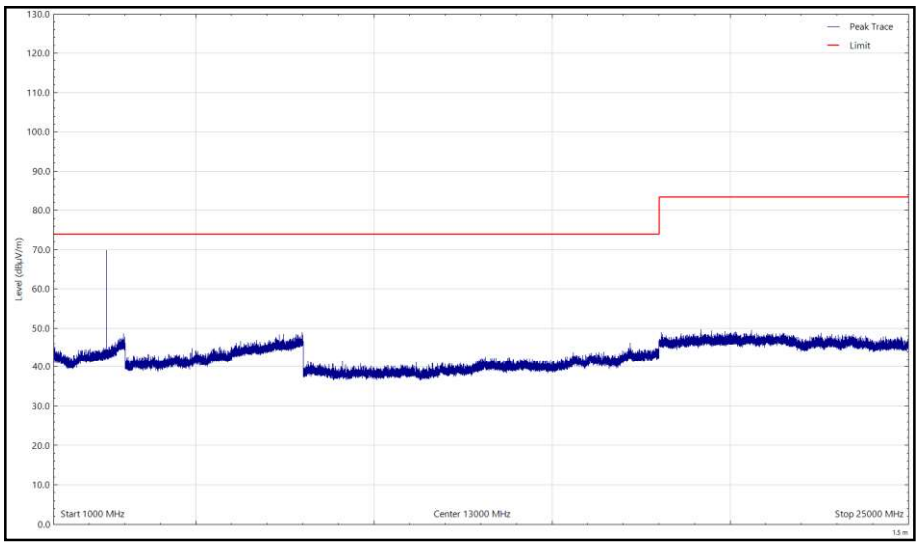


**Figure 66 - DTS_Top_2Mbps_Z, 2480 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

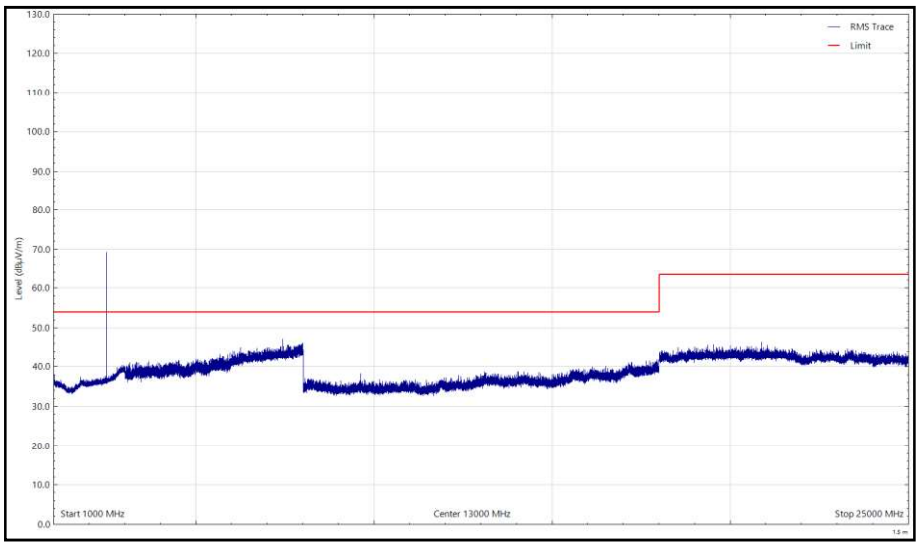


**Figure 67 - DTS_Top_2Mbps_Z, 2480 MHz, 1 GHz to 25 GHz, Vertical (rms)**

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.

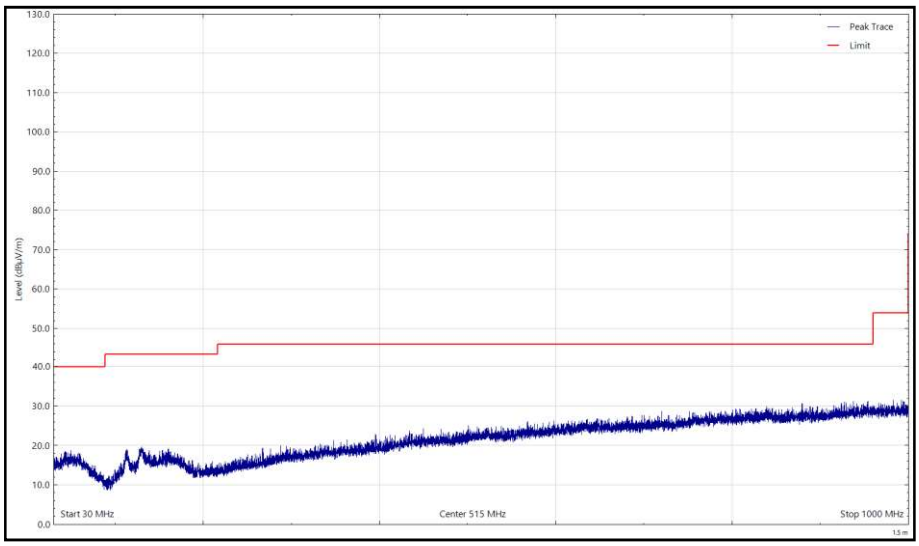


**Figure 68 - FHSS_Bot_1Mbps_X, 2403 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

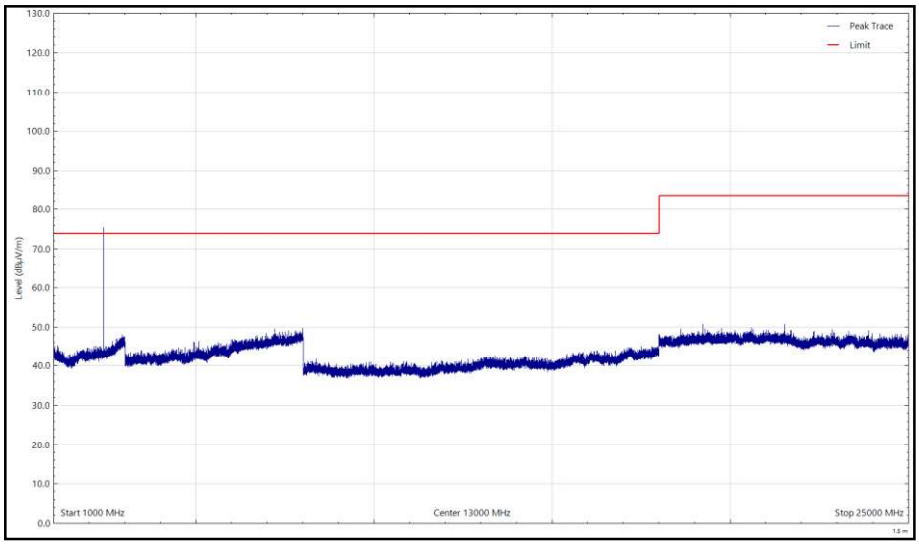


**Figure 69 - FHSS_Bot_1Mbps_X, 2403 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

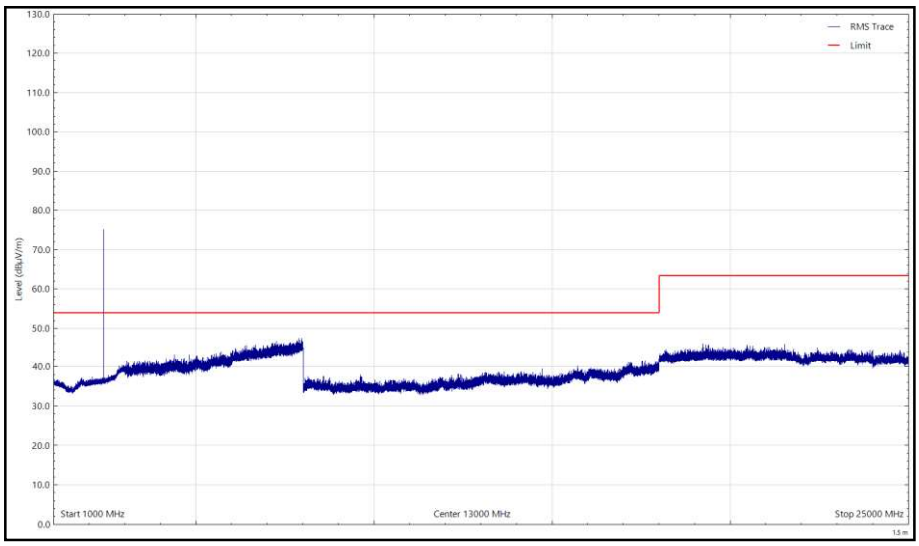


**Figure 70 - FHSS_Bot_1Mbps_X, 2403 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

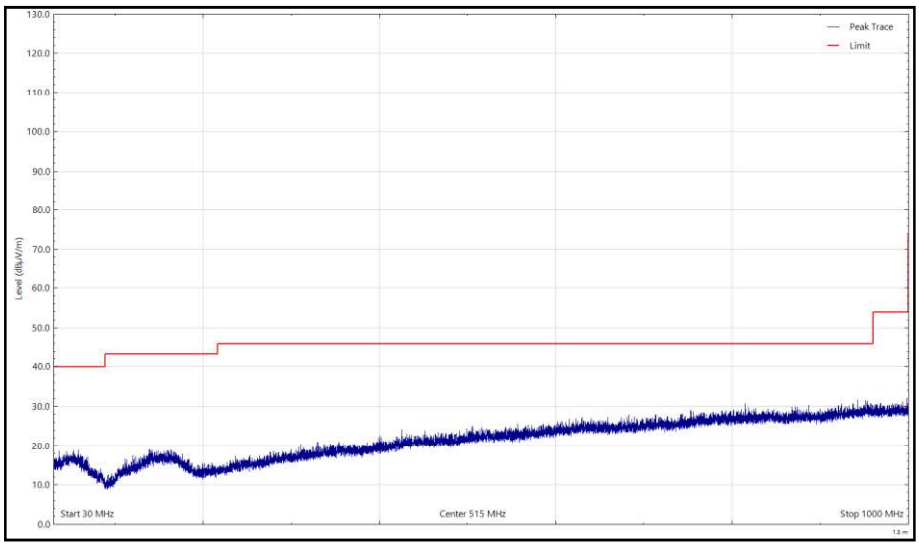


**Figure 71 - FHSS_Bot_1Mbps_X, 2403 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

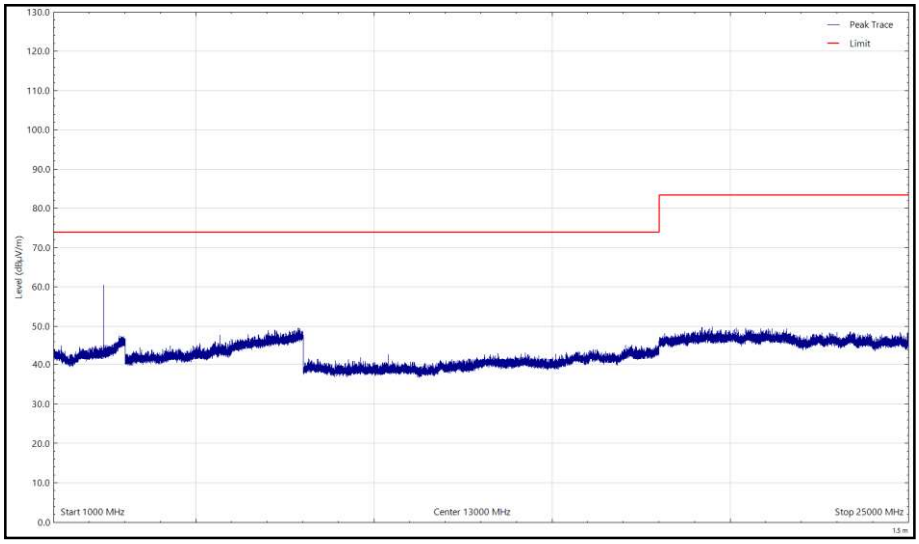


**Figure 72 - FHSS_Bot_1Mbps_X, 2403 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

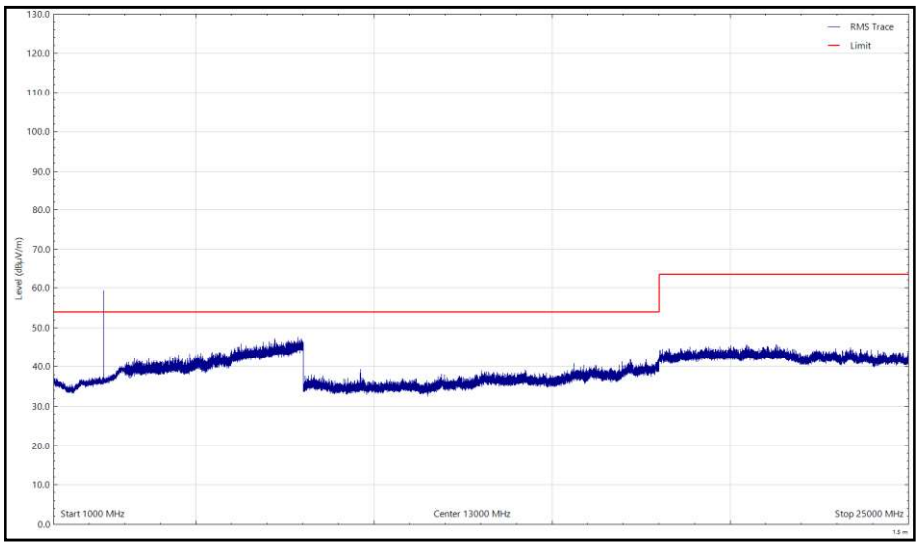


**Figure 73 - FHSS_Bot_1Mbps_X, 2403 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

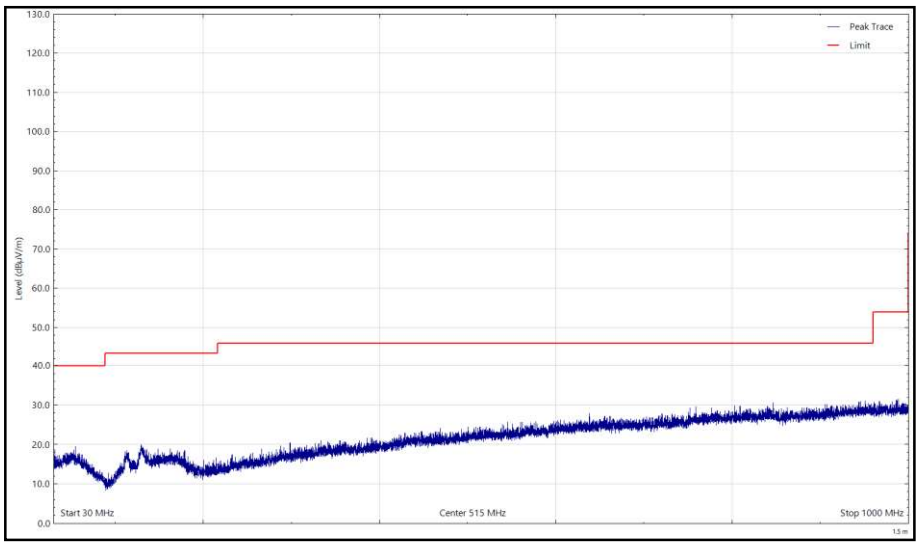


**Figure 74 - FHSS_Mid_1Mbps_X, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

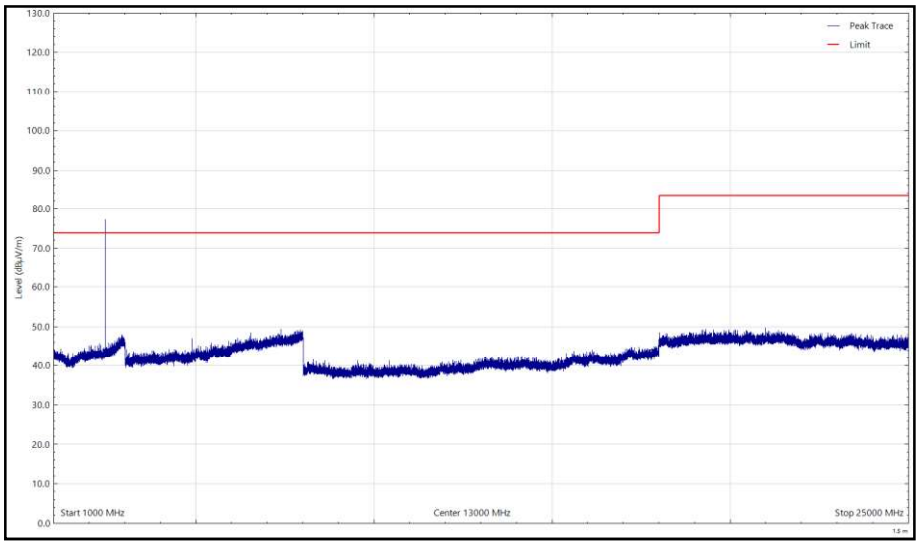


**Figure 75 - FHSS_Mid_1Mbps_X, 2442 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

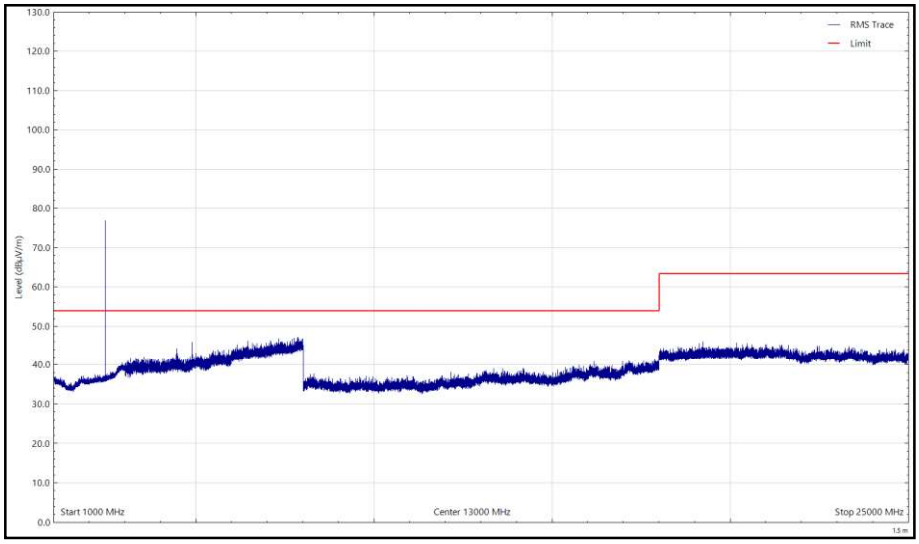


**Figure 76 - FHSS_Mid_1Mbps_X, 2442 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

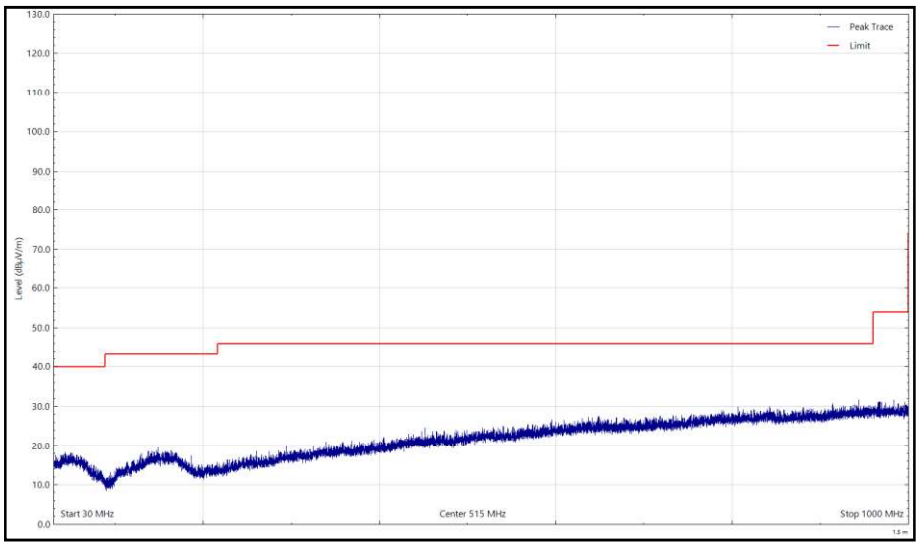


**Figure 77 - FHSS_Mid_1Mbps_X, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

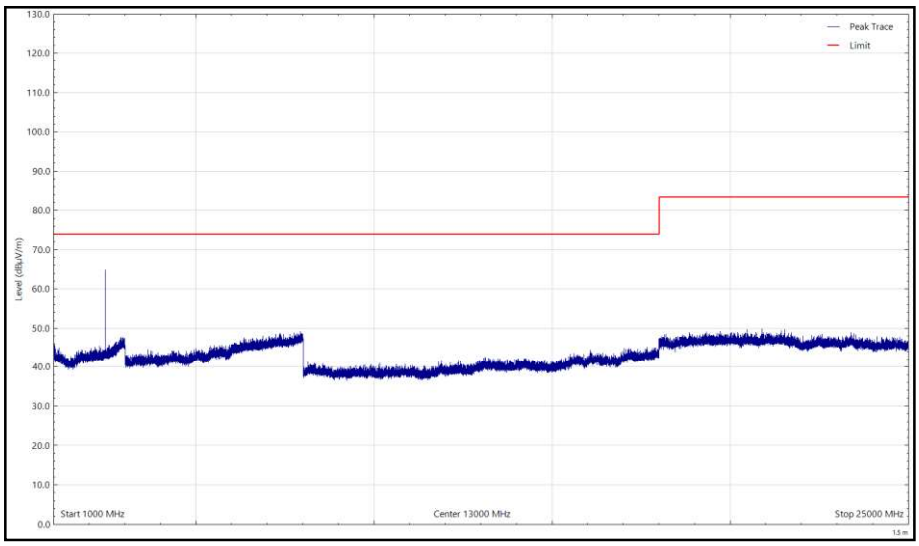


**Figure 78 - FHSS_Mid_1Mbps_X, 2442 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

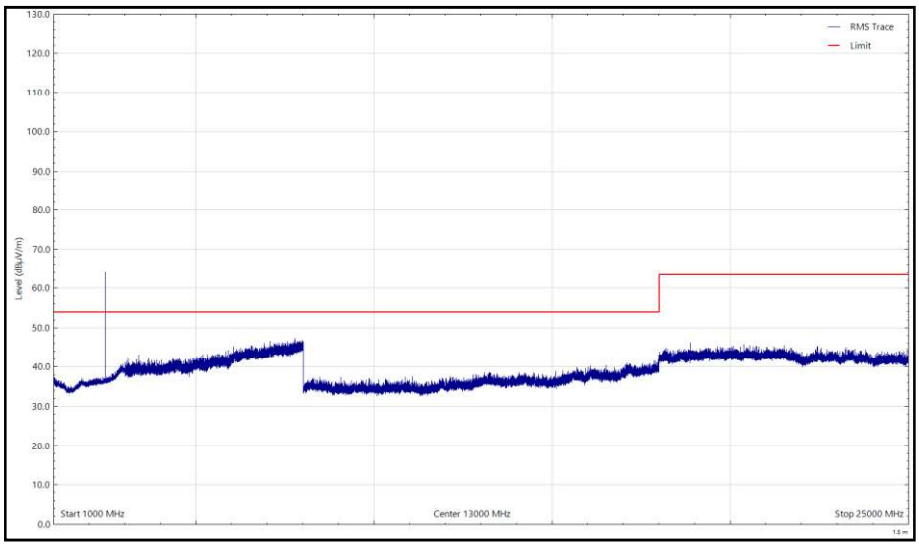


**Figure 79 - FHSS_Mid_1Mbps_X, 2442 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

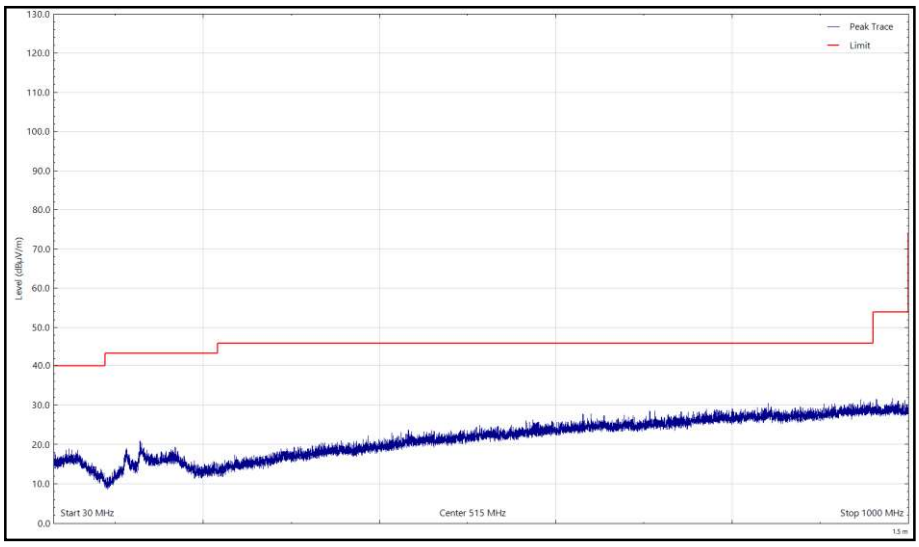


**Figure 80 - FHSS_Top_1Mbps_X, 2481 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

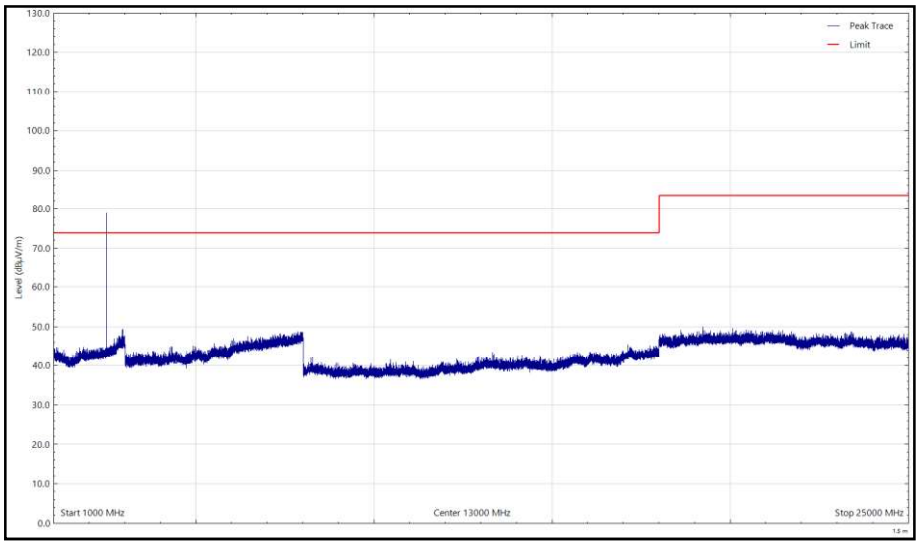


**Figure 81 - FHSS_Top_1Mbps_X, 2481 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

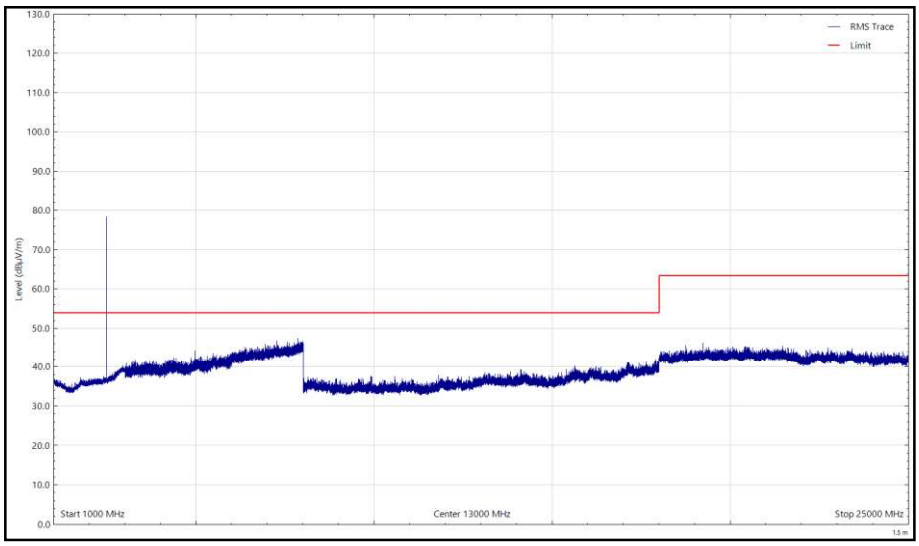


**Figure 82 - FHSS_Top_1Mbps_X, 2481 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

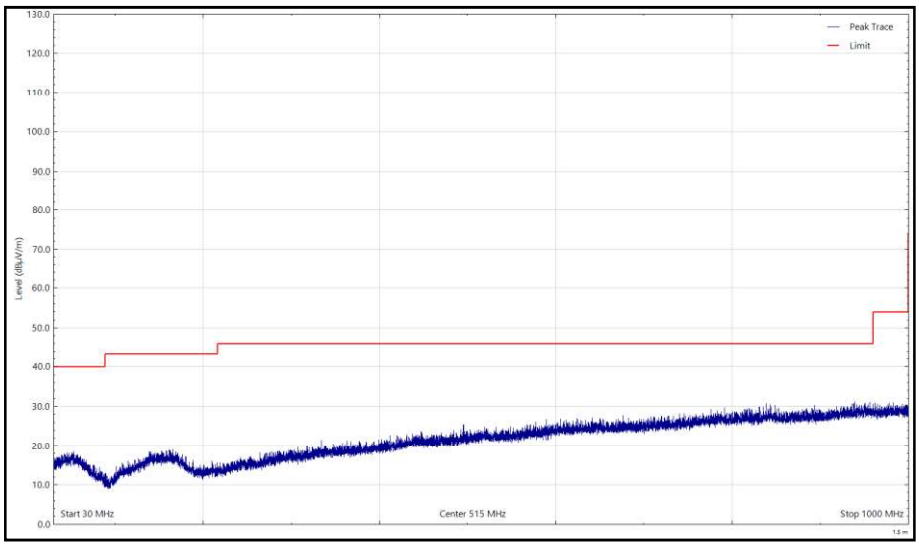


**Figure 83 - FHSS_Top_1Mbps_X, 2481 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

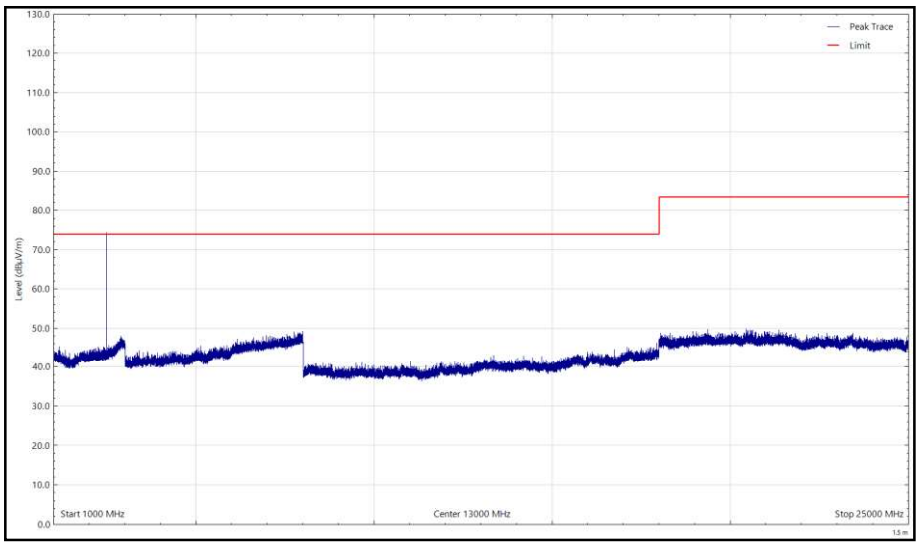


**Figure 84 - FHSS_Top_1Mbps_X, 2481 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

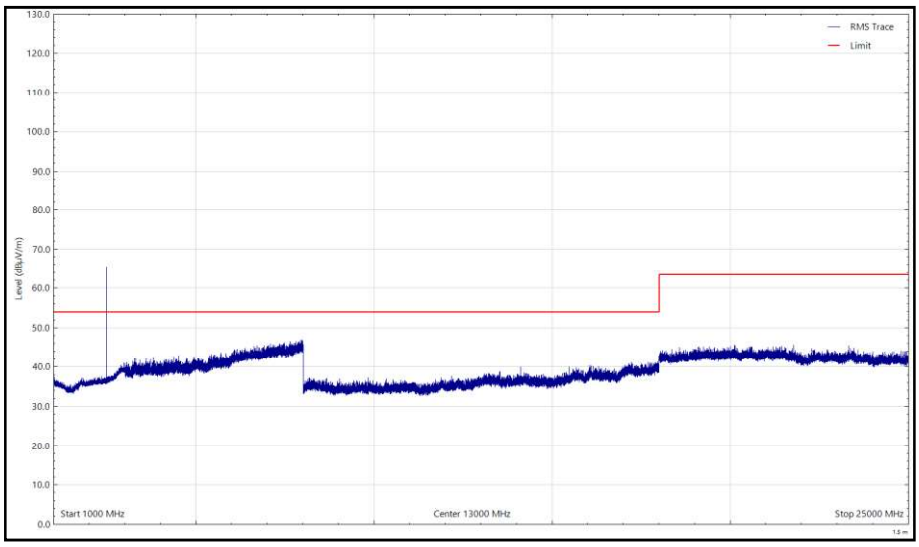


**Figure 85 - FHSS_Top_1Mbps_X, 2481 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

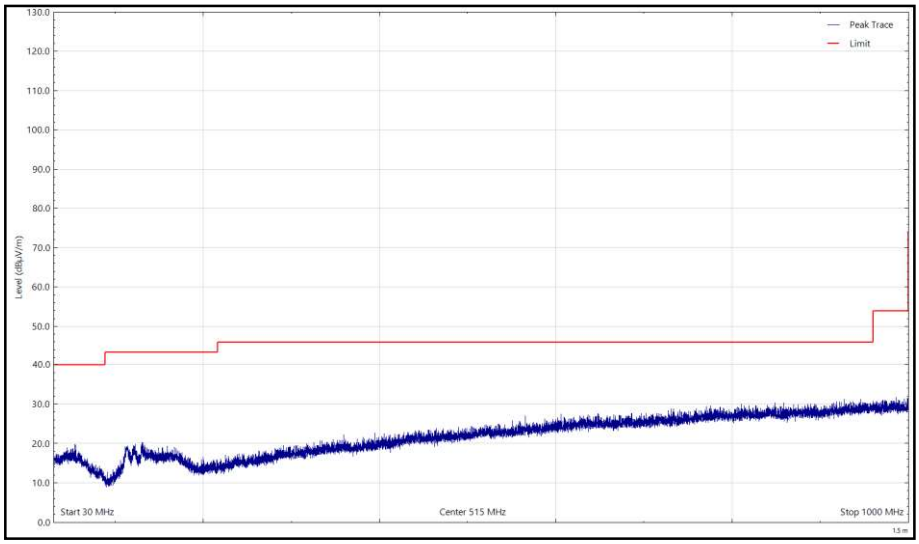


**Figure 86 - FHSS_Bot_1Mbps_Y, 2403 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

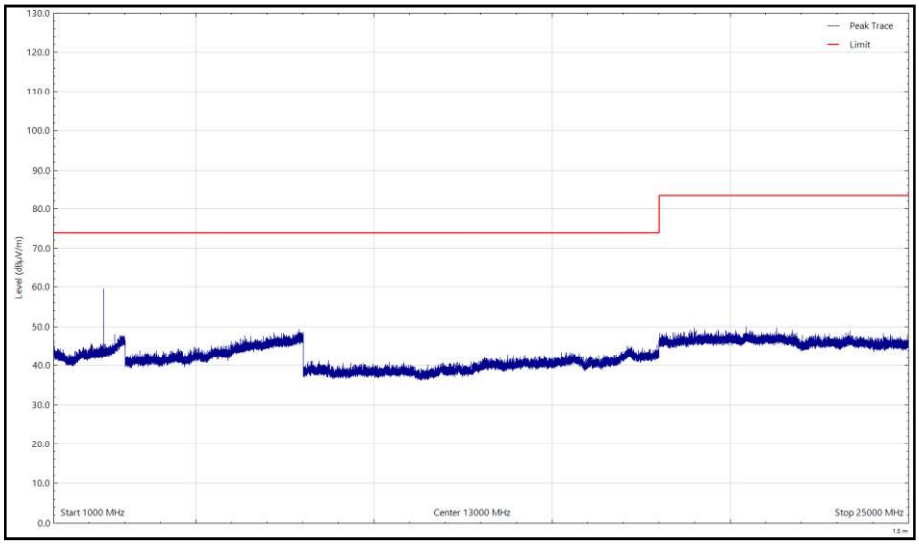


**Figure 87 - FHSS_Bot_1Mbps_Y, 2403 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

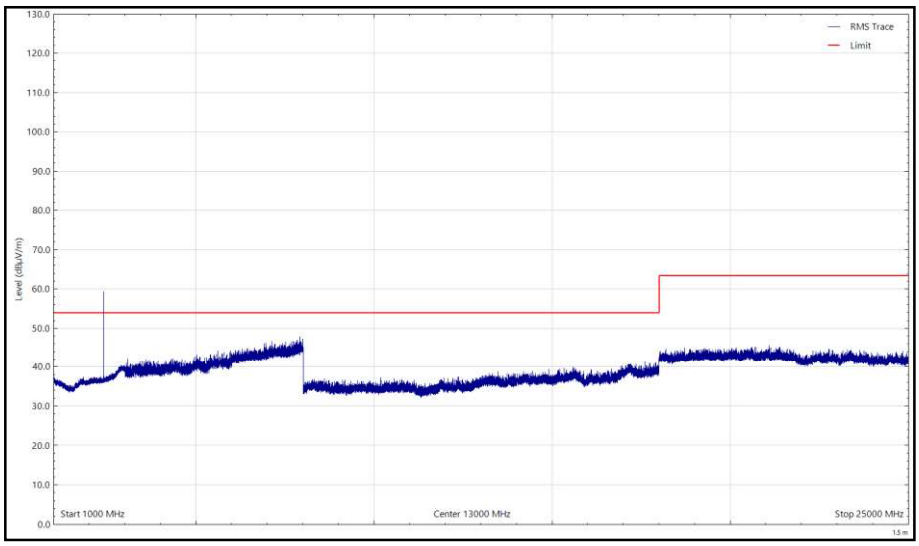


**Figure 88 - FHSS_Bot_1Mbps_Y, 2403 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

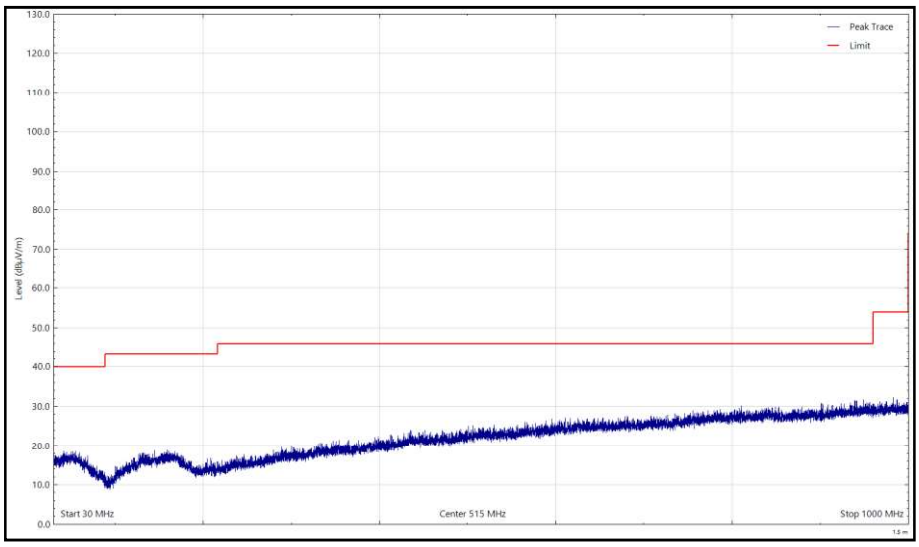


**Figure 89 - FHSS_Bot_1Mbps_Y, 2403 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

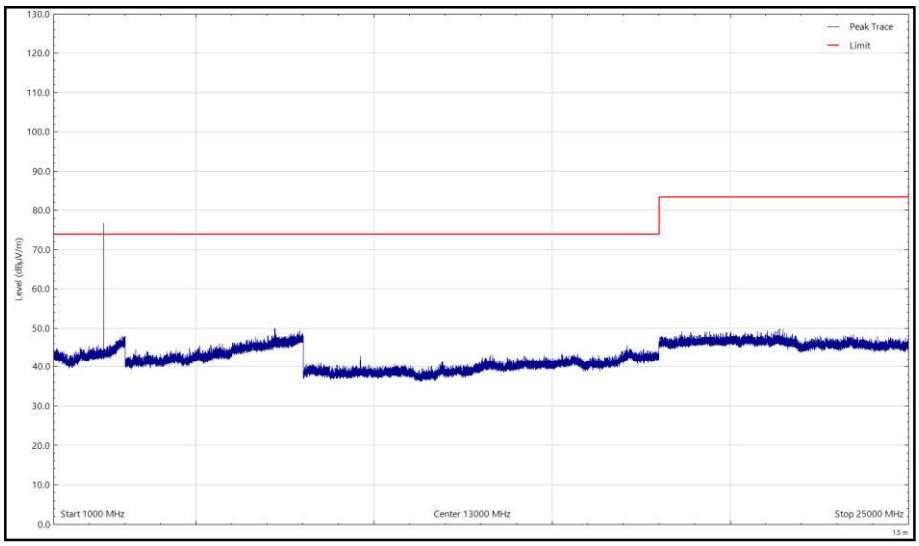


**Figure 90 - FHSS_Bot_1Mbps_Y, 2403 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

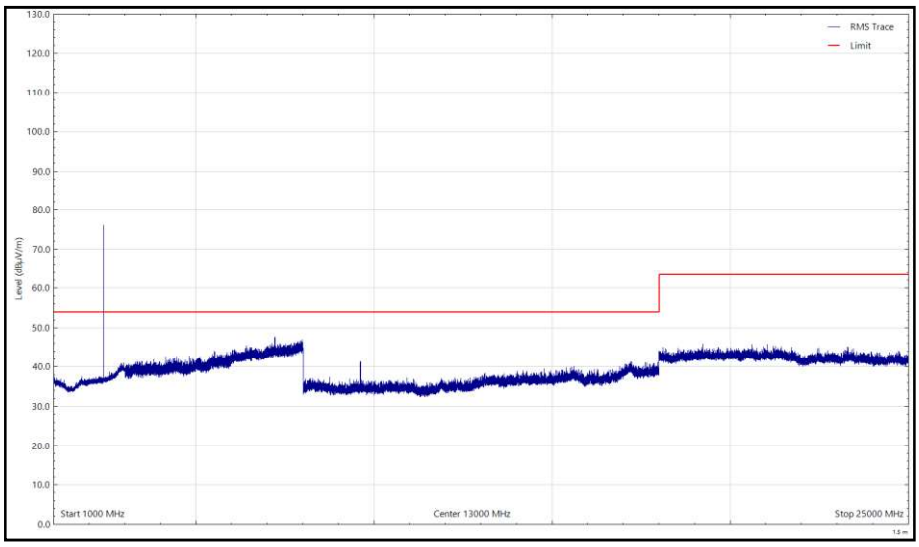


**Figure 91 - FHSS_Bot_1Mbps_Y, 2403 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

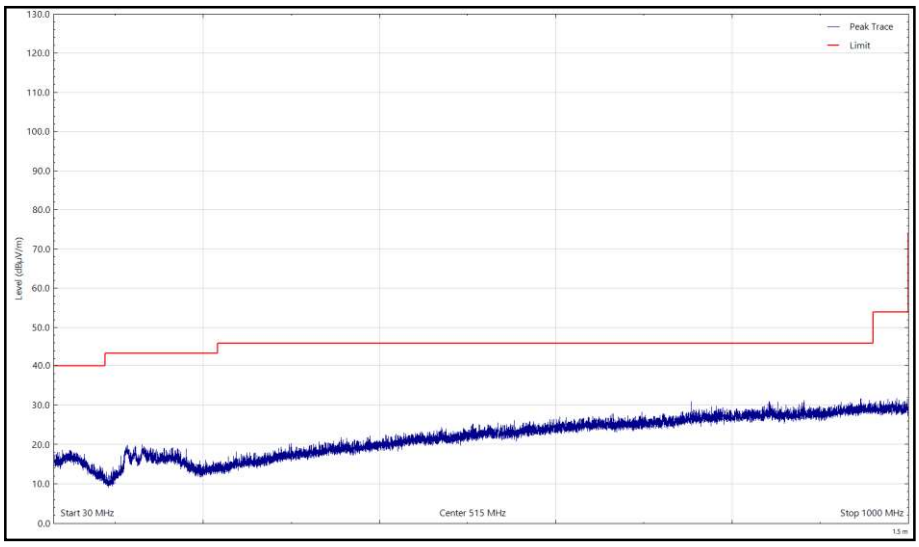


**Figure 92 - FHSS_Mid_1Mbps_Y, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

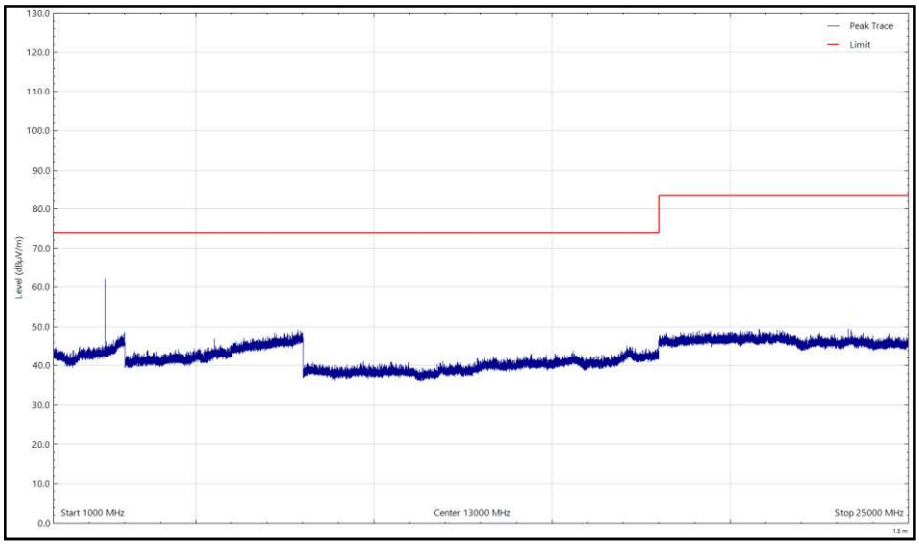


**Figure 93 - FHSS_Mid_1Mbps_Y, 2442 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

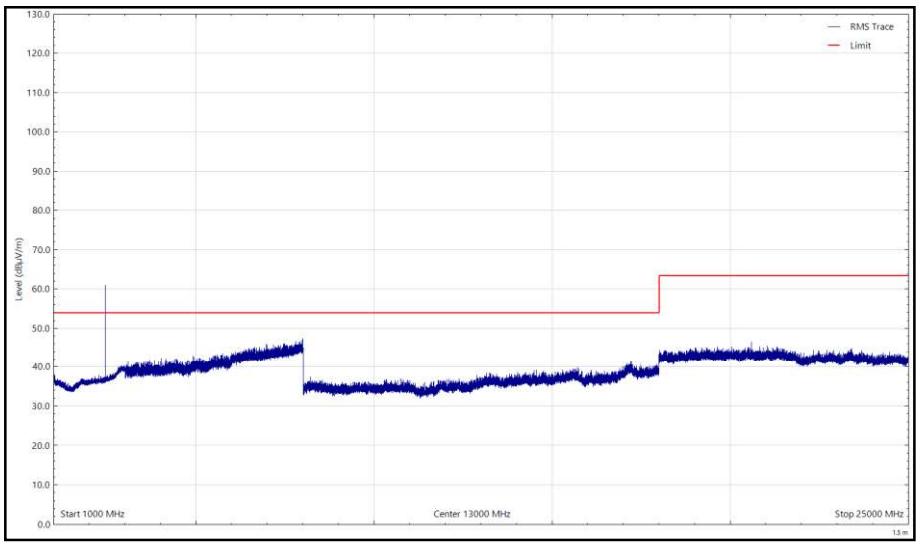


**Figure 94 - FHSS_Mid_1Mbps_Y, 2442 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

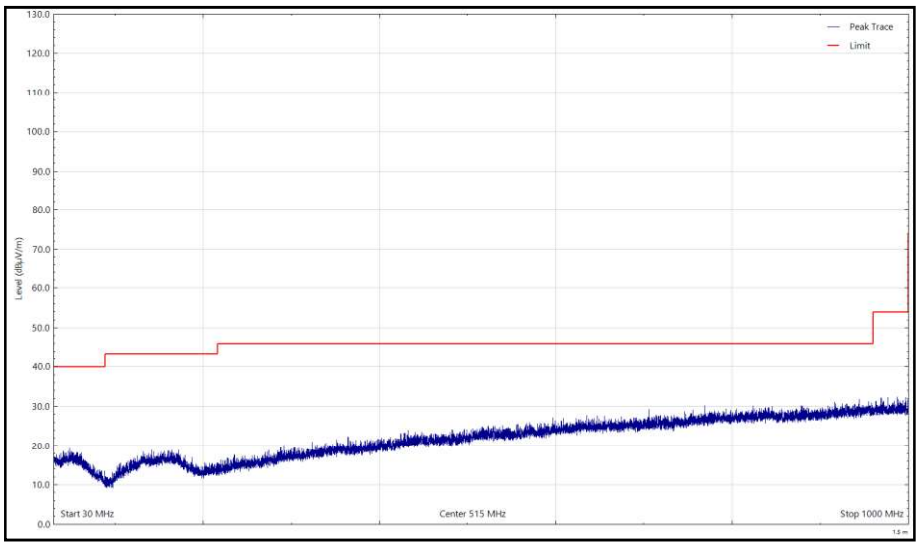


**Figure 95 - FHSS_Mid_1Mbps_Y, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

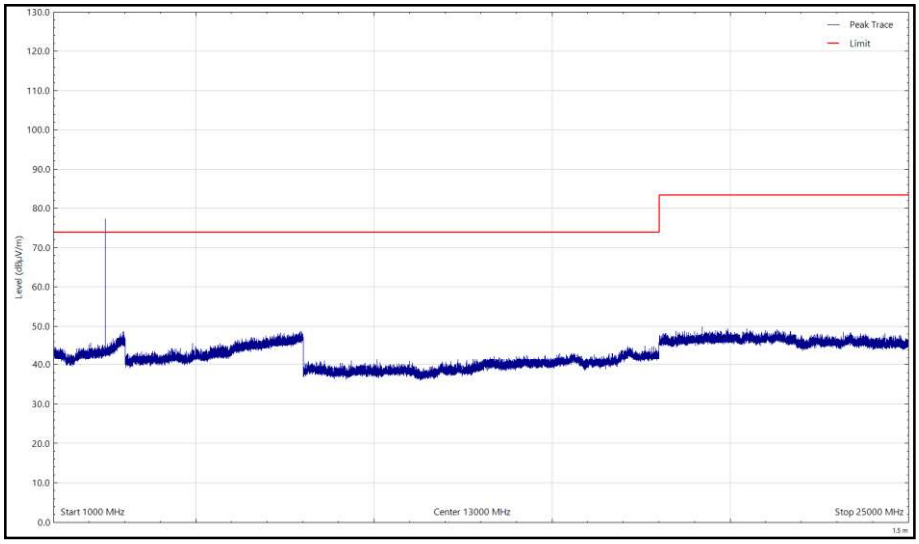


**Figure 96 - FHSS_Mid_1Mbps_Y, 2442 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

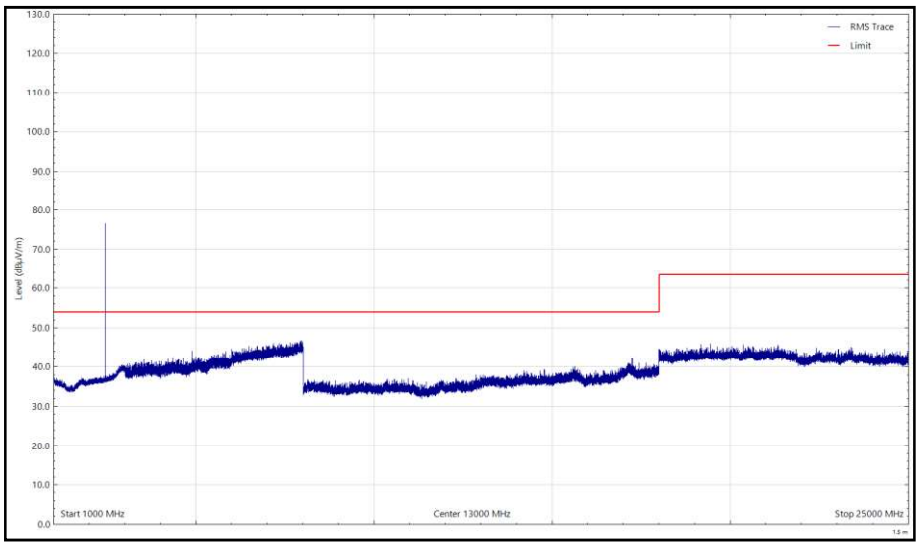


**Figure 97 - FHSS_Mid_1Mbps_Y, 2442 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

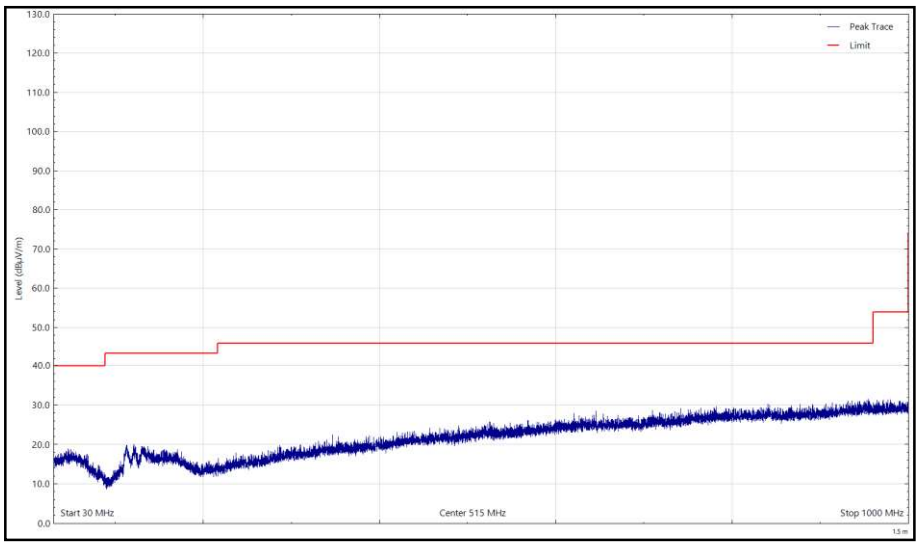


**Figure 98 - FHSS_Top_1Mbps_Y, 2481 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

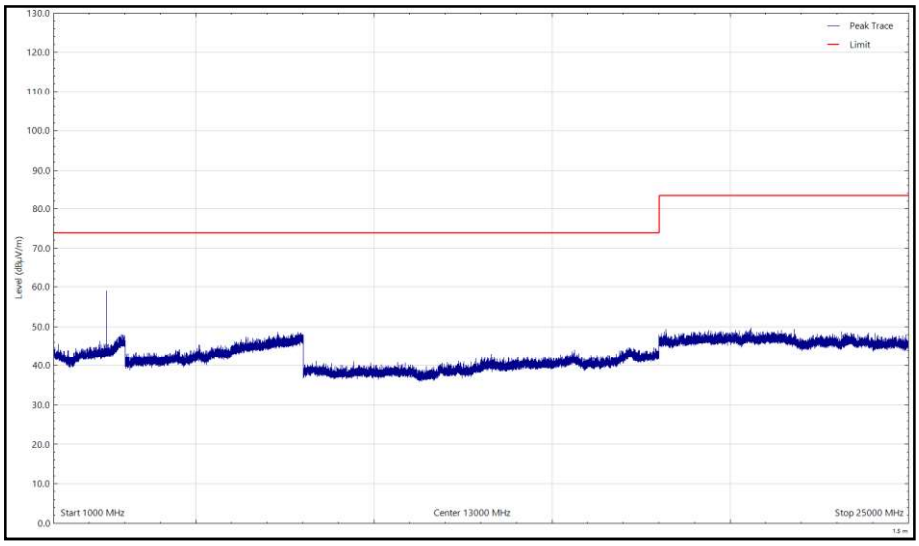


**Figure 99 - FHSS_Top_1Mbps_Y, 2481 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

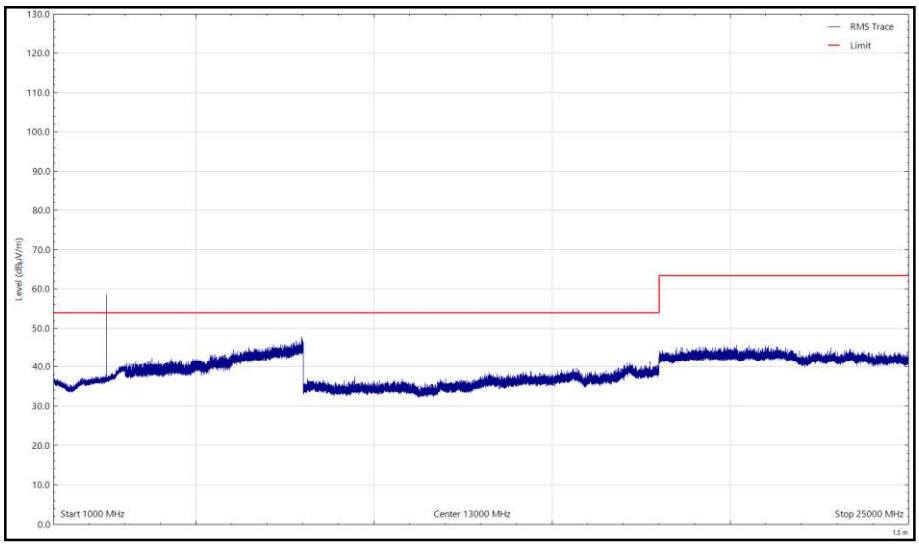


**Figure 100 - FHSS_Top_1Mbps_Y, 2481 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

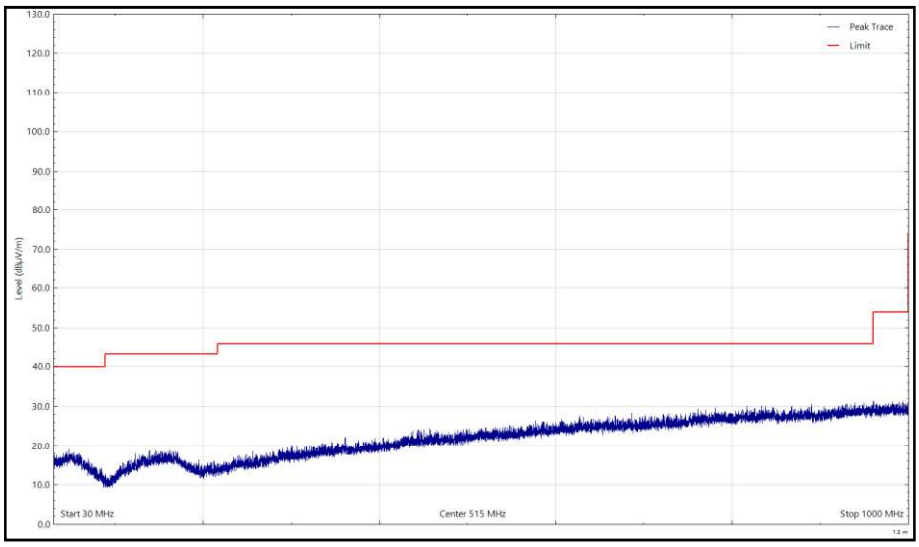


**Figure 101 - FHSS_Top_1Mbps_Y, 2481 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

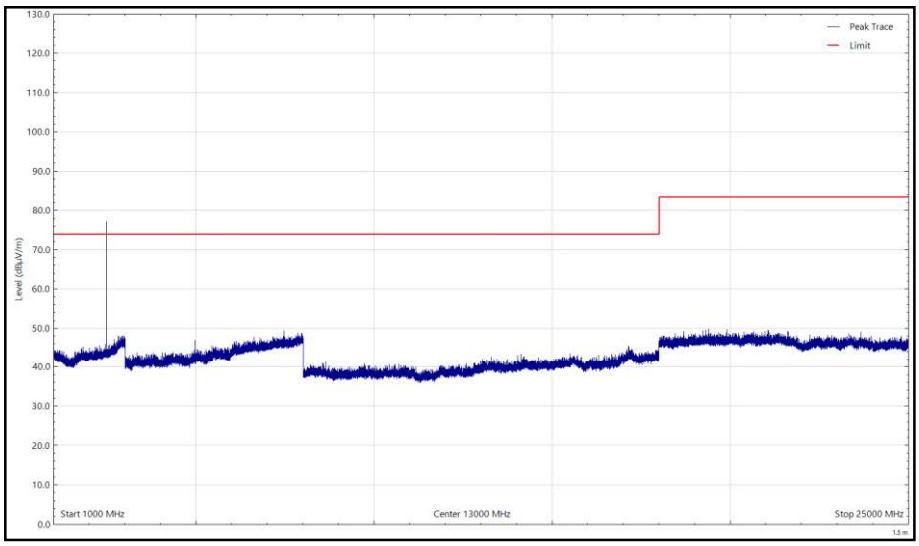


**Figure 102 - FHSS_Top_1Mbps_Y, 2481 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

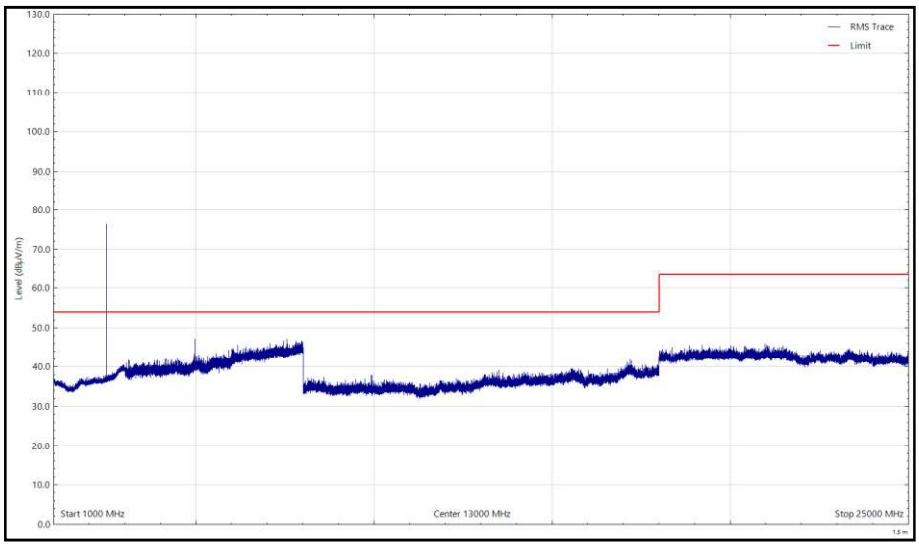


**Figure 103 - FHSS_Top_1Mbps_Y, 2481 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

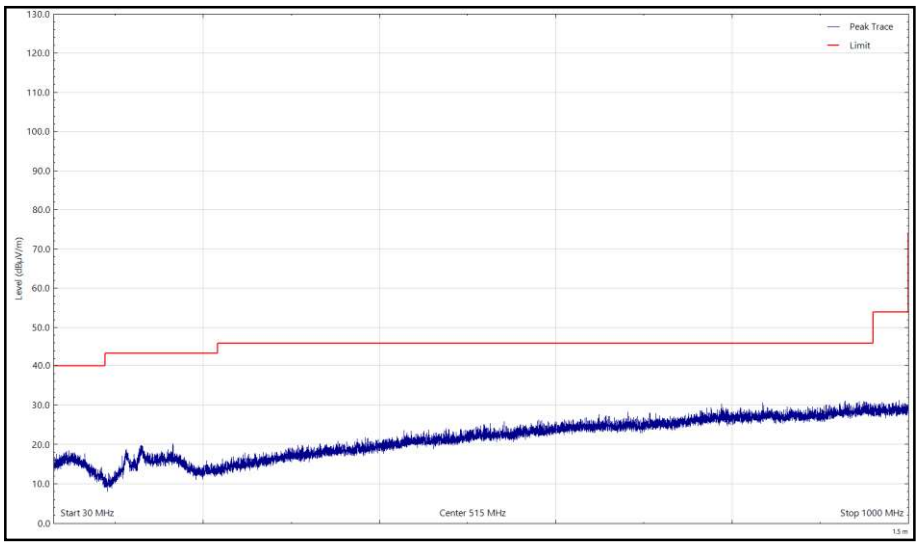


**Figure 104 - FHSS_Bot_1Mbps_Z, 2403 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

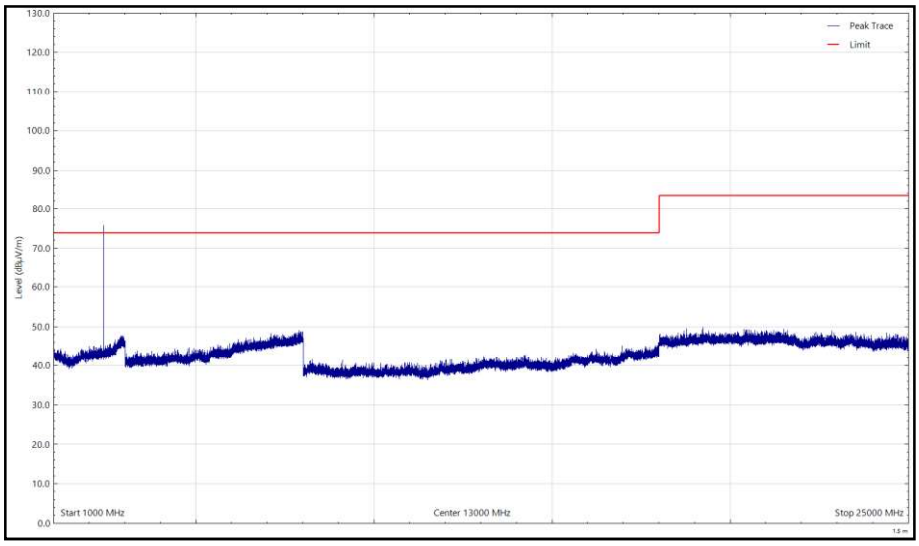


**Figure 105 - FHSS_Bot_1Mbps_Z, 2403 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

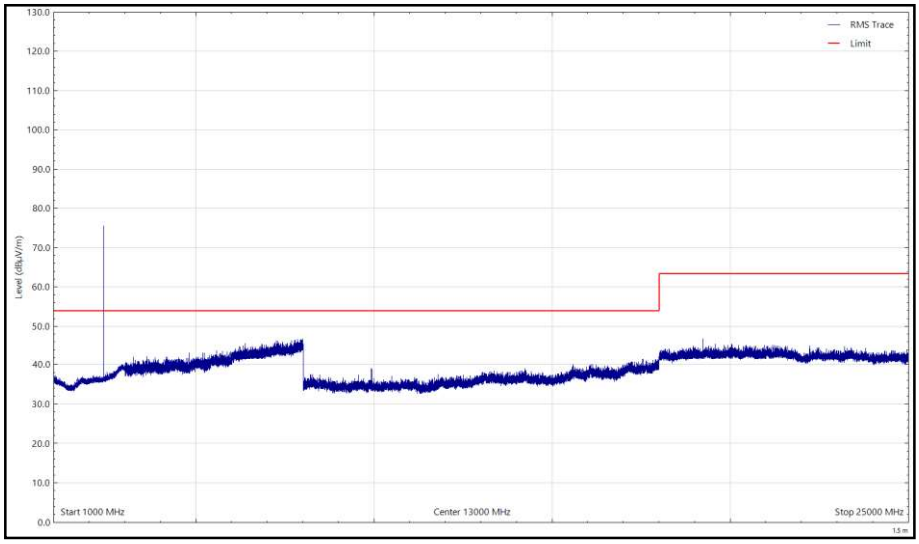


**Figure 106 - FHSS_Bot_1Mbps_Z, 2403 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

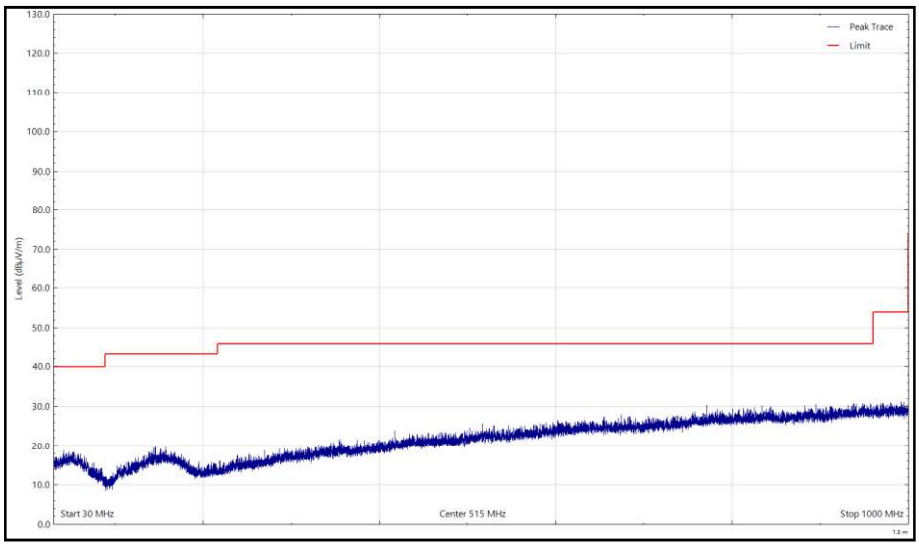


**Figure 107 - FHSS_Bot_1Mbps_Z, 2403 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

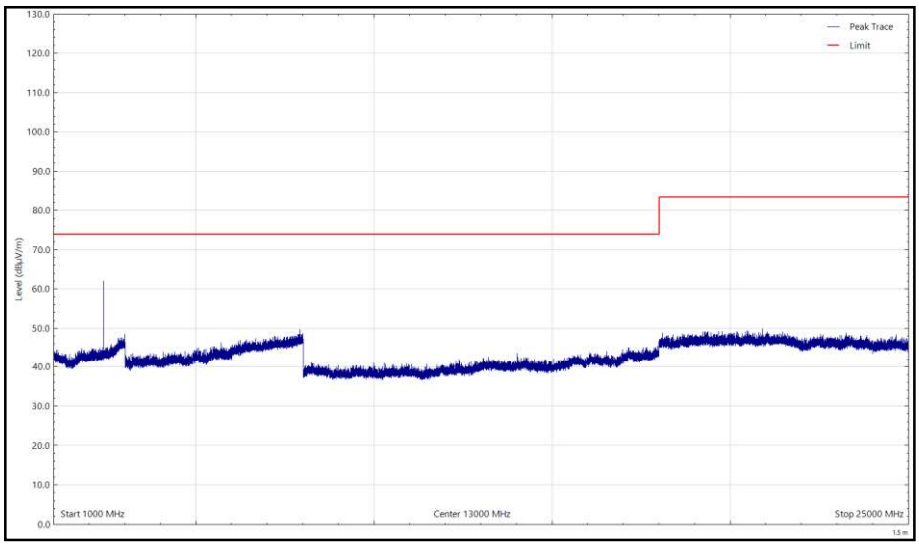


**Figure 108 - FHSS_Bot_1Mbps_Z, 2403 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

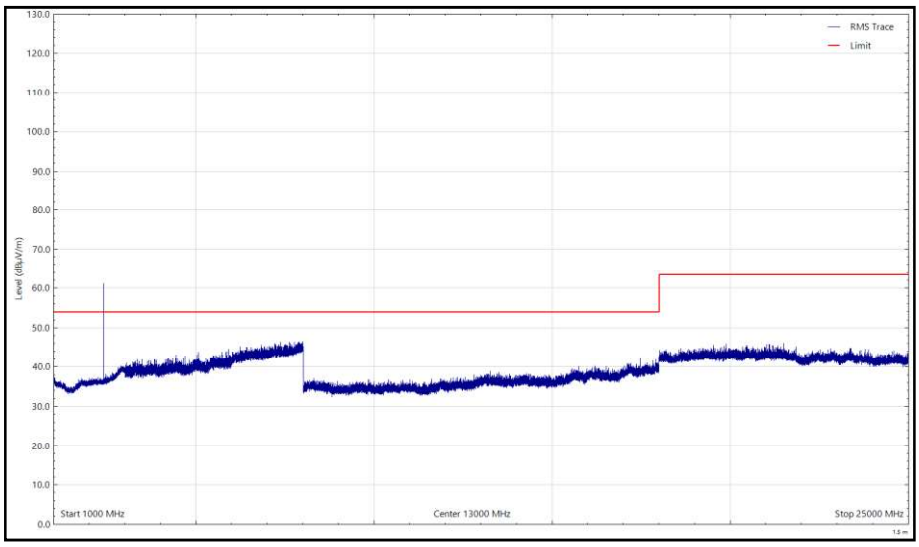


**Figure 109 - FHSS_Bot_1Mbps_Z, 2403 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

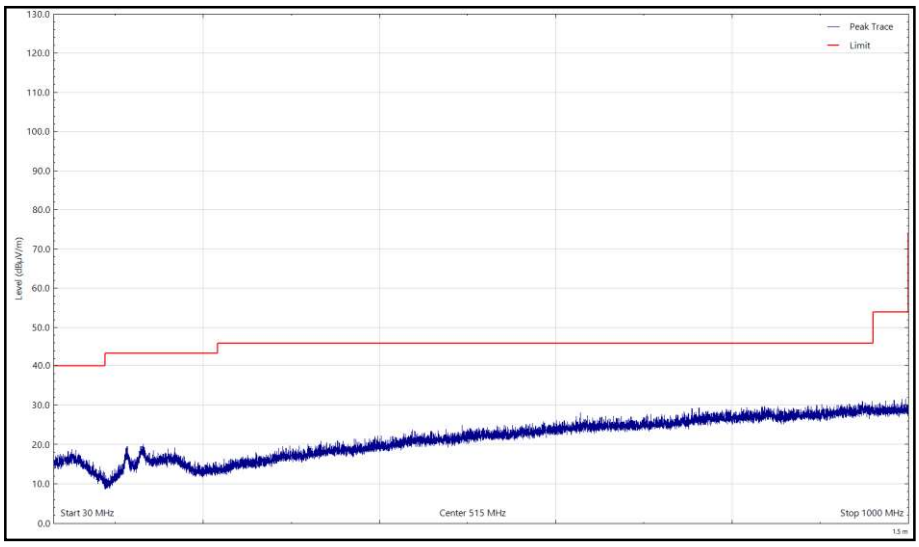


**Figure 110 - FHSS_Mid_1Mbps_Z, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

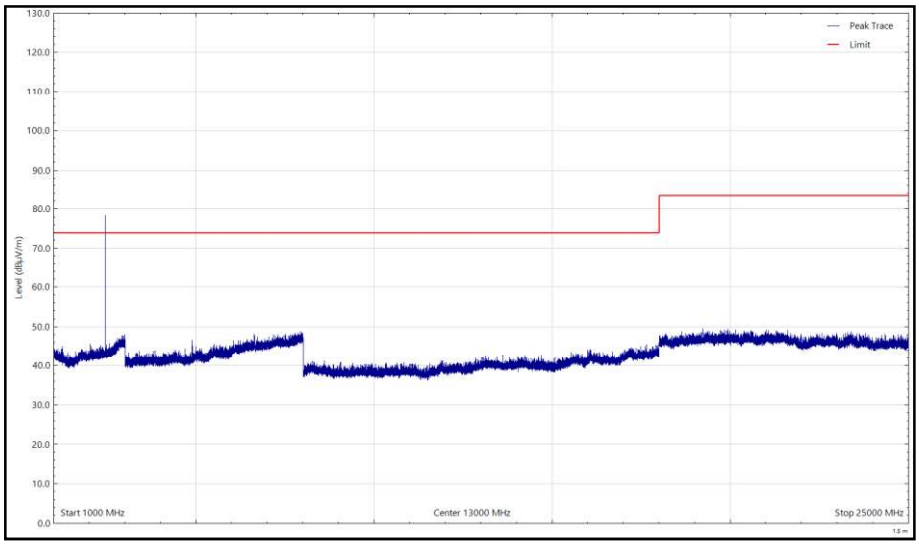


**Figure 111 - FHSS_Mid_1Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

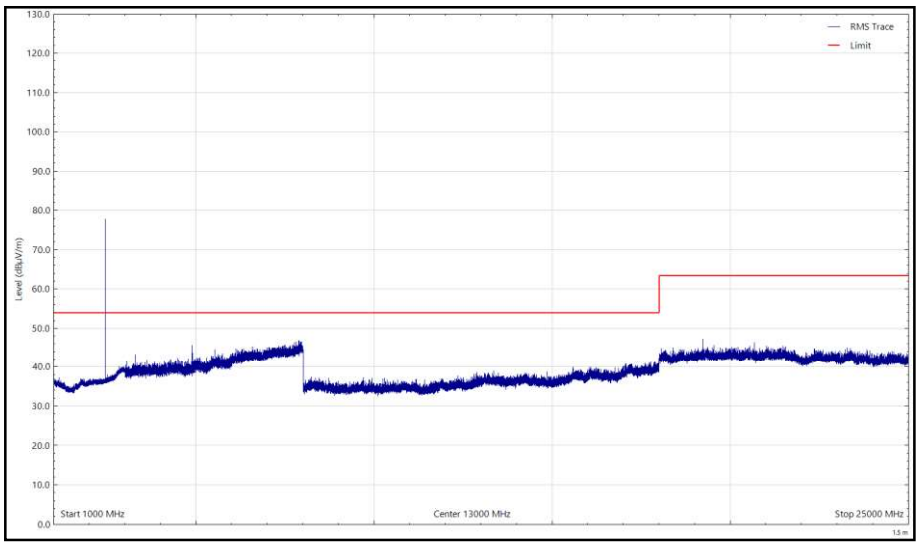


**Figure 112 - FHSS_Mid_1Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

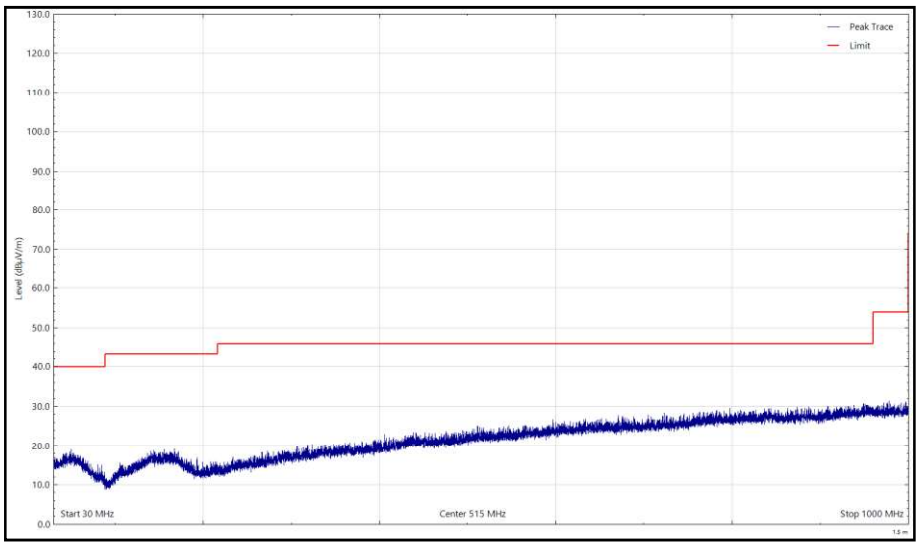


**Figure 113 - FHSS_Mid_1Mbps_Z, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

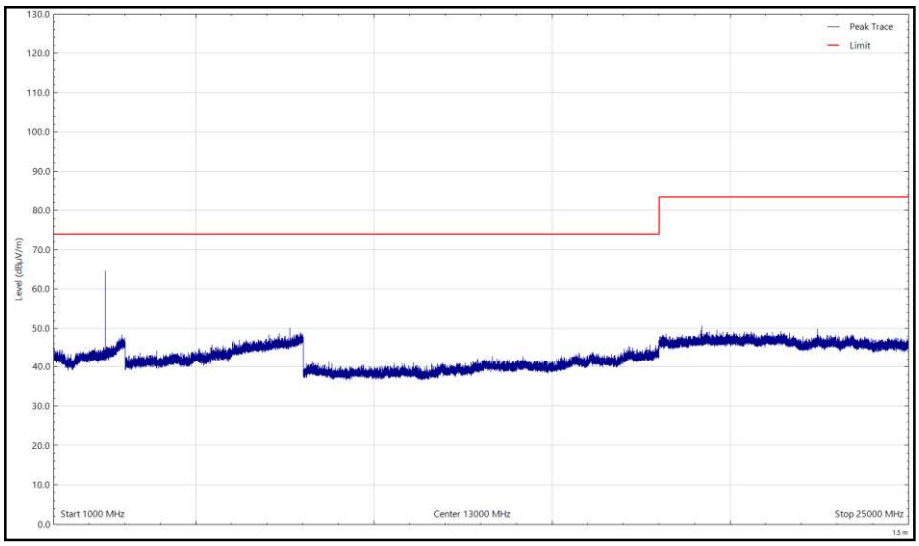


**Figure 114 - FHSS_Mid_1Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

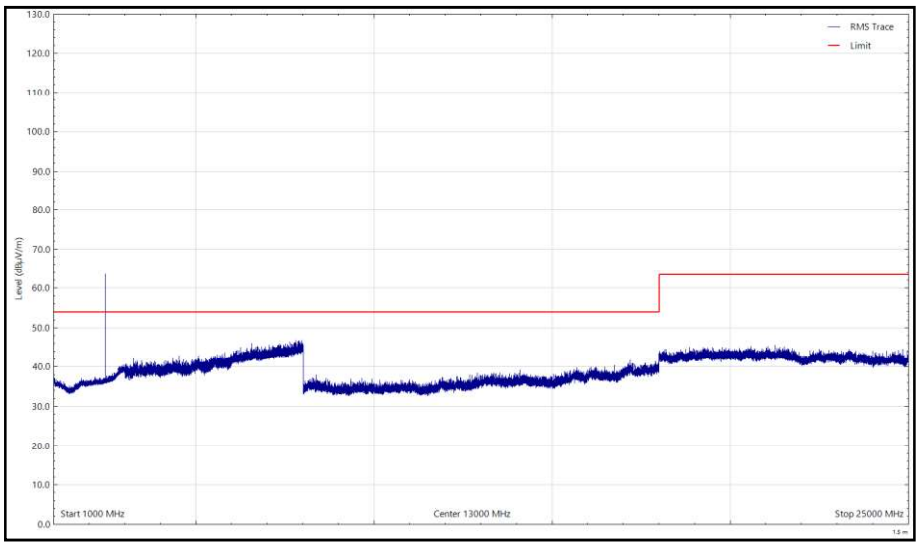


**Figure 115 - FHSS_Mid_1Mbps_Z, 2442 MHz, 1 GHz to 25 GHz, Vertical (rms)**

| 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.

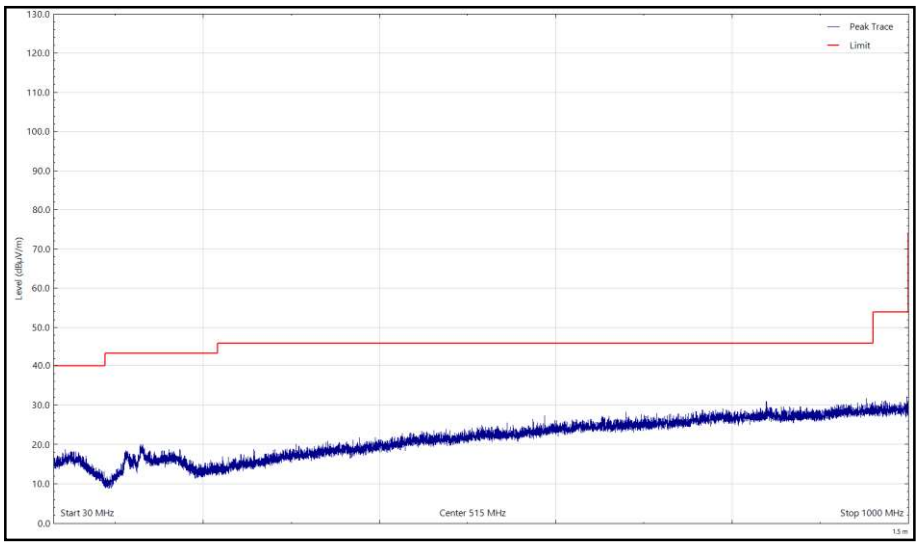


**Figure 116 - FHSS_Top_1Mbps_Z, 2481 MHz, 30 MHz to 1 GHz, Horizontal (Peak)**

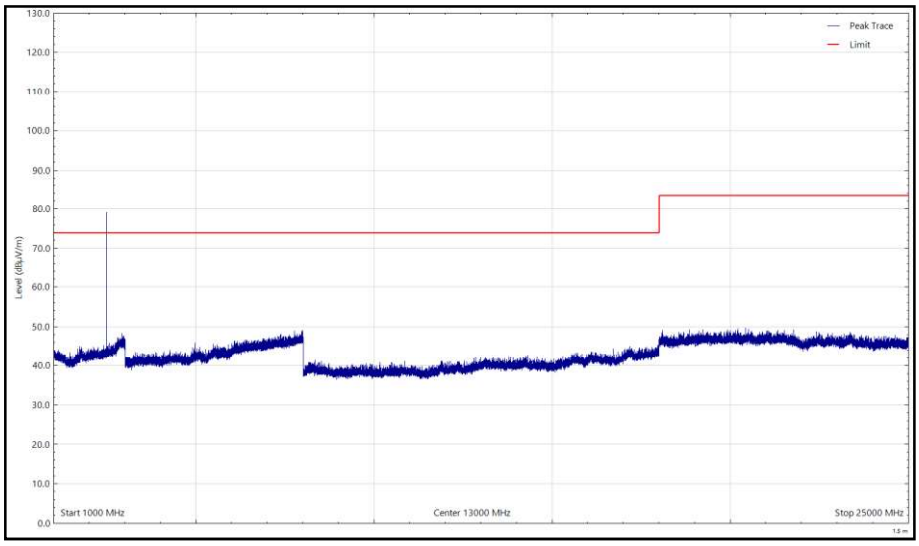


**Figure 117 - FHSS_Top_1Mbps_Z, 2481 MHz, 1 GHz to 25 GHz, Horizontal (Peak)**

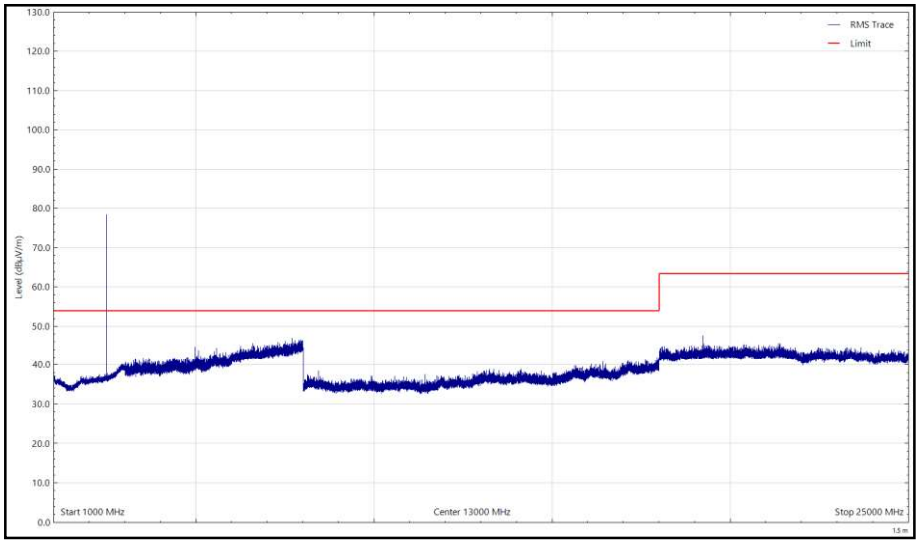


**Figure 118 - FHSS_Top_1Mbps_Z, 2481 MHz, 1 GHz to 25 GHz, Horizontal (rms)**

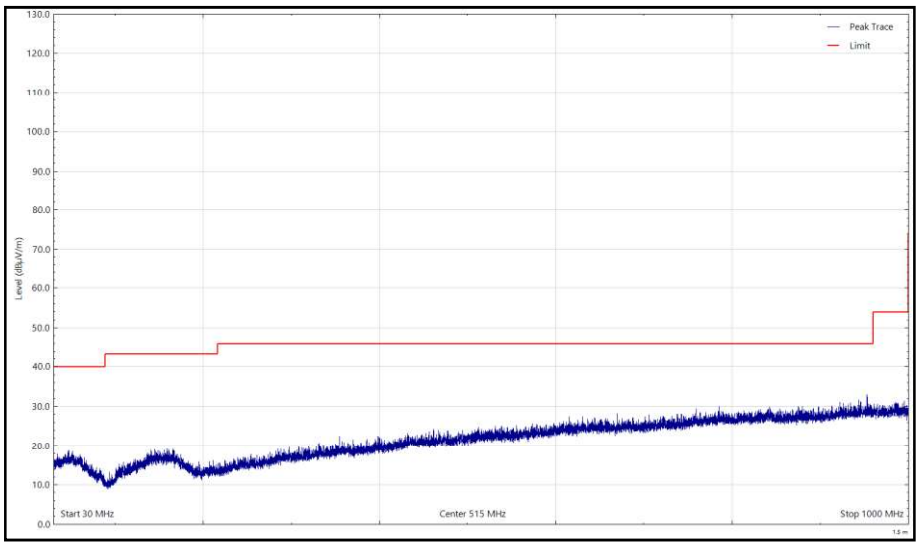


**Figure 119 - FHSS_Top_1Mbps_Z, 2481 MHz, 30 MHz to 1 GHz, Vertical (Peak)**

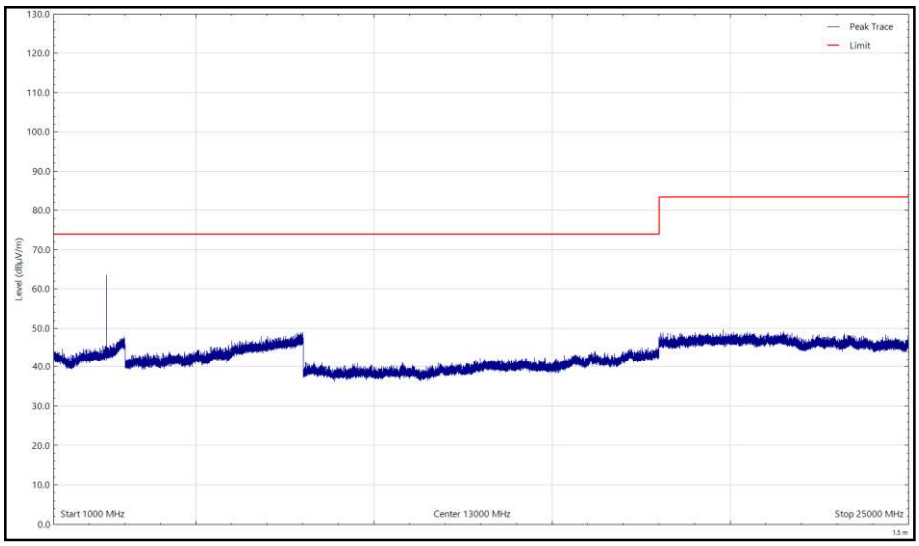


**Figure 120 - FHSS_Top_1Mbps_Z, 2481 MHz, 1 GHz to 25 GHz, Vertical (Peak)**

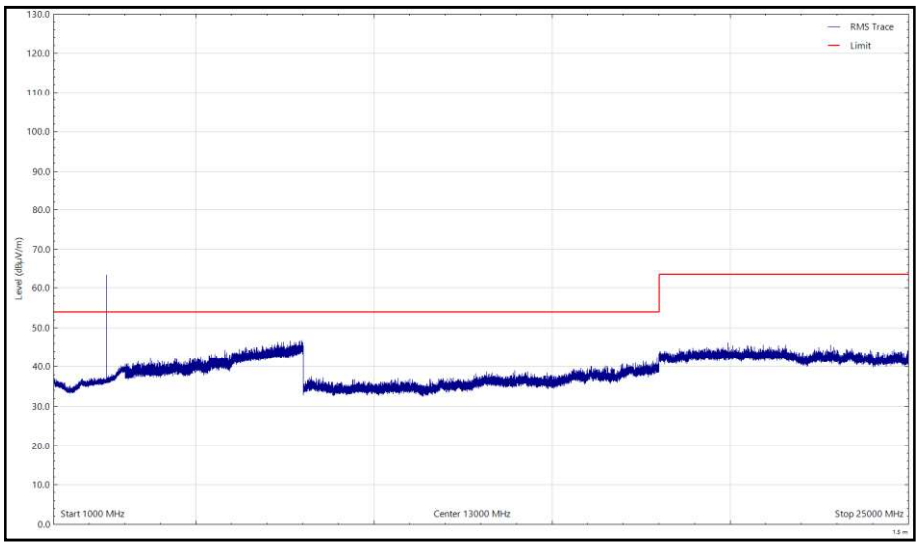


**Figure 121 - FHSS_Top_1Mbps_Z, 2481 MHz, 1 GHz to 25 GHz, Vertical (rms)**

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)<br>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**

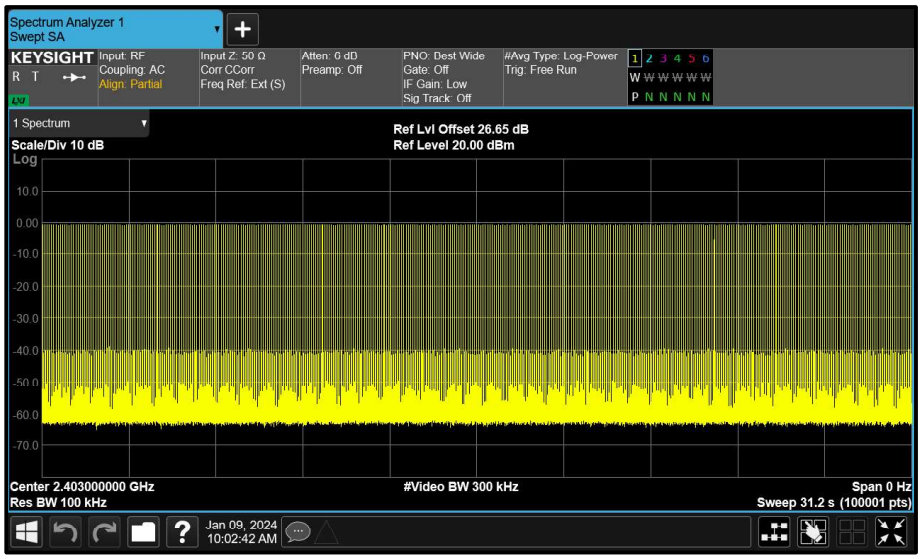


**Figure 122 - 1 MBit/s GFSK - 2403 MHz Accumulated Transmit Time**

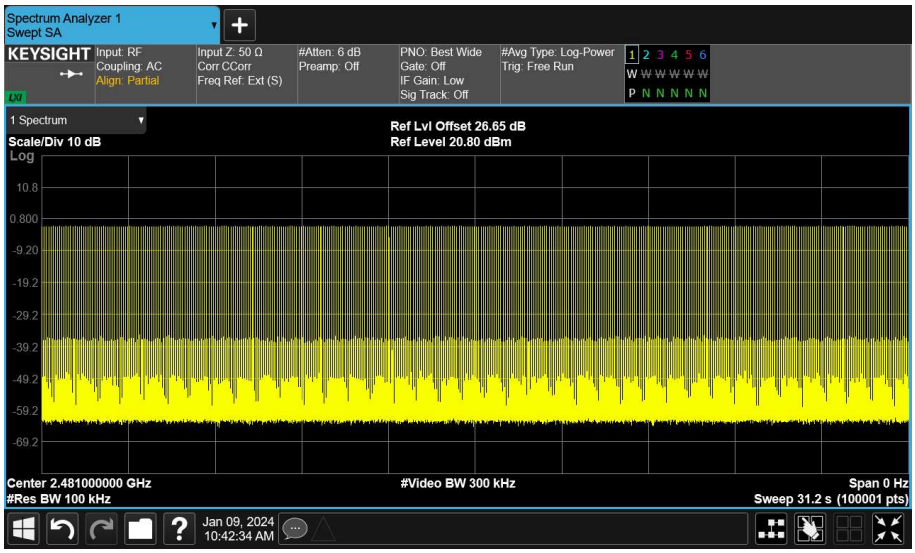


**Figure 123 - 1 MBit/s GFSK - 2481 MHz Accumulated Transmit Time**

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)<br>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)<br>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)<br>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**

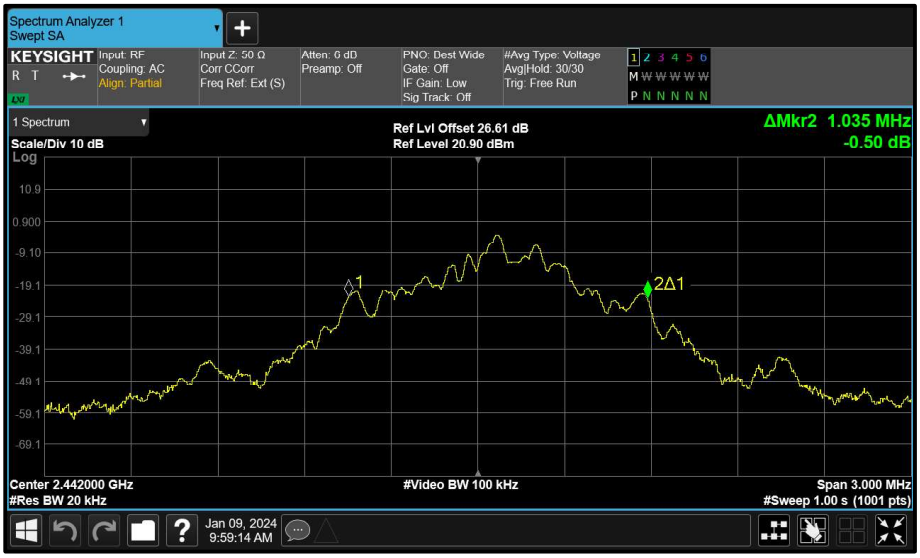


**Figure 127 - 2442 MHz 20 dB Bandwidth**


**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)<br>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

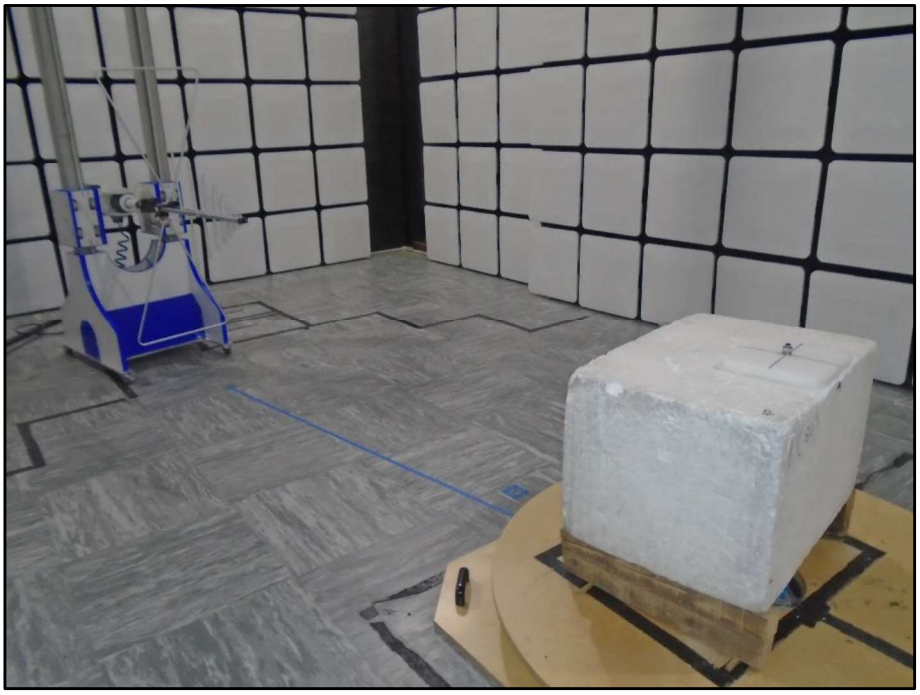

**Figure 129 – 30 MHz to 1 GHz**

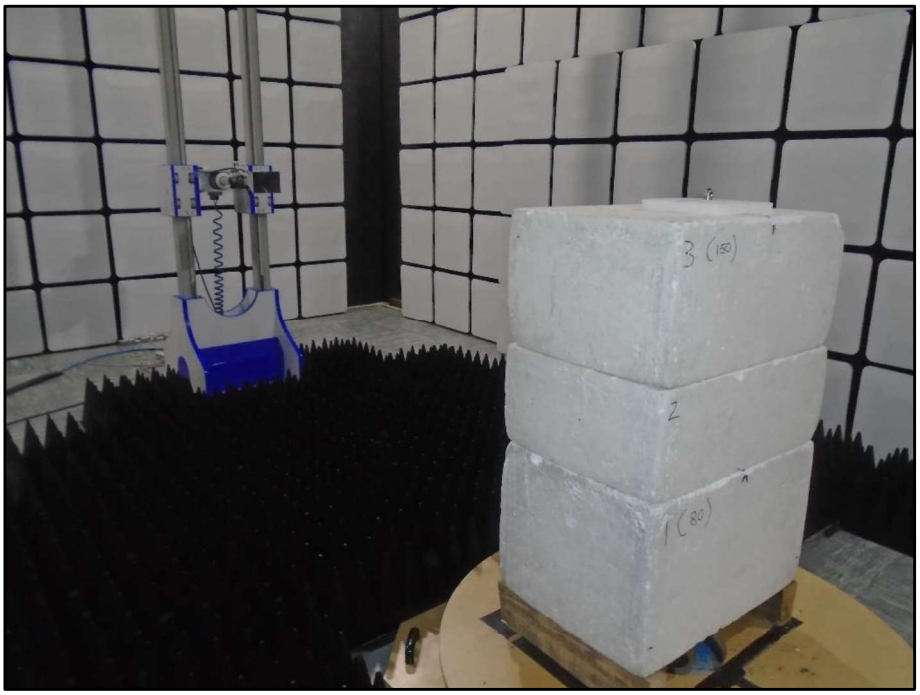


**Figure 130 – 1 GHz to 18 GHz**


**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<br>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<br>1 GHz to 40 GHz: ± 6.3 dB |
| Spurious Radiated Emissions | 30 MHz to 1 GHz: ± 5.2 dB<br>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.