

# RF TEST REPORT

For

**Wild Horses Wyoming (DBA The Different)**

**Product Name: Speaker**

**Test Model(s): AVXO HRTU7**

**Report Reference No.** : DACE260902004RF001

**FCC ID** : 2BXZ9-AVXOHRTU7

**Applicant's Name** : Wild Horses Wyoming (DBA The Different)

**Address** : 1309 Coffeen Avenue STE 1200 Sheridan Wyoming 82801

**Testing Laboratory** : Shenzhen DACE Testing Technology Co., Ltd.

**Address** : 102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park,  
Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen,  
Guangdong, China

**Test Specification Standard** : 47 CFR Part 15.247

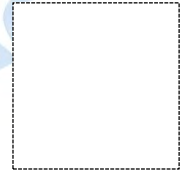
**Date of Receipt** : September 2, 2026

**Date of Test** : September 2, 2026 to September 10, 2026

**Date of Issue** : September 10, 2026

**Result** : Pass

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen DACE Testing Technology Co., Ltd. This document may be altered or revised by Shenzhen DACE Testing Technology Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample



### Apply for company information

|                                       |   |                                                     |
|---------------------------------------|---|-----------------------------------------------------|
| <b>Applicant's Name</b>               | : | Wild Horses Wyoming (DBA The Different)             |
| <b>Address</b>                        | : | 1309 Coffeen Avenue STE 1200 Sheridan Wyoming 82801 |
| <b>Product Name</b>                   | : | Speaker                                             |
| <b>Test Model(s)</b>                  | : | AVXO HRTU7                                          |
| <b>Series Model(s)</b>                | : | AVXO HRTU2, K1, X100                                |
| <b>Test Specification Standard(s)</b> | : | 47 CFR Part 15.247                                  |

#### NOTE1:

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

Compiled by:

*Lucy Mo*

Lucy Mo / Test Engineer

September 10, 2026

Supervised by:

*Arron Liu*

Arron Liu / Project Engineer

September 10, 2026

Approved by:

*Tom Chen*

Tom Chen / Manager

September 10, 2026

## Revision History Of Report

| Version | Description | REPORT No.         | Issue Date         |
|---------|-------------|--------------------|--------------------|
| V1.0    | Original    | DACE260902004RF001 | September 10, 2026 |
|         |             |                    |                    |
|         |             |                    |                    |
|         |             |                    |                    |
|         |             |                    |                    |

# CONTENTS

|          |                                                      |           |
|----------|------------------------------------------------------|-----------|
| <b>1</b> | <b>TEST SUMMARY .....</b>                            | <b>6</b>  |
| 1.1      | TEST STANDARDS .....                                 | 6         |
| 1.2      | SUMMARY OF TEST RESULT .....                         | 6         |
| <b>2</b> | <b>GENERAL INFORMATION .....</b>                     | <b>8</b>  |
| 2.1      | CLIENT INFORMATION .....                             | 8         |
| 2.2      | DESCRIPTION OF DEVICE (EUT) .....                    | 8         |
| 2.3      | DESCRIPTION OF TEST MODES .....                      | 8         |
| 2.4      | DESCRIPTION OF SUPPORT UNITS .....                   | 8         |
| 2.5      | OPERATION FREQUENCY EACH OF CHANNEL .....            | 9         |
| 2.6      | EQUIPMENTS USED DURING THE TEST .....                | 10        |
| 2.7      | STATEMENT OF THE MEASUREMENT UNCERTAINTY .....       | 13        |
| <b>3</b> | <b>EVALUATION RESULTS (EVALUATION) .....</b>         | <b>14</b> |
| 3.1      | ANTENNA REQUIREMENT .....                            | 14        |
| 3.1.1    | Conclusion: .....                                    | 14        |
| <b>4</b> | <b>RADIO SPECTRUM MATTER TEST RESULTS (RF) .....</b> | <b>15</b> |
| 4.1      | CONDUCTED EMISSION AT AC POWER LINE .....            | 15        |
| 4.1.1    | E.U.T. Operation: .....                              | 15        |
| 4.1.2    | Test Setup Diagram: .....                            | 15        |
| 4.1.3    | Test Data: .....                                     | 16        |
| 4.2      | 20DB BANDWIDTH .....                                 | 18        |
| 4.2.1    | E.U.T. Operation: .....                              | 19        |
| 4.2.2    | Test Setup Diagram: .....                            | 19        |
| 4.2.3    | Test Data: .....                                     | 19        |
| 4.3      | MAXIMUM CONDUCTED OUTPUT POWER .....                 | 20        |
| 4.3.1    | E.U.T. Operation: .....                              | 20        |
| 4.3.2    | Test Setup Diagram: .....                            | 20        |
| 4.3.3    | Test Data: .....                                     | 20        |
| 4.4      | CHANNEL SEPARATION .....                             | 21        |
| 4.4.1    | E.U.T. Operation: .....                              | 21        |
| 4.4.2    | Test Setup Diagram: .....                            | 21        |
| 4.4.3    | Test Data: .....                                     | 21        |
| 4.5      | NUMBER OF HOPPING FREQUENCIES .....                  | 22        |
| 4.5.1    | E.U.T. Operation: .....                              | 22        |
| 4.5.2    | Test Setup Diagram: .....                            | 22        |
| 4.5.3    | Test Data: .....                                     | 22        |
| 4.6      | DWELL TIME .....                                     | 23        |
| 4.6.1    | E.U.T. Operation: .....                              | 24        |
| 4.6.2    | Test Setup Diagram: .....                            | 24        |
| 4.6.3    | Test Data: .....                                     | 24        |
| 4.7      | EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS .....    | 25        |
| 4.7.1    | E.U.T. Operation: .....                              | 25        |
| 4.7.2    | Test Setup Diagram: .....                            | 25        |
| 4.7.3    | Test Data: .....                                     | 25        |
| 4.8      | BAND EDGE EMISSIONS (RADIATED) .....                 | 26        |
| 4.8.1    | E.U.T. Operation: .....                              | 26        |
| 4.8.2    | Test Setup Diagram: .....                            | 26        |

|             |                                                        |           |
|-------------|--------------------------------------------------------|-----------|
| 4.8.3       | Test Data: .....                                       | 27        |
| <b>4.9</b>  | <b>EMISSIONS IN FREQUENCY BANDS (BELOW 1GHz) .....</b> | <b>31</b> |
| 4.9.1       | E.U.T. Operation: .....                                | 31        |
| 4.9.2       | Test Setup Diagram: .....                              | 31        |
| 4.9.3       | Test Data: .....                                       | 33        |
| <b>4.10</b> | <b>EMISSIONS IN FREQUENCY BANDS (ABOVE 1GHz) .....</b> | <b>35</b> |
| 4.10.1      | E.U.T. Operation: .....                                | 35        |
| 4.10.2      | Test Setup Diagram: .....                              | 36        |
| 4.10.3      | Test Data: .....                                       | 37        |
| <b>5</b>    | <b>TEST SETUP PHOTOS .....</b>                         | <b>43</b> |
| <b>6</b>    | <b>PHOTOS OF THE EUT .....</b>                         | <b>45</b> |
|             | <b>APPENDIX .....</b>                                  | <b>46</b> |
| 1.          | Duty Cycle .....                                       | 47        |
| 2.          | -20dB Bandwidth .....                                  | 52        |
| 3.          | 99% Occupied Bandwidth .....                           | 57        |
| 4.          | Peak Output Power .....                                | 62        |
| 5.          | Spurious Emissions .....                               | 67        |
| 6.          | Bandedge .....                                         | 77        |
| 7.          | Carrier Frequencies Separation (Hopping) .....         | 90        |
| 8.          | Number of Hopping Channel (Hopping) .....              | 92        |
| 9.          | Dwell Time (Hopping) .....                             | 94        |

# 1 TEST SUMMARY

## 1.1 Test Standards

The tests were performed according to following standards:

**47 CFR Part 15.247:** Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

## 1.2 Summary of Test Result

| Item                                | Standard           | Method                                                                                                                               | Requirement              | Result |
|-------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------|
| Antenna requirement                 | 47 CFR Part 15.247 | ---                                                                                                                                  | 47 CFR 15.203            | Pass   |
| Conducted Emission at AC power line | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.2                                                     | 47 CFR 15.207(a)         | Pass   |
| 20dB Bandwidth                      | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.6<br>KDB 558074 D01<br>15.247 Meas Guidance v05r02 | 47 CFR 15.247(a)(1)      | Pass   |
| Maximum Conducted Output Power      | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.5<br>KDB 558074 D01<br>15.247 Meas Guidance v05r02 | 47 CFR 15.247(b)(1)      | Pass   |
| Channel Separation                  | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.2<br>KDB 558074 D01<br>15.247 Meas Guidance v05r02 | 47 CFR 15.247(a)(1)      | Pass   |
| Number of Hopping Frequencies       | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.3<br>KDB 558074 D01<br>15.247 Meas Guidance v05r02 | 47 CFR 15.247(a)(1)(iii) | Pass   |
| Dwell Time                          | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.4<br>KDB 558074 D01                                | 47 CFR 15.247(a)(1)(iii) | Pass   |

|                                             |                    |                                                                                                                                     |                                  |      |
|---------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------|
|                                             |                    | 15.247 Meas Guidance v05r02                                                                                                         |                                  |      |
| Emissions in non-restricted frequency bands | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 7.8.7<br>KDB 558074 D01<br>15.247 Meas Guidance v05r02 | 47 CFR 15.247(d)                 | Pass |
| Band edge emissions (Radiated)              | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.10<br>KDB 558074 D01<br>15.247 Meas Guidance v05r02  | 47 CFR 15.247(d), 15.209, 15.205 | Pass |
| Emissions in frequency bands (below 1GHz)   | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4<br>KDB 558074 D01<br>15.247 Meas Guidance v05r02 | 47 CFR 15.247(d), 15.209, 15.205 | Pass |
| Emissions in frequency bands (above 1GHz)   | 47 CFR Part 15.247 | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4<br>KDB 558074 D01<br>15.247 Meas Guidance v05r02 | 47 CFR 15.247(d), 15.209, 15.205 | Pass |

## 2 GENERAL INFORMATION

### 2.1 Client Information

**Applicant's Name** : Wild Horses Wyoming (DBA The Different)  
**Address** : 1309 Coffeen Avenue STE 1200 Sheridan Wyoming 82801

**Manufacturer** : Wild Horses Wyoming (DBA The Different)  
**Address** : 1309 Coffeen Avenue STE 1200 Sheridan Wyoming 82801

### 2.2 Description of Device (EUT)

|                       |                                                                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:         | Speaker                                                                                                                                 |
| Model/Type reference: | AVXO HRTU7                                                                                                                              |
| Series Model:         | AVXO HRTU2, K1, X100                                                                                                                    |
| Model Difference:     | All the model are the same circuit and RF module, only the model name and appearance color are different. Test sample model: AVXO HRTU7 |
| Trade Mark:           | N/A                                                                                                                                     |
| Power Supply:         | DC 5V charging from adapter<br>DC 3.7V by battery                                                                                       |
| Operation Frequency:  | 2402-2480MHz                                                                                                                            |
| Number of Channels:   | 79CH                                                                                                                                    |
| Modulation Type:      | GFSK, ( $\pi/4$ )DQPSK, 8DPSK                                                                                                           |
| Antenna Type:         | PCB Antenna                                                                                                                             |
| Antenna Gain:         | 2.21dBi                                                                                                                                 |
| Bluetooth Version:    | V6.0                                                                                                                                    |
| Hardware Version:     | V1.0                                                                                                                                    |
| Software Version:     | V1.0                                                                                                                                    |

### 2.3 Description of Test Modes

| No               | Title   | Description              |
|------------------|---------|--------------------------|
| TM1              | TX mode | Keep the EUT in TX mode  |
| Test Environment |         | Normal Voltage(DC): 3.7V |

### 2.4 Description of Support Units

| Title   | Manufacturer | Model No.     | Serial No. |
|---------|--------------|---------------|------------|
| Adapter | PHOTON       | ATXC-069AC65B | /          |

## 2.5 Operation Frequency each of channel

| CH | Frequency (MHz) | CH | Frequency (MHz) | CH | Frequency (MHz) | CH | Frequency (MHz) |
|----|-----------------|----|-----------------|----|-----------------|----|-----------------|
| 0  | 2402            | 1  | 2403            | 2  | 2404            | 3  | 2405            |
| 4  | 2406            | 5  | 2407            | 6  | 2408            | 7  | 2409            |
| 8  | 2410            | 9  | 2411            | 10 | 2412            | 11 | 2413            |
| 12 | 2414            | 13 | 2415            | 14 | 2416            | 15 | 2417            |
| 16 | 2418            | 17 | 2419            | 18 | 2420            | 19 | 2421            |
| 20 | 2422            | 21 | 2423            | 22 | 2424            | 23 | 2425            |
| 24 | 2426            | 25 | 2427            | 26 | 2428            | 27 | 2429            |
| 28 | 2430            | 29 | 2431            | 30 | 2432            | 31 | 2433            |
| 32 | 2434            | 33 | 2435            | 34 | 2436            | 35 | 2437            |
| 36 | 2438            | 37 | 2439            | 38 | 2440            | 39 | 2441            |
| 40 | 2442            | 41 | 2443            | 42 | 2444            | 43 | 2445            |
| 44 | 2446            | 45 | 2447            | 46 | 2448            | 47 | 2449            |
| 48 | 2450            | 49 | 2451            | 50 | 2452            | 51 | 2453            |
| 52 | 2454            | 53 | 2455            | 54 | 2456            | 55 | 2457            |
| 56 | 2458            | 57 | 2459            | 58 | 2460            | 59 | 2461            |
| 60 | 2462            | 61 | 2463            | 62 | 2464            | 63 | 2465            |
| 64 | 2466            | 65 | 2467            | 66 | 2468            | 67 | 2469            |
| 68 | 2470            | 69 | 2471            | 70 | 2472            | 71 | 2473            |
| 72 | 2474            | 73 | 2475            | 74 | 2476            | 75 | 2477            |
| 76 | 2478            | 77 | 2479            | 78 | 2480            | /  | /               |

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:

| Test channel    | Frequency (MHz)               |
|-----------------|-------------------------------|
|                 | GFSK, ( $\pi/4$ )DQPSK, 8DPSK |
| Lowest channel  | 2402MHz                       |
| Middle channel  | 2441MHz                       |
| Highest channel | 2480MHz                       |

## 2.6 Equipments Used During The Test

| Conducted Emission at AC power line |                 |                                                  |                            |            |              |
|-------------------------------------|-----------------|--------------------------------------------------|----------------------------|------------|--------------|
| Equipment                           | Manufacturer    | Model No                                         | Inventory No               | Cal Date   | Cal Due Date |
| Power absorbing clamp               | SCHWARZ BECK    | MESS-ELEKTRONIK                                  | /                          | 2026-04-14 | 2027-04-13   |
| Electric Network                    | SCHWARZ BECK    | CAT5 8158                                        | CAT5 8158#207              | 2026-04-14 | 2027-04-13   |
| Cable                               | SCHWARZ BECK    | /                                                | /                          | 2026-04-14 | 2027-04-13   |
| Pulse Limiter                       | SCHWARZ BECK    | VTSD 9561-F<br>Pulse limiter 10dB<br>Attenuation | 561-G071                   | 2025-12-02 | 2026-12-01   |
| Test Receiver                       | Rohde & Schwarz | ESPI TEST RECEIVER                               | 1164.6607K03<br>-102109-MH | 2026-04-14 | 2027-04-13   |
| L.I.S.N                             | R&S             | ESH3-Z5                                          | 831.5518.52                | 2026-04-14 | 2027-04-13   |
| L.I.S.N                             | SCHWARZ BECK    | NSLK 8126                                        | 05055                      | 2026-04-14 | 2027-04-13   |
| Pulse Limiter                       | CYBERTEK        | EM5010A                                          | /                          | 2026-04-14 | 2027-04-13   |
| EMI test software                   | Farad           | EZ -EMC                                          | EMEC-3A1.1                 | /          | /            |

**Maximum Conducted Output Power**  
**Channel Separation**  
**Number of Hopping Frequencies**  
**Dwell Time**  
**Emissions in non-restricted frequency bands**  
**20dB Bandwidth**

| Equipment                           | Manufacturer                                       | Model No | Inventory No | Cal Date   | Cal Due Date |
|-------------------------------------|----------------------------------------------------|----------|--------------|------------|--------------|
| RF Test Software                    | Tachoy Information Technology(she n zhen) Co.,Ltd. | RTS-01   | V1.0.0       | /          | /            |
| RF Power Sensor Unit                | Tachoy Information Technology(she n zhen) Co.,Ltd. | TR1029-2 | 20220428P005 | /          | /            |
| Wideband radio communication tester | R&S                                                | CMW500   | 113410       | 2026-04-14 | 2027-04-13   |
| Signal Generator                    | Keysight                                           | N5181A   | MY50143455   | 2025-12-02 | 2026-12-01   |
| Vector Signal Generator             | Keysight                                           | N5182A   | MY48180415   | 2025-12-02 | 2026-12-01   |
| Spectrum Analyzer                   | Keysight                                           | N9020A   | MY53420323   | 2025-12-02 | 2026-12-01   |
| RF Control Unit                     | Tachoy Information Technology(she n zhen) Co.,Ltd. | TR1029-1 | 20220428C005 | /          | /            |

**Band edge emissions (Radiated)**  
**Emissions in frequency bands (below 1GHz)**  
**Emissions in frequency bands (above 1GHz)**

| Equipment                           | Manufacturer   | Model No         | Inventory No           | Cal Date   | Cal Due Date |
|-------------------------------------|----------------|------------------|------------------------|------------|--------------|
| EMI Test software                   | Farad          | EZ -EMC          | FA-03A2 RE+            | /          | /            |
| Positioning Controller              | MF             | MF-7802          | /                      | /          | /            |
| Amplifier(18-40G)                   | COM-POWER      | AH-1840          | 10100008-1             | 2024-04-26 | 2027-04-25   |
| Horn antenna                        | COM-POWER      | AH-1840 (18-40G) | 10100008               | 2024-04-26 | 2027-04-25   |
| Loop antenna                        | ZHINAN         | ZN30900C         | ZN30900C               | 2026-04-14 | 2027-04-13   |
| Cable(LF)#2                         | Schwarzbeck    | /                | /                      | 2026-04-13 | 2027-04-12   |
| Cable(LF)#1                         | Schwarzbeck    | /                | /                      | 2026-04-14 | 2027-04-13   |
| Cable(HF)#2                         | Schwarzbeck    | AK9515E          | 96250                  | 2026-04-14 | 2027-04-13   |
| Cable(HF)#1                         | Schwarzbeck    | SYV-50-3-1       | /                      | 2026-04-14 | 2027-04-13   |
| Power amplifier(LF)                 | Schwarzbeck    | BBV9743          | 9743-151               | 2026-04-14 | 2027-04-13   |
| Power amplifier(HF)                 | Schwarzbeck    | BBV9718          | 9718-282               | 2026-04-14 | 2027-04-13   |
| Wideband radio communication tester | R&S            | CMW500           | 113410                 | 2026-04-14 | 2027-04-13   |
| Spectrum Analyzer                   | R&S            | FSP30            | 1321.3008K40-101729-jR | 2026-04-14 | 2027-04-13   |
| Test Receiver                       | R&S            | ESCI 3           | 1166.5950K03-101431-Jq | 2026-04-14 | 2027-04-13   |
| Horn Antenna                        | Sunol Sciences | DRH-118          | A091114                | 2026-04-14 | 2027-04-13   |
| Broadband Antenna                   | Sunol Sciences | JB6 Antenna      | A090414                | 2026-04-29 | 2028-04-28   |

## 2.7 Statement Of The Measurement Uncertainty

| Test Item                                                                                                                                            | Measurement Uncertainty |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Conducted Disturbance (0.15~30MHz)                                                                                                                   | $\pm 3.41\text{dB}$     |
| Occupied Bandwidth                                                                                                                                   | $\pm 3.63\%$            |
| RF conducted power                                                                                                                                   | $\pm 0.733\text{dB}$    |
| Duty cycle                                                                                                                                           | $\pm 3.1\%$             |
| Conducted Spurious emissions                                                                                                                         | $\pm 1.98\text{dB}$     |
| Radiated Emission (Above 1GHz)                                                                                                                       | $\pm 5.46\text{dB}$     |
| Radiated Emission (Below 1GHz)                                                                                                                       | $\pm 5.79\text{dB}$     |
| Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$ . |                         |

### 3 Evaluation Results (Evaluation)

#### 3.1 Antenna requirement

|                   |                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | Refer to 47 CFR Part 15.203, 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 shall be considered sufficient to comply with the provisions of this section. |
| Test Method:      | ---                                                                                                                                                                                                                                                                                                                                                                                 |

##### 3.1.1 Conclusion:



#### 4 Radio Spectrum Matter Test Results (RF)

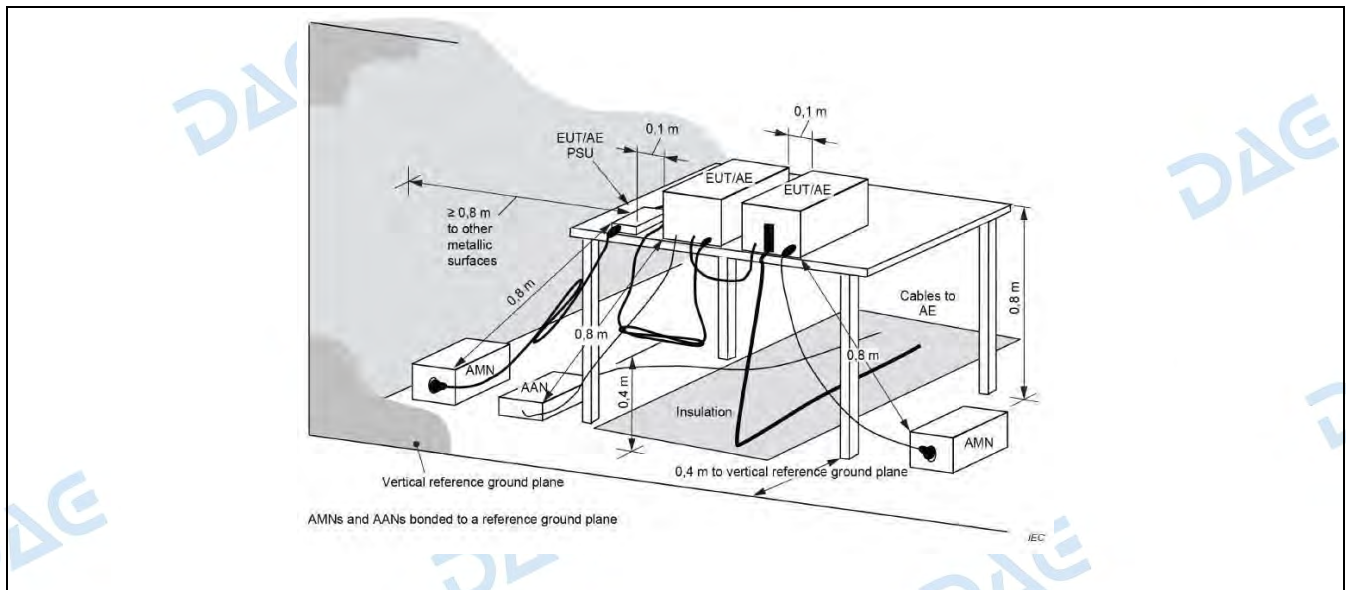
#### 4.1 Conducted Emission at AC power line

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |           |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------|
| Test Requirement: | Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 ohms line impedance stabilization network (LISN). |                              |           |
| Test Limit:       | Frequency of emission (MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Conducted limit (dB $\mu$ V) |           |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Quasi-peak                   | Average   |
|                   | 0.15-0.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 66 to 56*                    | 56 to 46* |
|                   | 0.5-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 56                           | 46        |
|                   | 5-30                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 60                           | 50        |
|                   | *Decreases with the logarithm of the frequency.                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |           |
| Test Method:      | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.2                                                                                                                                                                                                                                                                                                                                                                                                |                              |           |
| Procedure:        | Refer to ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices                                                                                                                                                                                                                                                                                          |                              |           |

#### 4.1.1 E.U.T. Operation:

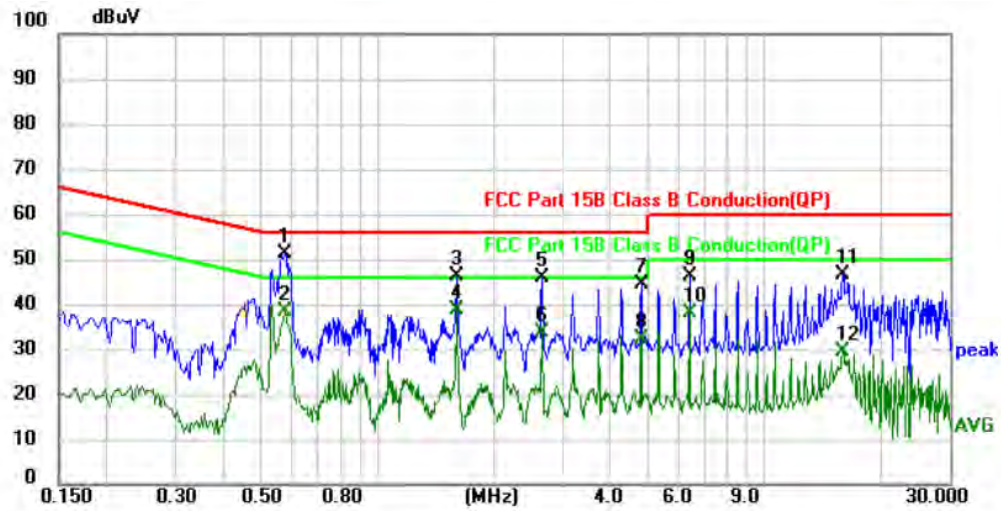
|                        |         |           |      |                       |           |
|------------------------|---------|-----------|------|-----------------------|-----------|
| Operating Environment: |         |           |      |                       |           |
| Temperature:           | 23.9 °C | Humidity: | 49 % | Atmospheric Pressure: | 101.2 kPa |
| Pretest mode:          | TM1     |           |      |                       |           |
| Final test mode:       | TM1     |           |      |                       |           |

#### 4.1.2 Test Setup Diagram:



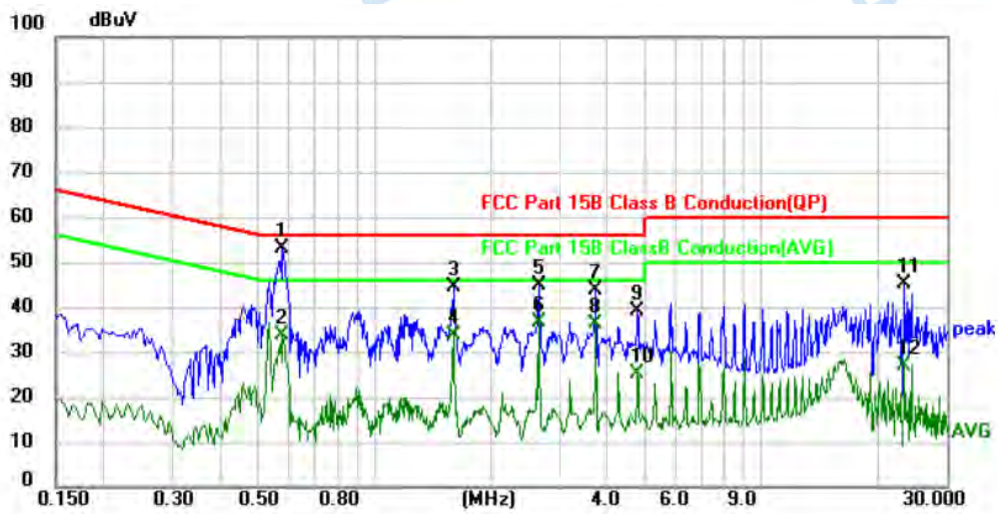
### 4.1.3 Test Data:

TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 1 / CH: L



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   | *   | 0.5780       | 41.24                    | 10.09                   | 51.33                    | 56.00         | -4.67      | peak     |         |
| 2   |     | 0.5780       | 28.22                    | 10.09                   | 38.31                    | 46.00         | -7.69      | AVG      |         |
| 3   |     | 1.5980       | 36.04                    | 10.10                   | 46.14                    | 56.00         | -9.86      | peak     |         |
| 4   |     | 1.5980       | 28.62                    | 10.10                   | 38.72                    | 46.00         | -7.28      | AVG      |         |
| 5   |     | 2.6660       | 35.74                    | 10.14                   | 45.88                    | 56.00         | -10.12     | peak     |         |
| 6   |     | 2.6660       | 23.66                    | 10.14                   | 33.80                    | 46.00         | -12.20     | AVG      |         |
| 7   |     | 4.7980       | 34.22                    | 10.19                   | 44.41                    | 56.00         | -11.59     | peak     |         |
| 8   |     | 4.7980       | 22.29                    | 10.19                   | 32.48                    | 46.00         | -13.52     | AVG      |         |
| 9   |     | 6.3980       | 35.87                    | 10.24                   | 46.11                    | 60.00         | -13.89     | peak     |         |
| 10  |     | 6.3980       | 27.75                    | 10.24                   | 37.99                    | 50.00         | -12.01     | AVG      |         |
| 11  |     | 15.9660      | 36.03                    | 10.63                   | 46.66                    | 60.00         | -13.34     | peak     |         |
| 12  |     | 15.9660      | 18.71                    | 10.63                   | 29.34                    | 50.00         | -20.66     | AVG      |         |

TM1 / Line: Neutral / Band: 2400-2483.5 MHz / BW: 1 / CH: L



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   | *   | 0.5780       | 42.90                    | 10.09                   | 52.99                    | 56.00         | -3.01      | peak     |         |
| 2   |     | 0.5780       | 23.63                    | 10.09                   | 33.72                    | 46.00         | -12.28     | AVG      |         |
| 3   |     | 1.5980       | 34.24                    | 10.10                   | 44.34                    | 56.00         | -11.66     | peak     |         |
| 4   |     | 1.5980       | 23.58                    | 10.10                   | 33.68                    | 46.00         | -12.32     | AVG      |         |
| 5   |     | 2.6619       | 34.69                    | 10.14                   | 44.83                    | 56.00         | -11.17     | peak     |         |
| 6   |     | 2.6619       | 26.40                    | 10.14                   | 36.54                    | 46.00         | -9.46      | AVG      |         |
| 7   |     | 3.7260       | 33.63                    | 10.16                   | 43.79                    | 56.00         | -12.21     | peak     |         |
| 8   |     | 3.7260       | 25.97                    | 10.16                   | 36.13                    | 46.00         | -9.87      | AVG      |         |
| 9   |     | 4.7940       | 28.98                    | 10.19                   | 39.17                    | 56.00         | -16.83     | peak     |         |
| 10  |     | 4.7940       | 15.14                    | 10.19                   | 25.33                    | 46.00         | -20.67     | AVG      |         |
| 11  |     | 23.4140      | 34.58                    | 10.68                   | 45.26                    | 60.00         | -14.74     | peak     |         |
| 12  |     | 23.4140      | 16.25                    | 10.68                   | 26.93                    | 50.00         | -23.07     | AVG      |         |

Remark: Factor = Cable loss + LISN factor, Margin = Measurement – Limit

All modes have been tested, and the test results show that GFSK-LCH data is the worst, only GFSK-LCH test chart is put. Test Mode: GFSK low channel (the worst)

## 4.2 20dB Bandwidth

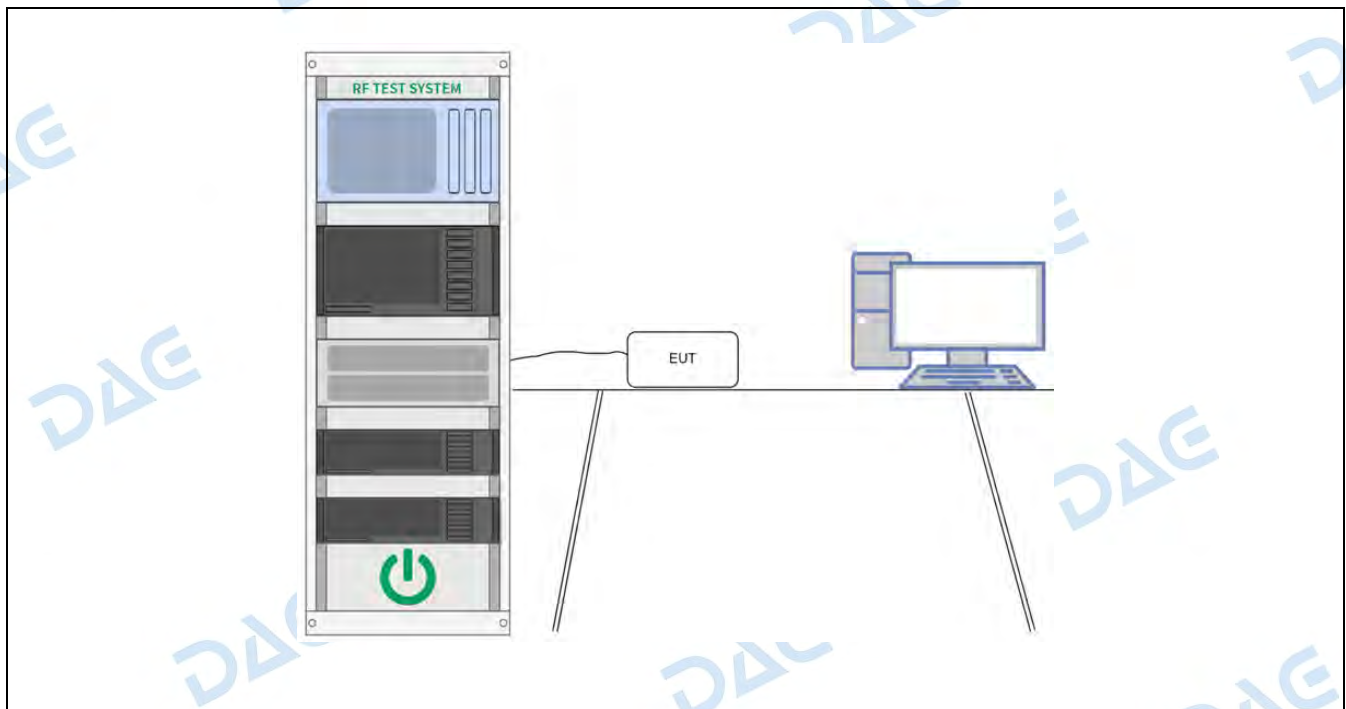
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(a)(1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Test Limit:       | Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Test Method:      | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.6, For occupied bandwidth measurements, use the procedure in 6.9.2. Frequency hopping shall be disabled for this test.<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Procedure:        | <p>A dBc bandwidth is measured as the width of the spectral envelope of the modulated signal, at an amplitude level reduced from a reference value by a specified ratio (or in decibels, a specified number of dB down from the reference value). Typical ratios, expressed in dB, are -6 dB, -20 dB, and -26 dB, corresponding to 6 dB BW, 20 dB BW, and 26 dB BW, respectively. In this subclause, the ratio is designated by “-xx dB.” The reference value is either the level of the unmodulated carrier or the highest level of the spectral envelope of the modulated signal, as stated by the applicable requirement. Some requirements might specify a specific maximum or minimum value for the “-xx dB” bandwidth; other requirements might specify that the “-xx dB” bandwidth be entirely contained within the authorized or designated frequency band.<sup>51</sup></p> <p>a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.</p> <p>b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be at least three times RBW, unless otherwise specified by the applicable requirement.</p> <p>c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than <math>[10 \log (OBW/RBW)]</math> below the reference level. Specific guidance is given in 4.1.6.2.</p> <p>d) Steps a) through c) might require iteration to adjust within the specified tolerances.</p> <p>e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.</p> <p>f) Set detection mode to peak and trace mode to max-hold.</p> <p>g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).</p> <p>h) Determine the “-xx dB down amplitude” using <math>[(\text{reference value}) - \text{xx}]</math>. Alternatively, this calculation may be made by using the marker-delta function of the instrument.</p> <p>i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).</p> <p>j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-xx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The dBc bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude”</p> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.</p> <p>k) The dBc bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).</p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 4.2.1 E.U.T. Operation:

|                        |         |           |      |                       |           |
|------------------------|---------|-----------|------|-----------------------|-----------|
| Operating Environment: |         |           |      |                       |           |
| Temperature:           | 23.9 °C | Humidity: | 50 % | Atmospheric Pressure: | 101.2 kPa |
| Pretest mode:          | TM1     |           |      |                       |           |
| Final test mode:       | TM1     |           |      |                       |           |

#### 4.2.2 Test Setup Diagram:



#### 4.2.3 Test Data:

Please Refer to Appendix for Details.

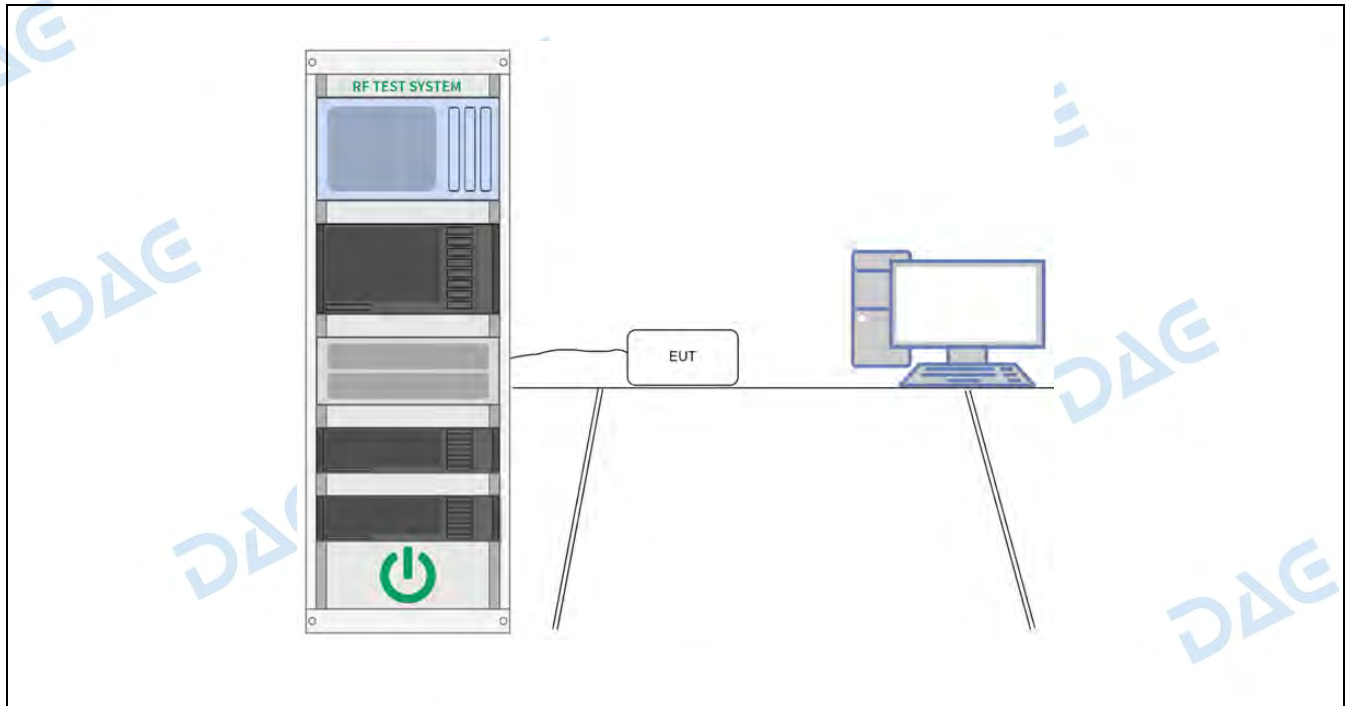
### 4.3 Maximum Conducted Output Power

|                   |                                                                                                                                                                                                                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(b)(1)                                                                                                                                                                                                                                                                                              |
| Test Limit:       | Refer to 47 CFR 15.247(b)(1), For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts. |
| Test Method:      | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.5<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                |

#### 4.3.1 E.U.T. Operation:

|                        |         |           |      |                       |           |
|------------------------|---------|-----------|------|-----------------------|-----------|
| Operating Environment: |         |           |      |                       |           |
| Temperature:           | 22.4 °C | Humidity: | 50 % | Atmospheric Pressure: | 101.2 kPa |
| Pretest mode:          | TM1     |           |      |                       |           |
| Final test mode:       | TM1     |           |      |                       |           |

#### 4.3.2 Test Setup Diagram:



#### 4.3.3 Test Data:

Please Refer to Appendix for Details.

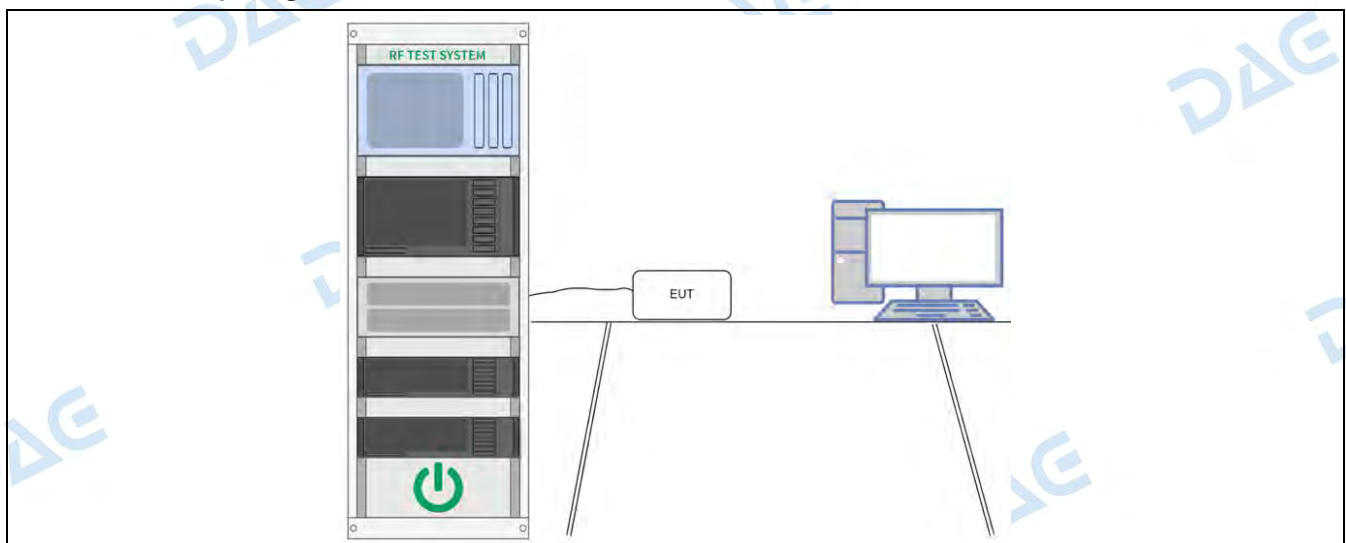
#### 4.4 Channel Separation

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(a)(1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Test Limit:       | Refer to 47 CFR 15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.                                                                                                                                                                                                                                                                                                                                                                   |
| Test Method:      | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.2<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Procedure:        | <p>The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:</p> <ul style="list-style-type: none"> <li>a) Span: Wide enough to capture the peaks of two adjacent channels.</li> <li>b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.</li> <li>c) Video (or average) bandwidth (VBW) <math>\geq</math> RBW.</li> <li>d) Sweep: No faster than coupled (auto) time.</li> <li>e) Detector function: Peak.</li> <li>f) Trace: Max-hold.</li> <li>g) Allow the trace to stabilize.</li> </ul> <p>Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A spectral plot of the data shall be included in the test report.</p> |

##### 4.4.1 E.U.T. Operation:

|                        |         |           |      |                       |           |
|------------------------|---------|-----------|------|-----------------------|-----------|
| Operating Environment: |         |           |      |                       |           |
| Temperature:           | 23.7 °C | Humidity: | 54 % | Atmospheric Pressure: | 101.2 kPa |
| Pretest mode:          | TM1     |           |      |                       |           |
| Final test mode:       | TM1     |           |      |                       |           |

##### 4.4.2 Test Setup Diagram:



##### 4.4.3 Test Data:

Please Refer to Appendix for Details.

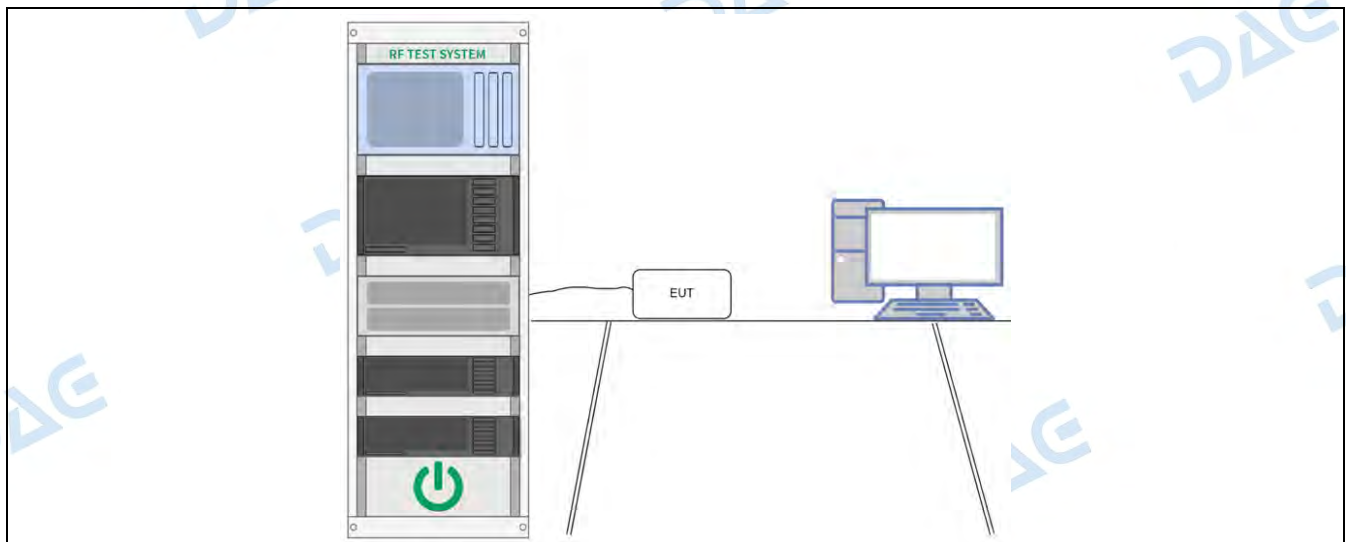
## 4.5 Number of Hopping Frequencies

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(a)(1)(iii)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Test Limit:       | Refer to 47 CFR 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Test Method:      | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.3<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Procedure:        | The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:<br>a) Span: The frequency band of operation. Depending on the number of channels the device supports, it could be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.<br>b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.<br>c) VBW $\geq$ RBW.<br>d) Sweep: No faster than coupled (auto) time.<br>e) Detector function: Peak.<br>f) Trace: Max-hold.<br>g) Allow the trace to stabilize.<br>It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A spectral plot of the data shall be included in the test report. |

### 4.5.1 E.U.T. Operation:

|                        |         |           |      |                       |           |
|------------------------|---------|-----------|------|-----------------------|-----------|
| Operating Environment: |         |           |      |                       |           |
| Temperature:           | 23.6 °C | Humidity: | 52 % | Atmospheric Pressure: | 101.2 kPa |
| Pretest mode:          | TM1     |           |      |                       |           |
| Final test mode:       | TM1     |           |      |                       |           |

### 4.5.2 Test Setup Diagram:



### 4.5.3 Test Data:

Please Refer to Appendix for Details.

#### 4.6 Dwell Time

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(a)(1)(iii)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Test Limit:       | Refer to 47 CFR 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Test Method:      | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 7.8.4<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Procedure:        | <p>The dwell time per hop on a channel is the time from the start of the first transmission to the end of the last transmission for that hop. If the device has a single transmission per hop then the dwell time is the duration of that transmission. If the device has a multiple transmissions per hop then the dwell time is measured from the start of the first transmission to the end of the last transmission.</p> <p>The time of occupancy is the total time that the device dwells on a channel over an observation period specified in the regulatory requirement. To determine the time of occupancy the spectrum analyzer will be configured to measure both the dwell time per hop and the number of times the device transmits on a specific channel in a given period.</p> <p>The EUT shall have its hopping function enabled. Compliance with the requirements shall be made with the minimum and with the maximum number of channels enabled. If the dwell time per channel does not vary with the number of channels then compliance with the requirements may be based on the minimum number of channels. If the device supports different dwell times per channel (example Bluetooth devices can dwell on a channel for 1, 3 or 5 time slots) then measurements can be limited to the longest dwell time with the minimum number of channels.</p> <p>Use the following spectrum analyzer settings to determine the dwell time per hop:</p> <ul style="list-style-type: none"> <li>a) Span: Zero span, centered on a hopping channel.</li> <li>b) RBW shall be <math>\leq</math> channel spacing and where possible RBW should be set <math>\gg 1/T</math>, where T is the expected transmission time per hop.</li> <li>c) Sweep time: Set so that the start of the first transmission and end of the last transmission for the hop are clearly captured. Setting the sweep time to be slightly longer than the hopping period per channel (hopping period = <math>1/\text{hopping rate}</math>) should achieve this.</li> <li>d) Use a video trigger, where possible with a trigger delay, so that the start of the transmission is clearly observed. The trigger level might need adjustment to reduce the chance of triggering when the system hops on an adjacent channel.</li> <li>e) Detector function: Peak.</li> <li>f) Trace: Clear-write, single sweep.</li> <li>g) Place markers at the start of the first transmission on the channel and at the end of the last transmission. The dwell time per hop is the time between these two markers.</li> </ul> <p>To determine the number of hops on a channel in the regulatory observation period repeat the measurement using a longer sweep time. When the device uses a single hopping sequence the period of measurement should be sufficient to capture at least 2 hops. When the device uses a dynamic hopping sequence, or the sequence varies, the period of measurement may need to capture multiple hops to better determine the average time of occupancy. Count the number of hops on the channel across the sweep time.</p> |

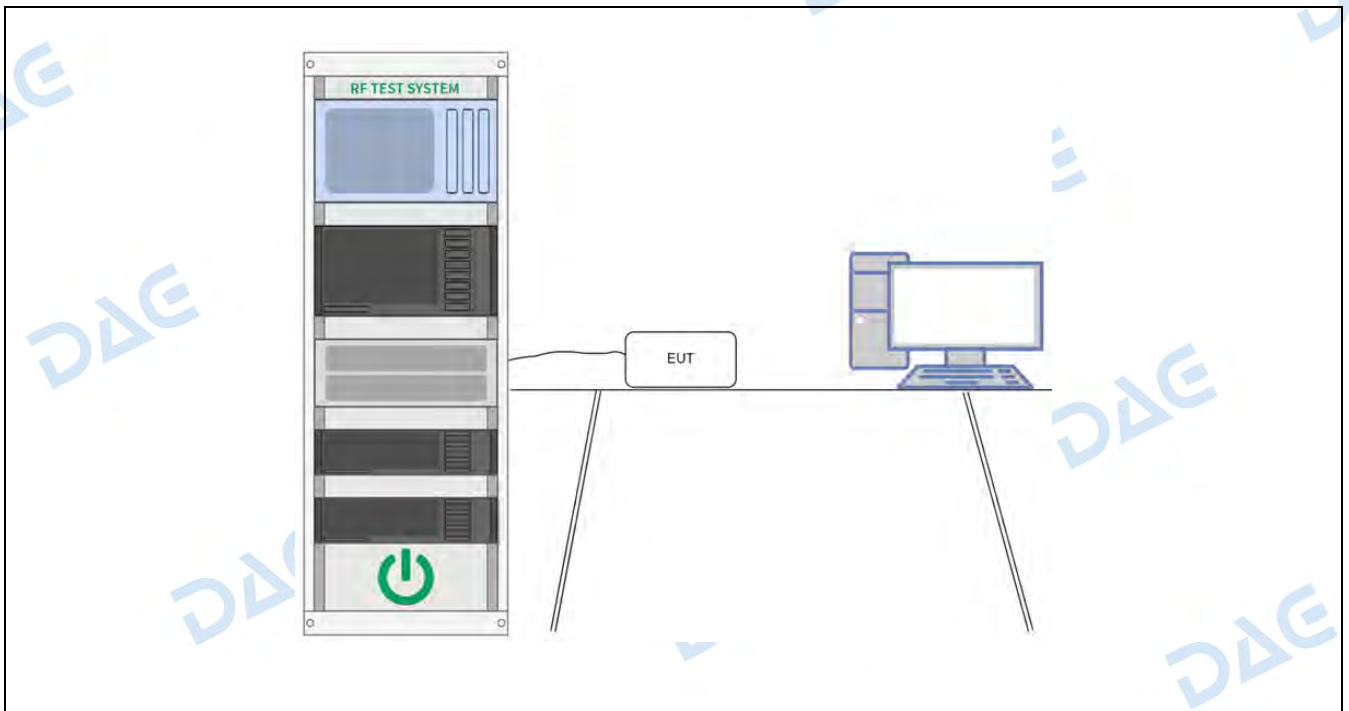
The average number of hops on the same channel within the regulatory observation period is calculated from the number of hops on the channel divided by the spectrum analyzer sweep time multiplied by the regulatory observation period. For example, if three hops are counted with an analyzer sweep time of 500 ms and the regulatory observation period is 10 s, then the number of hops in that ten seconds is  $3 / 0.5 \times 10$ , or 60 hops.

The average time of occupancy is calculated by multiplying the dwell time per hop by the number of hops in the observation period.

#### 4.6.1 E.U.T. Operation:

|                        |         |           |      |                       |           |
|------------------------|---------|-----------|------|-----------------------|-----------|
| Operating Environment: |         |           |      |                       |           |
| Temperature:           | 22.9 °C | Humidity: | 46 % | Atmospheric Pressure: | 101.2 kPa |
| Pretest mode:          | TM1     |           |      |                       |           |
| Final test mode:       | TM1     |           |      |                       |           |

#### 4.6.2 Test Setup Diagram:



#### 4.6.3 Test Data:

Please Refer to Appendix for Details.

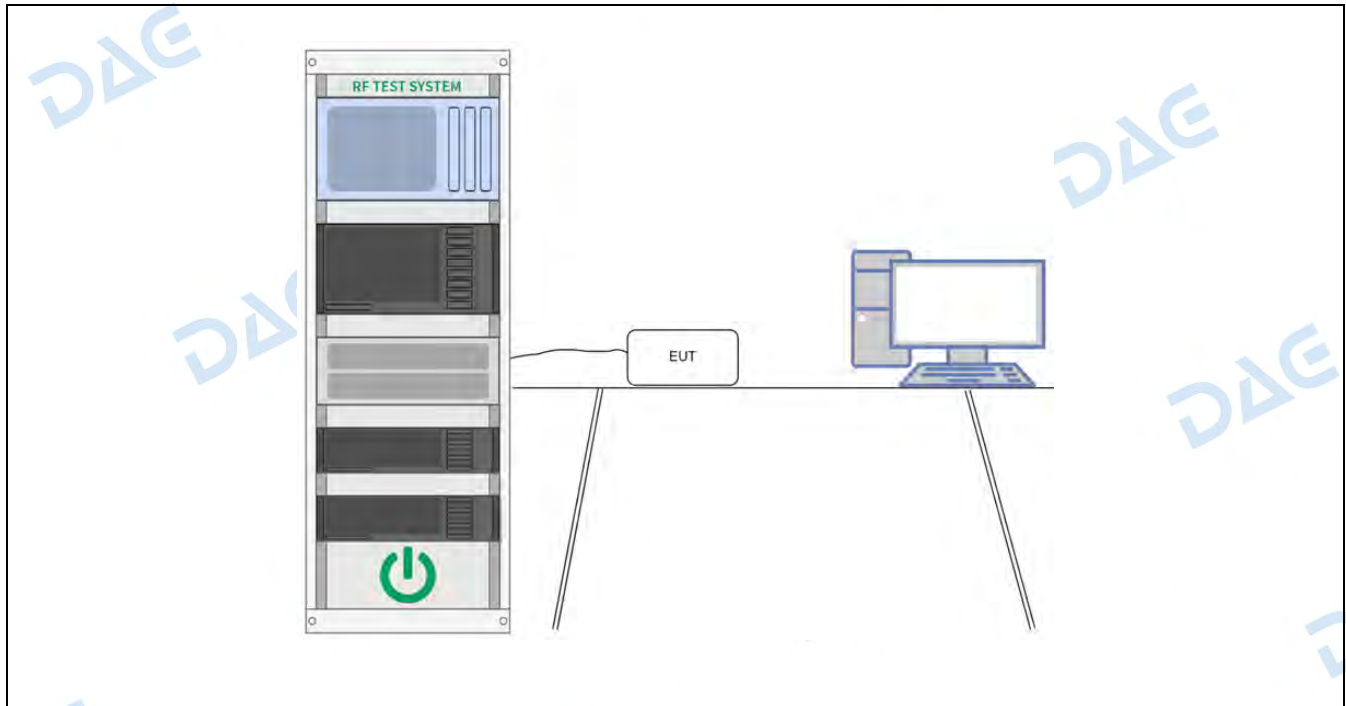
#### 4.7 Emissions in non-restricted frequency bands

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Test Limit:       | Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. |
| Test Method:      | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 7.8.7<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

##### 4.7.1 E.U.T. Operation:

|                        |         |           |      |                       |           |
|------------------------|---------|-----------|------|-----------------------|-----------|
| Operating Environment: |         |           |      |                       |           |
| Temperature:           | 22.2 °C | Humidity: | 47 % | Atmospheric Pressure: | 101.2 kPa |
| Pretest mode:          | TM1     |           |      |                       |           |
| Final test mode:       | TM1     |           |      |                       |           |

##### 4.7.2 Test Setup Diagram:



##### 4.7.3 Test Data:

Please Refer to Appendix for Details.

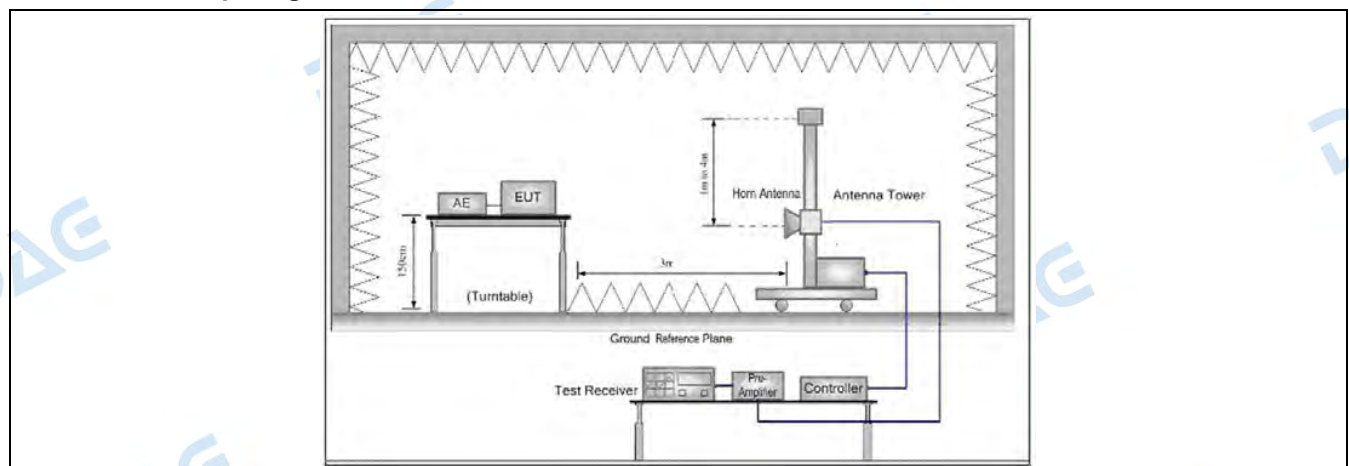
#### 4.8 Band edge emissions (Radiated)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                         |                                   |                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|
| Test Requirement:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)). |                                   |                               |
| Test Limit:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Frequency (MHz)                                                                                                                                                                                                         | Field strength (microvolts/meter) | Measurement distance (meters) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.009-0.490                                                                                                                                                                                                             | 2400/F(kHz)                       | 300                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.490-1.705                                                                                                                                                                                                             | 24000/F(kHz)                      | 30                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.705-30.0                                                                                                                                                                                                              | 30                                | 30                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 30-88                                                                                                                                                                                                                   | 100 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 88-216                                                                                                                                                                                                                  | 150 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 216-960                                                                                                                                                                                                                 | 200 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Above 960                                                                                                                                                                                                               | 500                               | 3                             |
| <p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>In the emission table above, the tighter limit applies at the band edges.</p> <p>The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p> |                                                                                                                                                                                                                         |                                   |                               |
| Test Method:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.10<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                         |                                   |                               |
| Procedure:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.10.5.2                                                                                                                                   |                                   |                               |

##### 4.8.1 E.U.T. Operation:

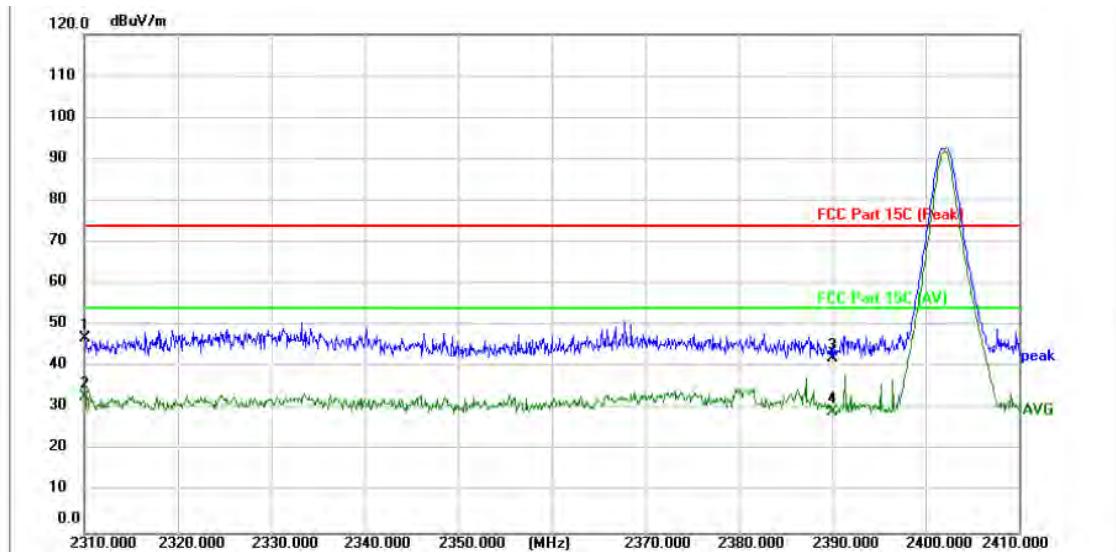
|                        |           |           |      |
|------------------------|-----------|-----------|------|
| Operating Environment: |           |           |      |
| Temperature:           | 23.2 °C   | Humidity: | 50 % |
| Atmospheric Pressure:  | 101.2 kPa |           |      |
| Pretest mode:          | TM1       |           |      |
| Final test mode:       | TM1       |           |      |

##### 4.8.2 Test Setup Diagram:



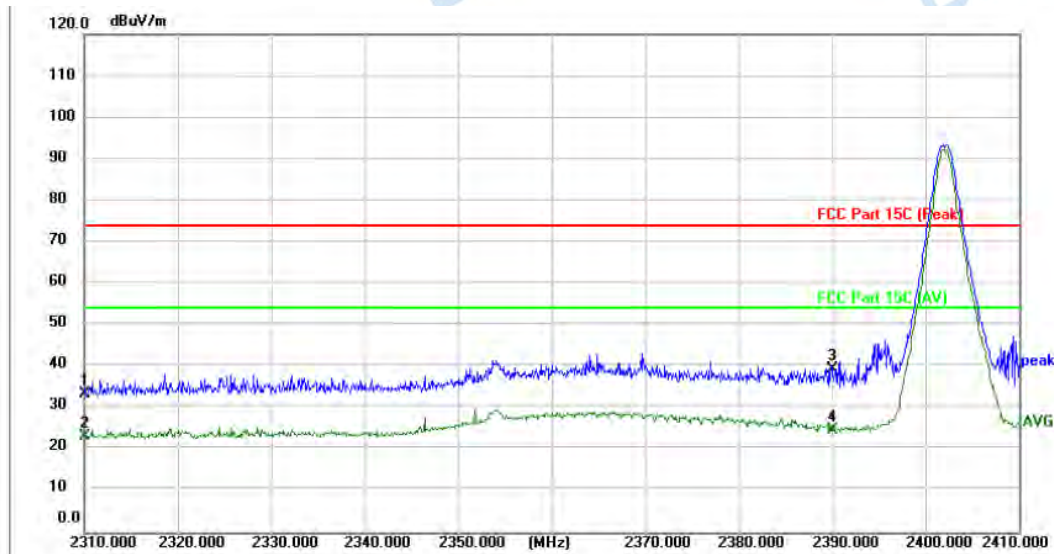
### 4.8.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



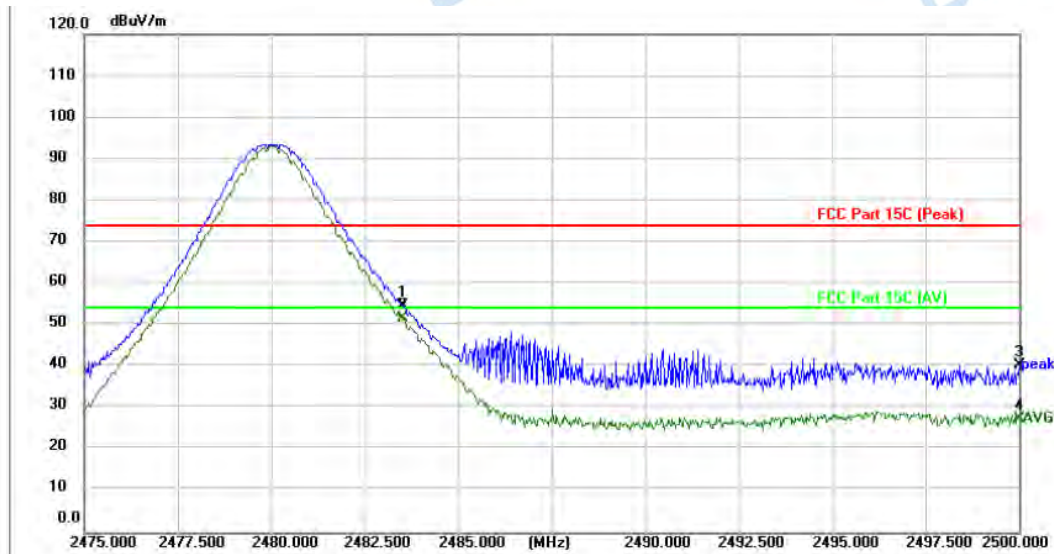
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|-----|--------|
| 1   | 2310.000        | 53.69          | -6.85         | 46.84          | 74.00          | -27.16      | peak     |  | P   |        |
| 2 * | 2310.000        | 39.68          | -6.85         | 32.83          | 54.00          | -21.17      | AVG      |  | P   |        |
| 3   | 2390.000        | 48.72          | -6.69         | 42.03          | 74.00          | -31.97      | peak     |  | P   |        |
| 4   | 2390.000        | 35.83          | -6.69         | 29.14          | 54.00          | -24.86      | AVG      |  | P   |        |

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



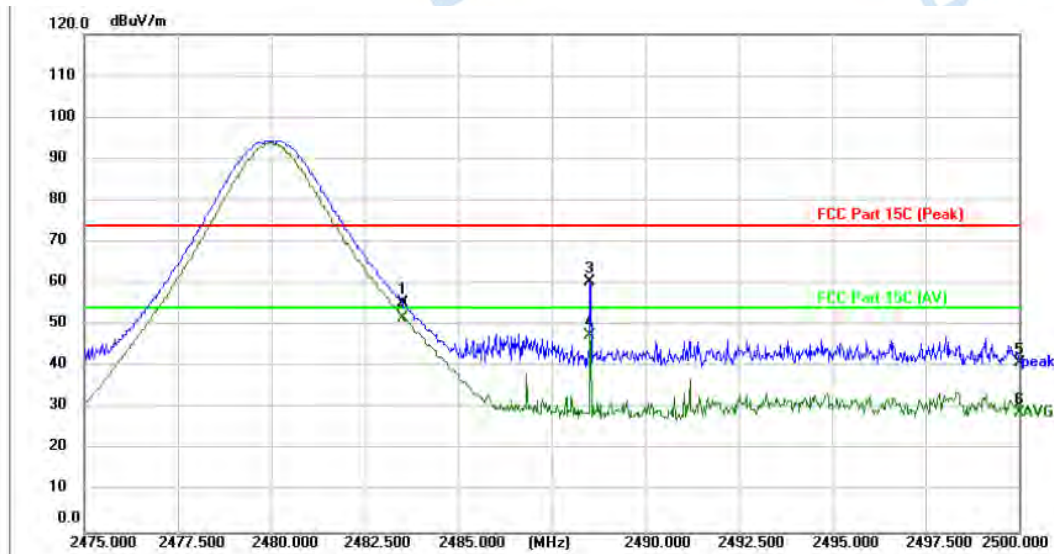
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|--|-----|--------|
| 1   | 2310.000        | 40.44          | -6.85         | 33.59          | 74.00          | -40.41      | peak     |  |  | P   |        |
| 2   | 2310.000        | 30.10          | -6.85         | 23.25          | 54.00          | -30.75      | AVG      |  |  | P   |        |
| 3   | 2390.000        | 46.00          | -6.69         | 39.31          | 74.00          | -34.69      | peak     |  |  | P   |        |
| 4 * | 2390.000        | 31.52          | -6.69         | 24.83          | 54.00          | -29.17      | AVG      |  |  | P   |        |

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|--|-----|--------|
| 1   | 2483.500        | 61.35          | -6.51         | 54.84          | 74.00          | -19.16      | peak     |  |  | P   |        |
| 2 * | 2483.500        | 58.27          | -6.51         | 51.76          | 54.00          | -2.24       | AVG      |  |  | P   |        |
| 3   | 2500.000        | 46.92          | -6.48         | 40.44          | 74.00          | -33.56      | peak     |  |  | P   |        |
| 4   | 2500.000        | 33.82          | -6.48         | 27.34          | 54.00          | -26.66      | AVG      |  |  | P   |        |

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|--|-----|--------|
| 1   | 2483.500        | 61.75          | -6.51         | 55.24          | 74.00          | -18.76      | peak     |  |  | P   |        |
| 2 * | 2483.500        | 58.31          | -6.51         | 51.80          | 54.00          | -2.20       | AVG      |  |  | P   |        |
| 3   | 2488.525        | 66.98          | -6.50         | 60.48          | 74.00          | -13.52      | peak     |  |  | P   |        |
| 4   | 2488.525        | 54.07          | -6.50         | 47.57          | 54.00          | -6.43       | AVG      |  |  | P   |        |
| 5   | 2500.000        | 47.32          | -6.48         | 40.84          | 74.00          | -33.16      | peak     |  |  | P   |        |
| 6   | 2500.000        | 35.55          | -6.48         | 29.07          | 54.00          | -24.93      | AVG      |  |  | P   |        |

Remark: Margin=Level - Limit, Level=Test receiver reading + correction factor

All modes have been tested, and the test results show that GFSK data is the worst, only GFSK test chart is put.  
Test Mode: GFSK (the worst)

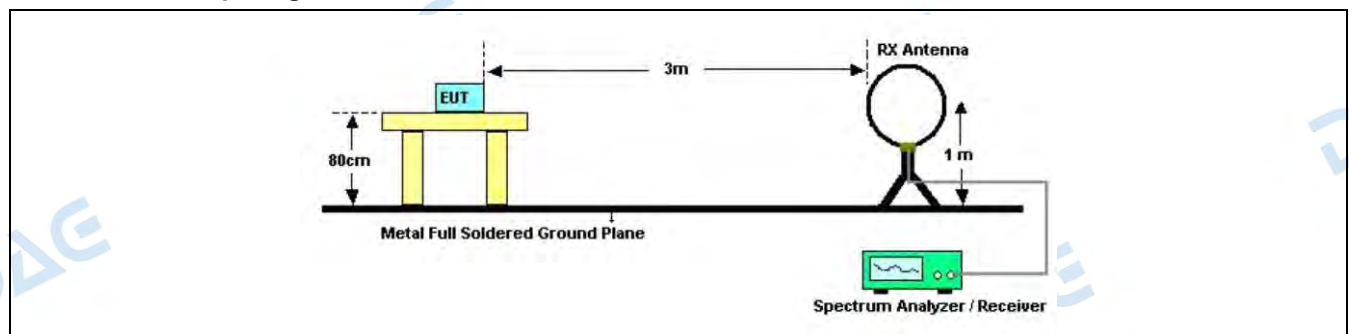
#### 4.9 Emissions in frequency bands (below 1GHz)

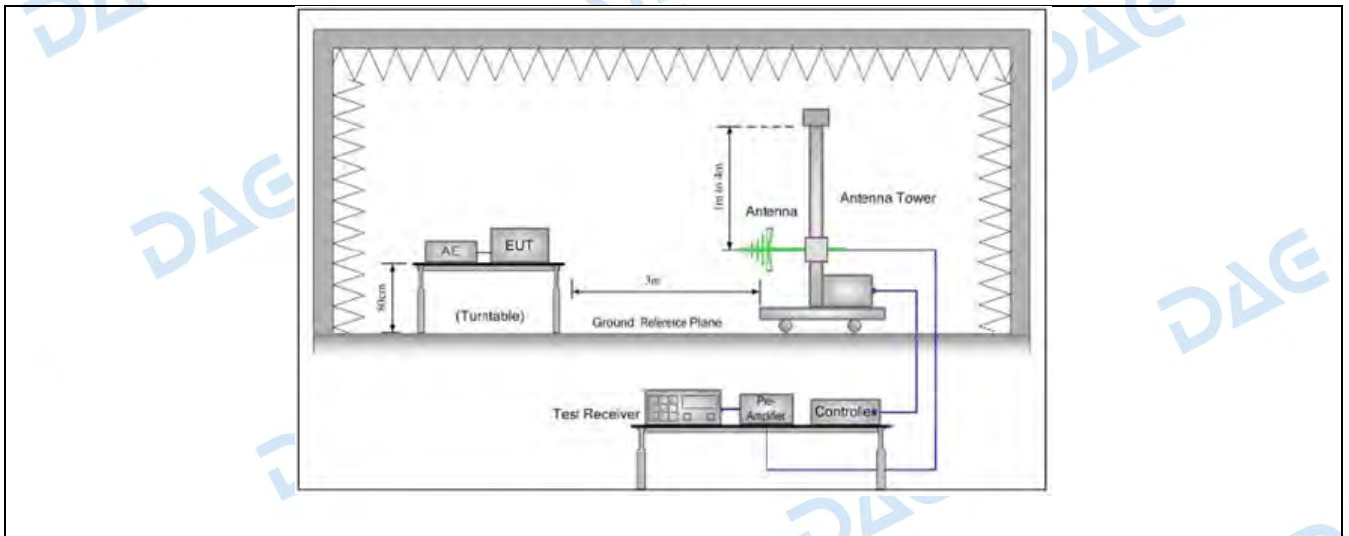
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                         |                                   |                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|
| Test Requirement:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)). |                                   |                               |
| Test Limit:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Frequency (MHz)                                                                                                                                                                                                         | Field strength (microvolts/meter) | Measurement distance (meters) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.009-0.490                                                                                                                                                                                                             | 2400/F(kHz)                       | 300                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.490-1.705                                                                                                                                                                                                             | 24000/F(kHz)                      | 30                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.705-30.0                                                                                                                                                                                                              | 30                                | 30                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 30-88                                                                                                                                                                                                                   | 100 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 88-216                                                                                                                                                                                                                  | 150 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 216-960                                                                                                                                                                                                                 | 200 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Above 960                                                                                                                                                                                                               | 500                               | 3                             |
| <p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>In the emission table above, the tighter limit applies at the band edges.</p> <p>The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p> |                                                                                                                                                                                                                         |                                   |                               |
| Test Method:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                        |                                   |                               |
| Procedure:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4                                                                                                                                      |                                   |                               |

##### 4.9.1 E.U.T. Operation:

|                        |           |           |      |
|------------------------|-----------|-----------|------|
| Operating Environment: |           |           |      |
| Temperature:           | 22.5 °C   | Humidity: | 50 % |
| Atmospheric Pressure:  | 101.2 kPa |           |      |
| Pretest mode:          | TM1       |           |      |
| Final test mode:       | TM1       |           |      |

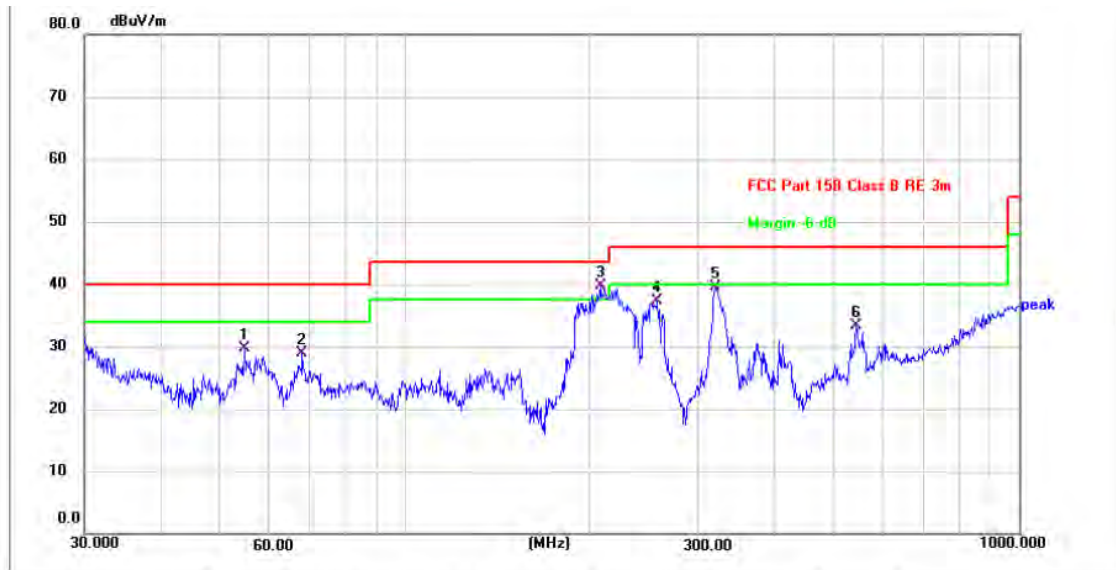
##### 4.9.2 Test Setup Diagram:





### 4.9.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1   | 54.6428         | 37.22          | -7.53         | 29.69          | 40.00          | -10.31      | QP       |             |                | P   |        |
| 2   | 67.9128         | 36.29          | -7.32         | 28.97          | 40.00          | -11.03      | QP       |             |                | P   |        |
| 3 * | 207.8501        | 43.81          | -4.18         | 39.63          | 43.50          | -3.87       | QP       |             |                | P   |        |
| 4   | 257.4221        | 41.01          | -3.73         | 37.28          | 46.00          | -8.72       | QP       |             |                | P   |        |
| 5   | 319.9370        | 41.12          | -1.71         | 39.41          | 46.00          | -6.59       | QP       |             |                | P   |        |
| 6   | 543.2742        | 29.60          | 3.74          | 33.34          | 46.00          | -12.66      | QP       |             |                | P   |        |

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1   | 30.0000         | 29.99          | 3.23          | 33.22          | 40.00          | -6.78       | QP       |             |                | P   |        |
| 2   | 46.9947         | 40.71          | -7.17         | 33.54          | 40.00          | -6.46       | QP       |             |                | P   |        |
| 3 * | 61.5617         | 42.20          | -7.44         | 34.76          | 40.00          | -5.24       | QP       |             |                | P   |        |
| 4   | 96.4360         | 38.57          | -4.96         | 33.61          | 43.50          | -9.89       | QP       |             |                | P   |        |
| 5   | 191.0738        | 40.76          | -3.31         | 37.45          | 43.50          | -6.05       | QP       |             |                | P   |        |
| 6   | 245.0900        | 41.50          | -4.24         | 37.26          | 46.00          | -8.74       | QP       |             |                | P   |        |

Remark: Margin=Level - Limit, Level=Test receiver reading + correction factor

All modes have been tested, and the test results show that GFSK data is the worst, only GFSK test chart is put.  
Test Mode: GFSK (the worst)

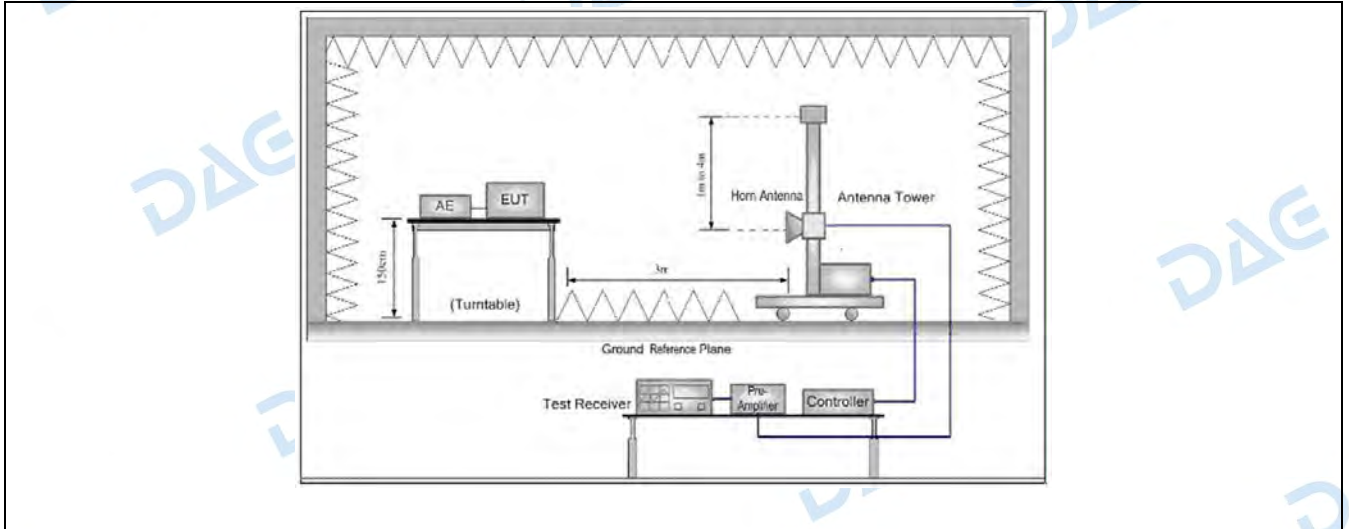
#### 4.10 Emissions in frequency bands (above 1GHz)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                         |                                   |                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|
| Test Requirement:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Refer to 47 CFR 15.247(d), in addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)). |                                   |                               |
| Test Limit:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Frequency (MHz)                                                                                                                                                                                                         | Field strength (microvolts/meter) | Measurement distance (meters) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.009-0.490                                                                                                                                                                                                             | 2400/F(kHz)                       | 300                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.490-1.705                                                                                                                                                                                                             | 24000/F(kHz)                      | 30                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.705-30.0                                                                                                                                                                                                              | 30                                | 30                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 30-88                                                                                                                                                                                                                   | 100 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 88-216                                                                                                                                                                                                                  | 150 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 216-960                                                                                                                                                                                                                 | 200 **                            | 3                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Above 960                                                                                                                                                                                                               | 500                               | 3                             |
| <p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>In the emission table above, the tighter limit applies at the band edges.</p> <p>The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p> |                                                                                                                                                                                                                         |                                   |                               |
| Test Method:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4<br>KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                        |                                   |                               |
| Procedure:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4                                                                                                                                      |                                   |                               |

##### 4.10.1 E.U.T. Operation:

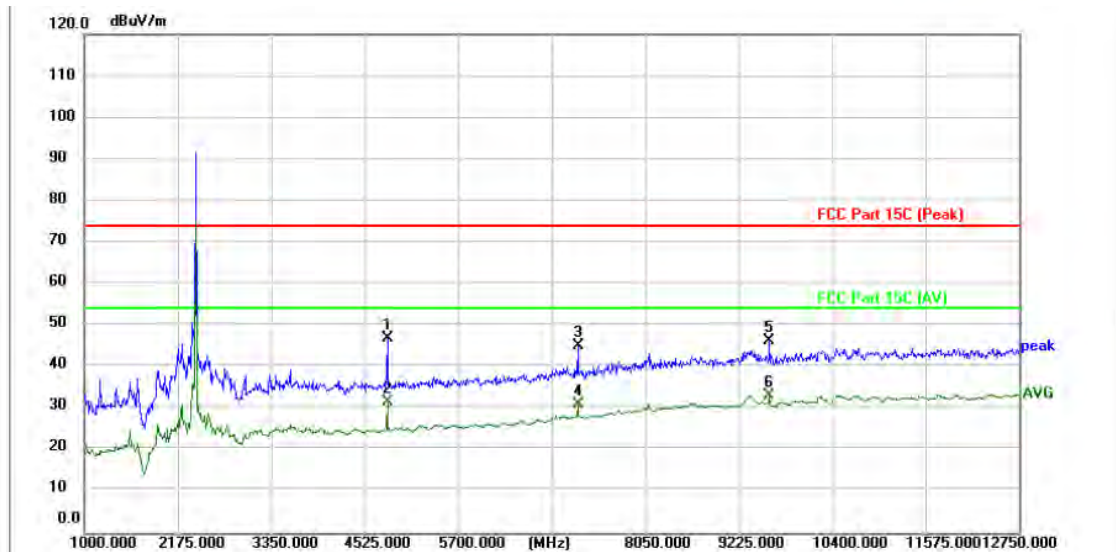
|                        |         |                       |           |
|------------------------|---------|-----------------------|-----------|
| Operating Environment: |         |                       |           |
| Temperature:           | 22.8 °C | Humidity:             | 50 %      |
|                        |         | Atmospheric Pressure: | 101.2 kPa |
| Pretest mode:          | TM1     |                       |           |
| Final test mode:       | TM1     |                       |           |

#### 4.10.2 Test Setup Diagram:



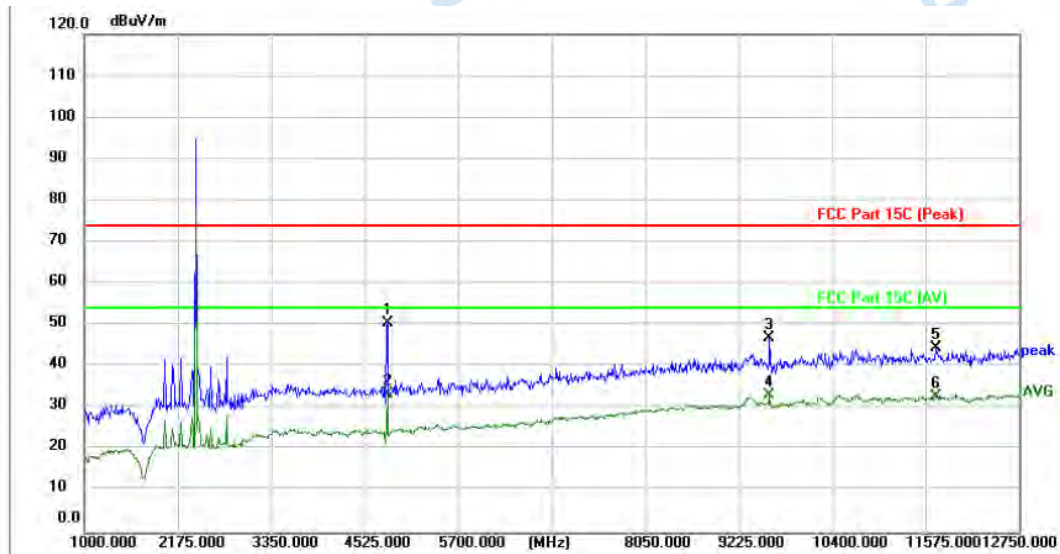
#### 4.10.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



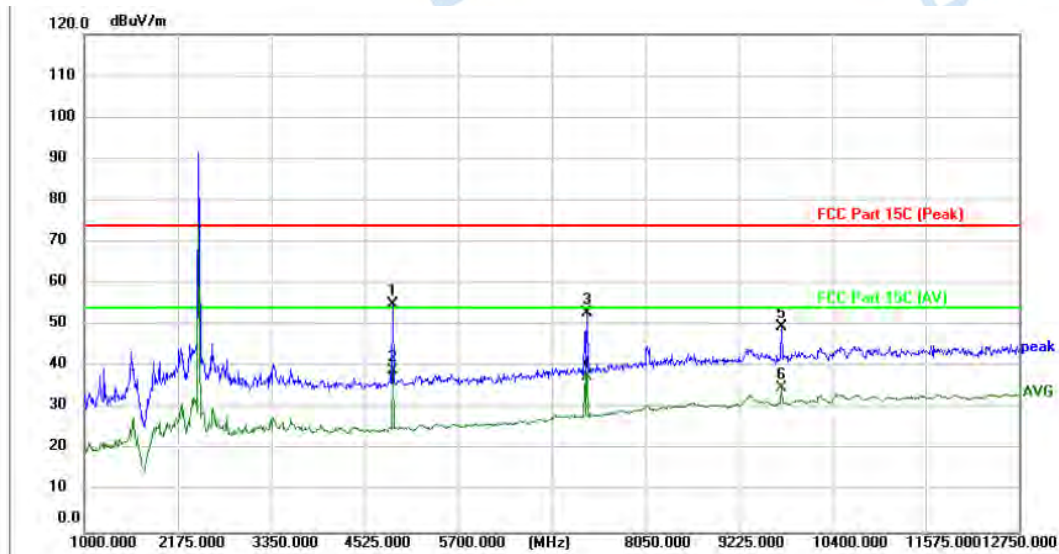
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|-----|--------|
| 1   | 4807.000        | 48.24          | -1.32         | 46.92          | 74.00          | -27.08      | peak     |  | P   |        |
| 2   | 4807.000        | 33.07          | -1.32         | 31.75          | 54.00          | -22.25      | AVG      |  | P   |        |
| 3   | 7204.000        | 41.67          | 3.58          | 45.25          | 74.00          | -28.75      | peak     |  | P   |        |
| 4   | 7204.000        | 27.53          | 3.58          | 31.11          | 54.00          | -22.89      | AVG      |  | P   |        |
| 5   | 9612.750        | 39.58          | 6.84          | 46.42          | 74.00          | -27.58      | peak     |  | P   |        |
| 6 * | 9612.750        | 26.34          | 6.84          | 33.18          | 54.00          | -20.82      | AVG      |  | P   |        |

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



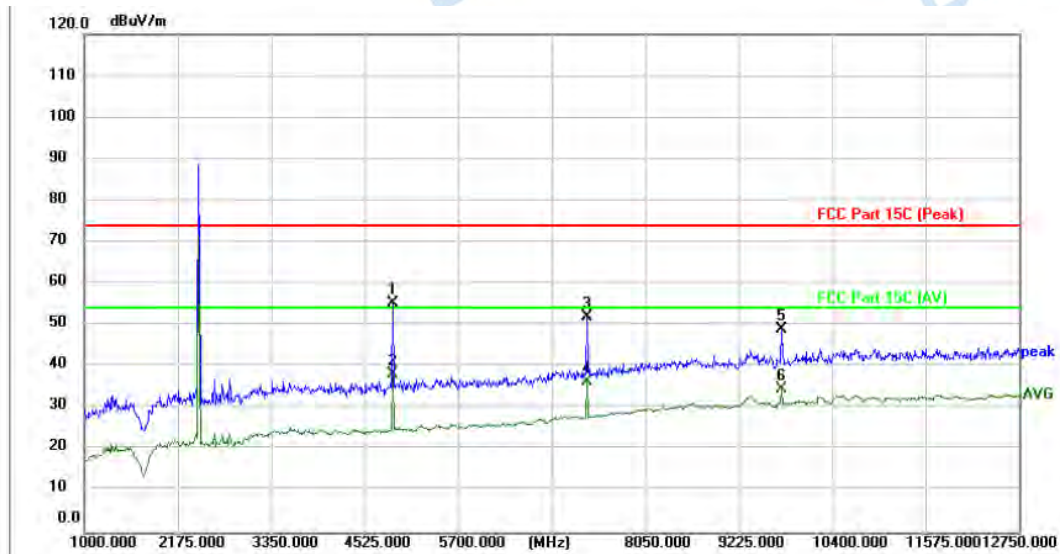
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|--|-----|--------|
| 1   | 4807.000        | 51.88          | -1.32         | 50.56          | 74.00          | -23.44      | peak     |  |  | P   |        |
| 2 * | 4807.000        | 34.75          | -1.32         | 33.43          | 54.00          | -20.57      | AVG      |  |  | P   |        |
| 3   | 9612.750        | 40.14          | 6.84          | 46.98          | 74.00          | -27.02      | peak     |  |  | P   |        |
| 4   | 9612.750        | 26.33          | 6.84          | 33.17          | 54.00          | -20.83      | AVG      |  |  | P   |        |
| 5   | 11704.250       | 36.87          | 7.62          | 44.49          | 74.00          | -29.51      | peak     |  |  | P   |        |
| 6   | 11704.250       | 25.25          | 7.62          | 32.87          | 54.00          | -21.13      | AVG      |  |  | P   |        |

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M



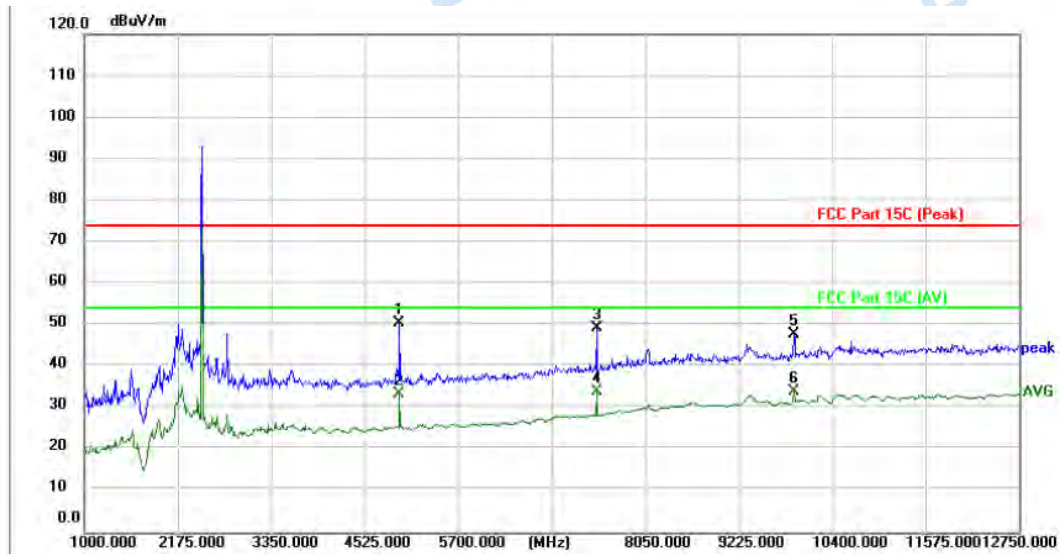
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|--|-----|--------|
| 1   | 4877.500        | 56.11          | -1.10         | 55.01          | 74.00          | -18.99      | peak     |  |  | P   |        |
| 2 * | 4877.500        | 40.29          | -1.10         | 39.19          | 54.00          | -14.81      | AVG      |  |  | P   |        |
| 3   | 7321.500        | 49.31          | 3.68          | 52.99          | 74.00          | -21.01      | peak     |  |  | P   |        |
| 4   | 7321.500        | 33.83          | 3.68          | 37.51          | 54.00          | -16.49      | AVG      |  |  | P   |        |
| 5   | 9765.500        | 42.61          | 6.90          | 49.51          | 74.00          | -24.49      | peak     |  |  | P   |        |
| 6   | 9765.500        | 27.94          | 6.90          | 34.84          | 54.00          | -19.16      | AVG      |  |  | P   |        |

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M



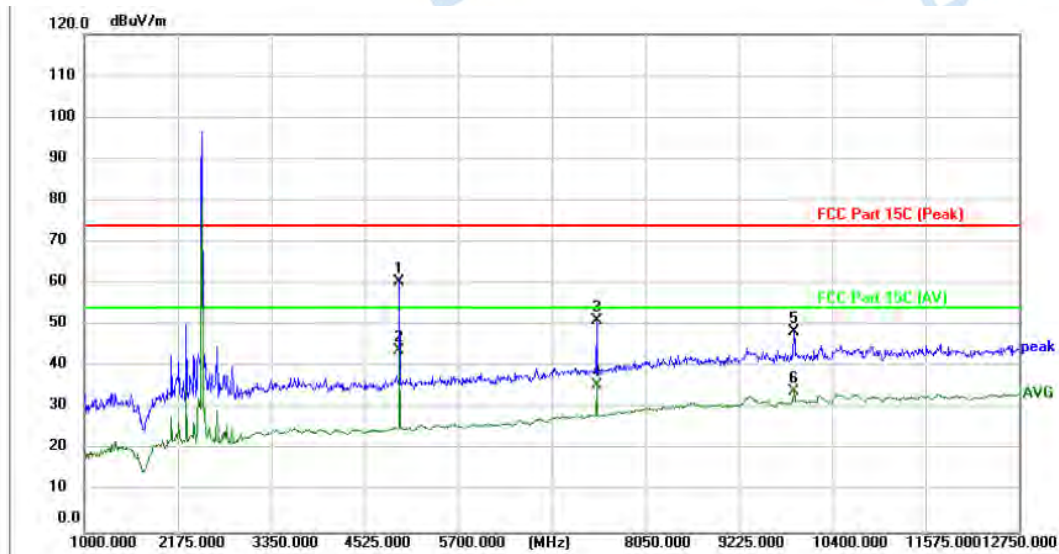
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|--|-----|--------|
| 1   | 4877.500        | 56.43          | -1.10         | 55.33          | 74.00          | -18.67      | peak     |  |  | P   |        |
| 2 * | 4877.500        | 39.26          | -1.10         | 38.16          | 54.00          | -15.84      | AVG      |  |  | P   |        |
| 3   | 7321.500        | 48.27          | 3.68          | 51.95          | 74.00          | -22.05      | peak     |  |  | P   |        |
| 4   | 7321.500        | 32.65          | 3.68          | 36.33          | 54.00          | -17.67      | AVG      |  |  | P   |        |
| 5   | 9765.500        | 42.21          | 6.90          | 49.11          | 74.00          | -24.89      | peak     |  |  | P   |        |
| 6   | 9765.500        | 27.64          | 6.90          | 34.54          | 54.00          | -19.46      | AVG      |  |  | P   |        |

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|--|-----|--------|
| 1   | 4959.750        | 51.44          | -0.85         | 50.59          | 74.00          | -23.41      | peak     |  |  | P   |        |
| 2   | 4959.750        | 34.28          | -0.85         | 33.43          | 54.00          | -20.57      | AVG      |  |  | P   |        |
| 3   | 7439.000        | 45.55          | 3.79          | 49.34          | 74.00          | -24.66      | peak     |  |  | P   |        |
| 4 * | 7439.000        | 30.24          | 3.79          | 34.03          | 54.00          | -19.97      | AVG      |  |  | P   |        |
| 5   | 9918.250        | 40.97          | 6.95          | 47.92          | 74.00          | -26.08      | peak     |  |  | P   |        |
| 6   | 9918.250        | 26.99          | 6.95          | 33.94          | 54.00          | -20.06      | AVG      |  |  | P   |        |

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |  |  | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|--|--|-----|--------|
| 1   | 4959.750        | 61.32          | -0.85         | 60.47          | 74.00          | -13.53      | peak     |  |  | P   |        |
| 2 * | 4959.750        | 44.69          | -0.85         | 43.84          | 54.00          | -10.16      | AVG      |  |  | P   |        |
| 3   | 7439.000        | 47.23          | 3.79          | 51.02          | 74.00          | -22.98      | peak     |  |  | P   |        |
| 4   | 7439.000        | 31.87          | 3.79          | 35.66          | 54.00          | -18.34      | AVG      |  |  | P   |        |
| 5   | 9918.250        | 41.60          | 6.95          | 48.55          | 74.00          | -25.45      | peak     |  |  | P   |        |
| 6   | 9918.250        | 27.02          | 6.95          | 33.97          | 54.00          | -20.03      | AVG      |  |  | P   |        |

Remark: Margin=Level - Limit, Level=Test receiver reading + correction factor

Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the noise floor test chart was not uploaded.

All modes have been tested, and the test results show that GFSK data is the worst, only GFSK test chart is put.  
Test Mode: GFSK (the worst)

## 5 TEST SETUP PHOTOS

Conducted Emission at AC power line



Emissions in frequency bands (below 1GHz)



**Emissions in frequency bands (above 1GHz)**



## 6 PHOTOS OF THE EUT

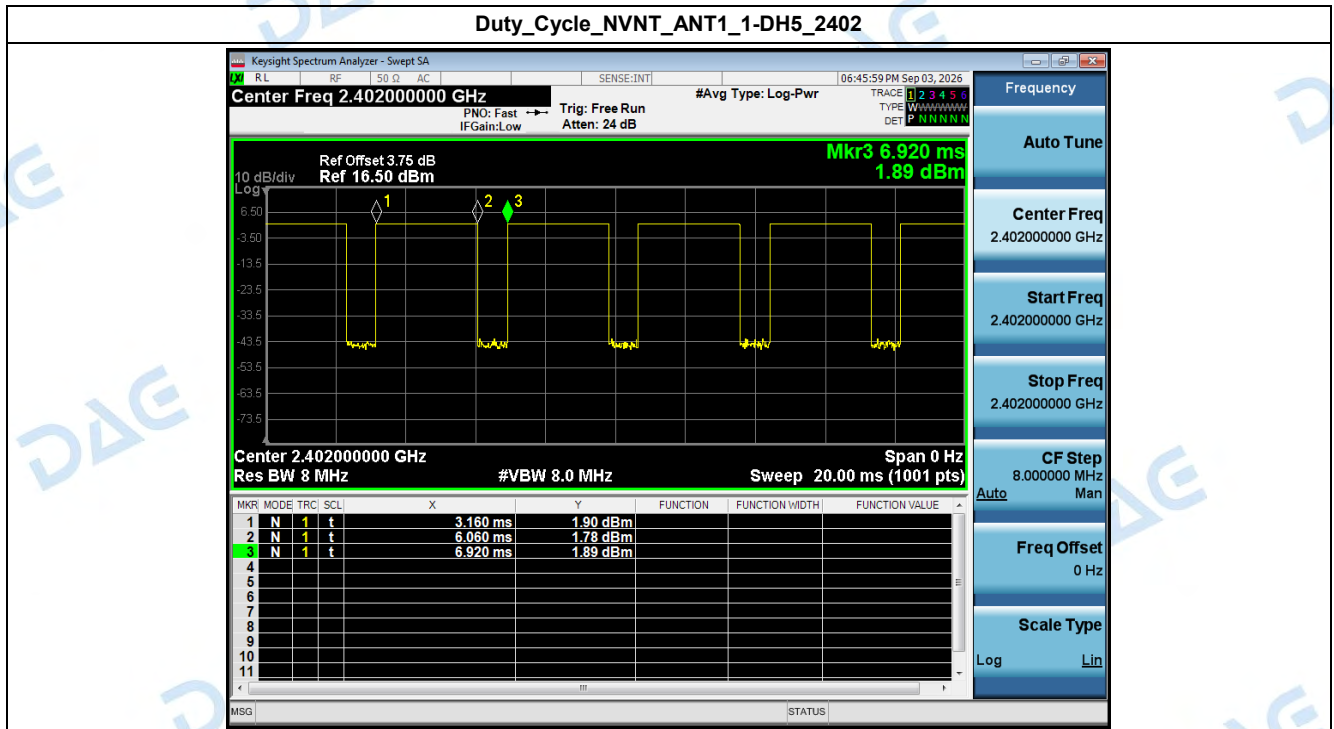
Refer to Appendix - EUT Photos for EUT External Photo and Internal Photo.

# Appendix

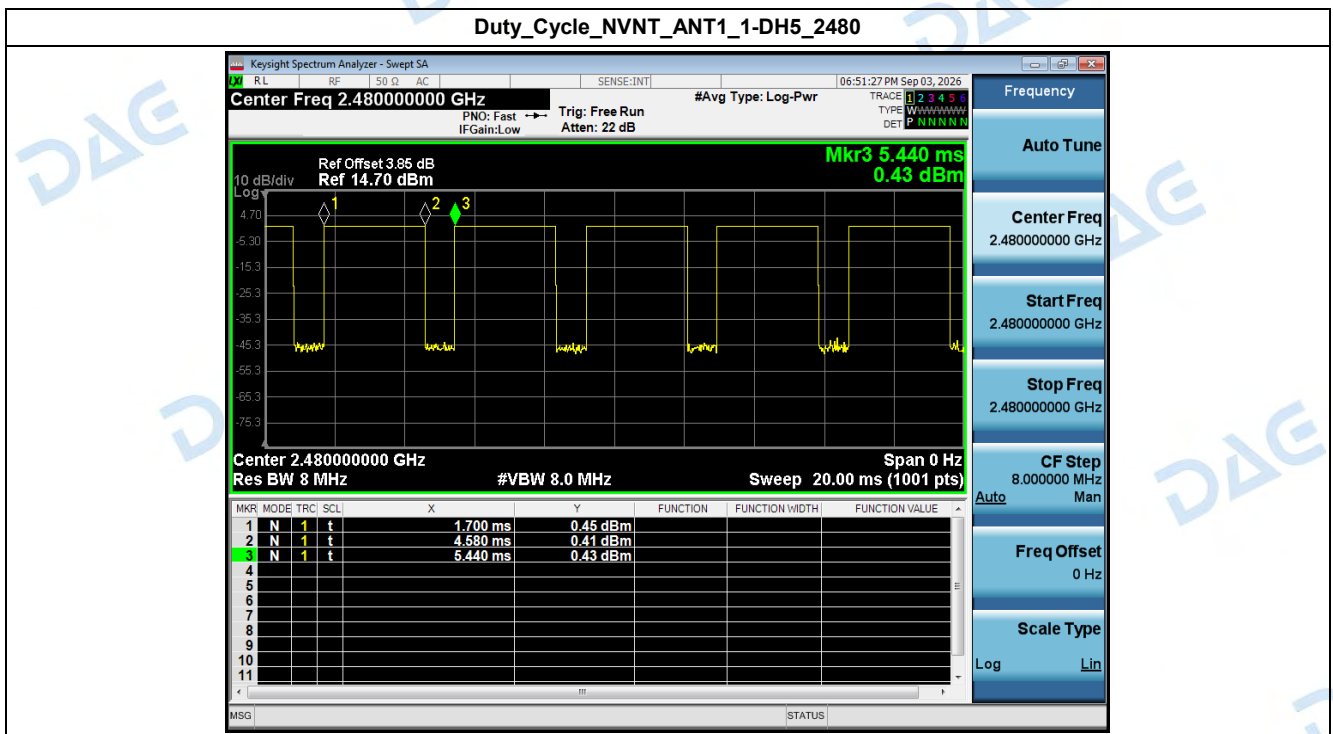
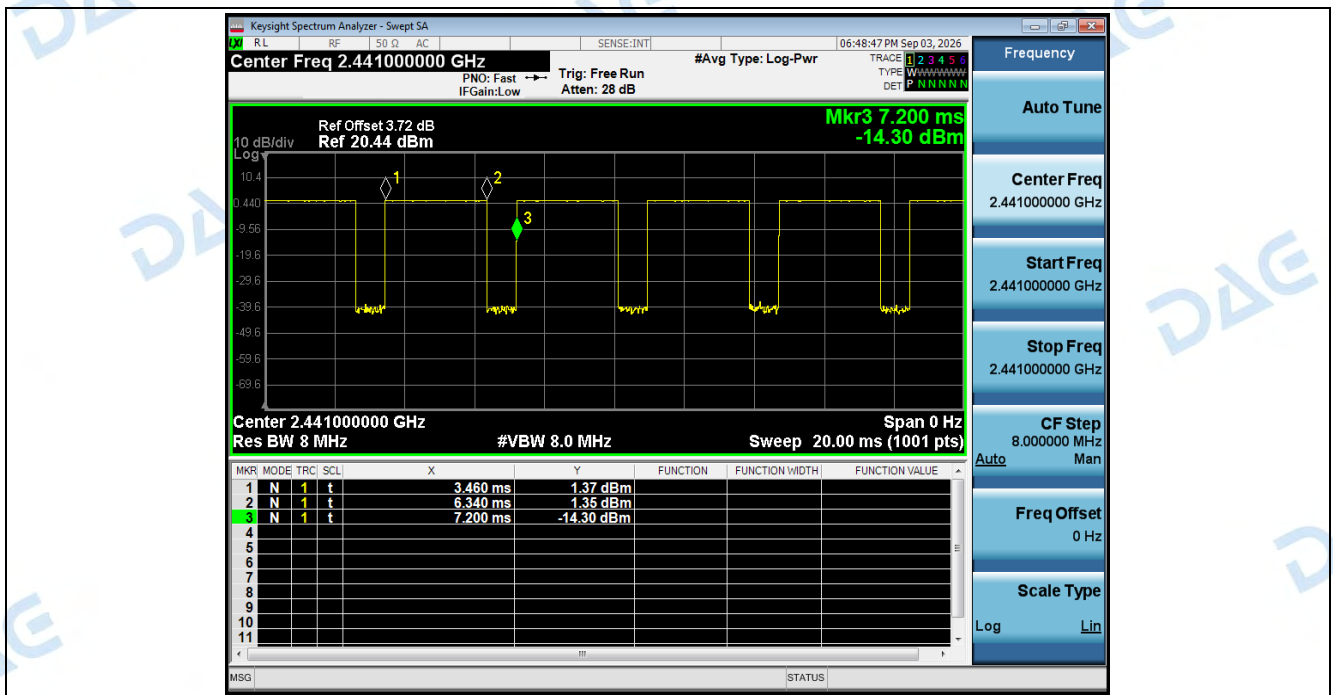
## 1. Duty Cycle

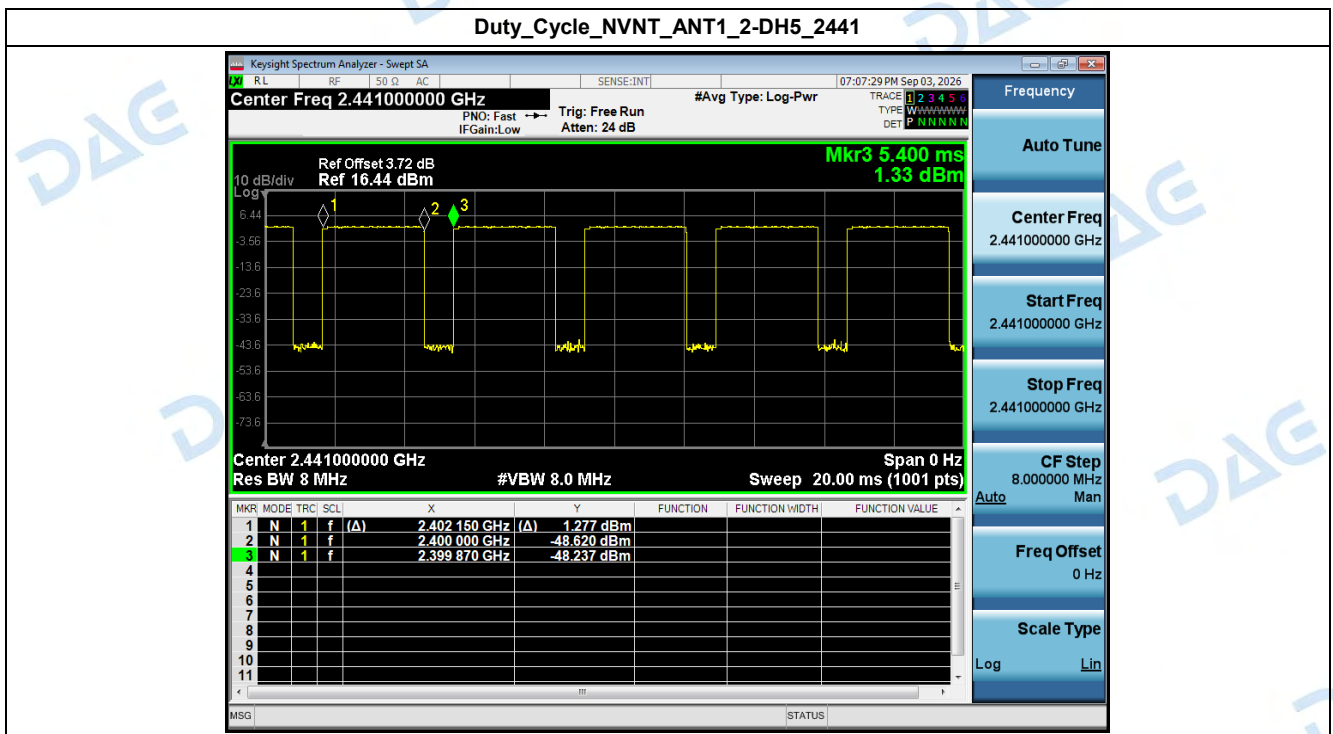
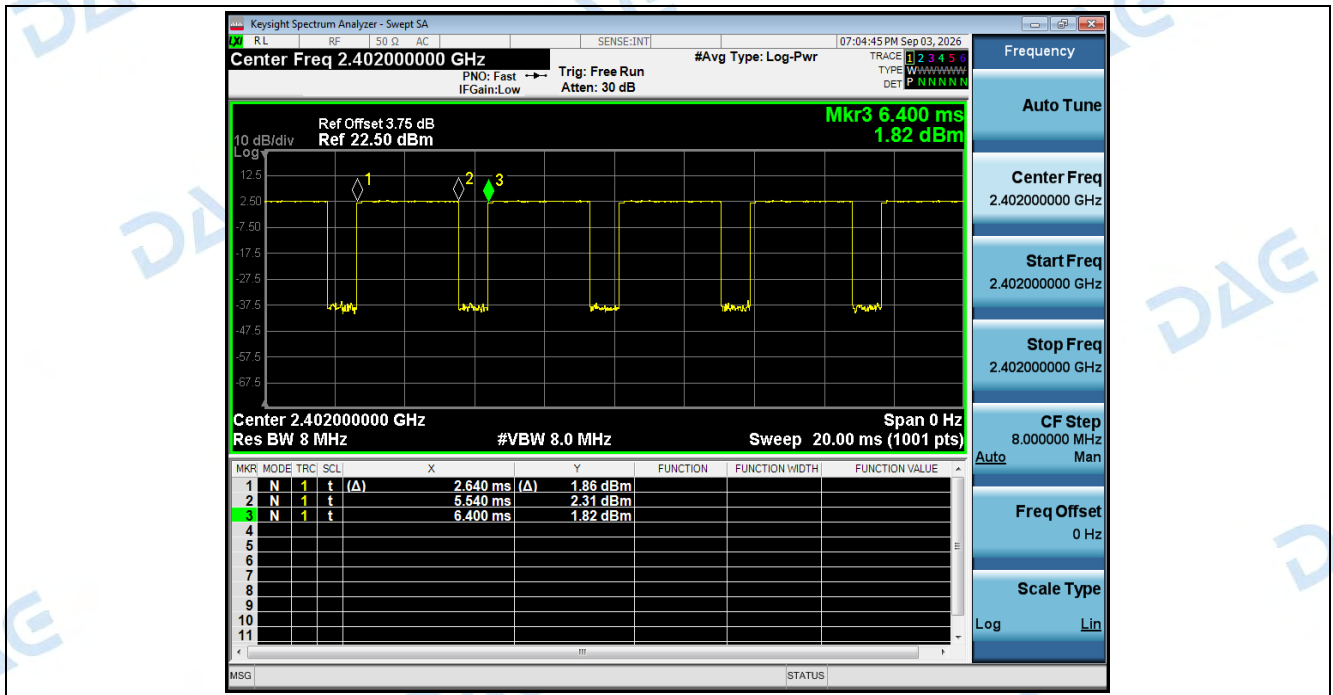
| Condition | Antenna | Rate  | Frequency (MHz) | Dutycycle(%) | Duty_factor |
|-----------|---------|-------|-----------------|--------------|-------------|
| NVNT      | ANT1    | 1-DH5 | 2402.00         | 77.66        | 1.10        |
| NVNT      | ANT1    | 1-DH5 | 2441.00         | 77.54        | 1.10        |
| NVNT      | ANT1    | 1-DH5 | 2480.00         | 77.54        | 1.10        |
| NVNT      | ANT1    | 2-DH5 | 2402.00         | 77.66        | 1.10        |
| NVNT      | ANT1    | 2-DH5 | 2441.00         | 78.07        | 1.07        |
| NVNT      | ANT1    | 2-DH5 | 2480.00         | 77.13        | 1.13        |
| NVNT      | ANT1    | 3-DH5 | 2402.00         | 77.13        | 1.13        |
| NVNT      | ANT1    | 3-DH5 | 2441.00         | 77.66        | 1.10        |
| NVNT      | ANT1    | 3-DH5 | 2480.00         | 77.13        | 1.13        |

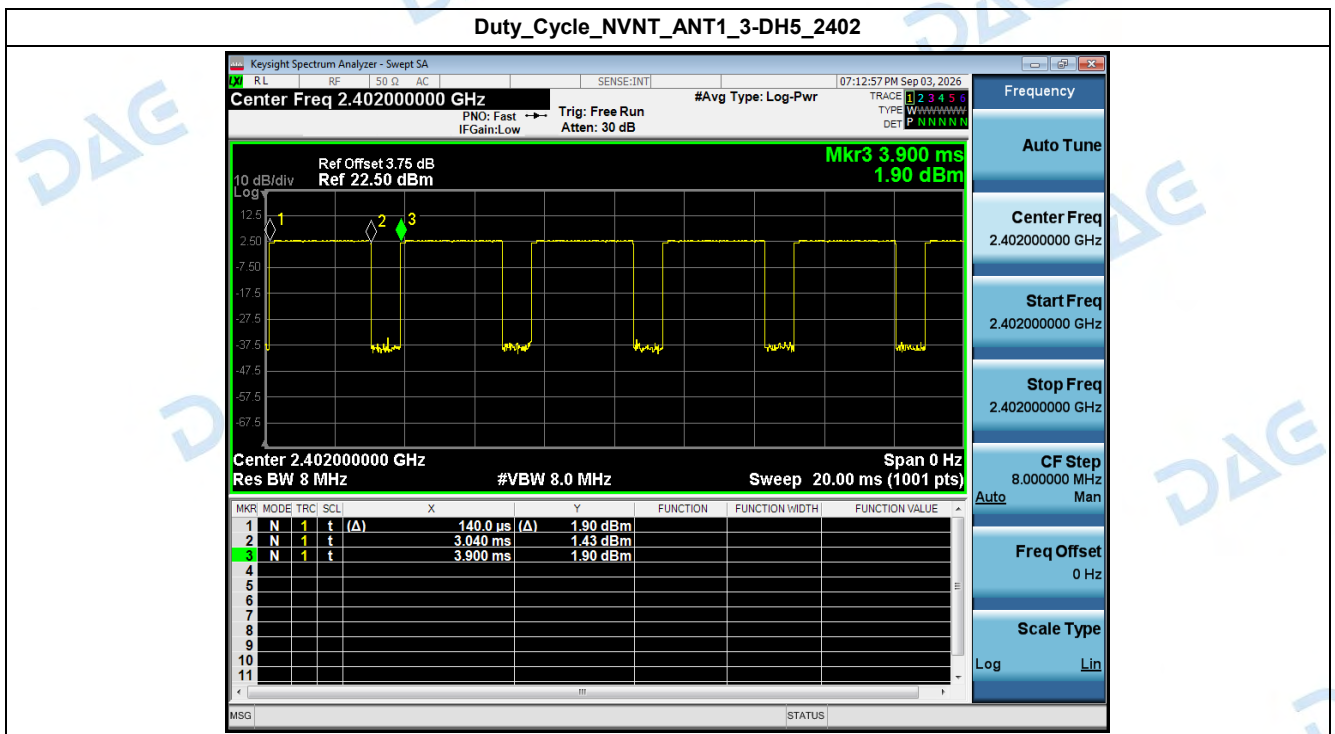
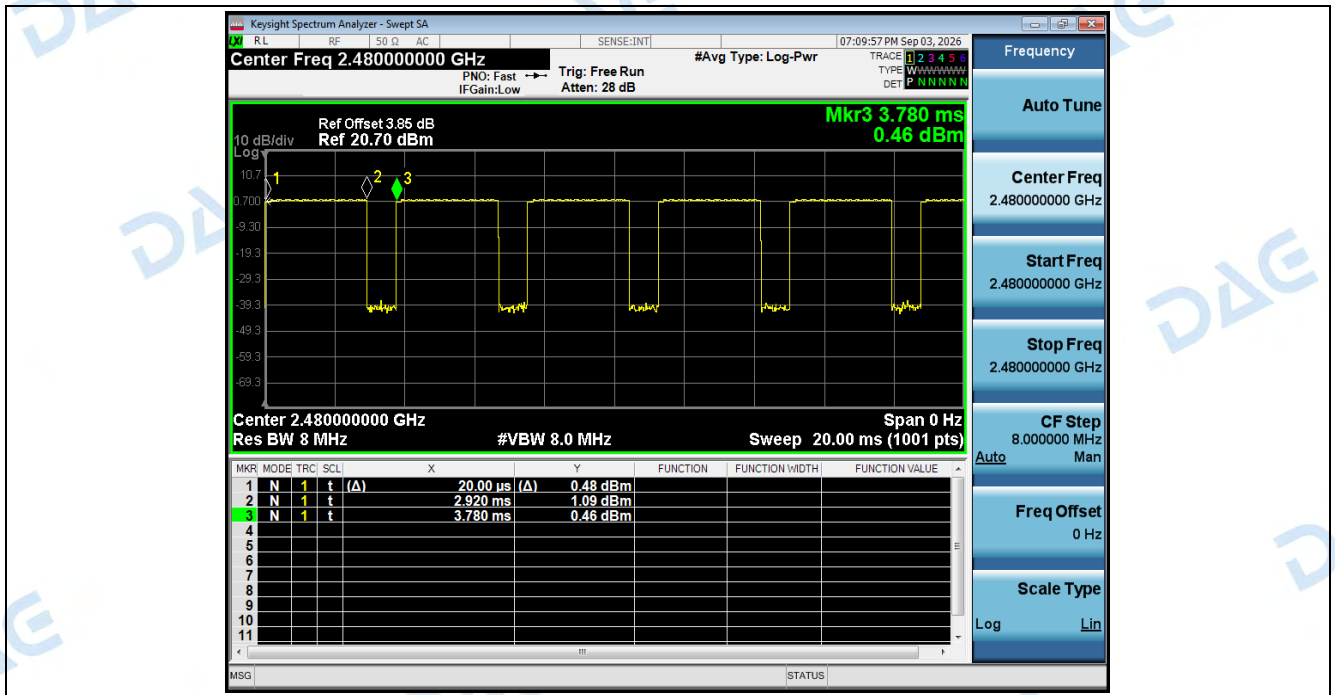
Duty\_Cycle\_NVNT\_ANT1\_1-DH5\_2402



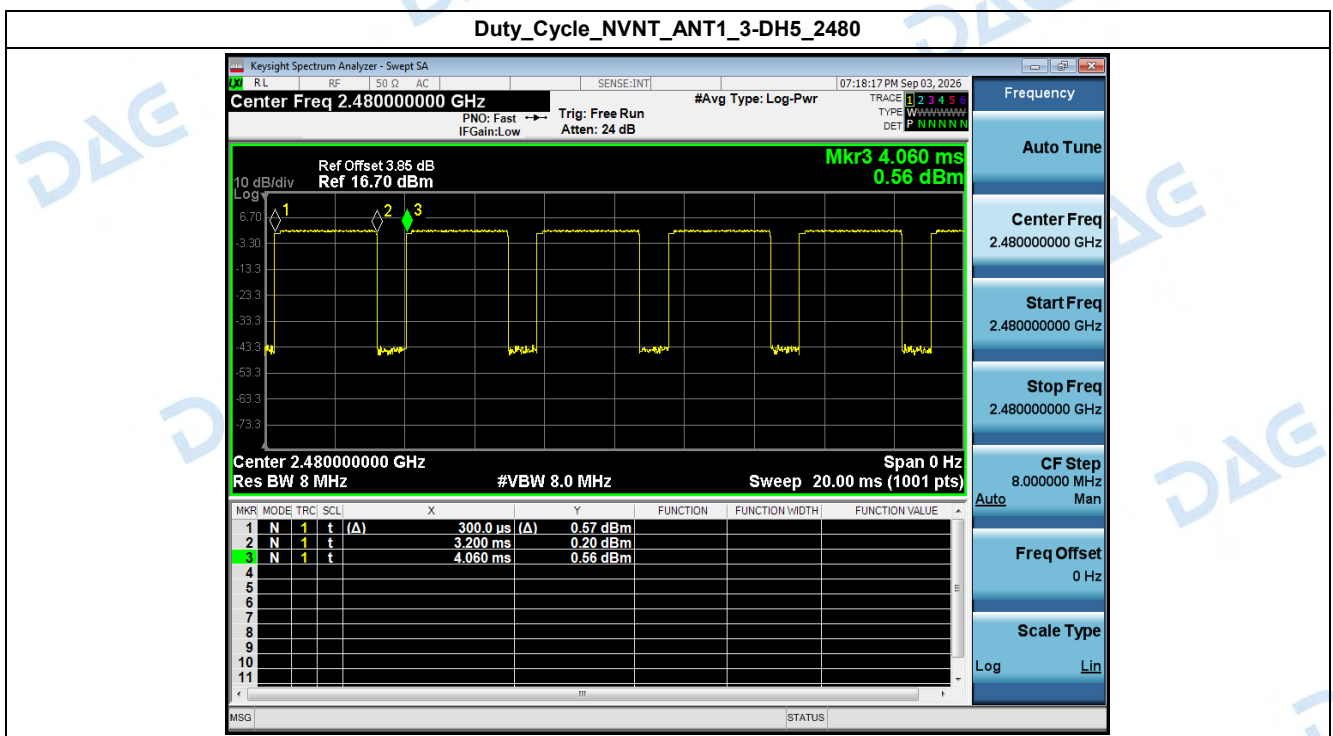
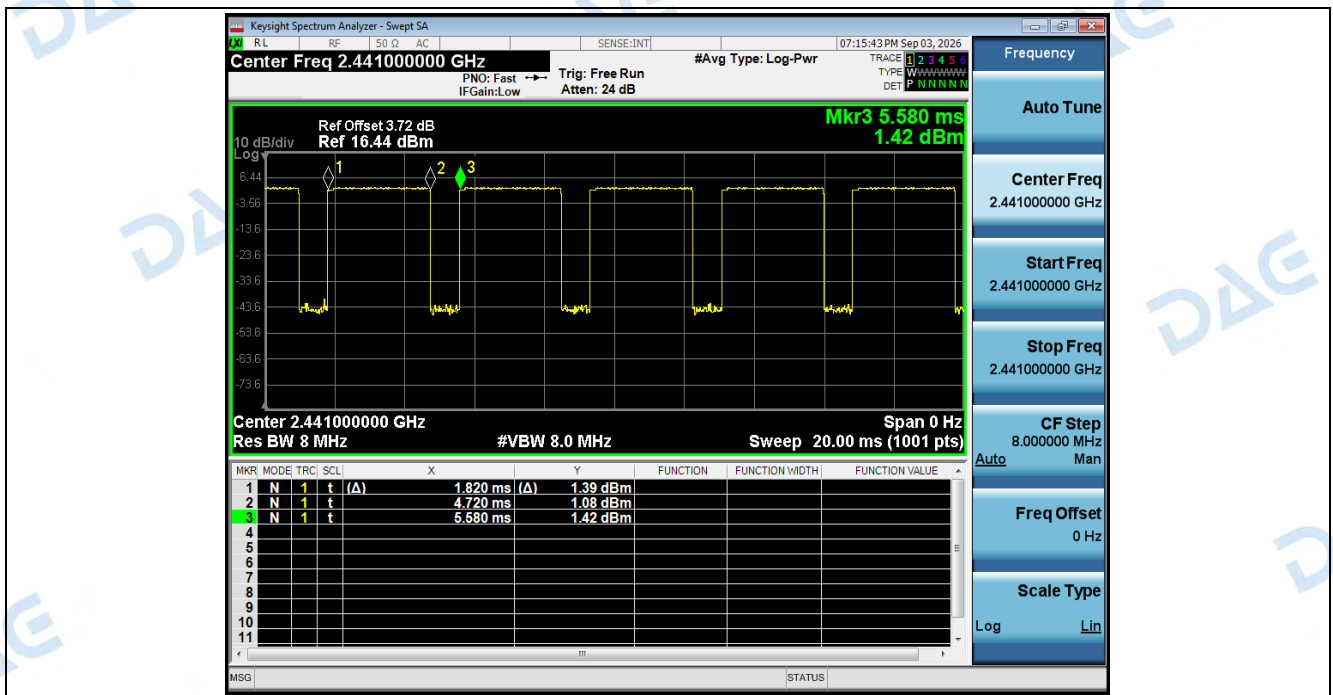
Duty\_Cycle\_NVNT\_ANT1\_1-DH5\_2441







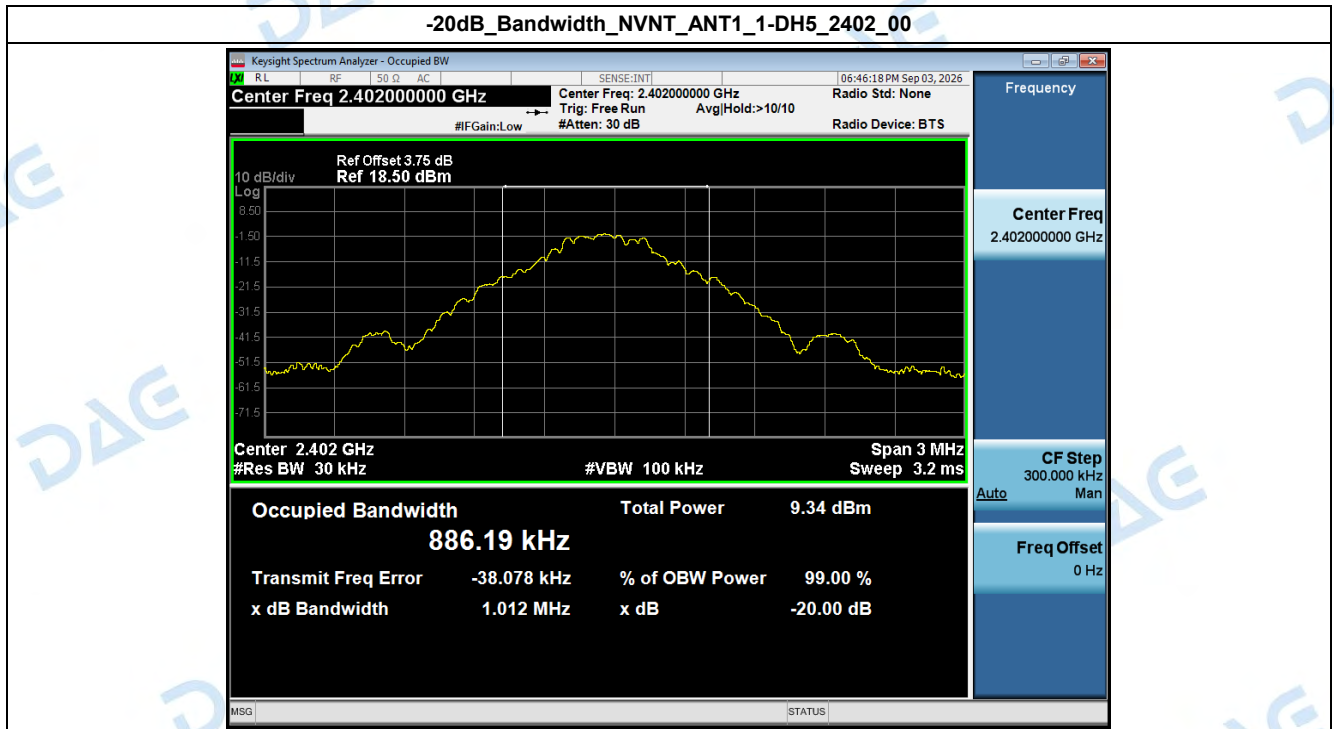
Duty\_Cycle\_NVNT\_ANT1\_3-DH5\_2441



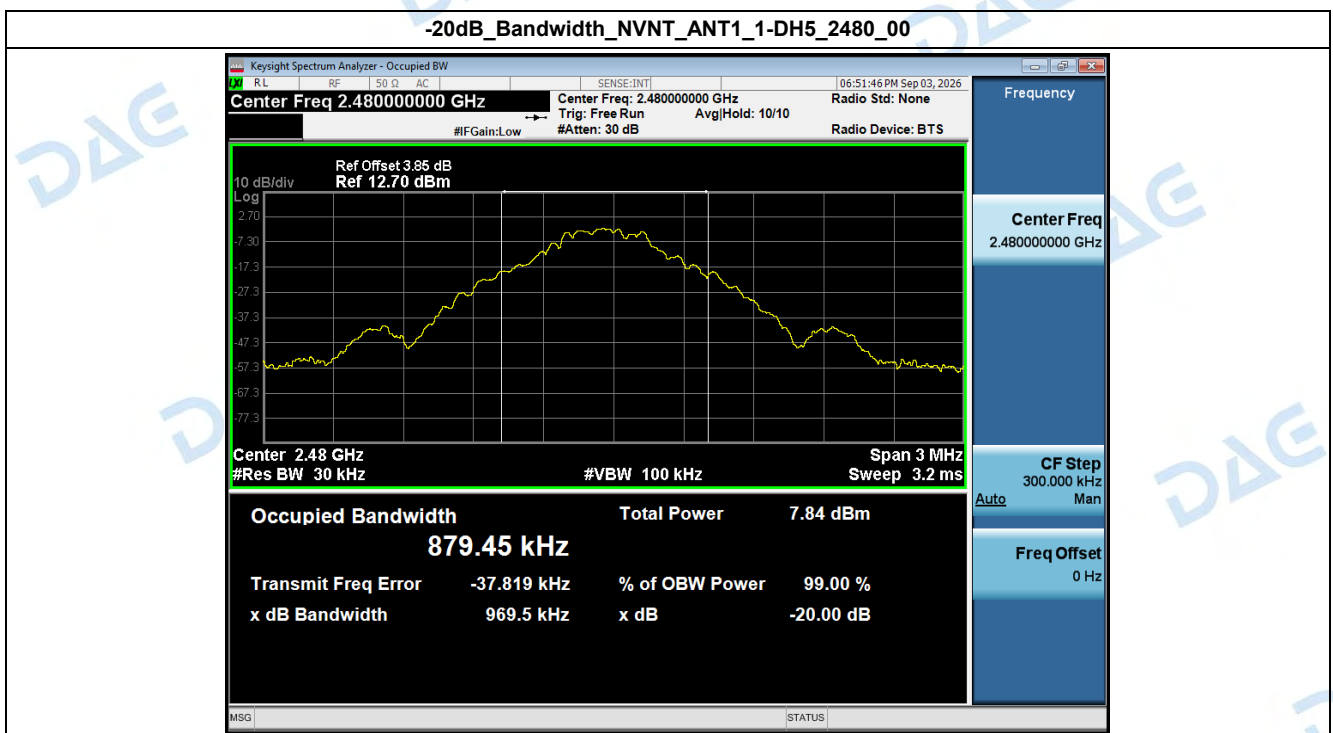
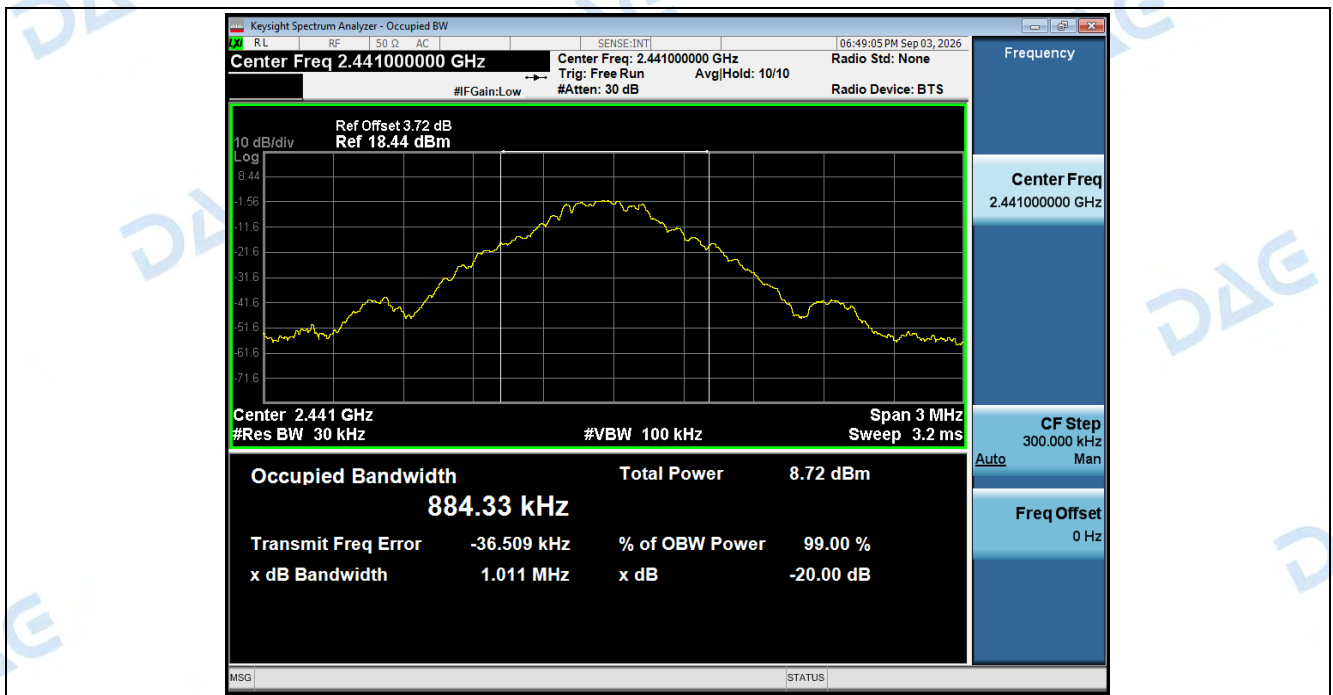
## 2. -20dB Bandwidth

| Condition | Antenna | Modulation | Frequency (MHz) | -20dB BW(MHz) | If larger than CFS |
|-----------|---------|------------|-----------------|---------------|--------------------|
| NVNT      | ANT1    | 1-DH5      | 2402.00         | 1.012         | Yes                |
| NVNT      | ANT1    | 1-DH5      | 2441.00         | 1.011         | Yes                |
| NVNT      | ANT1    | 1-DH5      | 2480.00         | 0.969         | No                 |
| NVNT      | ANT1    | 2-DH5      | 2402.00         | 1.316         | Yes                |
| NVNT      | ANT1    | 2-DH5      | 2441.00         | 1.317         | Yes                |
| NVNT      | ANT1    | 2-DH5      | 2480.00         | 1.315         | Yes                |
| NVNT      | ANT1    | 3-DH5      | 2402.00         | 1.305         | Yes                |
| NVNT      | ANT1    | 3-DH5      | 2441.00         | 1.306         | Yes                |
| NVNT      | ANT1    | 3-DH5      | 2480.00         | 1.304         | Yes                |

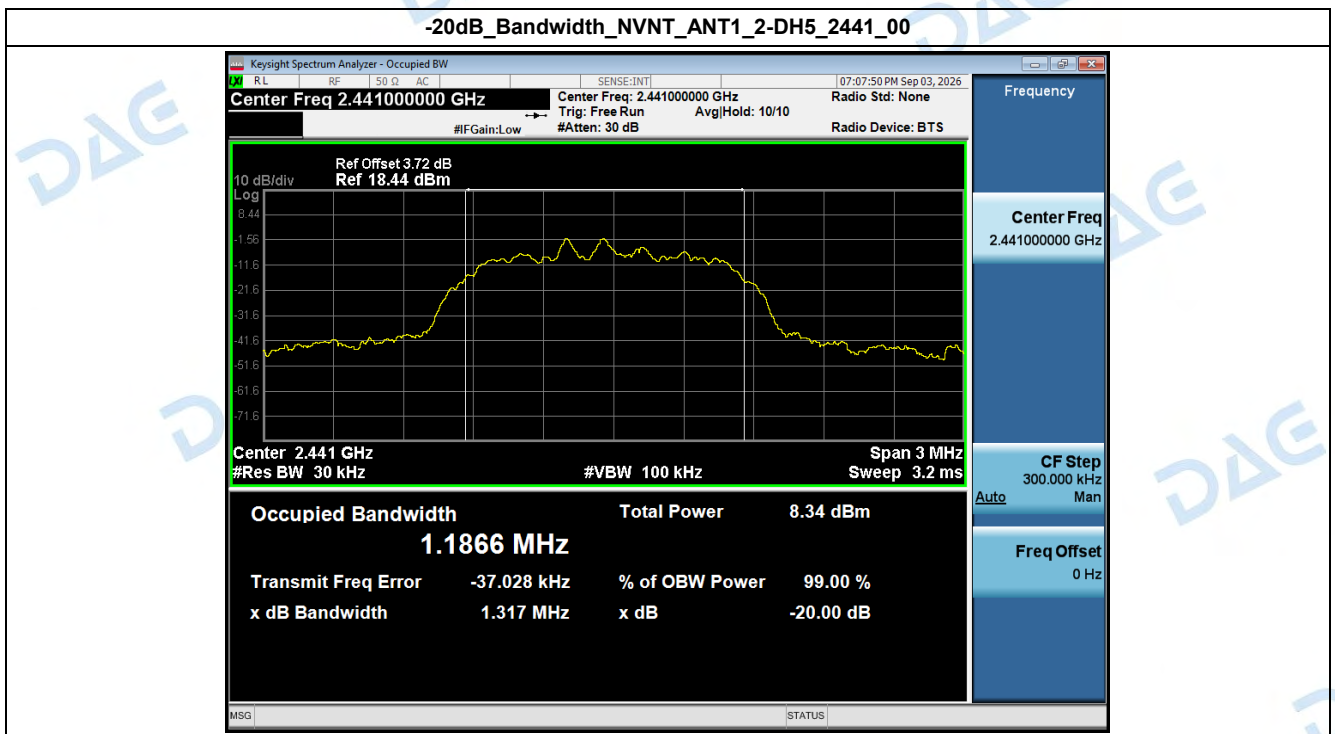
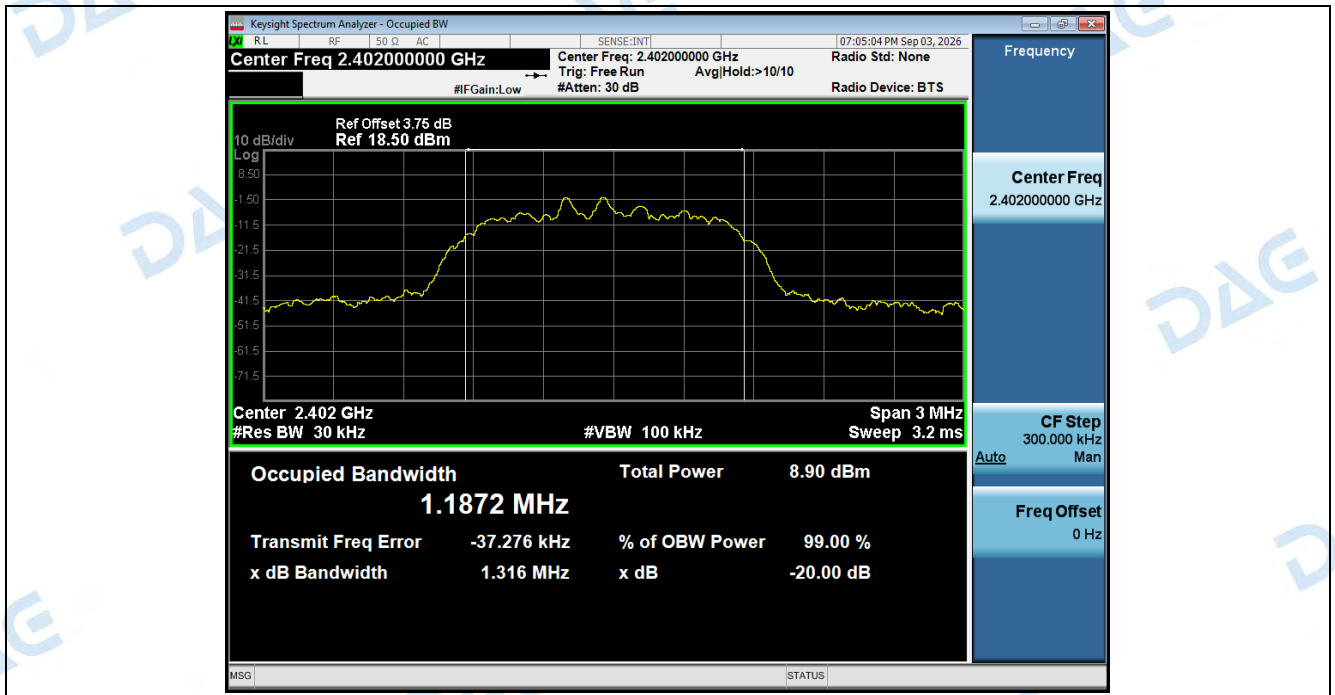
-20dB\_Bandwidth\_NVNT\_ANT1\_1-DH5\_2402\_00



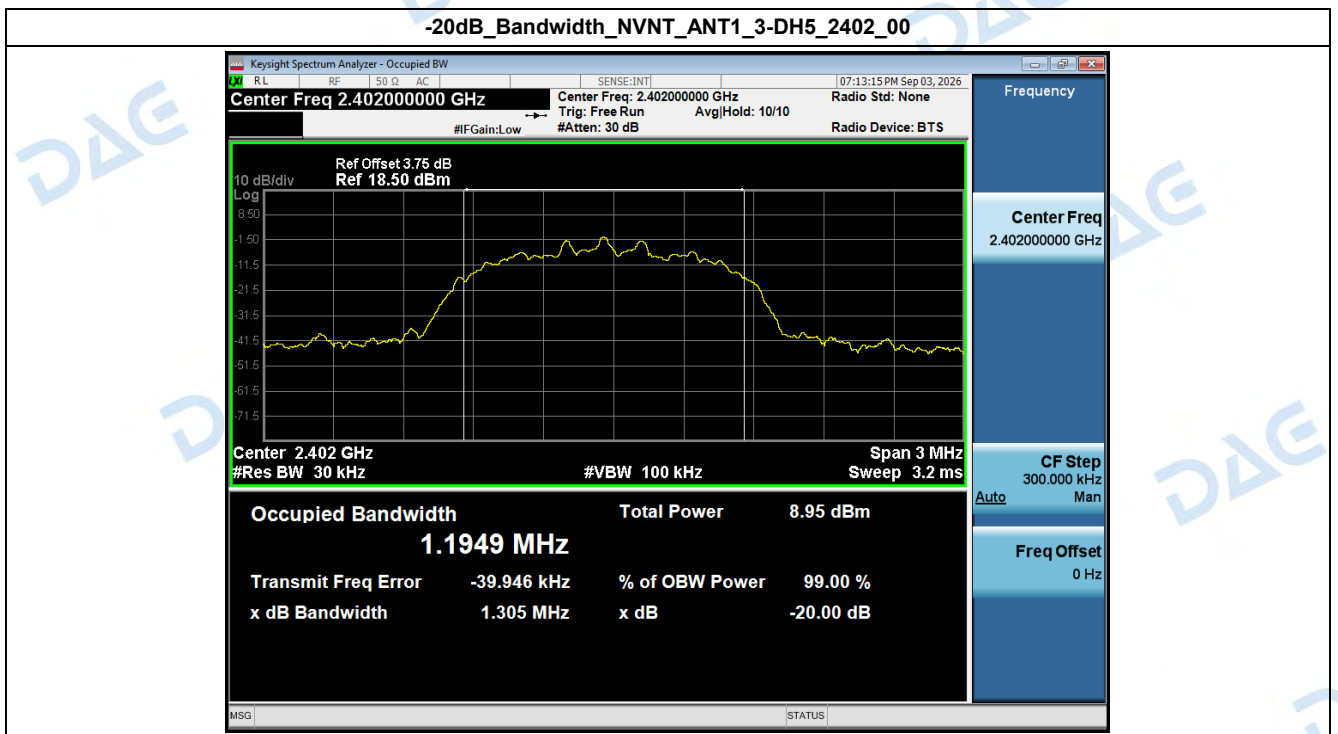
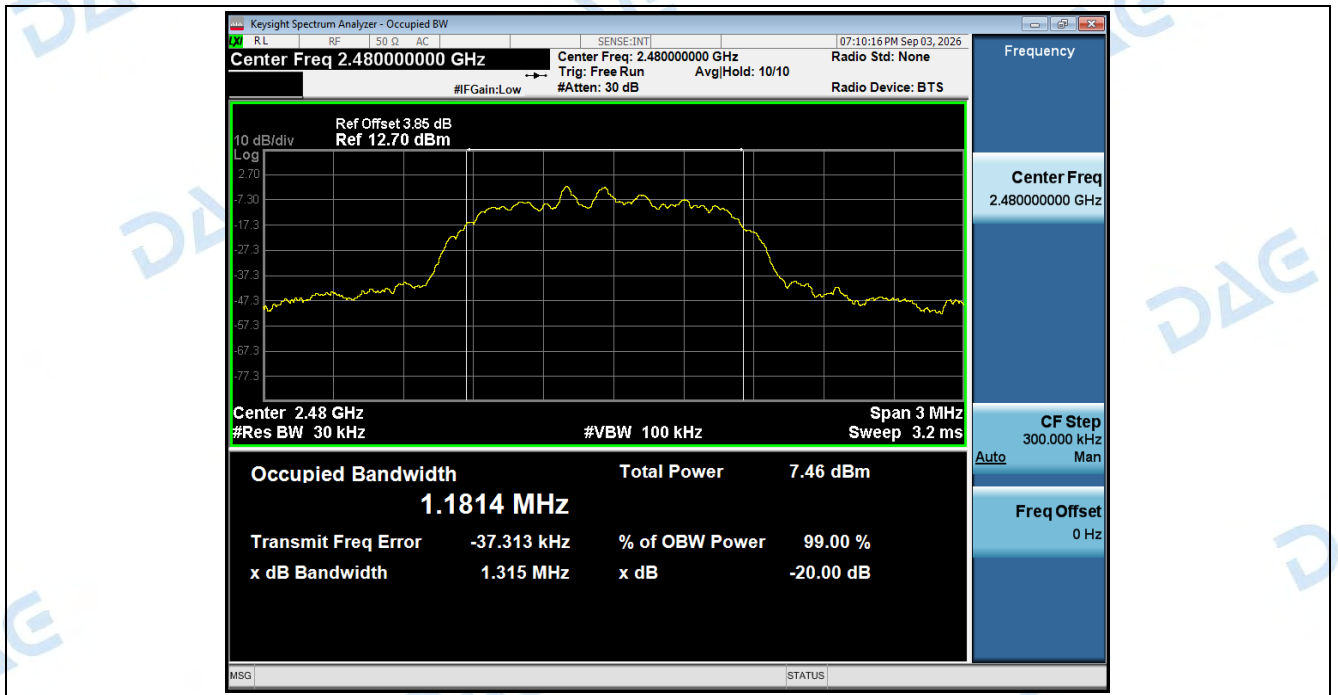
-20dB\_Bandwidth\_NVNT\_ANT1\_1-DH5\_2441\_00



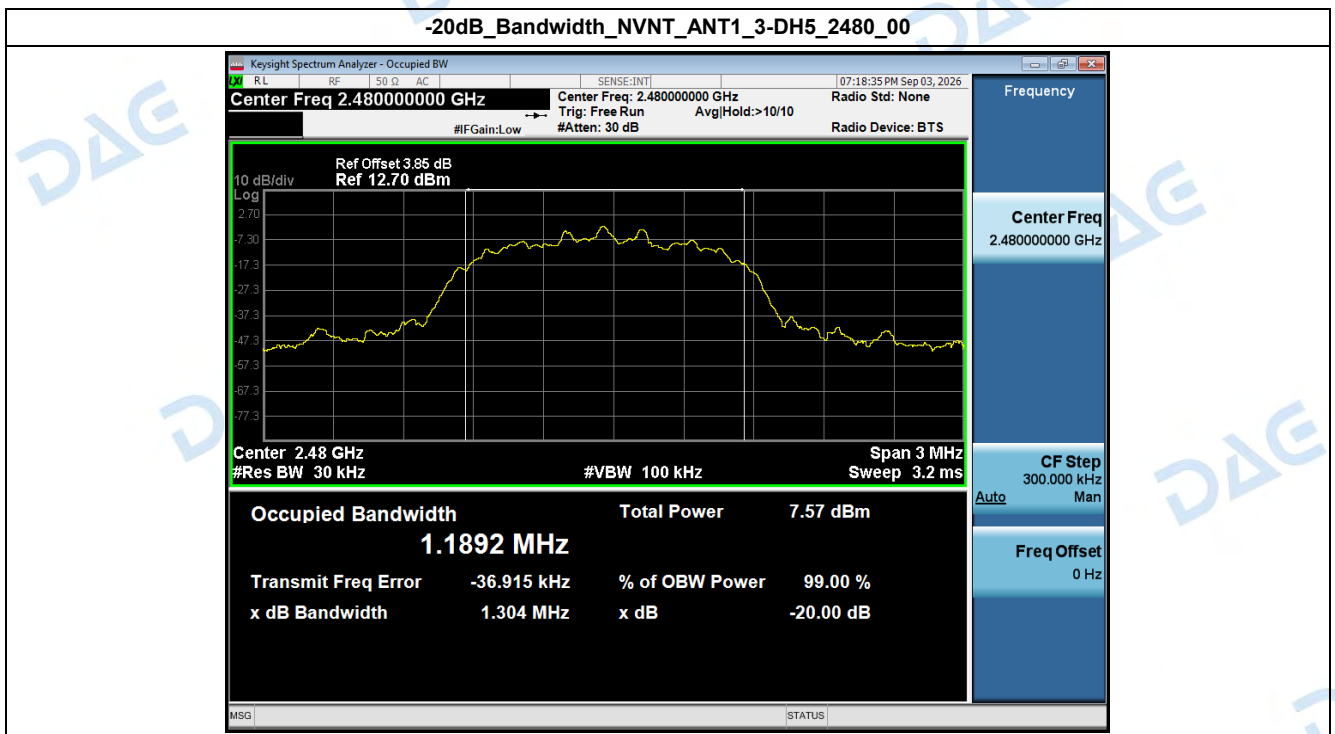
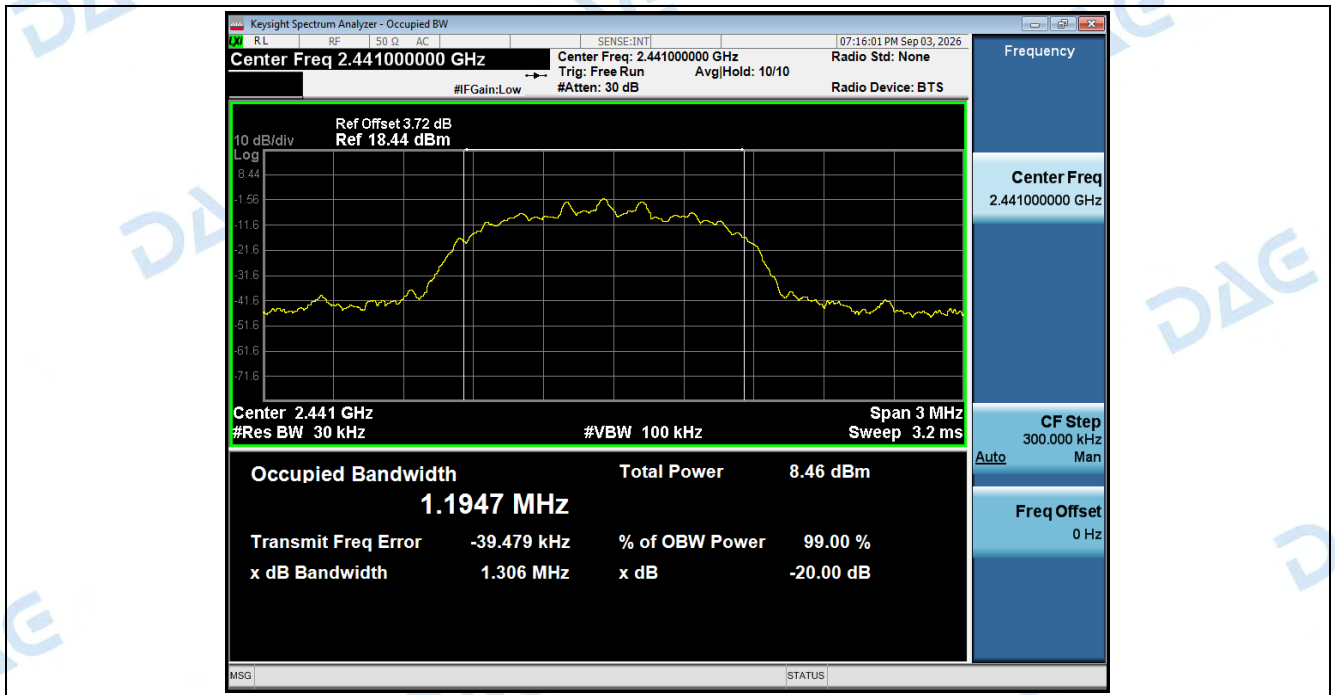
-20dB\_Bandwidth\_NVNT\_ANT1\_2-DH5\_2402\_00



-20dB\_Bandwidth\_NVNT\_ANT1\_2-DH5\_2480\_00



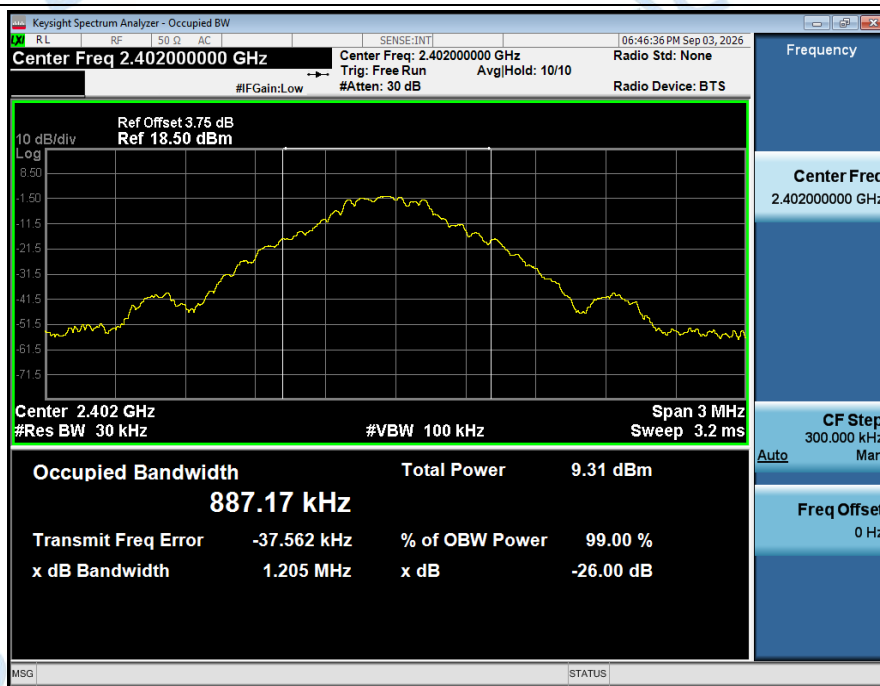
-20dB\_Bandwidth\_NVNT\_ANT1\_3-DH5\_2441\_00



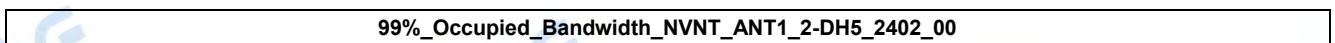
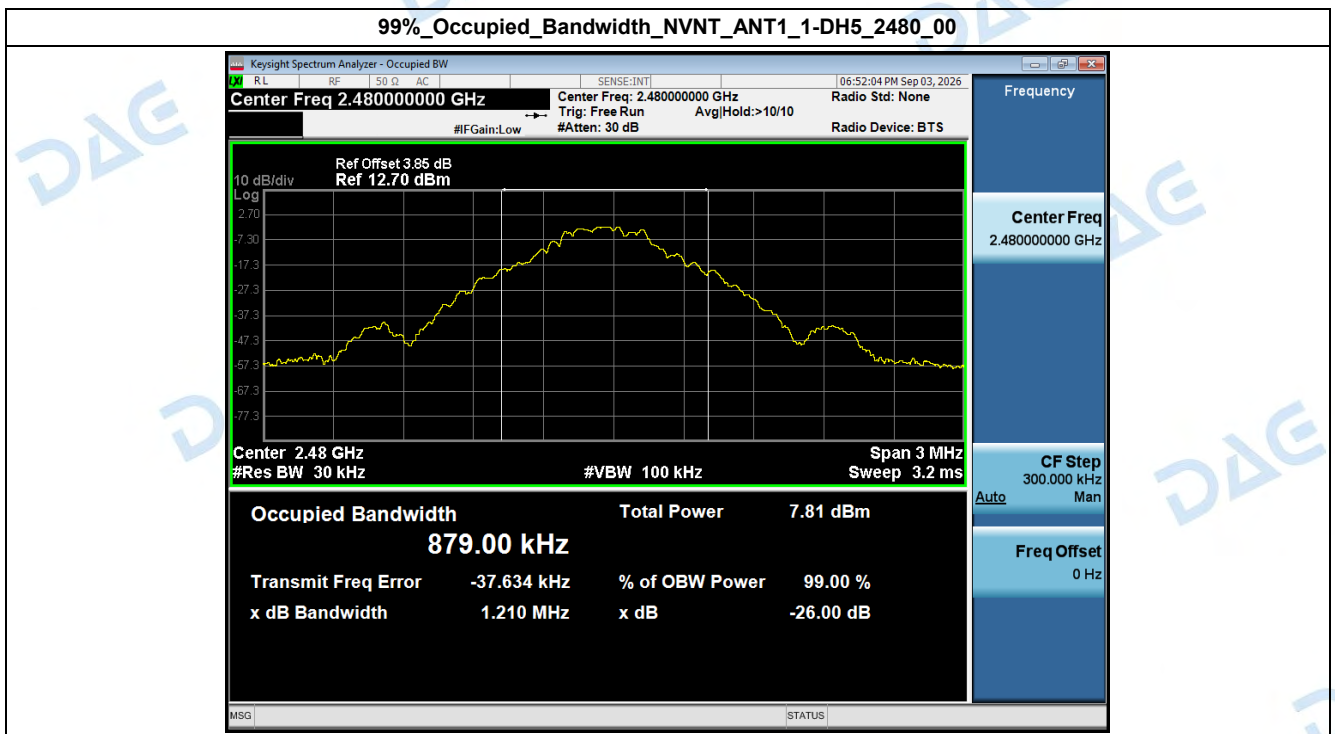
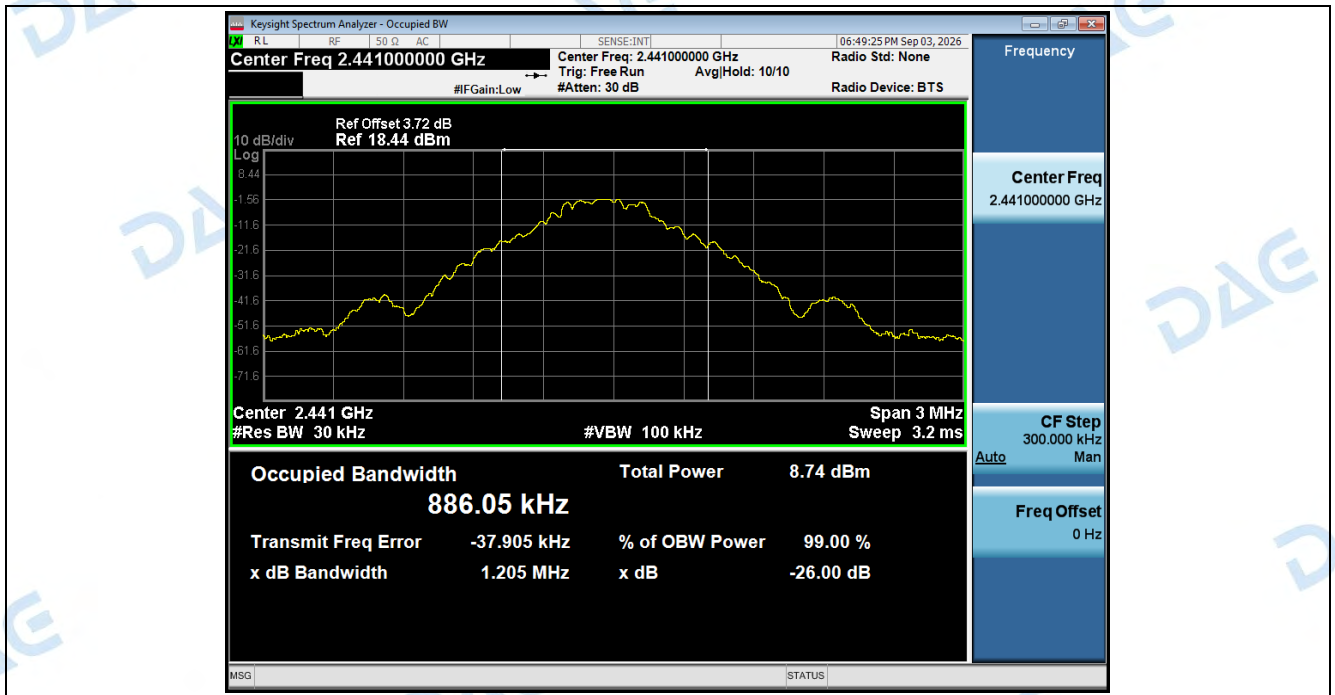
### 3. 99% Occupied Bandwidth

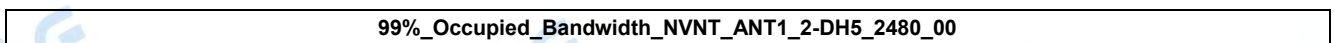
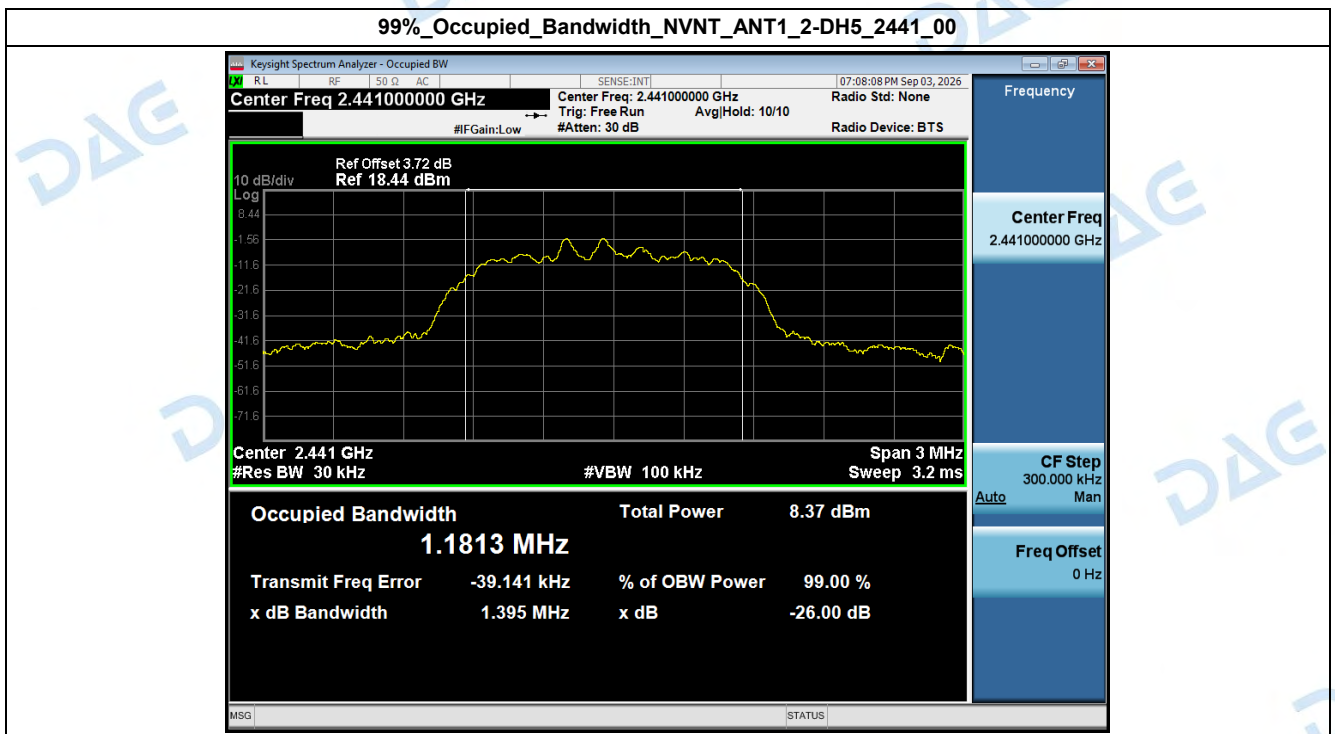
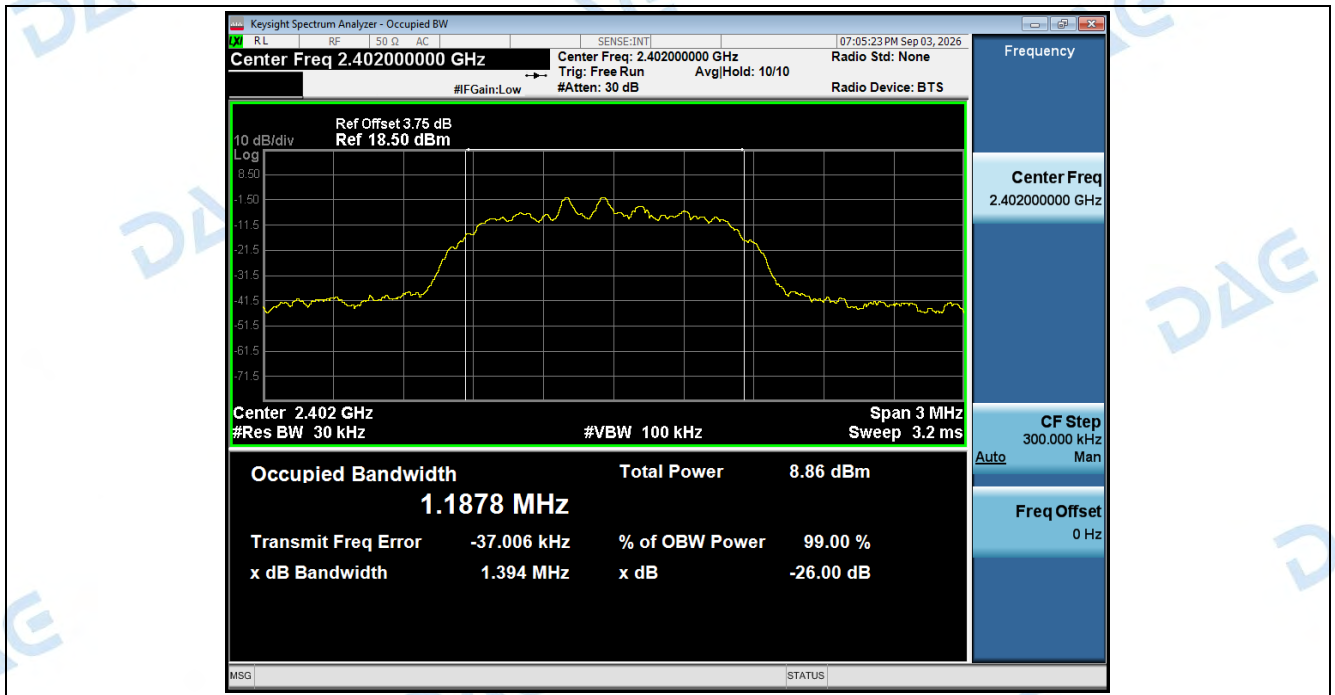
| Condition | Antenna | Modulation | Frequency (MHz) | 99% BW (MHz) |
|-----------|---------|------------|-----------------|--------------|
| NVNT      | ANT1    | 1-DH5      | 2402.00         | 0.887        |
| NVNT      | ANT1    | 1-DH5      | 2441.00         | 0.886        |
| NVNT      | ANT1    | 1-DH5      | 2480.00         | 0.879        |
| NVNT      | ANT1    | 2-DH5      | 2402.00         | 1.188        |
| NVNT      | ANT1    | 2-DH5      | 2441.00         | 1.181        |
| NVNT      | ANT1    | 2-DH5      | 2480.00         | 1.180        |
| NVNT      | ANT1    | 3-DH5      | 2402.00         | 1.196        |
| NVNT      | ANT1    | 3-DH5      | 2441.00         | 1.195        |
| NVNT      | ANT1    | 3-DH5      | 2480.00         | 1.188        |

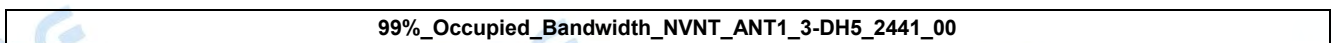
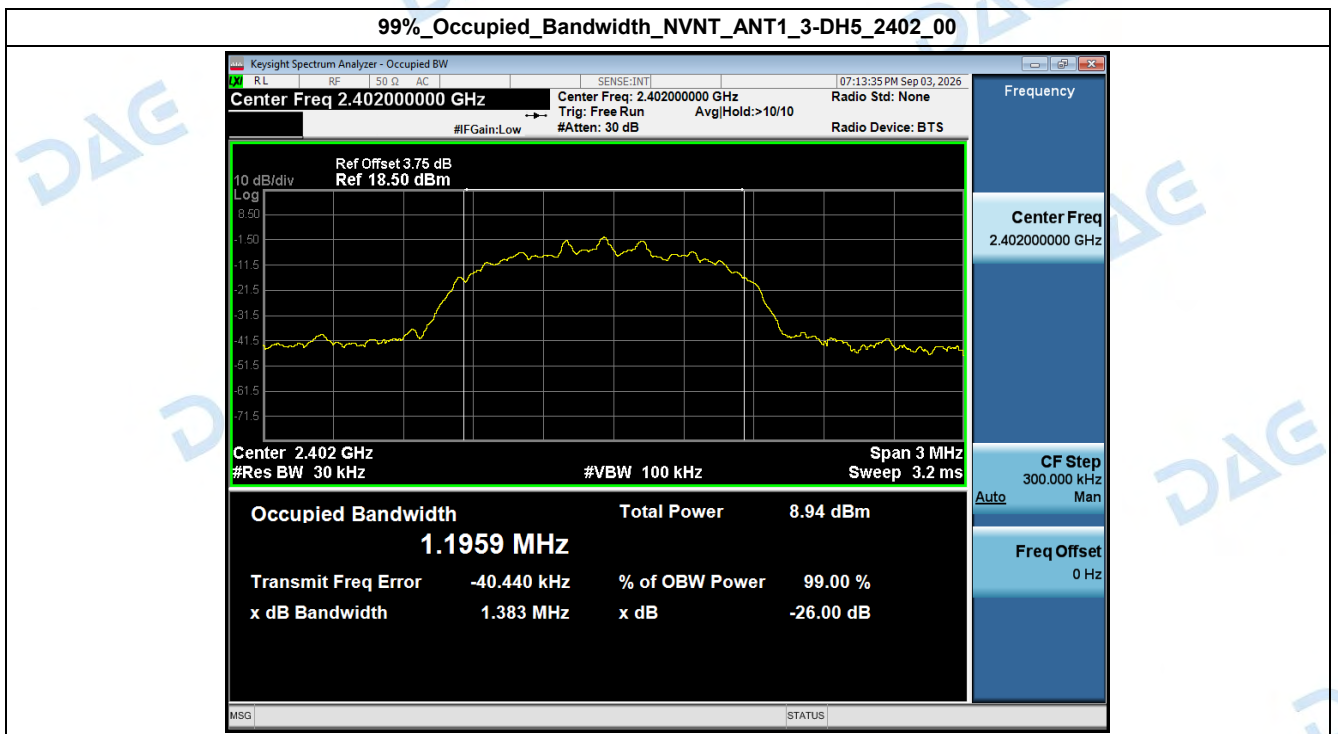
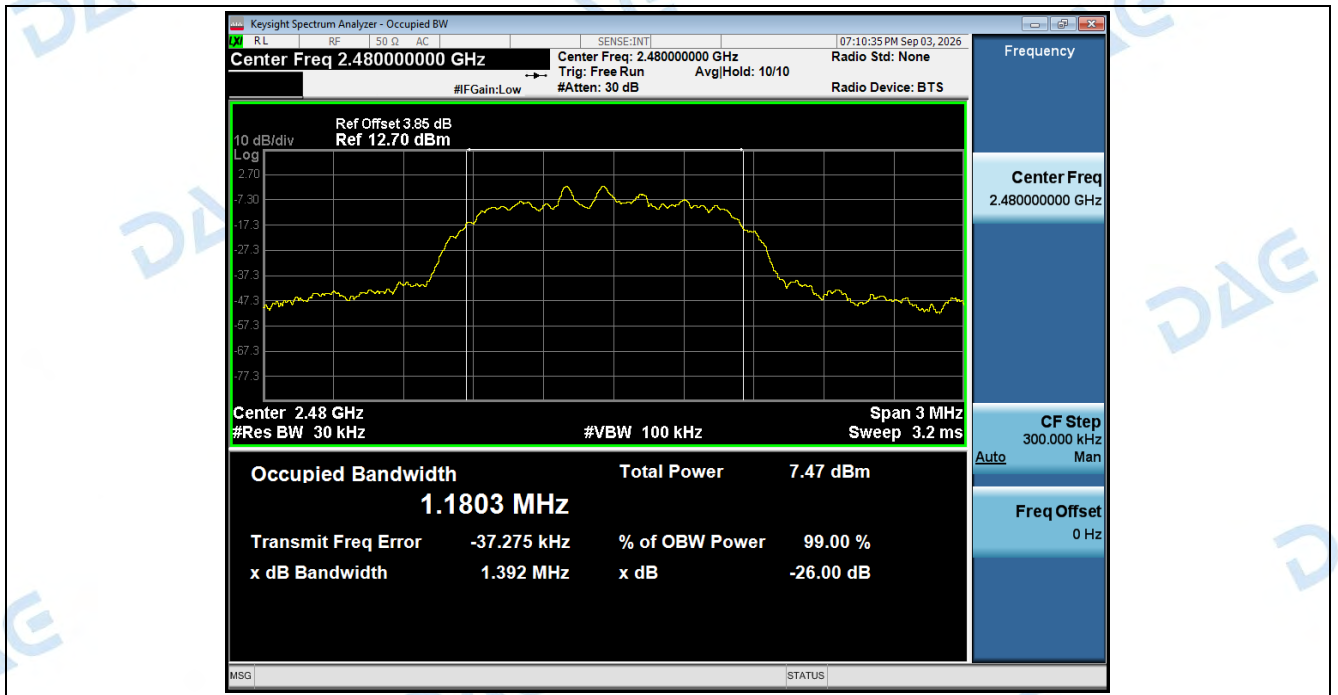
99%\_Occupied\_Bandwidth\_NVNT\_ANT1\_1-DH5\_2402\_00

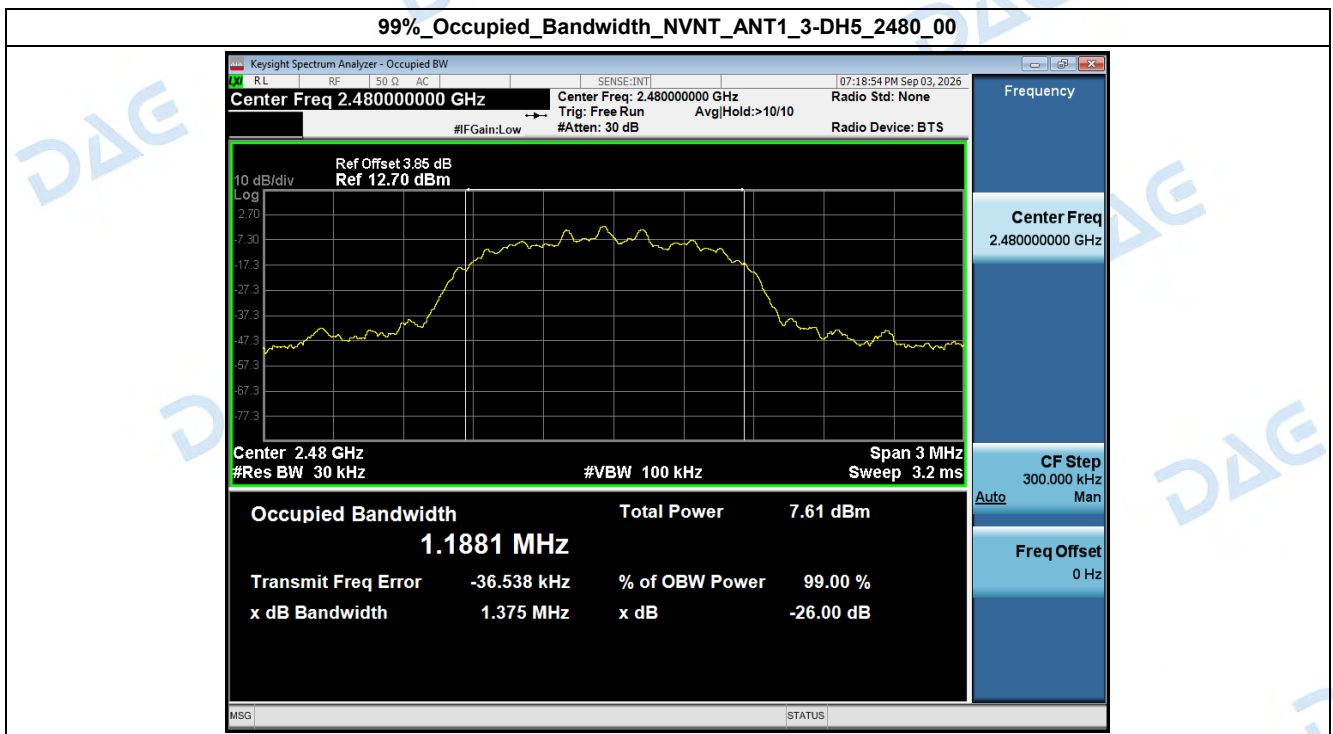
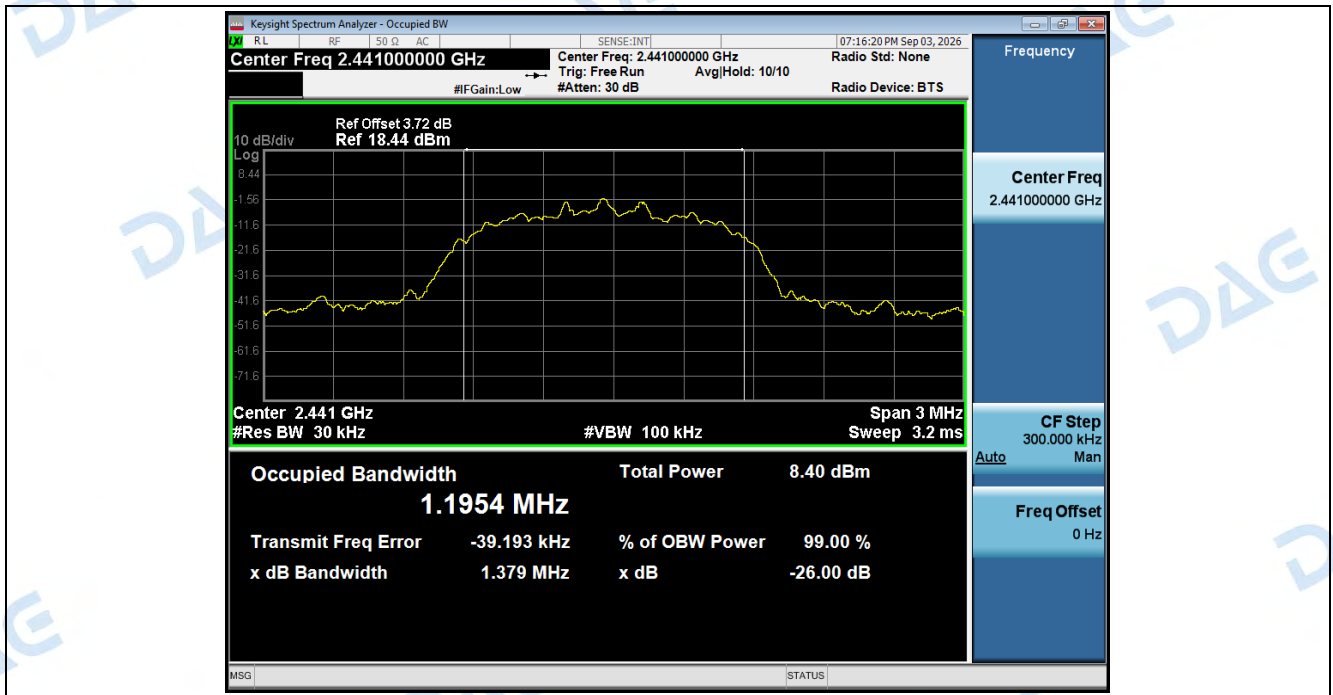


99%\_Occupied\_Bandwidth\_NVNT\_ANT1\_1-DH5\_2441\_00





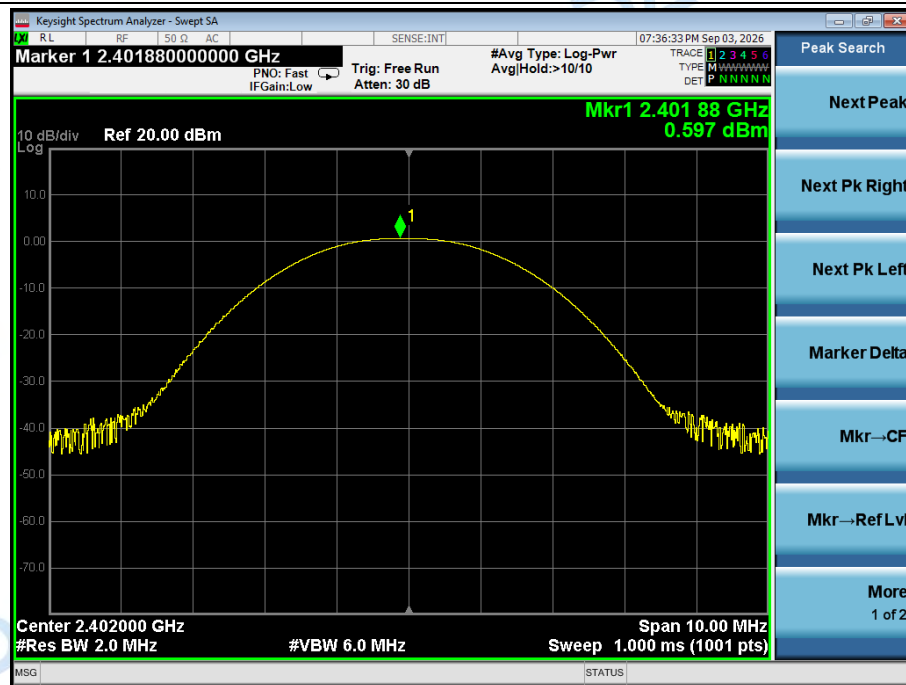




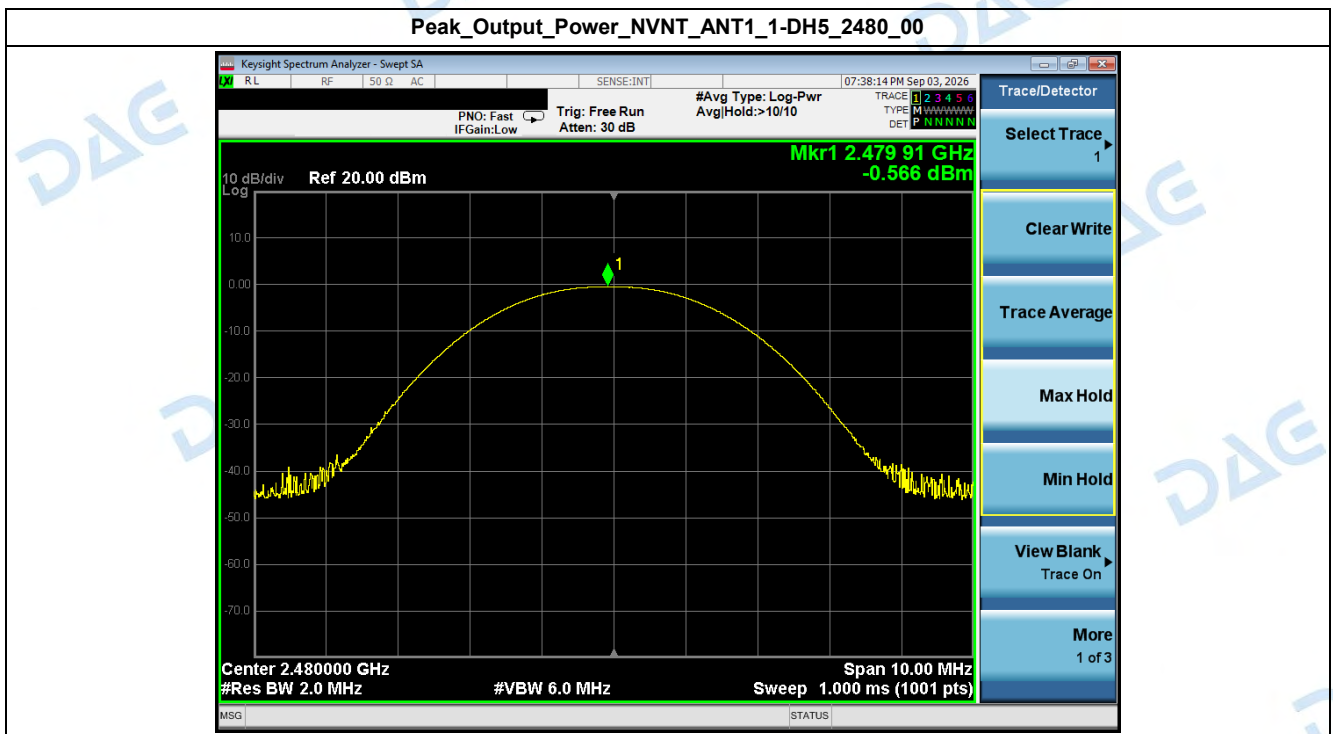
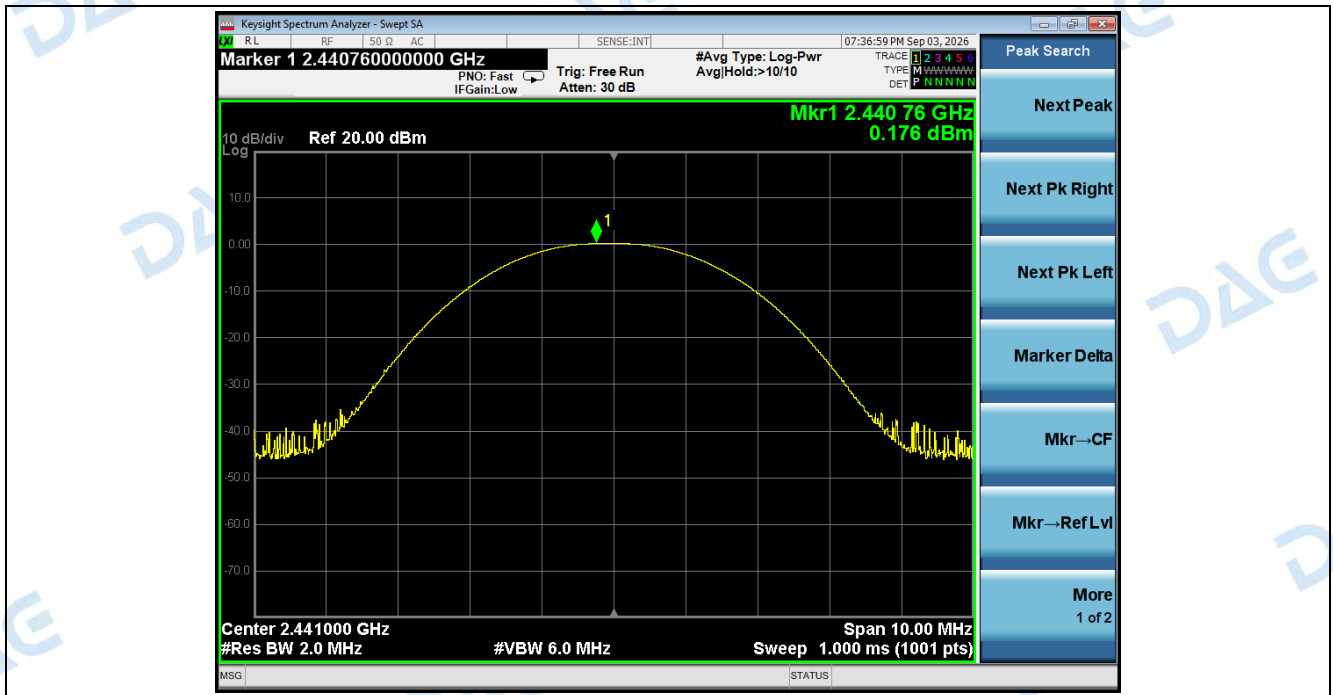
#### 4. Peak Output Power

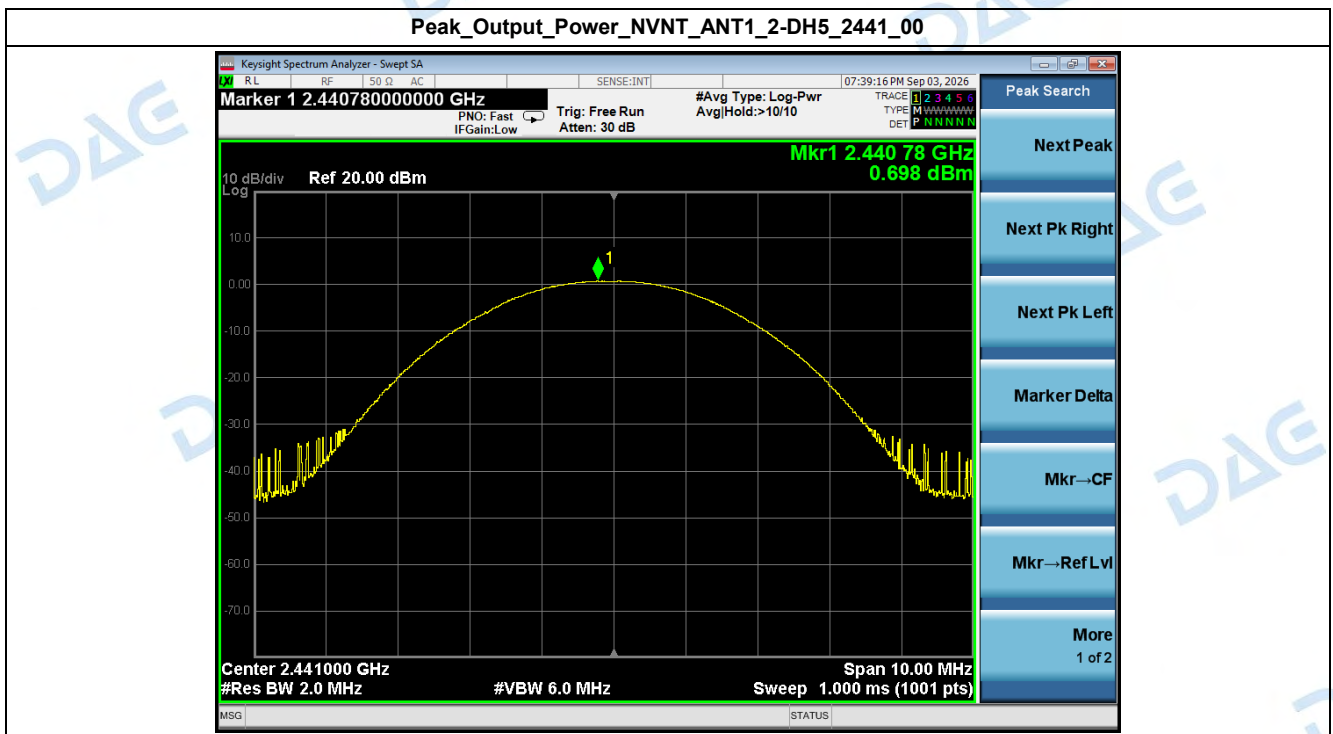
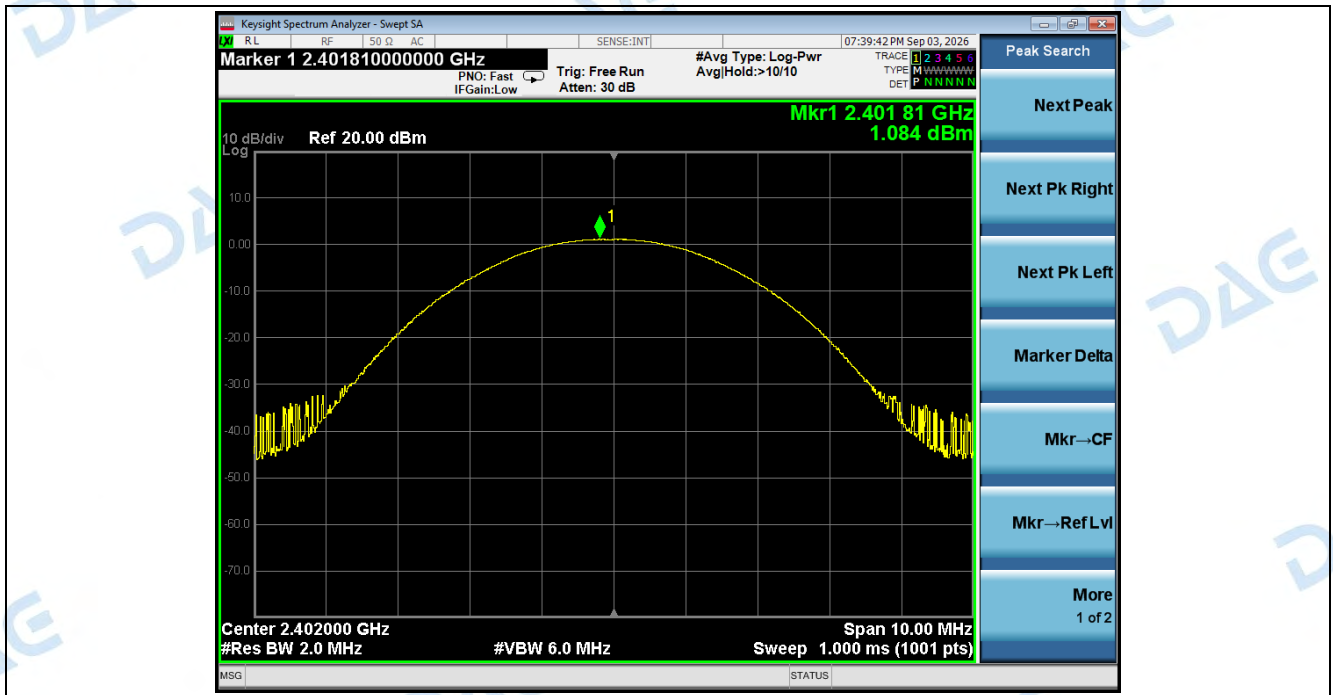
| Condition | Antenna | Modulation | Frequency (MHz) | Max. Conducted Power(dBm) | Max. Conducted Power(mW) | Limit(mW) | Result |
|-----------|---------|------------|-----------------|---------------------------|--------------------------|-----------|--------|
| NVNT      | ANT1    | 1-DH5      | 2402.00         | 0.597                     | 1.15                     | 1000      | Pass   |
| NVNT      | ANT1    | 1-DH5      | 2441.00         | 0.176                     | 1.04                     | 1000      | Pass   |
| NVNT      | ANT1    | 1-DH5      | 2480.00         | -0.566                    | 0.88                     | 1000      | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2402.00         | 1.084                     | 1.28                     | 1000      | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2441.00         | 0.698                     | 1.17                     | 1000      | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2480.00         | -0.038                    | 0.99                     | 1000      | Pass   |
| NVNT      | ANT1    | 3-DH5      | 2402.00         | 1.296                     | 1.35                     | 1000      | Pass   |
| NVNT      | ANT1    | 3-DH5      | 2441.00         | 0.885                     | 1.23                     | 1000      | Pass   |
| NVNT      | ANT1    | 3-DH5      | 2480.00         | 0.221                     | 1.05                     | 1000      | Pass   |

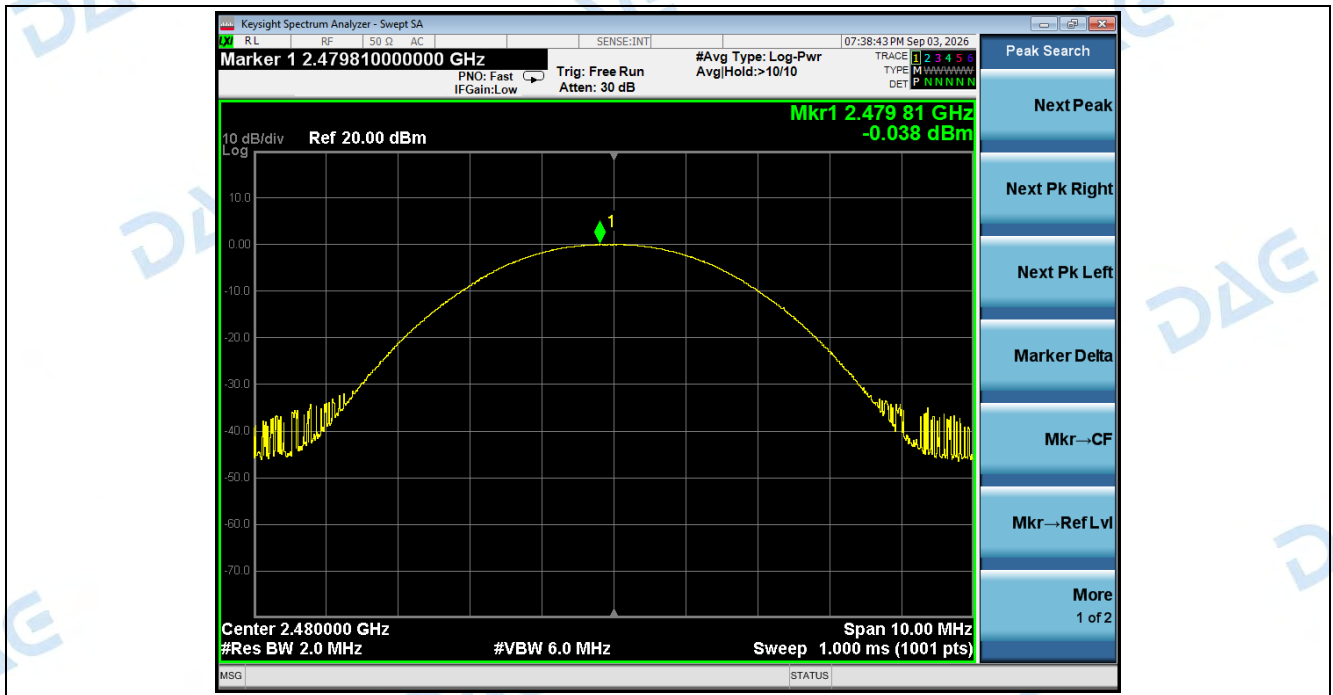
Peak\_Output\_Power\_NVNT\_ANT1\_1-DH5\_2402\_00



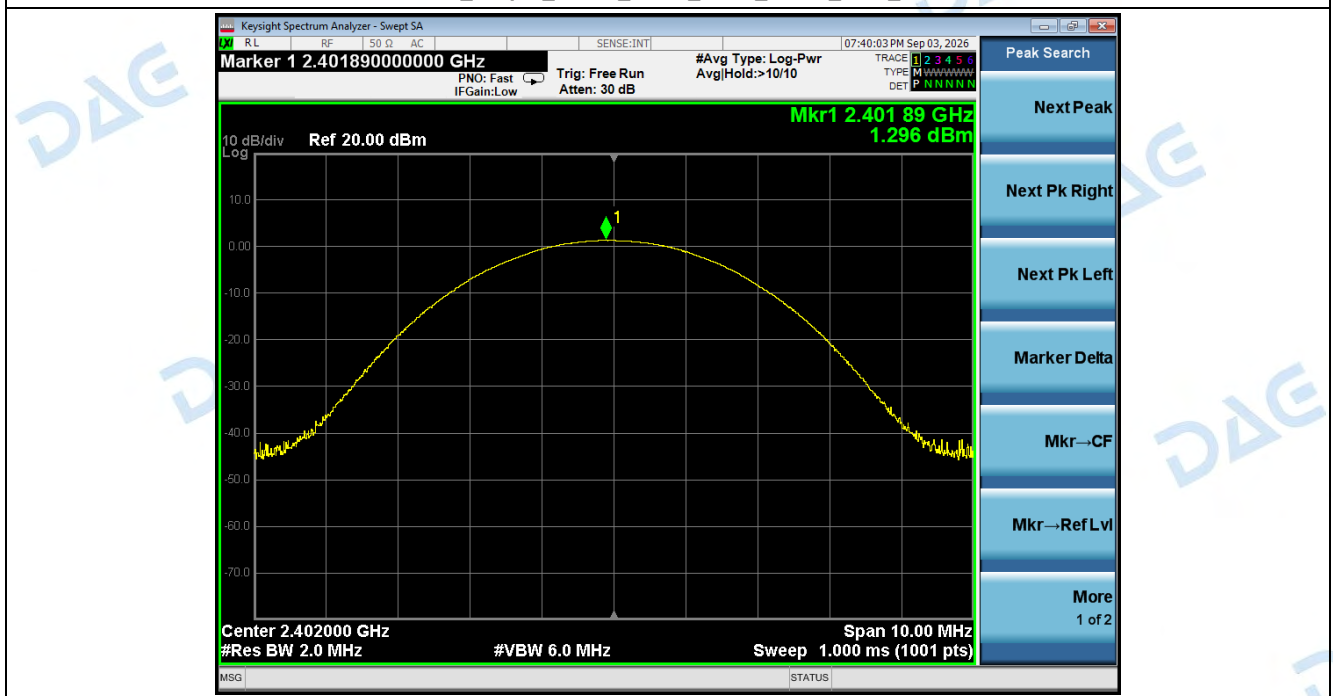
Peak\_Output\_Power\_NVNT\_ANT1\_1-DH5\_2441\_00



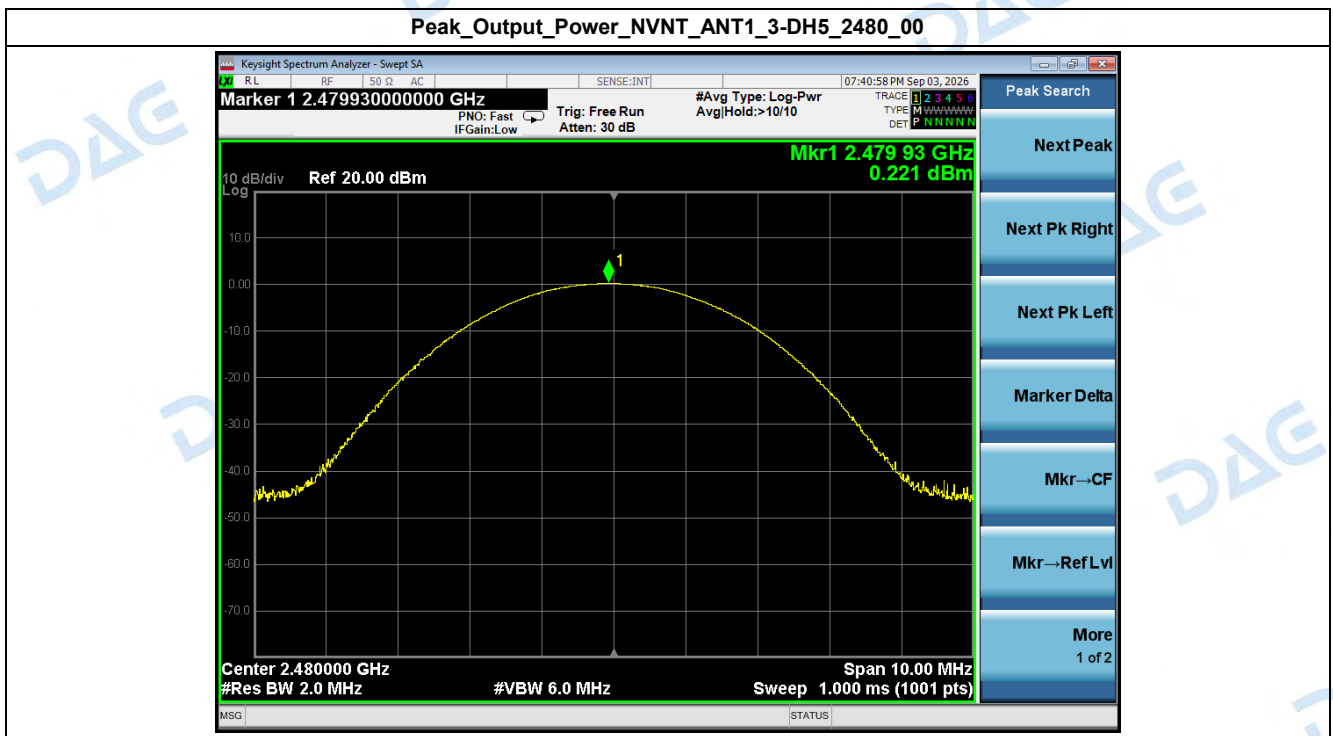
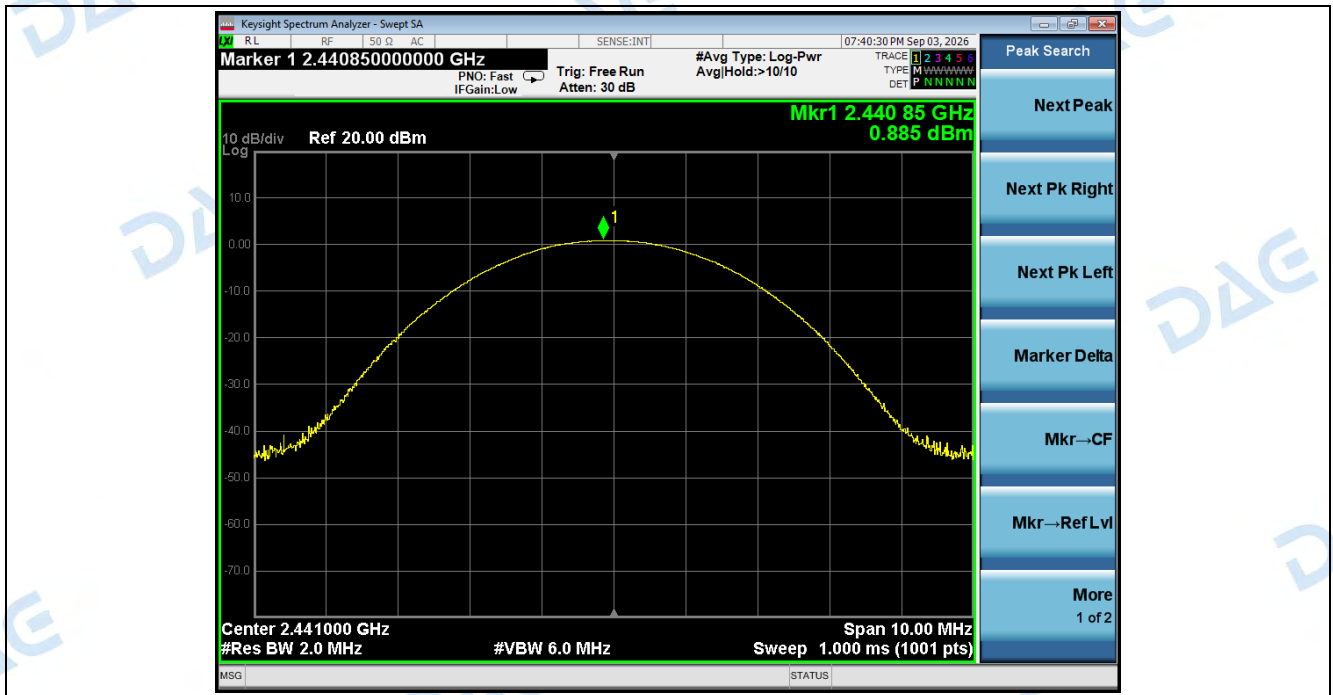




Peak\_Output\_Power\_NVNT\_ANT1\_3-DH5\_2402\_00



Peak\_Output\_Power\_NVNT\_ANT1\_3-DH5\_2441\_00



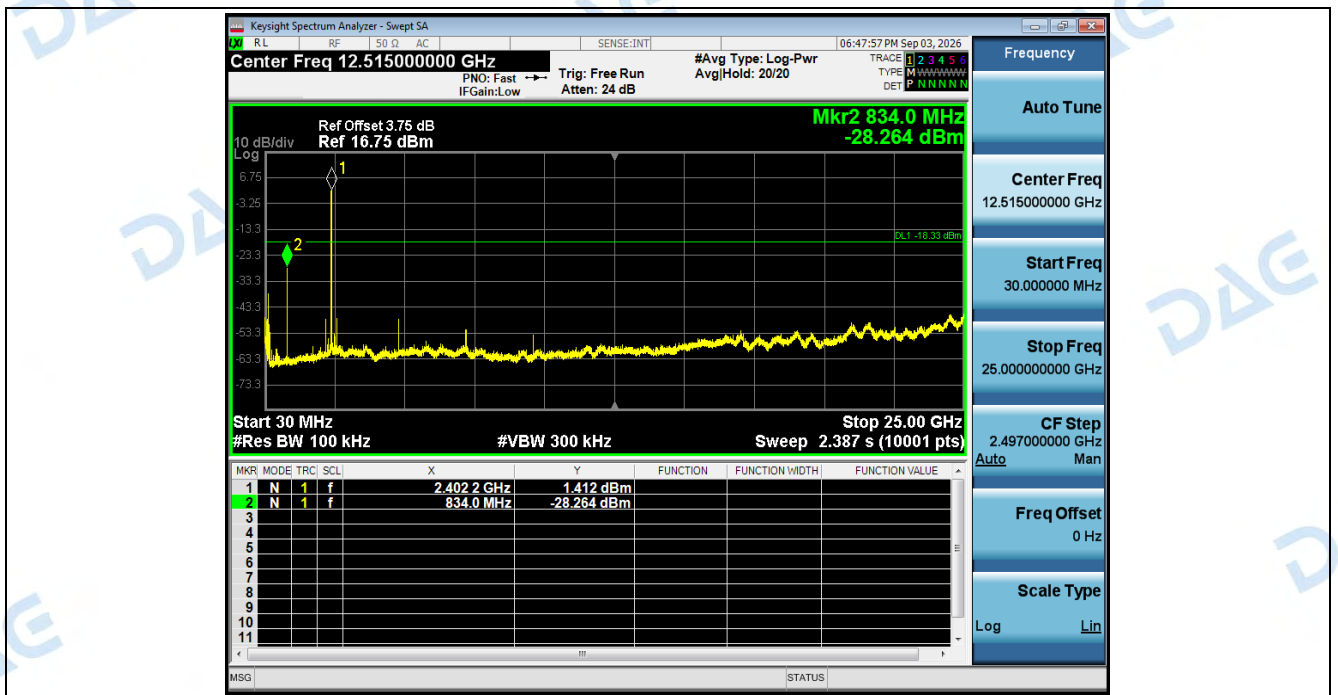
## 5. Spurious Emissions

| Condition | Antenna | Modulation | TX Mode | Ref_level(dBm) | Spurious MAX.Value(dBm) | Limit   | Result |
|-----------|---------|------------|---------|----------------|-------------------------|---------|--------|
| NVNT      | ANT1    | 1-DH5      | 2402.00 | 1.673          | -28.264                 | -18.327 | Pass   |
| NVNT      | ANT1    | 1-DH5      | 2441.00 | 1.164          | -20.564                 | -18.836 | Pass   |
| NVNT      | ANT1    | 1-DH5      | 2480.00 | 0.221          | -29.296                 | -19.779 | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2402.00 | 1.685          | -28.015                 | -18.315 | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2441.00 | 0.950          | -27.159                 | -19.050 | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2480.00 | 0.311          | -29.346                 | -19.689 | Pass   |
| NVNT      | ANT1    | 3-DH5      | 2402.00 | 1.613          | -38.089                 | -18.387 | Pass   |
| NVNT      | ANT1    | 3-DH5      | 2441.00 | 1.026          | -33.605                 | -18.974 | Pass   |
| NVNT      | ANT1    | 3-DH5      | 2480.00 | 0.300          | -38.116                 | -19.700 | Pass   |

1\_Reference\_Level\_NVNT\_ANT1\_1-DH5\_2402\_00



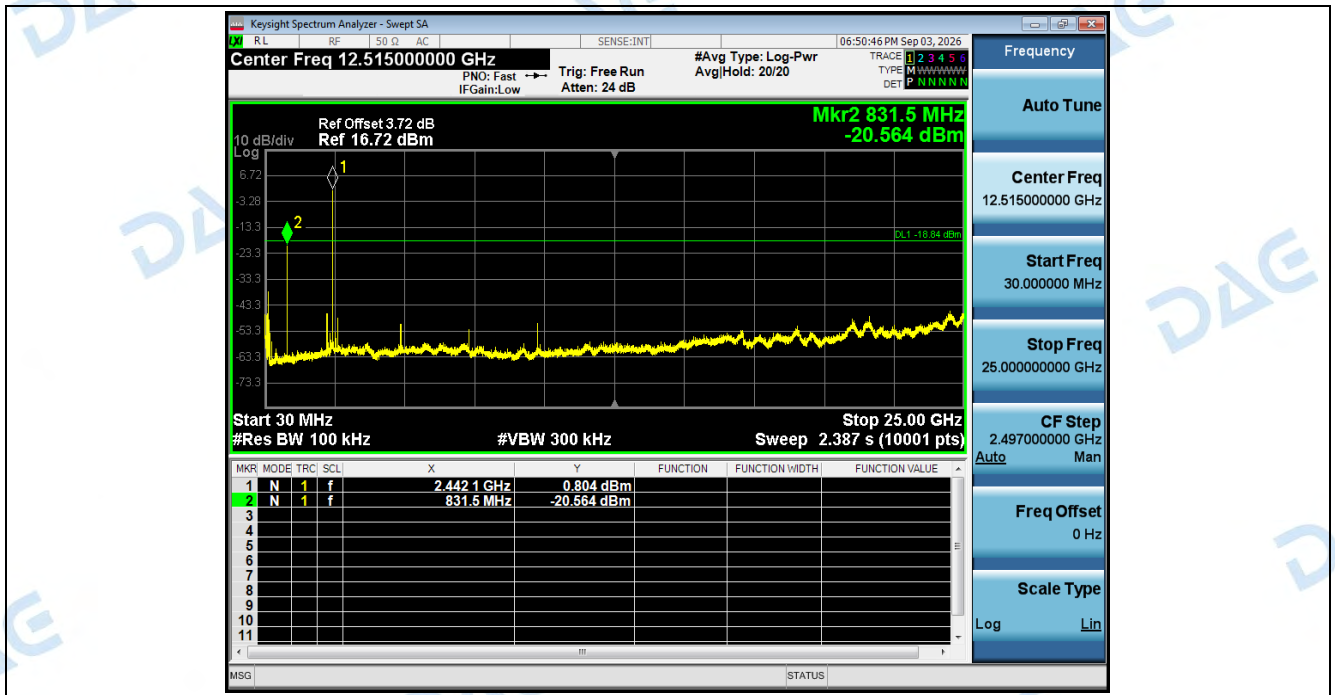
2\_Spurious\_Emissions\_NVNT\_ANT1\_1-DH5\_2402\_00



### 1\_Reference\_Level\_NVNT\_ANT1\_1-DH5\_2441\_00



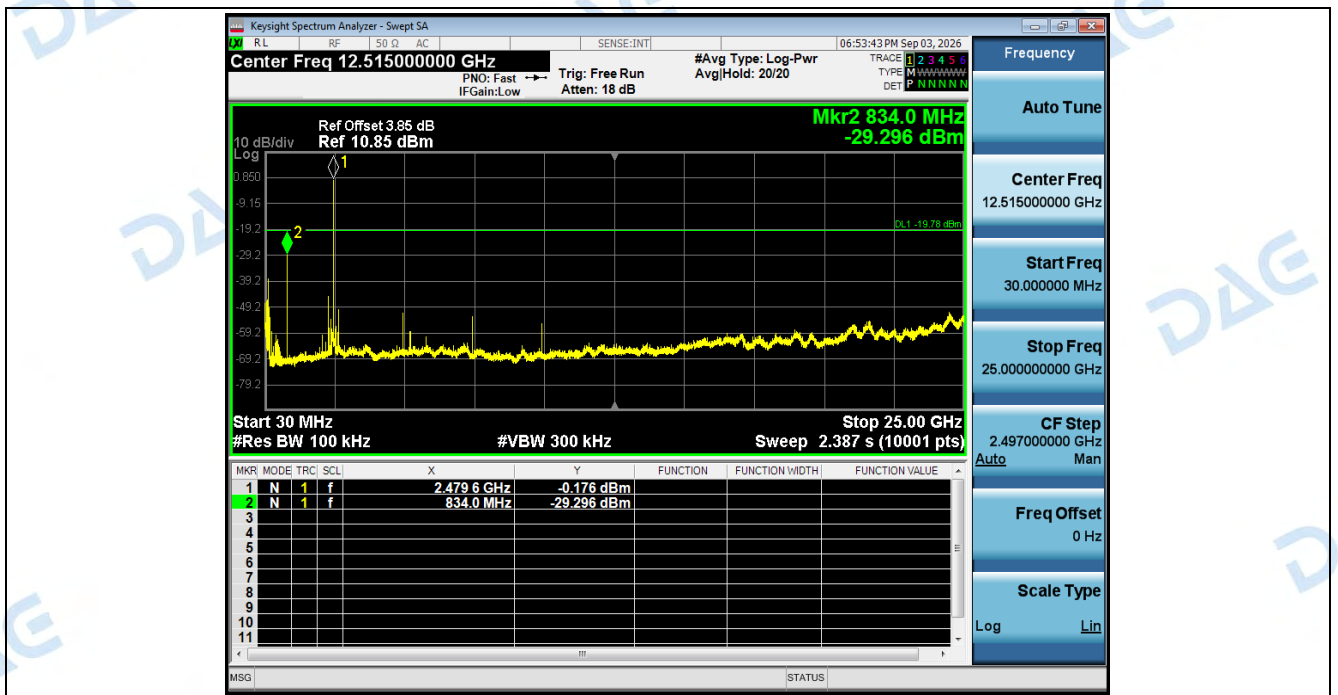
### 2\_Spurious\_Emissions\_NVNT\_ANT1\_1-DH5\_2441\_00



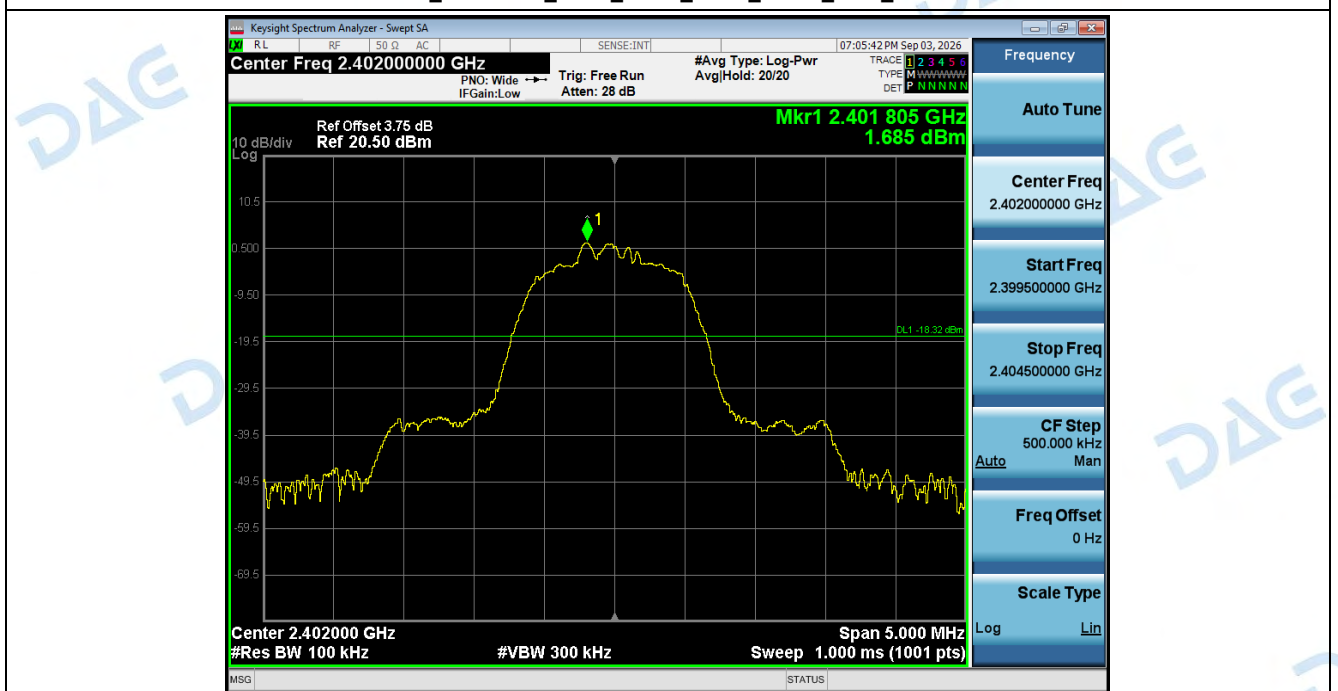
### 1\_Reference\_Level\_NVNT\_ANT1\_1-DH5\_2480\_00



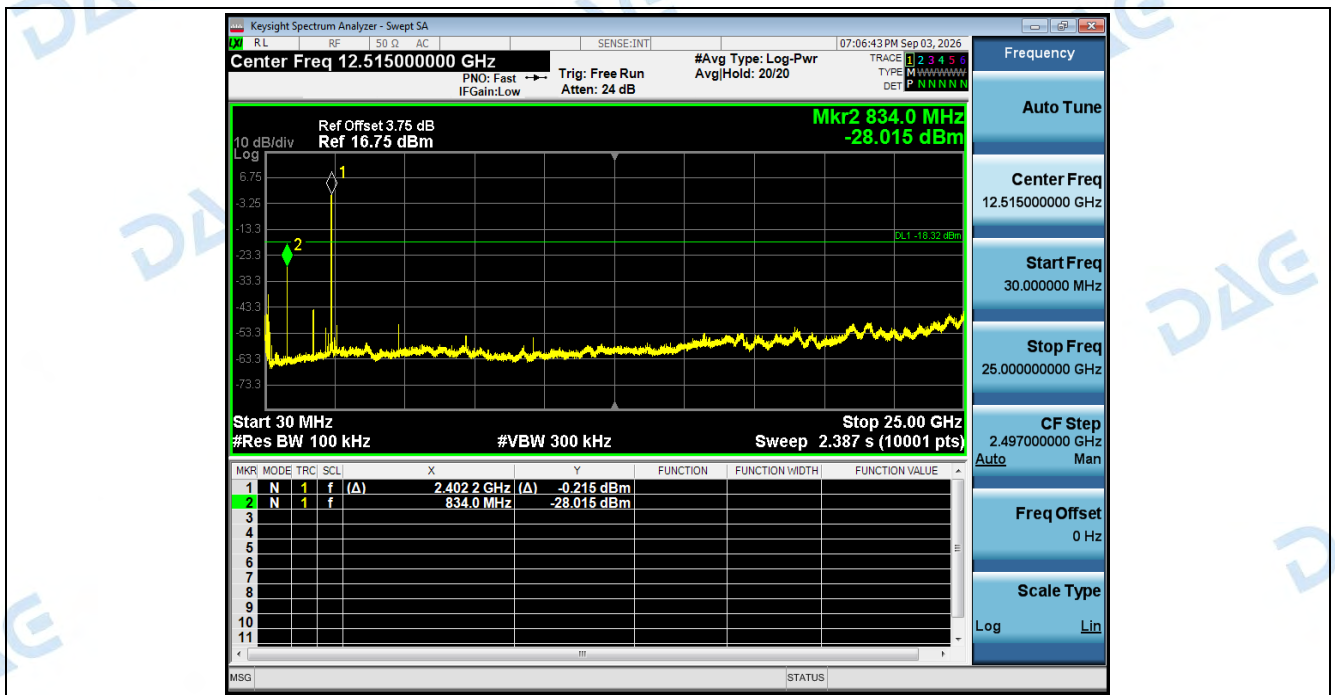
### 2\_Spurious\_Emissions\_NVNT\_ANT1\_1-DH5\_2480\_00



### 1\_Reference\_Level\_NVNT\_ANT1\_2-DH5\_2402\_00



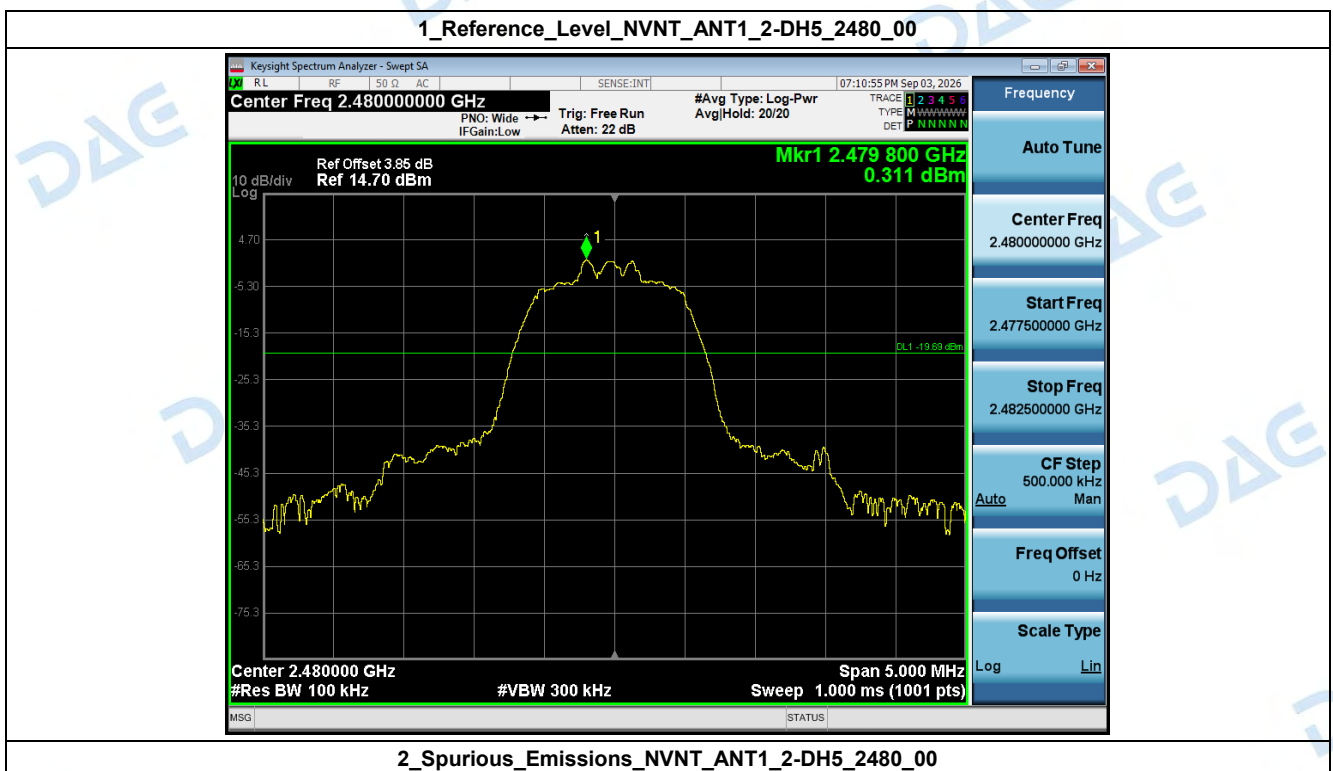
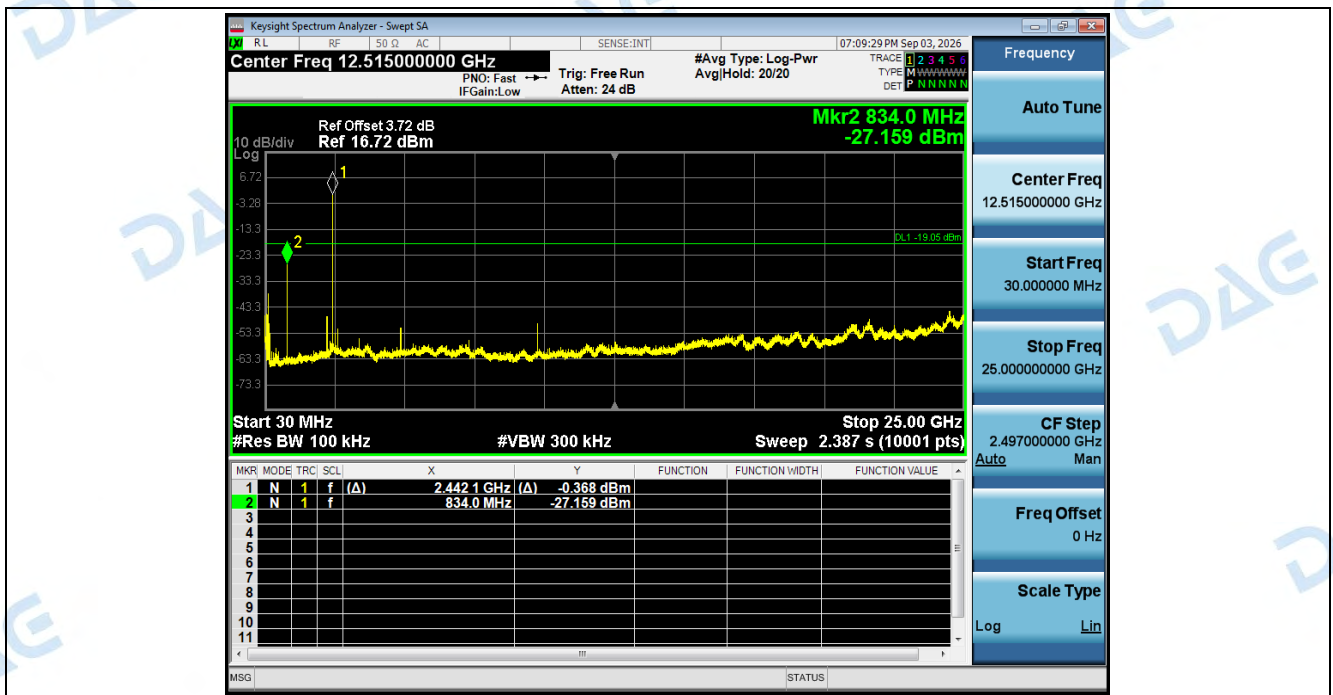
### 2\_Spurious\_Emissions\_NVNT\_ANT1\_2-DH5\_2402\_00



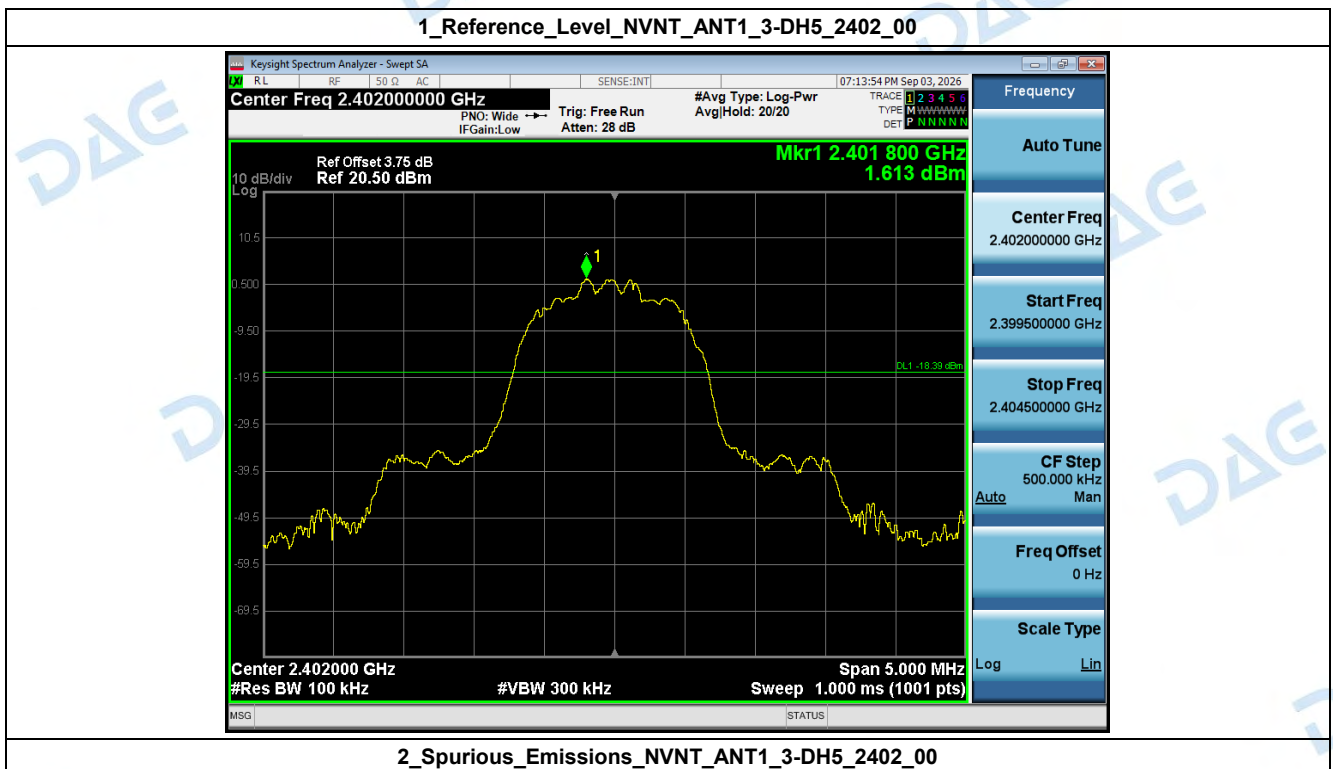
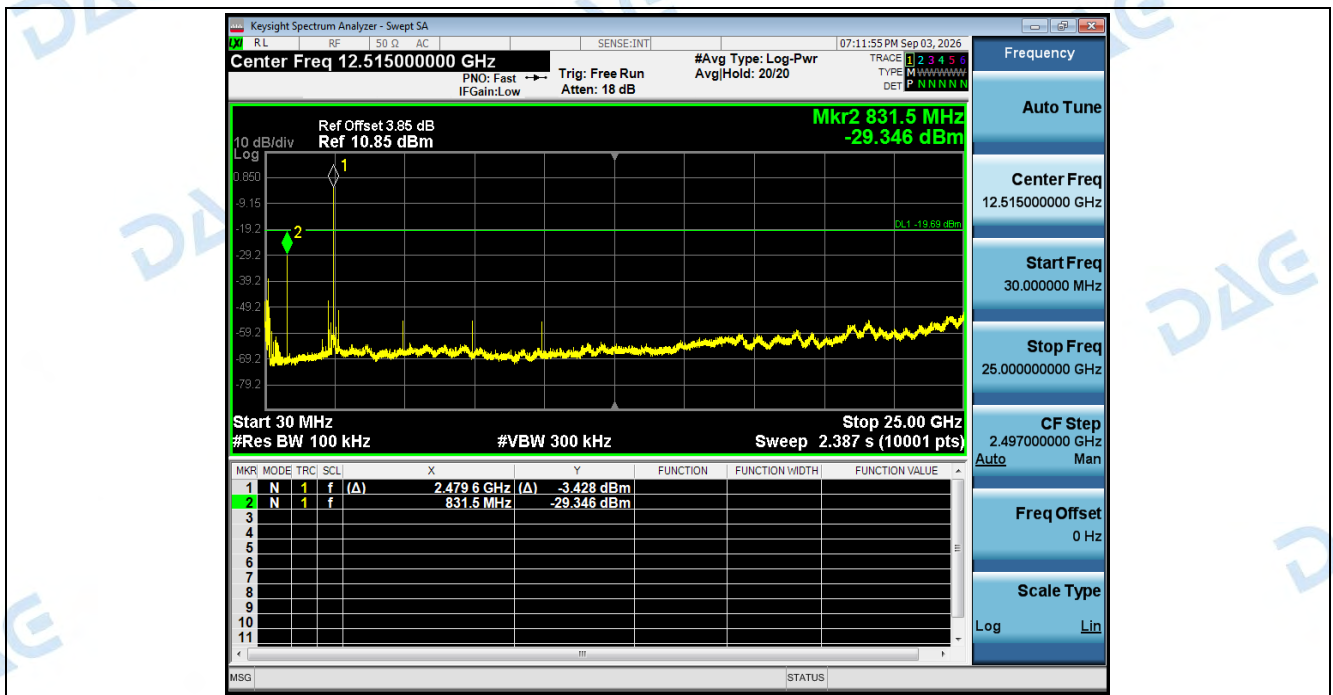
### 1\_Reference\_Level\_NVNT\_ANT1\_2-DH5\_2441\_00



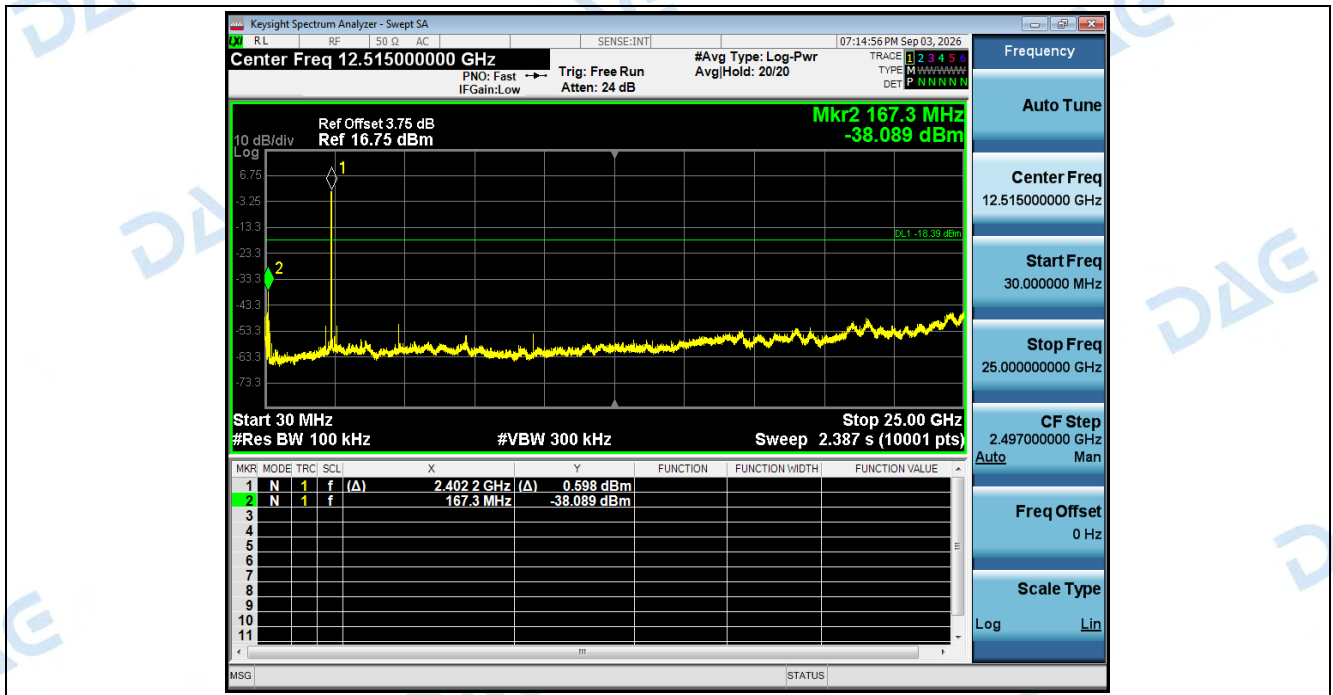
### 2\_Spurious\_Emissions\_NVNT\_ANT1\_2-DH5\_2441\_00



2\_Spurious\_Emissions\_NVNT\_ANT1\_2-DH5\_2480\_00



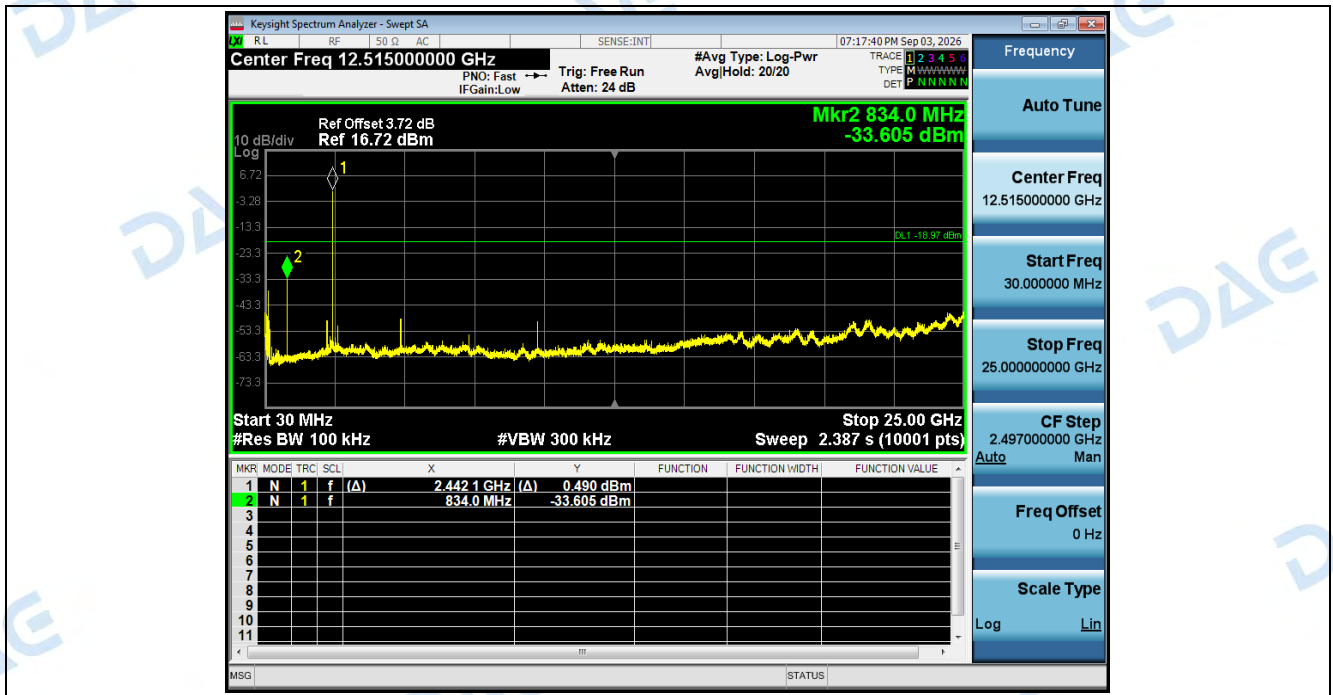
2\_Spurious\_Emissions\_NVNT\_ANT1\_3-DH5\_2402\_00



### 1\_Reference\_Level\_NVNT\_ANT1\_3-DH5\_2441\_00



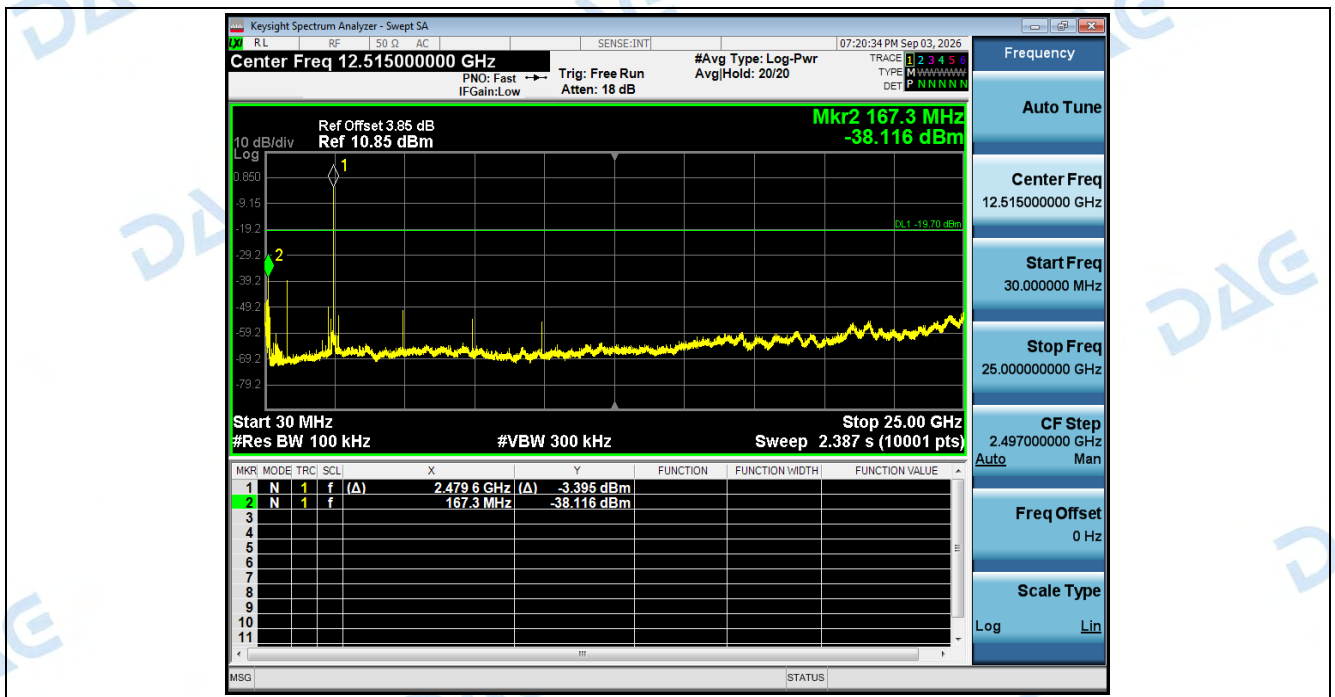
### 2\_Spurious\_Emissions\_NVNT\_ANT1\_3-DH5\_2441\_00



### 1\_Reference\_Level\_NVNT\_ANT1\_3-DH5\_2480\_00



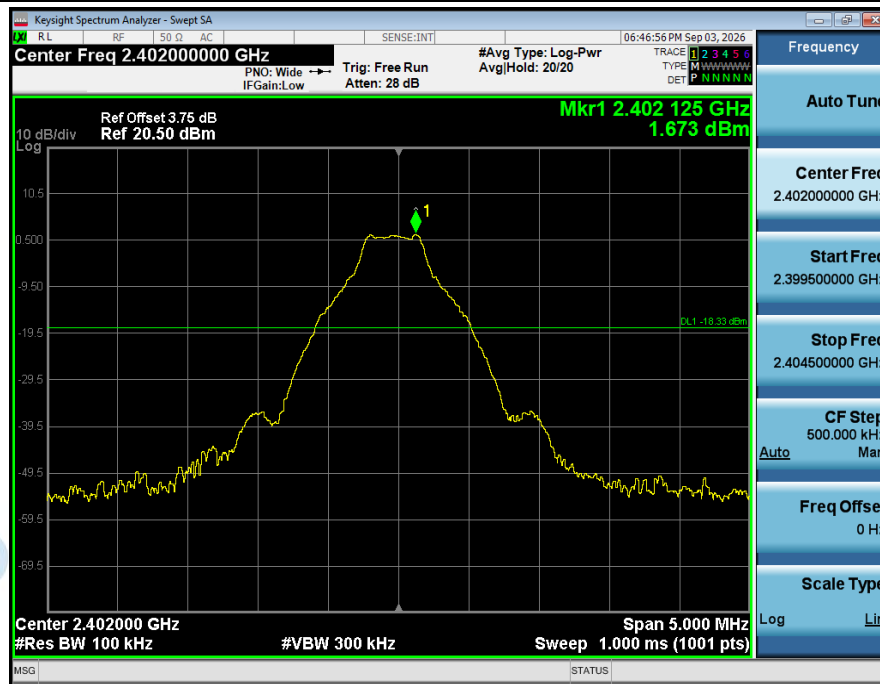
### 2\_Spurious\_Emissions\_NVNT\_ANT1\_3-DH5\_2480\_00



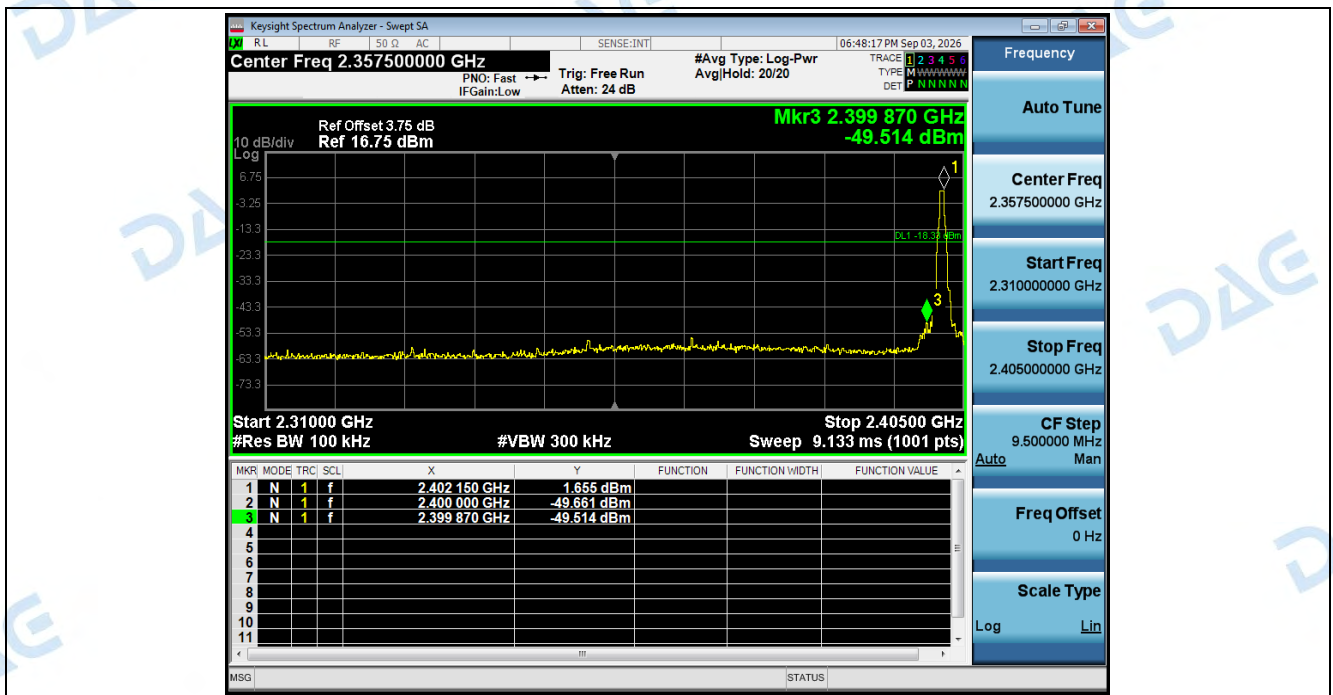
## 6. Bandedge

| Condition | Antenna | Modulation | TX Mode     | Ref_level(dBm) | Bandedge MAX.Value | Limit   | Result |
|-----------|---------|------------|-------------|----------------|--------------------|---------|--------|
| NVNT      | ANT1    | 1-DH5      | 2402.00     | 1.673          | -49.514            | -18.327 | Pass   |
| NVNT      | ANT1    | 1-DH5      | Hopping_LCH | 1.455          | -55.809            | -18.545 | Pass   |
| NVNT      | ANT1    | 1-DH5      | 2480.00     | 0.221          | -61.017            | -19.779 | Pass   |
| NVNT      | ANT1    | 1-DH5      | Hopping_HCH | 1.375          | -52.732            | -18.625 | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2402.00     | 1.685          | -48.237            | -18.315 | Pass   |
| NVNT      | ANT1    | 2-DH5      | Hopping_LCH | 1.617          | -57.309            | -18.383 | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2480.00     | 0.311          | -56.841            | -19.689 | Pass   |
| NVNT      | ANT1    | 2-DH5      | Hopping_HCH | 1.567          | -54.080            | -18.433 | Pass   |
| NVNT      | ANT1    | 3-DH5      | 2402.00     | 1.613          | -47.555            | -18.387 | Pass   |
| NVNT      | ANT1    | 3-DH5      | Hopping_LCH | 1.352          | -54.332            | -18.648 | Pass   |
| NVNT      | ANT1    | 3-DH5      | 2480.00     | 0.300          | -60.993            | -19.700 | Pass   |
| NVNT      | ANT1    | 3-DH5      | Hopping_HCH | 1.222          | -55.654            | -18.778 | Pass   |

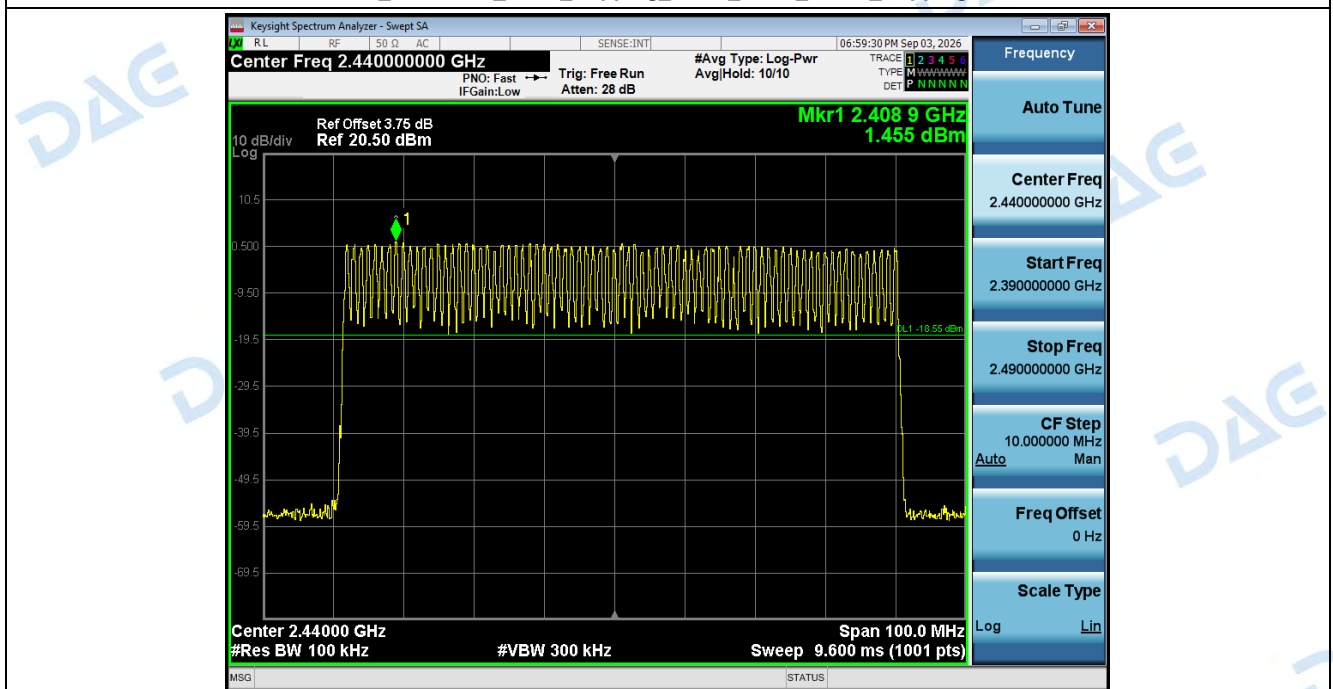
1\_Reference\_Level\_NVNT\_ANT1\_1-DH5\_2402\_00



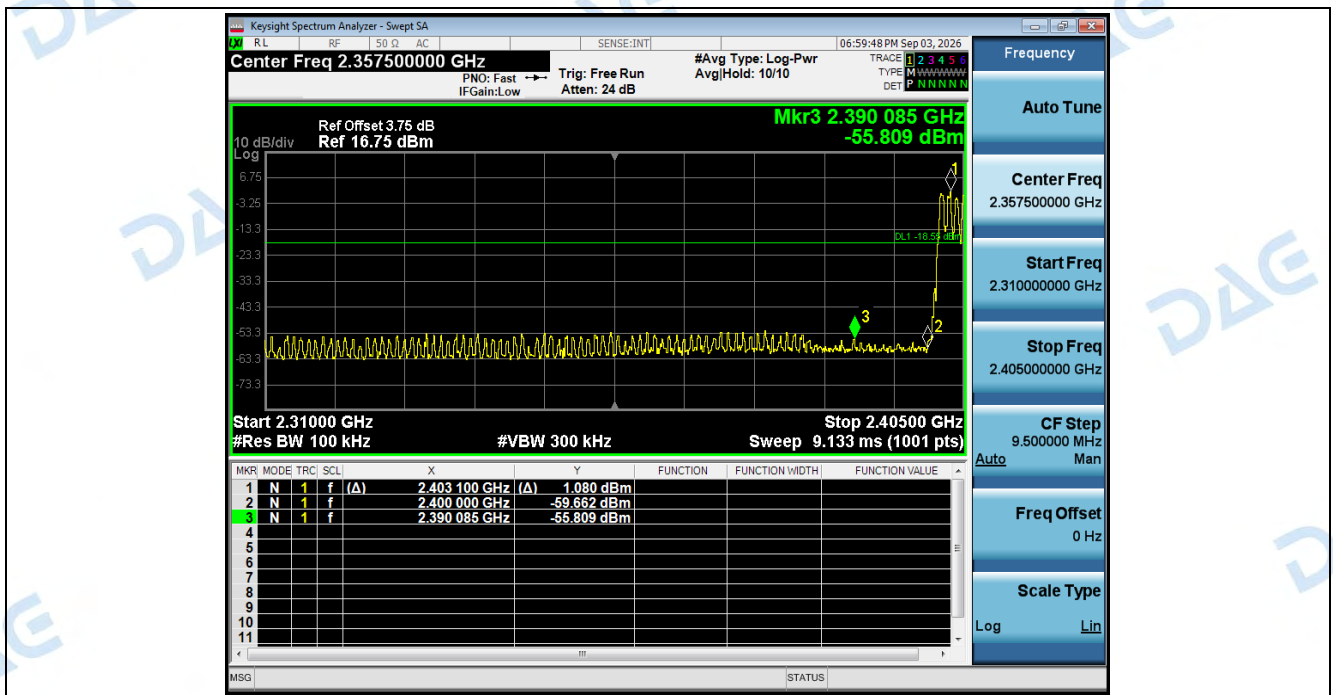
2\_Bandedge\_NVNT\_ANT1\_1-DH5\_2402\_00



### 1\_Reference\_Level\_Hopping\_NVNT\_ANT1\_1-DH5\_Hopping



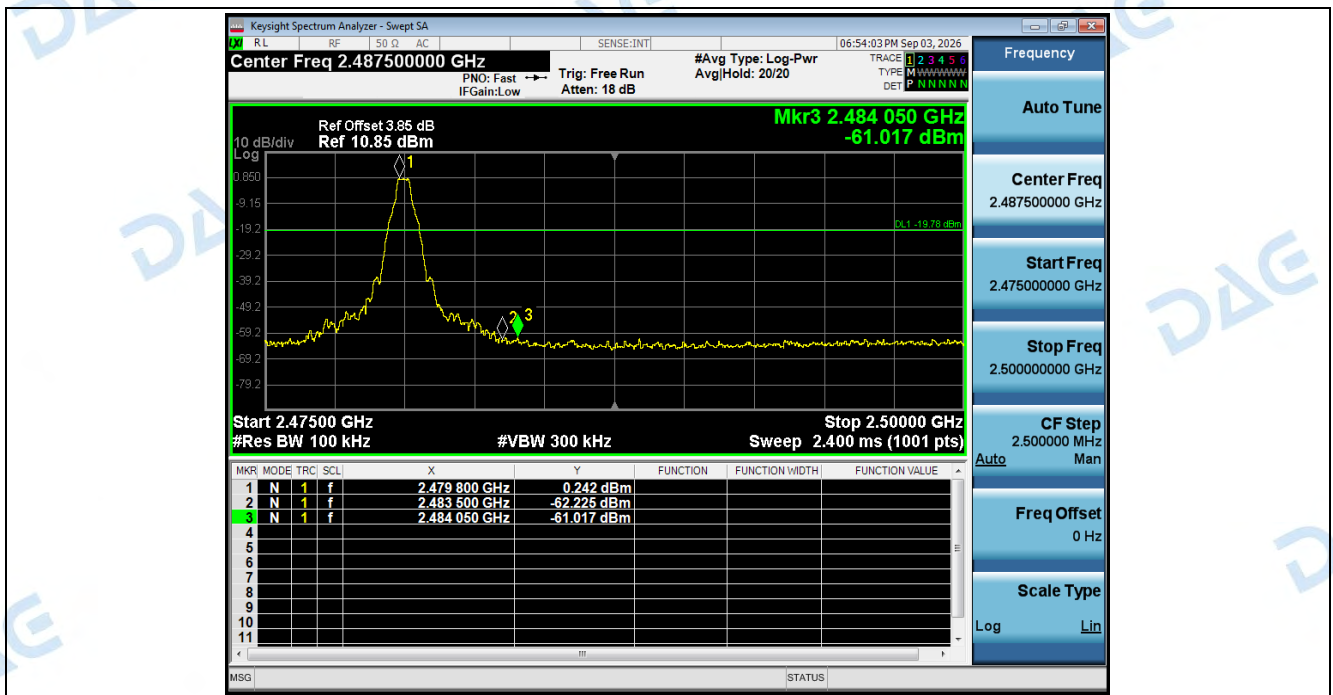
### 2\_Band\_Edge\_(Hopping)\_NVNT\_ANT1\_1-DH5\_Hopping



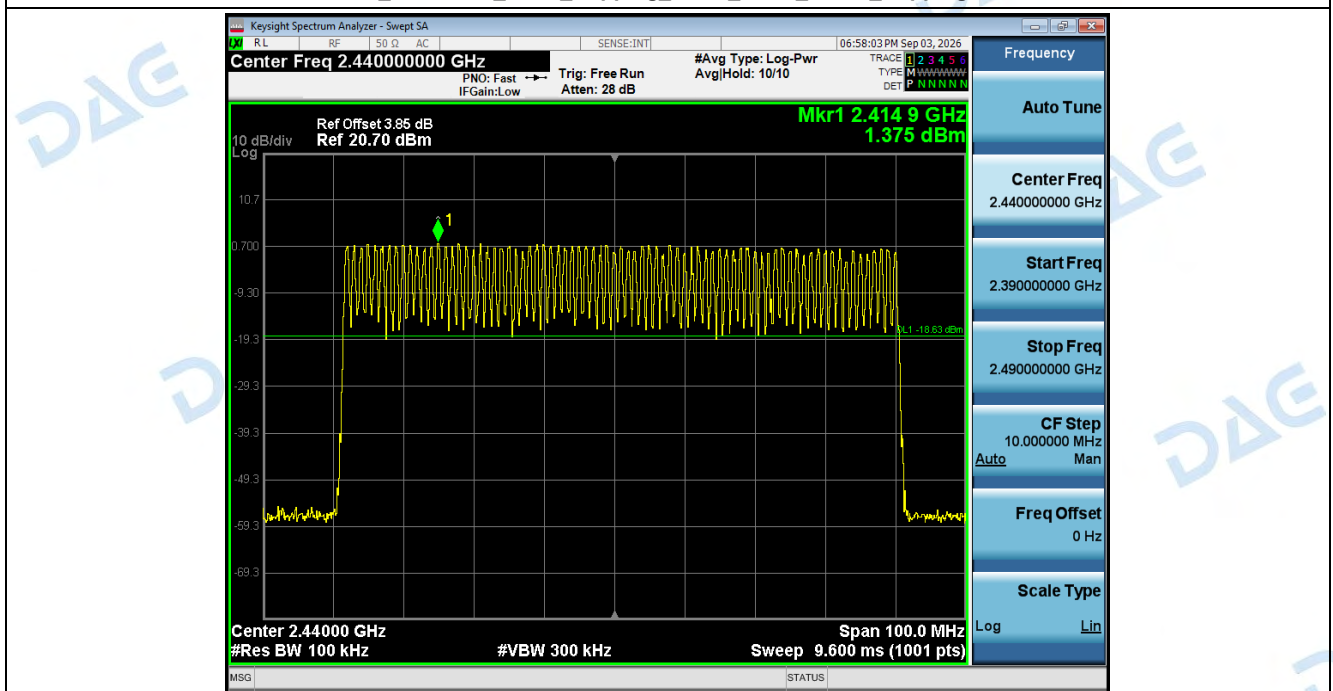
1\_Reference\_Level\_NVNT\_ANT1\_1-DH5\_2480\_00



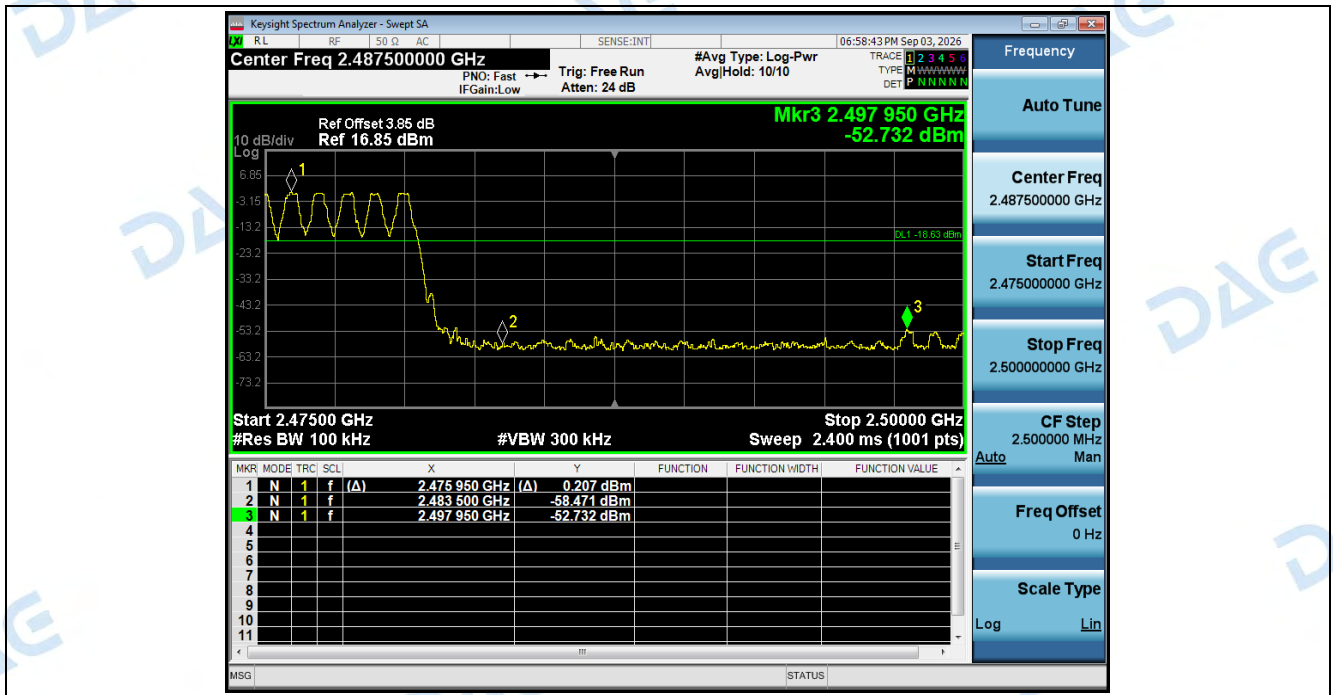
2\_Bandedge\_NVNT\_ANT1\_1-DH5\_2480\_00



### 1\_Reference\_Level\_Hopping\_NVNT\_ANT1\_1-DH5\_Hopping



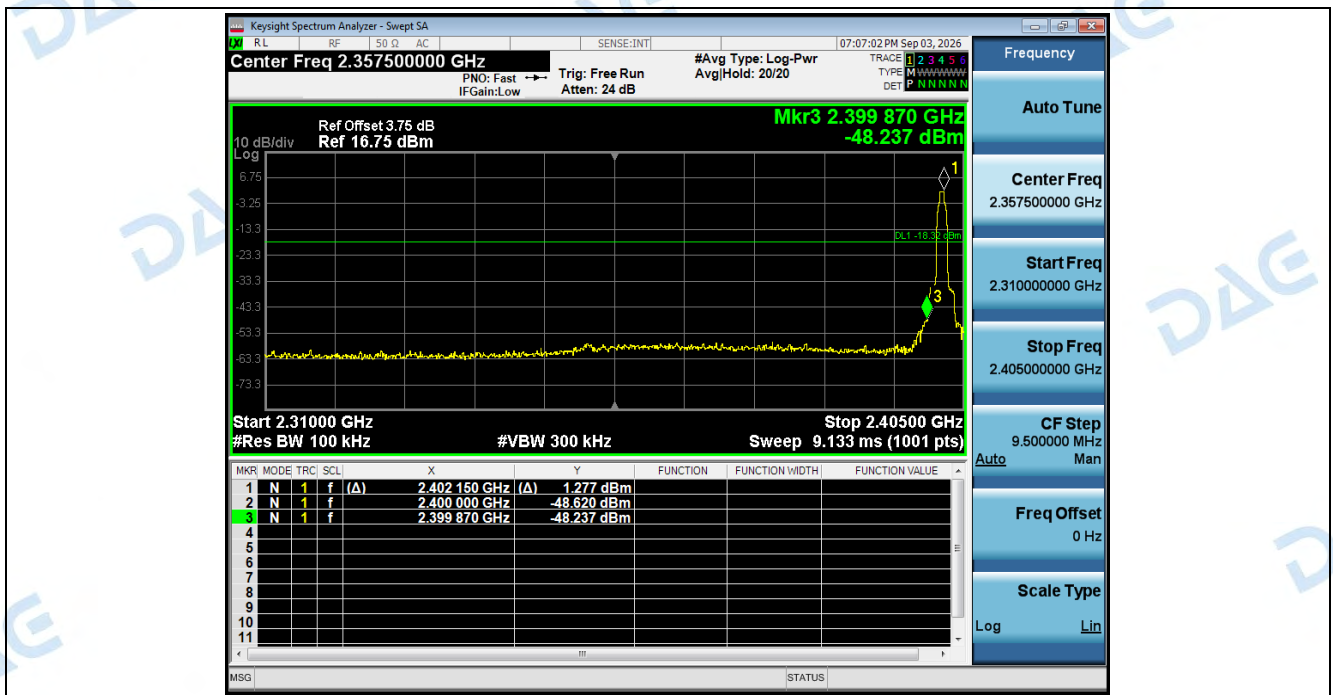
### 2\_Band\_Edge\_(Hopping)\_NVNT\_ANT1\_1-DH5\_Hopping



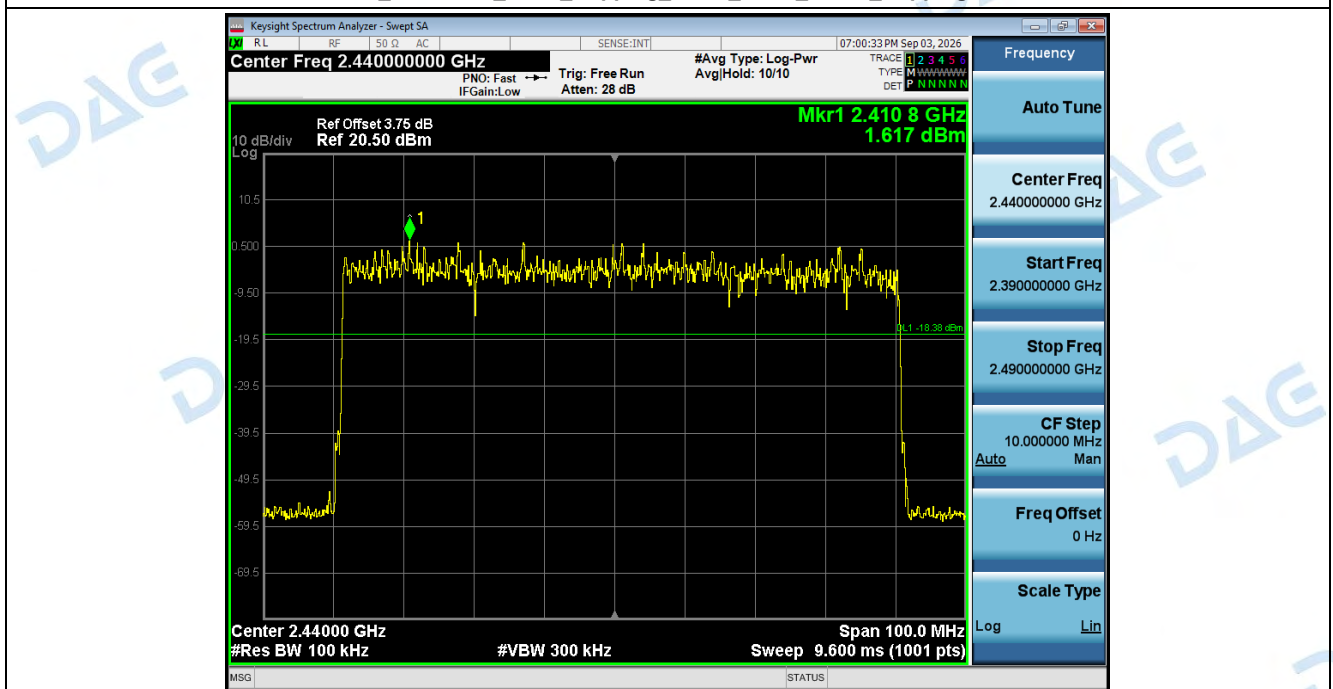
### 1\_Reference\_Level\_NVNT\_ANT1\_2-DH5\_2402\_00



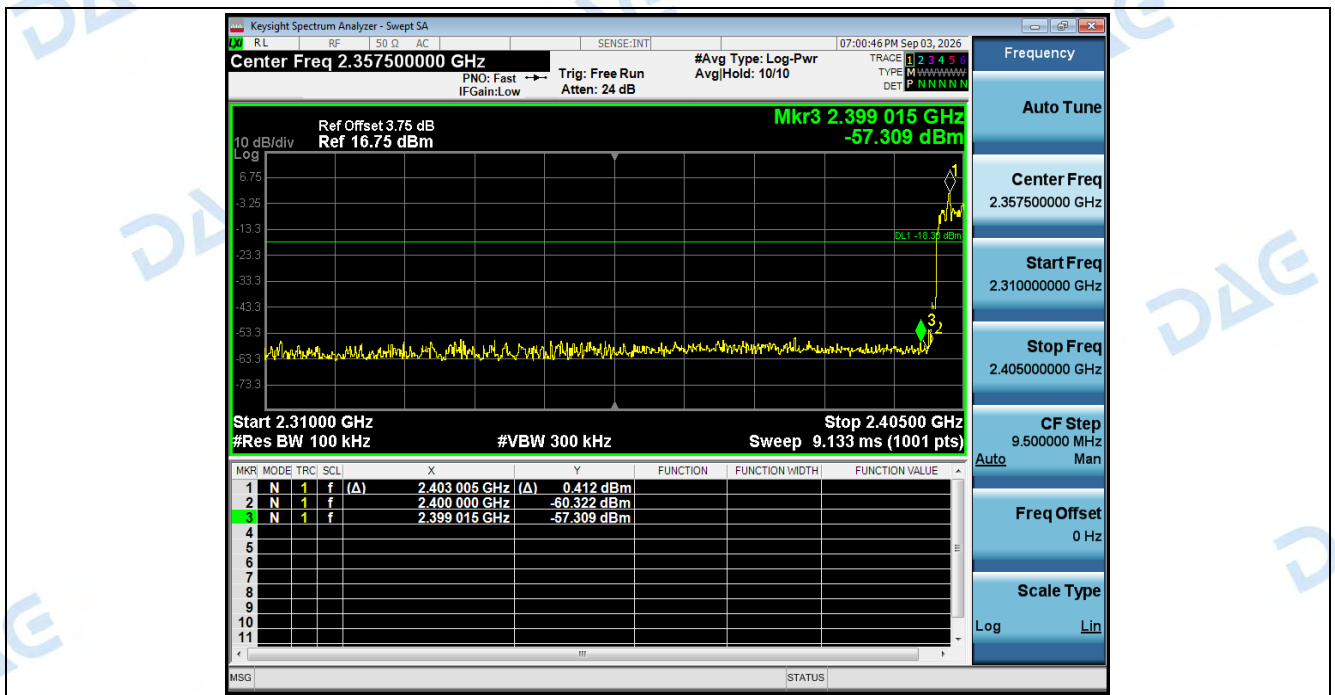
### 2\_Bandedge\_NVNT\_ANT1\_2-DH5\_2402\_00



### 1\_Reference\_Level\_Hopping\_NVNT\_ANT1\_2-DH5\_Hopping



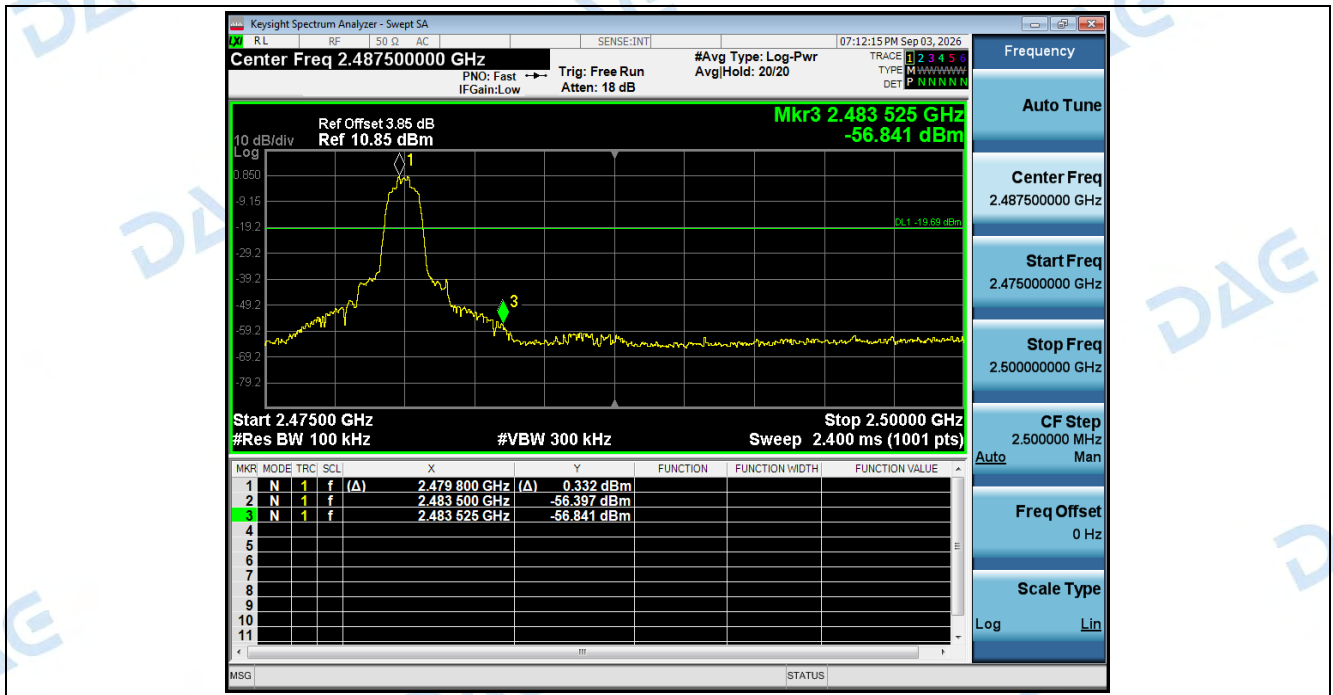
### 2\_Band\_Edge\_(Hopping)\_NVNT\_ANT1\_2-DH5\_Hopping



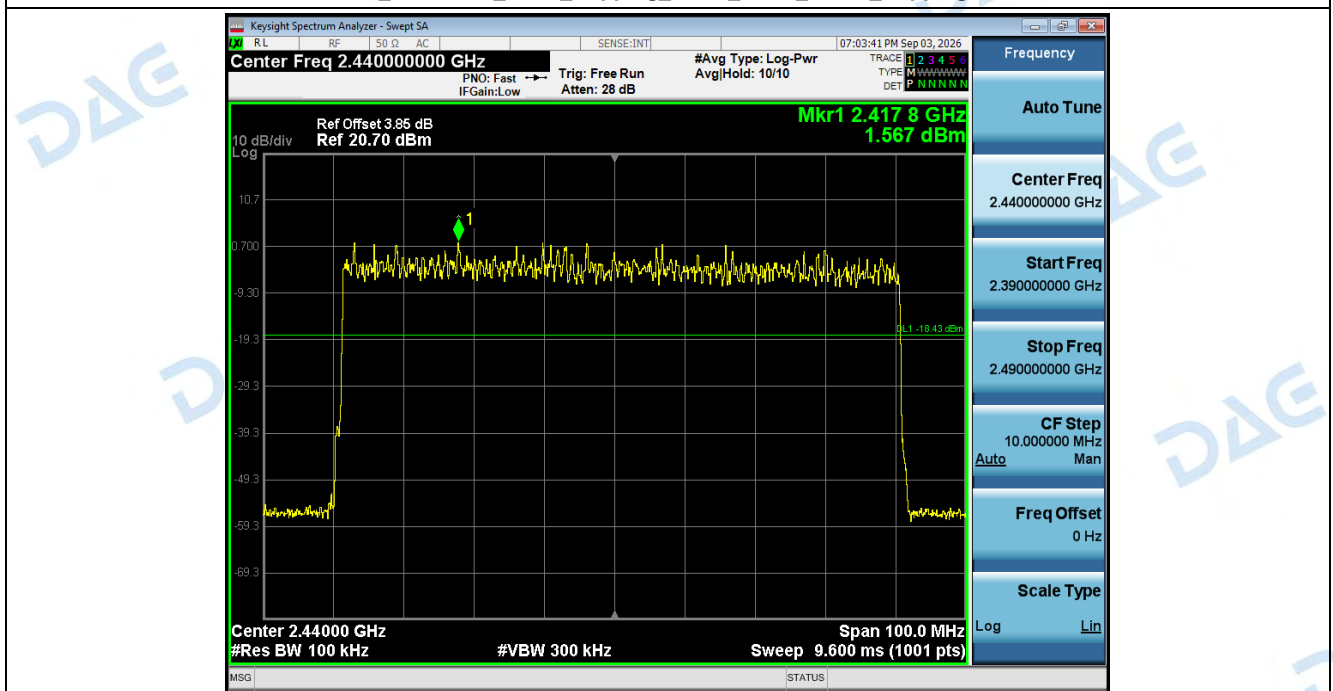
### 1\_Reference\_Level\_NVNT\_ANT1\_2-DH5\_2480\_00



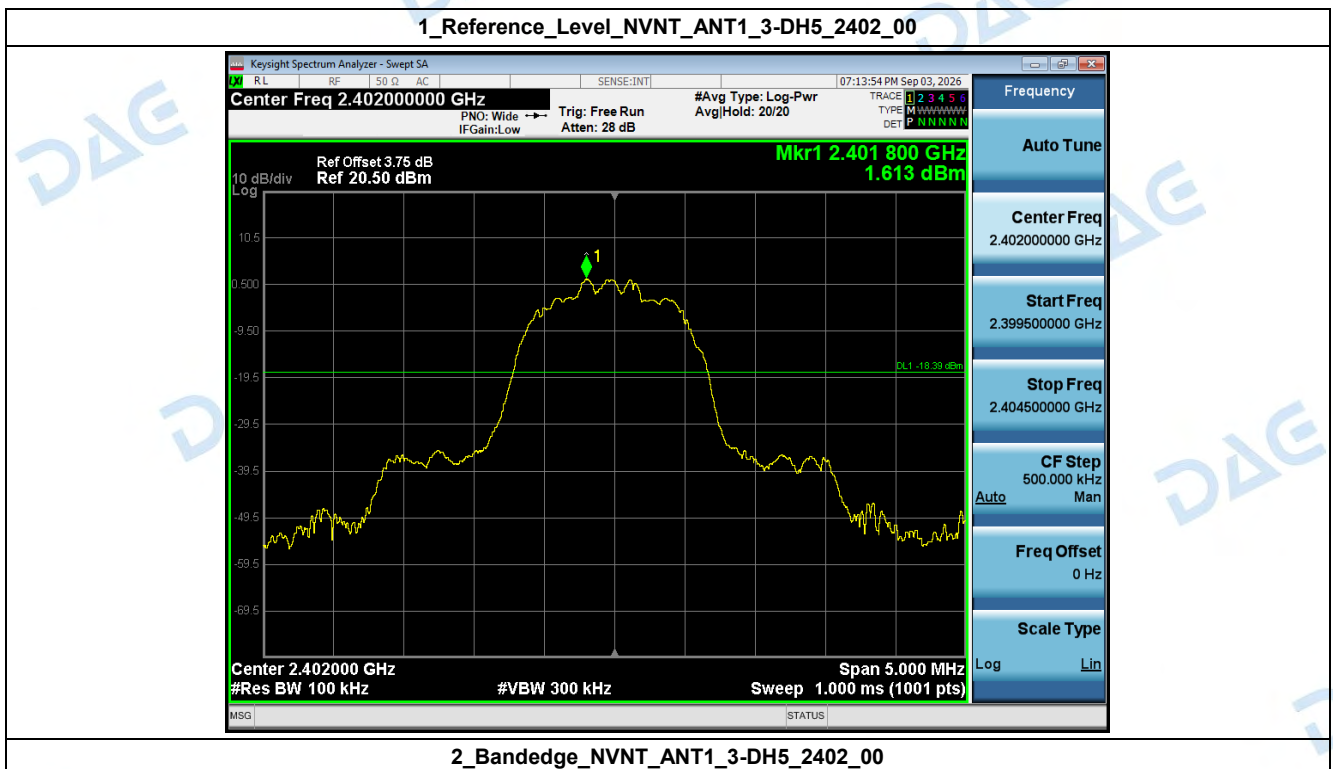
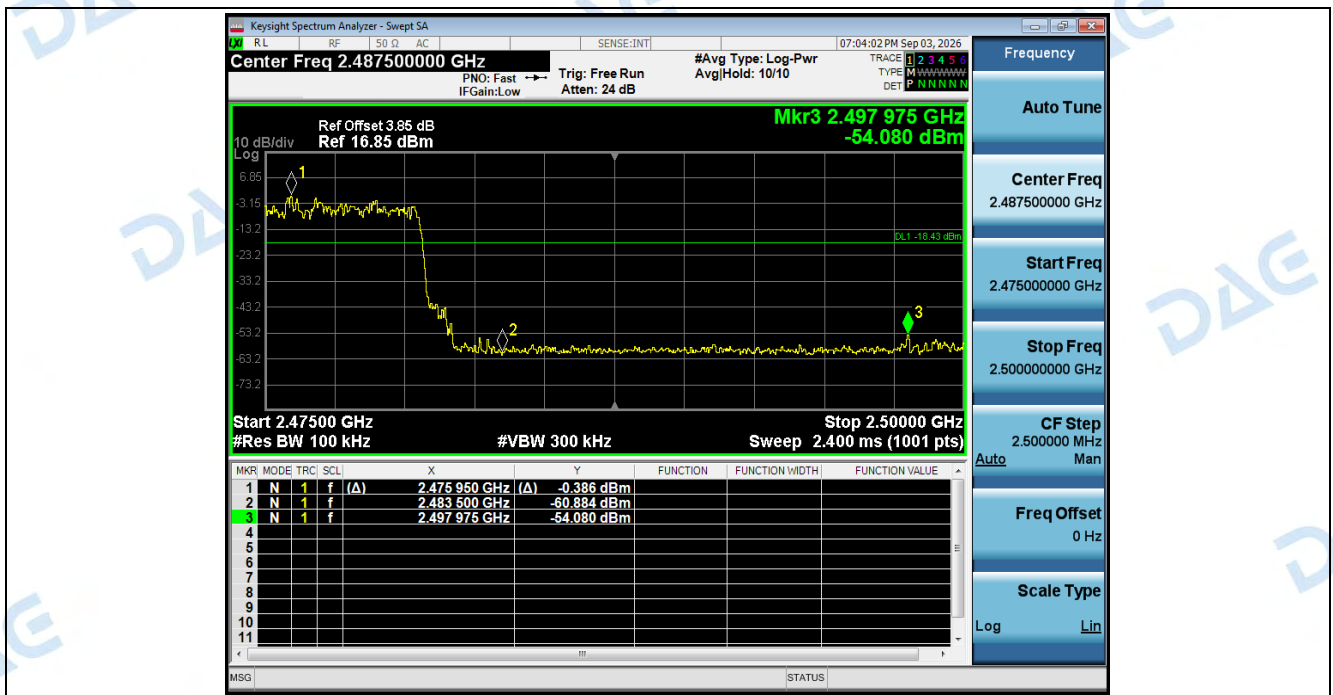
### 2\_Bandedge\_NVNT\_ANT1\_2-DH5\_2480\_00



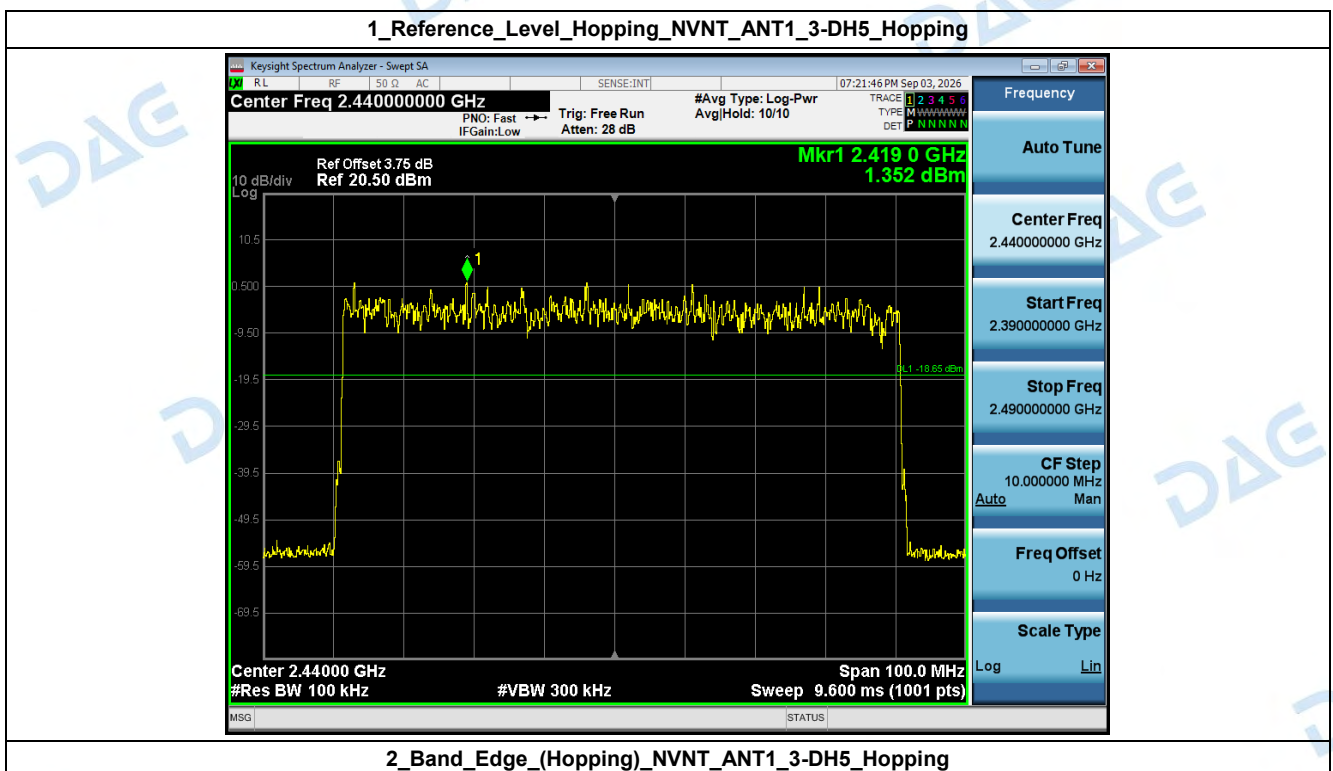
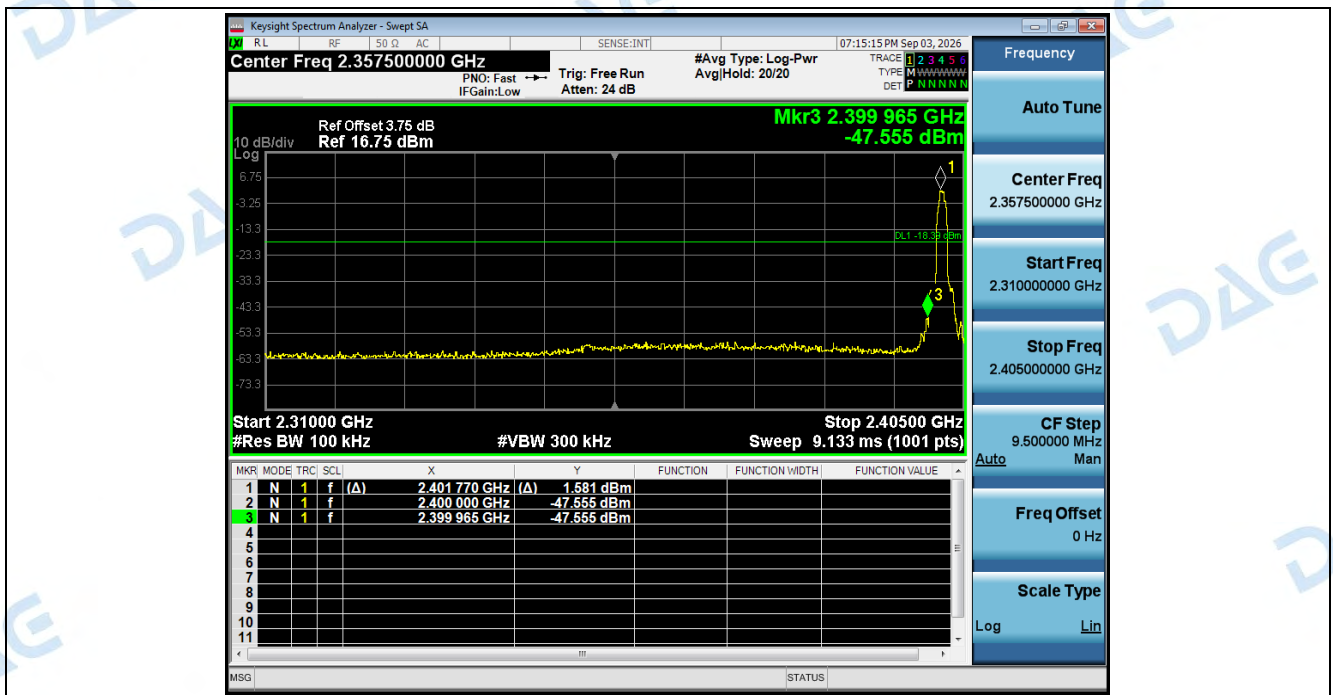
### 1\_Reference\_Level\_Hopping\_NVNT\_ANT1\_2-DH5\_Hopping

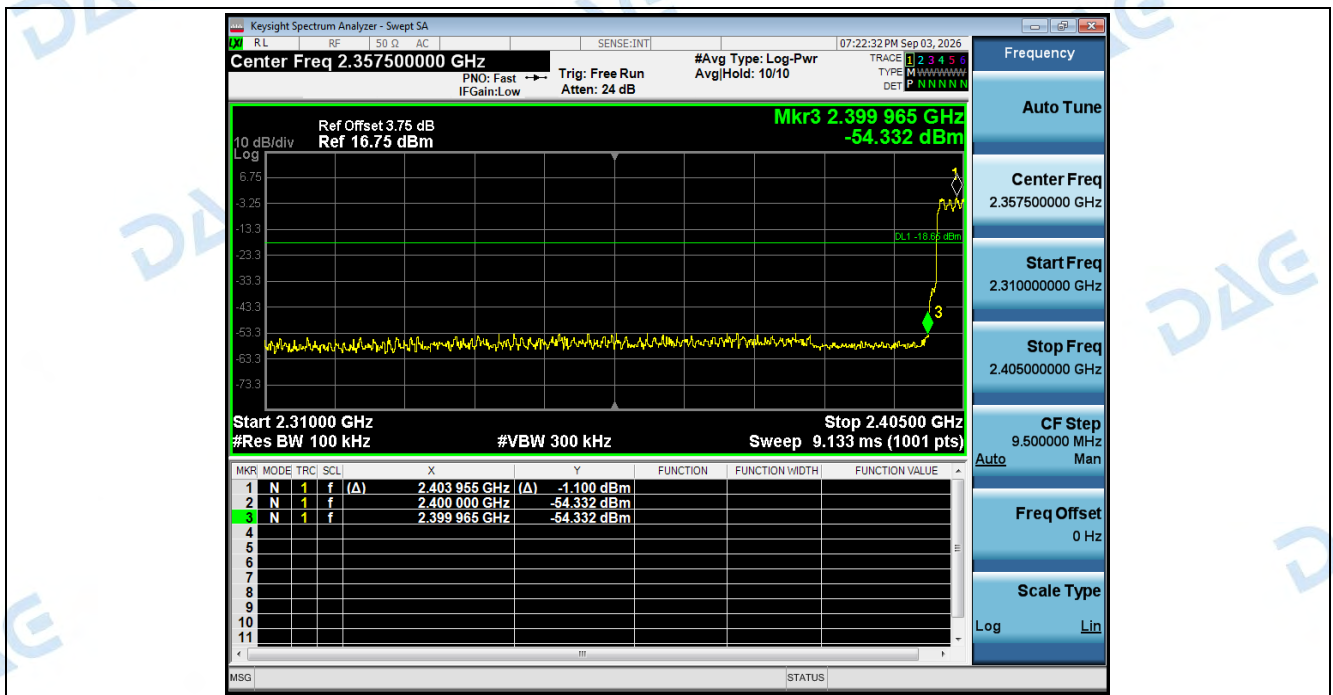


### 2\_Band\_Edge\_(Hopping)\_NVNT\_ANT1\_2-DH5\_Hopping



2\_Bandedge\_NVNT\_ANT1\_3-DH5\_2402\_00

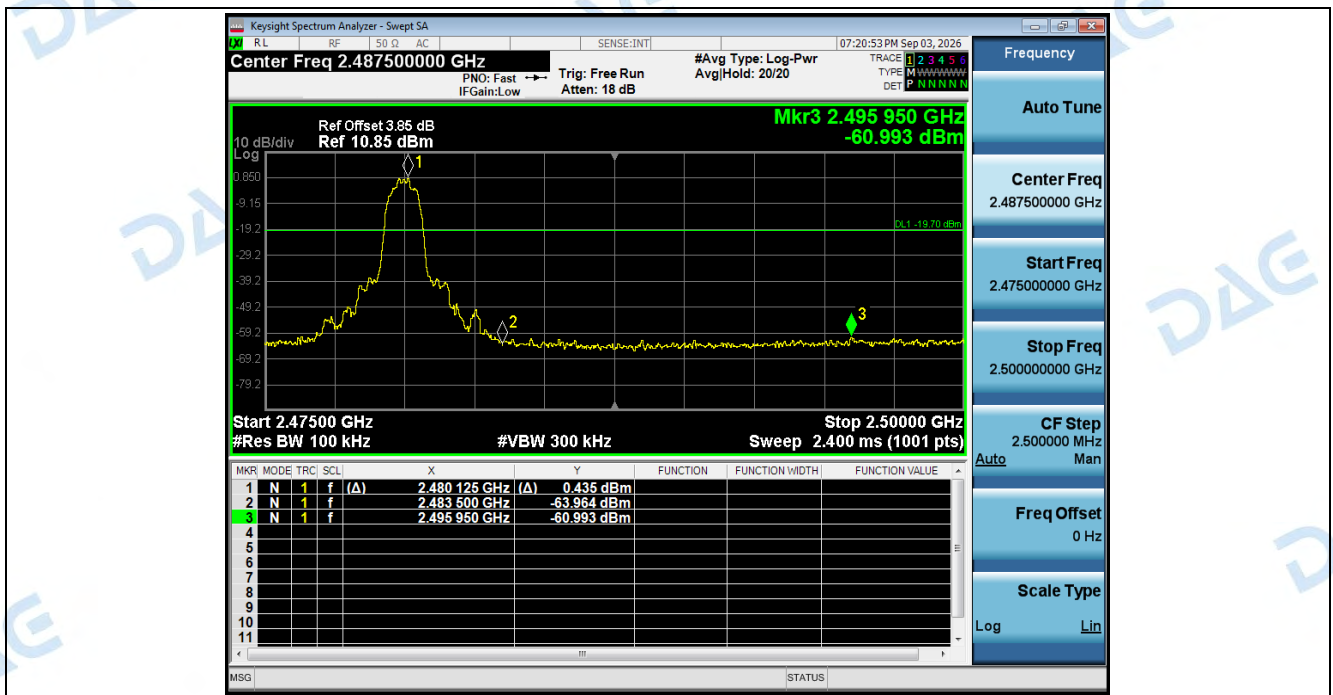




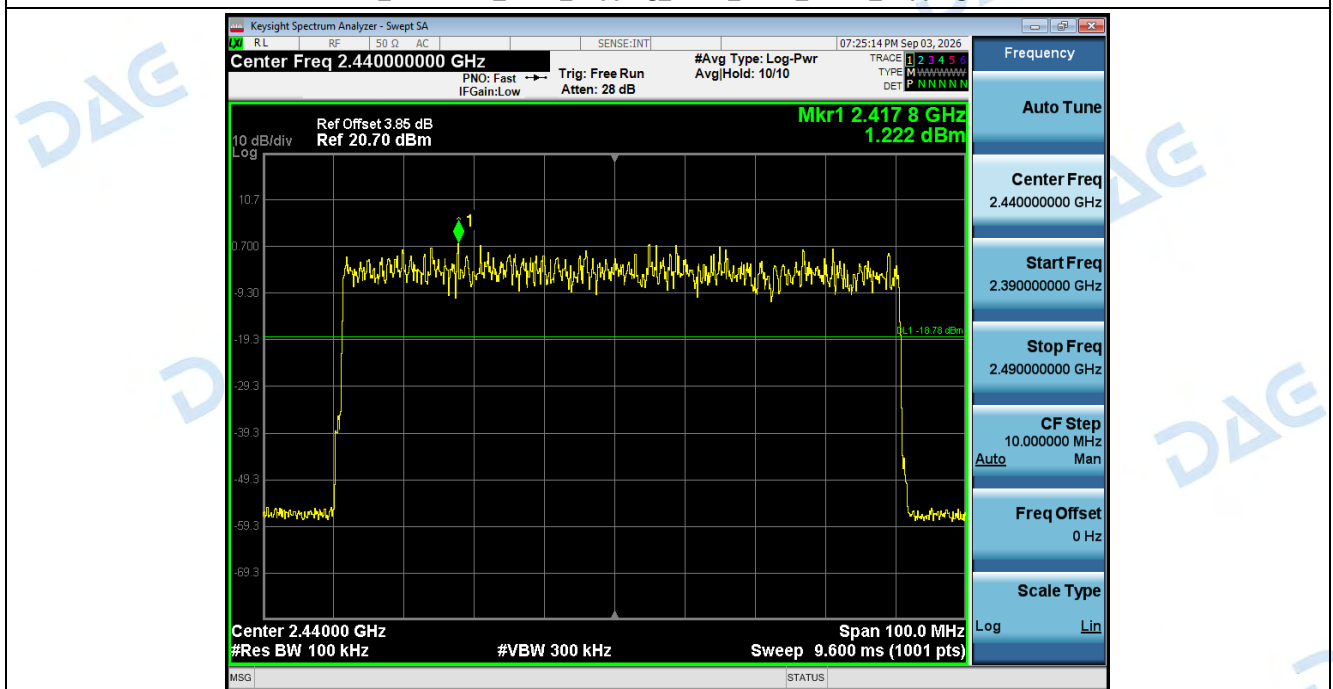
### 1\_Reference\_Level\_NVNT\_ANT1\_3-DH5\_2480\_00



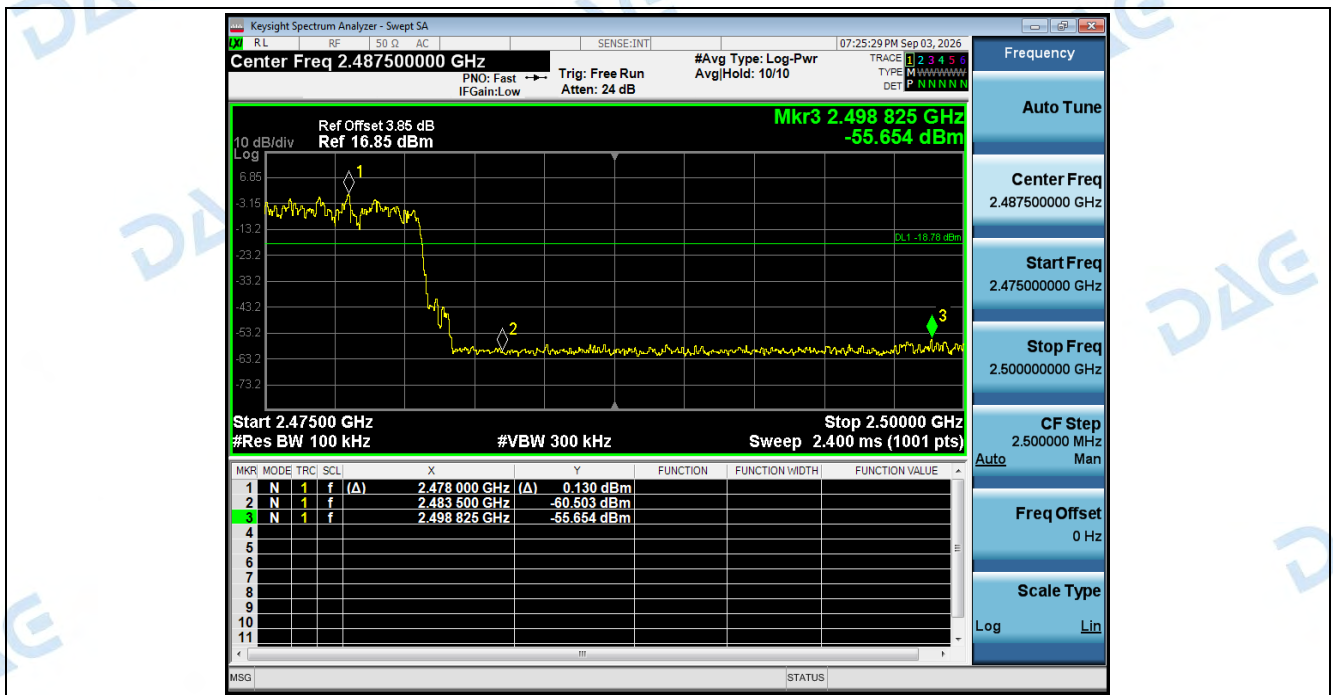
### 2\_Bandedge\_NVNT\_ANT1\_3-DH5\_2480\_00



### 1\_Reference\_Level\_Hopping\_NVNT\_ANT1\_3-DH5\_Hopping



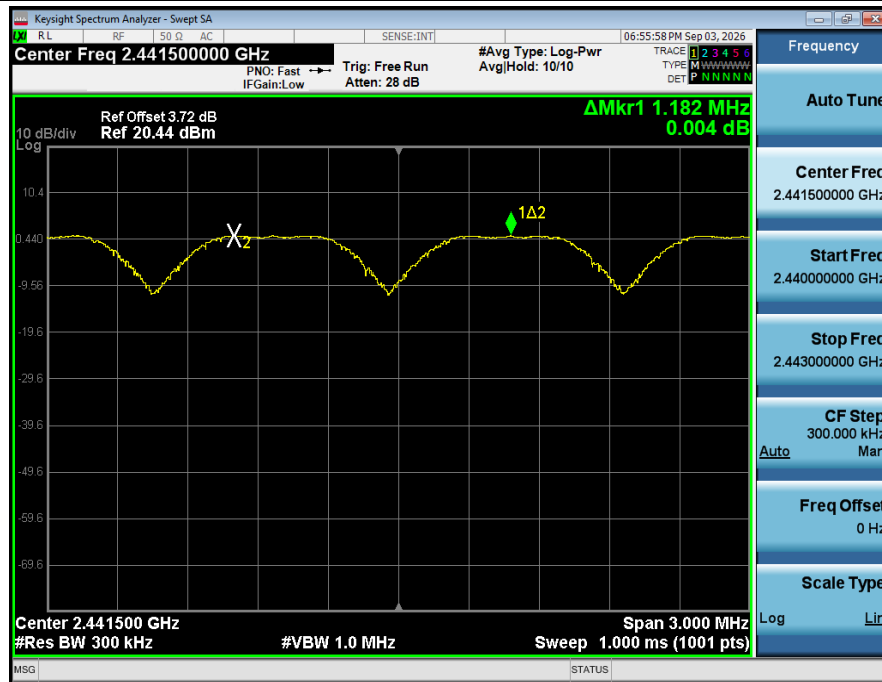
### 2\_Band\_Edge\_(Hopping)\_NVNT\_ANT1\_3-DH5\_Hopping



## 7. Carrier Frequencies Separation (Hopping)

| Condition | Antenna | Modulation | Frequency(MHz) | Hopping NO.0 (MHz) | Hopping NO.1 (MHz) | Carrier Frequencies Separation(MHz) | Limit(MHz) | Result |
|-----------|---------|------------|----------------|--------------------|--------------------|-------------------------------------|------------|--------|
| NVNT      | ANT1    | 1-DH5      | 2441.00        | 2440.798           | 2441.980           | 1.18                                | 0.674      | Pass   |
| NVNT      | ANT1    | 2-DH5      | 2441.00        | 2440.774           | 2442.115           | 1.34                                | 0.878      | Fail   |
| NVNT      | ANT1    | 3-DH5      | 2441.00        | 2440.783           | 2441.812           | 1.03                                | 0.871      | Pass   |

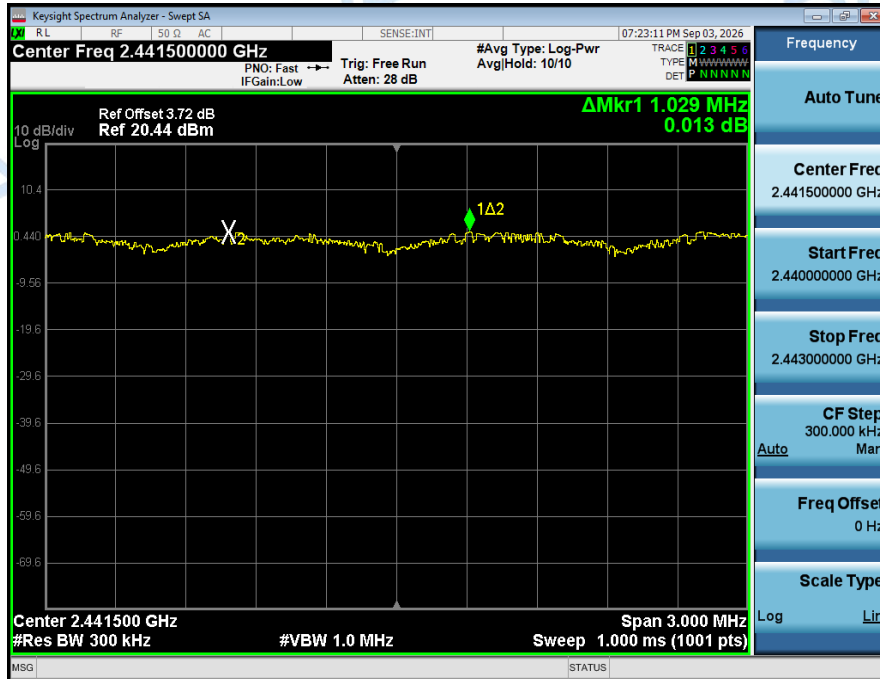
Carrier\_Frequencies\_Separation\_(Hopping)\_NVNT\_ANT1\_1-DH5\_Hopping



Carrier\_Frequencies\_Separation\_(Hopping)\_NVNT\_ANT1\_2-DH5\_Hopping



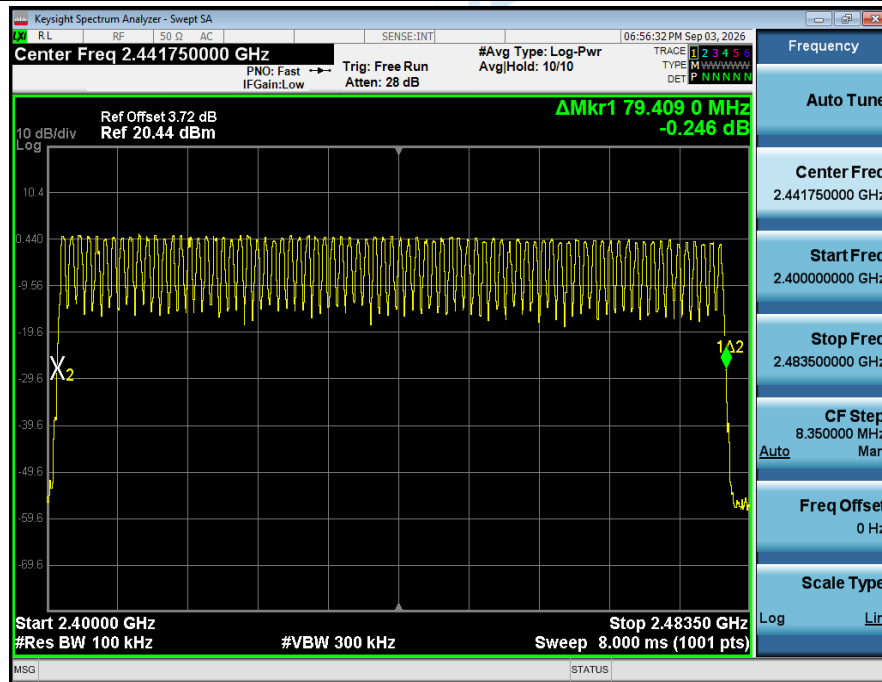
## Carrier\_Frequencies\_Separation\_(Hopping)\_NVNT\_ANT1\_3-DH5\_Hopping



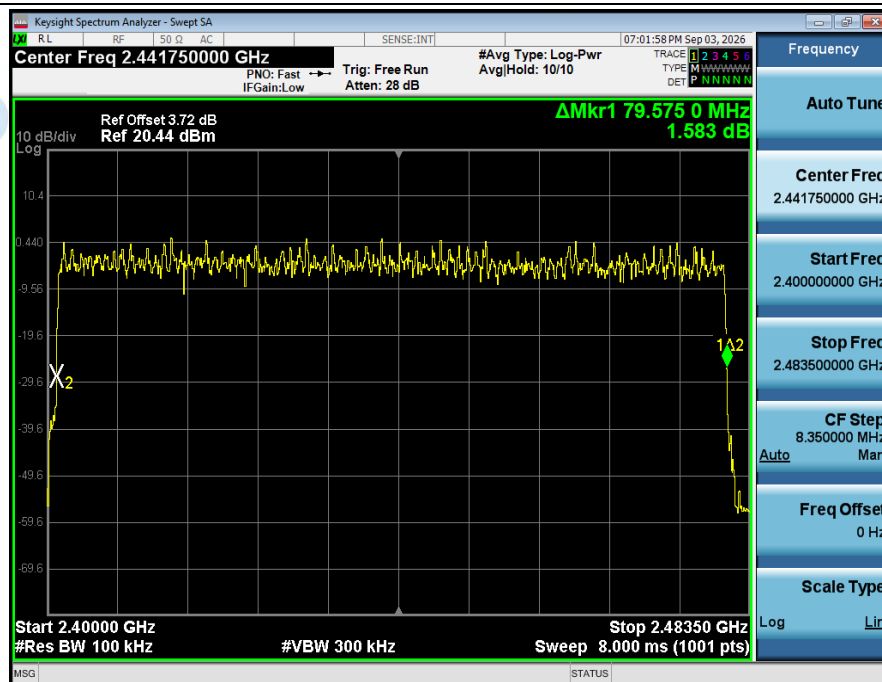
## 8. Number of Hopping Channel (Hopping)

| Condition | Antenna | Modulation | Hopping Num | Limit | Result |
|-----------|---------|------------|-------------|-------|--------|
| NVNT      | ANT1    | 1-DH5      | 79          | 15    | Pass   |
| NVNT      | ANT1    | 2-DH5      | 79          | 15    | Pass   |
| NVNT      | ANT1    | 3-DH5      | 79          | 15    | Pass   |

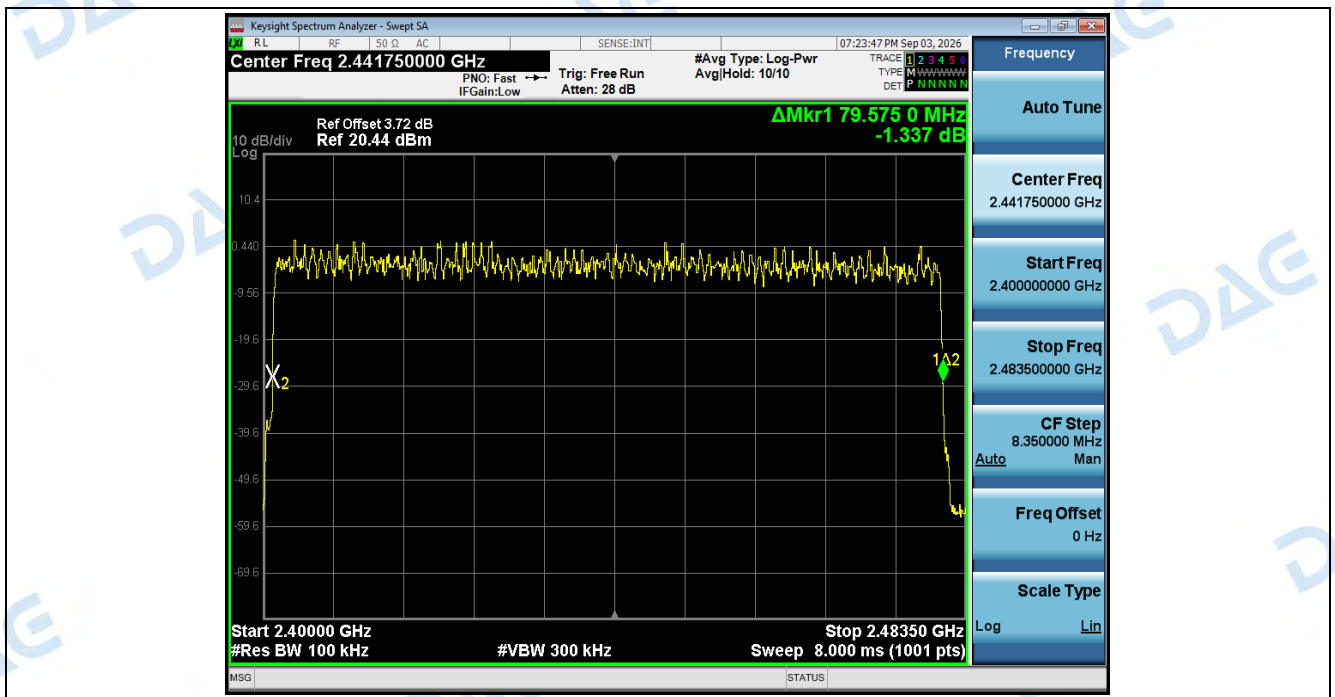
Number\_of\_Hopping\_Channel\_(Hopping)\_NVNT\_ANT1\_1-DH5\_Hopping



Number\_of\_Hopping\_Channel\_(Hopping)\_NVNT\_ANT1\_2-DH5\_Hopping



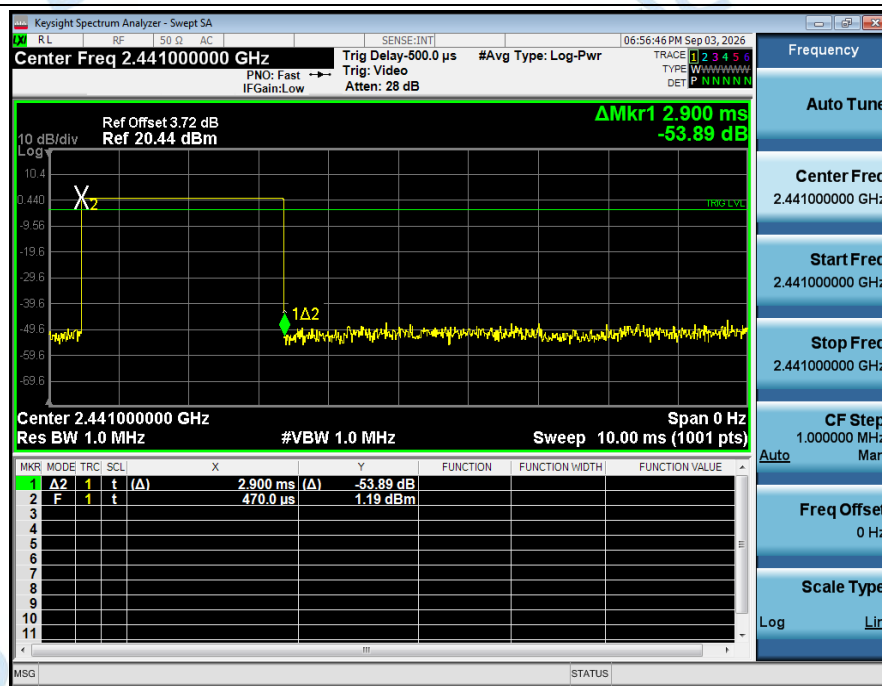
Number\_of\_Hopping\_Channel\_(Hopping)\_NVNT\_ANT1\_3-DH5\_Hopping



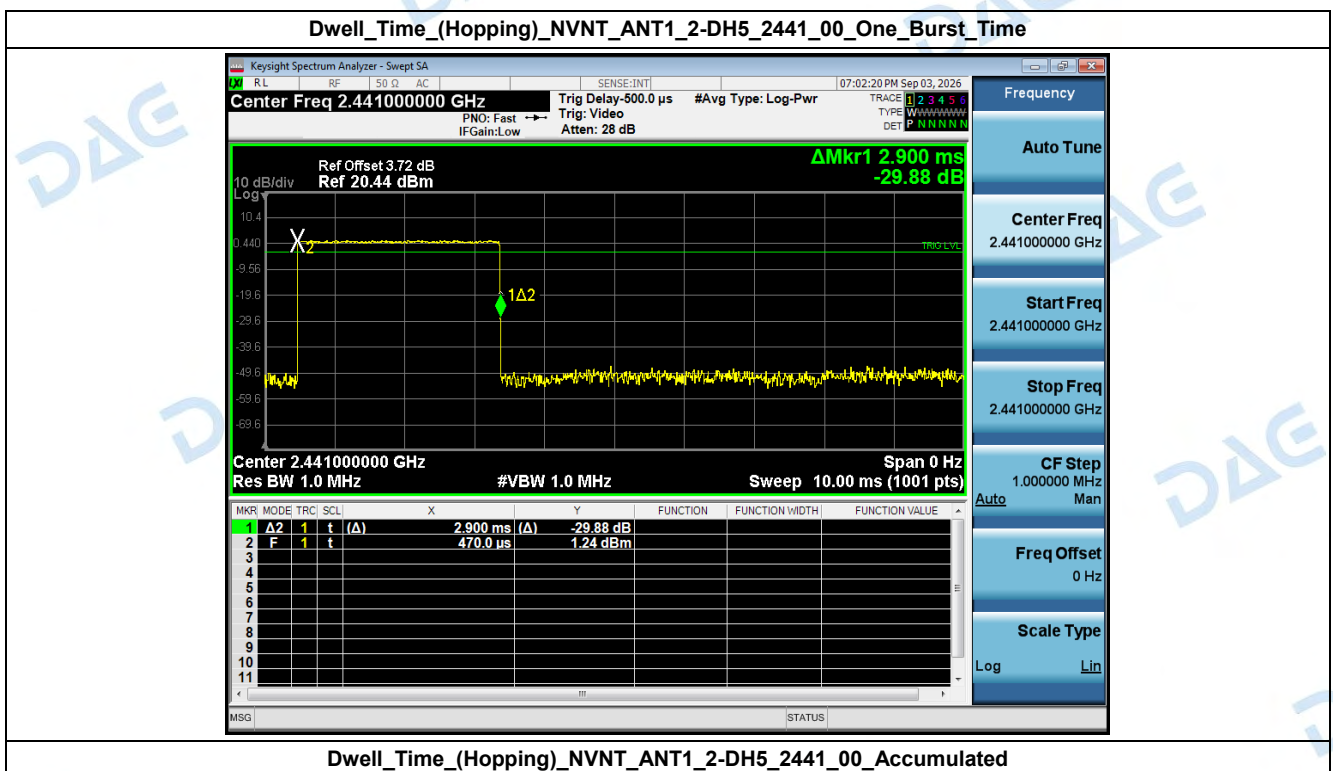
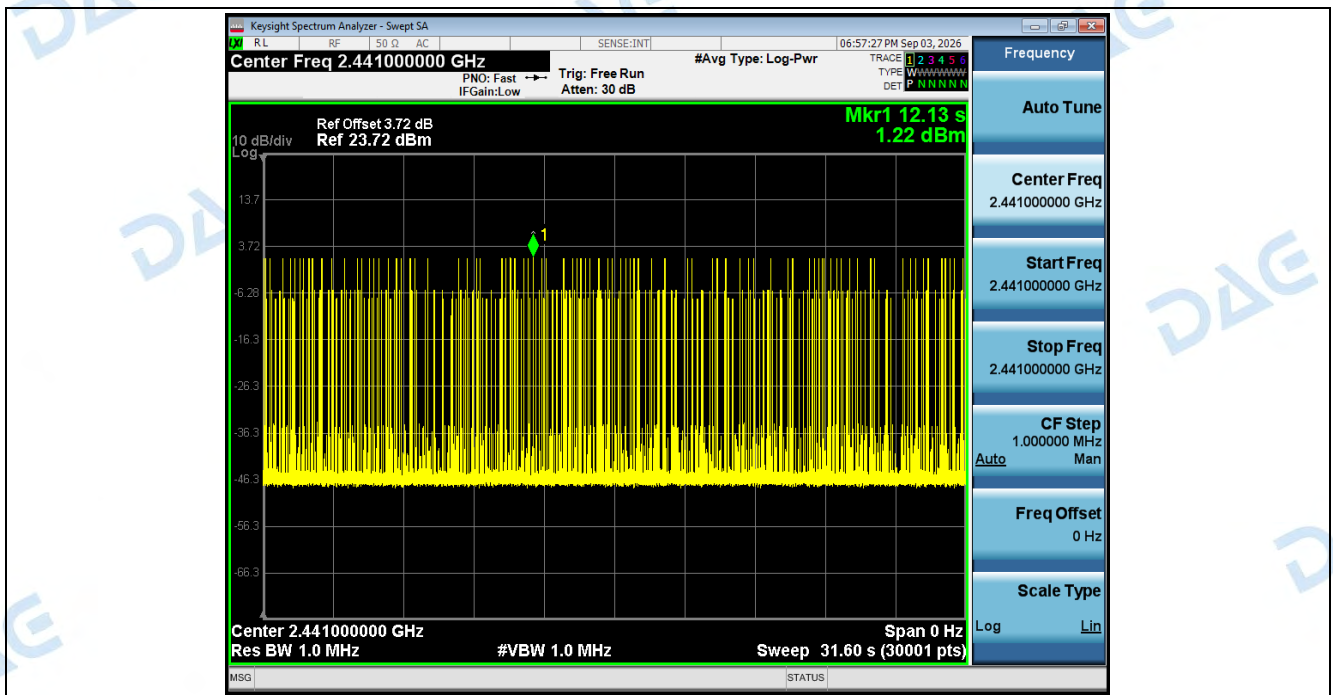
## 9. Dwell Time (Hopping)

| Condition | Antenna | Packet Type | Pulse Time(ms) | Hops   | Dwell Time(ms) | Limit(s) | Result |
|-----------|---------|-------------|----------------|--------|----------------|----------|--------|
| NVNT      | ANT1    | 1-DH5       | 2.900          | 99.00  | 287.100        | 0.40     | Pass   |
| NVNT      | ANT1    | 2-DH5       | 2.900          | 108.00 | 313.200        | 0.40     | Pass   |
| NVNT      | ANT1    | 3-DH5       | 2.900          | 112.00 | 324.800        | 0.40     | Pass   |
| NVNT      | ANT1    | 1-DH1       | 0.390          | 320.00 | 124.800        | 0.40     | Pass   |
| NVNT      | ANT1    | 1-DH3       | 1.650          | 165.00 | 272.250        | 0.40     | Pass   |
| NVNT      | ANT1    | 2-DH1       | 0.400          | 319.00 | 127.600        | 0.40     | Pass   |
| NVNT      | ANT1    | 2-DH3       | 1.660          | 157.00 | 260.620        | 0.40     | Pass   |
| NVNT      | ANT1    | 3-DH1       | 0.400          | 320.00 | 128.000        | 0.40     | Pass   |
| NVNT      | ANT1    | 3-DH3       | 1.660          | 156.00 | 258.960        | 0.40     | Pass   |

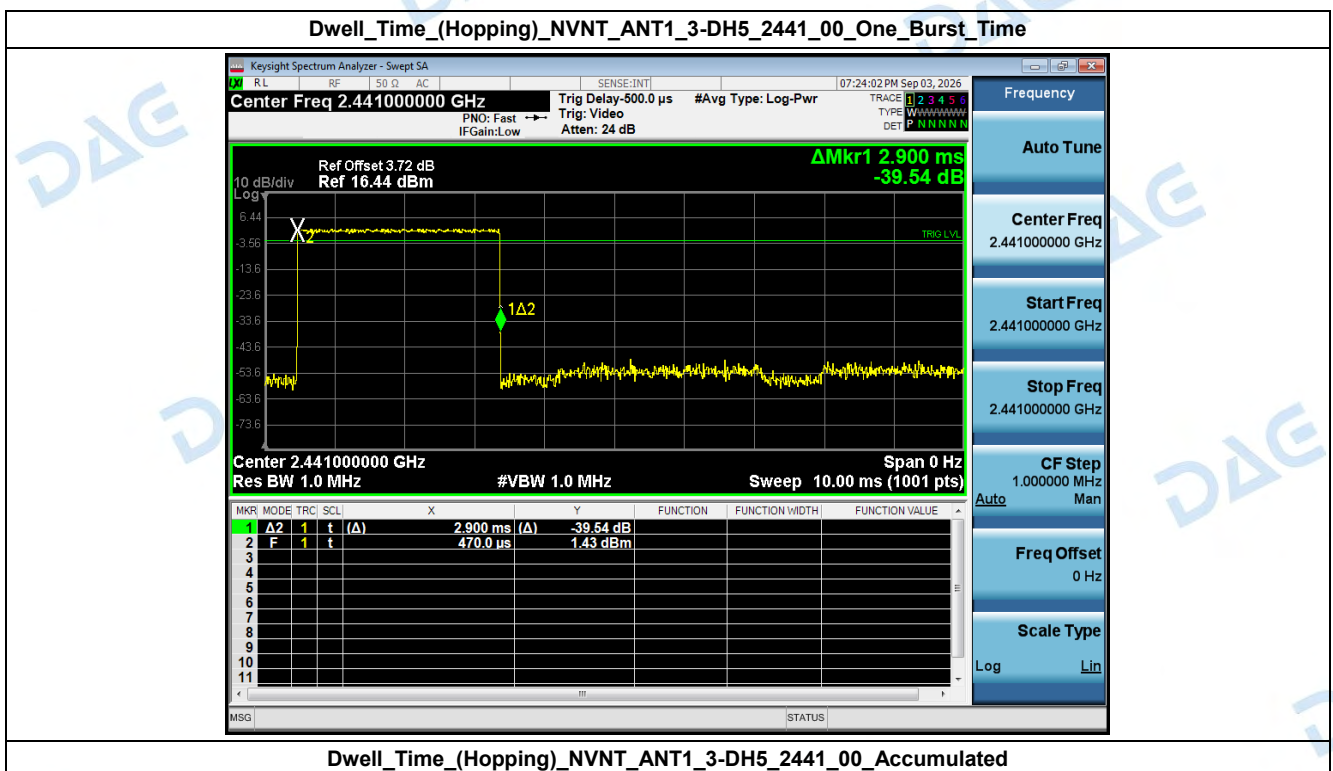
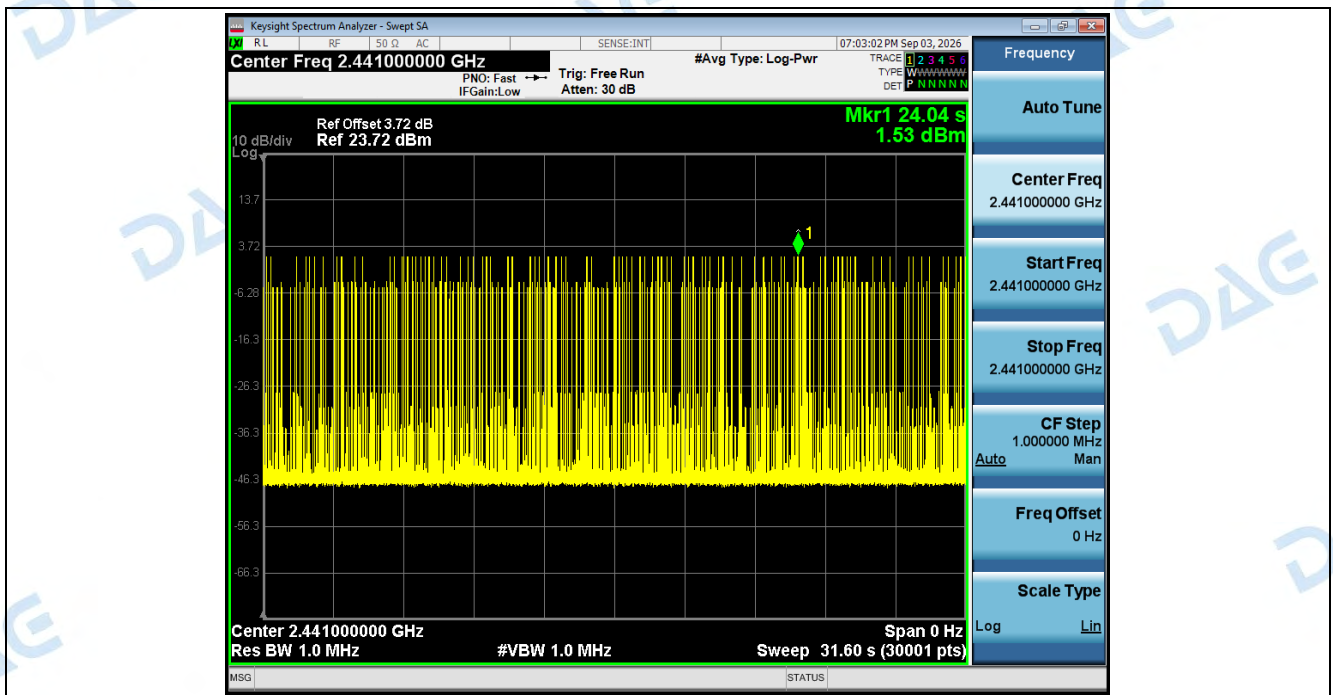
Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_1-DH5\_2441\_00\_One\_Burst\_Time



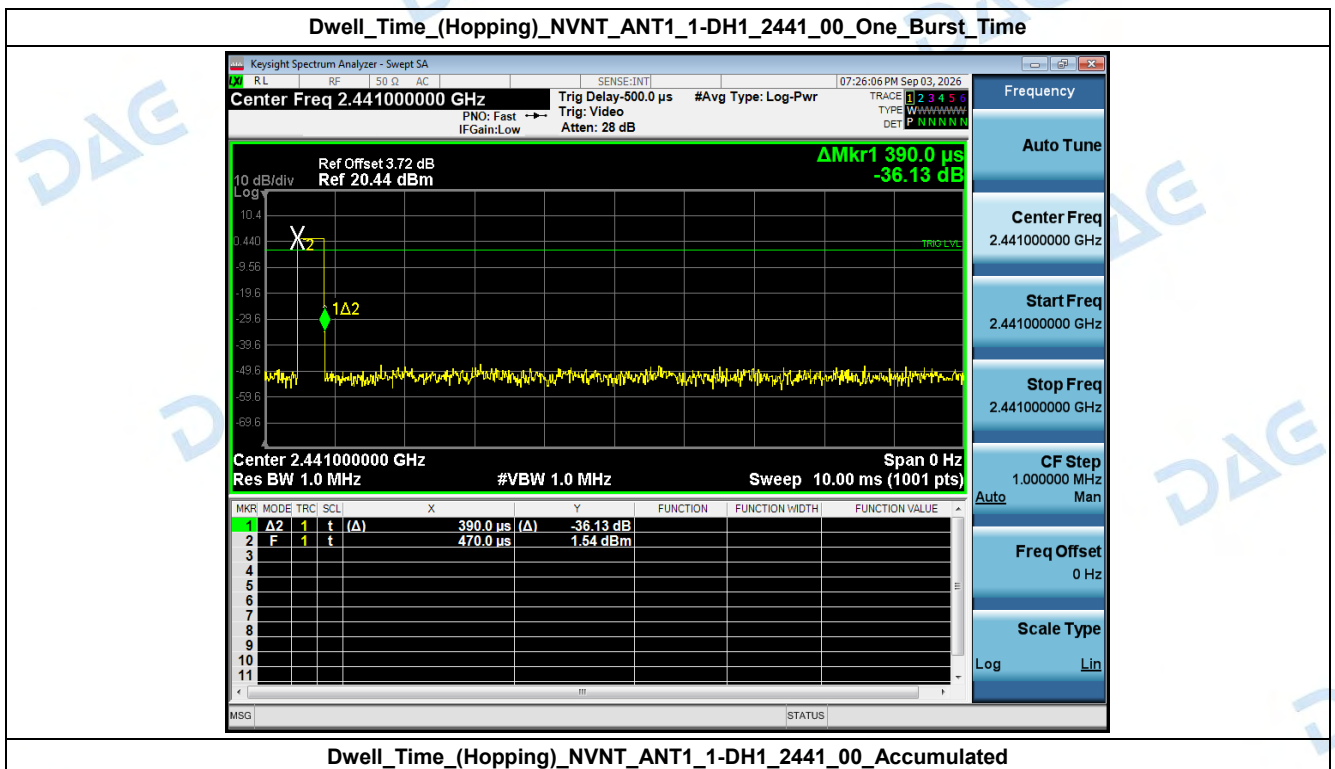
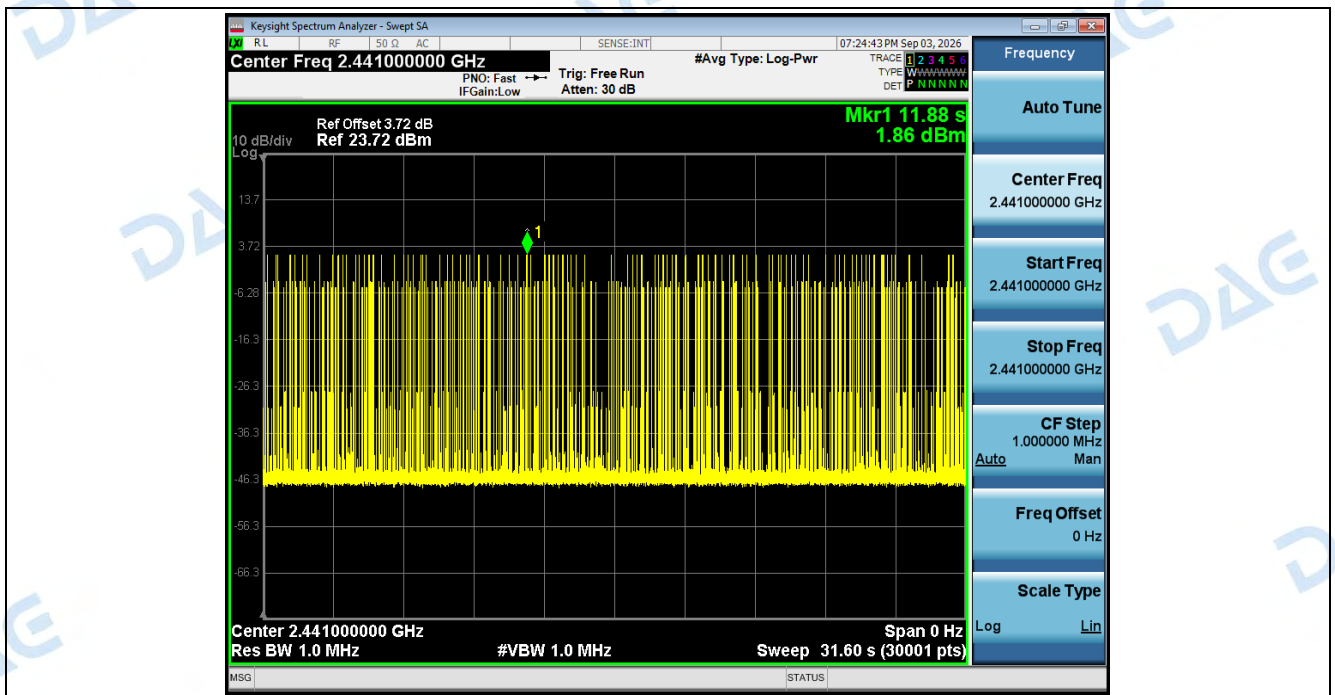
Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_1-DH5\_2441\_00\_Accumulated



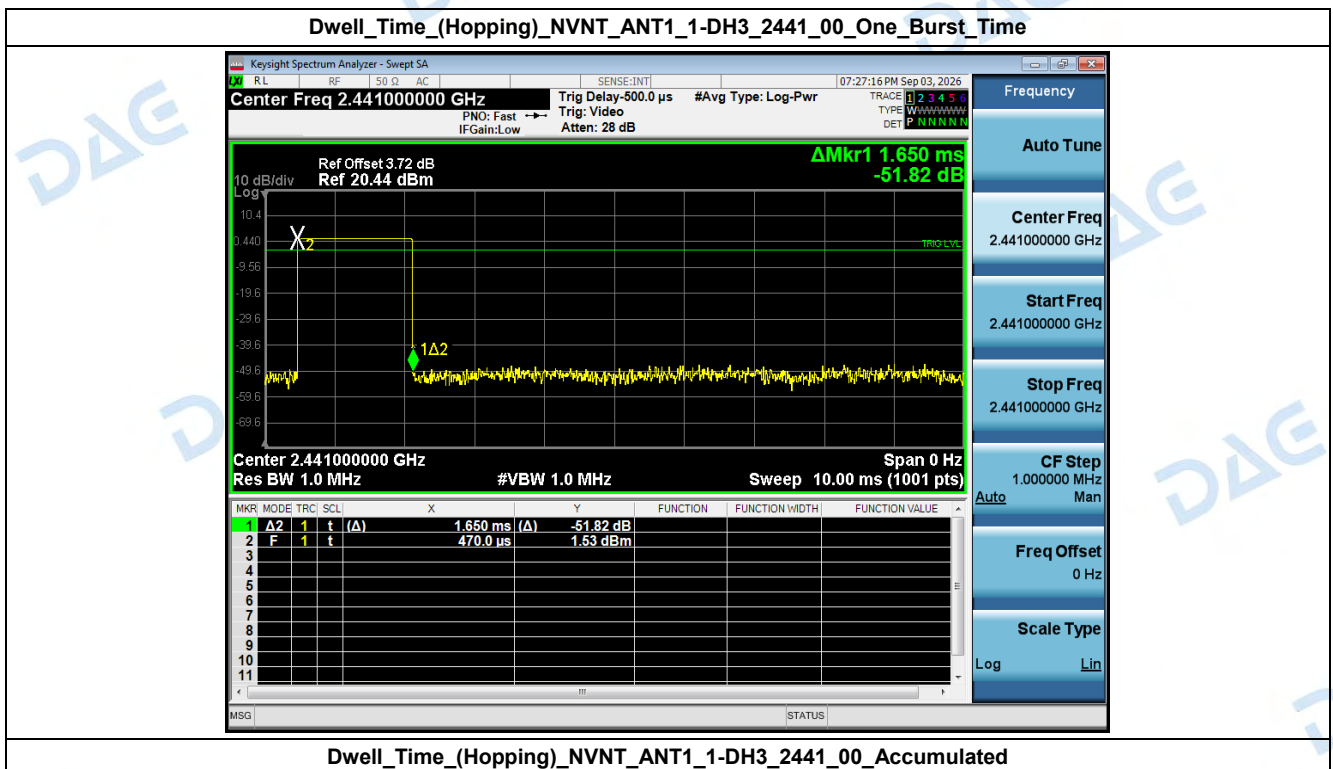
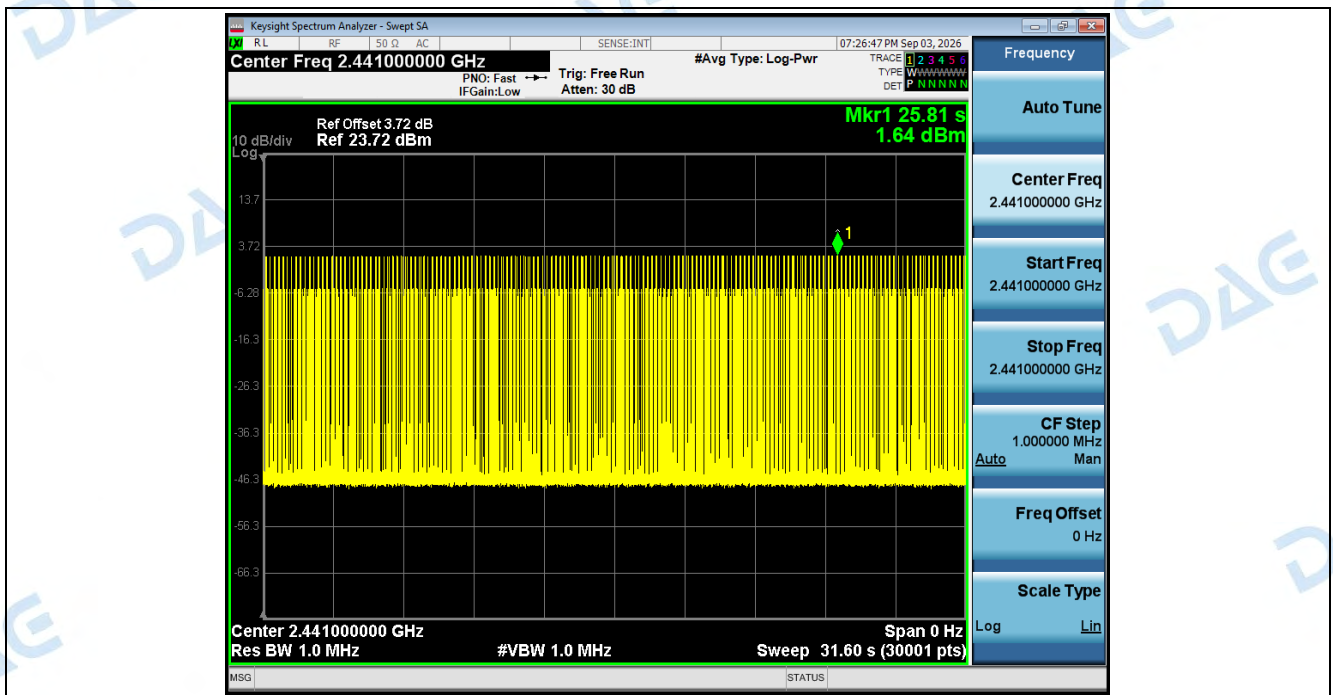
Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_2-DH5\_2441\_00\_Accumulated



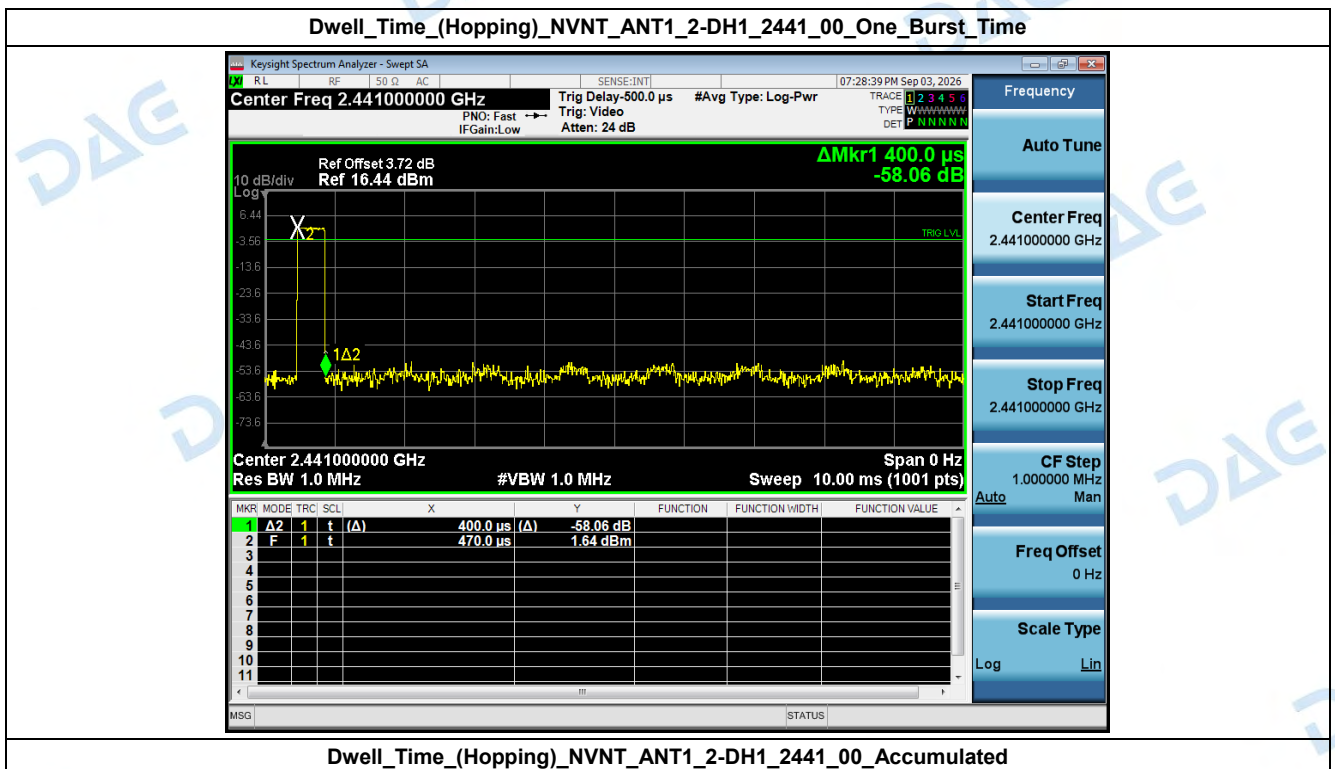
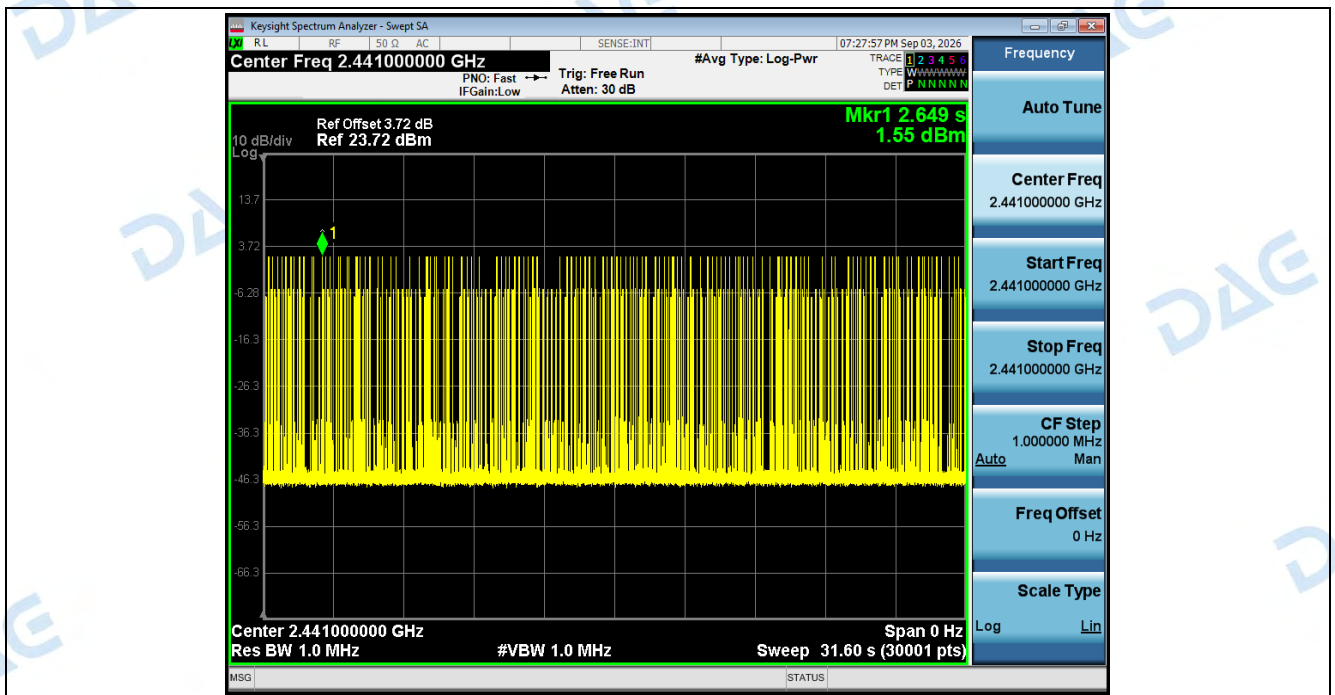
Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_3-DH5\_2441\_00\_Accumulated



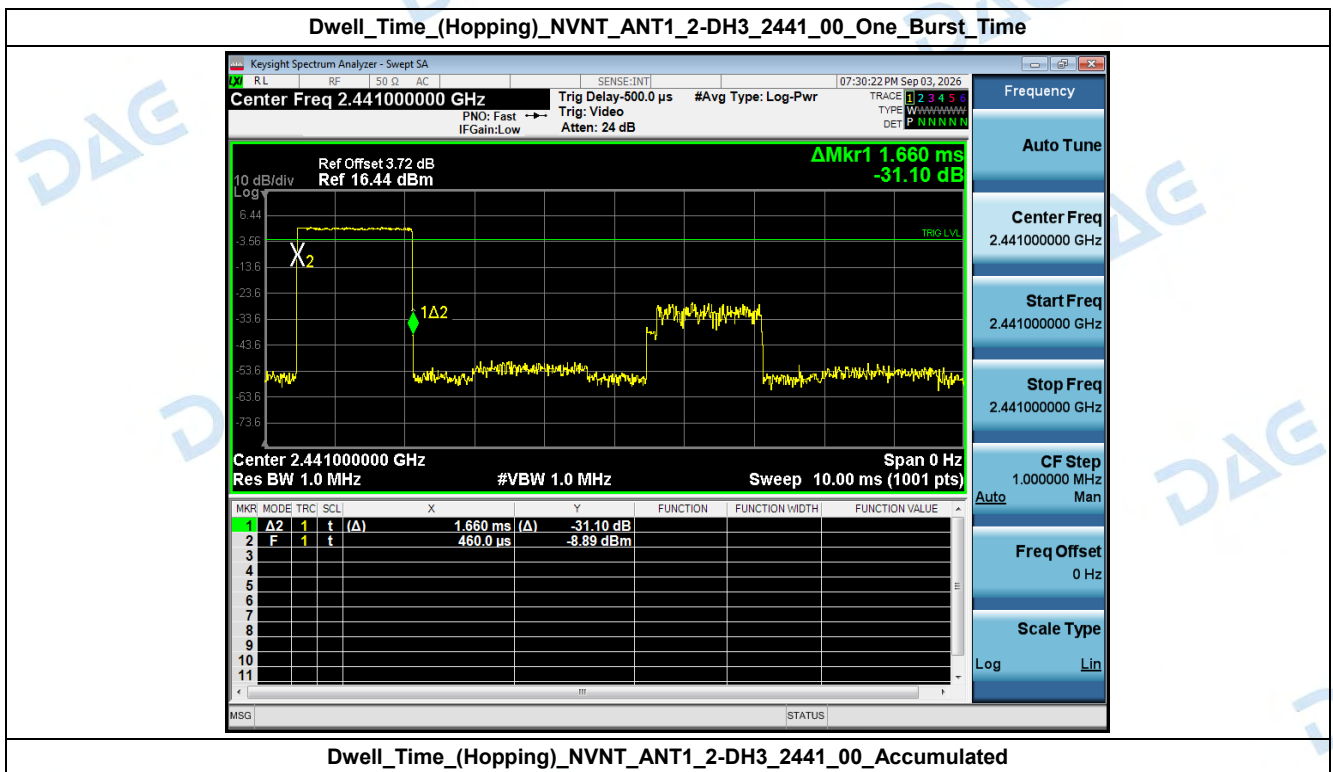
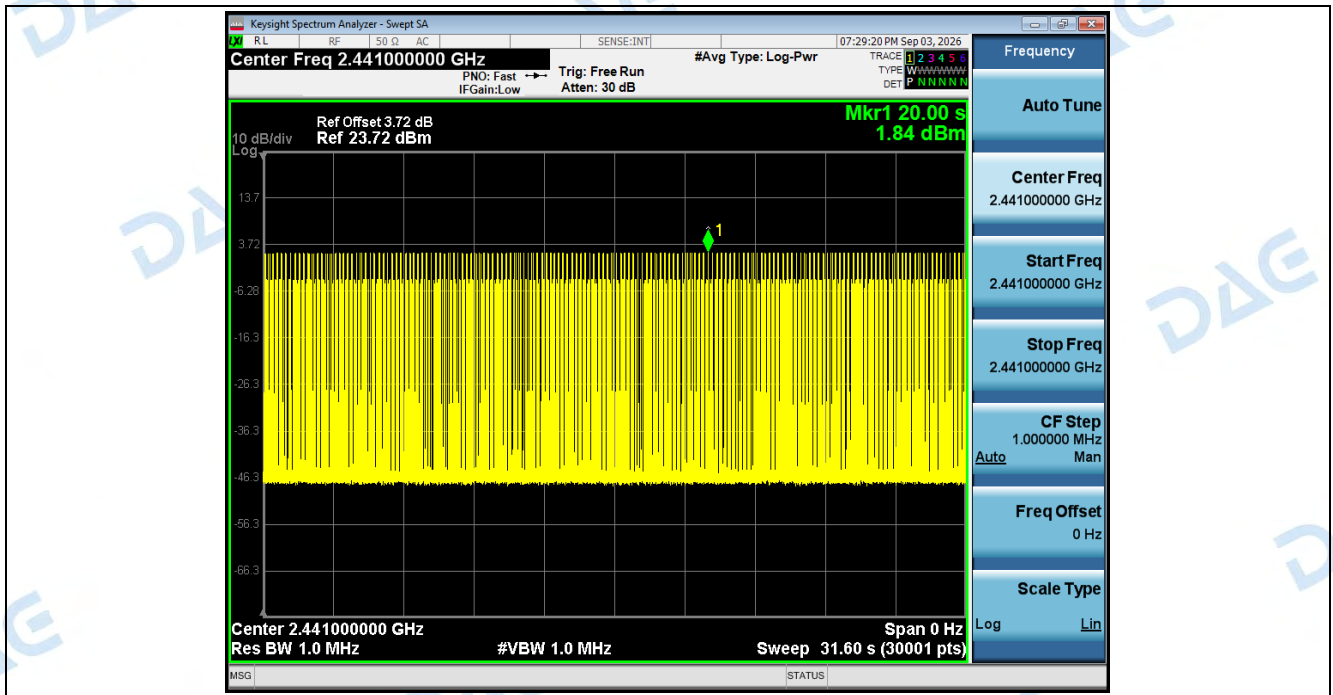
Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_1-DH1\_2441\_00\_Accumulated

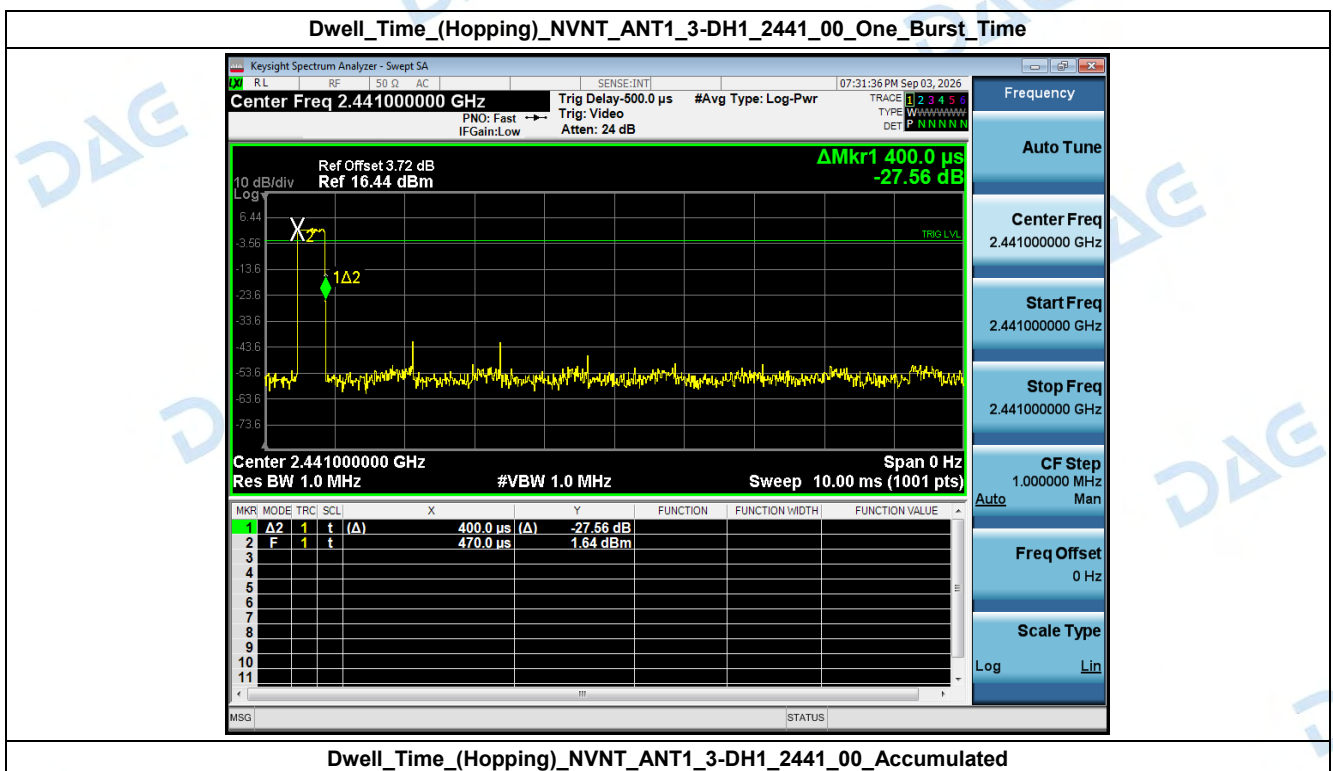
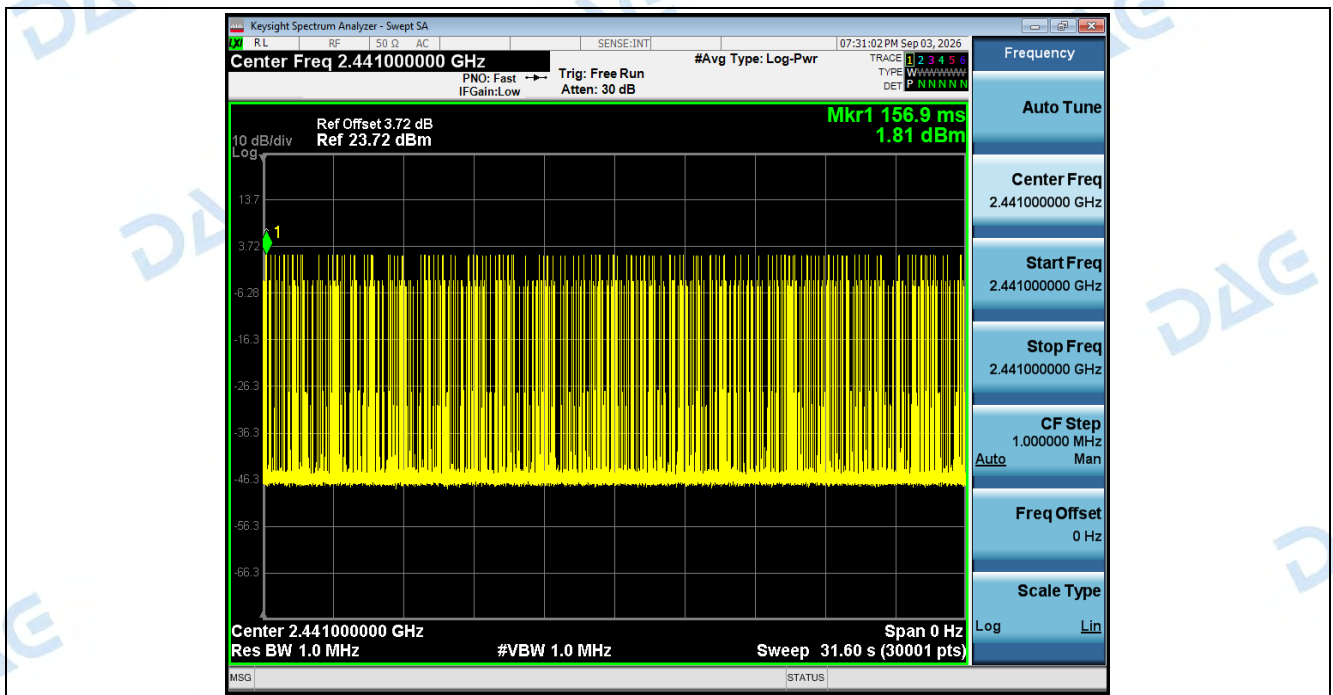


Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_1-DH3\_2441\_00\_Accumulated

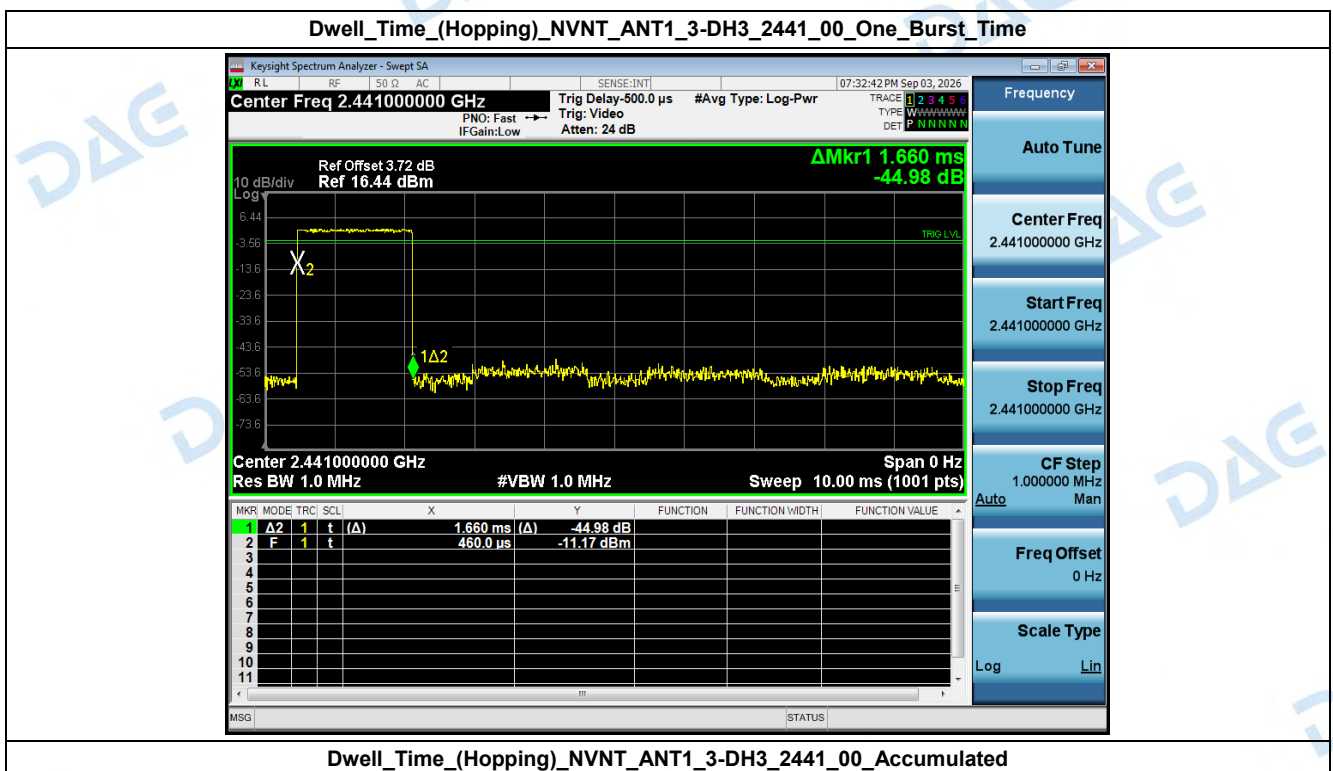
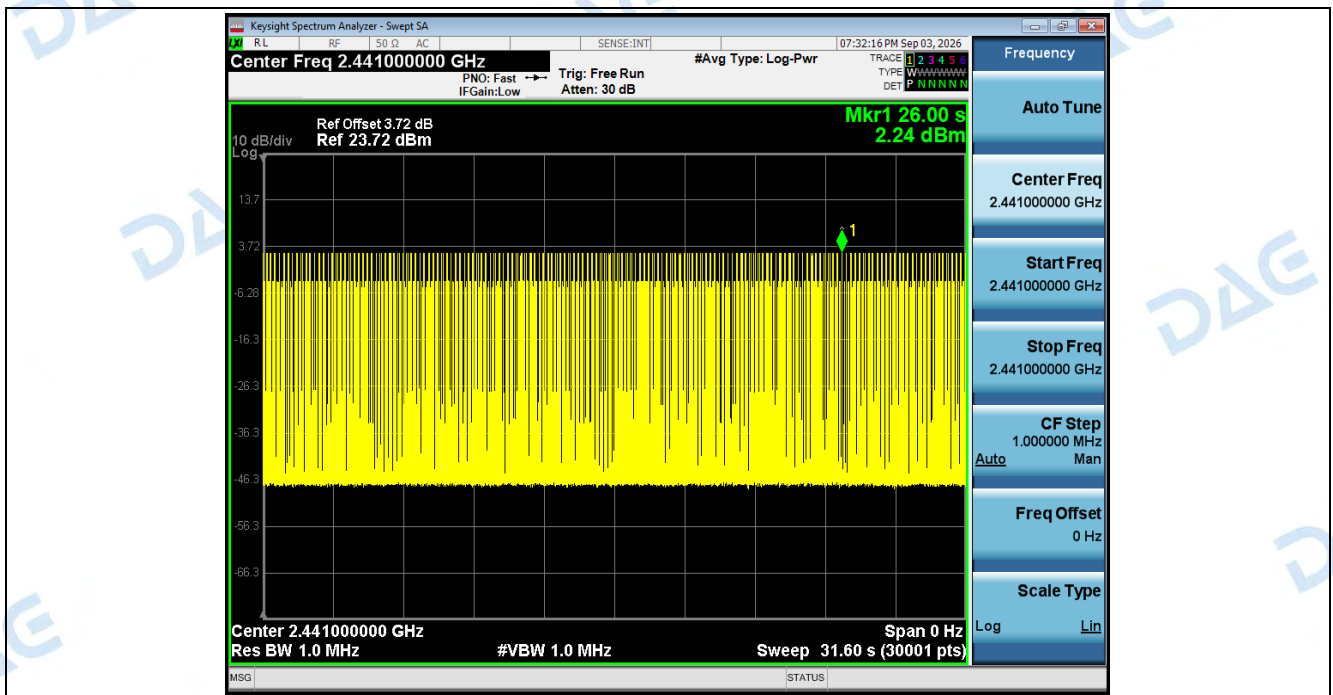


Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_2-DH1\_2441\_00\_Accumulated

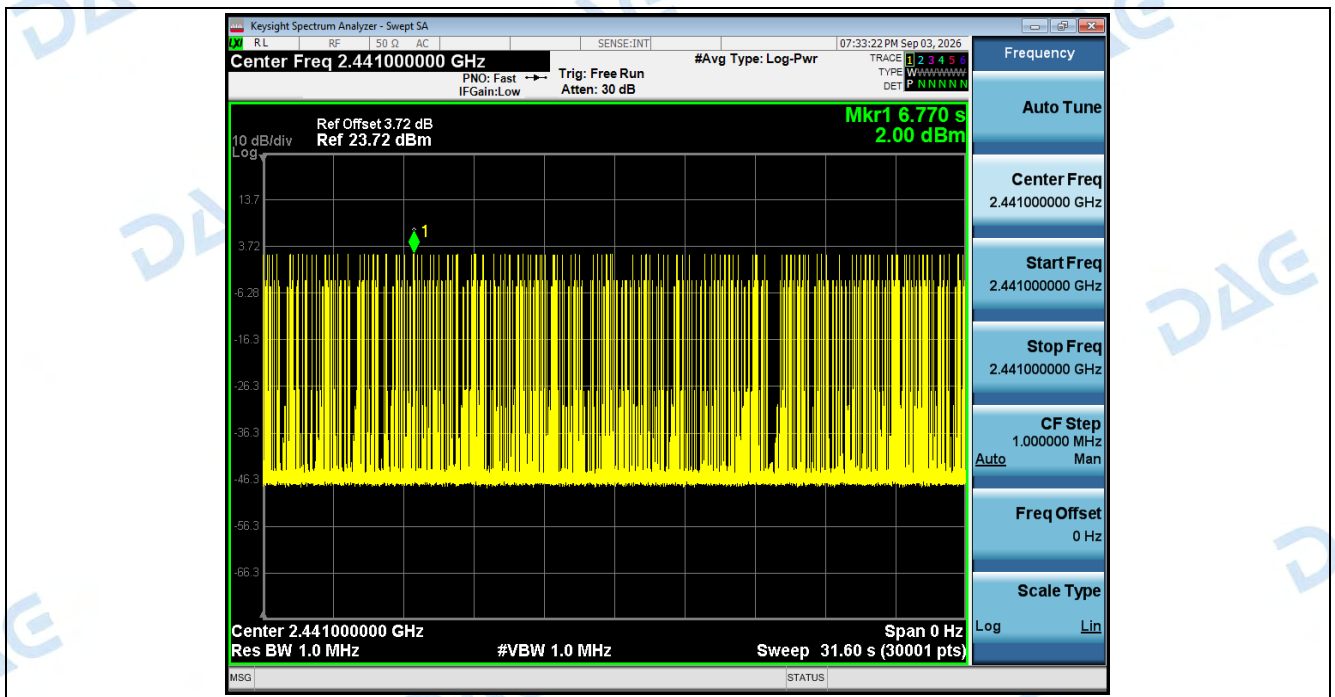




Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_3-DH1\_2441\_00\_Accumulated



Dwell\_Time\_(Hopping)\_NVNT\_ANT1\_3-DH3\_2441\_00\_Accumulated



\*\*\*\*\* End of Report \*\*\*\*\*