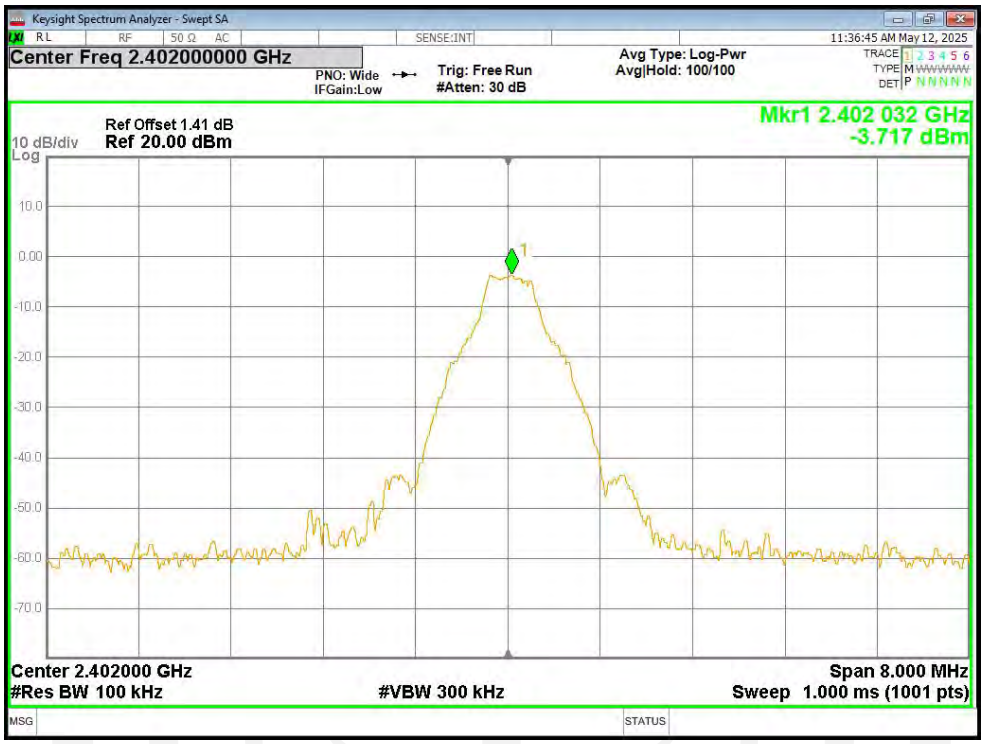
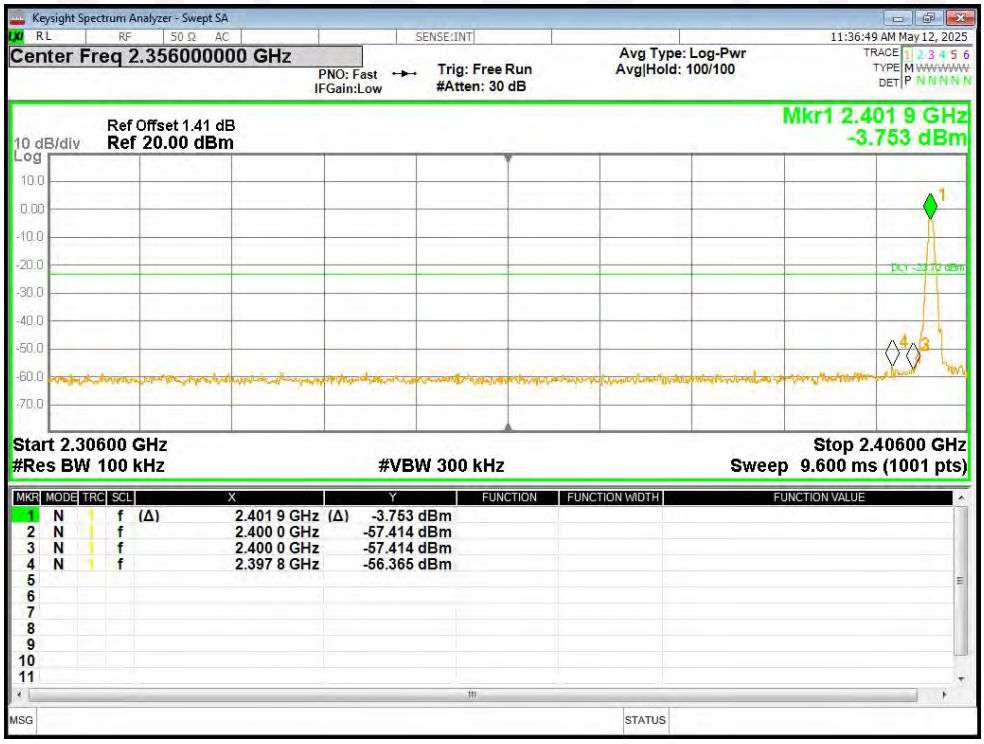
Test Graphs

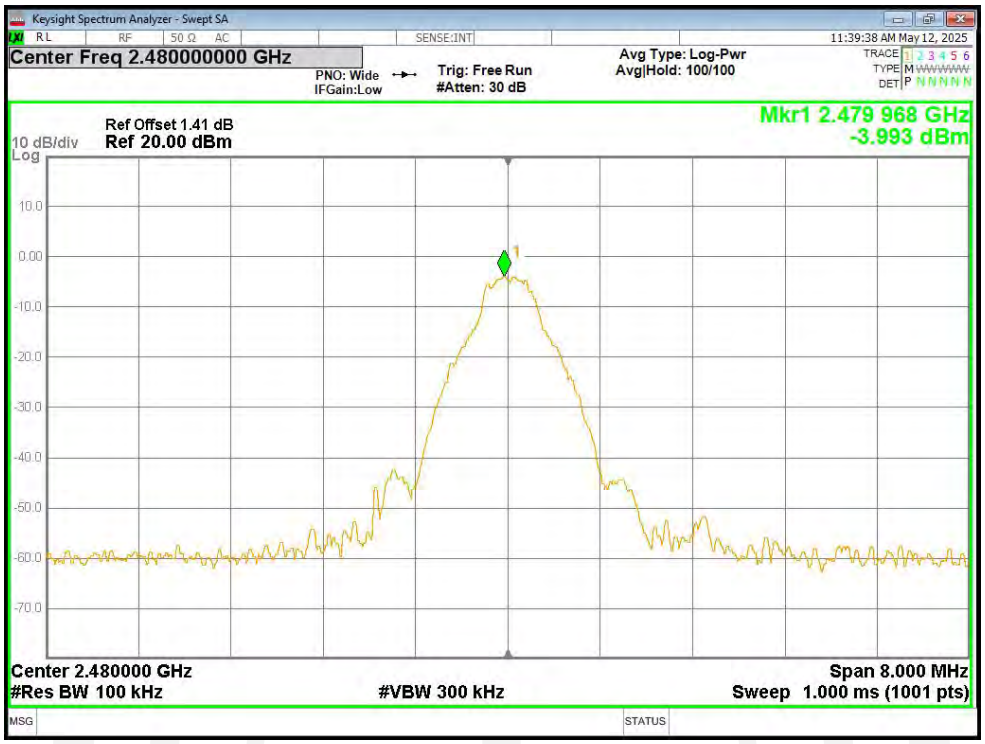
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref




Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

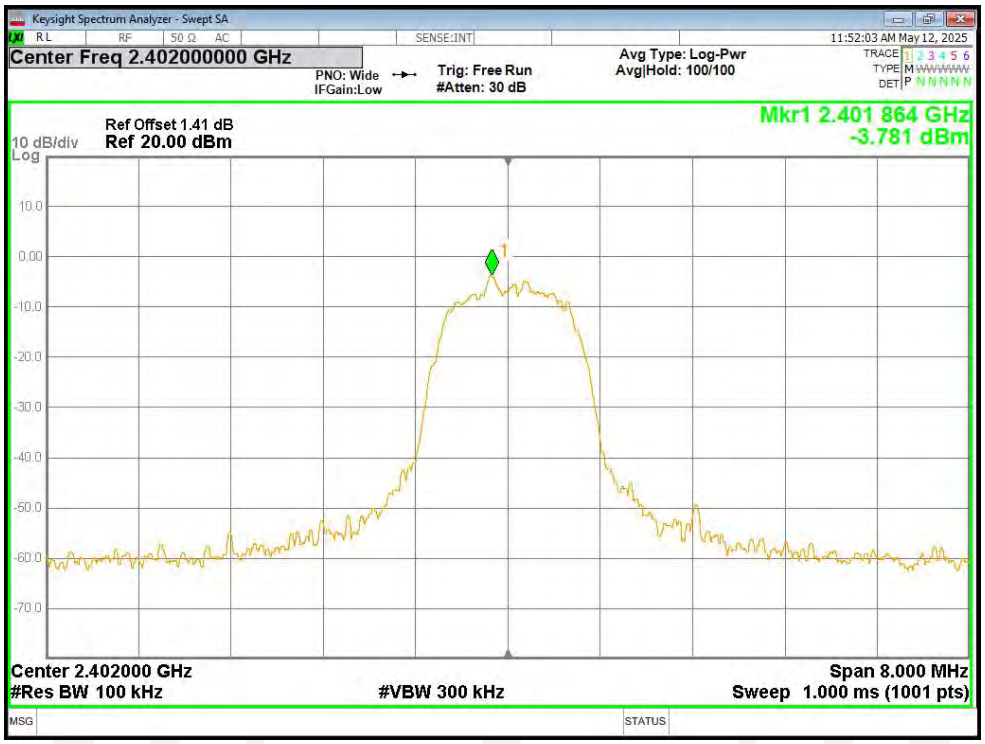


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



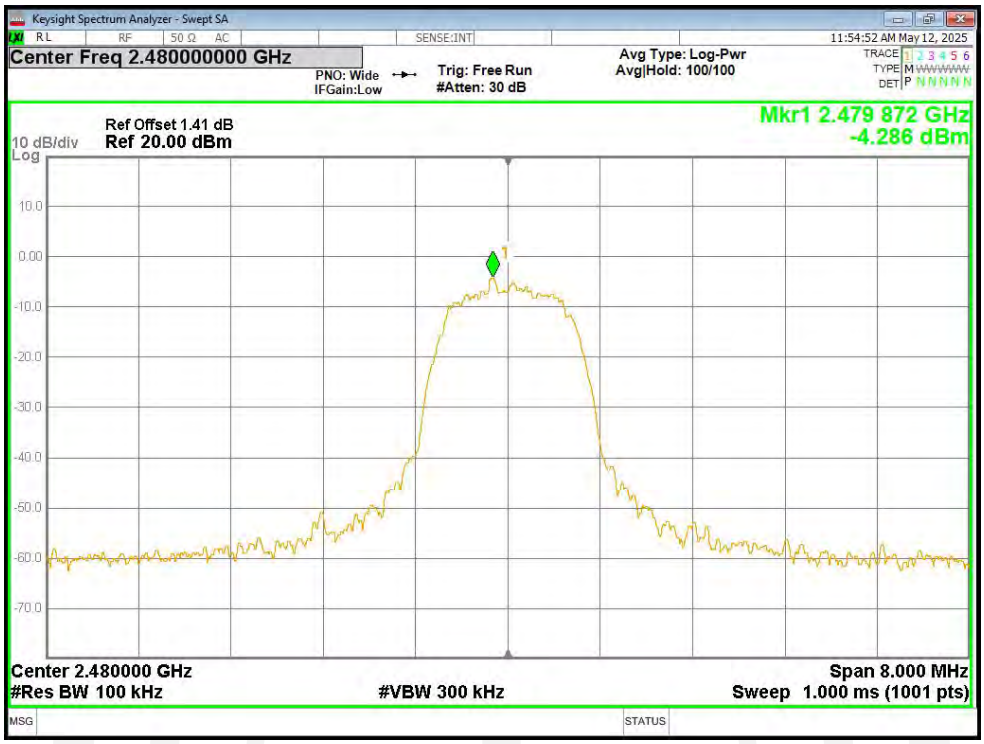

Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



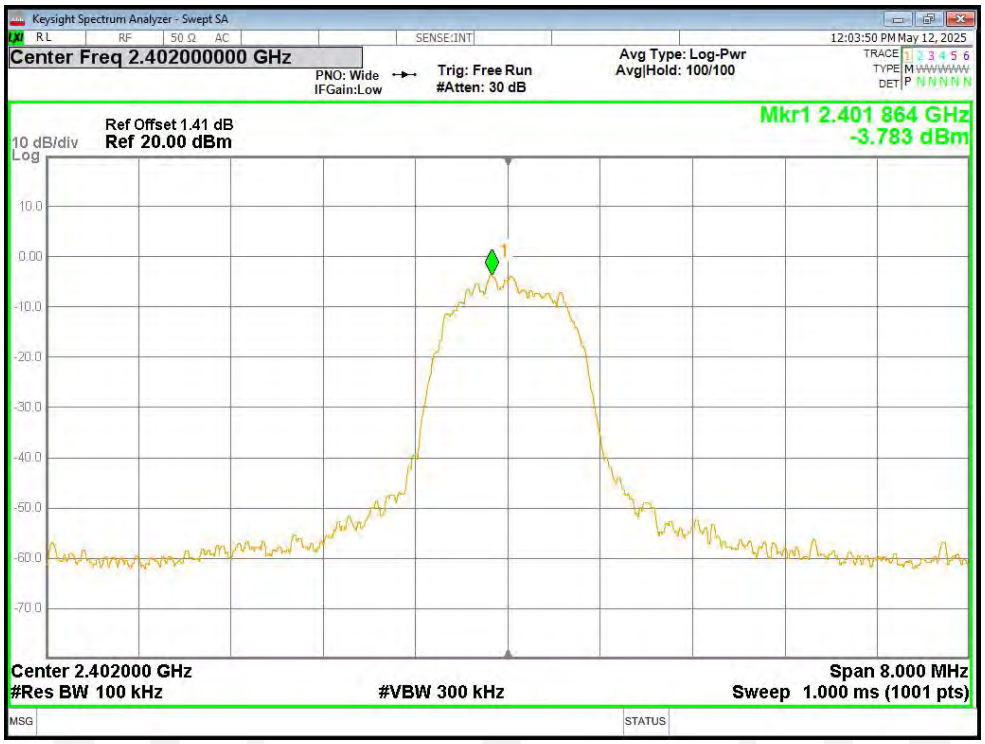

Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



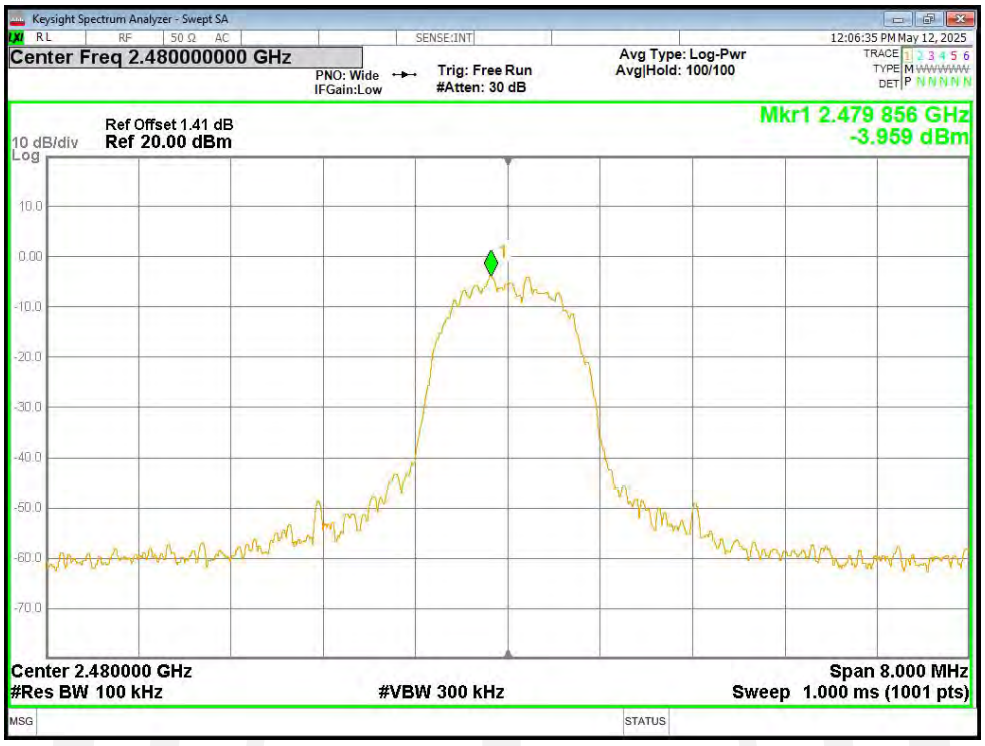

Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission

**Band Edge(Hopping)**

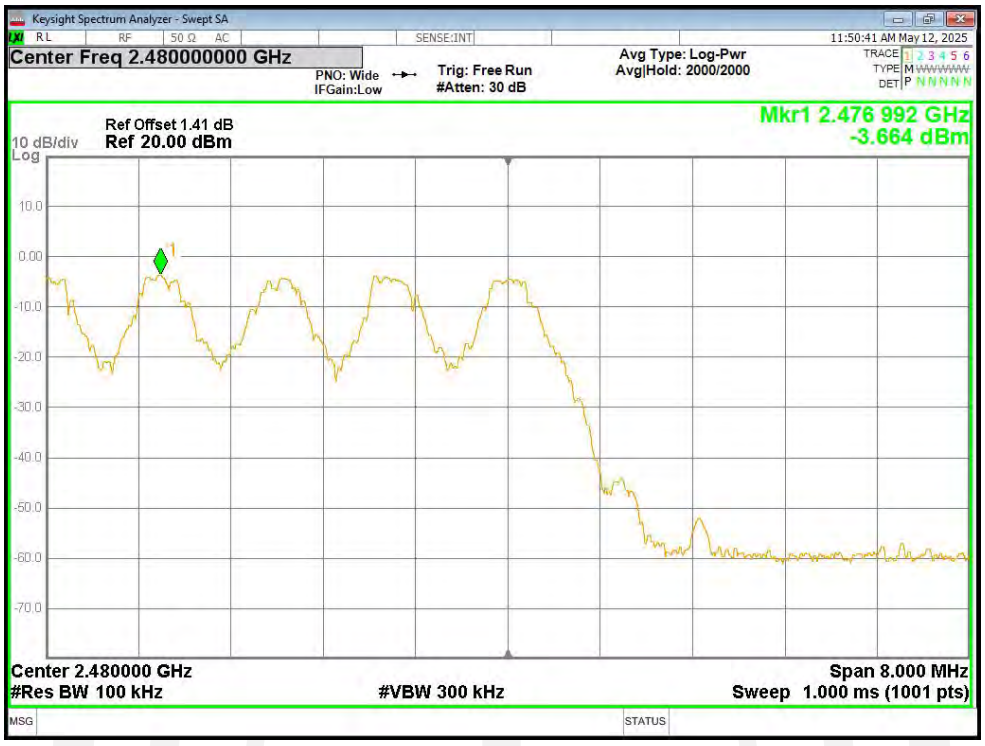
| Mode | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|---|
| 1-DH5 | 2402 | Ant1 | Hopping | -53.73 | -20 | Pass |
| 1-DH5 | 2480 | Ant1 | Hopping | -52.63 | -20 | Pass |
| 2-DH5 | 2402 | Ant1 | Hopping | -53.45 | -20 | Pass |
| 2-DH5 | 2480 | Ant1 | Hopping | -53.17 | -20 | Pass |
| 3-DH5 | 2402 | Ant1 | Hopping | -53.56 | -20 | Pass |
| 3-DH5 | 2480 | Ant1 | Hopping | -52.41 | -20 | Pass |

Test Graphs

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

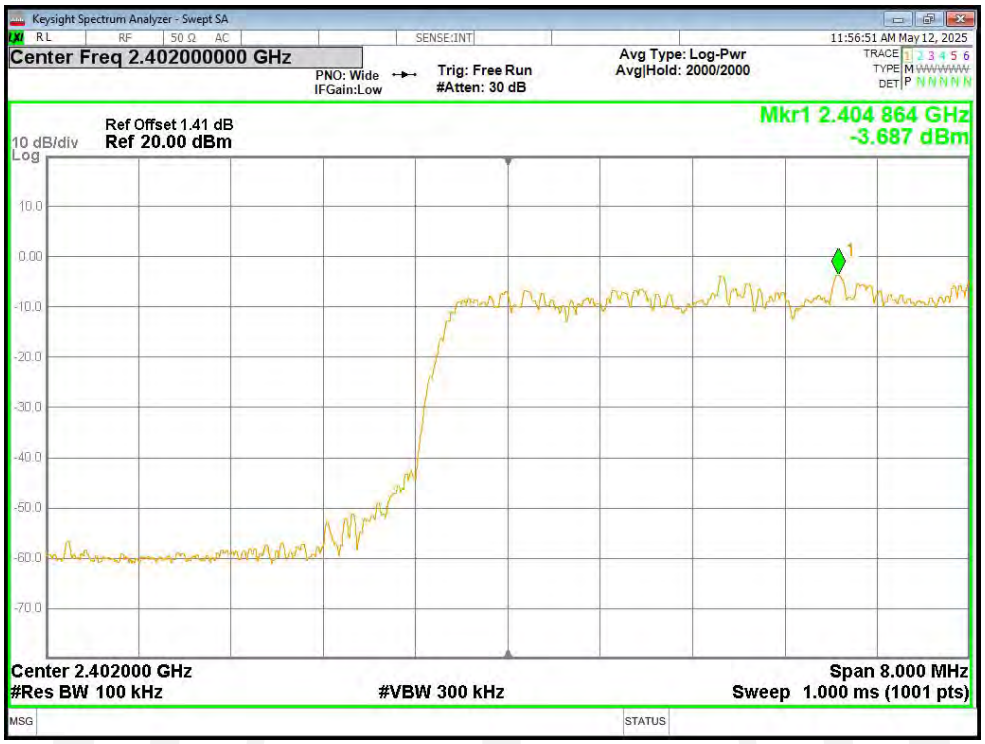

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



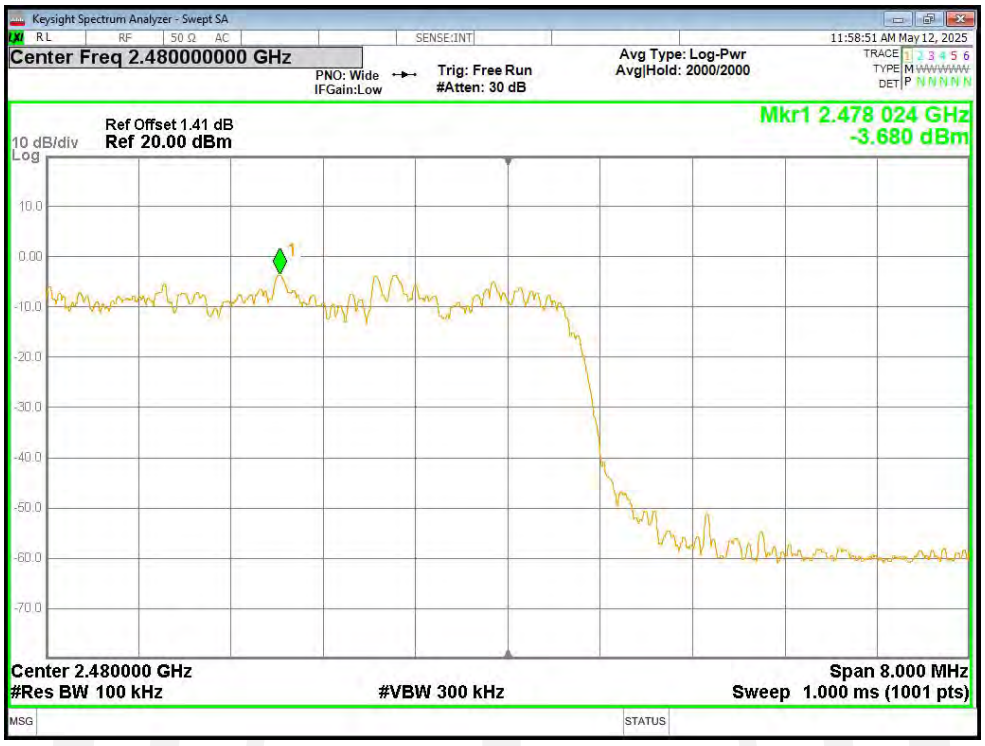

Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission

Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



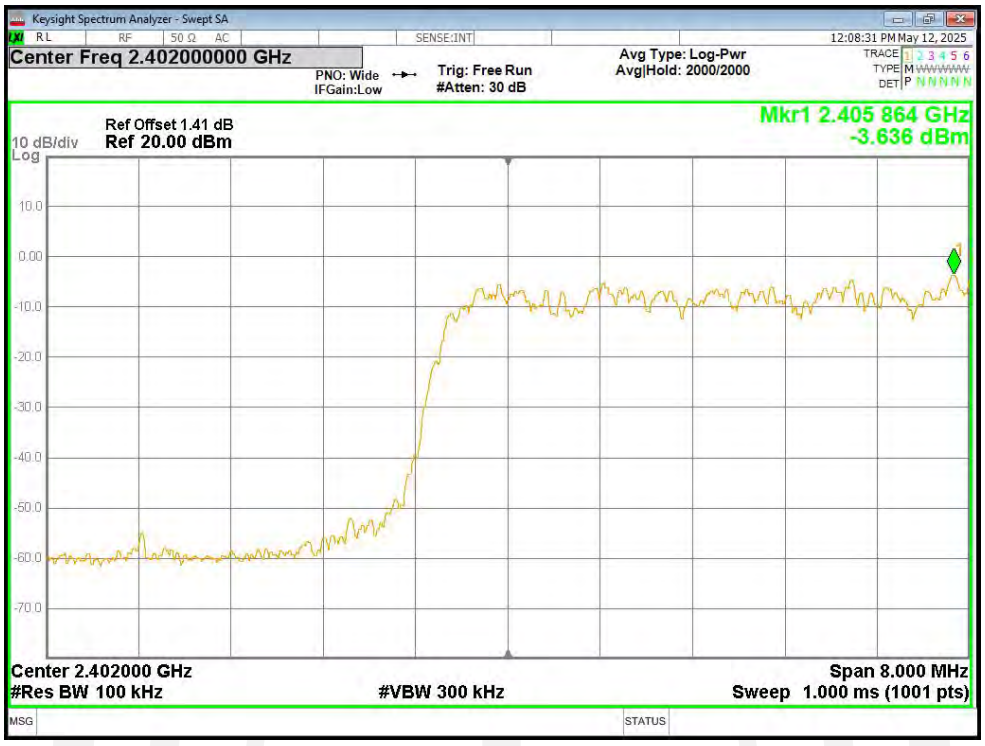

Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



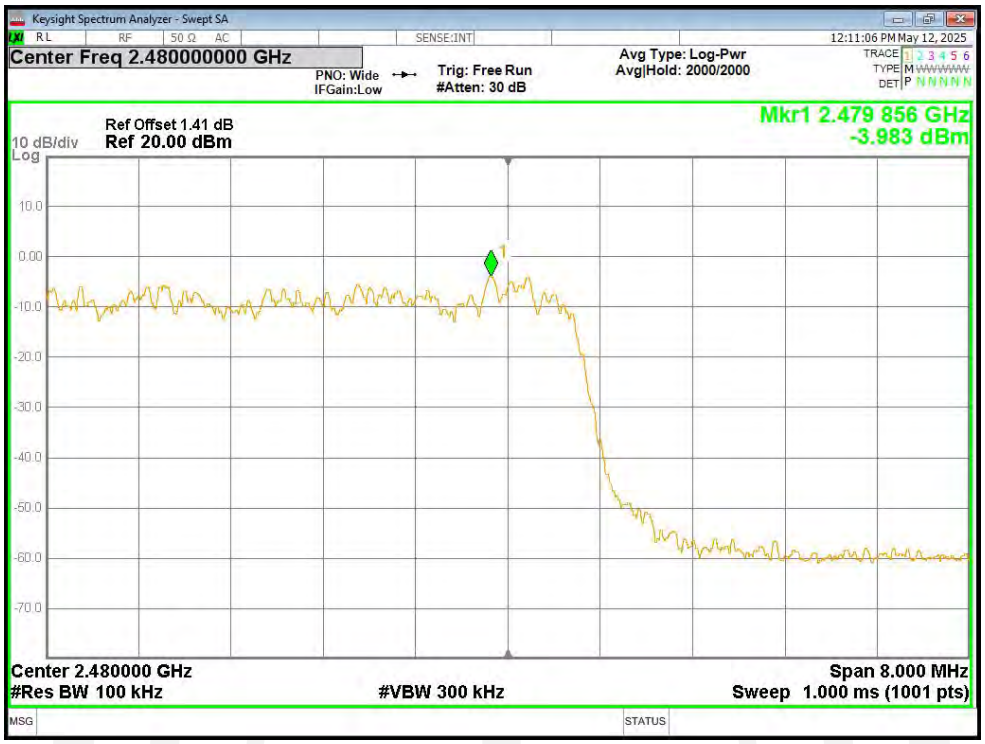

Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission

Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission

Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

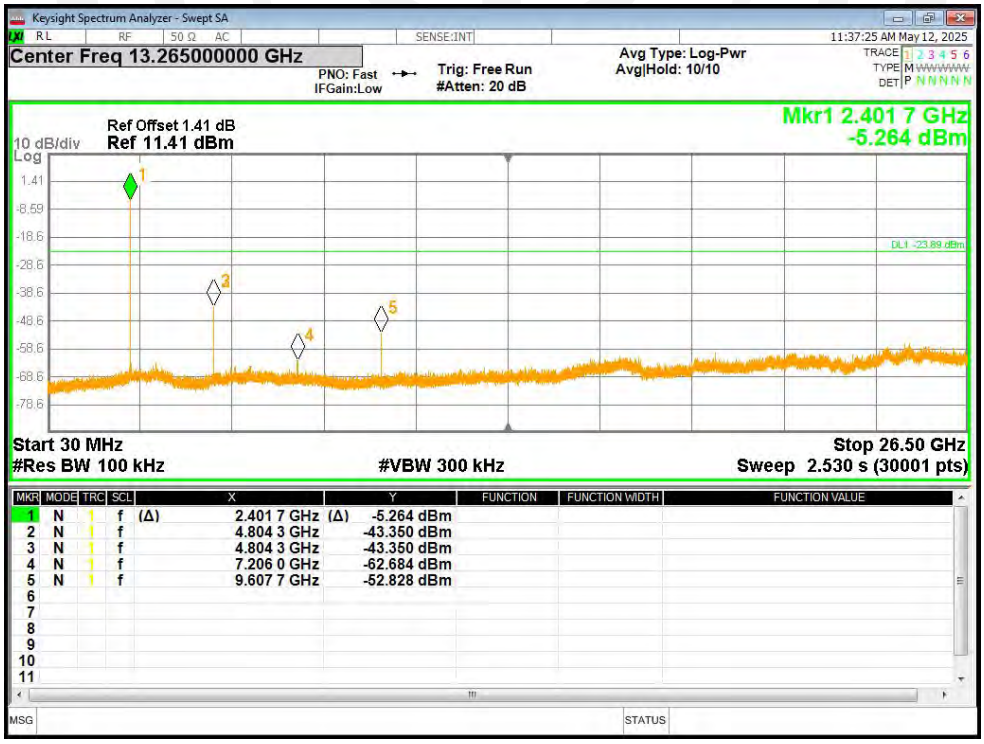
**Conducted spurious emission: Pass**

| Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| 1-DH5 | 2402 | Ant1 | -39.46 | -20 | Pass |
| 1-DH5 | 2441 | Ant1 | -41.3 | -20 | Pass |
| 1-DH5 | 2480 | Ant1 | -41.97 | -20 | Pass |
| 2-DH5 | 2402 | Ant1 | -41.58 | -20 | Pass |
| 2-DH5 | 2441 | Ant1 | -42.87 | -20 | Pass |
| 2-DH5 | 2480 | Ant1 | -41.27 | -20 | Pass |
| 3-DH5 | 2402 | Ant1 | -41.34 | -20 | Pass |
| 3-DH5 | 2441 | Ant1 | -43.09 | -20 | Pass |
| 3-DH5 | 2480 | Ant1 | -42.74 | -20 | Pass |

Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

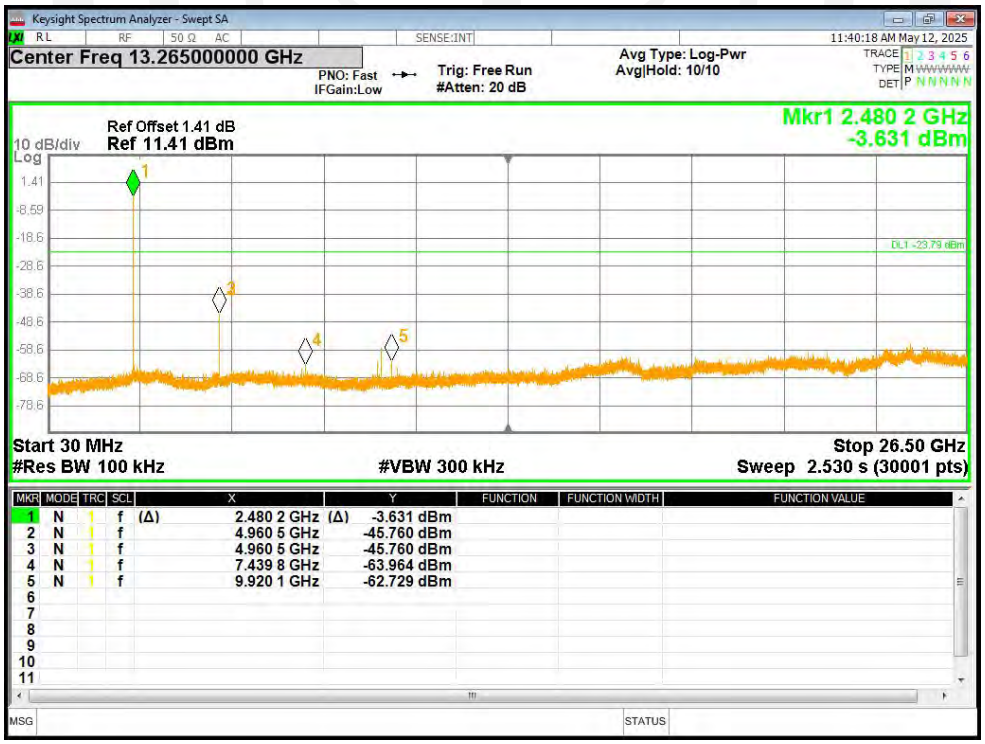


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



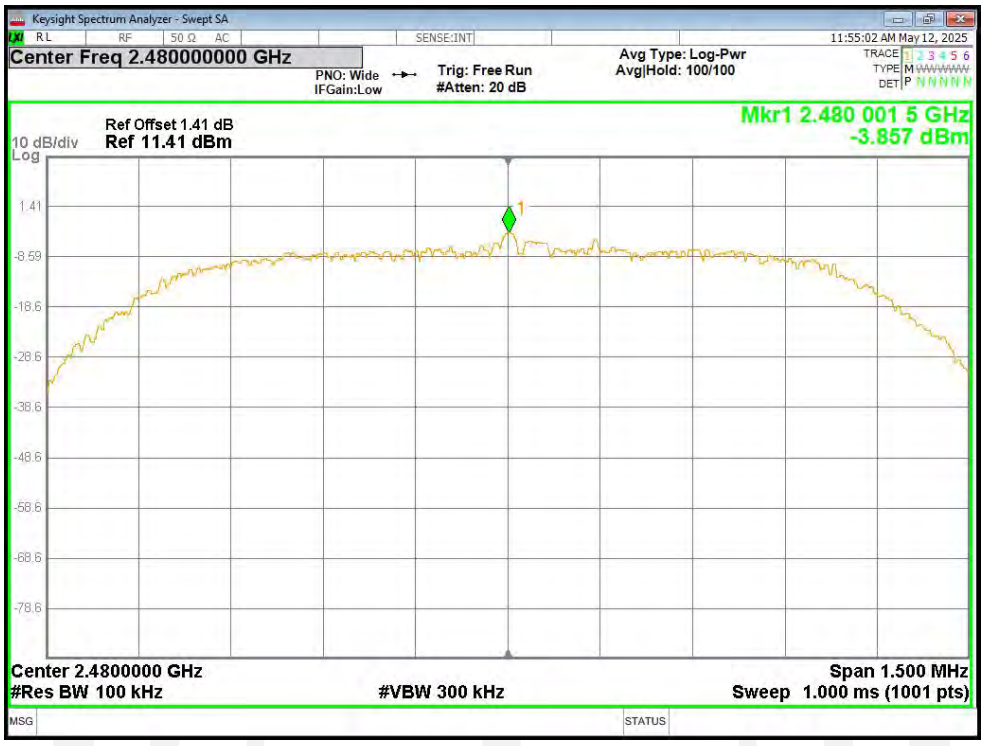
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

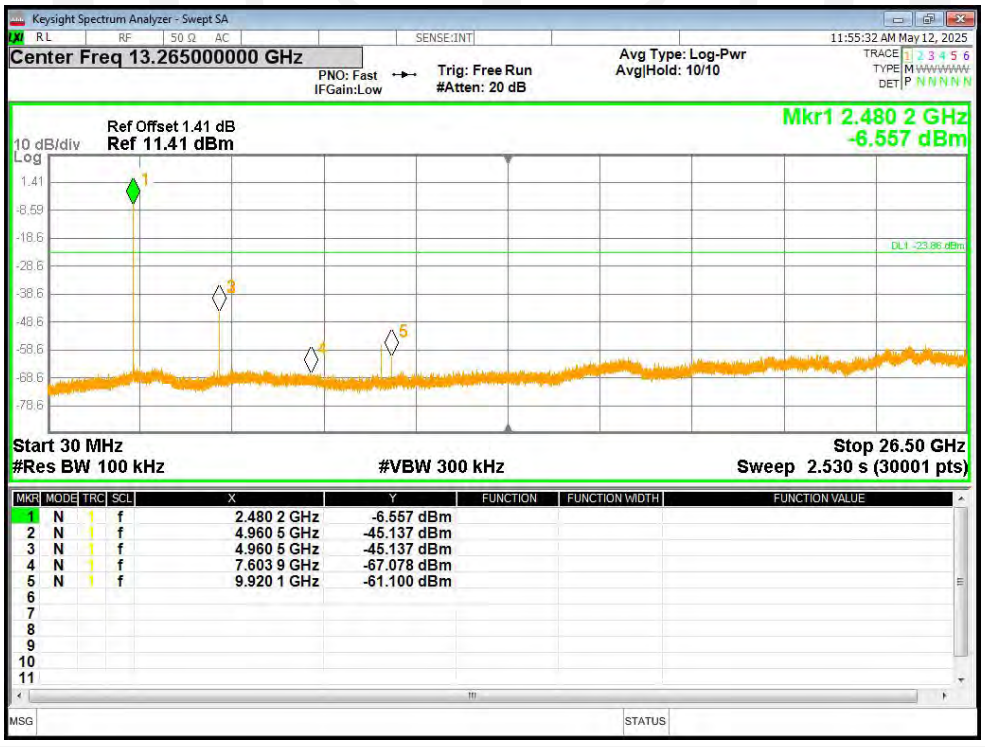
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref

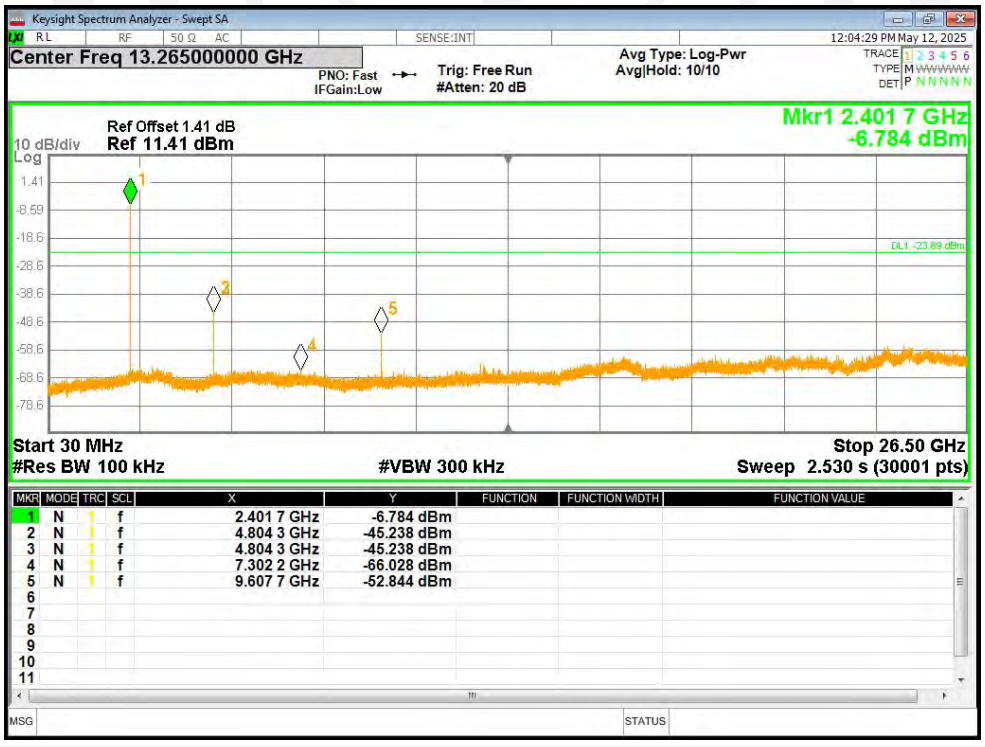



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref


Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission

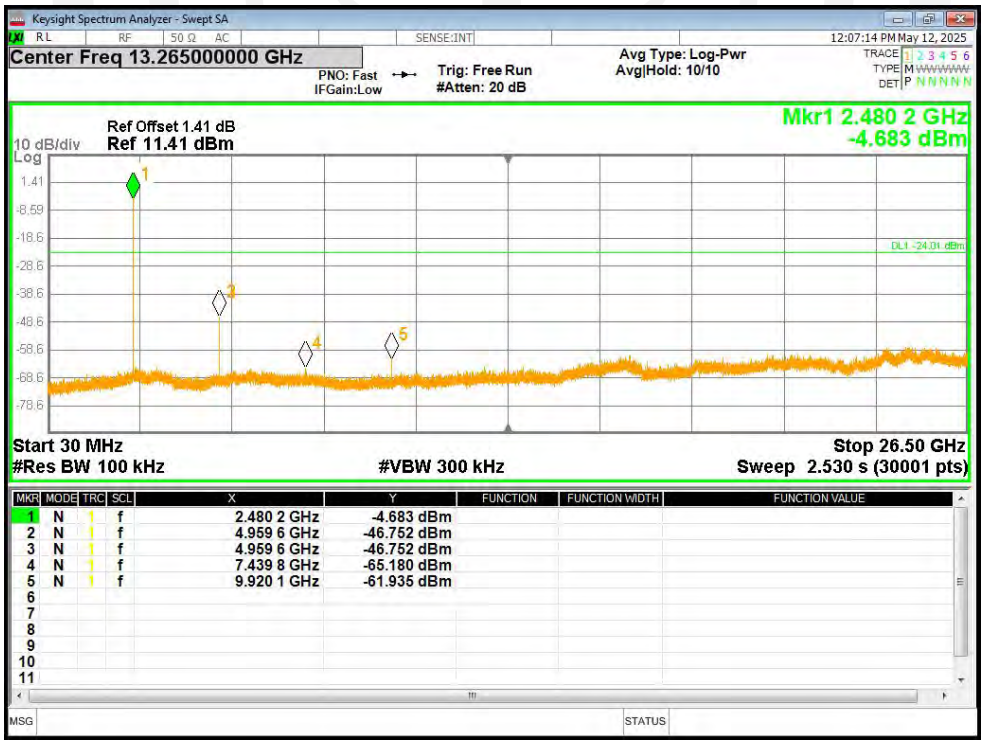


Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref


Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission

Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref


Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission



# 9. Radiated Emissions

## 9.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| [1]0.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 7.25 - 7.75 |
| 4.125 - 4.128 | 25.5 - 25.67 | 1300 - 1427 | 8.025 - 8.5 |
| 4.17725 - 4.17775 | 37.5 - 38.25 | 1435 - 1626.5 | 9.0 - 9.2 |
| 4.20725 - 4.20775 | 73 - 74.6 | 1645.5 - 1646.5 | 9.3 - 9.5 |
| 6.215 - 6.218 | 74.8 - 75.2 | 1660 - 1710 | 10.6 - 12.7 |
| 6.26775 - 6.26825 | 108 - 121.94 | 1718.8 - 1722.2 | 13.25 - 13.4 |
| 6.31175 - 6.31225 | 123 - 138 | 2200 - 2300 | 14.47 - 14.5 |
| 8.291 - 8.294 | 149.9 - 150.05 | 2310 - 2390 | 15.35 - 16.2 |
| 8.362 - 8.366 | 156.52475 - 156.52525 | 2483.5 - 2500 | 17.7 - 21.4 |
| 8.37625 - 8.38675 | 156.7 - 156.9 | 2690 - 2900 | 22.01 - 23.12 |
| 8.41425 - 8.41475 | 162.0125 - 167.17 | 3260 - 3267 | 23.6 - 24.0 |
| 12.29 - 12.293 | 167.72 - 173.2 | 3332 - 3339 | 31.2 - 31.8 |
| 12.51975 - 12.52025 | 240 - 285 | 3345.8 - 3358 | 36.43 - 36.5 |
| 12.57675 - 12.57725 | 322 - 335.4 | 3600 - 4400 | ([2]) |

RSS-GEN Restricted frequency band

| Table 7 – Restricted frequency bands[Note 1] | | |
|---|---|---|
| MHz | MHz | GHz |
| 0.090 - 0.110 | 149.9 - 150.05 | 9.0 - 9.2 |
| 0.495 - 0.505 | 156.52475 - 156.52525 | 9.3 - 9.5 |
| 2.1735 - 2.1905 | 156.7 - 156.9 | 10.6 - 12.7 |
| 3.020 - 3.026 | 162.0125 - 167.17 | 13.25 - 13.4 |
| 4.125 - 4.128 | 167.72 - 173.2 | 14.47 - 14.5 |
| 4.17725 - 4.17775 | 240 – 285 | 15.35 - 16.2 |
| 4.20725 - 4.20775 | 322 - 335.4 | 17.7 - 21.4 |
| 5.677 - 5.683 | 399.9 - 410 | 22.01 - 23.12 |
| 6.215 - 6.218 | 608 - 614 | 23.6 - 24.0 |
| 6.26775 - 6.26825 | 960 - 1427 | 31.2 - 31.8 |
| 6.31175 - 6.31225 | 1435 - 1626.5 | 36.43 - 36.5 |

| | | |
|---|---|---|
| 8.291 - 8.294 | 1645.5 - 1646.5 | Above 38.6 |
| 8.362 - 8.366 | 1660 - 1710 | |
| 8.37625 - 8.38675 | 1718.8 - 1722.2 | |
| 8.41425 - 8.41475 | 2200 - 2300 | |
| 12.29 - 12.293 | 2310 - 2390 | |
| 12.51975 - 12.52025 | 2483.5 - 2500 | |
| 12.57675 - 12.57725 | 2655 - 2900 | |
| 13.36 - 13.41 | 3260 – 3267 | |
| 16.42 - 16.423 | 3332 - 3339 | |
| 16.69475 - 16.69525 | 3345.8 - 3358 | |
| 16.80425 - 16.80475 | 3500 - 4400 | |
| 25.5 - 25.67 | 4500 - 5150 | |
| 37.5 - 38.25 | 5350 - 5460 | |
| 73 - 74.6 | 7250 - 7750 | |
| 74.8 - 75.2 | 8025 – 8500 | |
| 108 – 138 | | |

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSS.

15.209 Limit

| FREQUENCY MHz | DISTANCE Meters | FIELD STRENGTHS LIMIT | |
|---|---|---|---|
| | | μV/m | dB(μV)/m |
| 0.009-0.490 | 300 | 2400/F(KHz) | / |
| 0.490-1.705 | 30 | 24000/F(KHz) | / |
| 1.705-30 | 30 | 30 | 29.5 |
| 30 ~ 88 | 3 | 100 | 40.0 |
| 88 ~ 216 | 3 | 150 | 43.5 |
| 216 ~ 960 | 3 | 200 | 46.0 |
| 960 ~ 1000 | 3 | 500 | 54.0 |
| Above 1000 | 3 | 74.0 dB(μV)/m (Peak)<br>54.0 dB(μV)/m (Average) | |

Note: The peak limit is 20 dB higher than the average limit

**Table 5 – General field strength limits at frequencies above 30 MHz**

| Frequency (MHz) | Field strength (μV/m at 3 m) |
|---|---|
| 30 – 88 | 100 |
| 88 – 216 | 150 |
| 216 – 960 | 200 |
| Above 960 | 500 |

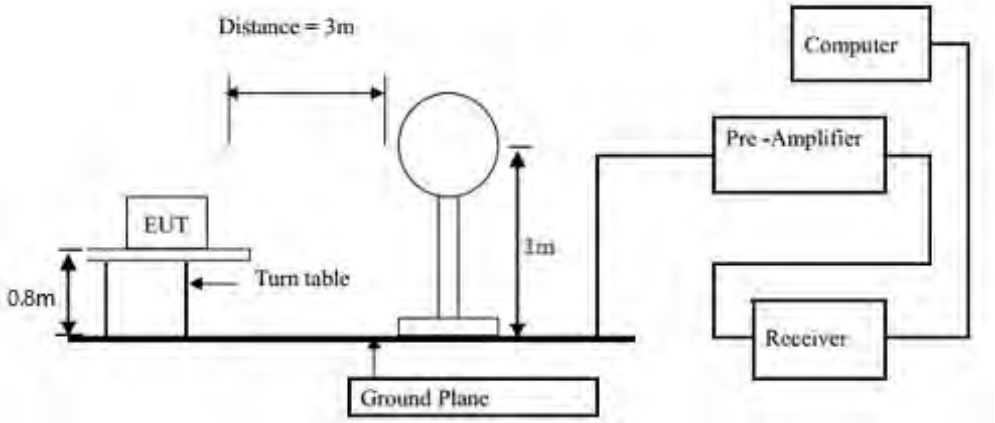
**Table 6 – General field strength limits at frequencies below 30 MHz**

| Frequency | Magnetic field strength (H-Field) (μA/m) | Measurement distance (m) |
|---|---|---|
| 9 - 490 kHz[Note 1] | 6.37/F (F in kHz) | 300 |
| 490 - 1705 kHz | 63.7/F (F in kHz) | 30 |
| 1.705 - 30 MHz | 0.08 | 30 |

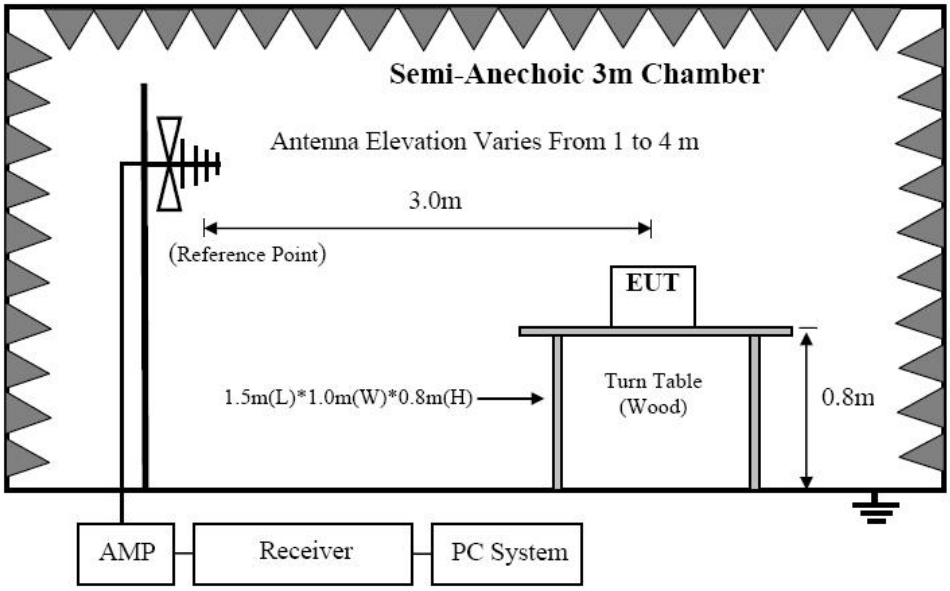
**Note 1:** The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

## 9.2. Block Diagram of Test setup

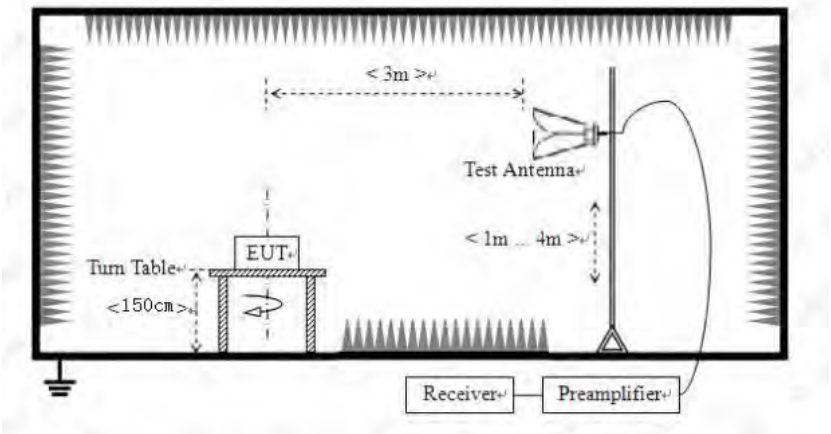
9.2.1 In 3m Anechoic Chamber Test Setup Diagram for below 30MHz




9.2.1 In 3m Anechoic Chamber Test Setup Diagram for below 1GHz




9.2.2 In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz




Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

## 9.3. Test Procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.

(2) Setup EUT and simulator

(3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.

(a) Change work frequency or channel of device if practicable.

(b) Change modulation type of device if practicable.

(c) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions

(4) Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated

(5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10:2013on Radiated Emission test.

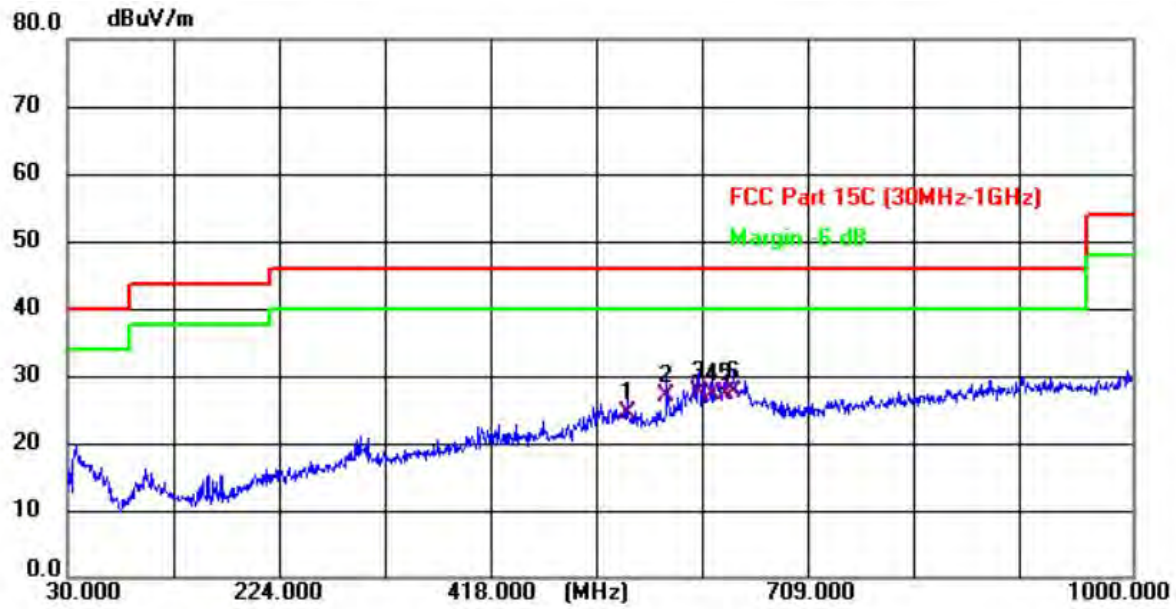
(6) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RBW is set at 1MHz, VBW is set at 10Hz for Average measure.

## 9.4. Test Results

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

| From 30MHz to 1000MHz: | | | | | |
|---|---|---|---|---|---|
| Test Date | : | 2025.5.9 | Temperature | : | 24.3℃ |
| Test Engineer | : | Felix Pang | Humidity | : | 53.6% |
| Test Mode | : | 8DPSK mode | | | |
| Test Results | : | **PASS** | | | |
| Note: | 1. The test results are listed in next pages.<br>2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out.<br>3. All modes have been tested, and only worst data of 8DPSK mode, Middle Channel 2441MHz (DC 3.7 V) was listed in this report. | | | | |

**Polarization: Vertical**

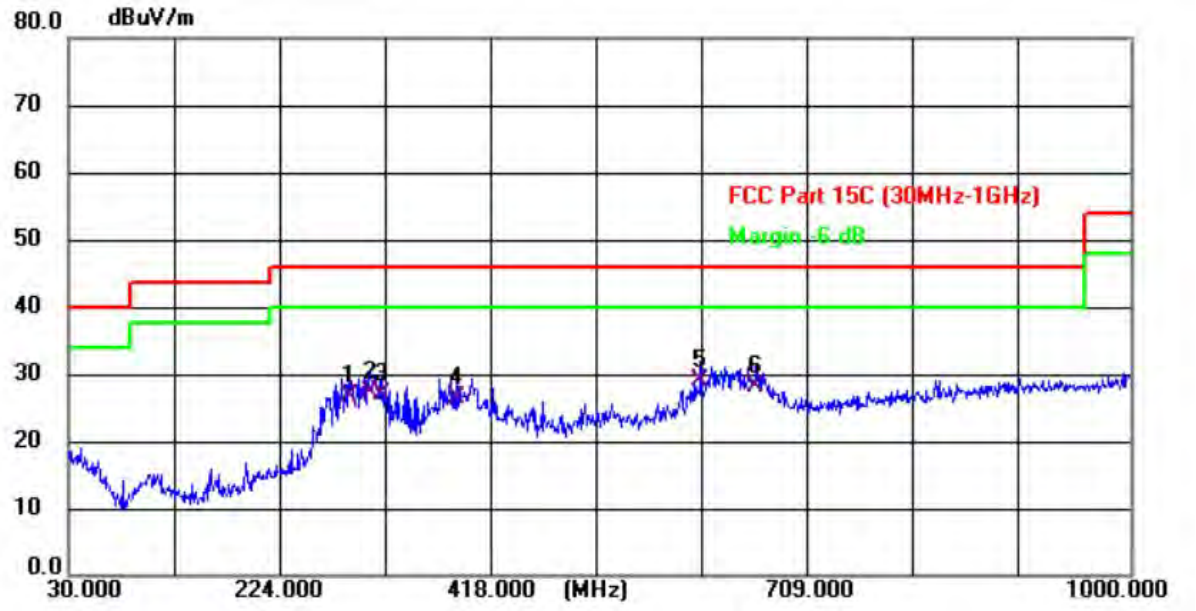



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 540.220 | 33.52 | -9.22 | 24.30 | 46.00 | -21.70 | QP | | | P |
| 2 | 576.110 | 35.26 | -8.38 | 26.88 | 46.00 | -19.12 | QP | | | P |
| 3 * | 605.210 | 35.46 | -7.76 | 27.70 | 46.00 | -18.30 | QP | | | P |
| 4 | 616.850 | 34.78 | -7.63 | 27.15 | 46.00 | -18.85 | QP | | | P |
| 5 | 629.460 | 34.68 | -7.47 | 27.21 | 46.00 | -18.79 | QP | | | P |
| 6 | 637.220 | 35.05 | -7.39 | 27.66 | 46.00 | -18.34 | QP | | | P |

Note: 1.Level = Reading + Factor Margin = Level - Limit

2.'-'Means' the test Degree and Height are not recorded by the test software and only show the worstcase in the test report.

**Polarization: Horizontal**




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 286.080 | 41.35 | -14.66 | 26.69 | 46.00 | -19.31 | QP | | | P |
| 2 | 305.480 | 41.38 | -14.22 | 27.16 | 46.00 | -18.84 | QP | | | P |
| 3 | 316.150 | 40.90 | -13.97 | 26.93 | 46.00 | -19.07 | QP | | | P |
| 4 | 385.020 | 38.86 | -12.31 | 26.55 | 46.00 | -19.45 | QP | | | P |
| 5 * | 607.150 | 36.60 | -7.73 | 28.87 | 46.00 | -17.13 | QP | | | P |
| 6 | 658.560 | 35.34 | -7.14 | 28.20 | 46.00 | -17.80 | QP | | | P |

Note: 1.Level = Reading + Factor Margin = Level - Limit

2.'-'Means' the test Degree and Height are not recorded by the test software and only show the worstcase in the test report.

| From 1GHz to 25GHz: | | | | | |
|---|---|---|---|---|---|
| Test Date | : | 2025.5.9 | Temperature | : | 24.3℃ |
| Test Engineer | : | Felix Pang | Humidity | : | 53.6% |
| Test Mode | : | GFSK, π/4 DQPSK, 8DPSK mode | | | |
| Test Results | : | **PASS** | | | |
| Note: | 1. The test results are listed in next pages.<br>2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out.<br>3. If the limits for the measurement with the average detector are met when using a receiver with a quasi-peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out. | | | | |

| Test Mode : GFSK TX Low | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | Freq MHz | Polarity | Reading (dBuV/m) | Correct Factor | Result (dBuV/m) | Limit (dBuV/m) | Margin | Remark |
| 1 | 4804 | V | 57.25 | -13.25 | 44 | 74 | -30 | Peak |
| 2 | 4804 | V | 47.98 | -13.25 | 34.73 | 54 | -19.27 | Avg |
| 3 | 7206 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9608 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4804 | H | 59.87 | -13.25 | 46.62 | 74 | -27.38 | Peak |
| 6 | 4804 | H | 47.69 | -13.25 | 34.44 | 54 | -19.56 | Avg |
| 7 | 7206 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9608 | -- | -- | -- | -- | -- | -- | -- |
| Test Mode : GFSK TX Mid | | | | | | | | |
| 1 | 4882 | V | 57.4 | -12.98 | 44.42 | 74 | -29.58 | Peak |
| 2 | 4882 | V | 48.29 | -12.98 | 35.31 | 54 | -18.69 | Avg |
| 3 | 7323 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9764 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4882 | H | 59.02 | -12.98 | 46.04 | 74 | -27.96 | Peak |
| 6 | 4882 | H | 48.77 | -12.98 | 35.79 | 54 | -18.21 | Avg |
| 7 | 7323 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9764 | -- | -- | -- | -- | -- | -- | -- |
| Test Mode : GFSK TX High | | | | | | | | |
| 1 | 4960 | V | 58.97 | -12.7 | 46.27 | 74 | -27.73 | Peak |
| 2 | 4960 | V | 48.6 | -12.7 | 35.9 | 54 | -18.1 | Avg |
| 3 | 7440 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9920 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4960 | H | 58.91 | -12.7 | 46.21 | 74 | -27.79 | Peak |
| 6 | 4960 | H | 48.21 | -12.7 | 35.51 | 54 | -18.49 | Avg |
| 7 | 7440 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9920 | -- | -- | -- | -- | -- | -- | -- |
| Note: | 1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.<br>2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.<br>Result=Reading + Correct Factor. Margin= Result-Limit. | | | | | | | |

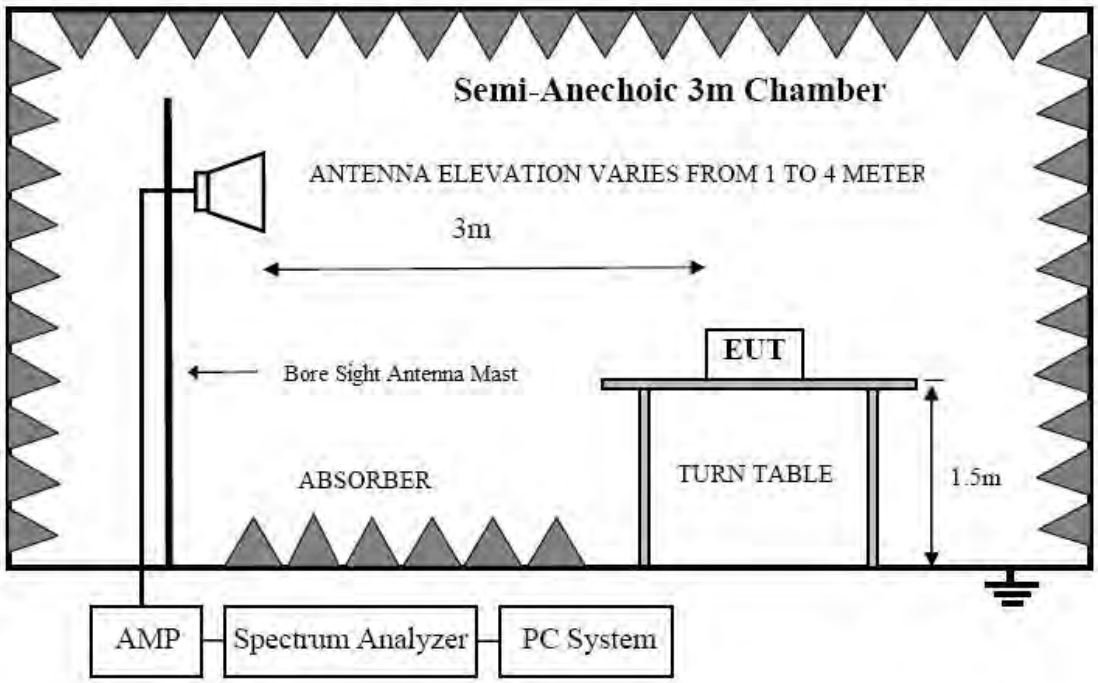
| Test Mode : π/4 DQPSK TX Low | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | Freq MHz | Polarity | Reading (dBuV/m) | Correct Factor | Result (dBuV/m) | Limit (dBuV/m) | Margin | Remark |
| 1 | 4804 | V | 58.03 | -13.25 | 44.78 | 74 | -29.22 | Peak |
| 2 | 4804 | V | 48.99 | -13.25 | 35.74 | 54 | -18.26 | Avg |
| 3 | 7206 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9608 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4804 | H | 58.34 | -13.25 | 45.09 | 74 | -28.91 | Peak |
| 6 | 4804 | H | 47.54 | -13.25 | 34.29 | 54 | -19.71 | Avg |
| 7 | 7206 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9608 | -- | -- | -- | -- | -- | -- | -- |
| Test Mode : π/4 DQPSK TX Mid | | | | | | | | |
| 1 | 4882 | V | 57.58 | -12.98 | 44.6 | 74 | -29.4 | Peak |
| 2 | 4882 | V | 47.7 | -12.98 | 34.72 | 54 | -19.28 | Avg |
| 3 | 7323 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9764 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4882 | H | 57.04 | -12.98 | 44.06 | 74 | -29.94 | Peak |
| 6 | 4882 | H | 47.07 | -12.98 | 34.09 | 54 | -19.91 | Avg |
| 7 | 7323 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9764 | -- | -- | -- | -- | -- | -- | -- |
| Test Mode : π/4 DQPSK TX High | | | | | | | | |
| 1 | 4960 | V | 57.89 | -12.7 | 45.19 | 74 | -28.81 | Peak |
| 2 | 4960 | V | 47.96 | -12.7 | 35.26 | 54 | -18.74 | Avg |
| 3 | 7440 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9920 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4960 | H | 57.52 | -12.7 | 44.82 | 74 | -29.18 | Peak |
| 6 | 4960 | H | 47.97 | -12.7 | 35.27 | 54 | -18.73 | Avg |
| 7 | 7440 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9920 | -- | -- | -- | -- | -- | -- | -- |

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor. Margin= Result-Limit.

| Test Mode : 8DPSK TX Low | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | Freq MHz | Polarity | Reading (dBuV/m) | Correct Factor | Result (dBuV/m) | Limit (dBuV/m) | Margin | Remark |
| 1 | 4804 | V | 57.4 | -13.25 | 44.15 | 74 | -29.85 | Peak |
| 2 | 4804 | V | 48.79 | -13.25 | 35.54 | 54 | -18.46 | Avg |
| 3 | 7206 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9608 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4804 | H | 58.76 | -13.25 | 45.51 | 74 | -28.49 | Peak |
| 6 | 4804 | H | 48.43 | -13.25 | 35.18 | 54 | -18.82 | Avg |
| 7 | 7206 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9608 | -- | -- | -- | -- | -- | -- | -- |
| Test Mode : 8DPSK TX Mid | | | | | | | | |
| 1 | 4882 | V | 58.09 | -12.98 | 45.11 | 74 | -28.89 | Peak |
| 2 | 4882 | V | 48.38 | -12.98 | 35.4 | 54 | -18.6 | Avg |
| 3 | 7323 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9764 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4882 | H | 57.91 | -12.98 | 44.93 | 74 | -29.07 | Peak |
| 6 | 4882 | H | 48.58 | -12.98 | 35.6 | 54 | -18.4 | Avg |
| 7 | 7323 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9764 | -- | -- | -- | -- | -- | -- | -- |
| Test Mode : 8D PSK TX High | | | | | | | | |
| 1 | 4960 | V | 58.38 | -12.7 | 45.68 | 74 | -28.32 | Peak |
| 2 | 4960 | V | 48.49 | -12.7 | 35.79 | 54 | -18.21 | Avg |
| 3 | 7440 | -- | -- | -- | -- | -- | -- | -- |
| 4 | 9920 | -- | -- | -- | -- | -- | -- | -- |
| 5 | 4960 | H | 59.9 | -12.7 | 47.2 | 74 | -26.8 | Peak |
| 6 | 4960 | H | 48.58 | -12.7 | 35.88 | 54 | -18.12 | Avg |
| 7 | 7440 | -- | -- | -- | -- | -- | -- | -- |
| 8 | 9920 | -- | -- | -- | -- | -- | -- | -- |
| Note: | 1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.<br>2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.<br>Result=Reading + Correct Factor. Margin= Result-Limit. | | | | | | | |

# 10. Band Edge Test

## 10.1.Block Diagram of Test Setup




## 10.2.Test Limit

Radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Please refer section RSS-GEN&15.247.

## 10.3.Test Procedure

Refer to ANSI C 63.10, Clause 6.10.

All restriction band and non- restriction band have been tested, only worse case is reported.

## 10.4.Test Results

| | | | | | |
|---|---|---|---|---|---|
| Test Date | : | 2025.5.9 | Temperature | : | 24.3℃ |
| Test Engineer | : | Felix Pang | Humidity | : | 53.6% |
| Test Results | : | **PASS** | | | |

| Frequency Range : **2310MHz~2410MHz** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Test Mode : GFSK TX 2402MHz | | | | | | | | |
| No. | Freq MHz | Polarity | Reading (dBuV/m) | Correct Factor | Result (dBuV/m) | Limit (dBuV/m) | Margin | Remark |
| 1 | 2390 | H | 62.62 | -20.45 | 42.17 | 74 | -31.83 | Peak |
| 2 | 2390 | H | -- | -20.45 | -- | 54 | -11.83 | Avg |
| 3 | 2400 | H | 62.68 | -20.41 | 42.27 | 74 | -31.73 | Peak |
| 4 | 2400 | H | -- | -20.41 | -- | 54 | -11.73 | Avg |
| | | | | | | | | |
| 1 | 2390 | V | 62.61 | -20.45 | 42.16 | 74 | -31.84 | Peak |
| 2 | 2390 | V | -- | -20.45 | -- | 54 | -11.84 | Avg |
| 3 | 2400 | V | 62.41 | -20.41 | 42 | 74 | -32 | Peak |
| 4 | 2400 | V | -- | -20.41 | -- | 54 | -12 | Avg |
| | | | | | | | | |
| Frequency Range : **2450MHz~2550MHz** | | | | | | | | |
| Test Mode : GFSK TX 2480MHz | | | | | | | | |
| 1 | 2483.5 | H | 62.99 | -20.15 | 42.84 | 74 | -31.16 | Peak |
| 2 | 2483.5 | H | -- | -20.15 | -- | 54 | -11.16 | Avg |
| | | | | | | | | |
| 1 | 2483.5 | V | 62.14 | -20.15 | 41.99 | 74 | -32.01 | Peak |
| 2 | 2483.5 | V | -- | -20.15 | -- | 54 | -12.01 | Avg |

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor. Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

| Frequency Range : **2310MHz~2410MHz** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Test Mode : π/4 DQPSK TX 2402MHz | | | | | | | | |
| No. | Freq MHz | Polarity | Reading (dBuV/m) | Correct Factor | Result (dBuV/m) | Limit (dBuV/m) | Margin | Remark |
| 1 | 2390 | H | 62.38 | -20.45 | 41.93 | 74 | -32.07 | Peak |
| 2 | 2390 | H | -- | -20.45 | -- | 54 | -12.07 | Avg |
| 3 | 2400 | H | 62.65 | -20.41 | 42.24 | 74 | -31.76 | Peak |
| 4 | 2400 | H | -- | -20.41 | -- | 54 | -11.76 | Avg |
| | | | | | | | | |
| 1 | 2390 | V | 62.65 | -20.45 | 42.2 | 74 | -31.8 | Peak |
| 2 | 2390 | V | -- | -20.45 | -- | 54 | -11.8 | Avg |
| 3 | 2400 | V | 62.79 | -20.41 | 42.38 | 74 | -31.62 | Peak |
| 4 | 2400 | V | -- | -20.41 | -- | 54 | -11.62 | Avg |
| | | | | | | | | |
| Frequency Range : **2450MHz~2550MHz** | | | | | | | | |
| Test Mode : π/4 DQPSK TX 2480MHz | | | | | | | | |
| 1 | 2483.5 | H | 62.46 | -20.15 | 42.31 | 74 | -31.69 | Peak |
| 2 | 2483.5 | H | -- | -20.15 | -- | 54 | -11.69 | Avg |
| | | | | | | | | |
| 1 | 2483.5 | V | 62.78 | -20.15 | 42.63 | 74 | -31.37 | Peak |
| 2 | 2483.5 | V | -- | -20.15 | -- | 54 | -11.37 | Avg |

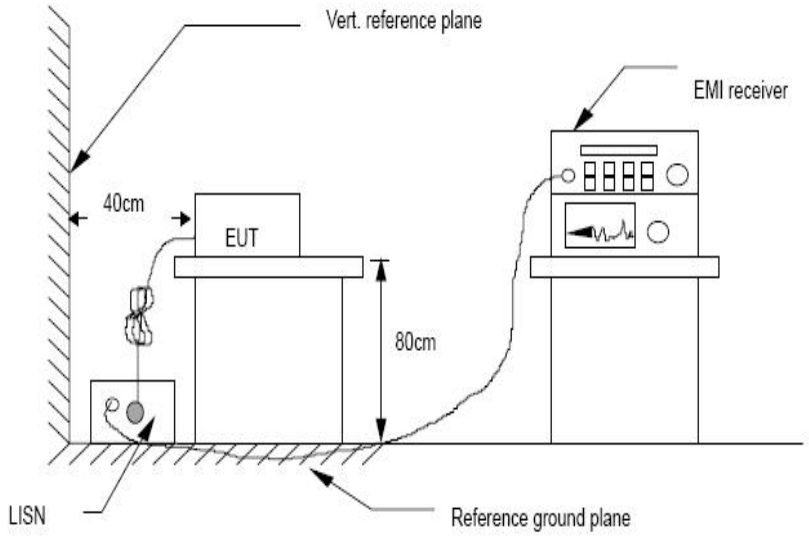
Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor. Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

| Frequency Range : **2310MHz~2410MHz** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Test Mode : 8DPSK TX 2402MHz | | | | | | | | |
| No. | Freq MHz | Polarity | Reading (dBuV/m) | Correct Factor | Result (dBuV/m) | Limit (dBuV/m) | Margin | Remark |
| 1 | 2390 | H | 62.08 | -20.45 | 41.63 | 74 | -32.37 | Peak |
| 2 | 2390 | H | -- | -20.45 | -- | 54 | -12.37 | Avg |
| 3 | 2400 | H | 62.02 | -20.41 | 41.61 | 74 | -32.39 | Peak |
| 4 | 2400 | H | -- | -20.41 | -- | 54 | -12.39 | Avg |
| | | | | | | | | |
| 1 | 2390 | V | 62.18 | -20.45 | 41.73 | 74 | -32.27 | Peak |
| 2 | 2390 | V | -- | -20.45 | -- | 54 | -12.27 | Avg |
| 3 | 2400 | V | 62.23 | -20.41 | 41.82 | 74 | -32.18 | Peak |
| 4 | 2400 | V | -- | -20.41 | -- | 54 | -12.18 | Avg |
| | | | | | | | | |
| Frequency Range : **2450MHz~2550MHz** | | | | | | | | |
| Test Mode : 8DPSK TX 2480MHz | | | | | | | | |
| 1 | 2483.5 | H | 62.66 | -20.15 | 42.51 | 74 | -31.49 | Peak |
| 2 | 2483.5 | H | -- | -20.15 | -- | 54 | -11.49 | Avg |
| | | | | | | | | |
| 1 | 2483.5 | V | 62.73 | -20.15 | 42.58 | 74 | -31.42 | Peak |
| 2 | 2483.5 | V | -- | -20.15 | -- | 54 | -11.42 | Avg |

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor. Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

# 11. Power Line Conducted Emissions

## 11.1.Block Diagram of Test Setup




## 11.2.Limit

| Frequency | Maximum RF Line Voltage | |
|---|---|---|
| | Quasi-Peak Level dB(μV) | Average Level dB(μV) |
| 150kHz ~ 500kHz | 66 ~ 56* | 56 ~ 46* |
| 500kHz ~ 5MHz | 56 | 46 |
| 5MHz ~ 30MHz | 60 | 50 |

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

## 11.3.Test Procedure

(1) The EUT was placed on a non-metallic table, 80cm above the ground plane.

(2) Setup the EUT and simulator as shown in 10.1

(3) The EUT Power connected to the power mains through a power adapter and a line impedance stabilization network (L.I.S.N1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N2), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10:2013on conducted Emission test.

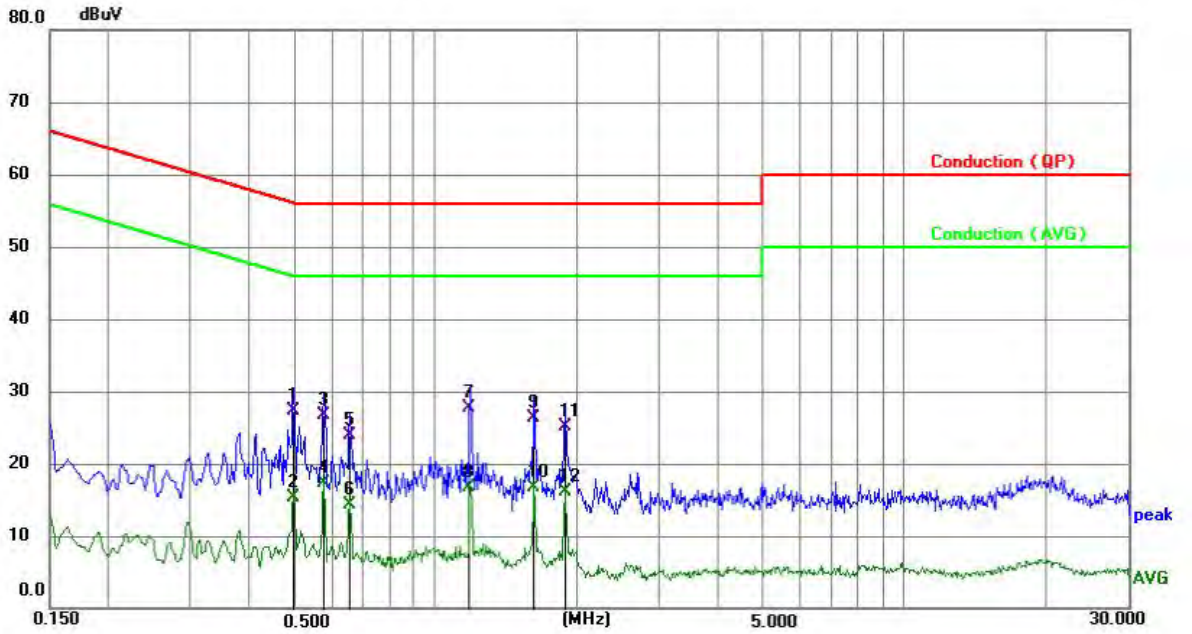
(4) The bandwidth of test receiver is set at 10KHz.

(5) The frequency range from 150 KHz to 30MHz is checked.

## 11.4.Test Results

| | | | | | |
|---|---|---|---|---|---|
| Test Date | : | 2025.5.9 | Temperature | : | 23.6℃ |
| Test Engineer | : | Felix Pang | Humidity | : | 54.2% |
| Test Mode | : | 8DPSK mode | | | |
| Test Results | : | **PASS** | | | |
| Note: | 1. The test results are listed in next pages.<br>2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out.<br>3. If the limits for the measurement with the average detector are met when using a receiver with a quasi-peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.<br>4. All modes have been tested, and only worst data of 8DPSK mode, Middle Channel 2441MHz (AC 120V/ 60Hz) was listed in this report. | | | | |

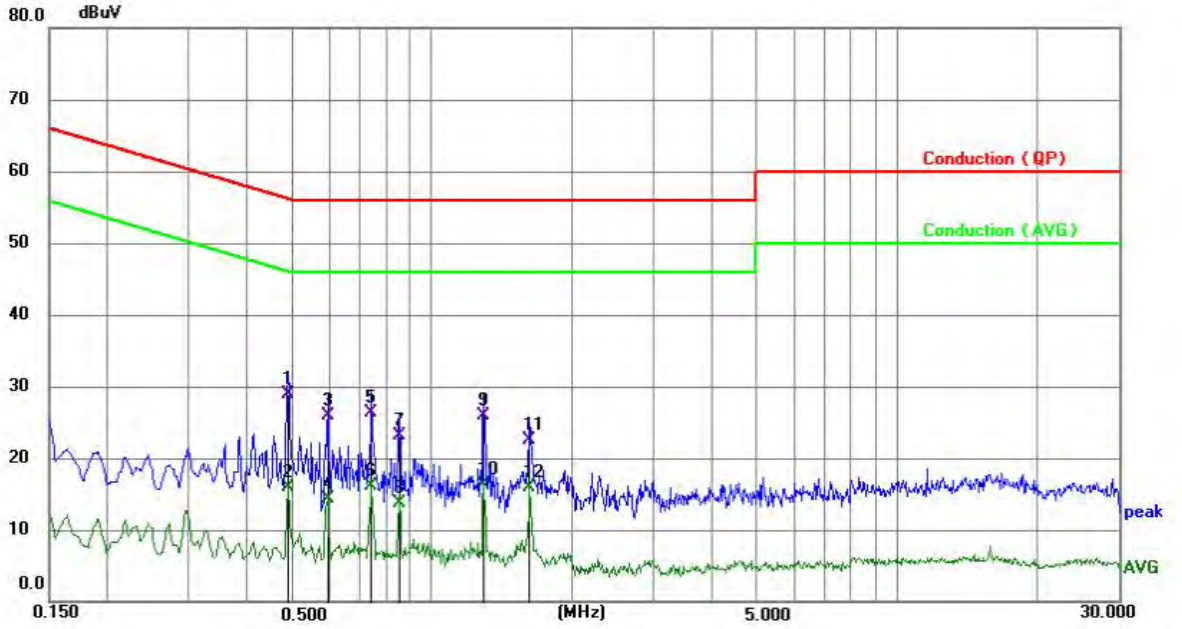
**Polarization: L**




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.4964 | 17.27 | 10.02 | 27.29 | 56.06 | -28.77 | QP | P | |
| 2 | 0.4964 | 5.27 | 10.02 | 15.29 | 46.06 | -30.77 | AVG | P | |
| 3 | 0.5775 | 16.75 | 10.03 | 26.78 | 56.00 | -29.22 | QP | P | |
| 4 | 0.5775 | 7.20 | 10.03 | 17.23 | 46.00 | -28.77 | AVG | P | |
| 5 | 0.6540 | 13.80 | 10.03 | 23.83 | 56.00 | -32.17 | QP | P | |
| 6 | 0.6540 | 4.34 | 10.03 | 14.37 | 46.00 | -31.63 | AVG | P | |
| 7 * | 1.1849 | 17.74 | 10.06 | 27.80 | 56.00 | -28.20 | QP | P | |
| 8 | 1.1849 | 6.67 | 10.06 | 16.73 | 46.00 | -29.27 | AVG | P | |
| 9 | 1.6214 | 16.16 | 10.06 | 26.22 | 56.00 | -29.78 | QP | P | |
| 10 | 1.6214 | 6.70 | 10.06 | 16.76 | 46.00 | -29.24 | AVG | P | |
| 11 | 1.8914 | 15.05 | 10.06 | 25.11 | 56.00 | -30.89 | QP | P | |
| 12 | 1.8914 | 5.96 | 10.06 | 16.02 | 46.00 | -29.98 | AVG | P | |

Note: Level = Reading + Factor Margin = Level - Limit

**Polarization: N**




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 0.4874 | 18.95 | 10.01 | 28.96 | 56.21 | -27.25 | QP | P | |
| 2 | 0.4874 | 5.95 | 10.01 | 15.96 | 46.21 | -30.25 | AVG | P | |
| 3 | 0.5955 | 15.84 | 10.03 | 25.87 | 56.00 | -30.13 | QP | P | |
| 4 | 0.5955 | 4.22 | 10.03 | 14.25 | 46.00 | -31.75 | AVG | P | |
| 5 | 0.7395 | 16.19 | 10.04 | 26.23 | 56.00 | -29.77 | QP | P | |
| 6 | 0.7395 | 6.03 | 10.04 | 16.07 | 46.00 | -29.93 | AVG | P | |
| 7 | 0.8520 | 12.99 | 10.05 | 23.04 | 56.00 | -32.96 | QP | P | |
| 8 | 0.8520 | 3.70 | 10.05 | 13.75 | 46.00 | -32.25 | AVG | P | |
| 9 | 1.2930 | 15.84 | 10.06 | 25.90 | 56.00 | -30.10 | QP | P | |
| 10 | 1.2930 | 6.15 | 10.06 | 16.21 | 46.00 | -29.79 | AVG | P | |
| 11 | 1.6260 | 12.35 | 10.06 | 22.41 | 56.00 | -33.59 | QP | P | |
| 12 | 1.6260 | 5.76 | 10.06 | 15.82 | 46.00 | -30.18 | AVG | P | |

Note: Level = Reading + Factor Margin = Level - Limit

# 12. Frequency stability

## 12.1. Test limit

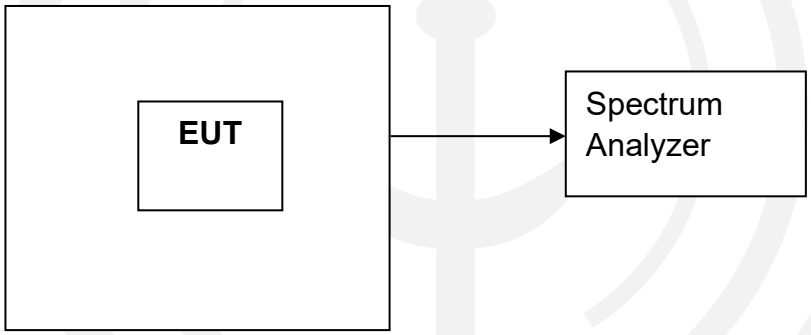
Please refer section RSS-Gen.

Regulation RSS-Gen If the frequency stability of the licence-exempt radio apparatus is not specified in the applicable RSS, the fundamental emissions of the radio apparatus should be kept within at least the central 80% of its permitted operating frequency band in order to minimize the possibility of out-of-band operation. In addition, its occupied bandwidth shall be entirely outside the restricted bands and the prohibited TV bands of 54-72 MHz, 76-88 MHz, 174-216 MHz, and 470-602 MHz, unless otherwise indicated.

## 12.2. Test Procedure

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 12.3. Test Setup




Temperature controller

## 12.4. Test Results

Not Applicable.

# 13. Antenna Requirements

## 13.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203 and RSS-GEN, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

## 13.2. Result

The EUT antenna is PCB antenna. It complies with the standard requirement.

# 14. Photos of test setup

Reference to the **appendix I Test Setup Photo** for details.

# 15. Photos of EUT

Reference to the **appendix II external photos** and **appendix III internal photos** for details.

**------ END OF REPORT------**