

# TEST REPORT

|                                        |                                                                                                                                                      |                                                                                       |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| FCC ID..... :                          | 2AON4YVL-096A-M26                                                                                                                                    |                                                                                       |
| Test Report No..... :                  | TCT241029E023                                                                                                                                        |                                                                                       |
| Date of issue..... :                   | Nov. 04, 2024                                                                                                                                        |                                                                                       |
| Testing laboratory .....               | SHENZHEN TONGCE TESTING LAB                                                                                                                          |                                                                                       |
| Testing location/ address:             | 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China |                                                                                       |
| Applicant's name..... :                | Global Media Industry Group Co., Ltd.                                                                                                                |                                                                                       |
| Address..... :                         | 2F, Bldg A, No. 46, Xingye 1st Rd, Fenghuang, Fuyong, Bao'an, Shenzhen, China                                                                        |                                                                                       |
| Manufacturer's name ... :              | Global Media Industry Group Co., Ltd.                                                                                                                |                                                                                       |
| Address..... :                         | 2F, Bldg A, No. 46, Xingye 1st Rd, Fenghuang, Fuyong, Bao'an, Shenzhen, China                                                                        |                                                                                       |
| Standard(s) .....                      | FCC CFR Title 47 Part 15 Subpart C Section 15.247<br>FCC KDB 558074 D01 15.247 Meas Guidance v05r02<br>ANSI C63.10:2020                              |                                                                                       |
| Product Name..... :                    | 9.66 Inch 2K/1440P Streaming Media Mirror Monitor With Built-in Dash Cam                                                                             |                                                                                       |
| Trade Mark .....                       | imirror                                                                                                                                              |                                                                                       |
| Model/Type reference..... :            | YVL-096A-M26, YK-096A-M26S                                                                                                                           |                                                                                       |
| Rating(s)..... :                       | DC12V-24V                                                                                                                                            |                                                                                       |
| Date of receipt of test item .....     | Oct. 29, 2024                                                                                                                                        |                                                                                       |
| Date (s) of performance of test..... : | Oct. 29, 2024 ~ Nov. 04, 2024                                                                                                                        |                                                                                       |
| Tested by (+signature) ... :           | Ronaldo LUO                                                                                                                                          |  |
| Check by (+signature).... :            | Beryl ZHAO                                                                                                                                           |  |
| Approved by (+signature):              | Tomsin                                                                                                                                               |  |

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## 1. General Product Information

### 1.1. EUT description

|                             |                                                                                                                                           |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name.....:          | 9.66 Inch 2K/1440P Streaming Media Mirror Monitor With Built-in Dash Cam                                                                  |
| Model/Type reference.....:  | YVL-096A-M26                                                                                                                              |
| Sample Number.....:         | TCT241029E023-0101                                                                                                                        |
| Operation Frequency .....   | 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20))                                                                                           |
| Channel Separation .....    | 5MHz                                                                                                                                      |
| Number of Channel .....     | 11 for 802.11b/802.11g/802.11n(HT20)                                                                                                      |
| Modulation Technology ..... | 802.11b: Direct Sequence Spread Spectrum (DSSS)<br>802.11g/802.11n: Orthogonal Frequency Division Multiplexing(OFDM)                      |
| Data speed .....            | 802.11b: 1Mbps, 2Mbps, 5.5Mbps, 11Mbps<br>802.11g: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps<br>802.11n: Up to 150Mbps |
| Antenna Type.....:          | FPC Antenna                                                                                                                               |
| Antenna Gain.....:          | 3.32dBi                                                                                                                                   |
| Rating(s).....:             | DC12V-24V                                                                                                                                 |

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

### 1.2. Model(s) list

| No.          | Model No.    | Tested with                         |
|--------------|--------------|-------------------------------------|
| 1            | YVL-096A-M26 | <input checked="" type="checkbox"/> |
| Other models | YK-096A-M26S | <input type="checkbox"/>            |

Note: YVL-096A-M26 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names, front camera, supercapacitor. So the test data of YVL-096A-M26 can represent the remaining models.

### 1.3. Operation Frequency

#### For 802.11b/g/n(HT20)

| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|---------|-----------|---------|-----------|
| 1       | 2412MHz   | 4       | 2427MHz   | 7       | 2442MHz   | 10      | 2457MHz   |
| 2       | 2417MHz   | 5       | 2432MHz   | 8       | 2447MHz   | 11      | 2462MHz   |
| 3       | 2422MHz   | 6       | 2437MHz   | 9       | 2452MHz   | --      | --        |

**Note:**

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

#### 802.11b/802.11g/802.11n (HT20)

| Channel             | Frequency |
|---------------------|-----------|
| The lowest channel  | 2412MHz   |
| The middle channel  | 2437MHz   |
| The Highest channel | 2462MHz   |

## 2. Test Result Summary

| Requirement                      | CFR 47 Section      | Result |
|----------------------------------|---------------------|--------|
| Antenna requirement              | §15.203/§15.247 (c) | PASS   |
| AC Power Line Conducted Emission | §15.207             | N/A    |
| Conducted Peak Output Power      | §15.247 (b)(3)      | PASS   |
| 6dB Emission Bandwidth           | §15.247 (a)(2)      | PASS   |
| Power Spectral Density           | §15.247 (e)         | PASS   |
| Band Edge                        | §15.247(d)          | PASS   |
| Spurious Emission                | §15.205/§15.209     | PASS   |

**Note:**

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.

### 3. General Information

#### 3.1. Test environment and mode

| Operating Environment:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Radiated Emission                                                                             |
| Temperature:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 24.5 °C                                                                                       |
| Humidity:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 52 % RH                                                                                       |
| Atmospheric Pressure:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1010 mbar                                                                                     |
| Test Software:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                               |
| Software Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | putty                                                                                         |
| Power Level:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 34                                                                                            |
| Test Mode:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                               |
| Engineer mode:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Keep the EUT in continuous transmitting by select channel and modulations with max duty cycle |
| The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case( Z axis) are shown in Test Results of the following pages. |                                                                                               |

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

**Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.**

| Mode          | Data rate |
|---------------|-----------|
| 802.11b       | 1Mbps     |
| 802.11g       | 6Mbps     |
| 802.11n(HT20) | 6.5Mbps   |

### 3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Equipment | Model No. | Serial No. | FCC ID | Trade Name |
|-----------|-----------|------------|--------|------------|
| /         | /         | /          | /      | /          |

**Note:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

## 4. Facilities and Accreditations

### 4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Innovation, Science and Economic Development Canada for radio equipment testing.

### 4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

### 4.3. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

| No. | Item                                    | MU            |
|-----|-----------------------------------------|---------------|
| 1   | Conducted Emission                      | $\pm 3.10$ dB |
| 2   | RF power, conducted                     | $\pm 0.12$ dB |
| 3   | Spurious emissions, conducted           | $\pm 0.11$ dB |
| 4   | All emissions, radiated(<1 GHz)         | $\pm 4.56$ dB |
| 5   | All emissions, radiated(1 GHz - 18 GHz) | $\pm 4.22$ dB |
| 6   | All emissions, radiated(18 GHz- 40 GHz) | $\pm 4.36$ dB |



## 5. Test Results and Measurement Data

### 5.1. Antenna requirement

#### Standard requirement:

FCC Part15 C Section 15.203 /247(c)

#### 15.203 requirement:

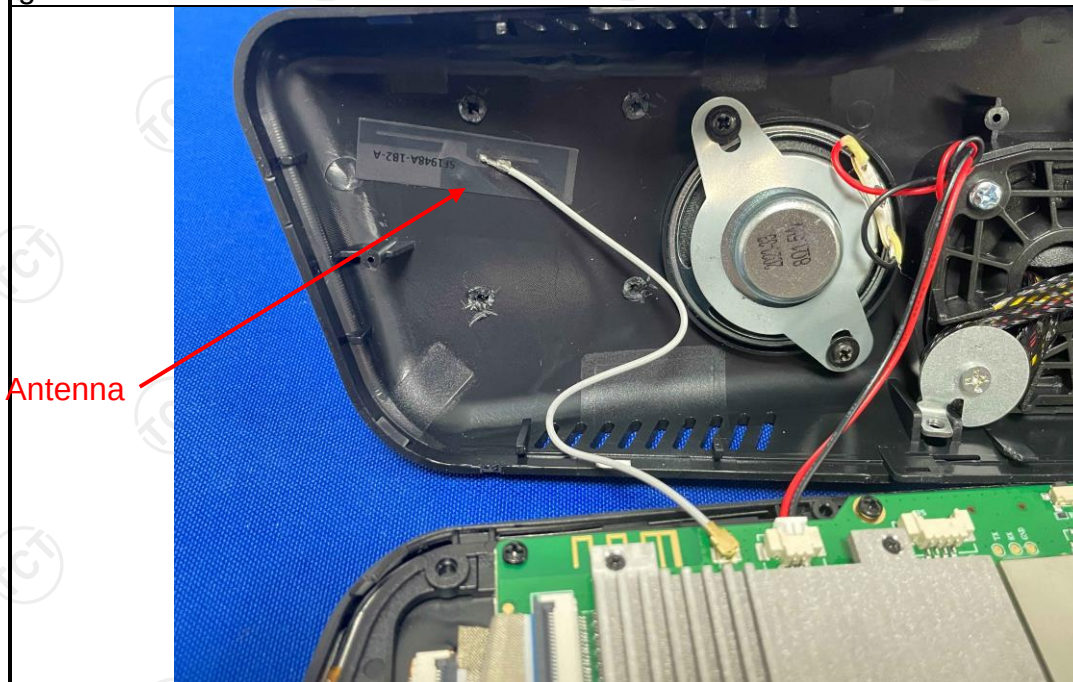
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### 15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### E.U.T Antenna:

The WIFI antenna is FPC antenna which permanently attached, and the best case gain of the antenna is 3.32dBi.



Antenna

## 5.2. Conducted Emission

### 5.2.1. Test Specification

| Test Requirement:     | FCC Part15 C Section 15.207                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|--|------------|---------|----------|-----------|-----------|-------|----|----|------|----|----|
| Test Method:          | ANSI C63.10:2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |
| Frequency Range:      | 150 kHz to 30 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |
| Receiver setup:       | RBW=9 kHz, VBW=30 kHz, Sweep time=auto                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |
| Limits:               | <table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                               | Frequency range (MHz) | Limit (dBuV) |  | Quasi-peak | Average | 0.15-0.5 | 66 to 56* | 56 to 46* | 0.5-5 | 56 | 46 | 5-30 | 60 | 50 |
| Frequency range (MHz) | Limit (dBuV)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |
|                       | Quasi-peak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Average               |              |  |            |         |          |           |           |       |    |    |      |    |    |
| 0.15-0.5              | 66 to 56*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 56 to 46*             |              |  |            |         |          |           |           |       |    |    |      |    |    |
| 0.5-5                 | 56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 46                    |              |  |            |         |          |           |           |       |    |    |      |    |    |
| 5-30                  | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 50                    |              |  |            |         |          |           |           |       |    |    |      |    |    |
| Test Setup:           | <div><div>Reference Plane</div><div><div>40cm</div><div><div>E.U.T</div><div>AC power</div></div><div>80cm</div><div><div>LISN</div><div>Filter</div><div>EMI Receiver</div></div><div>AC power</div><div>Test table/Insulation plane</div></div><div><div>Remark</div><div>E.U.T: Equipment Under Test</div><div>LISN: Line Impedance Stabilization Network</div><div>Test table height=0.8m</div></div></div>                                                                                                                                                                                                                                                                                                      |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |
| Test Mode:            | Transmitting Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |
| Test Procedure:       | <div><div>1. The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</div><div>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</div><div>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2020 on conducted measurement.</div></div> |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |
| Test Result:          | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |              |  |            |         |          |           |           |       |    |    |      |    |    |

### 5.3. Maximum Conducted (Peak) Output Power

#### 5.3.1. Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC Part15 C Section 15.247 (b)(3)                                                                                                                                                                                                                                                                                                                                 |
| <b>Test Method:</b>      | KDB 558074 D01 v05r02                                                                                                                                                                                                                                                                                                                                              |
| <b>Limit:</b>            | 30dBm                                                                                                                                                                                                                                                                                                                                                              |
| <b>Test Setup:</b>       | <br>Power meter                      EUT                                                                                                                                                                                                                                         |
| <b>Test Mode:</b>        | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                  |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"><li>1. The RF output of EUT was connected to the power meter by RF cable. The path loss was compensated to the results for each measurement.</li><li>2. Set to the maximum power setting and enable the EUT transmit continuously.</li><li>3. Measure the Peak output power and record the results in the test report.</li></ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                               |

#### 5.3.2. Test Instruments

| Equipment    | Manufacturer | Model  | Serial Number | Calibration Due |
|--------------|--------------|--------|---------------|-----------------|
| Power Sensor | Agilent      | 8184A  | MY41096530    | Jun. 26, 2025   |
| Power Meter  | Agilent      | E4418B | MY45100357    | Jun. 26, 2025   |

## 5.4. Emission Bandwidth

### 5.4.1. Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC Part15 C Section 15.247 (a)(2)                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Test Method:</b>      | KDB 558074 D01 v05r02                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Limit:</b>            | >500kHz                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Test Setup:</b>       |  <p>The diagram illustrates the test setup. On the left is a green Spectrum Analyzer with a blue screen and two red input ports. A black cable connects one of these ports to a yellow rectangular box on the right, which is labeled 'EUT'.</p>                                                                                                    |
| <b>Test Mode:</b>        | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"> <li>1. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>2. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz.</li> <li>3. Measure and record the results in the test report.</li> </ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                  |

### 5.4.2. Test Instruments

| Equipment         | Manufacturer | Model     | Serial Number | Calibration Due |
|-------------------|--------------|-----------|---------------|-----------------|
| Spectrum Analyzer | Agilent      | N9020A    | MY49100619    | Jun. 26, 2025   |
| Combiner Box      | Ascentest    | AT890-RFB | /             | /               |

## 5.5. Power Spectral Density

### 5.5.1. Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC Part15 C Section 15.247 (e)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Test Method:</b>      | KDB 558074 D01 v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Limit:</b>            | The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Test Setup:</b>       |  <p style="text-align: center;">Spectrum Analyzer                      EUT</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Test Mode:</b>        | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"> <li>1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.</li> <li>2. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): <math>3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}</math>. Video bandwidth VBW <math>\geq 3 \times \text{RBW}</math>. Set the span to at least 1.5 times the OBW.</li> <li>4. Detector = Peak, Sweep time = auto couple.</li> <li>5. Trace mode =max hold. Use the peak marker function to determine the maximum power level.</li> <li>6. Measure and record the results in the test report.</li> </ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

### 5.5.2. Test Instruments

| Equipment         | Manufacturer | Model     | Serial Number | Calibration Due |
|-------------------|--------------|-----------|---------------|-----------------|
| Spectrum Analyzer | Agilent      | N9020A    | MY49100619    | Jun. 26, 2025   |
| Combiner Box      | Ascentest    | AT890-RFB | /             | /               |

## 5.6. Conducted Band Edge and Spurious Emission Measurement

### 5.6.1. Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC Part15 C Section 15.247 (d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Test Method:</b>      | KDB 558074 D01 v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Limit:</b>            | In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Test Setup:</b>       |  <p>The diagram illustrates the test setup. On the left is a green Spectrum Analyzer with a blue screen. A black RF cable connects its output port to the input port of a yellow rectangular box labeled 'EUT' (Equipment Under Test).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Test Mode:</b>        | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"> <li>1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.</li> <li>2. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>3. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).</li> <li>4. Measure and record the results in the test report.</li> <li>5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> </ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

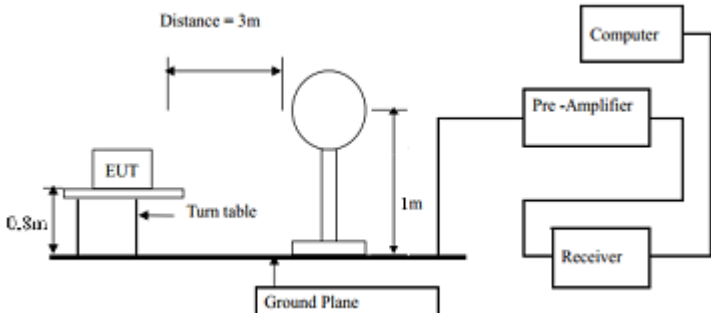
### 5.6.2. Test Instruments

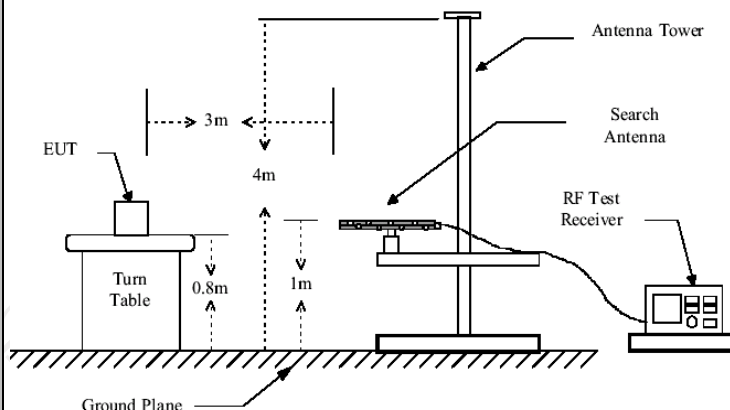
| Equipment         | Manufacturer | Model     | Serial Number | Calibration Due |
|-------------------|--------------|-----------|---------------|-----------------|
| Spectrum Analyzer | Agilent      | N9020A    | MY49100619    | Jun. 26, 2025   |
| Combiner Box      | Ascentest    | AT890-RFB | /             | /               |



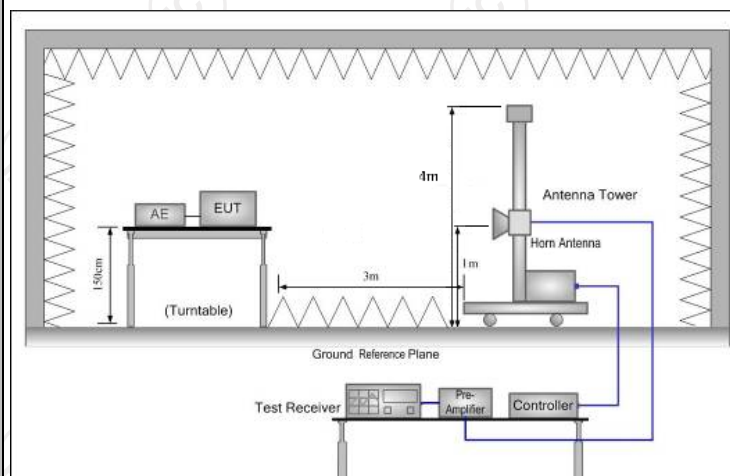
## 5.7. Radiated Spurious Emission Measurement

### 5.7.1. Test Specification

|                       |                                   |                                                                                      |                                   |               |                               |          |
|-----------------------|-----------------------------------|--------------------------------------------------------------------------------------|-----------------------------------|---------------|-------------------------------|----------|
| Test Requirement:     | FCC Part15 C Section 15.209       |                                                                                      |                                   |               |                               |          |
| Test Method:          | ANSI C63.10:2020                  |                                                                                      |                                   |               |                               |          |
| Frequency Range:      | 9 kHz to 25 GHz                   |                                                                                      |                                   |               |                               |          |
| Measurement Distance: | 3 m                               |                                                                                      |                                   |               |                               |          |
| Antenna Polarization: | Horizontal & Vertical             |                                                                                      |                                   |               |                               |          |
| Operation mode:       | Transmitting mode with modulation |                                                                                      |                                   |               |                               |          |
| Receiver Setup:       | Frequency                         | Detector                                                                             | RBW                               | VBW           | Remark                        |          |
|                       | 9kHz- 150kHz                      | Quasi-peak                                                                           | 200Hz                             | 1kHz          | Quasi-peak Value              |          |
|                       | 150kHz- 30MHz                     | Quasi-peak                                                                           | 9kHz                              | 30kHz         | Quasi-peak Value              |          |
|                       | 30MHz-1GHz                        | Quasi-peak                                                                           | 120KHz                            | 300KHz        | Quasi-peak Value              |          |
|                       | Above 1GHz                        | Peak                                                                                 | 1MHz                              | 3MHz          | Peak Value                    |          |
| Peak                  |                                   | 1MHz                                                                                 | 10Hz                              | Average Value |                               |          |
| Limit:                | Frequency                         |                                                                                      | Field Strength (microvolts/meter) |               | Measurement Distance (meters) |          |
|                       | 0.009-0.490                       |                                                                                      | 2400/F(KHz)                       |               | 300                           |          |
|                       | 0.490-1.705                       |                                                                                      | 24000/F(KHz)                      |               | 30                            |          |
|                       | 1.705-30                          |                                                                                      | 30                                |               | 30                            |          |
|                       | 30-88                             |                                                                                      | 100                               |               | 3                             |          |
|                       | 88-216                            |                                                                                      | 150                               |               | 3                             |          |
|                       | 216-960                           |                                                                                      | 200                               |               | 3                             |          |
|                       | Above 960                         |                                                                                      | 500                               |               | 3                             |          |
|                       | Frequency                         |                                                                                      | Field Strength (microvolts/meter) |               | Measurement Distance (meters) | Detector |
|                       | Above 1GHz                        |                                                                                      | 500                               |               | 3                             | Average  |
|                       |                                   |                                                                                      | 5000                              |               | 3                             | Peak     |
|                       | Test setup:                       | For radiated emissions below 30MHz                                                   |                                   |               |                               |          |
|                       |                                   |  |                                   |               |                               |          |
|                       | Test setup:                       | 30MHz to 1GHz                                                                        |                                   |               |                               |          |



Above 1GHz



## Test Procedure:

1. For the radiated emission test below 1GHz:  
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.  
For the radiated emission test above 1GHz:  
Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which



|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | <p>maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.</p> <p>3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level</p> <p>4. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.</p> <p>5. Use the following spectrum analyzer settings:</p> <p>(1) Span shall wide enough to fully capture the emission being measured;</p> <p>(2) Set RBW=120 kHz for <math>f &lt; 1</math> GHz; VBW <math>\geq</math> RBW; Sweep = auto; Detector function = peak; Trace = max hold;</p> <p>(3) Set RBW = 1 MHz, VBW= 3MHz for <math>f &gt; 1</math> GHz for peak measurement.</p> <p>For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW <math>\geq 1/T</math>, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.</p> |
| <b>Test results:</b> | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

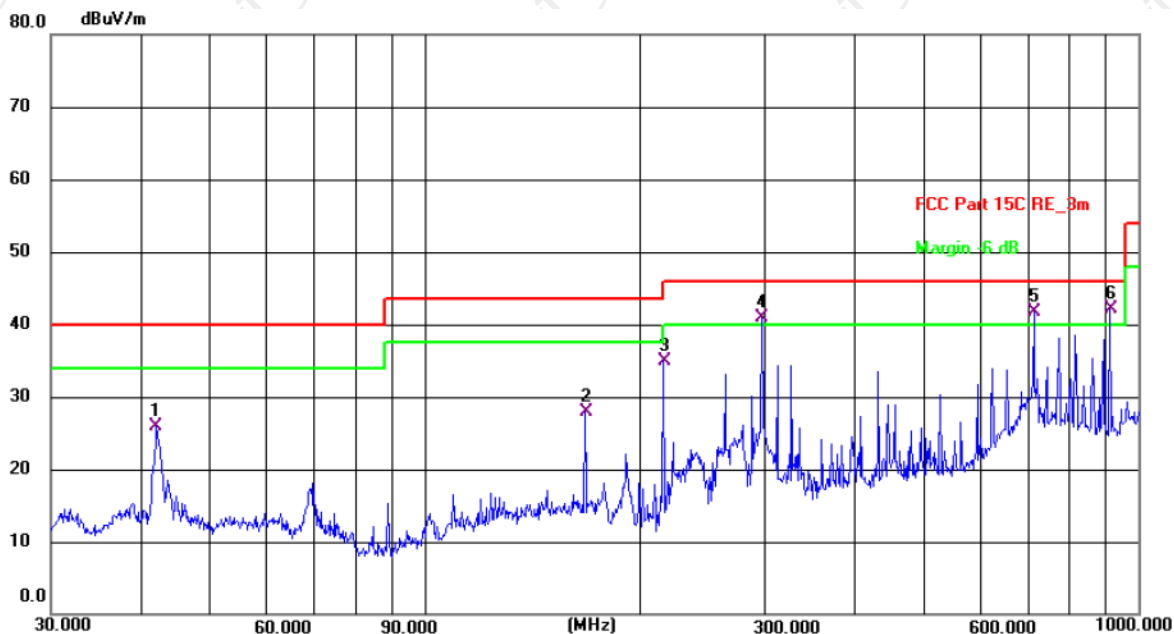
## 5.7.2. Test Instruments

| Radiated Emission Test Site (966) |              |               |                |                 |
|-----------------------------------|--------------|---------------|----------------|-----------------|
| Name of Equipment                 | Manufacturer | Model         | Serial Number  | Calibration Due |
| EMI Test Receiver                 | R&S          | ESCI7         | 100529         | Jan. 31, 2025   |
| Spectrum Analyzer                 | R&S          | FSQ40         | 200061         | Jun. 26, 2025   |
| Pre-amplifier                     | SKET         | LNPA_0118G-45 | SK2021012102   | Jan. 31, 2025   |
| Pre-amplifier                     | SKET         | LNPA_1840G-50 | SK202109203500 | Jan. 31, 2025   |
| Pre-amplifier                     | HP           | 8447D         | 2727A05017     | Jun. 26, 2025   |
| Loop antenna                      | Schwarzbeck  | FMZB1519B     | 00191          | Jun. 26, 2025   |
| Broadband Antenna                 | Schwarzbeck  | VULB9163      | 340            | Jun. 28, 2025   |
| Horn Antenna                      | Schwarzbeck  | BBHA 9120D    | 631            | Jun. 28, 2025   |
| Horn Antenna                      | Schwarzbeck  | BBHA 9170     | 00956          | Feb. 02, 2025   |
| Coaxial cable                     | SKET         | RE-03-D       | /              | Jun. 26, 2025   |
| Coaxial cable                     | SKET         | RE-03-M       | /              | Jun. 26, 2025   |
| Coaxial cable                     | SKET         | RE-03-L       | /              | Jun. 26, 2025   |
| Coaxial cable                     | SKET         | RE-04-D       | /              | Jun. 26, 2025   |
| Coaxial cable                     | SKET         | RE-04-M       | /              | Jun. 26, 2025   |
| Coaxial cable                     | SKET         | RE-04-L       | /              | Jun. 26, 2025   |
| Antenna Mast                      | Keleto       | RE-AM         | /              | /               |
| EMI Test Software                 | EZ EMC       | FA-03A2 RE+   | 1.1.4.2        | /               |

## 5.7.3. Test Data

Please refer to following diagram for individual  
Below 1GHz

Horizontal:



Site 3m Anechoic Chamber2

Polarization: **Horizontal**

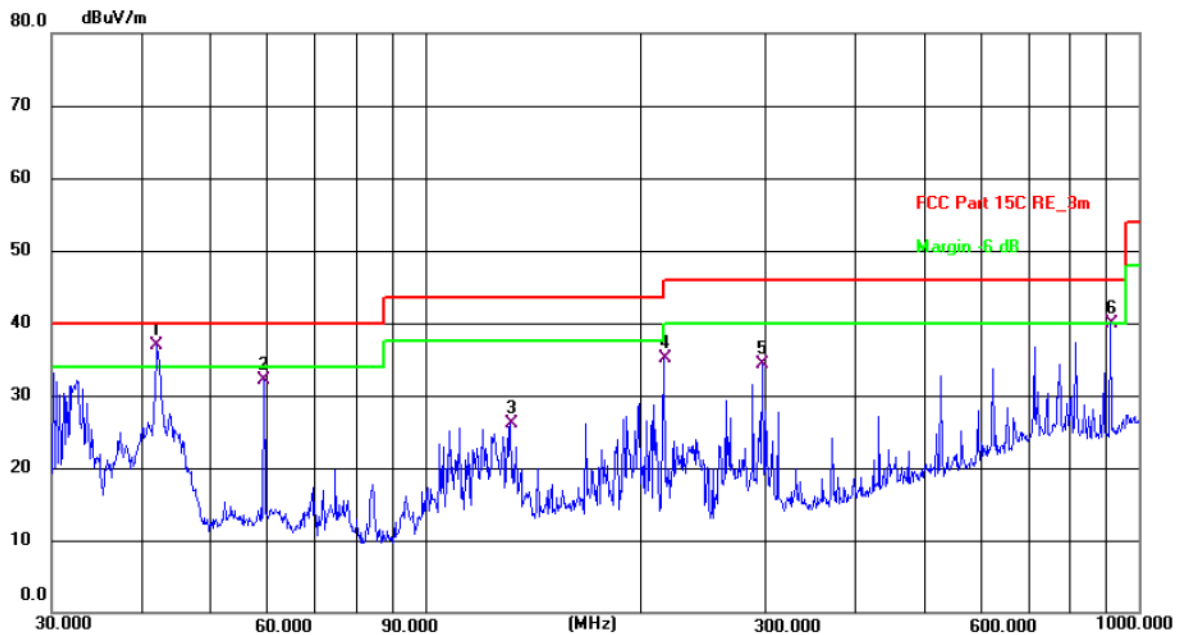
Temperature: 24.5(C) Humidity: 52 %

Limit: FCC Part 15C RE\_3m

Power: DC 12V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-----|--------|
| 1   | 42.1540         | 44.38          | -18.55        | 25.83          | 40.00          | -14.17      | QP       | P   |        |
| 2   | 167.8241        | 45.69          | -17.72        | 27.97          | 43.50          | -15.53      | QP       | P   |        |
| 3   | 216.0238        | 55.54          | -20.72        | 34.82          | 46.00          | -11.18      | QP       | P   |        |
| 4 ! | 297.2238        | 58.51          | -17.65        | 40.86          | 46.00          | -5.14       | QP       | P   |        |
| 5 ! | 714.1733        | 50.28          | -8.52         | 41.76          | 46.00          | -4.24       | QP       | P   |        |
| 6 * | 912.8619        | 48.11          | -5.96         | 42.15          | 46.00          | -3.85       | QP       | P   |        |

Vertical:



Site 3m Anechoic Chamber2

Polarization: **Vertical**

Temperature: 24.5(C) Humidity: 52 %

Limit: FCC Part 15C RE\_3m

Power: DC 12V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-----|--------|
| 1 * | 42.1540         | 55.45          | -18.55        | 36.90          | 40.00          | -3.10       | QP       | P   |        |
| 2   | 59.4405         | 51.06          | -18.87        | 32.19          | 40.00          | -7.81       | QP       | P   |        |
| 3   | 131.7576        | 44.50          | -18.38        | 26.12          | 43.50          | -17.38      | QP       | P   |        |
| 4   | 216.0238        | 55.85          | -20.72        | 35.13          | 46.00          | -10.87      | QP       | P   |        |
| 5   | 297.2238        | 52.02          | -17.65        | 34.37          | 46.00          | -11.63      | QP       | P   |        |
| 6   | 912.8619        | 45.93          | -5.96         | 39.97          | 46.00          | -6.03       | QP       | P   |        |

**Note:** 1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported

2. Measurements were conducted in all three channels (high, middle, low) and all modulation(802.11b, 802.11g, 802.11n(HT20)), and the worst case Mode (Highest channel and 802.11g) was submitted only.

3. Freq. = Emission frequency in MHz

Measurement (dBμV/m) = Reading level (dBμV) + Corr. Factor (dB)

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Limit (dBμV/m) = Limit stated in standard

Margin (dB) = Measurement (dBμV/m) – Limits (dBμV/m)

\* is meaning the worst frequency has been tested in the test frequency range.

## Test Result of Radiated Spurious at Band edges

Lowest channel 2412:

Horizontal:



Site: 3m Anechoic Chamber

Polarization: **Horizontal**

Temperature: 23.9(°C)

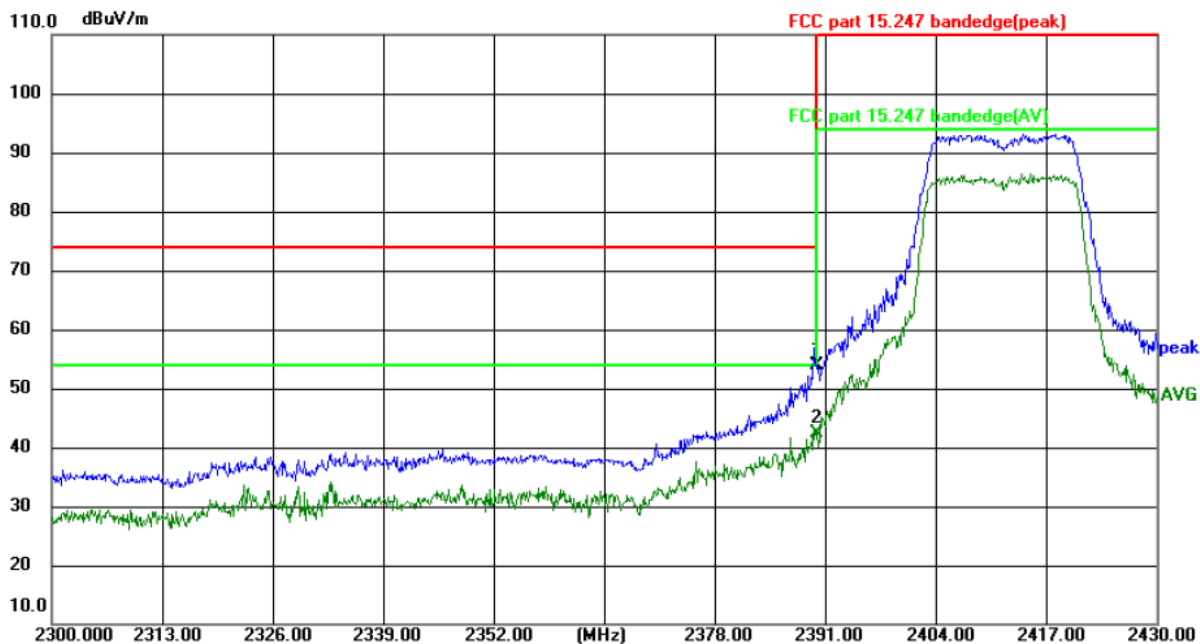
Humidity: 50 %

Limit: FCC part 15.247 bandedge(peak)

Power:DC 12V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-----|--------|
| 1   | 2390.000        | 79.28          | -19.78        | 59.50          | 74.00          | -14.50      | peak     | P   |        |
| 2 * | 2390.000        | 68.39          | -19.78        | 48.61          | 54.00          | -5.39       | AVG      | P   |        |

Vertical:



Site: 3m Anechoic Chamber

Polarization: **Vertical**

Temperature: 23.9(°C)

Humidity: 50 %

Limit: FCC part 15.247 bandedge(peak)

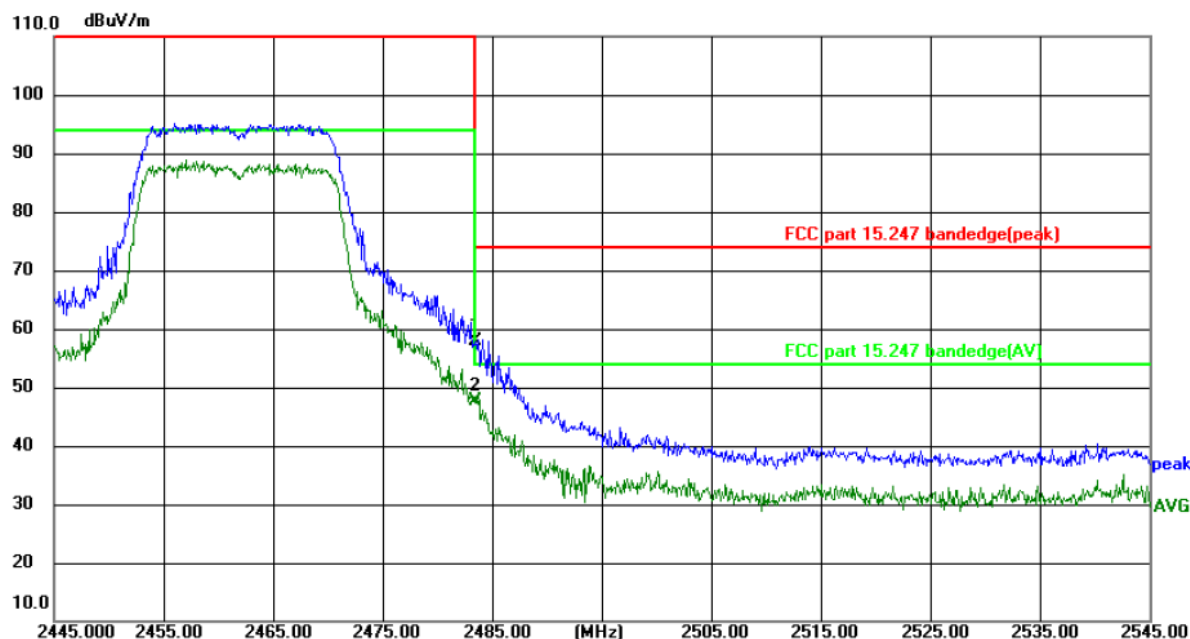
Power:DC 12V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-----|--------|
| 1   | 2390.000        | 73.78          | -19.78        | 54.00          | 74.00          | -20.00      | peak     | P   |        |
| 2 * | 2390.000        | 62.05          | -19.78        | 42.27          | 54.00          | -11.73      | AVG      | P   |        |

**Note:** Measurements were conducted in all two channels (high, low) and all modulation (802.11b, 802.11g, 802.11n(HT20)), and the worst case Mode 802.11n(HT20)) was submitted only.

Highest channel 2452:

Horizontal:



Site: 3m Anechoic Chamber

Polarization: **Horizontal**

Temperature: 23.9(°C)

Humidity: 50 %

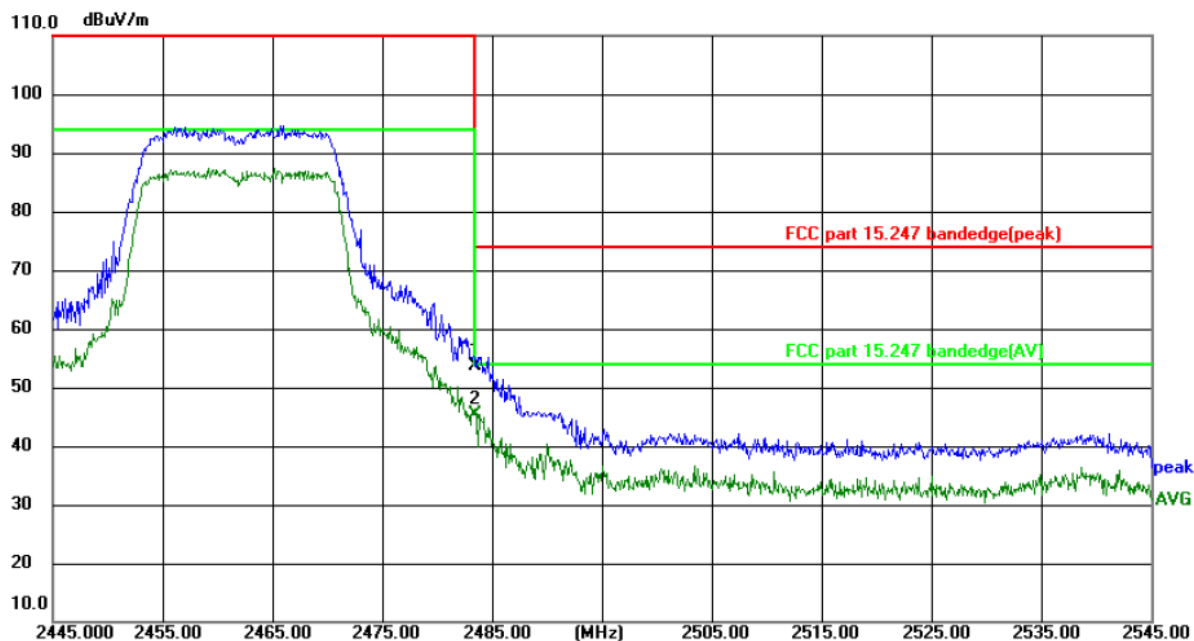
Limit: FCC part 15.247 bandedge(peak)

Power:DC 12V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-----|--------|
| 1   | 2483.500        | 77.55          | -19.79        | 57.76          | 74.00          | -16.24      | peak     | P   |        |
| 2 * | 2483.500        | 67.47          | -19.79        | 47.68          | 54.00          | -6.32       | AVG      | P   |        |



Vertical:



Site: 3m Anechoic Chamber      Polarization: **Vertical**      Temperature: 23.9(°C)      Humidity: 50 %

Limit: FCC part 15.247 bandedge(peak)

Power: DC 12V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-----|--------|
| 1   | 2483.500        | 73.30          | -19.79        | 53.51          | 74.00          | -20.49      | peak     | P   |        |
| 2 * | 2483.500        | 65.29          | -19.79        | 45.50          | 54.00          | -8.50       | AVG      | P   |        |

## Note:

1. Peak Final Emission Level=Peak Reading + Correction Factor;
2. Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
3. Measurements were conducted in all modulation(802.11b, 802.11g, 802.11n(HT20)), and the worst case Mode 802.11n(HT20)) was submitted only.

## Above 1GHz

Modulation Type: 802.11b

Low channel: 2412 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4824            | H             | 55.54               | ---               | -9.48                    | 46.06          | ---         | 74                  | 54                | -7.94       |
| 7236            | H             | 44.96               | ---               | -1.34                    | 43.62          | ---         | 74                  | 54                | -10.38      |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4824            | V             | 55.53               | ---               | -9.48                    | 46.05          | ---         | 74                  | 54                | -7.95       |
| 7236            | V             | 45.41               | ---               | -1.34                    | 44.07          | ---         | 74                  | 54                | -9.93       |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

Middle channel: 2437 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4874            | H             | 56.08               | ---               | -9.37                    | 46.71          | ---         | 74                  | 54                | -7.29       |
| 7311            | H             | 46.77               | ---               | -1.17                    | 45.60          | ---         | 74                  | 54                | -8.40       |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4874            | V             | 54.90               | ---               | -9.37                    | 45.53          | ---         | 74                  | 54                | -8.47       |
| 7311            | V             | 46.72               | ---               | -1.17                    | 45.55          | ---         | 74                  | 54                | -8.45       |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

High channel: 2462 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4924            | H             | 55.21               | ---               | -9.26                    | 45.95          | ---         | 74                  | 54                | -8.05       |
| 7386            | H             | 45.14               | ---               | -1.01                    | 44.13          | ---         | 74                  | 54                | -9.87       |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4924            | V             | 56.73               | ---               | -9.26                    | 47.47          | ---         | 74                  | 54                | -6.53       |
| 7386            | V             | 45.35               | ---               | -1.01                    | 44.34          | ---         | 74                  | 54                | -9.66       |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

### Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
6. All the restriction bands are compliance with the limit of 15.209.

Modulation Type: 802.11g

Low channel: 2412 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4824            | H             | 56.63               | ---               | -9.48                    | 47.15          | ---         | 74                  | 54                | -6.85       |
| 7236            | H             | 46.46               | ---               | -1.34                    | 45.12          | ---         | 74                  | 54                | -8.88       |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4824            | V             | 56.97               | ---               | -9.48                    | 47.49          | ---         | 74                  | 54                | -6.51       |
| 7236            | V             | 46.94               | ---               | -1.34                    | 45.60          | ---         | 74                  | 54                | -8.40       |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

Middle channel: 2437 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4874            | H             | 55.22               | ---               | -9.37                    | 45.85          | ---         | 74                  | 54                | -8.15       |
| 7311            | H             | 47.10               | ---               | -1.17                    | 45.93          | ---         | 74                  | 54                | -8.07       |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4874            | V             | 54.38               | ---               | -9.37                    | 45.01          | ---         | 74                  | 54                | -8.99       |
| 7311            | V             | 44.74               | ---               | -1.17                    | 43.57          | ---         | 74                  | 54                | -10.43      |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

High channel: 2462 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4924            | H             | 54.81               | ---               | -9.26                    | 45.55          | ---         | 74                  | 54                | -8.45       |
| 7386            | H             | 45.46               | ---               | -1.01                    | 44.45          | ---         | 74                  | 54                | -9.55       |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4924            | V             | 55.73               | ---               | -9.26                    | 46.47          | ---         | 74                  | 54                | -7.53       |
| 7386            | V             | 46.48               | ---               | -1.01                    | 45.47          | ---         | 74                  | 54                | -8.53       |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

**Note:**

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
6. All the restriction bands are compliance with the limit of 15.209.

Modulation Type: 802.11n (HT20)

Low channel: 2412 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4824            | H             | 55.54               | ---               | -9.48                    | 46.06          | ---         | 74                  | 54                | -7.94       |
| 7236            | H             | 45.31               | ---               | -1.34                    | 43.97          | ---         | 74                  | 54                | -10.03      |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4824            | V             | 54.83               | ---               | -9.48                    | 45.35          | ---         | 74                  | 54                | -8.65       |
| 7236            | V             | 45.46               | ---               | -1.34                    | 44.12          | ---         | 74                  | 54                | -9.88       |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

Middle channel: 2437 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4874            | H             | 55.28               | ---               | -9.37                    | 45.91          | ---         | 74                  | 54                | -8.09       |
| 7311            | H             | 44.85               | ---               | -1.17                    | 43.68          | ---         | 74                  | 54                | -10.32      |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4874            | V             | 54.24               | ---               | -9.37                    | 44.87          | ---         | 74                  | 54                | -9.13       |
| 7311            | V             | 45.21               | ---               | -1.17                    | 44.04          | ---         | 74                  | 54                | -9.96       |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

High channel: 2462 MHz

| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level |             | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
|-----------------|---------------|---------------------|-------------------|--------------------------|----------------|-------------|---------------------|-------------------|-------------|
|                 |               |                     |                   |                          | Peak (dBμV/m)  | AV (dBμV/m) |                     |                   |             |
| 4924            | H             | 55.10               | ---               | -9.26                    | 45.84          | ---         | 74                  | 54                | -8.16       |
| 7386            | H             | 46.32               | ---               | -1.01                    | 45.31          | ---         | 74                  | 54                | -8.69       |
| ---             | H             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |
| 4924            | V             | 54.73               | ---               | -9.26                    | 45.47          | ---         | 74                  | 54                | -8.53       |
| 7386            | V             | 45.96               | ---               | -1.01                    | 44.95          | ---         | 74                  | 54                | -9.05       |
| ---             | V             | ---                 | ---               | ---                      | ---            | ---         | ---                 | ---               | ---         |

**Note:**

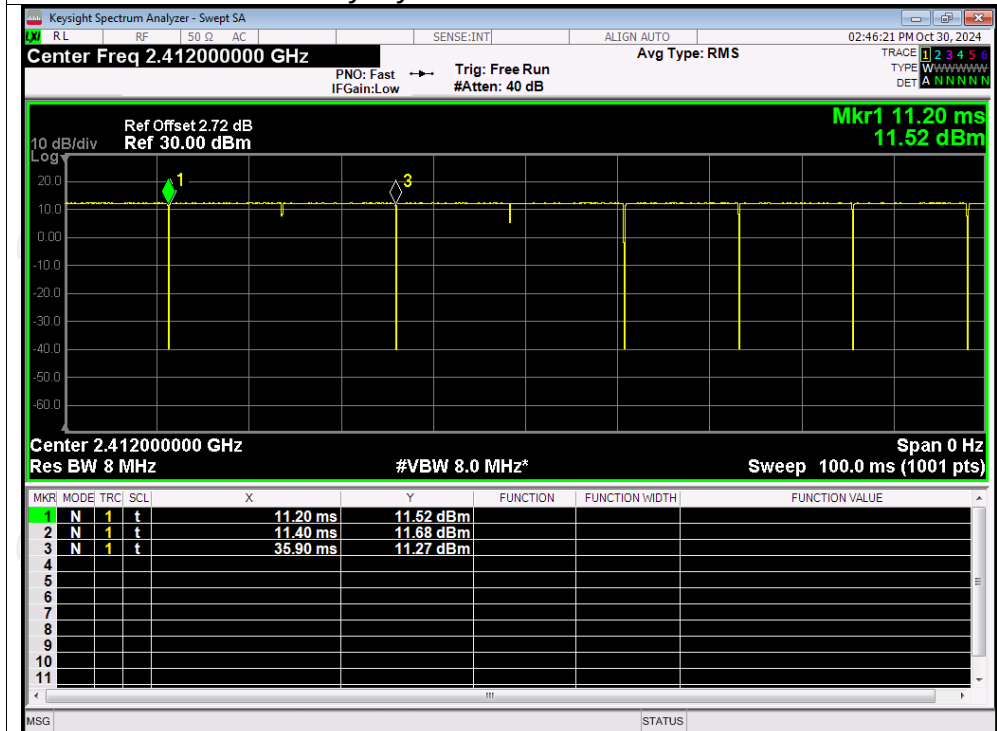
1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
6. All the restriction bands are compliance with the limit of 15.209.

## Appendix A: Test Result of Conducted Test

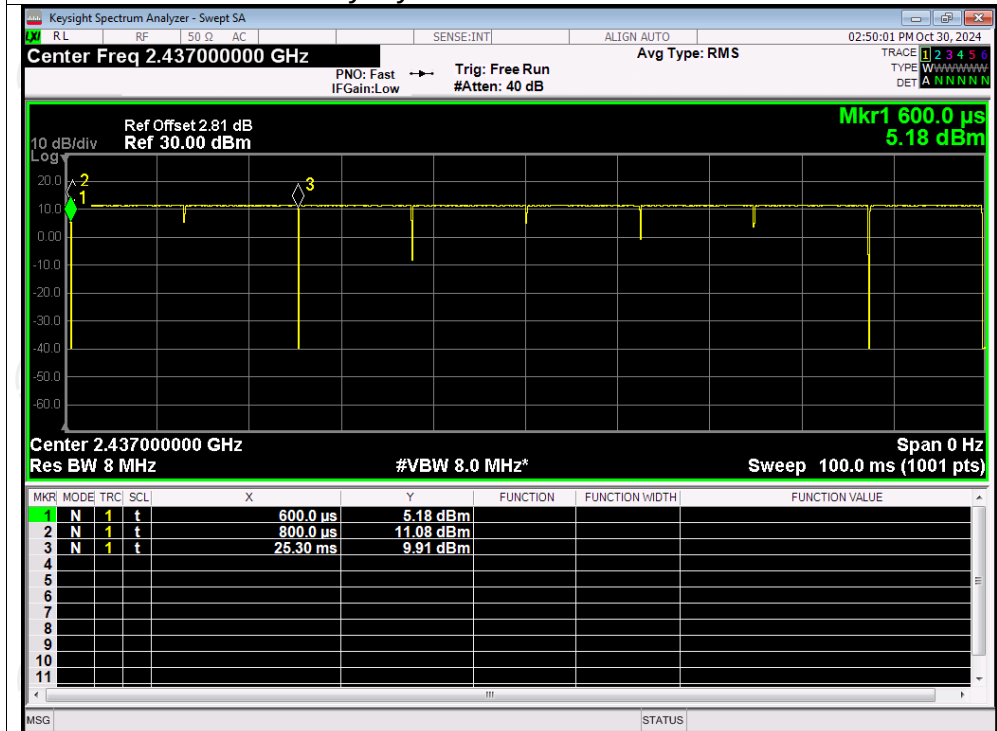
**Duty Cycle**

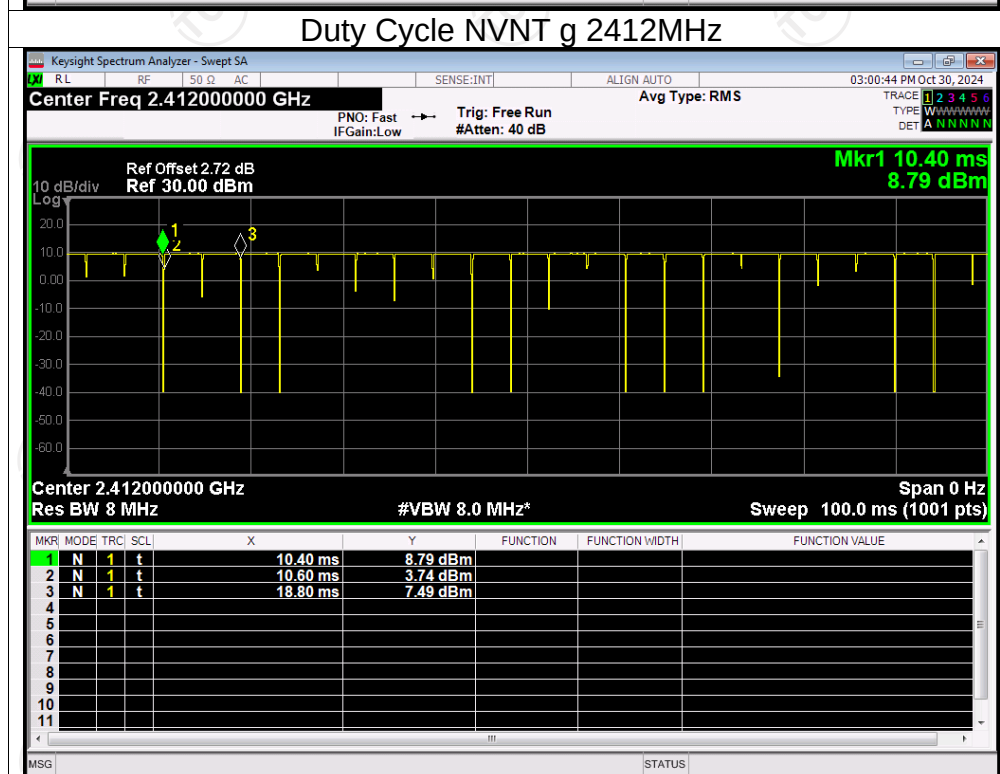
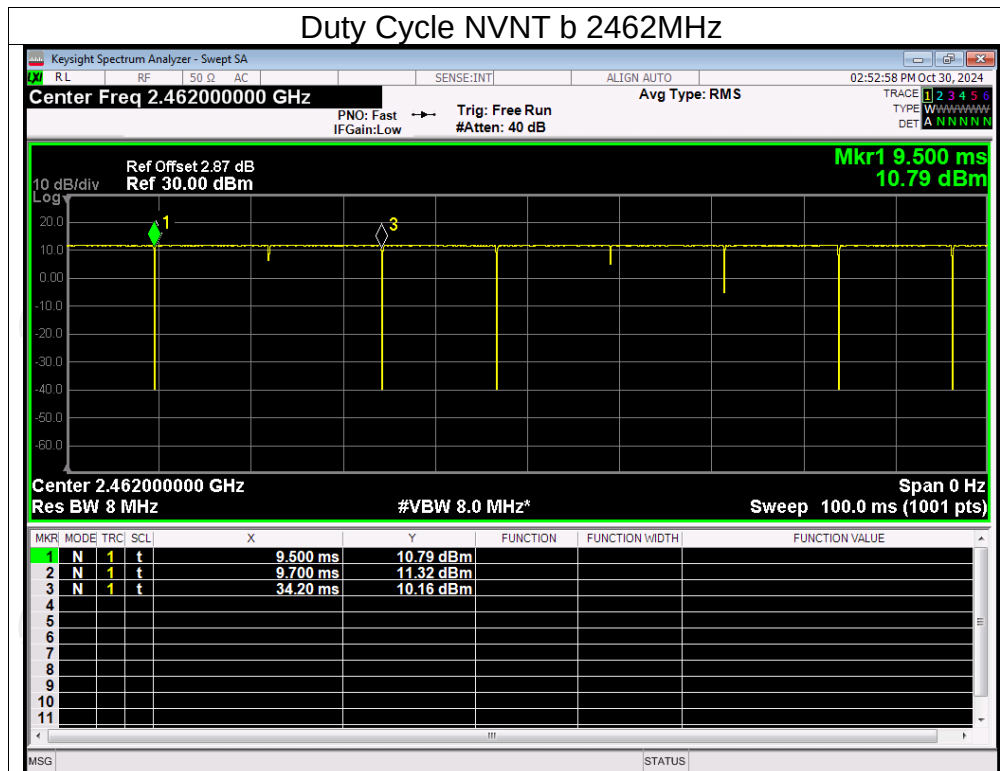
| Condition | Mode | Frequency (MHz) | Duty Cycle (%) | Correction Factor (dB) |
|-----------|------|-----------------|----------------|------------------------|
| NVNT      | b    | 2412            | 99.4           | 0                      |
| NVNT      | b    | 2437            | 99.3           | 0                      |
| NVNT      | b    | 2462            | 99.5           | 0                      |
| NVNT      | g    | 2412            | 98.8           | 0                      |
| NVNT      | g    | 2437            | 98.2           | 0                      |
| NVNT      | g    | 2462            | 98.1           | 0                      |
| NVNT      | n20  | 2412            | 98.4           | 0                      |
| NVNT      | n20  | 2437            | 98.4           | 0                      |
| NVNT      | n20  | 2462            | 99.1           | 0                      |

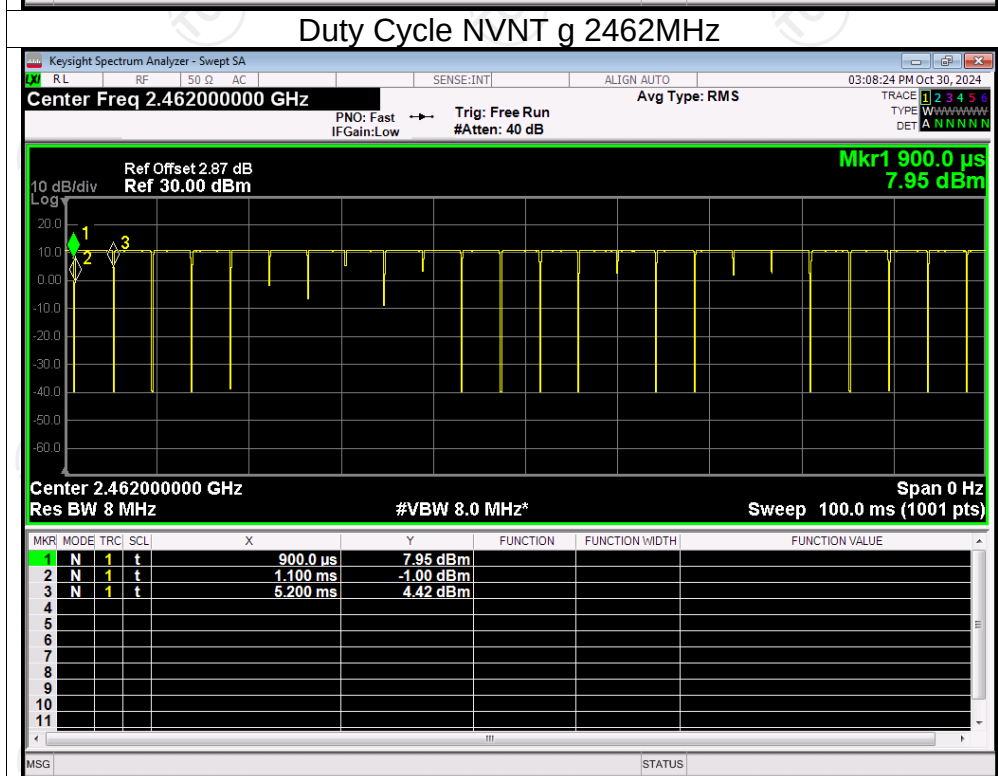
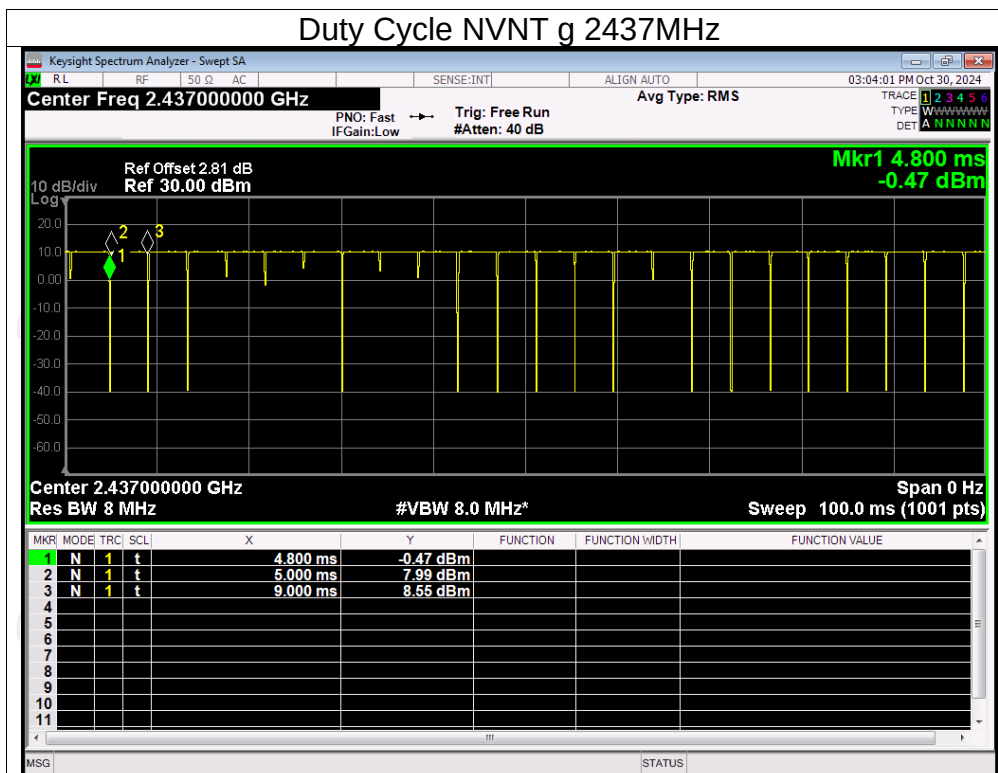
### Test Graphs Duty Cycle NVNT b 2412MHz



### Duty Cycle NVNT b 2437MHz

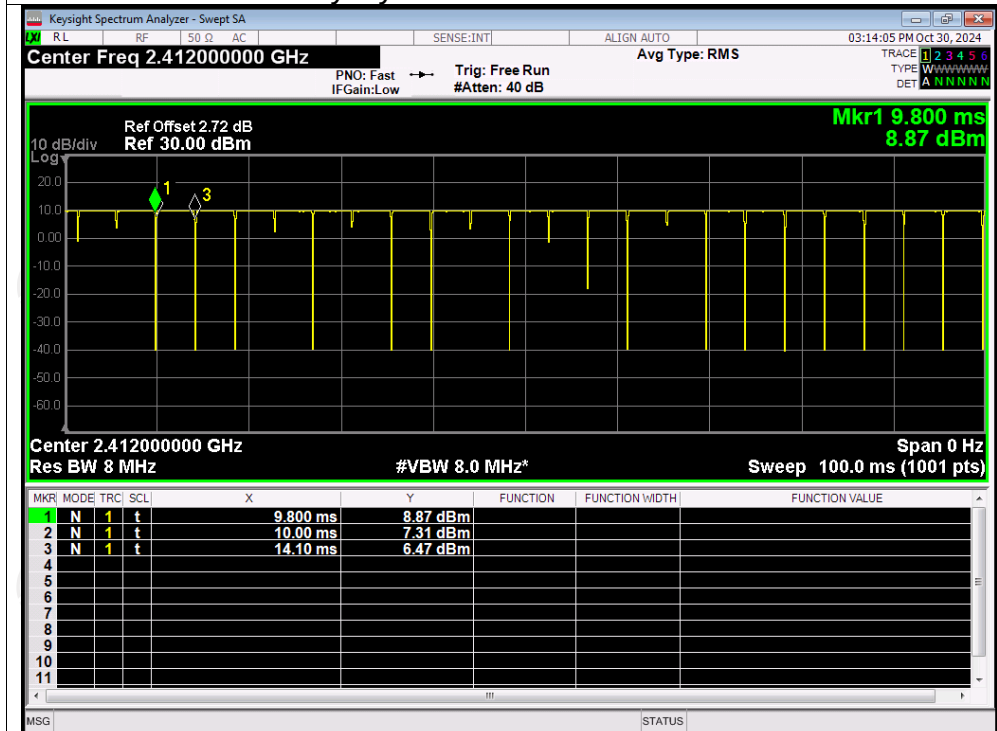




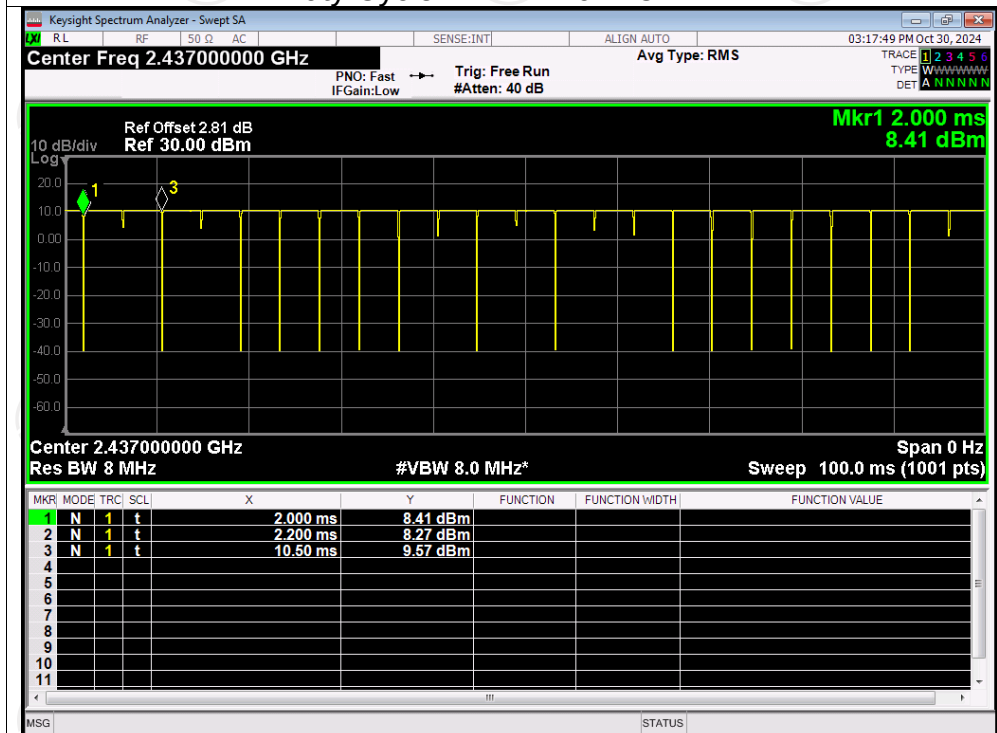


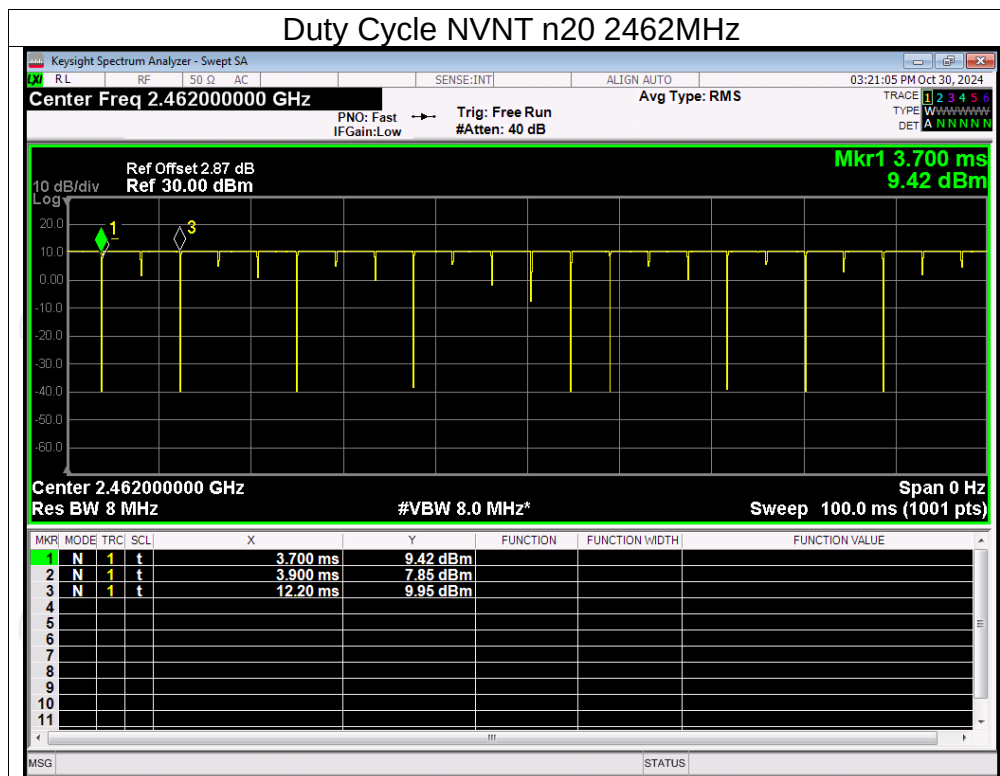


## Duty Cycle NVNT n20 2412MHz



## Duty Cycle NVNT n20 2437MHz





**Maximum Conducted (Peak) Output Power**

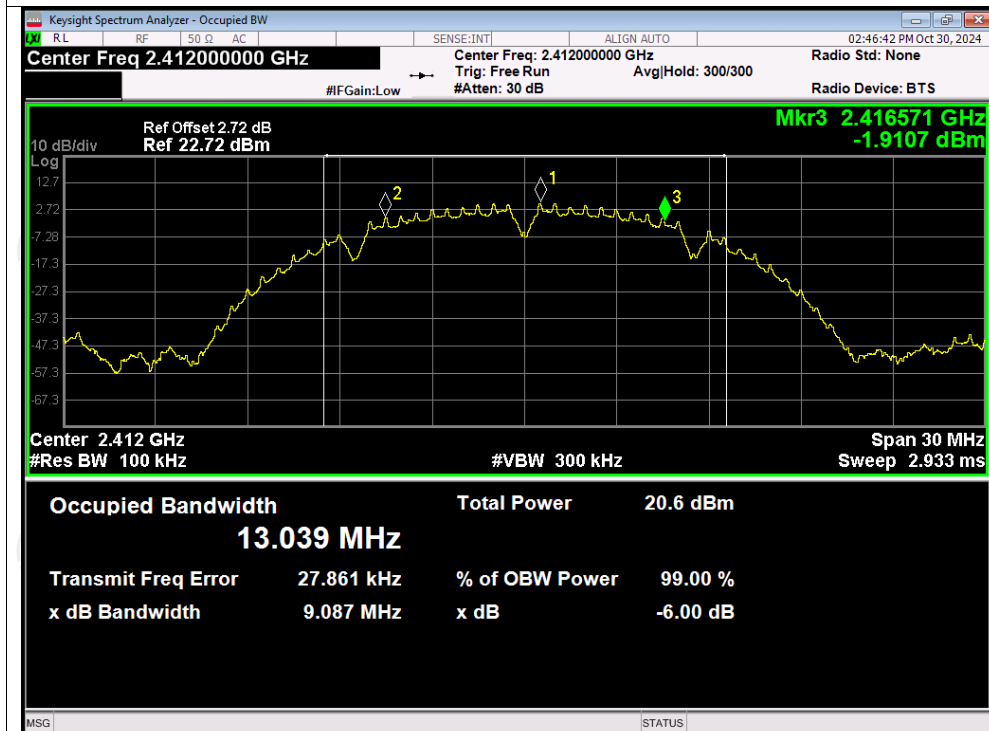
| Condition | Mode | Frequency (MHz) | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|-----------------------|-------------|---------|
| NVNT      | b    | 2412            | 13.30                 | 30          | Pass    |
| NVNT      | b    | 2437            | 12.30                 | 30          | Pass    |
| NVNT      | b    | 2462            | 12.69                 | 30          | Pass    |
| NVNT      | g    | 2412            | 12.42                 | 30          | Pass    |
| NVNT      | g    | 2437            | 13.15                 | 30          | Pass    |
| NVNT      | g    | 2462            | 13.64                 | 30          | Pass    |
| NVNT      | n20  | 2412            | 12.89                 | 30          | Pass    |
| NVNT      | n20  | 2437            | 13.60                 | 30          | Pass    |
| NVNT      | n20  | 2462            | 13.54                 | 30          | Pass    |

**-6dB Bandwidth**

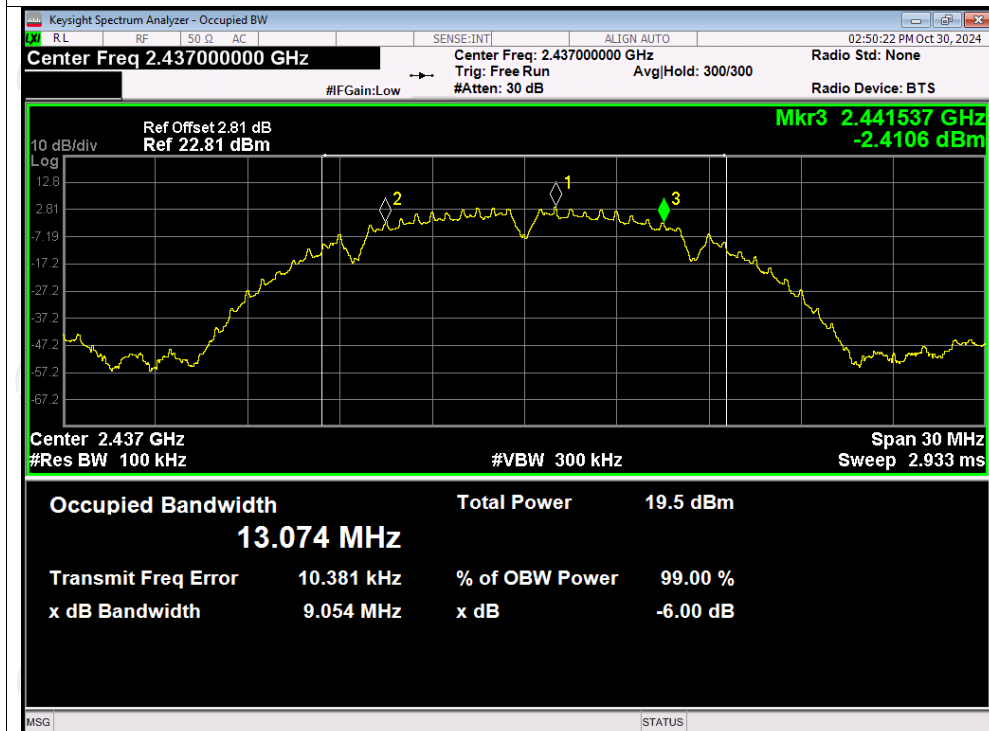
| Condition | Mode | Frequency (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|-----------------------|-----------------------------|---------|
| NVNT      | b    | 2412            | 9.087                 | 0.5                         | Pass    |
| NVNT      | b    | 2437            | 9.054                 | 0.5                         | Pass    |
| NVNT      | b    | 2462            | 8.605                 | 0.5                         | Pass    |
| NVNT      | g    | 2412            | 16.371                | 0.5                         | Pass    |
| NVNT      | g    | 2437            | 16.340                | 0.5                         | Pass    |
| NVNT      | g    | 2462            | 16.346                | 0.5                         | Pass    |
| NVNT      | n20  | 2412            | 17.585                | 0.5                         | Pass    |
| NVNT      | n20  | 2437            | 17.345                | 0.5                         | Pass    |
| NVNT      | n20  | 2462            | 17.599                | 0.5                         | Pass    |

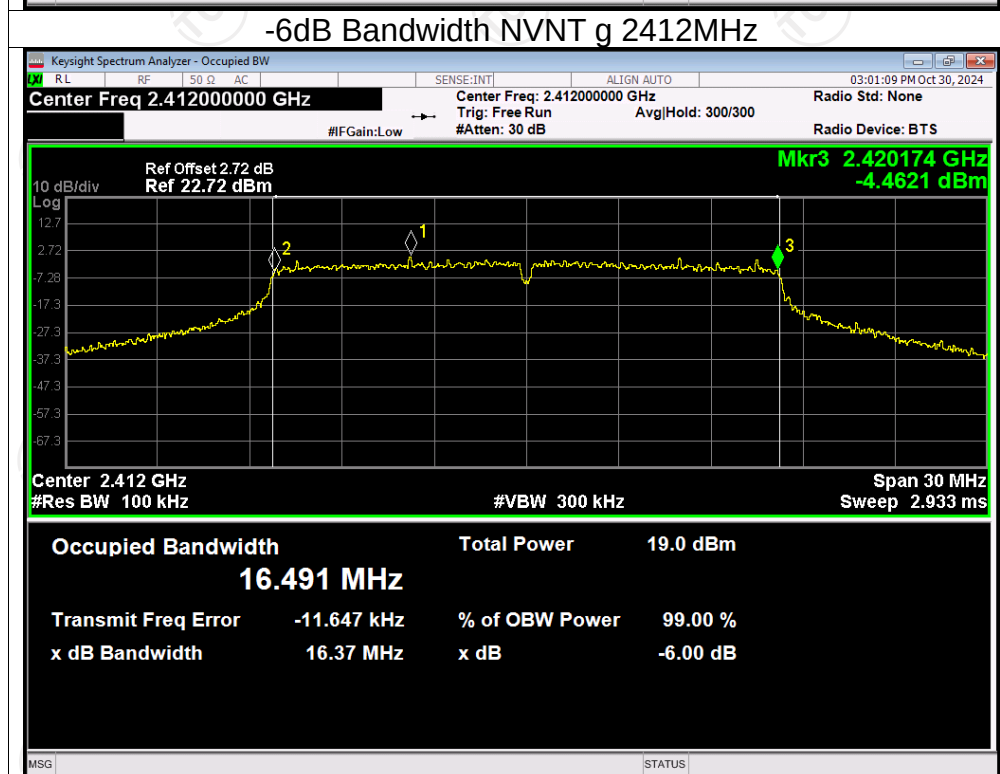
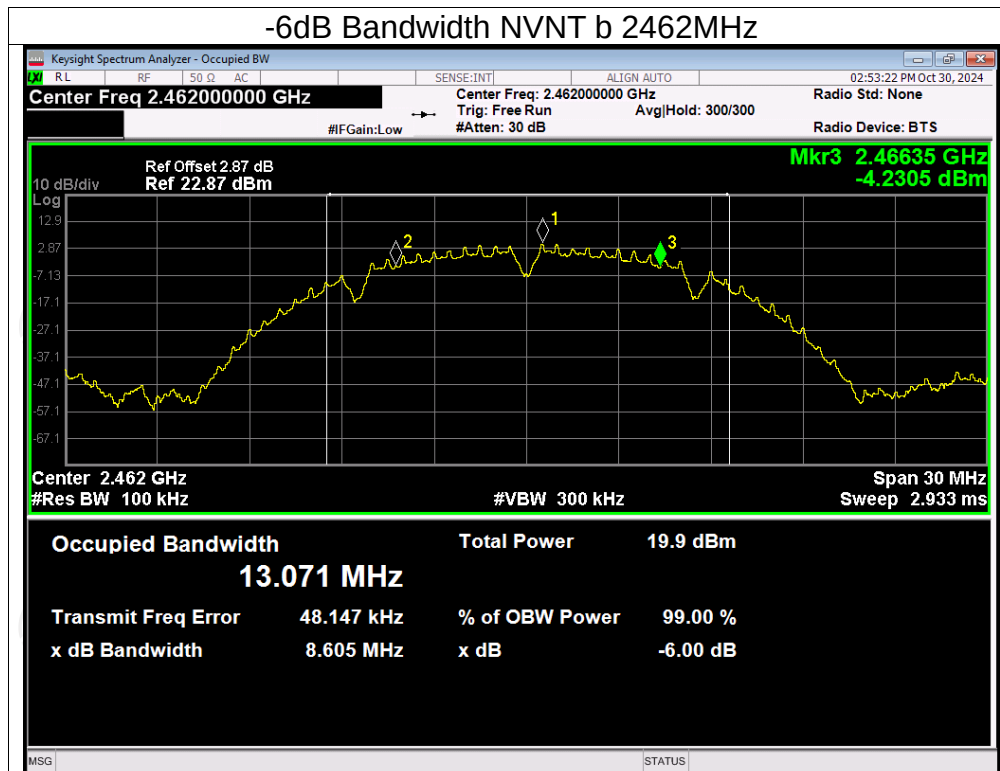
## Test Graphs

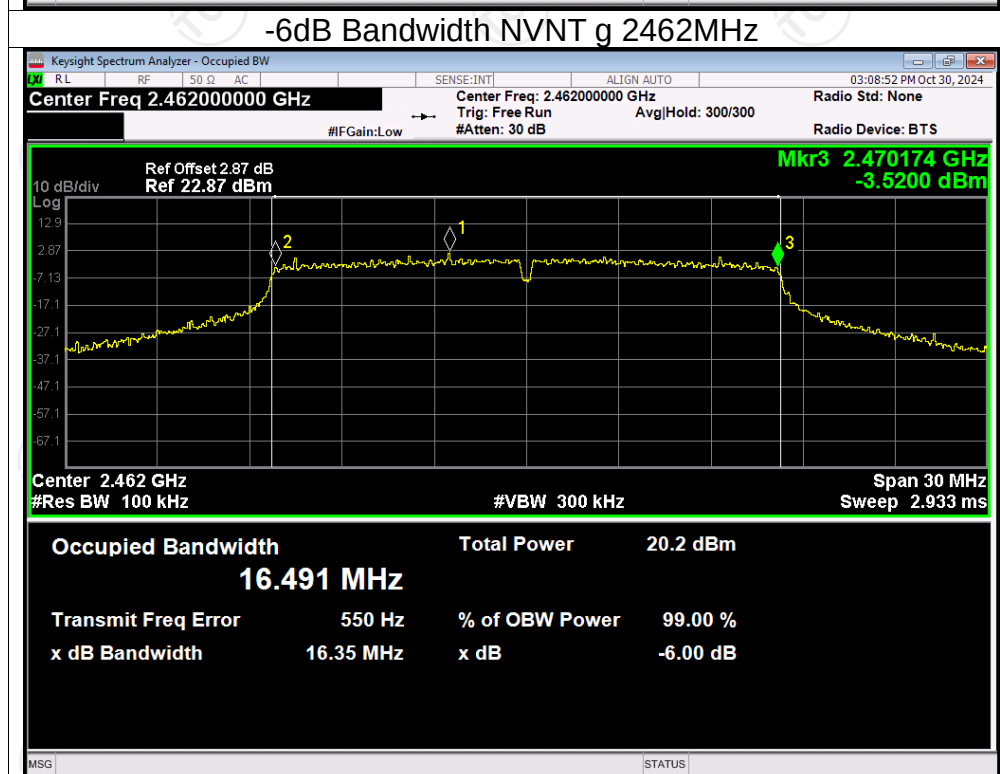
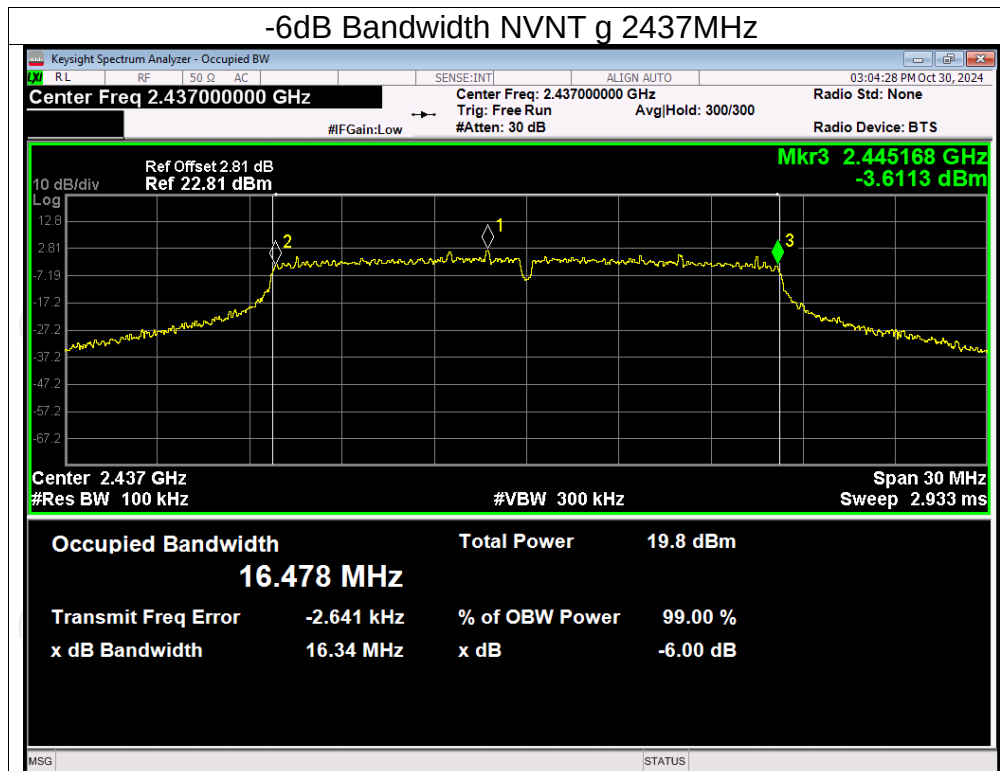
### -6dB Bandwidth NVNT b 2412MHz



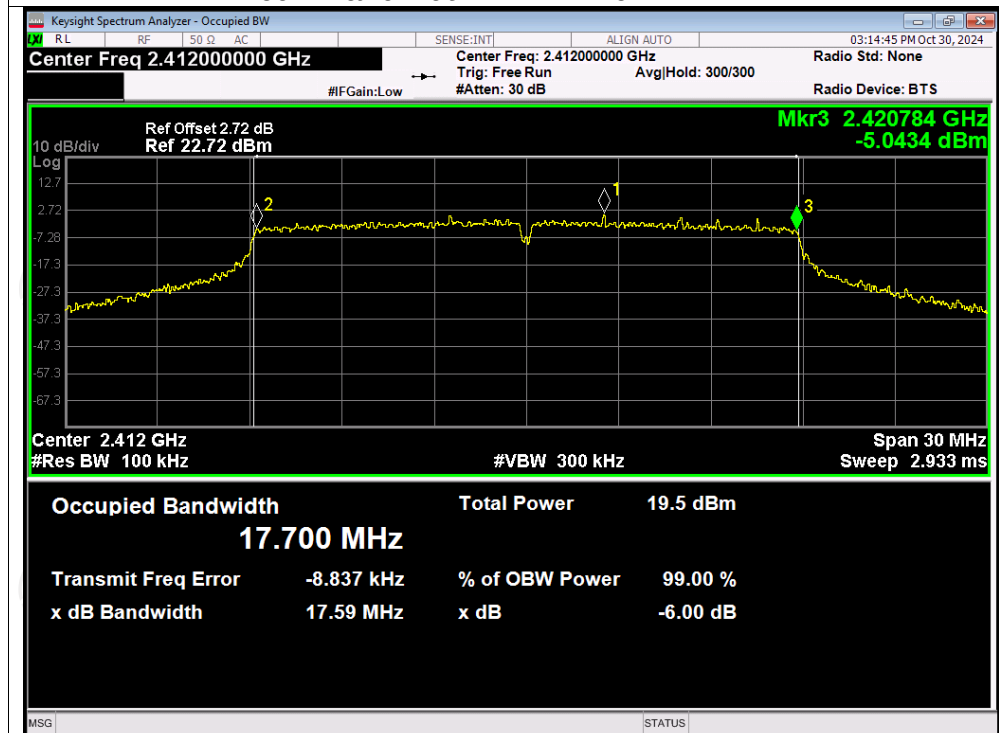
### -6dB Bandwidth NVNT b 2437MHz



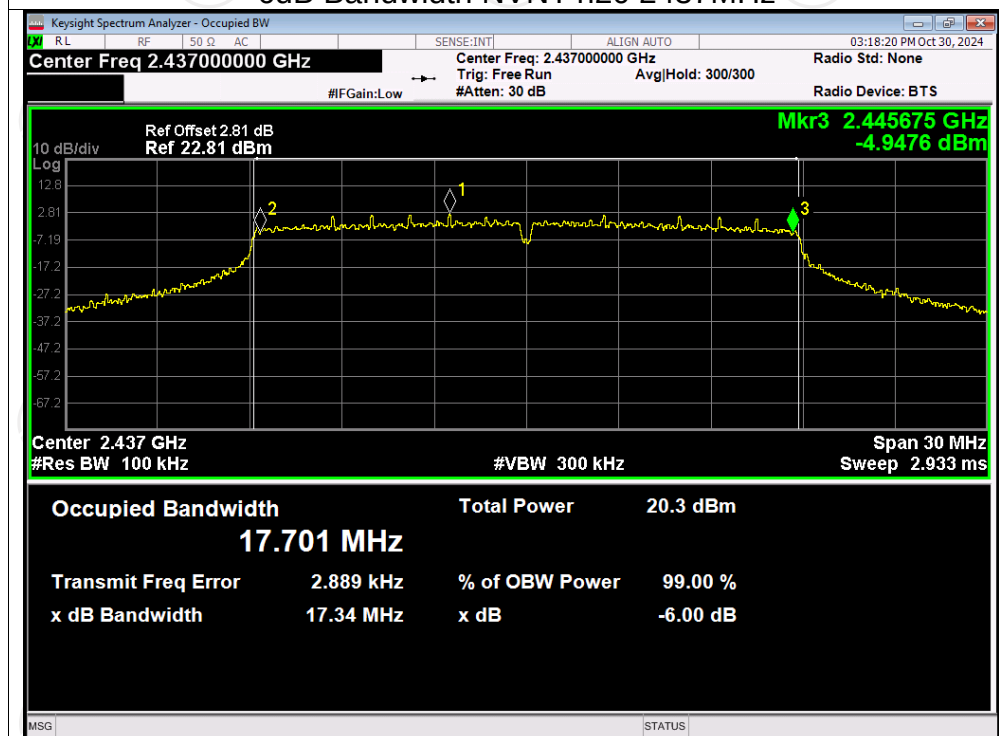




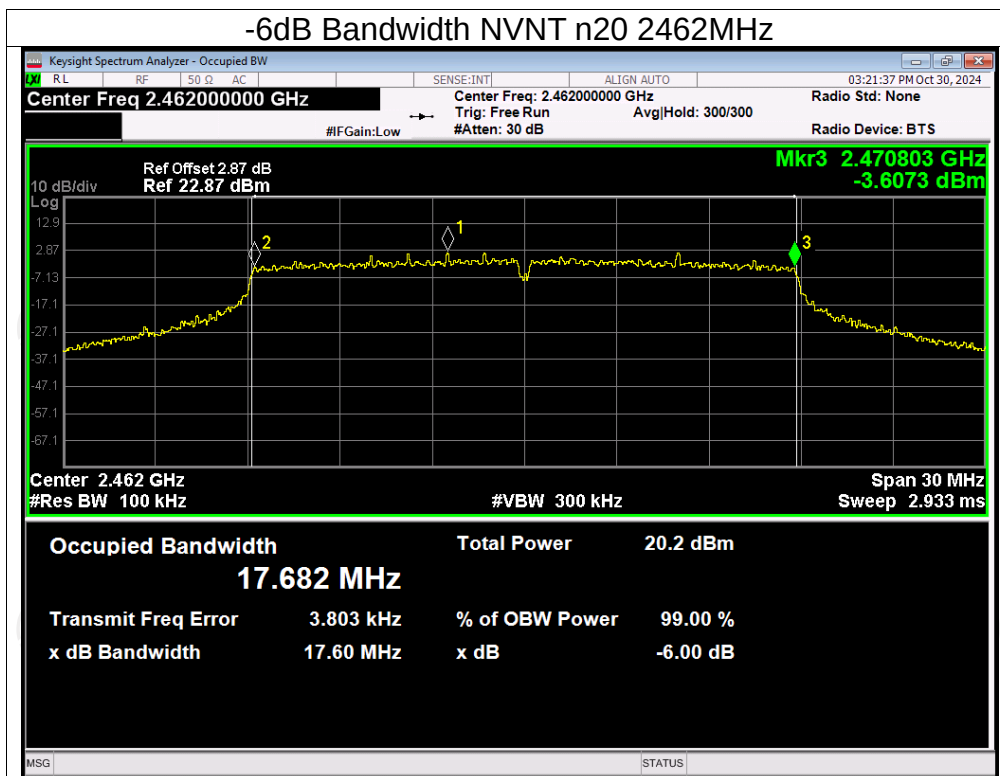
## -6dB Bandwidth NVNT n20 2412MHz



## -6dB Bandwidth NVNT n20 2437MHz





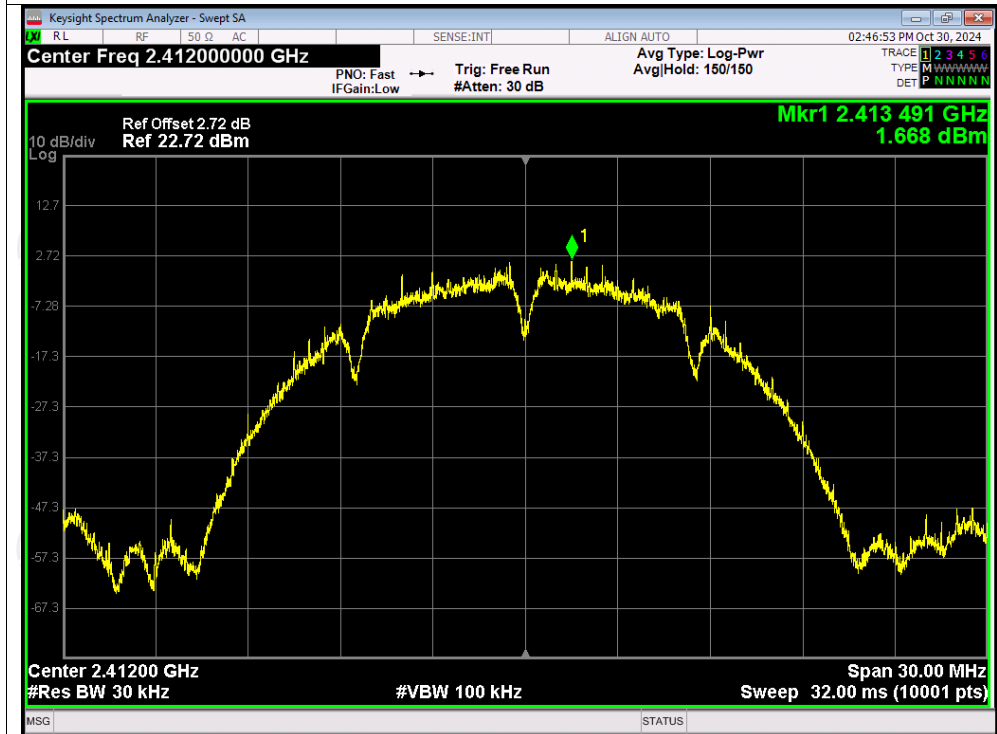


**Maximum Power Spectral Density Level**

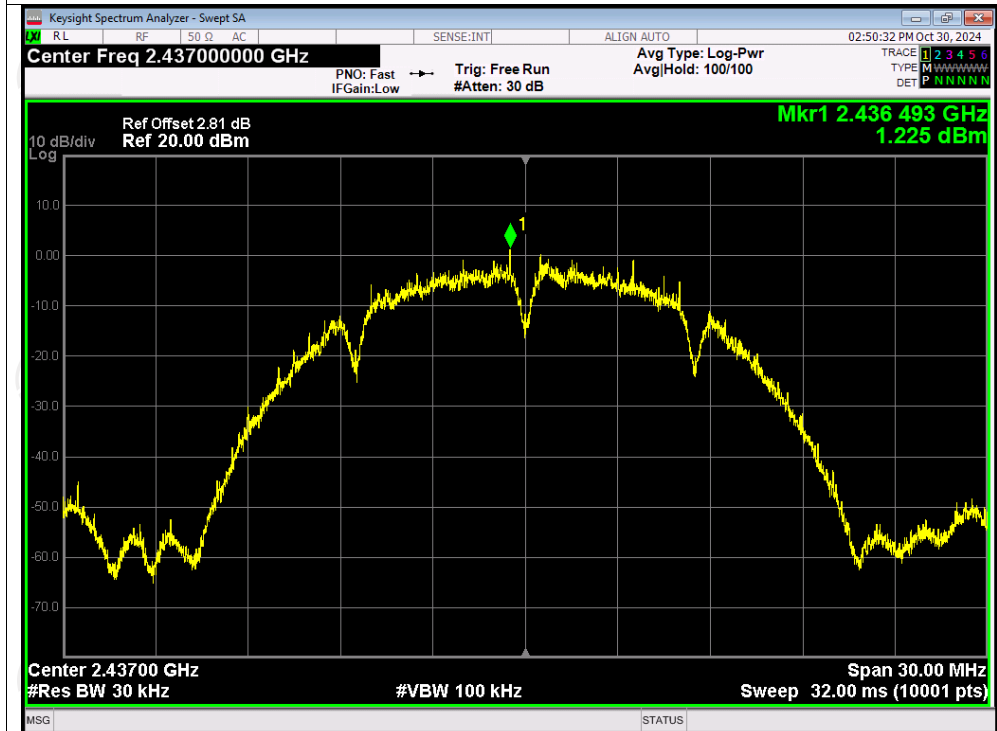
| Condition | Mode | Frequency (MHz) | Conducted PSD (dBm/30kHz) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|------|-----------------|---------------------------|----------------------|------------------|---------|
| NVNT      | b    | 2412            | 1.67                      | -8.33                | 8                | Pass    |
| NVNT      | b    | 2437            | 1.23                      | -8.77                | 8                | Pass    |
| NVNT      | b    | 2462            | 1.04                      | -8.96                | 8                | Pass    |
| NVNT      | g    | 2412            | -3.15                     | -13.15               | 8                | Pass    |
| NVNT      | g    | 2437            | -2.25                     | -12.25               | 8                | Pass    |
| NVNT      | g    | 2462            | -2.03                     | -12.03               | 8                | Pass    |
| NVNT      | n20  | 2412            | -3.05                     | -13.05               | 8                | Pass    |
| NVNT      | n20  | 2437            | -1.83                     | -11.83               | 8                | Pass    |
| NVNT      | n20  | 2462            | -1.91                     | -11.91               | 8                | Pass    |

Note: Total PSD (dBm/3kHz) = Conducted PSD (dBm/30kHz) +10log(3kHz/30kHz)

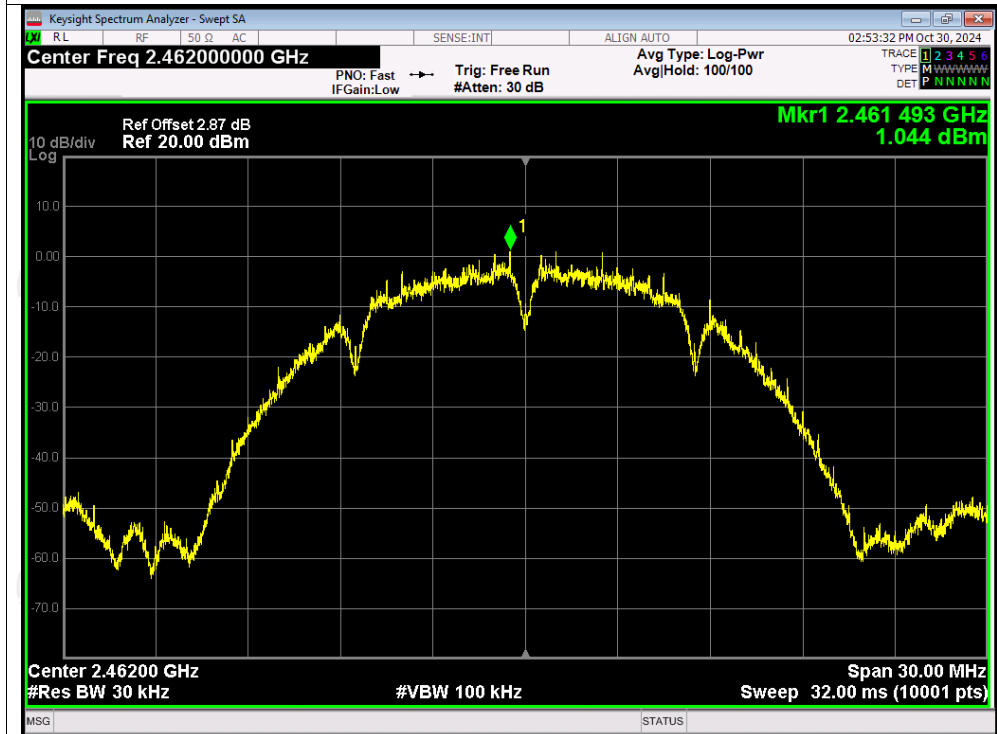
Test Graphs  
PSD NVNT b 2412MHz



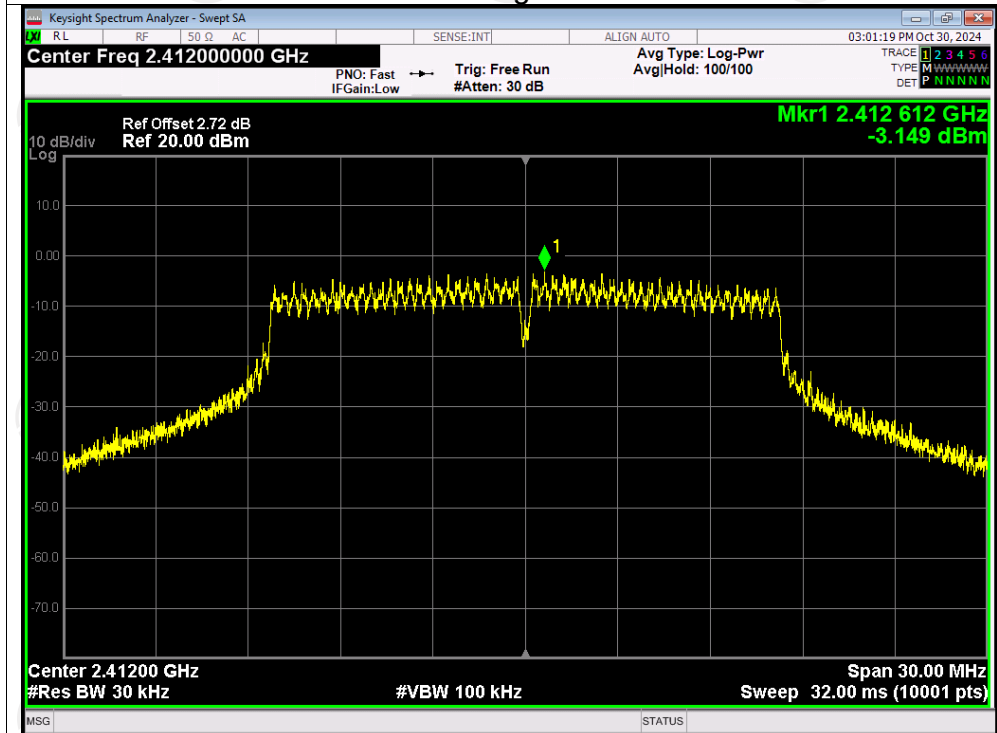
PSD NVNT b 2437MHz

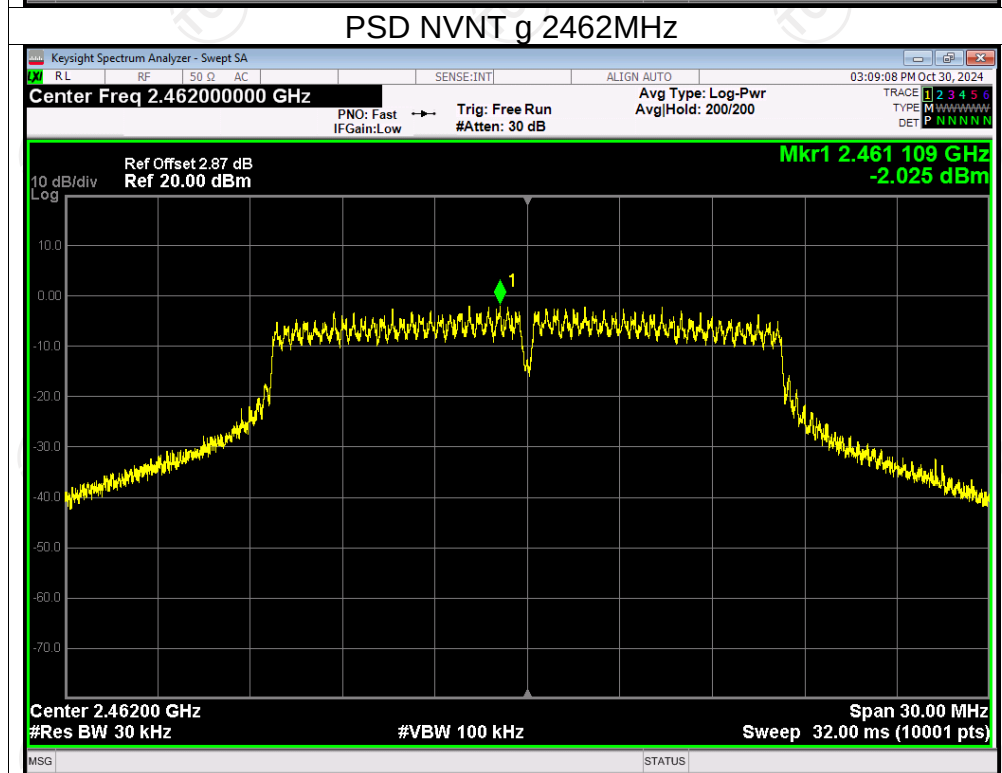
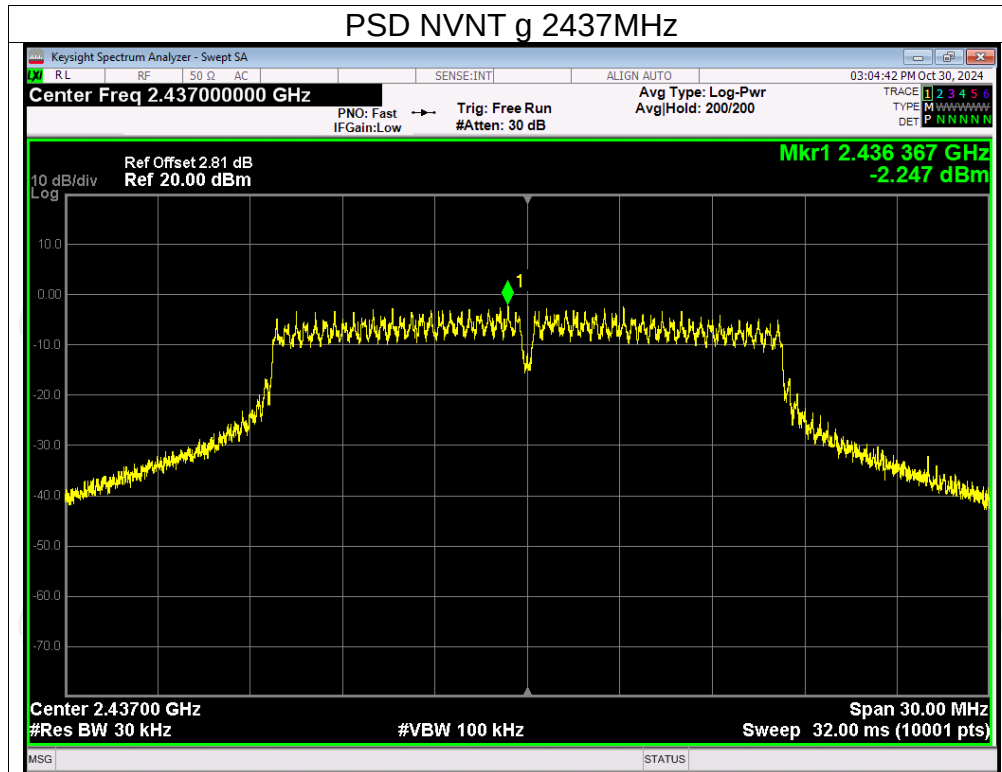


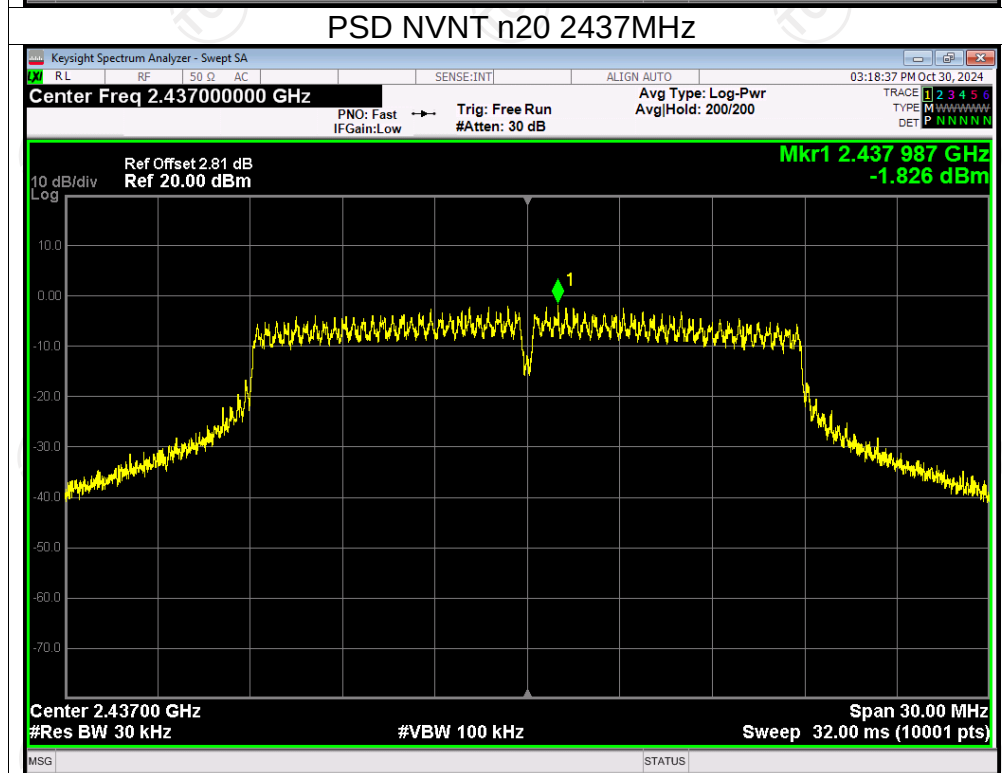
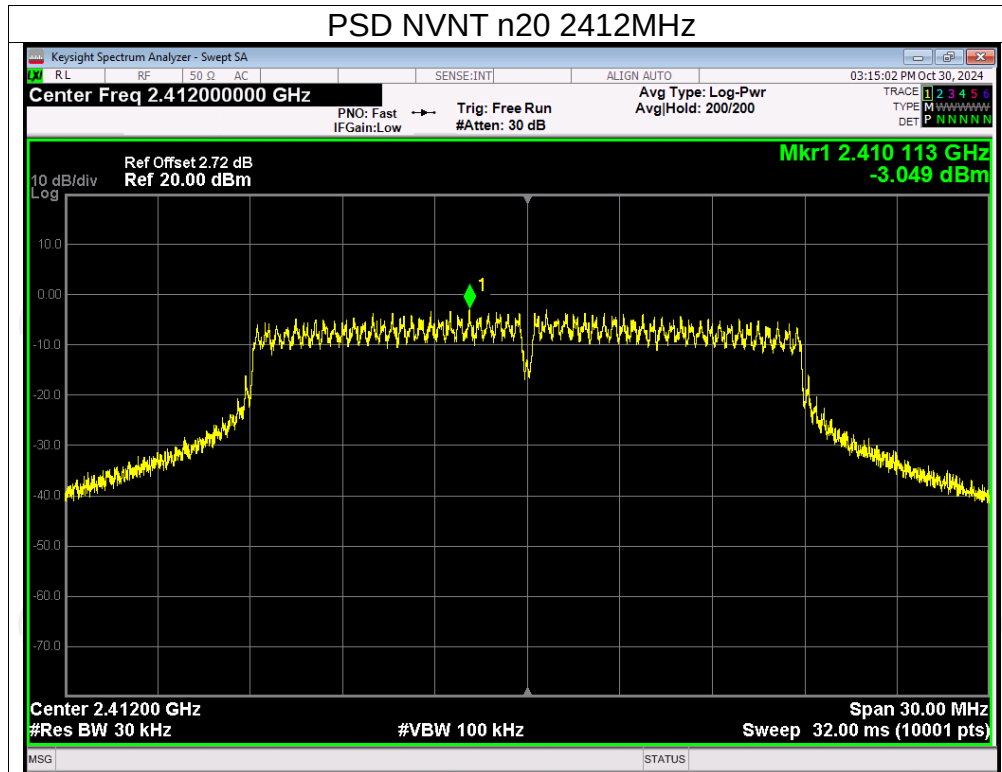
## PSD NVNT b 2462MHz

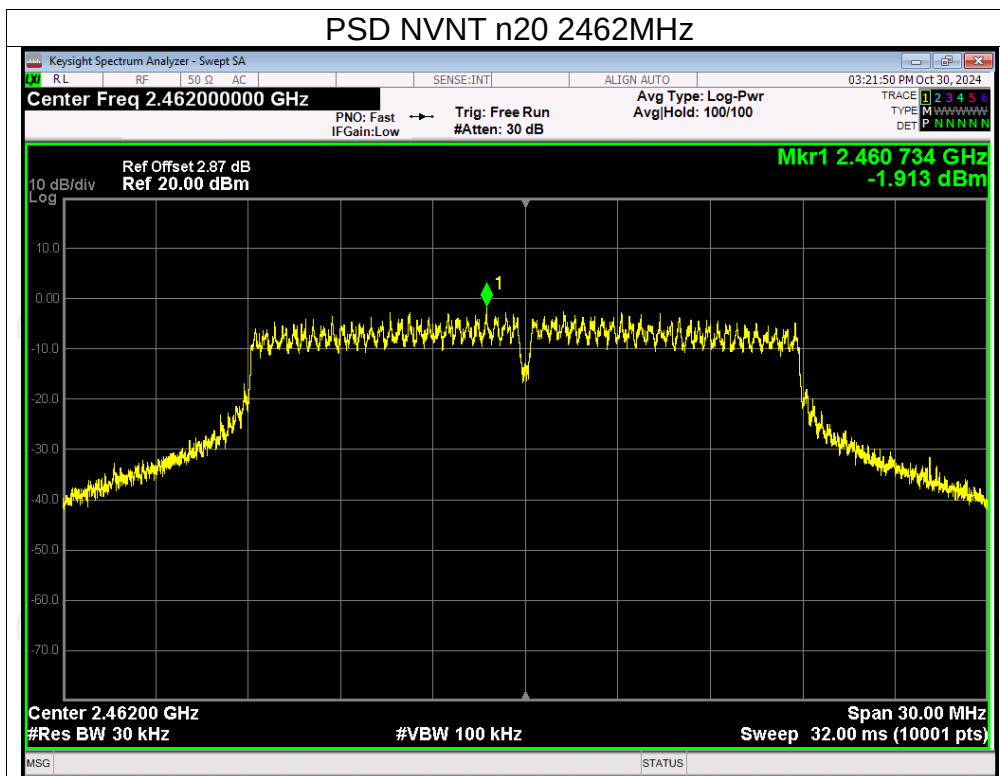


## PSD NVNT g 2412MHz









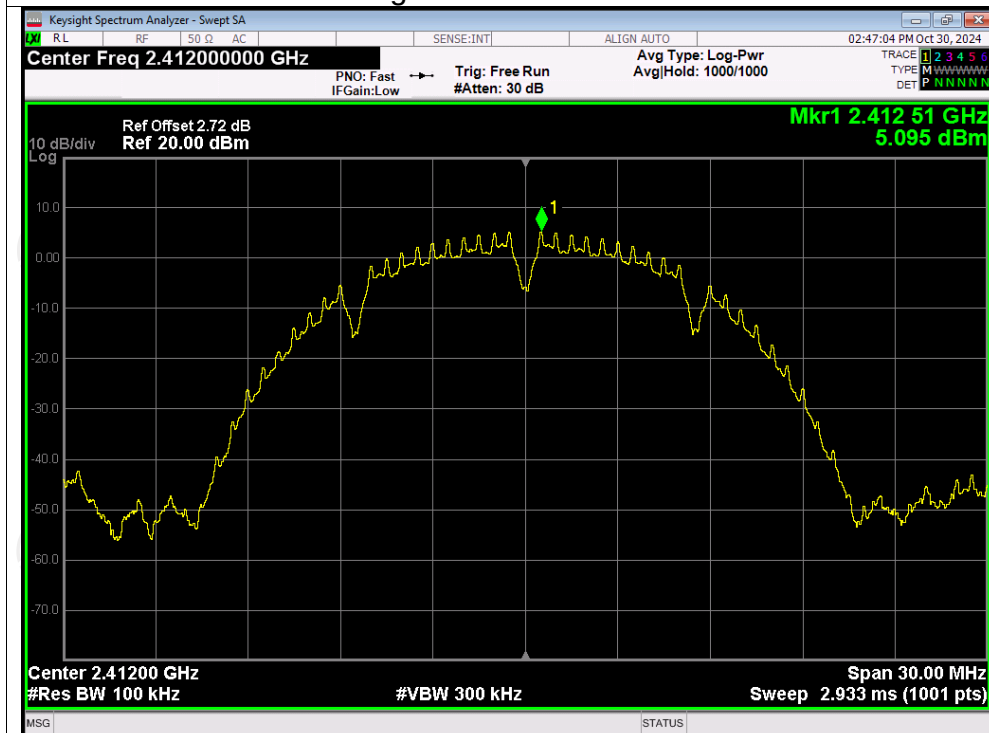
**Band Edge**

| Condition | Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|-----------------|-------------|---------|
| NVNT      | b    | 2412            | -58.37          | -20         | Pass    |
| NVNT      | b    | 2462            | -58.43          | -20         | Pass    |
| NVNT      | g    | 2412            | -48.70          | -20         | Pass    |
| NVNT      | g    | 2462            | -49.66          | -20         | Pass    |
| NVNT      | n20  | 2412            | -48.29          | -20         | Pass    |
| NVNT      | n20  | 2462            | -48.80          | -20         | Pass    |

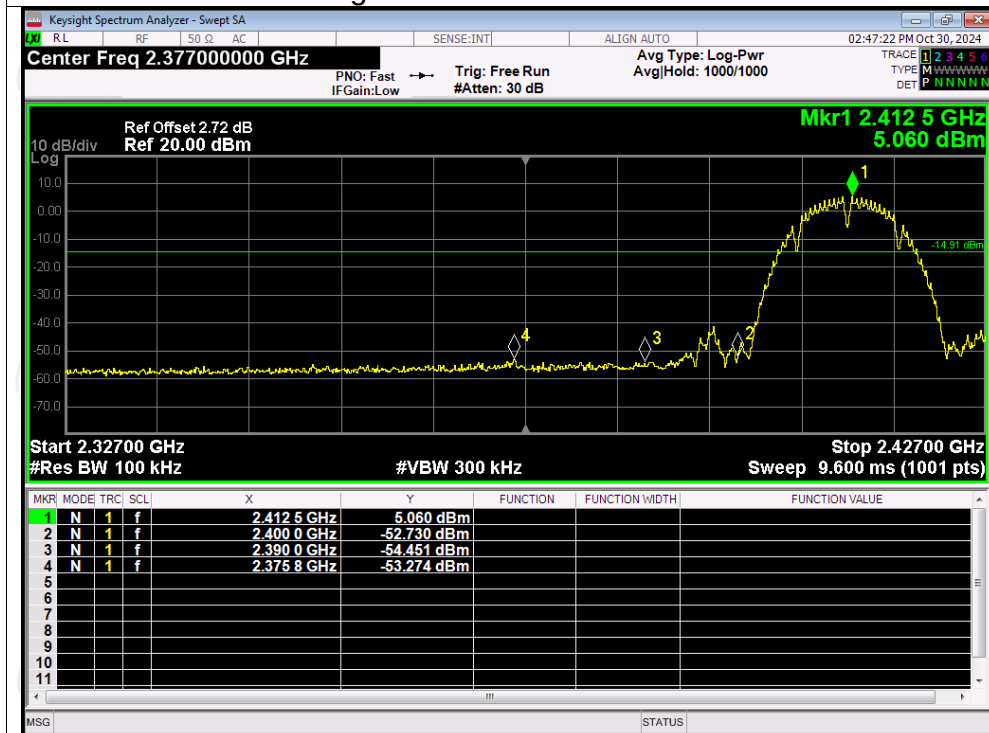


## Test Graphs

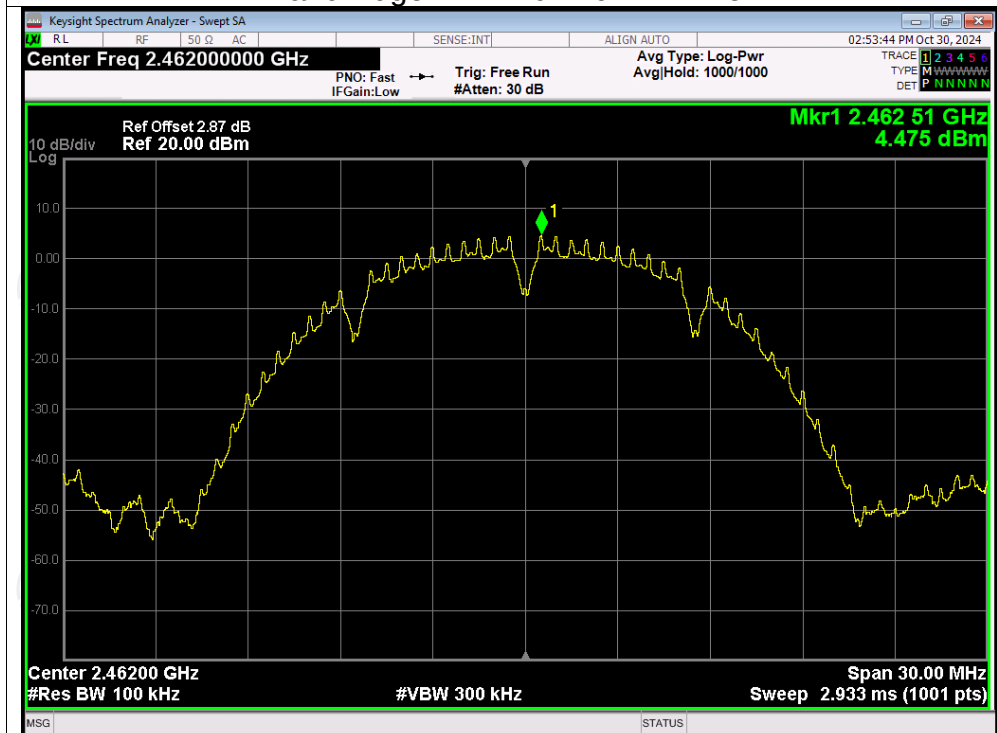
### Band Edge NVNT b 2412MHz Ref



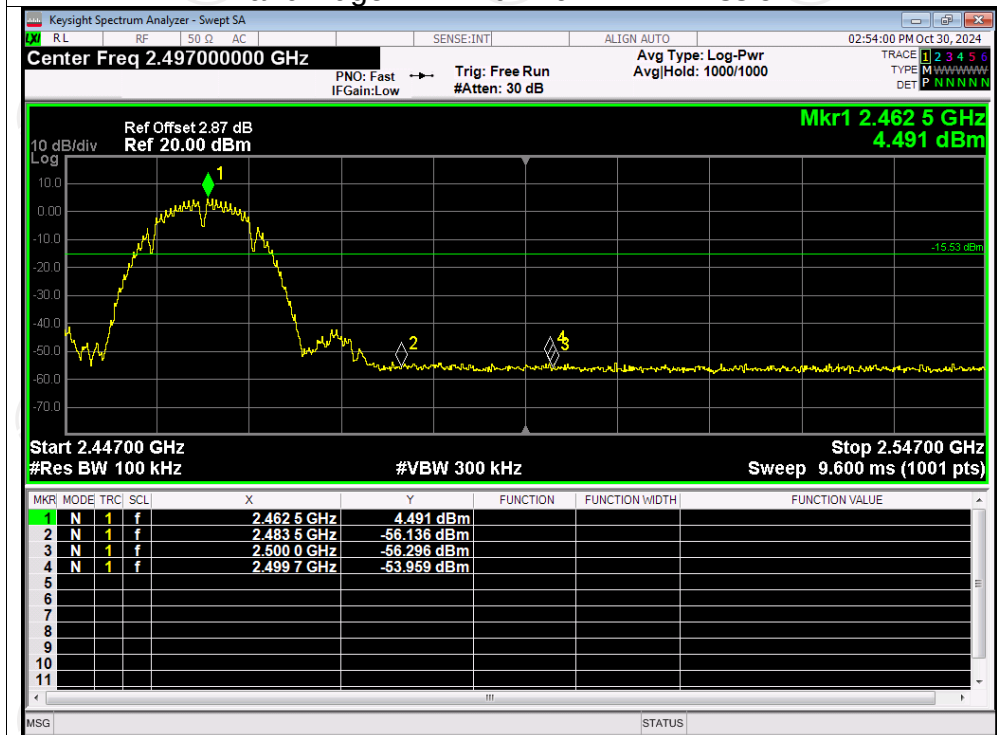
### Band Edge NVNT b 2412MHz Emission



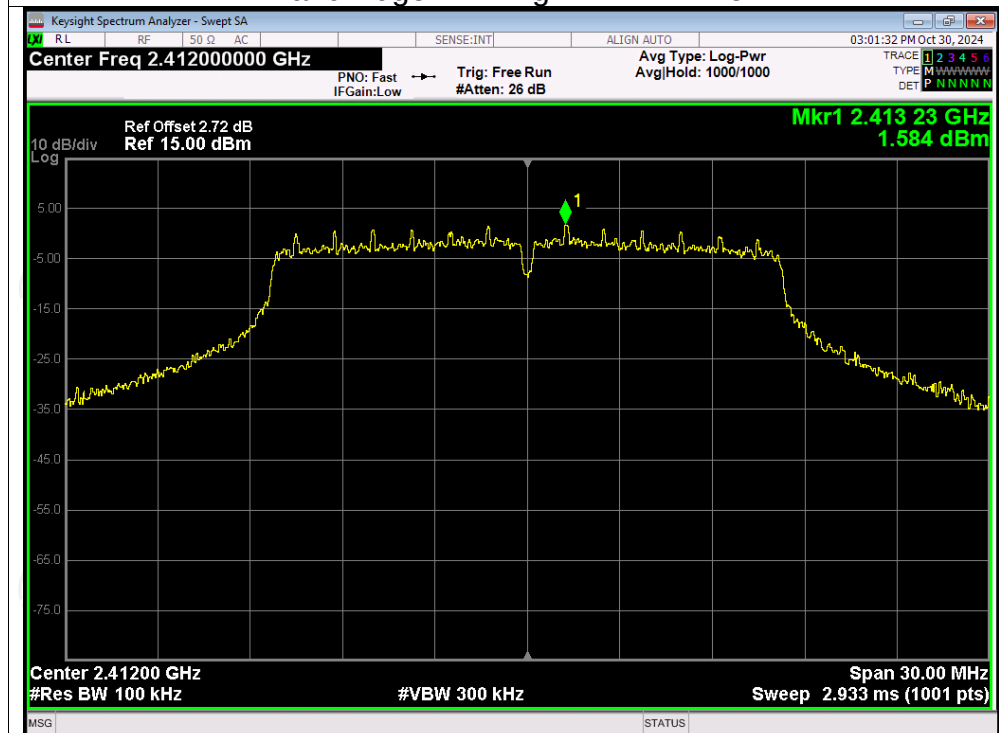
## Band Edge NVNT b 2462MHz Ref



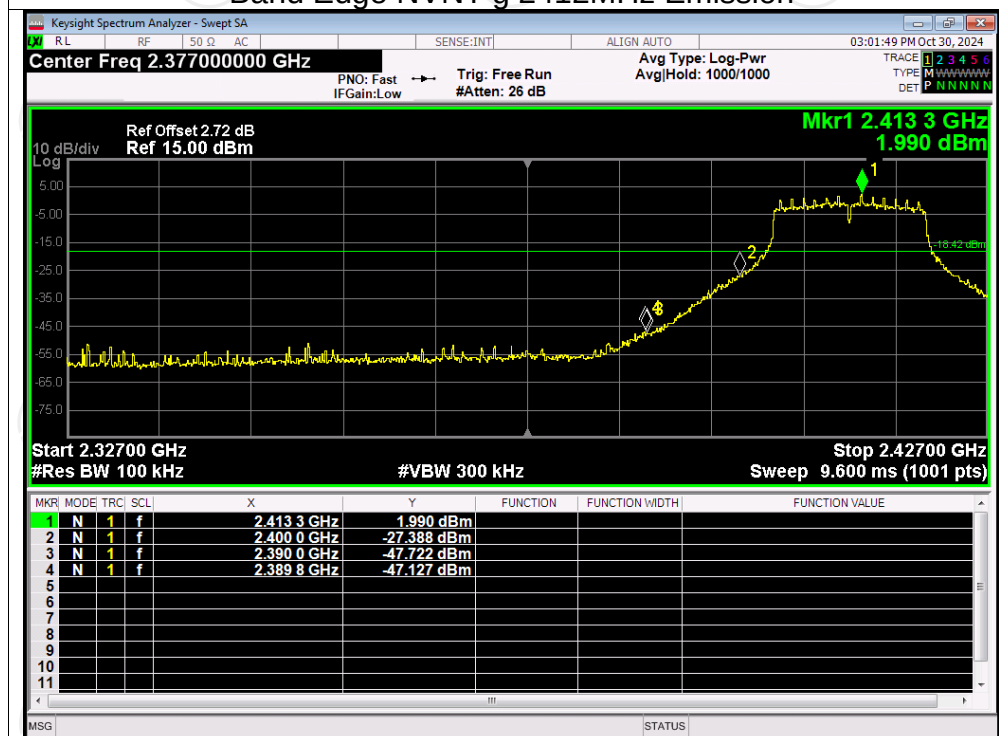
## Band Edge NVNT b 2462MHz Emission



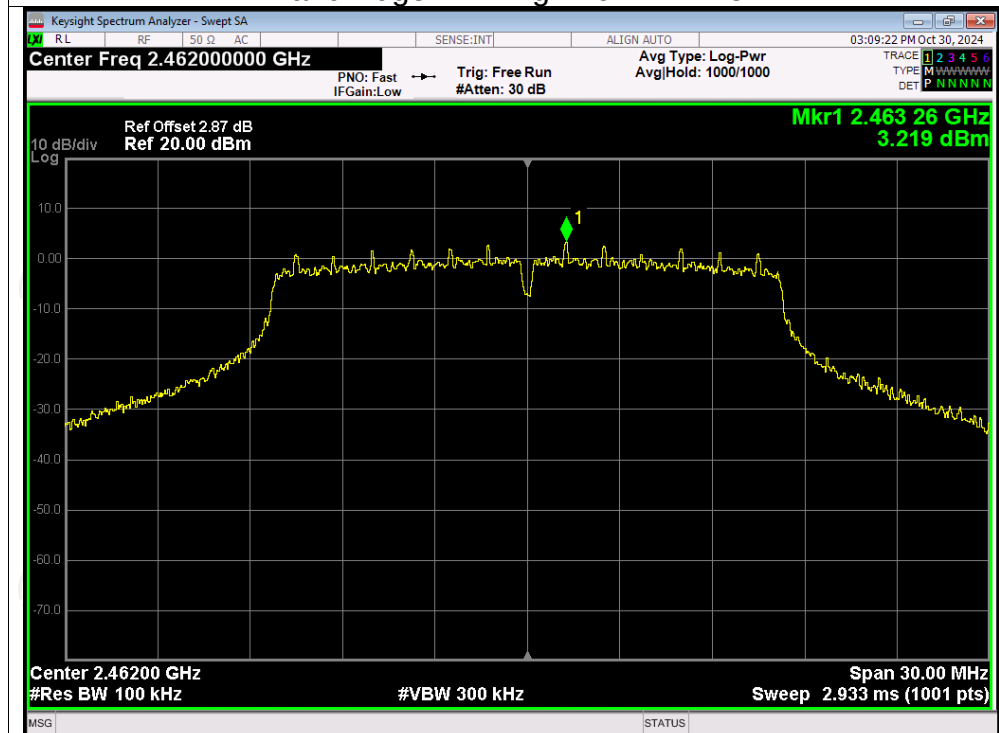
## Band Edge NVNT g 2412MHz Ref



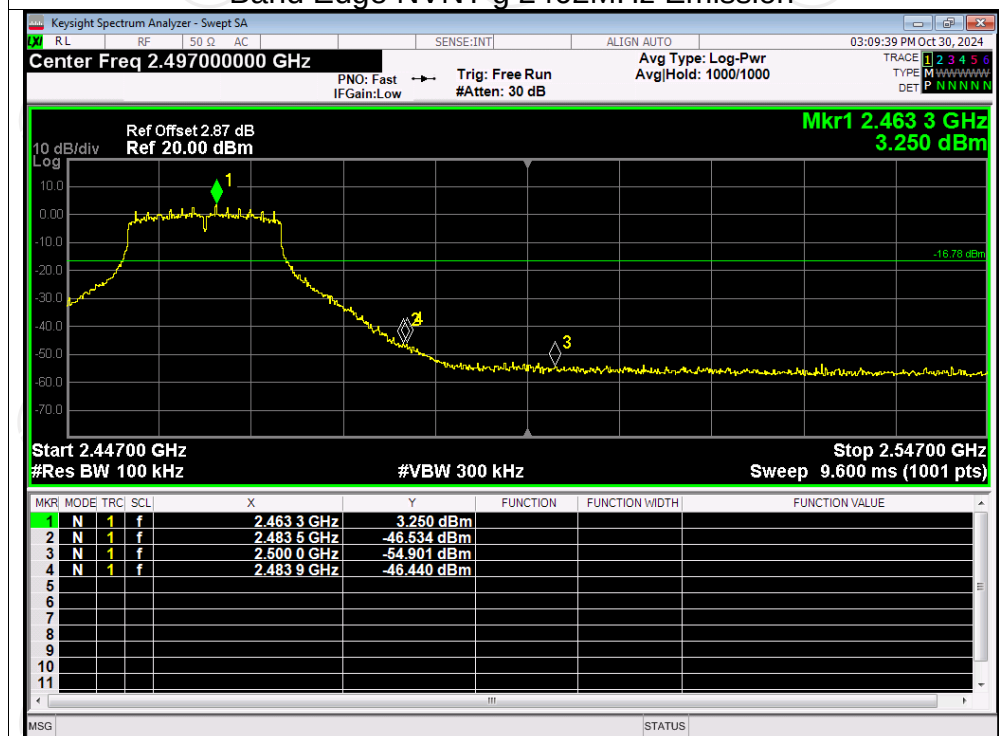
## Band Edge NVNT g 2412MHz Emission



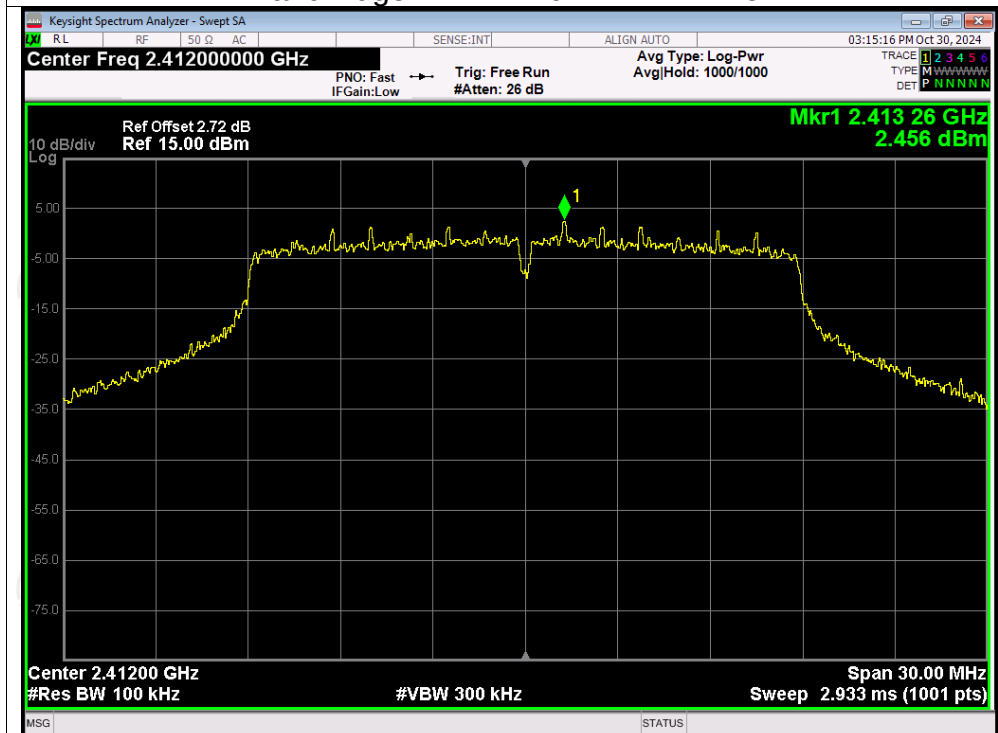
## Band Edge NVNT g 2462MHz Ref



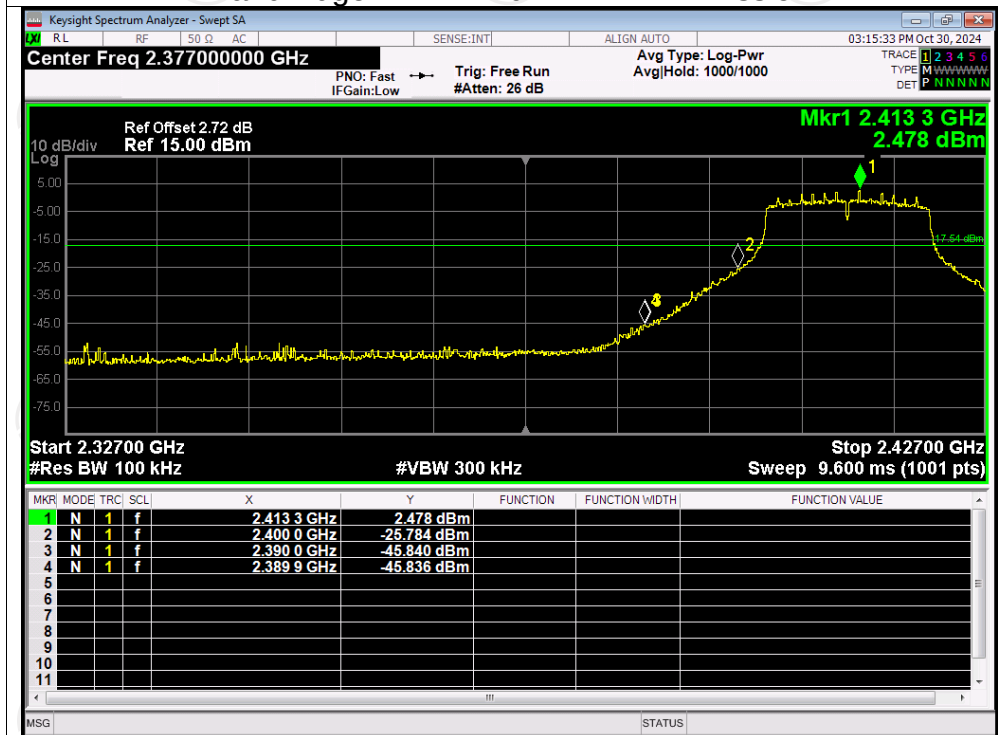
## Band Edge NVNT g 2462MHz Emission



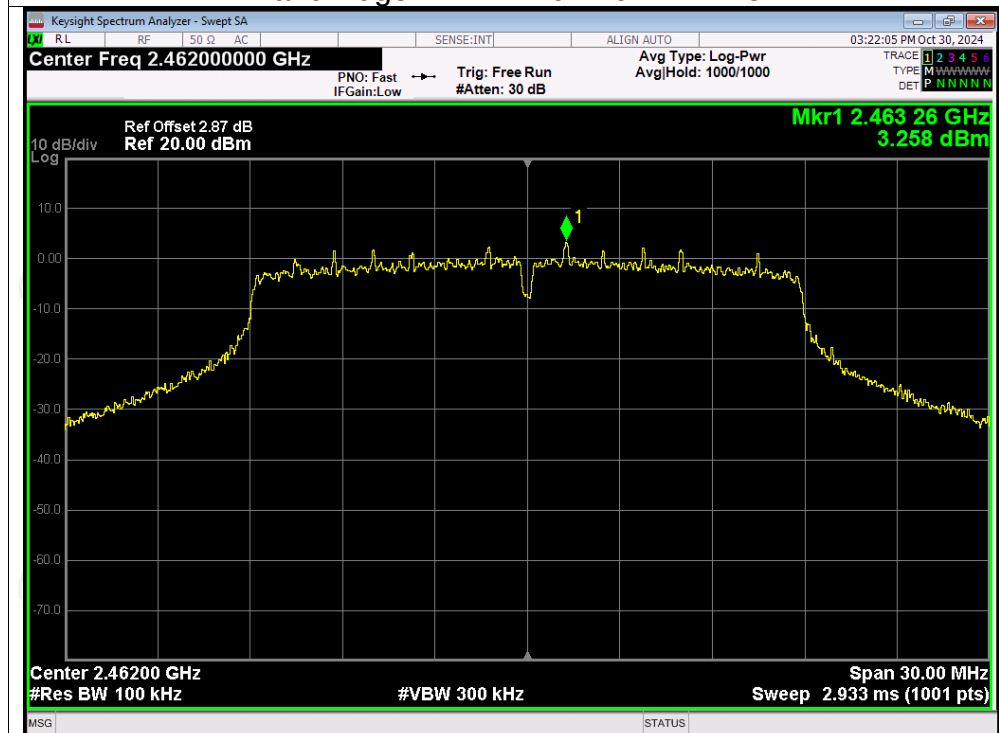
## Band Edge NVNT n20 2412MHz Ref



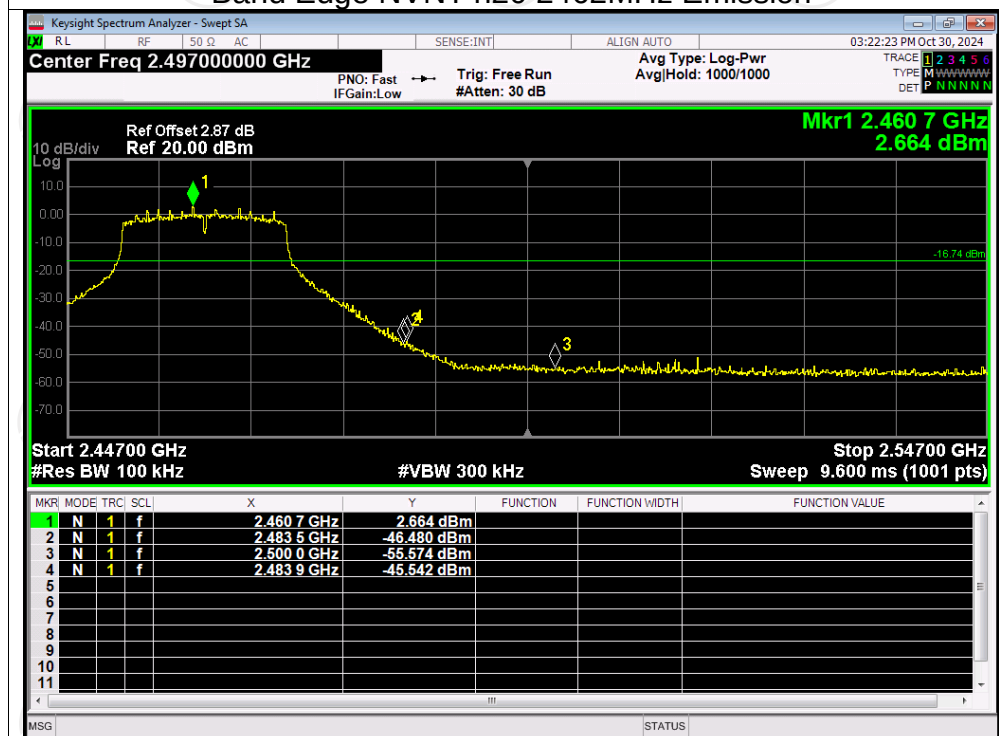
## Band Edge NVNT n20 2412MHz Emission



## Band Edge NVNT n20 2462MHz Ref



## Band Edge NVNT n20 2462MHz Emission

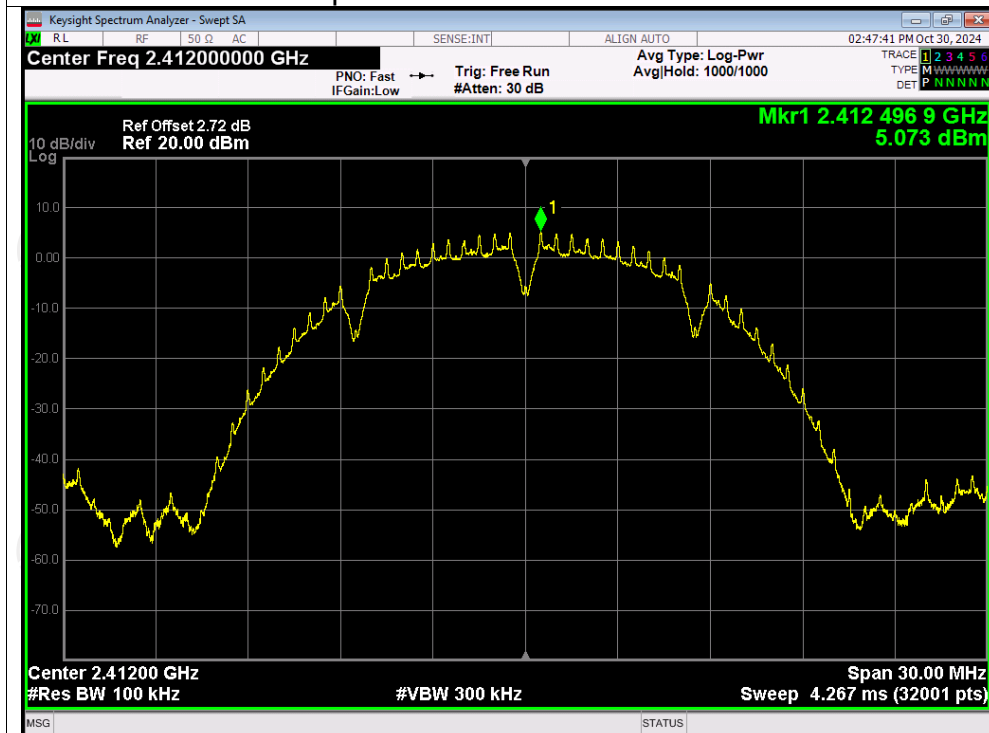


### Conducted RF Spurious Emission

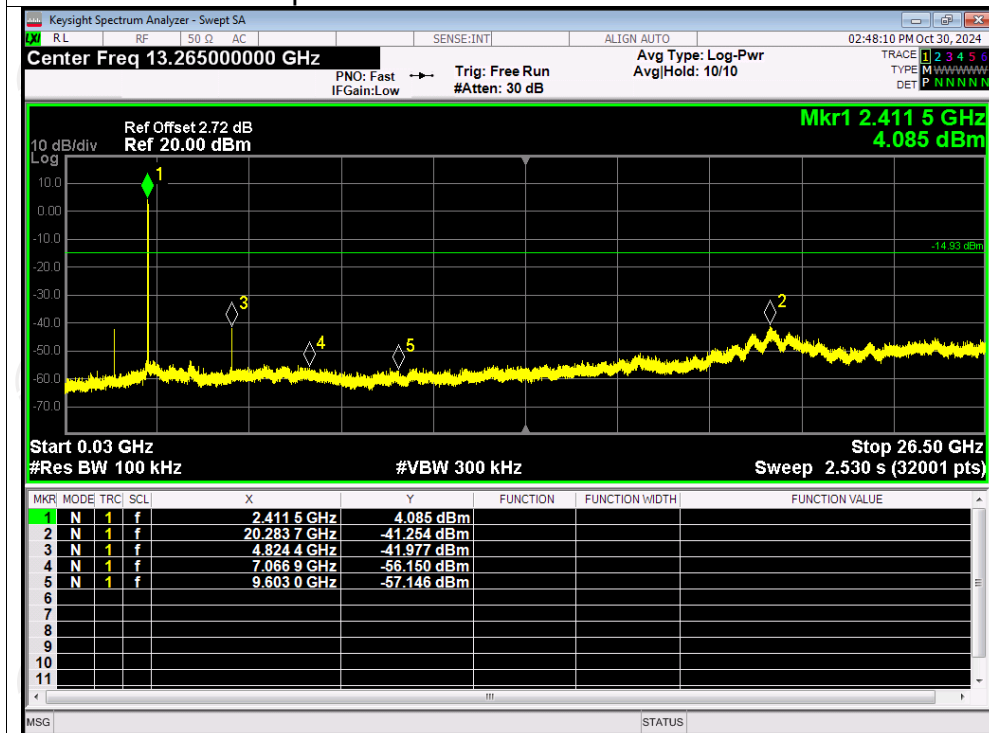
| Condition | Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|-----------------|-------------|---------|
| NVNT      | b    | 2412            | -46.32          | -20         | Pass    |
| NVNT      | b    | 2437            | -44.85          | -20         | Pass    |
| NVNT      | b    | 2462            | -44.30          | -20         | Pass    |
| NVNT      | g    | 2412            | -43.75          | -20         | Pass    |
| NVNT      | g    | 2437            | -43.77          | -20         | Pass    |
| NVNT      | g    | 2462            | -42.69          | -20         | Pass    |
| NVNT      | n20  | 2412            | -43.74          | -20         | Pass    |
| NVNT      | n20  | 2437            | -45.08          | -20         | Pass    |
| NVNT      | n20  | 2462            | -44.35          | -20         | Pass    |

### Test Graphs

#### Tx. Spurious NVNT b 2412MHz Ref

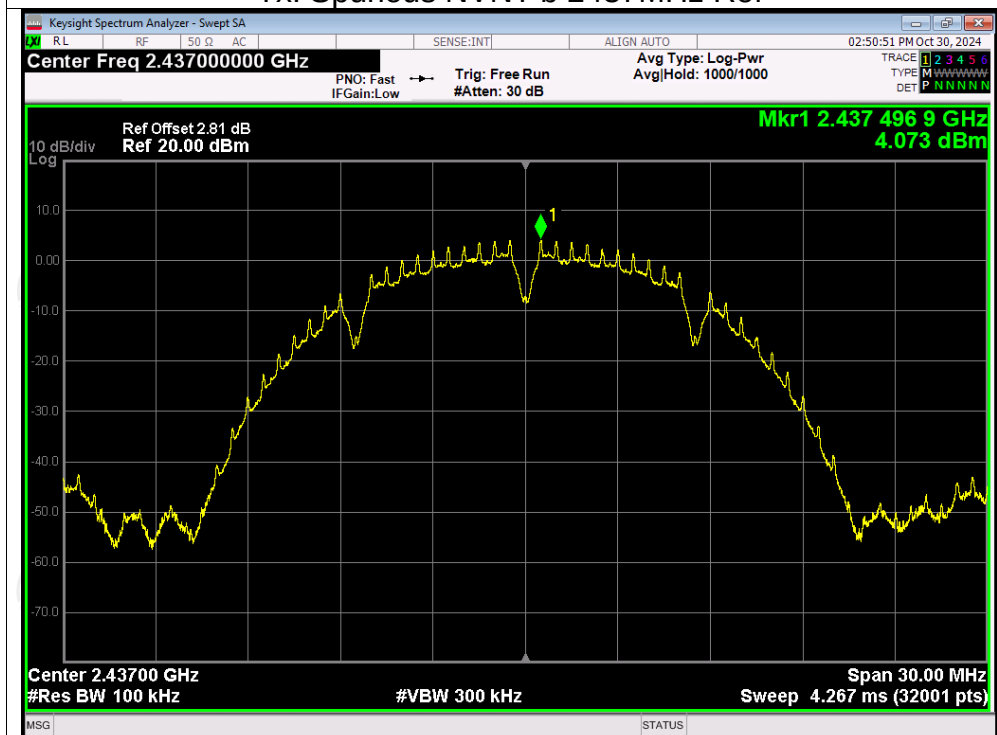


#### Tx. Spurious NVNT b 2412MHz Emission

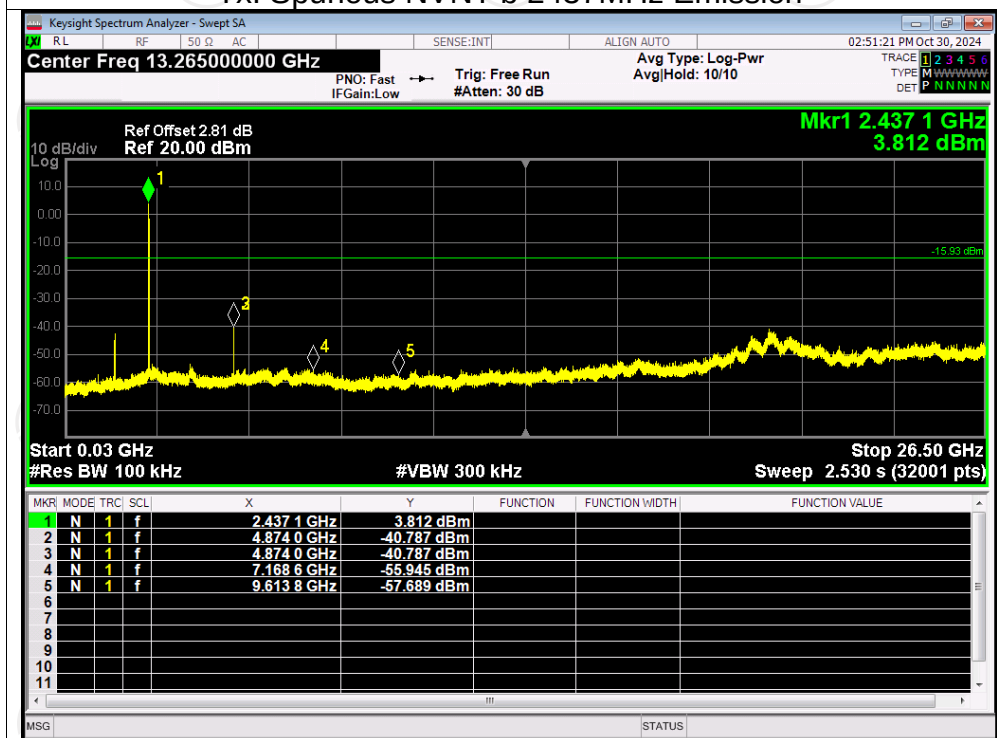




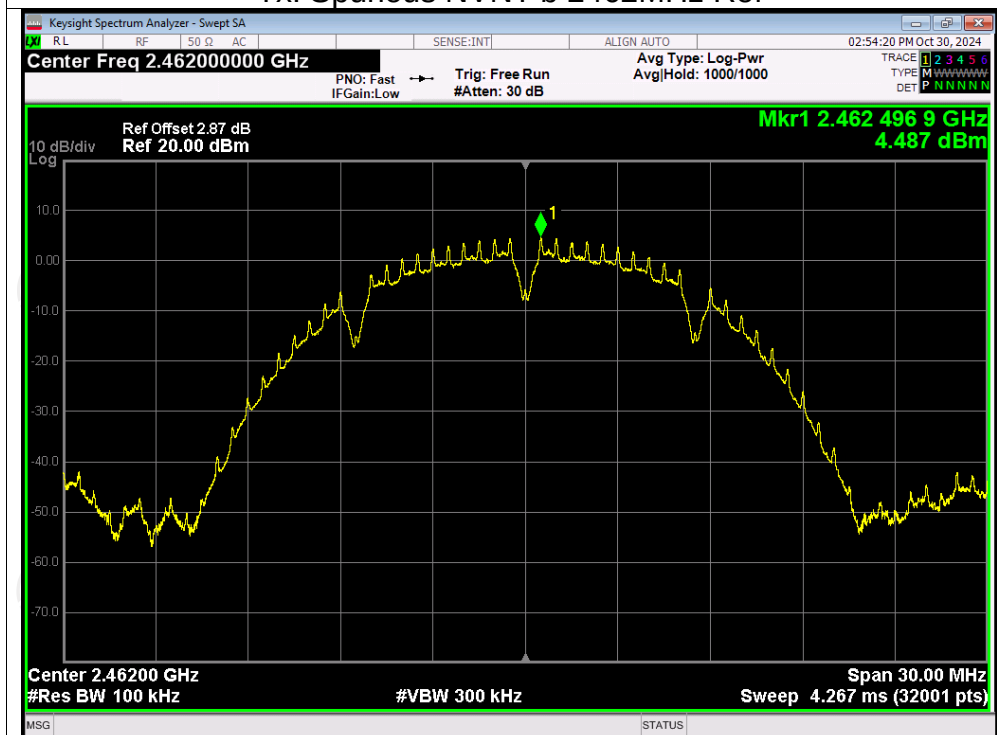
## Tx. Spurious NVNT b 2437MHz Ref



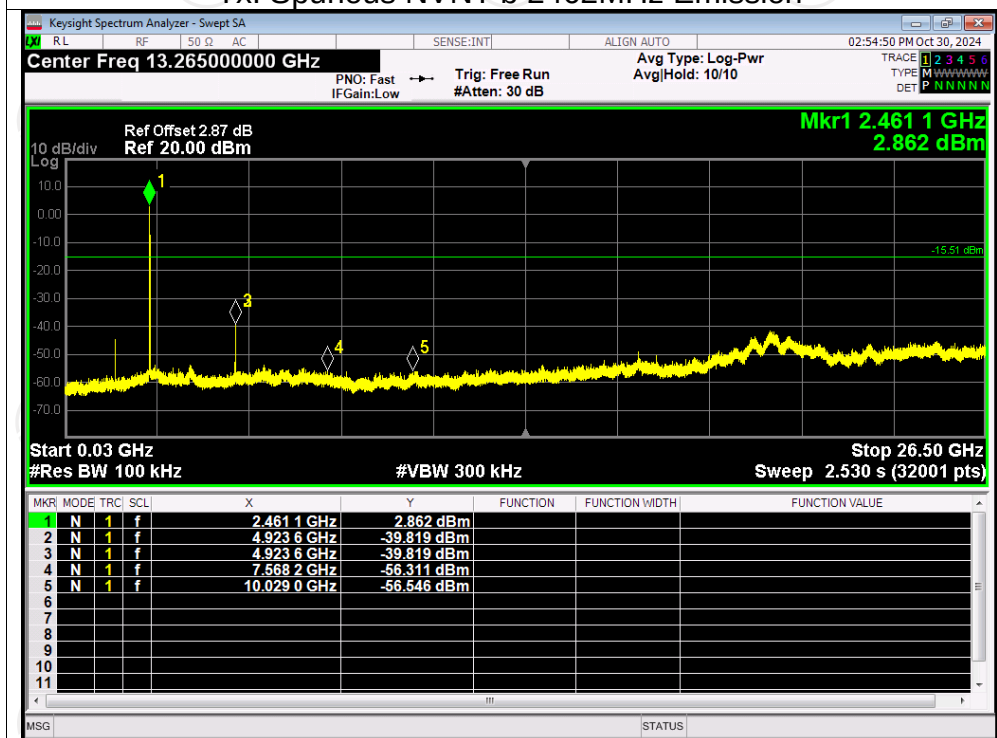
## Tx. Spurious NVNT b 2437MHz Emission



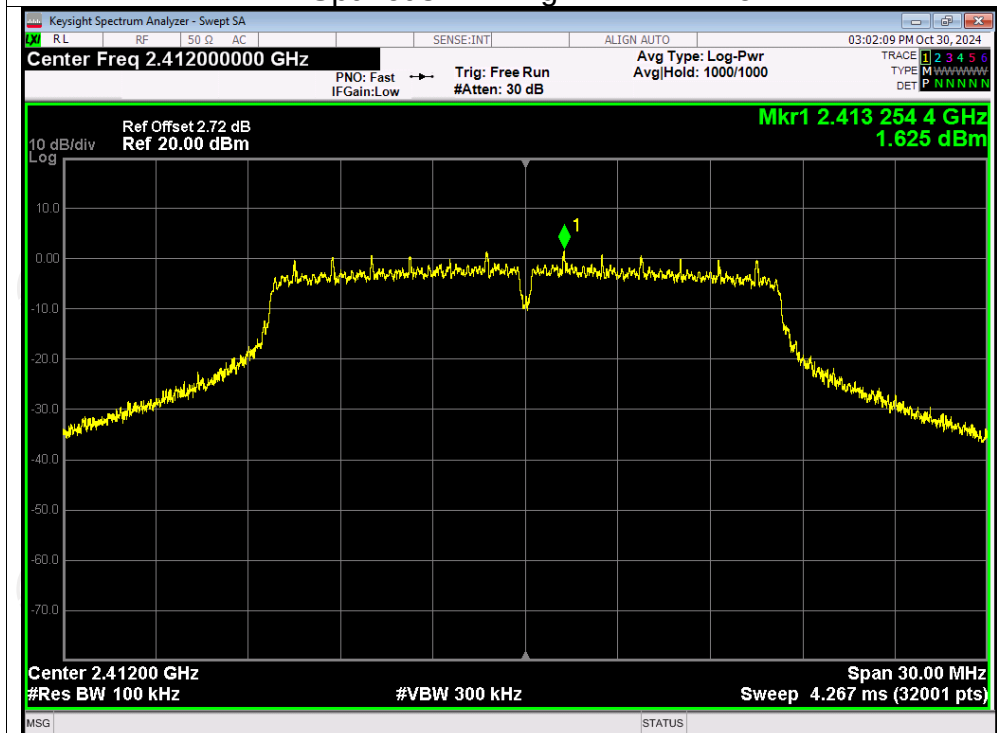
## Tx. Spurious NVNT b 2462MHz Ref



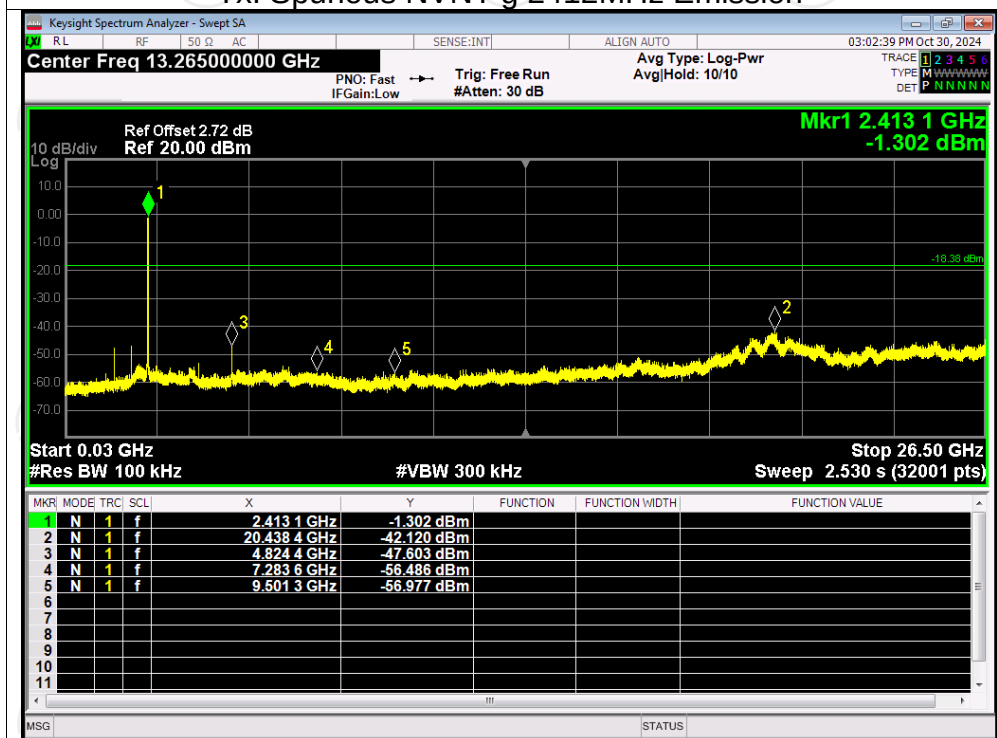
## Tx. Spurious NVNT b 2462MHz Emission



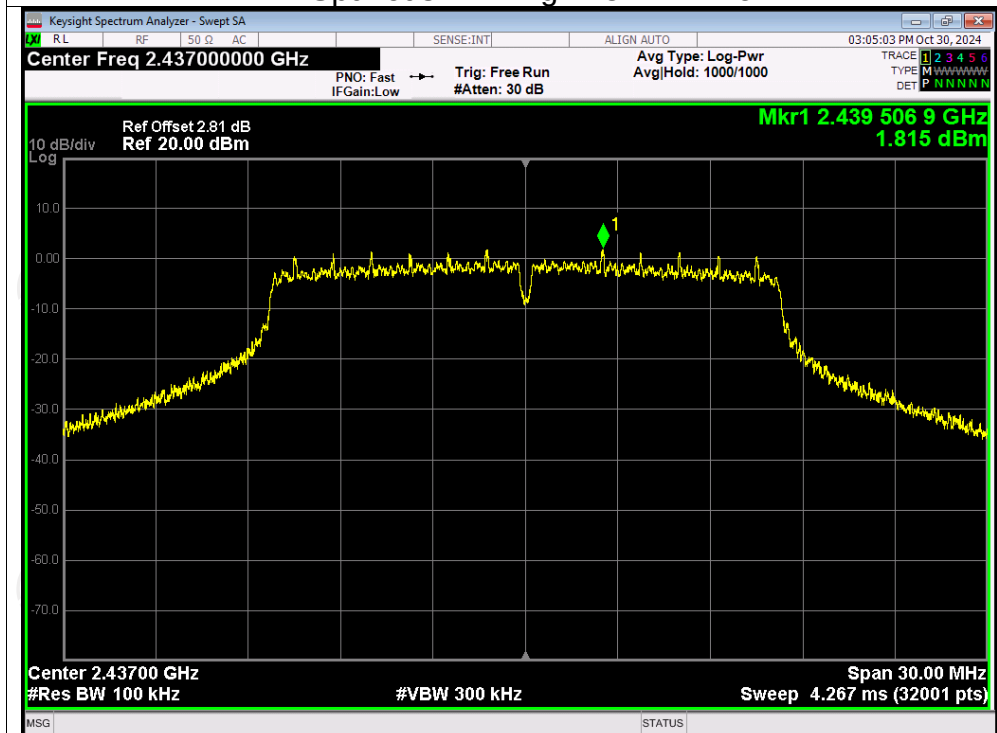
## Tx. Spurious NVNT g 2412MHz Ref



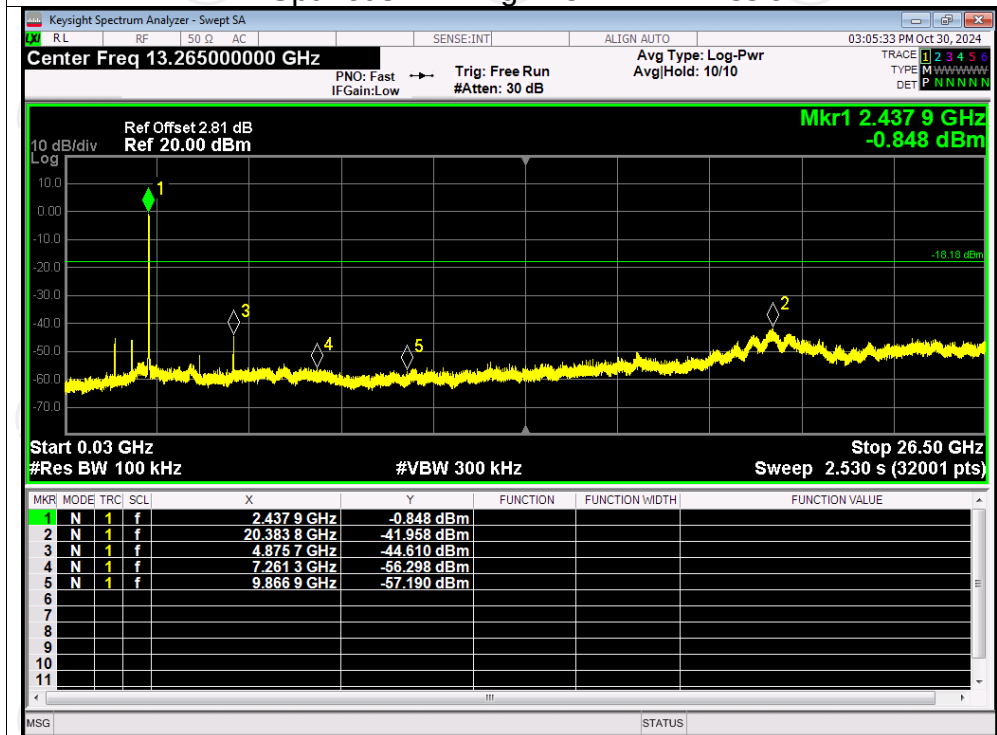
## Tx. Spurious NVNT g 2412MHz Emission



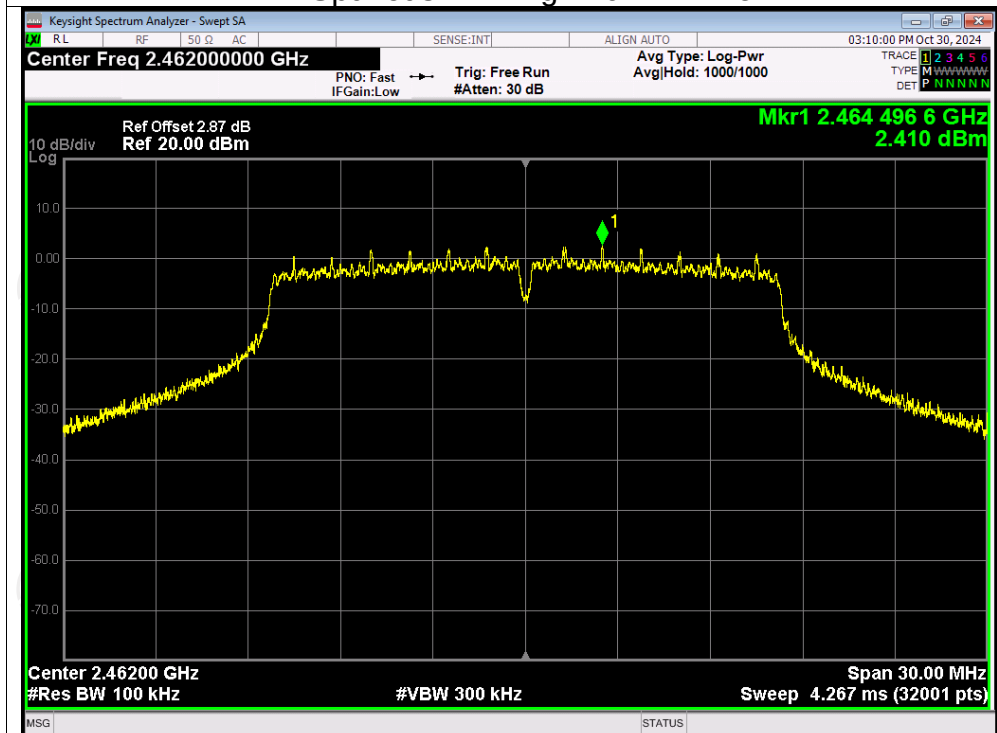
## Tx. Spurious NVNT g 2437MHz Ref



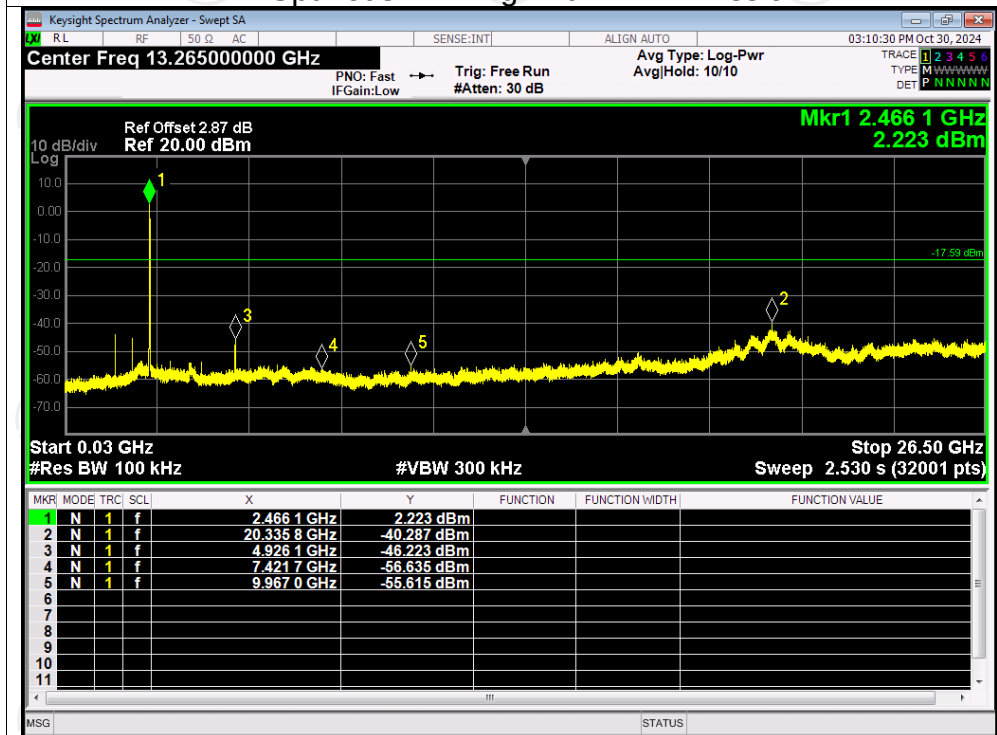
## Tx. Spurious NVNT g 2437MHz Emission



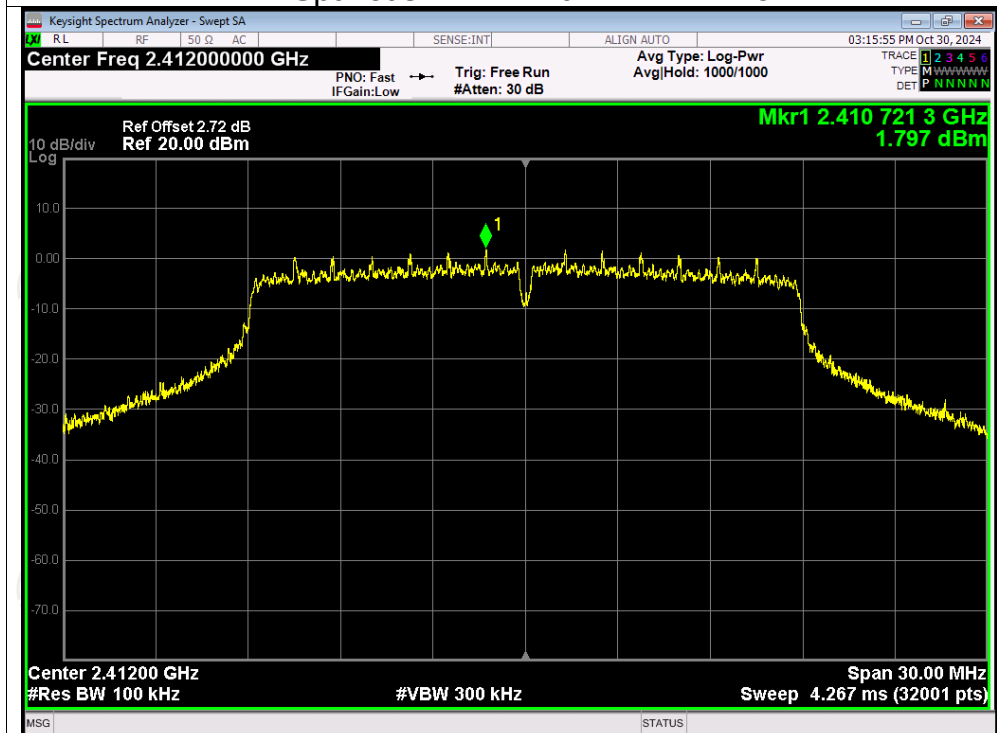
## Tx. Spurious NVNT g 2462MHz Ref



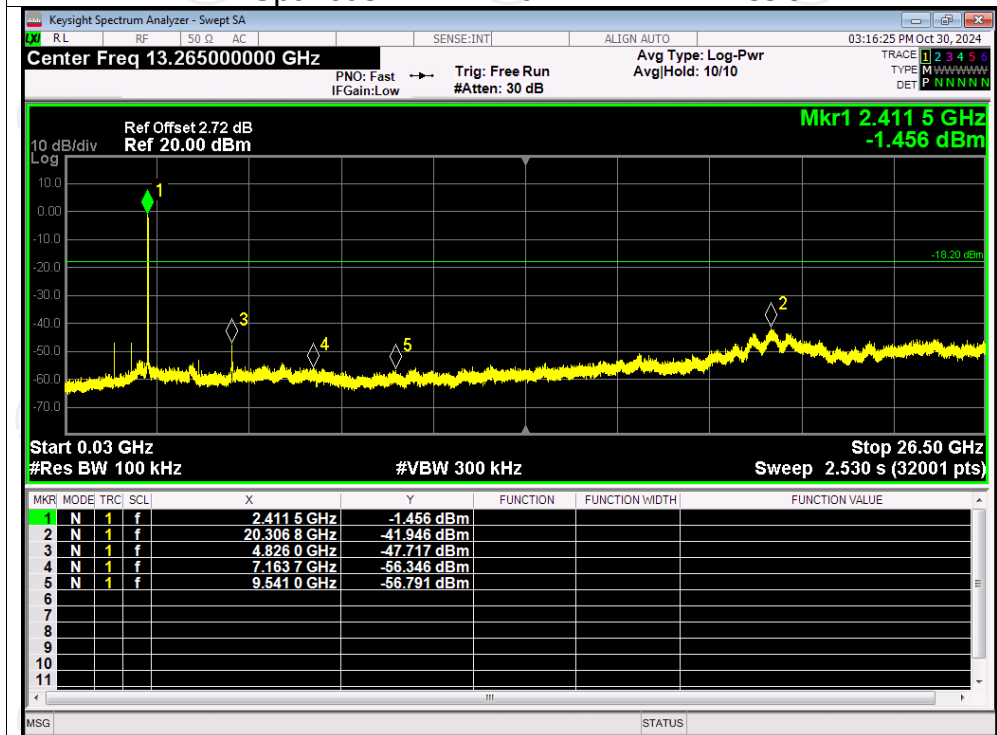
## Tx. Spurious NVNT g 2462MHz Emission



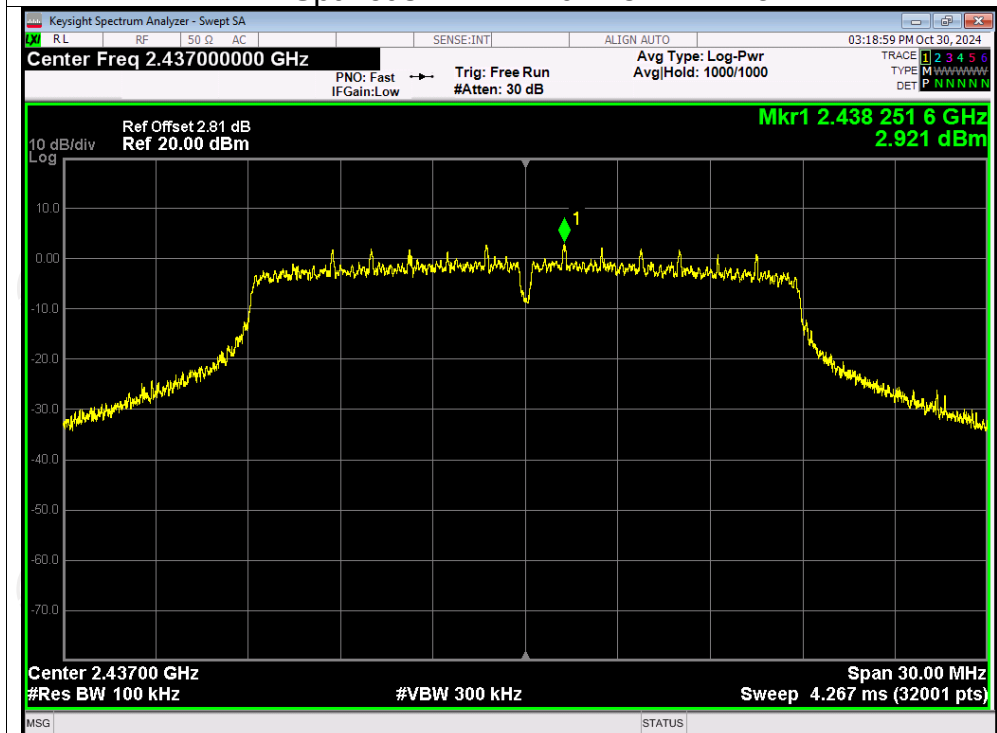
## Tx. Spurious NVNT n20 2412MHz Ref



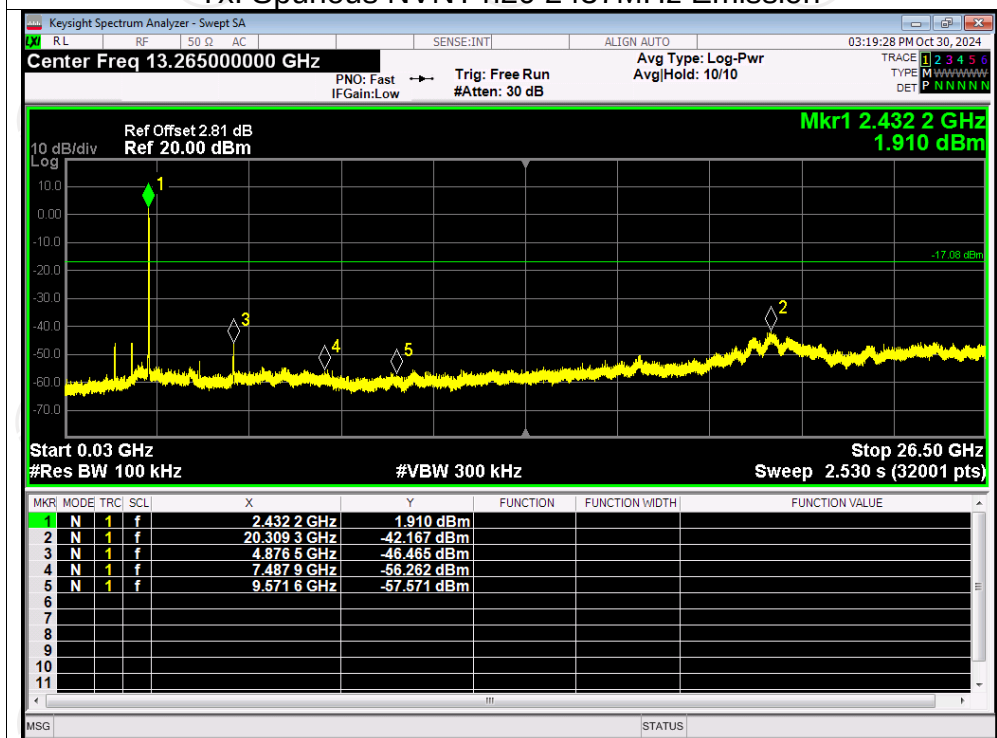
## Tx. Spurious NVNT n20 2412MHz Emission



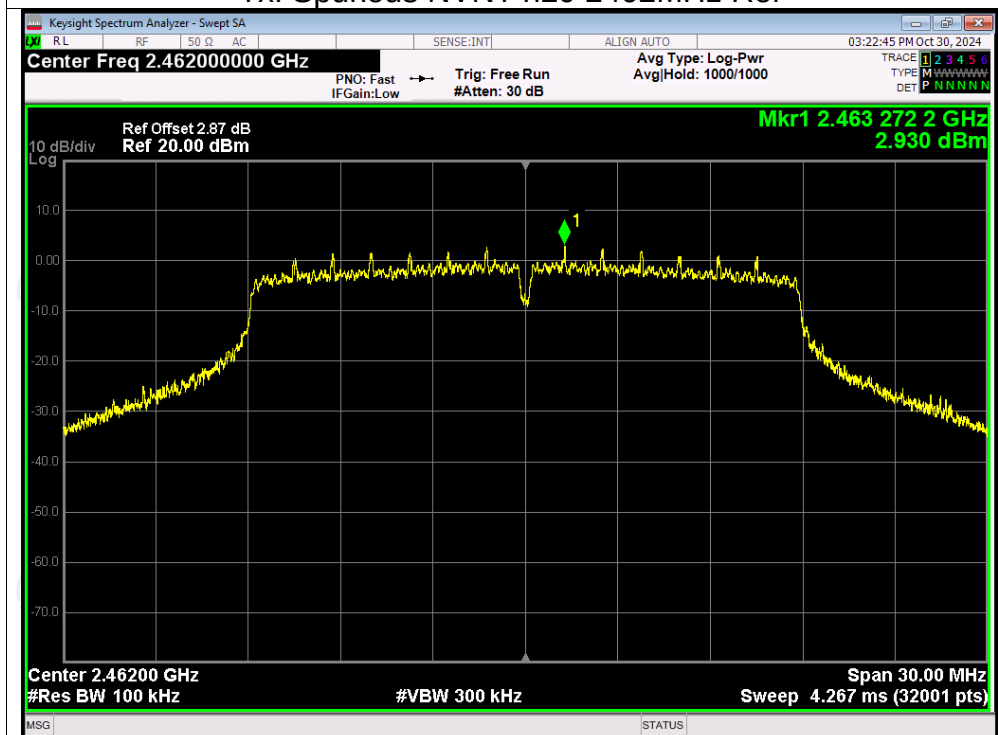
## Tx. Spurious NVNT n20 2437MHz Ref



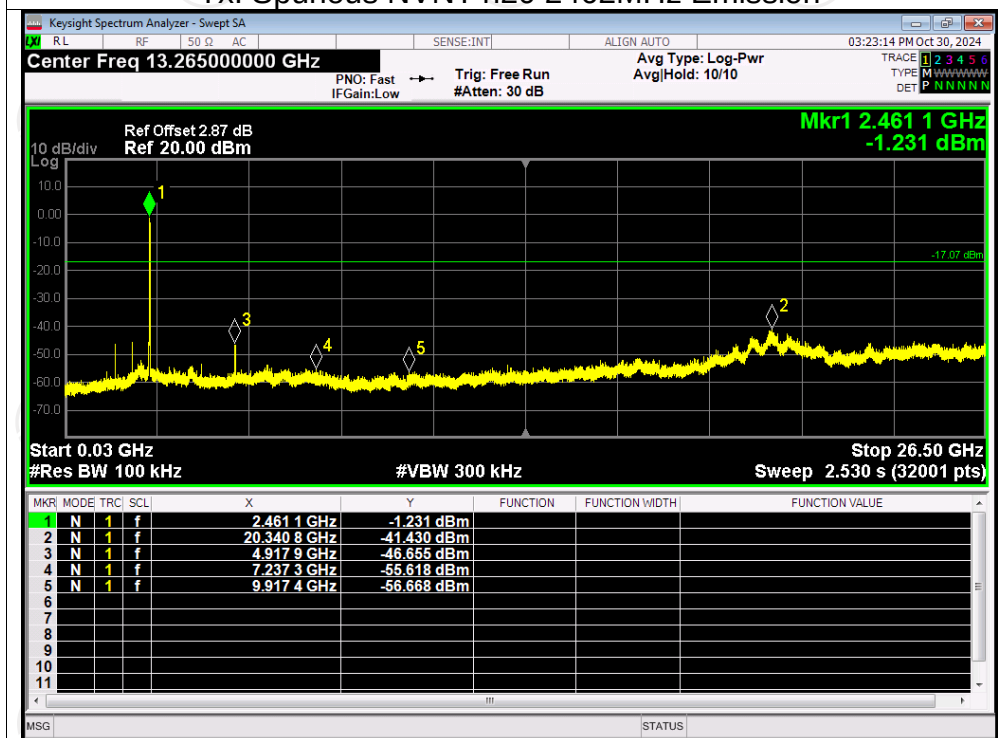
## Tx. Spurious NVNT n20 2437MHz Emission



## Tx. Spurious NVNT n20 2462MHz Ref



## Tx. Spurious NVNT n20 2462MHz Emission





## Appendix B: Photographs of Test Setup

Please refer to document Appendix No.: TCT241029E023-A

## Appendix C: Photographs of EUT

Please refer to document Appendix No.: TCT241029E023-B & TCT241029E023-C

**\*\*\*\*\*END OF REPORT\*\*\*\*\***