



FCC 47 CFR Part 15E, Limit Clause 15.407(a)

| Condition of Operation | Frequency Range (MHz)                                                                                                                                                                                               |                                                                                  |           |                                                                                                            |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------|
|                        | 5150-5250                                                                                                                                                                                                           | 5250-5350                                                                        | 5470-5725 | 5725-5850                                                                                                  |
| Max Conducted TX Power | 30 dBm (1W) for master device<br>24 dBm (250 mW) for client device                                                                                                                                                  | 24 dBm (250 mW) or 11 dBm + 10 Log B, whichever is lower (B = 26 dB emission BW) |           | 30 dBm (1 W)                                                                                               |
| Max EIRP               | 4W (36 dBm) with 6 dBi antenna<br>200 W (53 dBm) for fixed P-t-P application with 23 dBi antenna<br>Additional rule for outdoor operation:<br>Max_EIRP < 125 mW (21 dBm) at any elevation angle > 30° from horizon. | 1 W (30 dBm) with 6 dBi antenna                                                  |           | 4 W (36 dBm) with 6 dBi antenna.<br>No EIRP limit for fixed P-t-P application (i.e. no antenna gain limit) |

**Table 74**

ISED RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

| Device                    | Frequency Range (MHz)                                            |                                                                                                                   |                                                                                                                   |               |
|---------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------|
|                           | 5150-5250                                                        | 5250-5350                                                                                                         | 5470-5725                                                                                                         | 5725-5850     |
| OEM installed in vehicles | 30 mW or $1.76 + 10 \log_{10} B$ , dBm (EIRP); whichever is less | 30 mW or $1.76 + 10 \log_{10} B$ , dBm (EIRP); whichever is less                                                  | -                                                                                                                 | -             |
| Other                     | 200 mW or $10 + 10 \log_{10} B$ dBm (EIRP); whichever is less    | 250 mW or $11 + 10 \log_{10} B$ ; whichever is less<br>1.0 W or $17 + 10 \log_{10} B$ dBm EIRP; whichever is less | 250 mW or $11 + 10 \log_{10} B$ ; whichever is less<br>1.0 W or $17 + 10 \log_{10} B$ dBm EIRP; whichever is less | 1W<br>4W EIRP |

**Table 75**



### 2.3.7 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 |
|----------------------------------|-----------------------|---------------------------|-------|-----------------------------|---------------------|
| Multimeter                       | Fluke                 | 79 Series III             | 611   | 12                          | 21-Dec-2022         |
| Hygrometer                       | Rotronic              | I-1000                    | 3068  | 12                          | 21-Sep-2023         |
| Hygrometer                       | Rotronic              | I-1000                    | 3220  | 12                          | 05-Nov-2022         |
| Network Analyser                 | Rohde & Schwarz       | ZVA 40                    | 3548  | 12                          | 24-Feb-2023         |
| Calibration Unit                 | Rohde & Schwarz       | ZV-Z54                    | 4368  | 12                          | 24-Feb-2023         |
| Frequency Standard               | Spectracom            | SecureSync 1200-0408-0601 | 4393  | 6                           | 01-Feb-2023         |
| AC Programmable Power Supply     | iTech                 | IT7324                    | 5225  | -                           | O/P Mon             |
| AC Programmable Power Supply     | iTech                 | IT7324                    | 5226  | -                           | O/P Mon             |
| Attenuator 5W 20dB DC-18GHz      | Aaren                 | AT40A-4041-D18-20         | 5498  | 12                          | 16-May-2023         |
| MXA Signal Analyser              | Keysight Technologies | N9020B                    | 5528  | 24                          | 21-Mar-2024         |
| MXA Signal Analyser              | Keysight Technologies | N9020B                    | 5529  | 24                          | 13-Sep-2024         |
| Signal Conditioning Unit         | TUV SUD               | SPECTRUM SCU001           | 5546  | 12                          | 06-Apr-2023         |
| 2-Way Power Divider (2 to 8 GHz) | Aaren                 | AT30A-TE0208-2-AF         | 5684  | 12                          | 20-Dec-2022         |
| 2-Way Power Divider (2-8 GHz)    | Aaren                 | AT30A-TE0208-2-AF         | 5685  | 12                          | 20-Dec-2022         |
| Signal Conditioning Unit         | TUV SUD               | SPECTRUM SCU002           | 5759  | 12                          | 05-Jul-2023         |
| Directional Coupler 2-8GHz       | RF-Lambda             | RFDC2G8G10                | 5765  | -                           | O/P Mon             |
| Directional Coupler 2-8GHz       | RF-Lambda             | RFDC2G8G10                | 5766  | -                           | O/P Mon             |
| USB Power Sensor                 | Boonton               | RTP5008                   | 5820  | 12                          | 06-Apr-2023         |
| USB Power Sensor                 | Boonton               | RTP5008                   | 5830  | 12                          | 07-Jul-2023         |
| USB Power Sensor                 | Boonton               | RTP5008                   | 5831  | 12                          | 06-Apr-2023         |
| USB Power Sensor                 | Boonton               | RTP5008                   | 5832  | 12                          | 07-Jul-2023         |

**Table 76**

O/P Mon – Output Monitored using calibrated equipment



## **2.4 Maximum Conducted Power Spectral Density**

### **2.4.1 Specification Reference**

FCC 47 CFR Part 15E, Clause 15.407 (a)  
ISED RSS-247, Clause 6.2

### **2.4.2 Equipment Under Test and Modification State**

A2816, S/N: H12J4GXMVX - Modification State 0

### **2.4.3 Date of Test**

25-October-2022 to 10-November-2022

### **2.4.4 Test Method**

The test was performed in accordance with ANSI C63.10, clause 12.6.

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 SA-2). Where the duty cycle was  $= 98\%$  the spectrum analyser was set to trace (power) averaging and no duty cycle correction made (Method SA-1). In all other cases the spectrum analyser trace was set to max hold (Method SA-3).

Results for the U-NII-3 band were measured in a narrower bandwidth and integrated over 500 kHz using the spectrum analyzers channel power integration function.

The output power was verified as being the same from each transmit core (within negligible tolerances), but the antenna gains were not identical. Therefore, the modes reported for SISO operation are those giving the highest EIRP and/or lowest conducted limit based on the antenna giving highest total directional gain.

MIMO output port summing was performed in accordance with KDB 662911 D01:

For transmit beamforming (TxBF) mode Directional Gain was calculated in accordance with clause F)2)d)(i).

### **2.4.5 Environmental Conditions**

|                     |                |
|---------------------|----------------|
| Ambient Temperature | 22.8 - 23.3 °C |
| Relative Humidity   | 44.7 - 49.8 %  |



## 2.4.6 Test Results

### Narrow Band

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | ePA $\pi/4$ DQPSK (4-DH5) | Duty Cycle (%):          | 78.4 |
| Antenna Configuration: | SISO                      | DCCF (dB):               | 1.06 |
| Active Port(s):        | B (Core 1)                | Peak Antenna Gain (dBi): | 6.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                   |             |
| 5162                 | -             | 9.18 | - | - | -        | 10.75             | -1.57       |
| 5204                 | -             | 9.14 | - | - | -        | 10.75             | -1.61       |
| 5245                 | -             | 8.46 | - | - | -        | 10.75             | -2.29       |

**Table 77 - FCC Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | ePA $\pi/4$ DQPSK (8-DH5) | Duty Cycle (%):          | 78.2 |
| Antenna Configuration: | SISO                      | DCCF (dB):               | 1.07 |
| Active Port(s):        | B (Core 1)                | Peak Antenna Gain (dBi): | 6.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                   |             |
| 5162                 | -             | 6.55 | - | - | -        | 10.75             | -4.20       |
| 5204                 | -             | 7.24 | - | - | -        | 10.75             | -3.51       |
| 5245                 | -             | 6.52 | - | - | -        | 10.75             | -4.23       |

**Table 78 - FCC Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | ePA $\pi/4$ DQPSK (4-DH5) | Duty Cycle (%):          | 78.1 |
| Antenna Configuration: | Beamforming               | DCCF (dB):               | 1.07 |
| Active Port(s):        | A+B (Core 0 + Core 1)     | Peak Antenna Gain (dBi): | 6.74 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                   |             |
| 5162                 | 6.49          | 6.54 | - | - | 9.52     | 10.26             | -0.74       |
| 5204                 | 6.26          | 6.06 | - | - | 9.17     | 10.26             | -1.10       |
| 5245                 | 6.20          | 6.22 | - | - | 9.22     | 10.26             | -1.04       |

**Table 79 - FCC Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | ePA $\pi/4$ DQPSK (8-DH5) | Duty Cycle (%):          | 78.2 |
| Antenna Configuration: | Beamforming               | DCCF (dB):               | 1.07 |
| Active Port(s):        | A+B (Core 0 + Core 1)     | Peak Antenna Gain (dBi): | 6.74 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                   |             |
| 5162                 | 4.38          | 4.28 | - | - | 7.34     | 10.26             | -2.93       |
| 5204                 | 3.72          | 3.71 | - | - | 6.73     | 10.26             | -3.54       |
| 5245                 | 4.54          | 3.67 | - | - | 7.14     | 10.26             | -3.13       |

**Table 80 - FCC Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | ePA $\pi/4$ DQPSK (4-DH5) | Duty Cycle (%):          | 78.1 |
| Antenna Configuration: | SISO                      | DCCF (dB):               | 1.07 |
| Active Port(s):        | B (Core 1)                | Peak Antenna Gain (dBi): | 6.66 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-----------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                       |             |
| 5733                 | -             | 9.92  | - | - | -        | 29.34                 | -19.42      |
| 5789                 | -             | 10.32 | - | - | -        | 29.34                 | -19.02      |
| 5844                 | -             | 10.56 | - | - | -        | 29.34                 | -18.78      |

**Table 81 - Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | ePA $\pi/4$ DQPSK (8-DH5) | Duty Cycle (%):          | 78.2 |
| Antenna Configuration: | SISO                      | DCCF (dB):               | 1.07 |
| Active Port(s):        | B (Core 1)                | Peak Antenna Gain (dBi): | 6.66 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-----------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                       |             |
| 5733                 | -             | 6.32 | - | - | -        | 29.34                 | -23.02      |
| 5789                 | -             | 5.29 | - | - | -        | 29.34                 | -24.05      |
| 5844                 | -             | 5.90 | - | - | -        | 29.34                 | -23.44      |

**Table 82 - Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | ePA $\pi/4$ DQPSK (4-DH5) | Duty Cycle (%):          | 78.1 |
| Antenna Configuration: | Beamforming               | DCCF (dB):               | 1.07 |
| Active Port(s):        | A+B (Core 0 + Core 1)     | Peak Antenna Gain (dBi): | 7.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-----------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                       |             |
| 5733                 | 9.79          | 10.40 | - | - | 13.11    | 28.75                 | -15.63      |
| 5789                 | 10.14         | 10.19 | - | - | 13.18    | 28.75                 | -15.57      |
| 5844                 | 9.84          | 10.06 | - | - | 12.96    | 28.75                 | -15.79      |

**Table 83 - Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | ePA $\pi/4$ DQPSK (8-DH5) | Duty Cycle (%):          | 78.2 |
| Antenna Configuration: | Beamforming               | DCCF (dB):               | 1.07 |
| Active Port(s):        | A+B (Core 0 + Core 1)     | Peak Antenna Gain (dBi): | 7.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-----------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                       |             |
| 5733                 | 6.16          | 6.49 | - | - | 9.34     | 28.75                 | -19.41      |
| 5789                 | 5.22          | 5.80 | - | - | 8.53     | 28.75                 | -20.22      |
| 5844                 | 5.93          | 6.21 | - | - | 9.08     | 28.75                 | -19.66      |

**Table 84 - Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                |                          |      |
|------------------------|----------------|--------------------------|------|
| Mode:                  | iPA GFSK (DH5) | Duty Cycle (%):          | 76.7 |
| Antenna Configuration: | SISO           | DCCF (dB):               | 1.15 |
| Active Port(s):        | B (Core 1)     | Peak Antenna Gain (dBi): | 6.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                   |             |
| 5162                 | -             | 8.76 | - | - | -        | 10.75             | -1.99       |
| 5204                 | -             | 8.65 | - | - | -        | 10.75             | -2.10       |
| 5245                 | -             | 8.98 | - | - | -        | 10.75             | -1.77       |

**Table 85 - FCC Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                       |                          |      |
|------------------------|-----------------------|--------------------------|------|
| Mode:                  | iPA GFSK (DH5)        | Duty Cycle (%):          | 76.7 |
| Antenna Configuration: | Beamforming           | DCCF (dB):               | 1.15 |
| Active Port(s):        | A+B (Core 0 + Core 1) | Peak Antenna Gain (dBi): | 6.74 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                   |             |
| 5162                 | 7.15          | 6.51 | - | - | 9.85     | 10.26             | -0.41       |
| 5204                 | 6.30          | 6.20 | - | - | 9.26     | 10.26             | -1.00       |
| 5245                 | 5.83          | 6.68 | - | - | 9.29     | 10.26             | -0.98       |

**Table 86 - FCC Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | iPA $\pi/4$ DQPSK (4-DH5) | Duty Cycle (%):          | 78.4 |
| Antenna Configuration: | SISO                      | DCCF (dB):               | 1.06 |
| Active Port(s):        | B (Core 1)                | Peak Antenna Gain (dBi): | 6.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                   |             |
| 5162                 | -             | 1.64 | - | - | -        | 10.75             | -9.11       |
| 5204                 | -             | 2.31 | - | - | -        | 10.75             | -8.44       |
| 5245                 | -             | 2.05 | - | - | -        | 10.75             | -8.70       |

**Table 87 - FCC Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | iPA $\pi/4$ DQPSK (8-DH5) | Duty Cycle (%):          | 78.2 |
| Antenna Configuration: | SISO                      | DCCF (dB):               | 1.07 |
| Active Port(s):        | B (Core 1)                | Peak Antenna Gain (dBi): | 6.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                   |             |
| 5162                 | -             | -0.80 | - | - | -        | 10.75             | -11.55      |
| 5204                 | -             | -0.85 | - | - | -        | 10.75             | -11.60      |
| 5245                 | -             | -0.56 | - | - | -        | 10.75             | -11.31      |

**Table 88 - FCC Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | iPA $\pi/4$ DQPSK (4-DH5) | Duty Cycle (%):          | 78.1 |
| Antenna Configuration: | Beamforming               | DCCF (dB):               | 1.07 |
| Active Port(s):        | A+B (Core 0 + Core 1)     | Peak Antenna Gain (dBi): | 6.74 |

| Test Frequency (MHz) | PSD (dBm/MHz) |      |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|------|---|---|----------|-------------------|-------------|
|                      | A             | B    | C | D | $\Sigma$ |                   |             |
| 5162                 | 0.57          | 1.39 | - | - | 4.01     | 10.26             | -6.25       |
| 5204                 | 1.19          | 1.97 | - | - | 4.61     | 10.26             | -5.65       |
| 5245                 | 2.00          | 1.81 | - | - | 4.92     | 10.26             | -5.35       |

**Table 89 - FCC Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.150-5.250 GHz                                                 | Band:           | U-NII-1                        |
| Limit Clause(s):         | 15.407 (a)(1)(iv)                                               | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | iPA $\pi/4$ DQPSK (8-DH5) | Duty Cycle (%):          | 78.2 |
| Antenna Configuration: | Beamforming               | DCCF (dB):               | 1.07 |
| Active Port(s):        | A+B (Core 0 + Core 1)     | Peak Antenna Gain (dBi): | 6.74 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / MHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                   |             |
| 5162                 | -2.02         | -0.65 | - | - | 1.73     | 10.26             | -8.54       |
| 5204                 | -1.43         | -0.87 | - | - | 1.87     | 10.26             | -8.39       |
| 5245                 | 0.21          | -0.38 | - | - | 2.94     | 10.26             | -7.33       |

**Table 90 - FCC Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                |                          |      |
|------------------------|----------------|--------------------------|------|
| Mode:                  | iPA GFSK (DH5) | Duty Cycle (%):          | 76.7 |
| Antenna Configuration: | SISO           | DCCF (dB):               | 1.15 |
| Active Port(s):        | B (Core 1)     | Peak Antenna Gain (dBi): | 6.66 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-----------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                       |             |
| 5733                 | -             | 9.90  | - | - | -        | 29.34                 | -19.44      |
| 5789                 | -             | 9.93  | - | - | -        | 29.34                 | -19.41      |
| 5844                 | -             | 10.39 | - | - | -        | 29.34                 | -18.95      |

**Table 91 - Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                       |                          |      |
|------------------------|-----------------------|--------------------------|------|
| Mode:                  | iPA GFSK (DH5)        | Duty Cycle (%):          | 76.7 |
| Antenna Configuration: | Beamforming           | DCCF (dB):               | 1.15 |
| Active Port(s):        | A+B (Core 0 + Core 1) | Peak Antenna Gain (dBi): | 7.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-----------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                       |             |
| 5733                 | 10.20         | 9.29  | - | - | 12.78    | 28.75                 | -15.97      |
| 5789                 | 9.56          | 10.18 | - | - | 12.89    | 28.75                 | -15.86      |
| 5844                 | 9.94          | 9.98  | - | - | 12.97    | 28.75                 | -15.78      |

**Table 92 - Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | iPA $\pi/4$ DQPSK (4-DH5) | Duty Cycle (%):          | 78.1 |
| Antenna Configuration: | SISO                      | DCCF (dB):               | 1.07 |
| Active Port(s):        | B (Core 1)                | Peak Antenna Gain (dBi): | 6.66 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-----------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                       |             |
| 5733                 | -             | -0.53 | - | - | -        | 29.34                 | -29.87      |
| 5789                 | -             | -0.77 | - | - | -        | 29.34                 | -30.11      |
| 5844                 | -             | -0.42 | - | - | -        | 29.34                 | -29.76      |

**Table 93 - Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | -                                                               |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | iPA $\pi/4$ DQPSK (8-DH5) | Duty Cycle (%):          | 78.5 |
| Antenna Configuration: | SISO                      | DCCF (dB):               | 1.05 |
| Active Port(s):        | B (Core 1)                | Peak Antenna Gain (dBi): | 6.66 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-----------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                       |             |
| 5733                 | -             | -2.82 | - | - | -        | 29.34                 | -32.16      |
| 5789                 | -             | -3.06 | - | - | -        | 29.34                 | -32.40      |
| 5844                 | -             | -2.77 | - | - | -        | 29.34                 | -32.11      |

**Table 94 - Maximum Power Spectral Density Results**



| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | iPA $\pi/4$ DQPSK (4-DH5) | Duty Cycle (%):          | 78.1 |
| Antenna Configuration: | Beamforming               | DCCF (dB):               | 1.07 |
| Active Port(s):        | A+B (Core 0 + Core 1)     | Peak Antenna Gain (dBi): | 7.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-----------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                       |             |
| 5733                 | -0.79         | -1.04 | - | - | 2.10     | 28.75                 | -26.65      |
| 5789                 | -0.62         | -0.92 | - | - | 2.24     | 28.75                 | -26.51      |
| 5844                 | -0.34         | -0.48 | - | - | 2.60     | 28.75                 | -26.15      |

**Table 95 - Maximum Power Spectral Density Results**

| Test Configuration       |                                                                 |                 |                                |
|--------------------------|-----------------------------------------------------------------|-----------------|--------------------------------|
| Frequency Range:         | 5.725-5.850 GHz                                                 | Band:           | U-NII-3                        |
| Limit Clause(s):         | 15.407 (a)(3)<br>RSS-247 6.2.4.1                                | Test Method(s): | C63.10 12.4.2.4<br>C63.10 12.6 |
| Additional Reference(s): | 662911 D01 v02r01 E)2)b)                                        |                 |                                |
| Note(s):                 | DCCF was added to the spectrum analyser reference level offset. |                 |                                |

| DUT Configuration      |                           |                          |      |
|------------------------|---------------------------|--------------------------|------|
| Mode:                  | iPA $\pi/4$ DQPSK (8-DH5) | Duty Cycle (%):          | 78.2 |
| Antenna Configuration: | Beamforming               | DCCF (dB):               | 1.07 |
| Active Port(s):        | A+B (Core 0 + Core 1)     | Peak Antenna Gain (dBi): | 7.25 |

| Test Frequency (MHz) | PSD (dBm/MHz) |       |   |   |          | Limit (dBm / 500 kHz) | Margin (dB) |
|----------------------|---------------|-------|---|---|----------|-----------------------|-------------|
|                      | A             | B     | C | D | $\Sigma$ |                       |             |
| 5733                 | -2.81         | -3.40 | - | - | -0.08    | 28.75                 | -28.83      |
| 5789                 | -1.66         | -3.19 | - | - | 0.65     | 28.75                 | -28.09      |
| 5844                 | -3.01         | -2.53 | - | - | 0.25     | 28.75                 | -28.50      |

**Table 96 - Maximum Power Spectral Density Results**



FCC 47 CFR Part 15E, Limit Clause 15.407(a)

| Condition of Operation               | Frequency Range (MHz)                                                        |            |           |                |
|--------------------------------------|------------------------------------------------------------------------------|------------|-----------|----------------|
|                                      | 5150-5250                                                                    | 5250-5350  | 5470-5725 | 5725-5850      |
| Max Conducted Power Spectral Density | 17 dBm/MHz for master device<br>11 dBm/MHz for mobile/portable client device | 11 dBm/MHz |           | 30 dBm/500 kHz |

**Table 97**

ISED RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

| Device                    | Frequency Range (MHz) |             |             |                |
|---------------------------|-----------------------|-------------|-------------|----------------|
|                           | 5150-5250             | 5250-5350   | 5470-5725   | 5725-5850      |
| OEM installed in vehicles | -                     | -           | -           | -              |
| Other                     | ≤10 dBm/MHz EIRP      | ≤11 dBm/MHz | ≤11 dBm/MHz | ≤30 dBm/500kHz |

**Table 98**



#### 2.4.7 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 |
|----------------------------------|-----------------------|---------------------------|-------|-----------------------------|---------------------|
| Multimeter                       | Fluke                 | 79 Series III             | 611   | 12                          | 21-Dec-2022         |
| Hygrometer                       | Rotronic              | I-1000                    | 3068  | 12                          | 21-Sep-2023         |
| Hygrometer                       | Rotronic              | I-1000                    | 3220  | 12                          | 05-Nov-2022         |
| Network Analyser                 | Rohde & Schwarz       | ZVA 40                    | 3548  | 12                          | 24-Feb-2023         |
| Calibration Unit                 | Rohde & Schwarz       | ZV-Z54                    | 4368  | 12                          | 24-Feb-2023         |
| Frequency Standard               | Spectracom            | SecureSync 1200-0408-0601 | 4393  | 6                           | 01-Feb-2023         |
| AC Programmable Power Supply     | iTech                 | IT7324                    | 5225  | -                           | O/P Mon             |
| AC Programmable Power Supply     | iTech                 | IT7324                    | 5226  | -                           | O/P Mon             |
| Attenuator 5W 20dB DC-18GHz      | Aaren                 | AT40A-4041-D18-20         | 5498  | 12                          | 16-May-2023         |
| MXA Signal Analyser              | Keysight Technologies | N9020B                    | 5528  | 24                          | 21-Mar-2024         |
| MXA Signal Analyser              | Keysight Technologies | N9020B                    | 5529  | 24                          | 13-Sep-2024         |
| Signal Conditioning Unit         | TUV SUD               | SPECTRUM SCU001           | 5546  | 12                          | 06-Apr-2023         |
| 2-Way Power Divider (2 to 8 GHz) | Aaren                 | AT30A-TE0208-2-AF         | 5684  | 12                          | 20-Dec-2022         |
| 2-Way Power Divider (2-8 GHz)    | Aaren                 | AT30A-TE0208-2-AF         | 5685  | 12                          | 20-Dec-2022         |
| Signal Conditioning Unit         | TUV SUD               | SPECTRUM SCU002           | 5759  | 12                          | 05-Jul-2023         |
| Directional Coupler 2-8GHz       | RF-Lambda             | RFDC2G8G10                | 5765  | -                           | O/P Mon             |
| Directional Coupler 2-8GHz       | RF-Lambda             | RFDC2G8G10                | 5766  | -                           | O/P Mon             |

**Table 99**

O/P Mon – Output Monitored using calibrated equipment



## **2.5 Authorised Band Edges**

### **2.5.1 Specification Reference**

FCC 47 CFR Part 15E, Clause 15.407 (b)  
ISED RSS-247, Clause 6.2

### **2.5.2 Equipment Under Test and Modification State**

A2816, S/N: Q64HTFJ22X - Modification State 0  
A2816, S/N: V712HT2WFF - Modification State 0

### **2.5.3 Date of Test**

26-June-2022 to 26-October-2022

### **2.5.4 Test Method**

The test was performed in accordance with ANSI C63.10, clause 6.6.

For U-NII-2C channels, the limit line on the following plots equated to -27 dBm/MHz. EIRP and was converted to field strength at 3 m using the following formula:

Field Strength (dBμV/m at 3 m) = EIRP (dBm) + 95.2 dB

Authorised band edge measurements were performed, with the device operating in SISO and TXBF configurations, across the various modes supported by the device.

The measurements displayed within this report, have been limited to those modes which have been shown to be worst case.

Further measurements are held on file by TÜV SÜD and are available if required.

### **2.5.5 Environmental Conditions**

|                     |                |
|---------------------|----------------|
| Ambient Temperature | 21.5 - 25.0 °C |
| Relative Humidity   | 39.5 - 58.8 %  |

## 2.5.6 Test Results

### NarrowBand

### iPA - SISO

| Mode    | Modulation    | Core | Packet Type | Tx Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBμV/m) |
|---------|---------------|------|-------------|--------------------|---------------------------|----------------|
| Static  | GFSK          | 1    | DH5         | 5733               | 5725                      | 56.13          |
| Static  | $\pi/4$ DQPSK | 1    | 4-DH5       | 5733               | 5725                      | 56.03          |
| Static  | $\pi/4$ DQPSK | 1    | 8-DH5       | 5733               | 5725                      | 56.07          |
| Hopping | GFSK          | 1    | DH5         | -                  | 5725                      | 56.13          |
| Hopping | $\pi/4$ DQPSK | 1    | 4-DH5       | -                  | 5725                      | 56.04          |
| Hopping | $\pi/4$ DQPSK | 1    | 8-DH5       | -                  | 5725                      | 56.09          |
| Static  | GFSK          | 1    | DH5         | 5844               | 5850                      | 56.53          |
| Static  | $\pi/4$ DQPSK | 1    | 4-DH5       | 5844               | 5850                      | 57.19          |
| Static  | $\pi/4$ DQPSK | 1    | 8-DH5       | 5844               | 5850                      | 56.92          |
| Hopping | GFSK          | 1    | DH5         | -                  | 5850                      | 56.61          |
| Hopping | $\pi/4$ DQPSK | 1    | 4-DH5       | -                  | 5850                      | 56.85          |
| Hopping | $\pi/4$ DQPSK | 1    | 8-DH5       | -                  | 5850                      | 56.81          |

Table 100 - Authorised Band Edge Results

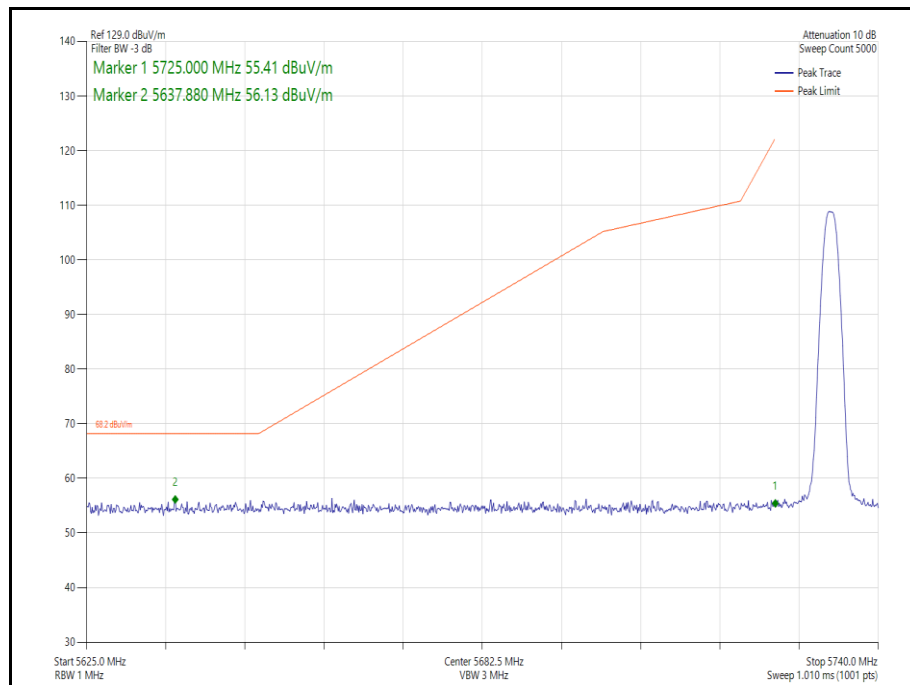


Figure 156 - Static - GFSK/DH5 - 5733 MHz - Band Edge Frequency 5725 MHz

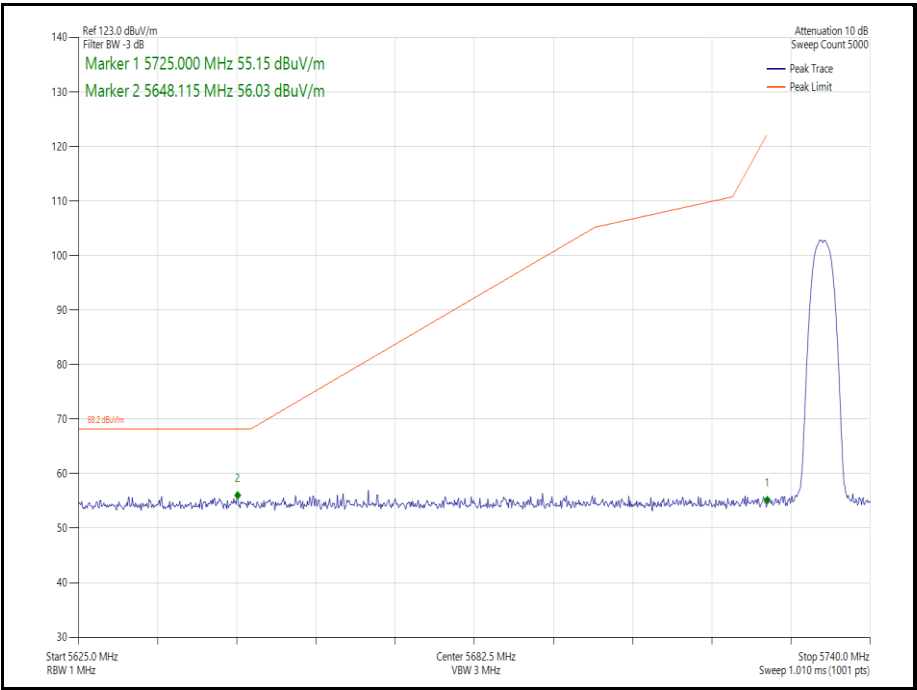


Figure 157 - Static -  $\pi/4$  DQPSK/4-DH5 - 5733 MHz - Band Edge Frequency 5725 MHz

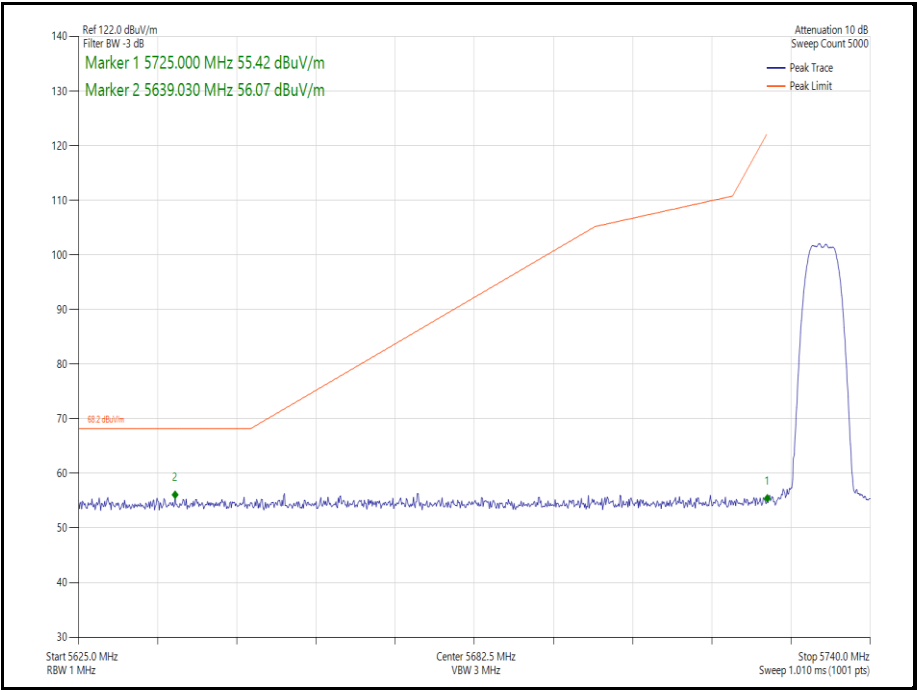


Figure 158 - Static -  $\pi/4$  DQPSK/8-DH5 - 5733 MHz - Band Edge Frequency 5725 MHz

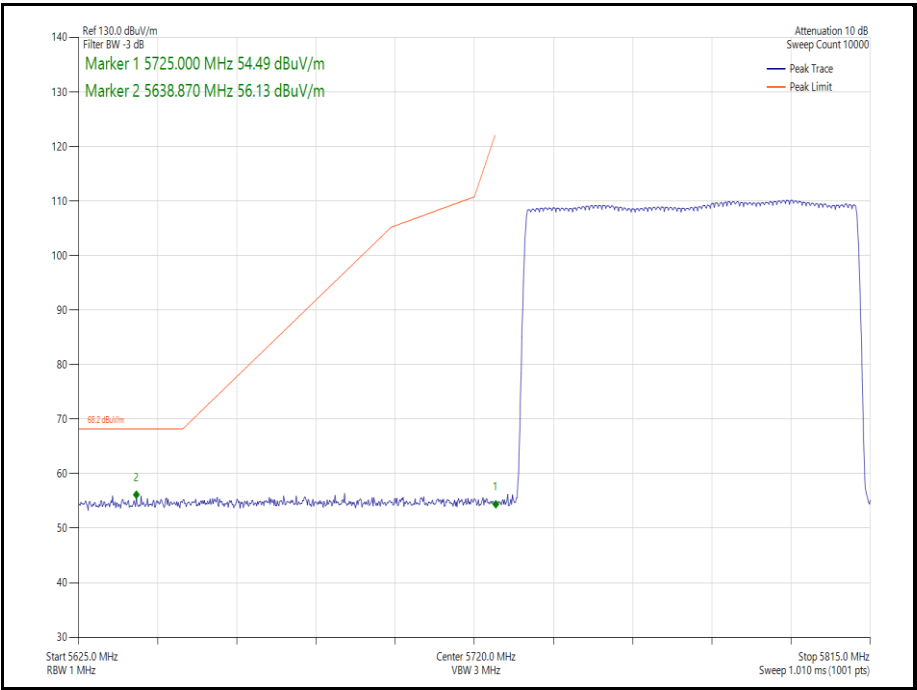


Figure 159 - Hopping - GFSK/DH5 - Band Edge Frequency 5725 MHz

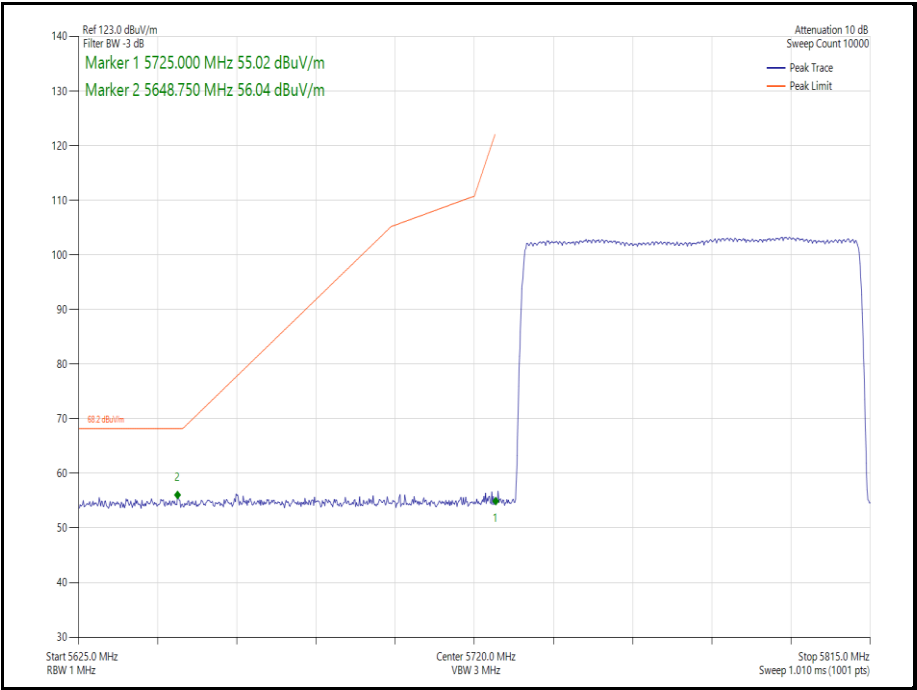


Figure 160 - Hopping -  $\pi/4$  DQPSK/4-DH5 - Band Edge Frequency 5725 MHz

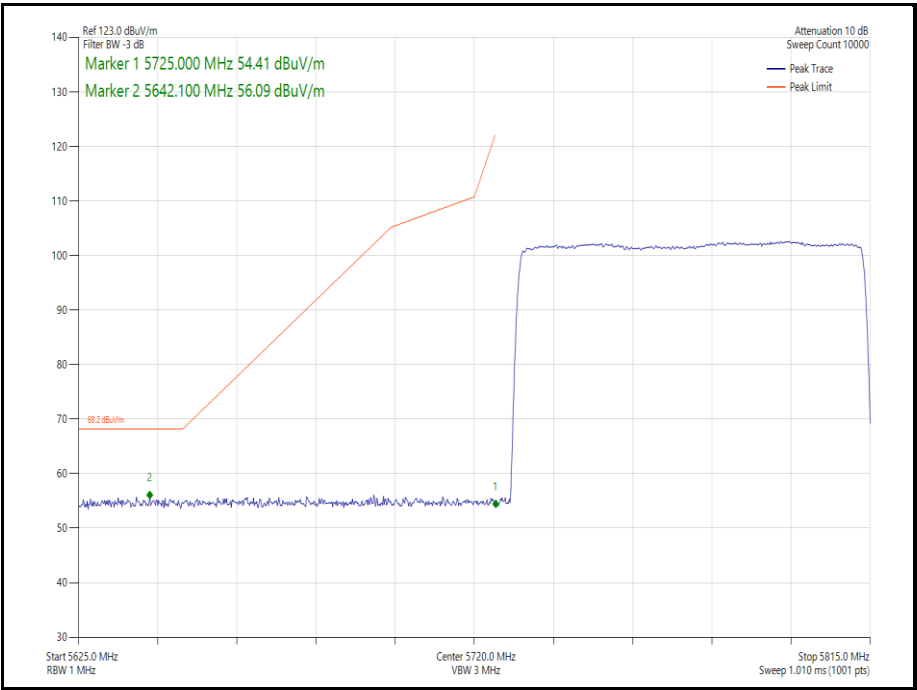


Figure 161 - Hopping -  $\pi/4$  DQPSK/8-DH5 - Band Edge Frequency 5725 MHz

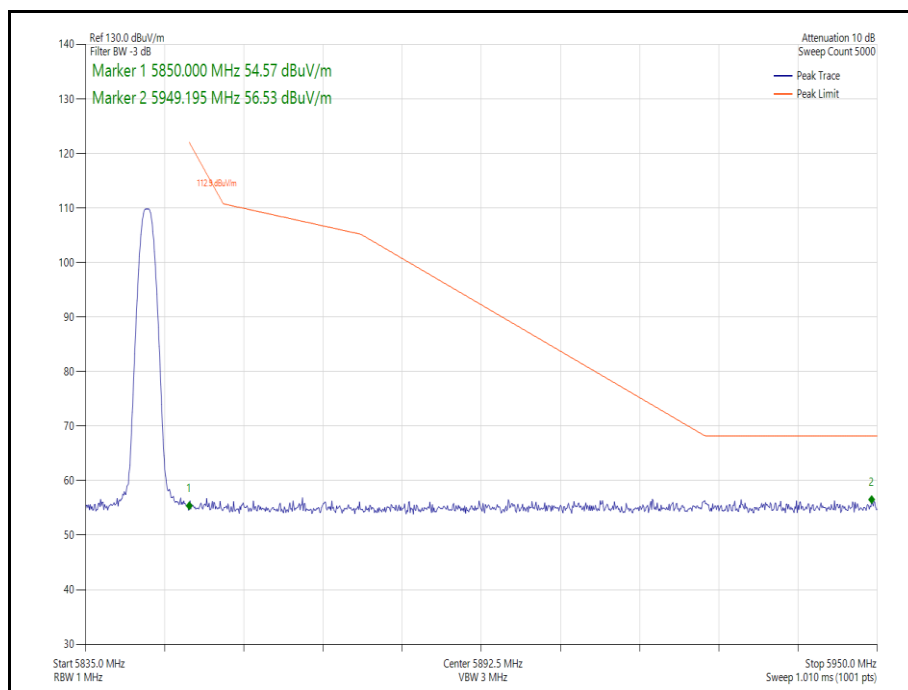


Figure 162 - Static - GFSK/DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

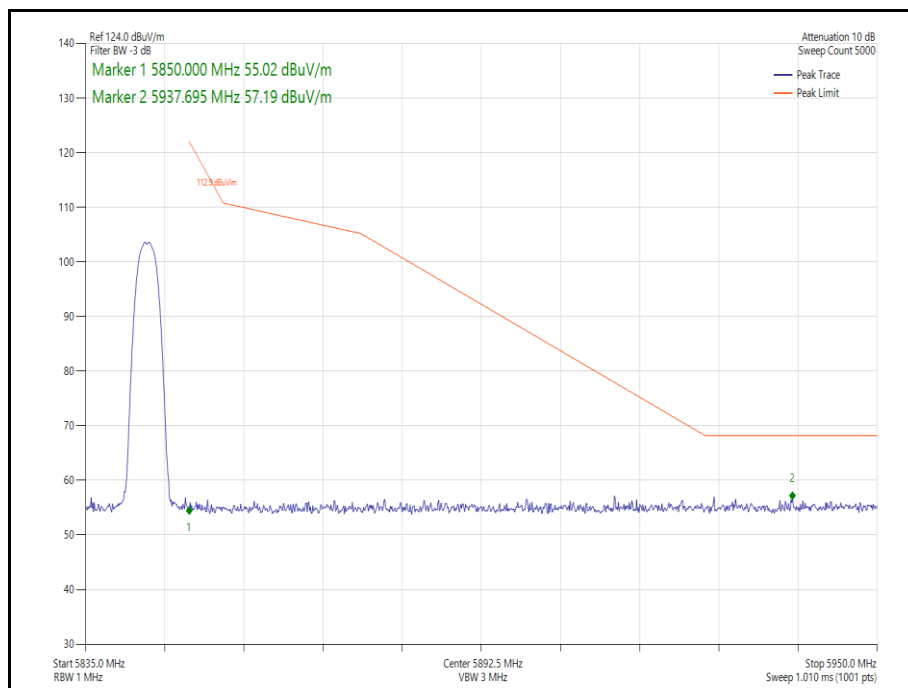


Figure 163 - Static -  $\pi/4$  DQPSK/4-DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

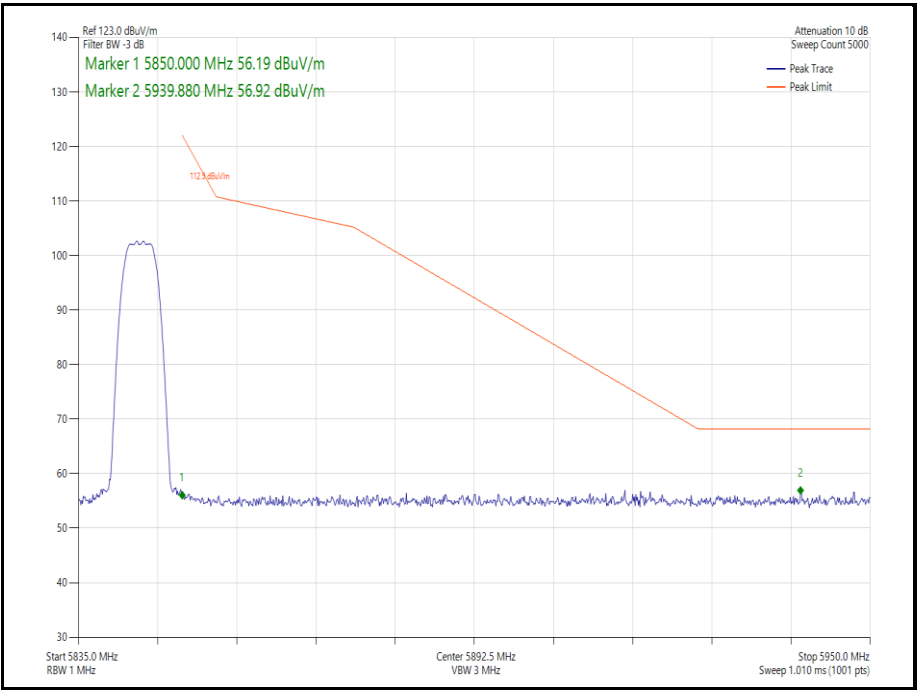


Figure 164 - Static -  $\pi/4$  DQPSK/8-DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

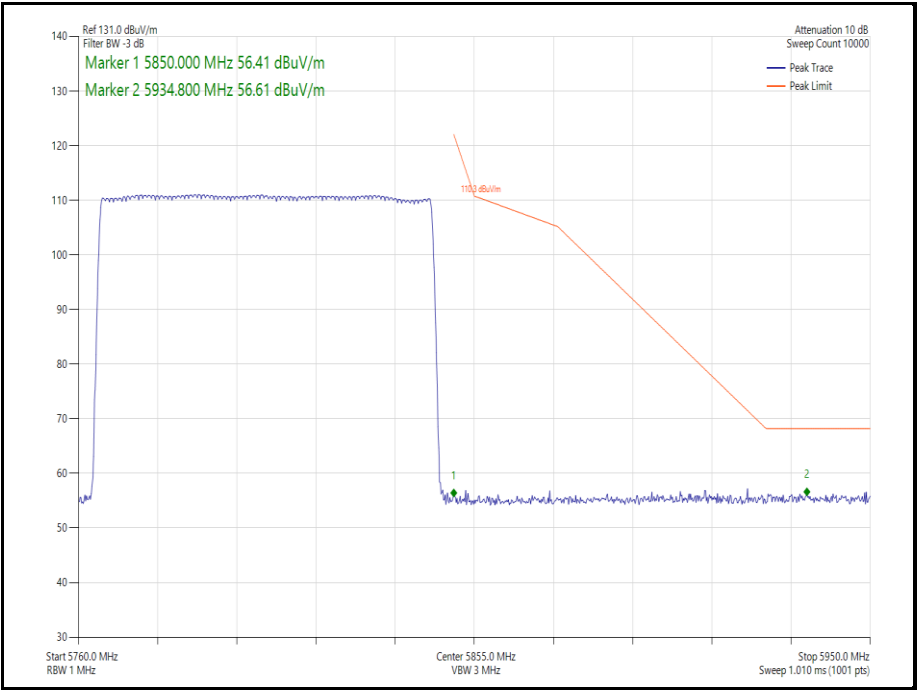


Figure 165 - Hopping - GFSK/DH5 - Band Edge Frequency 5850 MHz

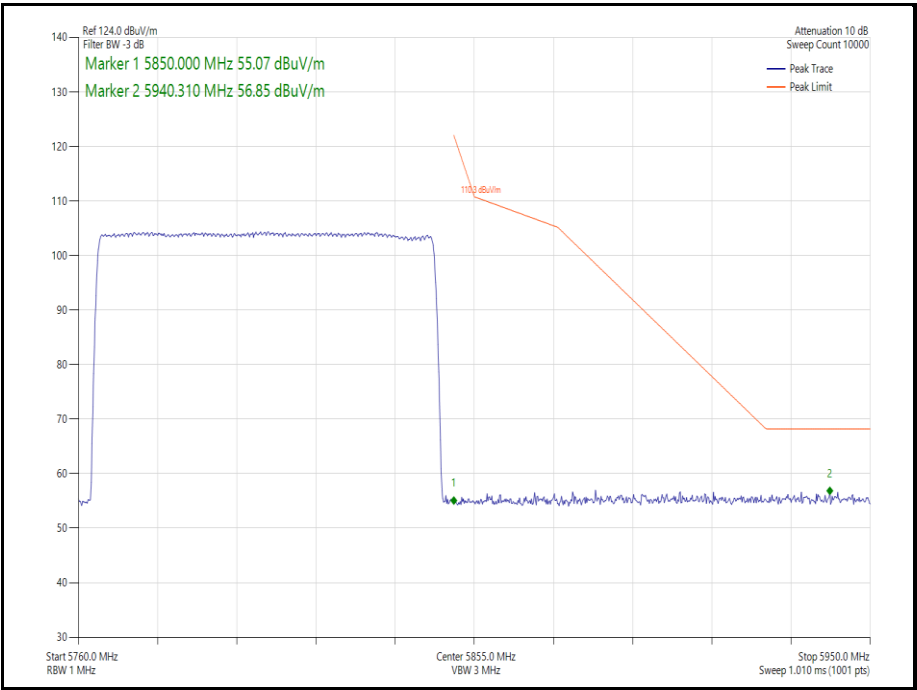


Figure 166 - Hopping -  $\pi/4$  DQPSK/4-DH5 - Band Edge Frequency 5850 MHz

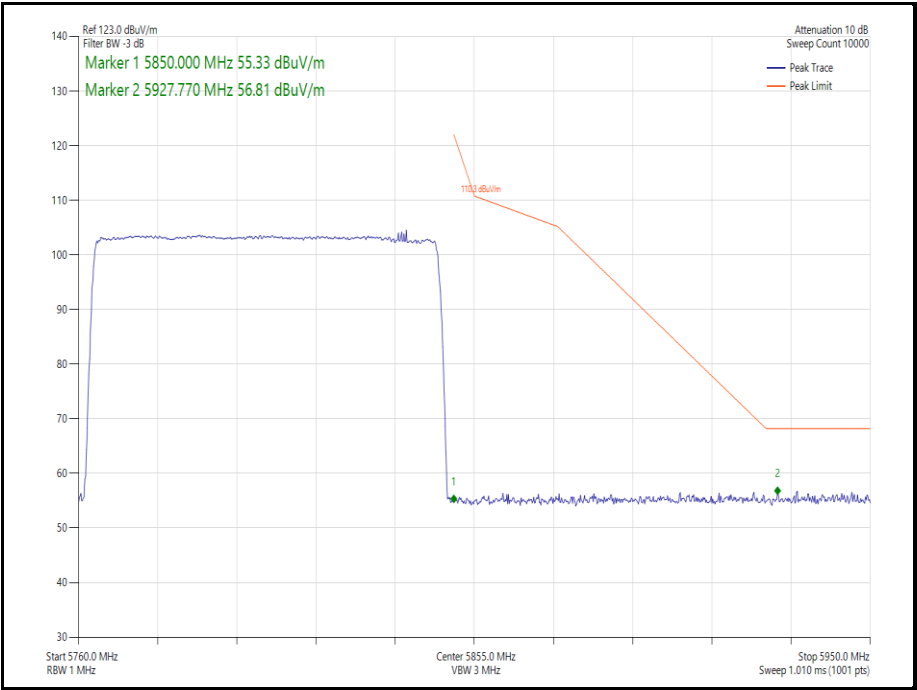


Figure 167 - Hopping -  $\pi/4$  DQPSK/8-DH5 - Band Edge Frequency 5850 MHz

iPA - TXBF

| Mode    | Modulation    | Core | Packet Type | Tx Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBμV/m) |
|---------|---------------|------|-------------|--------------------|---------------------------|----------------|
| Static  | GFSK          | 0-1  | DH5         | 5733               | 5725                      | 53.43          |
| Static  | $\pi/4$ DQPSK | 0-1  | 4-DH5       | 5733               | 5725                      | 52.18          |
| Static  | $\pi/4$ DQPSK | 0-1  | 8-DH5       | 5733               | 5725                      | 52.60          |
| Hopping | GFSK          | 0-1  | DH5         | -                  | 5725                      | 53.65          |
| Hopping | $\pi/4$ DQPSK | 0-1  | 4-DH5       | -                  | 5725                      | 52.39          |
| Hopping | $\pi/4$ DQPSK | 0-1  | 8-DH5       | -                  | 5725                      | 52.47          |
| Static  | GFSK          | 0-1  | DH5         | 5844               | 5850                      | 54.15          |
| Static  | $\pi/4$ DQPSK | 0-1  | 4-DH5       | 5844               | 5850                      | 52.50          |
| Static  | $\pi/4$ DQPSK | 0-1  | 8-DH5       | 5844               | 5850                      | 52.25          |
| Hopping | GFSK          | 0-1  | DH5         | -                  | 5850                      | 54.25          |
| Hopping | $\pi/4$ DQPSK | 0-1  | 4-DH5       | -                  | 5850                      | 52.27          |
| Hopping | $\pi/4$ DQPSK | 0-1  | 8-DH5       | -                  | 5850                      | 53.15          |

Table 101 - Authorised Band Edge Results

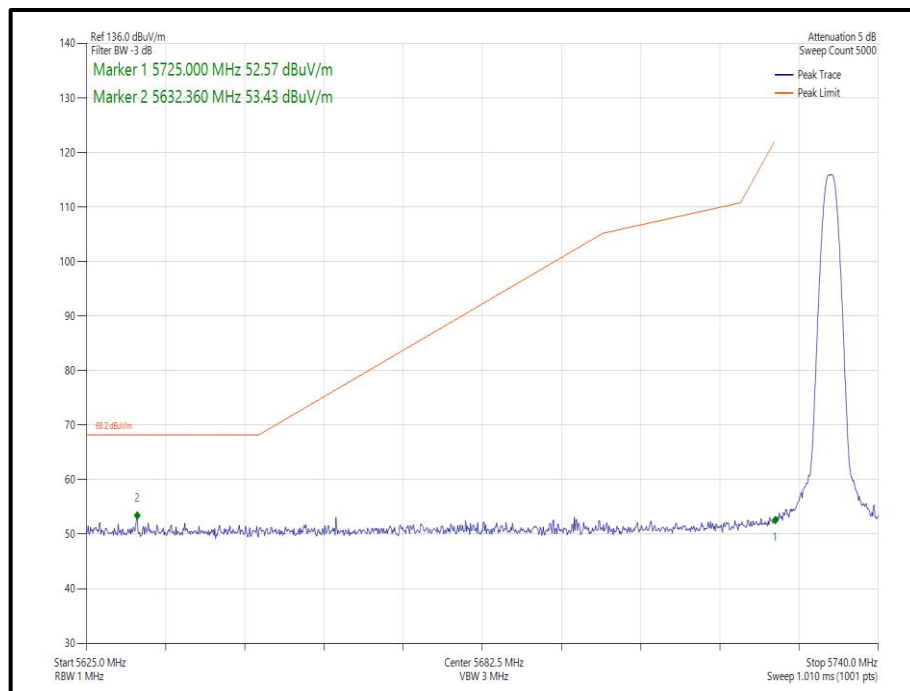


Figure 168 - Static - GFSK/DH5 - 5733 MHz - Band Edge Frequency 5725 MHz

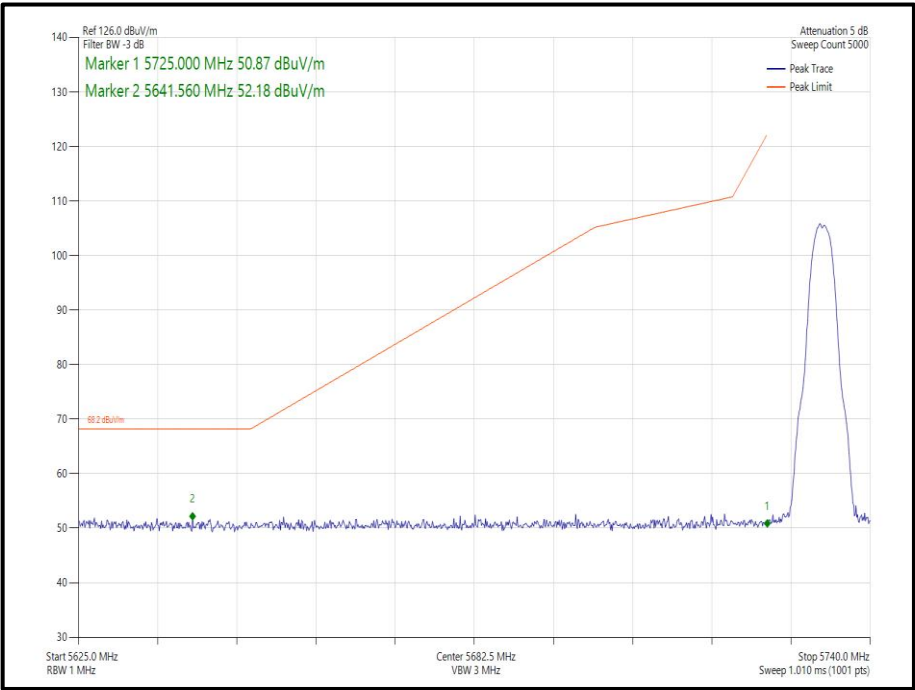


Figure 169 - Static -  $\pi/4$  DQPSK/4-DH5 - 5733 MHz - Band Edge Frequency 5725 MHz

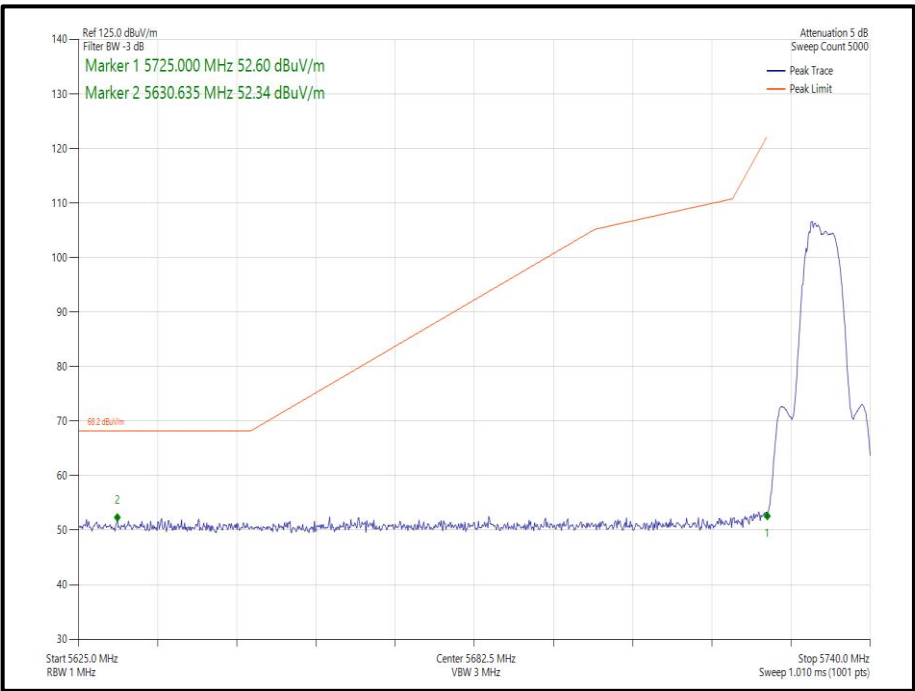


Figure 170 - Static -  $\pi/4$  DQPSK/8-DH5 - 5733 MHz - Band Edge Frequency 5725 MHz

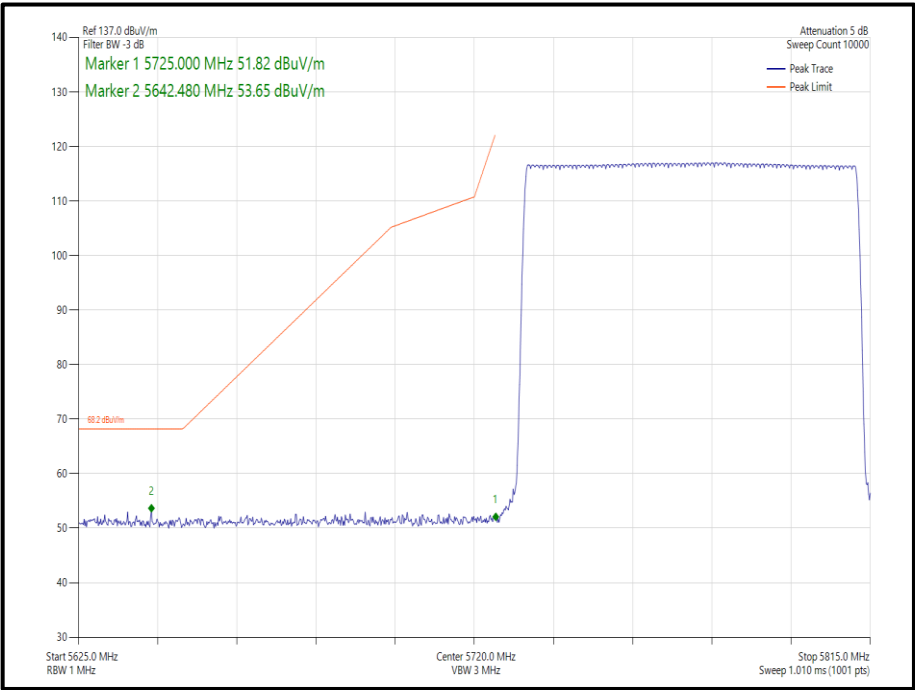


Figure 171 - Hopping - GFSK/DH5 - Band Edge Frequency 5725 MHz

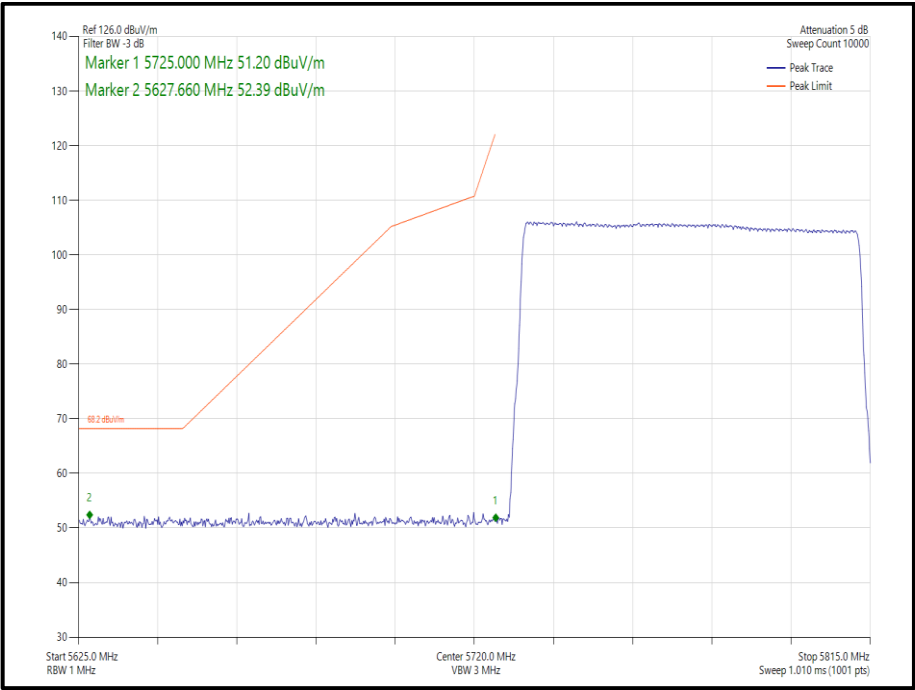


Figure 172 - Hopping -  $\pi/4$  DQPSK/4-DH5 - Band Edge Frequency 5725 MHz

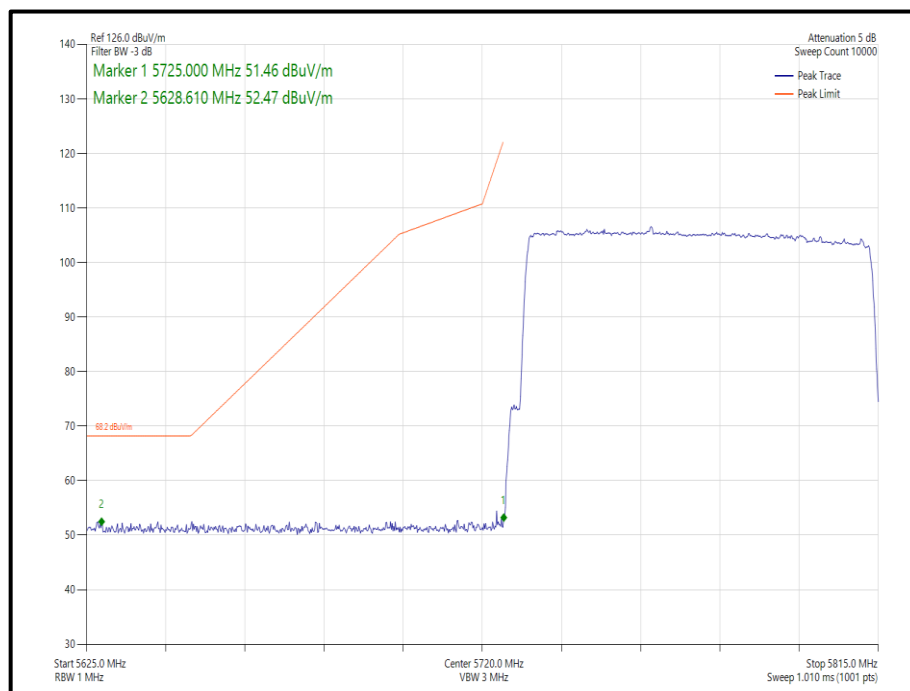


Figure 173 - Hopping -  $\pi/4$  DQPSK/8-DH5 - Band Edge Frequency 5725 MHz

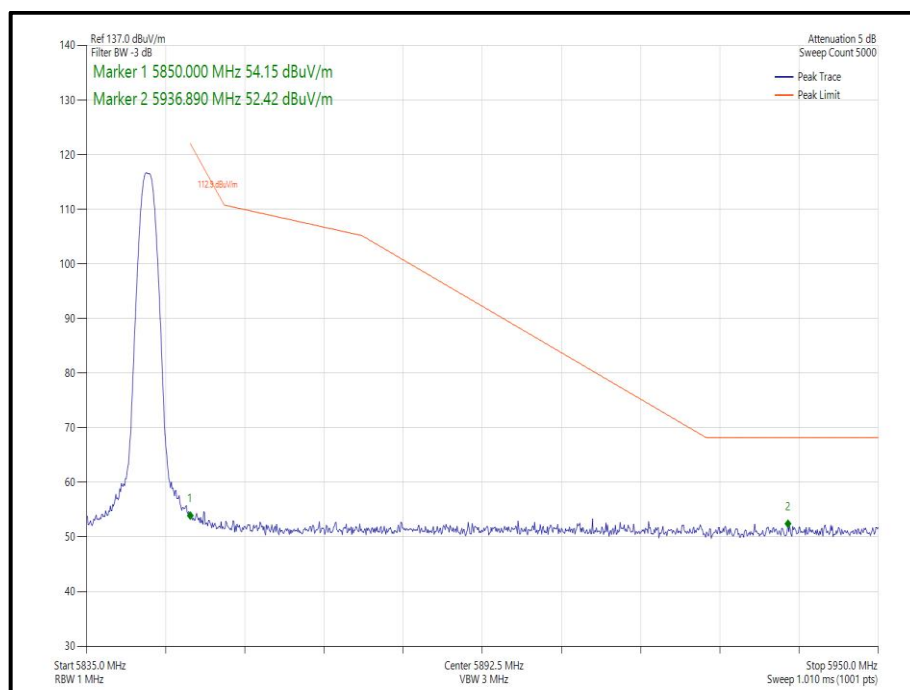


Figure 174 - Static - GFSK/DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

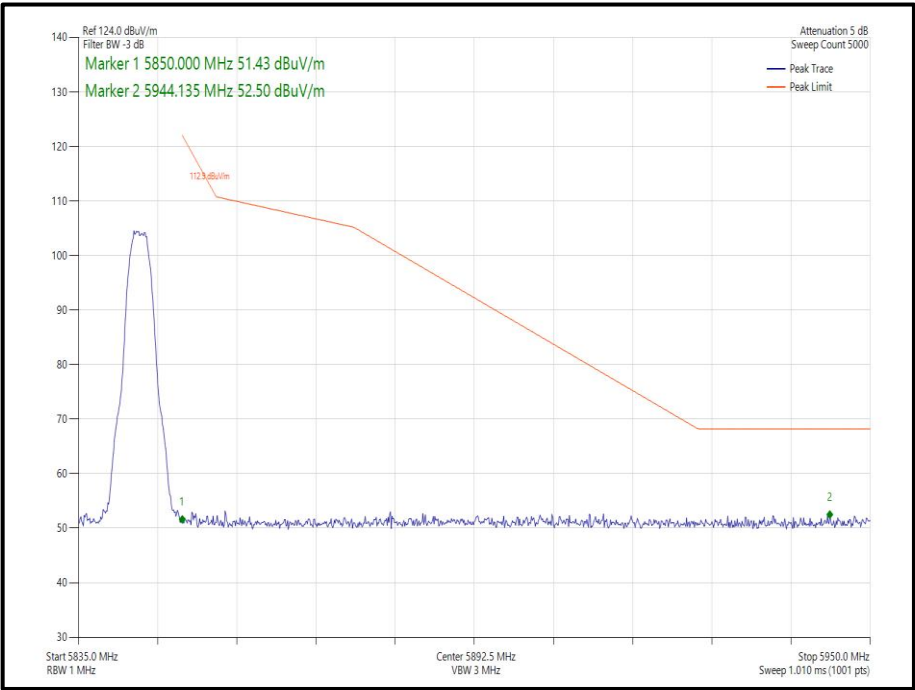


Figure 175 - Static -  $\pi/4$  DQPSK/4-DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

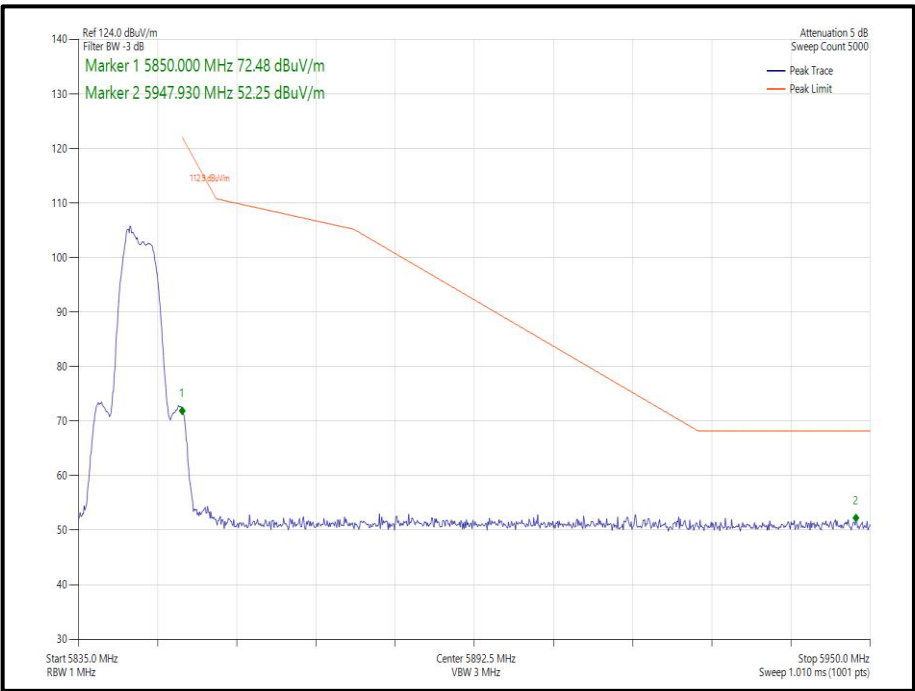


Figure 176 - Static -  $\pi/4$  DQPSK/8-DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

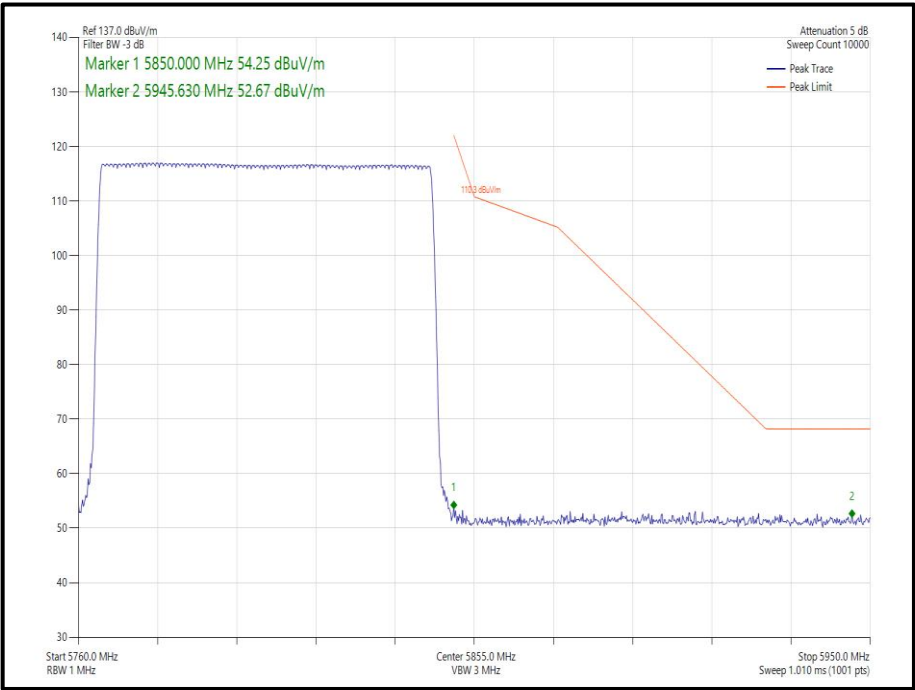


Figure 177 - Hopping - GFSK/DH5 - Band Edge Frequency 5850 MHz

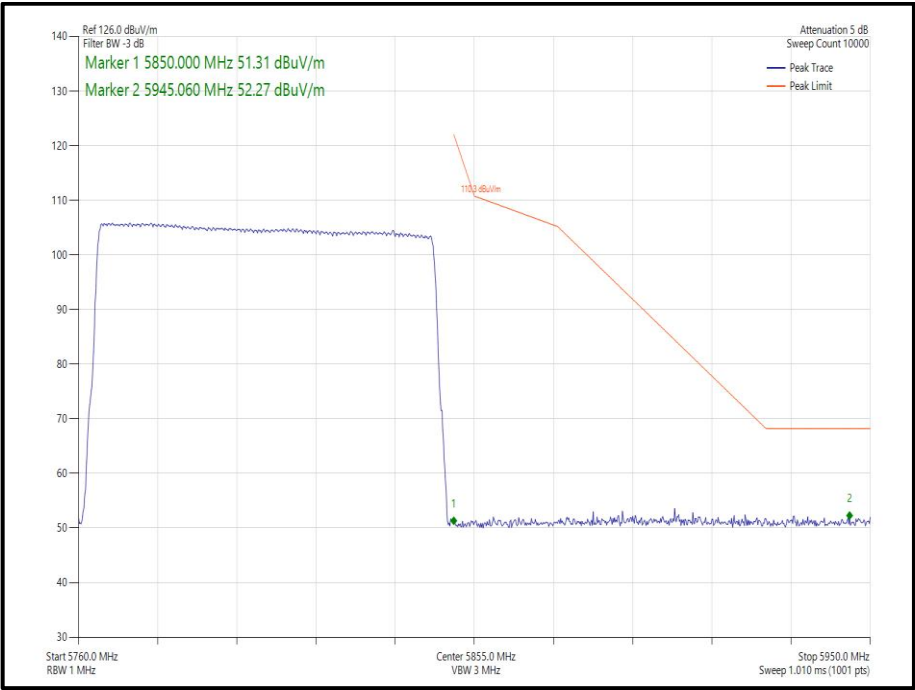


Figure 178 - Hopping -  $\pi/4$  DQPSK/4-DH5 - Band Edge Frequency 5850 MHz

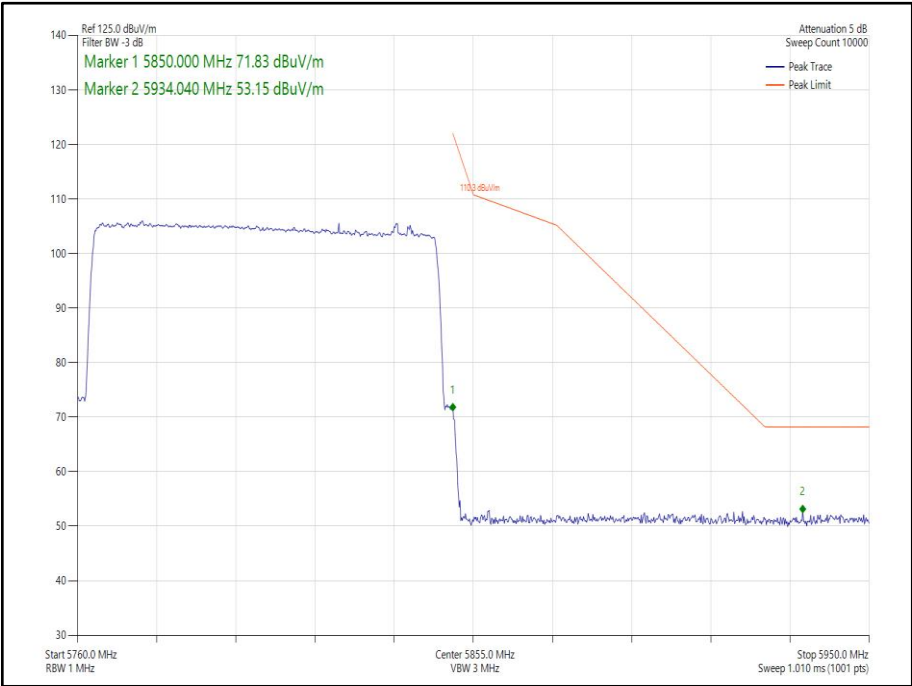
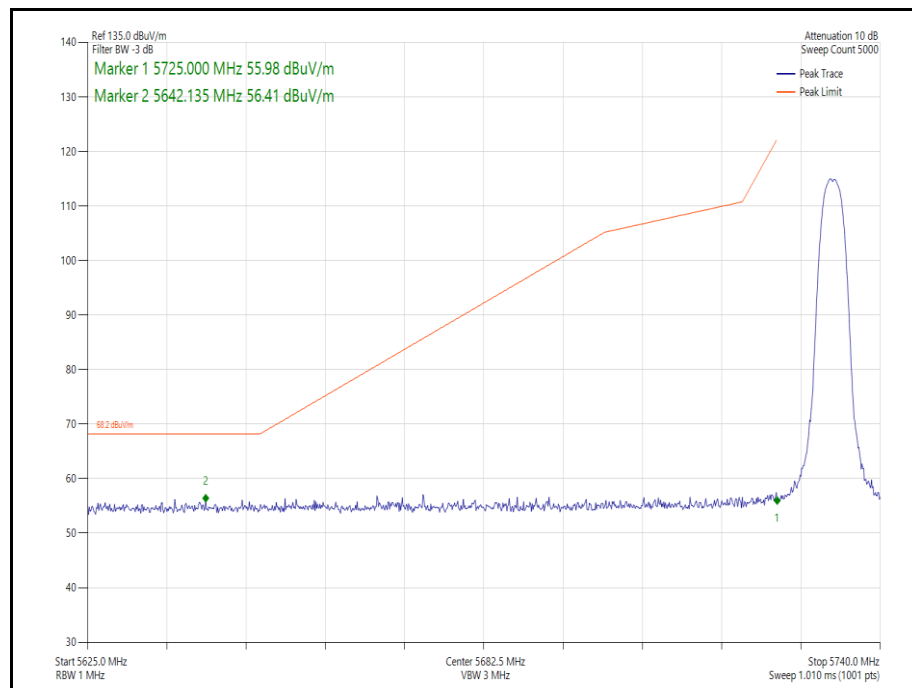


Figure 179 - Hopping -  $\pi/4$  DQPSK/8-DH5 - Band Edge Frequency 5850 MHz

ePA - SISO

| Mode    | Modulation    | Core | Packet Type | Tx Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBμV/m) |
|---------|---------------|------|-------------|--------------------|---------------------------|----------------|
| Static  | $\pi/4$ DQPSK | 1    | 4-DH5       | 5733               | 5725                      | 56.41          |
| Static  | $\pi/4$ DQPSK | 1    | 8-DH5       | 5733               | 5725                      | 57.17          |
| Hopping | $\pi/4$ DQPSK | 1    | 4-DH5       | -                  | 5725                      | 56.75          |
| Hopping | $\pi/4$ DQPSK | 1    | 8-DH5       | -                  | 5725                      | 57.29          |
| Static  | $\pi/4$ DQPSK | 1    | 4-DH5       | 5844               | 5850                      | 56.63          |
| Static  | $\pi/4$ DQPSK | 1    | 8-DH5       | 5844               | 5850                      | 56.96          |
| Hopping | $\pi/4$ DQPSK | 1    | 4-DH5       | -                  | 5850                      | 56.50          |
| Hopping | $\pi/4$ DQPSK | 1    | 8-DH5       | -                  | 5850                      | 57.13          |

**Table 102 - Authorised Band Edge Results**



**Figure 180 - Static -  $\pi/4$  DQPSK/4-DH5 - 5733 MHz - Band Edge Frequency 5725 MHz**

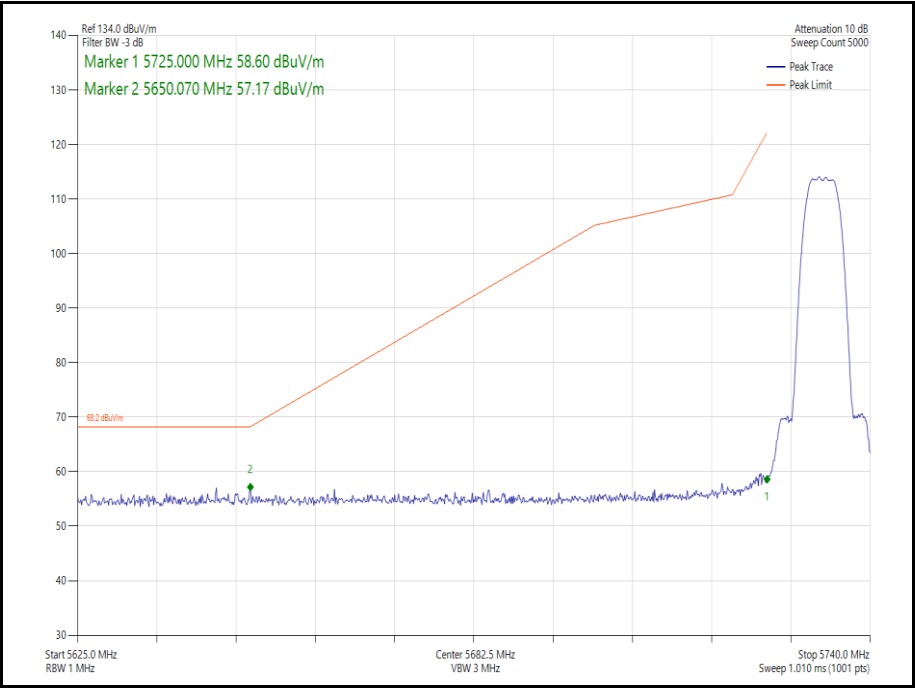


Figure 181 - Static -  $\pi/4$  DQPSK/8-DH5 - 5733 MHz - Band Edge Frequency 5725 MHz

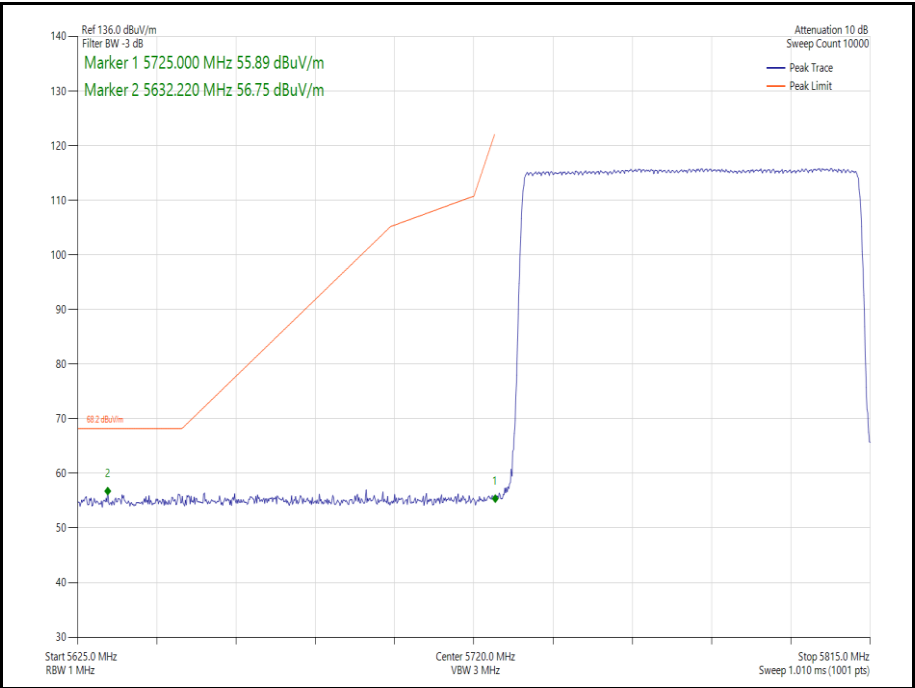


Figure 182 - Hopping -  $\pi/4$  DQPSK/4-DH5 - Band Edge Frequency 5725 MHz

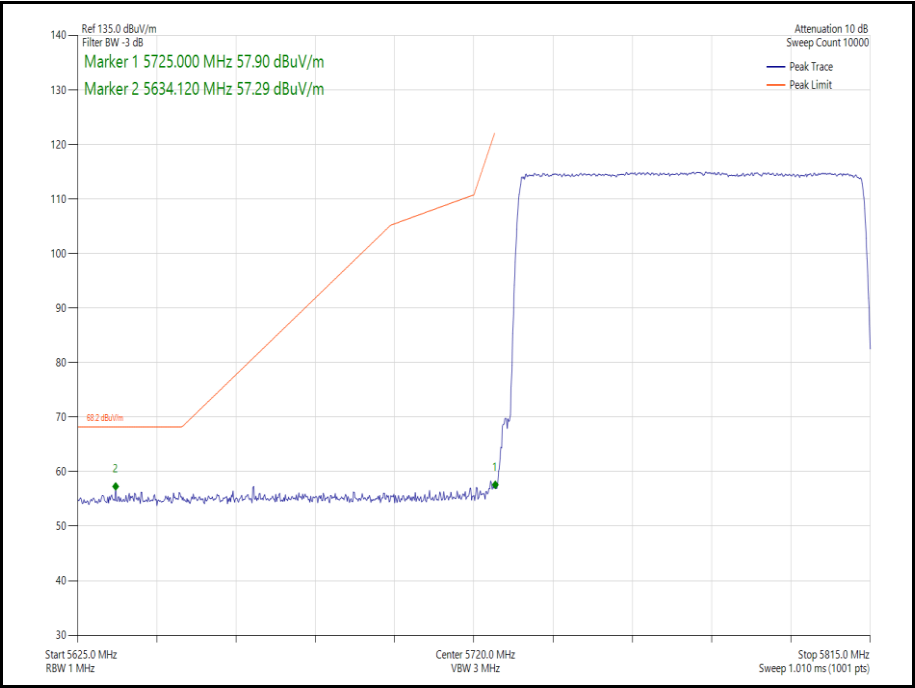


Figure 183 - Hopping -  $\pi/4$  DQPSK/8-DH5 - Band Edge Frequency 5725 MHz

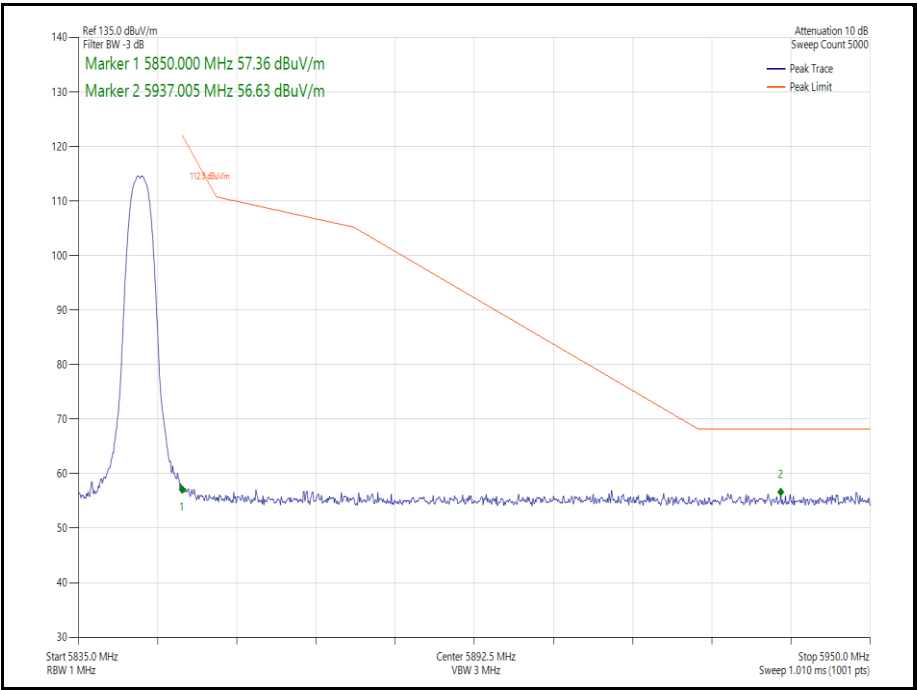


Figure 184 - Static -  $\pi/4$  DQPSK/4-DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

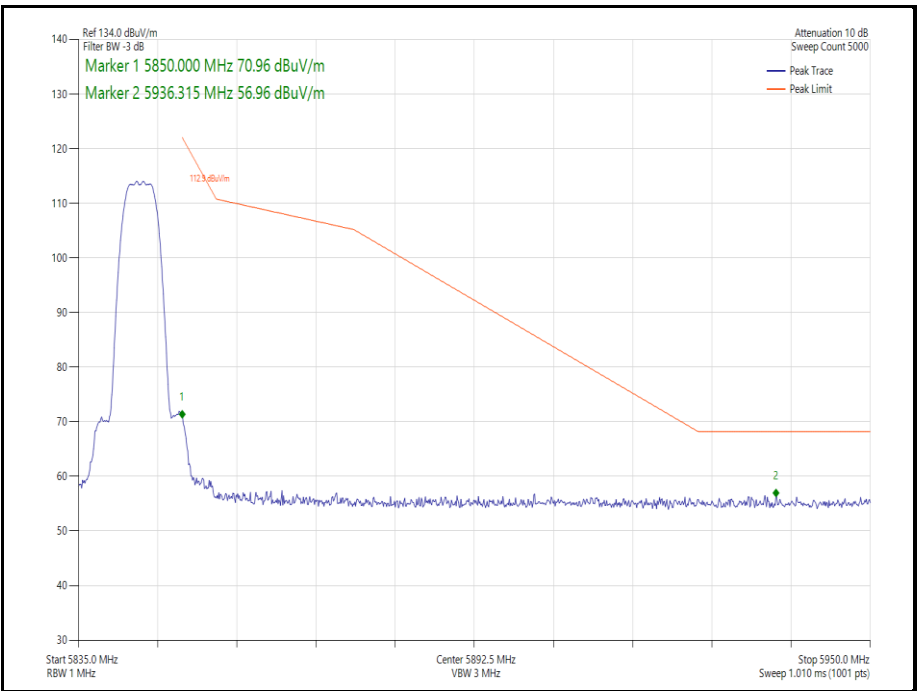


Figure 185 - Static -  $\pi/4$  DQPSK/8-DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

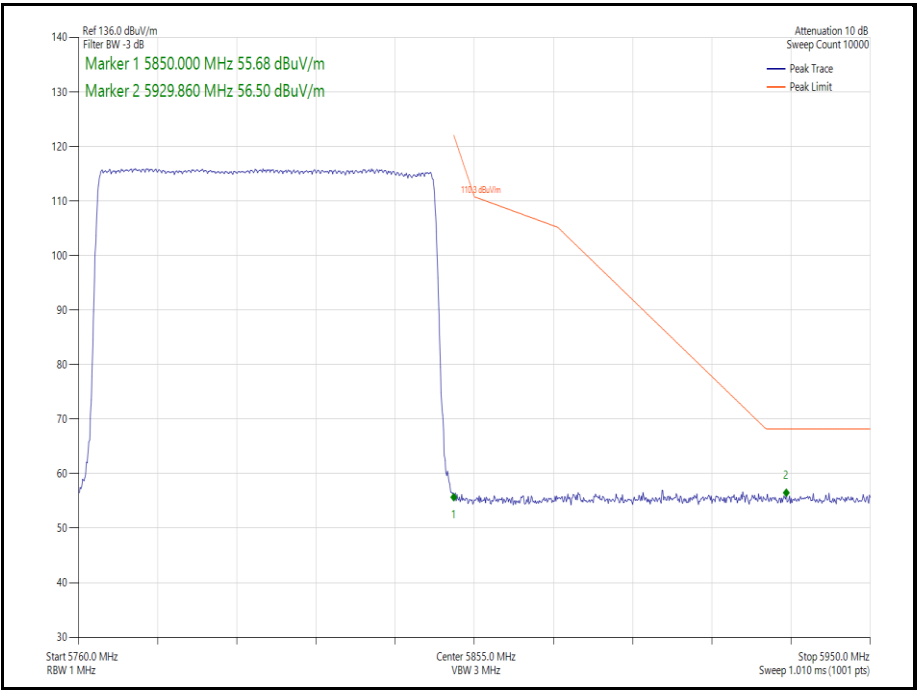


Figure 186 - Hopping -  $\pi/4$  DQPSK/4-DH5 - Band Edge Frequency 5850 MHz

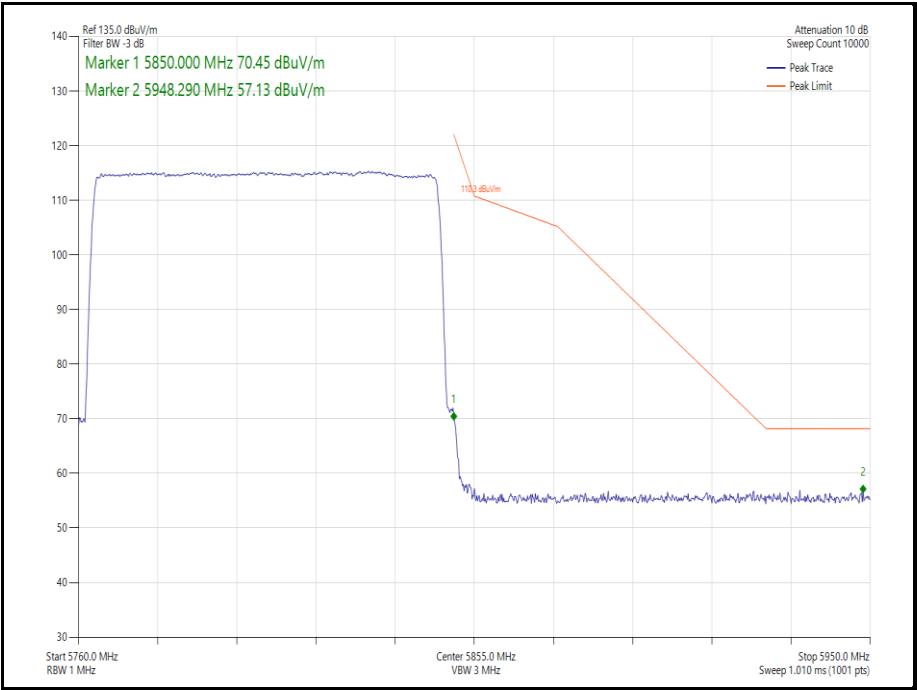
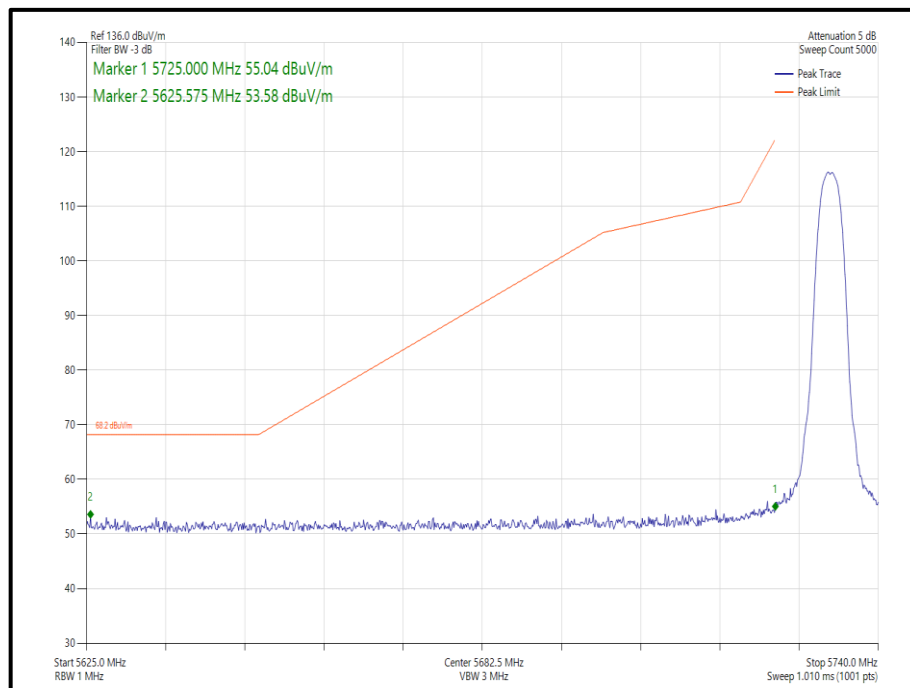


Figure 187 - Hopping -  $\pi/4$  DQPSK/8-DH5 - Band Edge Frequency 5850 MHz

ePA - TXBF

| Mode    | Modulation    | Core | Packet Type | Tx Frequency (MHz) | Band Edge Frequency (MHz) | Level (dBμV/m) |
|---------|---------------|------|-------------|--------------------|---------------------------|----------------|
| Static  | $\pi/4$ DQPSK | 0-1  | 4-DH5       | 5733               | 5725                      | 53.58          |
| Static  | $\pi/4$ DQPSK | 0-1  | 8-DH5       | 5733               | 5725                      | 52.69          |
| Hopping | $\pi/4$ DQPSK | 0-1  | 4-DH5       | -                  | 5725                      | 53.16          |
| Hopping | $\pi/4$ DQPSK | 0-1  | 8-DH5       | -                  | 5725                      | 56.36          |
| Static  | $\pi/4$ DQPSK | 0-1  | 4-DH5       | 5844               | 5850                      | 54.06          |
| Static  | $\pi/4$ DQPSK | 0-1  | 8-DH5       | 5844               | 5850                      | 54.32          |
| Hopping | $\pi/4$ DQPSK | 0-1  | 4-DH5       | -                  | 5850                      | 53.90          |
| Hopping | $\pi/4$ DQPSK | 0-1  | 8-DH5       | -                  | 5850                      | 53.08          |

**Table 103 - Authorised Band Edge Results**



**Figure 188 - Static -  $\pi/4$  DQPSK/4-DH5 - 5733 MHz - Band Edge Frequency 5725 MHz**

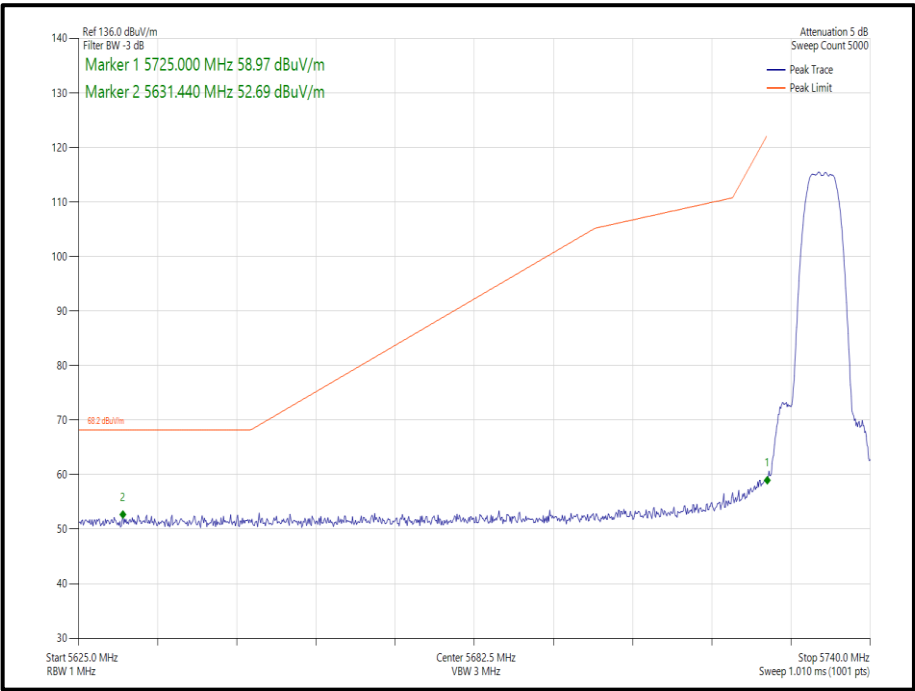


Figure 189 - Static -  $\pi/4$  DQPSK/8-DH5 - 5733 MHz - Band Edge Frequency 5725 MHz

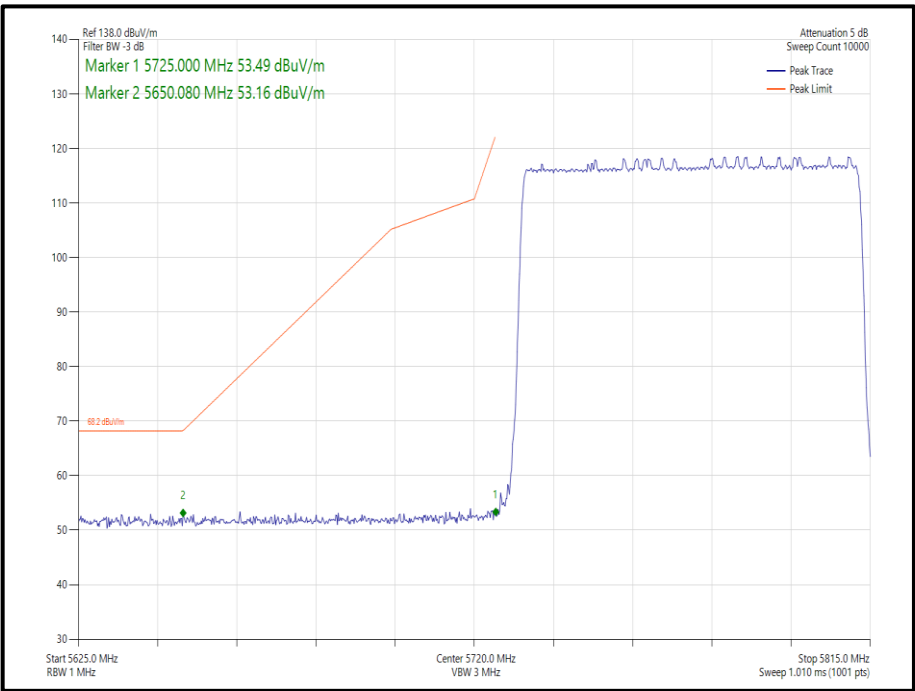


Figure 190 - Hopping -  $\pi/4$  DQPSK/4-DH5 - Band Edge Frequency 5725 MHz

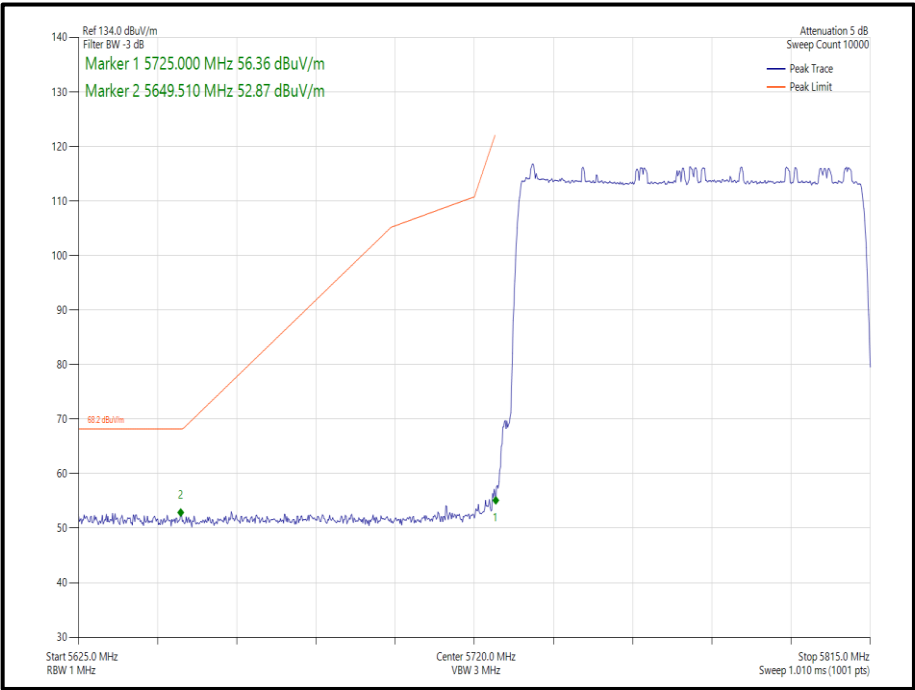


Figure 191 - Hopping -  $\pi/4$  DQPSK/8-DH5 - Band Edge Frequency 5725 MHz

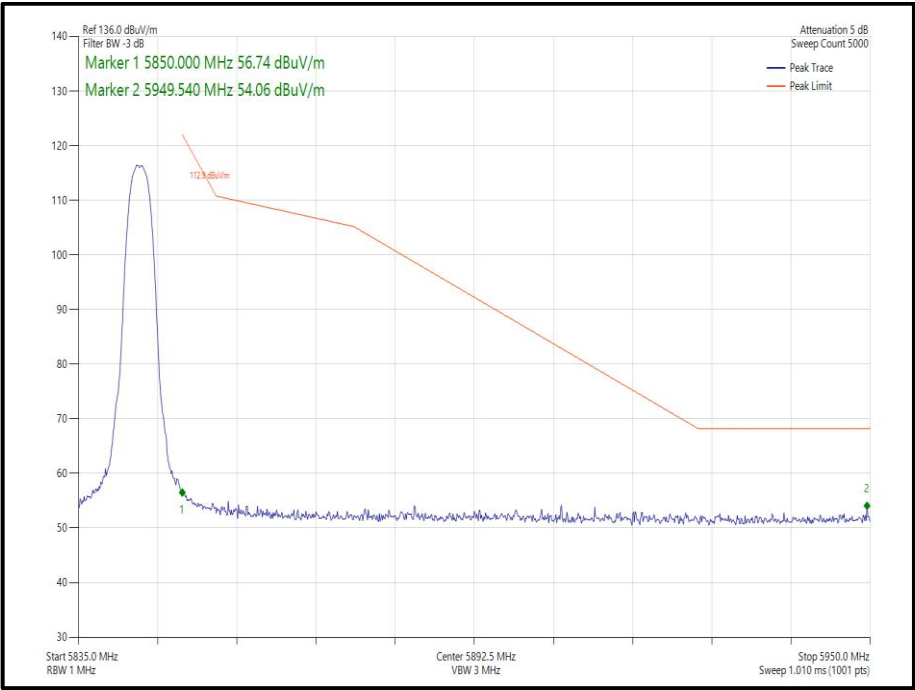


Figure 192 - Static -  $\pi/4$  DQPSK/4-DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

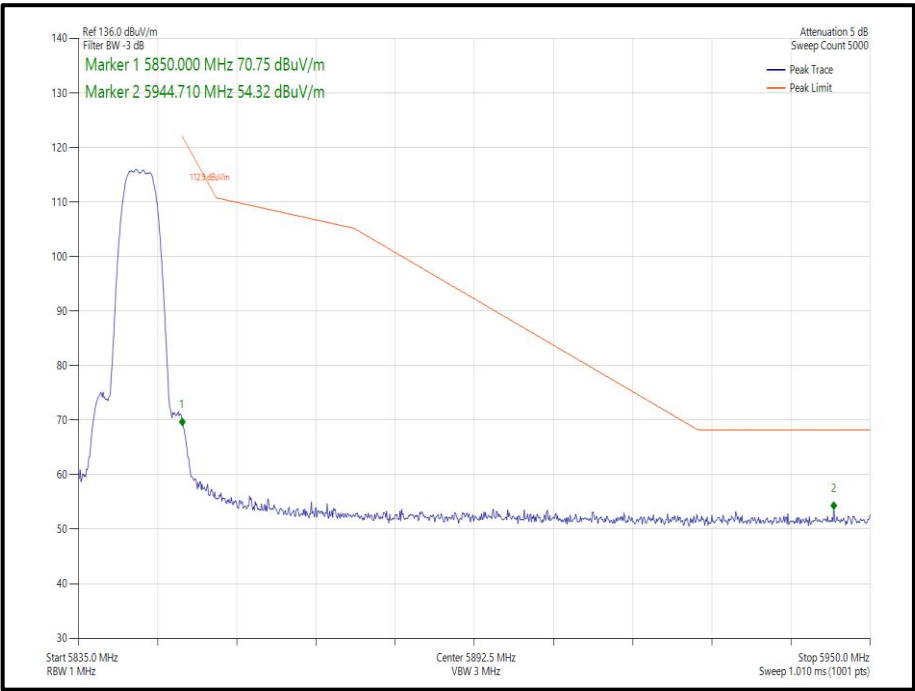


Figure 193 - Static -  $\pi/4$  DQPSK/8-DH5 - 5844 MHz - Band Edge Frequency 5850 MHz

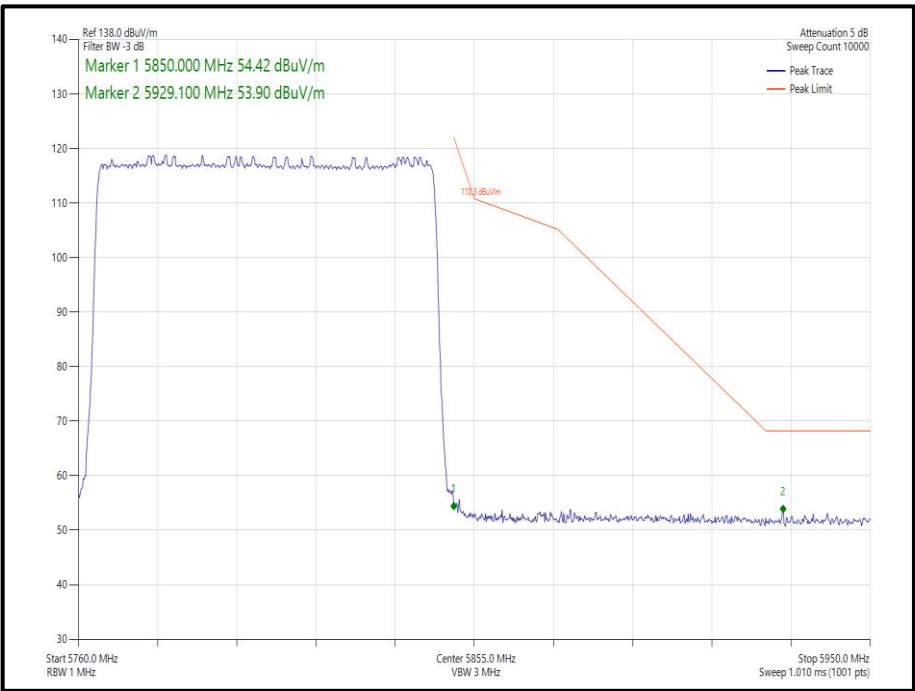


Figure 194 - Hopping -  $\pi/4$  DQPSK/4-DH5 - Band Edge Frequency 5850 MHz

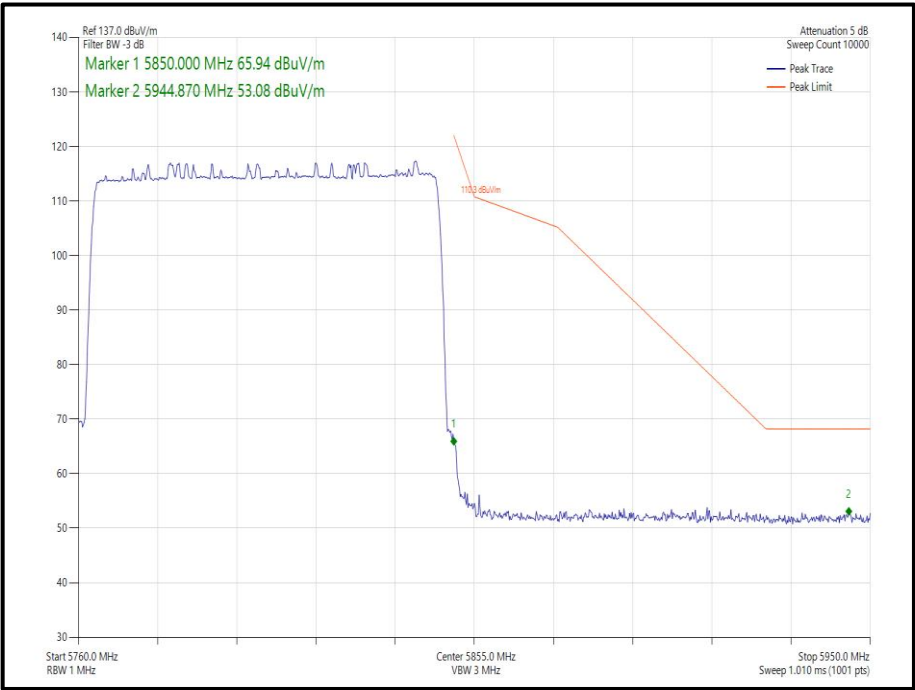


Figure 195 - Hopping -  $\pi/4$  DQPSK/8-DH5 - Band Edge Frequency 5850 MHz



FCC 47 CFR Part 15E, Limit Clause 15.407(b)(1)(2)(3)(4)

For transmitters operating in the 5.15-5.25 GHz band:  $\leq -27$  dBm/MHz outside 5150-5350 MHz.

For transmitters operating in the 5.25-5.35 GHz band:  $\leq -27$  dBm/MHz outside 5150-5350 MHz.

For transmitters operating in the 5.47-5.725 GHz band:  $\leq -27$  dBm/MHz outside 5470-5725 MHz

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

ISED RSS-247, Limit Clause 6.2.1.2, 6.2.2.2, 6.2.3.2 and 6.2.4.2

For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB.

For transmitters with operating frequencies in the bands 5250-5350 MHz and 5470-5725 MHz, all emissions outside the band 5250-5350 MHz and 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.

Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

- a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
- b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and

-27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.



## 2.5.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5 and RF Chamber 15,

| Instrument                           | Manufacturer       | Type No              | TE No | Calibration Period (months) | Calibration Expires |
|--------------------------------------|--------------------|----------------------|-------|-----------------------------|---------------------|
| Screened Room (5)                    | Rainford           | Rainford             | 1545  | 36                          | 15-Apr-2024         |
| Turntable Controller                 | Inn-Co GmbH        | CO 1000              | 1606  | -                           | TU                  |
| Mast Controller                      | Maturo GmbH        | NCD                  | 4810  | -                           | TU                  |
| Tilt Antenna Mast                    | Maturo GmbH        | TAM 4.0-P            | 4811  | -                           | TU                  |
| Antenna (DRG 1-10.5GHz)              | Schwarzbeck        | BBHA9120B            | 4848  | 12                          | 28-May-2023         |
| Preamplifier (30dB 1GHz to 18GHz)    | Schwarzbeck        | BBV 9718 C           | 5261  | 12                          | 08-Apr-2023         |
| Attenuator 5W 10dB DC-18GHz          | Aaren              | AT40A-4041-D18-10    | 5492  | 12                          | 11-Apr-2023         |
| Cable (SMA to SMA 1m)                | Junkosha           | MWX221-01000AMSAMS/A | 5513  | 12                          | 12-Apr-2023         |
| Cable (SMA to SMA, 2 m)              | Junkosha           | MWX221-02000AMSAMS/A | 5517  | 12                          | 12-Apr-2023         |
| EMI Test Receiver                    | Rohde & Schwarz    | ESW44                | 5911  | 12                          | 24-Feb-2023         |
| 1500W (300V 12A) AC Power Supply     | iTech              | IT7324               | 5956  | -                           | O/P Mon             |
| 5m Semi-Anechoic Chamber (Dual-Axis) | Albatross Projects | RF Chamber 15        | 5963  | 36                          | 28-Apr-2025         |
| Compact Antenna Mast                 | Maturo GmbH        | CAM4.0-P             | 5964  | -                           | TU                  |
| Tilt Antenna Mast                    | Maturo GmbH        | BAM4.5-P             | 5967  | -                           | TU                  |
| Cable (SMA to SMA 1m)                | Junkosha           | MWX221-01000AMSAMS/A | 5996  | 12                          | 06-Jun-2023         |
| Cable (SMA to SMA 1m)                | Junkosha           | MWX221-01000AMSAMS/A | 6007  | 12                          | 06-Jun-2023         |
| Cable (SMA to SMA 6.5m)              | Junkosha           | MWX221-06500AMSAMS/B | 6014  | 12                          | 07-Jun-2023         |
| Horn Antenna (1-10 GHz)              | Schwarzbeck        | BBHA9120B            | 6140  | 12                          | 21-Jun-2023         |
| Digital Multimeter                   | Fluke              | 115                  | 6147  | 12                          | 16-Jun-2023         |
| Humidity & Temperature meter         | R.S Components     | 1364                 | 6150  | 12                          | 17-Jun-2023         |
| SAC Switch Unit                      | TUV SUD            | SSU003               | 6191  | 12                          | 15-Jul-2023         |

**Table 104**

TU – Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment



## **2.6 Spurious Radiated Emissions**

### **2.6.1 Specification Reference**

FCC 47 CFR Part 15E, Clause 15.209 and 15.407 (b)  
ISED RSS-247, Clause 6.2  
ISED RSS-GEN, 6.13 and 8.9

### **2.6.2 Equipment Under Test and Modification State**

A2816, S/N: Q64HTFJ22X - Modification State 0

### **2.6.3 Date of Test**

13-October-2022 to 16-October-2022

### **2.6.4 Test Method**

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

Tests were performed in BDR and HDR4 2TX MIMO mode on the Main Radio, with measurements undertaken from 30 MHz to 40 GHz, on frequencies 5162 MHz, 5203 MHz, 5245 MHz, 5733 MHz, 5788 MHz and 5844 MHz.

All testing was performed using the lowest data rate/modulation scheme for the applicable mode since this was declared worst case by the customer.

For the purpose of this testing, spurious emissions were limited to 1 GHz to 40 GHz on all other test channels.

Tests on the AUX radio were limited to 1 GHz to 40 GHz, as measurement's below 1 GHz on the main radio were considered to be worst case.

Plots for average measurements were taken in accordance with ANSI C63.10, clause 12.7.7.2 with max-hold trace to characterize the EUT. Where emissions were detected, final average measurements were taken using trace averaging.

The plots shown are the characterization of the EUT. The limits on the plots represent the most stringent case for restricted bands, (54/74 dBuV/m @ 3 m and 64/84 dBuV/m @ 1m) when compared to -27 dBm/MHz EIRP outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10dB 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 dBuV/m to uV/m:  
 $10^{(\text{Field Strength in dBuV/m}/20)}$

EIRP was converted to field strength at 3m using the following formula:

Field Strength (dBuV/m at 3 m) = EIRP (dBm) + 95.2 dB

## 2.6.5 Test Setup Diagram

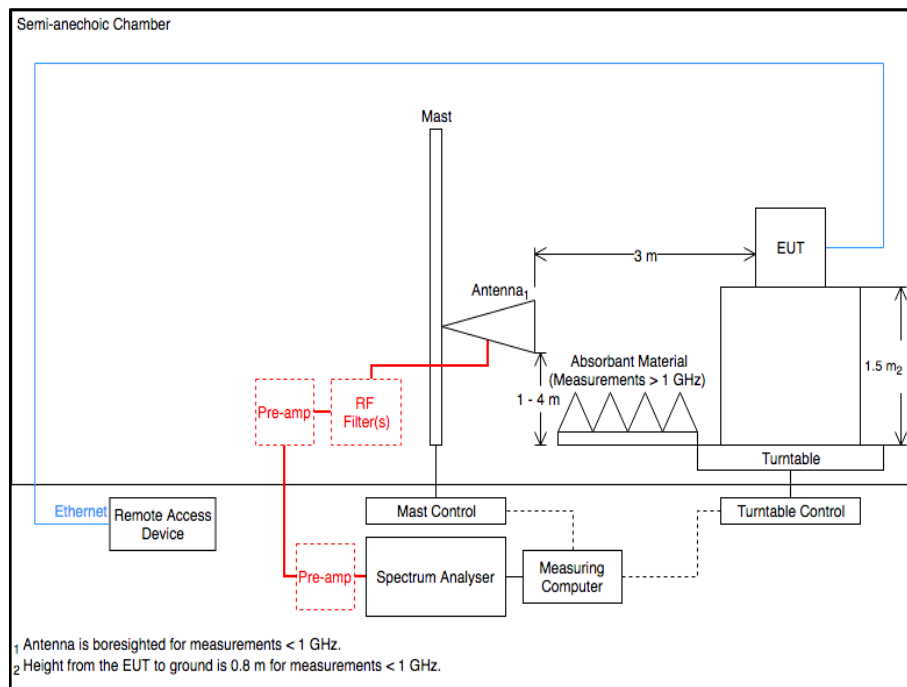


Figure 196

## 2.6.6 Environmental Conditions

|                     |                |
|---------------------|----------------|
| Ambient Temperature | 22.1 - 22.5 °C |
| Relative Humidity   | 46.5 - 50.4 %  |



2.6.7 Test Results

NarrowBand

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

Table 105 - U-NII-1 - 5162 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz

\*No emissions found within 10 dB of the limit.

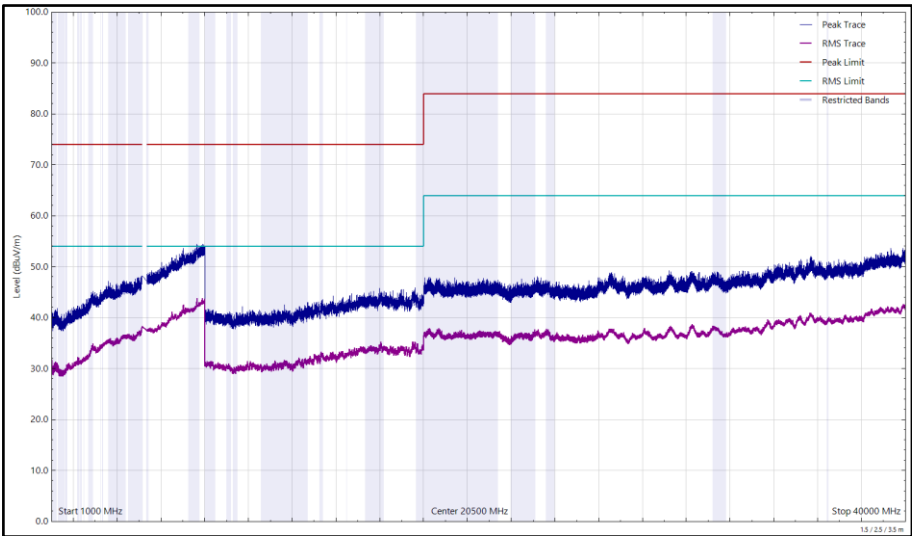


Figure 197 - U-NII-1 - 5162 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal

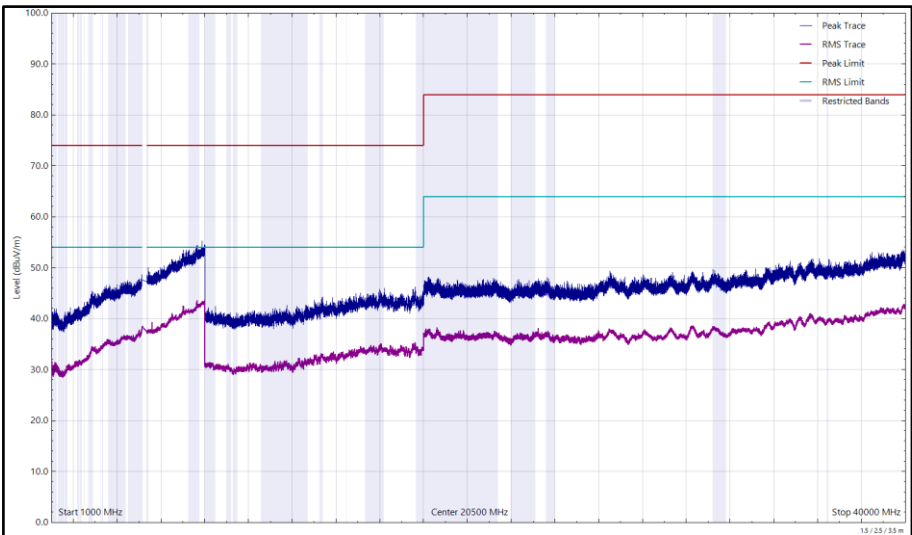
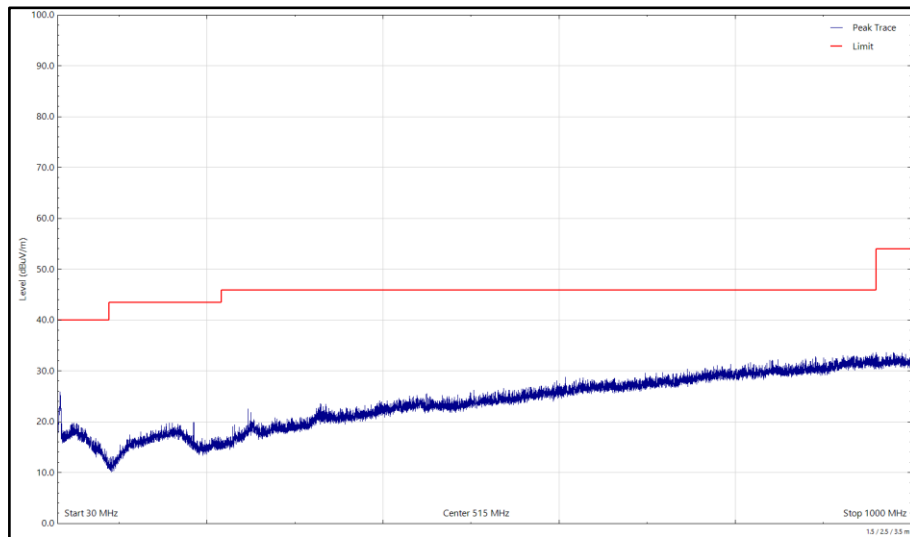


Figure 198 - U-NII-1 - 5162 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical

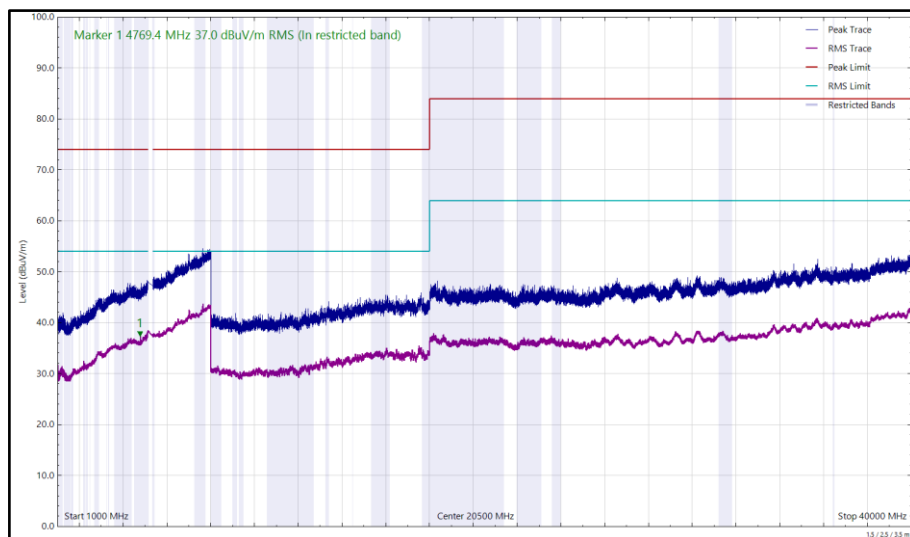
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 4769.362        | 36.96          | 54.00          | -17.04      | RMS      | 267       | 105         | Horizontal   |

**Table 106 - U-NII-1 - 5203 MHz, DH5, iPA, Core 0 + Core 1, 30 MHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 199 - U-NII-1 - 5203 MHz, DH5, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 200 - U-NII-1 - 5203 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**

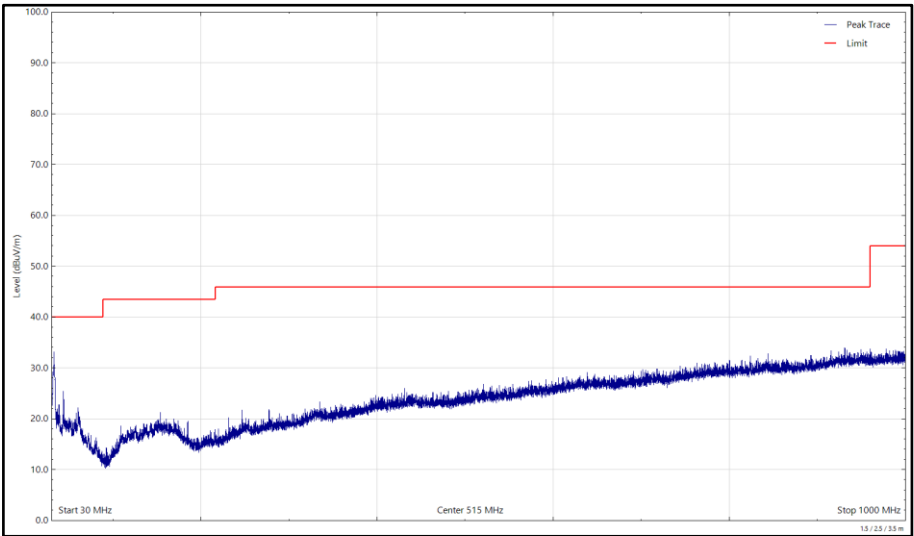


Figure 201 - U-NII-1 - 5203 MHz, DH5, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

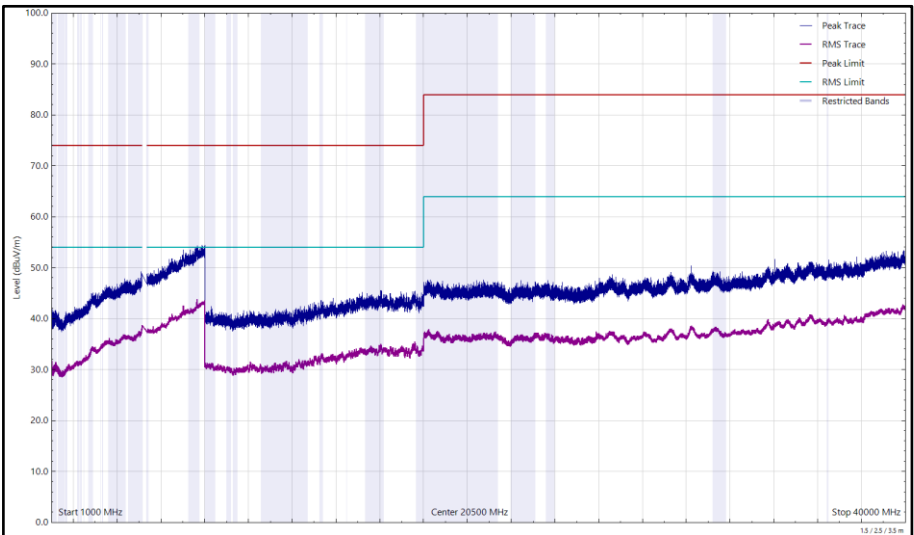
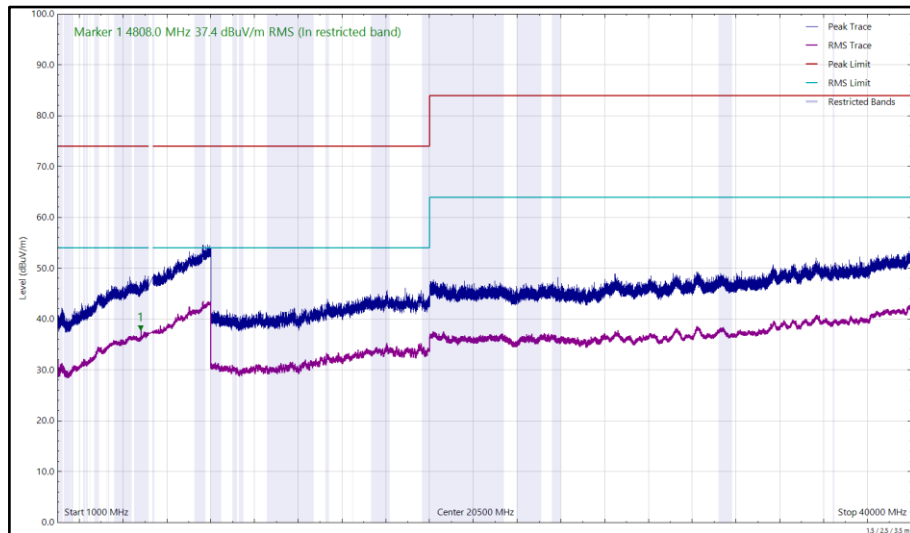


Figure 202 - U-NII-1 - 5203 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical

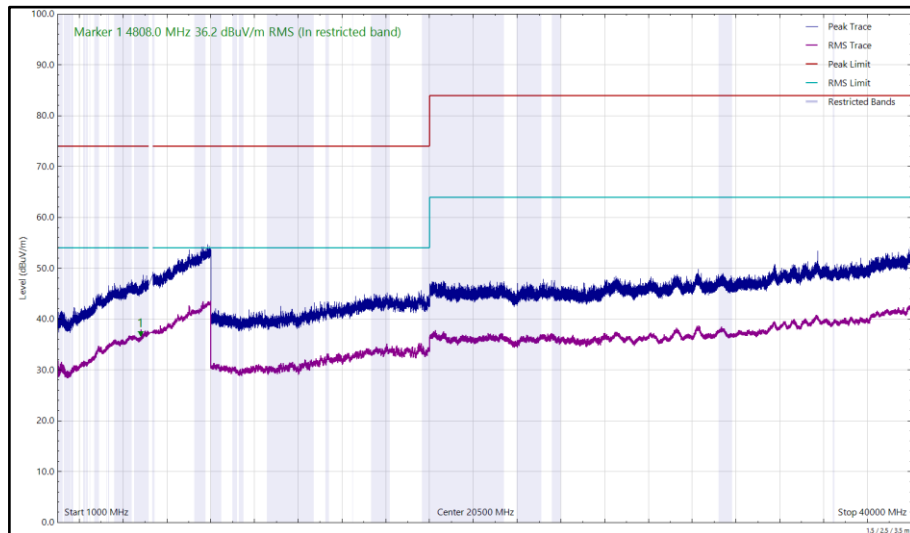
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 4807.951        | 37.35          | 54.00          | -16.65      | RMS      | 262       | 199         | Horizontal   |
| 4807.968        | 36.20          | 54.00          | -17.80      | RMS      | 272       | 110         | Vertical     |

**Table 107 - U-NII-1 - 5245 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 203 - U-NII-1 - 5245 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**

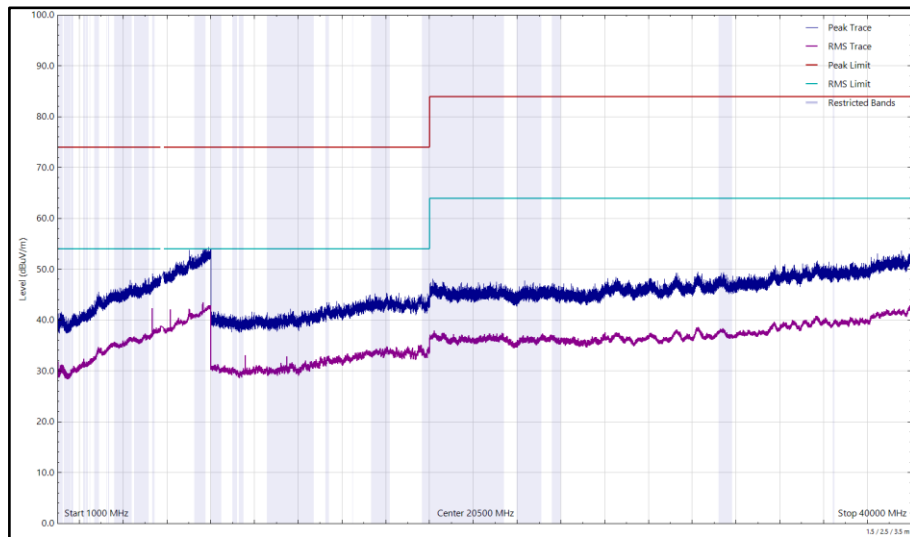


**Figure 204 - U-NII-1 - 5245 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical**

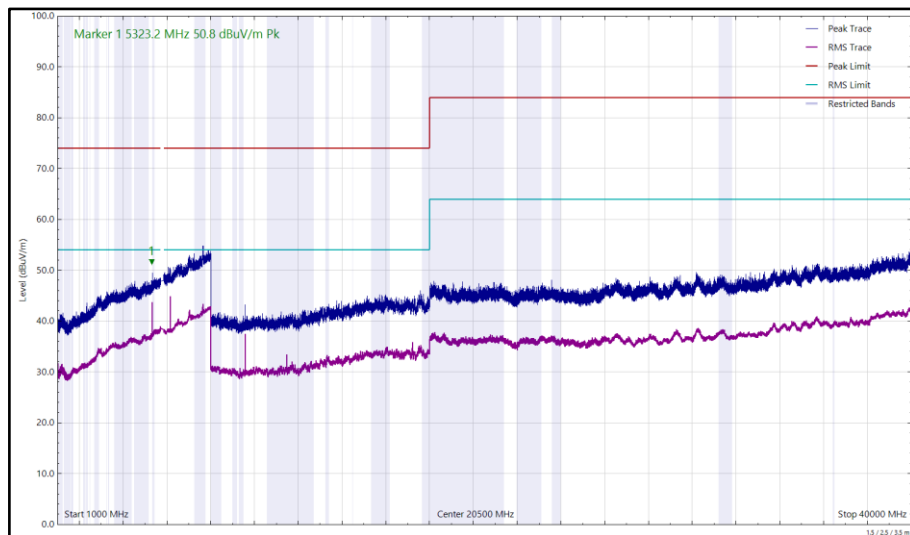
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 5323.220        | 50.83          | 74.00          | -23.17      | Peak     | 354       | 124         | Vertical     |

**Table 108 - U-NII-3 - 5733 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 205 - U-NII-3 - 5733 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**

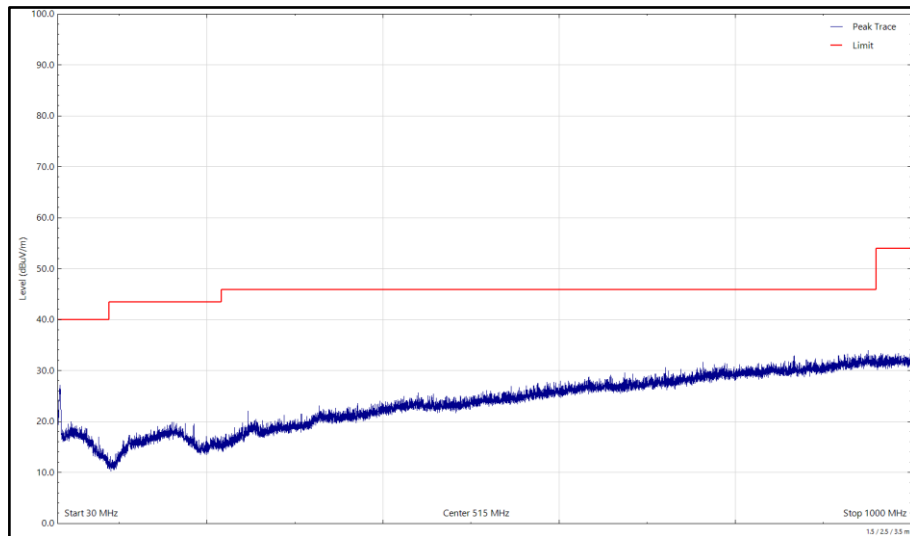


**Figure 206 - U-NII-3 - 5733 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical**

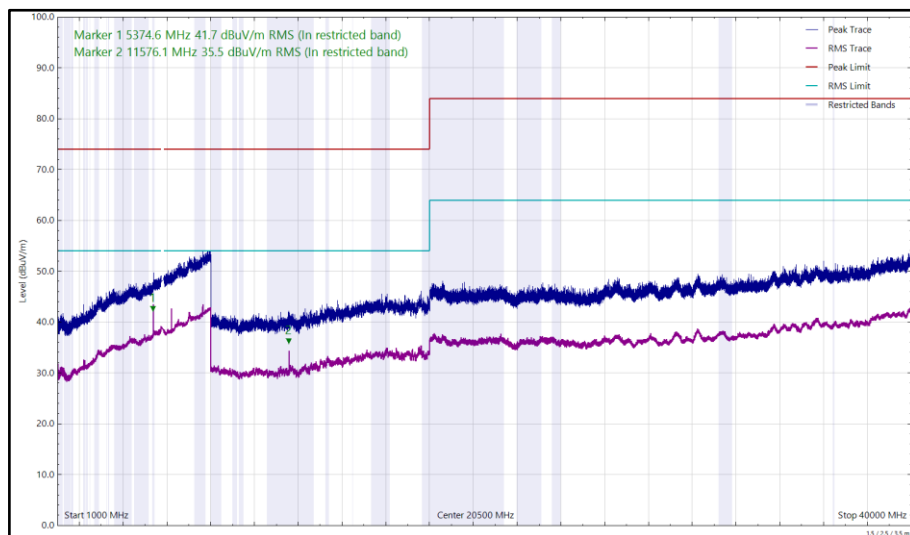
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 5374.538        | 42.40          | 54.00          | -11.60      | RMS      | 9         | 100         | Vertical     |
| 5374.613        | 41.74          | 54.00          | -12.26      | RMS      | 289       | 221         | Horizontal   |
| 11576.014       | 37.51          | 54.00          | -16.49      | RMS      | 266       | 100         | Vertical     |
| 11576.078       | 35.49          | 54.00          | -18.51      | RMS      | 3         | 113         | Horizontal   |

**Table 109 - U-NII-3 - 5788 MHz, DH5, iPA, Core 0 + Core 1, 30 MHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 207 - U-NII-3 - 5788 MHz, DH5, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 208 - U-NII-3 - 5788 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**

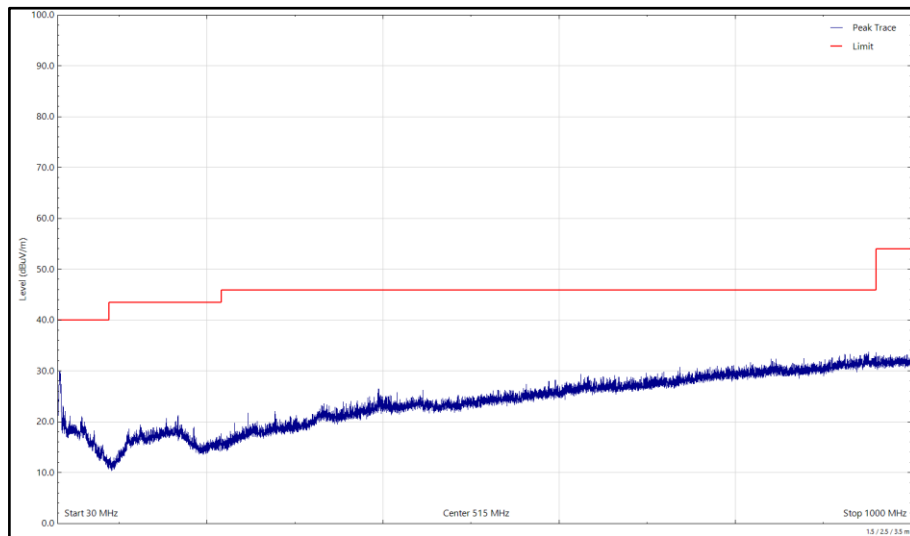


Figure 209 - U-NII-3 - 5788 MHz, DH5, iPA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

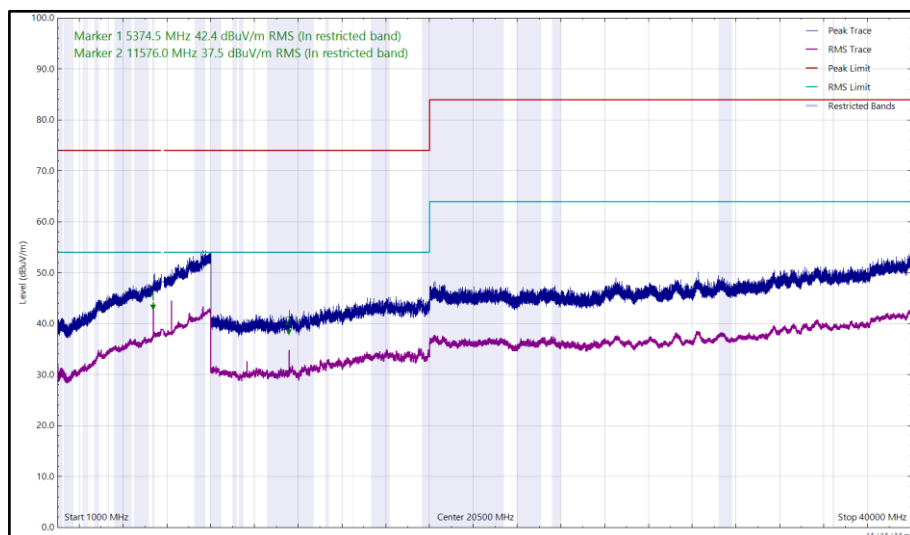
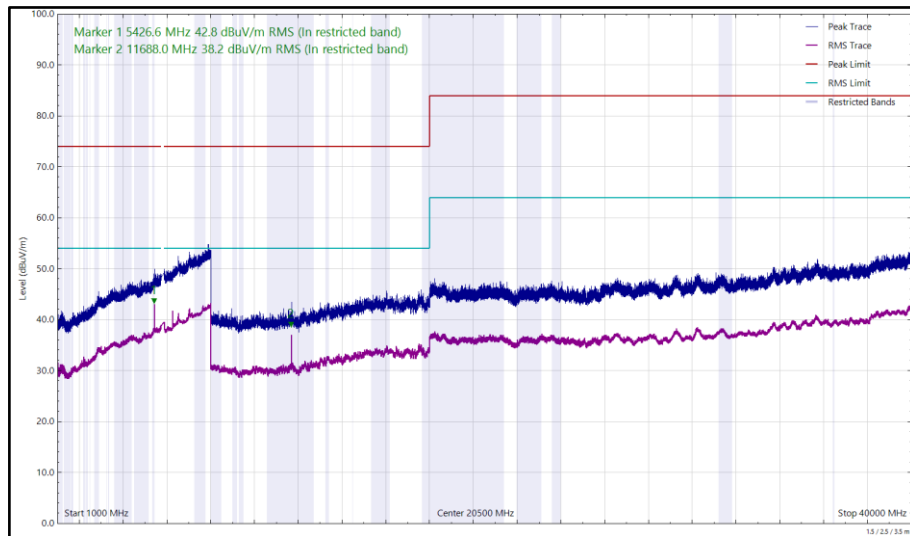


Figure 210 - U-NII-3 - 5788 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical

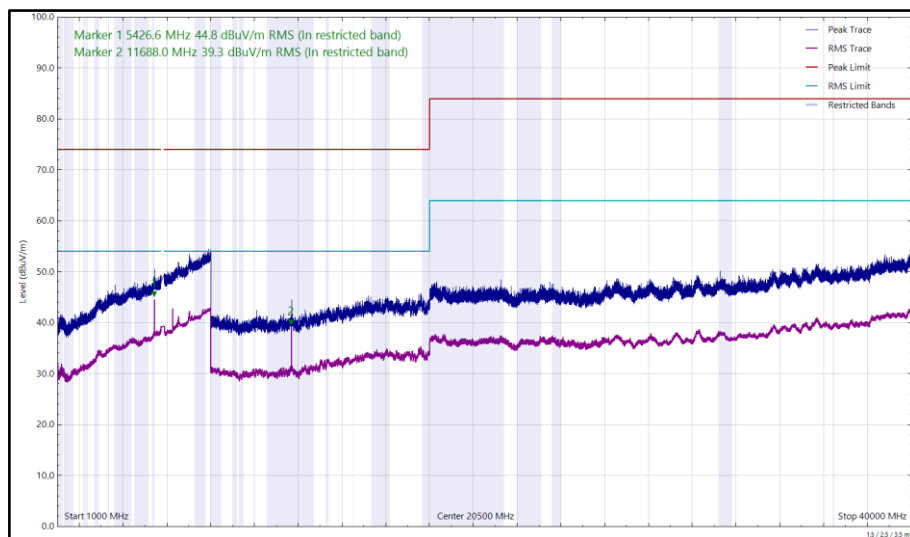
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 5426.583        | 44.77          | 54.00          | -9.23       | RMS      | 359       | 209         | Vertical     |
| 5426.613        | 42.83          | 54.00          | -11.17      | RMS      | 335       | 143         | Horizontal   |
| 11687.981       | 39.30          | 54.00          | -14.70      | RMS      | 286       | 383         | Vertical     |
| 11687.993       | 38.24          | 54.00          | -15.76      | RMS      | 5         | 144         | Horizontal   |

**Table 110 - U-NII-3 - 5844 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 211 - U-NII-3 - 5844 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**



**Figure 212 - U-NII-3 - 5844 MHz, DH5, iPA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical**



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

Table 111 - U-NII-1 - 5162 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz

\*No emissions found within 10 dB of the limit.

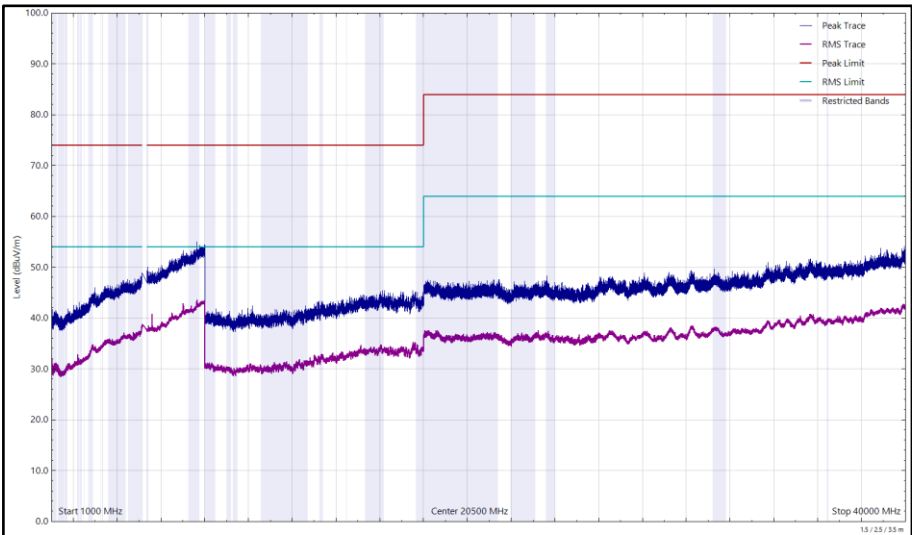


Figure 213 - U-NII-1 - 5162 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal

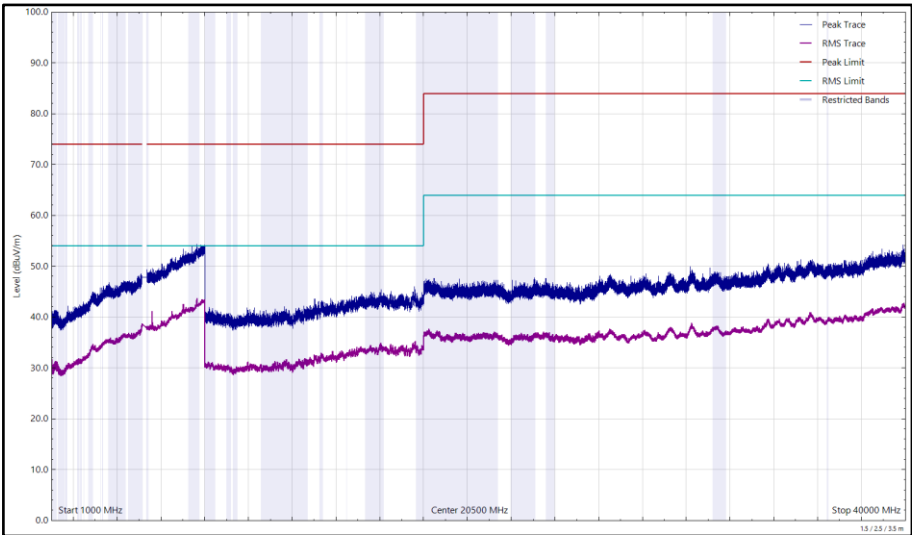
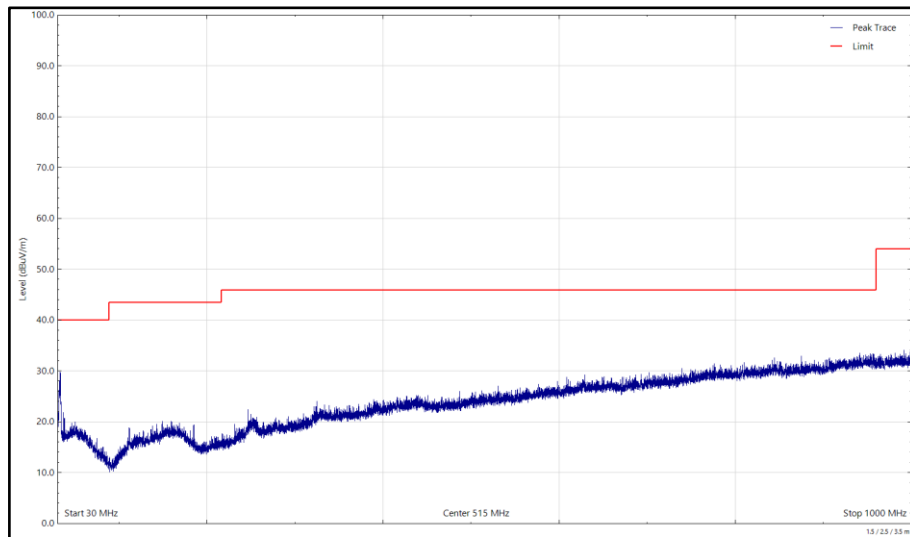


Figure 214 - U-NII-1 - 5162 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical

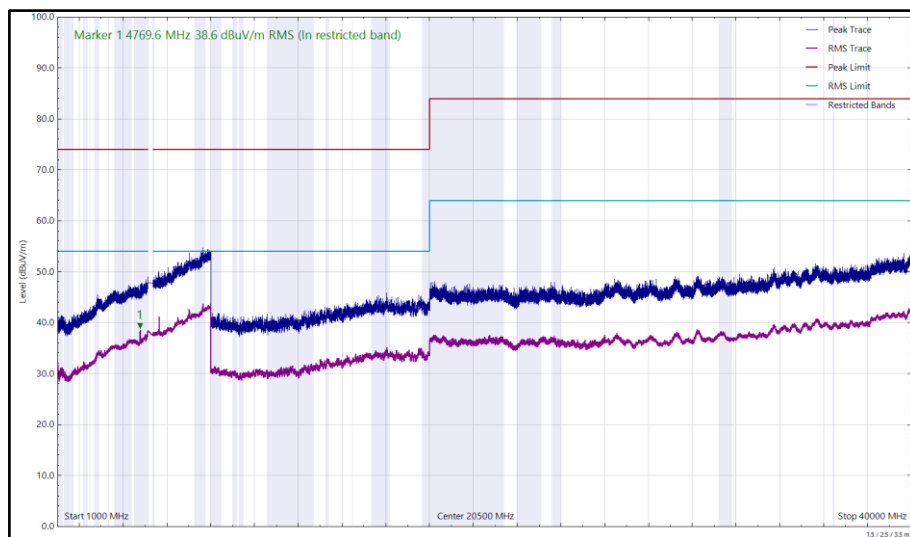
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 4769.572        | 38.55          | 54.00          | -15.45      | RMS      | 275       | 100         | Horizontal   |

**Table 112 - U-NII-1 - 5203 MHz, HDR4, ePA, Core 0 + Core 1, 30 MHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 215 - U-NII-1 - 5203 MHz, HDR4, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 216 - U-NII-1 - 5203 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**

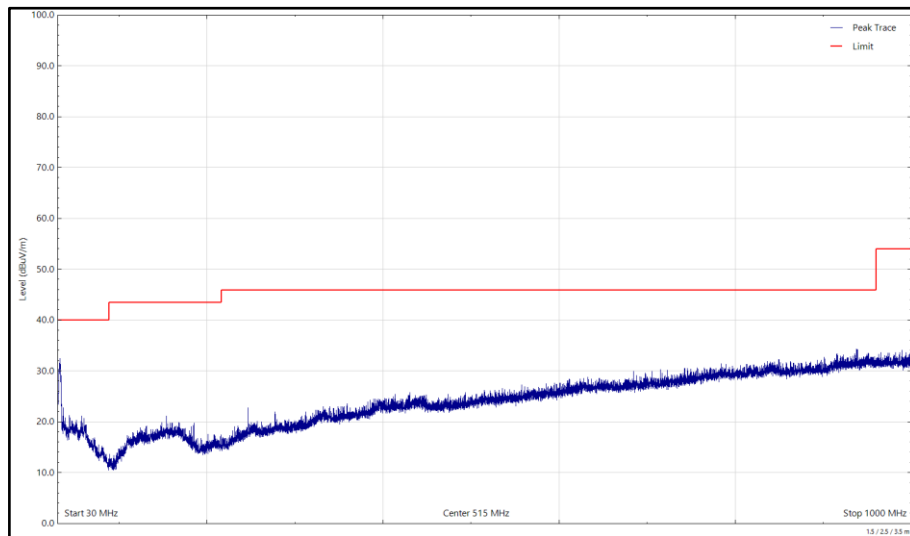


Figure 217 - U-NII-1 - 5203 MHz, HDR4, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

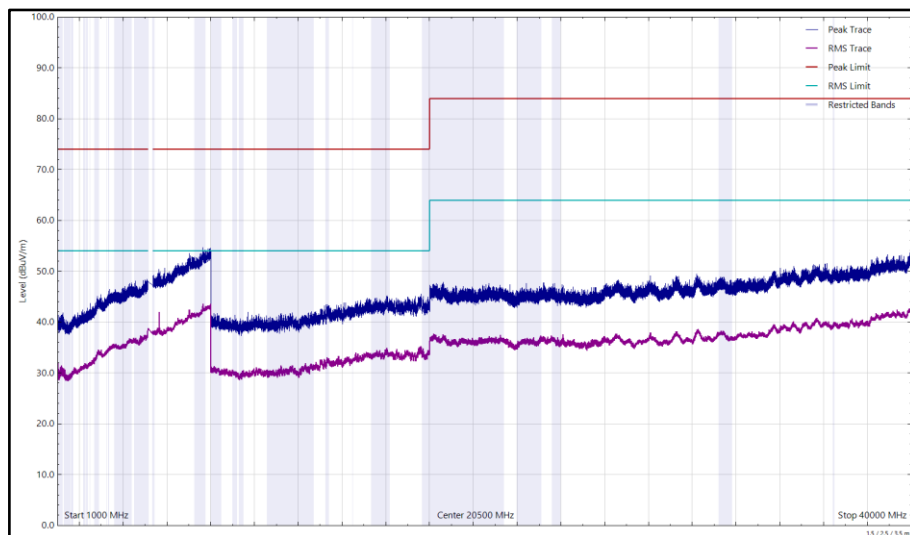


Figure 218 - U-NII-1 - 5203 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical



| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 4808.074        | 39.02          | 54.00          | -14.98      | RMS      | 271       | 100         | Horizontal   |

Table 113 - U-NII-1 - 5245 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz

No other emissions found within 10 dB of the limit.

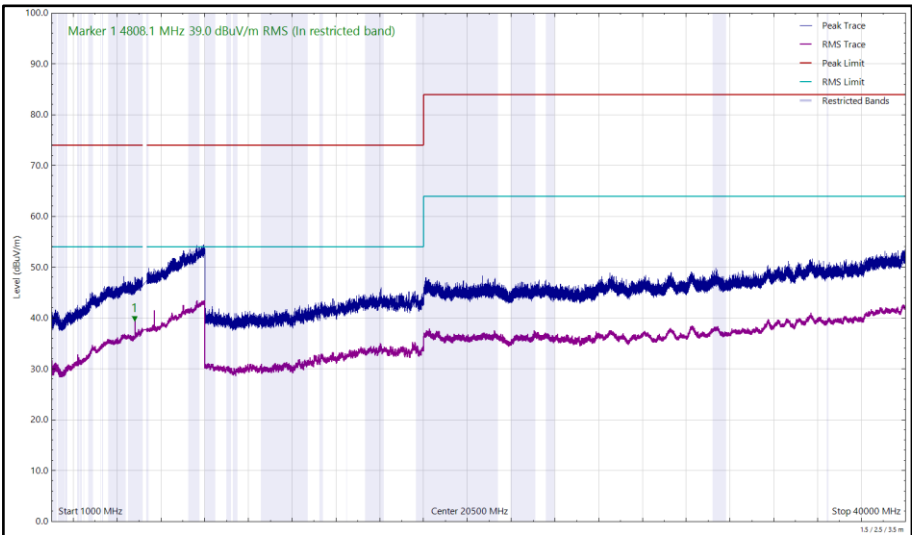


Figure 219 - U-NII-1 - 5245 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal

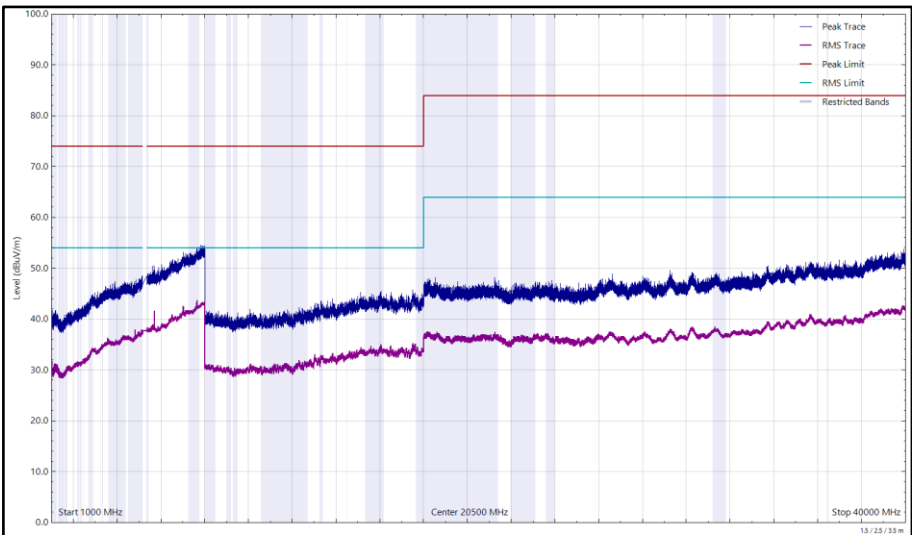
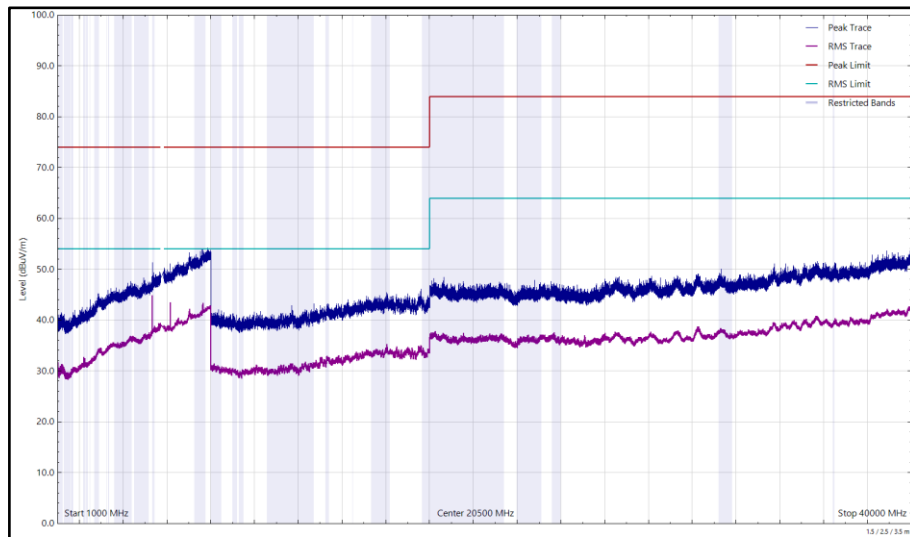


Figure 220 - U-NII-1 - 5245 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical

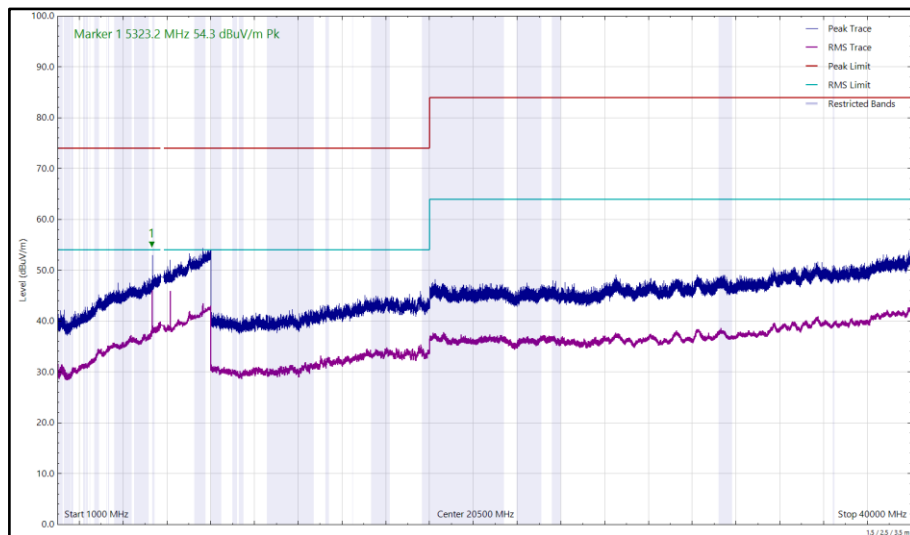
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 5323.170        | 54.33          | 74.00          | -19.67      | Peak     | 352       | 188         | Vertical     |

**Table 114 - U-NII-3 - 5733 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 221 - U-NII-3 - 5733 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**

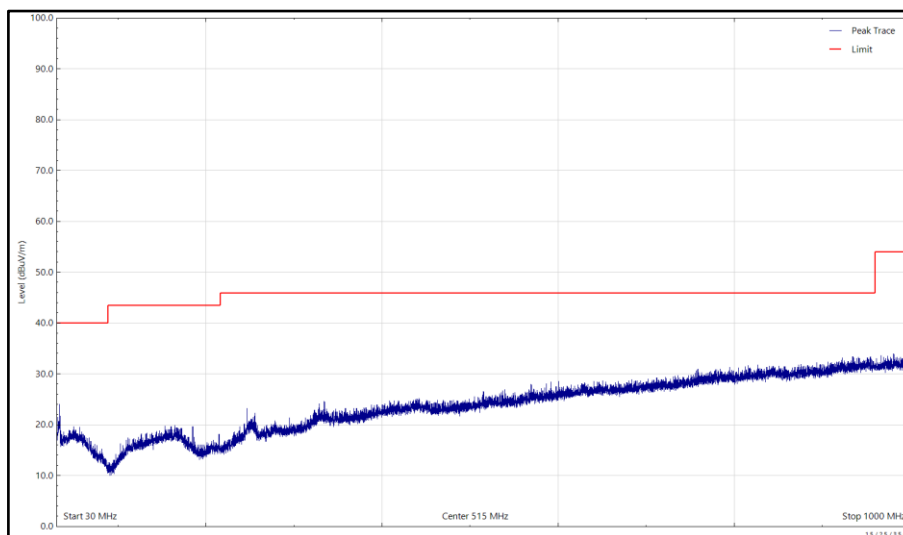


**Figure 222 - U-NII-3 - 5733 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical**

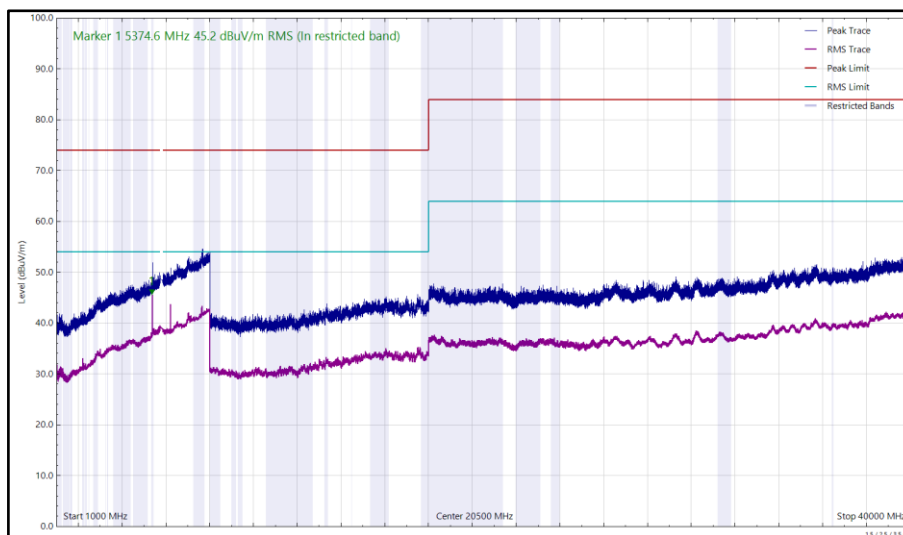
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 5374.553        | 45.21          | 54.00          | -8.79       | RMS      | 276       | 100         | Horizontal   |
| 5374.618        | 45.17          | 54.00          | -8.83       | RMS      | 354       | 172         | Vertical     |

**Table 115 - U-NII-3 - 5788 MHz, HDR4, ePA, Core 0 + Core 1, 30 MHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 223 - U-NII-3 - 5788 MHz, HDR4, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Horizontal (Peak)**



**Figure 224 - U-NII-3 - 5788 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**

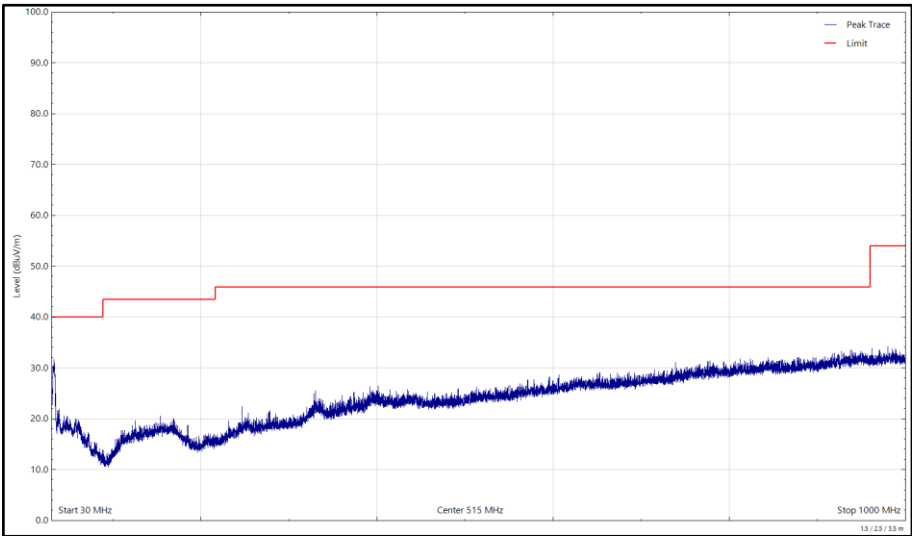


Figure 225 - U-NII-3 - 5788 MHz, HDR4, ePA, Core 0 + Core 1, 30 MHz to 1 GHz, Vertical (Peak)

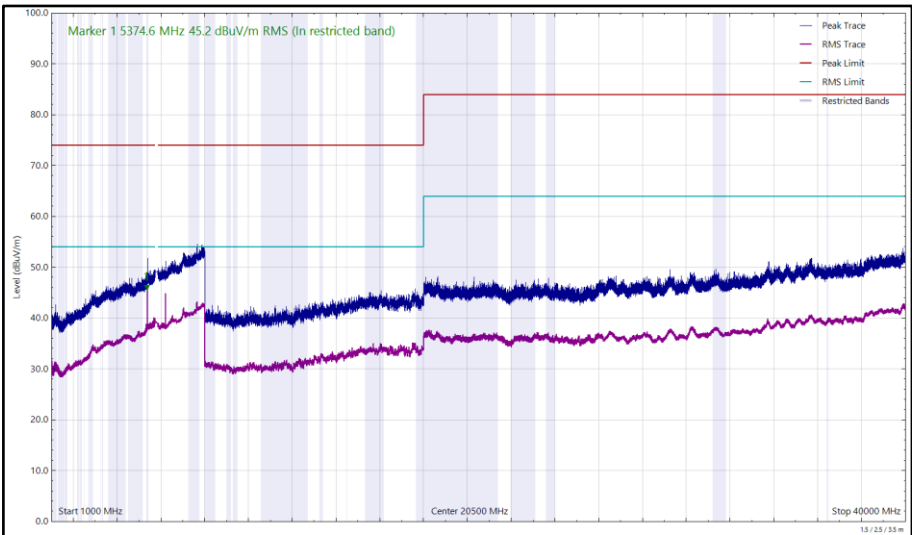
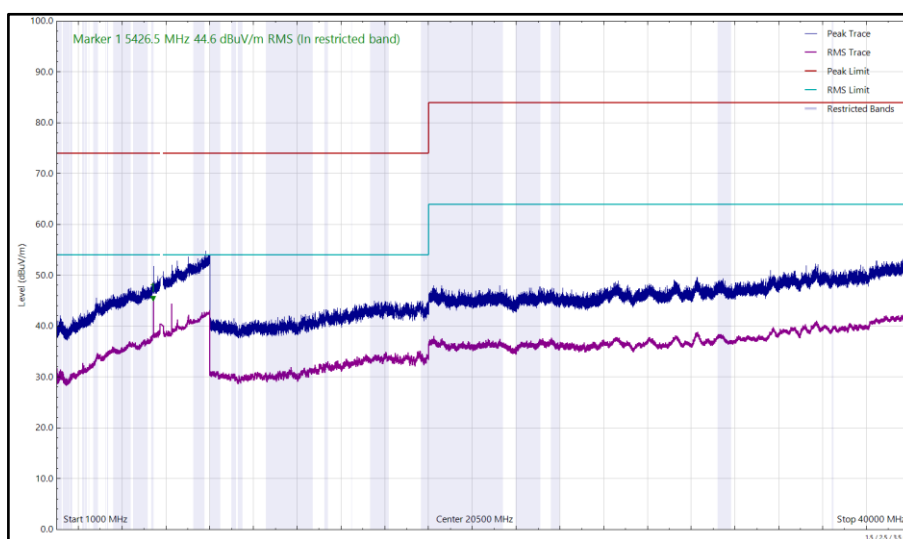


Figure 226 - U-NII-3 - 5788 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical

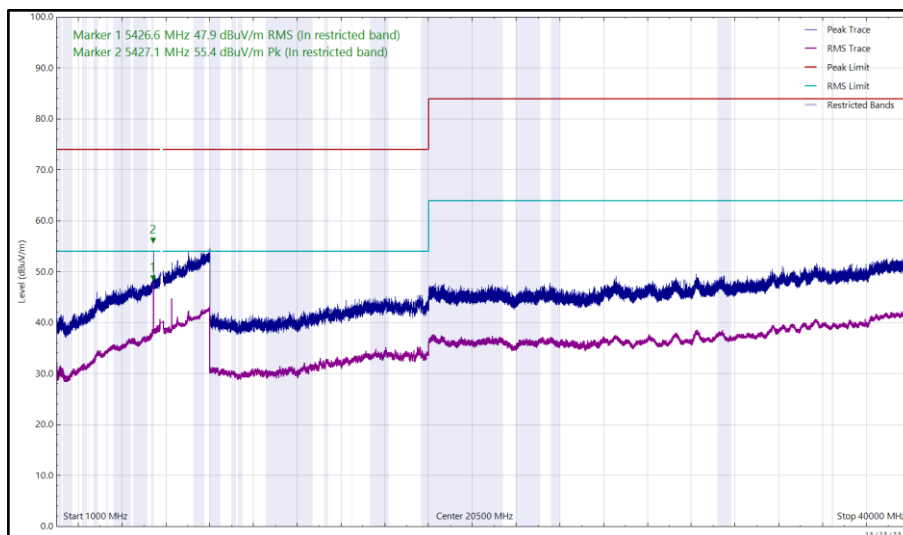
| Frequency (MHz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|
| 5426.548        | 44.62          | 54.00          | -9.38       | RMS      | 275       | 106         | Horizontal   |
| 5426.576        | 47.92          | 54.00          | -6.08       | RMS      | 351       | 217         | Vertical     |
| 5427.123        | 55.37          | 74.00          | -18.63      | Peak     | 351       | 217         | Vertical     |

**Table 116 - U-NII-3 - 5844 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz**

No other emissions found within 10 dB of the limit.



**Figure 227 - U-NII-3 - 5844 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Horizontal**



**Figure 228 - U-NII-3 - 5844 MHz, HDR4, ePA, Core 0 + Core 1, 1 GHz to 40 GHz, Vertical**



FCC 47 CFR Part 15, Limit Clause 15.407(b)(1)(2)(3)(4)

Emissions not falling within the restricted bands listed in FCC 47 CFR Part 15.209:

For transmitters operating in the 5.15-5.25 GHz band:  $\leq -27$  dBm/MHz outside 5150-5350 MHz.

For transmitters operating in the 5.25-5.35 GHz band:  $\leq -27$  dBm/MHz outside 5150-5350 MHz.

For transmitters operating in the 5.47-5.725 GHz band:  $\leq -27$  dBm/MHz outside 5470-5725 MHz

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Emissions within the restricted bands listed in FCC 47 CFR Part 15.209:

| Frequency (MHz) | Field Strength ( $\mu$ V/m) at 3m | Field Strength Limit (dB $\mu$ V/m) at 3m |
|-----------------|-----------------------------------|-------------------------------------------|
| 30 to 88        | 100                               | 40.00                                     |
| 88 to 216       | 150                               | 43.52                                     |
| 216 to 960      | 200                               | 46.02                                     |
| Above 960       | 500                               | 53.98                                     |

**Table 117 - Radiated Emissions Limit Table (FCC)**



ISED RSS-247, Limit Clause 6.2.1.2, 6.2.2.2, 6.2.3.2 and 6.2.4.2 and ISED RSS-GEN, Limit Clause 8.9

Emissions not falling within the restricted bands listed in ISED RSS-GEN, Clause 8.10:

For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB.

For transmitters with operating frequencies in the bands 5250-5350 MHz and 5470-5725 MHz, all emissions outside the band 5250-5350 MHz and 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.

Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

- a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
- b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
- d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

Emissions falling within the restricted bands listed in ISED RSS-GEN, Clause 8.10:

| Frequency (MHz) | Field Strength ( $\mu\text{V/m}$ ) at 3m | Field Strength Limit ( $\text{dB}\mu\text{V/m}$ ) at 3m |
|-----------------|------------------------------------------|---------------------------------------------------------|
| 30 to 88        | 100                                      | 40.00                                                   |
| 88 to 216       | 150                                      | 43.52                                                   |
| 216 to 960      | 200                                      | 46.02                                                   |
| Above 960       | 500                                      | 53.98                                                   |

**Table 118 - Radiated Emissions Limit Table (ISED)**

## 2.6.8 Test Location and Test Equipment Used

This test was carried out in RF Chamber 15.

| Instrument                          | Manufacturer    | Type No                  | TE No | Calibration Period (months) | Calibration Expires |
|-------------------------------------|-----------------|--------------------------|-------|-----------------------------|---------------------|
| Emissions Software                  | TUV SUD         | EmX V3.1.4<br>V.3.1.4    | 5125  | -                           | Software            |
| EMI Test Receiver                   | Rohde & Schwarz | ESW44                    | 5911  | 12                          | 24-Feb-2023         |
| Cable (K Type 2m)                   | Junkosha        | MWX241-<br>02000KMSKMS/B | 5937  | 12                          | 14-May-2023         |
| DRG Horn Antenna (7.5-18GHz)        | Schwarzbeck     | HWRD750                  | 5939  | 12                          | 29-May-2023         |
| TRILOG Super Broadband Test Antenna | Schwarzbeck     | VULB 9168                | 5944  | 24                          | 03-Feb-2024         |
| 1500W (300V 12A) AC Power Supply    | iTech           | IT7324                   | 5956  | -                           | O/P Mon             |



| Instrument                                   | Manufacturer        | Type No                   | TE No | Calibration Period (months) | Calibration Expires |
|----------------------------------------------|---------------------|---------------------------|-------|-----------------------------|---------------------|
| 5m Semi-Anechoic Chamber (Dual-Axis)         | Albatross Projects  | RF Chamber 15             | 5963  | 36                          | 28-Apr-2025         |
| Compact Antenna Mast                         | Maturo Gmbh         | CAM4.0-P                  | 5964  | -                           | TU                  |
| Mast & Turntable Controller                  | Maturo Gmbh         | FCU3.0                    | 5966  | -                           | TU                  |
| Tilt Antenna Mast                            | Maturo Gmbh         | BAM4.5-P                  | 5967  | -                           | TU                  |
| Turntable                                    | Maturo Gmbh         | TT1.5SI                   | 5968  | -                           | TU                  |
| Cable (SMA to SMA 1m)                        | Junkosha            | MWX221-01000AMSAMS/A      | 5996  | 12                          | 06-Jun-2023         |
| Cable (N to N 1m)                            | Junkosha            | MWX221-01000NMSNMS/B      | 5999  | 12                          | 05-Jun-2023         |
| Cable (N to N 7m)                            | Junkosha            | MWX221-07000NMSNMS/B      | 6005  | 12                          | 05-Jun-2023         |
| Cable (N to N 8m)                            | Junkosha            | MWX221-08000NMSNMS/A      | 6006  | 12                          | 05-Jun-2023         |
| Cable (SMA to SMA 1m)                        | Junkosha            | MWX221-01000AMSAMS/A      | 6007  | 12                          | 06-Jun-2023         |
| Cable (SMA to SMA 6.5m)                      | Junkosha            | MWX221-06500AMSAMS/B      | 6014  | 12                          | 07-Jun-2023         |
| Cable (SMA to SMA 1m)                        | Junkosha            | MWX221-01000AMSAMS/B      | 6019  | 12                          | 07-Jun-2023         |
| Horn Antenna (1-10 GHz)                      | Schwarzbeck         | BBHA9120B                 | 6140  | 12                          | 21-Jun-2023         |
| Digital Multimeter                           | Fluke               | 115                       | 6147  | 12                          | 16-Jun-2023         |
| Humidity & Temperature meter                 | R.S Components      | 1364                      | 6150  | 12                          | 17-Jun-2023         |
| Double Ridge Active Horn Antenna (18-40 GHz) | Com-Power           | AHA-840                   | 6188  | 24                          | 02-Jun-2024         |
| SAC Switch Unit                              | TUV SUD             | SSU003                    | 6191  | 12                          | 15-Jul-2023         |
| 8GHz Highpass Filter                         | Wainwright          | WHKX 7150 8000 18000 50SS | 6195  | 12                          | 15-Jul-2023         |
| Pre Amp 8 - 18 GHz                           | Wright Technologies | APS06 0061                | 6198  | 12                          | 19-Jul-2023         |
| Attenuator 4dB                               | Pasternack          | PE7074-4                  | 6203  | 24                          | 16-Jul-2024         |
| Cable (SMA to SMA 20cm)                      | TUV SUD             | MH-FH 8-18                | 6214  | 12                          | 25-Jul-2023         |

**Table 119**

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



### 3 Measurement Uncertainty

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

| Test Name                                | Measurement Uncertainty                                        |
|------------------------------------------|----------------------------------------------------------------|
| Restricted Band Edges                    | $\pm 6.3$ dB                                                   |
| Emission Bandwidth                       | $\pm 73.60$ kHz                                                |
| Maximum Conducted Output Power           | $\pm 1.38$ dB                                                  |
| Maximum Conducted Power Spectral Density | $\pm 1.49$ dB                                                  |
| Authorised Band Edges                    | $\pm 6.3$ dB                                                   |
| Spurious Radiated Emissions              | 30 MHz to 1 GHz: $\pm 5.2$ dB<br>1 GHz to 40 GHz: $\pm 6.3$ dB |

**Table 120**

#### 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.