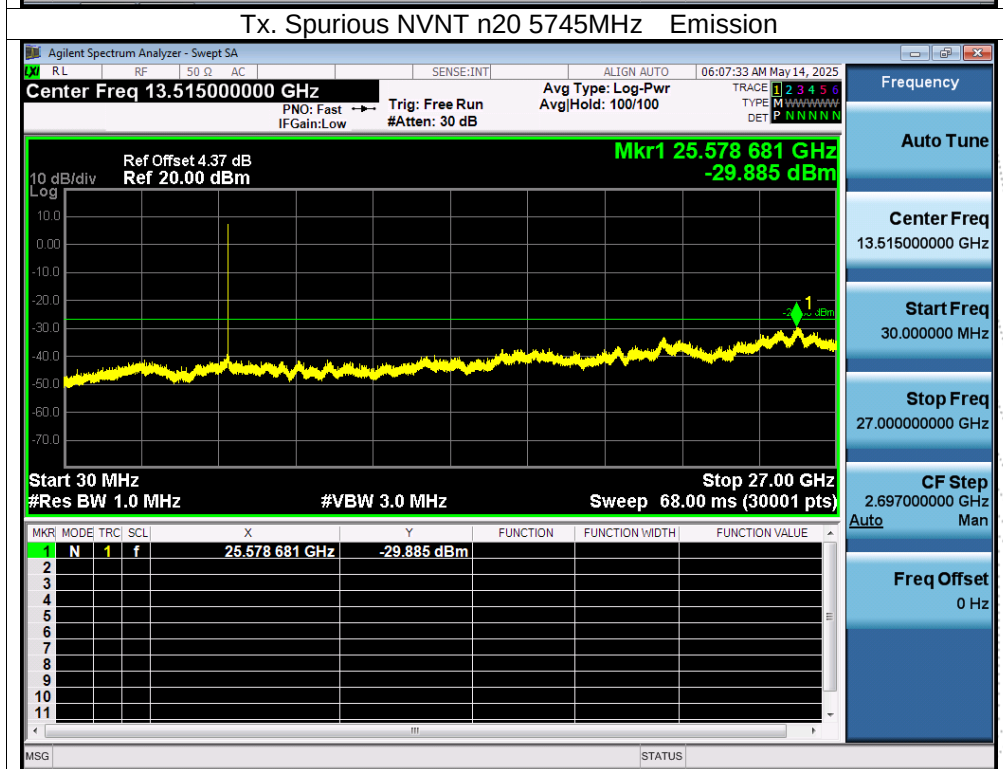
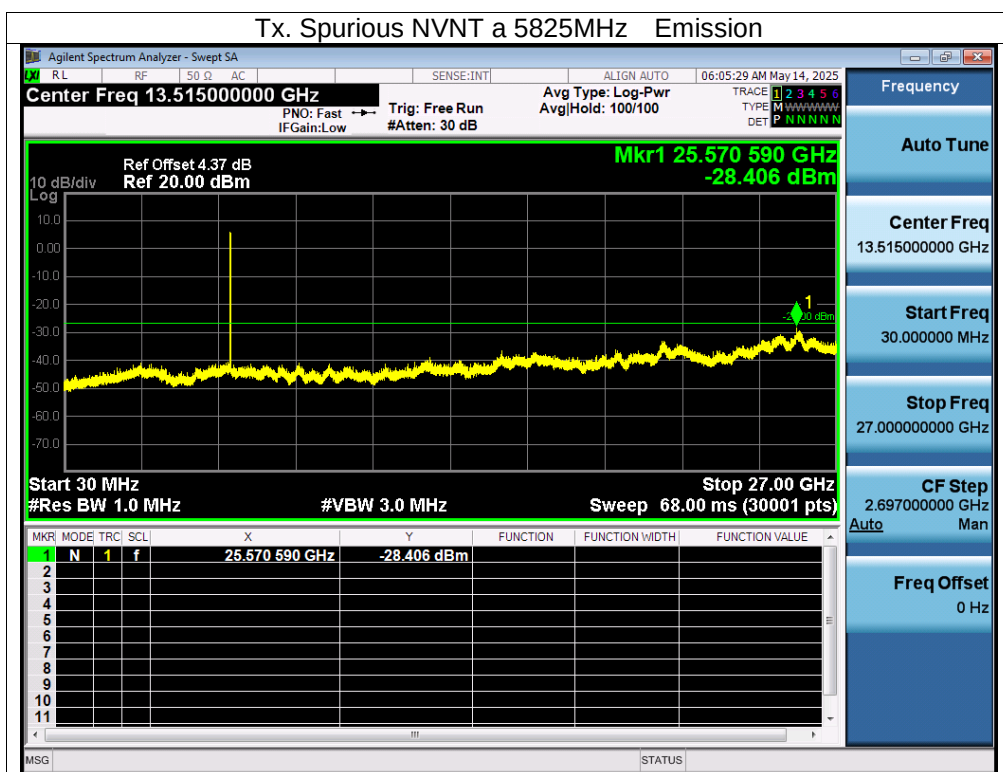
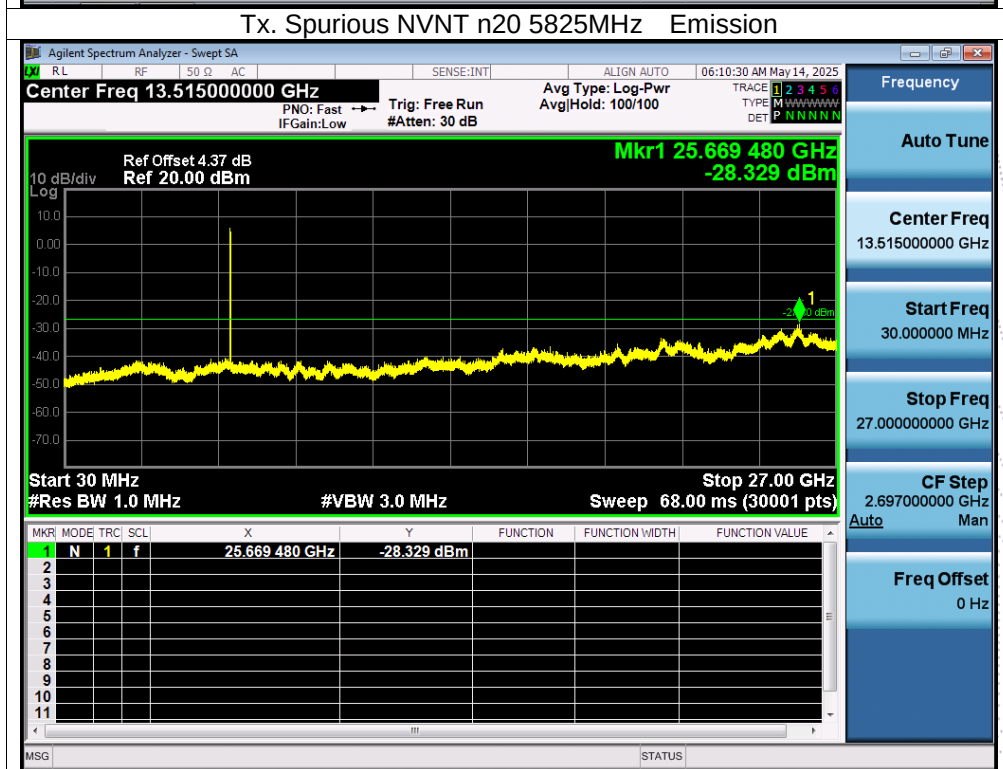
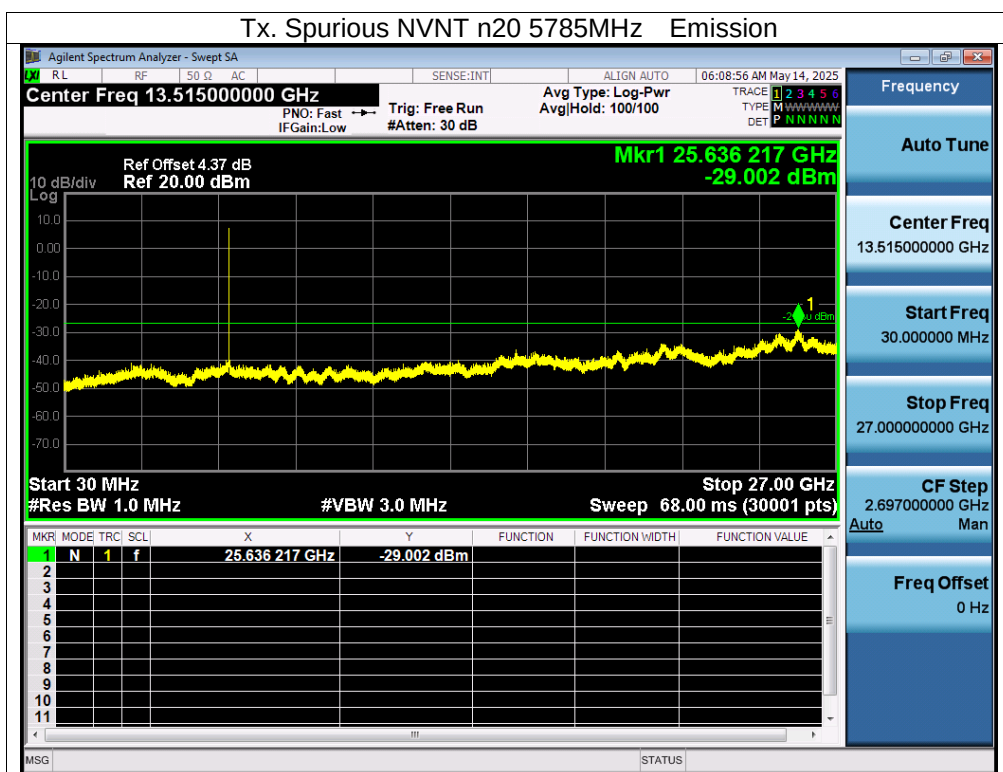
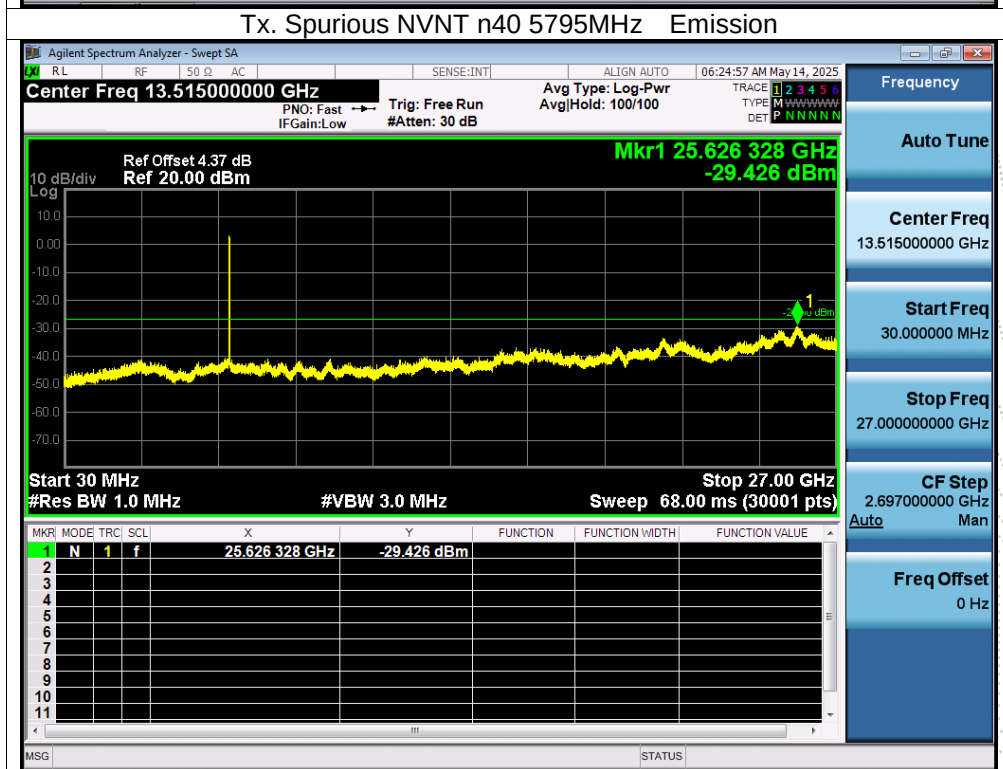
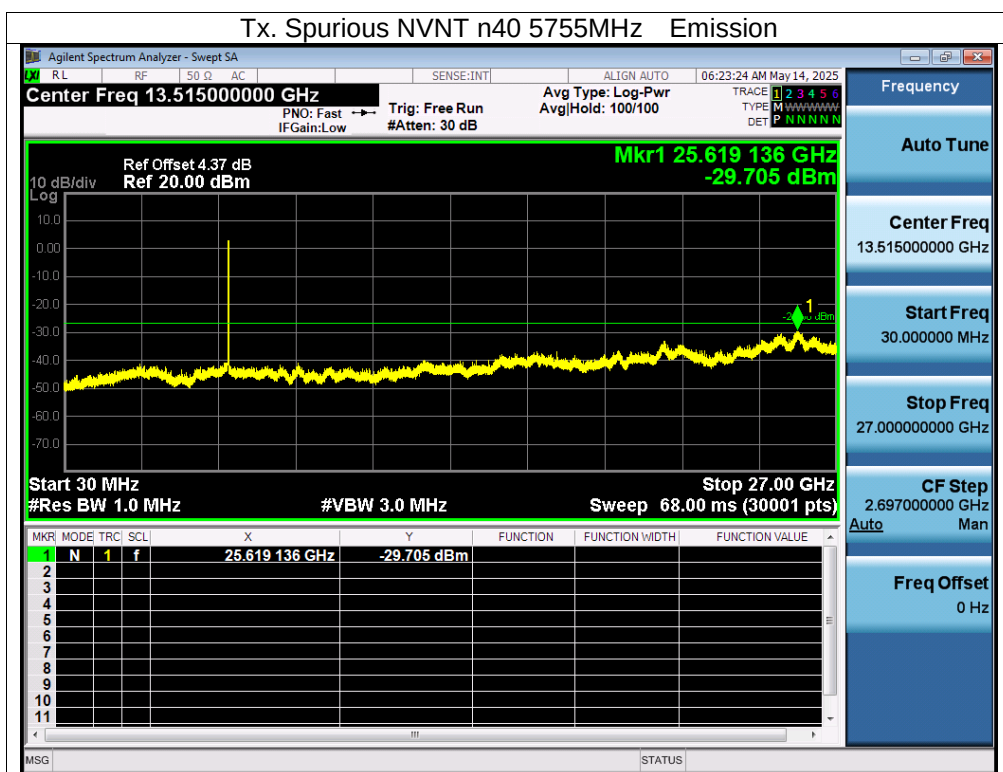
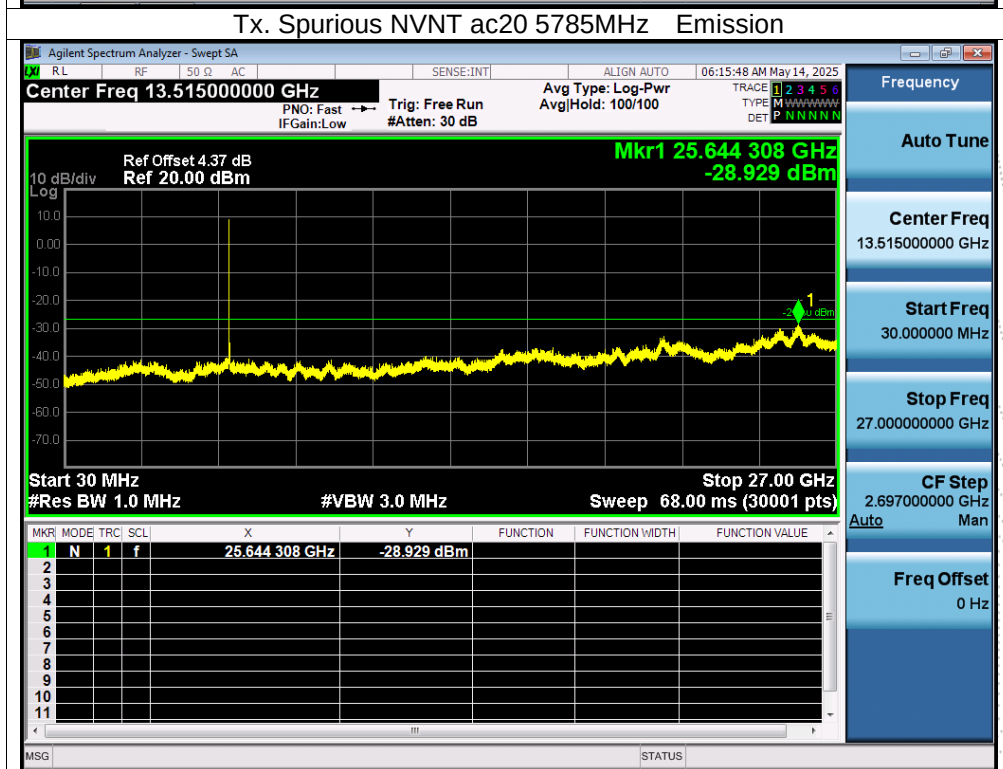
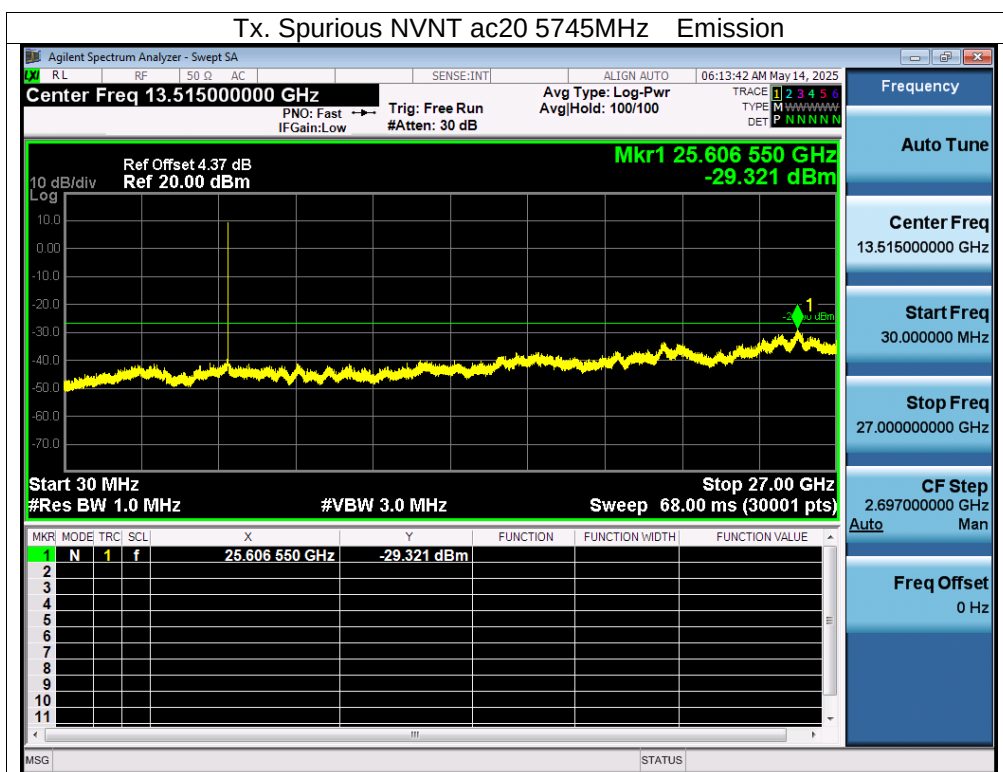
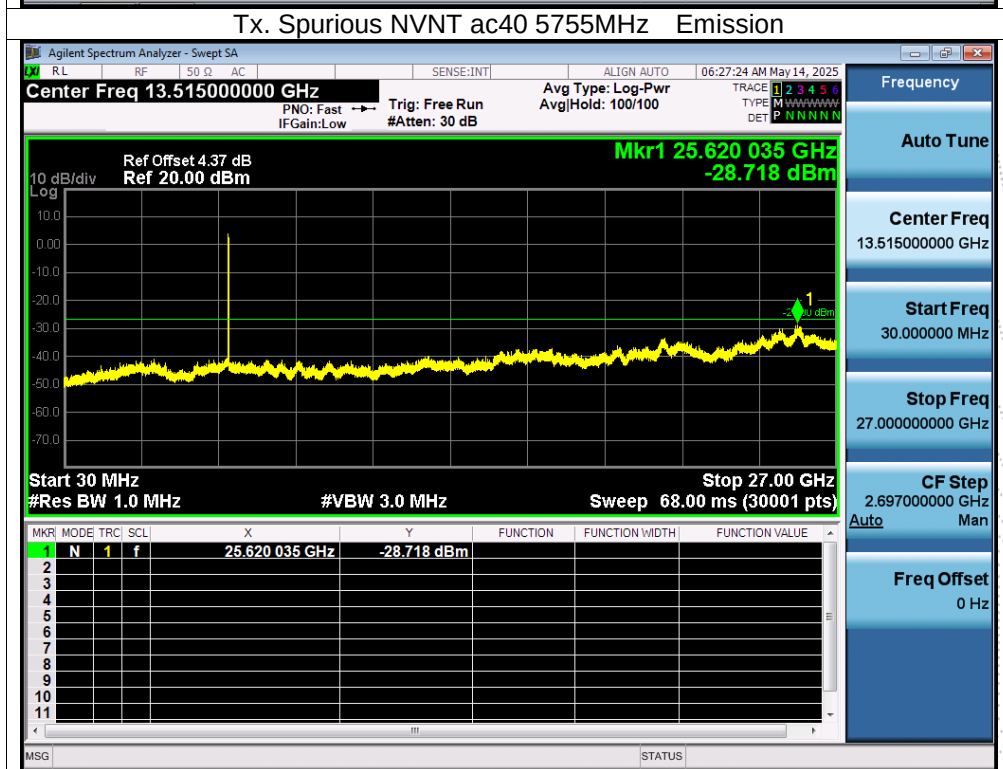
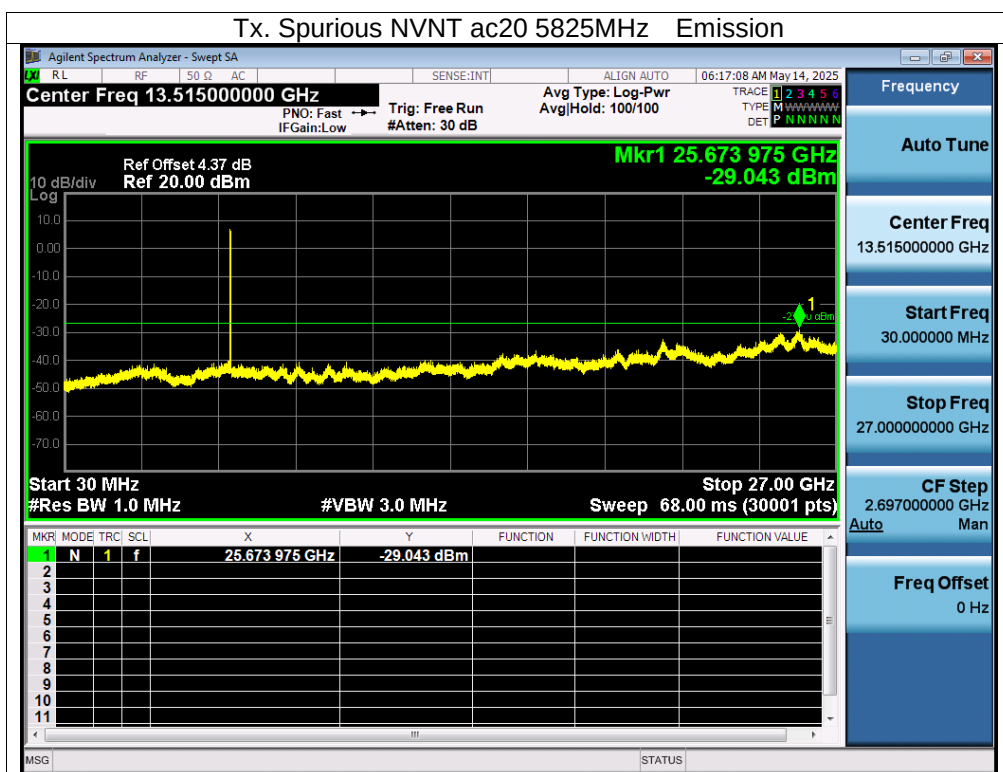




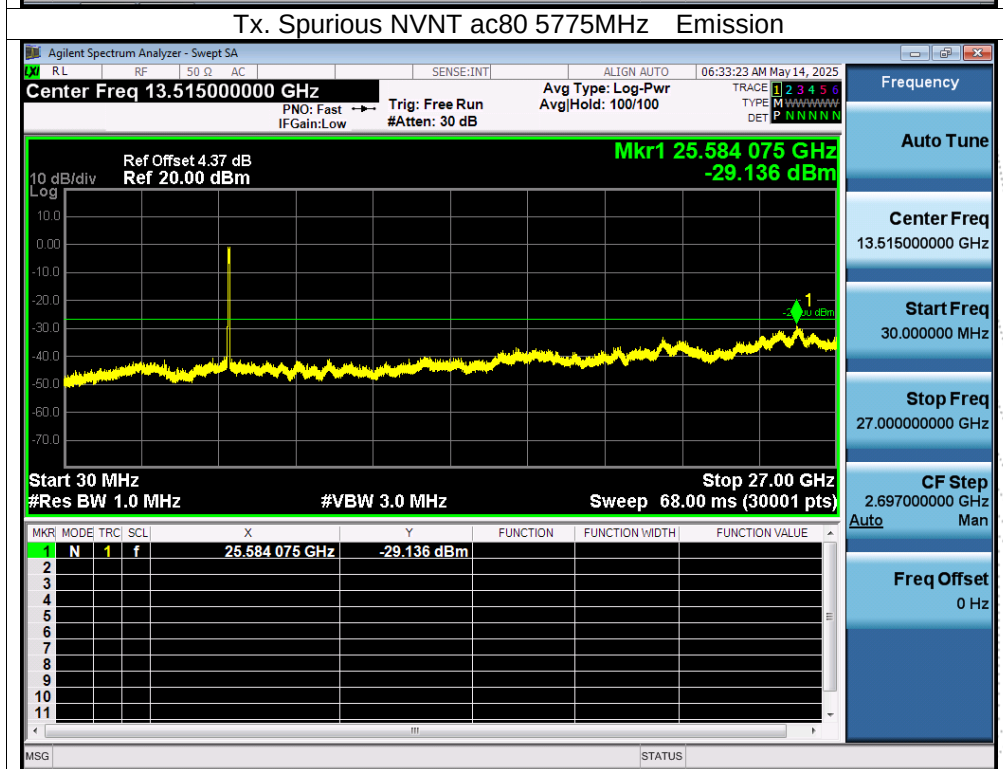
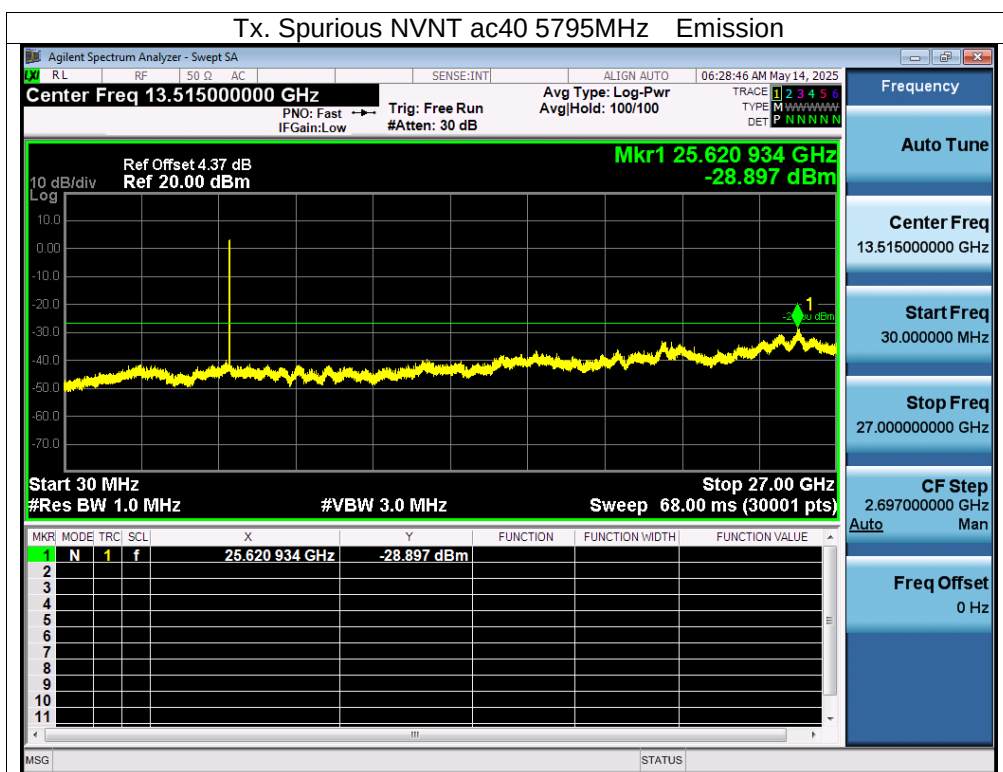


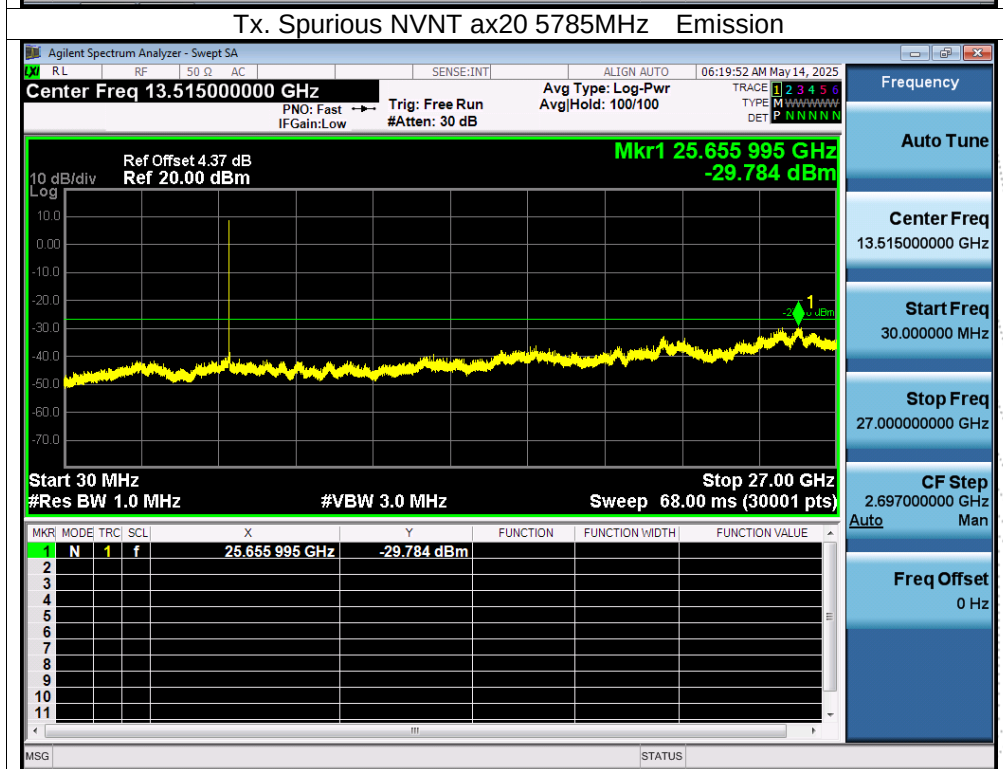
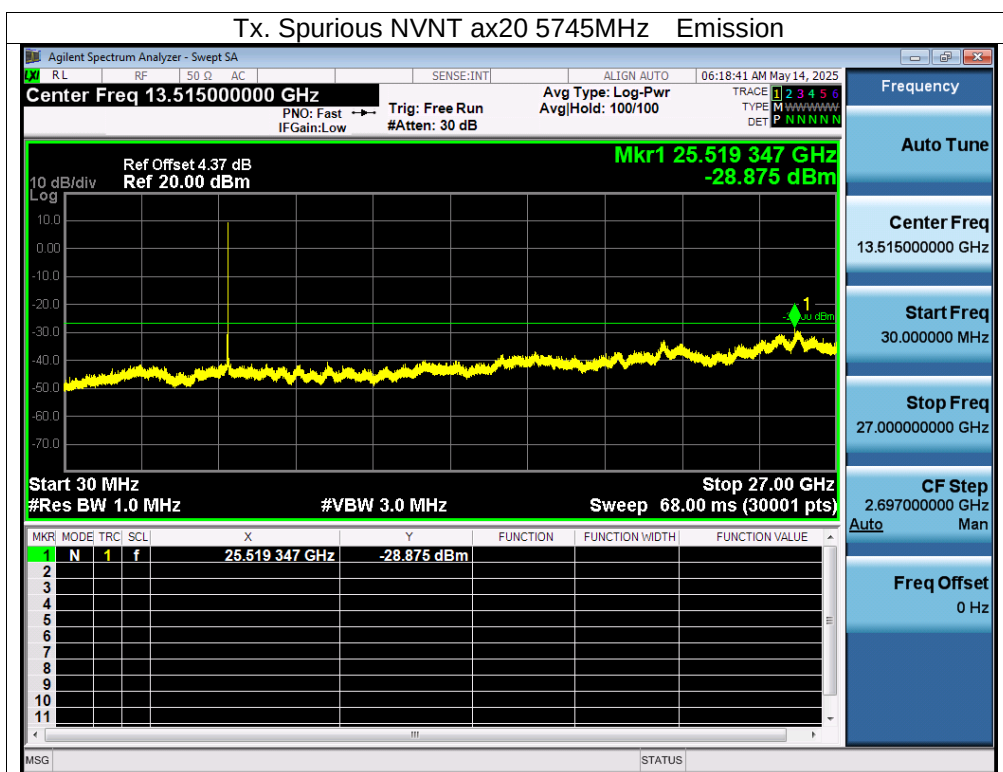


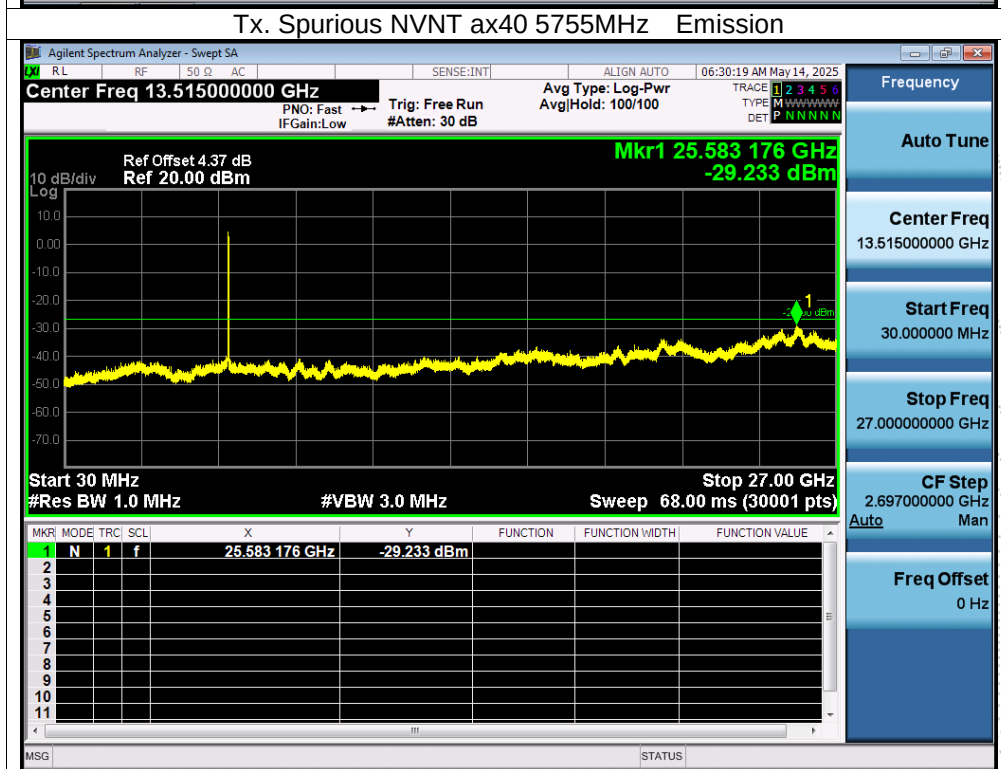
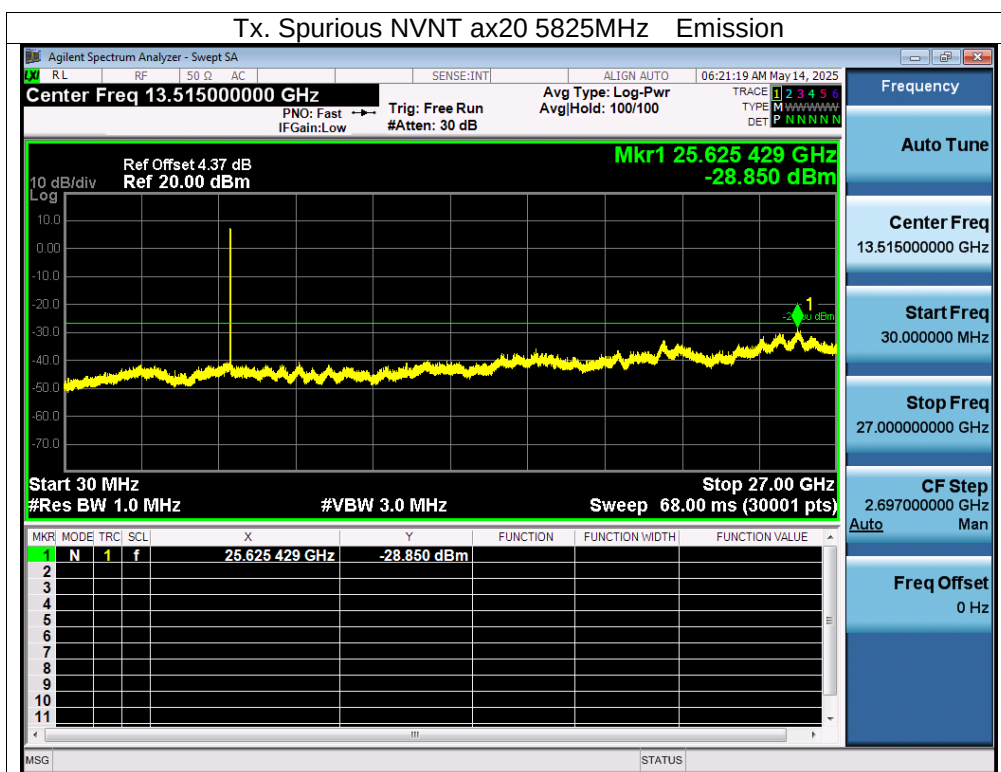




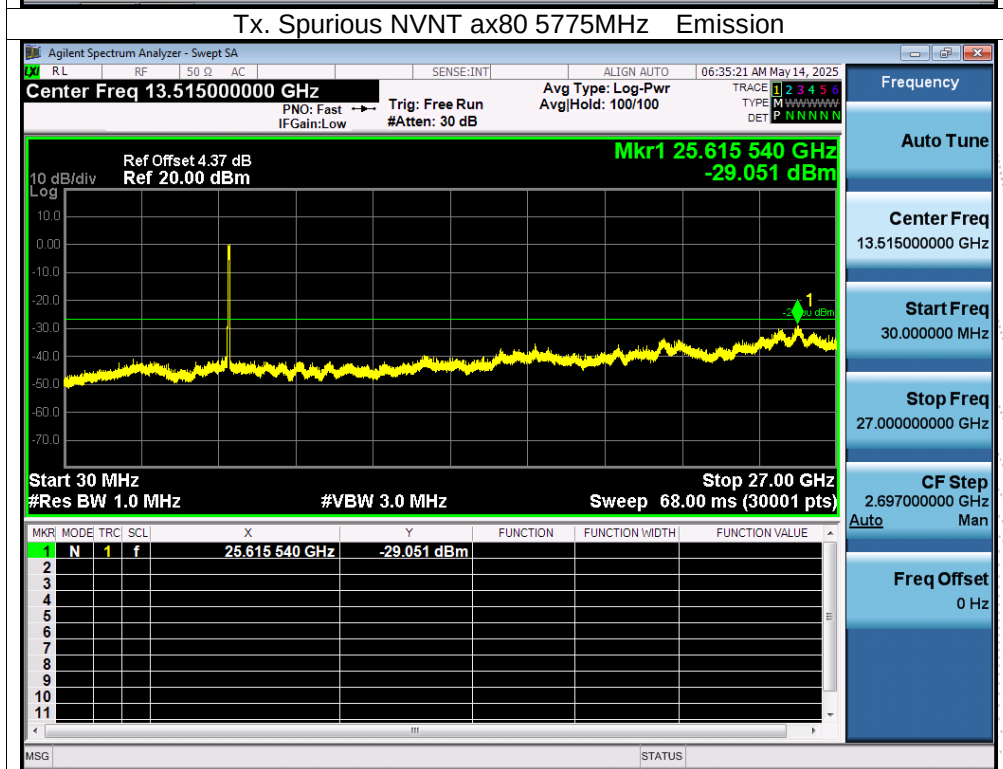
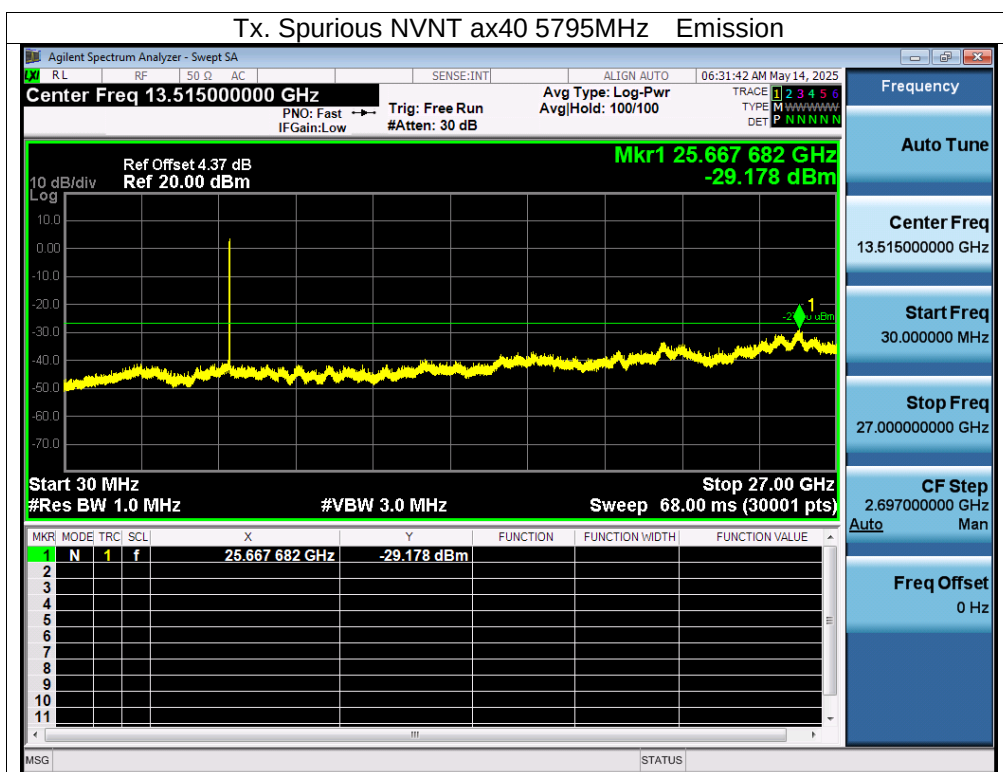












### 13. Frequency Stability Measurement

#### 13.1 Block Diagram Of Test Setup



#### 13.2 Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be  $\pm 20$  ppm maximum for the 5 GHz band (IEEE 802.11n specification)..

#### 13.3 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5.  $f_c$  is declaring of channel frequency. Then the frequency error formula is  $(f_c - f)/f_c \times 10^6$  ppm and he limit is less than  $\pm 20$  ppm (IEEE 802.11n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is  $-20^\circ\text{C} \sim 70^\circ\text{C}$ .

### 13.4 Test Result

|              |                                                 |                    |         |
|--------------|-------------------------------------------------|--------------------|---------|
| Temperature: | 26 °C                                           | Relative Humidity: | 54%     |
| Pressure:    | 101KPa                                          | Test Voltage:      | DC 3.3V |
| Test Mode:   | TX (5.1G) Mode Frequency U-NII-1 (5180-5240MHz) |                    |         |

#### Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5180MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5180.0085                    | 5180 | 0.0085               | 1.6409               |
|                 |    | V max (V) | 3.80 | 5180.0098                    | 5180 | 0.0098               | 1.8919               |
|                 |    | V min (V) | 2.81 | 5180.0021                    | 5180 | 0.0021               | 0.4054               |
| Limits          |    |           |      | 5150-5250 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

#### Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5180MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5180.0072                    | 5180 | 0.0072               | 1.3900               |
|                 |     | T (°C) | -10 | 5180.0006                    | 5180 | 0.0006               | 0.1158               |
|                 |     | T (°C) | 0   | 5180.0020                    | 5180 | 0.0020               | 0.3861               |
|                 |     | T (°C) | 10  | 5180.0086                    | 5180 | 0.0086               | 1.6602               |
|                 |     | T (°C) | 20  | 5180.0080                    | 5180 | 0.0080               | 1.5444               |
|                 |     | T (°C) | 30  | 5180.0124                    | 5180 | 0.0124               | 2.3938               |
|                 |     | T (°C) | 40  | 5180.0113                    | 5180 | 0.0113               | 2.1815               |
|                 |     | T (°C) | 50  | 5180.0027                    | 5180 | 0.0027               | 0.5212               |
|                 |     | T (°C) | 60  | 5180.0017                    | 5180 | 0.0017               | 0.3282               |
|                 |     | T (°C) | 70  | 5180.0034                    | 5180 | 0.0034               | 0.6564               |
| Limits          |     |        |     | 5150-5250 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5200MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5200.0013                    | 5200 | 0.0013               | 0.2500               |
|                 |    | V max (V) | 3.80 | 5200.0105                    | 5200 | 0.0105               | 2.0192               |
|                 |    | V min (V) | 2.81 | 5200.0037                    | 5200 | 0.0037               | 0.7115               |
| Limits          |    |           |      | 5150-5250 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5200MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5200.01050                   | 5200 | 0.01050              | 2.0192               |
|                 |     | T (°C) | -10 | 5200.00380                   | 5200 | 0.00380              | 0.7308               |
|                 |     | T (°C) | 0   | 5200.01300                   | 5200 | 0.01300              | 2.5000               |
|                 |     | T (°C) | 10  | 5200.00720                   | 5200 | 0.00720              | 1.3846               |
|                 |     | T (°C) | 20  | 5200.00540                   | 5200 | 0.00540              | 1.0385               |
|                 |     | T (°C) | 30  | 5200.01180                   | 5200 | 0.01180              | 2.2692               |
|                 |     | T (°C) | 40  | 5200.00250                   | 5200 | 0.00250              | 0.4808               |
|                 |     | T (°C) | 50  | 5200.00140                   | 5200 | 0.00140              | 0.2692               |
|                 |     | T (°C) | 60  | 5200.01090                   | 5200 | 0.01090              | 2.0962               |
|                 |     | T (°C) | 70  | 5200.00920                   | 5200 | 0.00920              | 1.7692               |
| Limits          |     |        |     | 5150-5250 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5240MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5240.0095                    | 5240 | 0.0095               | 1.8130               |
|                 |    | V max (V) | 3.80 | 5240.0096                    | 5240 | 0.0096               | 1.8321               |
|                 |    | V min (V) | 2.81 | 5240.0040                    | 5240 | 0.0040               | 0.7634               |
| Limits          |    |           |      | 5150-5250 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5240MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5240.0113                    | 5240 | 0.0113               | 2.1565               |
|                 |     | T (°C) | -10 | 5240.0111                    | 5240 | 0.0111               | 2.1183               |
|                 |     | T (°C) | 0   | 5240.0068                    | 5240 | 0.0068               | 1.2977               |
|                 |     | T (°C) | 10  | 5240.0047                    | 5240 | 0.0047               | 0.8969               |
|                 |     | T (°C) | 20  | 5240.0123                    | 5240 | 0.0123               | 2.3473               |
|                 |     | T (°C) | 30  | 5240.0002                    | 5240 | 0.0002               | 0.0382               |
|                 |     | T (°C) | 40  | 5240.0135                    | 5240 | 0.0135               | 2.5763               |
|                 |     | T (°C) | 50  | 5240.0082                    | 5240 | 0.0082               | 1.5649               |
|                 |     | T (°C) | 60  | 5240.0106                    | 5240 | 0.0106               | 2.0229               |
|                 |     | T (°C) | 70  | 5240.0113                    | 5240 | 0.0113               | 2.1565               |
| Limits          |     |        |     | 5150-5250 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |



|              |                                                  |                    |         |
|--------------|--------------------------------------------------|--------------------|---------|
| Temperature: | 26 °C                                            | Relative Humidity: | 54%     |
| Pressure:    | 101KPa                                           | Test Voltage:      | DC 3.3V |
| Test Mode:   | TX (5.3G) Mode Frequency U-NII-2A (5260-5320MHz) |                    |         |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5180MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5260.0103                    | 5260 | 0.0103               | 1.9582               |
|                 |    | V max (V) | 3.80 | 5260.0073                    | 5260 | 0.0073               | 1.3878               |
|                 |    | V min (V) | 2.81 | 5260.0116                    | 5260 | 0.0116               | 2.2053               |
| Limits          |    |           |      | 5250-5350 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5180MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5260.0074                    | 5260 | 0.0074               | 1.4068               |
|                 |     | T (°C) | -10 | 5260.0001                    | 5260 | 0.0001               | 0.0190               |
|                 |     | T (°C) | 0   | 5260.0052                    | 5260 | 0.0052               | 0.9886               |
|                 |     | T (°C) | 10  | 5260.0028                    | 5260 | 0.0028               | 0.5323               |
|                 |     | T (°C) | 20  | 5260.0065                    | 5260 | 0.0065               | 1.2357               |
|                 |     | T (°C) | 30  | 5260.0086                    | 5260 | 0.0086               | 1.6350               |
|                 |     | T (°C) | 40  | 5260.0056                    | 5260 | 0.0056               | 1.0646               |
|                 |     | T (°C) | 50  | 5260.0004                    | 5260 | 0.0004               | 0.0760               |
|                 |     | T (°C) | 60  | 5260.0022                    | 5260 | 0.0022               | 0.4183               |
|                 |     | T (°C) | 70  | 5260.0135                    | 5260 | 0.0135               | 2.5665               |
| Limits          |     |        |     | 5250-5350 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5200MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5280.0044                    | 5280 | 0.0044               | 0.8333               |
|                 |    | V max (V) | 3.80 | 5280.0074                    | 5280 | 0.0074               | 1.4015               |
|                 |    | V min (V) | 2.81 | 5280.0022                    | 5280 | 0.0022               | 0.4167               |
| Limits          |    |           |      | 5250-5350 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5200MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5280.00650                   | 5280 | 0.00650              | 1.2311               |
|                 |     | T (°C) | -10 | 5280.00470                   | 5280 | 0.00470              | 0.8902               |
|                 |     | T (°C) | 0   | 5280.00250                   | 5280 | 0.00250              | 0.4735               |
|                 |     | T (°C) | 10  | 5280.00220                   | 5280 | 0.00220              | 0.4167               |
|                 |     | T (°C) | 20  | 5280.01330                   | 5280 | 0.01330              | 2.5189               |
|                 |     | T (°C) | 30  | 5280.00800                   | 5280 | 0.00800              | 1.5152               |
|                 |     | T (°C) | 40  | 5280.00550                   | 5280 | 0.00550              | 1.0417               |
|                 |     | T (°C) | 50  | 5280.00890                   | 5280 | 0.00890              | 1.6856               |
|                 |     | T (°C) | 60  | 5280.00900                   | 5280 | 0.00900              | 1.7045               |
|                 |     | T (°C) | 70  | 5280.01060                   | 5280 | 0.01060              | 2.0076               |
| Limits          |     |        |     | 5250-5350 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5240MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5320.0084                    | 5320 | 0.0084               | 1.5789               |
|                 |    | V max (V) | 3.80 | 5320.0083                    | 5320 | 0.0083               | 1.5602               |
|                 |    | V min (V) | 2.81 | 5320.0086                    | 5320 | 0.0086               | 1.6165               |
| Limits          |    |           |      | 5250-5350 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5240MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5320.0095                    | 5320 | 0.0095               | 1.7857               |
|                 |     | T (°C) | -10 | 5320.0116                    | 5320 | 0.0116               | 2.1805               |
|                 |     | T (°C) | 0   | 5320.0084                    | 5320 | 0.0084               | 1.5789               |
|                 |     | T (°C) | 10  | 5320.0030                    | 5320 | 0.0030               | 0.5639               |
|                 |     | T (°C) | 20  | 5320.0129                    | 5320 | 0.0129               | 2.4248               |
|                 |     | T (°C) | 30  | 5320.0133                    | 5320 | 0.0133               | 2.5000               |
|                 |     | T (°C) | 40  | 5320.0126                    | 5320 | 0.0126               | 2.3684               |
|                 |     | T (°C) | 50  | 5320.0022                    | 5320 | 0.0022               | 0.4135               |
|                 |     | T (°C) | 60  | 5320.0118                    | 5320 | 0.0118               | 2.2180               |
|                 |     | T (°C) | 70  | 5320.0070                    | 5320 | 0.0070               | 1.3158               |
| Limits          |     |        |     | 5250-5350 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

|              |                                                  |                    |         |
|--------------|--------------------------------------------------|--------------------|---------|
| Temperature: | 26 °C                                            | Relative Humidity: | 54%     |
| Pressure:    | 101KPa                                           | Test Voltage:      | DC 3.3V |
| Test Mode:   | TX (5.6G) Mode Frequency U-NII-2C (5500-5700MHz) |                    |         |

#### Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5500MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5500.0102                    | 5500 | 0.0102               | 1.8545               |
|                 |    | V max (V) | 3.80 | 5500.0130                    | 5500 | 0.0130               | 2.3636               |
|                 |    | V min (V) | 2.81 | 5500.0062                    | 5500 | 0.0062               | 1.1273               |
| Limits          |    |           |      | 5470-5725 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

#### Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5500MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5500.0010                    | 5500 | 0.0010               | 0.1818               |
|                 |     | T (°C) | -10 | 5500.0047                    | 5500 | 0.0047               | 0.8545               |
|                 |     | T (°C) | 0   | 5500.0090                    | 5500 | 0.0090               | 1.6364               |
|                 |     | T (°C) | 10  | 5500.0100                    | 5500 | 0.0100               | 1.8182               |
|                 |     | T (°C) | 20  | 5500.0047                    | 5500 | 0.0047               | 0.8545               |
|                 |     | T (°C) | 30  | 5500.0097                    | 5500 | 0.0097               | 1.7636               |
|                 |     | T (°C) | 40  | 5500.0036                    | 5500 | 0.0036               | 0.6545               |
|                 |     | T (°C) | 50  | 5500.0126                    | 5500 | 0.0126               | 2.2909               |
|                 |     | T (°C) | 60  | 5500.0036                    | 5500 | 0.0036               | 0.6545               |
|                 |     | T (°C) | 70  | 5500.0002                    | 5500 | 0.0002               | 0.0364               |
| Limits          |     |        |     | 5470-5725 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5580MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5580.0088                    | 5580 | 0.0088               | 1.5771               |
|                 |    | V max (V) | 3.80 | 5580.0063                    | 5580 | 0.0063               | 1.1290               |
|                 |    | V min (V) | 2.81 | 5580.0134                    | 5580 | 0.0134               | 2.4014               |
| Limits          |    |           |      | 5470-5725 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5580MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5580.00310                   | 5580 | 0.00310              | 0.5556               |
|                 |     | T (°C) | -10 | 5580.00960                   | 5580 | 0.00960              | 1.7204               |
|                 |     | T (°C) | 0   | 5580.00390                   | 5580 | 0.00390              | 0.6989               |
|                 |     | T (°C) | 10  | 5580.01110                   | 5580 | 0.01110              | 1.9892               |
|                 |     | T (°C) | 20  | 5580.01330                   | 5580 | 0.01330              | 2.3835               |
|                 |     | T (°C) | 30  | 5580.01040                   | 5580 | 0.01040              | 1.8638               |
|                 |     | T (°C) | 40  | 5580.00670                   | 5580 | 0.00670              | 1.2007               |
|                 |     | T (°C) | 50  | 5580.00500                   | 5580 | 0.00500              | 0.8961               |
|                 |     | T (°C) | 60  | 5580.00100                   | 5580 | 0.00100              | 0.1792               |
|                 |     | T (°C) | 70  | 5580.00790                   | 5580 | 0.00790              | 1.4158               |
| Limits          |     |        |     | 5470-5725 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5700MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5700.0090                    | 5700 | 0.0090               | 1.5789               |
|                 |    | V max (V) | 3.80 | 5700.0008                    | 5700 | 0.0008               | 0.1404               |
|                 |    | V min (V) | 2.81 | 5700.0014                    | 5700 | 0.0014               | 0.2456               |
| Limits          |    |           |      | 5470-5725 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency : 5700MHz |      |                      |                      |
|-----------------|-----|--------|-----|-------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                             | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5700.0081                     | 5700 | 0.0081               | 1.4211               |
|                 |     | T (°C) | -10 | 5700.0045                     | 5700 | 0.0045               | 0.7895               |
|                 |     | T (°C) | 0   | 5700.0067                     | 5700 | 0.0067               | 1.1754               |
|                 |     | T (°C) | 10  | 5700.0043                     | 5700 | 0.0043               | 0.7544               |
|                 |     | T (°C) | 20  | 5700.0102                     | 5700 | 0.0102               | 1.7895               |
|                 |     | T (°C) | 30  | 5700.0049                     | 5700 | 0.0049               | 0.8596               |
|                 |     | T (°C) | 40  | 5700.0108                     | 5700 | 0.0108               | 1.8947               |
|                 |     | T (°C) | 50  | 5700.0131                     | 5700 | 0.0131               | 2.2982               |
|                 |     | T (°C) | 60  | 5700.0038                     | 5700 | 0.0038               | 0.6667               |
|                 |     | T (°C) | 70  | 5700.0036                     | 5700 | 0.0036               | 0.6316               |
| Limits          |     |        |     | 5470-5725 MHz                 |      |                      |                      |
| Result          |     |        |     | Complies                      |      |                      |                      |



|              |                                                 |                    |         |
|--------------|-------------------------------------------------|--------------------|---------|
| Temperature: | 26 °C                                           | Relative Humidity: | 54%     |
| Pressure:    | 101KPa                                          | Test Voltage:      | DC 3.3V |
| Test Mode:   | TX (5.8G) Mode Frequency U-NII-3 (5745-5825MHz) |                    |         |

#### Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5745MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5745.00860                   | 5745 | 0.00860              | 1.4970               |
|                 |    | V max (V) | 3.80 | 5745.00950                   | 5745 | 0.00950              | 1.6536               |
|                 |    | V min (V) | 2.81 | 5745.01260                   | 5745 | 0.01260              | 2.1932               |
| Limits          |    |           |      | 5725-5850 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

#### Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5745MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5745.00850                   | 5745 | 0.00850              | 1.4795               |
|                 |     | T (°C) | -10 | 5745.00000                   | 5745 | 0.00000              | 0.0000               |
|                 |     | T (°C) | 0   | 5745.00330                   | 5745 | 0.00330              | 0.5744               |
|                 |     | T (°C) | 10  | 5745.00260                   | 5745 | 0.00260              | 0.4526               |
|                 |     | T (°C) | 20  | 5745.00940                   | 5745 | 0.00940              | 1.6362               |
|                 |     | T (°C) | 30  | 5745.00300                   | 5745 | 0.00300              | 0.5222               |
|                 |     | T (°C) | 40  | 5745.00980                   | 5745 | 0.00980              | 1.7058               |
|                 |     | T (°C) | 50  | 5745.00910                   | 5745 | 0.00910              | 1.5840               |
|                 |     | T (°C) | 60  | 5745.00310                   | 5745 | 0.00310              | 0.5396               |
|                 |     | T (°C) | 70  | 5745.00340                   | 5745 | 0.00340              | 0.5918               |
| Limits          |     |        |     | 5725-5850 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5785MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5785.00210                   | 5785 | 0.00210              | 0.3630               |
|                 |    | V max (V) | 3.80 | 5785.01180                   | 5785 | 0.01180              | 2.0398               |
|                 |    | V min (V) | 2.81 | 5785.00730                   | 5785 | 0.00730              | 1.2619               |
| Limits          |    |           |      | 5725-5850 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5785MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5785.00620                   | 5785 | 0.00620              | 1.0717               |
|                 |     | T (°C) | -10 | 5785.01000                   | 5785 | 0.01000              | 1.7286               |
|                 |     | T (°C) | 0   | 5785.00860                   | 5785 | 0.00860              | 1.4866               |
|                 |     | T (°C) | 10  | 5785.01150                   | 5785 | 0.01150              | 1.9879               |
|                 |     | T (°C) | 20  | 5785.00640                   | 5785 | 0.00640              | 1.1063               |
|                 |     | T (°C) | 30  | 5785.01020                   | 5785 | 0.01020              | 1.7632               |
|                 |     | T (°C) | 40  | 5785.00090                   | 5785 | 0.00090              | 0.1556               |
|                 |     | T (°C) | 50  | 5785.01190                   | 5785 | 0.01190              | 2.0570               |
|                 |     | T (°C) | 60  | 5785.00730                   | 5785 | 0.00730              | 1.2619               |
|                 |     | T (°C) | 70  | 5785.00020                   | 5785 | 0.00020              | 0.0346               |
| Limits          |     |        |     | 5725-5850 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5825MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.30 | 5825.01120                   | 5825 | 0.01120              | 1.9227               |
|                 |    | V max (V) | 3.80 | 5825.00310                   | 5825 | 0.00310              | 0.5322               |
|                 |    | V min (V) | 2.81 | 5825.01190                   | 5825 | 0.01190              | 2.0429               |
| Limits          |    |           |      | 5725-5850 MHz                |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

## Temperature vs. Frequency Stability

| TEST CONDITIONS |     |        |     | Reference Frequency: 5825MHz |      |                      |                      |
|-----------------|-----|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |     |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 3.3 | T (°C) | -20 | 5825.00570                   | 5825 | 0.00570              | 0.9785               |
|                 |     | T (°C) | -10 | 5825.01350                   | 5825 | 0.01350              | 2.3176               |
|                 |     | T (°C) | 0   | 5825.00960                   | 5825 | 0.00960              | 1.6481               |
|                 |     | T (°C) | 10  | 5825.00600                   | 5825 | 0.00600              | 1.0300               |
|                 |     | T (°C) | 20  | 5825.00450                   | 5825 | 0.00450              | 0.7725               |
|                 |     | T (°C) | 30  | 5825.00940                   | 5825 | 0.00940              | 1.6137               |
|                 |     | T (°C) | 40  | 5825.00800                   | 5825 | 0.00800              | 1.3734               |
|                 |     | T (°C) | 50  | 5825.00470                   | 5825 | 0.00470              | 0.8069               |
|                 |     | T (°C) | 60  | 5825.00110                   | 5825 | 0.00110              | 0.1888               |
|                 |     | T (°C) | 70  | 5825.01160                   | 5825 | 0.01160              | 1.9914               |
| Limits          |     |        |     | 5725-5850 MHz                |      |                      |                      |
| Result          |     |        |     | Complies                     |      |                      |                      |

## 14. Duty Cycle Of Test Signal

### 14.1 Standard Requirement

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

### 14.2 Formula

Duty Cycle =  $T_{on} / (T_{on} + T_{off})$

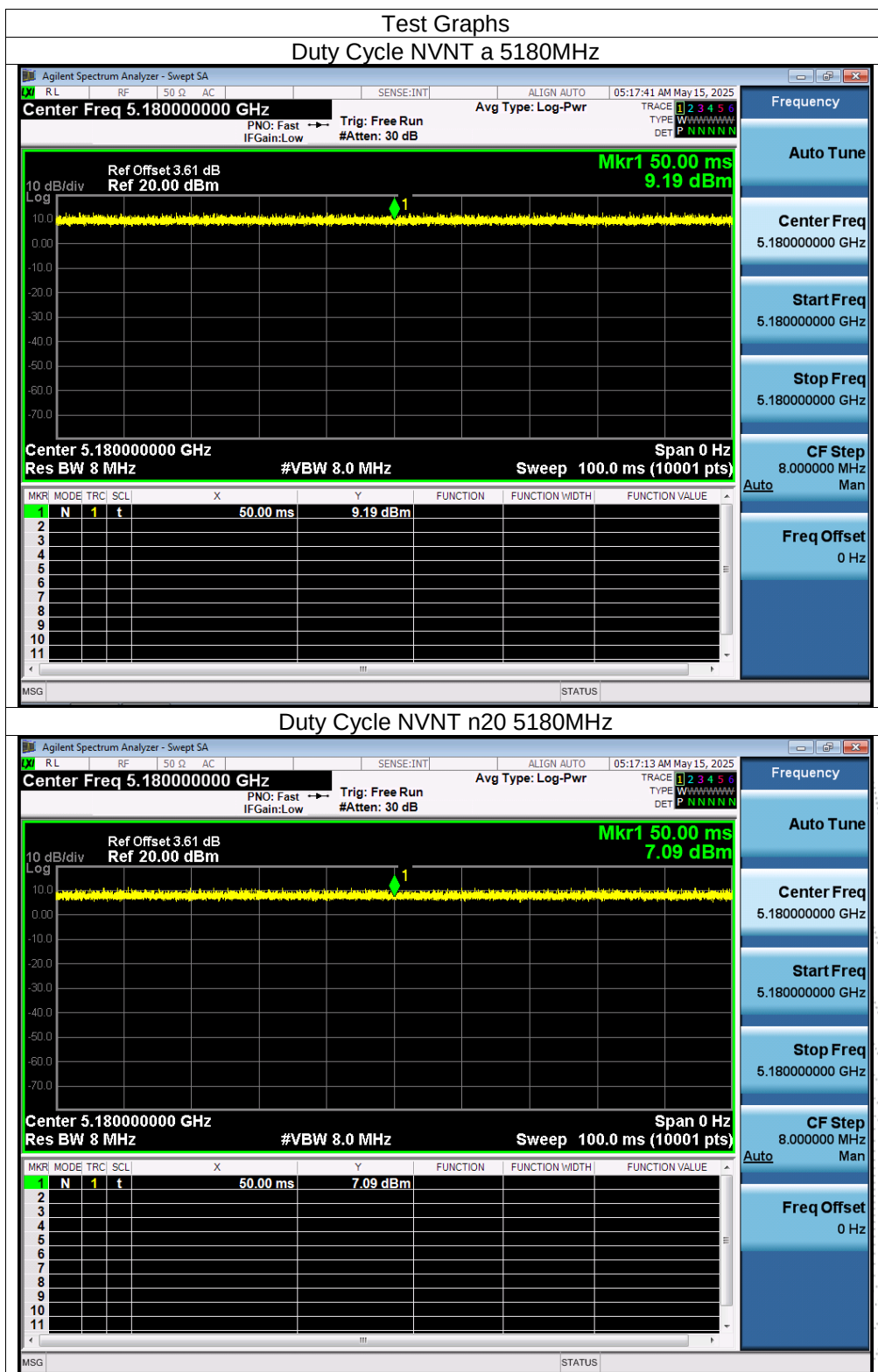
### 14.3 Test Procedure

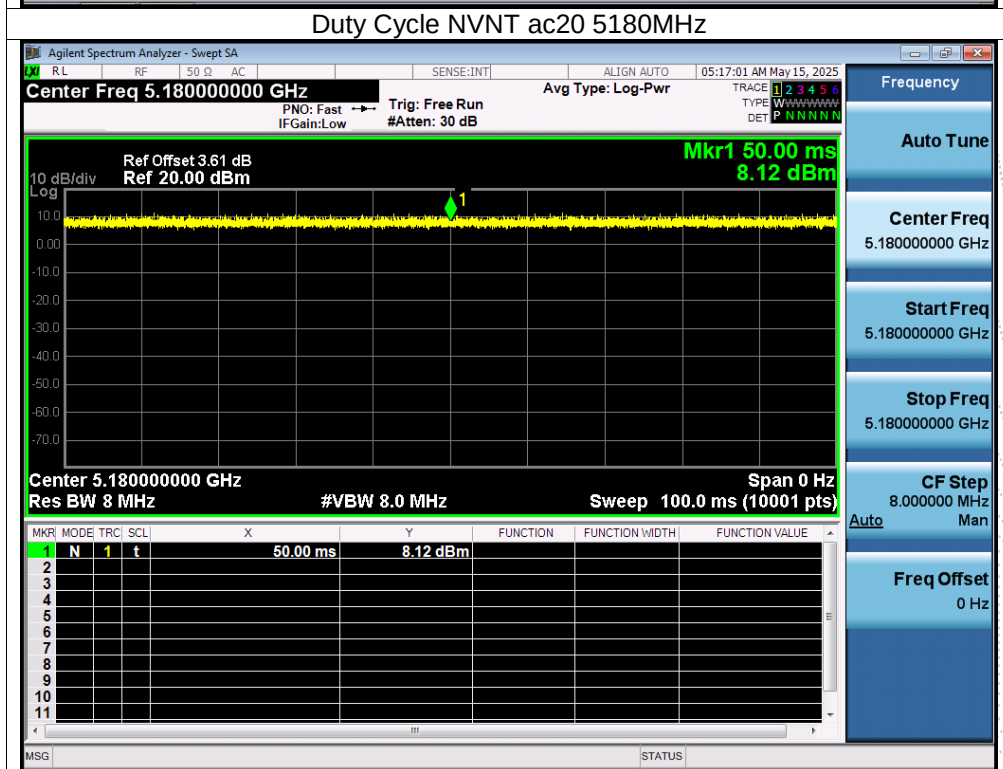
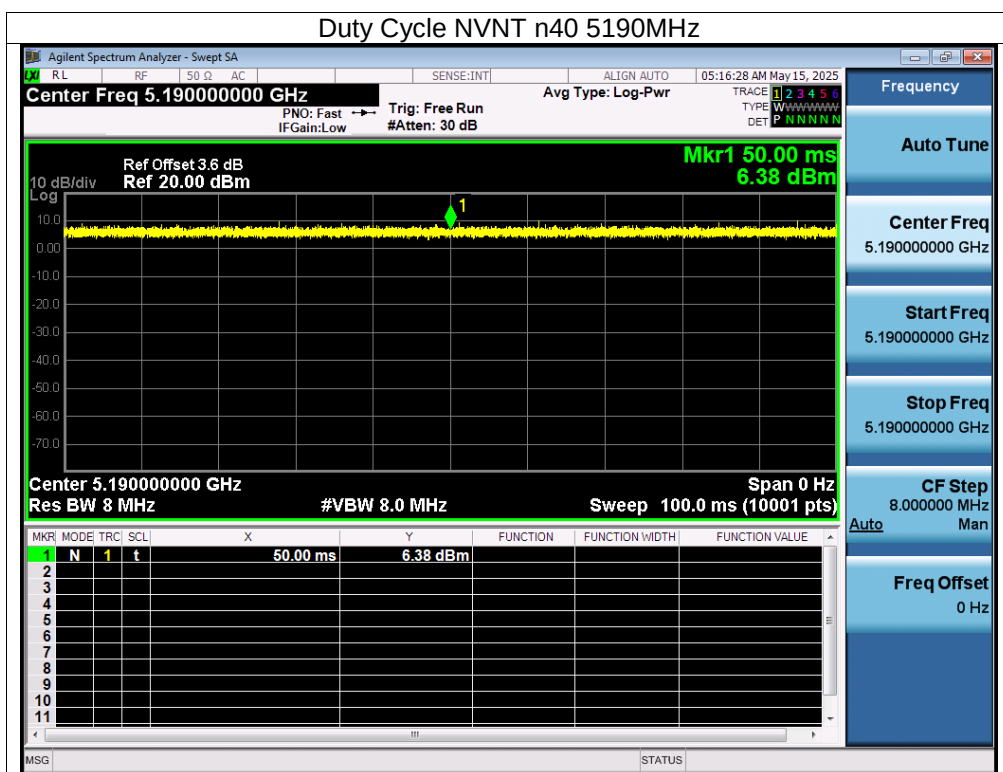
1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

### 14.4 Test Result

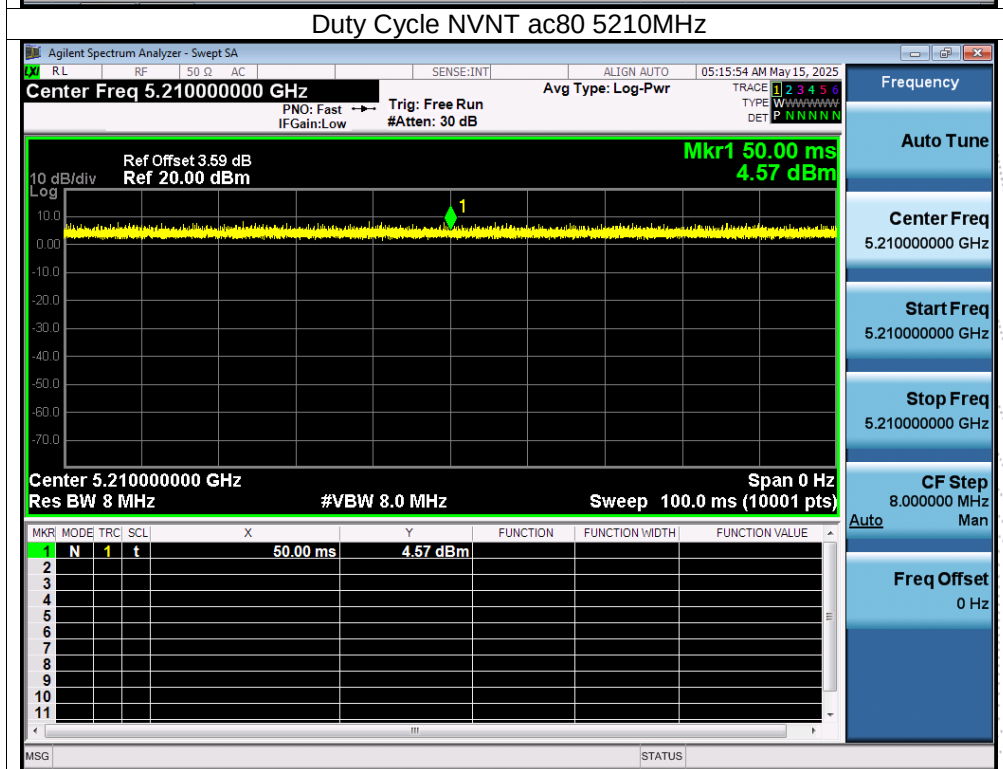
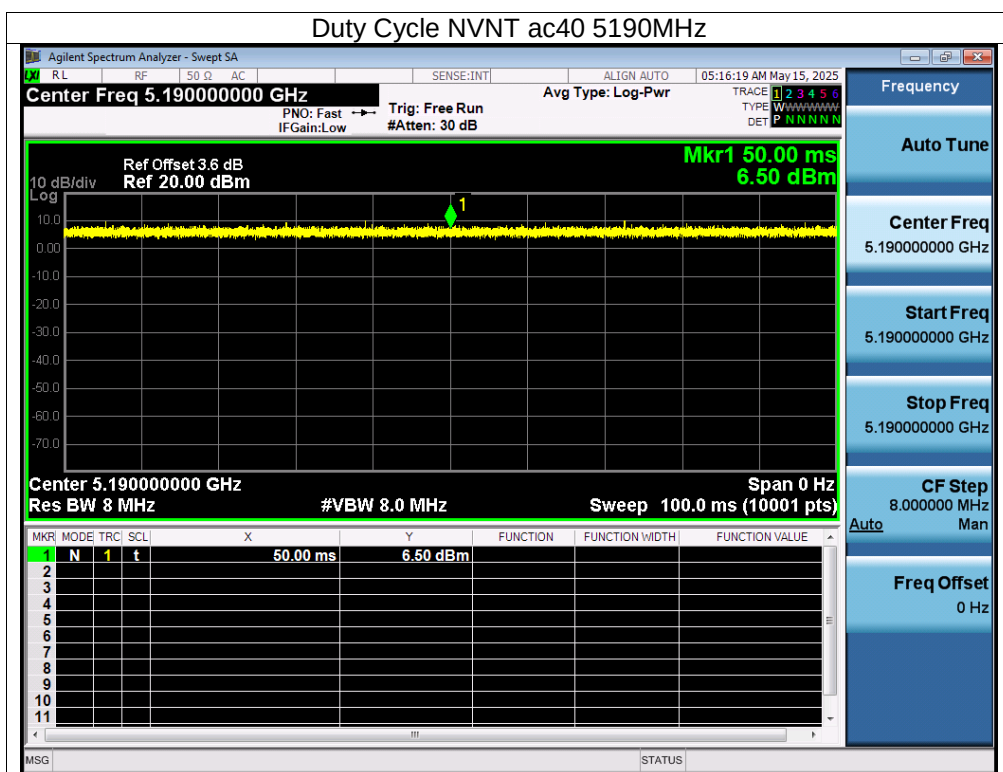
ANT A

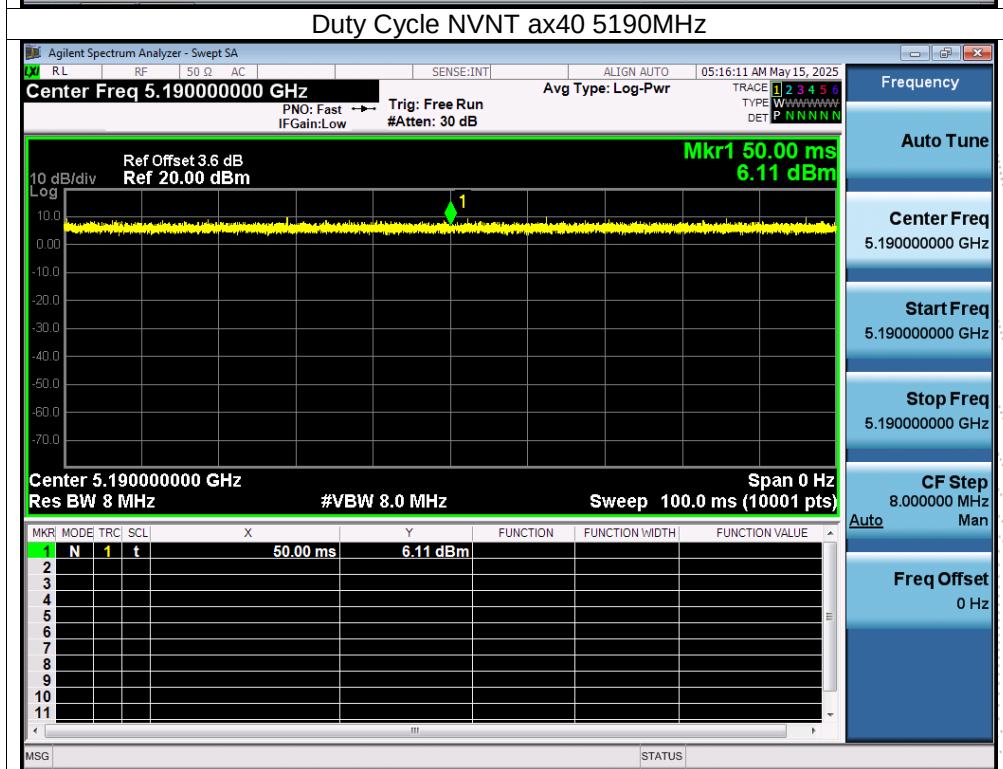
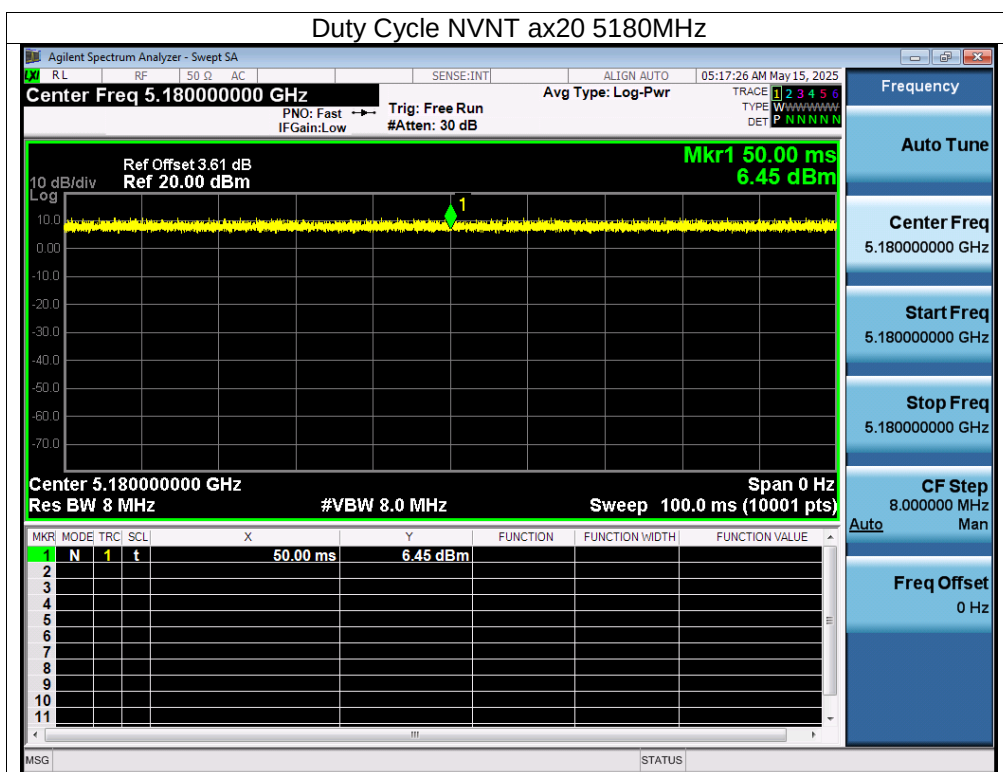
| Condition | Mode | Frequency (MHz) | Duty Cycle (%) | Correction Factor (dB) |
|-----------|------|-----------------|----------------|------------------------|
| NVNT      | a    | 5180            | 100            | 0                      |
| NVNT      | n20  | 5180            | 100            | 0                      |
| NVNT      | n40  | 5190            | 100            | 0                      |
| NVNT      | ac20 | 5180            | 100            | 0                      |
| NVNT      | ac40 | 5190            | 100            | 0                      |
| NVNT      | ac80 | 5210            | 100            | 0                      |
| NVNT      | ax20 | 5180            | 100            | 0                      |
| NVNT      | ax40 | 5190            | 100            | 0                      |
| NVNT      | ax80 | 5210            | 100            | 0                      |

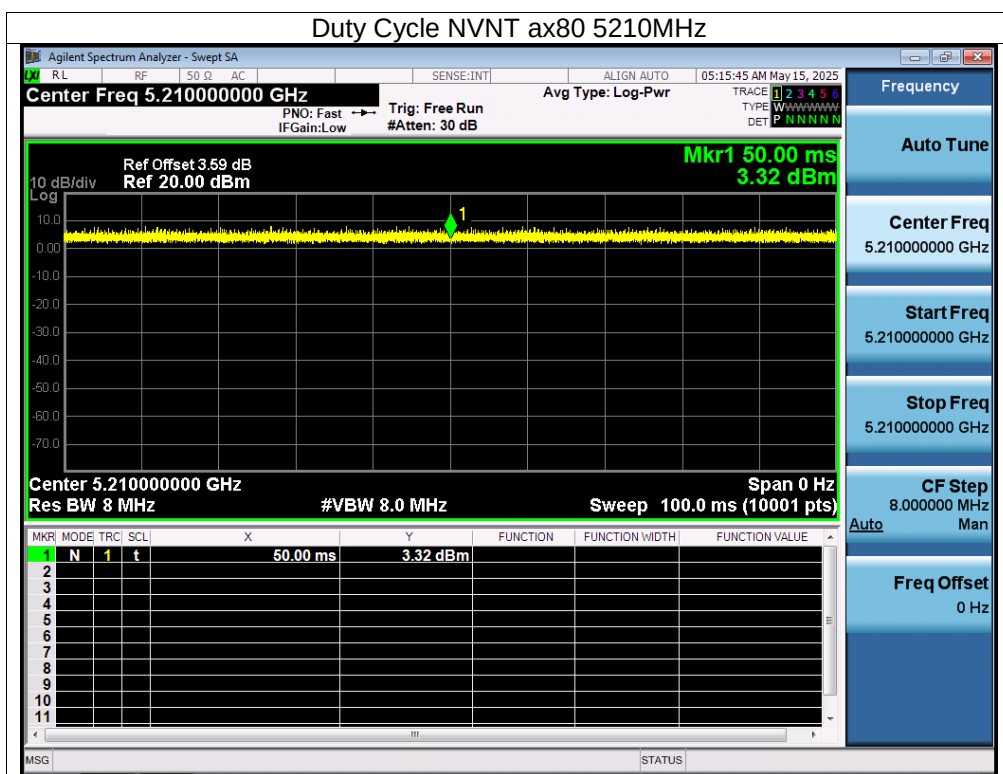






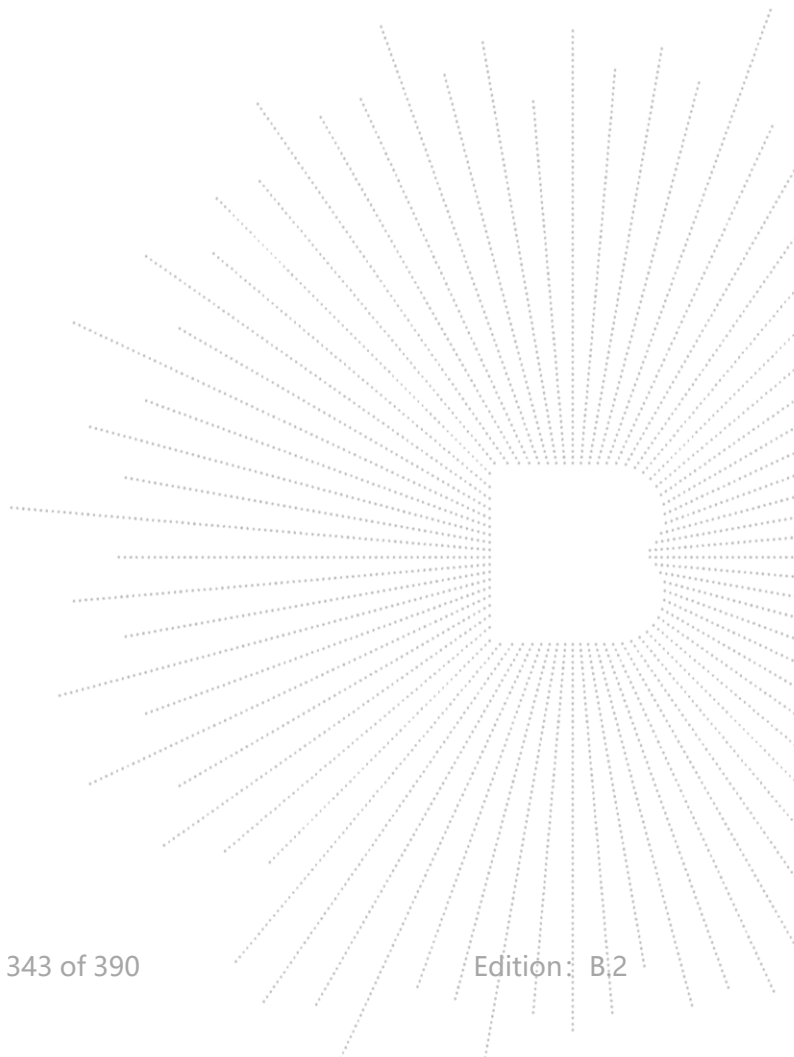


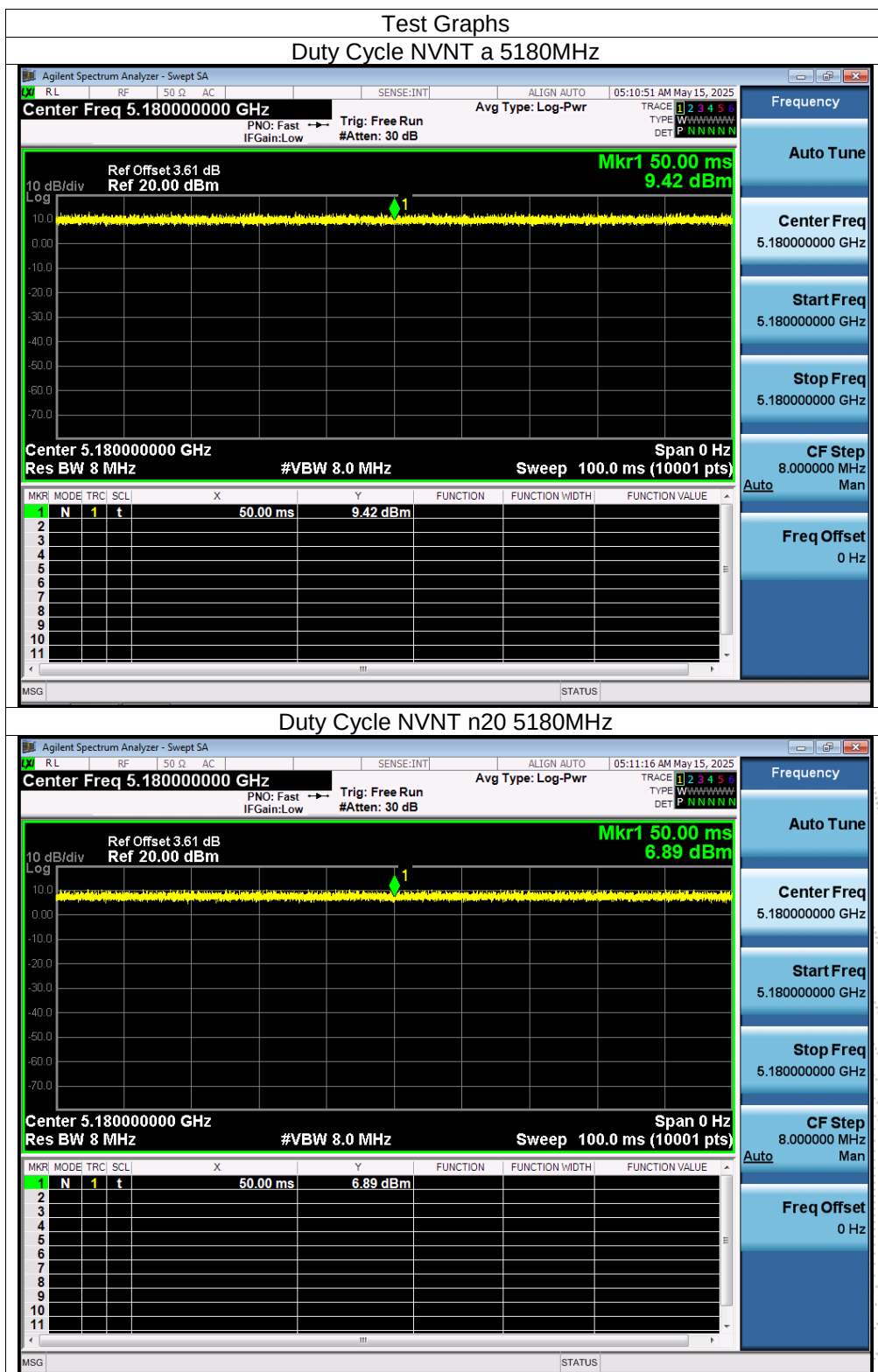


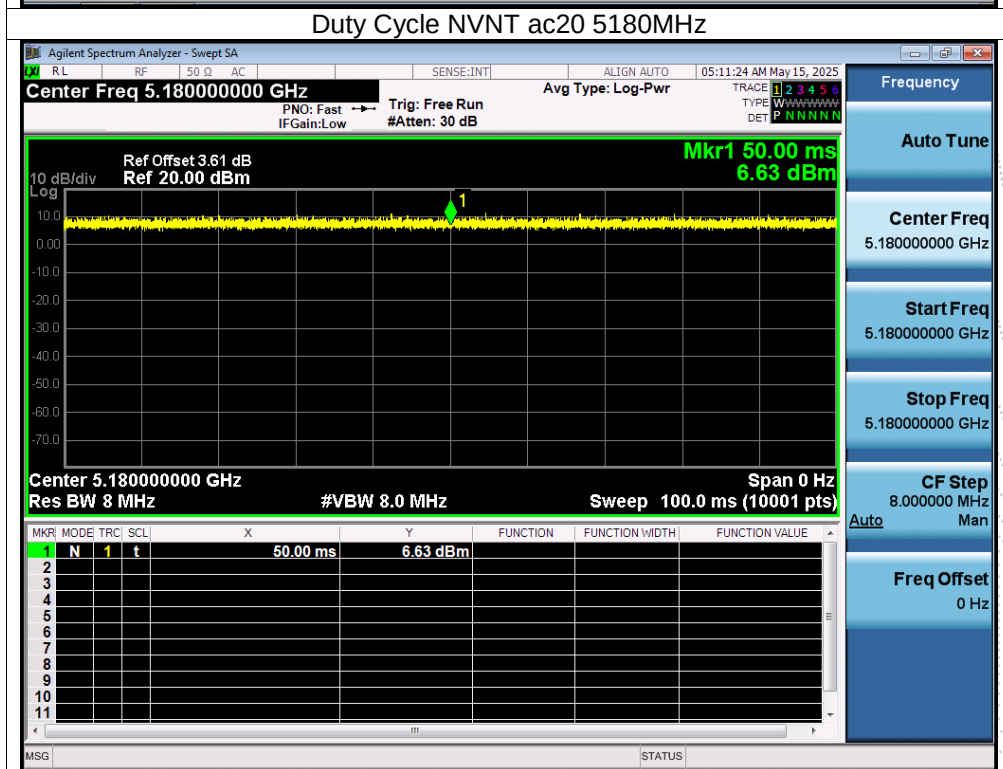
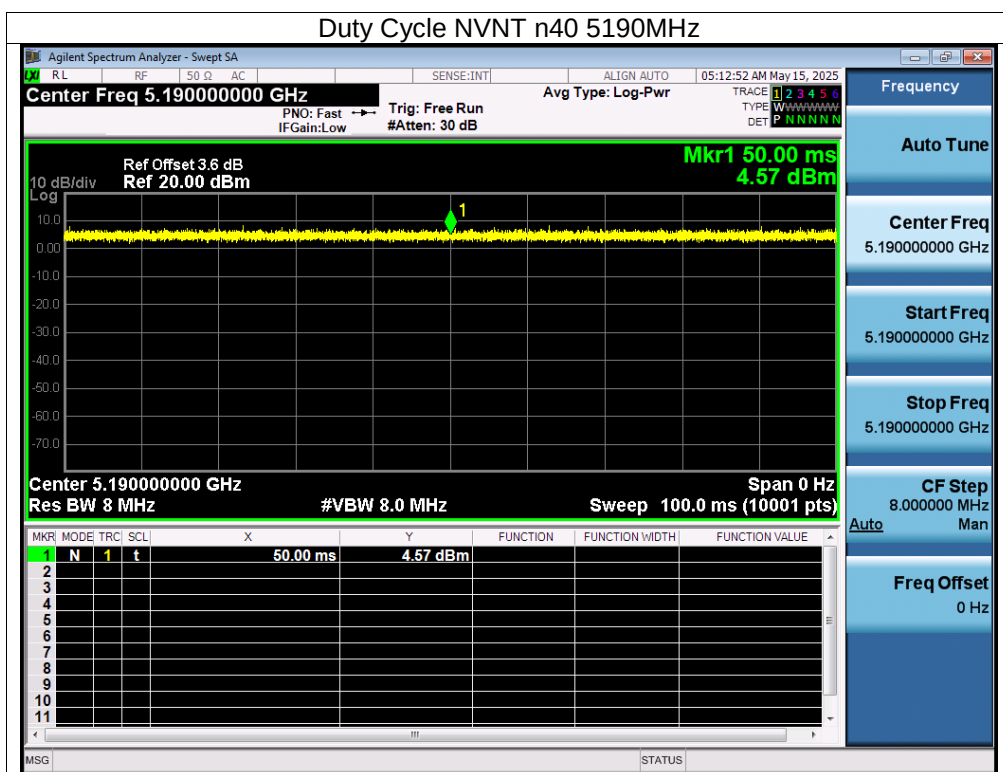


## ANT B

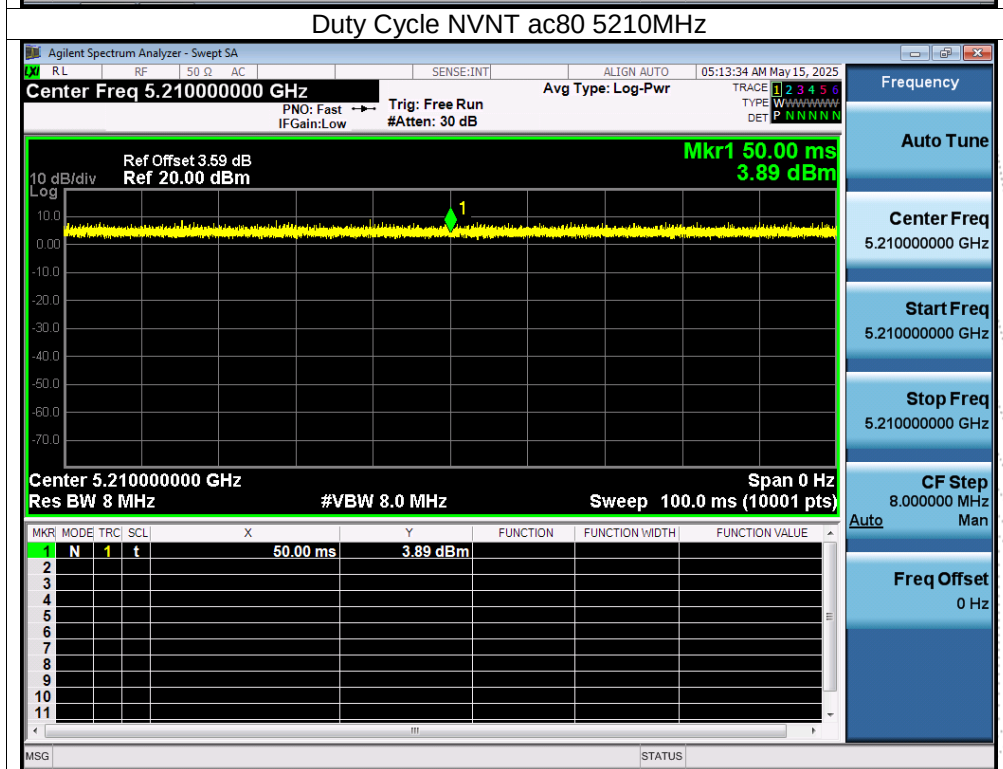
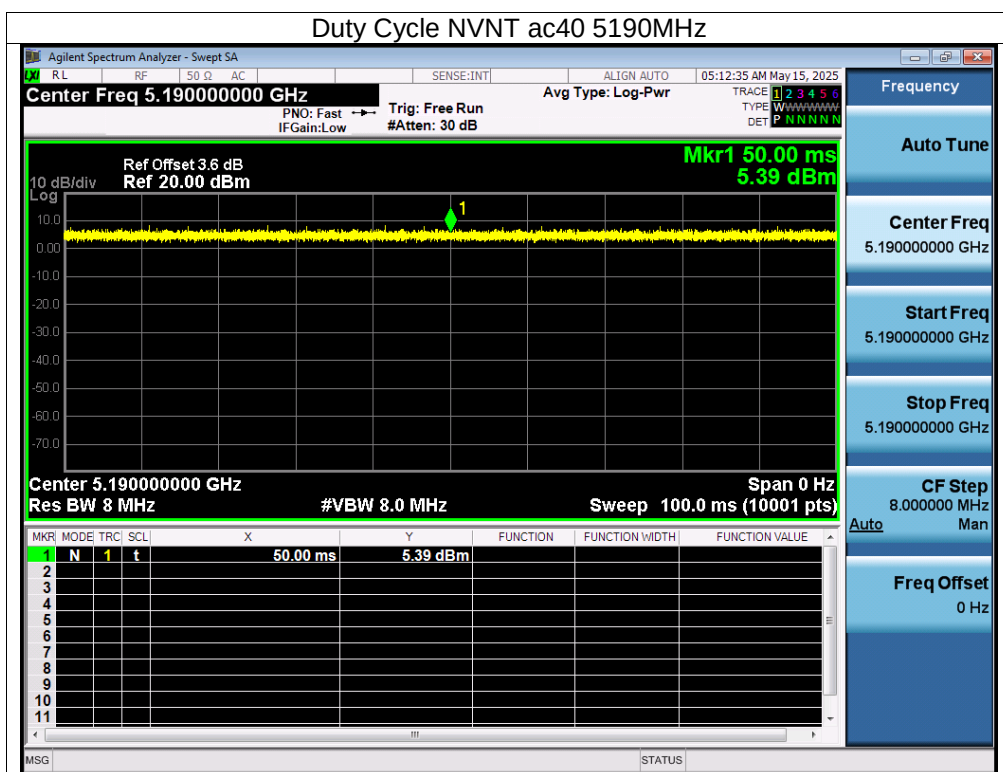
| Condition | Mode | Frequency (MHz) | Duty Cycle (%) | Correction Factor (dB) |
|-----------|------|-----------------|----------------|------------------------|
| NVNT      | a    | 5180            | 100            | 0                      |
| NVNT      | n20  | 5180            | 100            | 0                      |
| NVNT      | n40  | 5190            | 100            | 0                      |
| NVNT      | ac20 | 5180            | 100            | 0                      |
| NVNT      | ac40 | 5190            | 100            | 0                      |
| NVNT      | ac80 | 5210            | 100            | 0                      |
| NVNT      | ax20 | 5180            | 100            | 0                      |
| NVNT      | ax40 | 5190            | 100            | 0                      |
| NVNT      | ax80 | 5210            | 100            | 0                      |

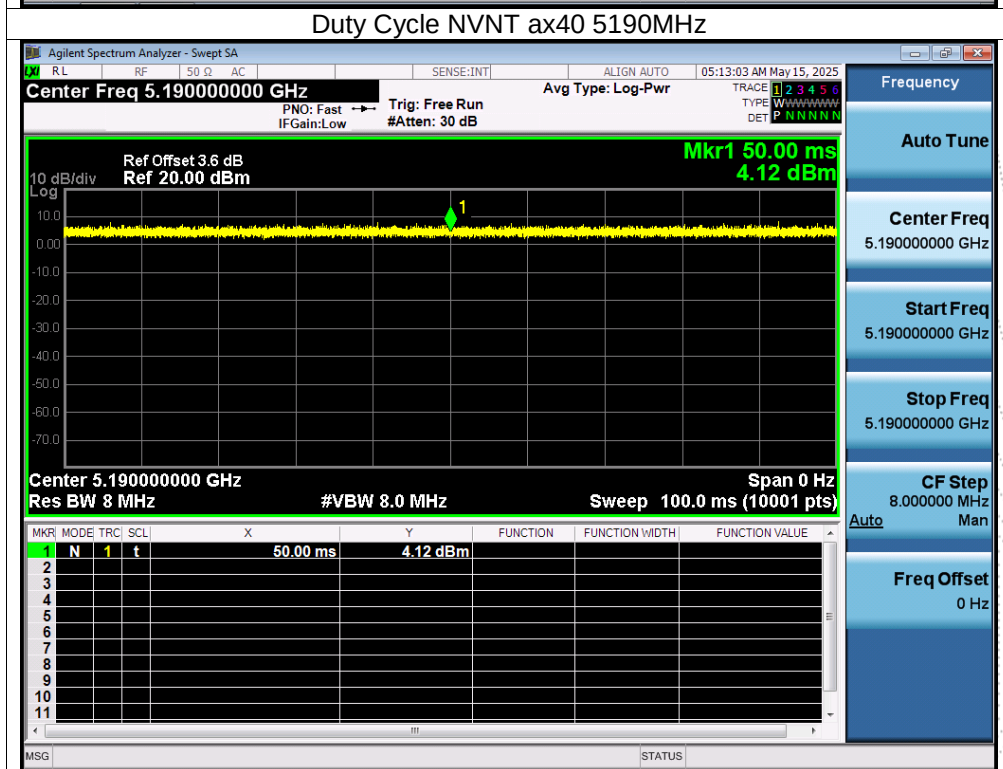
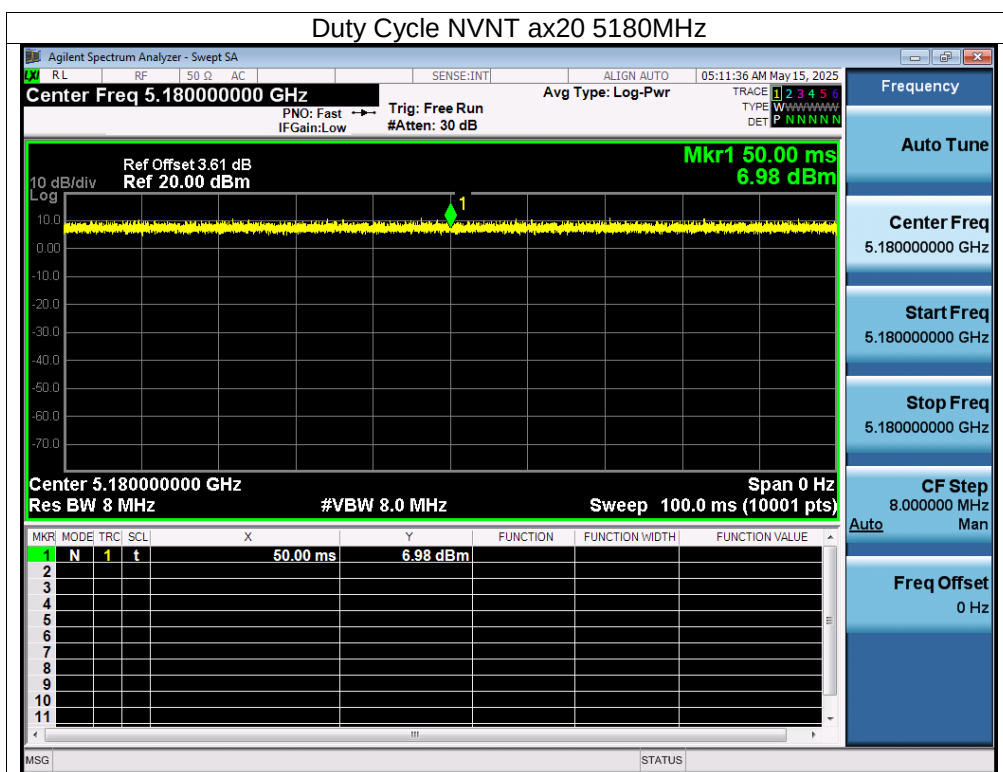


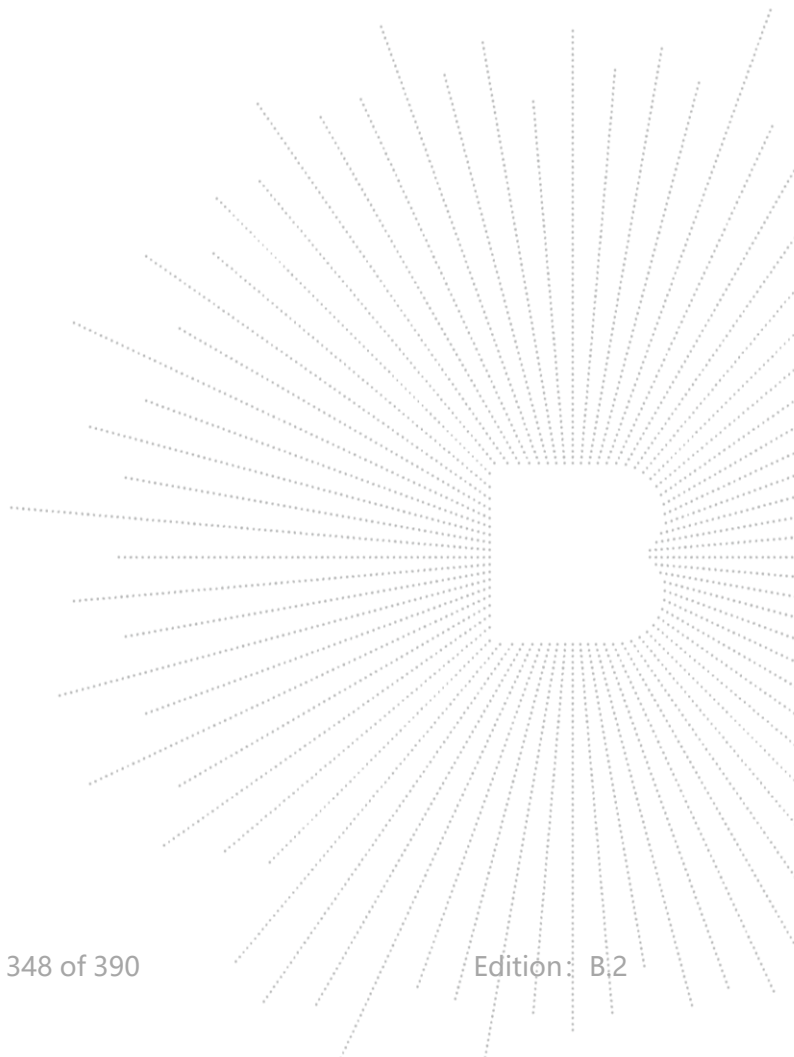
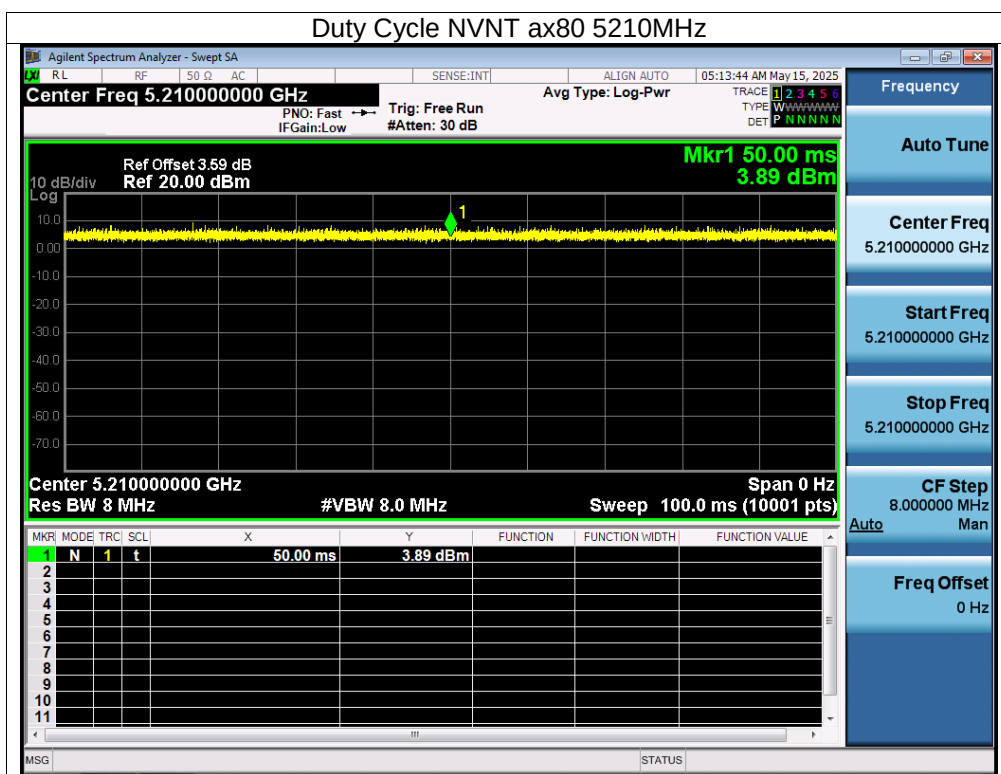






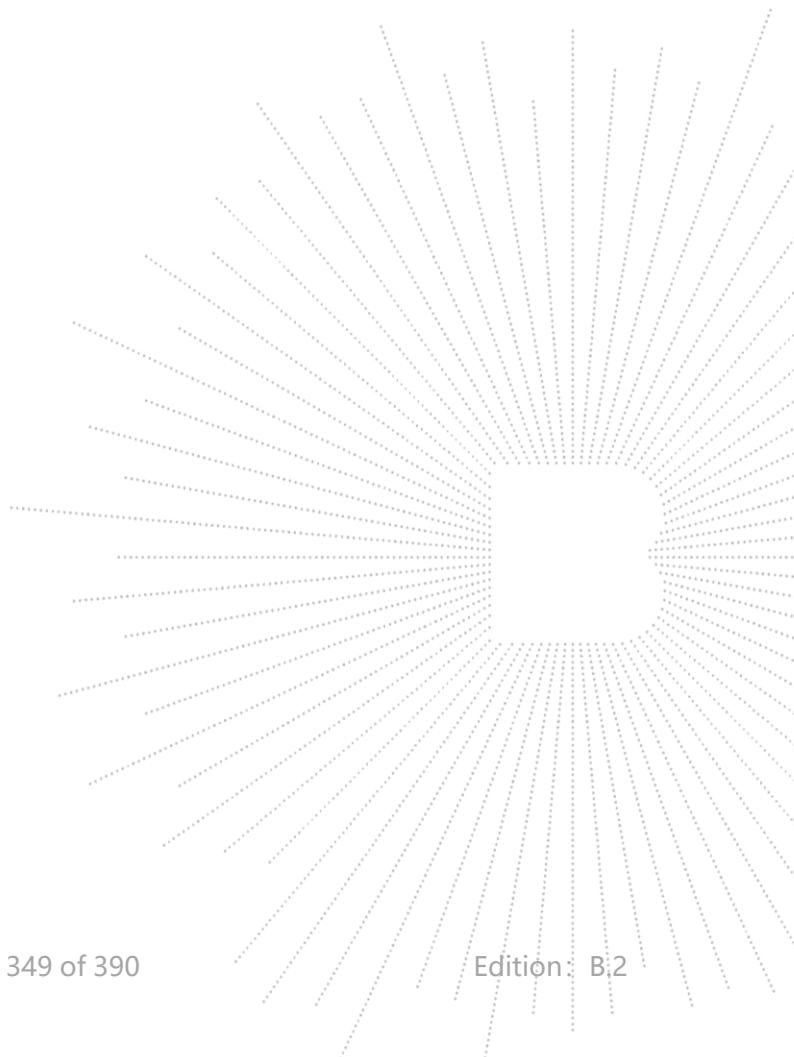


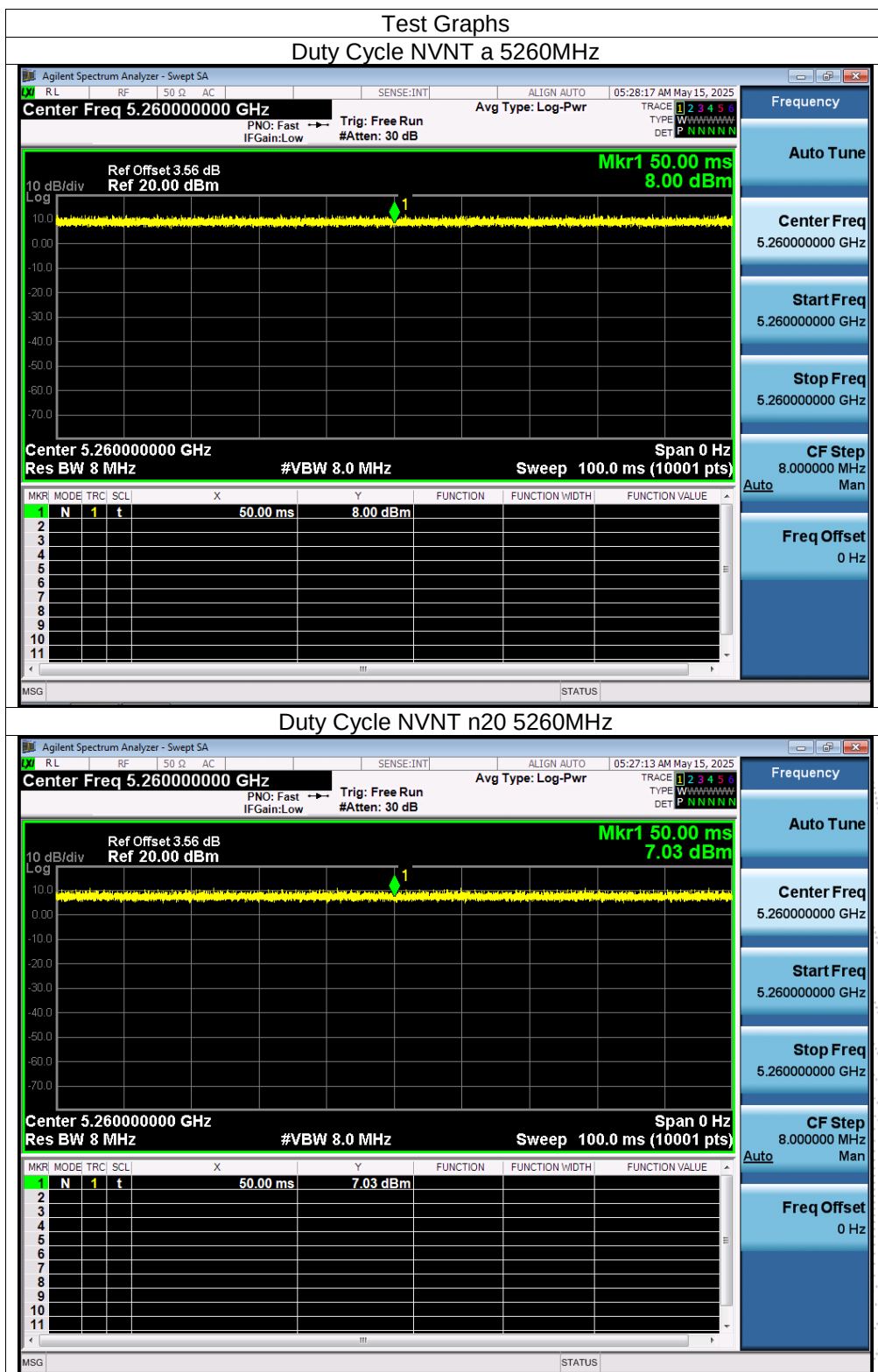


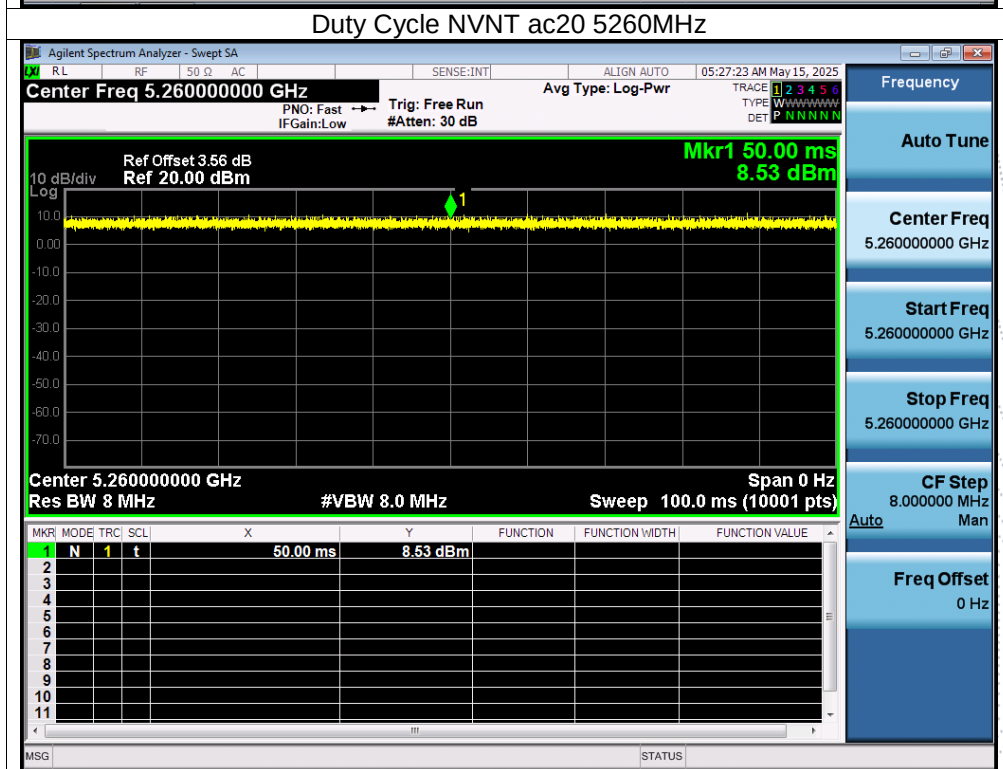
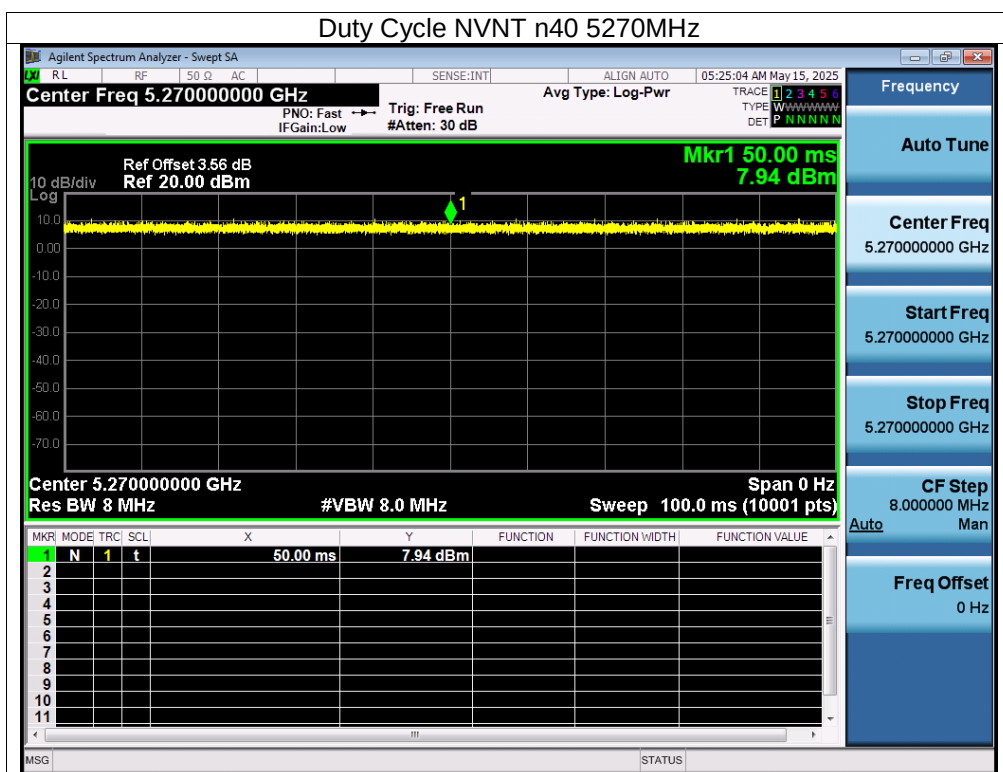


ANT A

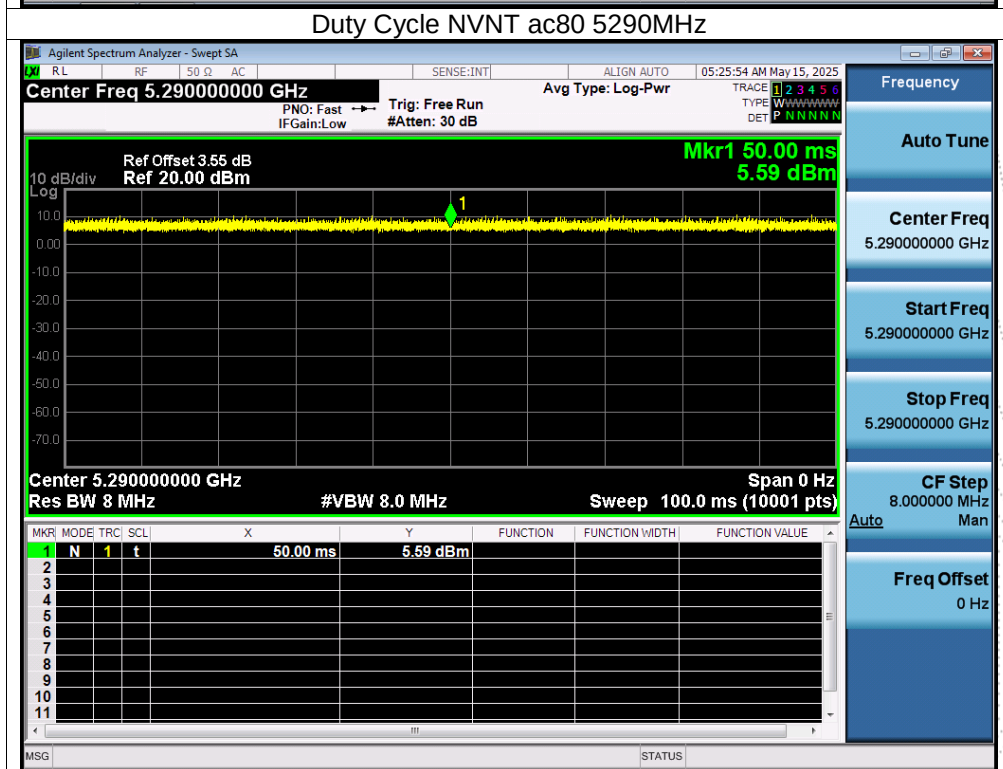
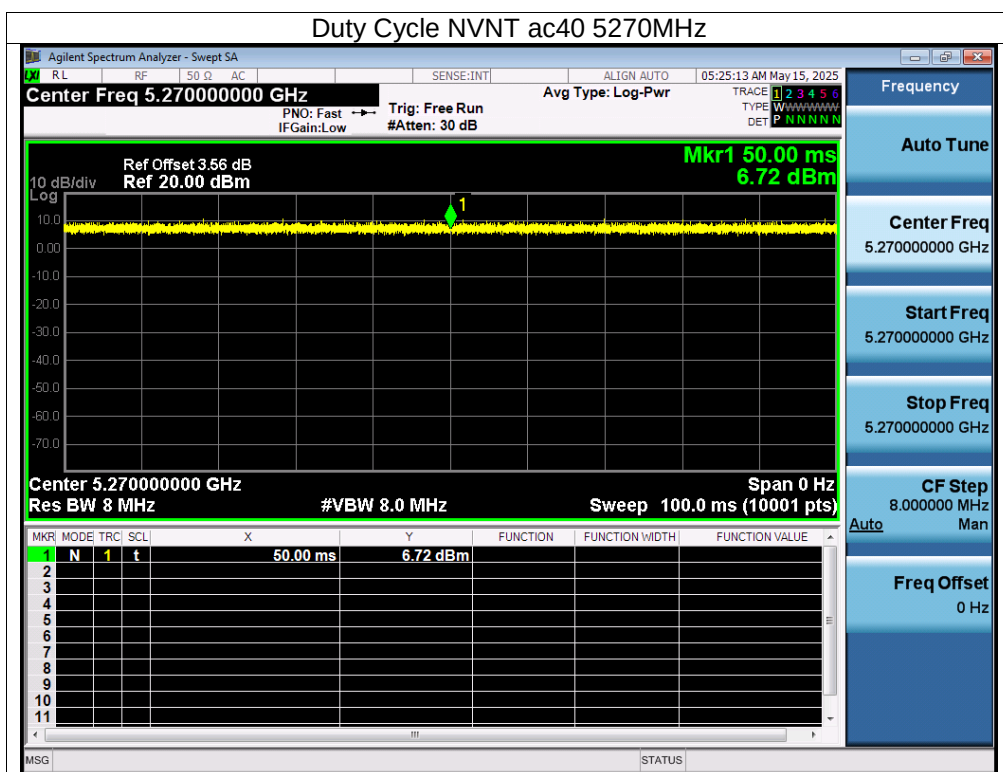
| Condition | Mode | Frequency (MHz) | Duty Cycle (%) | Correction Factor (dB) |
|-----------|------|-----------------|----------------|------------------------|
| NVNT      | a    | 5260            | 100            | 0                      |
| NVNT      | n20  | 5260            | 100            | 0                      |
| NVNT      | n40  | 5270            | 100            | 0                      |
| NVNT      | ac20 | 5260            | 100            | 0                      |
| NVNT      | ac40 | 5270            | 100            | 0                      |
| NVNT      | ac80 | 5290            | 100            | 0                      |
| NVNT      | ax20 | 5260            | 100            | 0                      |
| NVNT      | ax40 | 5270            | 100            | 0                      |
| NVNT      | ax80 | 5290            | 100            | 0                      |

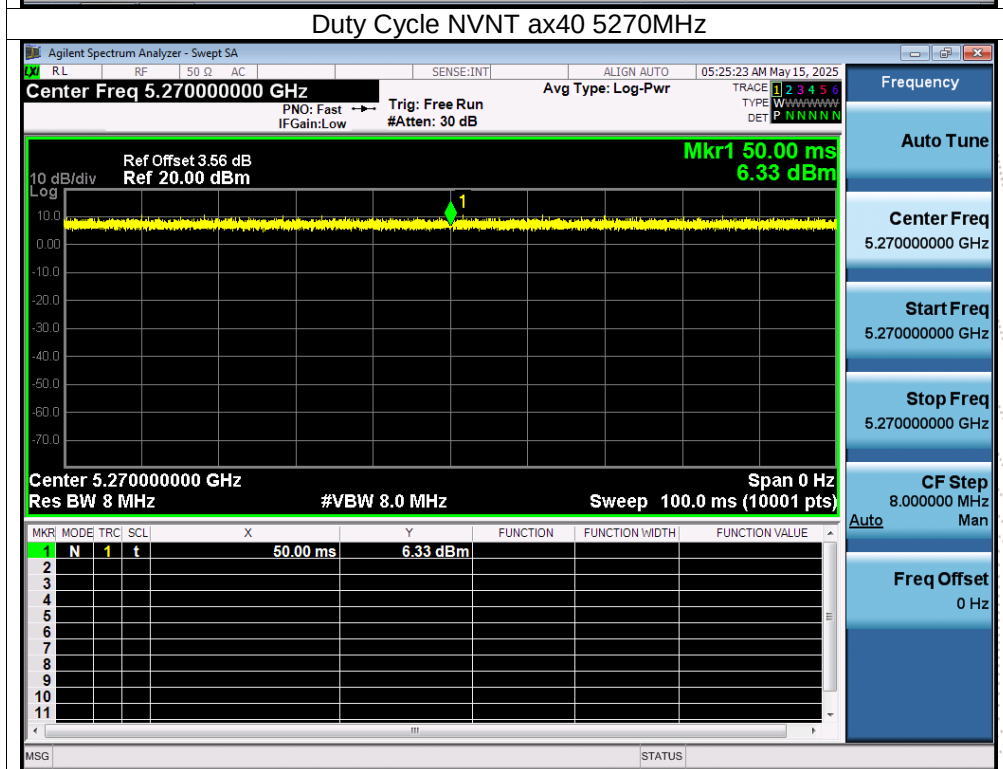
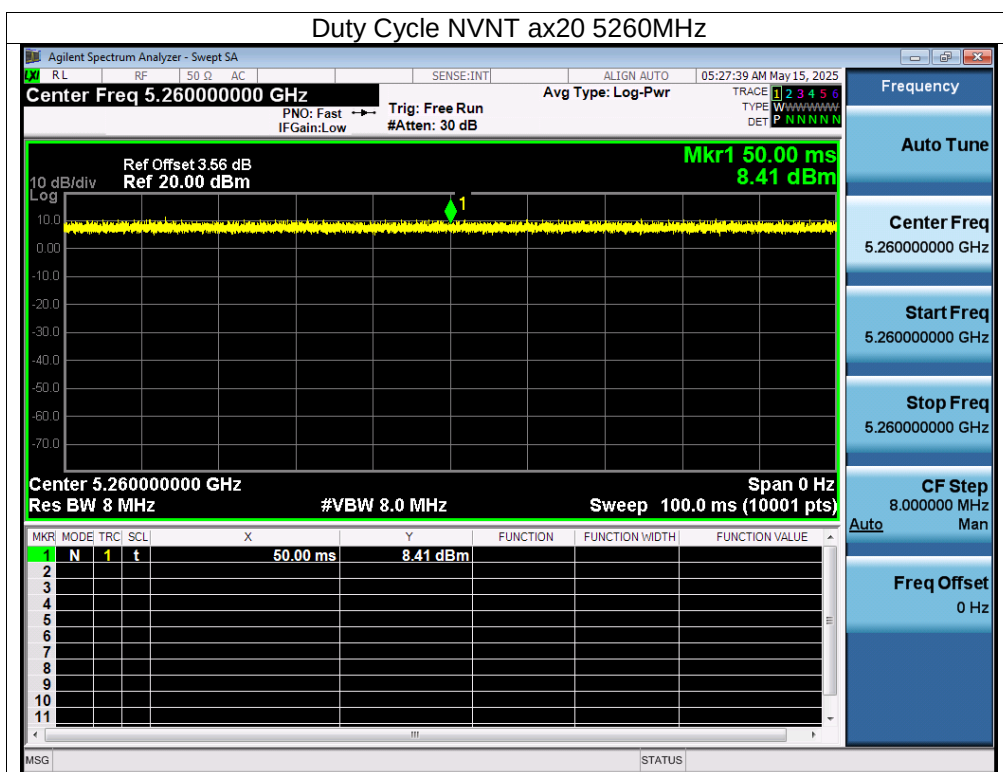


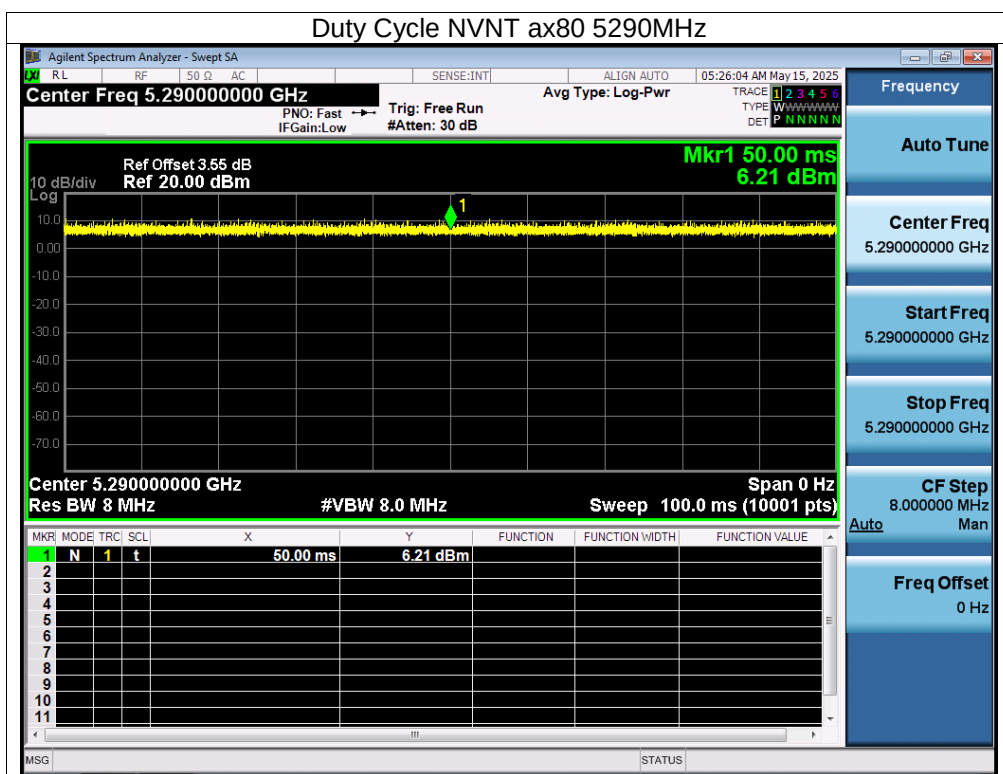






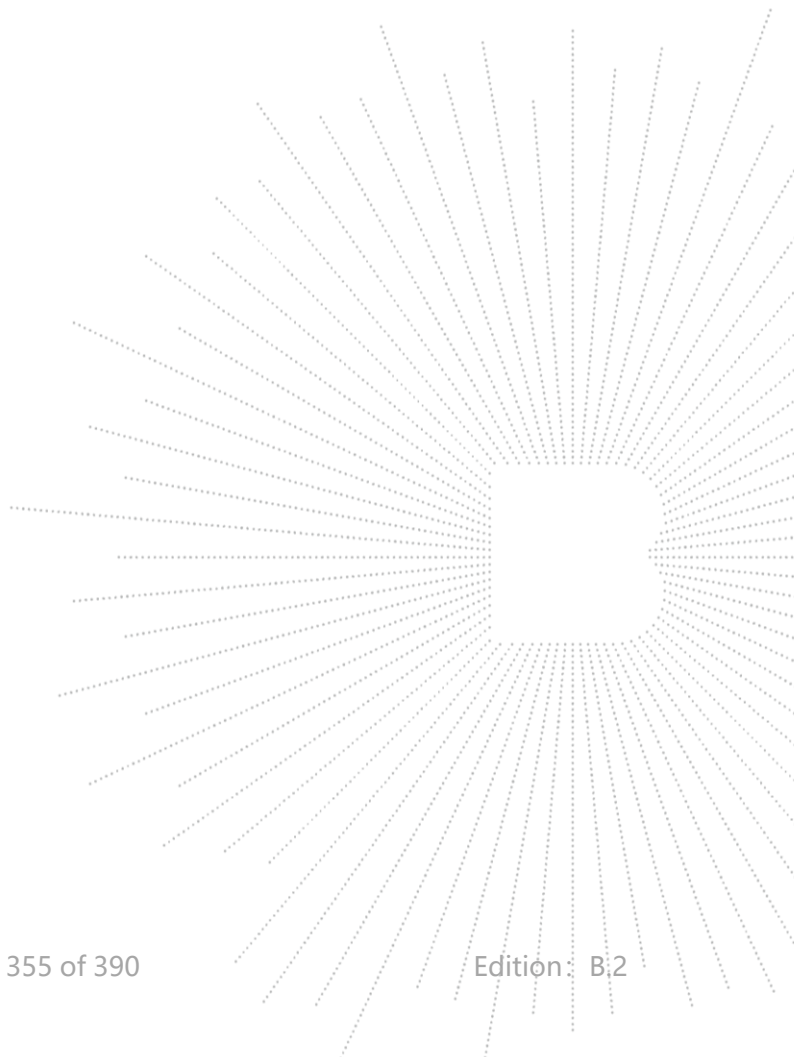


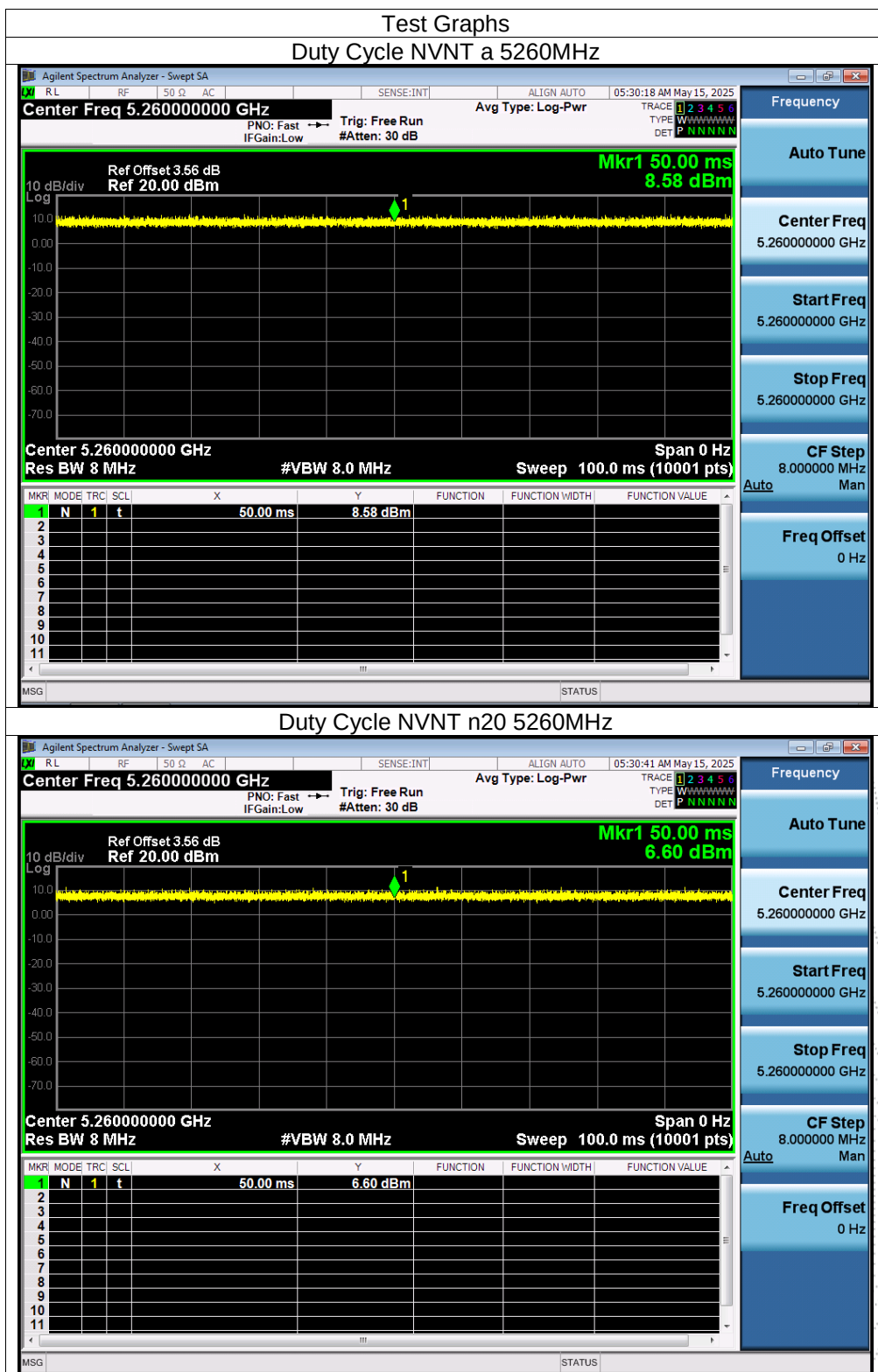


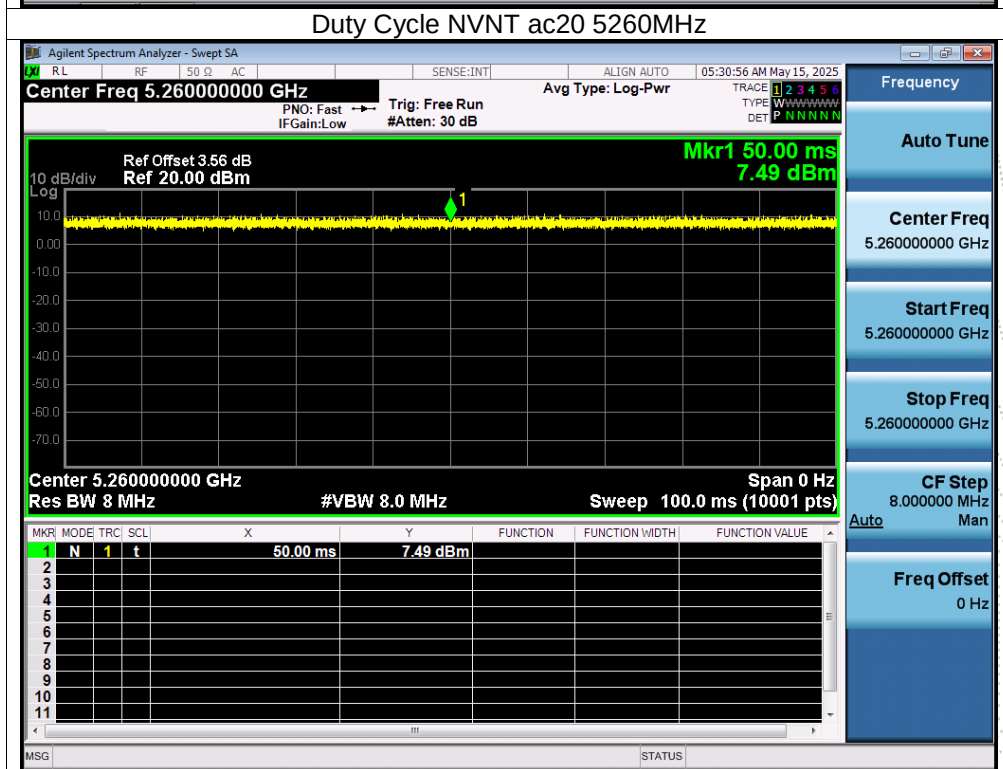
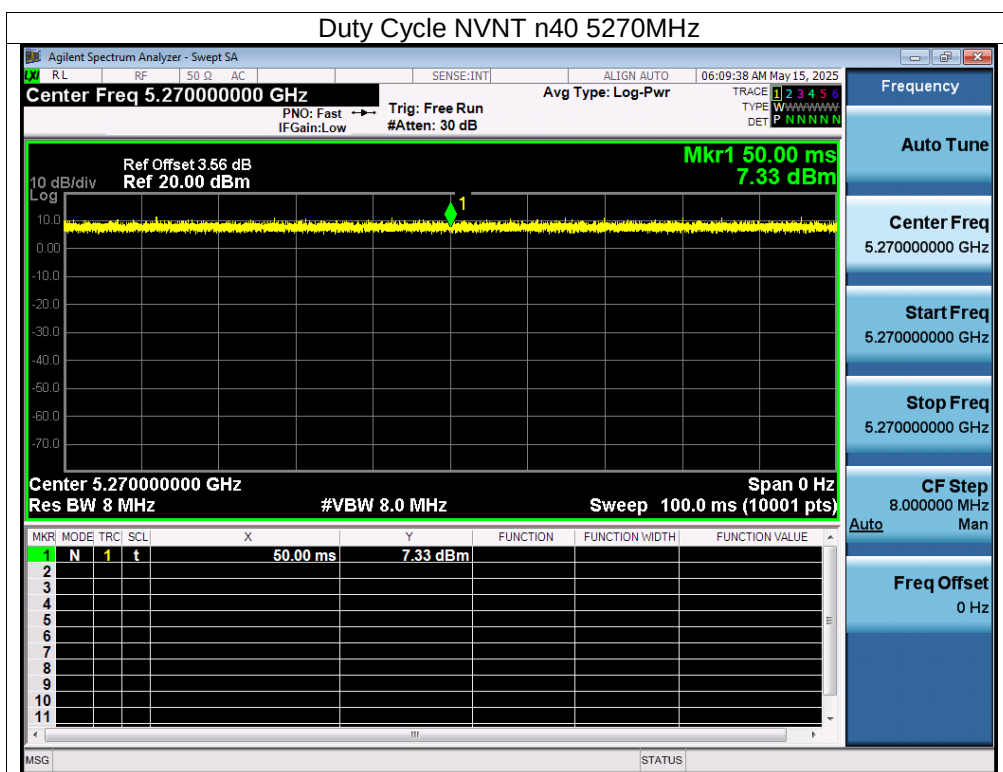


## ANT B

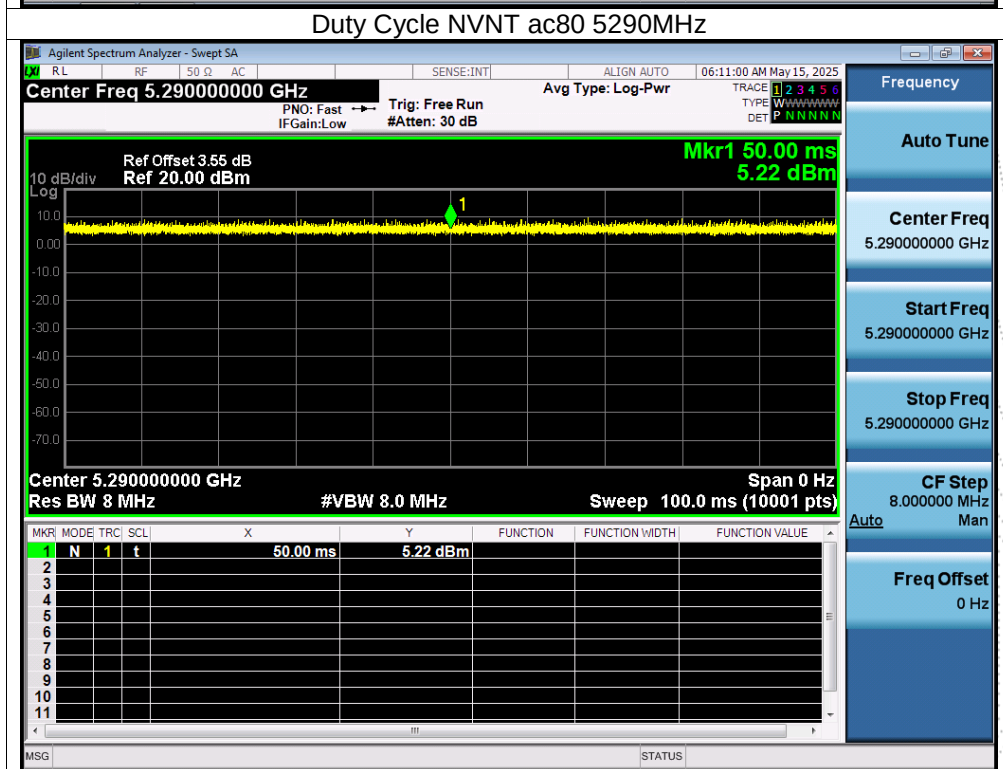
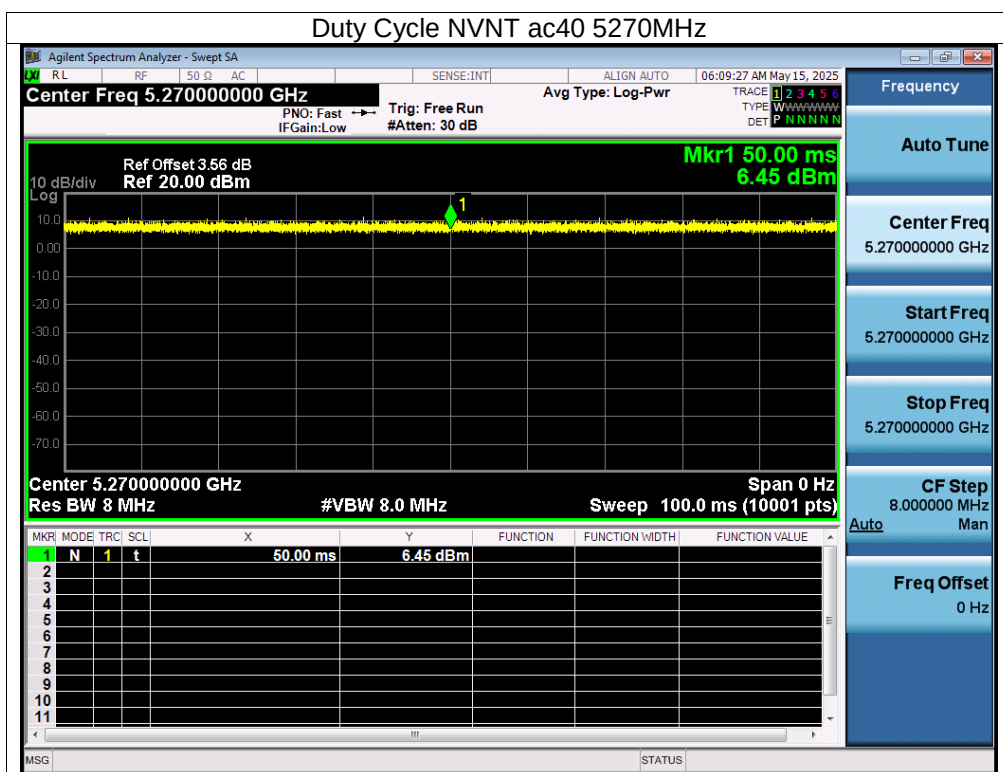
| Condition | Mode | Frequency (MHz) | Duty Cycle (%) | Correction Factor (dB) |
|-----------|------|-----------------|----------------|------------------------|
| NVNT      | a    | 5260            | 100            | 0                      |
| NVNT      | n20  | 5260            | 100            | 0                      |
| NVNT      | n40  | 5270            | 100            | 0                      |
| NVNT      | ac20 | 5260            | 100            | 0                      |
| NVNT      | ac40 | 5270            | 100            | 0                      |
| NVNT      | ac80 | 5290            | 100            | 0                      |
| NVNT      | ax20 | 5260            | 100            | 0                      |
| NVNT      | ax40 | 5270            | 100            | 0                      |
| NVNT      | ax80 | 5290            | 100            | 0                      |

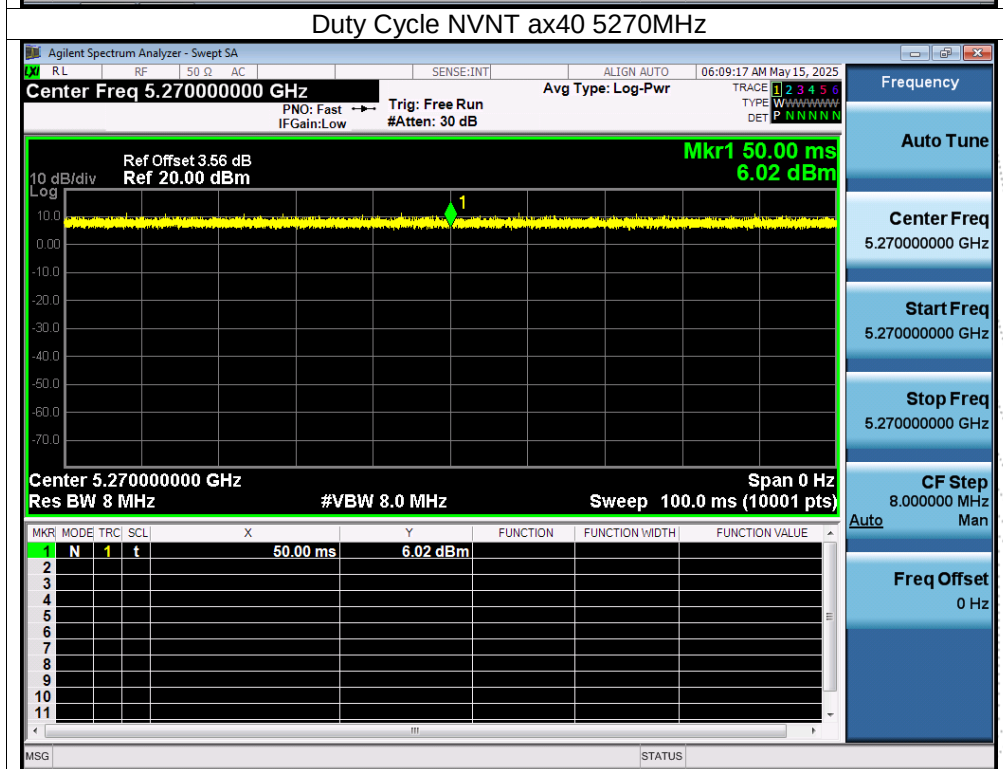
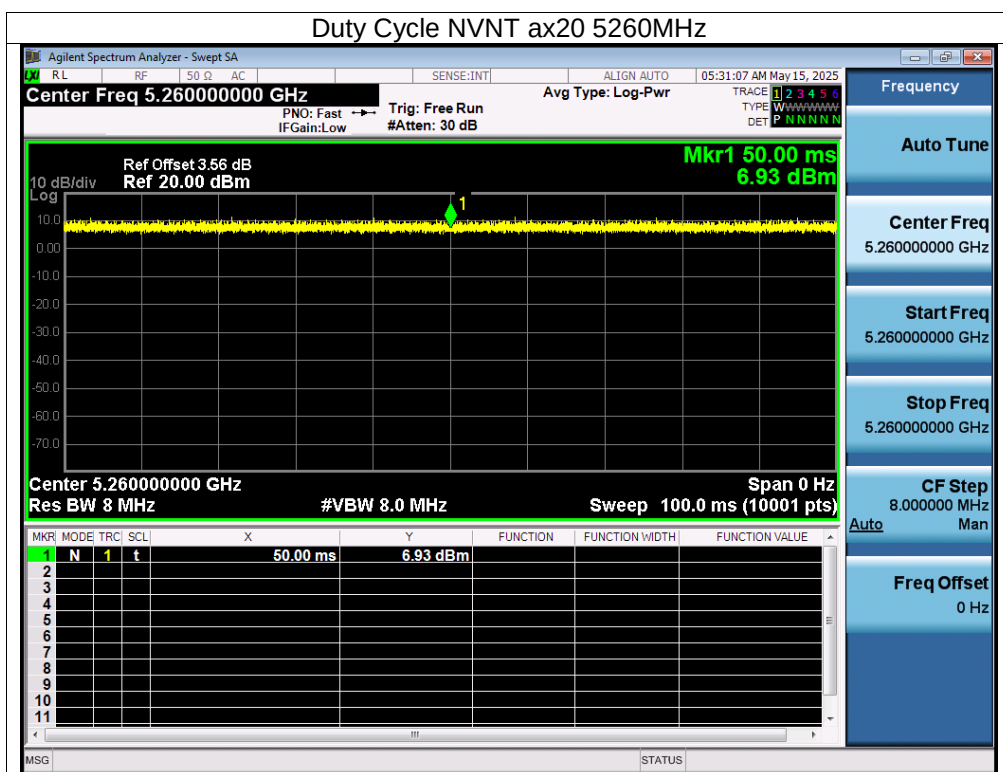


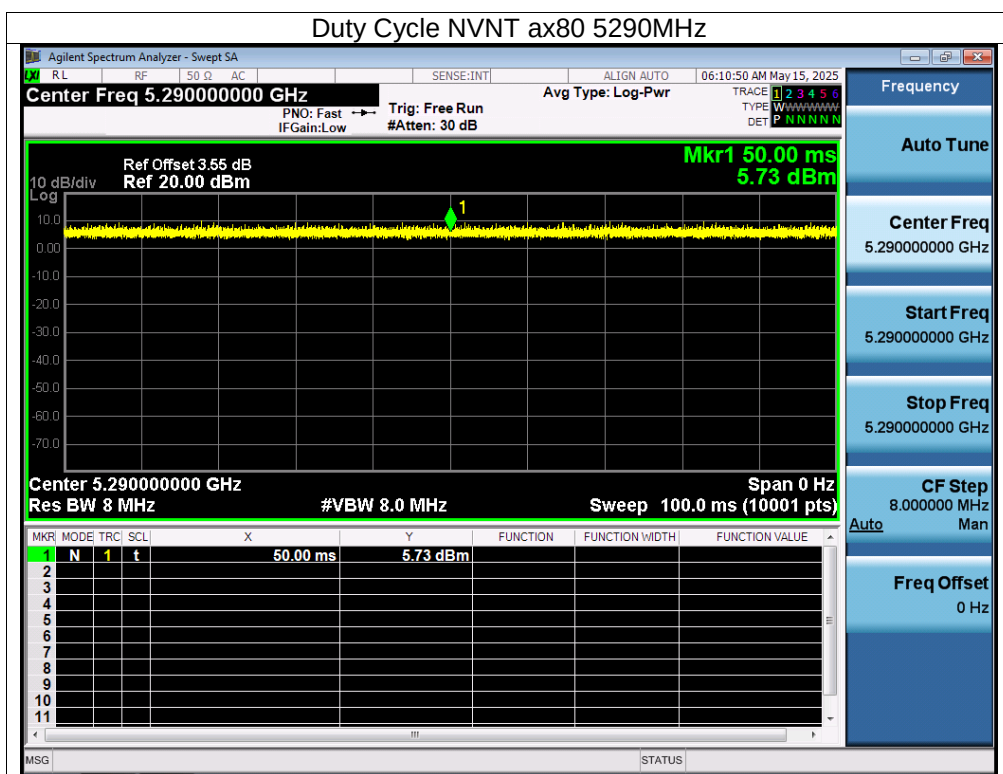












ANT A

| Condition | Mode | Frequency (MHz) | Duty Cycle (%) | Correction Factor (dB) |
|-----------|------|-----------------|----------------|------------------------|
| NVNT      | a    | 5500            | 100            | 0                      |
| NVNT      | n20  | 5500            | 100            | 0                      |
| NVNT      | n40  | 5510            | 100            | 0                      |
| NVNT      | ac20 | 5500            | 100            | 0                      |
| NVNT      | ac40 | 5510            | 100            | 0                      |
| NVNT      | ac80 | 5530            | 100            | 0                      |
| NVNT      | ax20 | 5500            | 100            | 0                      |
| NVNT      | ax40 | 5510            | 100            | 0                      |
| NVNT      | ax80 | 5530            | 100            | 0                      |

