

# RF TEST REPORT

For

**Shenzhen Weiwo Innovation Technology Co., Ltd.**  
**Product Name: Neideso Dash Cam**  
**Test Model(s): N700**

**Report Reference No.** : POCE240229001RF001  
**FCC ID** : 2BFJA-N700

**Applicant's Name** : Shenzhen Weiwo Innovation Technology Co., Ltd.  
**Address** : Room 504, Building 4, Manjinghua Yiluan Building, No.230 Xixiang Avenue, Longteng Community, Xixiang Street, Bao'an District, Shenzhen, P.R.China

**Testing Laboratory** : Shenzhen POCE Technology Co., Ltd.  
**Address** : 101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China

**Test Specification Standard** : 47 CFR Part 15E  
KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

**Date of Receipt** : February 29, 2024  
**Date of Test** : February 29, 2024 to March 13, 2024  
**Data of Issue** : March 13, 2024  
**Result** : Pass

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen POCE Technology Co., Ltd. This document may be altered or revised by Shenzhen POCE 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.



## Revision History Of Report

| Version | Description | REPORT No.         | Issue Date     |
|---------|-------------|--------------------|----------------|
| V1.0    | Original    | POCE240229001RF001 | March 13, 2024 |
|         |             |                    |                |
|         |             |                    |                |
|         |             |                    |                |
|         |             |                    |                |

**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:

*Keren Huang*

---

Keren Huang / Test Engineer

Supervised by:

*Stone Yin*

---

Stone Yin / Project Engineer

Approved by:

*Tom Chen*

---

Tom Chen / Manager

## CONTENTS

|                 |   |           |
|-----------------|---|-----------|
| <b>1</b>        | <b>TEST SUMMARY</b>                                 | <b>5</b>  |
| 1.1             | TEST STANDARDS .....                                | 5         |
| 1.2             | SUMMARY OF TEST RESULT .....                        | 5         |
| <b>2</b>        | <b>GENERAL INFORMATION</b>                          | <b>6</b>  |
| 2.1             | CLIENT INFORMATION .....                            | 6         |
| 2.2             | DESCRIPTION OF DEVICE (EUT).....                    | 6         |
| 2.3             | DESCRIPTION OF TEST MODES.....                      | 6         |
| 2.4             | DESCRIPTION OF SUPPORT UNITS .....                  | 7         |
| 2.5             | EQUIPMENTS USED DURING THE TEST .....               | 8         |
| 2.6             | STATEMENT OF THE MEASUREMENT UNCERTAINTY .....      | 9         |
| 2.7             | AUTHORIZATIONS .....                                | 9         |
| 2.8             | ANNOUNCEMENT .....                                  | 9         |
| <b>3</b>        | <b>RADIO SPECTRUM MATTER TEST RESULTS (RF).....</b> | <b>10</b> |
| 3.1             | DUTY CYCLE .....                                    | 10        |
| 3.1.1           | E.U.T. Operation: .....                             | 10        |
| 3.1.2           | Test Setup Diagram:.....                            | 10        |
| 3.1.3           | Test Data: .....                                    | 10        |
| 3.2             | MAXIMUM CONDUCTED OUTPUT POWER.....                 | 11        |
| 3.2.1           | E.U.T. Operation: .....                             | 11        |
| 3.2.2           | Test Setup Diagram:.....                            | 11        |
| 3.2.3           | Test Data: .....                                    | 11        |
| 3.3             | POWER SPECTRAL DENSITY .....                        | 12        |
| 3.3.1           | E.U.T. Operation: .....                             | 12        |
| 3.3.2           | Test Setup Diagram:.....                            | 12        |
| 3.3.3           | Test Data: .....                                    | 12        |
| 3.4             | EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH .....     | 13        |
| 3.4.1           | E.U.T. Operation: .....                             | 13        |
| 3.4.2           | Test Setup Diagram:.....                            | 13        |
| 3.4.3           | Test Data: .....                                    | 14        |
| 3.5             | BAND EDGE EMISSIONS (RADIATED) .....                | 15        |
| 3.5.1           | E.U.T. Operation: .....                             | 17        |
| 3.5.2           | Test Setup Diagram:.....                            | 17        |
| 3.5.3           | Test Data: .....                                    | 18        |
| 3.6             | UNDESIRABLE EMISSION LIMITS (BELOW 1GHz).....       | 22        |
| 3.6.1           | E.U.T. Operation: .....                             | 23        |
| 3.6.2           | Test Data: .....                                    | 24        |
| 3.7             | UNDESIRABLE EMISSION LIMITS (ABOVE 1GHz) .....      | 26        |
| 3.7.1           | E.U.T. Operation: .....                             | 28        |
| 3.7.2           | Test Setup Diagram:.....                            | 28        |
| 3.7.3           | Test Data: .....                                    | 29        |
| <b>4</b>        | <b>TEST SETUP PHOTOS .....</b>                      | <b>37</b> |
| <b>5</b>        | <b>PHOTOS OF THE EUT .....</b>                      | <b>38</b> |
| <b>APPENDIX</b> | <b>46</b>   |           |
| 1.              | -6dB EMISSION BANDWIDTH.....                        | 46        |
| 2.              | -26dB AND 99% EMISSION BANDWIDTH.....               | 51        |
| 3.              | DUTY CYCLE .....                                    | 60        |

|   |    |
|---|----|
| 4. MAXIMUM CONDUCTED OUTPUT POWER ..... | 65 |
| 5. POWER SPECTRAL DENSITY .....         | 65 |
| 6. BANDEDGE .....                       | 70 |
| 7. SPURIOUS EMISSION .....              | 74 |
| 8. FREQUENCY STABILITY .....            | 79 |

## 1 TEST SUMMARY

### 1.1 Test Standards

The tests were performed according to following standards:

**47 CFR Part 15E:** Unlicensed National Information Infrastructure Devices

### 1.2 Summary of Test Result

| Item                                      | Method   | Requirement   | Result |
|---|--|---|--------|
| Duty Cycle                                | ANSI C63.10-2013 section 12.2 (b)                                  | /   | Pass   |
| Maximum conducted output power            | ANSI C63.10-2013, section 12.3                                     | 47 CFR Part 15.407(a)(3)(i)                           | Pass   |
| Power spectral density                    | ANSI C63.10-2013, section 12.5                                     | 47 CFR Part 15.407(a)(3)(i)                           | Pass   |
| Emission bandwidth and occupied bandwidth | ANSI C63.10-2013, section 6.9 & 12.4<br>KDB 789033 D02, Clause C.2 | 47 CFR Part 15.407(e)                                 | Pass   |
| Band edge emissions (Radiated)            | ANSI C63.10-2013, section 12.7.4, 12.7.6, 12.7.7                   | 47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10) | Pass   |
| Undesirable emission limits (below 1GHz)  | ANSI C63.10-2013, section 12.7.4, 12.7.5                           | 47 CFR Part 15.407(b)(9)                              | Pass   |
| Undesirable emission limits (above 1GHz)  | ANSI C63.10-2013, section 12.7.4, 12.7.6, 12.7.7                   | 47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10) | Pass   |

Note: 1.N/A -this device(EUT) is not applicable to this testing item

2. RF-conducted test results including cable loss.

## 2 GENERAL INFORMATION

### 2.1 Client Information

**Applicant's Name** : Shenzhen Weiwo Innovation Technology Co., Ltd.  
**Address** : Room 504, Building 4, Manjinghua Yiluan Building, N0.230 Xixiang Avenue, Longteng Community, Xixiang Street, Bao'an District, Shenzhen, P.R.China  
  
**Manufacturer** : SHENZHEN WEIYIKE ELECTRONIC CO., LTD.  
**Address** : ROOM 503, BUILDING 4, MANJINGHUA YILUAN BUILDING, NO. 230 XIXIANG AVENUE, LONGTENG COMMUNITY, XIXIANG STREET, BAO'AN DISTRICT, SHENZHEN, GUANGDONG, 518000 P.R.CHINA

### 2.2 Description of Device (EUT)

|                       |  |
|-----------------------|--|
| Product Name:         | Neideso Dash Cam   |
| Model/Type reference: | N700   |
| Series Model:         | N100, N300, N500, N600, N900   |
| Model Difference:     | The difference between models is that the built-in software version is different, and other hardware components are the same, such as PCB, BOM, and other electrical structures. Therefore, the test model is N700 |
| Trade Mark:           | Neideso  |
| Product Description:  | Neideso Dash Cam   |
| Power Supply:         | DC5.0V from car-adapter(DC12V--24V)  |
| Operation Frequency:  | 802.11a/n(HT20):<br>U-NII Band 3: 5745MHz to 5825MHz;<br>802.11n(HT40):<br>U-NII Band 3: 5755MHz to 5795MHz;   |
| Number of Channels:   | 802.11a/n(HT20): U-NII Band 3: 5;<br>802.11n(HT40): U-NII Band 3: 2;   |
| Modulation Type:      | 802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM);<br>802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM);  |
| Antenna Type:         | PCB ANTENNA  |
| Antenna Gain"         | 2.27dBi  |
| Hardware Version:     | V1.0   |
| Software Version:     | /  |

### 2.3 Description of Test Modes

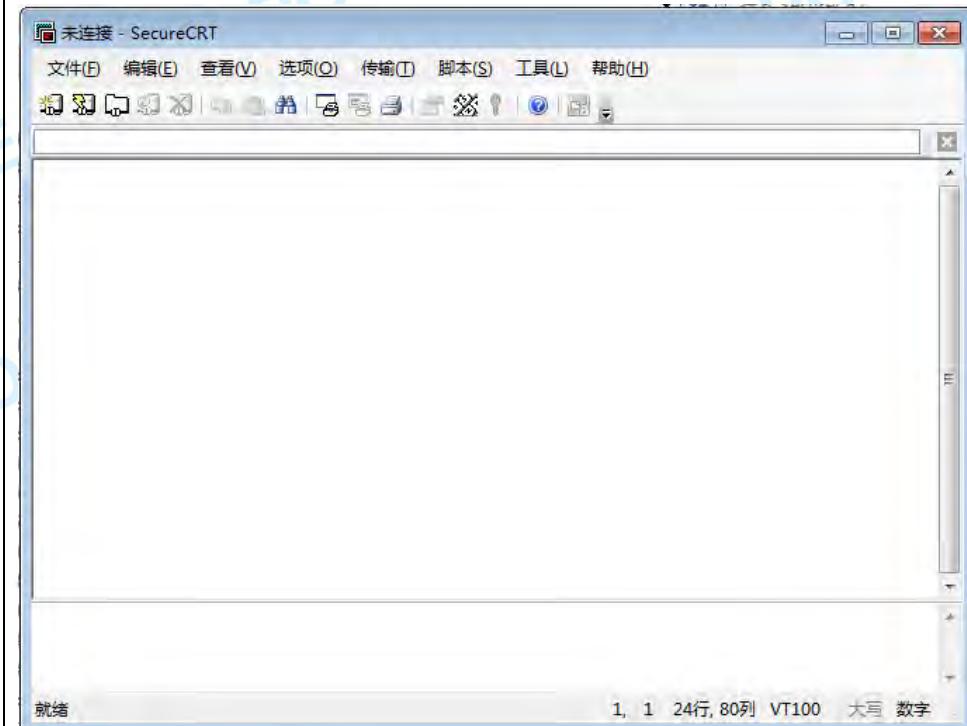
| No  | Title              | Description  |
|-----|--------------------|--|
| TM1 | 802.11a mode       | Keep the EUT in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.              |
| TM2 | 802.11n(HT20) mode | Keep the EUT in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS7 is the worst case. Only the data of worst case is recorded in the report. |
| TM3 | 802.11n(HT40) mode | Keep the EUT in continuously transmitting mode with 802.11n-40MHz modulation type. All bandwidth and data rates has been   |

|  |  |   |
|--|--|---|
|  |  | tested and found the data rate @ MCS7 is the worst case. Only the data of worst case is recorded in the report. |
|--|--|---|

**Description**

Special software is used.  
 Through engineering command into the engineering mode.  
engineering command: \*#\*#3646633#\*#\*  
 Other method:

Special software:



## 2.4 Description of Support Units

| Title       | Manufacturer | Model No.       | Serial No. |
|-------------|--------------|-----------------|------------|
| Car-adapter | /            | DC12—24 to DC5V | /          |
| Battery     | CAMEL        | DC12V           | /          |

## 2.5 Equipments Used During The Test

### Duty Cycle

### Maximum conducted output power

### Power spectral density

### Emission bandwidth and occupied bandwidth

| Equipment               | Manufacturer | Model No | Inventory No | Cal Date   | Cal Due Date |
|-------------------------|--------------|----------|--------------|------------|--------------|
| RF Test Software        | TACHOY       | RTS-01   | V2.0.0.0     | /          | /            |
| Power divider           | MIDEWEST     | PWD-2533 | SMA-79       | 2023-05-11 | 2026-05-10   |
| DC power                | HP           | 66311B   | 38444359     | /          | /            |
| Power Meter             | Keysight     | E4416A   | MY5303506    | 2022-12-10 | 2023-12-09   |
| RF Sensor Unit          | TACHOY       | TR1029-2 | 000001       | /          | /            |
| Vector signal generator | Keysight     | N5181A   | MY48180415   | 2023-11-09 | 2024-11-08   |
| Signal generator        | Keysight     | N5182A   | MY50143455   | 2023-11-09 | 2024-11-08   |
| Spectrum Analyzer       | Keysight     | N9020A   | MY53420323   | 2023-12-12 | 2024-12-11   |

### Band edge emissions (Radiated)

### Undesirable emission limits (below 1GHz)

### Undesirable emission limits (above 1GHz)

| Equipment              | Manufacturer   | Model No         | Inventory No           | Cal Date   | Cal Due Date |
|------------------------|----------------|------------------|------------------------|------------|--------------|
| EMI Test software      | Farad          | EZ -EMC          | V1.1.42                | /          | /            |
| Positioning Controller | /              | MF-7802          | /                      | /          | /            |
| Amplifier(18-40G)      | COM-POWER      | AH-1840          | 10100008-1             | 2022-04-05 | 2025-04-04   |
| Horn antenna           | COM-POWER      | AH-1840 (18-40G) | 10100008               | 2023-04-05 | 2025-04-04   |
| Loop antenna           | ZHINAN         | ZN30900C         | ZN30900C               | 2021-07-05 | 2024-07-04   |
| Cable(LF)#2            | Schwarzbeck    | /                | /                      | 2024-02-19 | 2025-02-18   |
| Cable(LF)#1            | Schwarzbeck    | /                | /                      | 2024-02-19 | 2025-02-18   |
| Cable(HF)#2            | Schwarzbeck    | AK9515E          | 96250                  | 2024-02-19 | 2025-02-18   |
| Cable(HF)#1            | Schwarzbeck    | SYV-50-3-1       | /                      | 2024-02-19 | 2025-02-18   |
| Power amplifier(LF)    | Schwarzbeck    | BBV9743          | 9743-151               | 2023-06-13 | 2024-06-12   |
| Power amplifier(HF)    | Schwarzbeck    | BBV9718          | 9718-282               | 2023-06-13 | 2024-06-12   |
| Spectrum Analyzer      | R&S            | FSP30            | 1321.3008K40-101729-jR | 2023-06-14 | 2024-06-13   |
| Horn Antenna           | Sunol Sciences | DRH-118          | A091114                | 2023-05-13 | 2025-05-12   |
| Broadband Antenna      | Sunol Sciences | JB6 Antenna      | A090414                | 2023-05-21 | 2025-05-20   |
| Test Receiver          | R&S            | ESCI             | 102109                 | 2023-06-13 | 2024-06-12   |

## 2.6 Statement Of The Measurement Uncertainty

| Test Item                          | Measurement Uncertainty |
|------------------------------------|-------------------------|
| Conducted Disturbance (0.15~30MHz) | ±3.41dB                 |
| Occupied Bandwidth                 | ±3.63%                  |
| RF conducted power                 | ±0.733dB                |
| Duty cycle                         | ±3.1%                   |
| Conducted Spurious emissions       | ±1.98dB                 |
| Radiated Emission (Above 1GHz)     | ±5.46dB                 |
| Radiated Emission (Below 1GHz)     | ±5.79dB                 |

Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 2.7 Authorizations

|               |  |
|---------------|--|
| Company Name: | Shenzhen POCE Technology Co., Ltd.   |
| Address:      | 101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China |
| Phone Number: | +86-13267178997  |
| Fax Number:   | 86-755-29113252  |

### Identification of the Responsible Testing Location

|                             |  |
|-----------------------------|--|
| Company Name:               | Shenzhen POCE Technology Co., Ltd.   |
| Address:                    | 101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China |
| Phone Number:               | +86-13267178997  |
| Fax Number:                 | 86-755-29113252  |
| FCC Registration Number:    | 0032847402   |
| Designation Number:         | CN1342   |
| Test Firm Registration No.: | 778666   |
| A2LA Certificate Number:    | 6270.01  |

## 2.8 Announcement

- (1) The test report reference to the report template version v1.0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by POCE and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) We hereby declare that the laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant. the laboratory is not responsible for the accuracy of the information provided by the client. When the information provided by the customer may affect the effectiveness of the results, the responsibility lies with the customer, and the laboratory does not assume any responsibility.

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

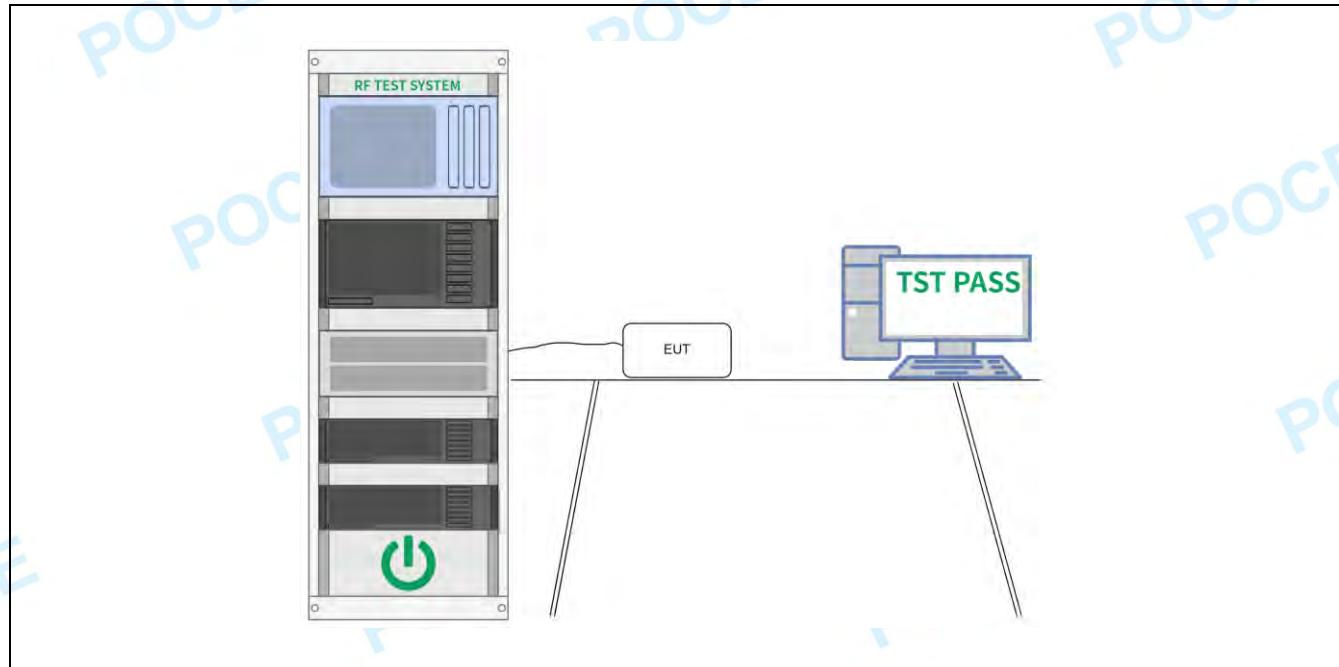
#### 3.1 Duty Cycle

|                   |   |
|-------------------|---|
| Test Requirement: | All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.  |
| Test Limit:       | No limits, only for report use.   |
| Test Method:      | ANSI C63.10-2013 section 12.2 (b)   |
| Procedure:        | <ul style="list-style-type: none"> <li>i) Set the center frequency of the instrument to the center frequency of the transmission.</li> <li>ii) Set RBW <math>\geq</math> EBW if possible; otherwise, set RBW to the largest available value.</li> <li>iii) Set VBW <math>\geq</math> RBW.</li> <li>iv) Set detector = peak.</li> <li>v) The zero-span measurement method shall not be used unless both RBW and VBW are <math>&gt; 50/T</math>, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100.</li> </ul> |

##### 3.1.1 E.U.T. Operation:

|                        |               |           |        |                               |
|------------------------|---------------|-----------|--------|-------------------------------|
| Operating Environment: |               |           |        |                               |
| Temperature:           | 22.5 °C       | Humidity: | 49.3 % | Atmospheric Pressure: 101 kPa |
| Pretest mode:          | TM1, TM2, TM3 |           |        |                               |
| Final test mode:       | TM1, TM2, TM3 |           |        |                               |

##### 3.1.2 Test Setup Diagram:



##### 3.1.3 Test Data:

Please Refer to Appendix for Details.

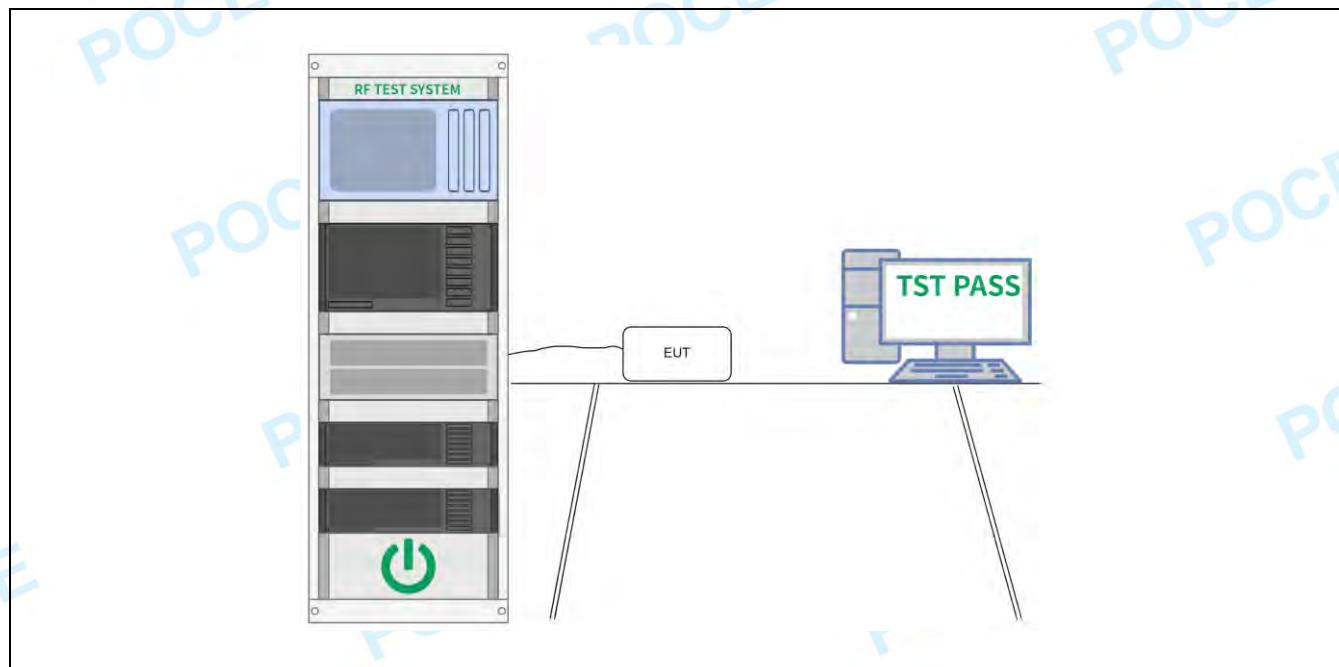
### 3.2 Maximum conducted output power

|                   |  |
|-------------------|--|
| Test Requirement: | 47 CFR Part 15.407(a)(3)(i)  |
| Test Limit:       | <p>For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.</p> <p>If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.</p> <p>However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.</p> <p>The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.</p> |
| Test Method:      | ANSI C63.10-2013, section 12.3   |
| Procedure:        | Refer to ANSI C63.10-2013 section 12.3   |

#### 3.2.1 E.U.T. Operation:

|                        |               |           |        |                       |
|------------------------|---------------|-----------|--------|-----------------------|
| Operating Environment: |               |           |        |                       |
| Temperature:           | 22.5 °C       | Humidity: | 49.3 % | Atmospheric Pressure: |
| Pretest mode:          | TM1, TM2, TM3 |           |        |                       |
| Final test mode:       | TM1, TM2, TM3 |           |        |                       |

#### 3.2.2 Test Setup Diagram:



#### 3.2.3 Test Data:

Please Refer to Appendix for Details.

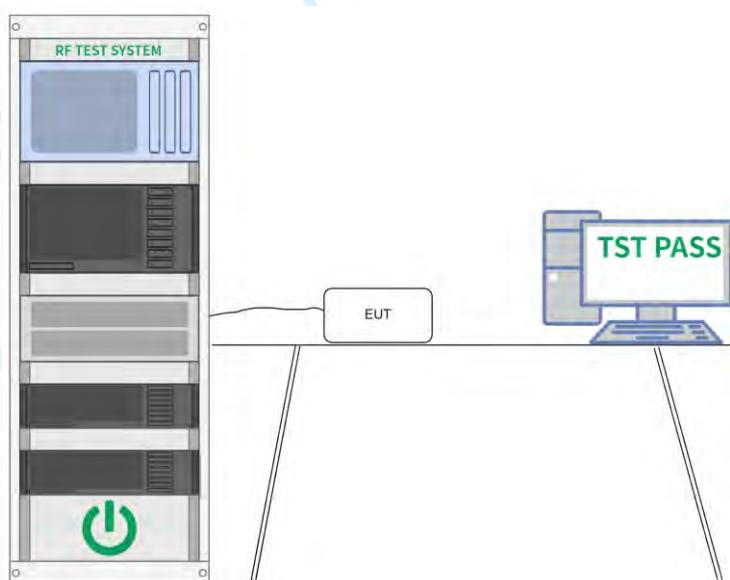
### 3.3 Power spectral density

|                   |   |
|-------------------|---|
| Test Requirement: | 47 CFR Part 15.407(a)(3)(i)   |
| Test Limit:       | <p>For the band 5.725-5.850 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.</p> <p>If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.</p> <p>Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.</p> |
| Test Method:      | ANSI C63.10-2013, section 12.5  |
| Procedure:        | Refer to ANSI C63.10-2013, section 12.5   |

#### 3.3.1 E.U.T. Operation:

|                        |               |           |        |                       |
|------------------------|---------------|-----------|--------|-----------------------|
| Operating Environment: |               |           |        |                       |
| Temperature:           | 22.5 °C       | Humidity: | 49.3 % | Atmospheric Pressure: |
| Pretest mode:          | TM1, TM2, TM3 |           |        |                       |
| Final test mode:       | TM1, TM2, TM3 |           |        |                       |

#### 3.3.2 Test Setup Diagram:



#### 3.3.3 Test Data:

Please Refer to Appendix for Details.

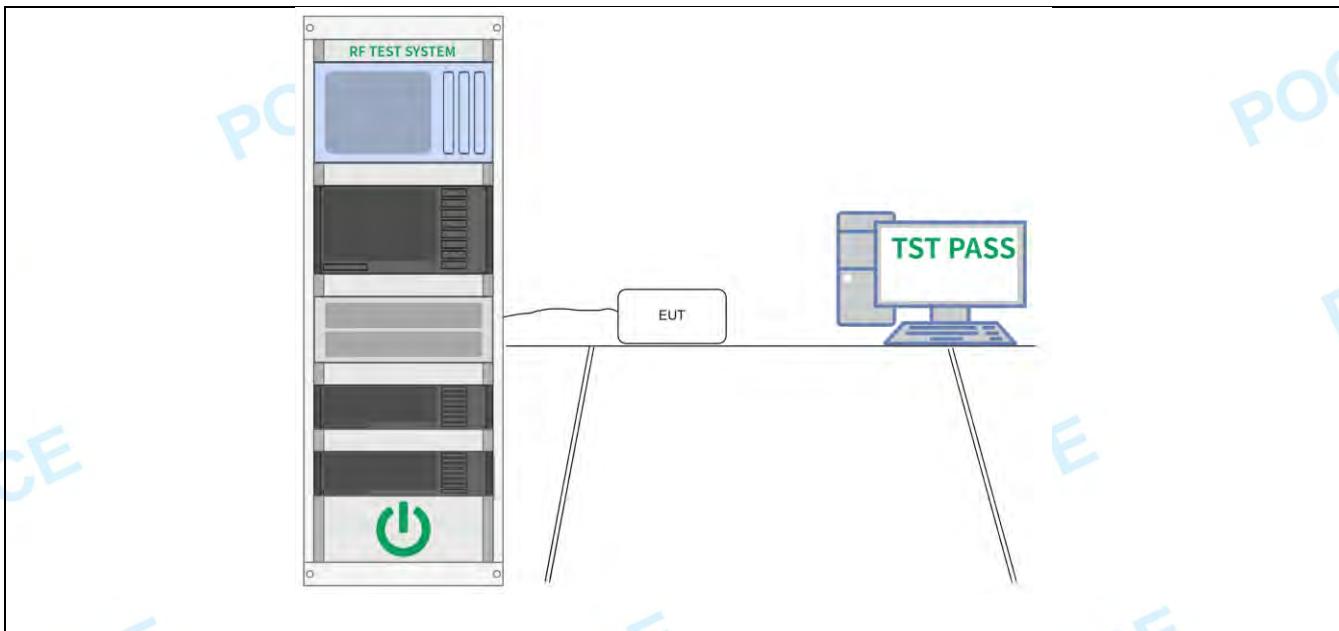
### 3.4 Emission bandwidth and occupied bandwidth

|                   |  |
|-------------------|--|
| Test Requirement: | U-NII 3, U-NII 4: 47 CFR Part 15.407(e)  |
| Test Limit:       | U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.   |
| Test Method:      | ANSI C63.10-2013, section 6.9 & 12.4<br>KDB 789033 D02, Clause C.2   |
| Procedure:        | <p>Occupied bandwidth:</p> <p>a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 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 VBW shall be approximately three times the 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 [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.</p> <p>d) Step a) through step c) might require iteration to adjust within the specified range.</p> <p>e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.</p> <p>f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.</p> <p>g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.</p> <p>h) The occupied bandwidth shall be reported by providing 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> <p>6 dB emission bandwidth:</p> <p>a) Set RBW = 100 kHz.</p> <p>b) Set the video bandwidth (VBW) <math>\geq 3 \geq RBW</math>.</p> <p>c) Detector = Peak.</p> <p>d) Trace mode = max hold.</p> <p>e) Sweep = auto couple.</p> <p>f) Allow the trace to stabilize.</p> <p>g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.</p> |

#### 3.4.1 E.U.T. Operation:

|                        |               |           |        |                               |
|------------------------|---------------|-----------|--------|-------------------------------|
| Operating Environment: |               |           |        |                               |
| Temperature:           | 22.5 °C       | Humidity: | 49.3 % | Atmospheric Pressure: 101 kPa |
| Pretest mode:          | TM1, TM2, TM3 |           |        |                               |
| Final test mode:       | TM1, TM2, TM3 |           |        |                               |

#### 3.4.2 Test Setup Diagram:



### 3.4.3 Test Data:

Please Refer to Appendix for Details.

### 3.5 Band edge emissions (Radiated)

|                   |   |                     |               |                  |
|-------------------|---|---------------------|---------------|------------------|
| Test Requirement: | 47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10)   |                     |               |                  |
| Test Limit:       | For transmitters operating solely in the 5.725-5.850 GHz band:<br>All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. |                     |               |                  |
|                   | MHz   | MHz                 | MHz           | GHz              |
|                   | 0.090-0.110   | 16.42-16.423        | 399.9-410     | 4.5-5.15         |
|                   | <sup>1</sup> 0.495-0.505  | 16.69475-16.69525   | 608-614       | 5.35-5.46        |
|                   | 2.1735-2.1905   | 16.80425-16.80475   | 960-1240      | 7.25-7.75        |
|                   | 4.125-4.128   | 25.5-25.67          | 1300-1427     | 8.025-8.5        |
|                   | 4.17725-4.17775   | 37.5-38.25          | 1435-1626.5   | 9.0-9.2          |
|                   | 4.20725-4.20775   | 73-74.6             | 1645.5-1646.5 | 9.3-9.5          |
|                   | 6.215-6.218   | 74.8-75.2           | 1660-1710     | 10.6-12.7        |
|                   | 6.26775-6.26825   | 108-121.94          | 1718.8-1722.2 | 13.25-13.4       |
|                   | 6.31175-6.31225   | 123-138             | 2200-2300     | 14.47-14.5       |
|                   | 8.291-8.294   | 149.9-150.05        | 2310-2390     | 15.35-16.2       |
|                   | 8.362-8.366   | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4        |
|                   | 8.37625-8.38675   | 156.7-156.9         | 2690-2900     | 22.01-23.12      |
|                   | 8.41425-8.41475   | 162.0125-167.17     | 3260-3267     | 23.6-24.0        |
|                   | 12.29-12.293  | 167.72-173.2        | 3332-3339     | 31.2-31.8        |
|                   | 12.51975-12.52025   | 240-285             | 3345.8-3358   | 36.43-36.5       |
|                   | 12.57675-12.57725   | 322-335.4           | 3600-4400     | ( <sup>2</sup> ) |
|                   | 13.36-13.41   |                     |               |                  |

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup>Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| 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. 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 C63.10-2013, section 12.7.4, 12.7.6, 12.7.7  |              |    |
| Procedure:   | <p>Above 1GHz:</p> <p>a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.</p> <p>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.</p> <p>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p> <p>Remark:</p> <p>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor</p> <p>2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.</p> <p>3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.</p> <p>4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been</p> |              |    |

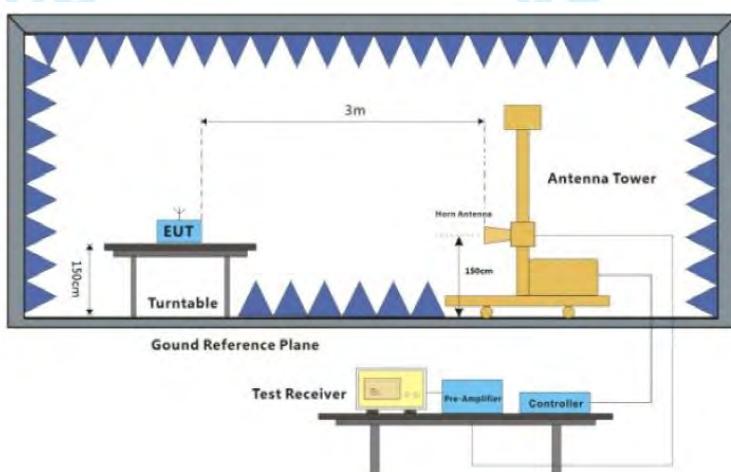
|  |            |
|--|------------|
|  | displayed. |
|--|------------|

### 3.5.1 E.U.T. Operation:

#### Operating Environment:

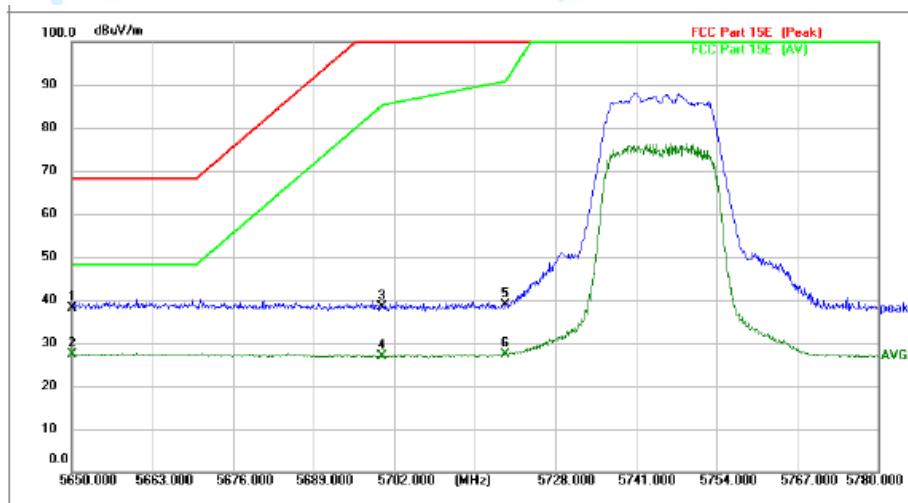
|                  |               |           |        |                       |         |
|------------------|---------------|-----------|--------|-----------------------|---------|
| Temperature:     | 22.5 °C       | Humidity: | 49.3 % | Atmospheric Pressure: | 101 kPa |
| Pretest mode:    | TM1, TM2, TM3 |           |        |                       |         |
| Final test mode: | TM1, TM2, TM3 |           |        |                       |         |

### 3.5.2 Test Setup Diagram:



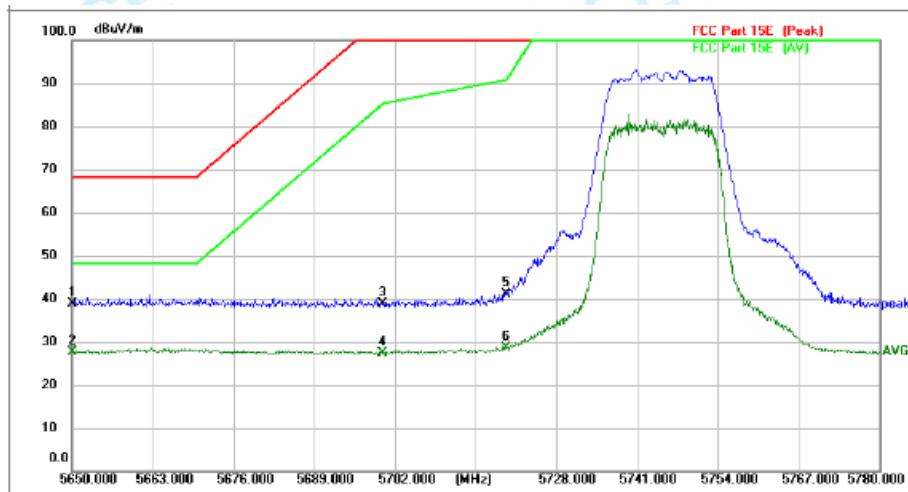
### 3.5.3 Test Data:

TM1 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: L



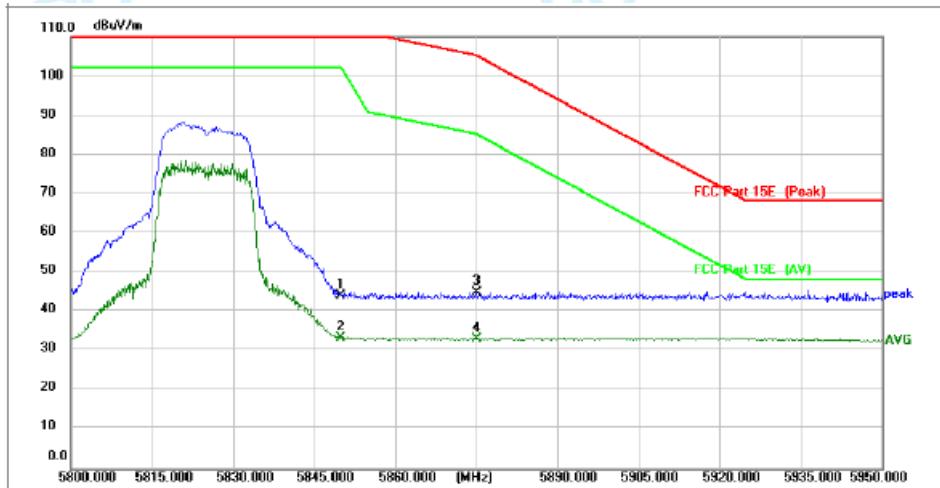
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1   | 5650.000        | 37.18          | 0.89          | 38.07          | 68.20          | -30.13      | peak     |             |                | P   |        |
| 2 * | 5650.000        | 26.58          | 0.89          | 27.47          | 48.20          | -20.73      | AVG      |             |                | P   |        |
| 3   | 5700.000        | 37.36          | 0.95          | 38.31          | 105.20         | -66.89      | peak     |             |                | P   |        |
| 4   | 5700.000        | 26.01          | 0.95          | 26.96          | 85.20          | -58.24      | AVG      |             |                | P   |        |
| 5   | 5720.000        | 37.96          | 0.97          | 38.93          | 110.80         | -71.87      | peak     |             |                | P   |        |
| 6   | 5720.000        | 26.48          | 0.97          | 27.45          | 90.80          | -63.35      | AVG      |             |                | P   |        |

TM1 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / CH: L



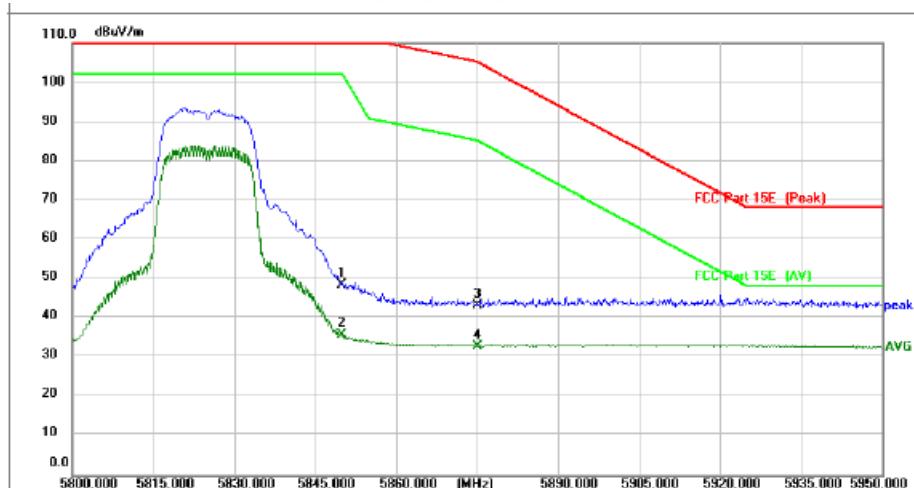
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1   | 5650.000        | 38.00          | 0.77          | 38.77          | 68.20          | -29.43      | peak     | 150         |                | P   |        |
| 2 * | 5650.000        | 26.89          | 0.77          | 27.66          | 48.20          | -20.54      | AVG      | 150         |                | P   |        |
| 3   | 5700.000        | 38.06          | 0.80          | 38.86          | 105.20         | -66.34      | peak     | 150         |                | P   |        |
| 4   | 5700.000        | 26.66          | 0.80          | 27.46          | 85.20          | -57.74      | AVG      | 150         |                | P   |        |
| 5   | 5720.000        | 40.37          | 0.81          | 41.18          | 110.80         | -69.62      | peak     | 150         |                | P   |        |
| 6   | 5720.000        | 27.82          | 0.81          | 28.63          | 90.80          | -62.17      | AVG      | 150         |                | P   |        |

## TM1 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: H



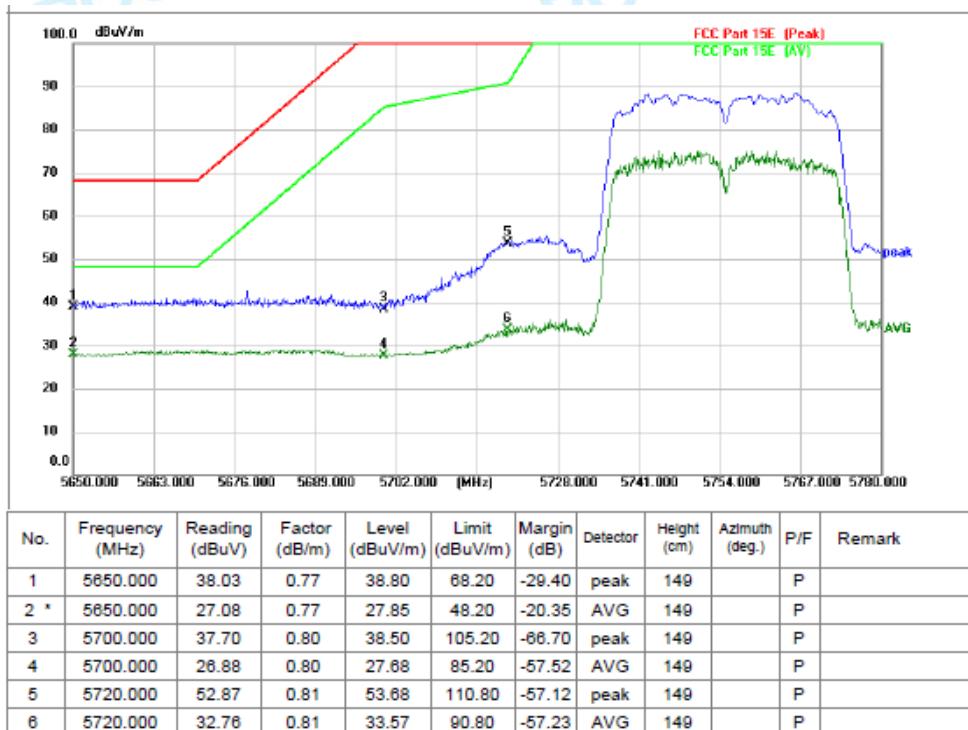
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1   | 5850.000        | 43.20          | 0.91          | 44.11          | 122.20         | -78.09      | peak     | 150         |                | P   |        |
| 2   | 5850.000        | 32.64          | 0.91          | 33.55          | 102.20         | -68.65      | AVG      | 150         |                | P   |        |
| 3   | 5875.000        | 43.99          | 0.92          | 44.91          | 105.20         | -60.29      | peak     | 150         |                | P   |        |
| 4 * | 5875.000        | 32.09          | 0.92          | 33.01          | 85.20          | -52.19      | AVG      | 150         |                | P   |        |

## TM1 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / CH: H

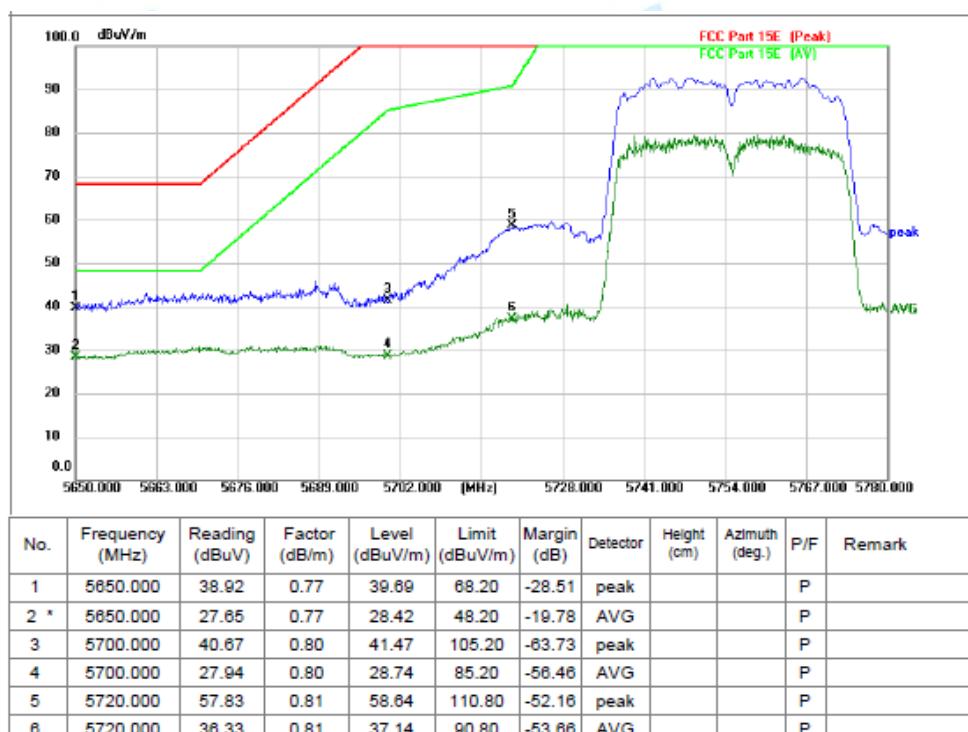


| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1   | 5850.000        | 47.62          | 0.91          | 48.53          | 122.20         | -73.67      | peak     | 150         |                | P   |        |
| 2   | 5850.000        | 35.03          | 0.91          | 35.94          | 102.20         | -66.26      | AVG      | 150         |                | P   |        |
| 3   | 5875.000        | 42.34          | 0.92          | 43.26          | 105.20         | -61.94      | peak     | 150         |                | P   |        |
| 4 * | 5875.000        | 32.08          | 0.92          | 33.00          | 85.20          | -52.20      | AVG      | 150         |                | P   |        |

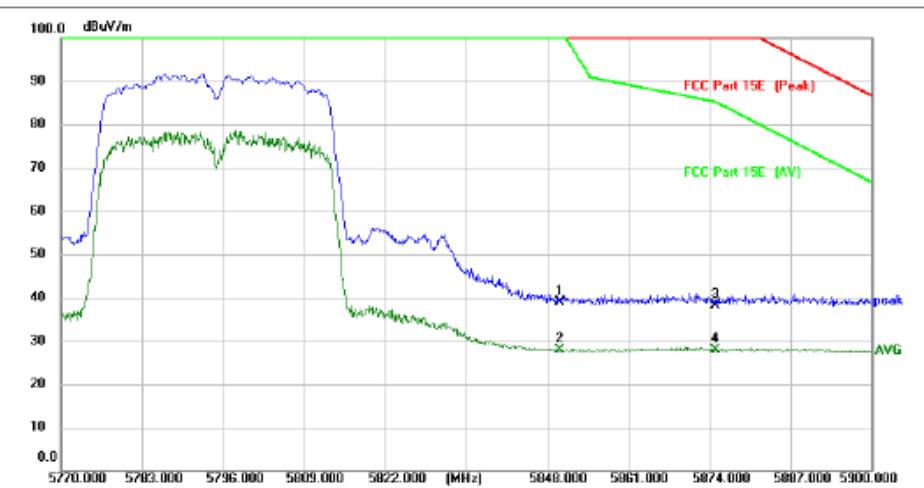
## TM2 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 40 / CH: L



## TM2 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 40 / CH: L

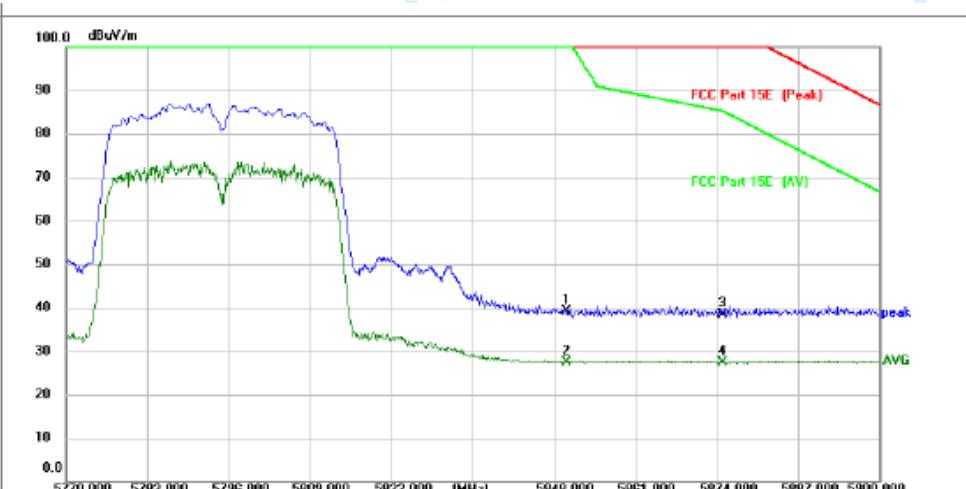


## TM2 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 40 / CH: H



| 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   | 5850.000        | 37.67          | 1.13          | 38.80          | 122.20         | -83.40      | peak     | 149         |                | P   |        |
| 2   | 5850.000        | 26.84          | 1.13          | 27.97          | 102.20         | -74.23      | AVG      | 149         |                | P   |        |
| 3   | 5875.000        | 37.06          | 1.15          | 38.21          | 105.20         | -66.99      | peak     | 149         |                | P   |        |
| 4 * | 5875.000        | 26.63          | 1.15          | 27.78          | 85.20          | -57.42      | AVG      | 149         |                | P   |        |

## TM2 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 40 / CH: H



| 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   | 5850.000        | 38.12          | 0.91          | 39.03          | 122.20         | -83.17      | peak     |             |                | P   |        |
| 2   | 5850.000        | 26.58          | 0.91          | 27.47          | 102.20         | -74.73      | AVG      |             |                | P   |        |
| 3   | 5875.000        | 37.42          | 0.92          | 38.34          | 105.20         | -66.86      | peak     |             |                | P   |        |
| 4 * | 5875.000        | 26.36          | 0.92          | 27.28          | 85.20          | -57.92      | AVG      |             |                | P   |        |

Measurement Level = Reading level + Correct Factor, Margin= Level - Limit

### 3.6 Undesirable emission limits (below 1GHz)

| Test Requirement: | 47 CFR Part 15.407(b)(9)  |                               |  |                 |                                   |                               |             |             |     |             |              |    |            |    |    |       |        |   |        |        |   |         |        |   |           |     |   |
|-------------------|---|-------------------------------|--|-----------------|-----------------------------------|-------------------------------|-------------|-------------|-----|-------------|--------------|----|------------|----|----|-------|--------|---|--------|--------|---|---------|--------|---|-----------|-----|---|
| Test Limit:       | <p>Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.</p> <p>Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:</p>  |                               |  |                 |                                   |                               |             |             |     |             |              |    |            |    |    |       |        |   |        |        |   |         |        |   |           |     |   |
|                   | <table border="1"> <thead> <tr> <th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr> </thead> <tbody> <tr> <td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr> <tr> <td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr> <tr> <td>1.705-30.0</td><td>30</td><td>30</td></tr> <tr> <td>30-88</td><td>100 **</td><td>3</td></tr> <tr> <td>88-216</td><td>150 **</td><td>3</td></tr> <tr> <td>216-960</td><td>200 **</td><td>3</td></tr> <tr> <td>Above 960</td><td>500</td><td>3</td></tr> </tbody> </table>  |                               |  | 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 |
| 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. 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 C63.10-2013, section 12.7.4, 12.7.5  |                               |  |                 |                                   |                               |             |             |     |             |              |    |            |    |    |       |        |   |        |        |   |         |        |   |           |     |   |
| Procedure:        | <p>Below 1GHz:</p> <p>a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.</p> <p>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.</p> <p>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p> <p>Remark:</p> <p>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor</p> |                               |  |                 |                                   |                               |             |             |     |             |              |    |            |    |    |       |        |   |        |        |   |         |        |   |           |     |   |

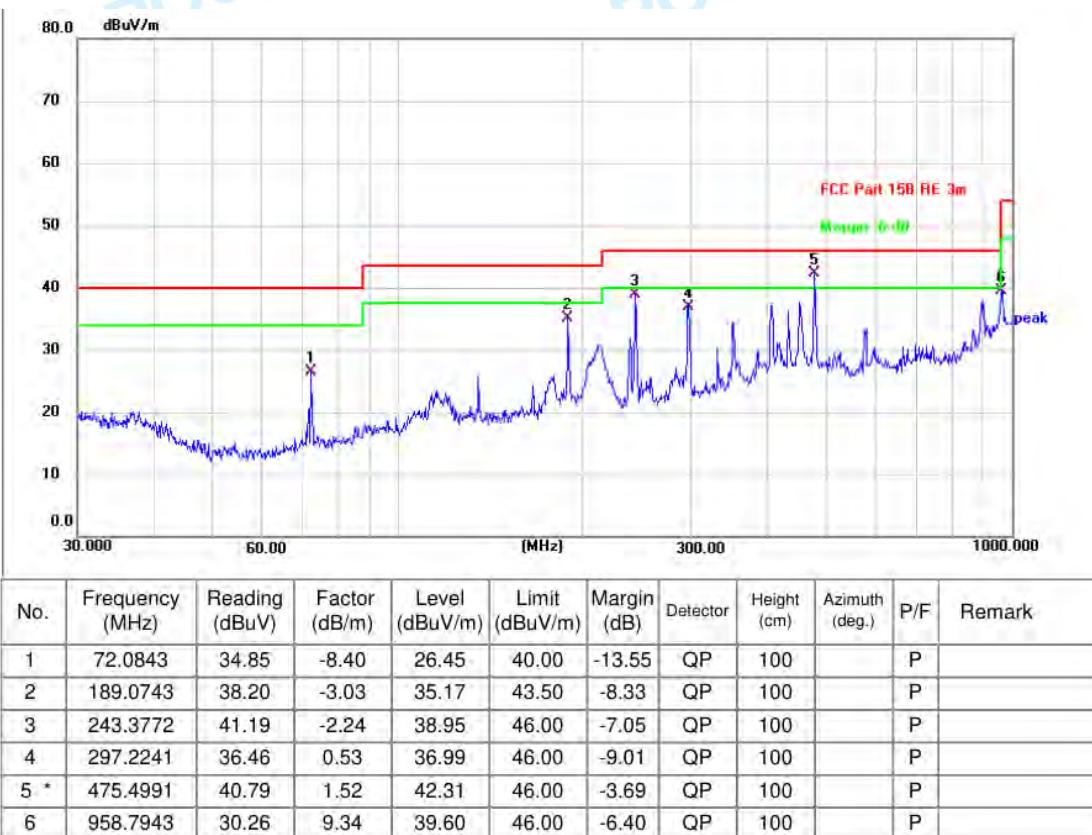
|  |  |
|--|--|
|  | <p>2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.</p> <p>3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.</p> <p>Above 1GHz:</p> <p>a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.</p> <p>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.</p> <p>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p> <p>Remark:</p> <p>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor</p> <p>2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.</p> <p>3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.</p> <p>4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.</p> |
|--|--|

### 3.6.1 E.U.T. Operation:

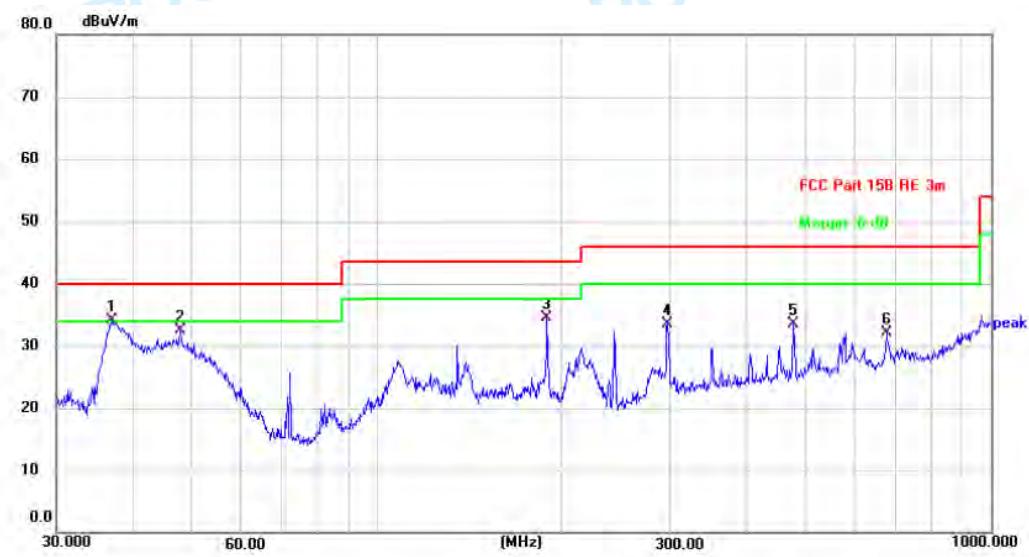
| Operating Environment: |                 |           |        |                               |
|------------------------|-----------------|-----------|--------|-------------------------------|
| Temperature:           | 22.5 °C         | Humidity: | 49.3 % | Atmospheric Pressure: 101 kPa |
| Pretest mode:          | TM1, TM2, TM3   |           |        |                               |
| Final test mode:       | TM1(worse case) |           |        |                               |

### 3.6.2 Test Data:

TM1 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: L



TM1 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / 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 * | 37.0248         | 38.83          | -4.76         | 34.07          | 40.00          | -5.93       | QP       | 100         |                | P   |        |
| 2   | 47.8260         | 41.39          | -8.93         | 32.46          | 40.00          | -7.54       | QP       | 100         |                | P   |        |
| 3   | 189.0743        | 37.62          | -3.03         | 34.59          | 43.50          | -8.91       | QP       | 100         |                | P   |        |
| 4   | 297.2241        | 33.63          | -0.22         | 33.41          | 46.00          | -12.59      | QP       | 100         |                | P   |        |
| 5   | 475.4991        | 31.91          | 1.52          | 33.43          | 46.00          | -12.57      | QP       | 100         |                | P   |        |
| 6   | 675.2080        | 27.65          | 4.40          | 32.05          | 46.00          | -13.95      | QP       | 100         |                | P   |        |

### 3.7 Undesirable emission limits (above 1GHz)

| Test Requirement:        | 47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10)  |               |                  |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
|--------------------------|--|---------------|------------------|--|-----|-----|-----|-----|-------------|--------------|-----------|----------|--------------------------|-------------------|---------|-----------|---------------|-------------------|----------|-----------|-------------|------------|-----------|-----------|-----------------|------------|-------------|---------|-----------------|---------|---------------|---------|-------------|-----------|-----------|-----------|-----------------|------------|---------------|------------|-----------------|---------|-----------|------------|-------------|--------------|-----------|------------|-------------|---------------------|-------------|-----------|-----------------|-------------|-----------|-------------|-----------------|-----------------|-----------|-----------|--------------|--------------|-----------|-----------|-------------------|---------|-------------|------------|-------------------|-----------|-----------|------------------|-------------|--|--|--|
| Test Limit:              | <p>For transmitters operating solely in the 5.725-5.850 GHz band:<br/>           All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</p> <table border="1"> <thead> <tr> <th>MHz</th><th>MHz</th><th>MHz</th><th>GHz</th></tr> </thead> <tbody> <tr><td>0.090-0.110</td><td>16.42-16.423</td><td>399.9-410</td><td>4.5-5.15</td></tr> <tr><td><sup>1</sup>0.495-0.505</td><td>16.69475-16.69525</td><td>608-614</td><td>5.35-5.46</td></tr> <tr><td>2.1735-2.1905</td><td>16.80425-16.80475</td><td>960-1240</td><td>7.25-7.75</td></tr> <tr><td>4.125-4.128</td><td>25.5-25.67</td><td>1300-1427</td><td>8.025-8.5</td></tr> <tr><td>4.17725-4.17775</td><td>37.5-38.25</td><td>1435-1626.5</td><td>9.0-9.2</td></tr> <tr><td>4.20725-4.20775</td><td>73-74.6</td><td>1645.5-1646.5</td><td>9.3-9.5</td></tr> <tr><td>6.215-6.218</td><td>74.8-75.2</td><td>1660-1710</td><td>10.6-12.7</td></tr> <tr><td>6.26775-6.26825</td><td>108-121.94</td><td>1718.8-1722.2</td><td>13.25-13.4</td></tr> <tr><td>6.31175-6.31225</td><td>123-138</td><td>2200-2300</td><td>14.47-14.5</td></tr> <tr><td>8.291-8.294</td><td>149.9-150.05</td><td>2310-2390</td><td>15.35-16.2</td></tr> <tr><td>8.362-8.366</td><td>156.52475-156.52525</td><td>2483.5-2500</td><td>17.7-21.4</td></tr> <tr><td>8.37625-8.38675</td><td>156.7-156.9</td><td>2690-2900</td><td>22.01-23.12</td></tr> <tr><td>8.41425-8.41475</td><td>162.0125-167.17</td><td>3260-3267</td><td>23.6-24.0</td></tr> <tr><td>12.29-12.293</td><td>167.72-173.2</td><td>3332-3339</td><td>31.2-31.8</td></tr> <tr><td>12.51975-12.52025</td><td>240-285</td><td>3345.8-3358</td><td>36.43-36.5</td></tr> <tr><td>12.57675-12.57725</td><td>322-335.4</td><td>3600-4400</td><td>(<sup>2</sup>)</td></tr> <tr><td>13.36-13.41</td><td></td><td></td><td></td></tr> </tbody> </table> |               |                  |  | MHz | MHz | MHz | GHz | 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 | <sup>1</sup> 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 | 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 | 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 | 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 | 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 | 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 | 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 | 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 | 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 | 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 | 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 | 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 | 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 | 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 | 12.57675-12.57725 | 322-335.4 | 3600-4400 | ( <sup>2</sup> ) | 13.36-13.41 |  |  |  |
| MHz                      | MHz  | MHz           | GHz              |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 0.090-0.110              | 16.42-16.423   | 399.9-410     | 4.5-5.15         |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| <sup>1</sup> 0.495-0.505 | 16.69475-16.69525  | 608-614       | 5.35-5.46        |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 2.1735-2.1905            | 16.80425-16.80475  | 960-1240      | 7.25-7.75        |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 4.125-4.128              | 25.5-25.67   | 1300-1427     | 8.025-8.5        |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 4.17725-4.17775          | 37.5-38.25   | 1435-1626.5   | 9.0-9.2          |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 4.20725-4.20775          | 73-74.6  | 1645.5-1646.5 | 9.3-9.5          |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 6.215-6.218              | 74.8-75.2  | 1660-1710     | 10.6-12.7        |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 6.26775-6.26825          | 108-121.94   | 1718.8-1722.2 | 13.25-13.4       |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 6.31175-6.31225          | 123-138  | 2200-2300     | 14.47-14.5       |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 8.291-8.294              | 149.9-150.05   | 2310-2390     | 15.35-16.2       |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 8.362-8.366              | 156.52475-156.52525  | 2483.5-2500   | 17.7-21.4        |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 8.37625-8.38675          | 156.7-156.9  | 2690-2900     | 22.01-23.12      |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 8.41425-8.41475          | 162.0125-167.17  | 3260-3267     | 23.6-24.0        |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 12.29-12.293             | 167.72-173.2   | 3332-3339     | 31.2-31.8        |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 12.51975-12.52025        | 240-285  | 3345.8-3358   | 36.43-36.5       |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 12.57675-12.57725        | 322-335.4  | 3600-4400     | ( <sup>2</sup> ) |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |
| 13.36-13.41              |  |               |                  |  |     |     |     |     |             |              |           |          |                          |                   |         |           |               |                   |          |           |             |            |           |           |                 |            |             |         |                 |         |               |         |             |           |           |           |                 |            |               |            |                 |         |           |            |             |              |           |            |             |                     |             |           |                 |             |           |             |                 |                 |           |           |              |              |           |           |                   |         |             |            |                   |           |           |                  |             |  |  |  |

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup>Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| 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   |

\*\* 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.

In the emission table above, the tighter limit applies at the band edges. 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.

| Test Method: | ANSI C63.10-2013, section 12.7.4, 12.7.6, 12.7.7 | | |
| Procedure: | Above 1GHz:   - For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. - The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. - The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. - For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. - The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. - If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. - Test the EUT in the lowest channel, the middle channel, the Highest channel. - The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. - Repeat above procedures until all frequencies measured was complete.   Remark:   - Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor - Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. - As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. - The disturbance above 18GHz were very low and the harmonics were the | | |

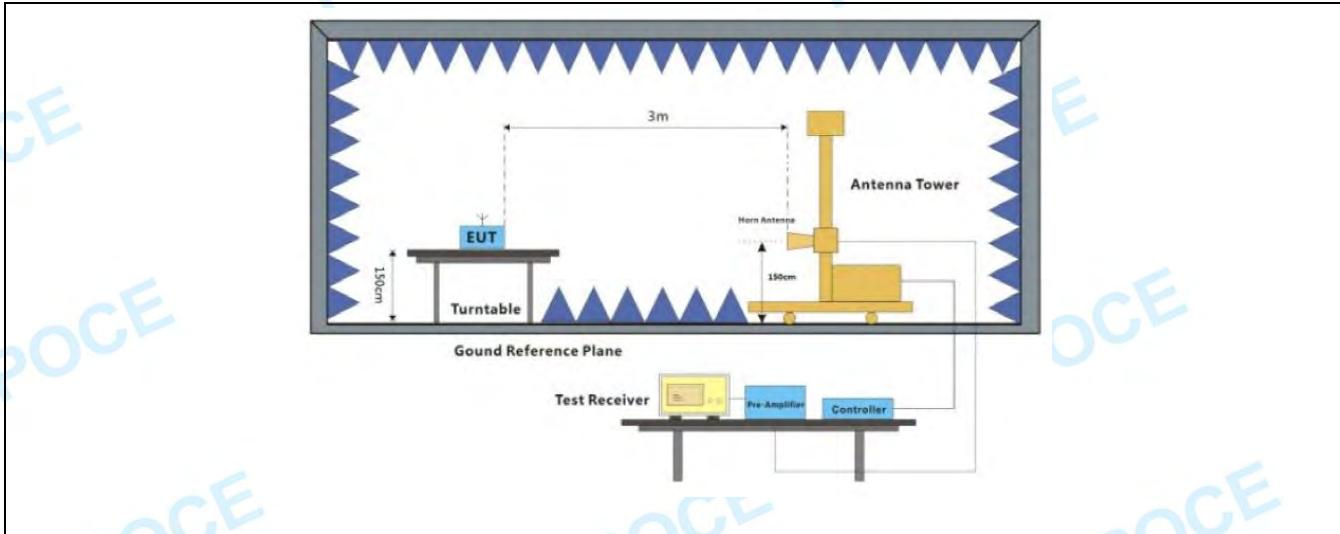
|  |  |
|--|--|
|  | highest point could be found when testing, so only the above harmonics had been displayed. |
|--|--|

### 3.7.1 E.U.T. Operation:

Operating Environment:

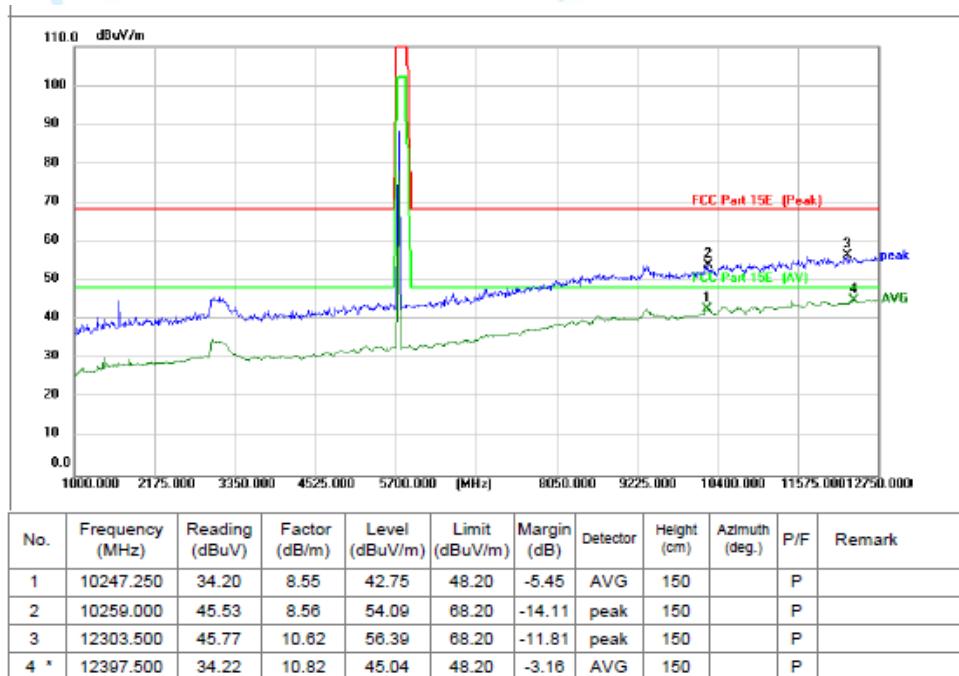
|                  |               |           |        |                       |         |
|------------------|---------------|-----------|--------|-----------------------|---------|
| Temperature:     | 22.5 °C       | Humidity: | 49.3 % | Atmospheric Pressure: | 101 kPa |
| Pretest mode:    | TM1, TM2, TM3 |           |        |                       |         |
| Final test mode: | TM1, TM2, TM3 |           |        |                       |         |

### 3.7.2 Test Setup Diagram:

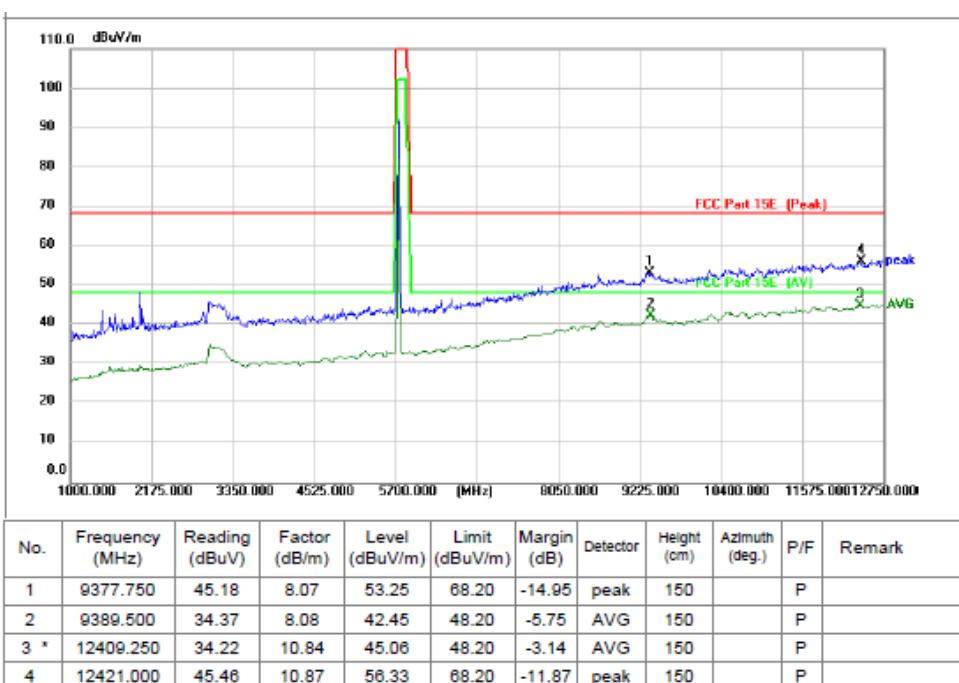


### 3.7.3 Test Data:

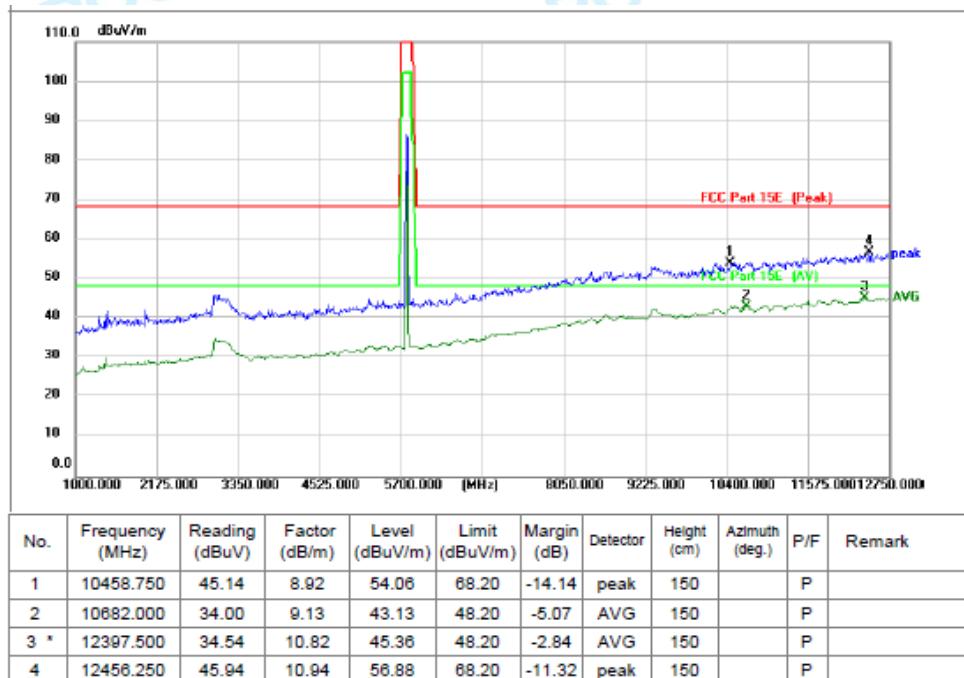
TM1 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: L



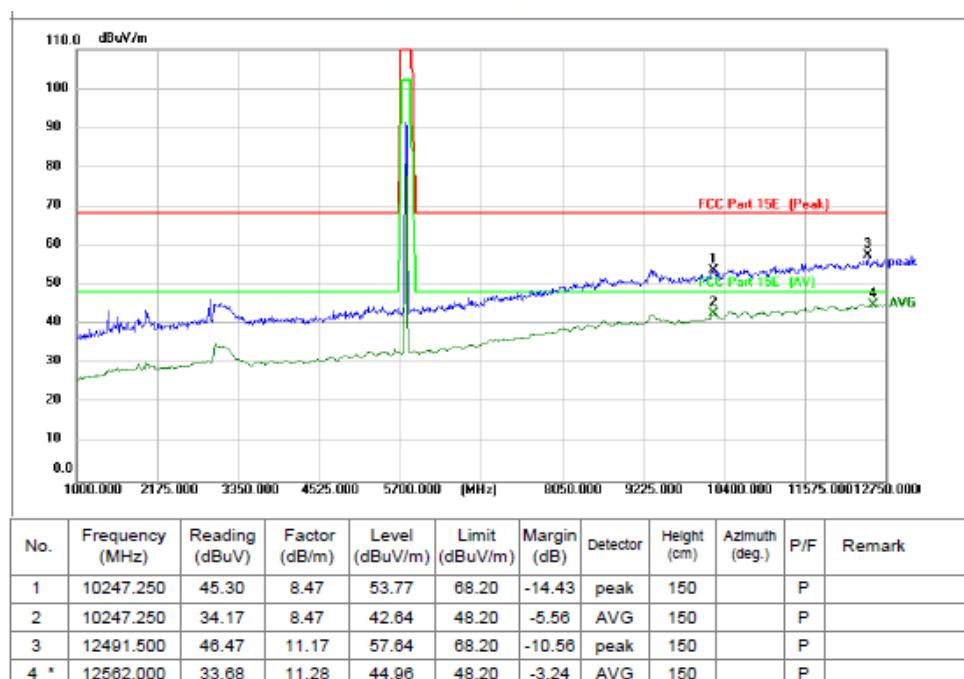
TM1 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / CH: L



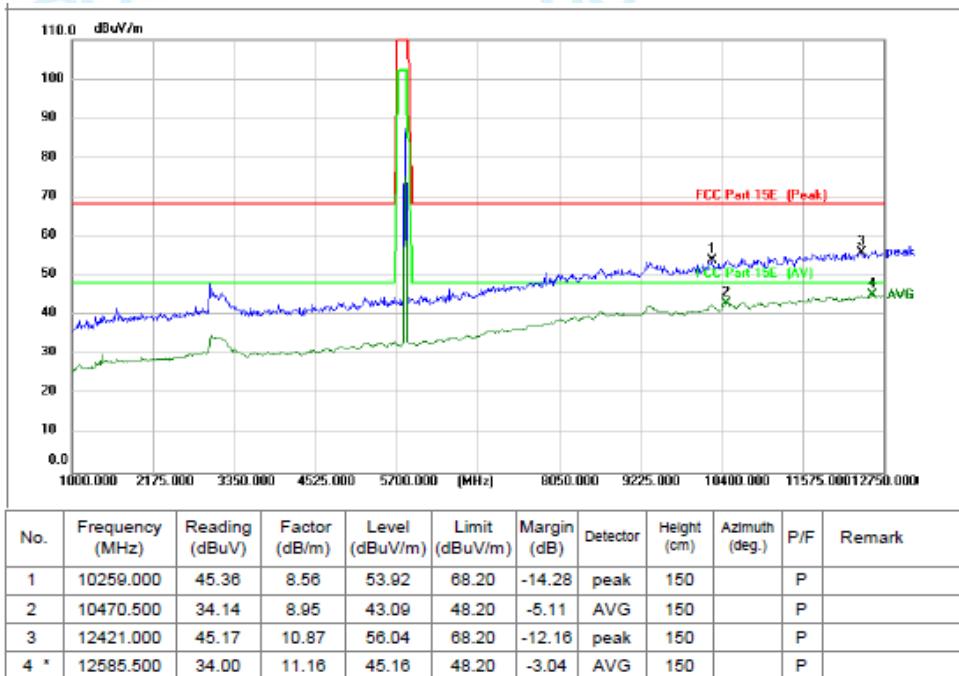
## TM1 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: M



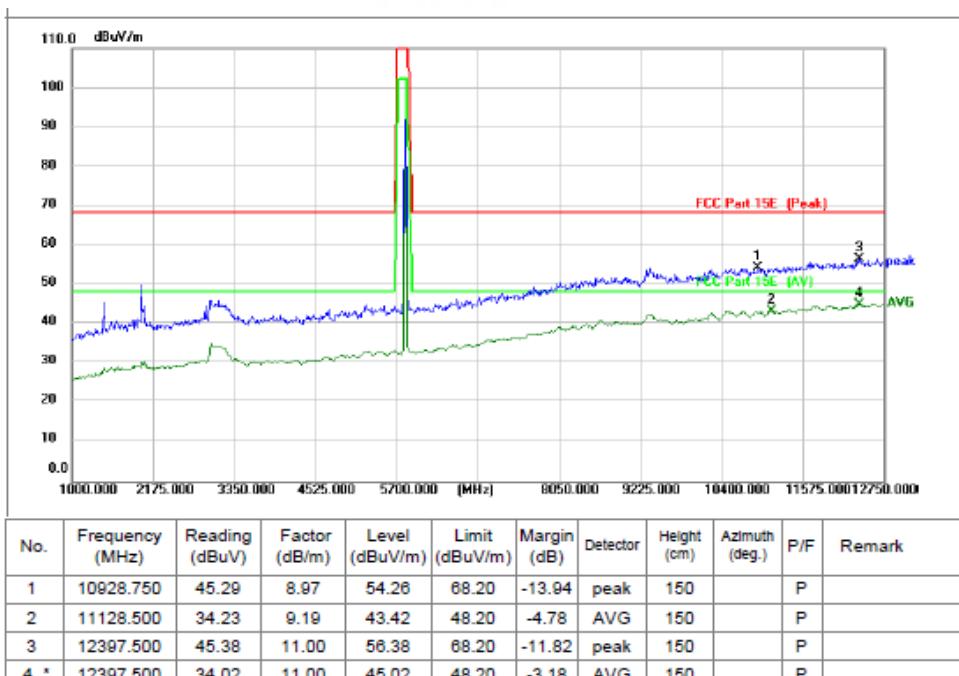
## TM1 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / CH: M



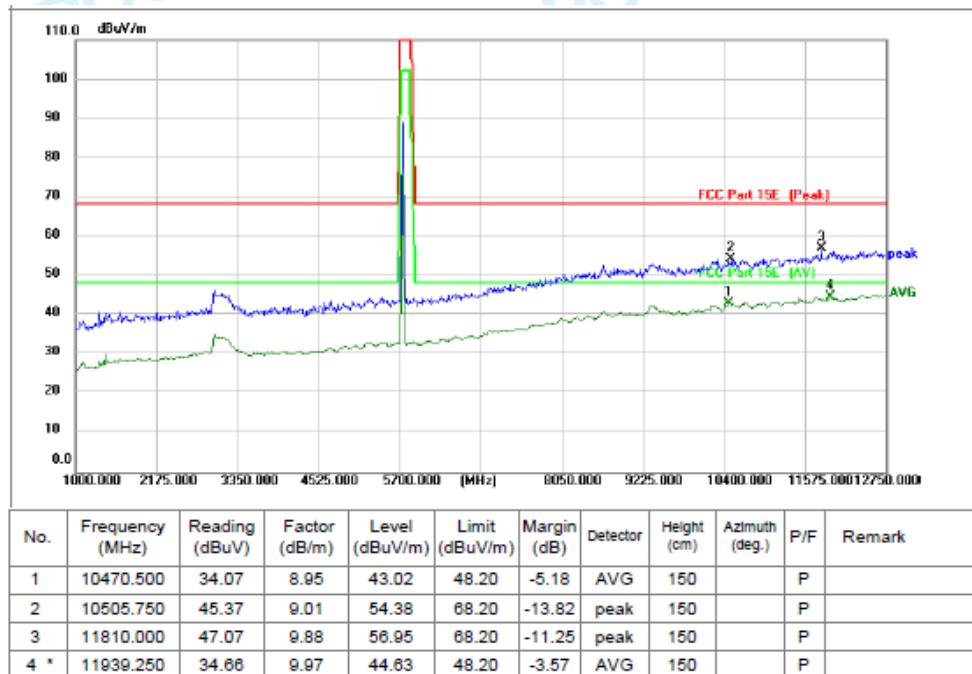
## TM1 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: H



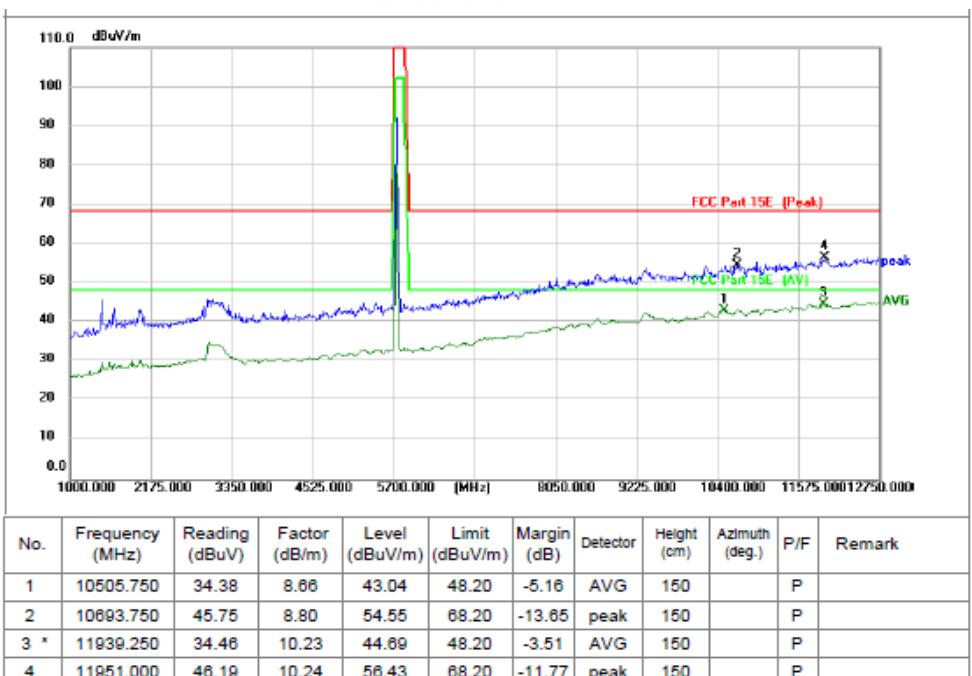
## TM1 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / CH: H



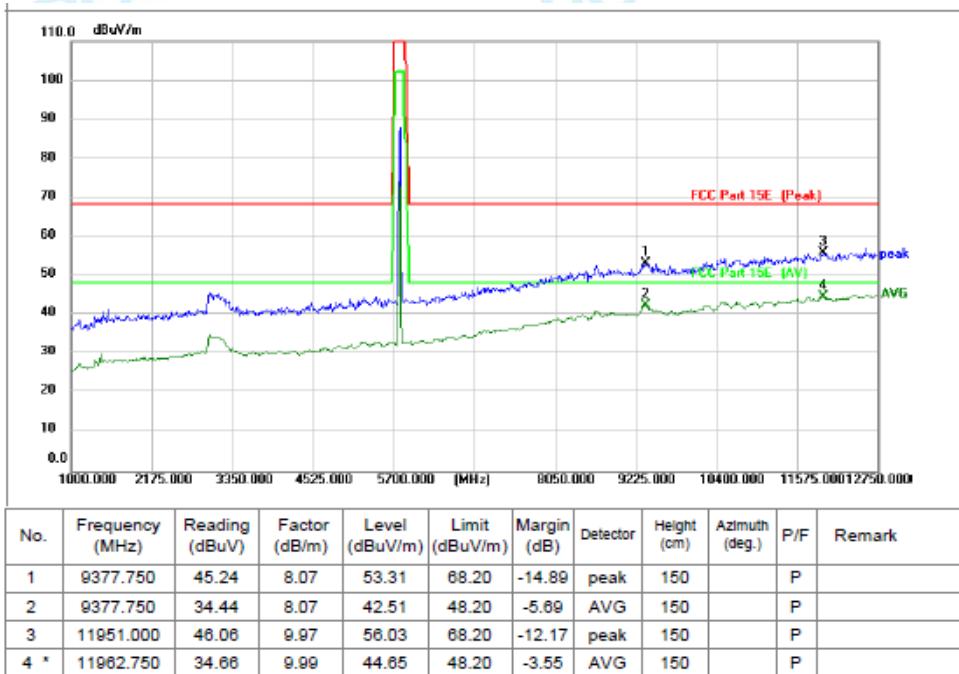
## TM2 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: L



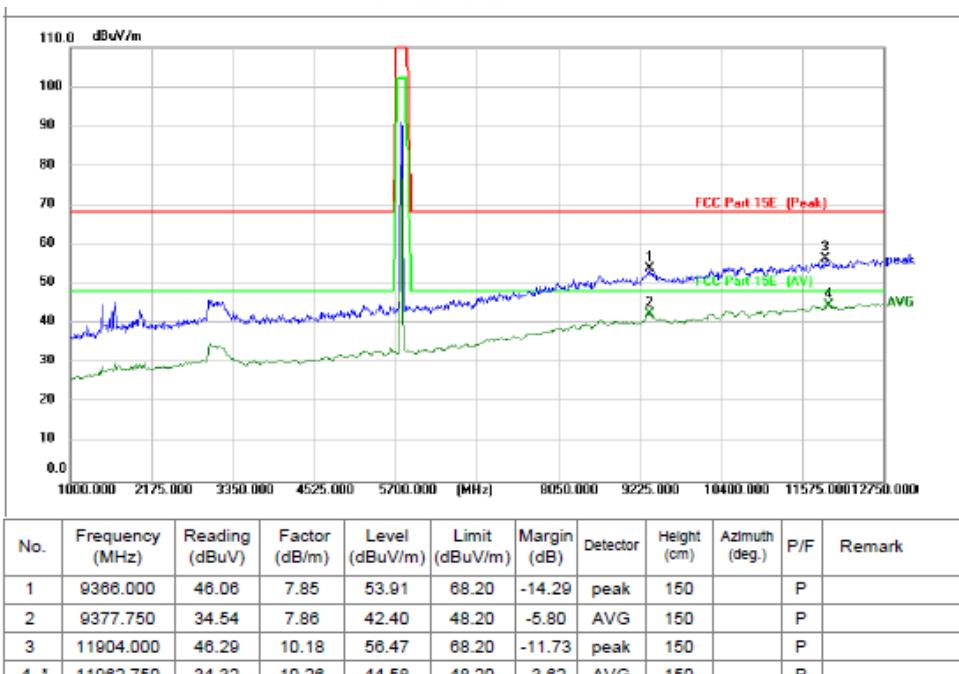
## TM2 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / CH: L



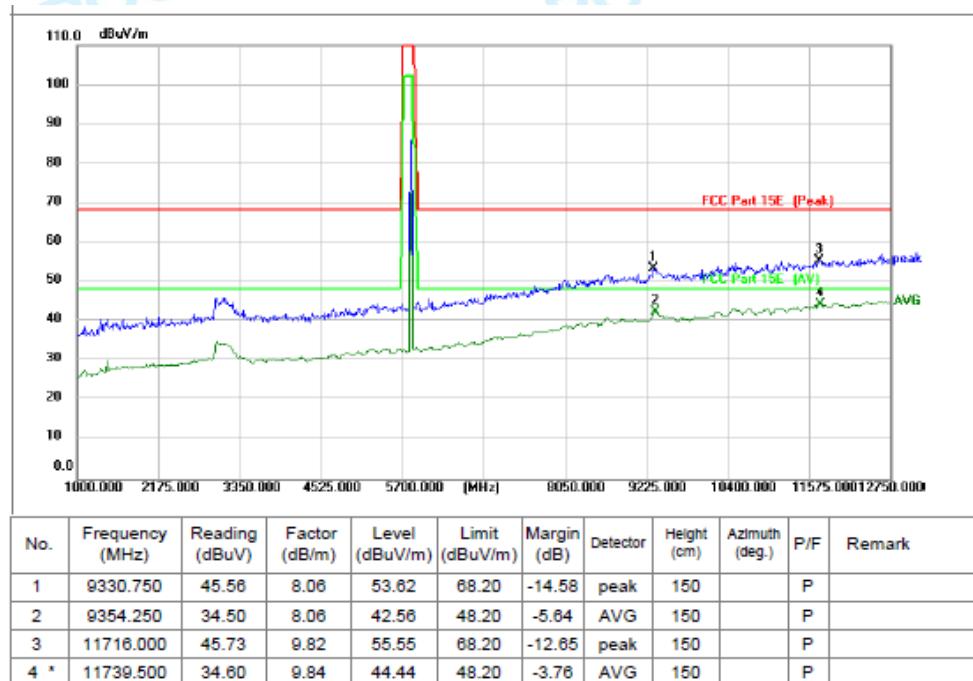
## TM2 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: M



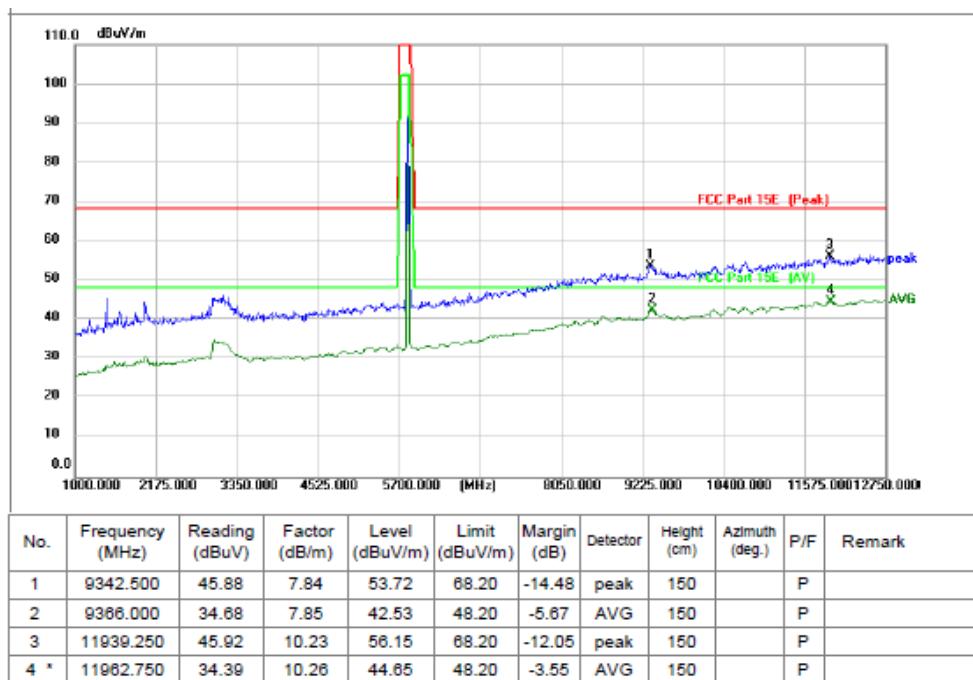
## TM2 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / CH: M



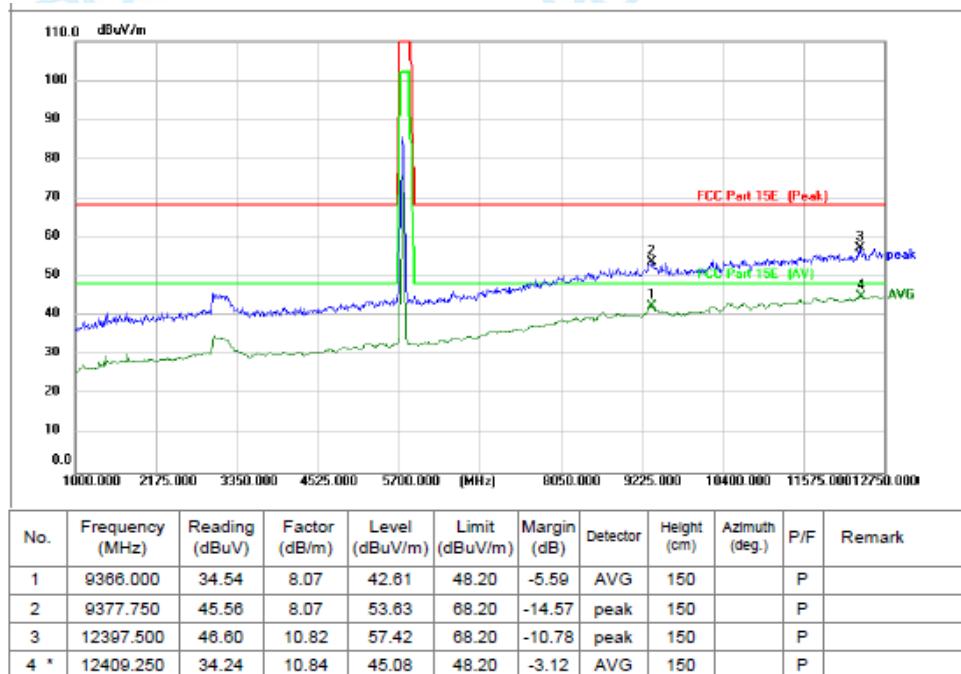
## TM2 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 20 / CH: H



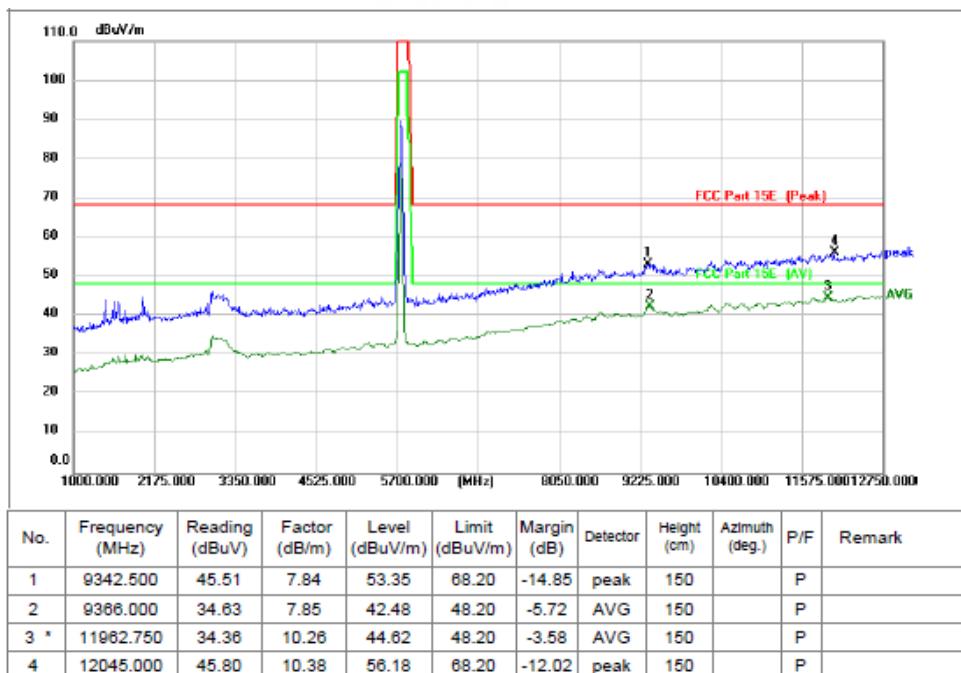
## TM2 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 20 / CH: H



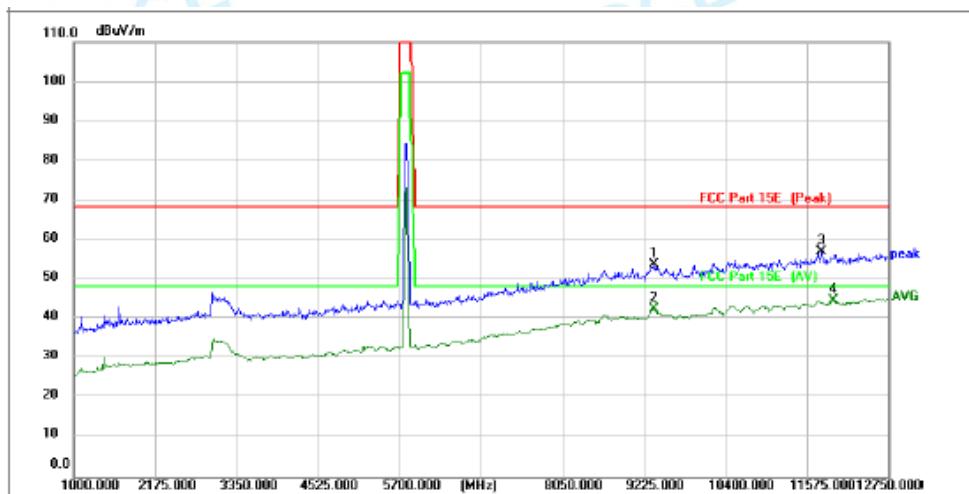
## TM2 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 40 / CH: L



## TM2 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 40 / CH: L

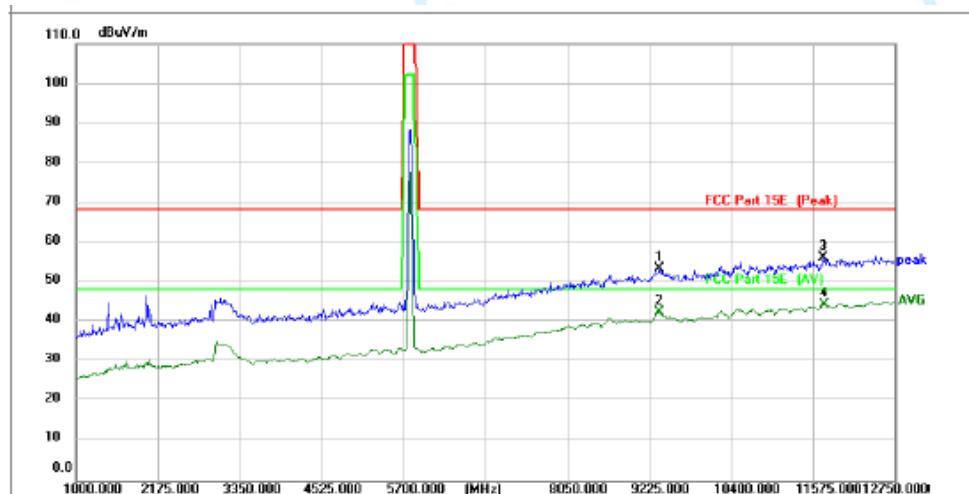


## TM2 / Polarization: Horizontal / Band: 5725-5850 MHz / BW: 40 / CH: H



| 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   | 9377.750        | 45.67          | 8.07          | 53.74          | 68.20          | -14.46      | peak     | 150         |                | P   |        |
| 2   | 9377.750        | 34.41          | 8.07          | 42.48          | 48.20          | -5.72       | AVG      | 150         |                | P   |        |
| 3   | 11786.500       | 47.20          | 9.85          | 57.05          | 68.20          | -11.15      | peak     | 150         |                | P   |        |
| 4 * | 11982.750       | 34.67          | 9.99          | 44.66          | 48.20          | -3.54       | AVG      | 150         |                | P   |        |

## TM2 / Polarization: Vertical / Band: 5725-5850 MHz / BW: 40 / CH: H



| 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   | 9366.000        | 45.52          | 7.85          | 53.37          | 68.20          | -14.83      | peak     | 150         |                | P   |        |
| 2   | 9366.000        | 34.65          | 7.85          | 42.50          | 48.20          | -5.70       | AVG      | 150         |                | P   |        |
| 3   | 11727.750       | 46.30          | 9.96          | 56.26          | 68.20          | -11.94      | peak     | 150         |                | P   |        |
| 4 * | 11739.500       | 34.56          | 9.98          | 44.54          | 48.20          | -3.66       | AVG      | 150         |                | P   |        |

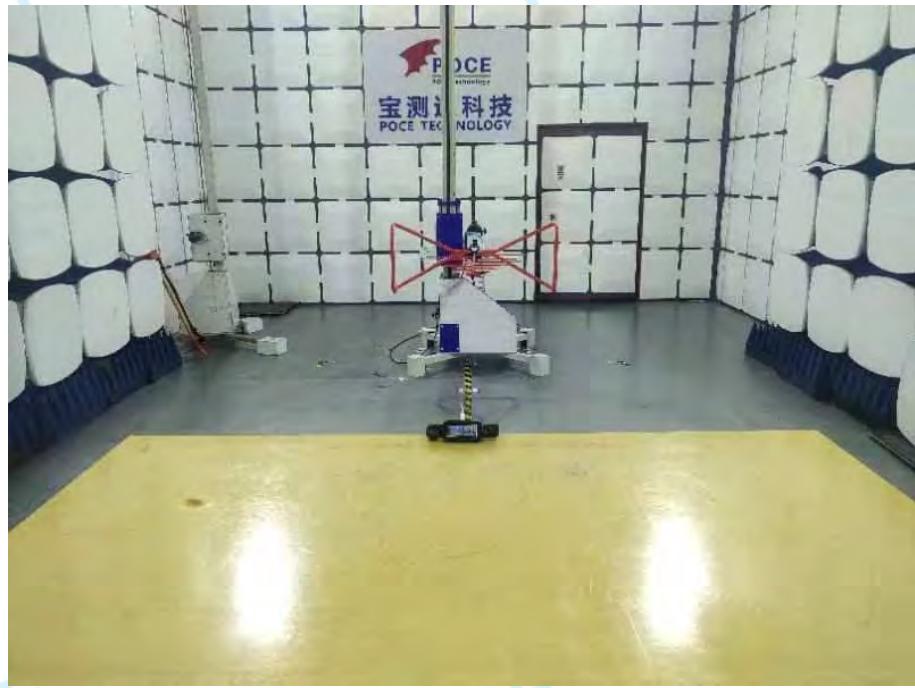
Remark: Margin = Level - Limit

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

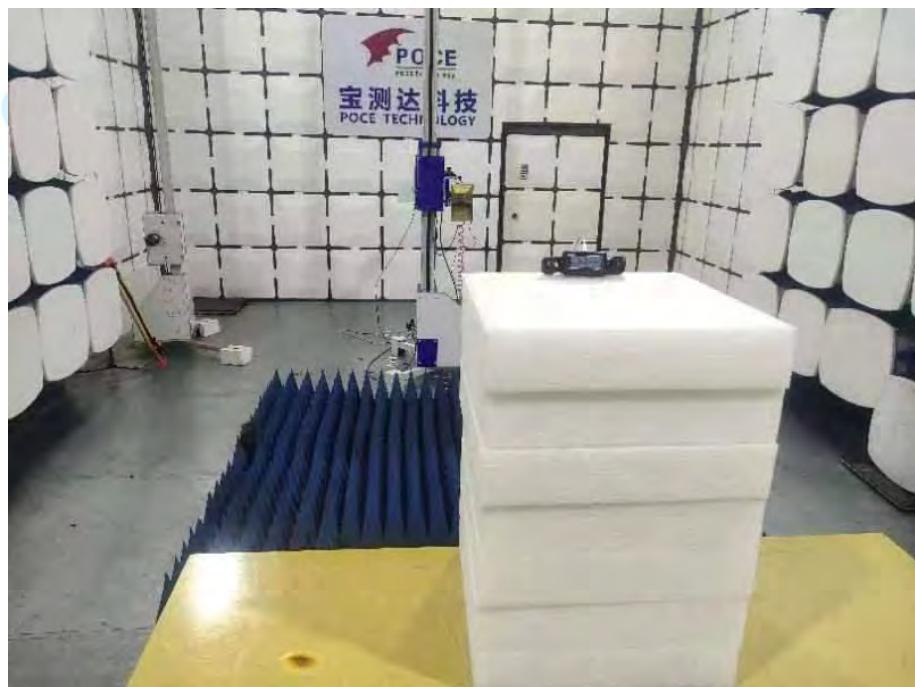
Level=Test receiver reading + correction factor

## 4 TEST SETUP PHOTOS

Undesirable emission limits (below 1GHz)



Undesirable emission limits (above 1GHz)



## 5 PHOTOS OF THE EUT

External



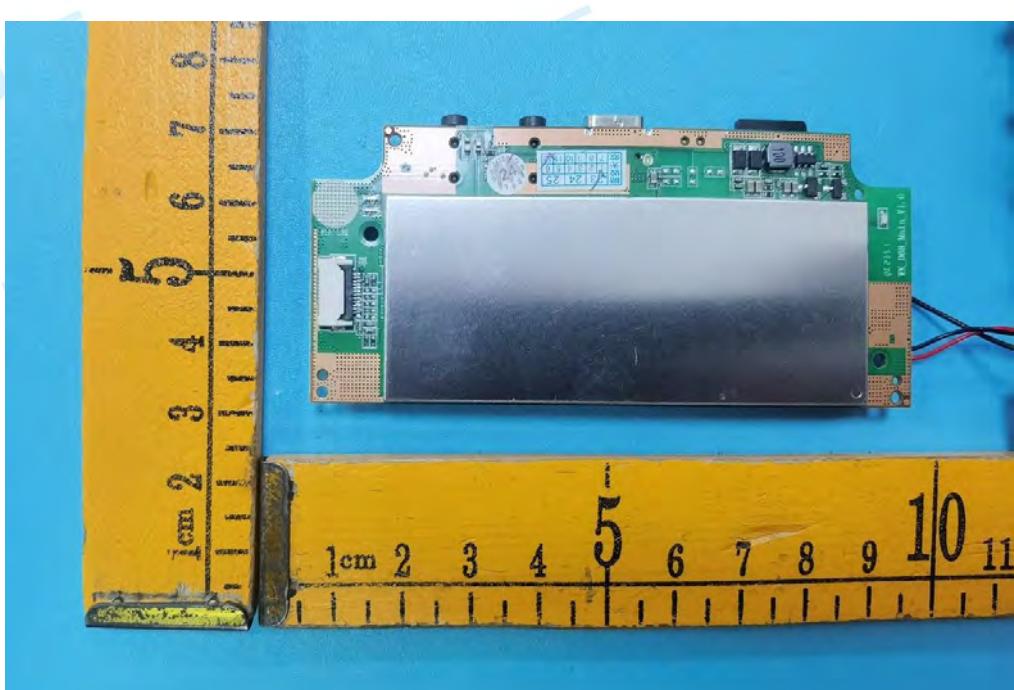
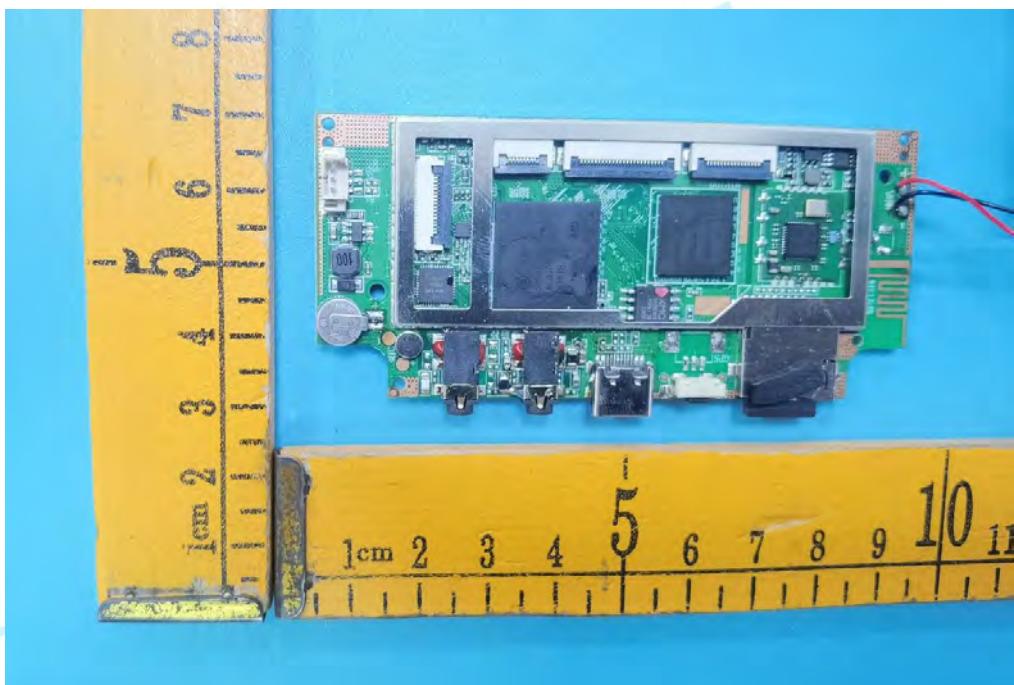


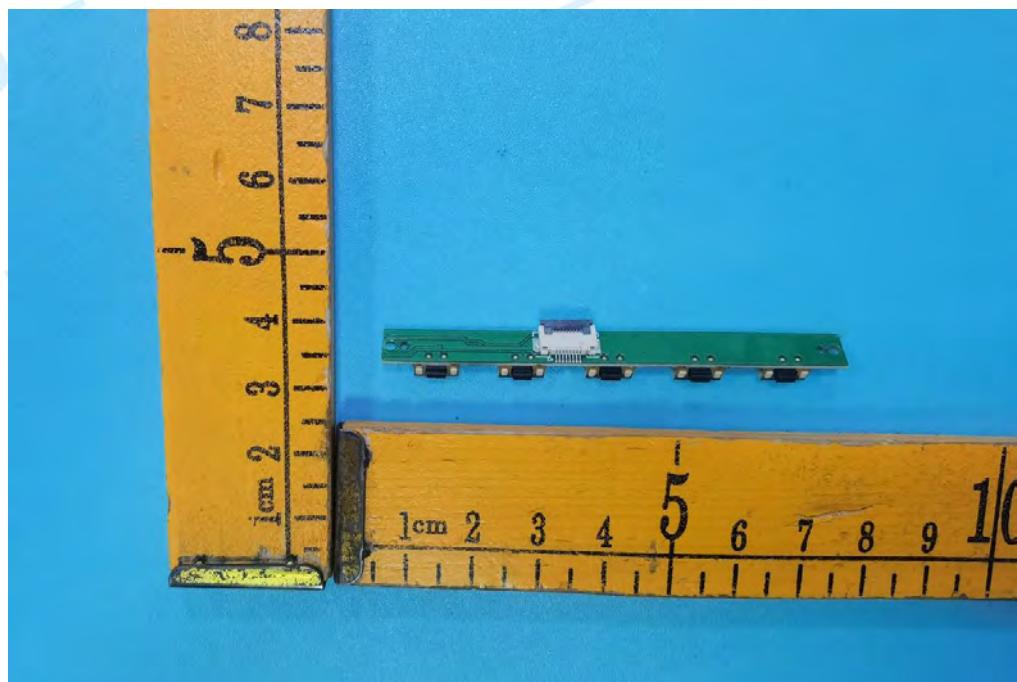
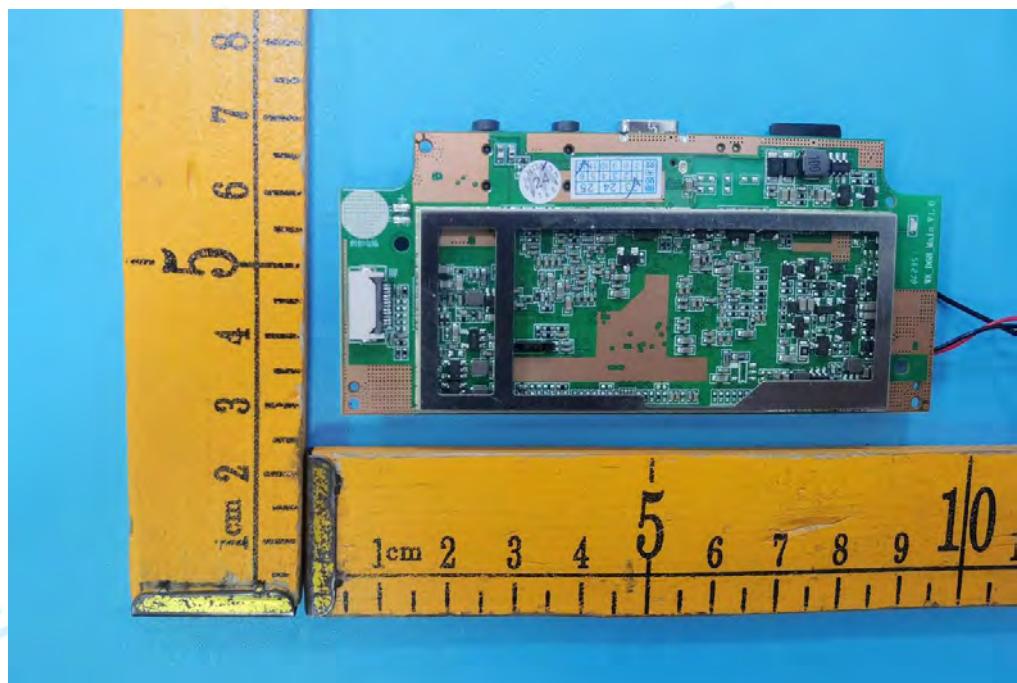


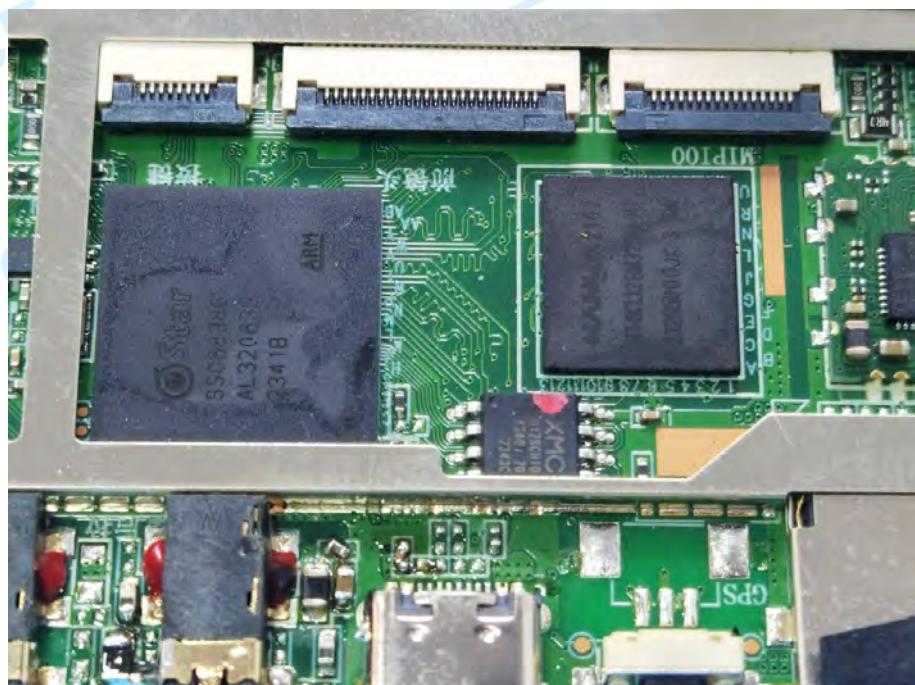
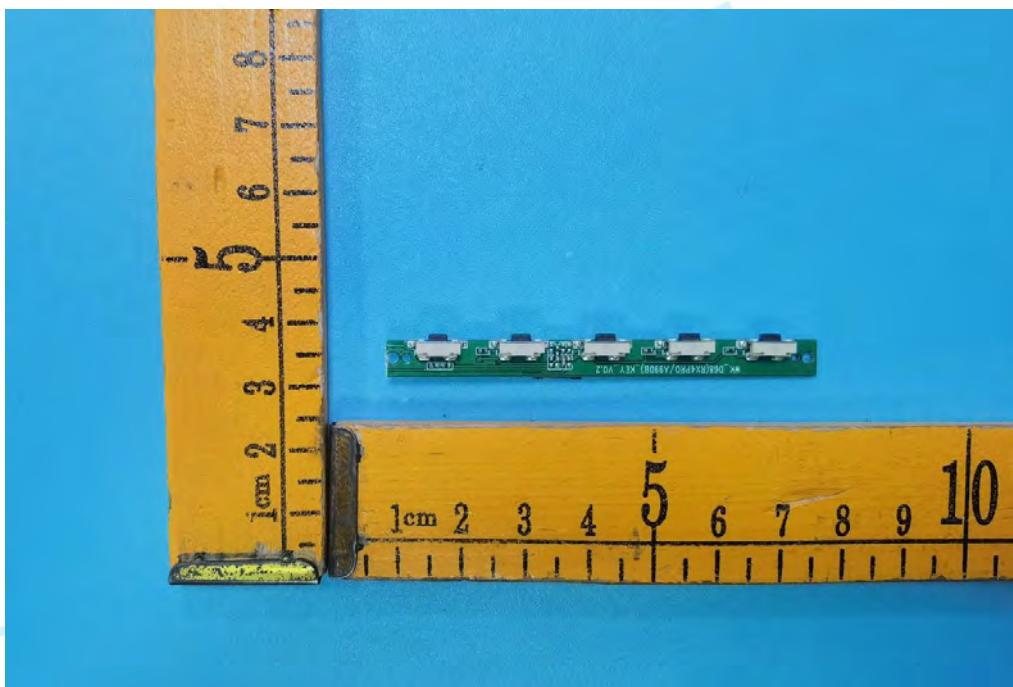


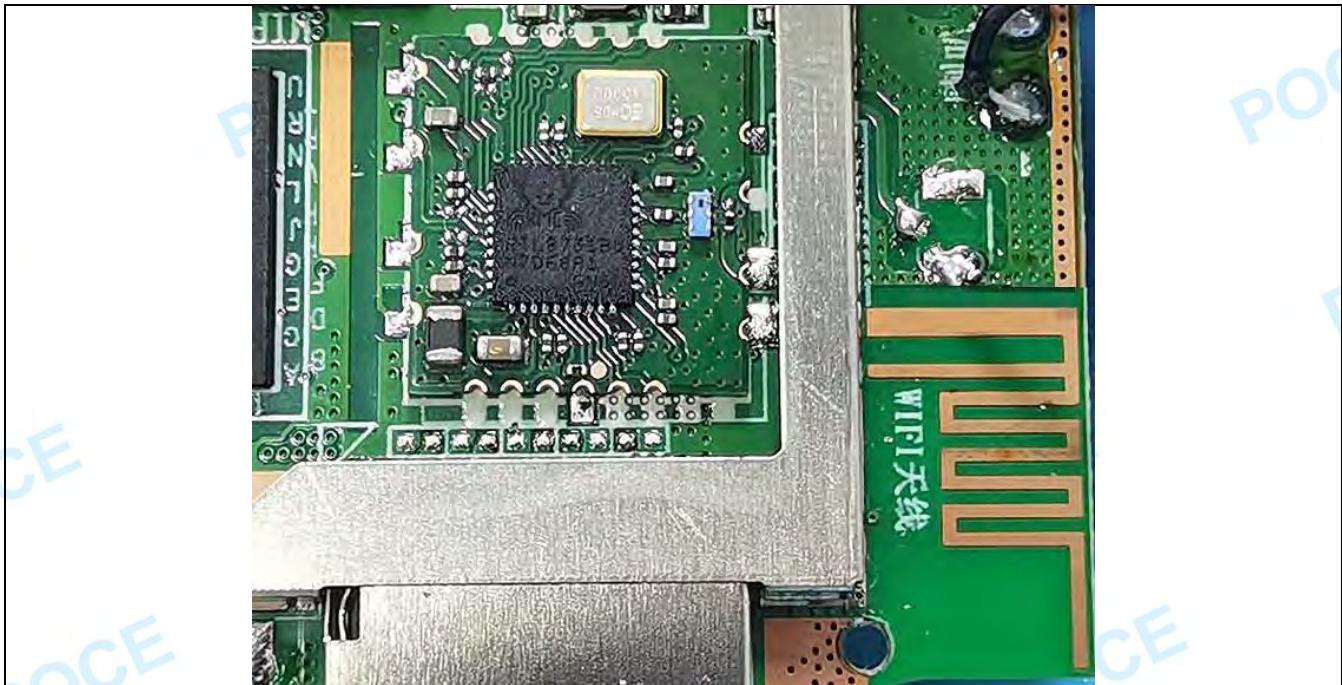
**Internal**







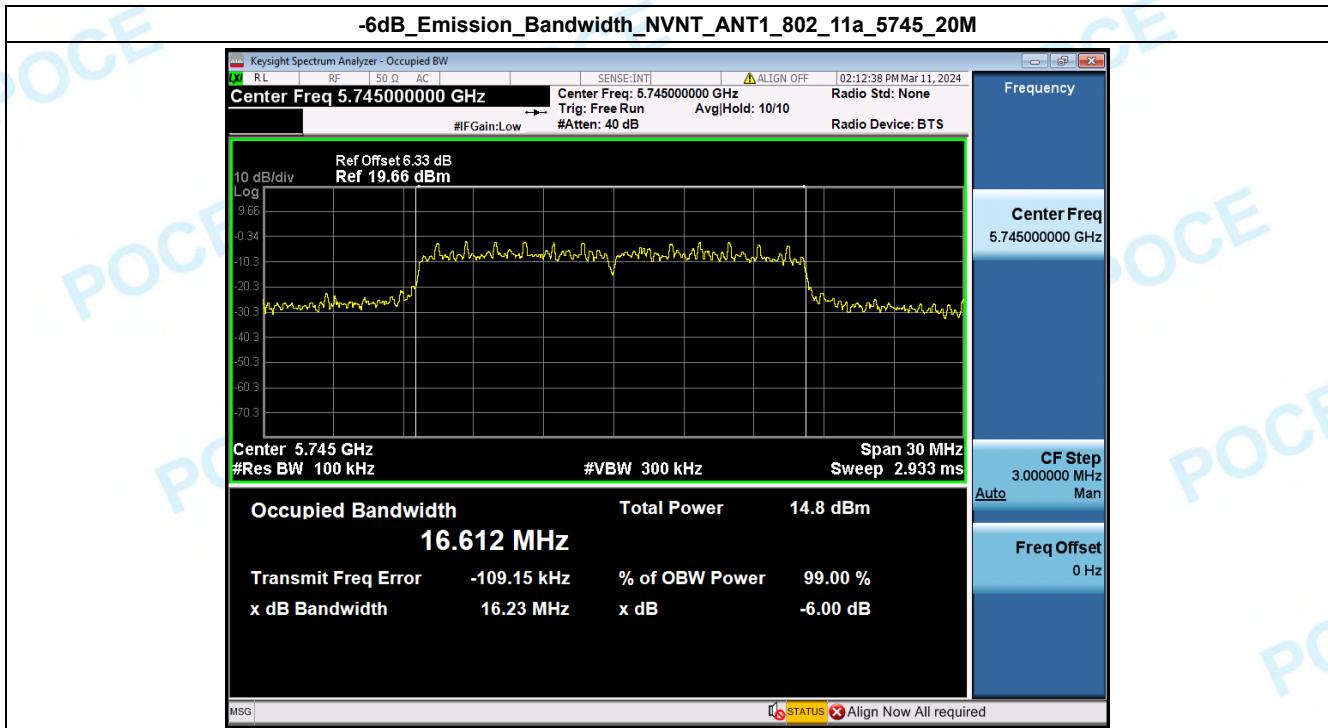


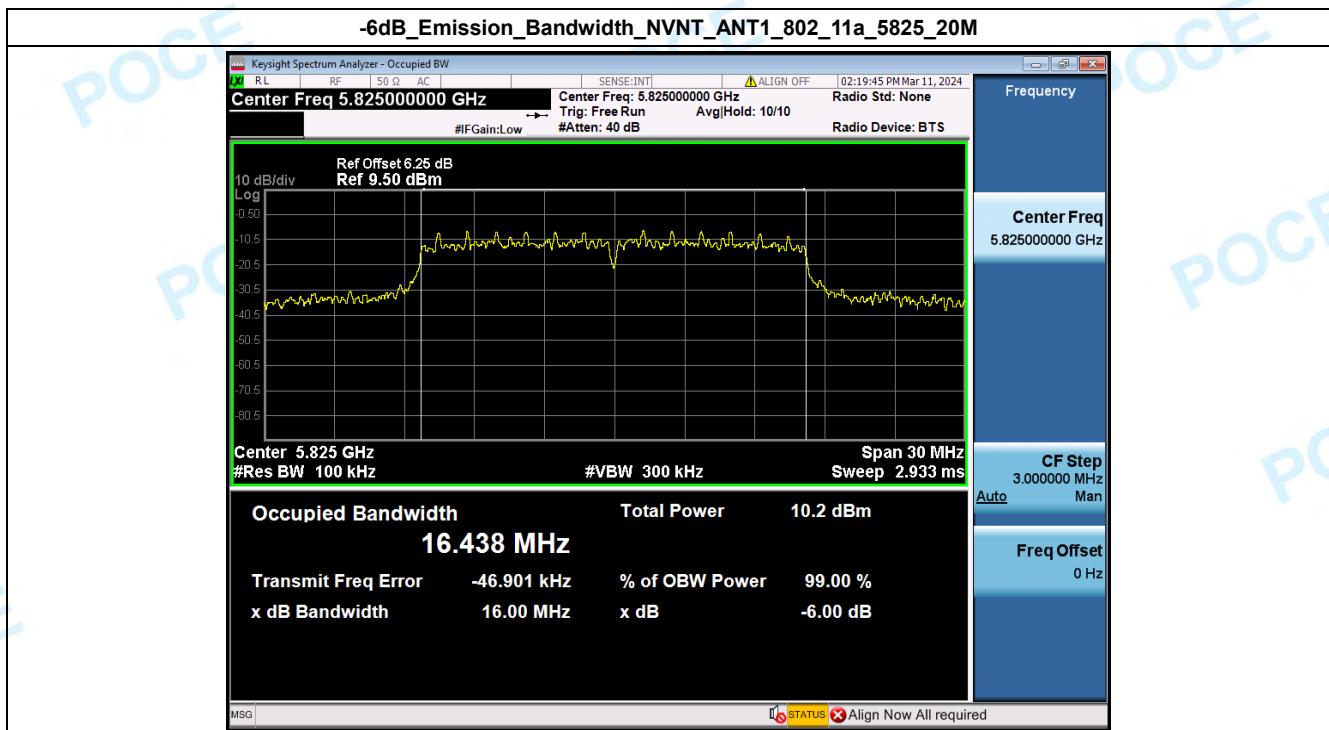
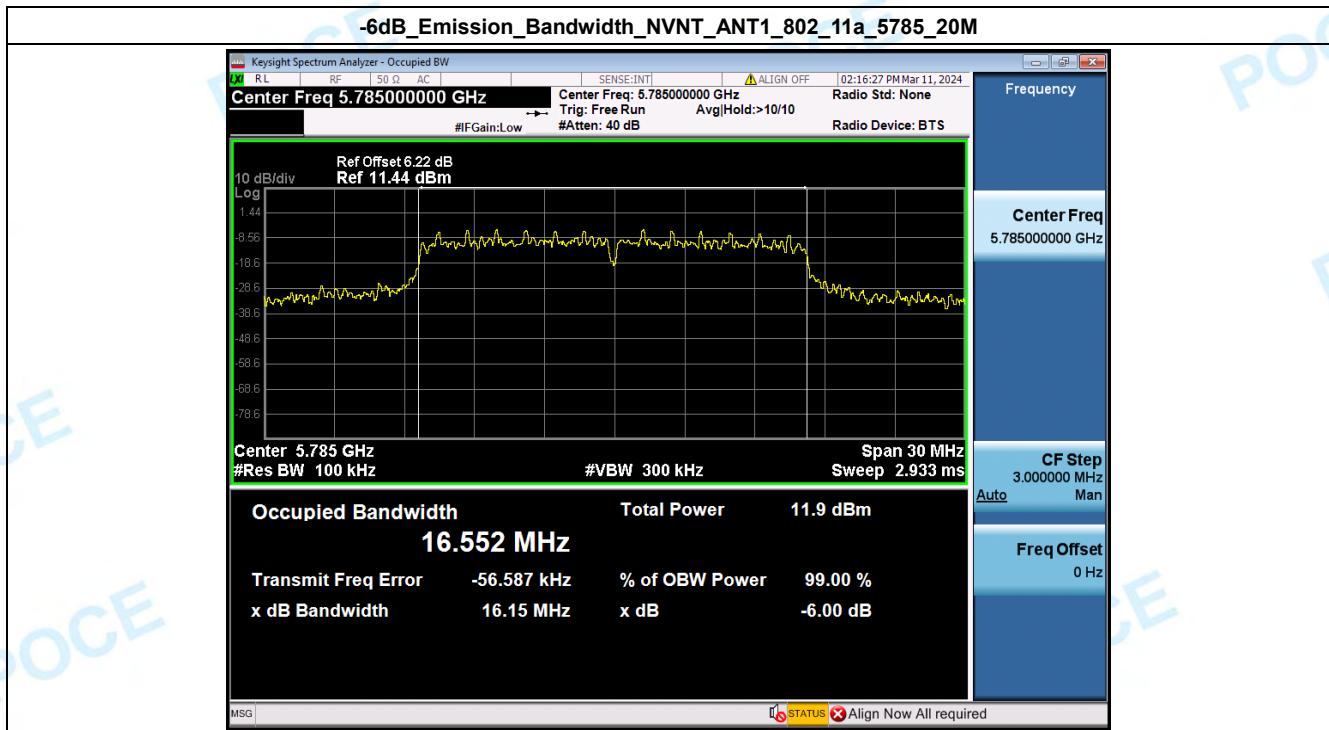


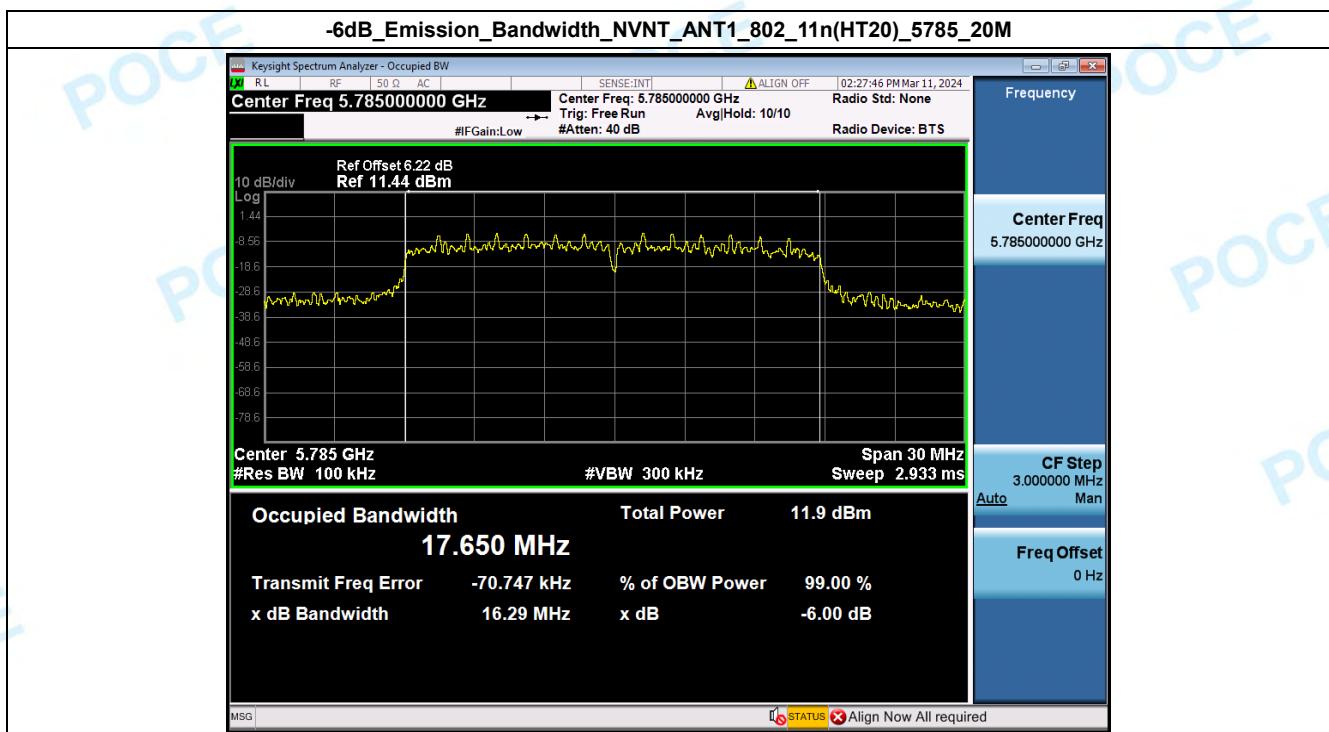
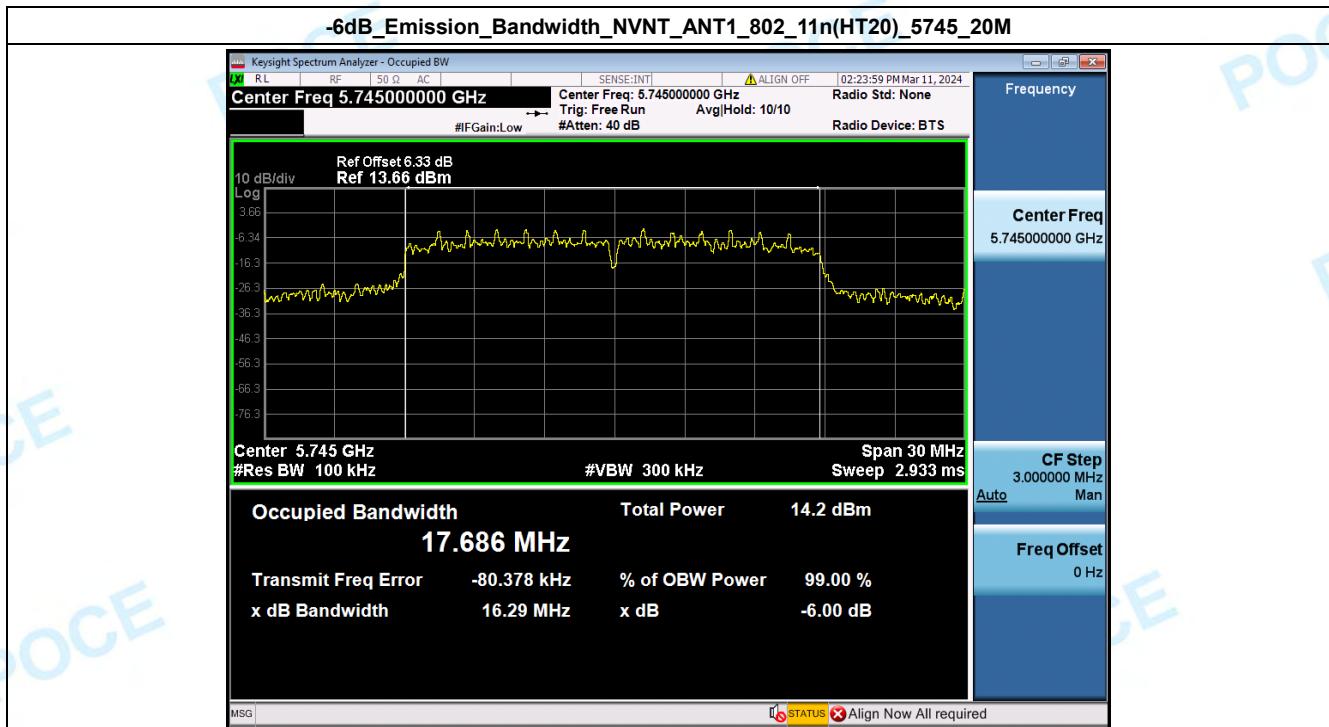
# Appendix

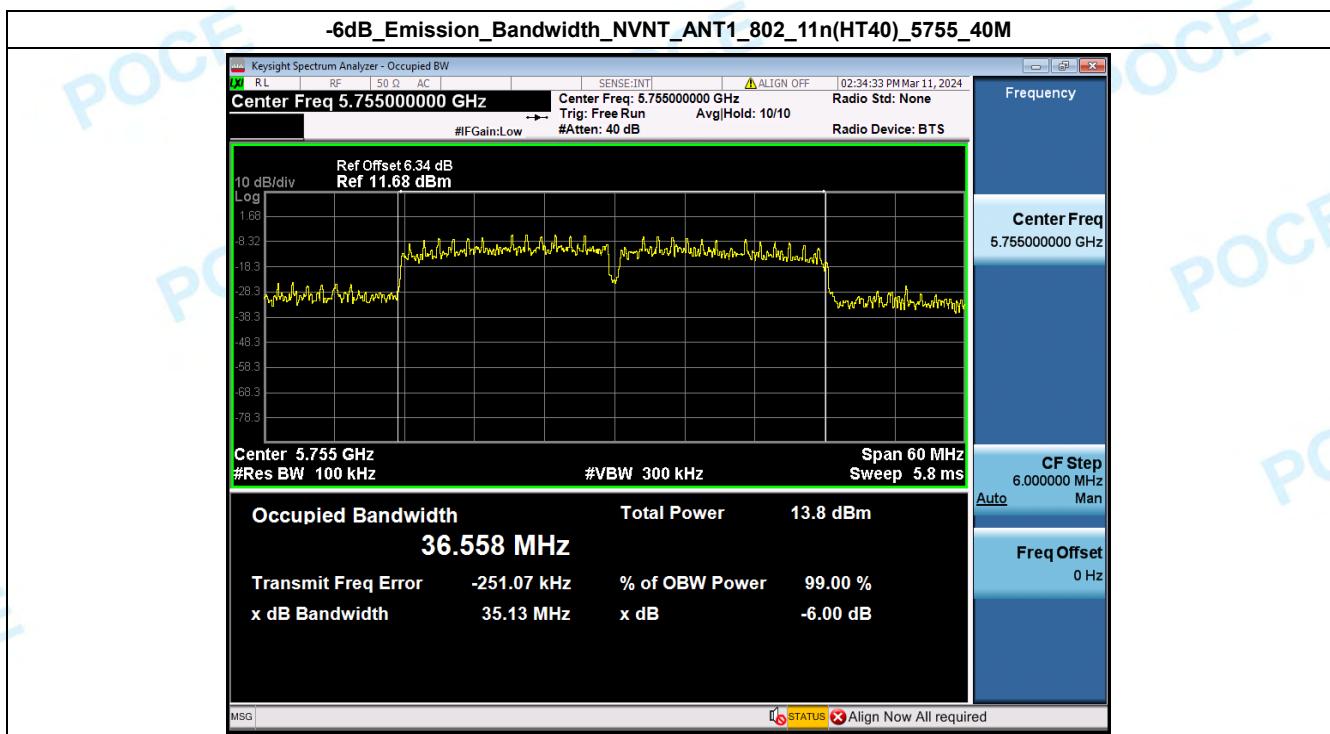
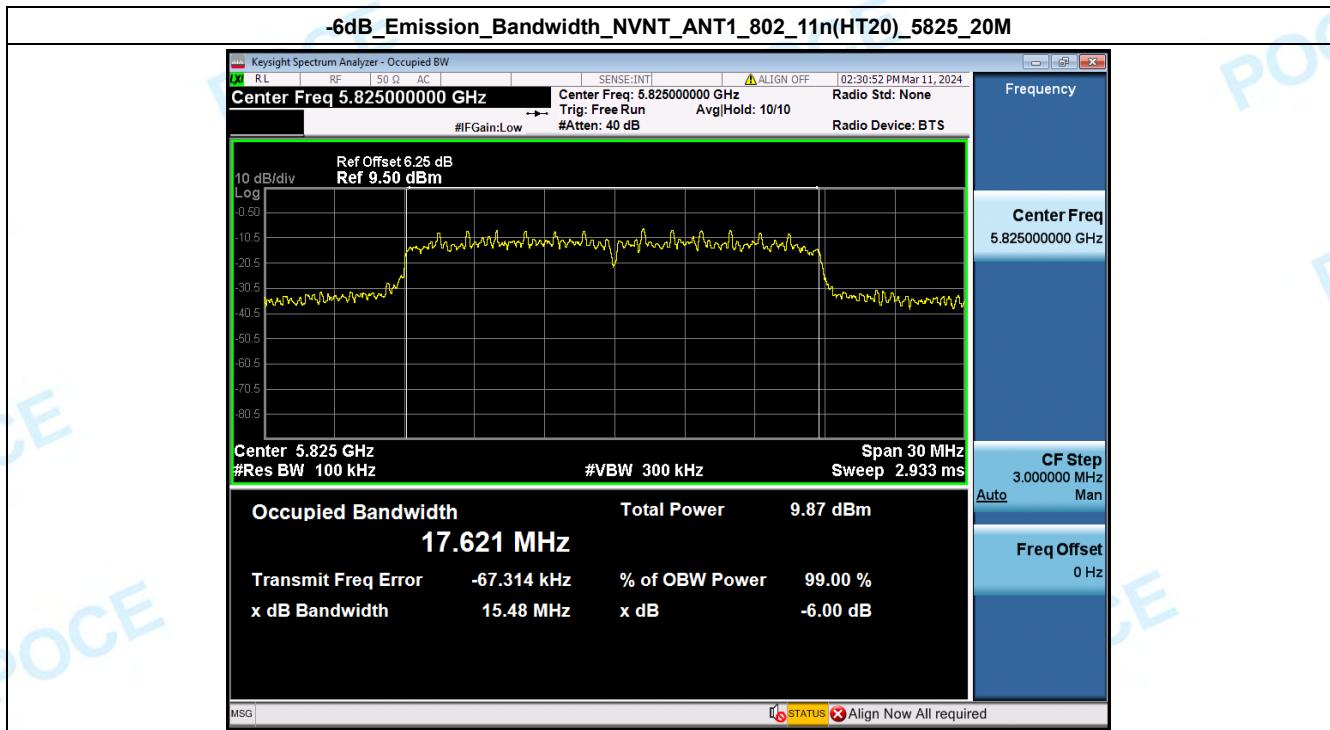
## 1. -6dB Emission Bandwidth

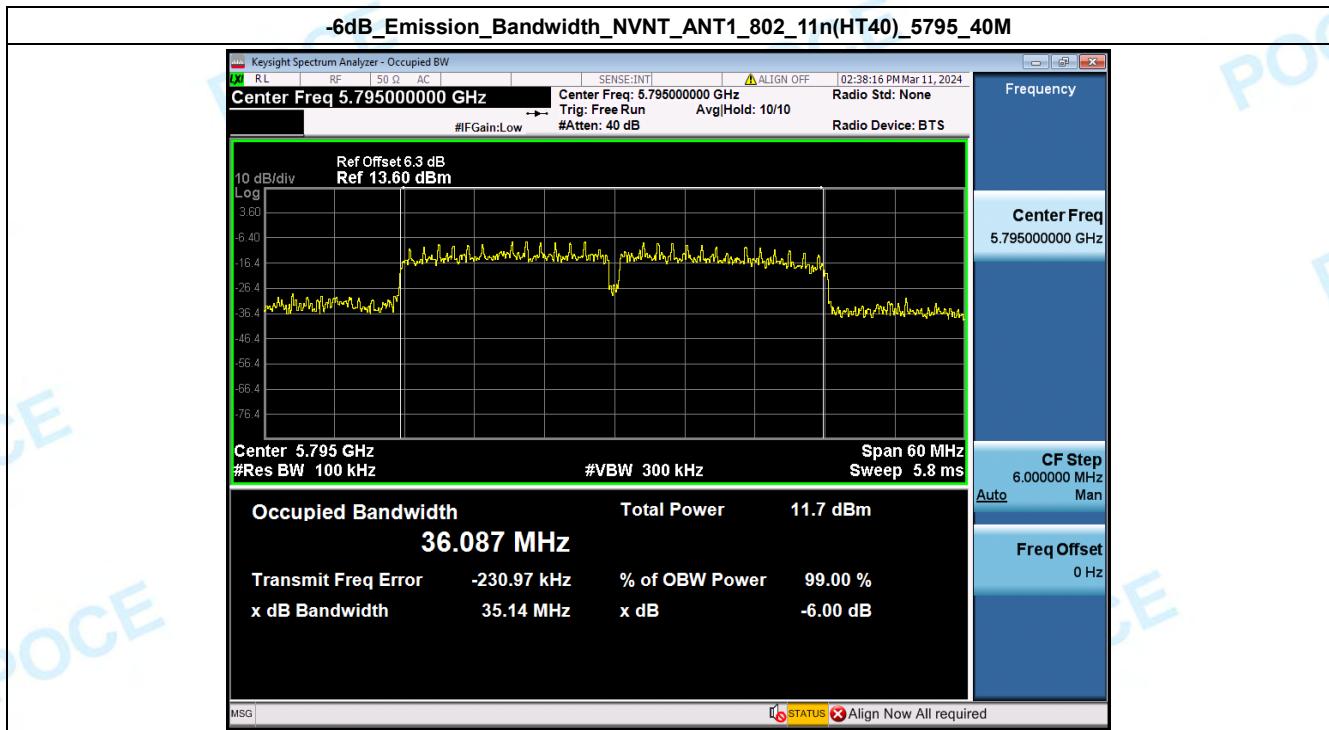
| Condition | Antenna | Mode | Frequency(MHz) | -6dB_Emission_Bandwidth (MHz) | Limit(MHz) | Result |
|-----------|---------|------|----------------|-------------------------------|------------|--------|
| NVNT      | ANT1    | LCH  | 5745.00        | 16.226                        | 0.500      | Pass   |
| NVNT      | ANT1    | MCH  | 5785.00        | 16.155                        | 0.500      | Pass   |
| NVNT      | ANT1    | HCH  | 5825.00        | 16.002                        | 0.500      | Pass   |
| NVNT      | ANT1    | LCH  | 5745.00        | 16.287                        | 0.500      | Pass   |
| NVNT      | ANT1    | MCH  | 5785.00        | 16.293                        | 0.500      | Pass   |
| NVNT      | ANT1    | HCH  | 5825.00        | 15.480                        | 0.500      | Pass   |
| NVNT      | ANT1    | LCH  | 5755.00        | 35.125                        | 0.500      | Pass   |
| NVNT      | ANT1    | HCH  | 5795.00        | 35.144                        | 0.500      | Pass   |





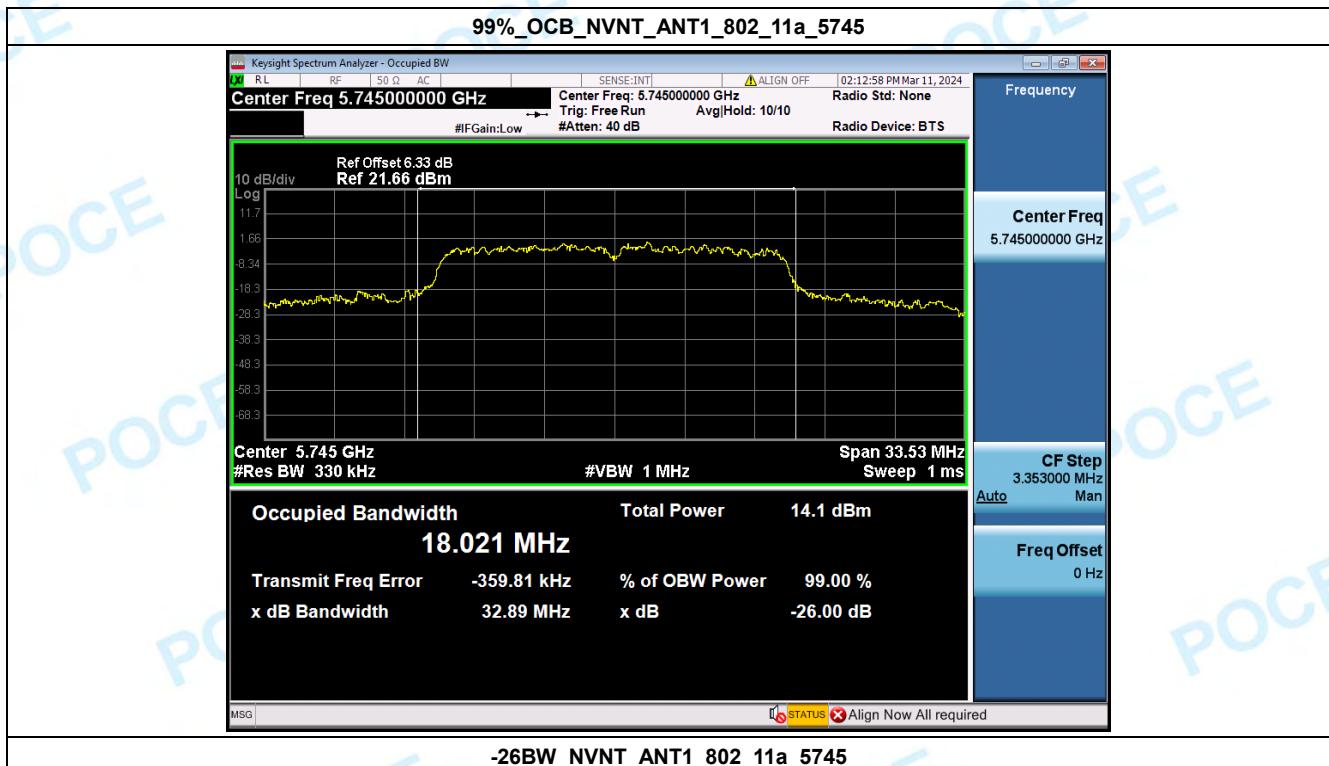


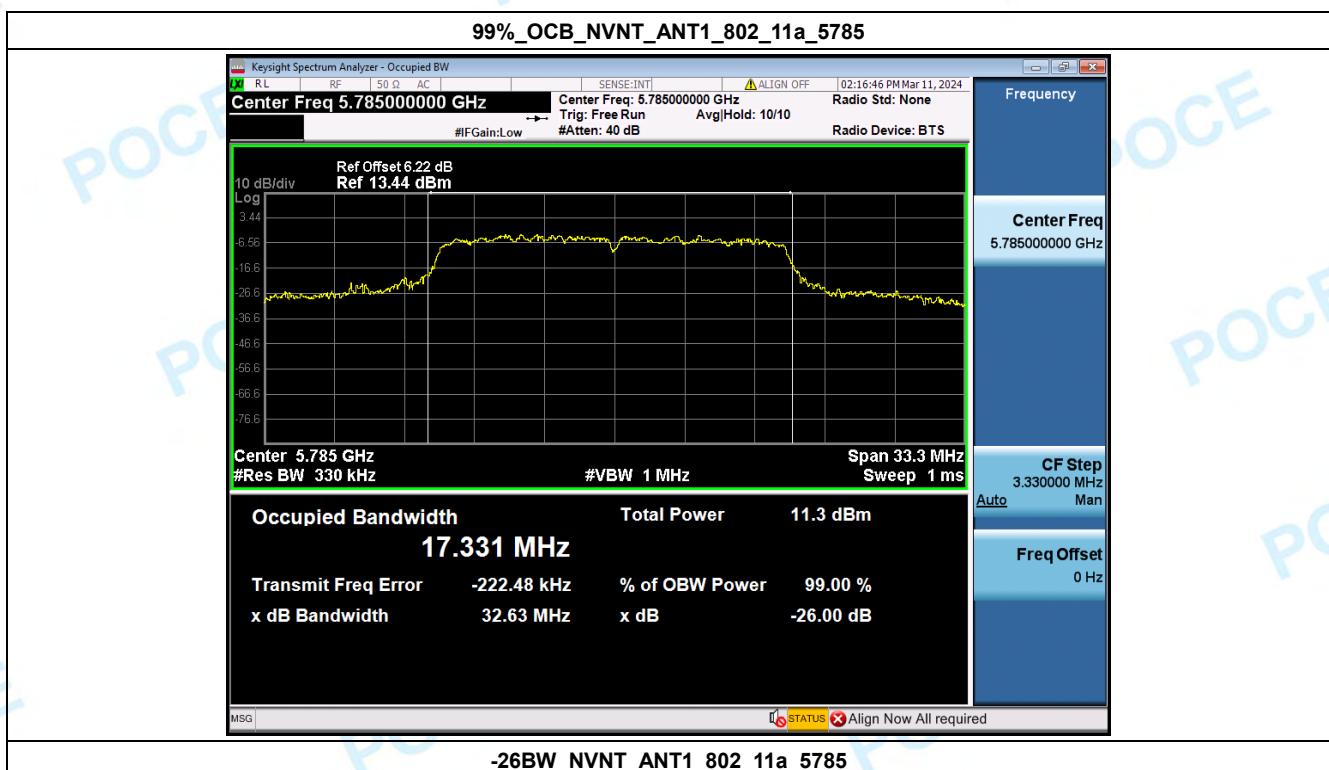
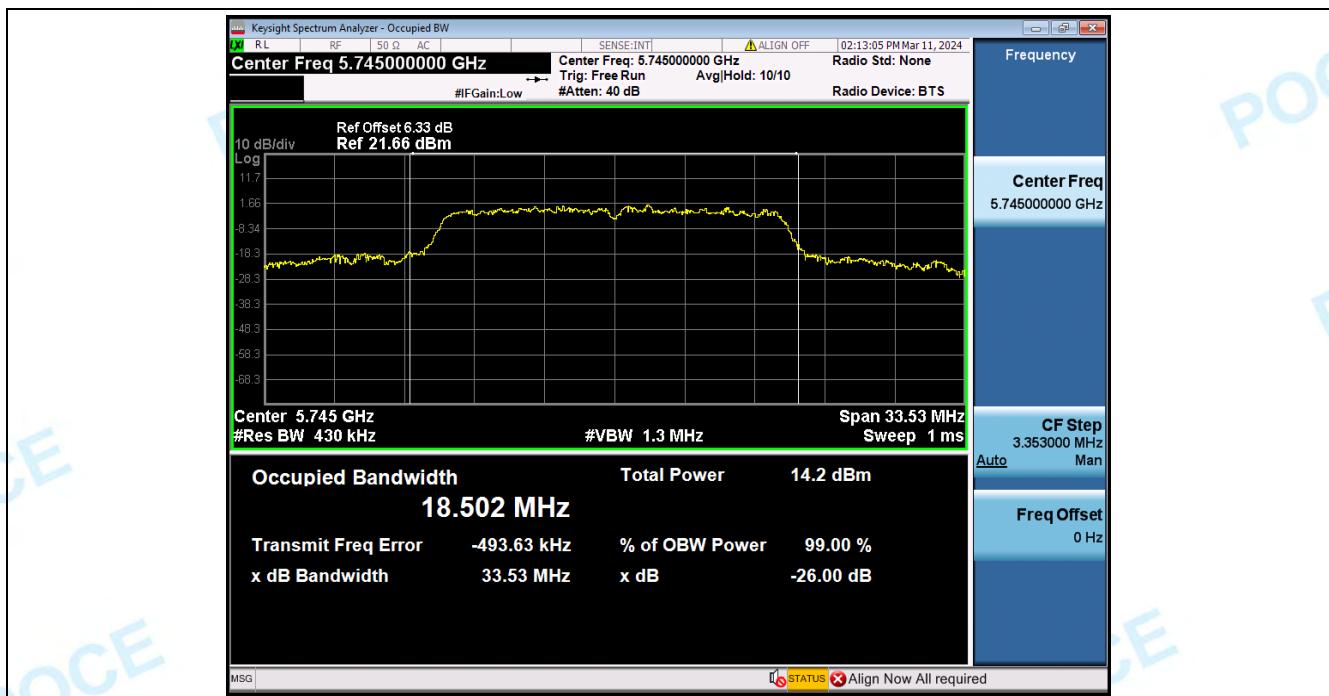


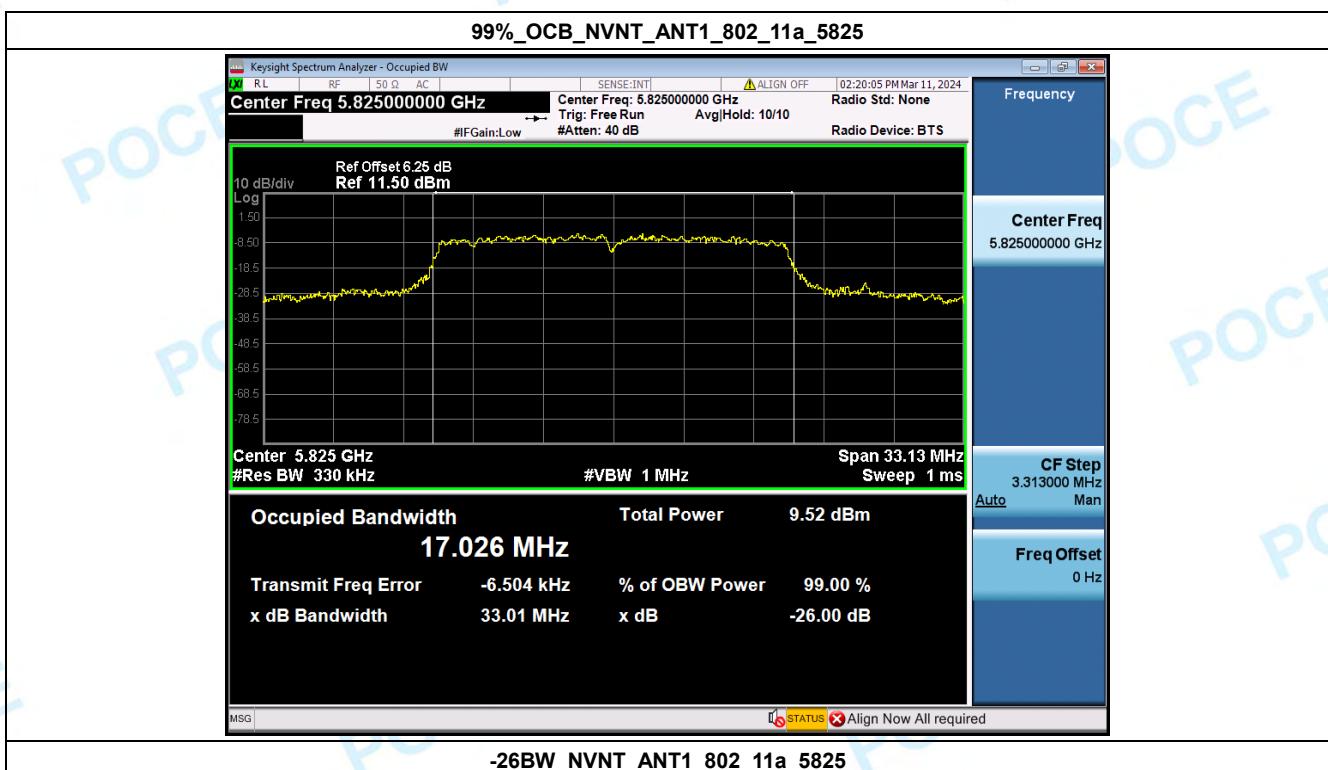
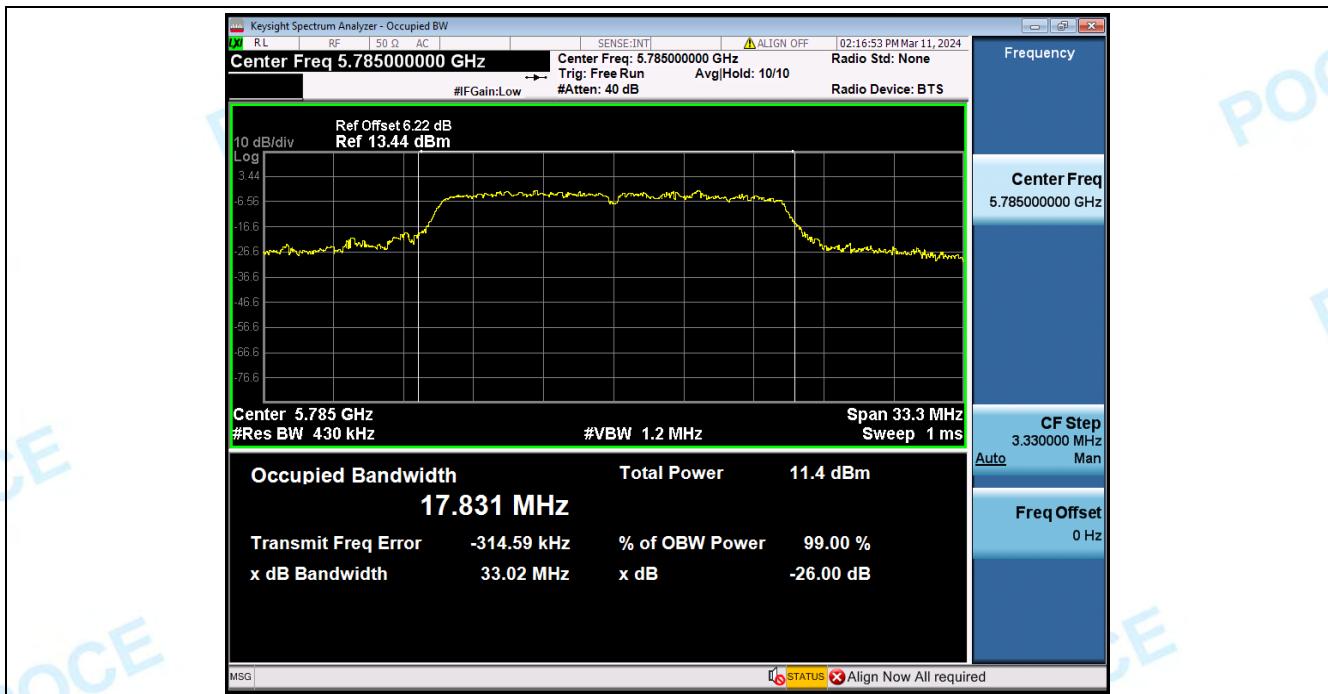


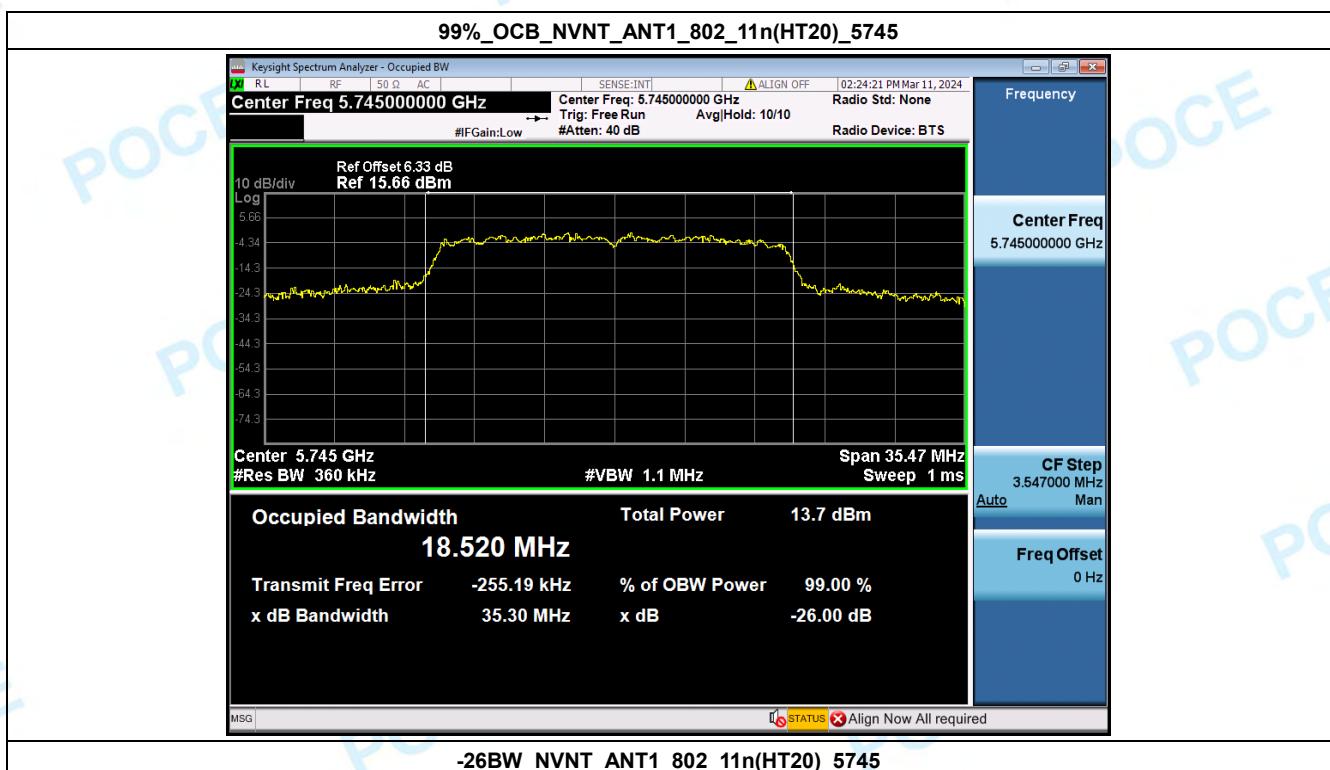
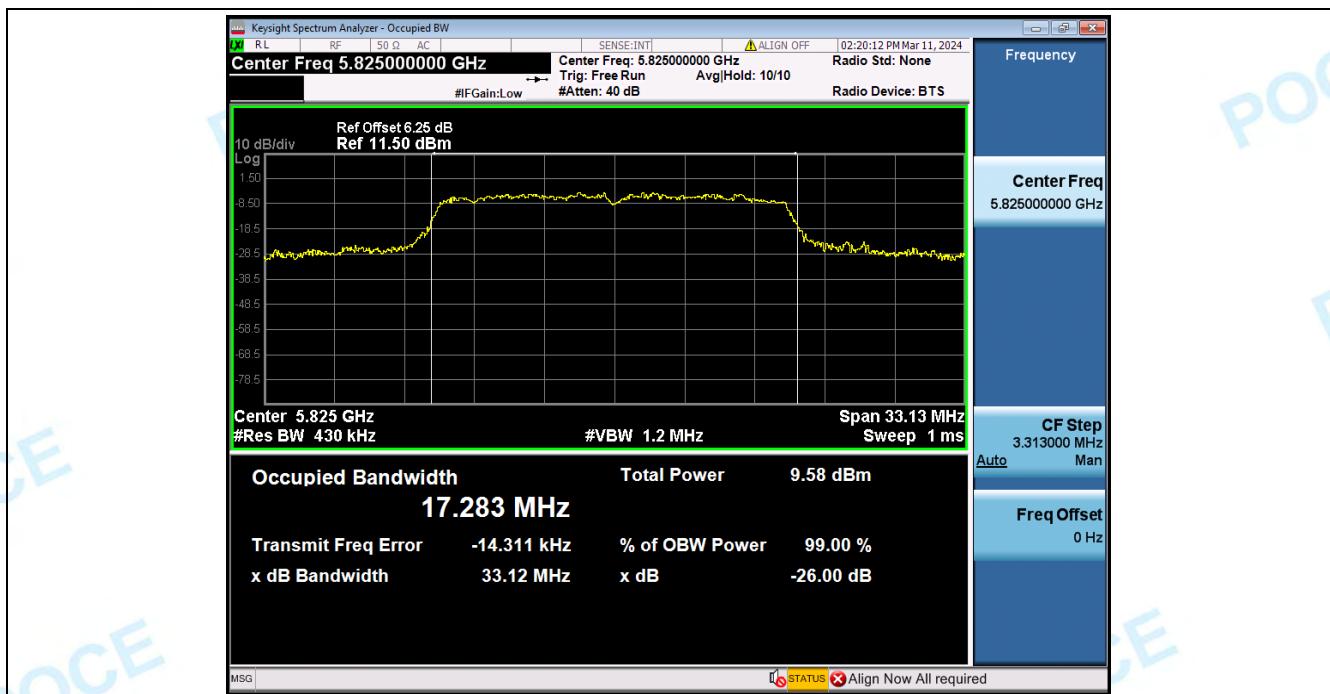
## 2. -26dB and 99% Emission Bandwidth

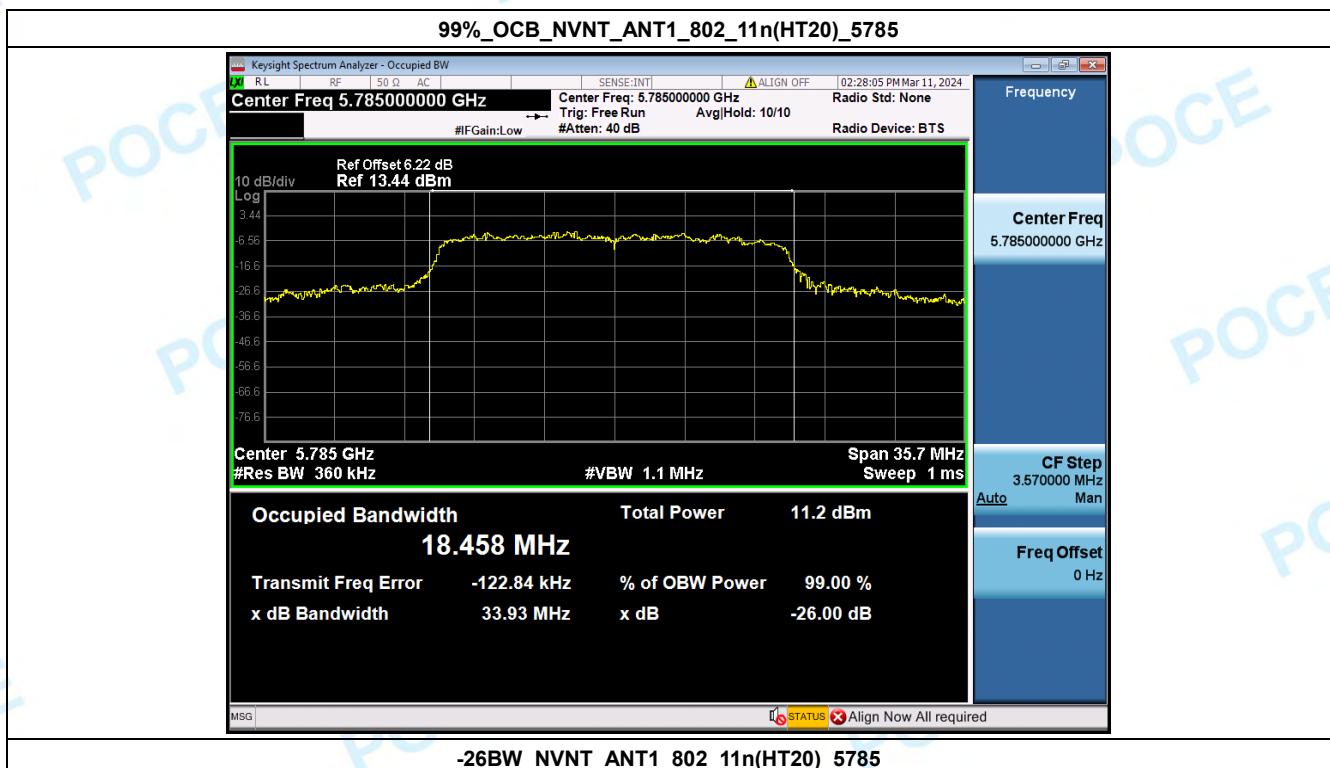
| Condition | Antenna | Modulation    | Frequency(MHz) | -26dB_Emission_Bandwidth(MHz) | Occupied Bandwidth(MHz) |
|-----------|---------|---------------|----------------|-------------------------------|-------------------------|
| NVNT      | ANT1    | 802.11a       | 5745.00        | 33.53                         | 18.02                   |
| NVNT      | ANT1    | 802.11a       | 5785.00        | 33.02                         | 17.33                   |
| NVNT      | ANT1    | 802.11a       | 5825.00        | 33.12                         | 17.03                   |
| NVNT      | ANT1    | 802.11n(HT20) | 5745.00        | 35.44                         | 18.52                   |
| NVNT      | ANT1    | 802.11n(HT20) | 5785.00        | 35.33                         | 18.46                   |
| NVNT      | ANT1    | 802.11n(HT20) | 5825.00        | 34.22                         | 18.06                   |
| NVNT      | ANT1    | 802.11n(HT40) | 5755.00        | 72.32                         | 44.49                   |
| NVNT      | ANT1    | 802.11n(HT40) | 5795.00        | 71.87                         | 41.43                   |

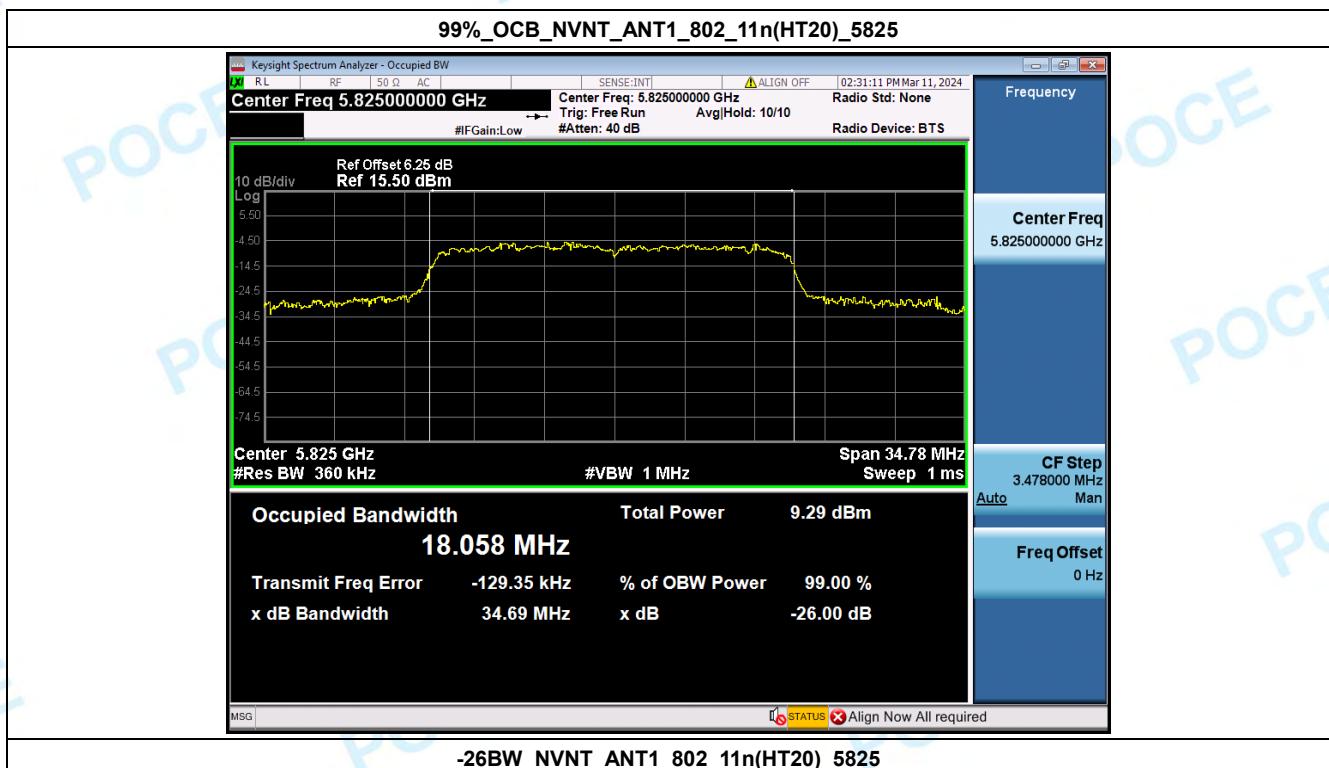
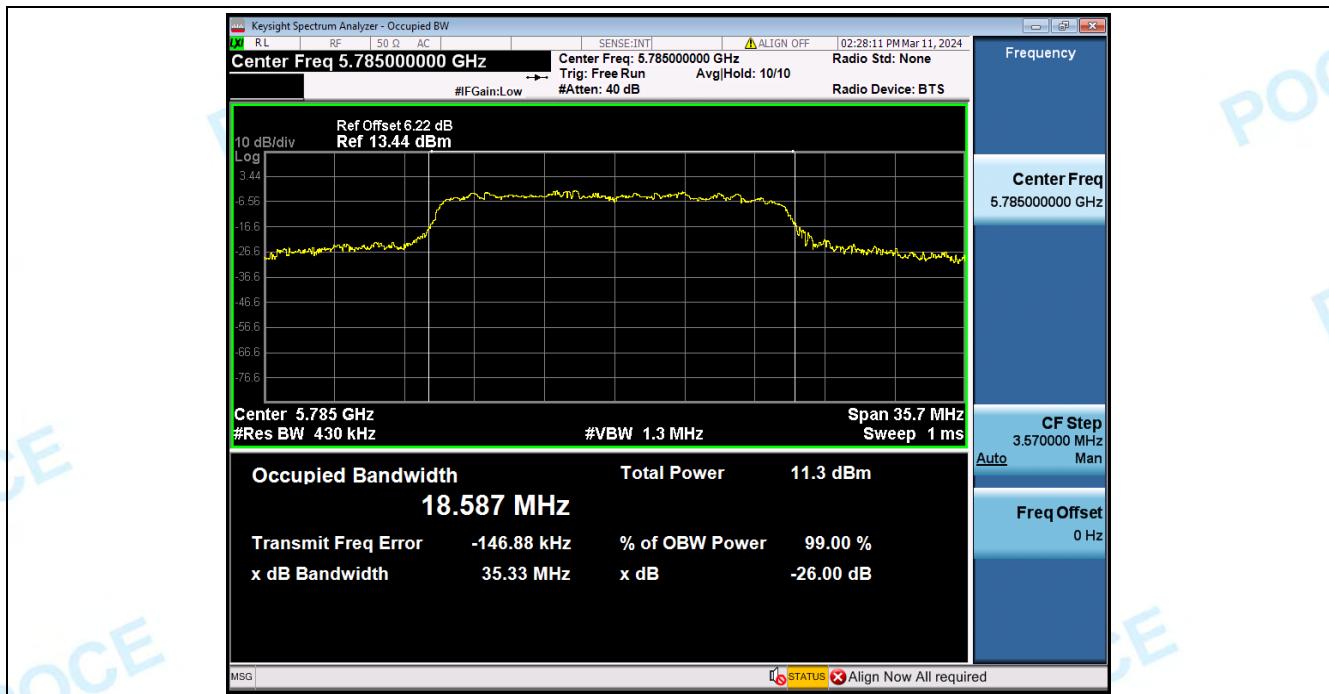


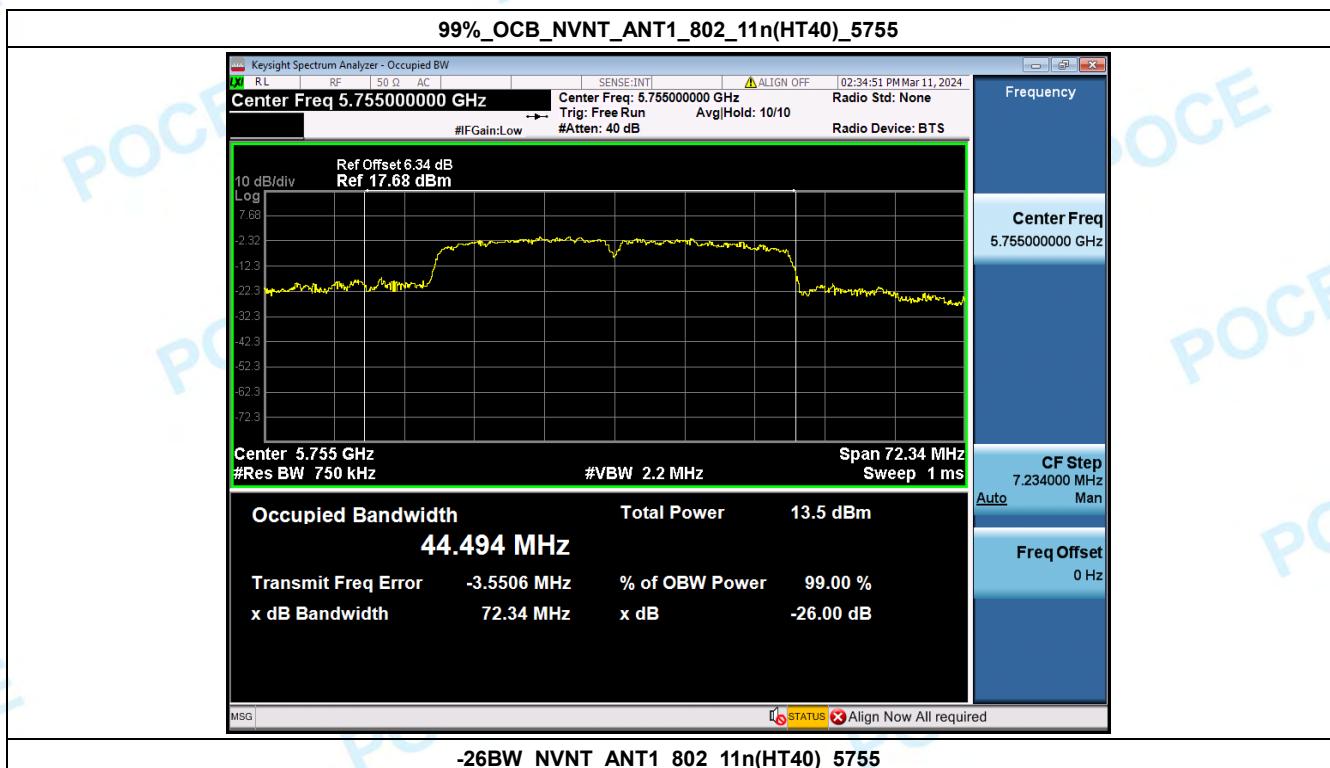
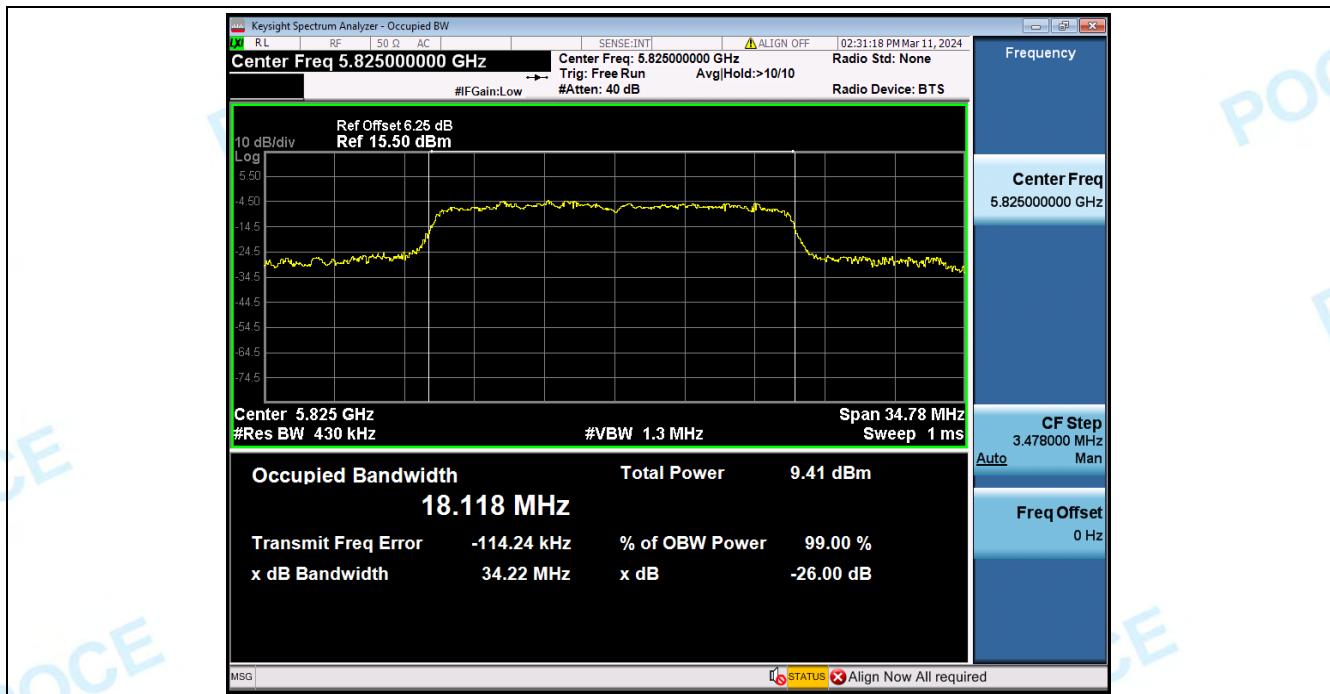


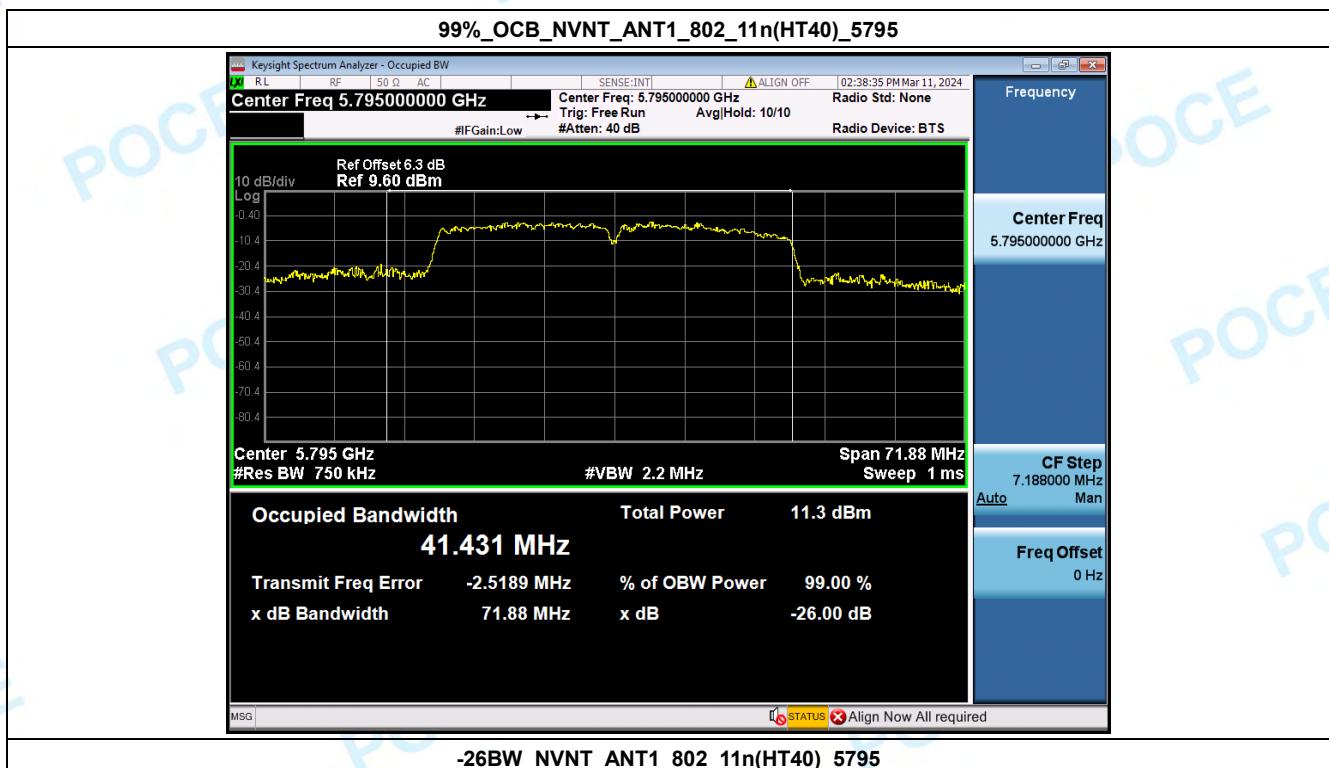
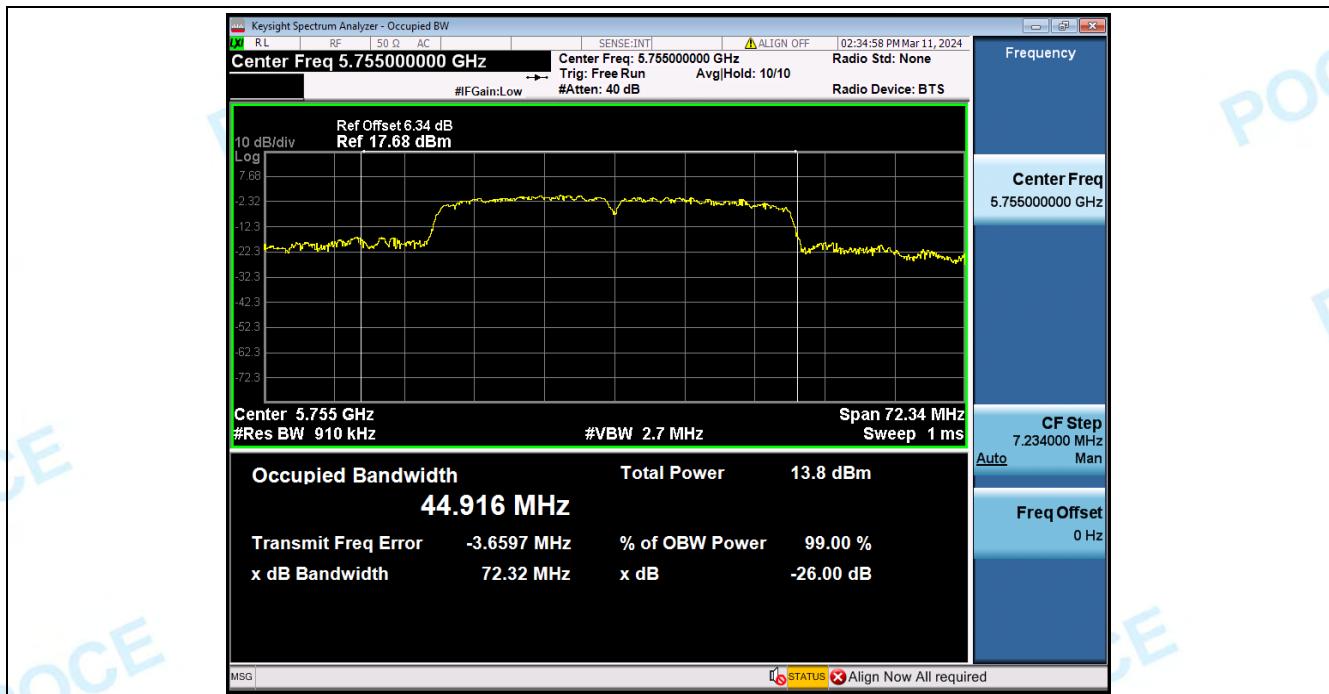


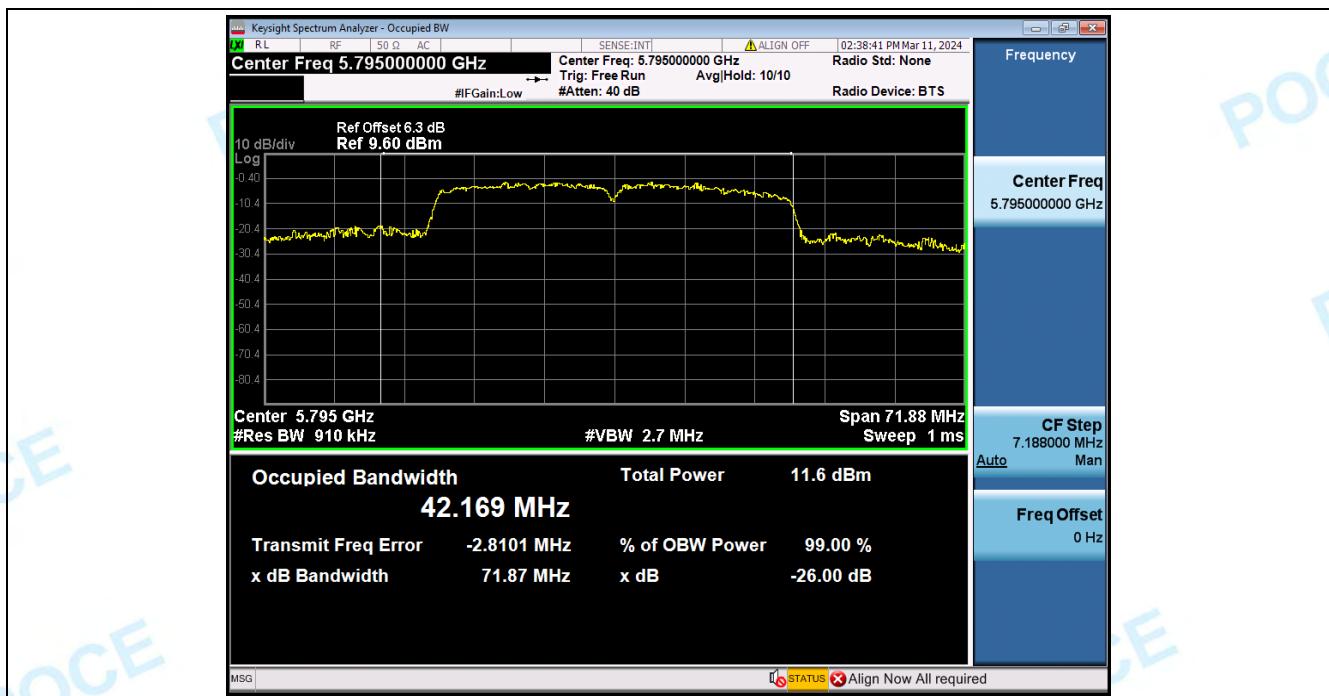






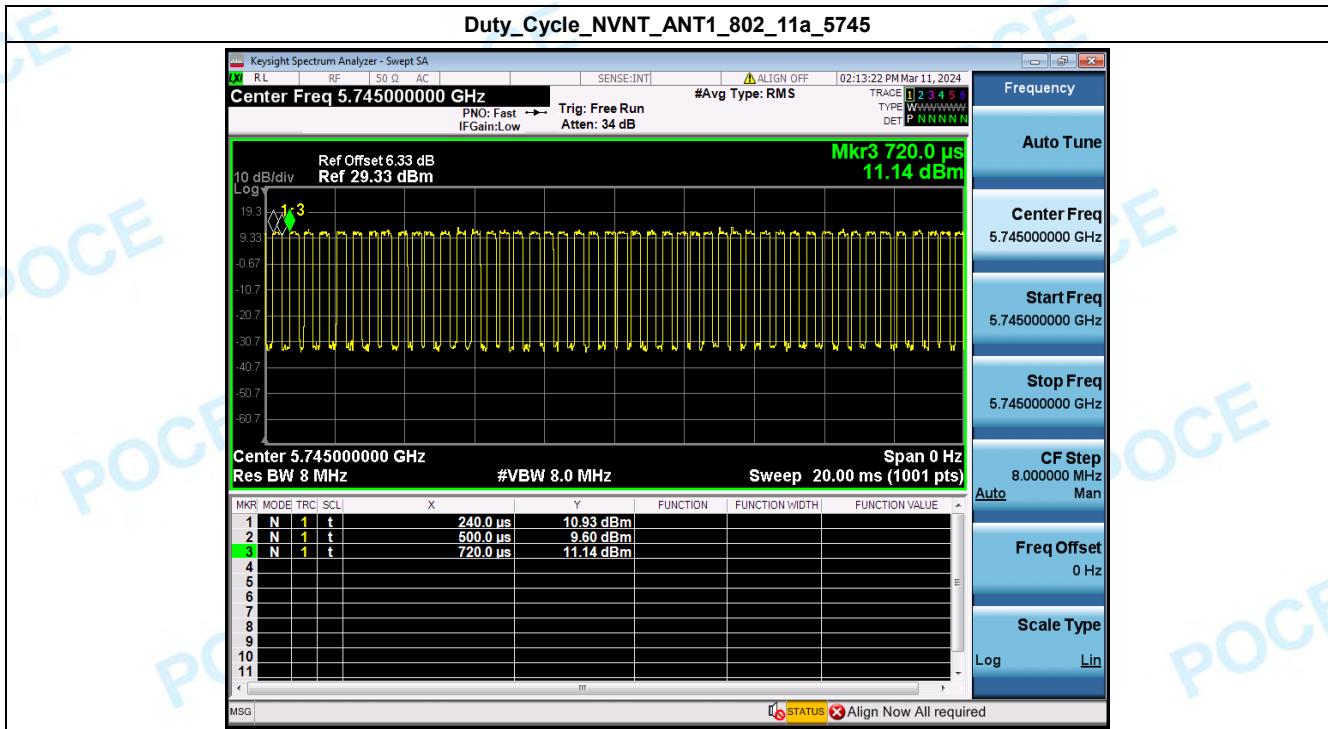




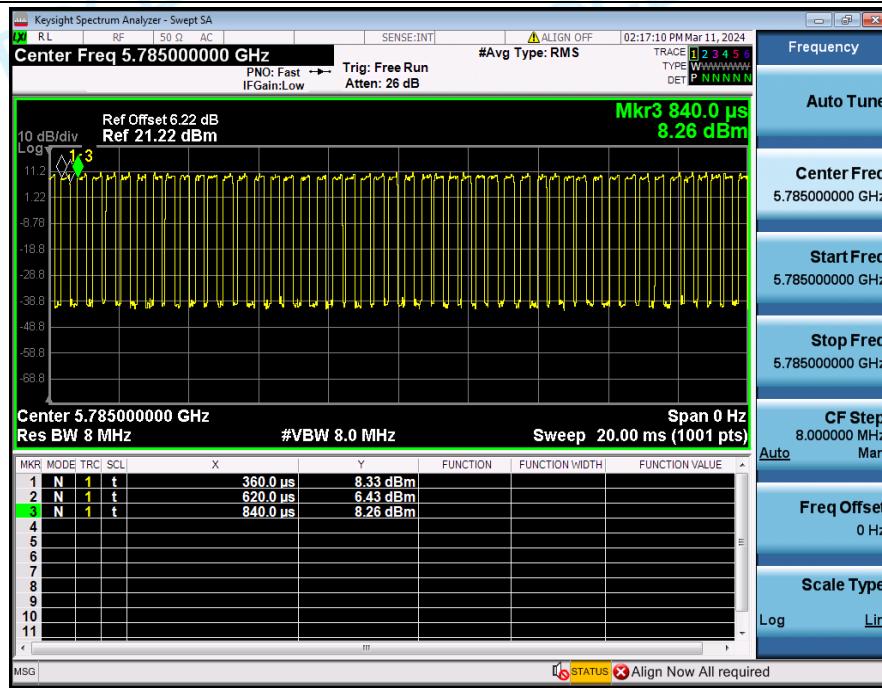


### 3. Duty Cycle

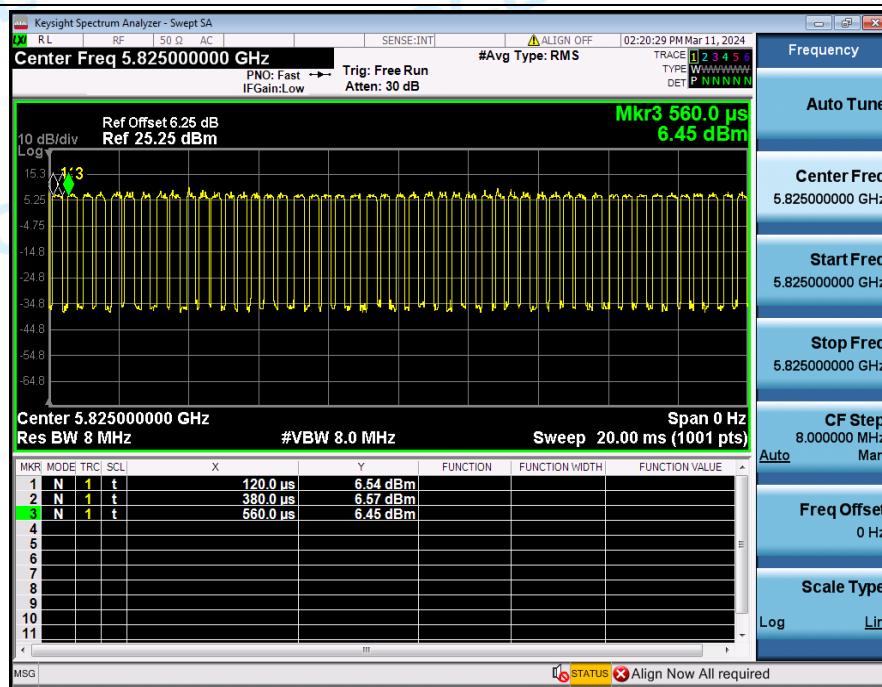
| Condition | Antenna | Modulation    | Frequency (MHz) | Duty cycle(%) | Duty_factor |
|-----------|---------|---------------|-----------------|---------------|-------------|
| NVNT      | ANT1    | 802.11a       | 5745.00         | 54.17         | 2.66        |
| NVNT      | ANT1    | 802.11a       | 5785.00         | 54.17         | 2.66        |
| NVNT      | ANT1    | 802.11a       | 5825.00         | 59.09         | 2.28        |
| NVNT      | ANT1    | 802.11n(HT20) | 5745.00         | 47.83         | 3.20        |
| NVNT      | ANT1    | 802.11n(HT20) | 5785.00         | 47.83         | 3.20        |
| NVNT      | ANT1    | 802.11n(HT20) | 5825.00         | 47.83         | 3.20        |
| NVNT      | ANT1    | 802.11n(HT40) | 5755.00         | 40.00         | 3.98        |
| NVNT      | ANT1    | 802.11n(HT40) | 5795.00         | 35.29         | 4.52        |

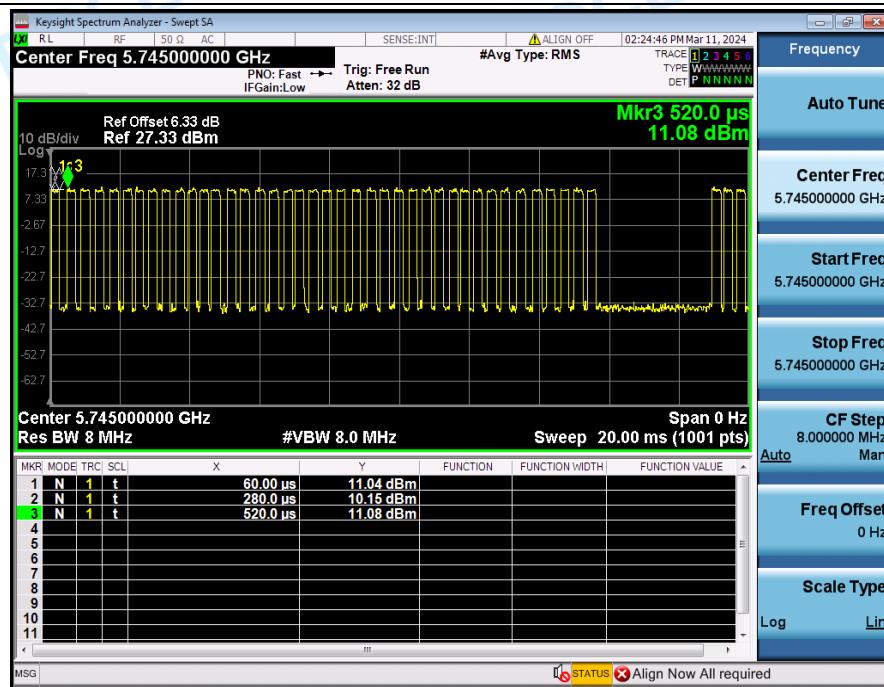
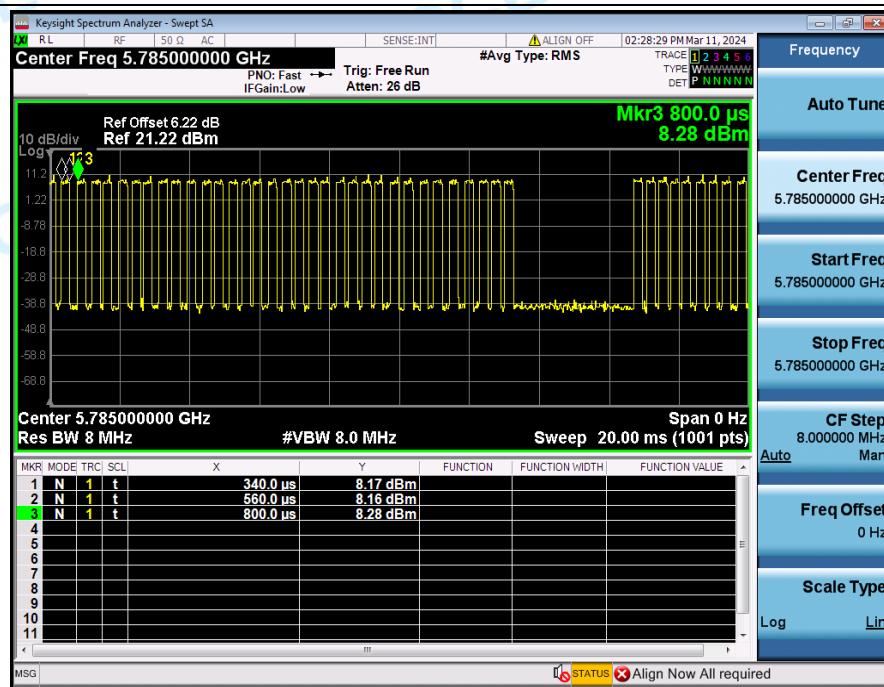


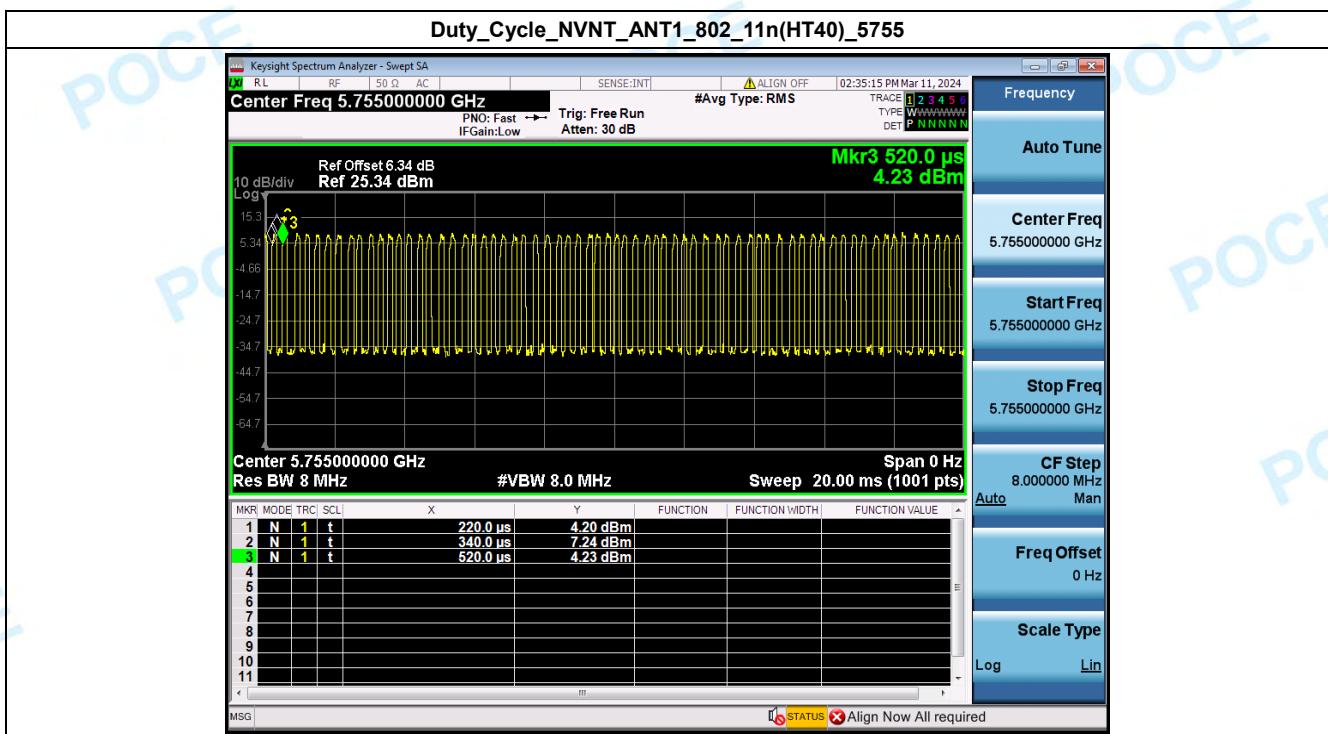
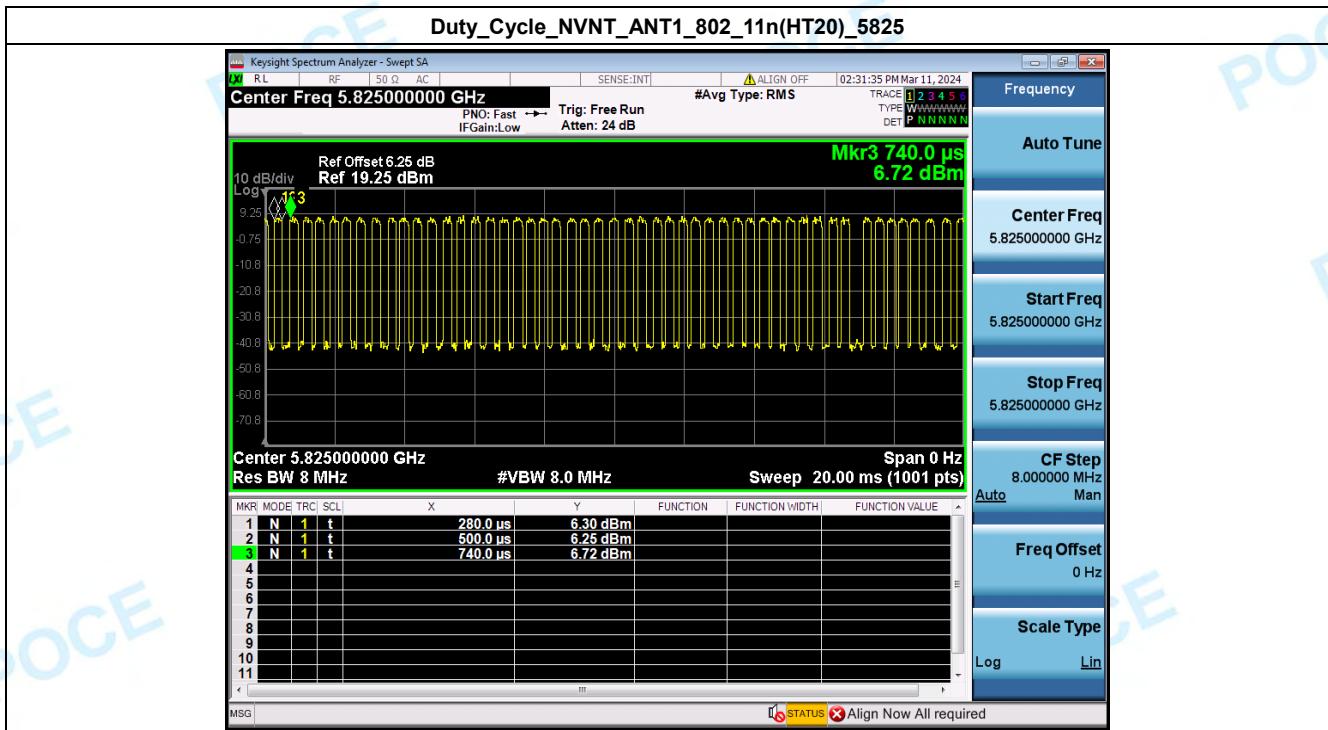
### Duty\_Cycle\_NVNT\_ANT1\_802\_11a\_5785

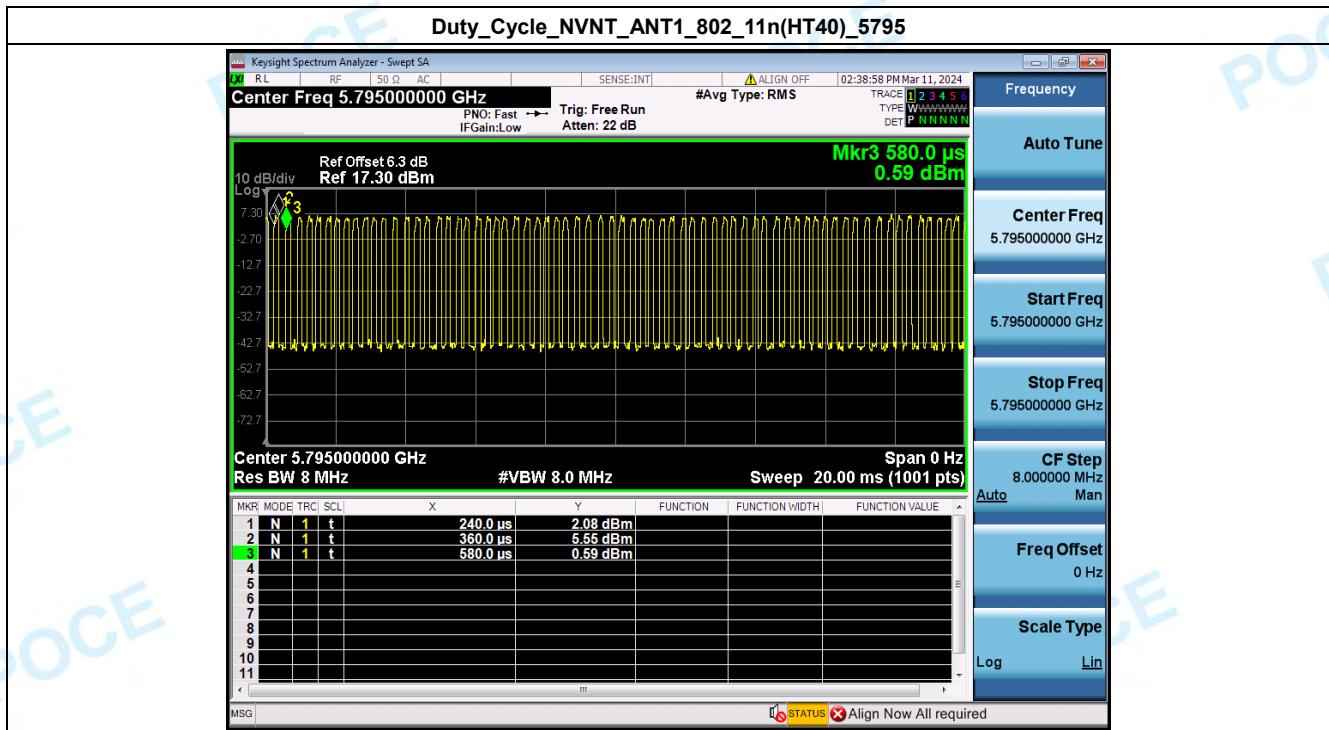


### Duty\_Cycle\_NVNT\_ANT1\_802\_11a\_5825



**Duty\_Cycle\_NVNT\_ANT1\_802\_11n(HT20)\_5745**

**Duty\_Cycle\_NVNT\_ANT1\_802\_11n(HT20)\_5785**






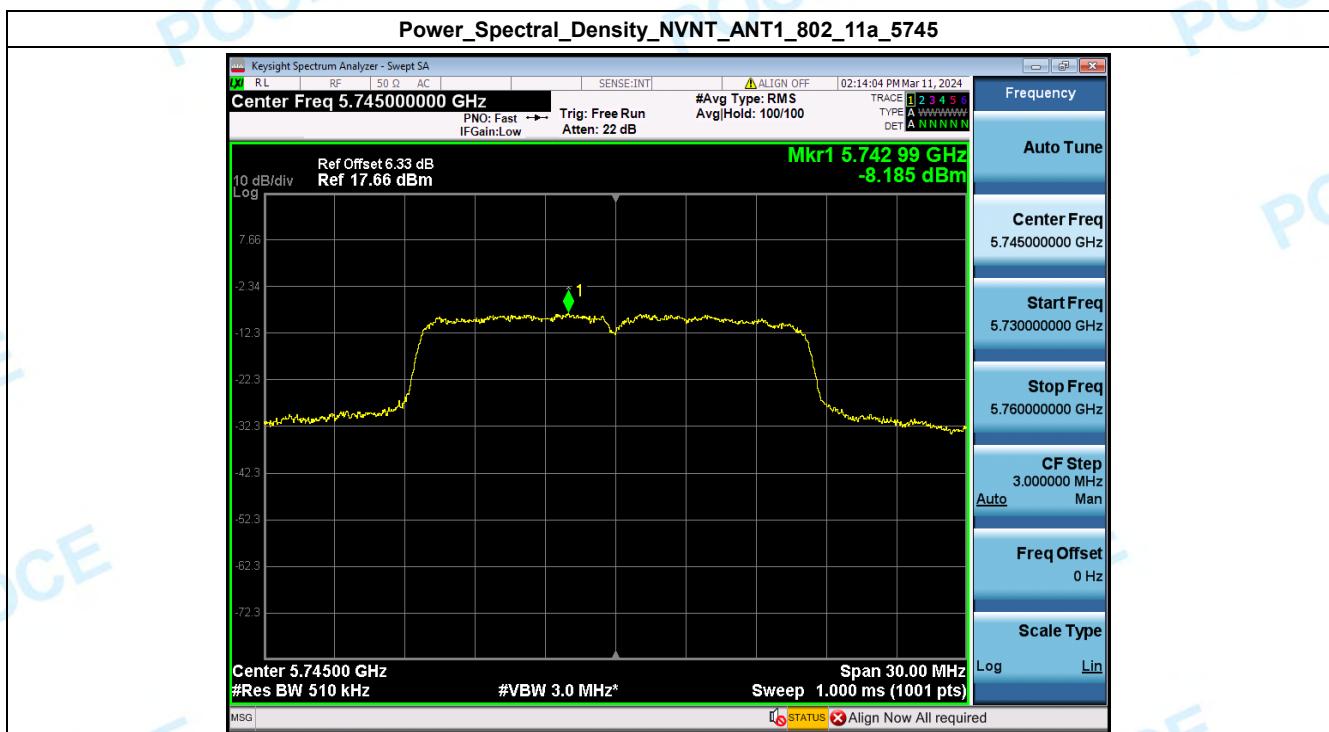
#### 4. Maximum Conducted Output Power

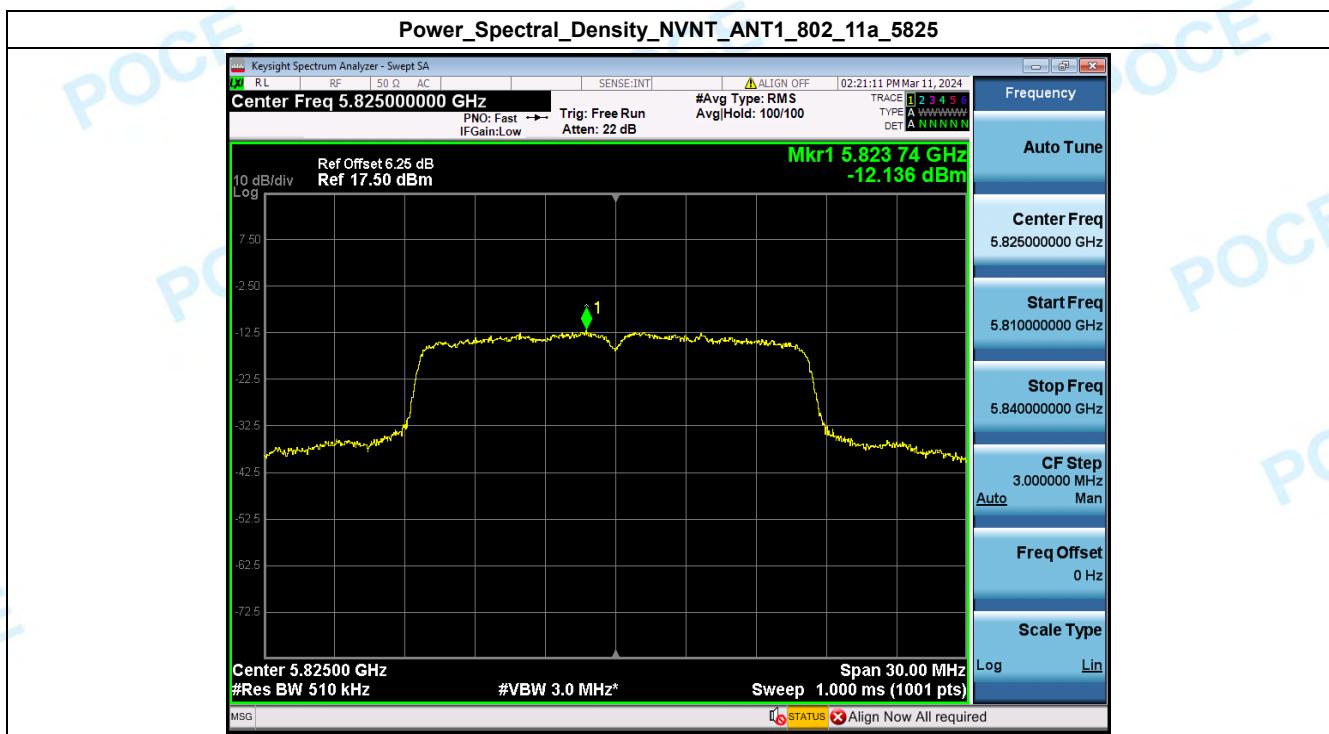
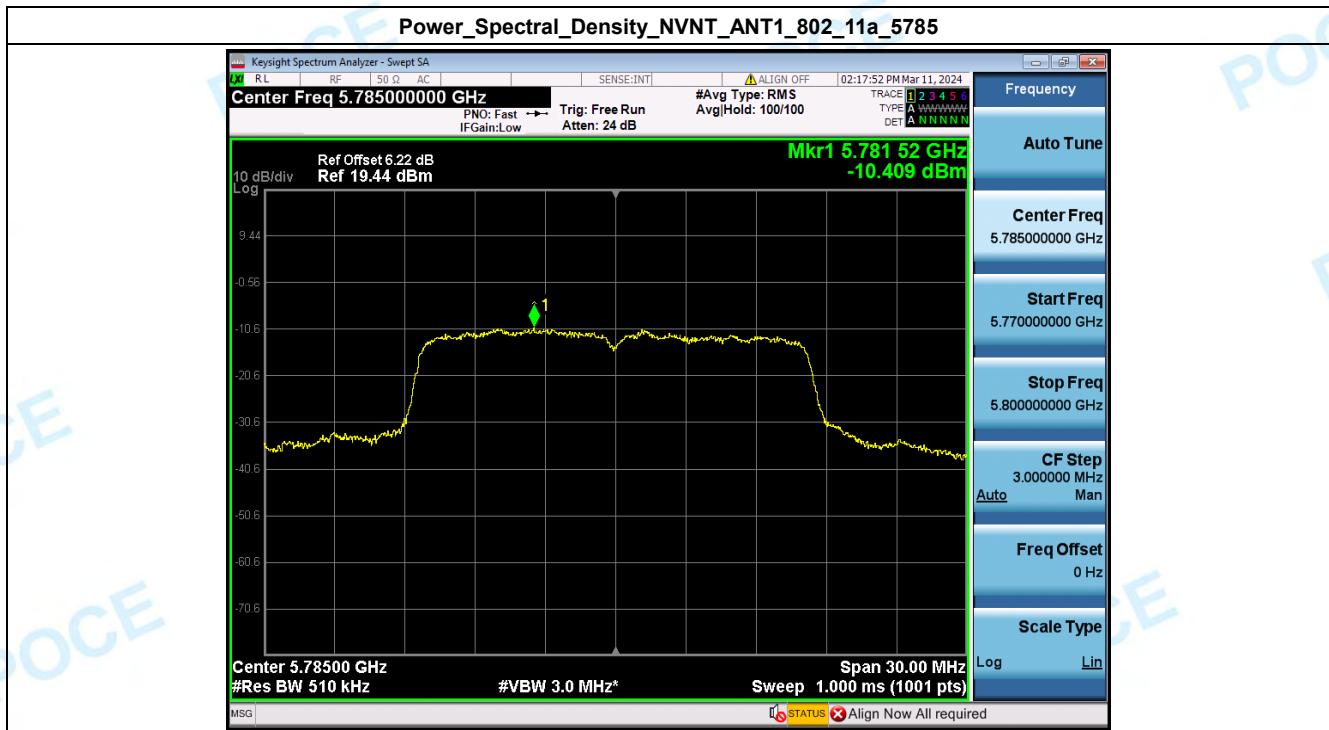
| Condition | Antenna | Modulation    | Frequency (MHz) | Conducted Power(dBm) | Duty factor(dB) | Total Power(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|-----------------|----------------------|-----------------|------------------|------------|--------|
| NVNT      | ANT1    | 802.11a       | 5745.00         | 5.20                 | 2.66            | 7.86             | 30         | Pass   |
| NVNT      | ANT1    | 802.11a       | 5785.00         | 2.42                 | 2.66            | 5.08             | 30         | Pass   |
| NVNT      | ANT1    | 802.11a       | 5825.00         | 0.76                 | 2.28            | 3.04             | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5745.00         | 4.71                 | 3.20            | 7.91             | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5785.00         | 2.18                 | 3.20            | 5.38             | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5825.00         | 0.50                 | 3.20            | 3.70             | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 5755.00         | 3.03                 | 3.98            | 7.01             | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 5795.00         | 0.94                 | 4.52            | 5.46             | 30         | Pass   |

#### 5. Power Spectral Density

| Condition | Antenna | Modulation    | Frequency (MHz) | PSD_SA (dBm/RBW) | Duty factor (dB) | RB factor (dB) | PSD (dBm/500kHz) | Limit (dBm/500kHz) | Result |
|-----------|---------|---------------|-----------------|------------------|------------------|----------------|------------------|--------------------|--------|
| NVNT      | ANT1    | 802.11a       | 5745.00         | -8.185           | 2.66             | -0.086         | -5.611           | 30                 | Pass   |
| NVNT      | ANT1    | 802.11a       | 5785.00         | -10.409          | 2.66             | -0.086         | -7.835           | 30                 | Pass   |
| NVNT      | ANT1    | 802.11a       | 5825.00         | -12.136          | 2.28             | -0.086         | -9.942           | 30                 | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5745.00         | -8.736           | 3.20             | -0.086         | -5.622           | 30                 | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5785.00         | -10.919          | 3.20             | -0.086         | -7.805           | 30                 | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5825.00         | -12.585          | 3.20             | -0.086         | -9.471           | 30                 | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 5755.00         | -12.654          | 3.98             | -0.086         | -8.76            | 30                 | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 5795.00         | -14.597          | 4.52             | -0.086         | -10.163          | 30                 | Pass   |

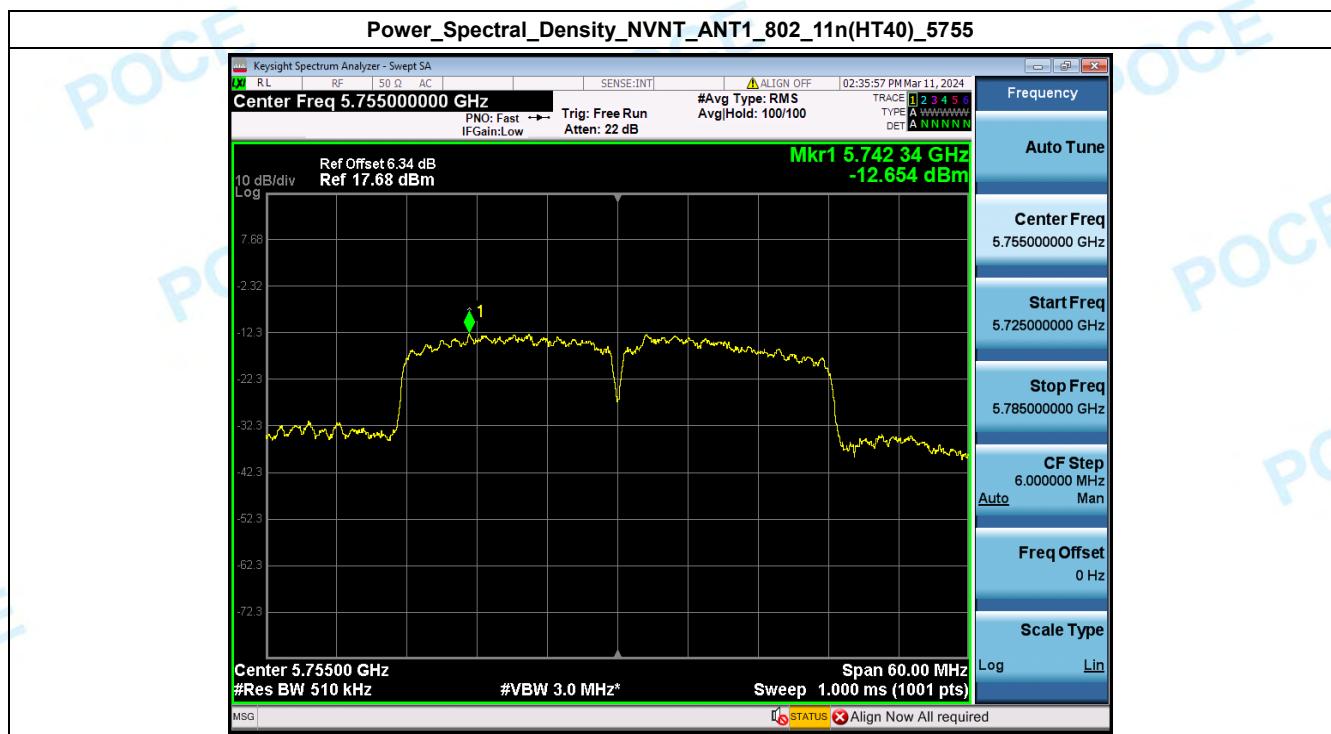
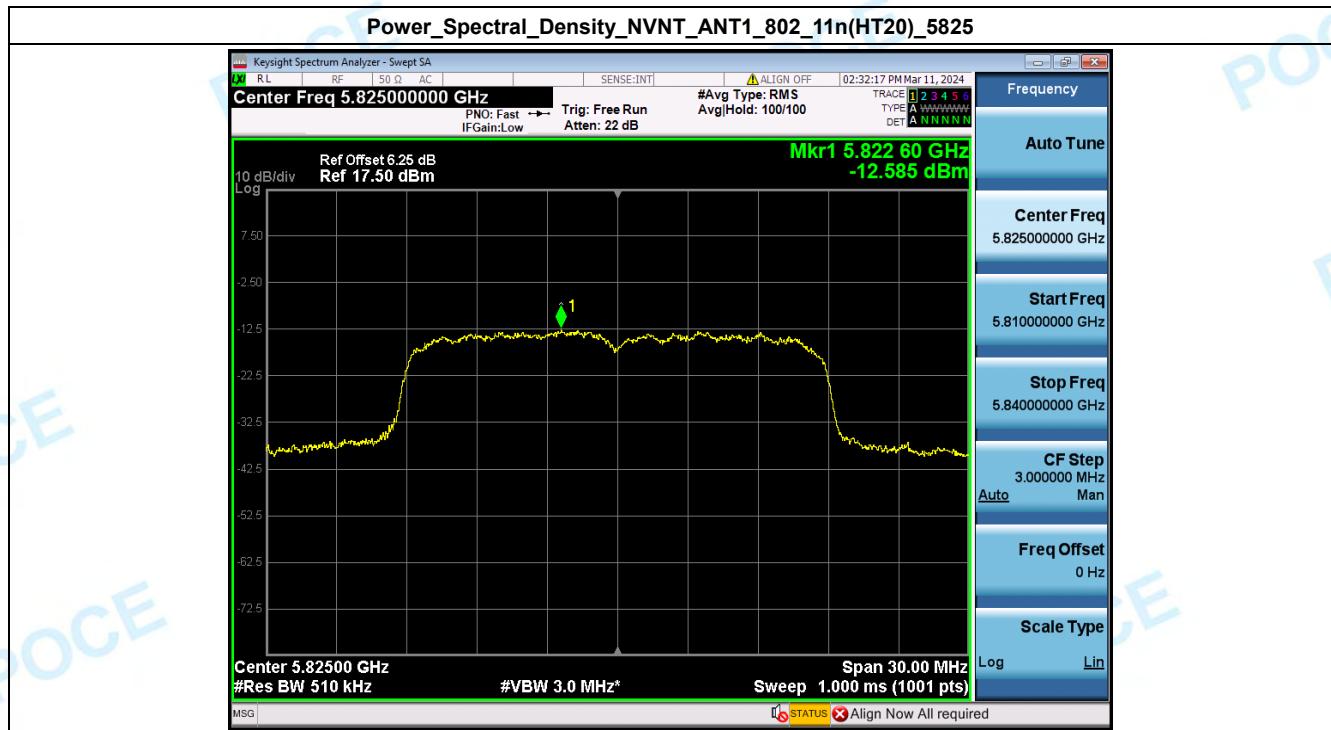
RB factor=10\*log(500/510)=-0.086dB; PSD (dBm/500kHz)= PSD\_SA + Duty factor + RB factor

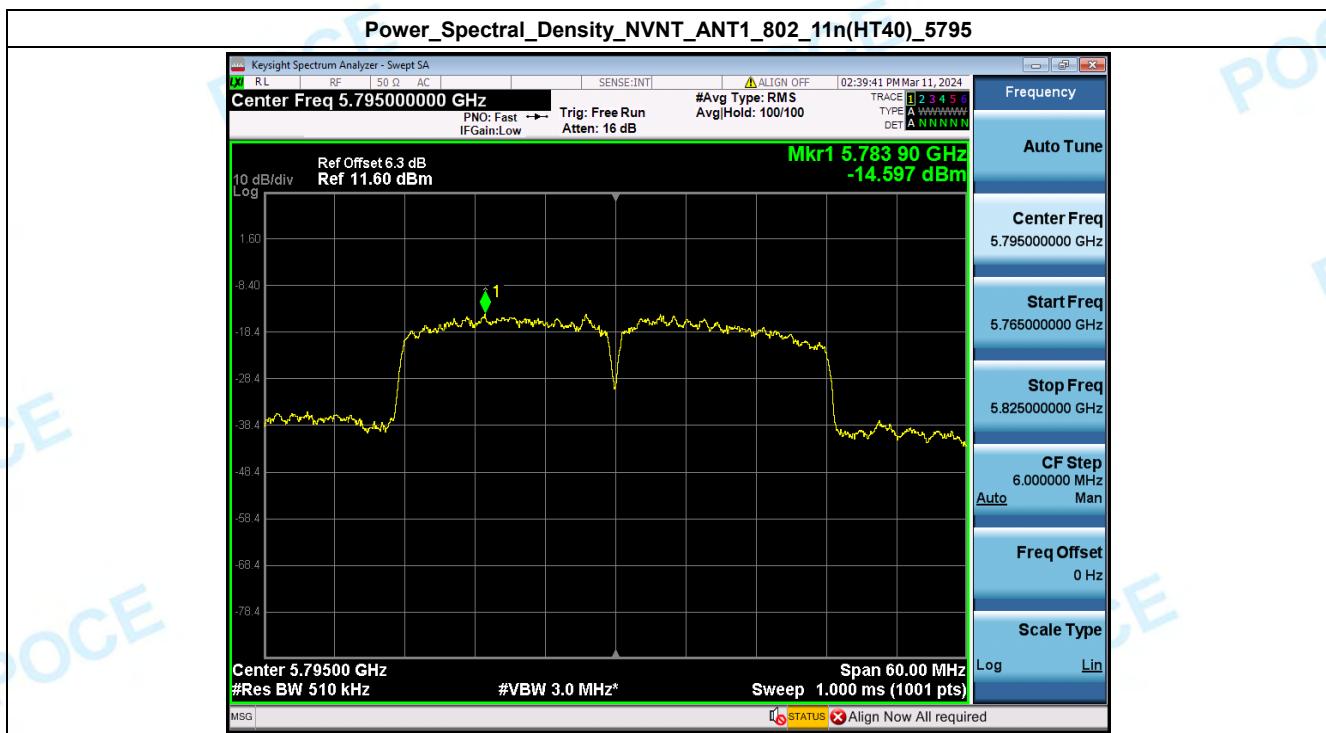




**Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11n(HT20)\_5745**

**Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11n(HT20)\_5785**

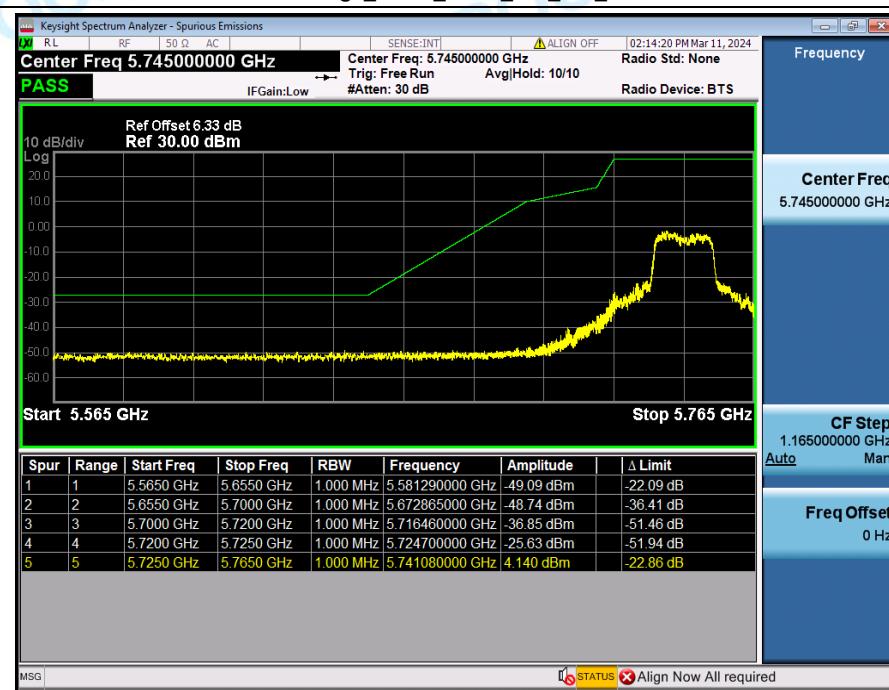



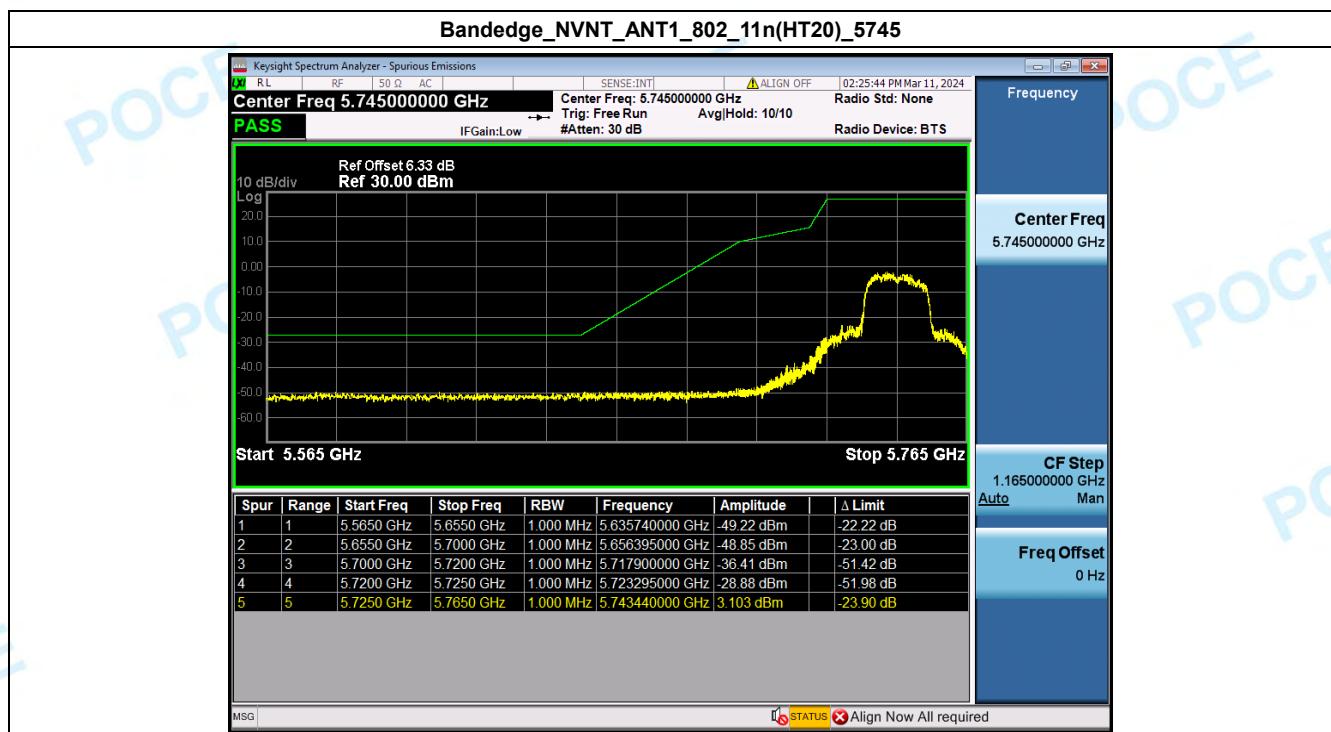
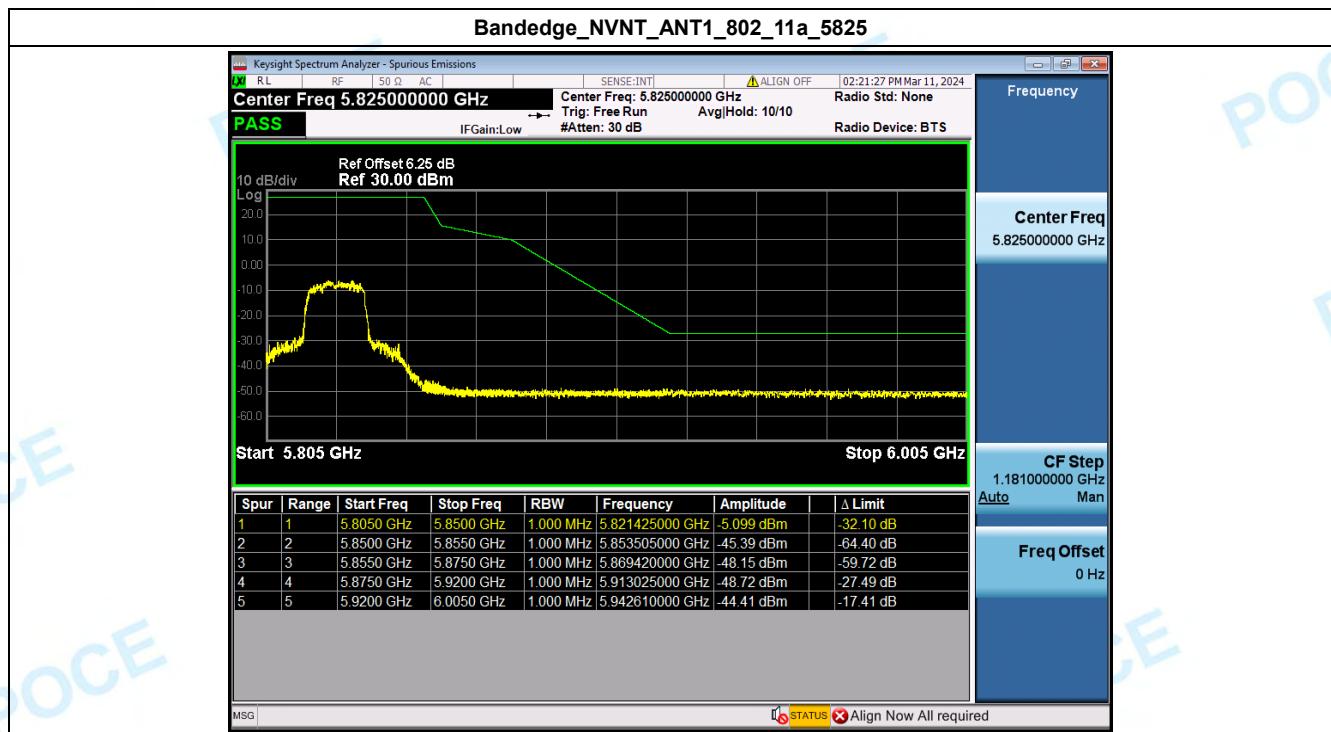


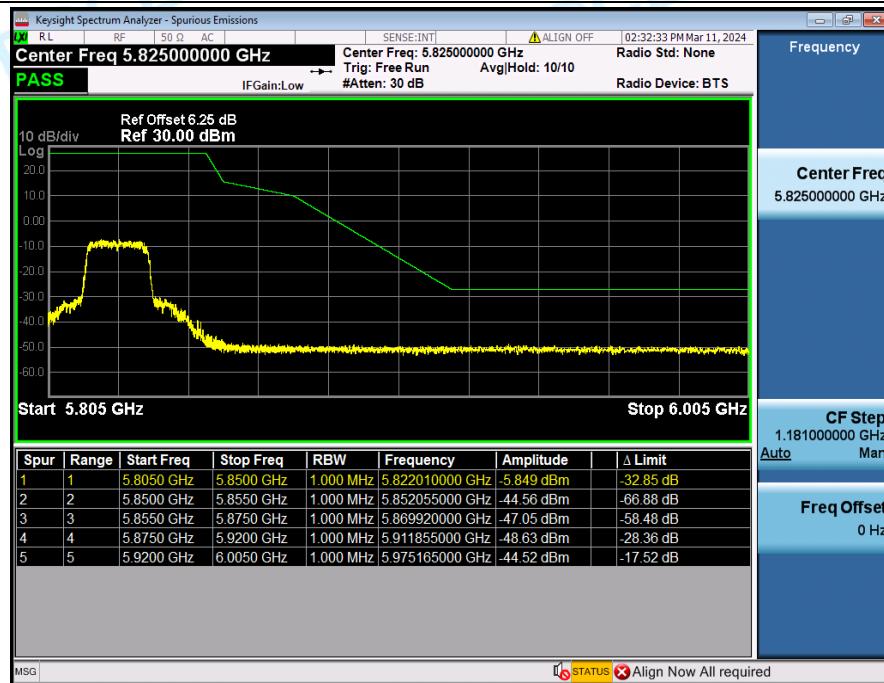
## 6. Bandedge

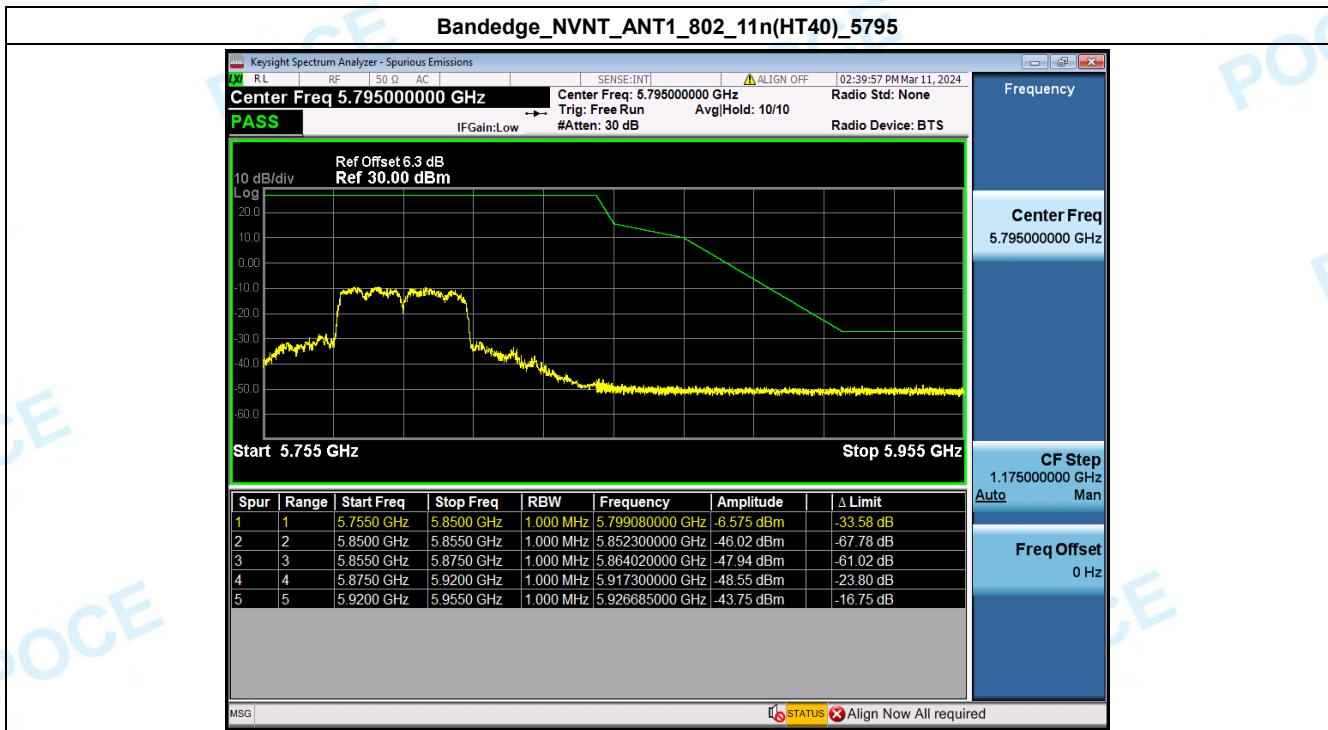
| Condition | Antenna | Modulation    | TX_Frequency (MHz) | Frequency Area(MHz) | Frequency(MHz) | Amplitude(dBm) | Limit(dBm) | Result |
|-----------|---------|---------------|--------------------|---------------------|----------------|----------------|------------|--------|
| NVNT      | ANT1    | 802.11a       | LCH                | 5565-5655           | 5581.290       | -49.09         | -27.00     | Pass   |
| NVNT      | ANT1    | 802.11a       | LCH                | 5655-5700           | 5672.865       | -48.74         | -12.31     | Pass   |
| NVNT      | ANT1    | 802.11a       | LCH                | 5700-5720           | 5716.460       | -36.85         | 14.61      | Pass   |
| NVNT      | ANT1    | 802.11a       | LCH                | 5720-5725           | 5724.700       | -25.63         | 26.32      | Pass   |
| NVNT      | ANT1    | 802.11a       | HCH                | 5850-5855           | 5853.505       | -45.39         | 19.01      | Pass   |
| NVNT      | ANT1    | 802.11a       | HCH                | 5855-5875           | 5869.420       | -48.15         | 11.56      | Pass   |
| NVNT      | ANT1    | 802.11a       | HCH                | 5875-5920           | 5913.025       | -48.72         | -21.26     | Pass   |
| NVNT      | ANT1    | 802.11a       | HCH                | 5920-6005           | 5942.610       | -44.41         | -27.00     | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | LCH                | 5565-5655           | 5635.740       | -49.22         | -27.00     | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | LCH                | 5655-5700           | 5656.395       | -48.85         | -25.85     | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | LCH                | 5700-5720           | 5717.900       | -36.41         | 15.01      | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | LCH                | 5720-5725           | 5723.295       | -28.88         | 23.11      | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | HCH                | 5850-5855           | 5852.055       | -44.56         | 22.31      | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | HCH                | 5855-5875           | 5869.920       | -47.05         | 11.42      | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | HCH                | 5875-5920           | 5911.855       | -48.63         | -20.30     | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | HCH                | 5920-6005           | 5975.165       | -44.52         | -27.00     | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | LCH                | 5595-5655           | 5650.920       | -48.99         | -27.00     | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | LCH                | 5655-5700           | 5692.440       | -43.41         | 3.78       | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | LCH                | 5700-5720           | 5718.800       | -27.33         | 15.26      | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | LCH                | 5720-5725           | 5721.720       | -24.91         | 19.52      | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | HCH                | 5850-5855           | 5852.300       | -46.02         | 21.76      | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | HCH                | 5855-5875           | 5864.020       | -47.94         | 13.07      | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | HCH                | 5875-5920           | 5917.300       | -48.55         | -24.78     | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | HCH                | 5920-5955           | 5926.685       | -43.75         | -27.00     | Pass   |

Bandedge\_NVNT\_ANT1\_802\_11a\_5745





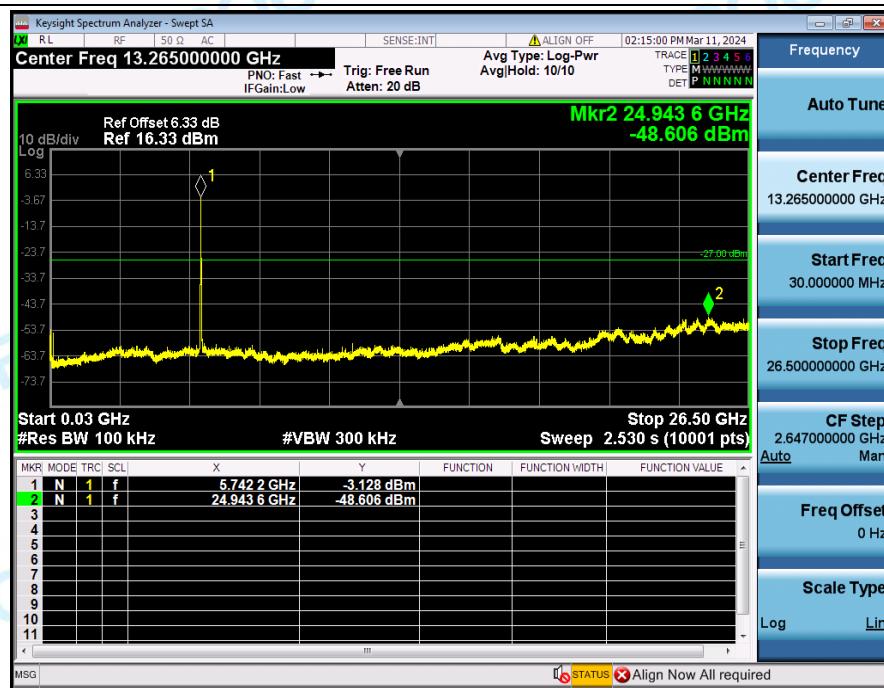
**Bandedge\_NVNT\_ANT1\_802\_11n(HT20)\_5825**

**Bandedge\_NVNT\_ANT1\_802\_11n(HT40)\_5755**

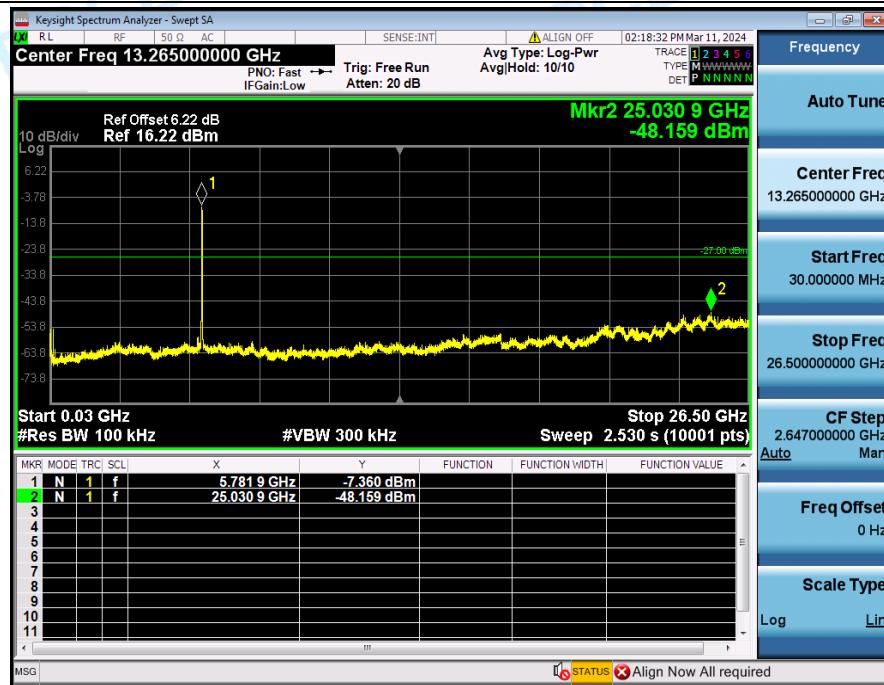
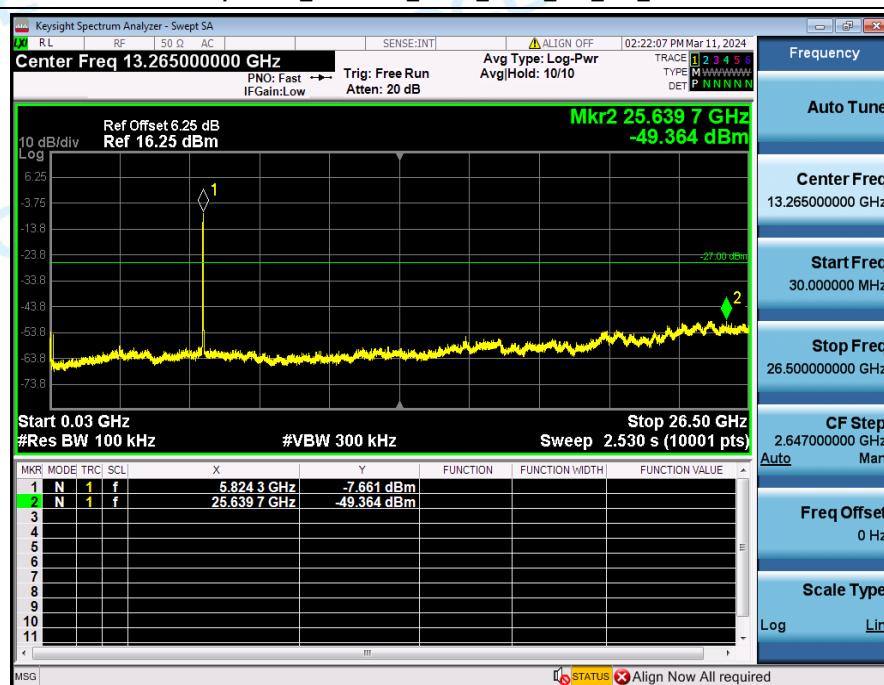



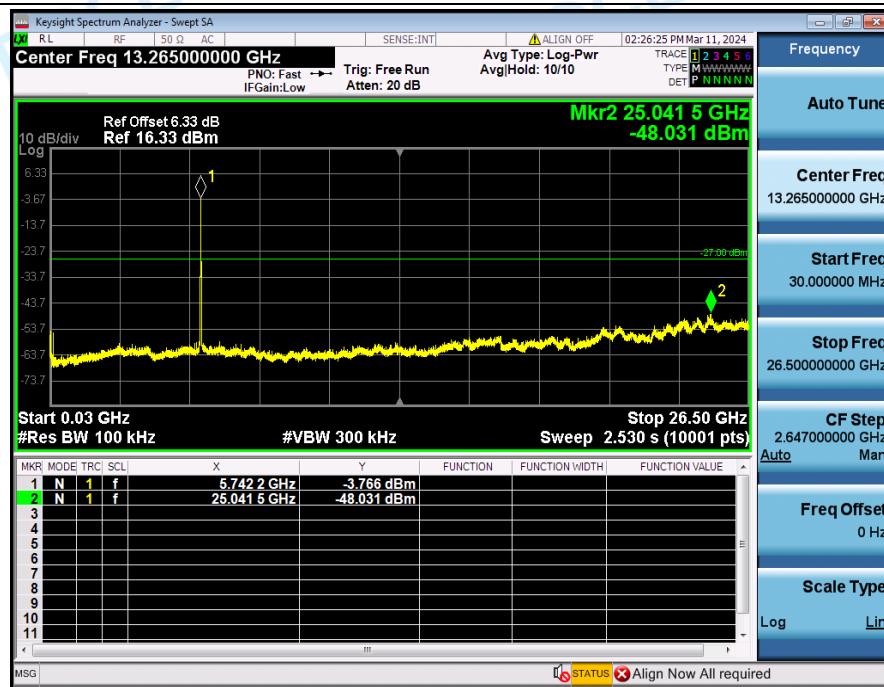
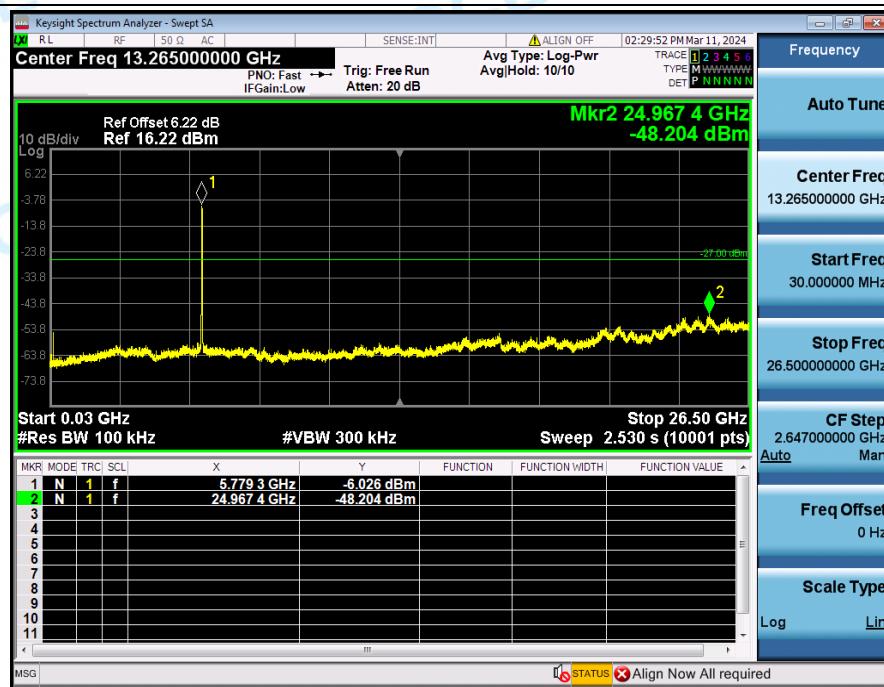
## 7. Spurious Emission

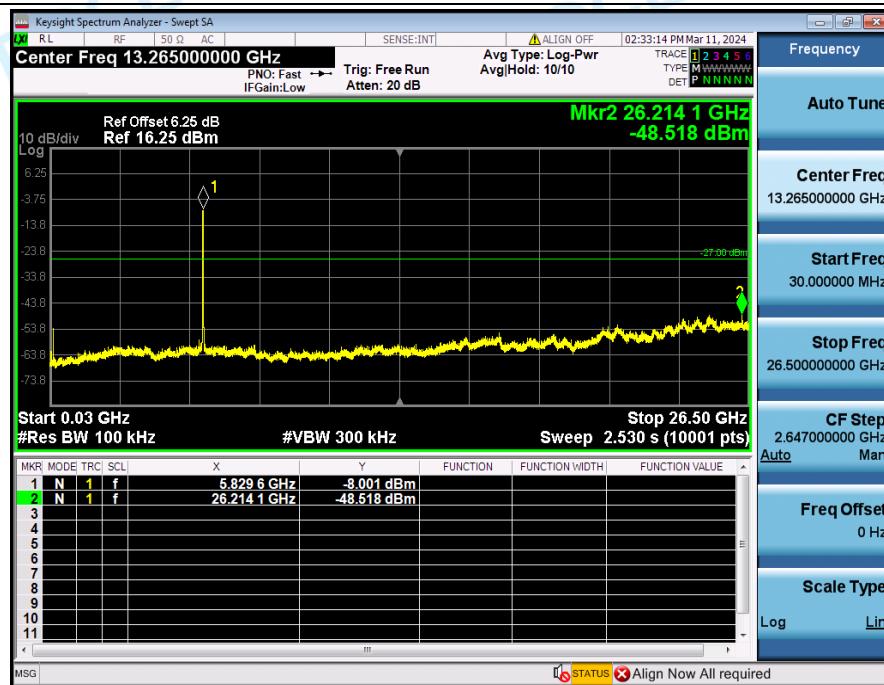
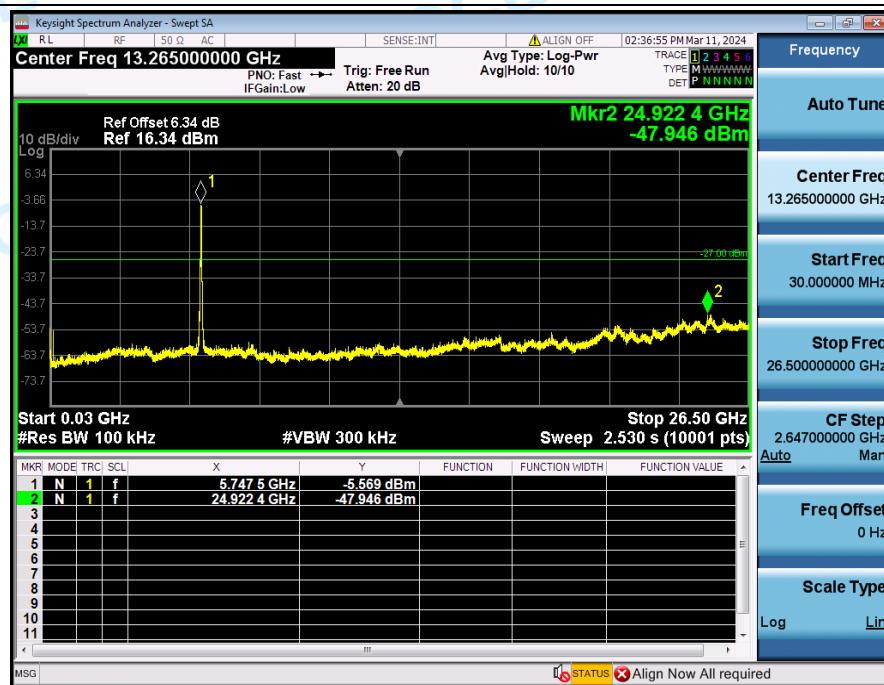
| Condition | Antenna | Modulation    | TX_Frequency (MHz) | Max. Mark Frequency(MHz) | Spurious level(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|--------------------|--------------------------|---------------------|------------|--------|
| NVNT      | ANT1    | 802.11a       | 5745.00            | 24943.56                 | -48.61              | -27        | Pass   |
| NVNT      | ANT1    | 802.11a       | 5785.00            | 25030.92                 | -48.16              | -27        | Pass   |
| NVNT      | ANT1    | 802.11a       | 5825.00            | 25639.72                 | -49.36              | -27        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5745.00            | 25041.50                 | -48.03              | -27        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5785.00            | 24967.39                 | -48.20              | -27        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5825.00            | 26214.12                 | -48.52              | -27        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 5755.00            | 24922.39                 | -47.95              | -27        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 5795.00            | 25607.96                 | -48.55              | -27        | Pass   |

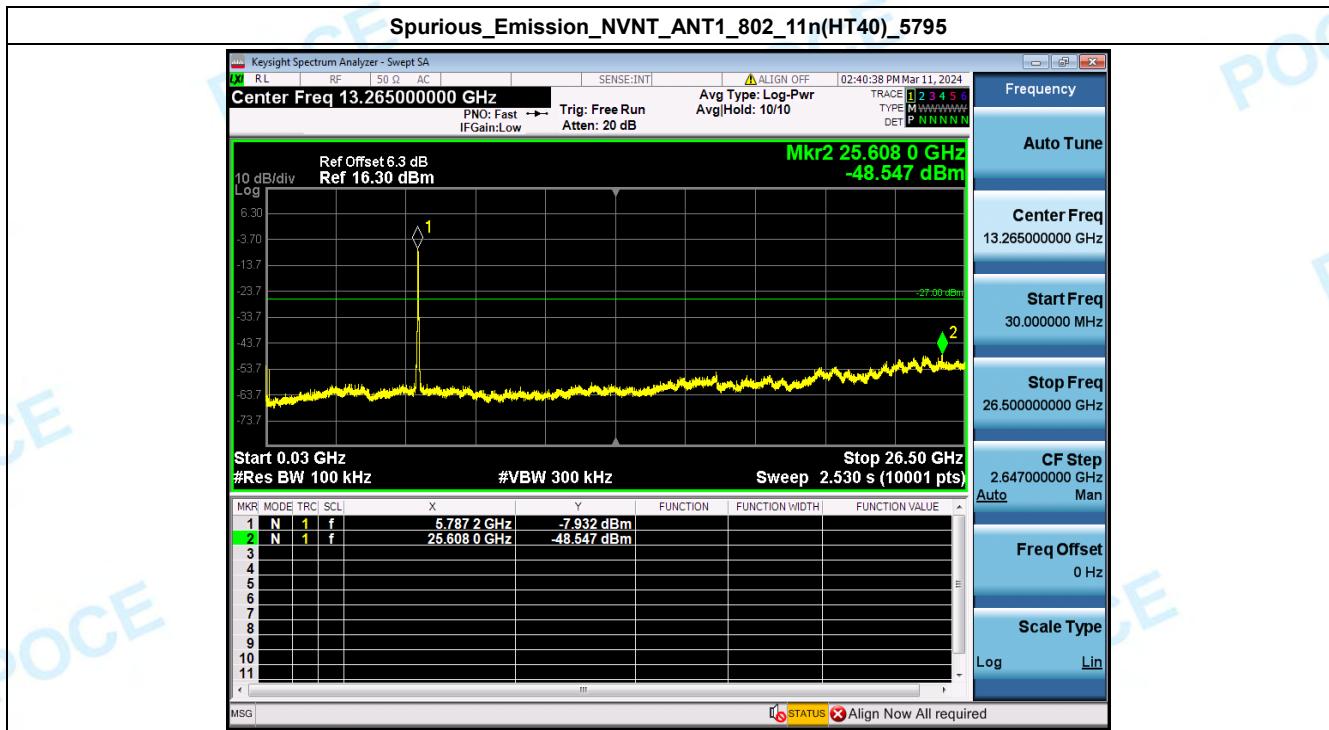
Spurious\_Emission\_NVNT\_ANT1\_802\_11a\_5745



**Spurious\_Emission\_NVNT\_ANT1\_802\_11a\_5785**

**Spurious\_Emission\_NVNT\_ANT1\_802\_11a\_5825**


**Spurious\_Emission\_NVNT\_ANT1\_802\_11n(HT20)\_5745**

**Spurious\_Emission\_NVNT\_ANT1\_802\_11n(HT20)\_5785**


**Spurious\_Emission\_NVNT\_ANT1\_802\_11n(HT20)\_5825**

**Spurious\_Emission\_NVNT\_ANT1\_802\_11n(HT40)\_5755**


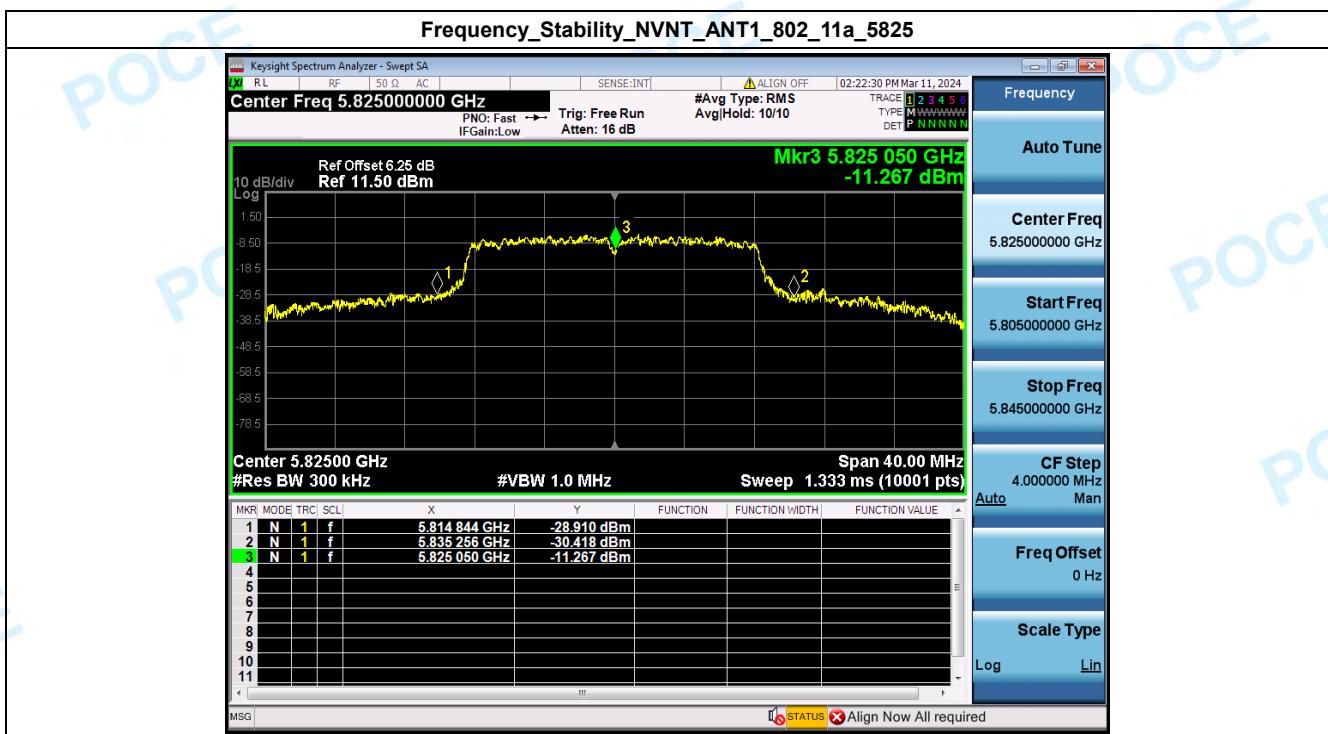
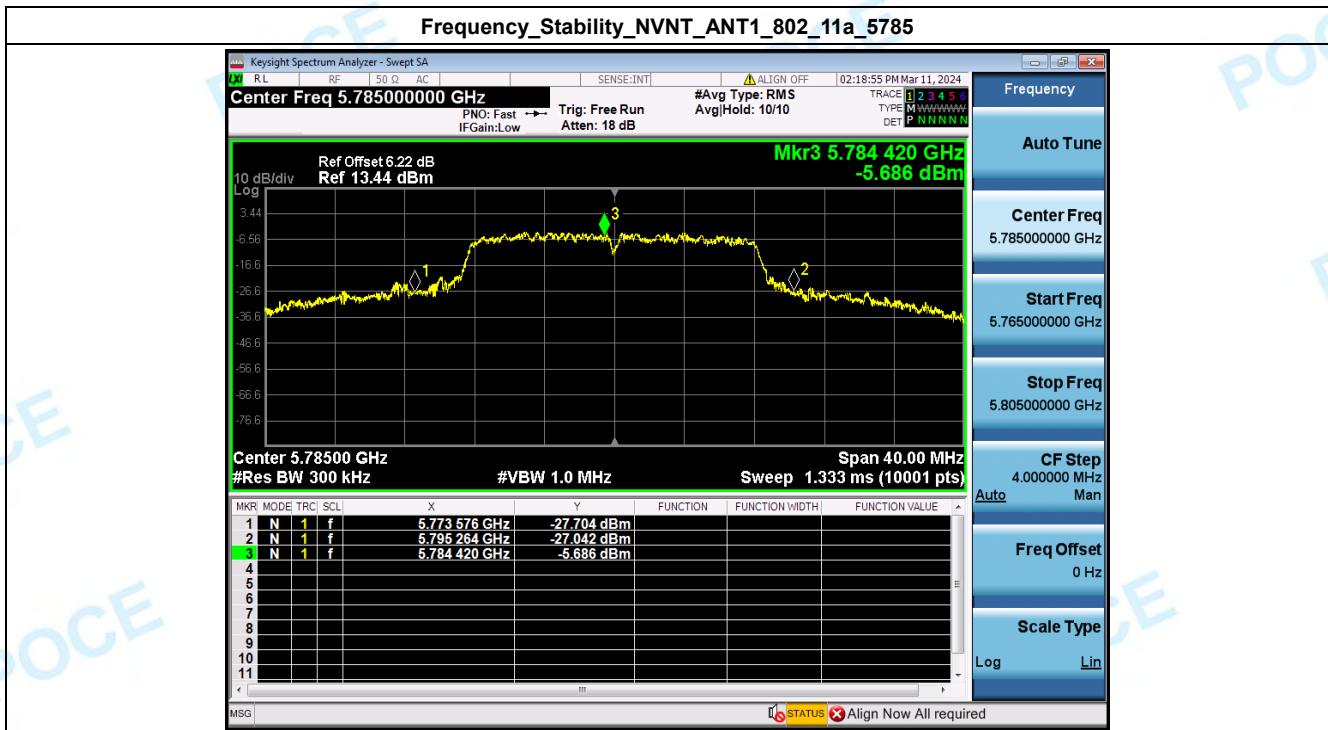


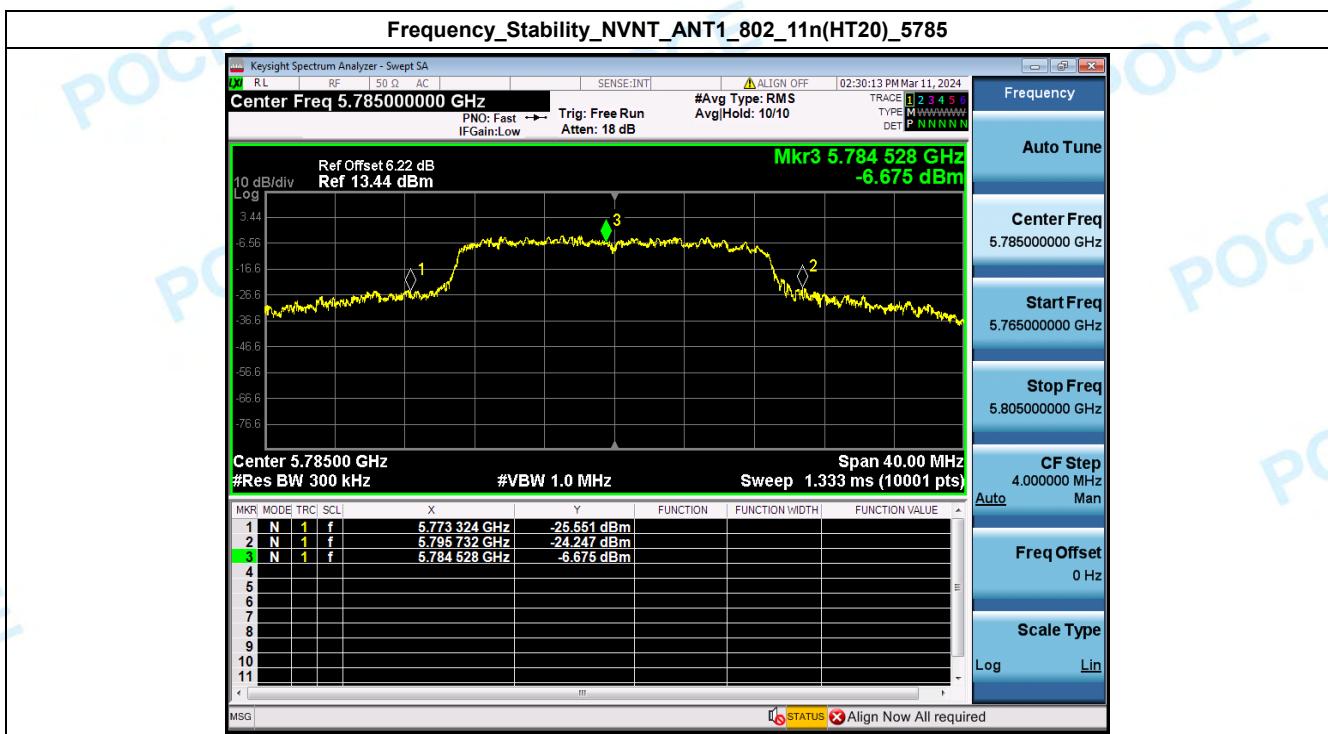
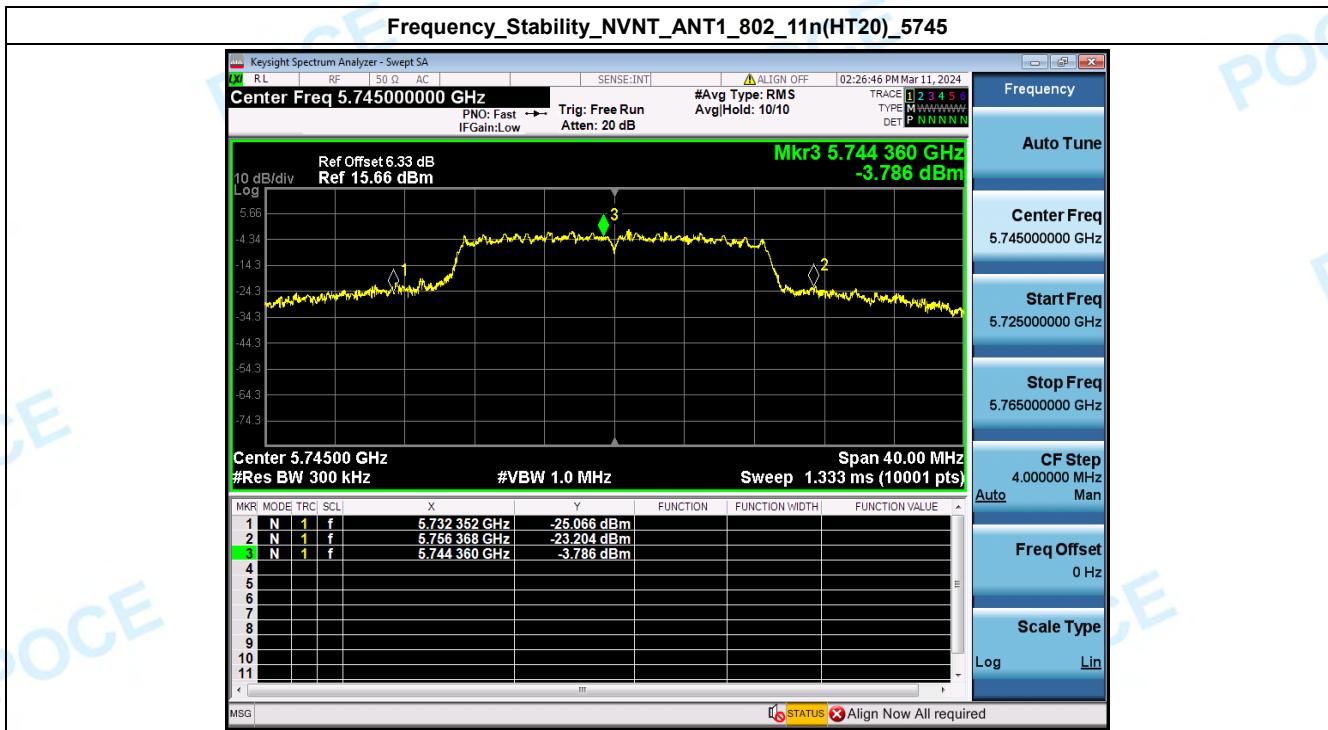
## 8. Frequency Stability

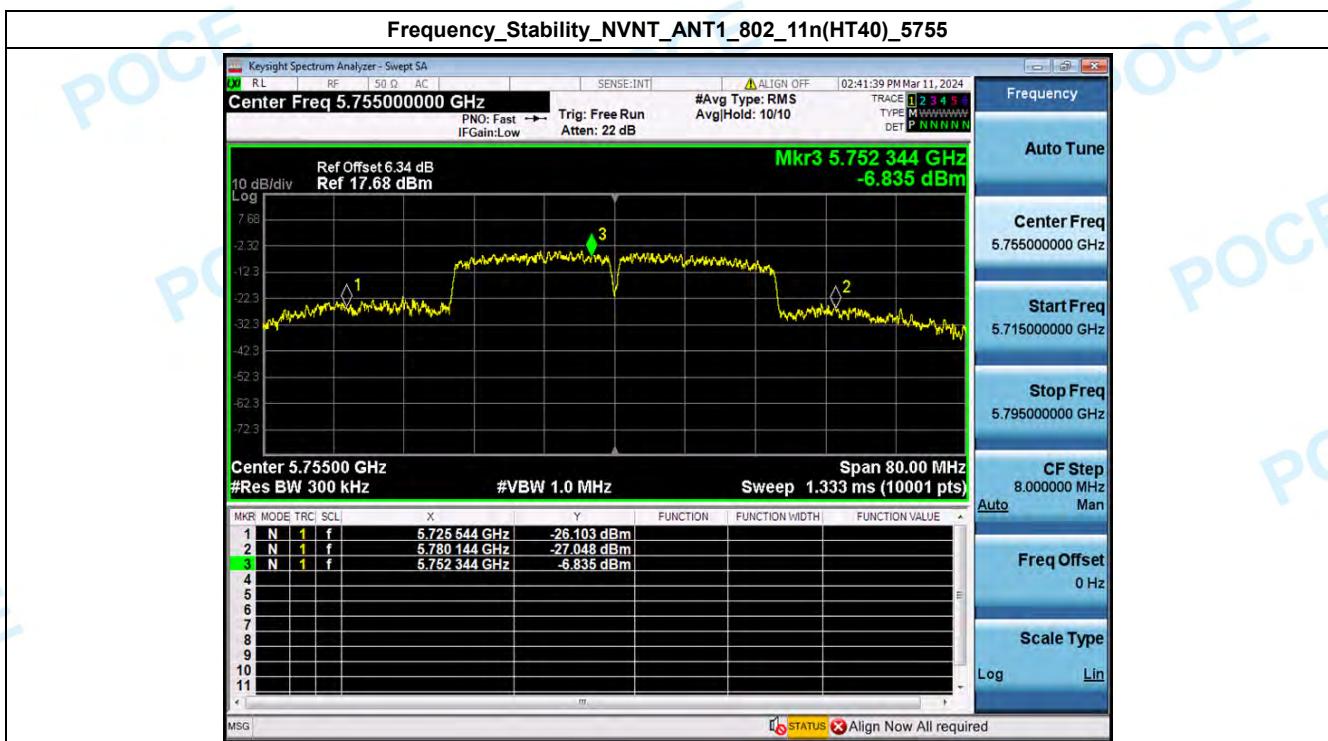
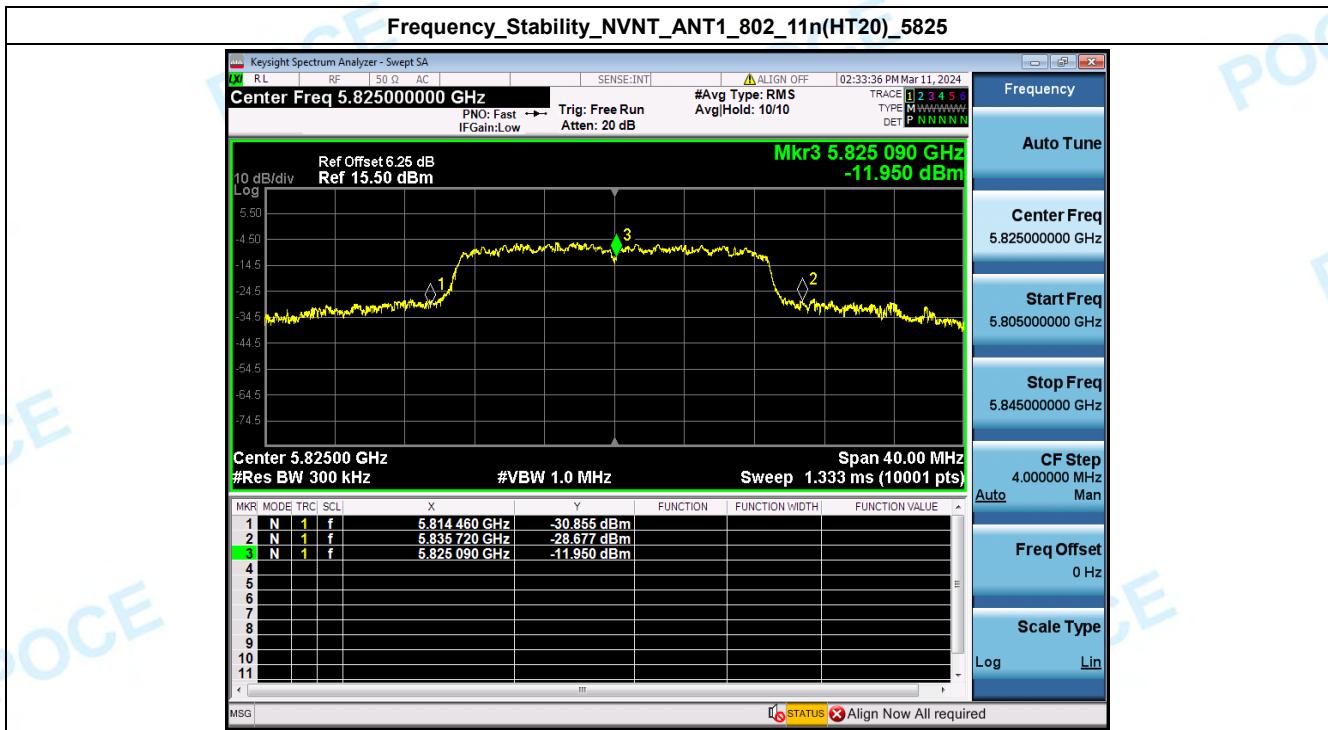
| Condition | Antenna | Modulation    | Frequency (MHz) | Fc(MHz)  | Fl(MHz)  | Fh(MHz)  | Limit(MHz) | Result |
|-----------|---------|---------------|-----------------|----------|----------|----------|------------|--------|
| NVNT      | ANT1    | 802.11a       | 5745.00         | 5744.344 | 5732.172 | 5756.516 | 5725~5850  | Pass   |
| NVNT      | ANT1    | 802.11a       | 5785.00         | 5784.420 | 5773.576 | 5795.264 | 5725~5850  | Pass   |
| NVNT      | ANT1    | 802.11a       | 5825.00         | 5825.050 | 5814.844 | 5835.256 | 5725~5850  | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5745.00         | 5744.360 | 5732.352 | 5756.368 | 5725~5850  | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5785.00         | 5784.528 | 5773.324 | 5795.732 | 5725~5850  | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 5825.00         | 5825.090 | 5814.460 | 5835.720 | 5725~5850  | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 5755.00         | 5752.344 | 5725.544 | 5780.144 | 5725~5850  | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 5795.00         | 5792.324 | 5766.952 | 5817.696 | 5725~5850  | Pass   |

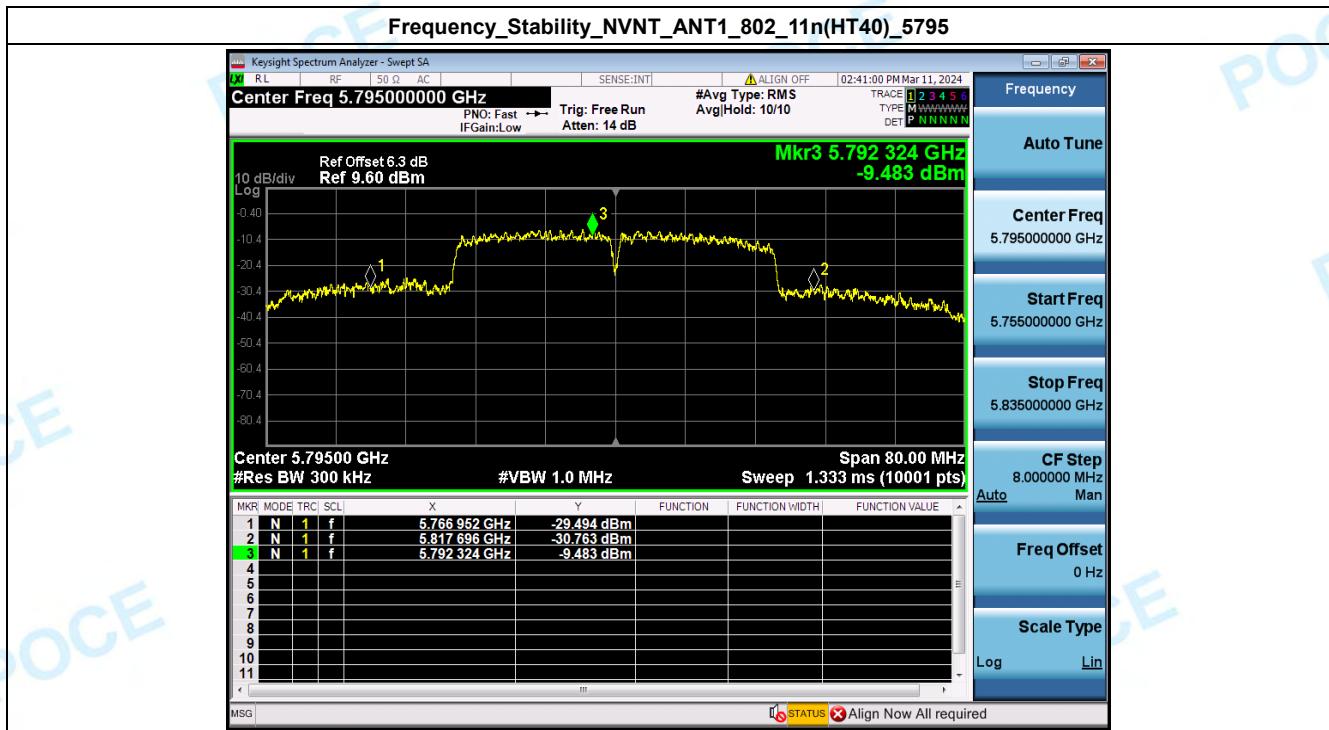
Frequency\_Stability\_NVNT\_ANT1\_802\_11a\_5745











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