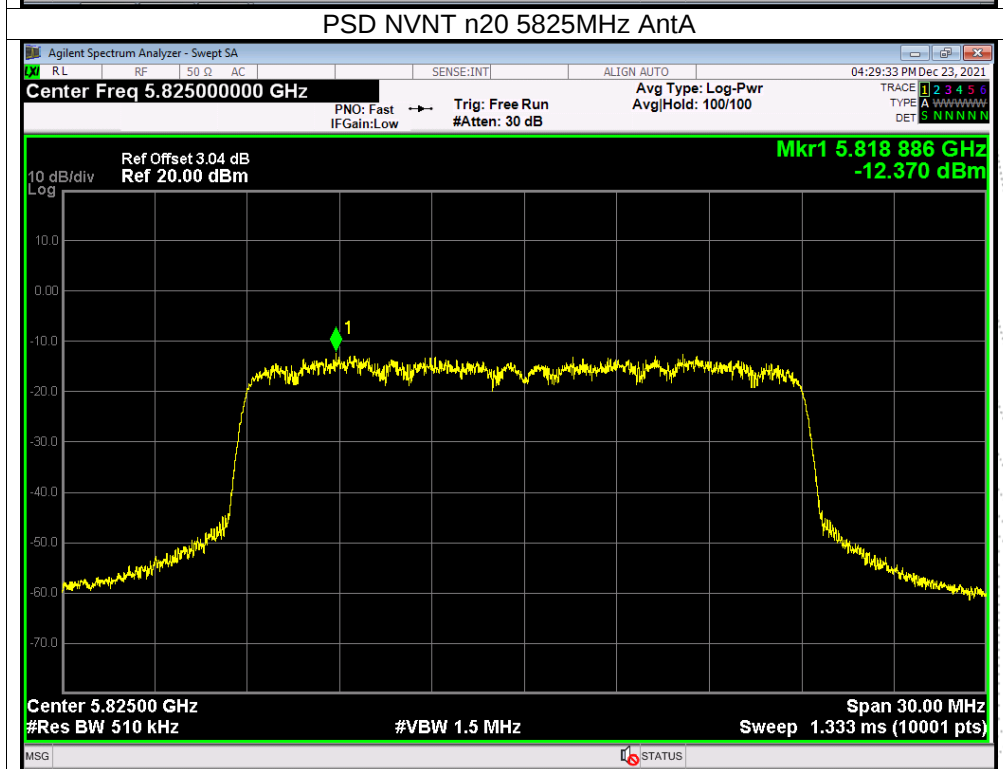
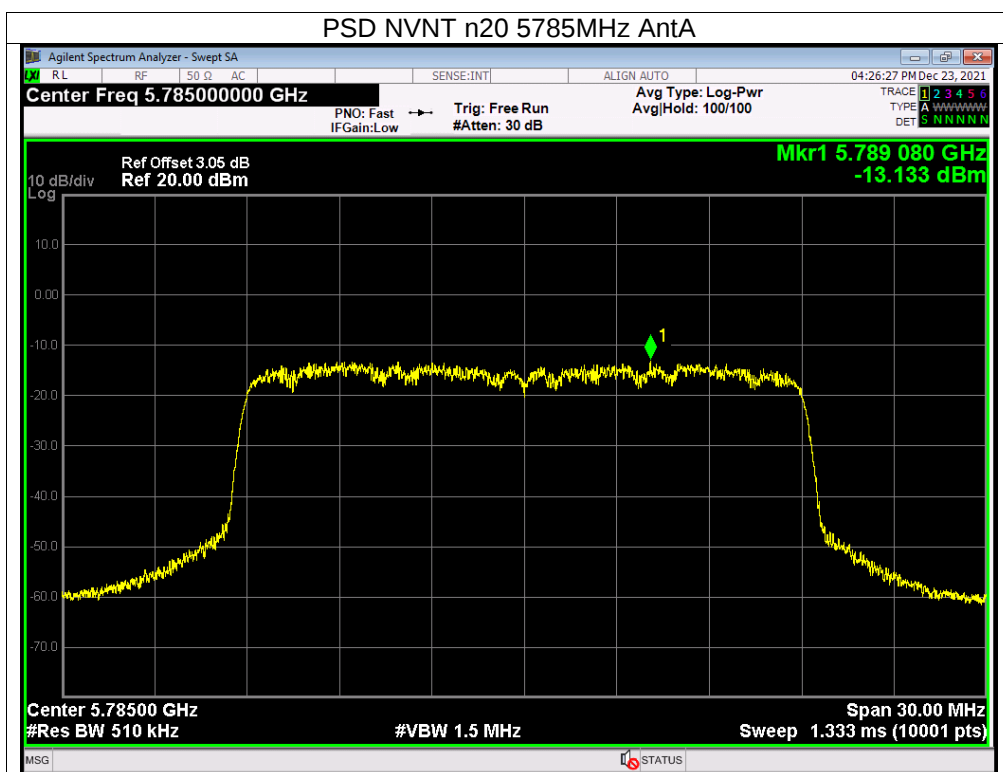
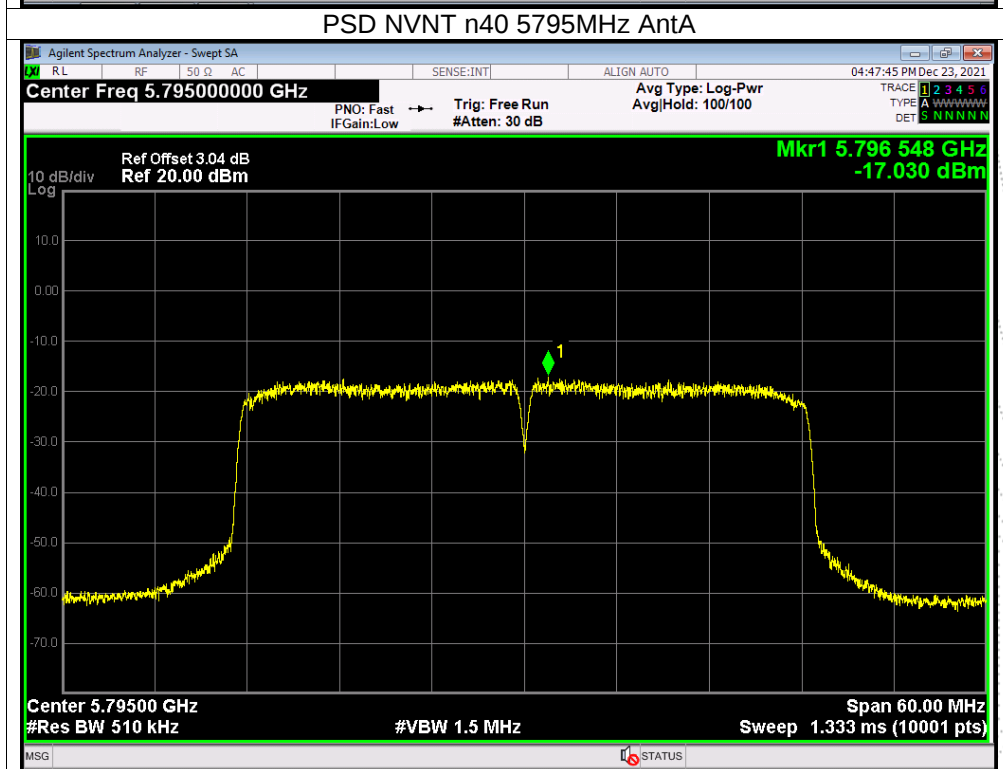
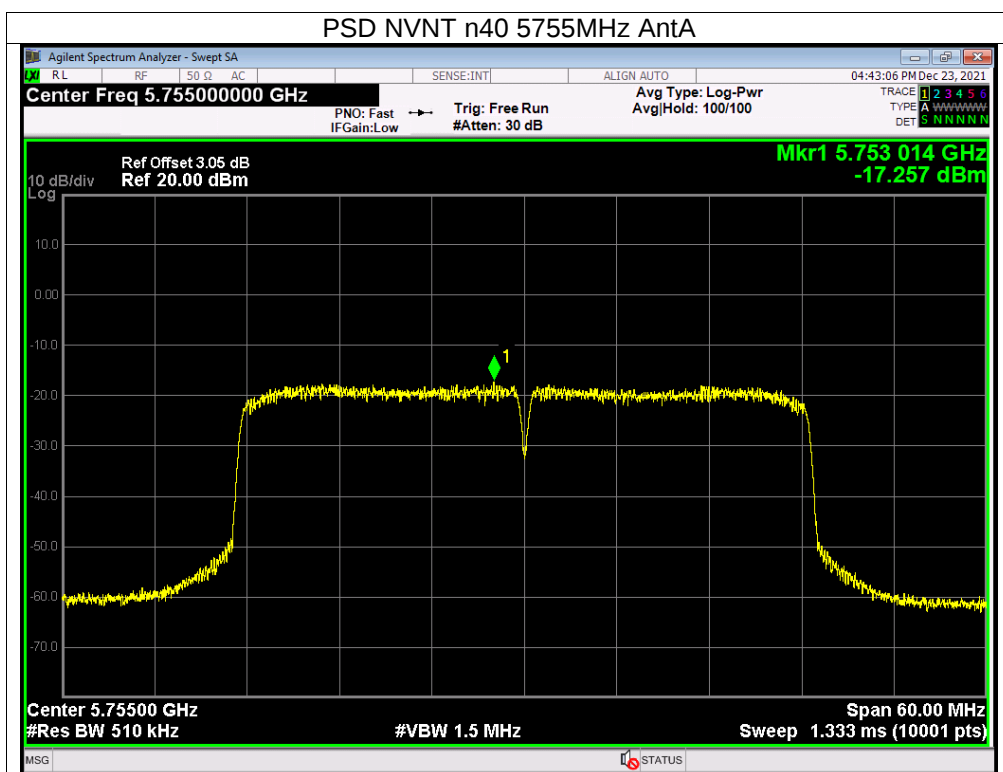
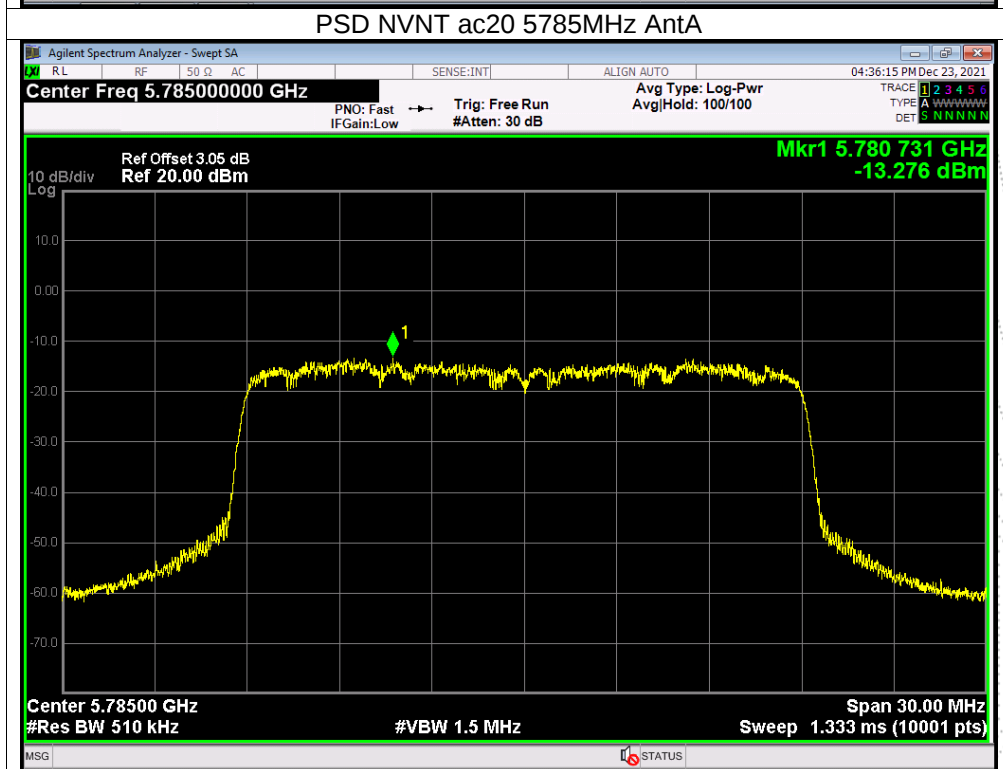
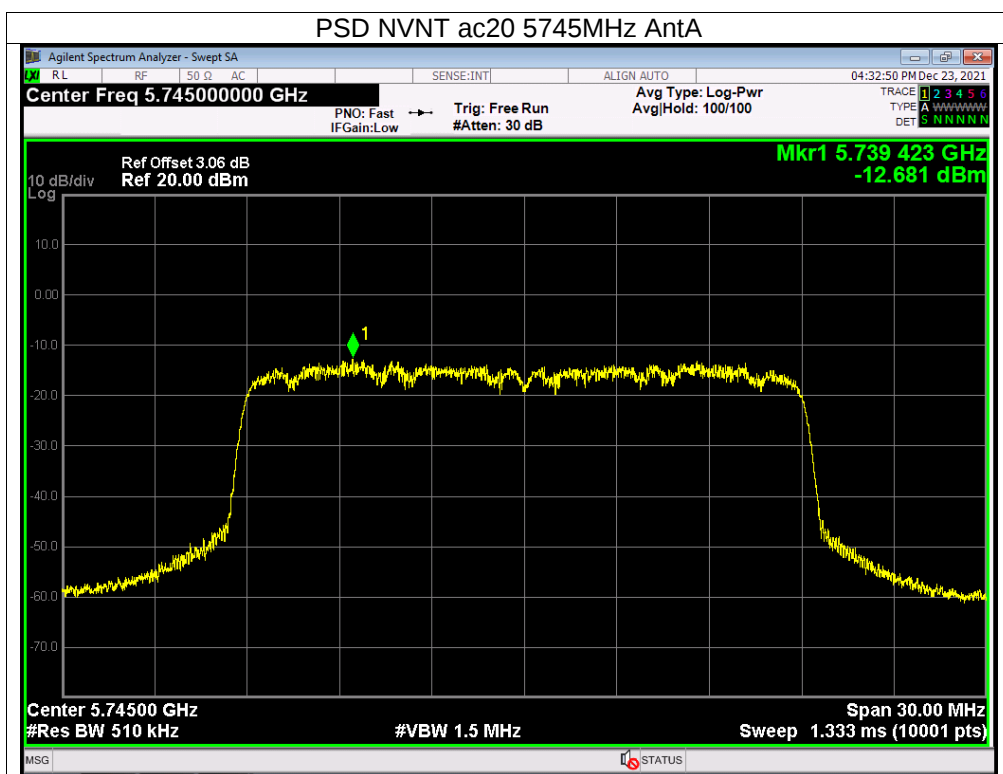
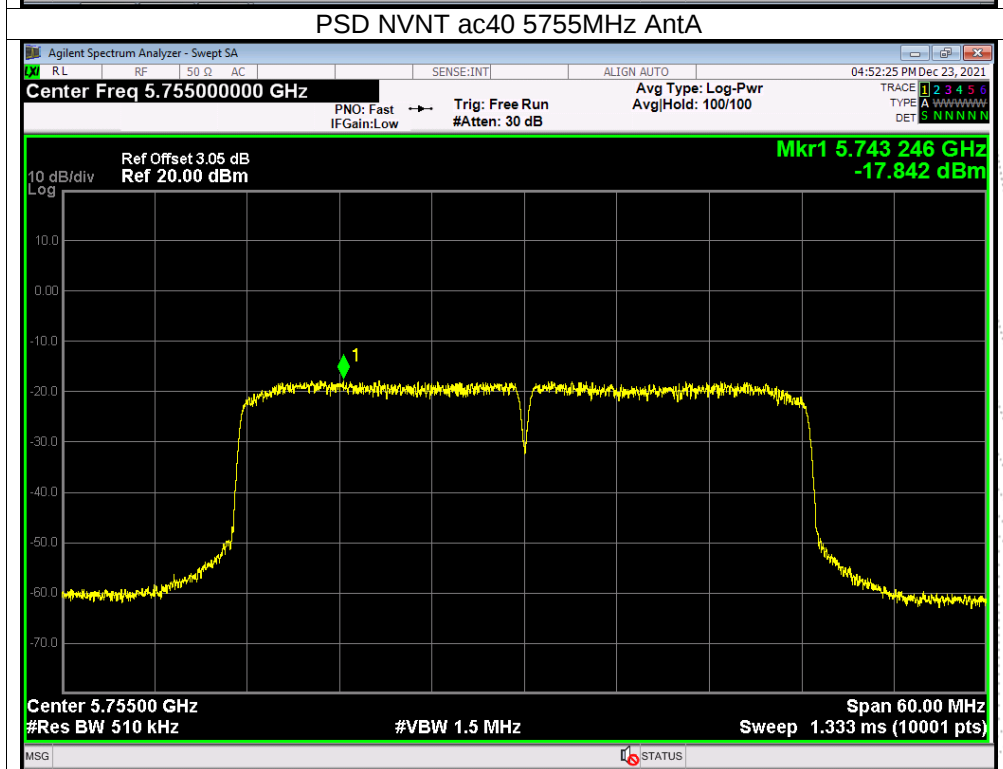
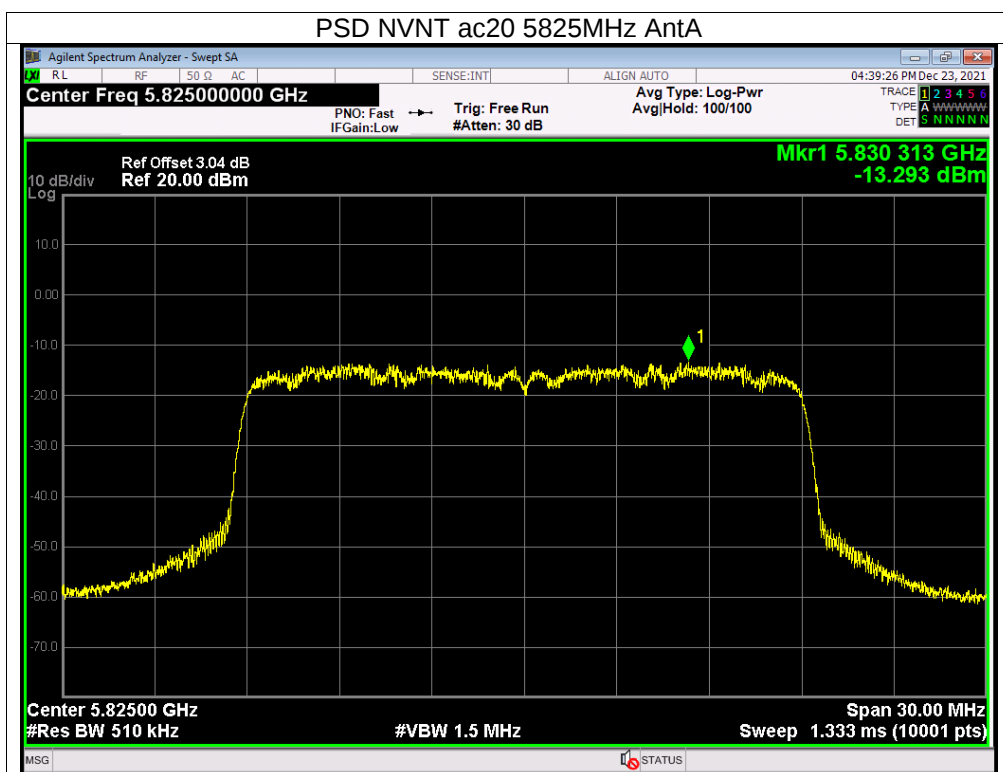
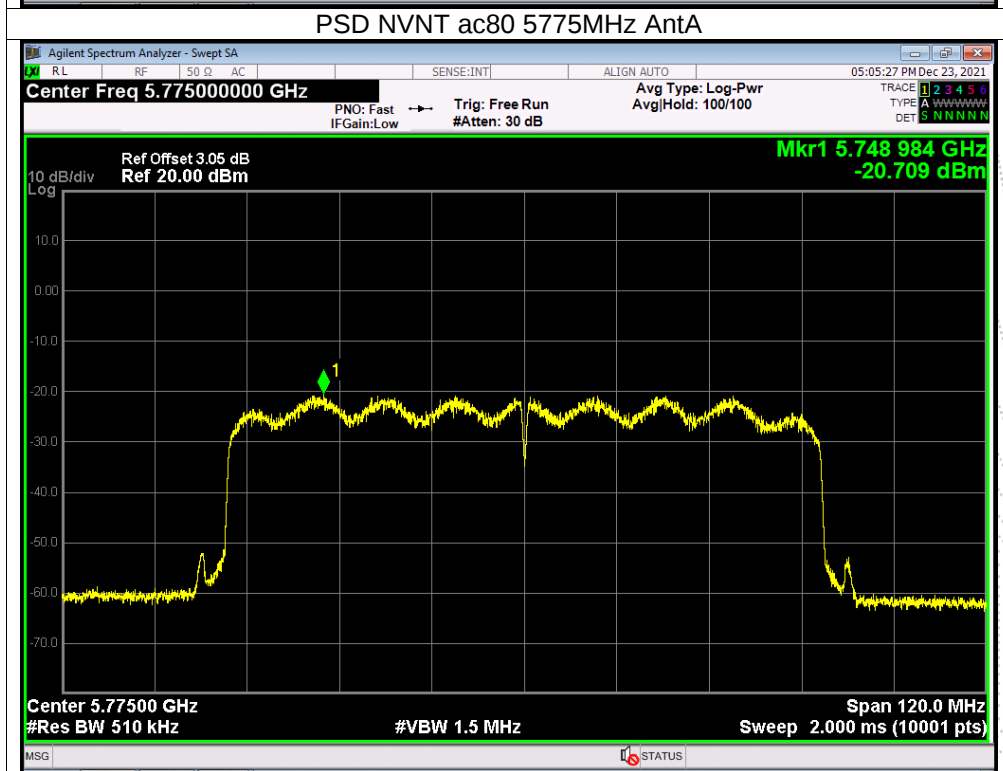
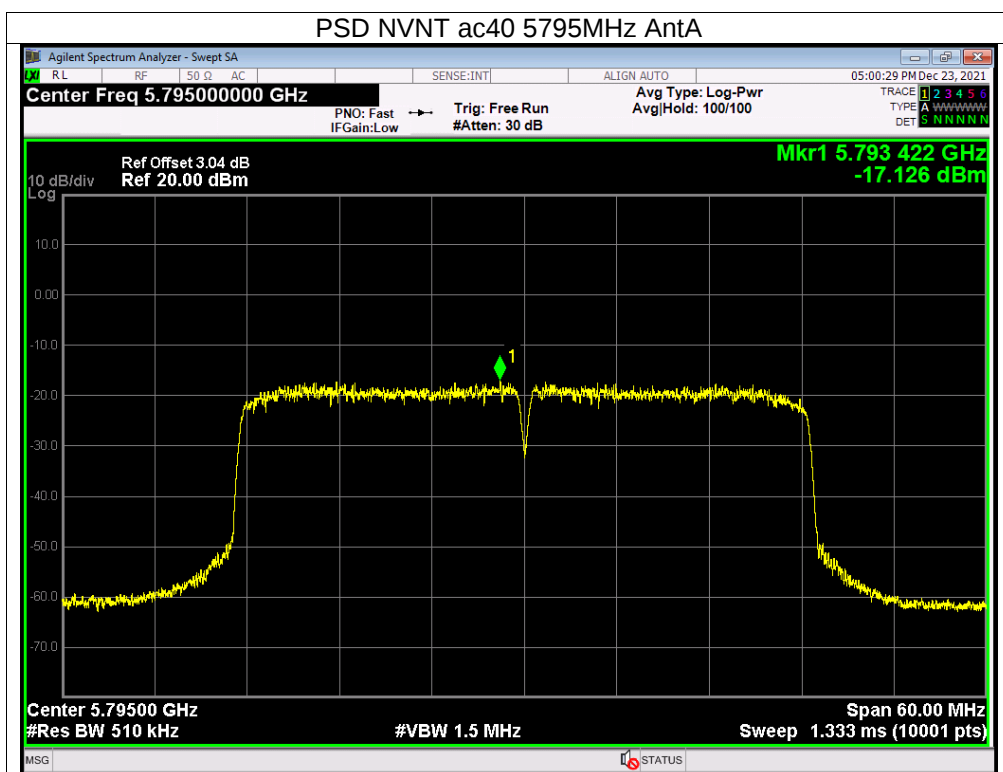






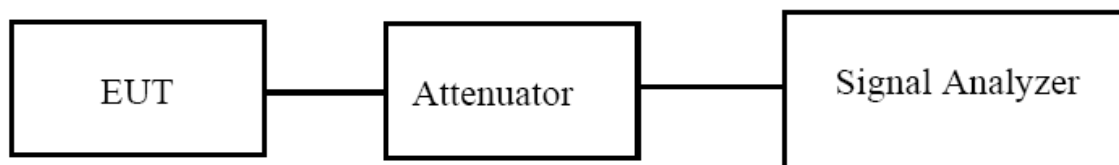






## 9. 26dB & 6dB & 99% Emission Bandwidth

### 9.1 Block Diagram Of Test Setup



### 9.2 Limit

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

(6dB bandwidth)>500kHz

### 9.3 Test Procedure

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

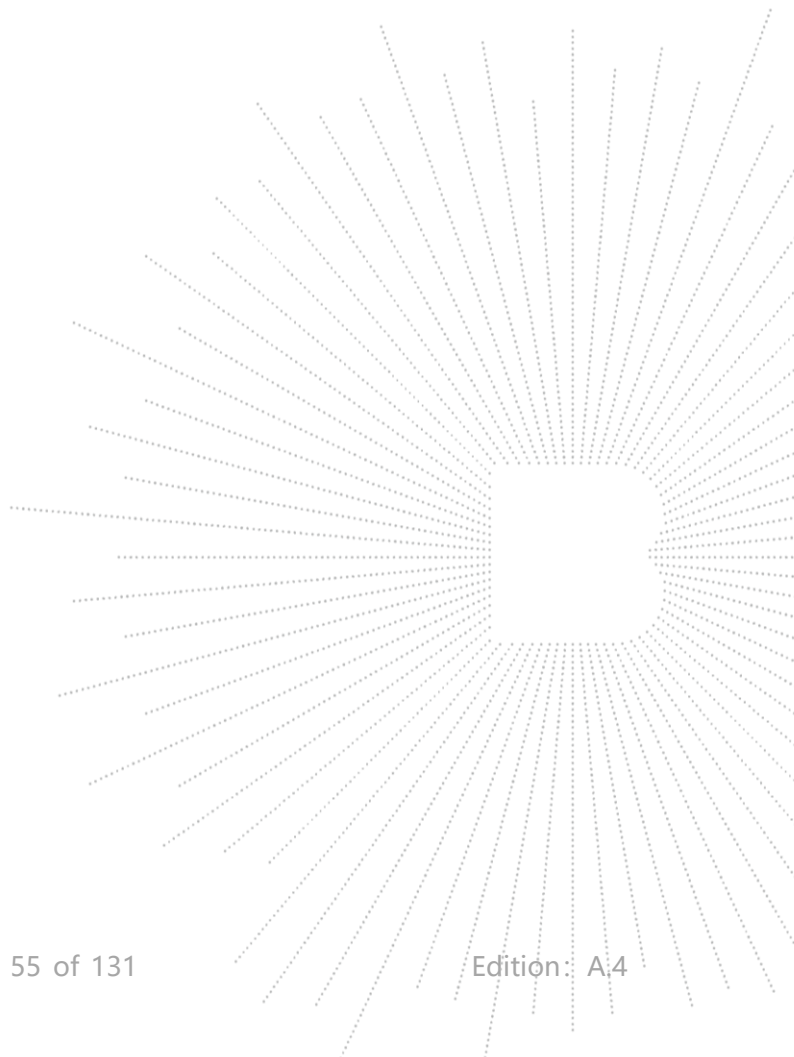
The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW  $\geq 3 \cdot$  RBW
5. 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.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. 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% occupied bandwidth is the difference between these two frequencies.

**6DB**

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.

7. 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.



## 9.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

## 9.5 Test Result

|               |                                     |                     |         |
|---------------|-------------------------------------|---------------------|---------|
| Temperature : | 26 °C                               | Relative Humidity : | 54%     |
| Pressure :    | 101kPa                              | Test Voltage :      | DC 7.6V |
| Test Mode :   | TX Frequency U-NII-1 (5180-5240MHz) |                     |         |

Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A ,only shown Antenna A Plot.

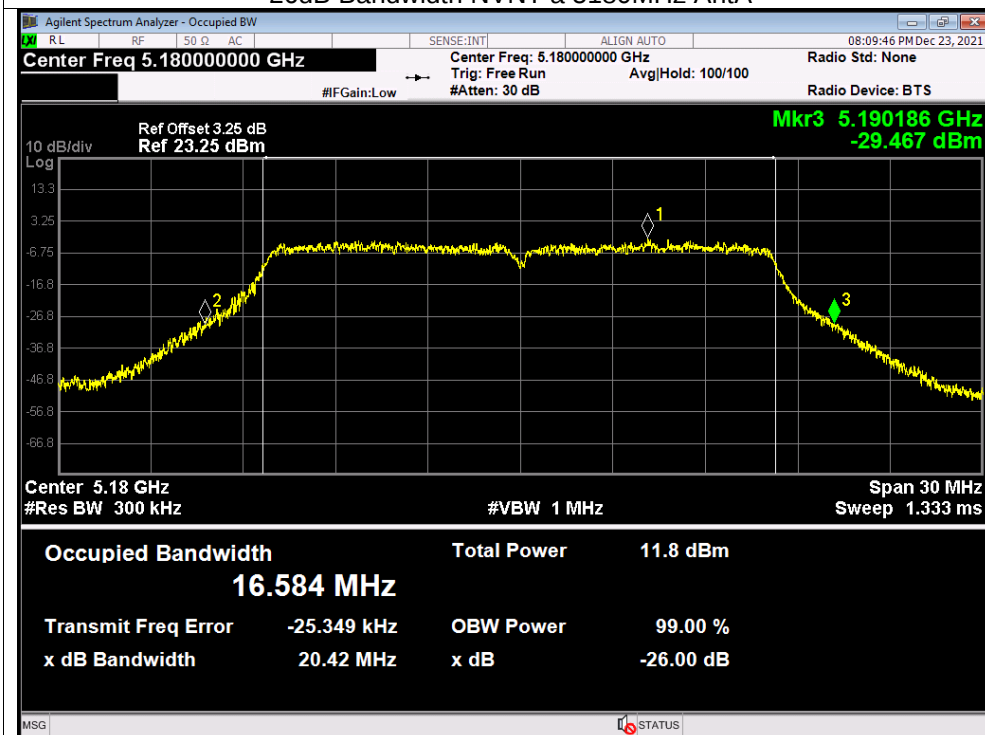
| Mode        | Channel | Frequency (MHz) | 99% bandwidth (MHz) | 26dB bandwidth (MHz) | Limit MHz | Result |
|-------------|---------|-----------------|---------------------|----------------------|-----------|--------|
|             |         |                 | ANT A               | ANT A                |           |        |
| 802.11a     | CH36    | 5180            | 16.485              | 20.423               | N/A       | Pass   |
|             | CH40    | 5200            | 16.493              | 20.335               | N/A       | Pass   |
|             | CH48    | 5240            | 16.463              | 20.561               | N/A       | Pass   |
| 802.11 n20  | CH36    | 5180            | 17.606              | 21.1                 | N/A       | Pass   |
|             | CH40    | 5200            | 17.609              | 21.261               | N/A       | Pass   |
|             | CH48    | 5240            | 17.6                | 21.259               | N/A       | Pass   |
| 802.11 n40  | CH 38   | 5190            | 36.022              | 40.857               | N/A       | Pass   |
|             | CH 46   | 5230            | 36.042              | 40.576               | N/A       | Pass   |
| 802.11 ac20 | CH36    | 5180            | 17.615              | 21.189               | N/A       | Pass   |
|             | CH40    | 5200            | 17.616              | 21.259               | N/A       | Pass   |
|             | CH48    | 5240            | 17.61               | 21.203               | N/A       | Pass   |
| 802.11 ac40 | CH 38   | 5190            | 36.054              | 40.348               | N/A       | Pass   |
|             | CH 46   | 5230            | 36.045              | 40.311               | N/A       | Pass   |
| 802.11 AC80 | CH 42   | 5210            | 75.026              | <b>79.425</b>        | N/A       | Pass   |

| Mode        | Channel | Frequency<br>(MHz) | 99%<br>bandwidth<br>(MHz) | 26dB<br>bandwidth<br>(MHz) | Limit<br>MHz | Result |
|-------------|---------|--------------------|---------------------------|----------------------------|--------------|--------|
|             |         |                    | ANT B                     | ANT B                      |              |        |
| 802.11a     | CH36    | 5180               | 16.484                    | 20.507                     | N/A          | Pass   |
|             | CH40    | 5200               | 16.485                    | 20.4                       | N/A          | Pass   |
|             | CH48    | 5240               | 16.474                    | 20.483                     | N/A          | Pass   |
| 802.11 n20  | CH36    | 5180               | 17.615                    | 21.3                       | N/A          | Pass   |
|             | CH40    | 5200               | 17.598                    | 21.129                     | N/A          | Pass   |
|             | CH48    | 5240               | 17.604                    | 21.233                     | N/A          | Pass   |
| 802.11 n40  | CH 38   | 5190               | 36.055                    | 41.236                     | N/A          | Pass   |
|             | CH 46   | 5230               | 36.05                     | 40.717                     | N/A          | Pass   |
| 802.11 ac20 | CH36    | 5180               | 17.604                    | 21.083                     | N/A          | Pass   |
|             | CH40    | 5200               | 17.605                    | 21.025                     | N/A          | Pass   |
|             | CH48    | 5240               | 17.61                     | 20.962                     | N/A          | Pass   |
| 802.11 ac40 | CH 38   | 5190               | 36.064                    | 40.753                     | N/A          | Pass   |
|             | CH 46   | 5230               | 36.016                    | 40.512                     | N/A          | Pass   |
| 802.11 AC80 | CH 42   | 5210               | 74.901                    | 78.915                     | N/A          | Pass   |

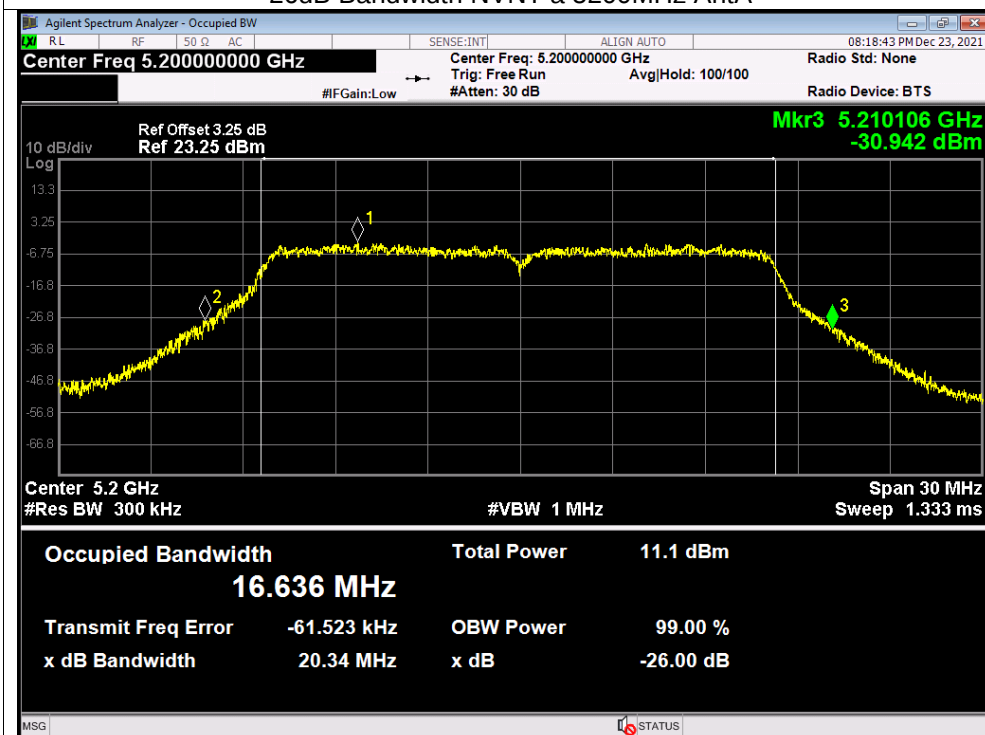
# -26dB Bandwidth

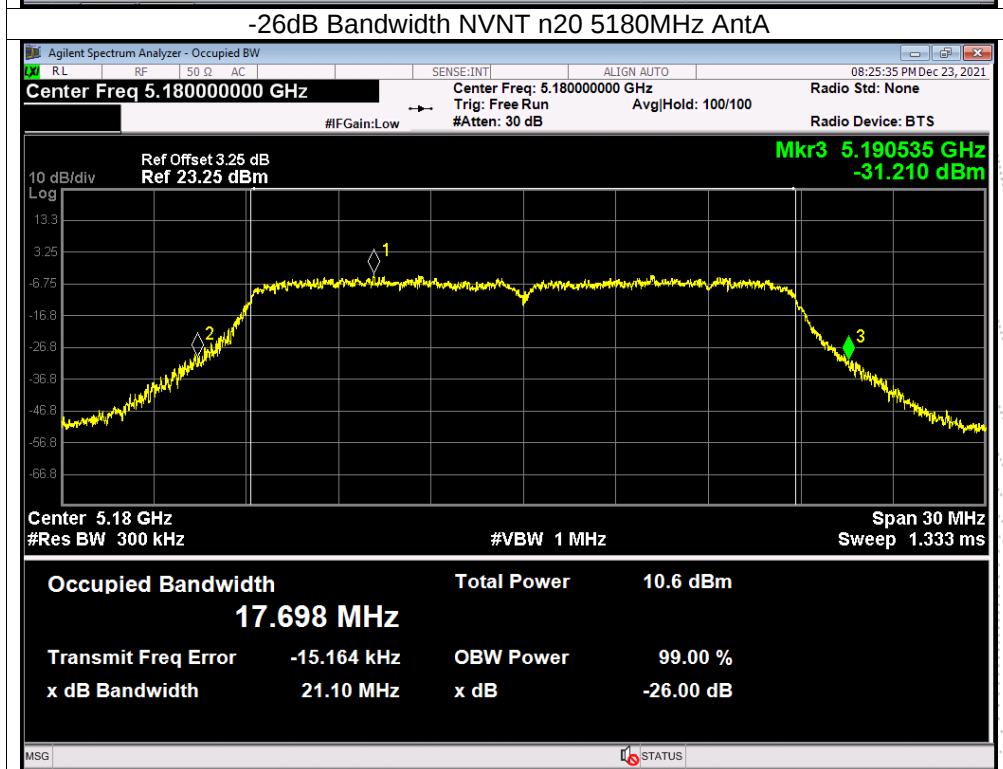
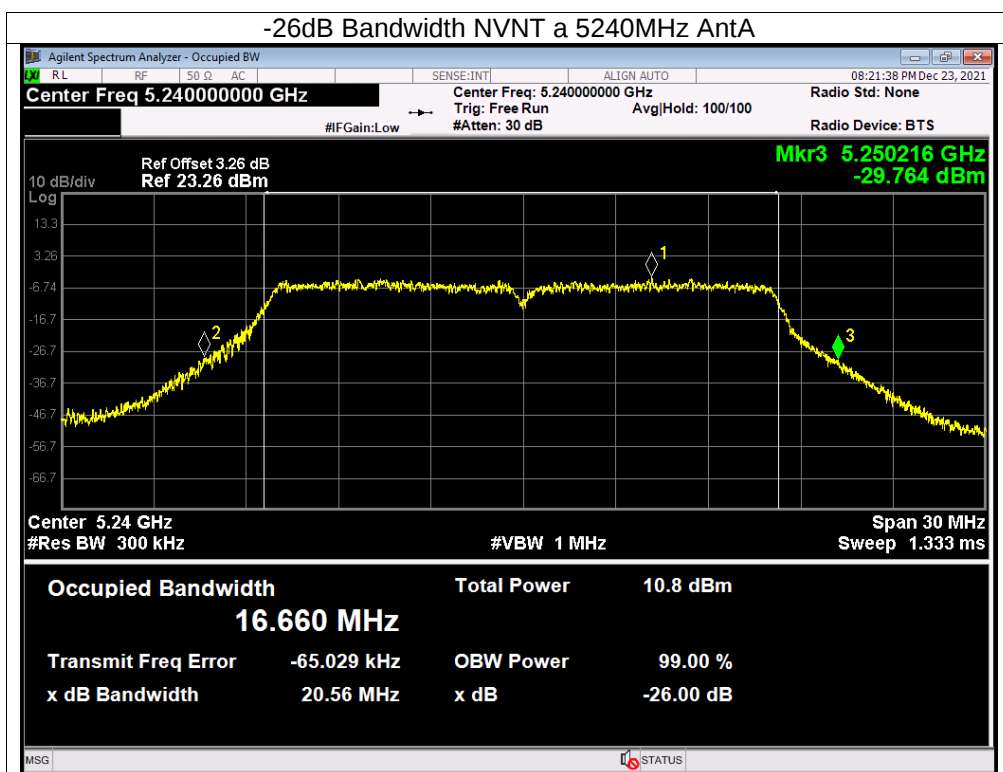
## Test Graphs

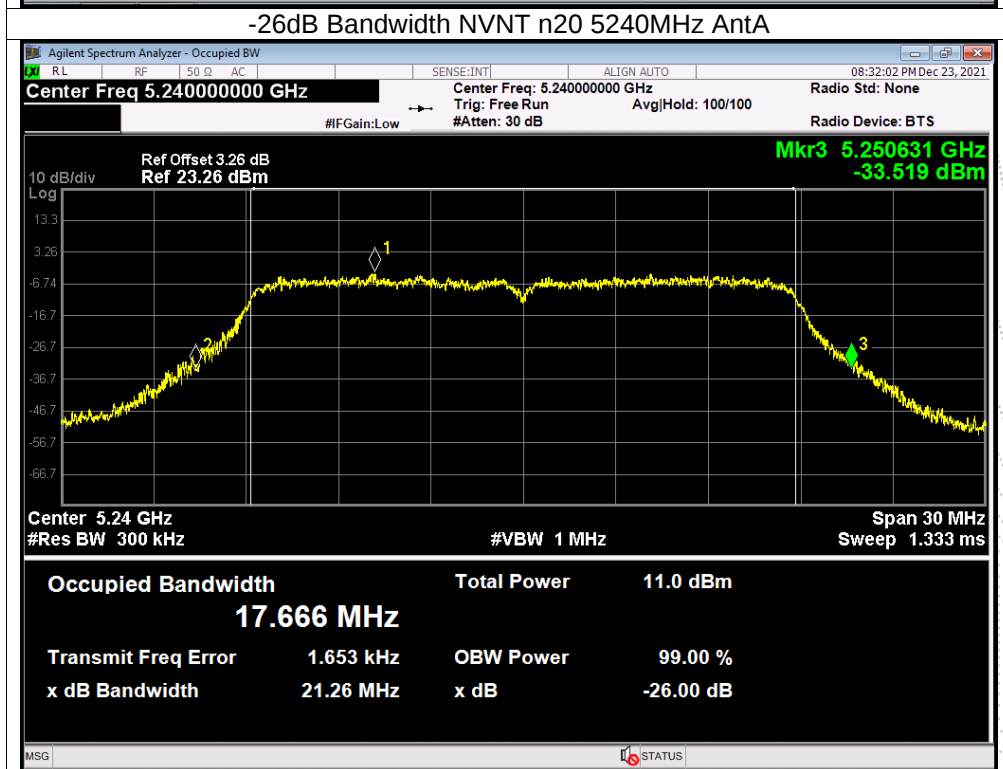
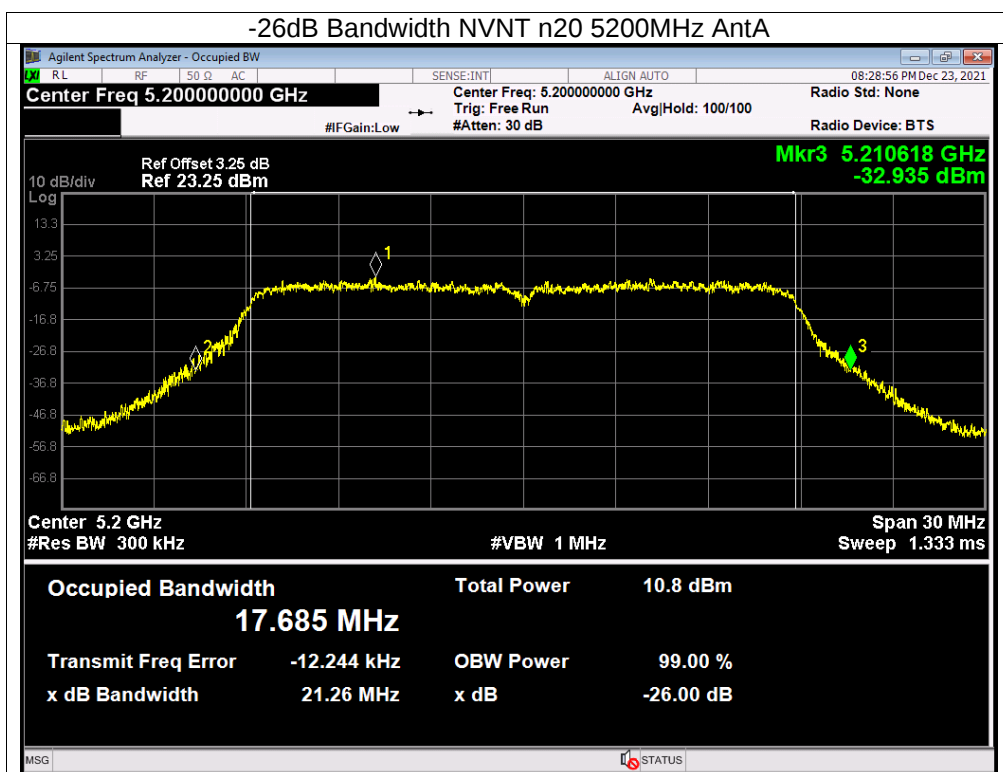
### -26dB Bandwidth NVNT a 5180MHz AntA

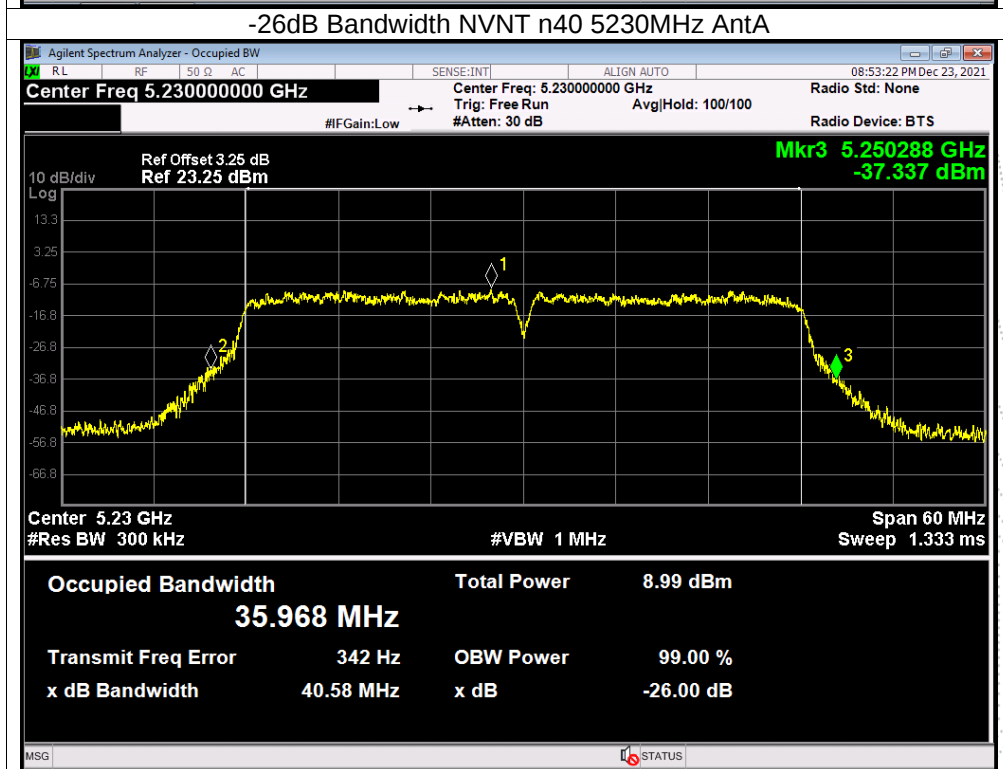
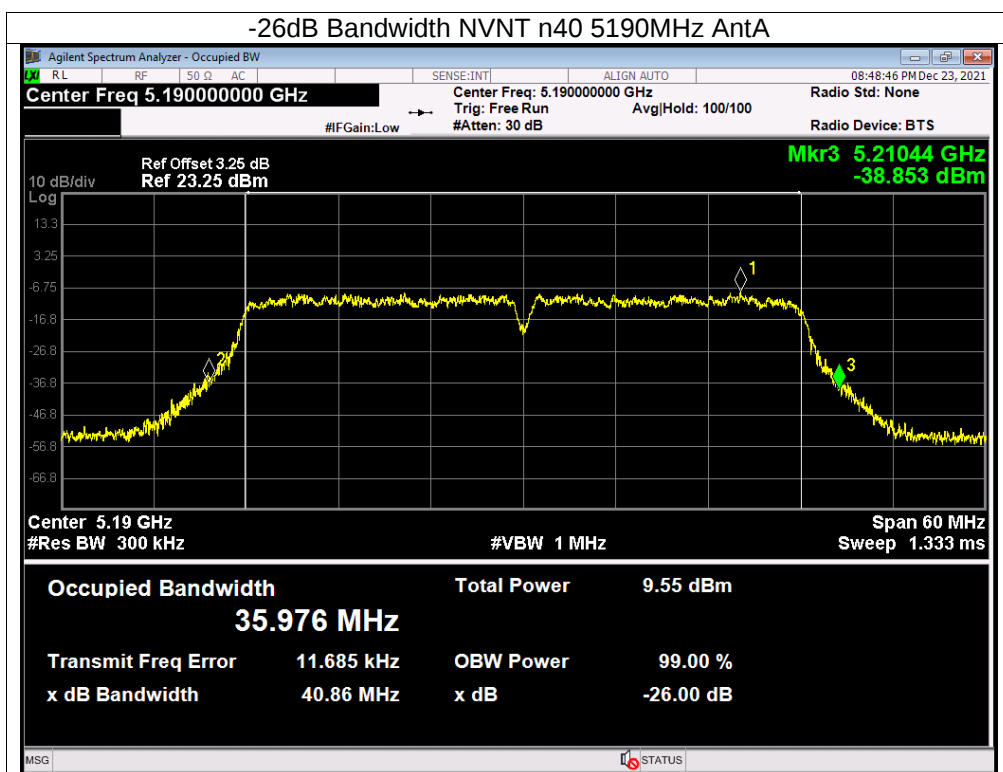


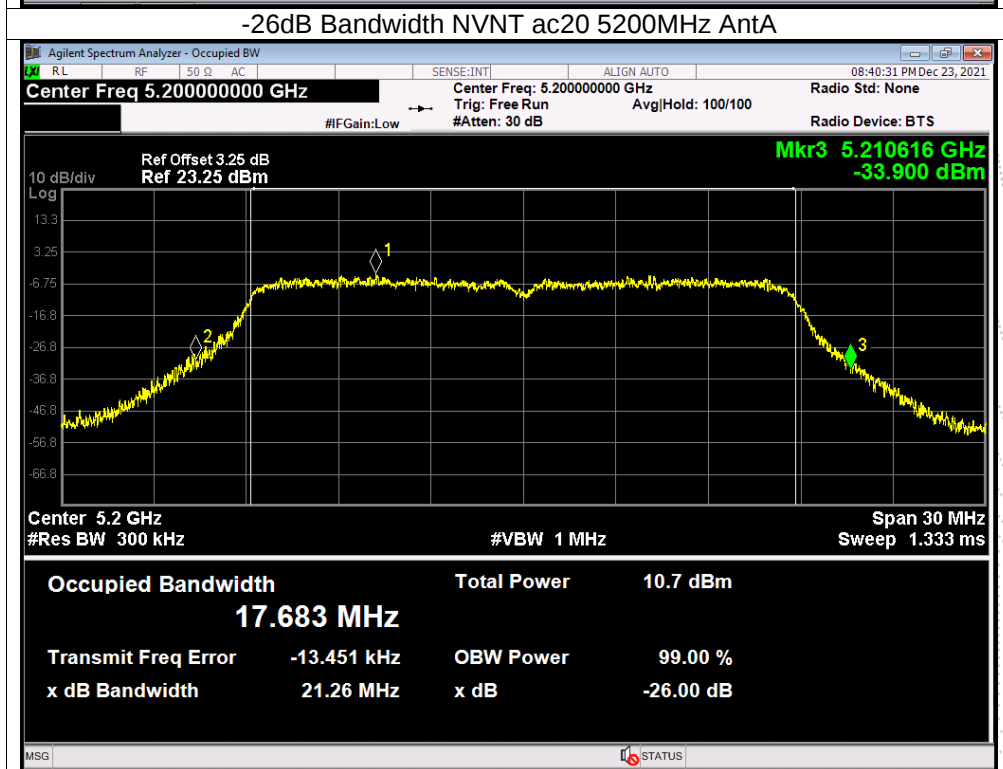
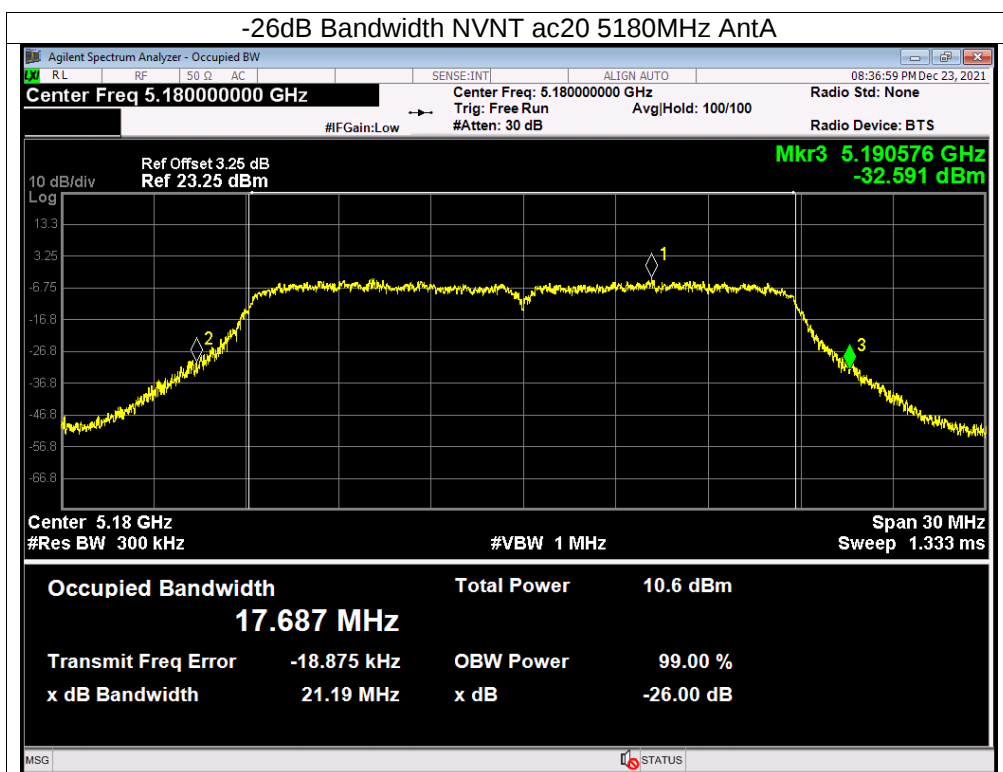
### -26dB Bandwidth NVNT a 5200MHz AntA

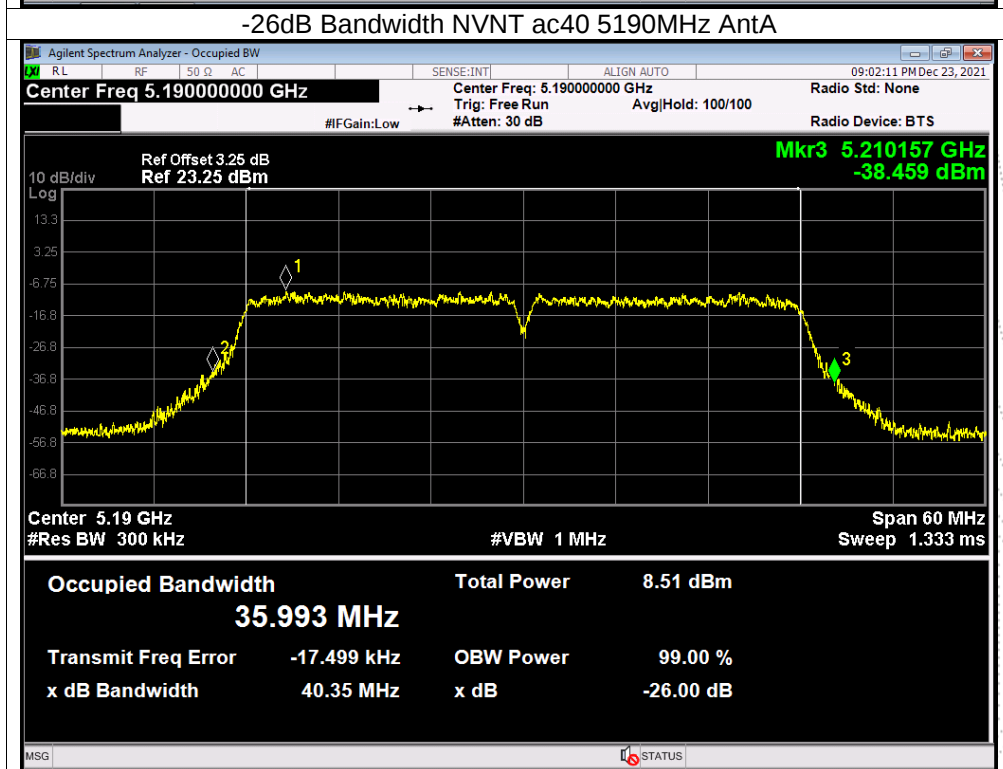
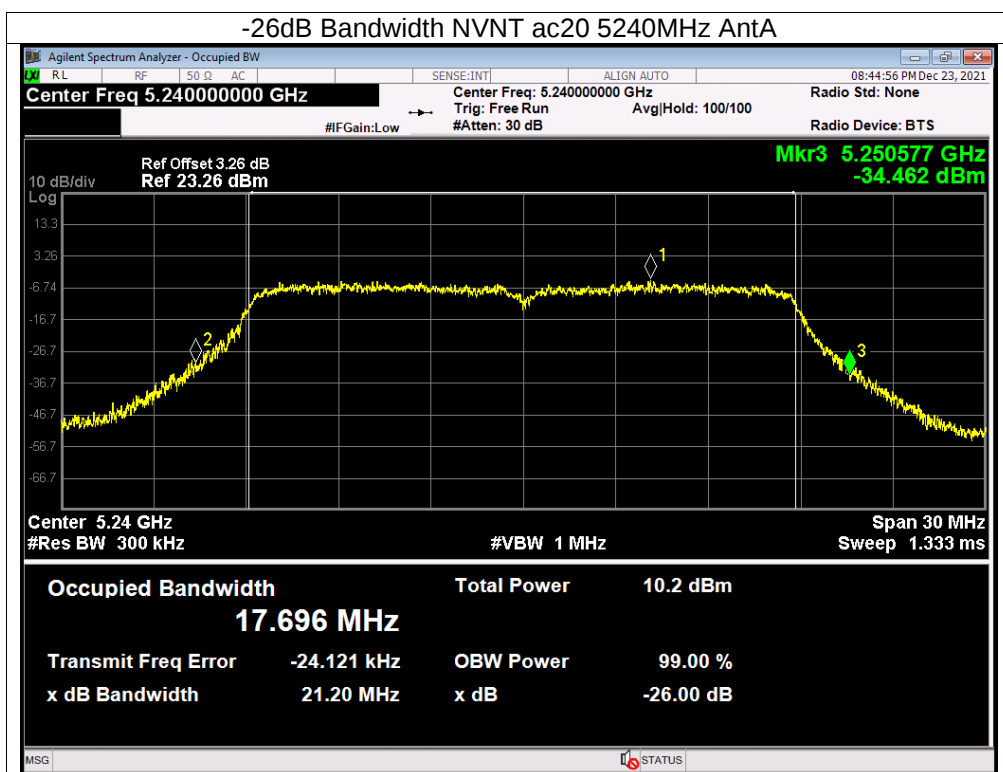


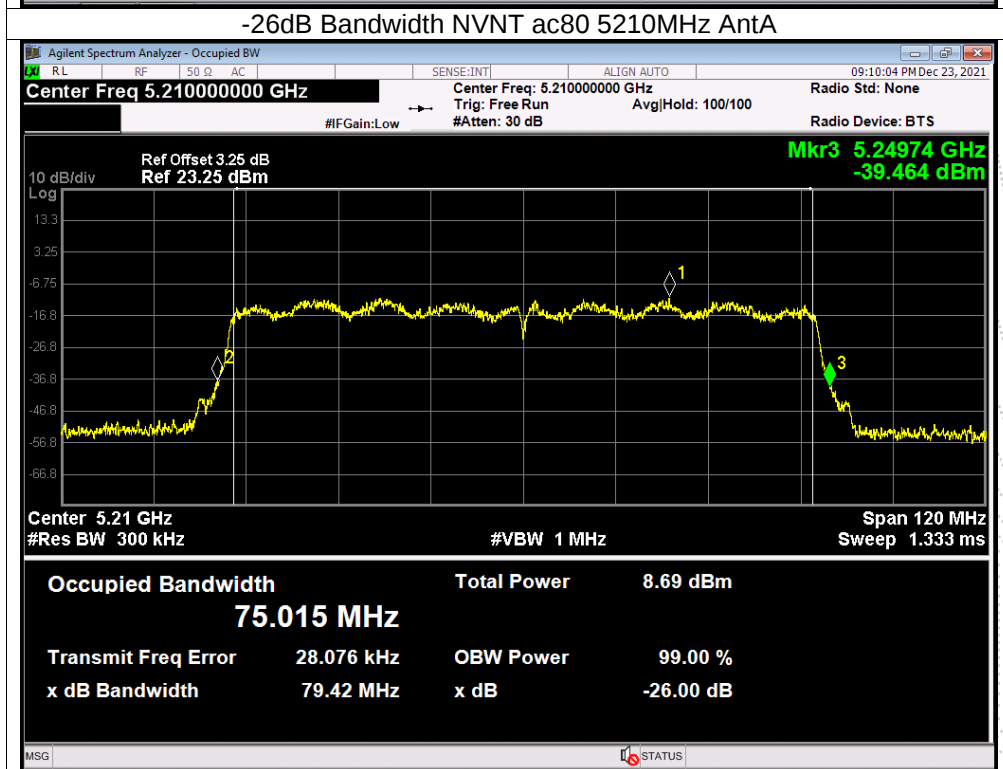
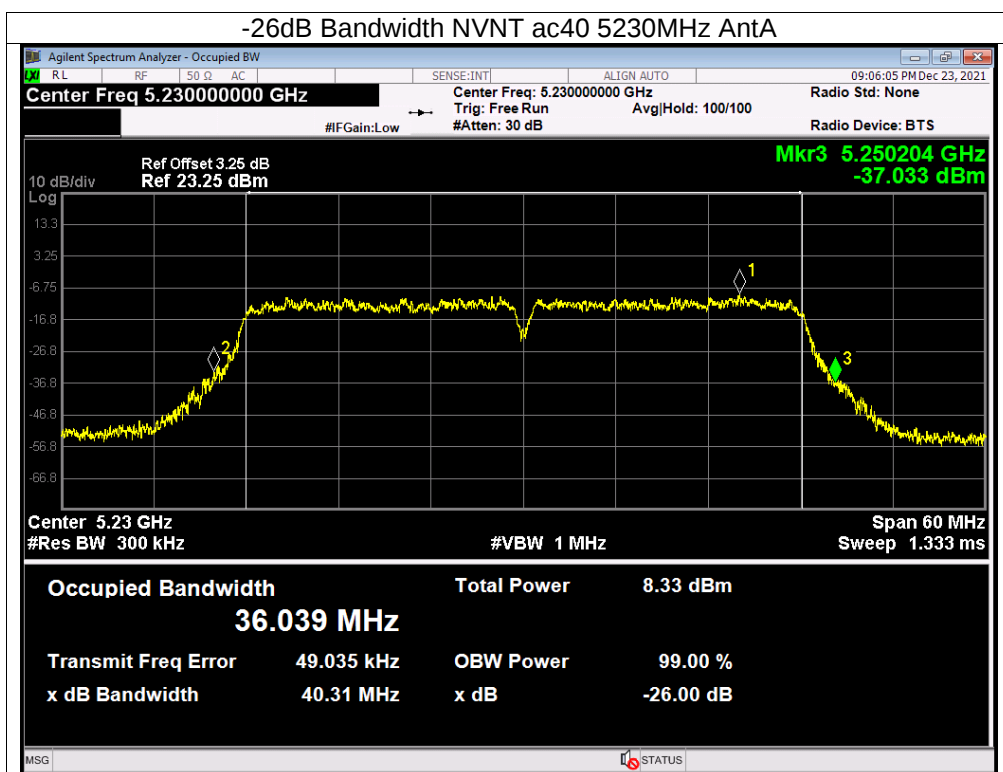








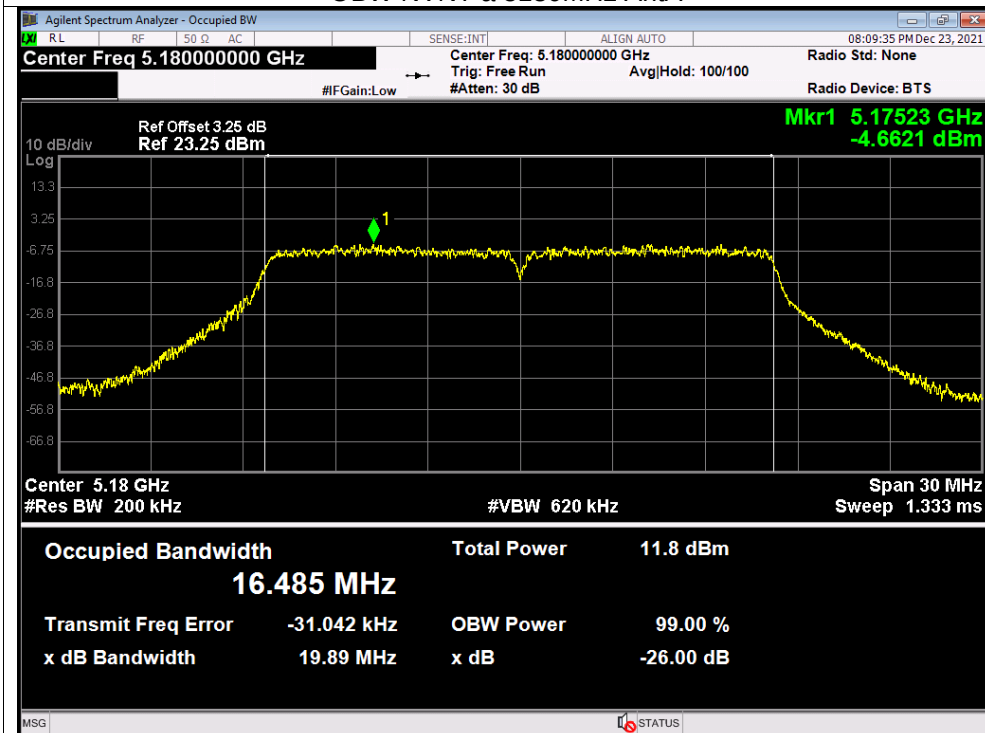




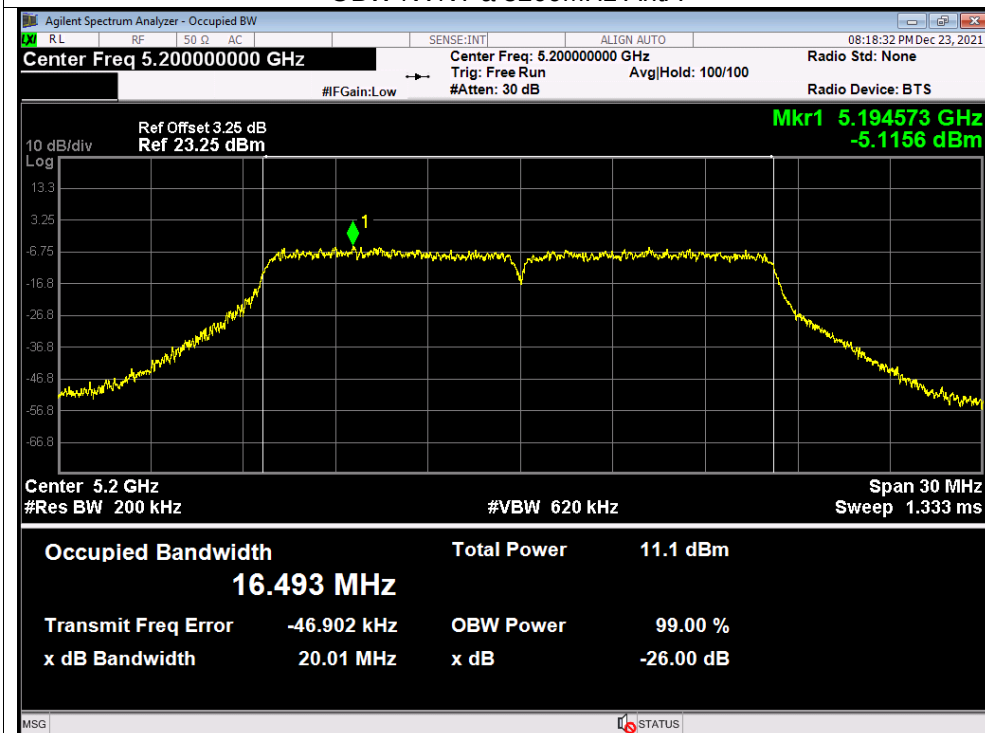
99% OBW

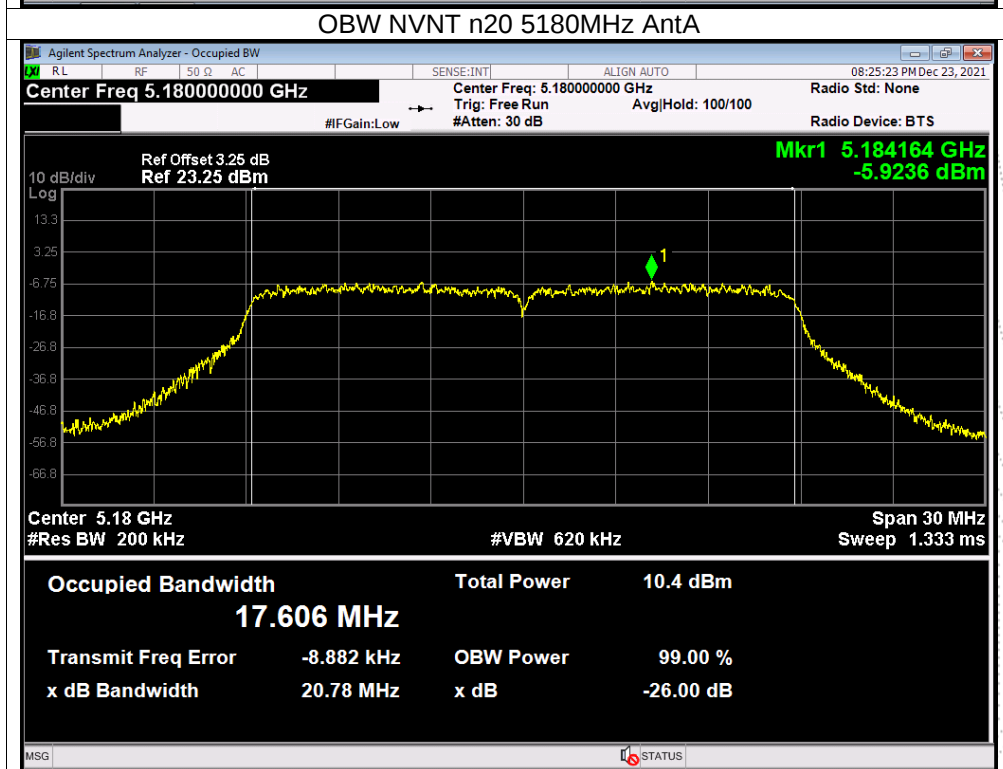
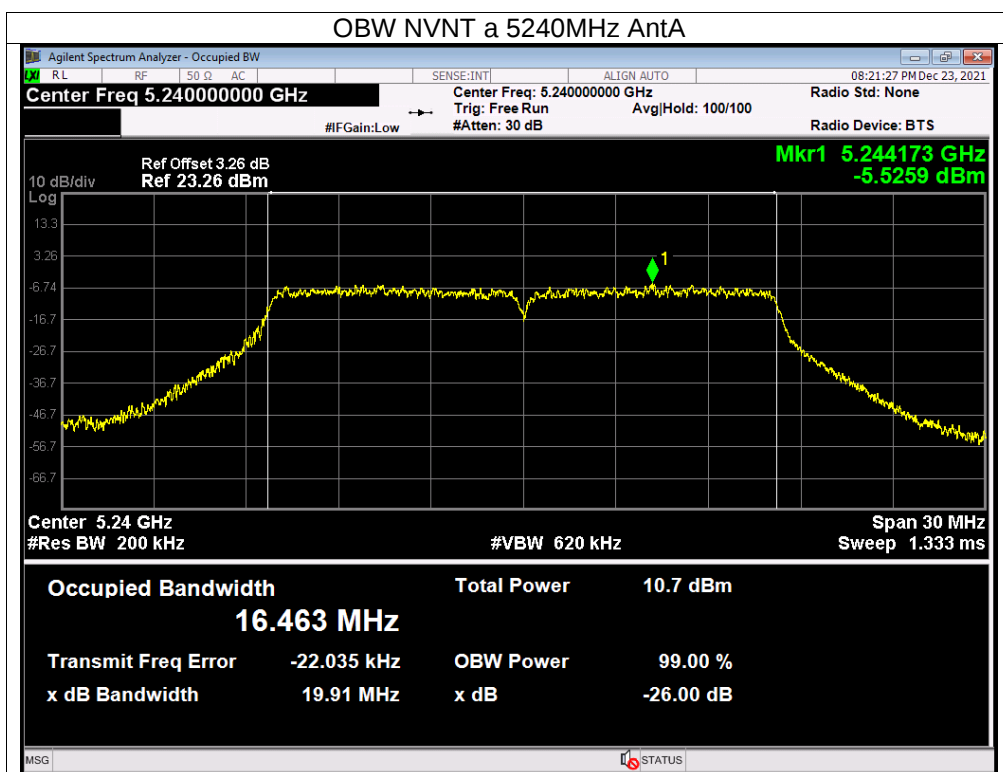
Test Graphs

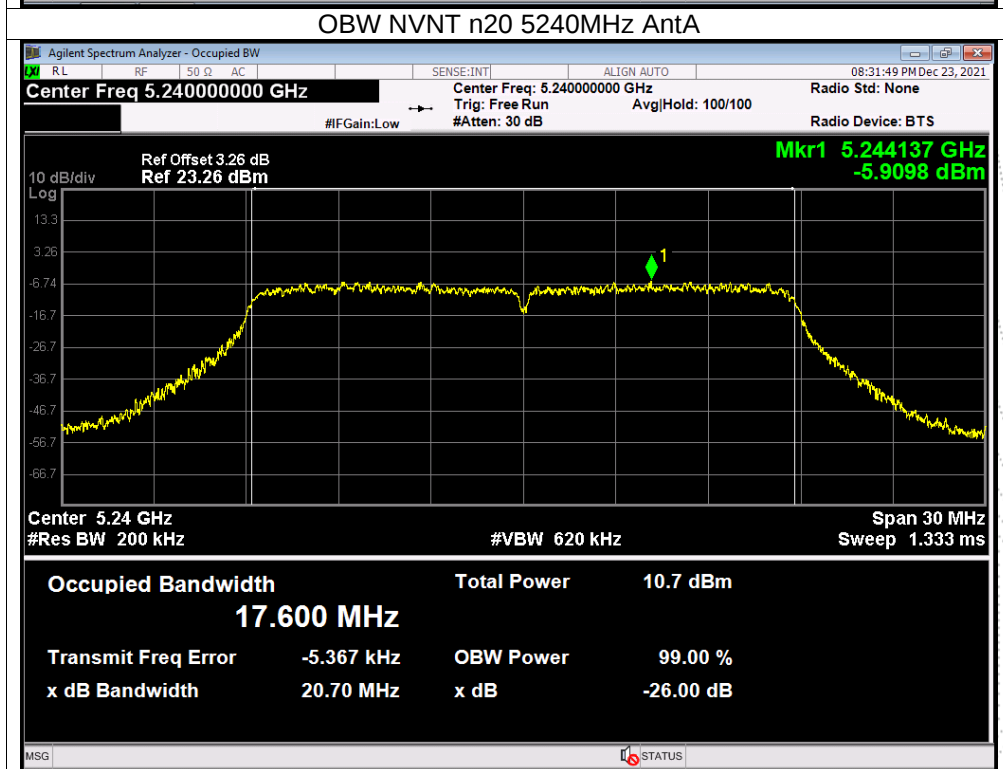
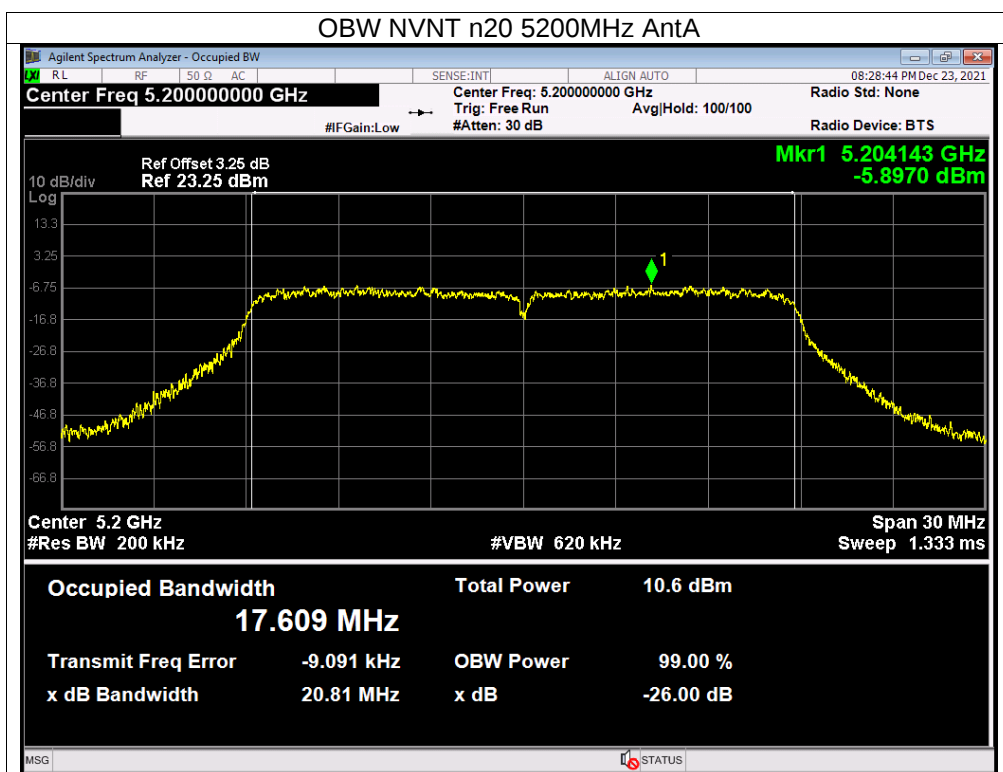
OBW NVNT a 5180MHz AntA

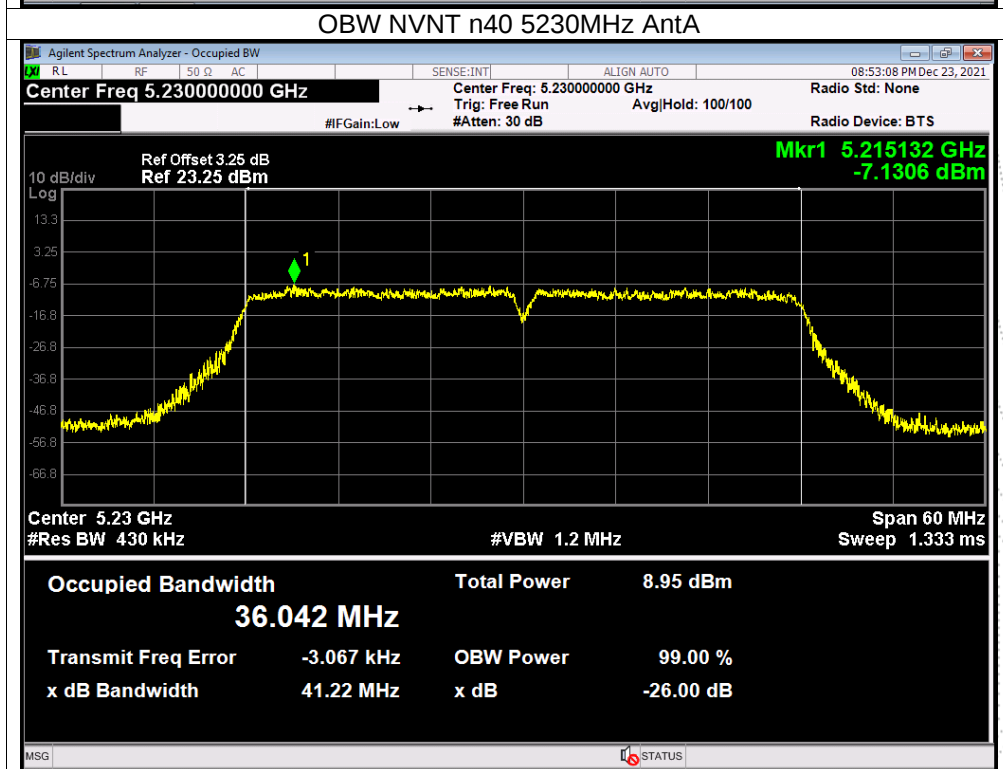
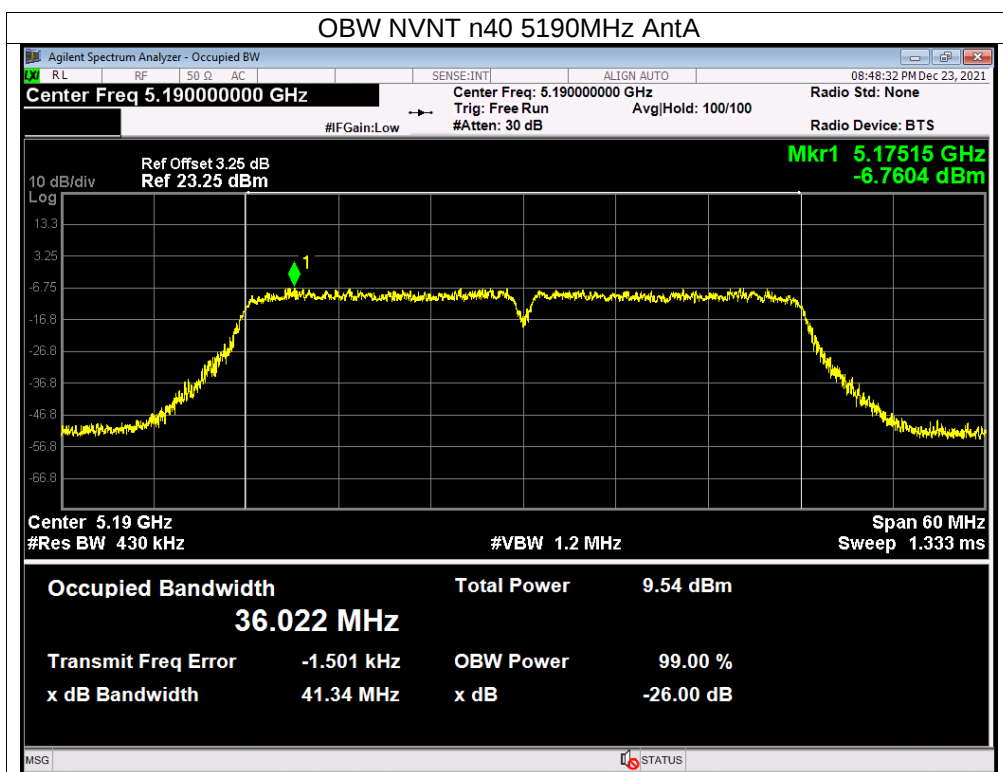


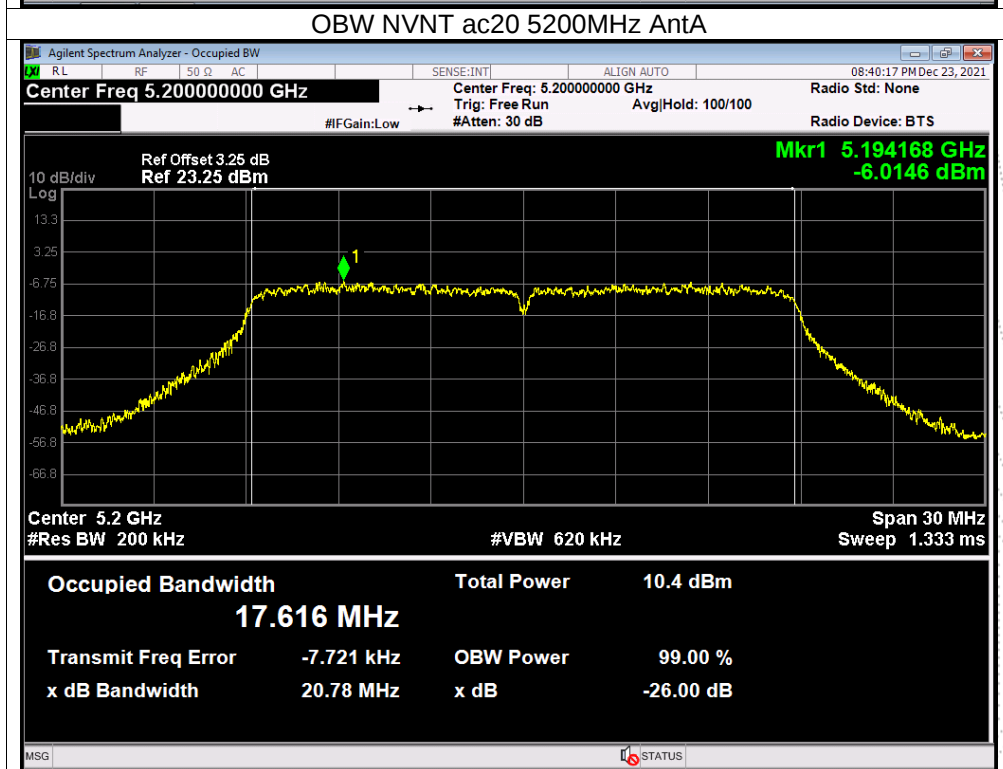
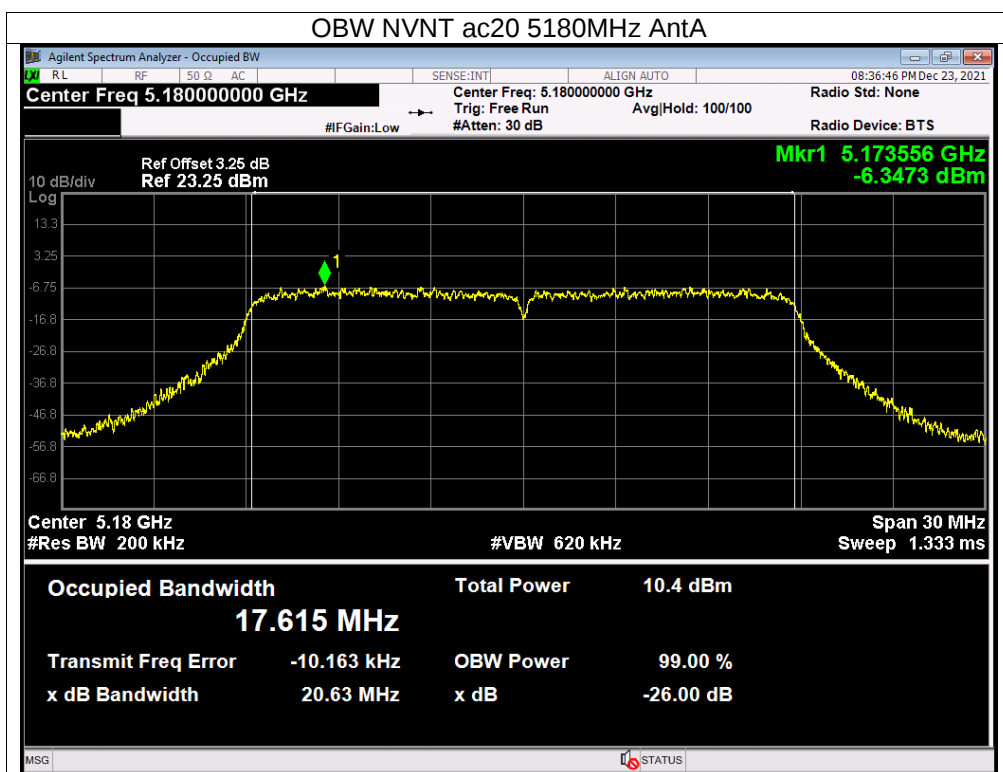
OBW NVNT a 5200MHz AntA

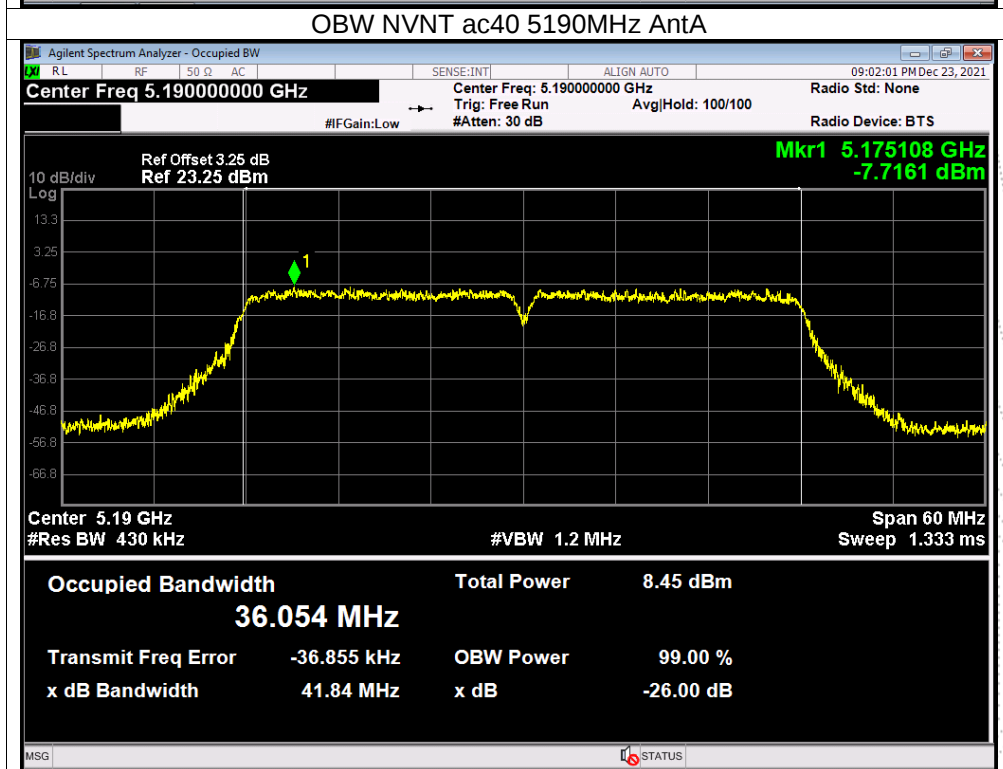
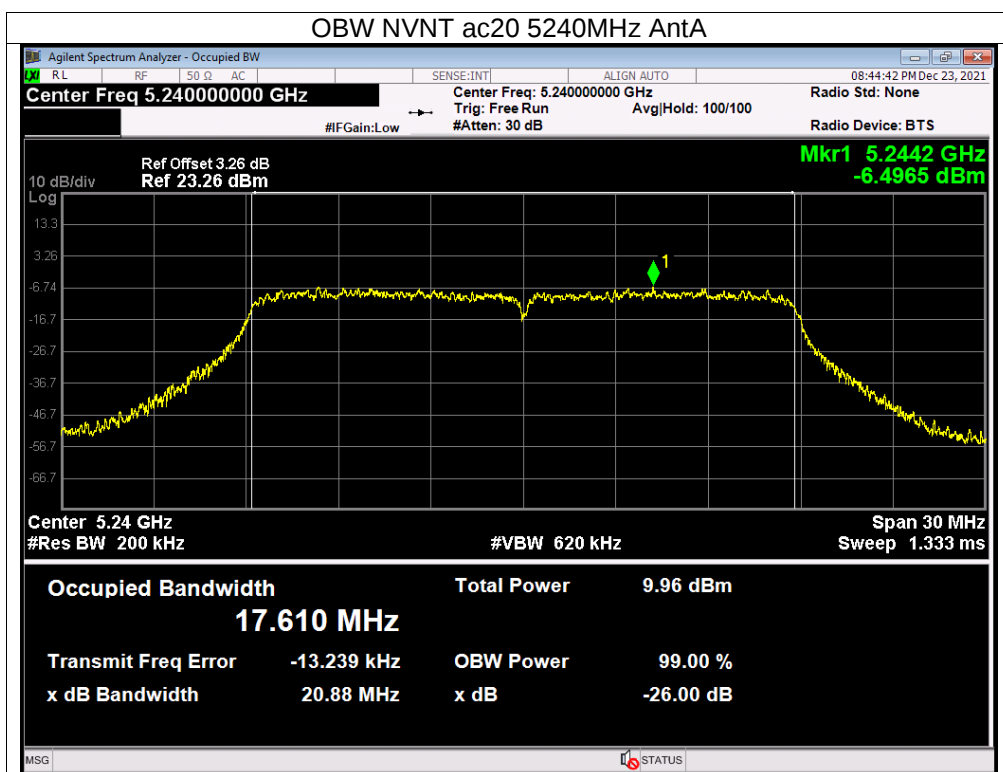


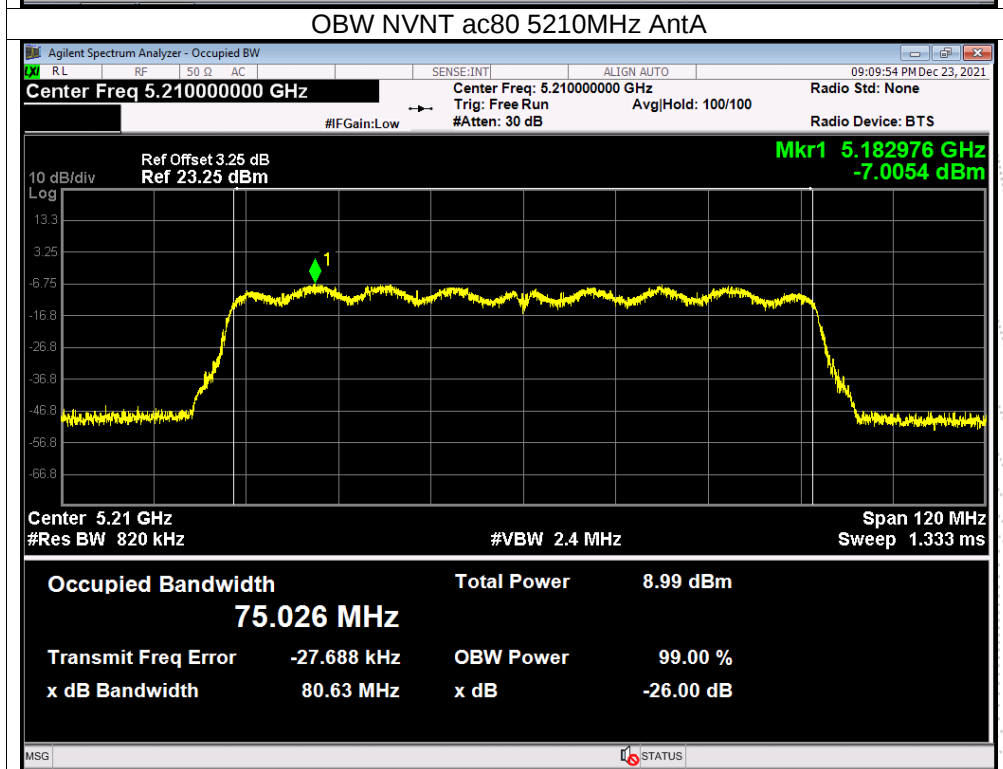
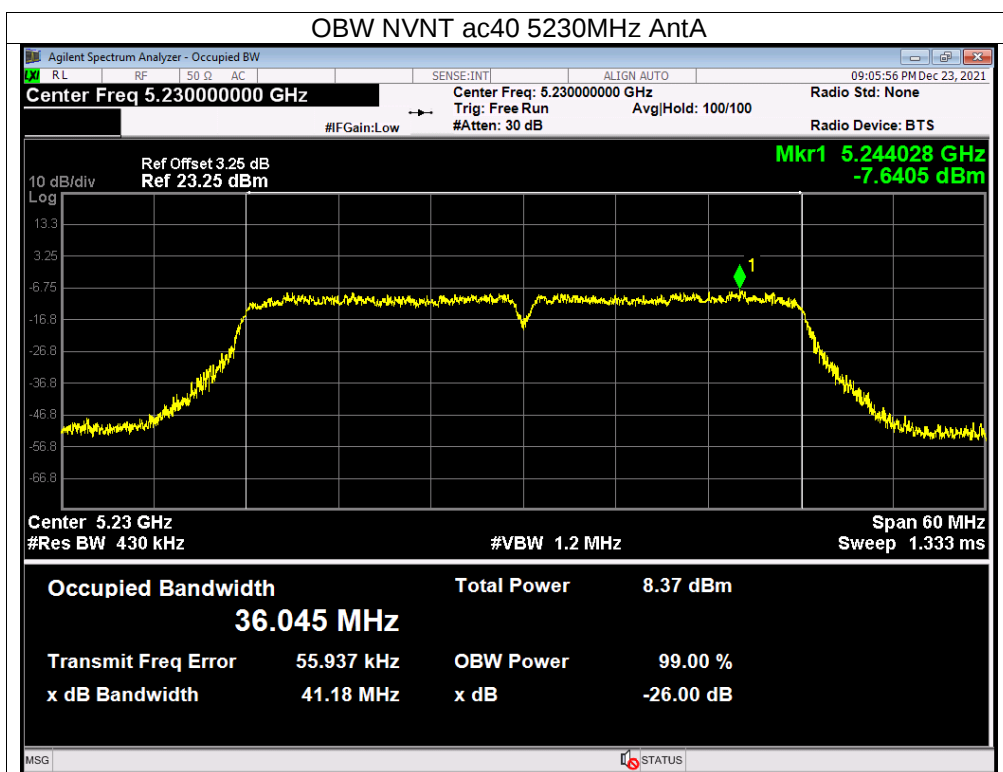












|               |                                    |                     |         |
|---------------|------------------------------------|---------------------|---------|
| Temperature : | 26 °C                              | Relative Humidity : | 54%     |
| Pressure :    | 101kPa                             | Test Voltage :      | DC 7.6V |
| Test Mode :   | TX Frequency U-NII-3(5745-5825MHz) |                     |         |

Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B ,only shown Antenna B Plot.

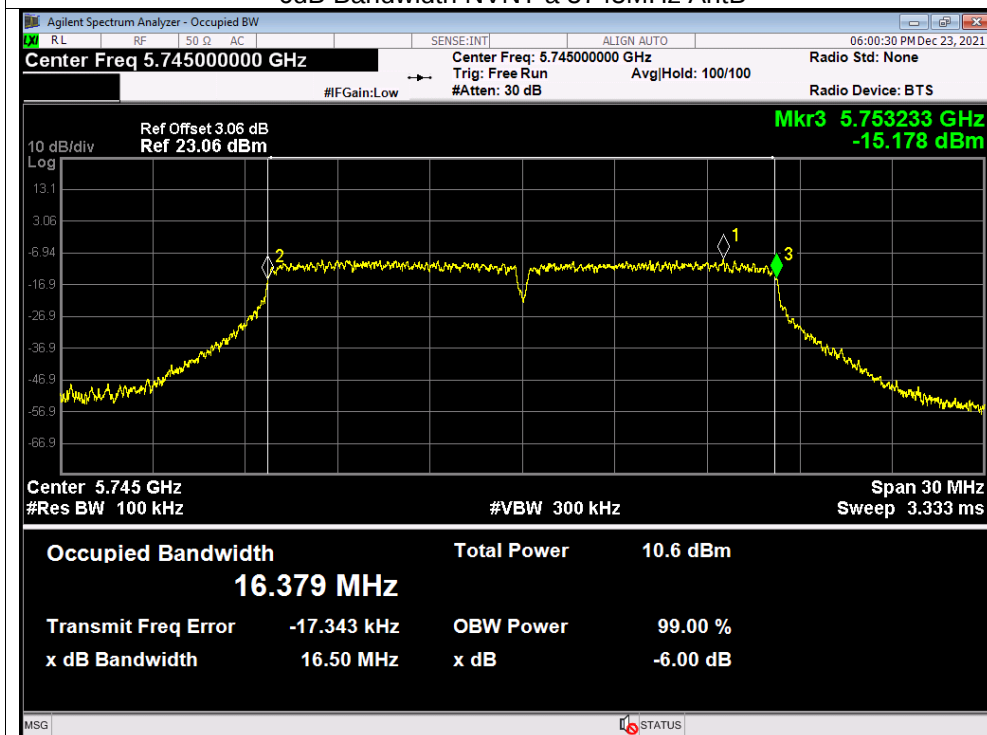
| Mode        | Channel | Frequency (MHz) | 99% bandwidth(M Hz) | 6dB bandwidth (MHz) | Limit MHz | Result |
|-------------|---------|-----------------|---------------------|---------------------|-----------|--------|
|             |         |                 | ANT A               | ANT A               |           |        |
| 802.11a     | CH149   | 5745            | 16.455              | 16.434              | ≥500      | Pass   |
|             | CH157   | 5785            | 16.452              | 16.475              | ≥500      | Pass   |
|             | CH165   | 5825            | 16.437              | 16.452              | ≥500      | Pass   |
| 802.11 n20  | CH149   | 5745            | 17.556              | 17.611              | ≥500      | Pass   |
|             | CH157   | 5785            | 17.571              | 17.609              | ≥500      | Pass   |
|             | CH165   | 5825            | 17.553              | 17.603              | ≥500      | Pass   |
| 802.11 n40  | CH151   | 5755            | 35.961              | 36.347              | ≥500      | Pass   |
|             | CH159   | 5795            | 35.931              | 36.342              | ≥500      | Pass   |
| 802.11 ac20 | CH149   | 5745            | 17.565              | 17.588              | ≥500      | Pass   |
|             | CH157   | 5785            | 17.575              | 17.604              | ≥500      | Pass   |
|             | CH165   | 5825            | 17.563              | 17.62               | ≥500      | Pass   |
| 802.11 ac40 | CH151   | 5755            | 35.924              | 36.34               | ≥500      | Pass   |
|             | CH159   | 5795            | 35.89               | 36.314              | ≥500      | Pass   |
| 802.11 AC80 | CH155   | 5775            | 74.48               | 74.345              | ≥500      | Pass   |

| Mode        | Channel | Frequency<br>(MHz) | 99%<br>bandwidth(M<br>Hz) | 6dB bandwidth<br>(MHz) | Limit<br>MHz | Result |
|-------------|---------|--------------------|---------------------------|------------------------|--------------|--------|
|             |         |                    | ANT B                     | ANT B                  |              |        |
| 802.11a     | CH149   | 5745               | 16.438                    | 16.501                 | ≥500         | Pass   |
|             | CH157   | 5785               | 16.445                    | 16.45                  | ≥500         | Pass   |
|             | CH165   | 5825               | 16.46                     | 16.49                  | ≥500         | Pass   |
| 802.11 n20  | CH149   | 5745               | 17.556                    | 17.59                  | ≥500         | Pass   |
|             | CH157   | 5785               | 17.552                    | 17.604                 | ≥500         | Pass   |
|             | CH165   | 5825               | 17.552                    | 17.585                 | ≥500         | Pass   |
| 802.11 n40  | CH151   | 5755               | 36.065                    | 36.393                 | ≥500         | Pass   |
|             | CH159   | 5795               | 36.052                    | 36.378                 | ≥500         | Pass   |
| 802.11 ac20 | CH149   | 5745               | 17.56                     | 17.617                 | ≥500         | Pass   |
|             | CH157   | 5785               | 17.57                     | 17.599                 | ≥500         | Pass   |
|             | CH165   | 5825               | 17.624                    | 17.619                 | ≥500         | Pass   |
| 802.11 ac40 | CH151   | 5755               | 36.068                    | 36.409                 | ≥500         | Pass   |
|             | CH159   | 5795               | 36.061                    | 36.367                 | ≥500         | Pass   |
| 802.11 AC80 | CH155   | 5775               | <b>74.841</b>             | 75.398                 | ≥500         | Pass   |

# -6dB Bandwidth

## Test Graphs

### -6dB Bandwidth NVNT a 5745MHz AntB



### -6dB Bandwidth NVNT a 5785MHz AntB

