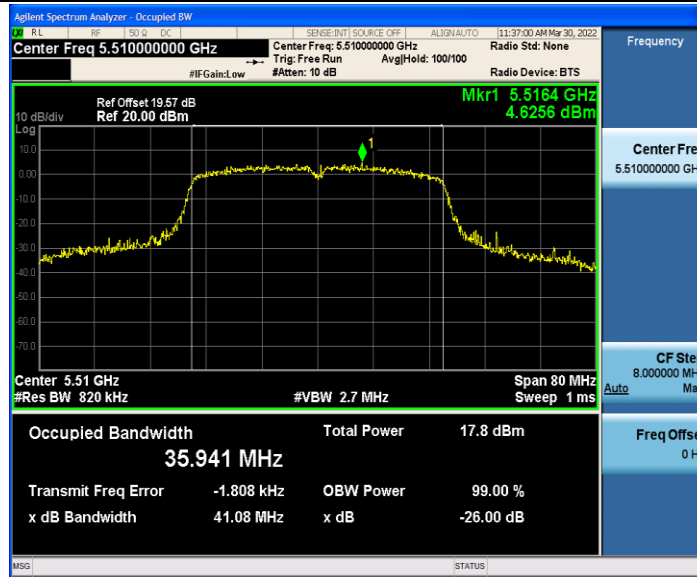
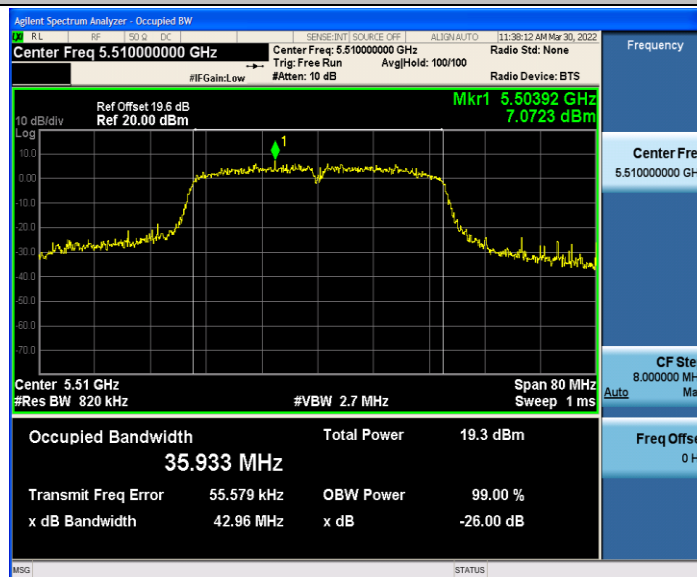
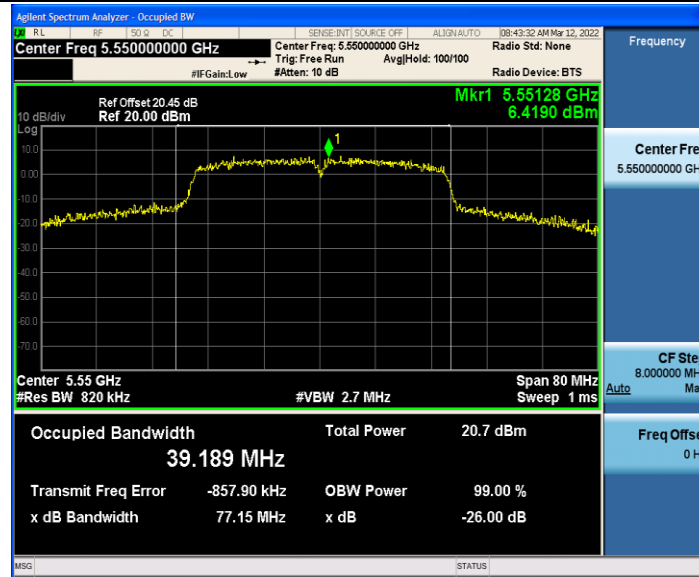




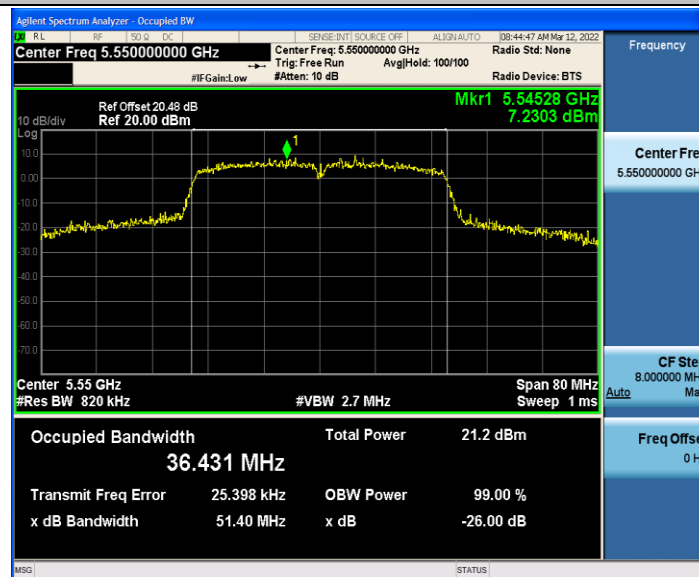
11N40MIMO\_Ant2\_5510



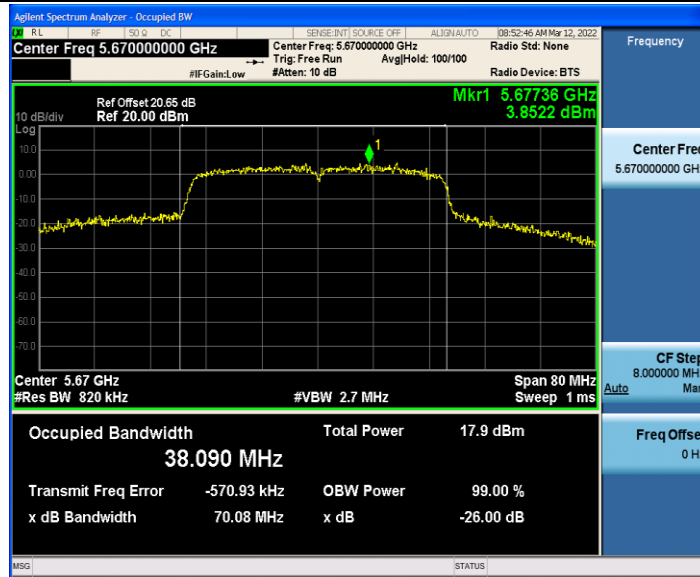
11N40MIMO\_Ant1\_5550



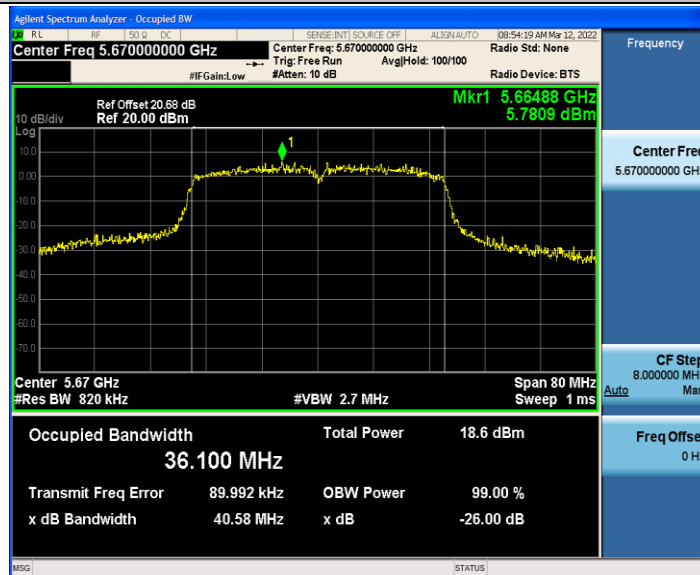
11N40MIMO\_Ant2\_5550



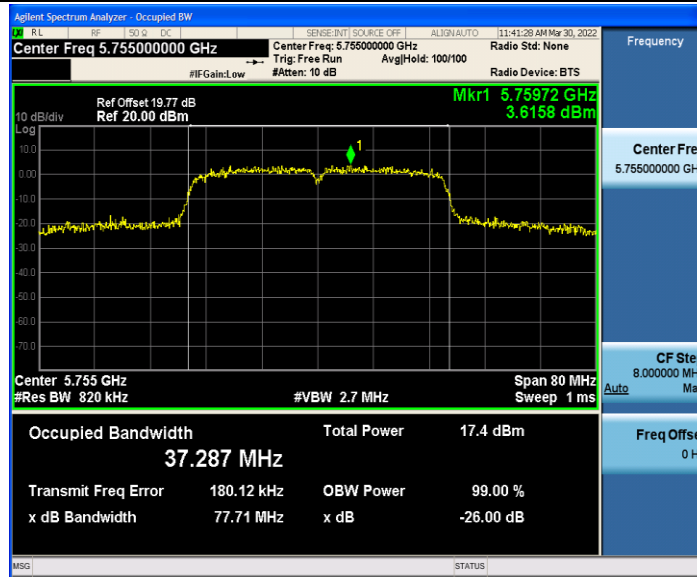
11N40MIMO\_Ant1\_5670



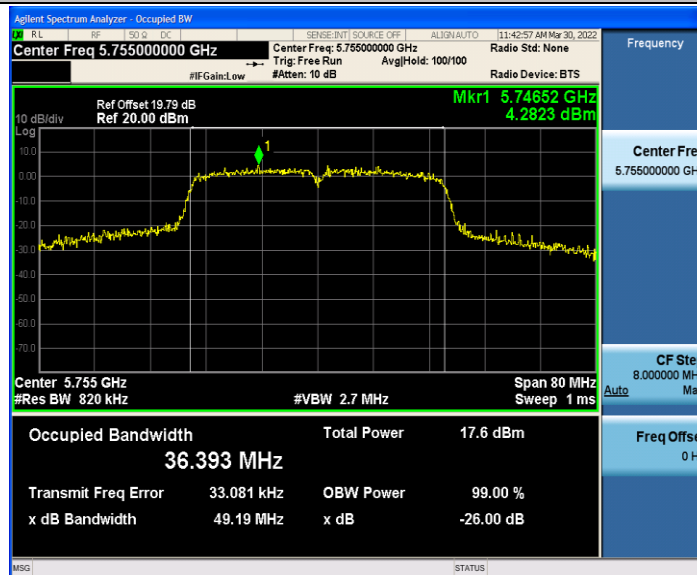
11N40MIMO\_Ant2\_5670



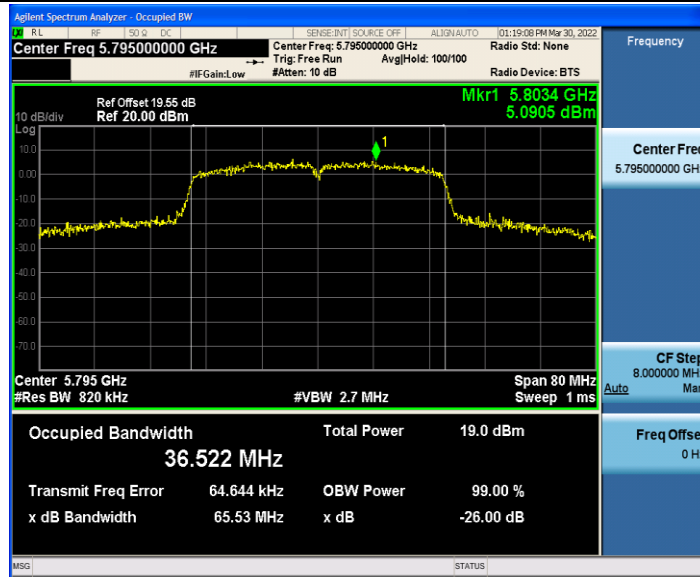
11N40MIMO\_Ant1\_5755



11N40MIMO\_Ant2\_5755



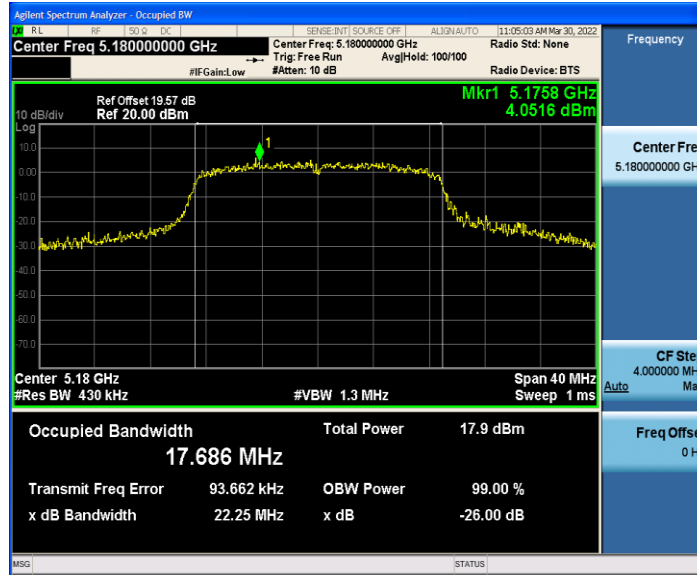
11N40MIMO\_Ant1\_5795



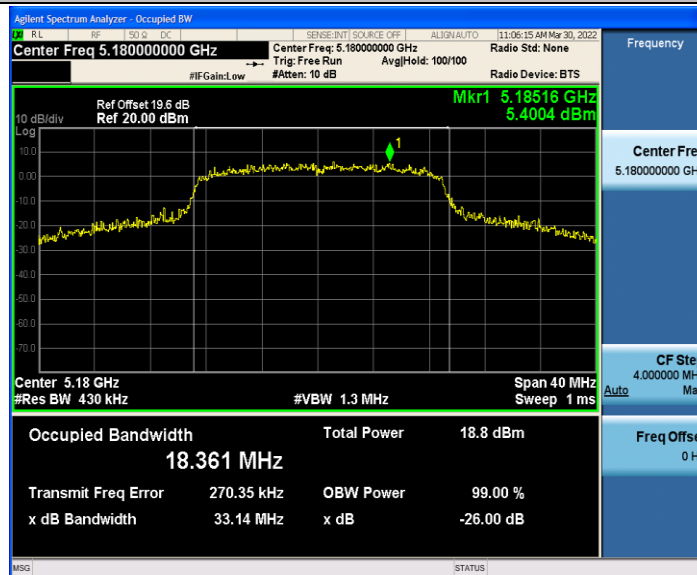
11N40MIMO\_Ant2\_5795



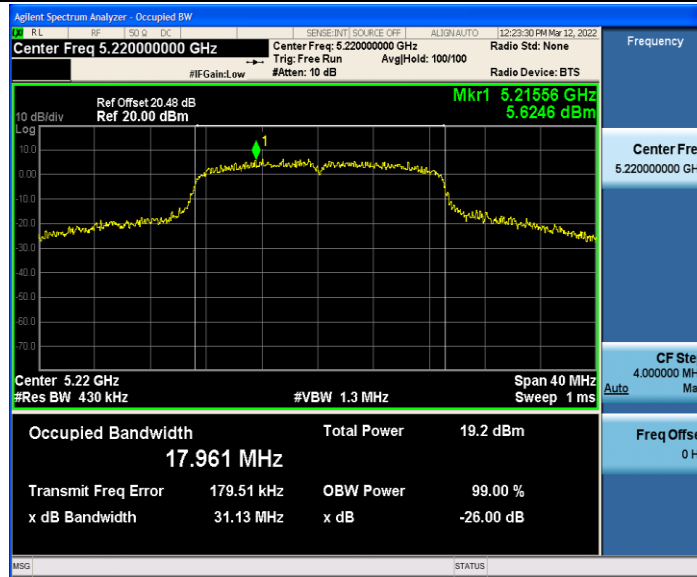
11AC20MIMO\_Ant1\_5180



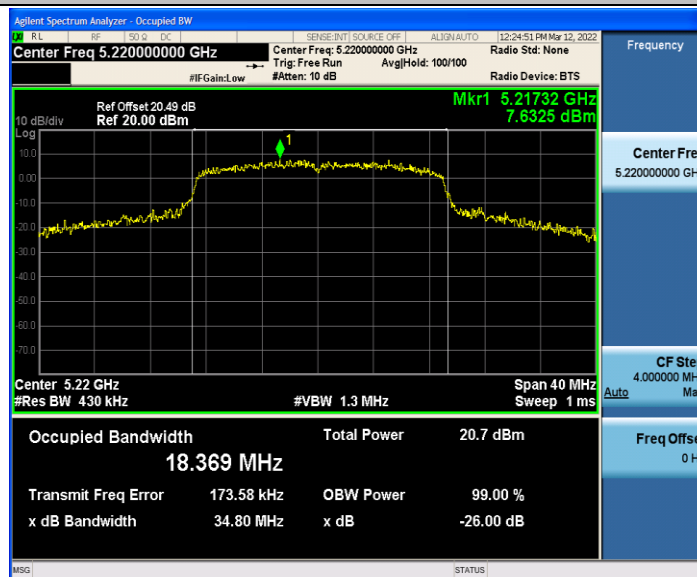
11AC20MIMO\_Ant2\_5180



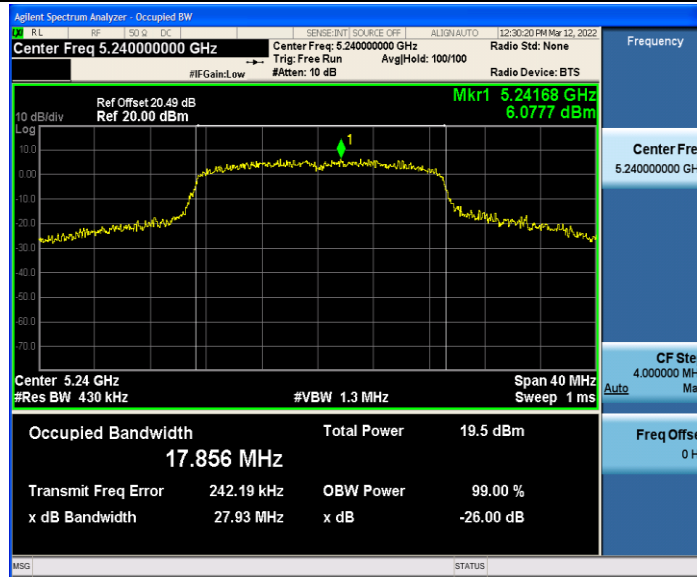
11AC20MIMO\_Ant1\_5220



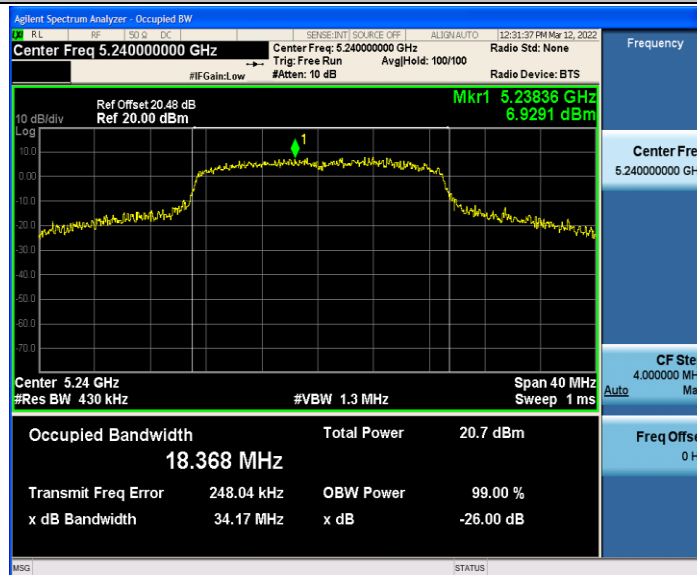
11AC20MIMO\_Ant2\_5220



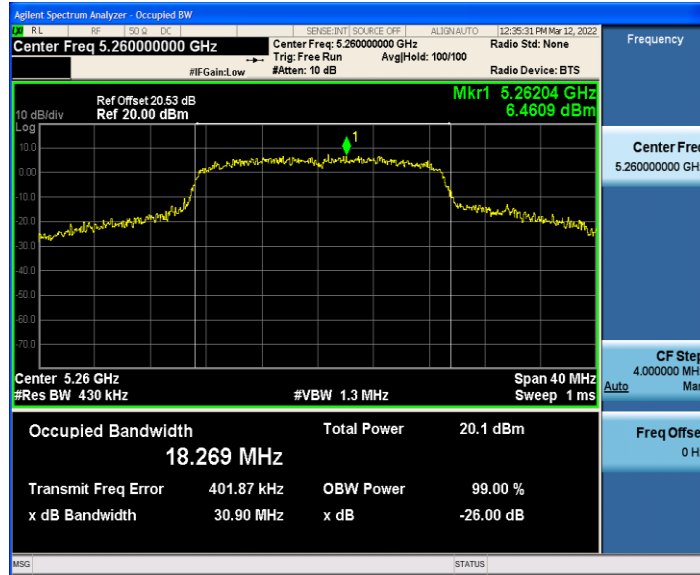
11AC20MIMO\_Ant1\_5240



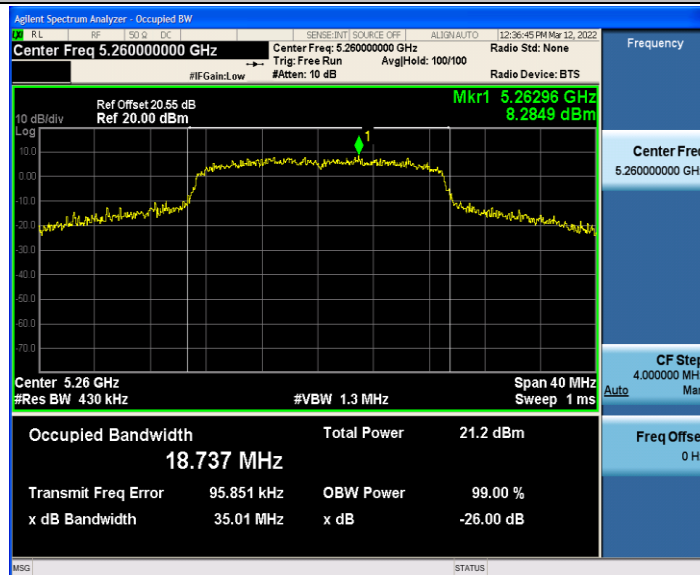
11AC20MIMO\_Ant2\_5240



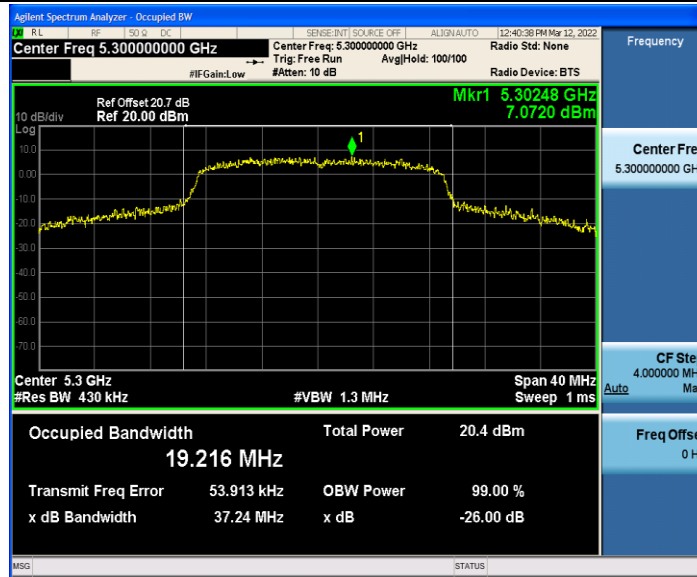
11AC20MIMO\_Ant1\_5260



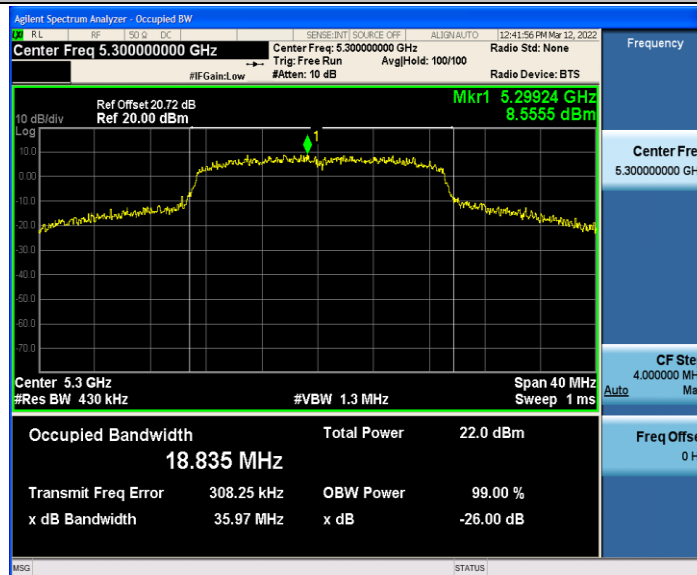
11AC20MIMO\_Ant2\_5260



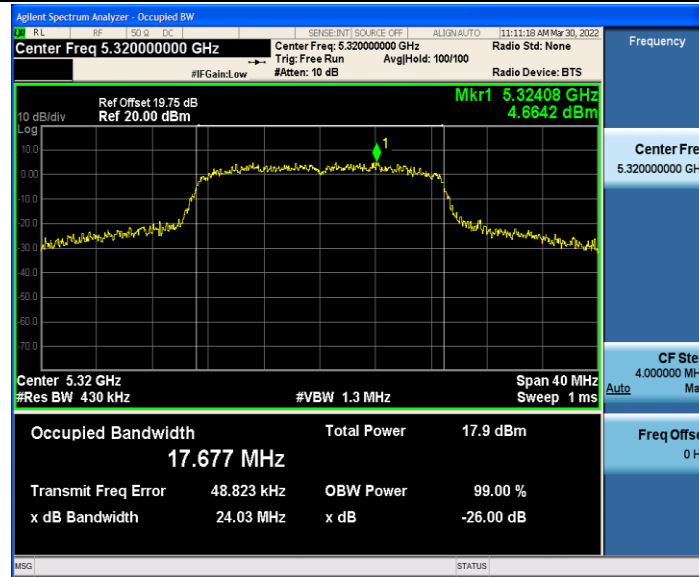
11AC20MIMO\_Ant1\_5300



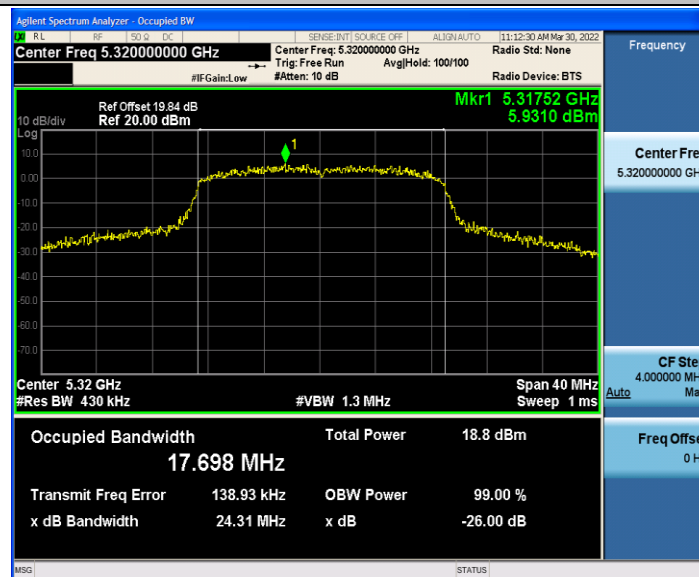
11AC20MIMO\_Ant2\_5300



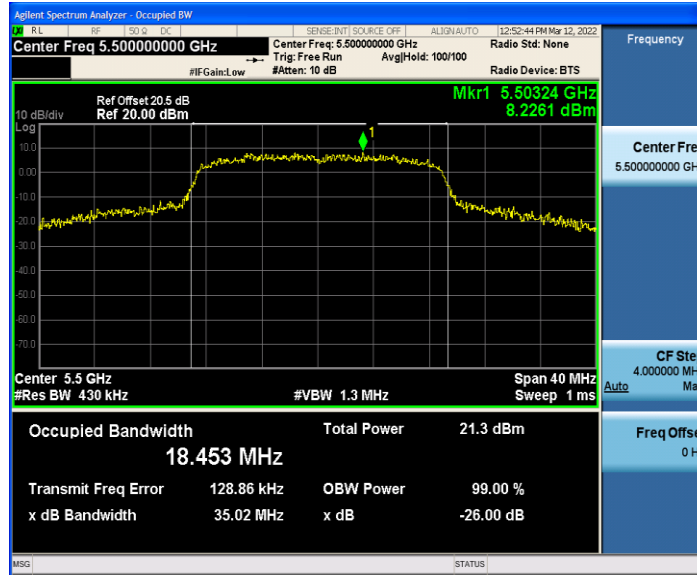
11AC20MIMO\_Ant1\_5320



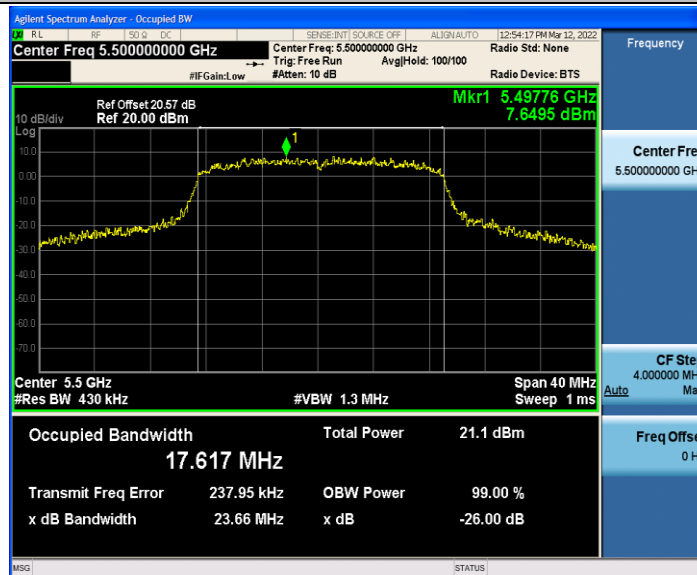
11AC20MIMO\_Ant2\_5320



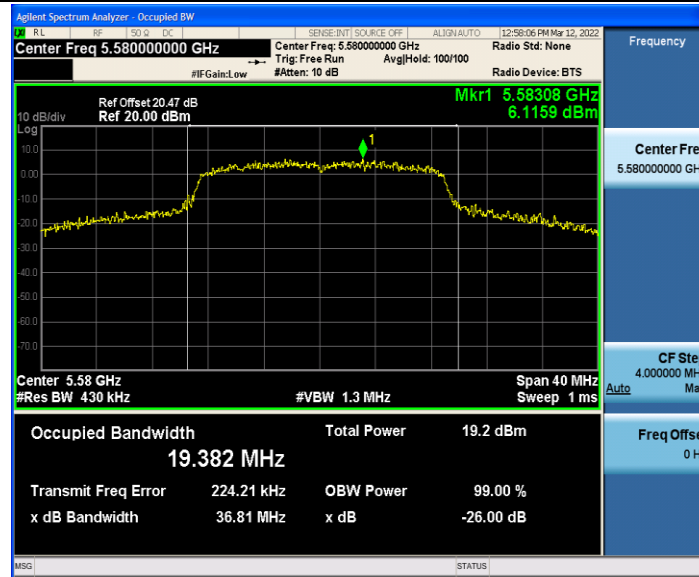
11AC20MIMO\_Ant1\_5500



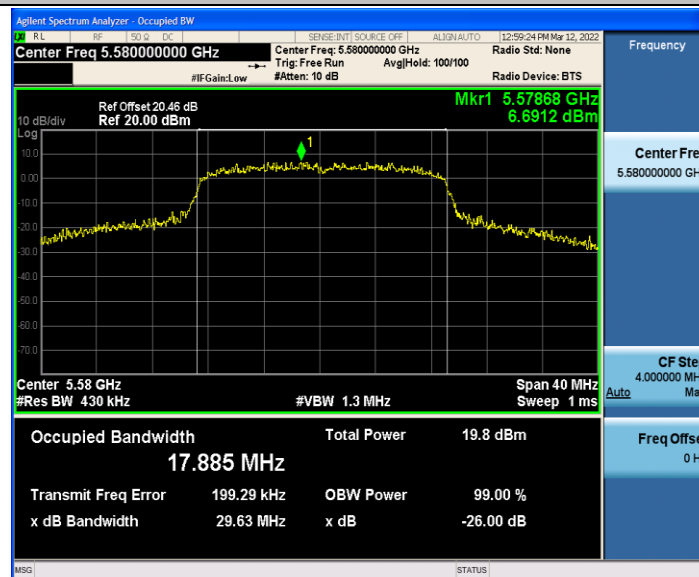
11AC20MIMO\_Ant2\_5500



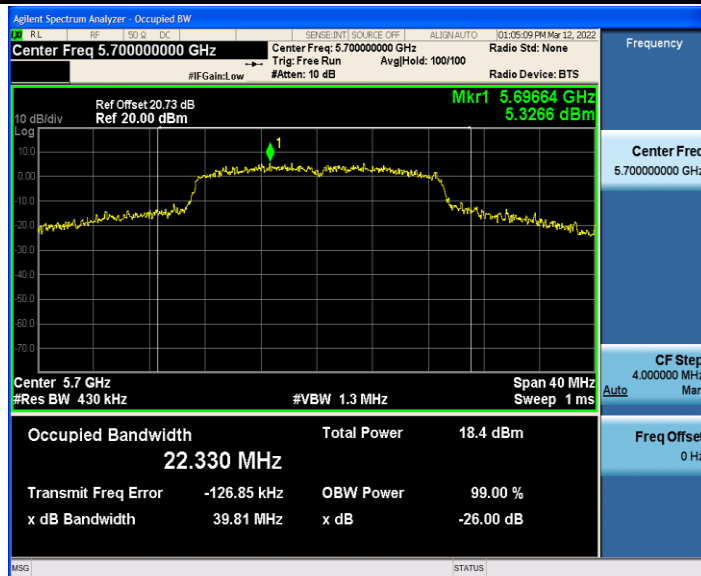
11AC20MIMO\_Ant1\_5580



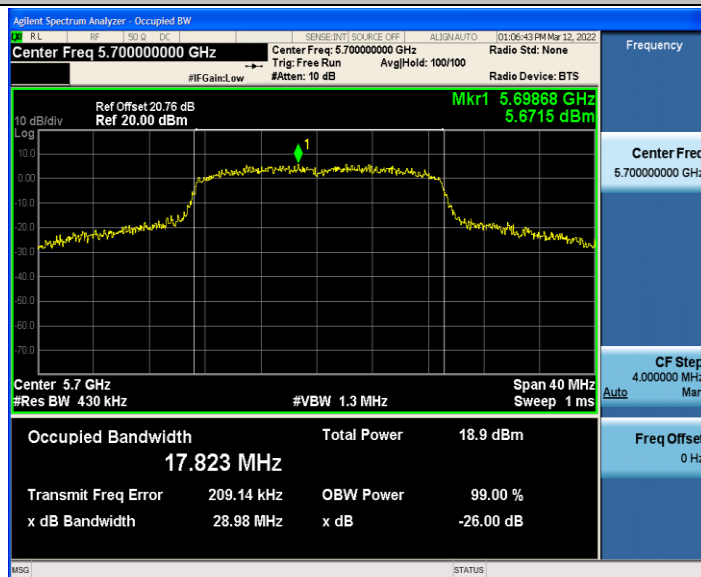
11AC20MIMO\_Ant2\_5580



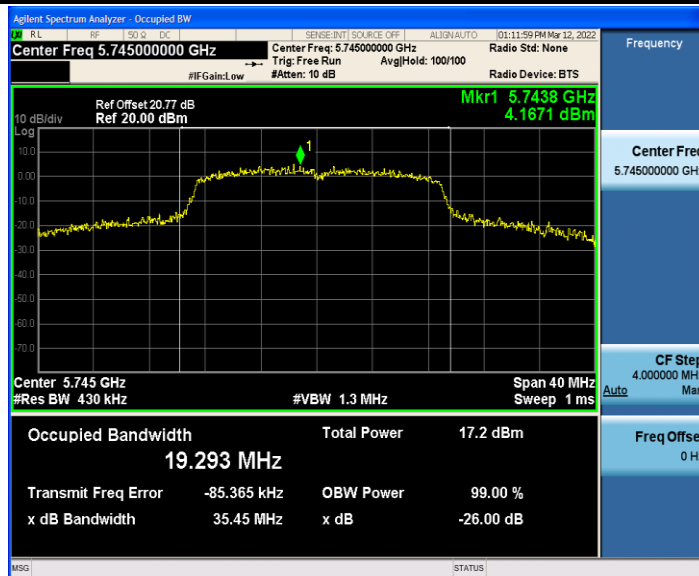
11AC20MIMO\_Ant1\_5700



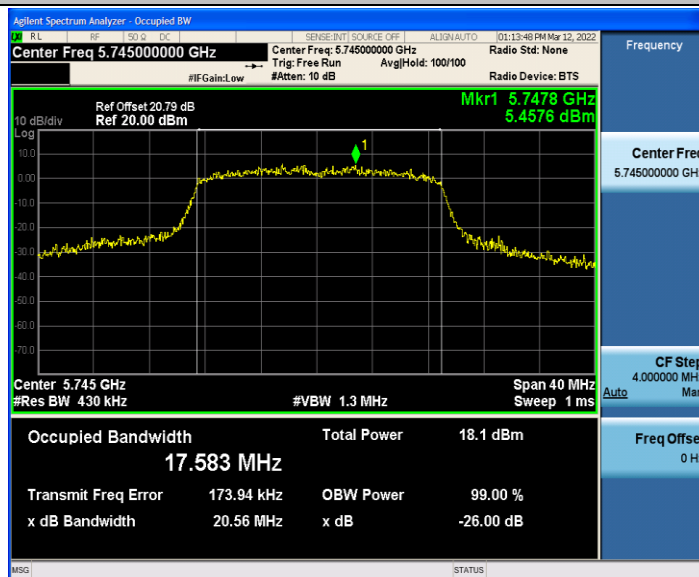
11AC20MIMO\_Ant2\_5700



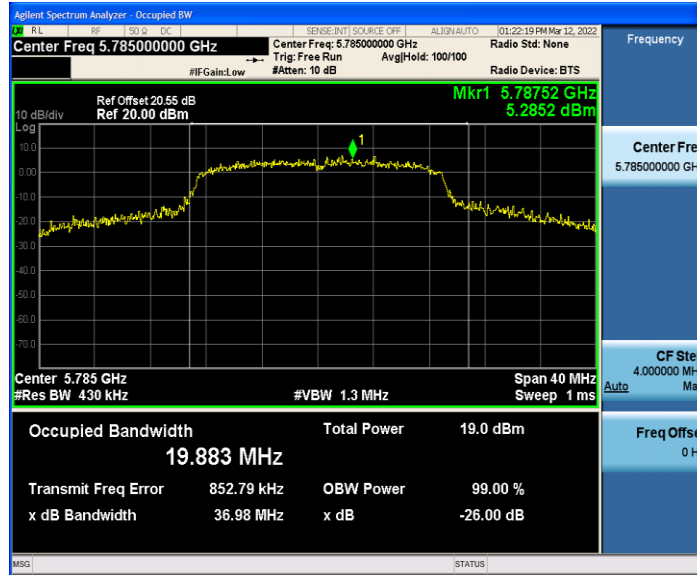
11AC20MIMO\_Ant1\_5745



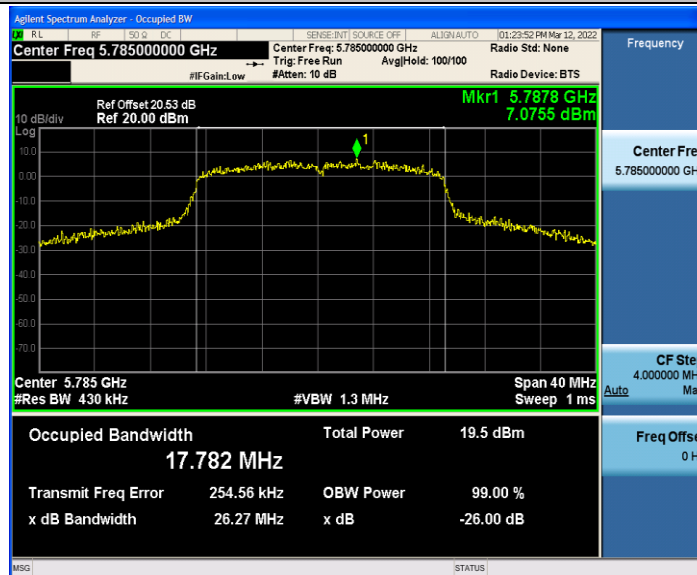
11AC20MIMO\_Ant2\_5745



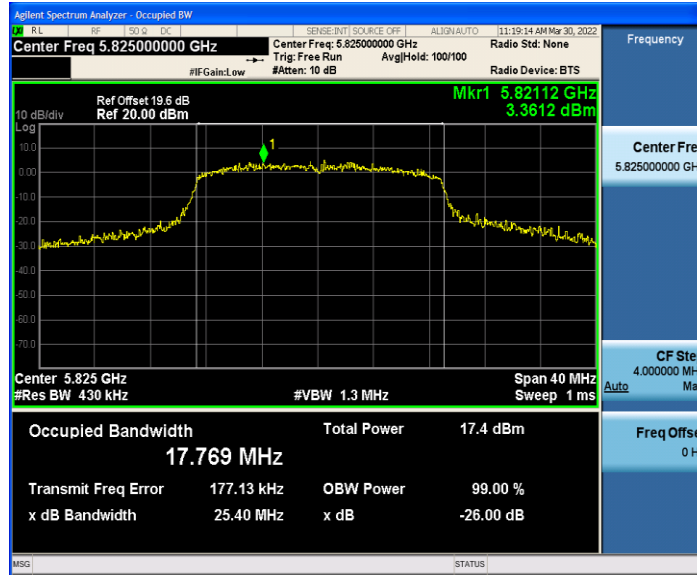
11AC20MIMO\_Ant1\_5785



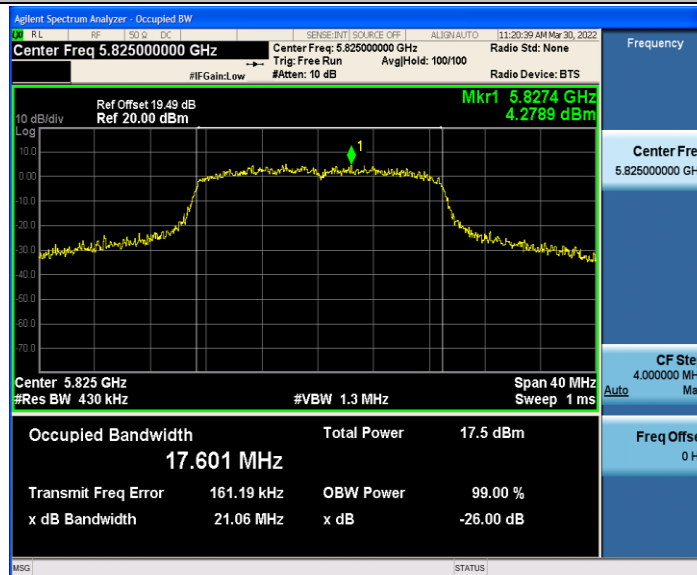
11AC20MIMO\_Ant2\_5785



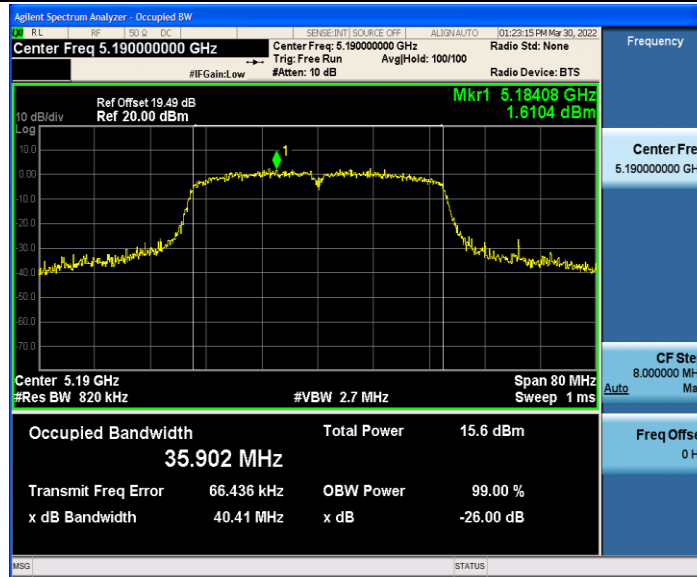
11AC20MIMO\_Ant1\_5825



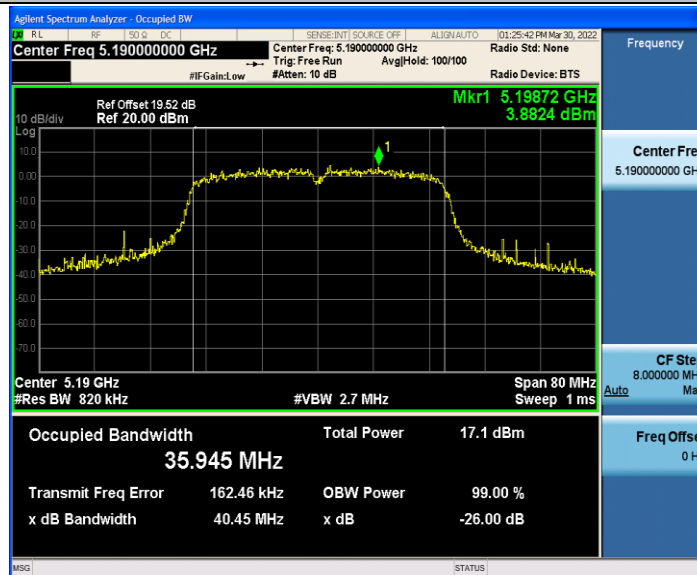
11AC20MIMO\_Ant2\_5825



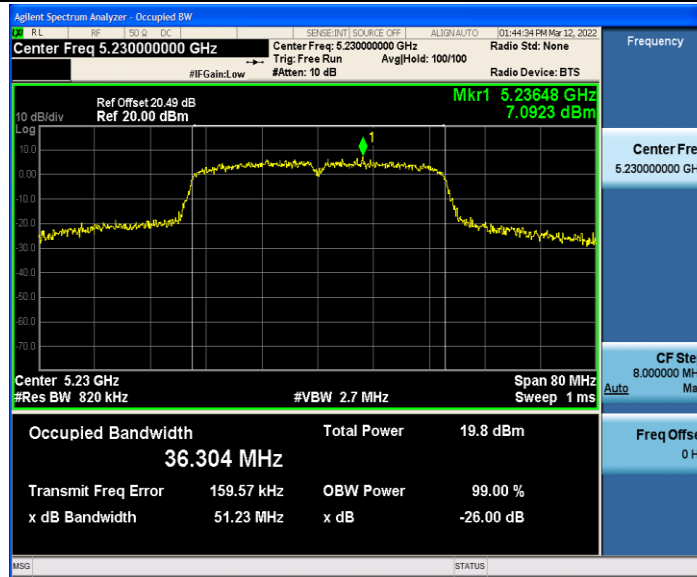
11AC40MIMO\_Ant1\_5190



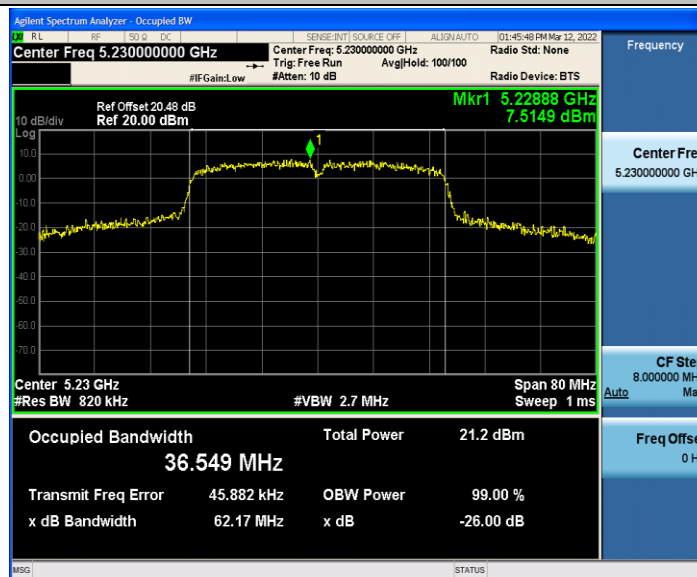
11AC40MIMO\_Ant2\_5190



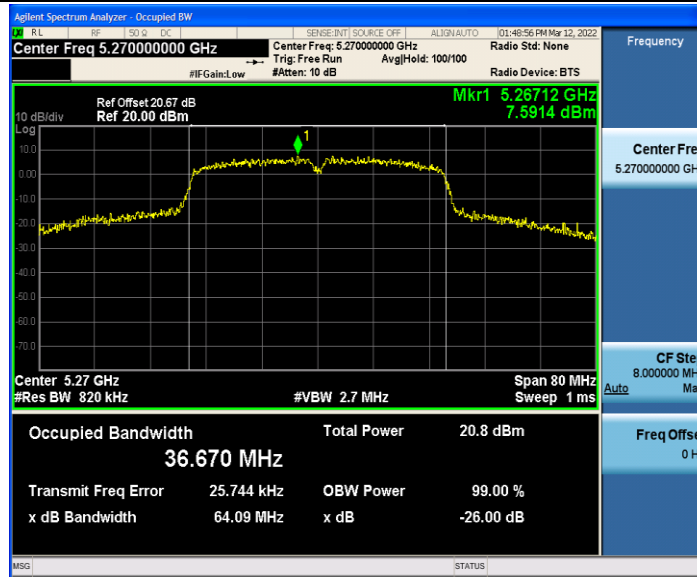
11AC40MIMO\_Ant1\_5230



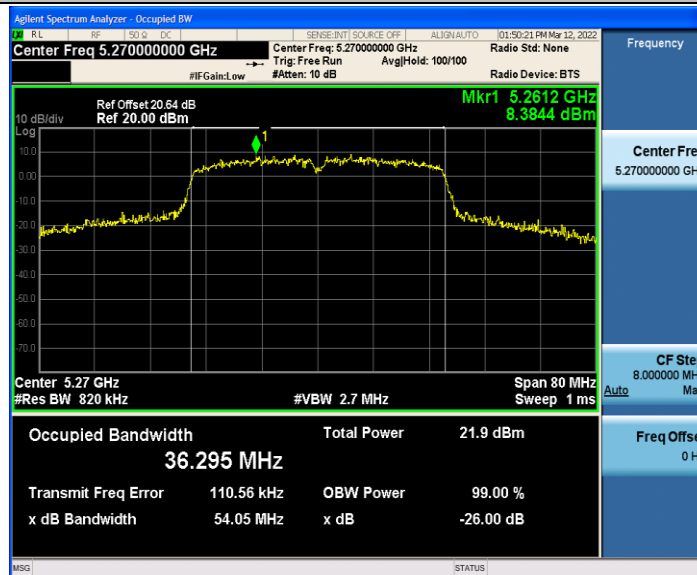
11AC40MIMO\_Ant2\_5230



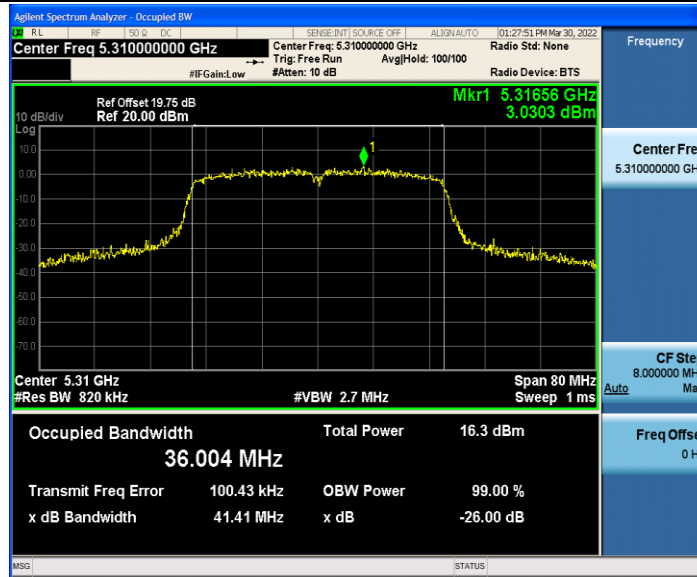
11AC40MIMO\_Ant1\_5270



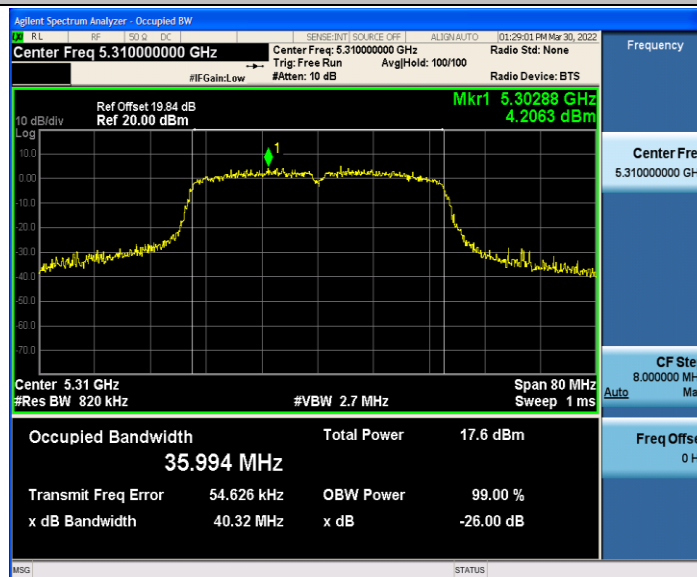
11AC40MIMO\_Ant2\_5270



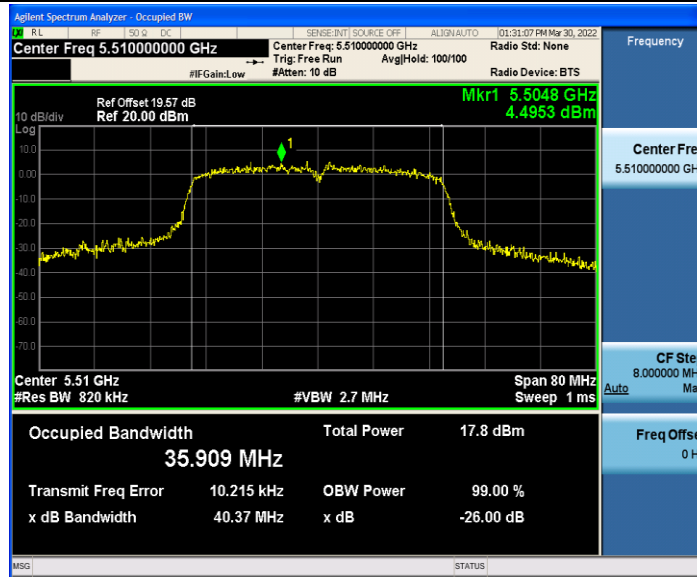
11AC40MIMO\_Ant1\_5310



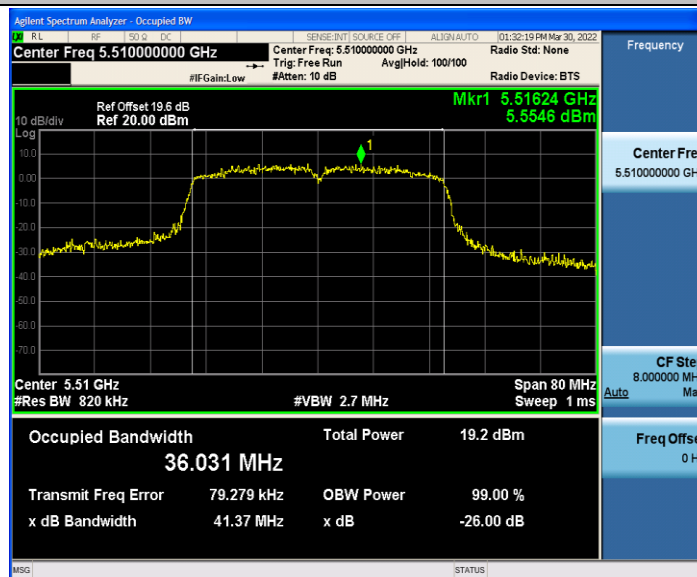
11AC40MIMO\_Ant2\_5310



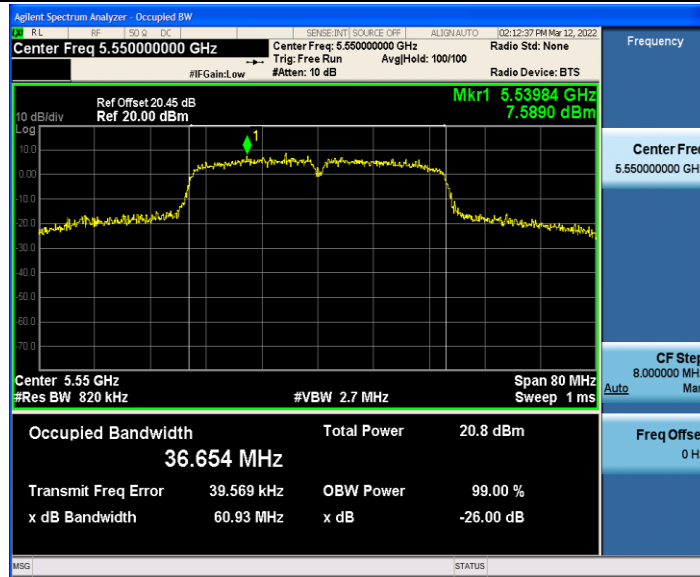
11AC40MIMO\_Ant1\_5510



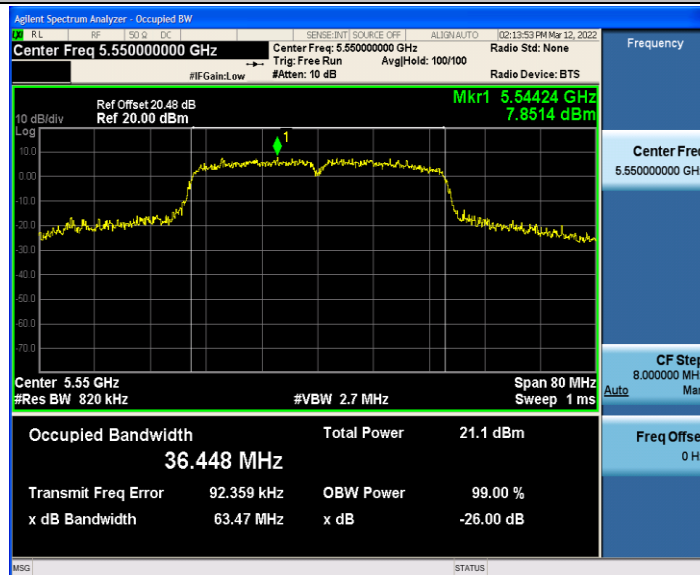
11AC40MIMO\_Ant2\_5510



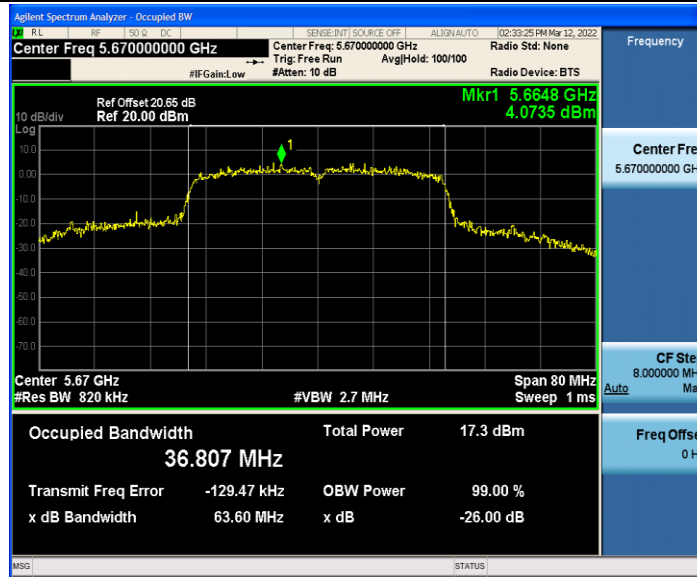
11AC40MIMO\_Ant1\_5550



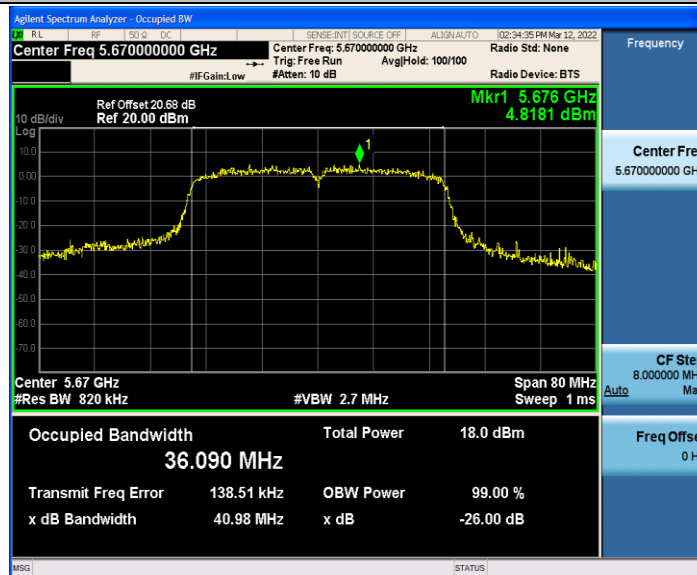
11AC40MIMO\_Ant2\_5550



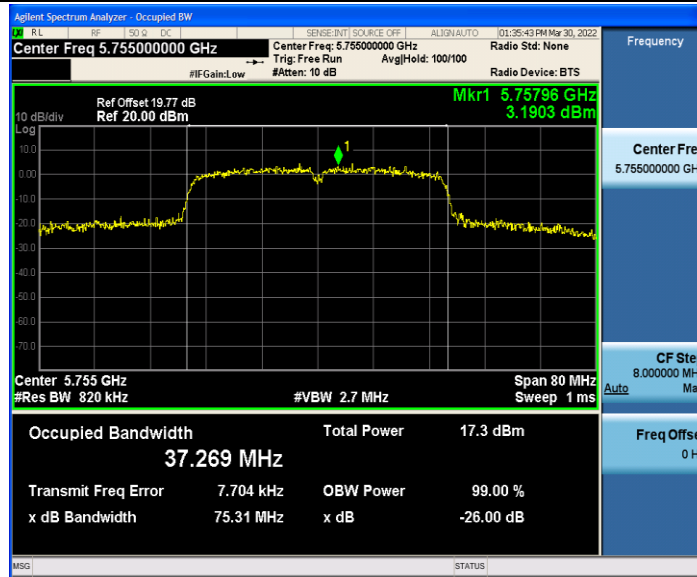
11AC40MIMO\_Ant1\_5670



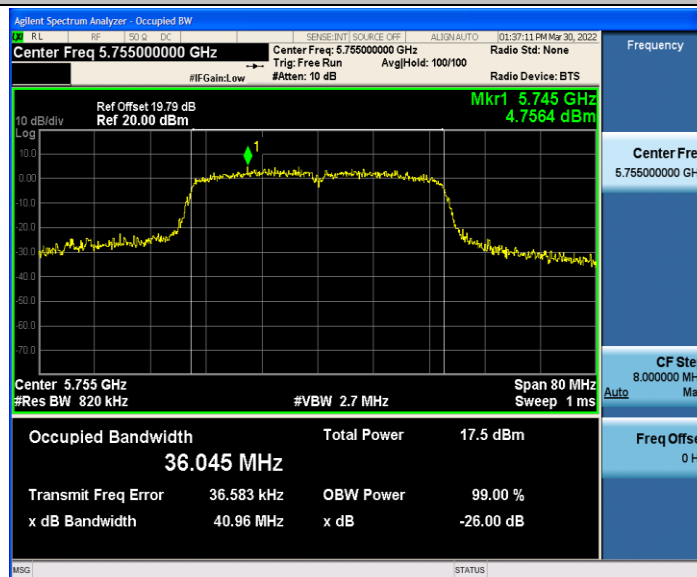
11AC40MIMO\_Ant2\_5670



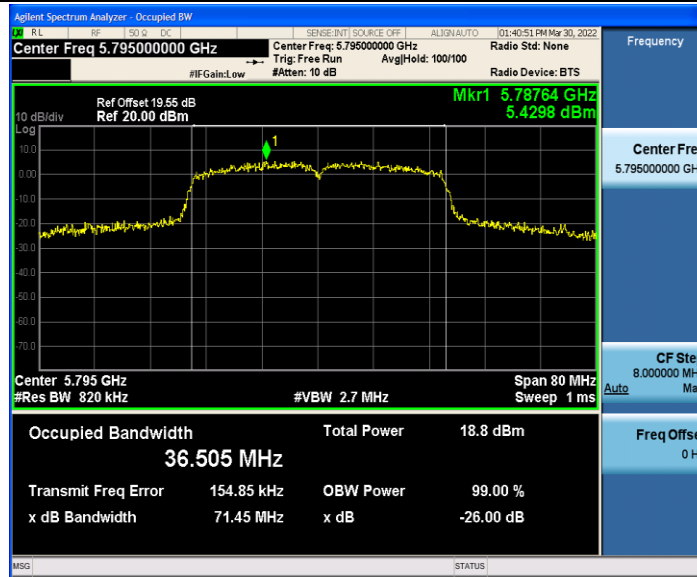
11AC40MIMO\_Ant1\_5755



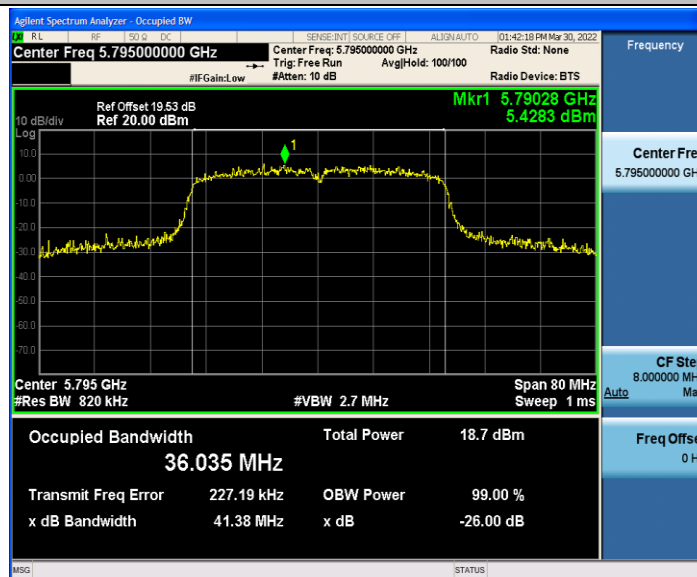
11AC40MIMO\_Ant2\_5755



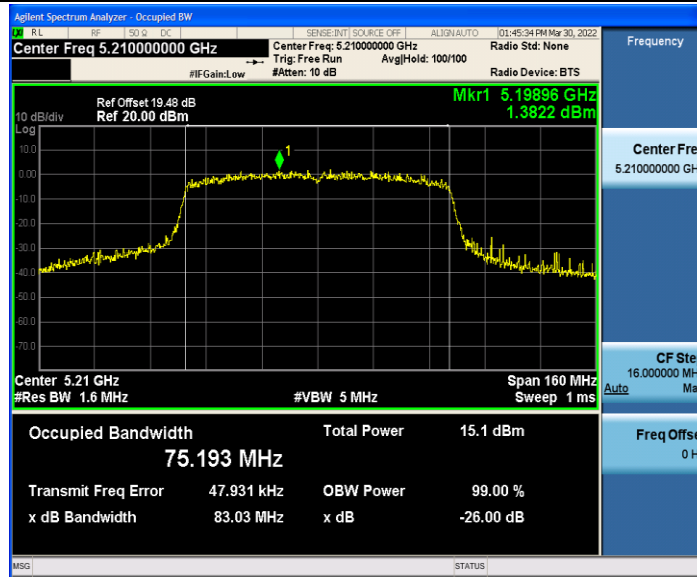
11AC40MIMO\_Ant1\_5795



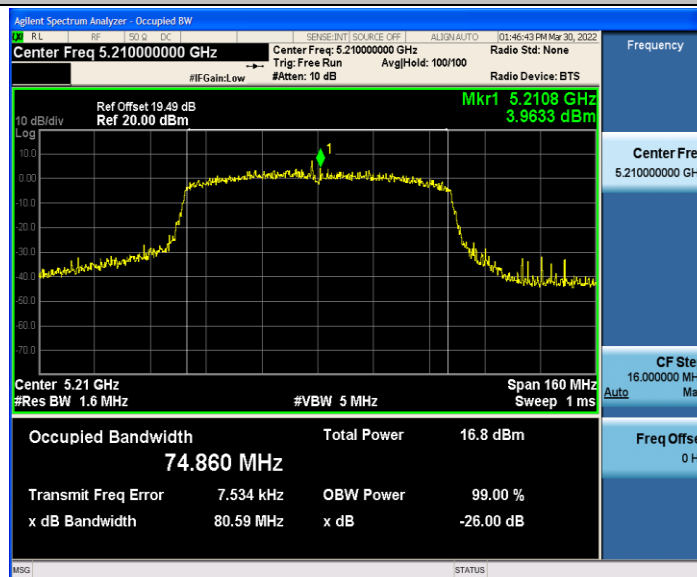
11AC40MIMO\_Ant2\_5795



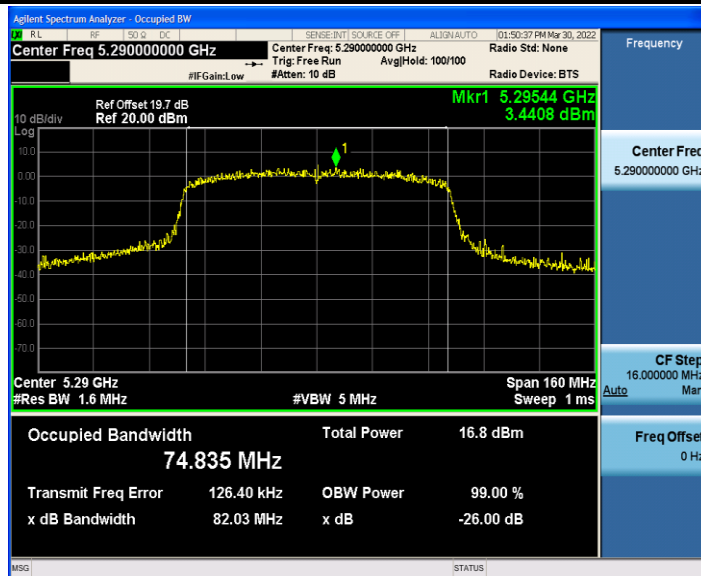
11AC80MIMO\_Ant1\_5210



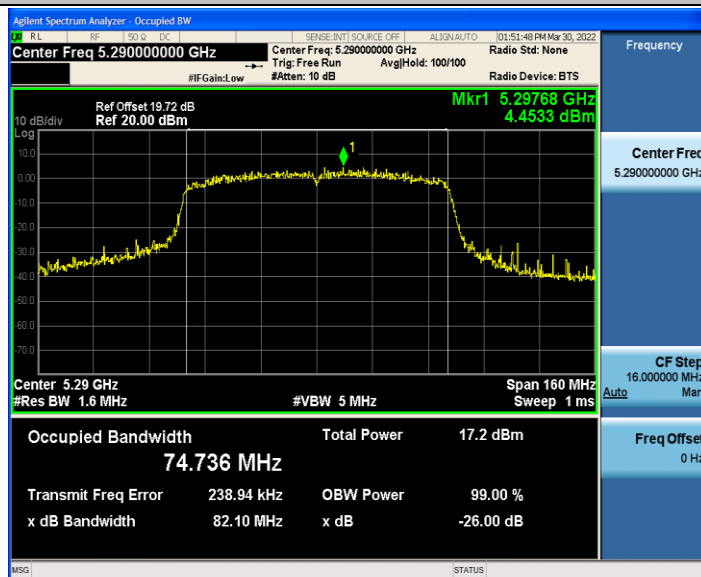
11AC80MIMO\_Ant2\_5210



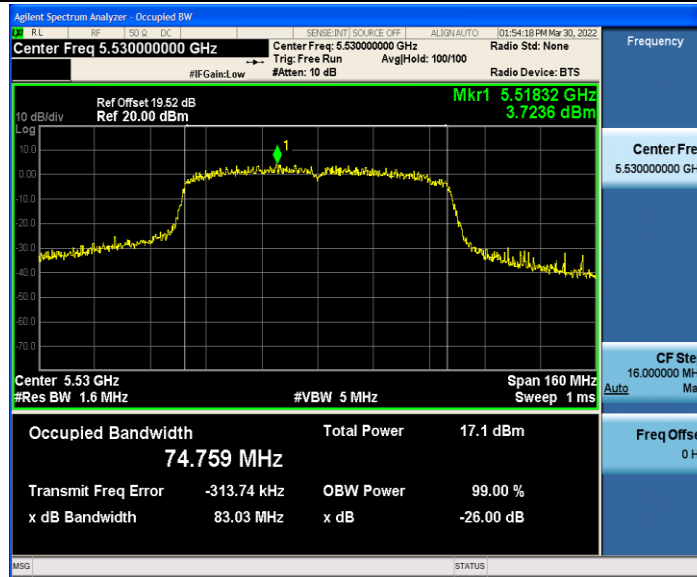
11AC80MIMO\_Ant1\_5290



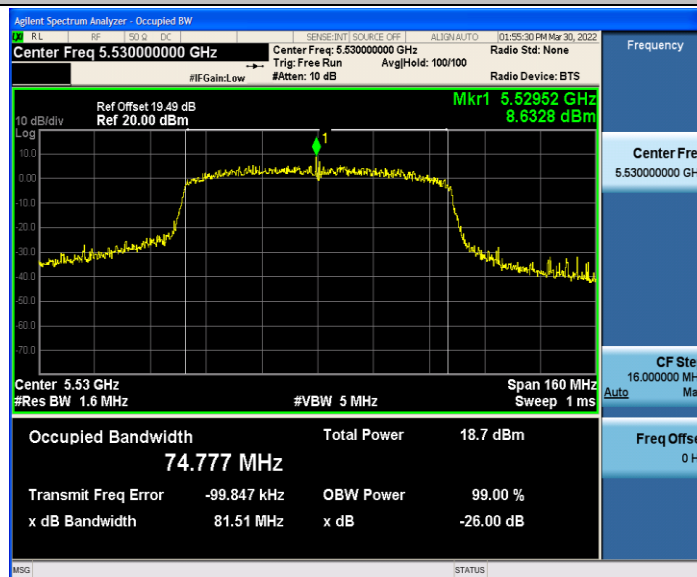
11AC80MIMO\_Ant2\_5290



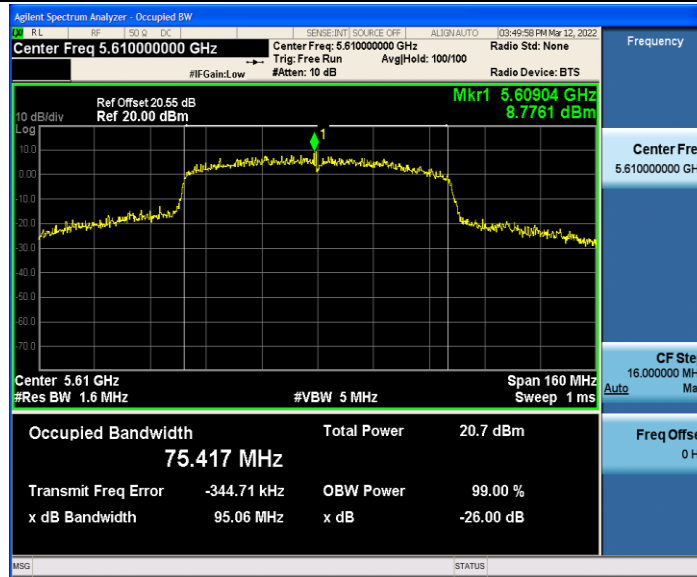
11AC80MIMO\_Ant1\_5530



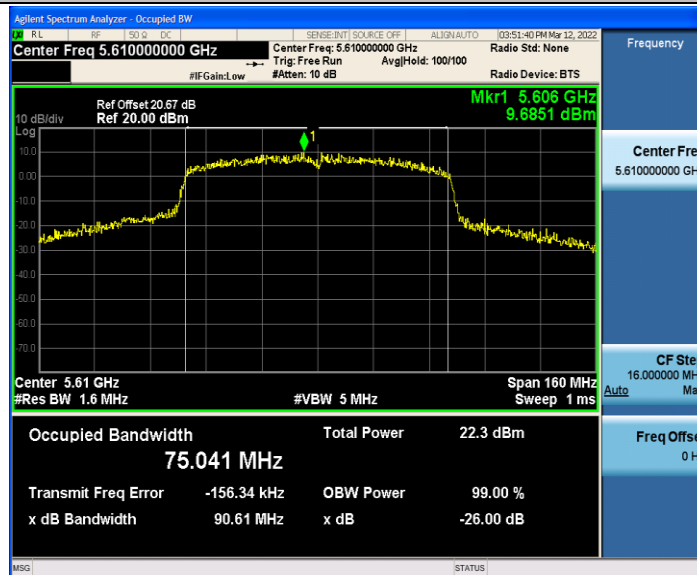
11AC80MIMO\_Ant2\_5530



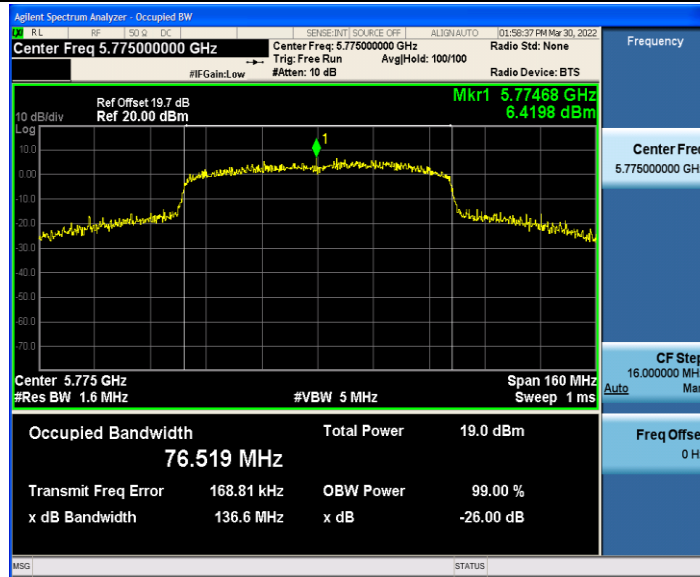
11AC80MIMO\_Ant1\_5610



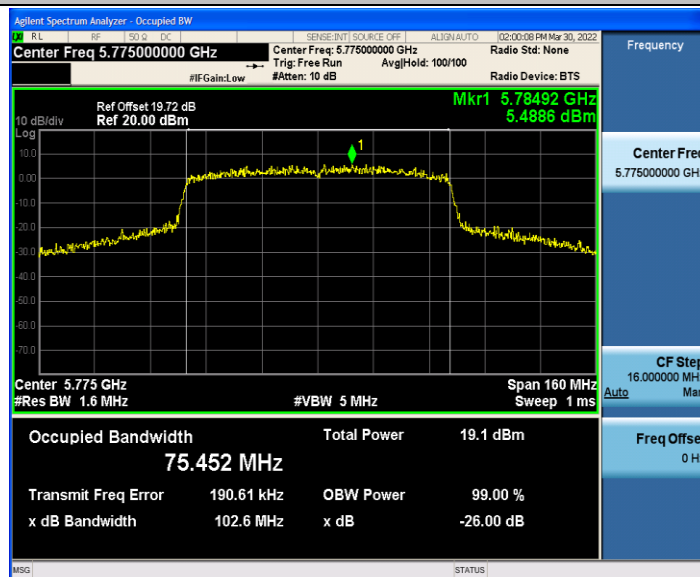
11AC80MIMO\_Ant2\_5610



11AC80MIMO\_Ant1\_5775



### 11AC80MIMO\_Ant2\_5775



### 3.4 Conducted Output Power

#### 3.4.1 Limit

| FCC Part15, Subpart E (15.407) |                        |                                                              |                       |
|--------------------------------|------------------------|--------------------------------------------------------------|-----------------------|
| Section                        | Test Item              | Limit                                                        | Frequency Range (MHz) |
| 15.407(a)                      | Conducted Output Power | AP device: 1 Watt (30 dBm)<br>Client device: 250 mW (24 dBm) | 5150-5250             |
|                                |                        | 250 mW (24 dBm)                                              | 5250-5350             |
|                                |                        | 250 mW (24 dBm)                                              | 5470-5725             |
|                                |                        | 1 Watt (30dBm)                                               | 5725-5850             |

Note:

a. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

b. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26dB Bandwidth in megahertz.

#### 3.4.2 Test Peripherals

| Support Equipment |            |            |            |         |
|-------------------|------------|------------|------------|---------|
| No.               | Equipment  | Brand Name | Model Name | Remarks |
| 1                 | Record PC  | Lenovo     | M4500T     | NA      |
| 2                 | Control PC | Lenovo     | M4500T     | NA      |

#### 3.4.3 Test Procedure

| Test Method                                                         |                                                  |
|---------------------------------------------------------------------|--------------------------------------------------|
| <input checked="" type="radio"/> Conducted Measurement              | <input type="radio"/> Radiated Measurement       |
| Test Channels                                                       |                                                  |
| <input checked="" type="radio"/> Lowest, Middle and Highest Channel | <input type="radio"/> Lowest and Highest Channel |
| Environmental conditions                                            |                                                  |
| <input checked="" type="radio"/> Normal                             | <input type="radio"/> Normal and Extreme         |
| Note: ● : Test    ○ : No Test                                       |                                                  |

a) The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.

b) Test test was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

### 3.4.4 Test Setup



### 3.4.5 Table of Parameters of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

For Power Setting value

| Test Mode  | Power Level Setting defined by Manufacturer |       |         |       |         |       |         |       |
|------------|---------------------------------------------|-------|---------|-------|---------|-------|---------|-------|
|            | ALL ANT                                     |       |         |       |         |       |         |       |
|            | Channel                                     | Value | Channel | Value | Channel | Value | Channel | Value |
| 11A-ANT1   | 5180                                        | 20    | 5220    | 20    | 5240    | 21    | 5260    | 20    |
|            | 5300                                        | 20    | 5320    | 20    | 5500    | 20    | 5580    | 20    |
|            | 5700                                        | 19    | 5745    | 18    | 5785    | 19    | 5825    | 18    |
| 11A-ANT2   | 5180                                        | 20    | 5220    | 20    | 5240    | 20    | 5260    | 20    |
|            | 5300                                        | 20    | 5320    | 20    | 5500    | 21    | 5580    | 21    |
|            | 5700                                        | 20    | 5745    | 20    | 5785    | 20    | 5825    | 18    |
| 11N20MIMO  | 5180                                        | 18    | 5220    | 19    | 5240    | 19    | 5260    | 19    |
|            | 5300                                        | 18    | 5320    | 17    | 5500    | 19    | 5580    | 19    |
|            | 5700                                        | 18    | 5745    | 18    | 5785    | 18    | 5825    | 18    |
| 11N40MIMO  | 5190                                        | 14    | 5230    | 18    | 5270    | 18    | 5310    | 14    |
|            | 5510                                        | 16    | 5550    | 19    | 5670    | 17    | 5755    | 17    |
|            | 5795                                        | 17    | /       | /     | /       | /     | /       | /     |
| 11AC20MIMO | 5180                                        | 18    | 5220    | 19    | 5240    | 19    | 5260    | 19    |
|            | 5300                                        | 19    | 5320    | 17    | 5500    | 19    | 5580    | 19    |
|            | 5700                                        | 18    | 5745    | 17    | 5785    | 18    | 5825    | 17    |
| 11AC40MIMO | 5190                                        | 14    | 5230    | 18    | 5270    | 18    | 5310    | 14    |
|            | 5510                                        | 16    | 5550    | 19    | 5670    | 16    | 5755    | 17    |
|            | 5795                                        | 17    | /       | /     | /       | /     | /       | /     |
| 11AC80MIMO | 5210                                        | 14    | 5290    | 14    | 5530    | 16    | 5610    | 19    |
|            | 5775                                        | 18    | /       | /     | /       | /     | /       | /     |

### 3.4.6 The Result

| TestMode  | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|---------|-------------|------------|---------|
| 11A       | Ant1    | 5180    | 14.98       | ≤22.49     | PASS    |
|           | Ant2    | 5180    | 16.03       | ≤22.49     | PASS    |
|           | Ant1    | 5220    | 13.97       | ≤22.49     | PASS    |
|           | Ant2    | 5220    | 15.65       | ≤22.49     | PASS    |
|           | Ant1    | 5240    | 14.42       | ≤22.49     | PASS    |
|           | Ant2    | 5240    | 15.64       | ≤22.49     | PASS    |
|           | Ant1    | 5260    | 14.59       | ≤22.49     | PASS    |
|           | Ant2    | 5260    | 15.89       | ≤22.49     | PASS    |
|           | Ant1    | 5300    | 15.09       | ≤22.49     | PASS    |
|           | Ant2    | 5300    | 16.89       | ≤22.49     | PASS    |
|           | Ant1    | 5320    | 14.99       | ≤22.49     | PASS    |
|           | Ant2    | 5320    | 16.87       | ≤22.49     | PASS    |
|           | Ant1    | 5500    | 16.10       | ≤22.49     | PASS    |
|           | Ant2    | 5500    | 16.77       | ≤22.49     | PASS    |
|           | Ant1    | 5580    | 14.26       | ≤22.49     | PASS    |
|           | Ant2    | 5580    | 15.63       | ≤22.49     | PASS    |
|           | Ant1    | 5700    | 13.33       | ≤22.49     | PASS    |
|           | Ant2    | 5700    | 14.68       | ≤22.49     | PASS    |
|           | Ant1    | 5745    | 11.60       | ≤28.49     | PASS    |
|           | Ant2    | 5745    | 13.00       | ≤28.49     | PASS    |
|           | Ant1    | 5785    | 13.57       | ≤28.49     | PASS    |
|           | Ant2    | 5785    | 14.83       | ≤28.49     | PASS    |
|           | Ant1    | 5825    | 12.05       | ≤28.49     | PASS    |
|           | Ant2    | 5825    | 15.14       | ≤28.49     | PASS    |
| 11N20MIMO | Ant1    | 5180    | 13.76       | ≤22.49     | PASS    |
|           | Ant2    | 5180    | 14.59       | ≤22.49     | PASS    |
|           | total   | 5180    | 17.21       | ≤22.49     | PASS    |
|           | Ant1    | 5220    | 13.27       | ≤22.49     | PASS    |
|           | Ant2    | 5220    | 14.60       | ≤22.49     | PASS    |
|           | total   | 5220    | 17.00       | ≤22.49     | PASS    |
|           | Ant1    | 5240    | 13.13       | ≤22.49     | PASS    |
|           | Ant2    | 5240    | 14.60       | ≤22.49     | PASS    |
|           | total   | 5240    | 16.94       | ≤22.49     | PASS    |
|           | Ant1    | 5260    | 13.84       | ≤22.49     | PASS    |
|           | Ant2    | 5260    | 14.60       | ≤22.49     | PASS    |
|           | total   | 5260    | 17.25       | ≤22.49     | PASS    |
|           | Ant1    | 5300    | 13.81       | ≤22.49     | PASS    |
|           | Ant2    | 5300    | 15.18       | ≤22.49     | PASS    |
|           | total   | 5300    | 17.56       | ≤22.49     | PASS    |

|           |       |      |       |        |      |
|-----------|-------|------|-------|--------|------|
|           | Ant1  | 5320 | 11.78 | ≤22.49 | PASS |
|           | Ant2  | 5320 | 12.65 | ≤22.49 | PASS |
|           | total | 5320 | 15.25 | ≤22.49 | PASS |
|           | Ant1  | 5500 | 15.07 | ≤22.49 | PASS |
|           | Ant2  | 5500 | 15.03 | ≤22.49 | PASS |
|           | total | 5500 | 18.06 | ≤22.49 | PASS |
|           | Ant1  | 5580 | 13.12 | ≤22.49 | PASS |
|           | Ant2  | 5580 | 13.89 | ≤22.49 | PASS |
|           | total | 5580 | 16.53 | ≤22.49 | PASS |
|           | Ant1  | 5700 | 12.08 | ≤22.49 | PASS |
|           | Ant2  | 5700 | 12.59 | ≤22.49 | PASS |
|           | total | 5700 | 15.35 | ≤22.49 | PASS |
|           | Ant1  | 5745 | 11.33 | ≤28.49 | PASS |
|           | Ant2  | 5745 | 12.64 | ≤28.49 | PASS |
|           | total | 5745 | 15.04 | ≤28.49 | PASS |
|           | Ant1  | 5785 | 12.66 | ≤28.49 | PASS |
|           | Ant2  | 5785 | 13.37 | ≤28.49 | PASS |
|           | total | 5785 | 16.04 | ≤28.49 | PASS |
|           | Ant1  | 5825 | 12.32 | ≤28.49 | PASS |
|           | Ant2  | 5825 | 13.74 | ≤28.49 | PASS |
|           | total | 5825 | 16.10 | ≤28.49 | PASS |
| 11N40MIMO | Ant1  | 5190 | 9.40  | ≤22.49 | PASS |
|           | Ant2  | 5190 | 10.06 | ≤22.49 | PASS |
|           | total | 5190 | 12.75 | ≤22.49 | PASS |
|           | Ant1  | 5230 | 12.48 | ≤22.49 | PASS |
|           | Ant2  | 5230 | 14.00 | ≤22.49 | PASS |
|           | total | 5230 | 16.32 | ≤22.49 | PASS |
|           | Ant1  | 5270 | 13.95 | ≤22.49 | PASS |
|           | Ant2  | 5270 | 14.71 | ≤22.49 | PASS |
|           | total | 5270 | 17.36 | ≤22.49 | PASS |
|           | Ant1  | 5310 | 9.76  | ≤22.49 | PASS |
|           | Ant2  | 5310 | 10.48 | ≤22.49 | PASS |
|           | total | 5310 | 13.15 | ≤22.49 | PASS |
|           | Ant1  | 5510 | 11.33 | ≤22.49 | PASS |
|           | Ant2  | 5510 | 12.10 | ≤22.49 | PASS |
|           | total | 5510 | 14.74 | ≤22.49 | PASS |
|           | Ant1  | 5550 | 13.60 | ≤22.49 | PASS |
|           | Ant2  | 5550 | 14.07 | ≤22.49 | PASS |
|           | total | 5550 | 16.85 | ≤22.49 | PASS |
|           | Ant1  | 5670 | 10.75 | ≤22.49 | PASS |
|           | Ant2  | 5670 | 11.63 | ≤22.49 | PASS |
|           | total | 5670 | 14.22 | ≤22.49 | PASS |

|            |       |      |       |        |      |
|------------|-------|------|-------|--------|------|
|            | Ant1  | 5755 | 10.34 | ≤28.49 | PASS |
|            | Ant2  | 5755 | 10.49 | ≤28.49 | PASS |
|            | total | 5755 | 13.43 | ≤28.49 | PASS |
|            | Ant1  | 5795 | 11.95 | ≤28.49 | PASS |
|            | Ant2  | 5795 | 11.28 | ≤28.49 | PASS |
|            | total | 5795 | 14.64 | ≤28.49 | PASS |
| 11AC20MIMO | Ant1  | 5180 | 11.94 | ≤22.49 | PASS |
|            | Ant2  | 5180 | 12.54 | ≤22.49 | PASS |
|            | total | 5180 | 15.26 | ≤22.49 | PASS |
|            | Ant1  | 5220 | 12.87 | ≤22.49 | PASS |
|            | Ant2  | 5220 | 14.45 | ≤22.49 | PASS |
|            | total | 5220 | 16.74 | ≤22.49 | PASS |
|            | Ant1  | 5240 | 13.13 | ≤22.49 | PASS |
|            | Ant2  | 5240 | 14.44 | ≤22.49 | PASS |
|            | total | 5240 | 16.84 | ≤22.49 | PASS |
|            | Ant1  | 5260 | 13.68 | ≤22.49 | PASS |
|            | Ant2  | 5260 | 15.18 | ≤22.49 | PASS |
|            | total | 5260 | 17.50 | ≤22.49 | PASS |
|            | Ant1  | 5300 | 14.09 | ≤22.49 | PASS |
|            | Ant2  | 5300 | 15.76 | ≤22.49 | PASS |
|            | total | 5300 | 18.02 | ≤22.49 | PASS |
|            | Ant1  | 5320 | 11.93 | ≤22.49 | PASS |
|            | Ant2  | 5320 | 12.47 | ≤22.49 | PASS |
|            | total | 5320 | 15.22 | ≤22.49 | PASS |
|            | Ant1  | 5500 | 14.82 | ≤22.49 | PASS |
|            | Ant2  | 5500 | 14.82 | ≤22.49 | PASS |
|            | total | 5500 | 17.83 | ≤22.49 | PASS |
|            | Ant1  | 5580 | 12.87 | ≤22.49 | PASS |
|            | Ant2  | 5580 | 13.67 | ≤22.49 | PASS |
|            | total | 5580 | 16.30 | ≤22.49 | PASS |
|            | Ant1  | 5700 | 12.13 | ≤22.49 | PASS |
|            | Ant2  | 5700 | 12.63 | ≤22.49 | PASS |
|            | total | 5700 | 15.40 | ≤22.49 | PASS |
|            | Ant1  | 5745 | 10.78 | ≤28.49 | PASS |
|            | Ant2  | 5745 | 11.99 | ≤28.49 | PASS |
|            | total | 5745 | 14.44 | ≤28.49 | PASS |
|            | Ant1  | 5785 | 12.59 | ≤28.49 | PASS |
|            | Ant2  | 5785 | 13.35 | ≤28.49 | PASS |
|            | total | 5785 | 16.00 | ≤28.49 | PASS |
|            | Ant1  | 5825 | 10.97 | ≤28.49 | PASS |
|            | Ant2  | 5825 | 11.23 | ≤28.49 | PASS |
|            | total | 5825 | 14.11 | ≤28.49 | PASS |

|            |       |      |       |        |      |
|------------|-------|------|-------|--------|------|
| 11AC40MIMO | Ant1  | 5190 | 9.02  | ≤22.49 | PASS |
|            | Ant2  | 5190 | 10.28 | ≤22.49 | PASS |
|            | total | 5190 | 12.71 | ≤22.49 | PASS |
|            | Ant1  | 5230 | 12.70 | ≤22.49 | PASS |
|            | Ant2  | 5230 | 14.08 | ≤22.49 | PASS |
|            | total | 5230 | 16.45 | ≤22.49 | PASS |
|            | Ant1  | 5270 | 13.81 | ≤22.49 | PASS |
|            | Ant2  | 5270 | 14.71 | ≤22.49 | PASS |
|            | total | 5270 | 17.29 | ≤22.49 | PASS |
|            | Ant1  | 5310 | 9.69  | ≤22.49 | PASS |
|            | Ant2  | 5310 | 10.61 | ≤22.49 | PASS |
|            | total | 5310 | 13.18 | ≤22.49 | PASS |
|            | Ant1  | 5510 | 11.33 | ≤22.49 | PASS |
|            | Ant2  | 5510 | 12.14 | ≤22.49 | PASS |
|            | total | 5510 | 14.76 | ≤22.49 | PASS |
|            | Ant1  | 5550 | 13.64 | ≤22.49 | PASS |
|            | Ant2  | 5550 | 14.00 | ≤22.49 | PASS |
|            | total | 5550 | 16.83 | ≤22.49 | PASS |
|            | Ant1  | 5670 | 10.14 | ≤22.49 | PASS |
|            | Ant2  | 5670 | 10.66 | ≤22.49 | PASS |
|            | total | 5670 | 13.42 | ≤22.49 | PASS |
|            | Ant1  | 5755 | 10.17 | ≤28.49 | PASS |
|            | Ant2  | 5755 | 10.45 | ≤28.49 | PASS |
|            | total | 5755 | 13.32 | ≤28.49 | PASS |
|            | Ant1  | 5795 | 11.77 | ≤28.49 | PASS |
|            | Ant2  | 5795 | 11.46 | ≤28.49 | PASS |
|            | total | 5795 | 14.63 | ≤28.49 | PASS |
| 11AC80MIMO | Ant1  | 5210 | 7.61  | ≤22.49 | PASS |
|            | Ant2  | 5210 | 9.07  | ≤22.49 | PASS |
|            | total | 5210 | 11.41 | ≤22.49 | PASS |
|            | Ant1  | 5290 | 9.14  | ≤22.49 | PASS |
|            | Ant2  | 5290 | 9.54  | ≤22.49 | PASS |
|            | total | 5290 | 12.35 | ≤22.49 | PASS |
|            | Ant1  | 5530 | 9.56  | ≤22.49 | PASS |
|            | Ant2  | 5530 | 10.98 | ≤22.49 | PASS |
|            | total | 5530 | 13.34 | ≤22.49 | PASS |
|            | Ant1  | 5610 | 13.35 | ≤22.49 | PASS |
|            | Ant2  | 5610 | 14.59 | ≤22.49 | PASS |
|            | total | 5610 | 17.02 | ≤22.49 | PASS |
|            | Ant1  | 5775 | 11.41 | ≤28.49 | PASS |
|            | Ant2  | 5775 | 11.30 | ≤28.49 | PASS |
|            | total | 5775 | 14.37 | ≤28.49 | PASS |

**For U-NII-2A, U-NII-2C Band:**

For IEEE 802.11 a/n/ac, the minimum 26 dB emission bandwidth is 20.28 MHz

$11 \text{ dBm} + 10\log_{10}(20.28) = 24.07 \text{ dBm} > 22.49 \text{ dBm}$

So the 22.49 dBm limit applicable

| Frequency Band                                                                                                                                                                                                                                                                                                                                                                                            | ANT 1 Antenna Gain (dBi) | ANT 2 Antenna Gain (dBi) | Correlated chains directional gain (dBi) | Peak Power Limit (dBm) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|------------------------------------------|------------------------|
| U-NII-1                                                                                                                                                                                                                                                                                                                                                                                                   | 4.50                     | 4.50                     | 7.51                                     | 22.49                  |
| U-NII-2A                                                                                                                                                                                                                                                                                                                                                                                                  | 4.50                     | 4.50                     | 7.51                                     | 22.49                  |
| U-NII-2C                                                                                                                                                                                                                                                                                                                                                                                                  | 4.50                     | 4.50                     | 7.51                                     | 22.49                  |
| U-NII-3                                                                                                                                                                                                                                                                                                                                                                                                   | 4.50                     | 4.50                     | 7.51                                     | 28.49                  |
| <p>Basic methodology with <i>NANT</i> transmit antennas, each with the same directional gain <i>GANT</i> dBi, being driven by <i>NANT</i> transmitter outputs of equal power. Directional gain is to be computed as follows:</p> <p>If <i>any</i> transmit signals are <i>correlated</i> with each other,</p> <p style="text-align: center;">Directional gain = <math>GANT + 10 \log(NANT)</math> dBi</p> |                          |                          |                                          |                        |

### 3.5 Power Spectral Density

#### 3.5.1 Limit

| FCC Part15, Subpart E (15.407) |                        |                                                    |                       |
|--------------------------------|------------------------|----------------------------------------------------|-----------------------|
| Section                        | Test Item              | Limit                                              | Frequency Range (MHz) |
| 15.407(a)                      | Power Spectral Density | AP device: 17 dBm/MHz<br>Client device: 11 dBm/MHz | 5150-5250             |
|                                |                        | 11 dBm/MHz                                         | 5250-5350             |
|                                |                        | 11 dBm/MHz                                         | 5470-5725             |
|                                |                        | 30 dBm/500 kHz                                     | 5725-5850             |

#### 3.5.2 Test Peripherals

| Support Equipment |            |            |            |         |
|-------------------|------------|------------|------------|---------|
| No.               | Equipment  | Brand Name | Model Name | Remarks |
| 1                 | Record PC  | Lenovo     | M4500T     | NA      |
| 2                 | Control PC | Lenovo     | M4500T     | NA      |

#### 3.5.3 Test Procedure

| Test Method                                                         |                                                  |
|---------------------------------------------------------------------|--------------------------------------------------|
| <input checked="" type="radio"/> Conducted Measurement              | <input type="radio"/> Radiated Measurement       |
| Test Channels                                                       |                                                  |
| <input checked="" type="radio"/> Lowest, Middle and Highest Channel | <input type="radio"/> Lowest and Highest Channel |
| Environmental conditions                                            |                                                  |
| <input checked="" type="radio"/> Normal                             | <input type="radio"/> Normal and Extreme         |
| Note: ● : Test    ○ : No Test                                       |                                                  |

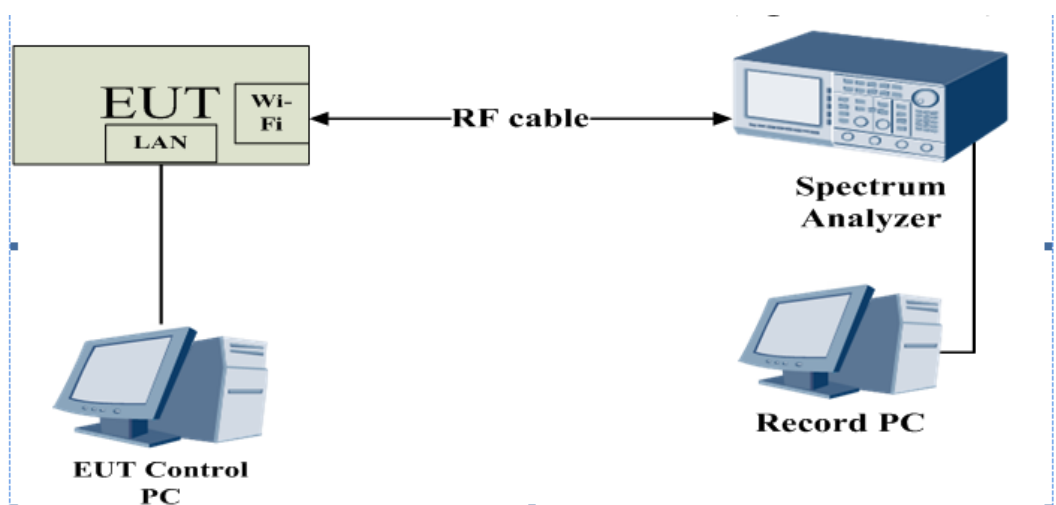
a) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below. Spectrum analyser settings as following:

|                  |                                                |
|------------------|------------------------------------------------|
| Centre Frequency | The centre frequency of the channel under test |
| RBW              | = 1 MHz (Band1/2/3)<br>= 500 KHz (Band4)       |
| VBW              | ≥ 3 x RBW                                      |
| Frequency span   | 2 x Nominal Channel Bandwidth                  |
| Detector Mode    | RMS                                            |
| Trace Mode       | Max Hold                                       |
| Sweep Time       | Auto Couple                                    |

b) Wait for the trace to stabilize. Use the peak marker function to determine the maximum amplitude level within the RBW.

c) The value defined in step b shall be compared to the limits and be recorded .

### 3.5.4 Test Setup



### 3.5.5 The Result

| TestMode  | Antenna | Channel | Result [dBm/MHz] | Limit[dBm/MHz] | Verdict |
|-----------|---------|---------|------------------|----------------|---------|
| 11A       | Ant1    | 5180    | 5.27             | ≤9.49          | PASS    |
|           | Ant2    | 5180    | 6.18             | ≤9.49          | PASS    |
|           | Ant1    | 5220    | 4.72             | ≤9.49          | PASS    |
|           | Ant2    | 5220    | 6.05             | ≤9.49          | PASS    |
|           | Ant1    | 5240    | 4.18             | ≤9.49          | PASS    |
|           | Ant2    | 5240    | 5.57             | ≤9.49          | PASS    |
|           | Ant1    | 5260    | 5.14             | ≤9.49          | PASS    |
|           | Ant2    | 5260    | 5.99             | ≤9.49          | PASS    |
|           | Ant1    | 5300    | 5.25             | ≤9.49          | PASS    |
|           | Ant2    | 5300    | 7.45             | ≤9.49          | PASS    |
|           | Ant1    | 5320    | 5.23             | ≤9.49          | PASS    |
|           | Ant2    | 5320    | 6.94             | ≤9.49          | PASS    |
|           | Ant1    | 5500    | 6.38             | ≤9.49          | PASS    |
|           | Ant2    | 5500    | 7.26             | ≤9.49          | PASS    |
|           | Ant1    | 5580    | 4.7              | ≤9.49          | PASS    |
|           | Ant2    | 5580    | 5.87             | ≤9.49          | PASS    |
|           | Ant1    | 5700    | 3.93             | ≤9.49          | PASS    |
|           | Ant2    | 5700    | 5.02             | ≤9.49          | PASS    |
|           | Ant1    | 5745    | -0.99            | ≤28.49         | PASS    |
|           | Ant2    | 5745    | 0.47             | ≤28.49         | PASS    |
|           | Ant1    | 5785    | 1.67             | ≤28.49         | PASS    |
|           | Ant2    | 5785    | 2.83             | ≤28.49         | PASS    |
|           | Ant1    | 5825    | 0.23             | ≤28.49         | PASS    |
|           | Ant2    | 5825    | 0.81             | ≤28.49         | PASS    |
| 11N20MIMO | Ant1    | 5180    | 3.38             | ≤9.49          | PASS    |
|           | Ant2    | 5180    | 4.41             | ≤9.49          | PASS    |
|           | total   | 5180    | 6.94             | ≤9.49          | PASS    |
|           | Ant1    | 5220    | 3.75             | ≤9.49          | PASS    |
|           | Ant2    | 5220    | 4.74             | ≤9.49          | PASS    |
|           | total   | 5220    | 7.28             | ≤9.49          | PASS    |
|           | Ant1    | 5240    | 3.29             | ≤9.49          | PASS    |
|           | Ant2    | 5240    | 5.36             | ≤9.49          | PASS    |
|           | total   | 5240    | 7.46             | ≤9.49          | PASS    |
|           | Ant1    | 5260    | 4.17             | ≤9.49          | PASS    |
|           | Ant2    | 5260    | 4.73             | ≤9.49          | PASS    |
|           | total   | 5260    | 7.47             | ≤9.49          | PASS    |
|           | Ant1    | 5300    | 4.03             | ≤9.49          | PASS    |
|           | Ant2    | 5300    | 5.15             | ≤9.49          | PASS    |
|           | total   | 5300    | 7.64             | ≤9.49          | PASS    |

|           |       |      |       |        |      |
|-----------|-------|------|-------|--------|------|
|           | Ant1  | 5320 | 1.92  | ≤9.49  | PASS |
|           | Ant2  | 5320 | 3.2   | ≤9.49  | PASS |
|           | total | 5320 | 5.62  | ≤9.49  | PASS |
|           | Ant1  | 5500 | 5.35  | ≤9.49  | PASS |
|           | Ant2  | 5500 | 5.54  | ≤9.49  | PASS |
|           | total | 5500 | 8.46  | ≤9.49  | PASS |
|           | Ant1  | 5580 | 3.25  | ≤9.49  | PASS |
|           | Ant2  | 5580 | 4.27  | ≤9.49  | PASS |
|           | total | 5580 | 6.80  | ≤9.49  | PASS |
|           | Ant1  | 5700 | 2.17  | ≤9.49  | PASS |
|           | Ant2  | 5700 | 2.76  | ≤9.49  | PASS |
|           | total | 5700 | 5.49  | ≤9.49  | PASS |
|           | Ant1  | 5745 | -1.59 | ≤28.49 | PASS |
|           | Ant2  | 5745 | 1.3   | ≤28.49 | PASS |
|           | total | 5745 | 3.10  | ≤28.49 | PASS |
|           | Ant1  | 5785 | 1.11  | ≤28.49 | PASS |
|           | Ant2  | 5785 | 1.42  | ≤28.49 | PASS |
|           | total | 5785 | 4.28  | ≤28.49 | PASS |
|           | Ant1  | 5825 | 0.39  | ≤28.49 | PASS |
|           | Ant2  | 5825 | 1.21  | ≤28.49 | PASS |
|           | total | 5825 | 3.83  | ≤28.49 | PASS |
| 11N40MIMO | Ant1  | 5190 | -4.15 | ≤9.49  | PASS |
|           | Ant2  | 5190 | -2.28 | ≤9.49  | PASS |
|           | total | 5190 | -0.10 | ≤9.49  | PASS |
|           | Ant1  | 5230 | 0.78  | ≤9.49  | PASS |
|           | Ant2  | 5230 | 1.88  | ≤9.49  | PASS |
|           | total | 5230 | 4.38  | ≤9.49  | PASS |
|           | Ant1  | 5270 | 1.26  | ≤9.49  | PASS |
|           | Ant2  | 5270 | 0.54  | ≤9.49  | PASS |
|           | total | 5270 | 3.93  | ≤9.49  | PASS |
|           | Ant1  | 5310 | 0.56  | ≤9.49  | PASS |
|           | Ant2  | 5310 | 0.84  | ≤9.49  | PASS |
|           | total | 5310 | 3.71  | ≤9.49  | PASS |
|           | Ant1  | 5510 | -1.31 | ≤9.49  | PASS |
|           | Ant2  | 5510 | -1.21 | ≤9.49  | PASS |
|           | total | 5510 | 1.75  | ≤9.49  | PASS |
|           | Ant1  | 5550 | 1.18  | ≤9.49  | PASS |
|           | Ant2  | 5550 | 1.31  | ≤9.49  | PASS |
|           | total | 5550 | 4.26  | ≤9.49  | PASS |
|           | Ant1  | 5670 | -2.06 | ≤9.49  | PASS |
|           | Ant2  | 5670 | -1.39 | ≤9.49  | PASS |
|           | total | 5670 | 1.30  | ≤9.49  | PASS |

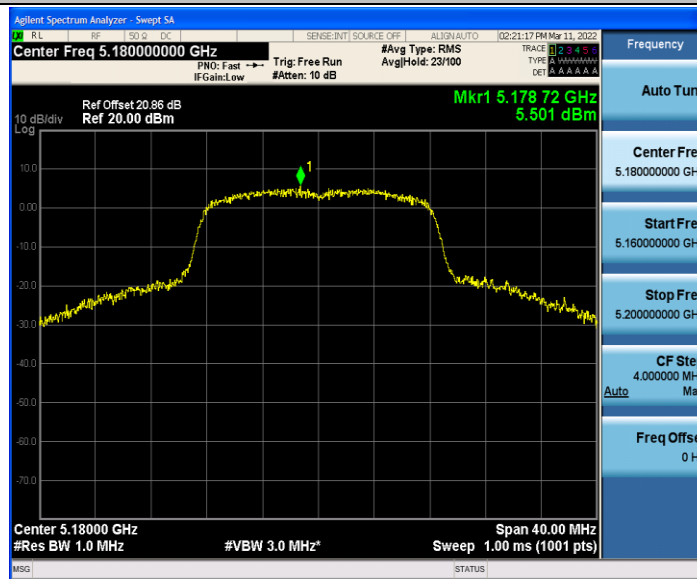
|            |       |      |       |        |      |
|------------|-------|------|-------|--------|------|
|            | Ant1  | 5755 | -4.2  | ≤28.49 | PASS |
|            | Ant2  | 5755 | -4.12 | ≤28.49 | PASS |
|            | total | 5755 | -1.15 | ≤28.49 | PASS |
|            | Ant1  | 5795 | -4.72 | ≤28.49 | PASS |
|            | Ant2  | 5795 | -3.73 | ≤28.49 | PASS |
|            | total | 5795 | -1.19 | ≤28.49 | PASS |
| 11AC20MIMO | Ant1  | 5180 | 2.57  | ≤9.49  | PASS |
|            | Ant2  | 5180 | 3.26  | ≤9.49  | PASS |
|            | total | 5180 | 5.94  | ≤9.49  | PASS |
|            | Ant1  | 5220 | 2.9   | ≤9.49  | PASS |
|            | Ant2  | 5220 | 4.12  | ≤9.49  | PASS |
|            | total | 5220 | 6.56  | ≤9.49  | PASS |
|            | Ant1  | 5240 | 3.45  | ≤9.49  | PASS |
|            | Ant2  | 5240 | 4.39  | ≤9.49  | PASS |
|            | total | 5240 | 6.96  | ≤9.49  | PASS |
|            | Ant1  | 5260 | 3.51  | ≤9.49  | PASS |
|            | Ant2  | 5260 | 5.15  | ≤9.49  | PASS |
|            | total | 5260 | 7.42  | ≤9.49  | PASS |
|            | Ant1  | 5300 | 3.8   | ≤9.49  | PASS |
|            | Ant2  | 5300 | 5.39  | ≤9.49  | PASS |
|            | total | 5300 | 7.68  | ≤9.49  | PASS |
|            | Ant1  | 5320 | 1.82  | ≤9.49  | PASS |
|            | Ant2  | 5320 | 2.84  | ≤9.49  | PASS |
|            | total | 5320 | 5.37  | ≤9.49  | PASS |
|            | Ant1  | 5500 | 5.07  | ≤9.49  | PASS |
|            | Ant2  | 5500 | 4.97  | ≤9.49  | PASS |
|            | total | 5500 | 8.03  | ≤9.49  | PASS |
|            | Ant1  | 5580 | 2.8   | ≤9.49  | PASS |
|            | Ant2  | 5580 | 3.68  | ≤9.49  | PASS |
|            | total | 5580 | 6.27  | ≤9.49  | PASS |
|            | Ant1  | 5700 | 2.74  | ≤9.49  | PASS |
|            | Ant2  | 5700 | 3.31  | ≤9.49  | PASS |
|            | total | 5700 | 6.04  | ≤9.49  | PASS |
|            | Ant1  | 5745 | -1.94 | ≤28.49 | PASS |
|            | Ant2  | 5745 | -0.38 | ≤28.49 | PASS |
|            | total | 5745 | 1.92  | ≤28.49 | PASS |
|            | Ant1  | 5785 | 0.71  | ≤28.49 | PASS |
|            | Ant2  | 5785 | 0.71  | ≤28.49 | PASS |
|            | total | 5785 | 3.72  | ≤28.49 | PASS |
|            | Ant1  | 5825 | -1.93 | ≤28.49 | PASS |
|            | Ant2  | 5825 | -0.87 | ≤28.49 | PASS |
|            | total | 5825 | 1.64  | ≤28.49 | PASS |

|            |       |      |       |        |      |
|------------|-------|------|-------|--------|------|
| 11AC40MIMO | Ant1  | 5190 | -4.3  | ≤9.49  | PASS |
|            | Ant2  | 5190 | -2.96 | ≤9.49  | PASS |
|            | total | 5190 | -0.57 | ≤9.49  | PASS |
|            | Ant1  | 5230 | 0.6   | ≤9.49  | PASS |
|            | Ant2  | 5230 | 1.45  | ≤9.49  | PASS |
|            | total | 5230 | 4.06  | ≤9.49  | PASS |
|            | Ant1  | 5270 | 1.14  | ≤9.49  | PASS |
|            | Ant2  | 5270 | 2.12  | ≤9.49  | PASS |
|            | total | 5270 | 4.67  | ≤9.49  | PASS |
|            | Ant1  | 5310 | -3.28 | ≤9.49  | PASS |
|            | Ant2  | 5310 | -3.18 | ≤9.49  | PASS |
|            | total | 5310 | -0.22 | ≤9.49  | PASS |
|            | Ant1  | 5510 | -1.35 | ≤9.49  | PASS |
|            | Ant2  | 5510 | -0.36 | ≤9.49  | PASS |
|            | total | 5510 | 2.18  | ≤9.49  | PASS |
|            | Ant1  | 5550 | 1.07  | ≤9.49  | PASS |
|            | Ant2  | 5550 | 1.44  | ≤9.49  | PASS |
|            | total | 5550 | 4.27  | ≤9.49  | PASS |
|            | Ant1  | 5670 | -3.66 | ≤9.49  | PASS |
|            | Ant2  | 5670 | -2.08 | ≤9.49  | PASS |
|            | total | 5670 | 0.21  | ≤9.49  | PASS |
|            | Ant1  | 5755 | -6.21 | ≤28.49 | PASS |
|            | Ant2  | 5755 | -5.33 | ≤28.49 | PASS |
|            | total | 5755 | -2.74 | ≤28.49 | PASS |
|            | Ant1  | 5795 | -5.18 | ≤28.49 | PASS |
|            | Ant2  | 5795 | -4.22 | ≤28.49 | PASS |
|            | total | 5795 | -1.66 | ≤28.49 | PASS |
| 11AC80MIMO | Ant1  | 5210 | -7.47 | ≤9.49  | PASS |
|            | Ant2  | 5210 | -5.95 | ≤9.49  | PASS |
|            | total | 5210 | -3.63 | ≤9.49  | PASS |
|            | Ant1  | 5290 | -6.18 | ≤9.49  | PASS |
|            | Ant2  | 5290 | -5.48 | ≤9.49  | PASS |
|            | total | 5290 | -2.81 | ≤9.49  | PASS |
|            | Ant1  | 5530 | -5.97 | ≤9.49  | PASS |
|            | Ant2  | 5530 | -4.99 | ≤9.49  | PASS |
|            | total | 5530 | -2.44 | ≤9.49  | PASS |
|            | Ant1  | 5610 | -2.22 | ≤9.49  | PASS |
|            | Ant2  | 5610 | -1.56 | ≤9.49  | PASS |
|            | total | 5610 | 1.13  | ≤9.49  | PASS |
|            | Ant1  | 5775 | -6.1  | ≤28.49 | PASS |
|            | Ant2  | 5775 | -7.55 | ≤28.49 | PASS |
|            | total | 5775 | -3.75 | ≤28.49 | PASS |

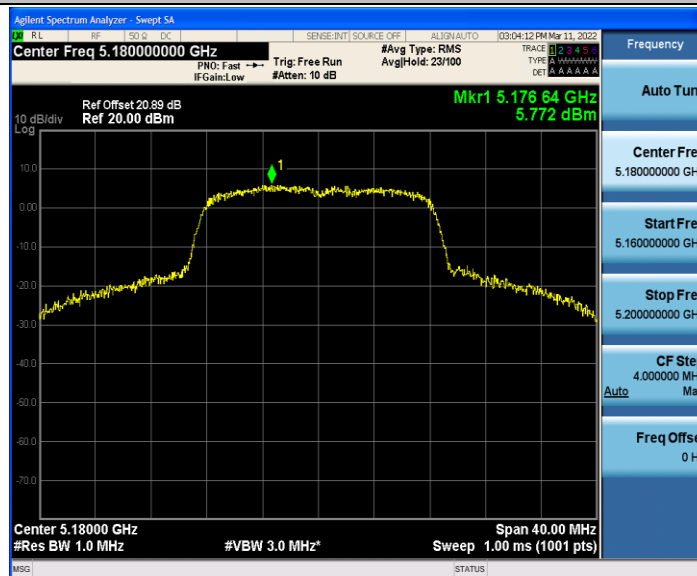
Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

| Frequency Band                                                                                                                                                                                                                                                                                                                                                                               | ANT 1 Antenna Gain (dBi) | ANT 2 Antenna Gain (dBi) | Correlated chains directional gain (dBi) | Peak Power Limit (dBm) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|------------------------------------------|------------------------|
| U-NII-1                                                                                                                                                                                                                                                                                                                                                                                      | 4.50                     | 4.50                     | 7.51                                     | 9.49                   |
| U-NII-2A                                                                                                                                                                                                                                                                                                                                                                                     | 4.50                     | 4.50                     | 7.51                                     | 9.49                   |
| U-NII-2C                                                                                                                                                                                                                                                                                                                                                                                     | 4.50                     | 4.50                     | 7.51                                     | 9.49                   |
| U-NII-3                                                                                                                                                                                                                                                                                                                                                                                      | 4.50                     | 4.50                     | 7.51                                     | 28.49                  |
| <p>Basic methodology with <math>NANT</math> transmit antennas, each with the same directional gain <math>GANT</math> dBi, being driven by <math>NANT</math> transmitter outputs of equal power. Directional gain is to be computed as follows:</p> <p>If <i>any</i> transmit signals are <i>correlated</i> with each other,</p> $\text{Directional gain} = GANT + 10 \log(NANT) \text{ dBi}$ |                          |                          |                                          |                        |

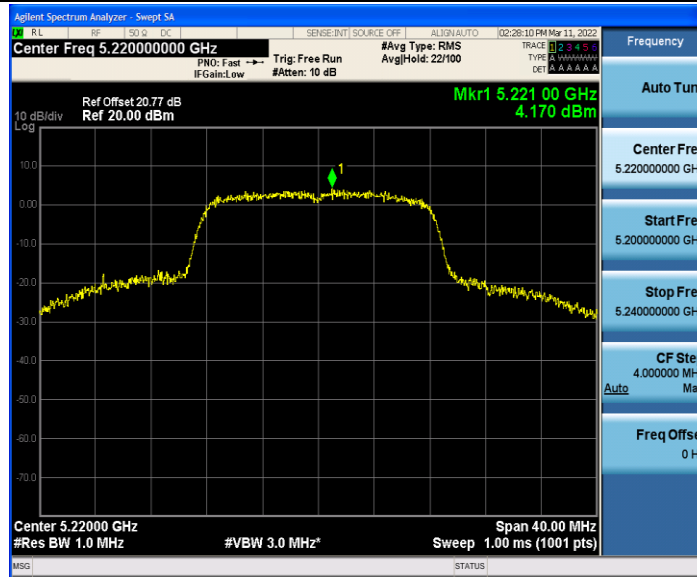
11A\_Ant1\_5180



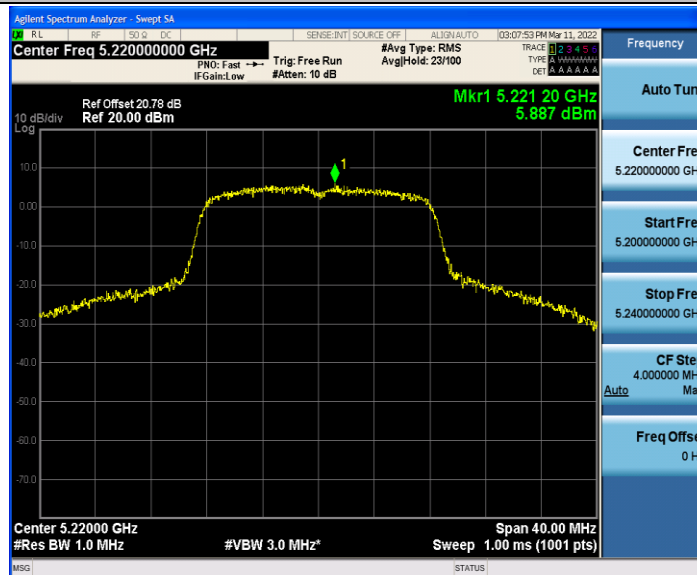
11A\_Ant2\_5180



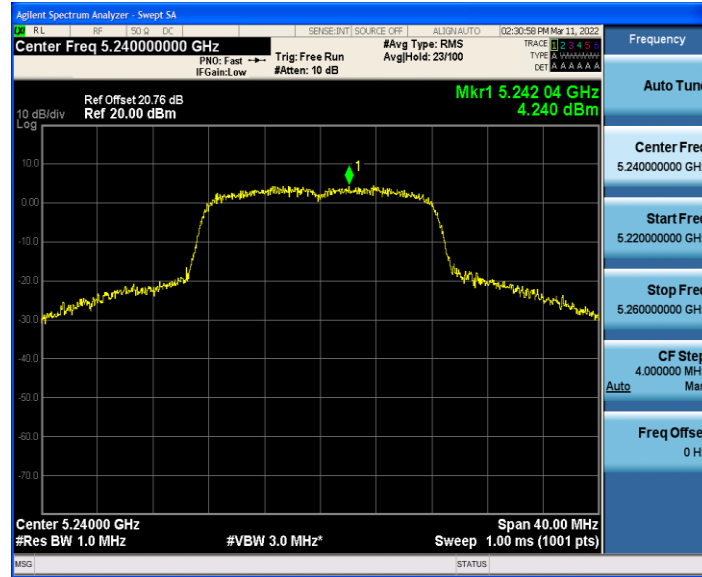
11A\_Ant1\_5220



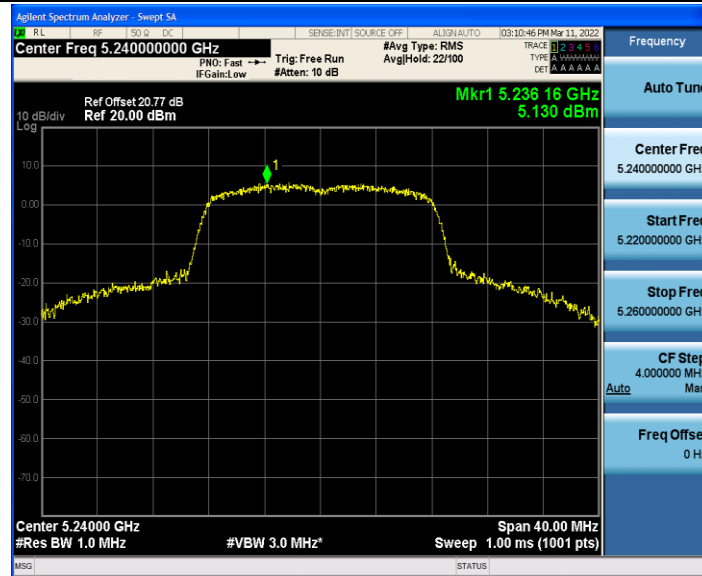
11A\_Ant2\_5220



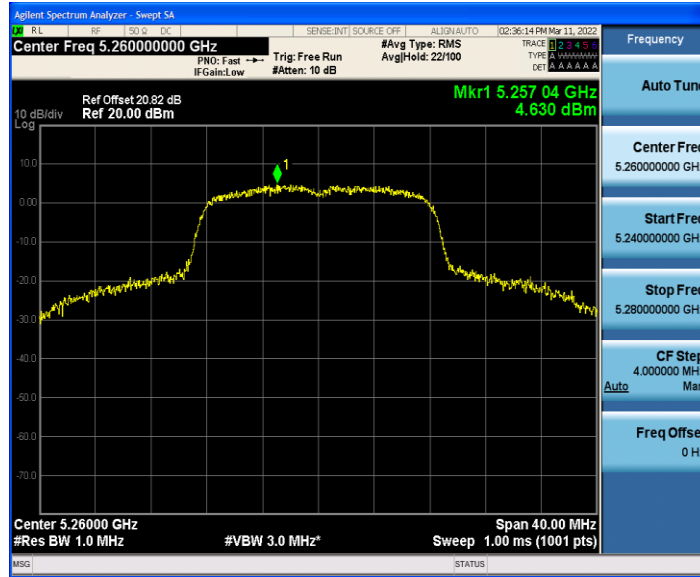
11A\_Ant1\_5240



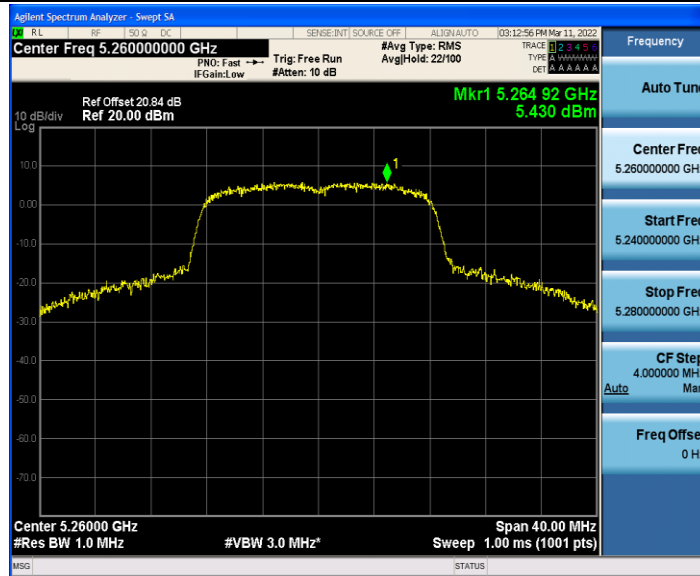
11A\_Ant2\_5240



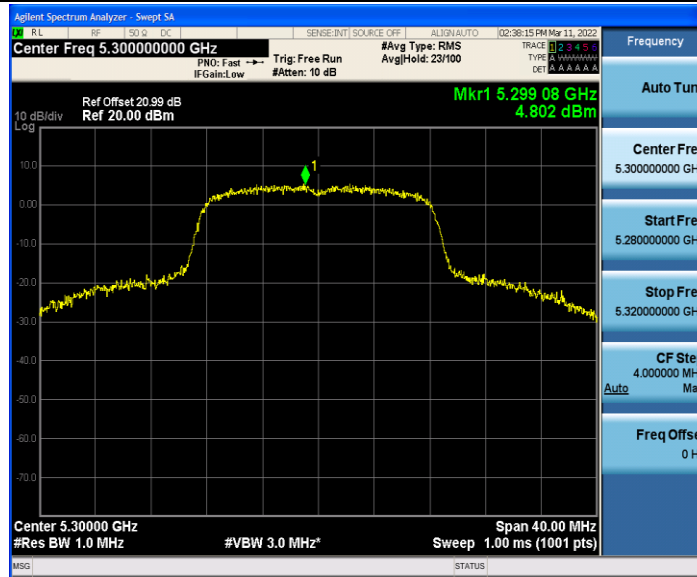
11A\_Ant1\_5260



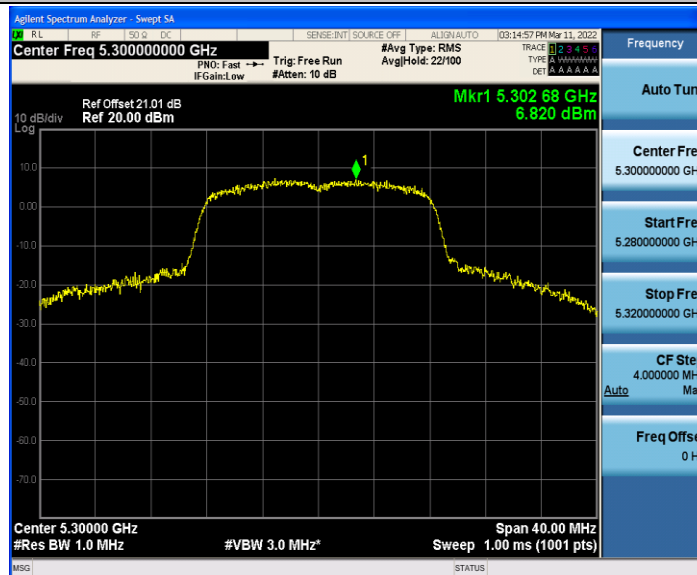
11A\_Ant2\_5260



11A\_Ant1\_5300



11A\_Ant2\_5300



11A\_Ant1\_5320