

## 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 | Master 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             |

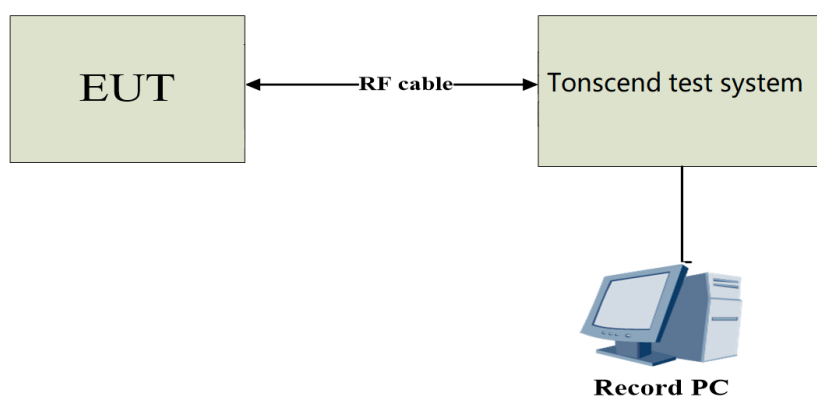
### 3.5.2 Test Procedure

| Test Method                         |                              |
|-------------------------------------|------------------------------|
| ●Conducted Measurement              | ○Radiated Measurement        |
| Test Channels                       |                              |
| ●Lowest, Middle and Highest Channel | ○ Lowest and Highest Channel |
| Environmental conditions            |                              |
| ●Normal                             | ○Normal and Extreme          |
| Note:●:Test    ○:No Test            |                              |

a) The EUT was directly connected to the tonskend test system 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); = 300kHz (Band4)          |
| VBW              | ≥3 x RBW                                       |
| Frequency span   | 2 x Nominal Channel Bandwidth                  |
| Detector Mode    | RMS                                            |
| Trace Mode       | Max Hold                                       |
| Sweep Time       | Auto Couple                                    |

### 3.5.3 Test Setup



### 3.5.4 The Result

| TestMode  | Antenna | Frequency[MHz] | Result [dBm/MHz] | Limit[dBm/MHz] | Verdict |
|-----------|---------|----------------|------------------|----------------|---------|
| 11A-CDD   | Ant1    | 5180           | 13.97            | ≤17.00         | PASS    |
|           | Ant2    | 5180           | 8.20             | ≤17.00         | PASS    |
|           | total   | 5180           | 14.99            | ≤17.00         | PASS    |
|           | Ant1    | 5200           | 14.00            | ≤17.00         | PASS    |
|           | Ant2    | 5200           | 12.34            | ≤17.00         | PASS    |
|           | total   | 5200           | 16.26            | ≤17.00         | PASS    |
|           | Ant1    | 5240           | 14.76            | ≤17.00         | PASS    |
|           | Ant2    | 5240           | 12.8             | ≤17.00         | PASS    |
|           | total   | 5240           | 16.90            | ≤17.00         | PASS    |
|           | Ant1    | 5260           | 8.35             | ≤11.00         | PASS    |
|           | Ant2    | 5260           | 6.86             | ≤11.00         | PASS    |
|           | total   | 5260           | 10.68            | ≤11.00         | PASS    |
|           | Ant1    | 5280           | 7.94             | ≤11.00         | PASS    |
|           | Ant2    | 5280           | 7.16             | ≤11.00         | PASS    |
|           | total   | 5280           | 10.58            | ≤11.00         | PASS    |
|           | Ant1    | 5320           | 7.49             | ≤11.00         | PASS    |
|           | Ant2    | 5320           | 6.37             | ≤11.00         | PASS    |
|           | total   | 5320           | 9.98             | ≤11.00         | PASS    |
|           | Ant1    | 5500           | 6.84             | ≤10.10         | PASS    |
|           | Ant2    | 5500           | 5.97             | ≤10.10         | PASS    |
|           | total   | 5500           | 9.44             | ≤10.10         | PASS    |
|           | Ant1    | 5580           | 6.57             | ≤10.10         | PASS    |
|           | Ant2    | 5580           | 5.01             | ≤10.10         | PASS    |
|           | total   | 5580           | 8.87             | ≤10.10         | PASS    |
|           | Ant1    | 5700           | 7.66             | ≤10.10         | PASS    |
|           | Ant2    | 5700           | 5.69             | ≤10.10         | PASS    |
|           | total   | 5700           | 9.80             | ≤10.10         | PASS    |
|           | Ant1    | 5745           | 3.77             | ≤29.29         | PASS    |
|           | Ant2    | 5745           | 8.78             | ≤29.29         | PASS    |
|           | total   | 5745           | 9.97             | ≤29.29         | PASS    |
|           | Ant1    | 5785           | 3.84             | ≤29.29         | PASS    |
|           | Ant2    | 5785           | 8.58             | ≤29.29         | PASS    |
|           | total   | 5785           | 9.84             | ≤29.29         | PASS    |
|           | Ant1    | 5825           | 4.32             | ≤29.29         | PASS    |
|           | Ant2    | 5825           | 8.84             | ≤29.29         | PASS    |
|           | total   | 5825           | 10.15            | ≤29.29         | PASS    |
| 11N20MIMO | Ant1    | 5180           | 9.58             | ≤17.00         | PASS    |
|           | Ant2    | 5180           | 9.67             | ≤17.00         | PASS    |
|           | total   | 5180           | 12.64            | ≤17.00         | PASS    |

|           |       |      |       |        |      |
|-----------|-------|------|-------|--------|------|
|           | Ant1  | 5200 | 12.44 | ≤17.00 | PASS |
|           | Ant2  | 5200 | 9.43  | ≤17.00 | PASS |
|           | total | 5200 | 14.20 | ≤17.00 | PASS |
|           | Ant1  | 5240 | 7.78  | ≤17.00 | PASS |
|           | Ant2  | 5240 | 7.75  | ≤17.00 | PASS |
|           | total | 5240 | 10.78 | ≤17.00 | PASS |
|           | Ant1  | 5260 | 7.76  | ≤11.00 | PASS |
|           | Ant2  | 5260 | 7.51  | ≤11.00 | PASS |
|           | total | 5260 | 10.65 | ≤11.00 | PASS |
|           | Ant1  | 5280 | 7.88  | ≤11.00 | PASS |
|           | Ant2  | 5280 | 7.60  | ≤11.00 | PASS |
|           | total | 5280 | 10.75 | ≤11.00 | PASS |
|           | Ant1  | 5320 | 7.37  | ≤11.00 | PASS |
|           | Ant2  | 5320 | 6.70  | ≤11.00 | PASS |
|           | total | 5320 | 10.06 | ≤11.00 | PASS |
|           | Ant1  | 5500 | 6.93  | ≤10.10 | PASS |
|           | Ant2  | 5500 | 7.29  | ≤10.10 | PASS |
|           | total | 5500 | 10.12 | ≤10.10 | PASS |
|           | Ant1  | 5580 | 7.74  | ≤10.10 | PASS |
|           | Ant2  | 5580 | 7.23  | ≤10.10 | PASS |
|           | total | 5580 | 10.50 | ≤10.10 | PASS |
|           | Ant1  | 5700 | 7.86  | ≤10.10 | PASS |
|           | Ant2  | 5700 | 7.43  | ≤10.10 | PASS |
|           | total | 5700 | 10.66 | ≤10.10 | PASS |
|           | Ant1  | 5745 | 10.35 | ≤29.29 | PASS |
|           | Ant2  | 5745 | 11.01 | ≤29.29 | PASS |
|           | total | 5745 | 13.70 | ≤29.29 | PASS |
|           | Ant1  | 5825 | 8.64  | ≤29.29 | PASS |
|           | Ant2  | 5825 | 9.05  | ≤29.29 | PASS |
|           | total | 5825 | 11.86 | ≤29.29 | PASS |
| 11N40MIMO | Ant1  | 5190 | 9.04  | ≤17.00 | PASS |
|           | Ant2  | 5190 | 7.93  | ≤17.00 | PASS |
|           | total | 5190 | 11.53 | ≤17.00 | PASS |
|           | Ant1  | 5230 | 9.64  | ≤17.00 | PASS |
|           | Ant2  | 5230 | 7.91  | ≤17.00 | PASS |
|           | total | 5230 | 11.87 | ≤17.00 | PASS |
|           | Ant1  | 5270 | 8.21  | ≤11.00 | PASS |
|           | Ant2  | 5270 | 6.78  | ≤11.00 | PASS |
|           | total | 5270 | 10.56 | ≤11.00 | PASS |
|           | Ant1  | 5310 | 8.66  | ≤11.00 | PASS |
|           | Ant2  | 5310 | 6.61  | ≤11.00 | PASS |
|           | total | 5310 | 10.77 | ≤11.00 | PASS |

|             |       |              |       |        |      |
|-------------|-------|--------------|-------|--------|------|
|             | Ant1  | 5510         | 5.39  | ≤10.10 | PASS |
|             | Ant2  | 5510         | 5.64  | ≤10.10 | PASS |
|             | total | 5510         | 8.53  | ≤10.10 | PASS |
|             | Ant1  | 5550         | 5.43  | ≤10.10 | PASS |
|             | Ant2  | 5550         | 5.06  | ≤10.10 | PASS |
|             | total | 5550         | 8.26  | ≤10.10 | PASS |
|             | Ant1  | 5670         | 5.63  | ≤10.10 | PASS |
|             | Ant2  | 5670         | 3.53  | ≤10.10 | PASS |
|             | total | 5670         | 7.72  | ≤10.10 | PASS |
|             | Ant1  | 5755         | 7.26  | ≤29.29 | PASS |
|             | Ant2  | 5755         | 5.55  | ≤29.29 | PASS |
|             | total | 5755         | 9.50  | ≤29.29 | PASS |
|             | Ant1  | 5795         | 4.3   | ≤29.29 | PASS |
|             | Ant2  | 5795         | 2.89  | ≤29.29 | PASS |
|             | total | 5795         | 6.66  | ≤29.29 | PASS |
| 11AC80MIMO  | Ant1  | 5210         | 3.87  | ≤17.00 | PASS |
|             | Ant2  | 5210         | 2.21  | ≤17.00 | PASS |
|             | total | 5210         | 6.13  | ≤17.00 | PASS |
|             | Ant1  | 5290         | 3.85  | ≤11.00 | PASS |
|             | Ant2  | 5290         | 2.82  | ≤11.00 | PASS |
|             | total | 5290         | 6.38  | ≤11.00 | PASS |
|             | Ant1  | 5530         | 4.87  | ≤10.10 | PASS |
|             | Ant2  | 5530         | 2.91  | ≤10.10 | PASS |
|             | total | 5530         | 7.01  | ≤10.10 | PASS |
|             | Ant1  | 5610         | 4.39  | ≤10.10 | PASS |
|             | Ant2  | 5610         | 2.73  | ≤10.10 | PASS |
|             | total | 5610         | 6.65  | ≤10.10 | PASS |
|             | Ant1  | 5775         | 0.53  | ≤29.29 | PASS |
|             | Ant2  | 5775         | 0.90  | ≤29.29 | PASS |
|             | total | 5775         | 3.73  | ≤29.29 | PASS |
| 11AC160MIMO | Ant1  | 5250_UNII-1  | 0.32  | ≤11.00 | PASS |
|             | Ant2  | 5250_UNII-1  | -0.82 | ≤11.00 | PASS |
|             | total | 5250_UNII-1  | 2.80  | ≤11.00 | PASS |
|             | Ant1  | 5250_UNII-2A | -0.16 | ≤11.00 | PASS |
|             | Ant2  | 5250_UNII-2A | -1.32 | ≤11.00 | PASS |
|             | total | 5250_UNII-2A | 2.31  | ≤11.00 | PASS |
|             | Ant1  | 5570         | -0.54 | ≤10.10 | PASS |
|             | Ant2  | 5570         | -2.1  | ≤10.10 | PASS |
|             | total | 5570         | 1.76  | ≤10.10 | PASS |
| 11AX20MIMO  | Ant1  | 5180         | 10.98 | ≤17.00 | PASS |
|             | Ant2  | 5180         | 9.63  | ≤17.00 | PASS |
|             | total | 5180         | 13.37 | ≤17.00 | PASS |

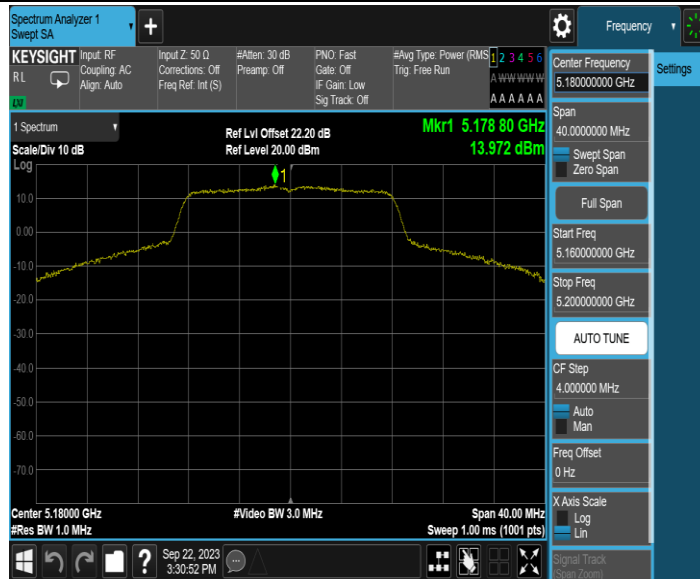
|            |       |      |       |        |      |
|------------|-------|------|-------|--------|------|
|            | Ant1  | 5200 | 9.10  | ≤17.00 | PASS |
|            | Ant2  | 5200 | 9.06  | ≤17.00 | PASS |
|            | total | 5200 | 12.09 | ≤17.00 | PASS |
|            | Ant1  | 5240 | 9.43  | ≤17.00 | PASS |
|            | Ant2  | 5240 | 9.01  | ≤17.00 | PASS |
|            | total | 5240 | 12.24 | ≤17.00 | PASS |
|            | Ant1  | 5260 | 8.24  | ≤11.00 | PASS |
|            | Ant2  | 5260 | 7.35  | ≤11.00 | PASS |
|            | total | 5260 | 10.83 | ≤11.00 | PASS |
|            | Ant1  | 5280 | 7.37  | ≤11.00 | PASS |
|            | Ant2  | 5280 | 7.23  | ≤11.00 | PASS |
|            | total | 5280 | 10.31 | ≤11.00 | PASS |
|            | Ant1  | 5320 | 8.06  | ≤11.00 | PASS |
|            | Ant2  | 5320 | 6.71  | ≤11.00 | PASS |
|            | total | 5320 | 10.45 | ≤11.00 | PASS |
|            | Ant1  | 5500 | 8.42  | ≤10.10 | PASS |
|            | Ant2  | 5500 | 6.98  | ≤10.10 | PASS |
|            | total | 5500 | 10.77 | ≤10.10 | PASS |
|            | Ant1  | 5580 | 7.73  | ≤10.10 | PASS |
|            | Ant2  | 5580 | 7.10  | ≤10.10 | PASS |
|            | total | 5580 | 10.44 | ≤10.10 | PASS |
|            | Ant1  | 5700 | 7.66  | ≤10.10 | PASS |
|            | Ant2  | 5700 | 5.78  | ≤10.10 | PASS |
|            | total | 5700 | 9.83  | ≤10.10 | PASS |
|            | Ant1  | 5745 | 9.87  | ≤29.29 | PASS |
|            | Ant2  | 5745 | 8.64  | ≤29.29 | PASS |
|            | total | 5745 | 12.31 | ≤29.29 | PASS |
|            | Ant1  | 5785 | 9.44  | ≤29.29 | PASS |
|            | Ant2  | 5785 | 8.03  | ≤29.29 | PASS |
|            | total | 5785 | 11.80 | ≤29.29 | PASS |
|            | Ant1  | 5825 | 9.27  | ≤29.29 | PASS |
|            | Ant2  | 5825 | 8.22  | ≤29.29 | PASS |
|            | total | 5825 | 11.79 | ≤29.29 | PASS |
| 11AX40MIMO | Ant1  | 5190 | 7.6   | ≤17.00 | PASS |
|            | Ant2  | 5190 | 6.14  | ≤17.00 | PASS |
|            | total | 5190 | 9.94  | ≤17.00 | PASS |
|            | Ant1  | 5230 | 7.85  | ≤17.00 | PASS |
|            | Ant2  | 5230 | 6.36  | ≤17.00 | PASS |
|            | total | 5230 | 10.18 | ≤17.00 | PASS |
|            | Ant1  | 5270 | 6.09  | ≤11.00 | PASS |
|            | Ant2  | 5270 | 4.86  | ≤11.00 | PASS |
|            | total | 5270 | 8.53  | ≤11.00 | PASS |

|             |       |              |       |        |      |
|-------------|-------|--------------|-------|--------|------|
|             | Ant1  | 5310         | 5.78  | ≤11.00 | PASS |
|             | Ant2  | 5310         | 5.38  | ≤11.00 | PASS |
|             | total | 5310         | 8.59  | ≤11.00 | PASS |
|             | Ant1  | 5510         | 5.91  | ≤10.10 | PASS |
|             | Ant2  | 5510         | 4.49  | ≤10.10 | PASS |
|             | total | 5510         | 8.27  | ≤10.10 | PASS |
|             | Ant1  | 5550         | 5.10  | ≤10.10 | PASS |
|             | Ant2  | 5550         | 4.62  | ≤10.10 | PASS |
|             | total | 5550         | 7.88  | ≤10.10 | PASS |
|             | Ant1  | 5670         | 6.16  | ≤10.10 | PASS |
|             | Ant2  | 5670         | 4.44  | ≤10.10 | PASS |
|             | total | 5670         | 8.39  | ≤10.10 | PASS |
|             | Ant1  | 5755         | 7.07  | ≤29.29 | PASS |
|             | Ant2  | 5755         | 5.00  | ≤29.29 | PASS |
|             | total | 5755         | 9.17  | ≤29.29 | PASS |
|             | Ant1  | 5795         | 6.54  | ≤29.29 | PASS |
|             | Ant2  | 5795         | 4.90  | ≤29.29 | PASS |
|             | total | 5795         | 8.81  | ≤29.29 | PASS |
| 11AX80MIMO  | Ant1  | 5210         | 2.98  | ≤17.00 | PASS |
|             | Ant2  | 5210         | 1.74  | ≤17.00 | PASS |
|             | total | 5210         | 5.41  | ≤17.00 | PASS |
|             | Ant1  | 5290         | 3.64  | ≤11.00 | PASS |
|             | Ant2  | 5290         | 2.63  | ≤11.00 | PASS |
|             | total | 5290         | 6.17  | ≤11.00 | PASS |
|             | Ant1  | 5530         | 2.52  | ≤10.10 | PASS |
|             | Ant2  | 5530         | 1.47  | ≤10.10 | PASS |
|             | total | 5530         | 5.04  | ≤10.10 | PASS |
|             | Ant1  | 5610         | 3.27  | ≤10.10 | PASS |
|             | Ant2  | 5610         | 1.39  | ≤10.10 | PASS |
|             | total | 5610         | 5.44  | ≤10.10 | PASS |
|             | Ant1  | 5775         | 0.53  | ≤30.00 | PASS |
|             | Ant2  | 5775         | 0.90  | ≤30.00 | PASS |
|             | total | 5775         | 3.73  | ≤30.00 | PASS |
| 11AX160MIMO | Ant1  | 5250_UNII-1  | 0.63  | ≤10.10 | PASS |
|             | Ant2  | 5250_UNII-1  | -1.19 | ≤10.10 | PASS |
|             | total | 5250_UNII-1  | 2.82  | ≤10.10 | PASS |
|             | Ant1  | 5250_UNII-2A | 1.31  | ≤10.10 | PASS |
|             | Ant2  | 5250_UNII-2A | -1.09 | ≤10.10 | PASS |
|             | total | 5250_UNII-2A | 3.28  | ≤10.10 | PASS |
|             | Ant1  | 5570         | -0.25 | ≤10.10 | PASS |
|             | Ant2  | 5570         | -1.6  | ≤10.10 | PASS |
|             | total | 5570         | 2.14  | ≤10.10 | PASS |

Note:

1. The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.
2. For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 300kHz and VBW at 1500kHz if the spectrum analyzer does not have 500 kHz RBW. Then, add  $10 \log (500 \text{ kHz}/300 \text{ kHz})$  to the measured result, i.e. 2.22 dB.
3. During the test of U-NII 3 PSD, the measurement result with RBW=300kHz has been added 2.22 dB by compensating offset,  $\text{offset} = \text{cable loss} + \text{duty factor} + 10 \log(500 \text{ kHz}/300 \text{ kHz})$ .
4. Note: The results have compensated for the Duty Cycle Correction Factor.

11A-CDD\_Ant1\_5180

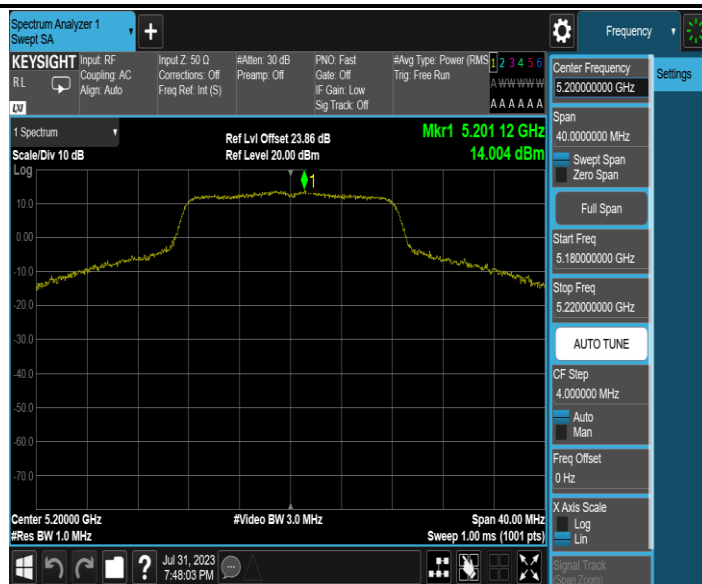


11A-CDD\_Ant2\_5180

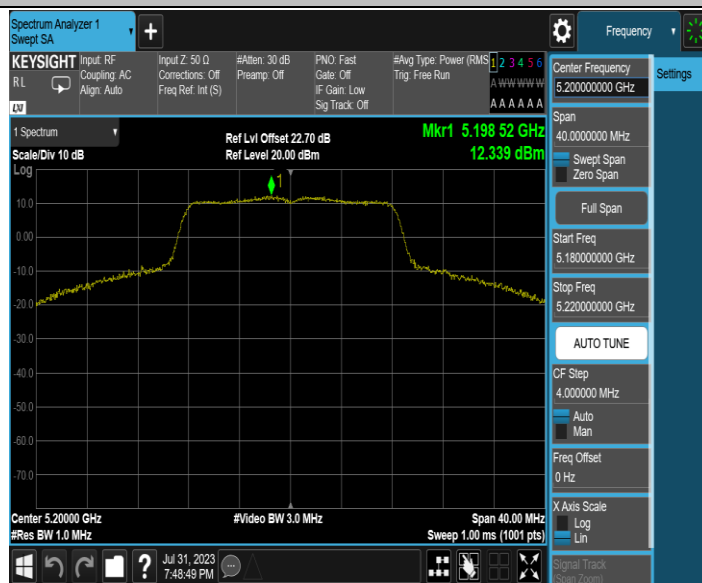


11A-CDD\_Ant1\_5200





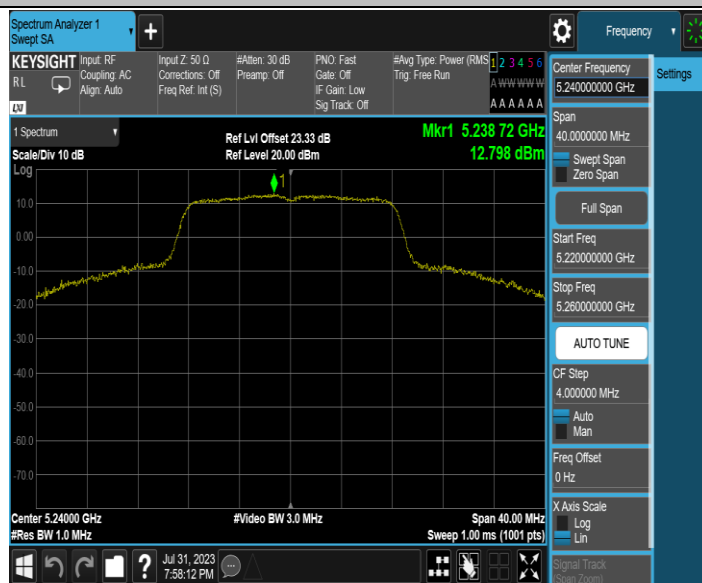
11A-CDD\_Ant2\_5200



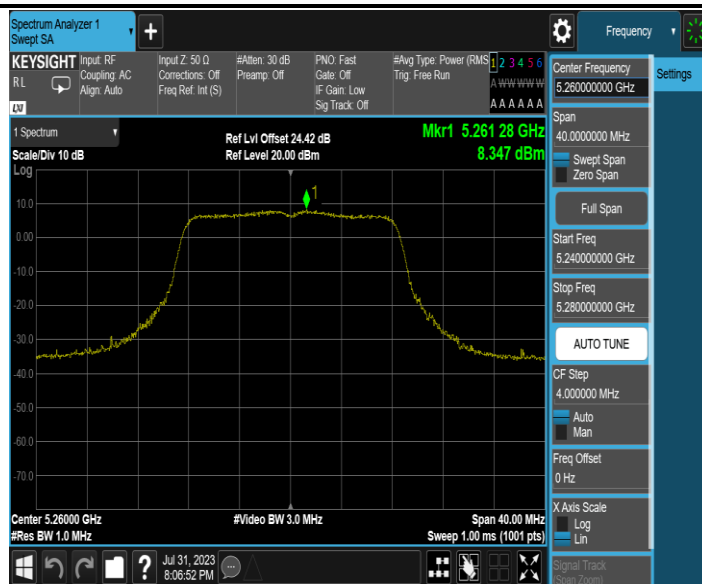
11A-CDD\_Ant1\_5240



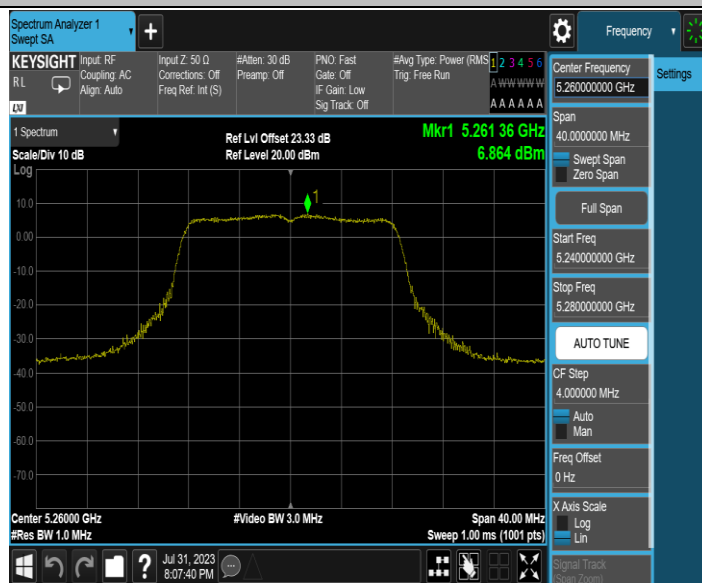
11A-CDD\_Ant2\_5240



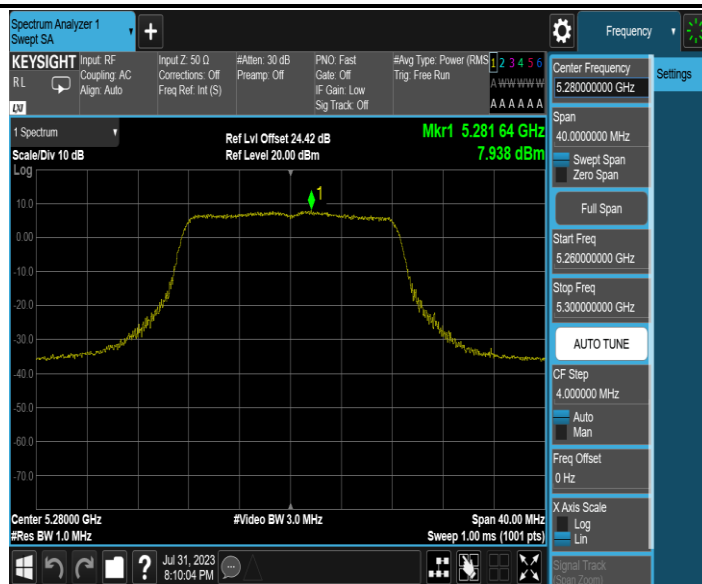
11A-CDD\_Ant1\_5260



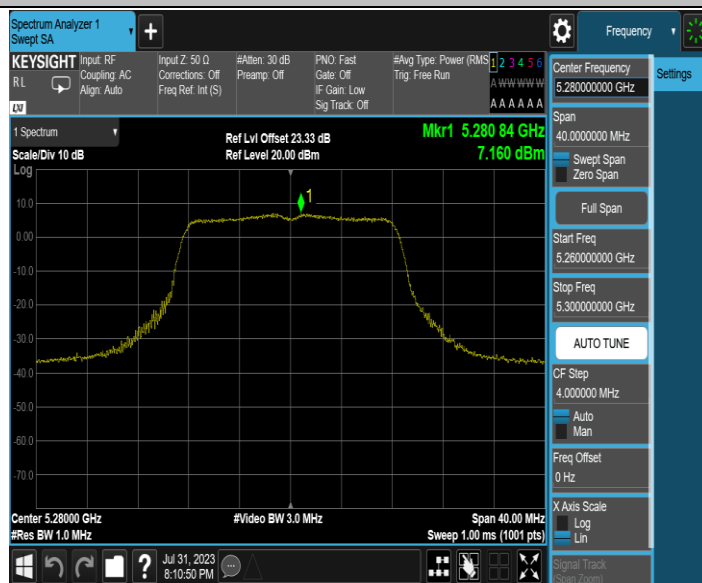
11A-CDD\_Ant2\_5260



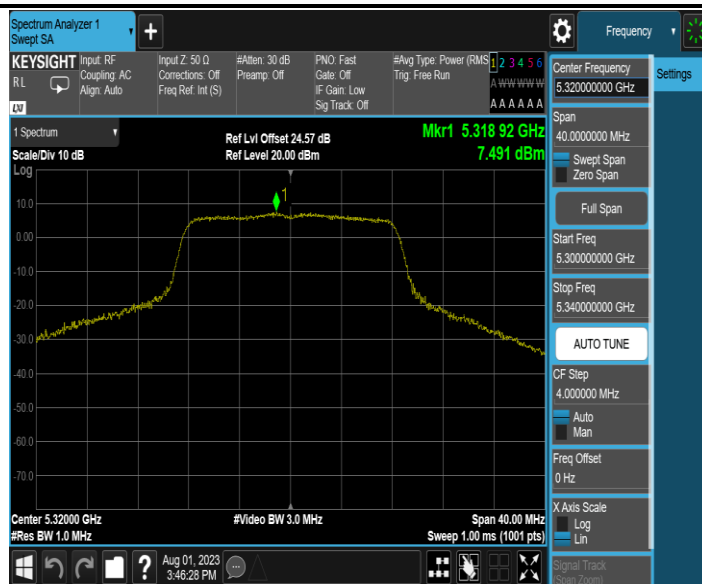
11A-CDD\_Ant1\_5280



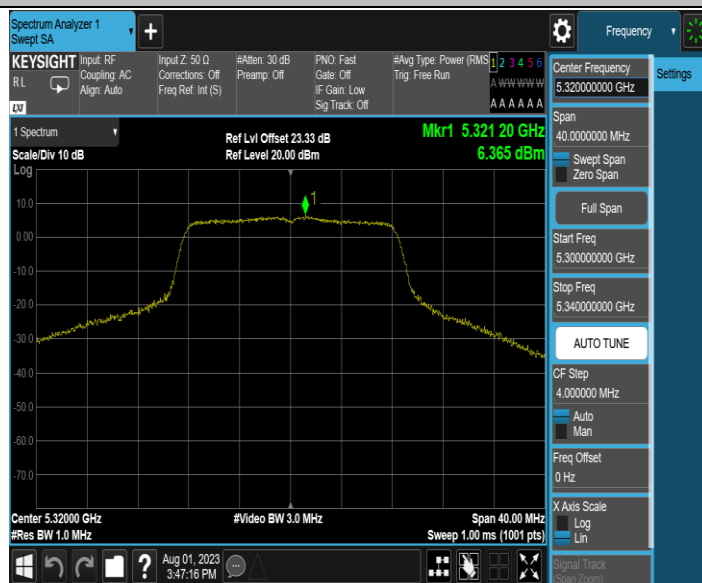
11A-CDD\_Ant2\_5280



11A-CDD\_Ant1\_5320



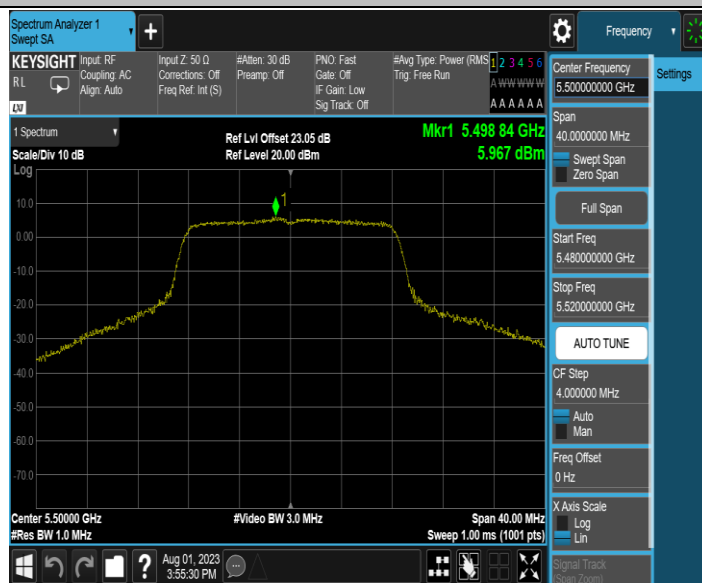
11A-CDD\_Ant2\_5320



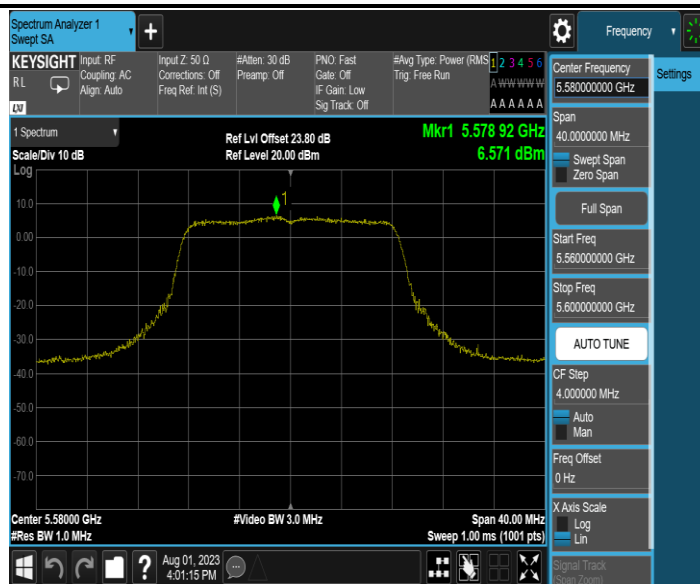
11A-CDD\_Ant1\_5500



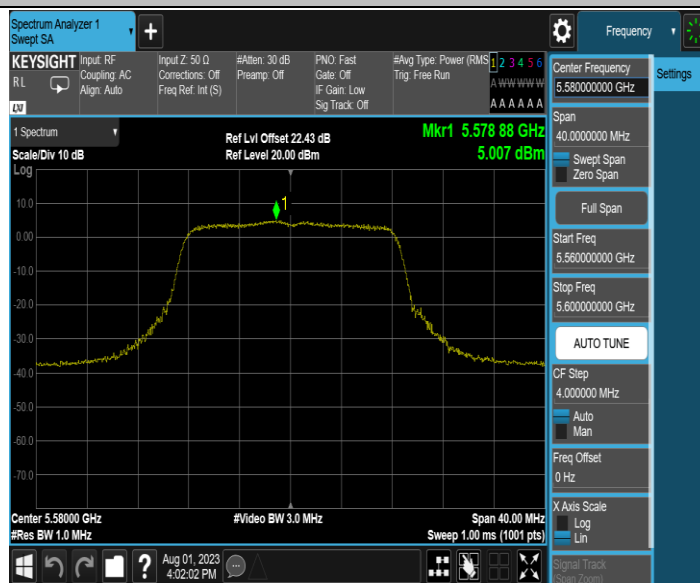
11A-CDD\_Ant2\_5500



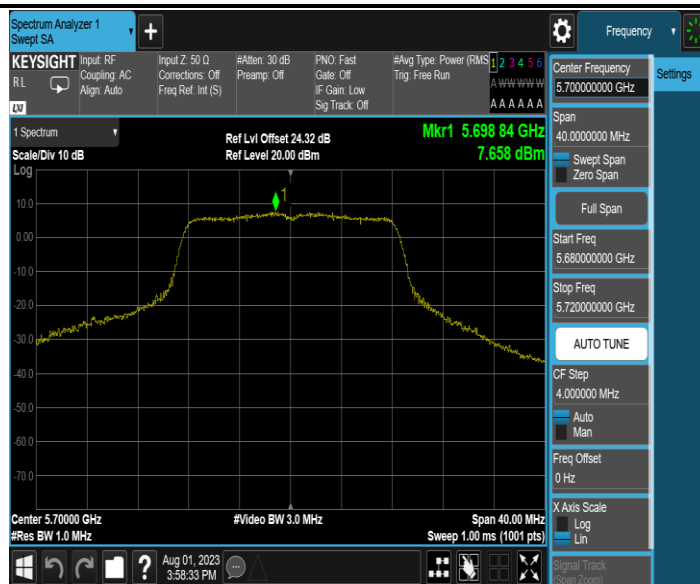
11A-CDD\_Ant1\_5580



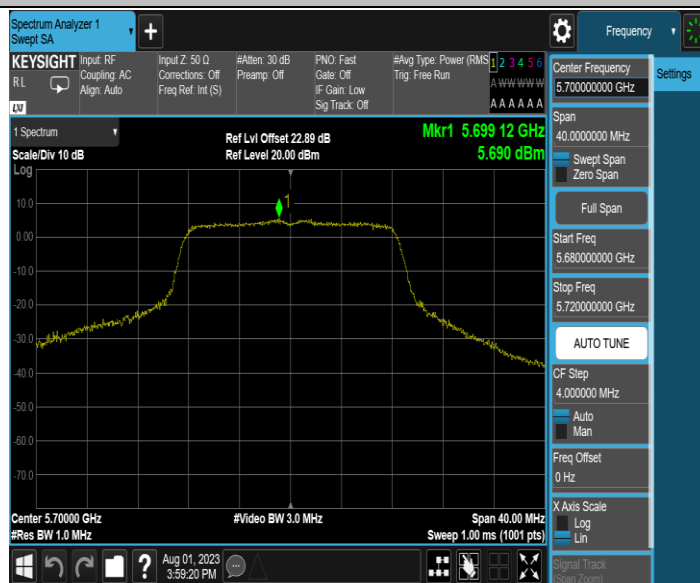
11A-CDD\_Ant2\_5580



11A-CDD\_Ant1\_5700

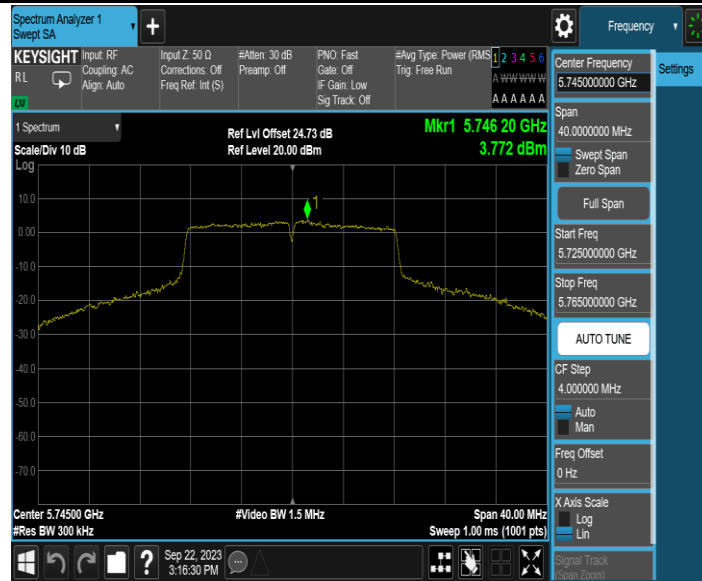


11A-CDD\_Ant2\_5700

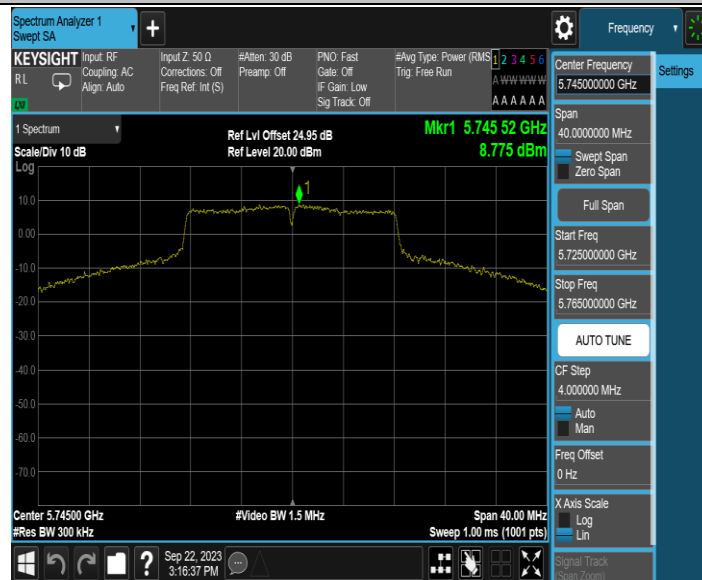


11A-CDD\_Ant1\_5745

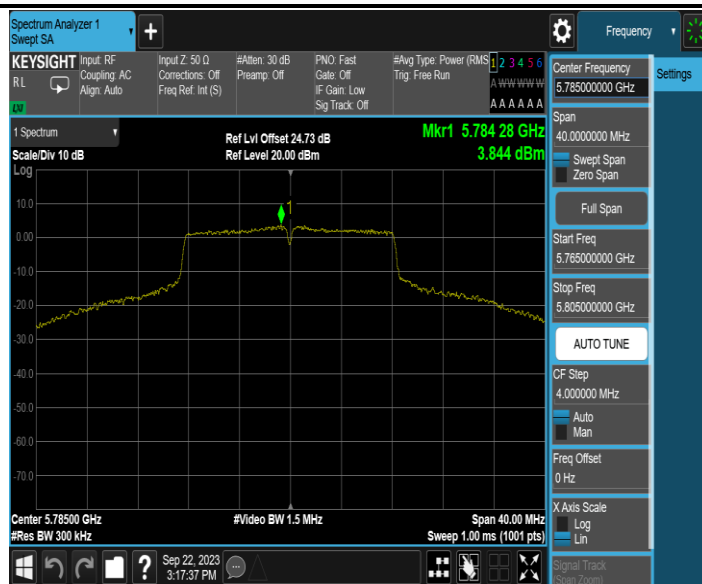




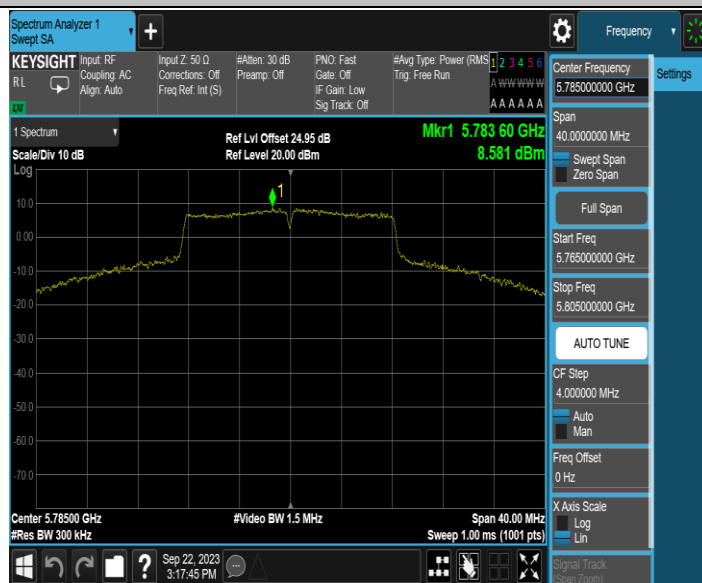
11A-CDD\_Ant2\_5745



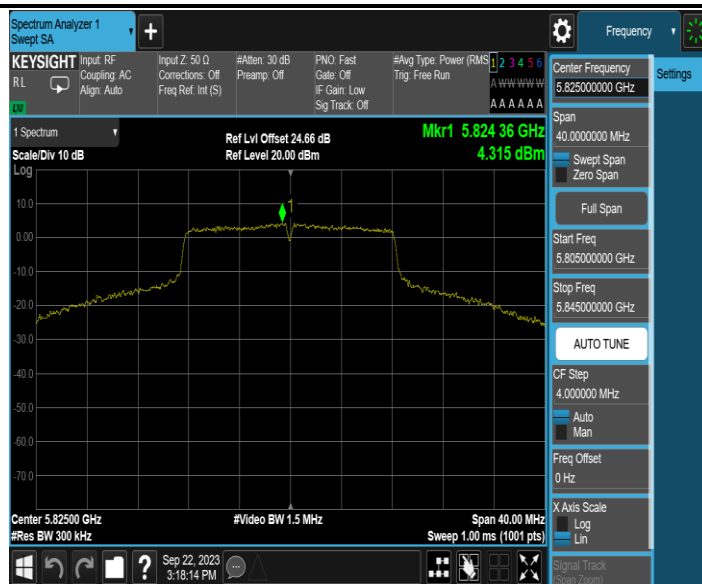
11A-CDD\_Ant1\_5785



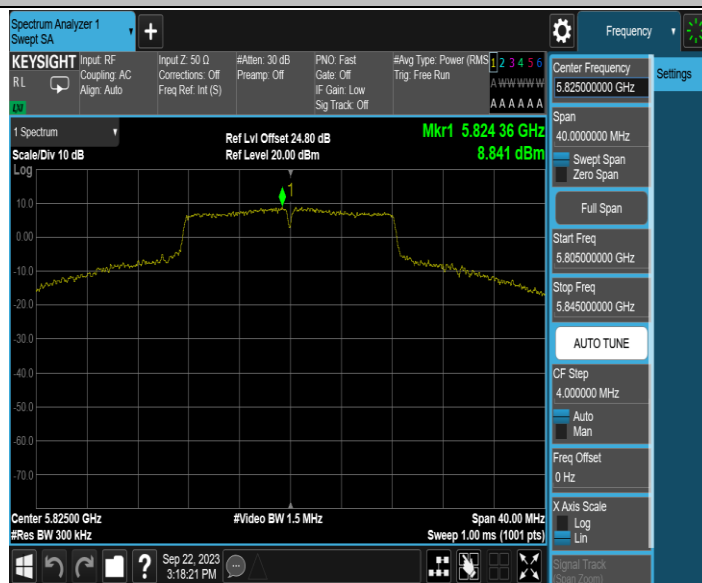
11A-CDD\_Ant2\_5785



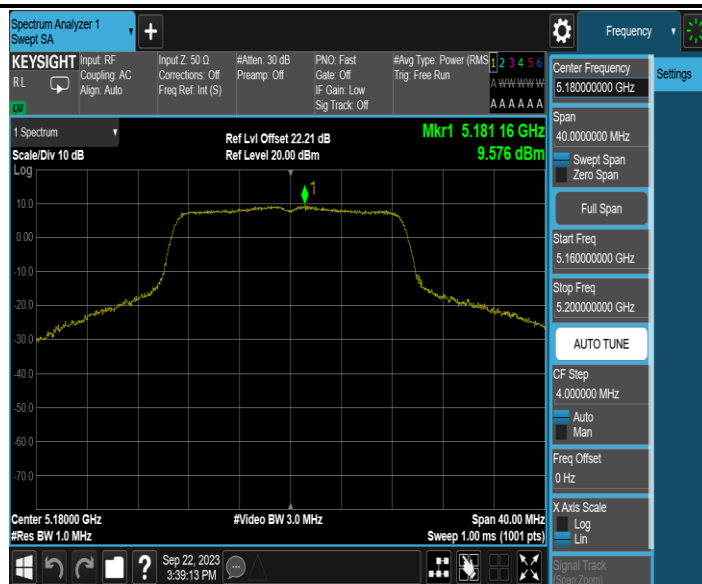
11A-CDD\_Ant1\_5825



11A-CDD\_Ant2\_5825



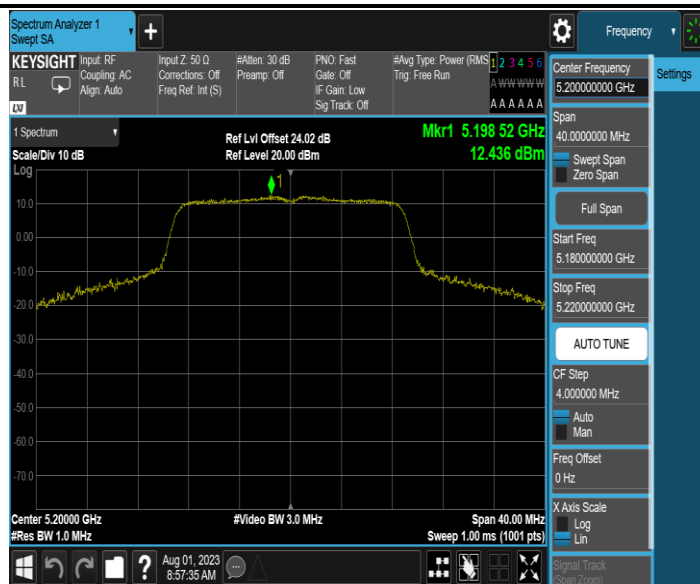
11N20MIMO\_Ant1\_5180



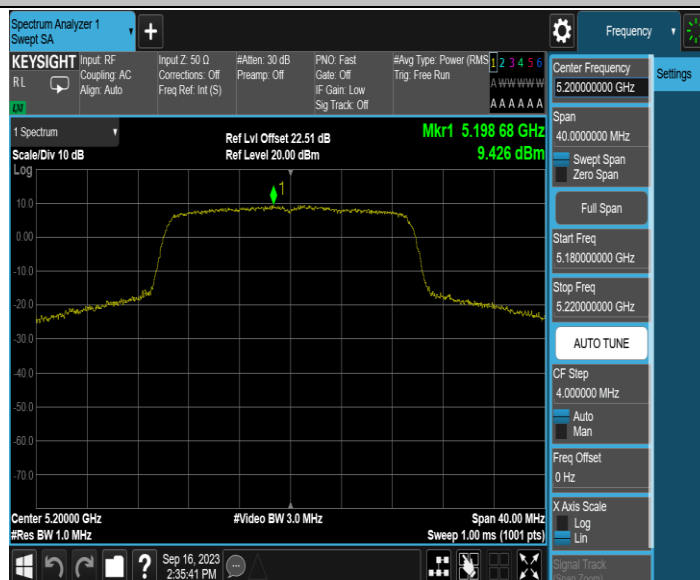
11N20MIMO\_Ant2\_5180



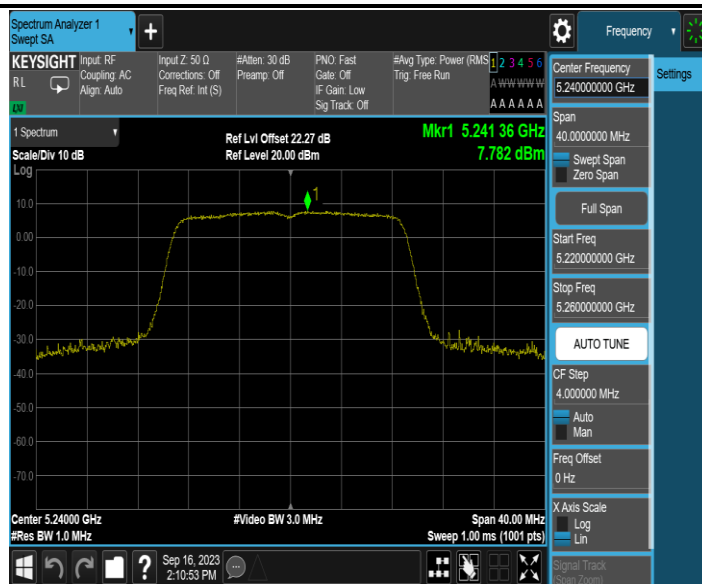
11N20MIMO\_Ant1\_5200



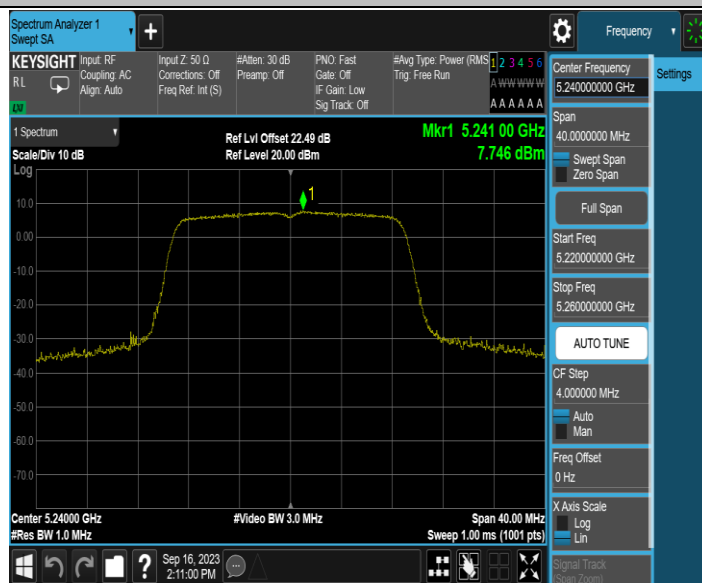
11N20MIMO\_Ant2\_5200



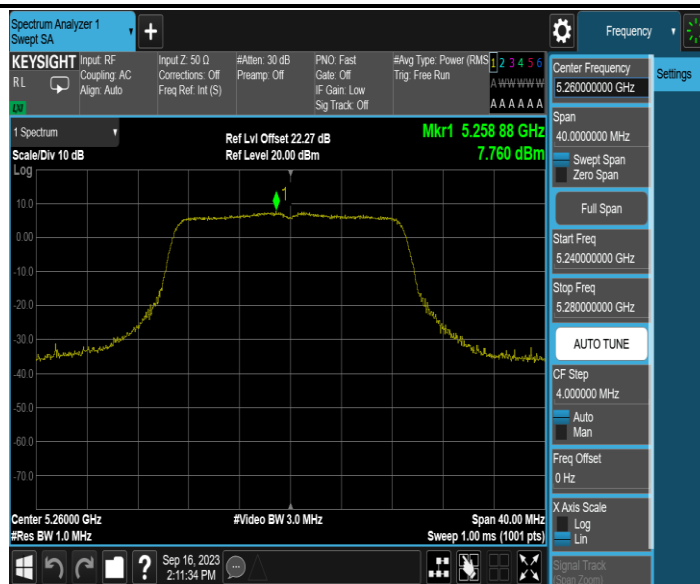
11N20MIMO\_Ant1\_5240



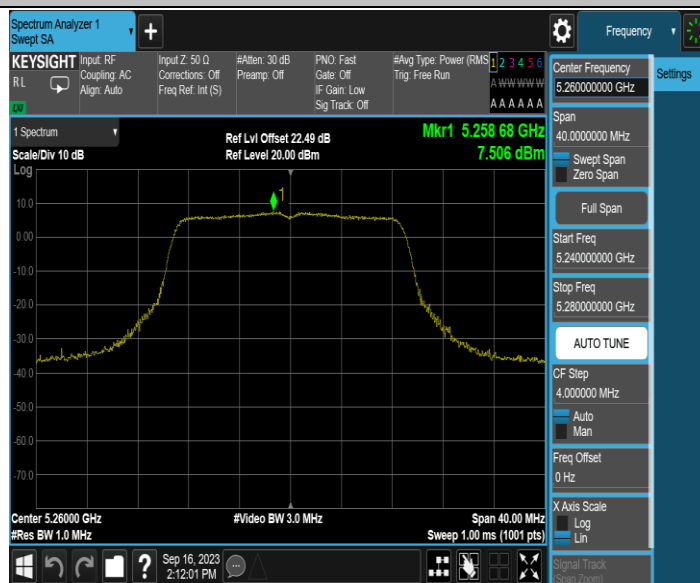
11N20MIMO\_Ant2\_5240



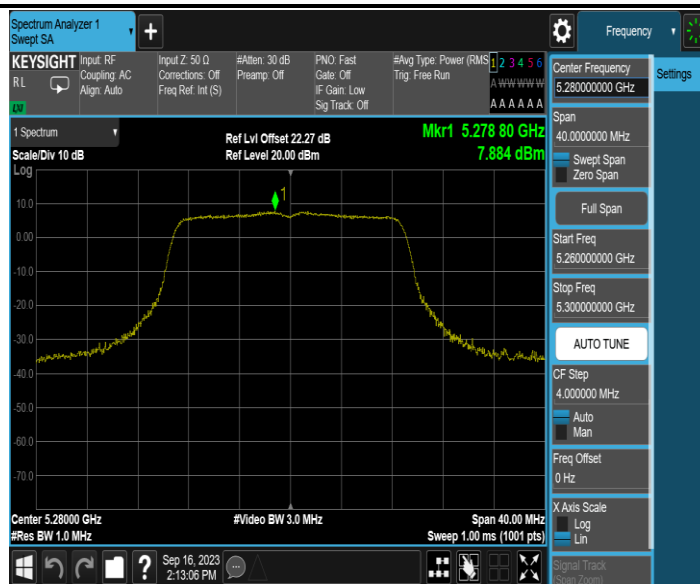
11N20MIMO\_Ant1\_5260



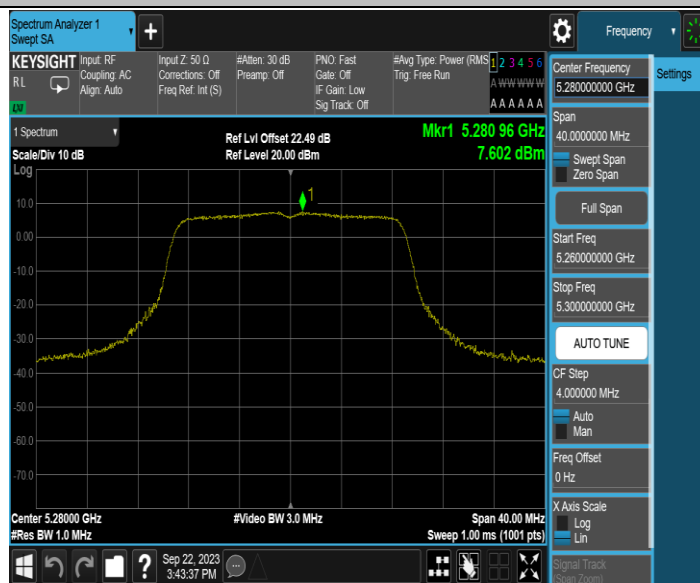
11N20MIMO\_Ant2\_5260



11N20MIMO\_Ant1\_5280

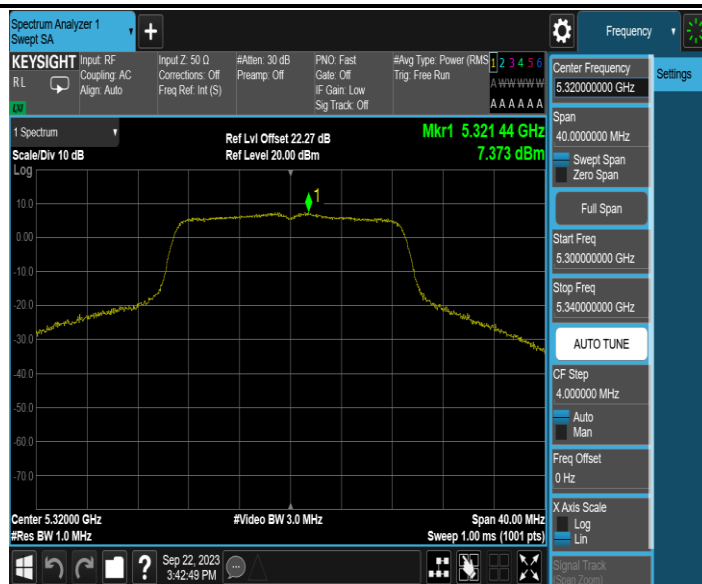


11N20MIMO\_Ant2\_5280



11N20MIMO\_Ant1\_5320





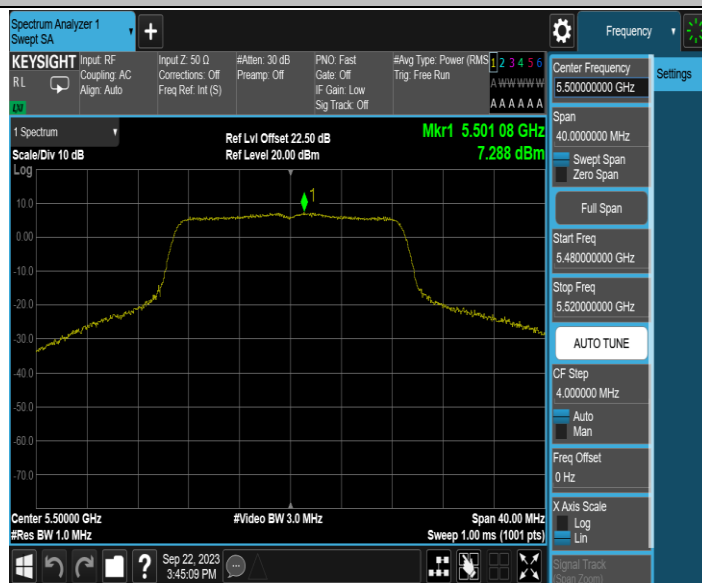
11N20MIMO\_Ant2\_5320



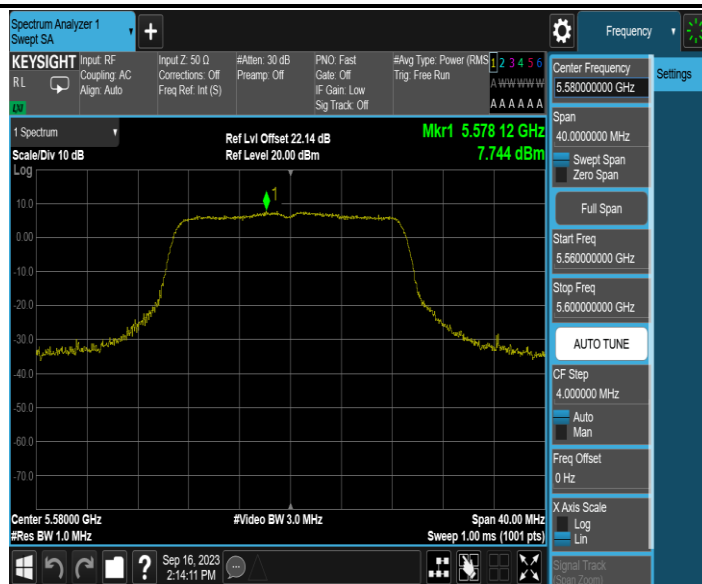
11N20MIMO\_Ant1\_5500



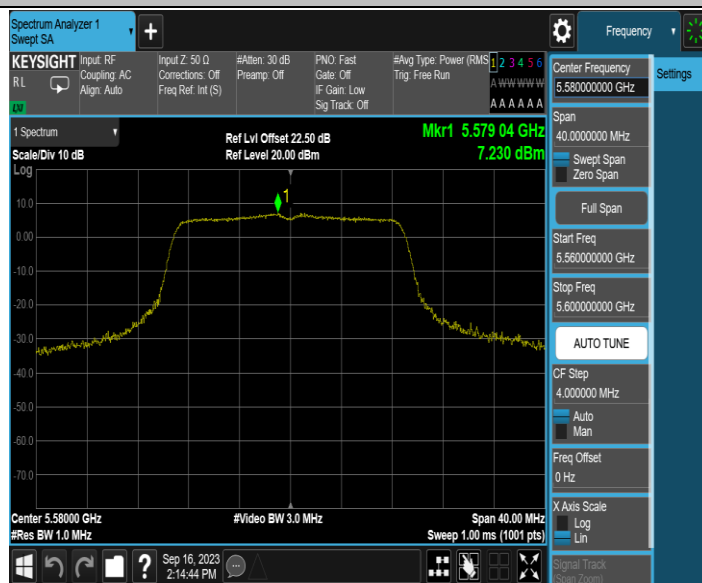
11N20MIMO\_Ant2\_5500



11N20MIMO\_Ant1\_5580



11N20MIMO\_Ant2\_5580



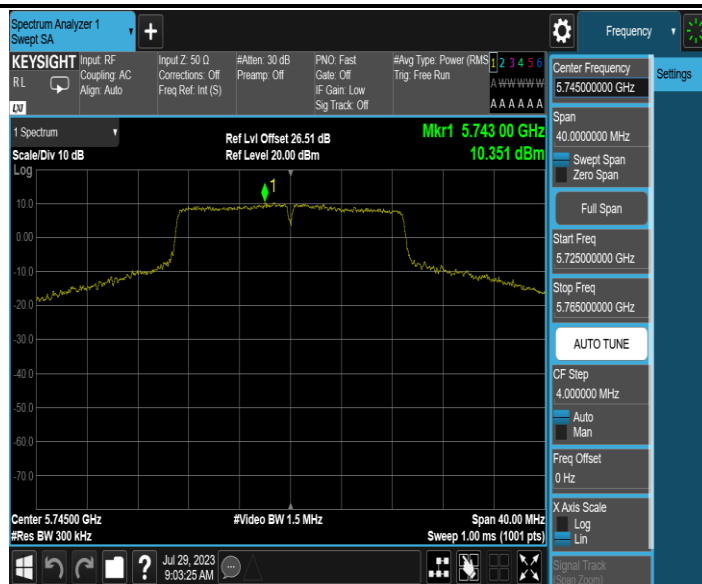
11N20MIMO\_Ant1\_5700



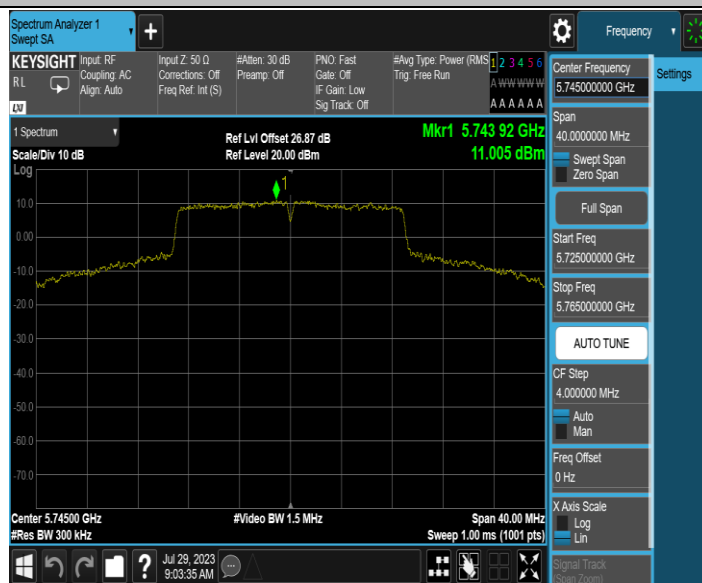
11N20MIMO\_Ant2\_5700



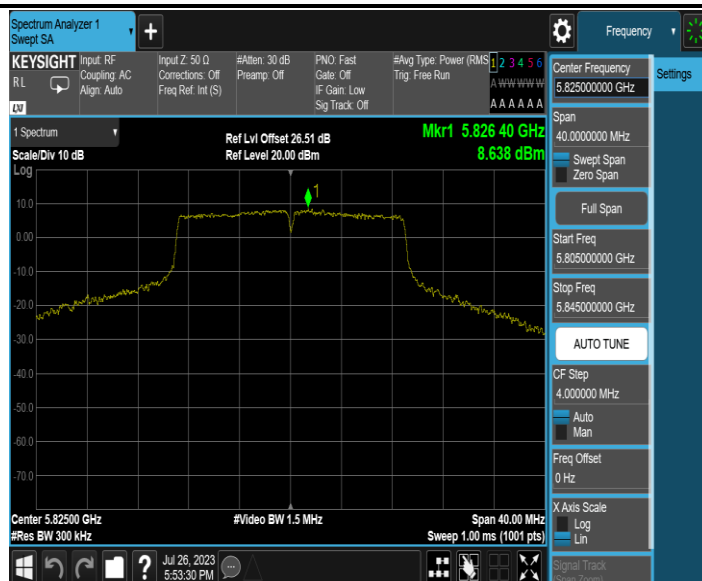
11N20MIMO\_Ant1\_5745



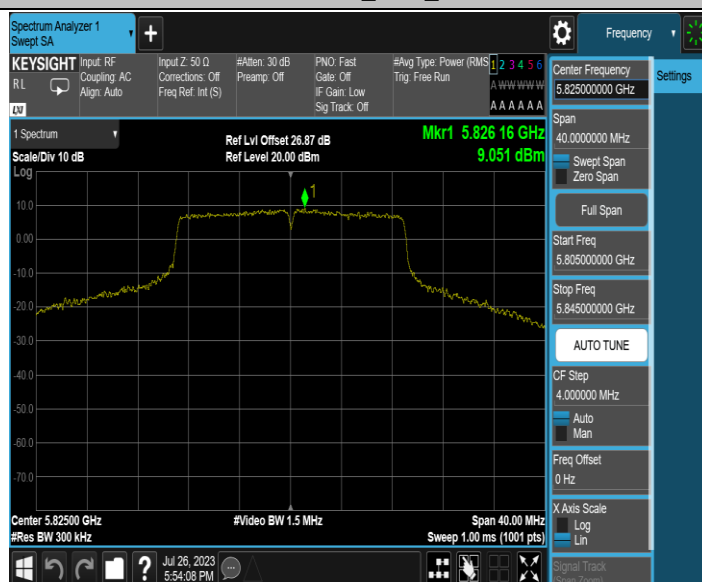
11N20MIMO\_Ant2\_5745



11N20MIMO\_Ant1\_5825



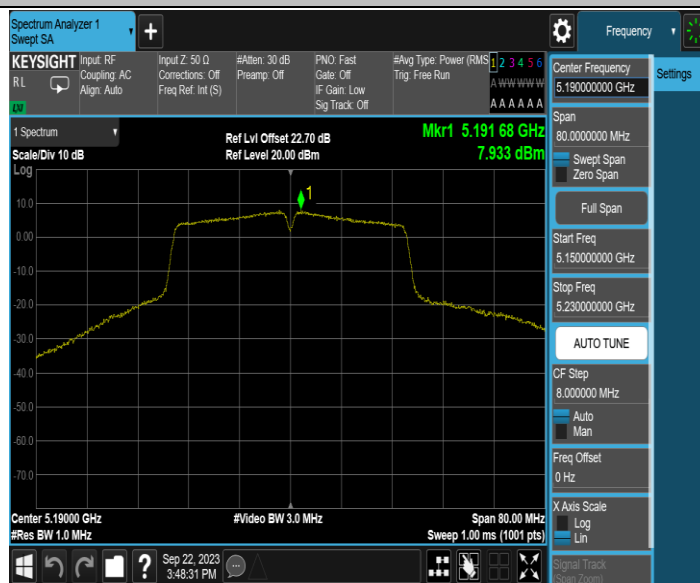
11N20MIMO\_Ant2\_5825



11N40MIMO\_Ant1\_5190



11N40MIMO\_Ant2\_5190



11N40MIMO\_Ant1\_5230



11N40MIMO\_Ant2\_5230

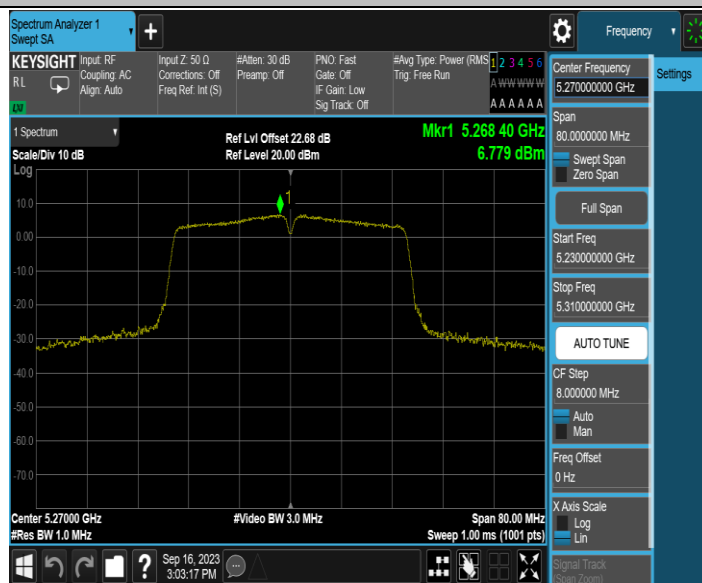


11N40MIMO\_Ant1\_5270





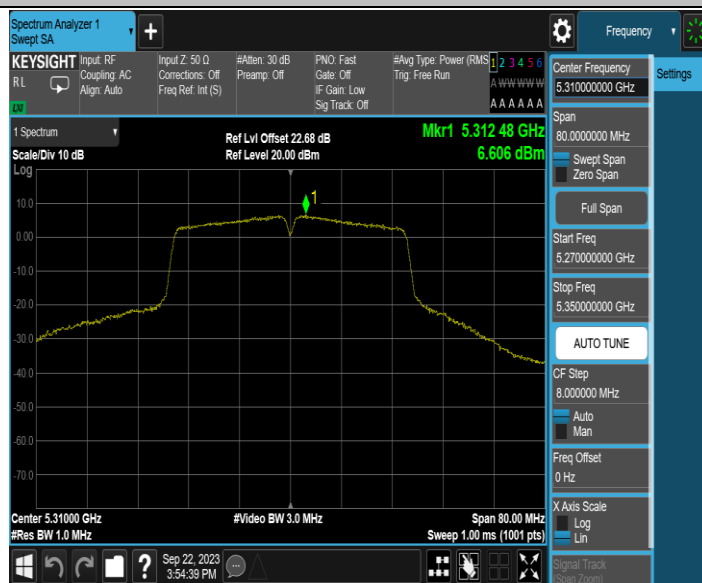
11N40MIMO\_Ant2\_5270



11N40MIMO\_Ant1\_5310



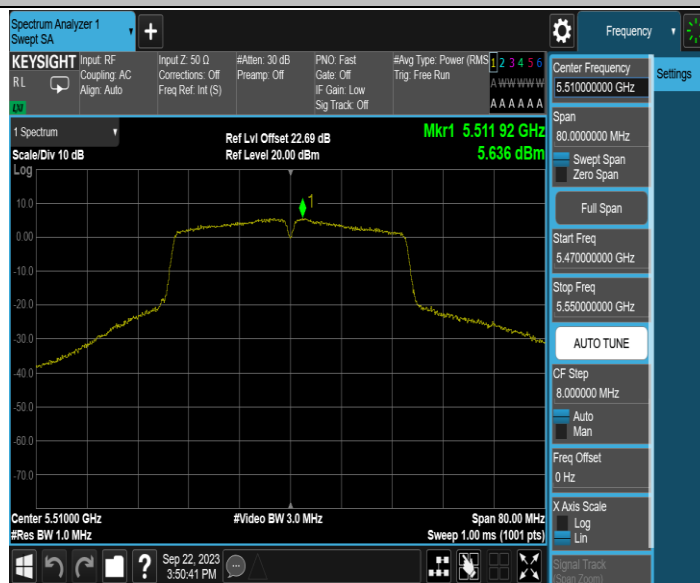
11N40MIMO\_Ant2\_5310



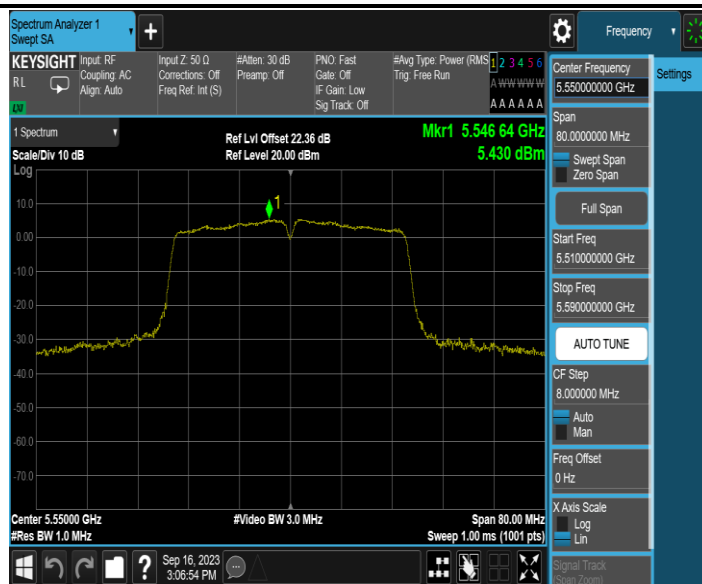
11N40MIMO\_Ant1\_5510



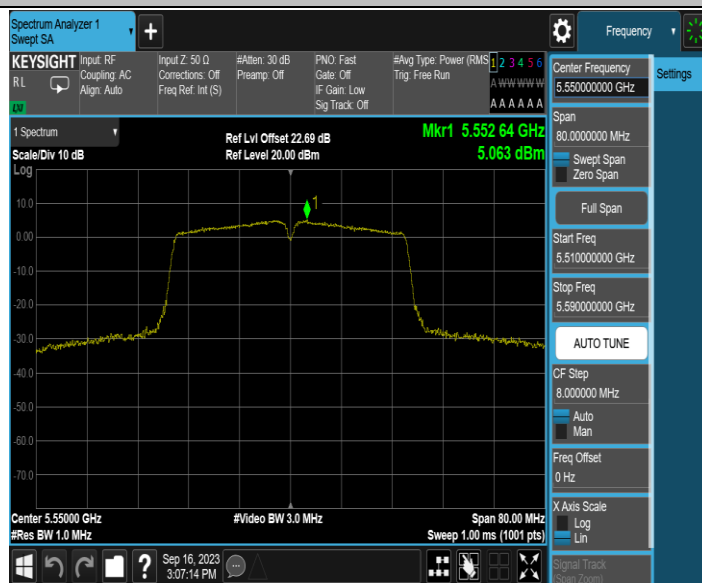
11N40MIMO\_Ant2\_5510



11N40MIMO\_Ant1\_5550



11N40MIMO\_Ant2\_5550



11N40MIMO\_Ant1\_5670