# Appendix A

## RF Test Data for 2.4GWIFI (Conducted Measurement)

**Product Name: Permanent Outdoor Light**

**Test Model: OS010**

**Environmental Conditions**

| | |
|---|---|
| Temperature: | 23.8° C |
| Relative Humidity: | 52.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Nick Peng |
| Supervised by: | Jack Cheng |

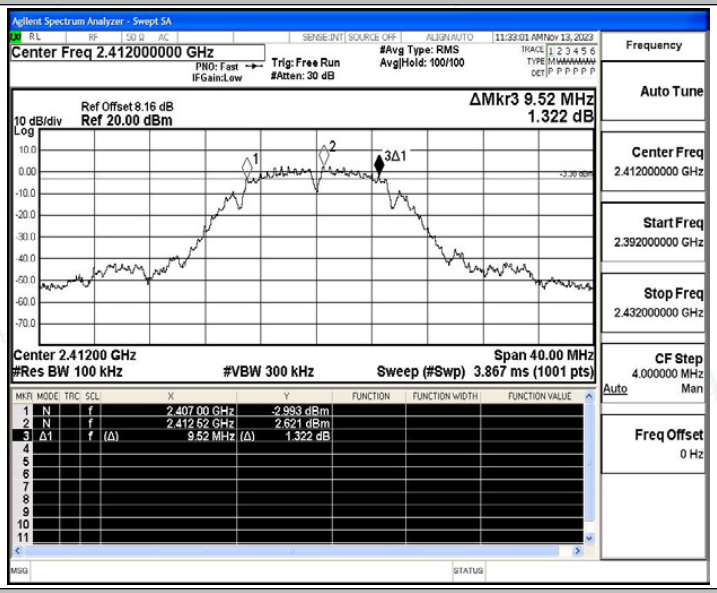
# A.1 DTS Bandwidth

## Test Result

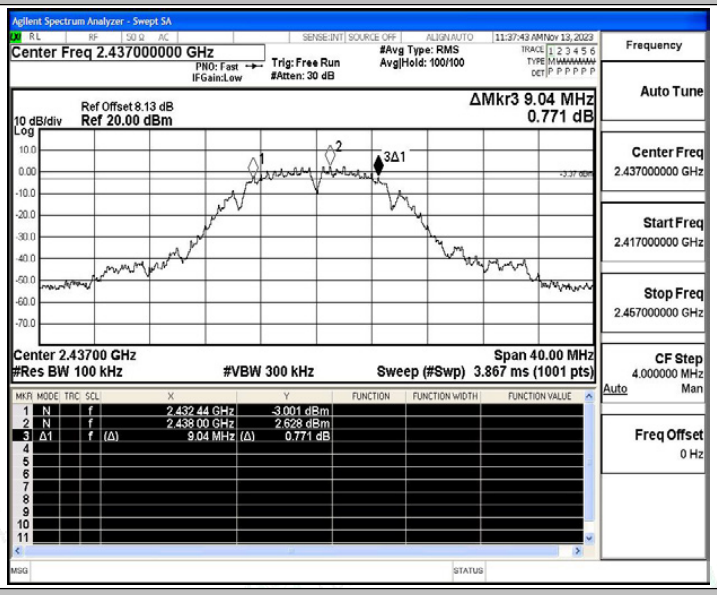
| TestMode | Antenna | Freq(MHz) | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 9.520 | 2407.000 | 2416.520 | 0.5 | PASS |
| | | 2437 | 9.040 | 2432.440 | 2441.480 | 0.5 | PASS |
| | | 2462 | 9.560 | 2457.440 | 2467.000 | 0.5 | PASS |
| 11G | Ant1 | 2412 | 16.360 | 2403.800 | 2420.160 | 0.5 | PASS |
| | | 2437 | 16.400 | 2428.800 | 2445.200 | 0.5 | PASS |
| | | 2462 | 16.320 | 2453.840 | 2470.160 | 0.5 | PASS |
| 11N20SISO | Ant1 | 2412 | 17.600 | 2403.200 | 2420.800 | 0.5 | PASS |
| | | 2437 | 17.600 | 2428.200 | 2445.800 | 0.5 | PASS |
| | | 2462 | 17.600 | 2453.200 | 2470.800 | 0.5 | PASS |
| 11N40SISO | Ant1 | 2422 | 35.760 | 2404.080 | 2439.840 | 0.5 | PASS |
| | | 2437 | 35.680 | 2419.080 | 2454.760 | 0.5 | PASS |
| | | 2452 | 35.840 | 2434.080 | 2469.920 | 0.5 | PASS |

## Test Graphs

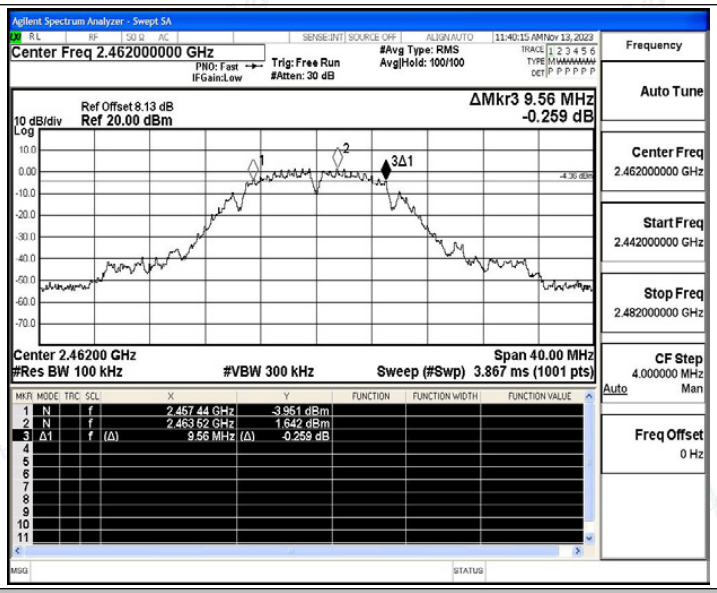
11B_Ant1_2412



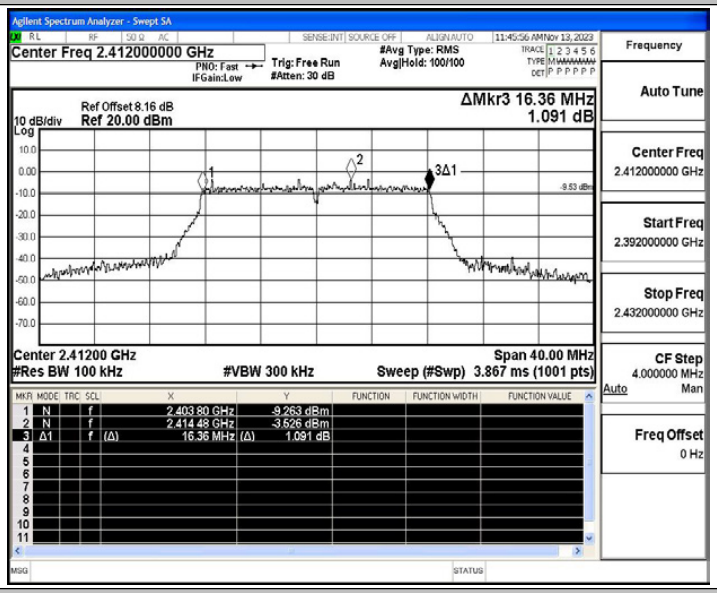

11B_Ant1_2437



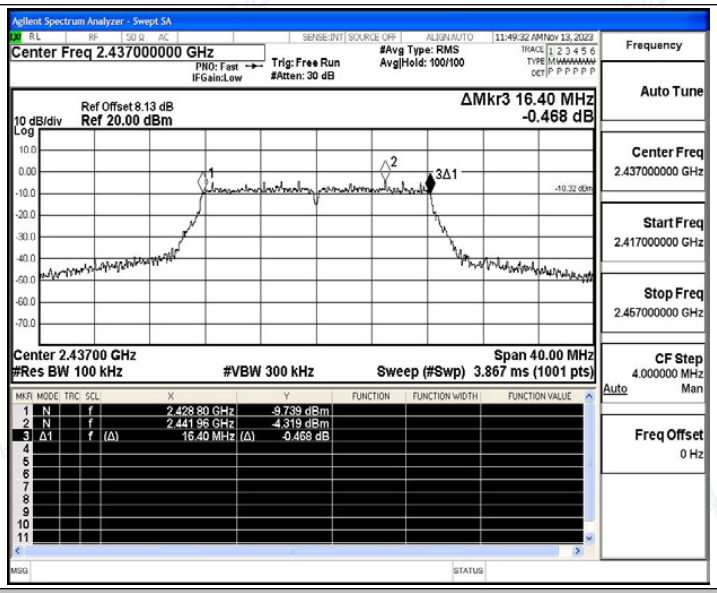

11B_Ant1_2462



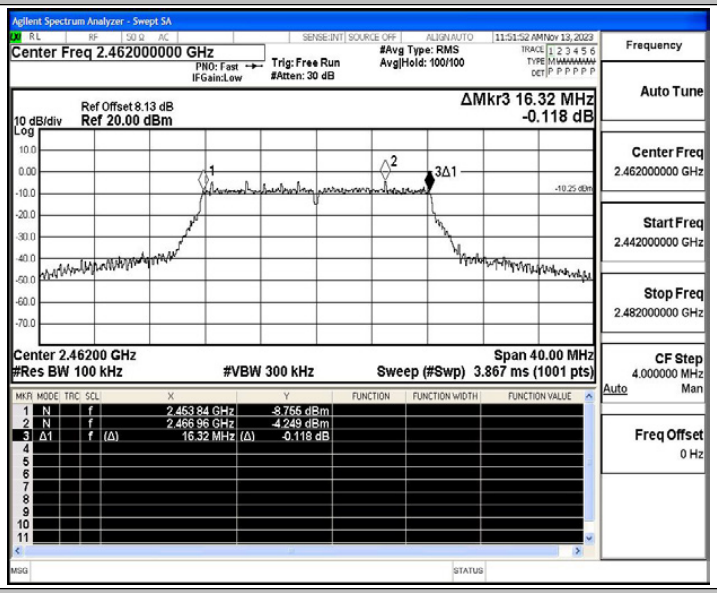

11G_Ant1_2412



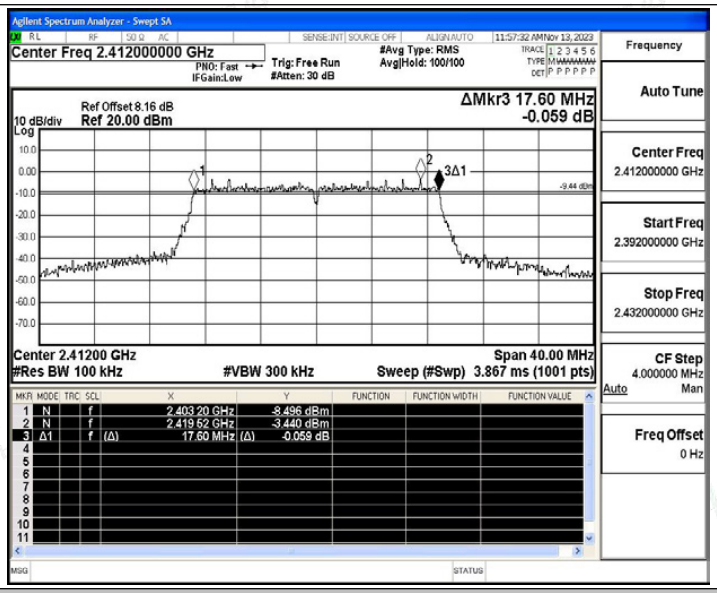

11G_Ant1_2437



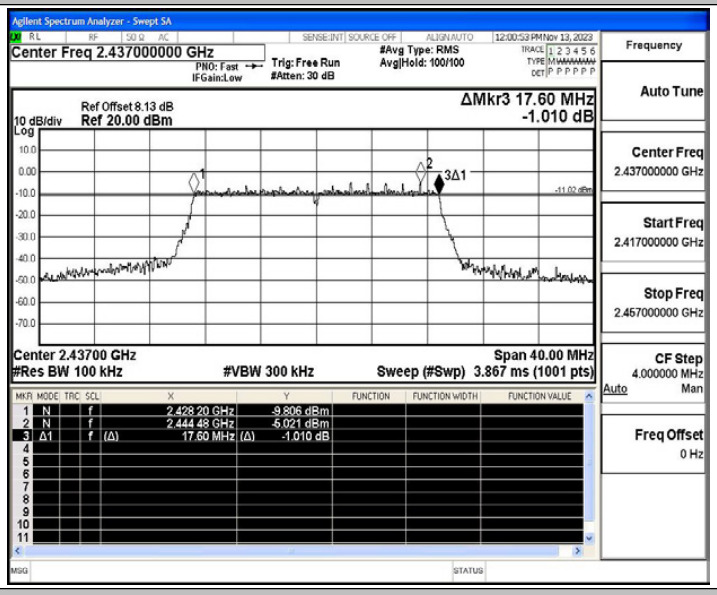

11G_Ant1_2462




11N20SISO_Ant1_2412




11N20SISO_Ant1_2437

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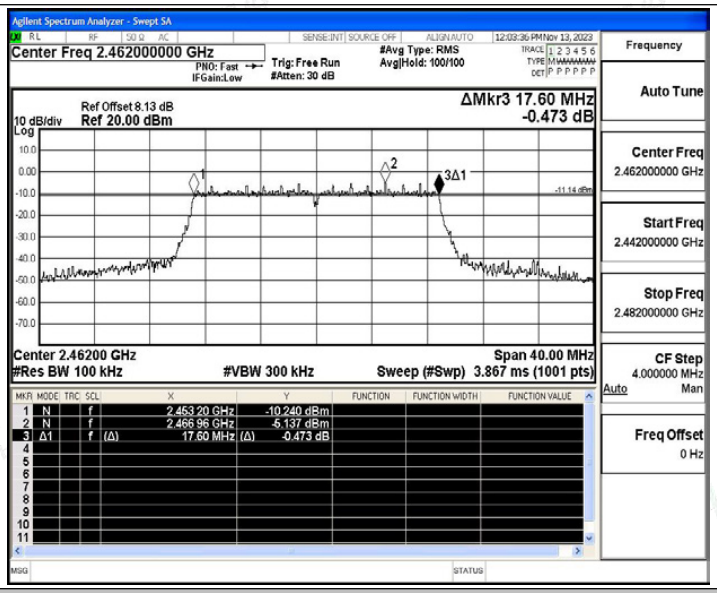
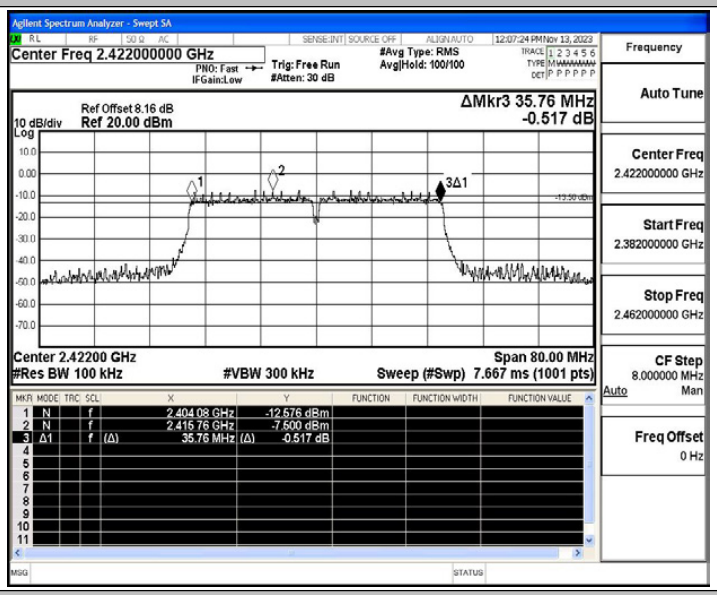
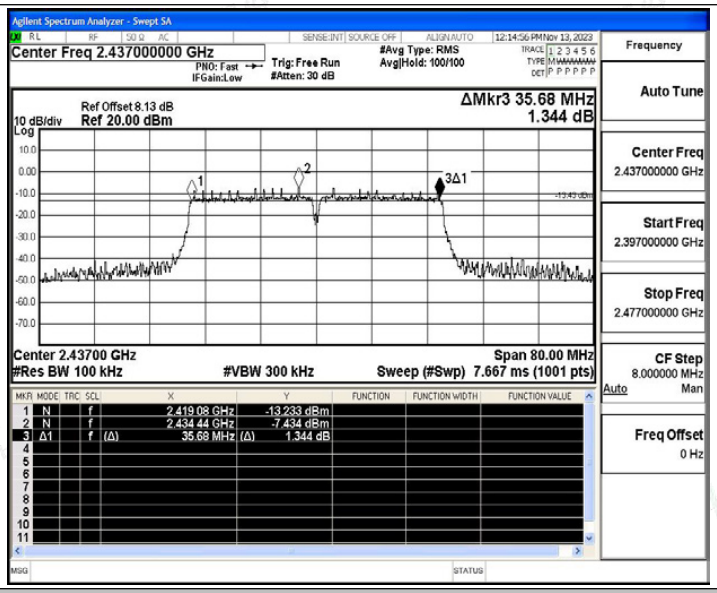


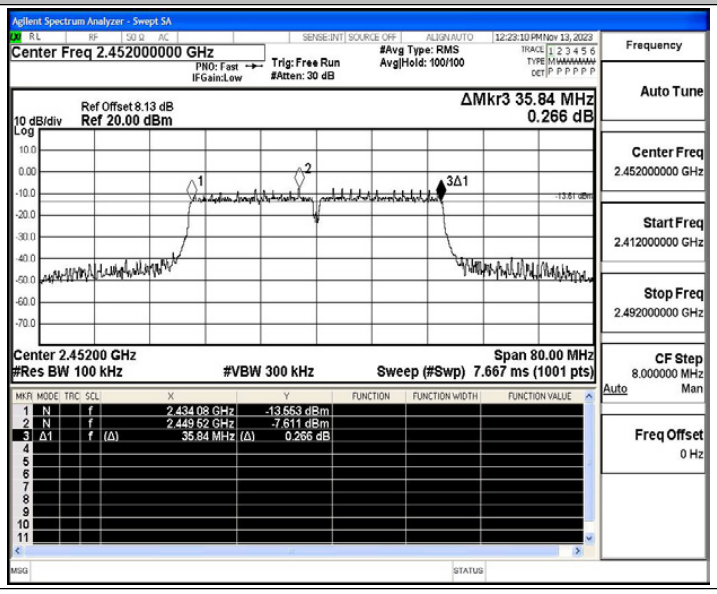

11N40SISO_Ant1_2422




11N40SISO_Ant1_2437




11N40SISO_Ant1_2452



# A.2 Maximum conducted output power

## Test Result Peak

| TestMode | Antenna | Freq(MHz) | Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 14.92 | ≤30.00 | PASS |
| | | 2437 | 14.46 | ≤30.00 | PASS |
| | | 2462 | 13.85 | ≤30.00 | PASS |
| 11G | Ant1 | 2412 | 14.43 | ≤30.00 | PASS |
| | | 2437 | 13.82 | ≤30.00 | PASS |
| | | 2462 | 13.51 | ≤30.00 | PASS |
| 11N20SISO | Ant1 | 2412 | 14.76 | ≤30.00 | PASS |
| | | 2437 | 12.97 | ≤30.00 | PASS |
| | | 2462 | 13.39 | ≤30.00 | PASS |
| 11N40SISO | Ant1 | 2422 | 13.01 | ≤30.00 | PASS |
| | | 2437 | 13.04 | ≤30.00 | PASS |
| | | 2452 | 12.81 | ≤30.00 | PASS |

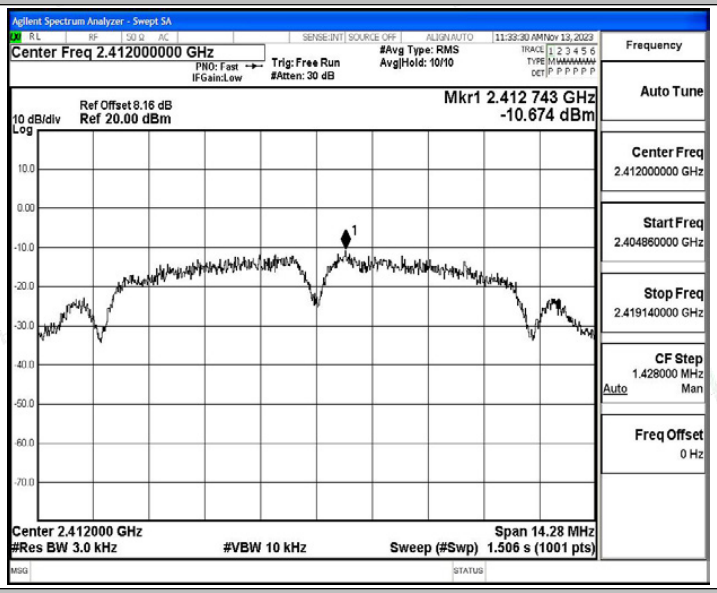
# A.3 Maximum power spectral density

## Test Result

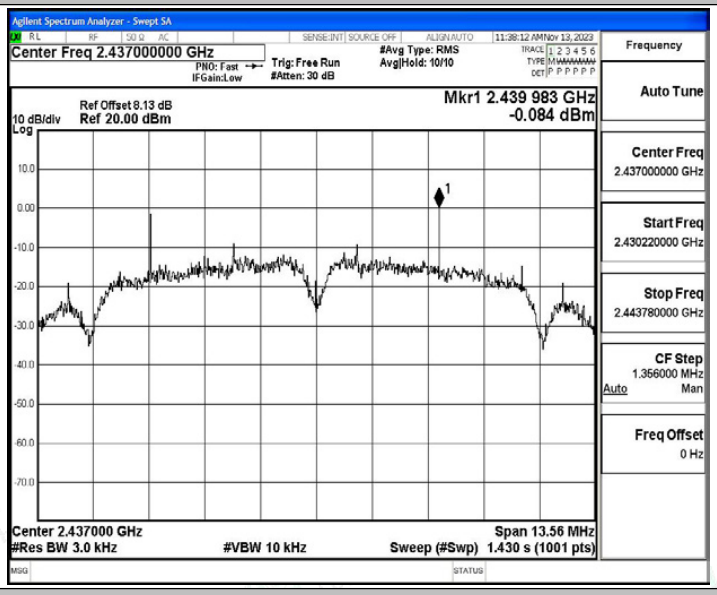
| TestMode | Antenna | Freq(MHz) | Result [dBm/3kHz] | Limit [dBm/3kHz] | Verdict |
|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | -10.67 | ≤8.00 | PASS |
| | | 2437 | -0.08 | ≤8.00 | PASS |
| | | 2462 | -12.11 | ≤8.00 | PASS |
| 11G | Ant1 | 2412 | -16.62 | ≤8.00 | PASS |
| | | 2437 | -17.01 | ≤8.00 | PASS |
| | | 2462 | -17.92 | ≤8.00 | PASS |
| 11N20SISO | Ant1 | 2412 | -16.57 | ≤8.00 | PASS |
| | | 2437 | -18.19 | ≤8.00 | PASS |
| | | 2462 | -17.07 | ≤8.00 | PASS |
| 11N40SISO | Ant1 | 2422 | -20.2 | ≤8.00 | PASS |
| | | 2437 | -21.95 | ≤8.00 | PASS |
| | | 2452 | -21.4 | ≤8.00 | PASS |

## Test Graphs

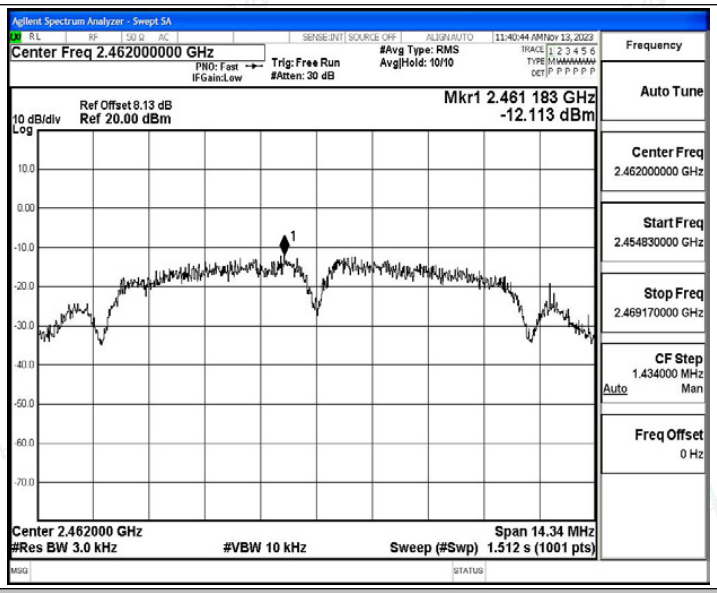
11B_Ant1_2412



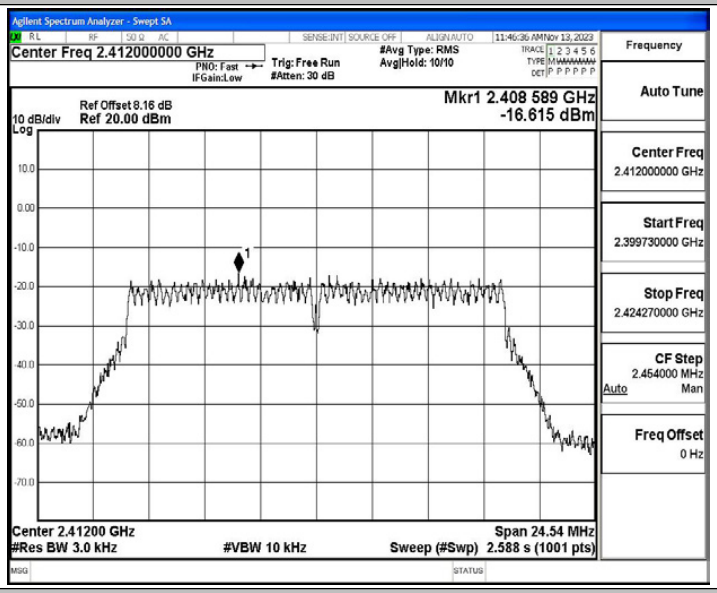

11B_Ant1_2437



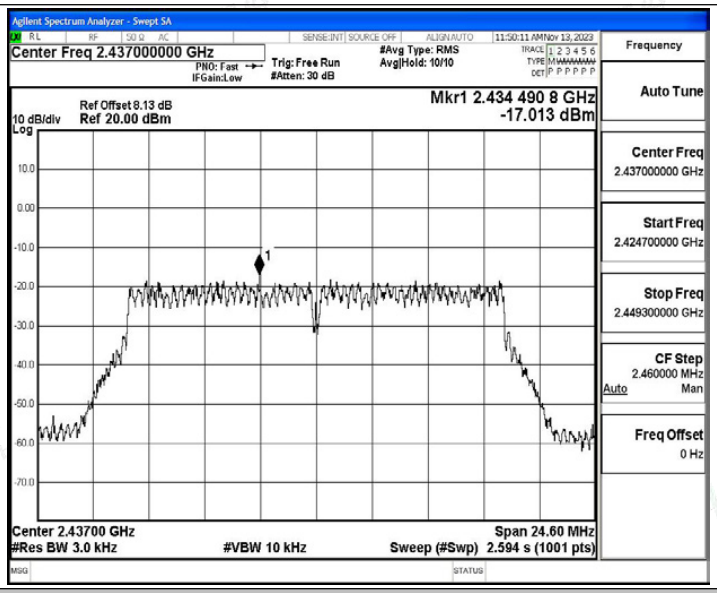

11B_Ant1_2462



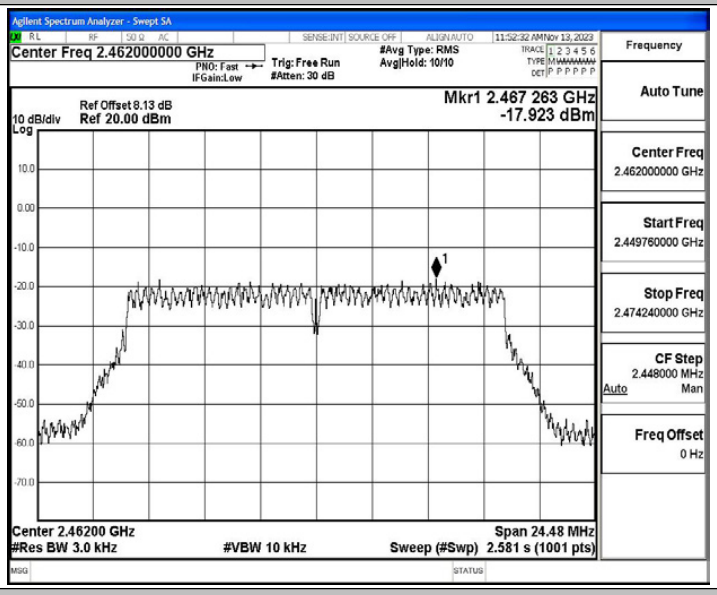

11G_Ant1_2412



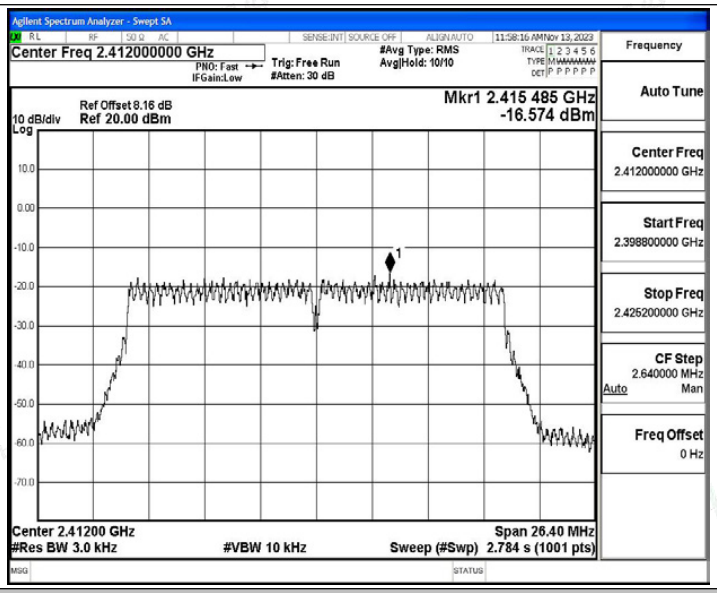

11G_Ant1_2437




11G_Ant1_2462




11N20SISO_Ant1_2412

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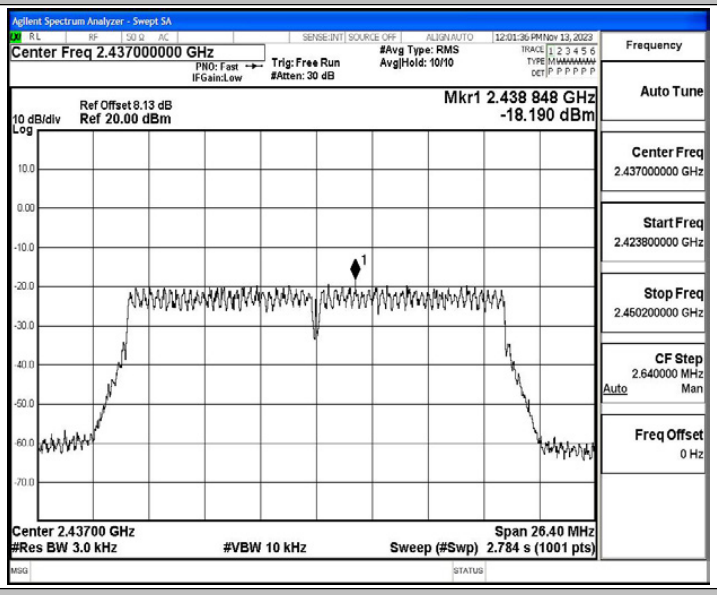


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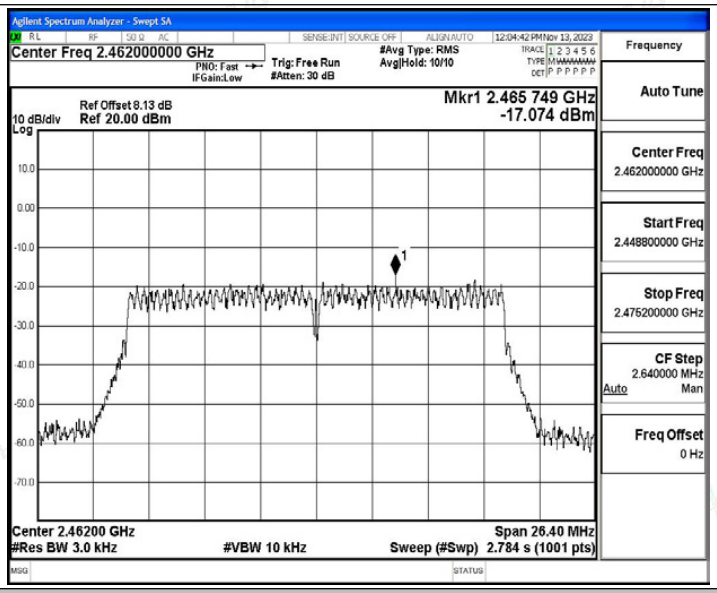
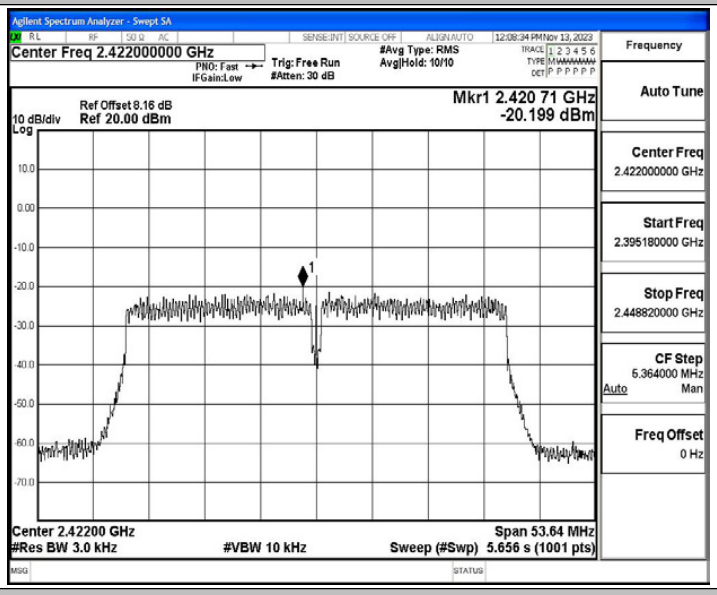
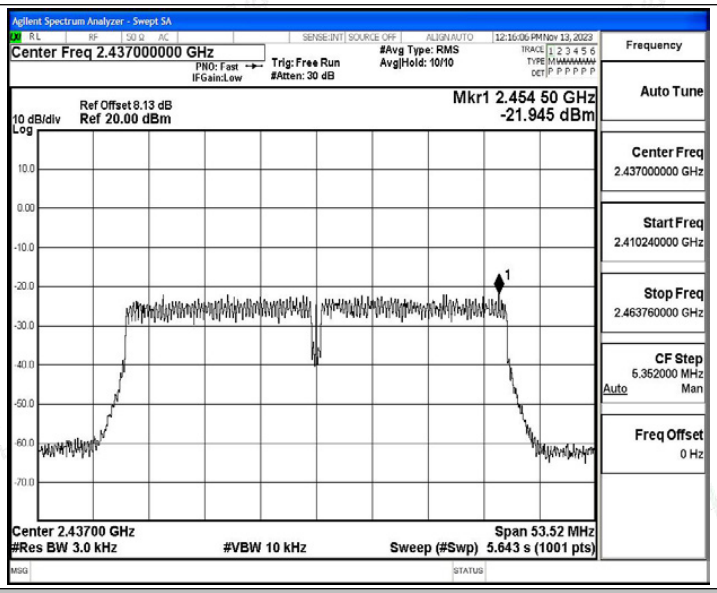


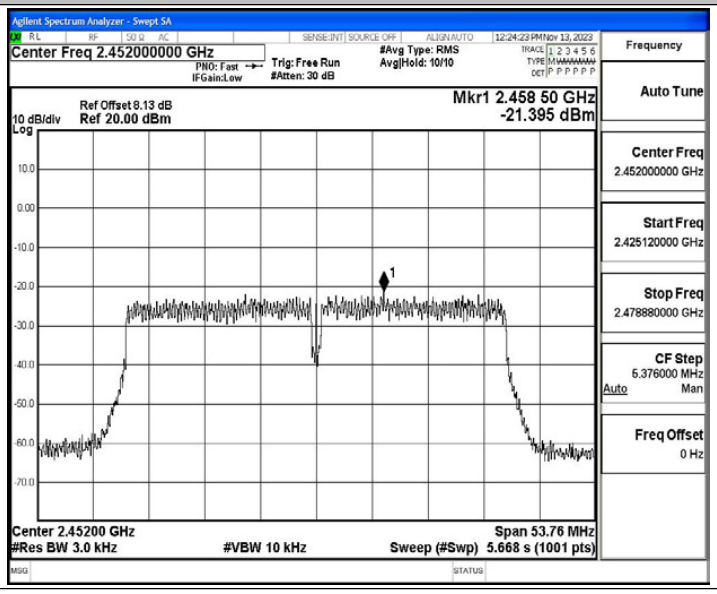

11N40SISO_Ant1_2422




11N40SISO_Ant1_2437




11N40SISO_Ant1_2452



# A.4 Band edge measurements

## Reference level measurement

### Test Result

| TestMode | Antenna | Freq(MHz) | Max.Point[MHz] | Result[dBm] |
|---|---|---|---|---|
| 11B | Ant1 | 2412 | 2411.01 | 2.42 |
| | | 2437 | 2437.49 | 2.85 |
| | | 2462 | 2462.49 | 2.21 |
| 11G | Ant1 | 2412 | 2417.01 | -3.67 |
| | | 2437 | 2438.28 | -4.33 |
| | | 2462 | 2460.73 | -4.45 |
| 11N20SISO | Ant1 | 2412 | 2413.27 | -2.89 |
| | | 2437 | 2438.24 | -4.51 |
| | | 2462 | 2463.24 | -4.09 |
| 11N40SISO | Ant1 | 2422 | 2424.52 | -7.19 |
| | | 2437 | 2439.52 | -7.38 |
| | | 2452 | 2457.00 | -7.84 |

## Band edge measurements

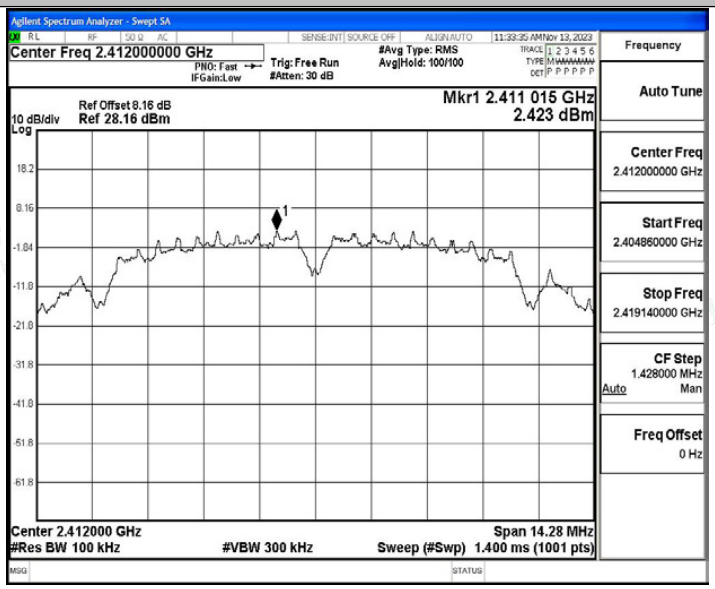
### Test Result

| TestMode | Antenna | ChName | Freq(MHz) | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| 11B | Ant1 | Low | 2412 | 2.42 | -42.43 | ≤-17.58 | PASS |
| | | High | 2462 | 2.21 | -49.55 | ≤-17.79 | PASS |
| 11G | Ant1 | Low | 2412 | -3.67 | -39.35 | ≤-23.67 | PASS |
| | | High | 2462 | -4.45 | -48.42 | ≤-24.45 | PASS |
| 11N20SISO | Ant1 | Low | 2412 | -2.89 | -39.26 | ≤-22.89 | PASS |
| | | High | 2462 | -4.09 | -46.97 | ≤-24.09 | PASS |
| 11N40SISO | Ant1 | Low | 2422 | -7.19 | -41.6 | ≤-27.19 | PASS |
| | | High | 2452 | -7.84 | -41.9 | ≤-27.84 | PASS |

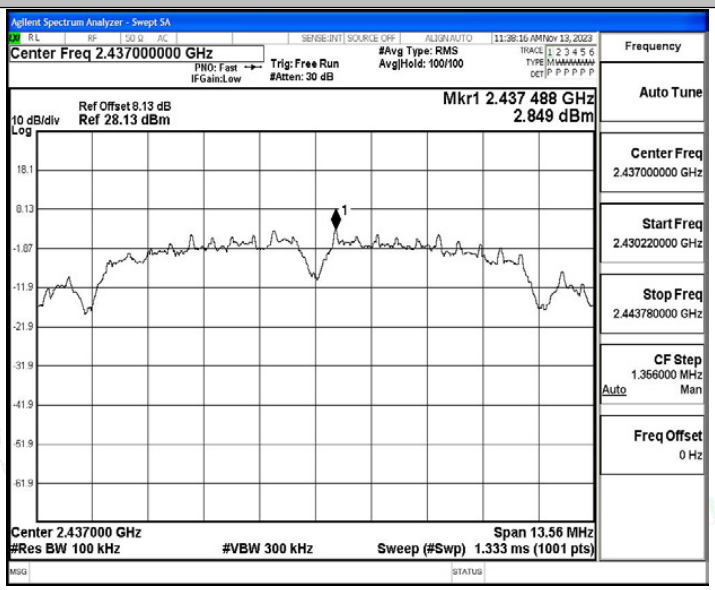
## Reference level measurement

### Test Graphs

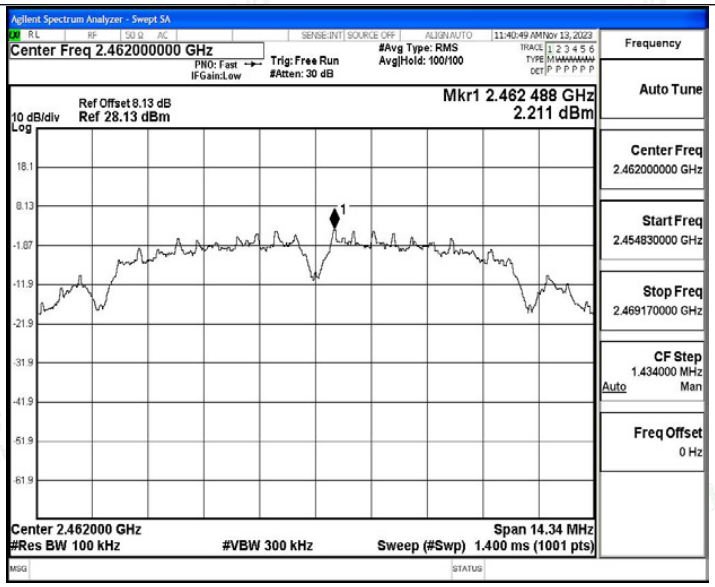
11B_Ant1_2412



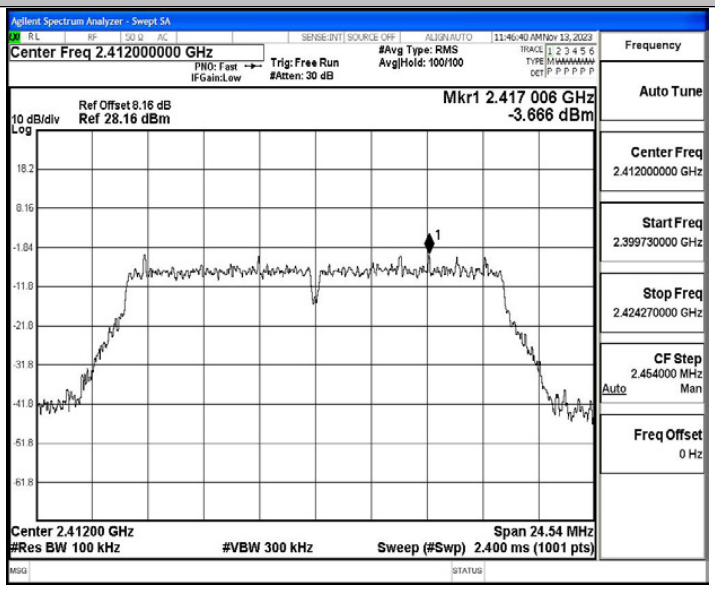

11B_Ant1_2437



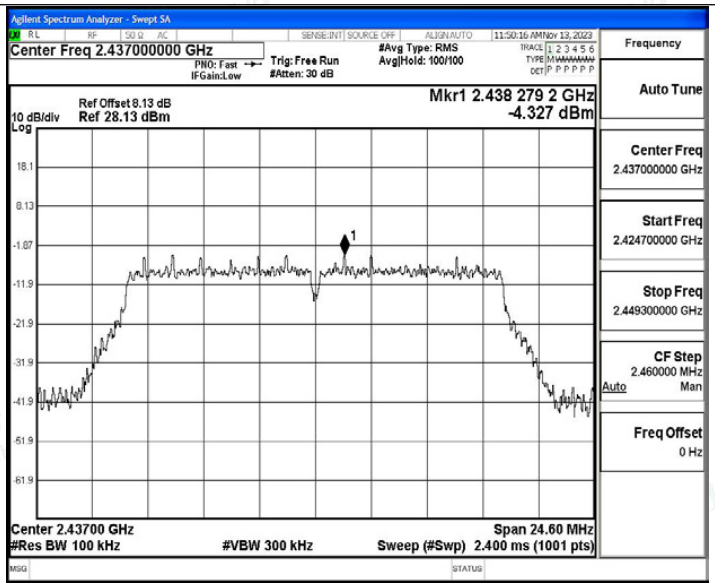

11B_Ant1_2462



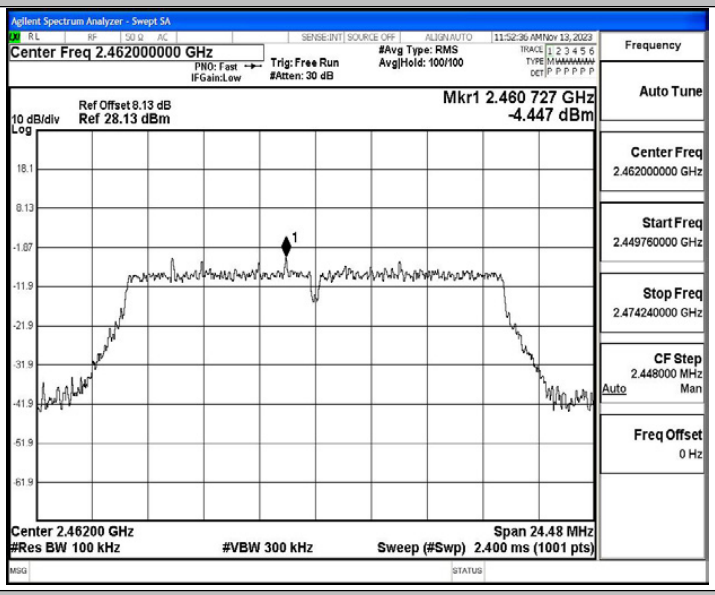

11G_Ant1_2412



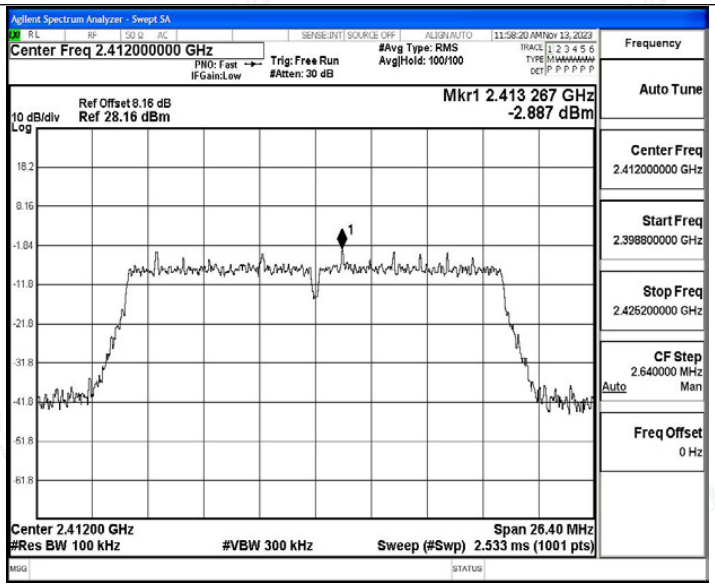

11G_Ant1_2437




11G_Ant1_2462




11N20SISO_Ant1_2412

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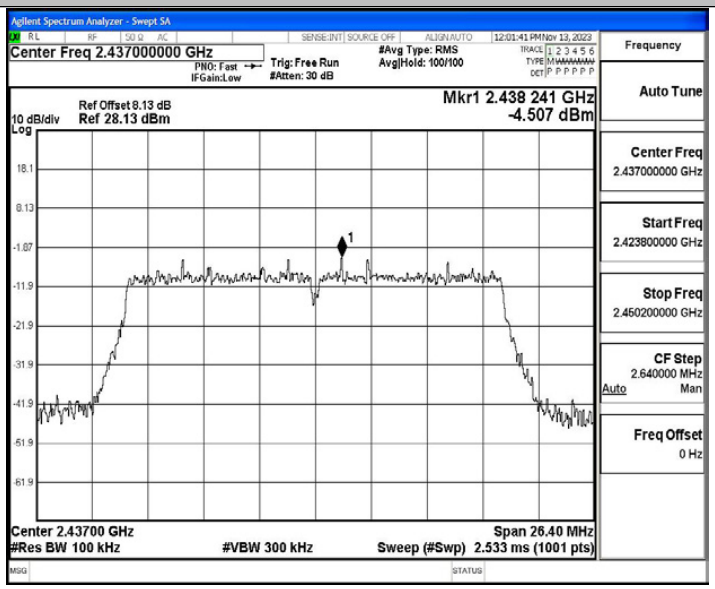
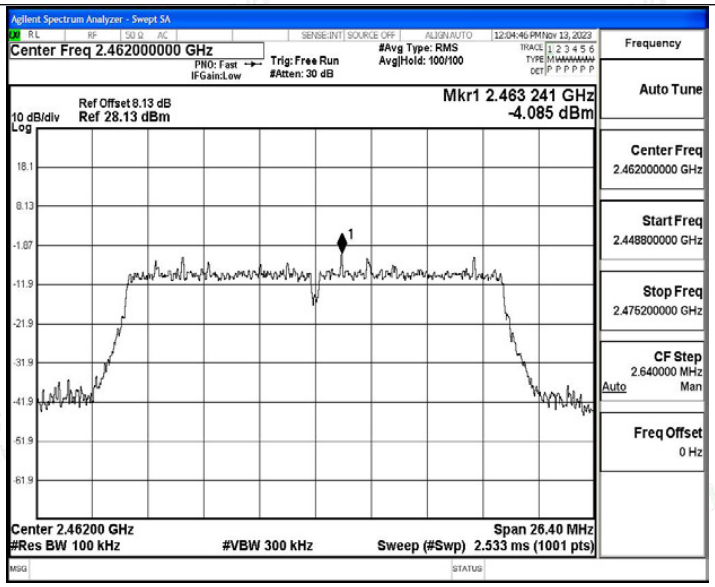
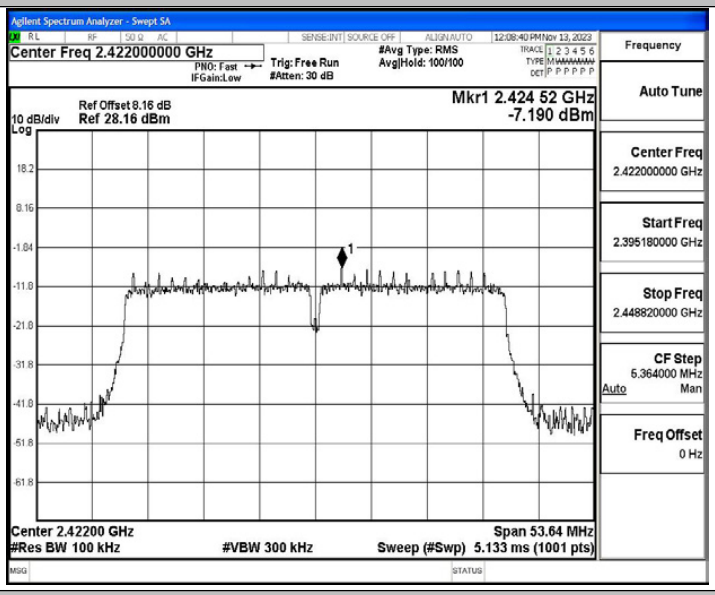


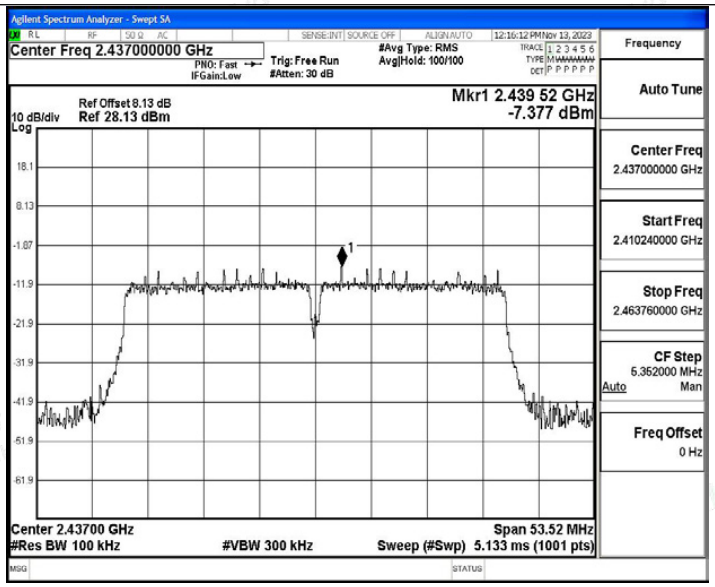

11N20SISO_Ant1_2462



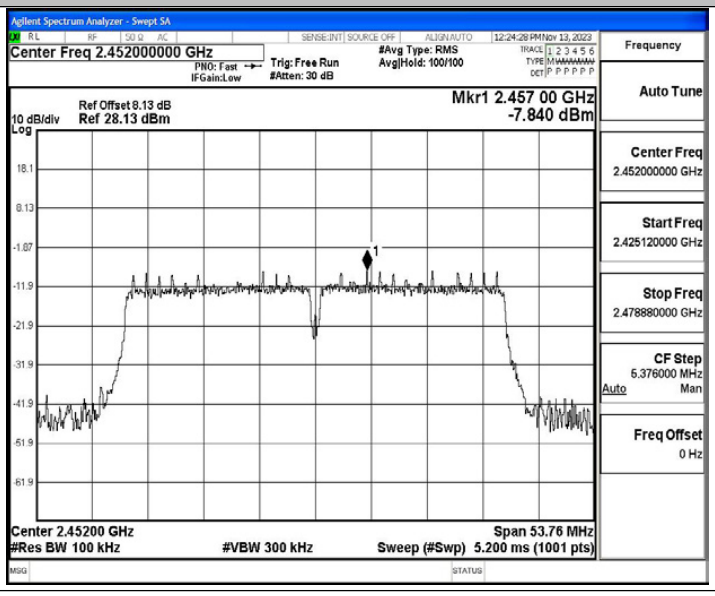

11N40SISO_Ant1_2422




11N40SISO_Ant1_2437



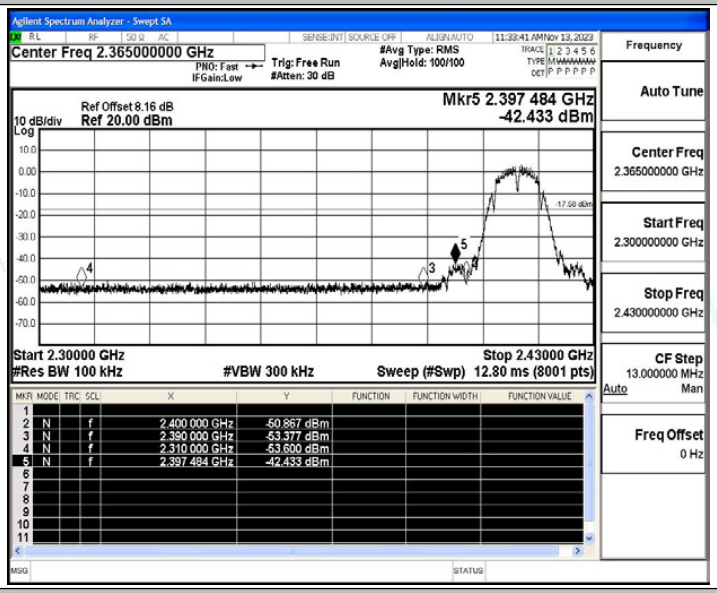

11N40SISO_Ant1_2452



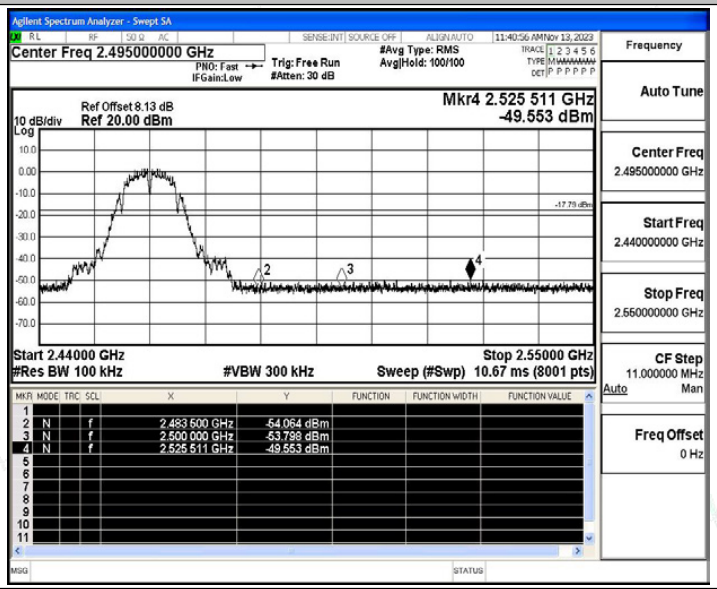
## Band edge measurements

### Test Graphs

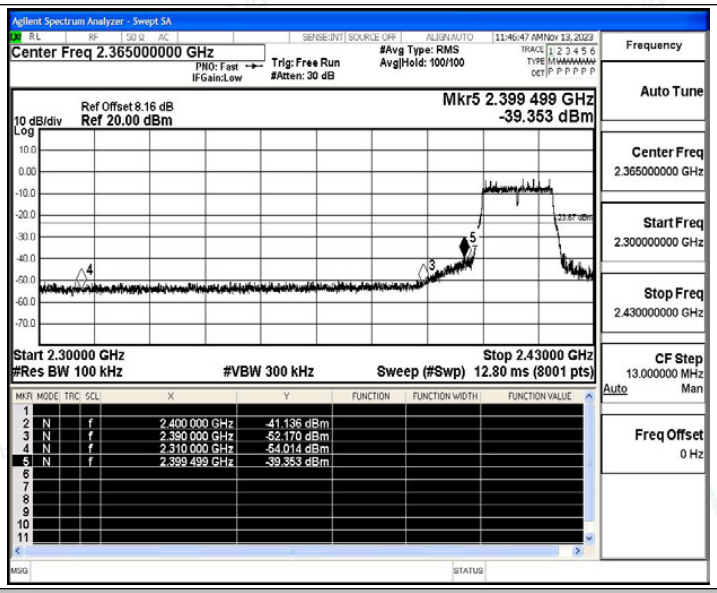
11B_Ant1_Low_2412



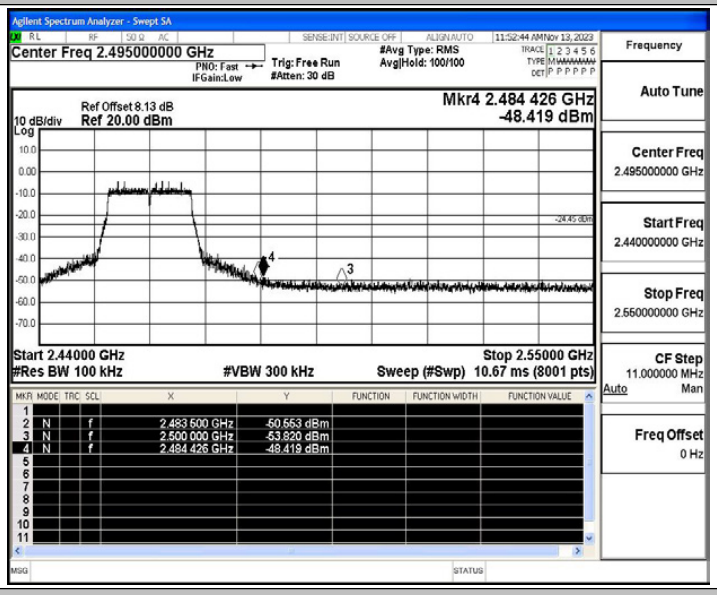

11B_Ant1_High_2462



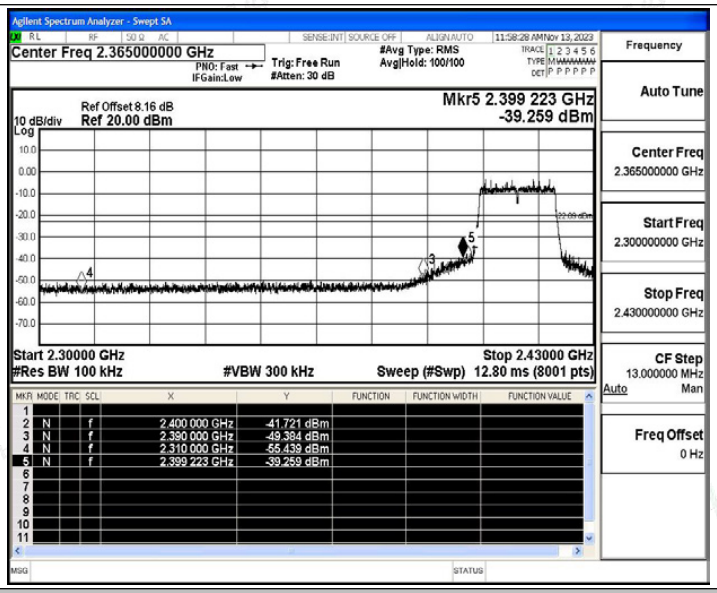

11G_Ant1_Low_2412



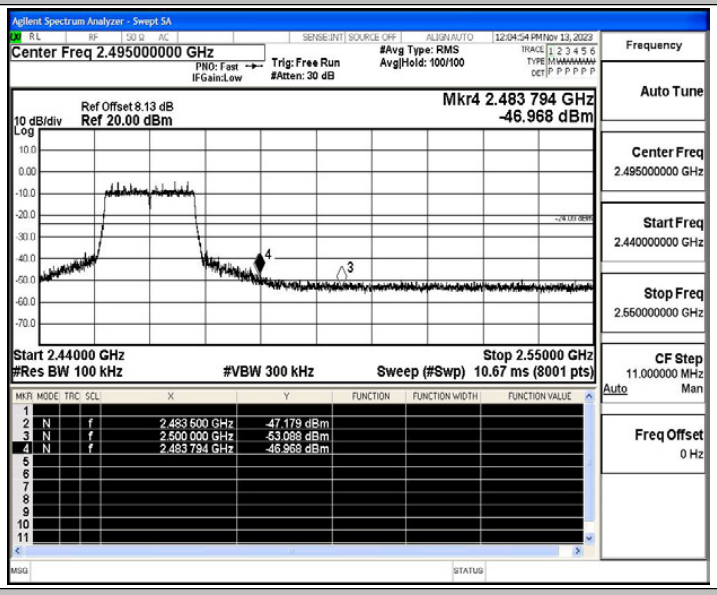

11G_Ant1_High_2462



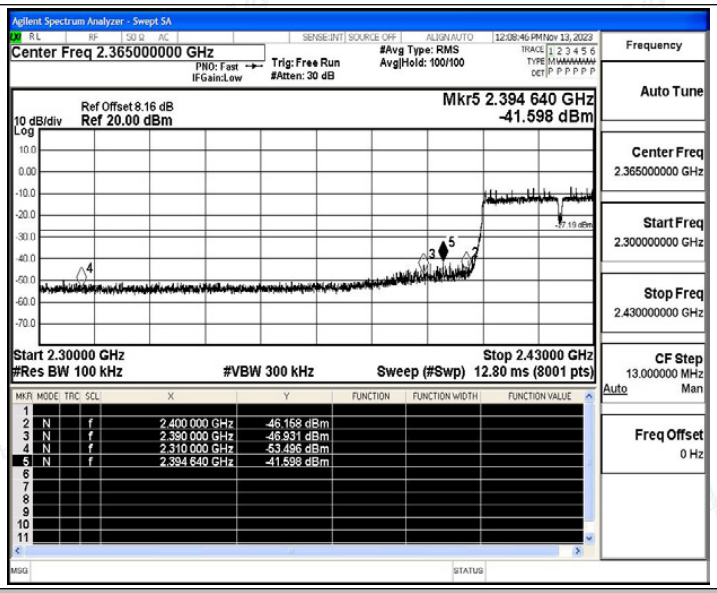

11N20SISO_Ant1_Low_2412



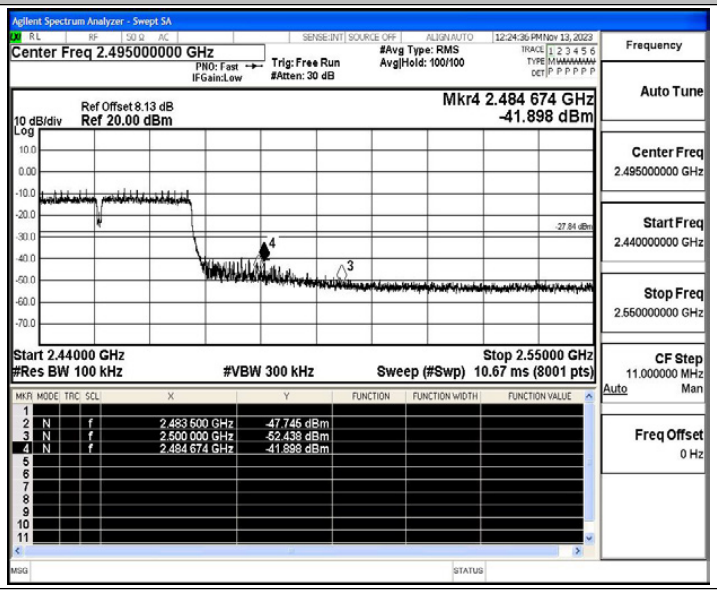

11N20SISO_Ant1_High_2462




11N40SISO_Ant1_Low_2422




11N40SISO_Ant1_High_2452



# A.5 Conducted Spurious Emission

## Reference level measurement

### Test Result

| TestMode | Antenna | Freq(MHz) | Max.Point[MHz] | Result[dBm] |
|---|---|---|---|---|
| 11B | Ant1 | 2412 | 2411.01 | 2.42 |
| | | 2437 | 2437.49 | 2.85 |
| | | 2462 | 2462.49 | 2.21 |
| 11G | Ant1 | 2412 | 2417.01 | -3.67 |
| | | 2437 | 2438.28 | -4.33 |
| | | 2462 | 2460.73 | -4.45 |
| 11N20SISO | Ant1 | 2412 | 2413.27 | -2.89 |
| | | 2437 | 2438.24 | -4.51 |
| | | 2462 | 2463.24 | -4.09 |
| 11N40SISO | Ant1 | 2422 | 2424.52 | -7.19 |
| | | 2437 | 2439.52 | -7.38 |
| | | 2452 | 2457.00 | -7.84 |

## Conducted Spurious Emission

### Test Result

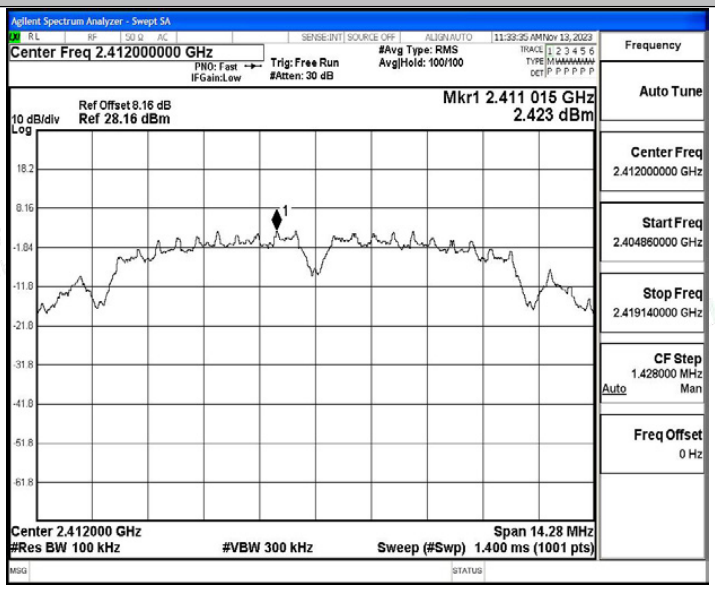
| TestMode | Antenna | Freq(MHz) | FreqRange [Mhz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 30~1000 | 2.42 | -60.87 | ≤-17.58 | PASS |
| | | | 1000~26500 | 2.42 | -49.28 | ≤-17.58 | PASS |
| | | 2437 | 30~1000 | 2.85 | -61.61 | ≤-17.15 | PASS |
| | | | 1000~26500 | 2.85 | -48.35 | ≤-17.15 | PASS |
| | | 2462 | 30~1000 | 2.21 | -60.3 | ≤-17.79 | PASS |
| | | | 1000~26500 | 2.21 | -49.61 | ≤-17.79 | PASS |
| 11G | Ant1 | 2412 | 30~1000 | -3.67 | -61.62 | ≤-23.67 | PASS |
| | | | 1000~26500 | -3.67 | -48.86 | ≤-23.67 | PASS |
| | | 2437 | 30~1000 | -4.33 | -61.4 | ≤-24.33 | PASS |
| | | | 1000~26500 | -4.33 | -49.13 | ≤-24.33 | PASS |
| | | 2462 | 30~1000 | -4.45 | -62.21 | ≤-24.45 | PASS |
| | | | 1000~26500 | -4.45 | -48.92 | ≤-24.45 | PASS |
| 11N20SISO | Ant1 | 2412 | 30~1000 | -2.89 | -61.84 | ≤-22.89 | PASS |
| | | | 1000~26500 | -2.89 | -47.71 | ≤-22.89 | PASS |
| | | 2437 | 30~1000 | -4.51 | -61.79 | ≤-24.51 | PASS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1000~26500 | -4.51 | -48.71 | ≤-24.51 | PASS |
| | | 2462 | 30~1000 | -4.09 | -61.29 | ≤-24.09 | PASS |
| | | | 1000~26500 | -4.09 | -48.58 | ≤-24.09 | PASS |
| 11N40SISO | Ant1 | 2422 | 30~1000 | -7.19 | -61.72 | ≤-27.19 | PASS |
| | | | 1000~26500 | -7.19 | -49.2 | ≤-27.19 | PASS |
| | | 2437 | 30~1000 | -7.38 | -61.98 | ≤-27.38 | PASS |
| | | | 1000~26500 | -7.38 | -49.16 | ≤-27.38 | PASS |
| | | 2452 | 30~1000 | -7.84 | -62.02 | ≤-27.84 | PASS |
| | | | 1000~26500 | -7.84 | -48.94 | ≤-27.84 | PASS |

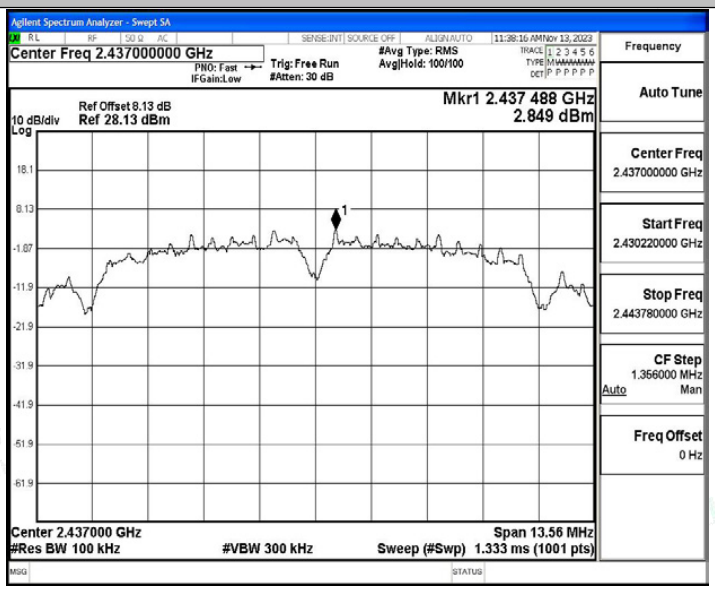
## Reference level measurement

### Test Graphs

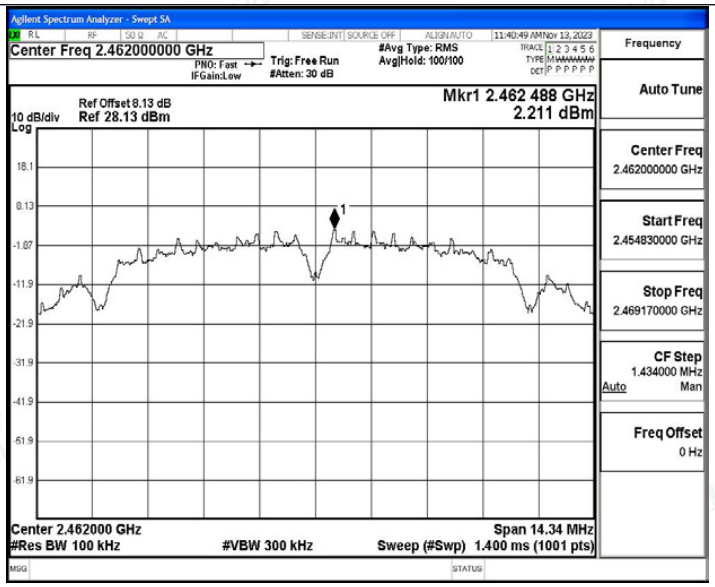
11B_Ant1_2412



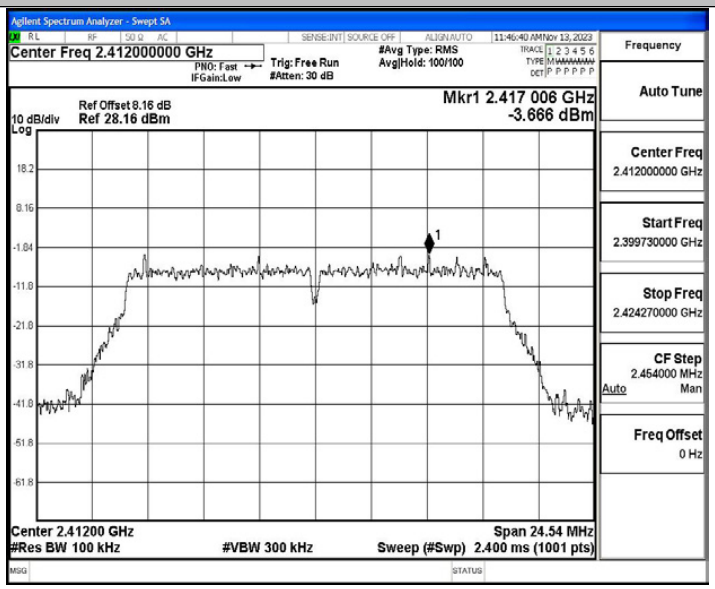

11B_Ant1_2437



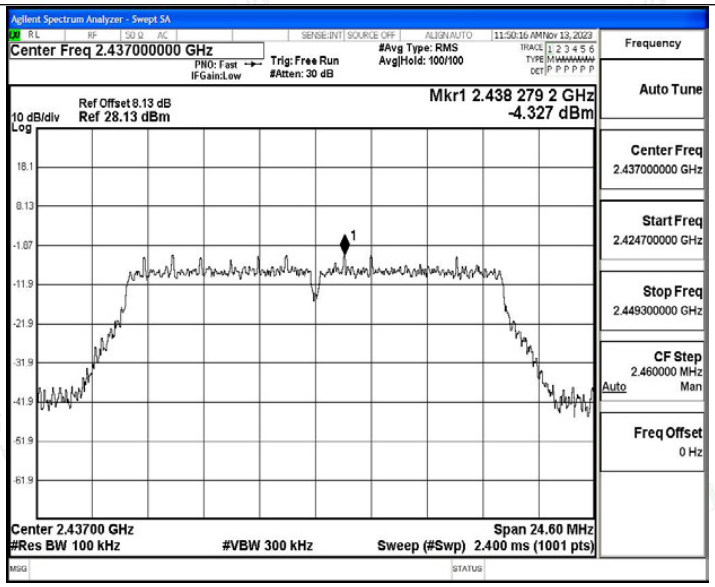

11B_Ant1_2462



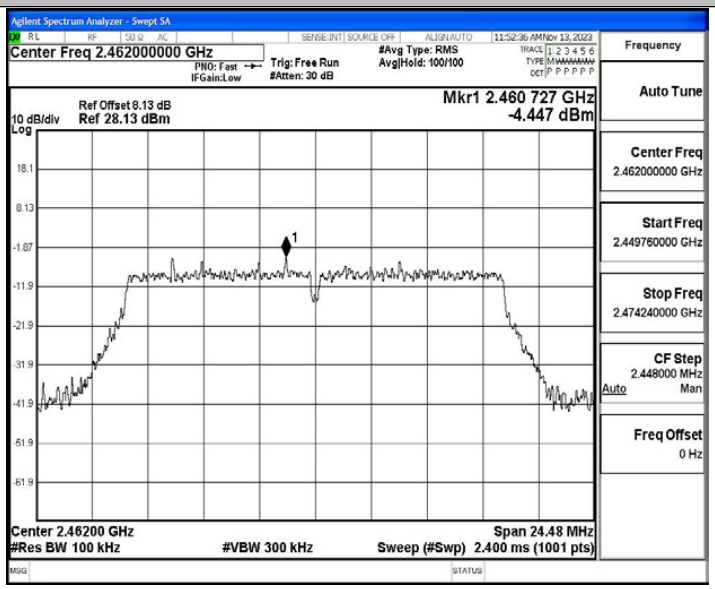

11G_Ant1_2412



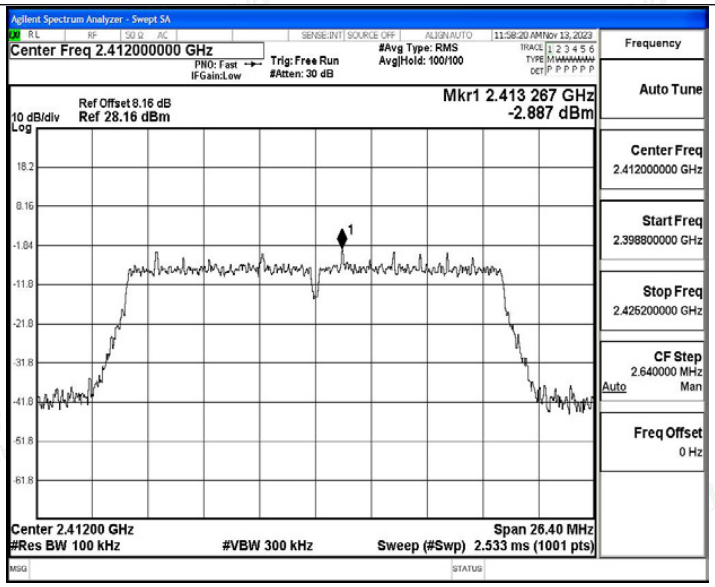

11G_Ant1_2437



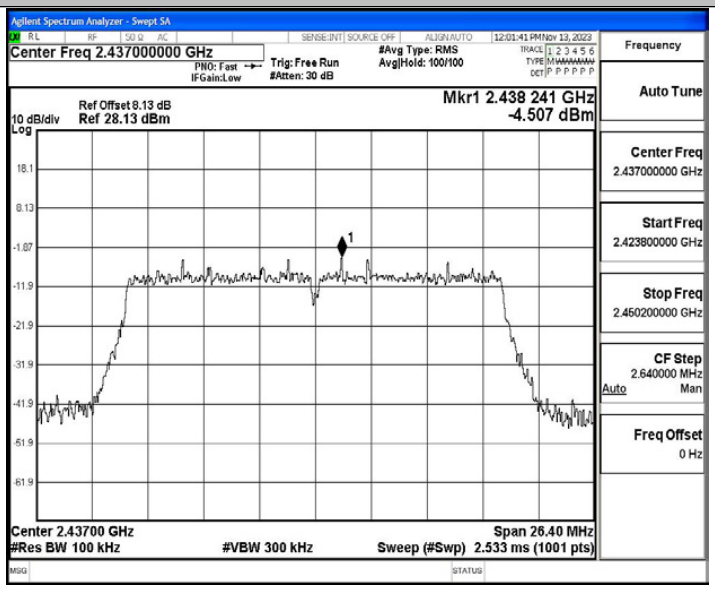

11G_Ant1_2462



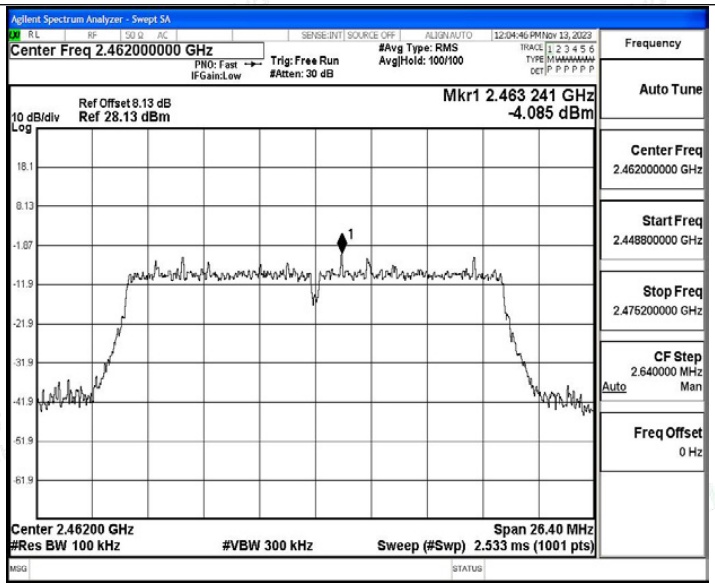

11N20SISO_Ant1_2412



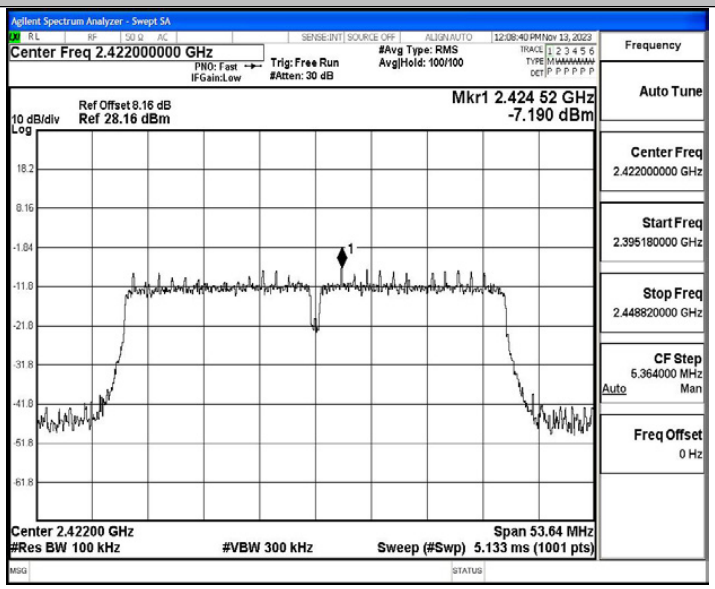

11N20SISO_Ant1_2437



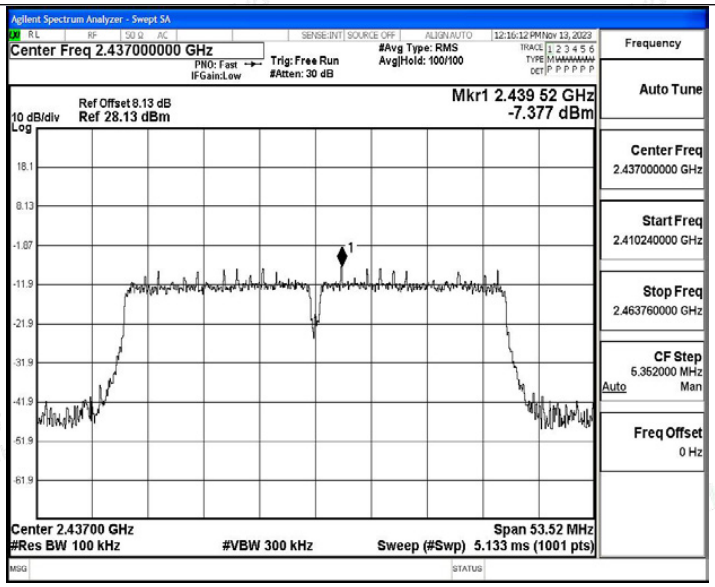

11N20SISO_Ant1_2462



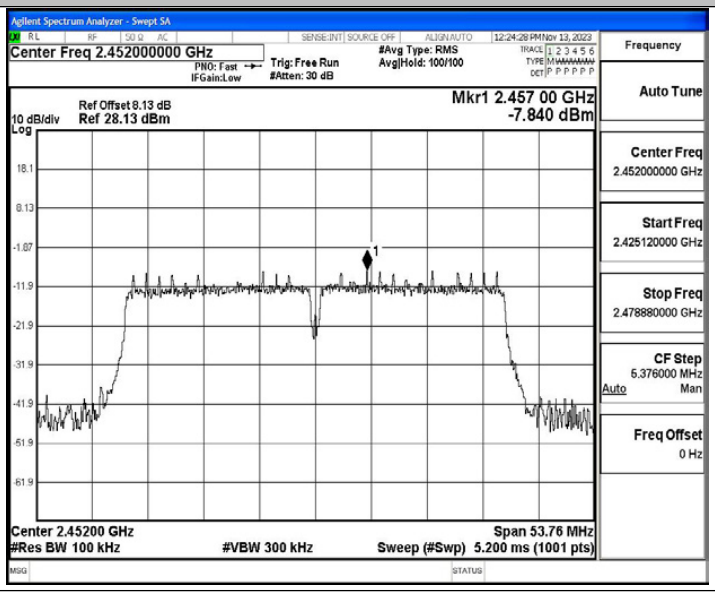

11N40SISO_Ant1_2422




11N40SISO_Ant1_2437



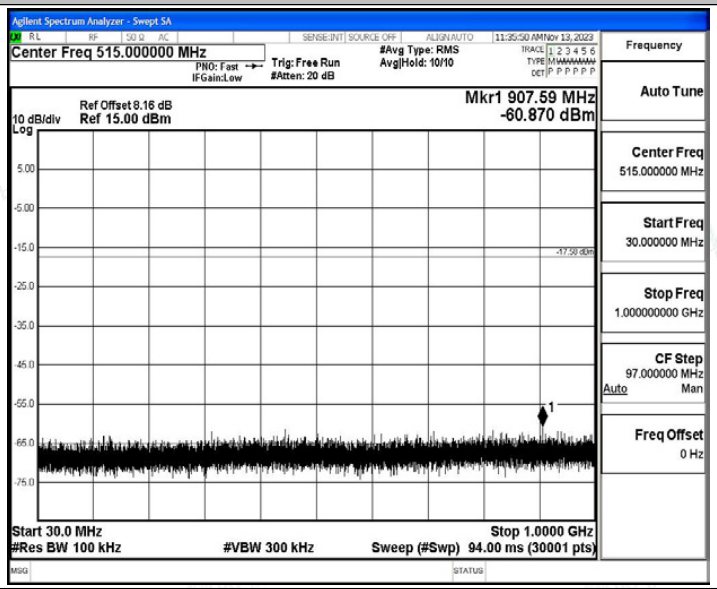

11N40SISO_Ant1_2452



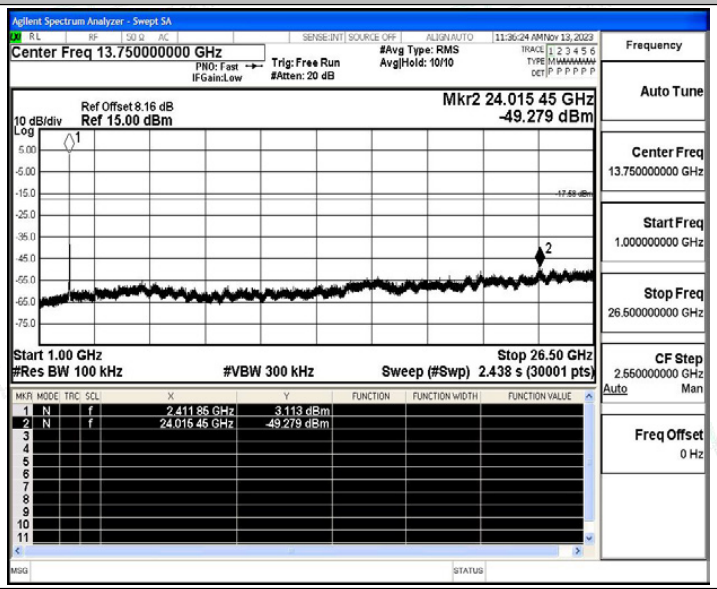
## Conducted Spurious Emission

## Test Graphs

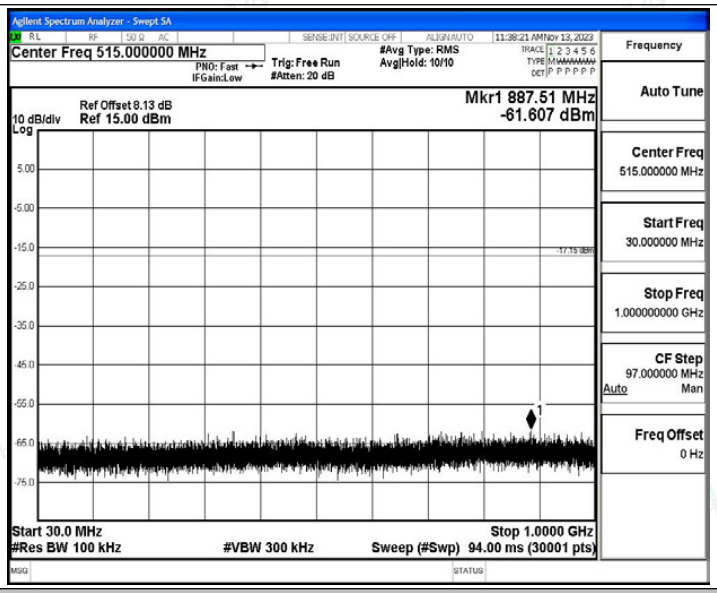
11B_Ant1_2412_30~1000



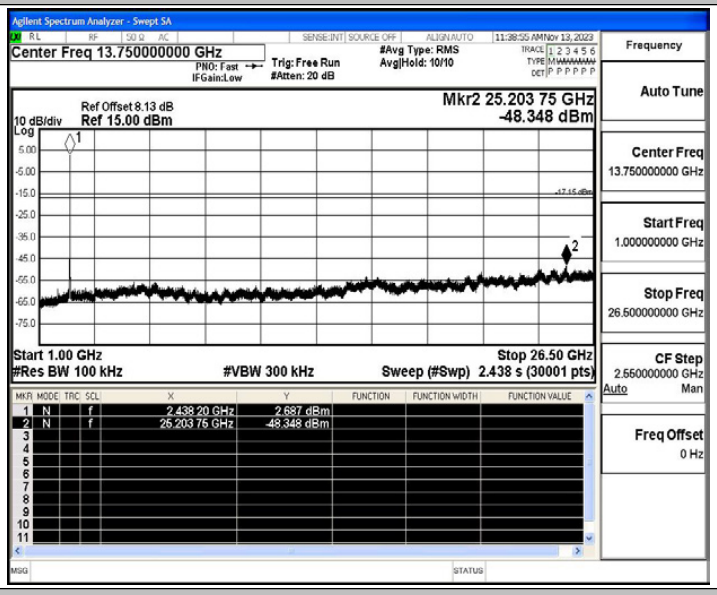

11B_Ant1_2412_1000~26500



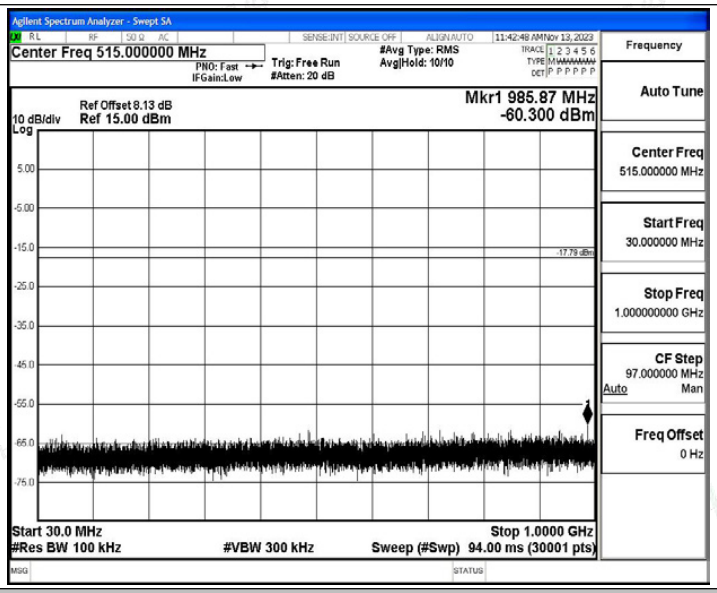

11B_Ant1_2437_30~1000



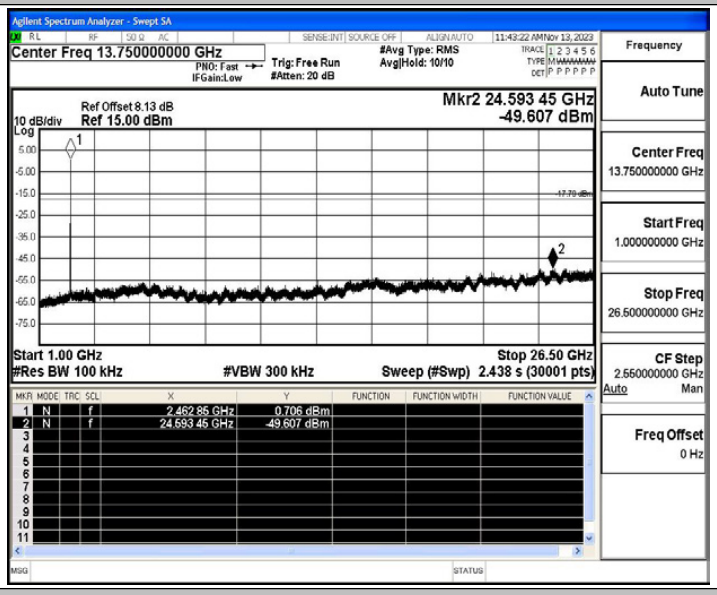

11B_Ant1_2437_1000~26500



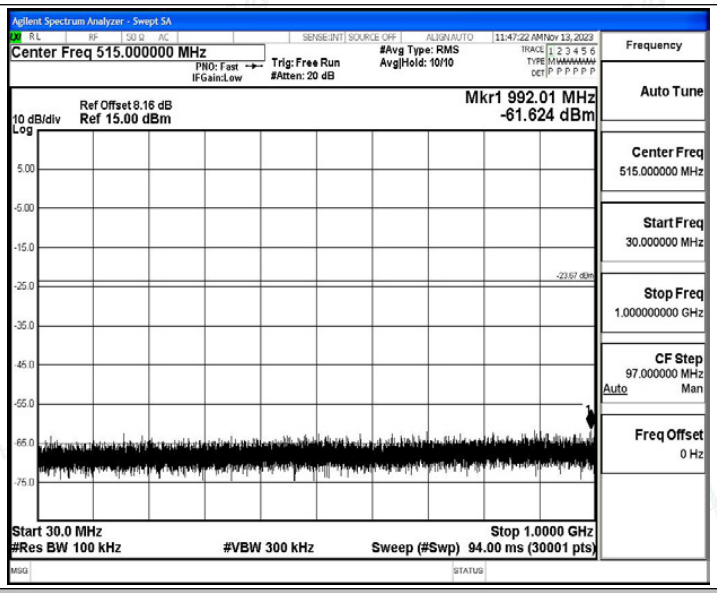

11B_Ant1_2462_30~1000



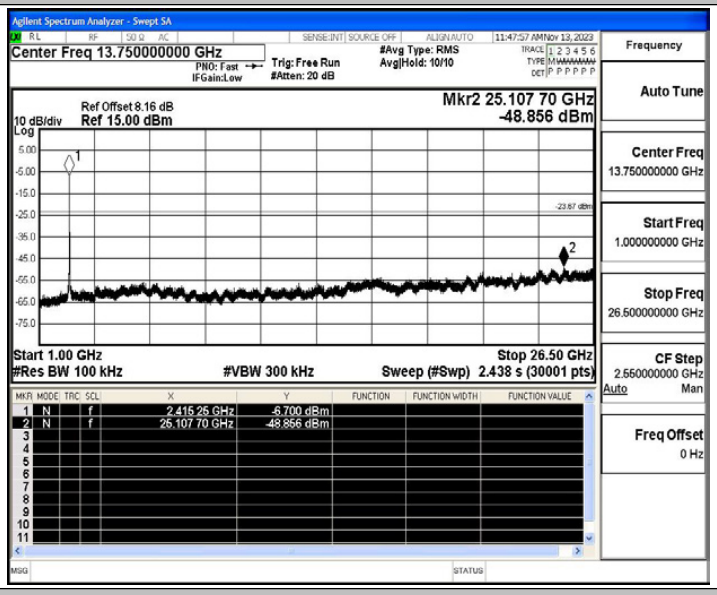

11B_Ant1_2462_1000~26500



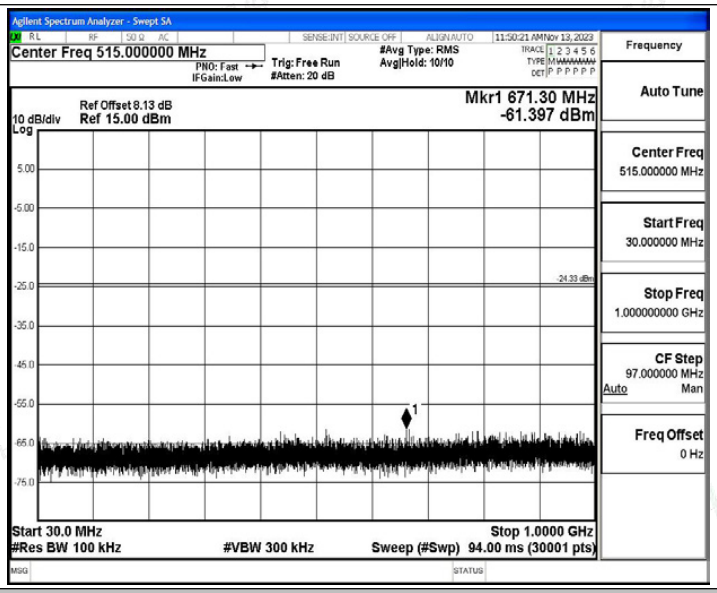

11G_Ant1_2412_30~1000



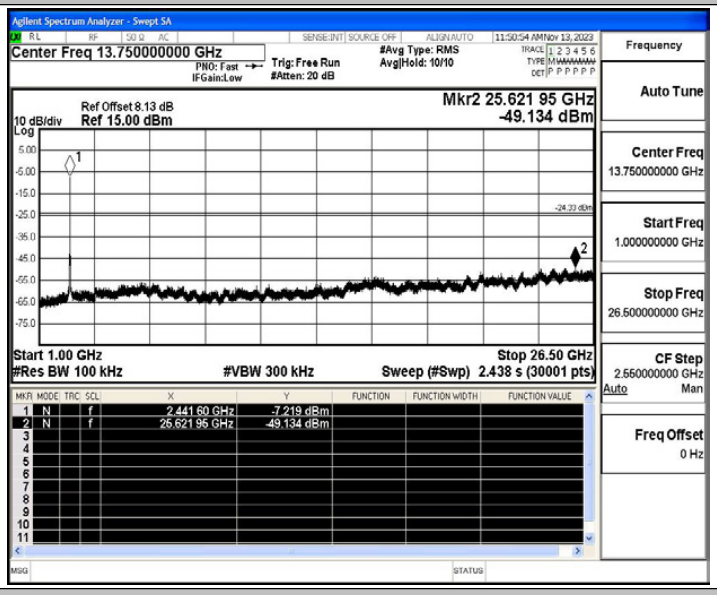

11G_Ant1_2412_1000~26500



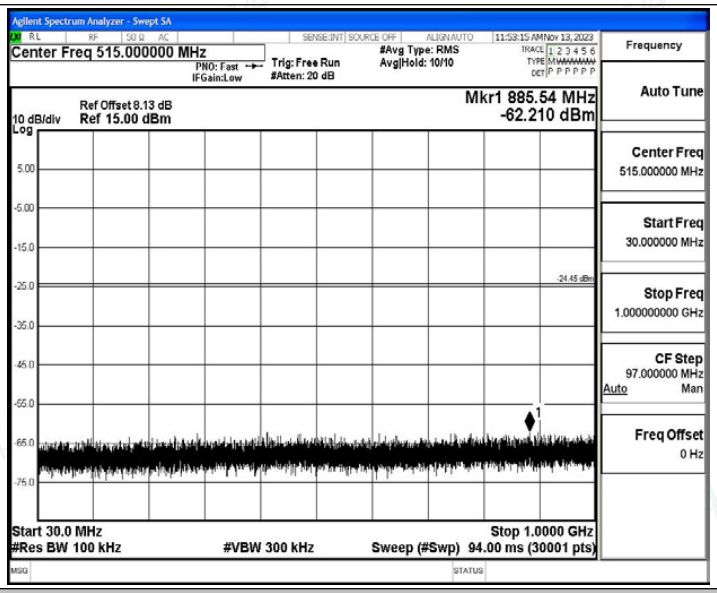

11G_Ant1_2437_30~1000



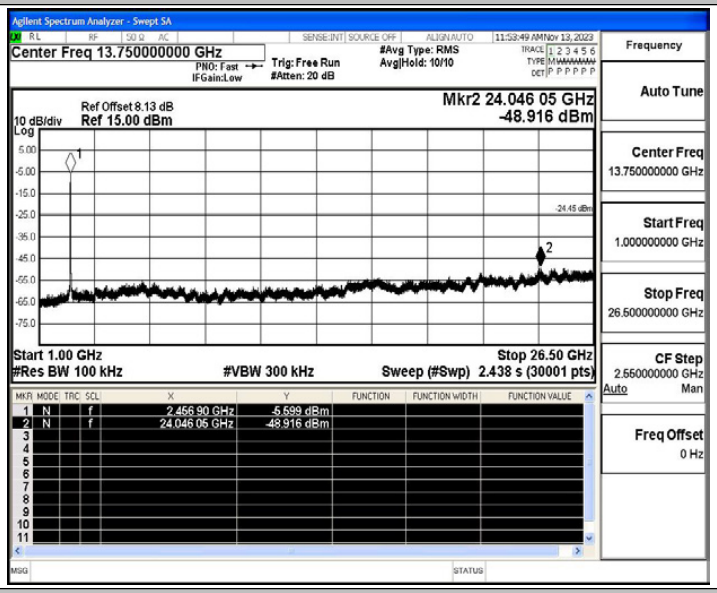

11G_Ant1_2437_1000~26500



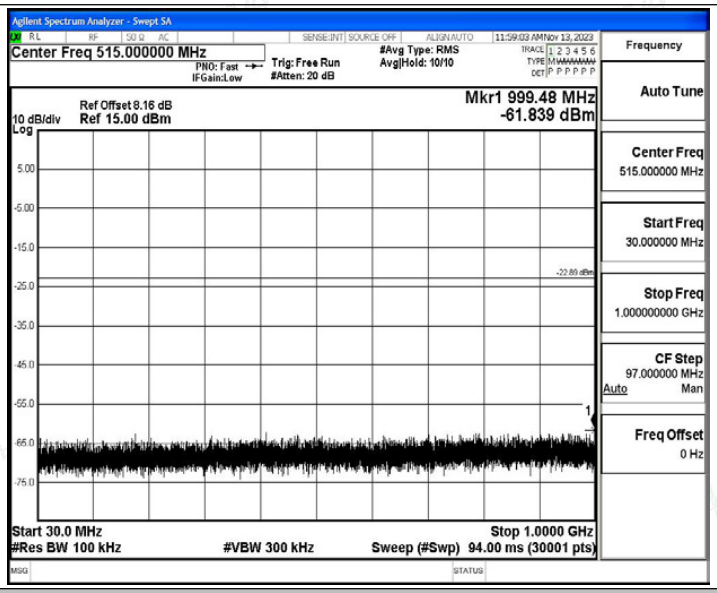

11G_Ant1_2462_30~1000



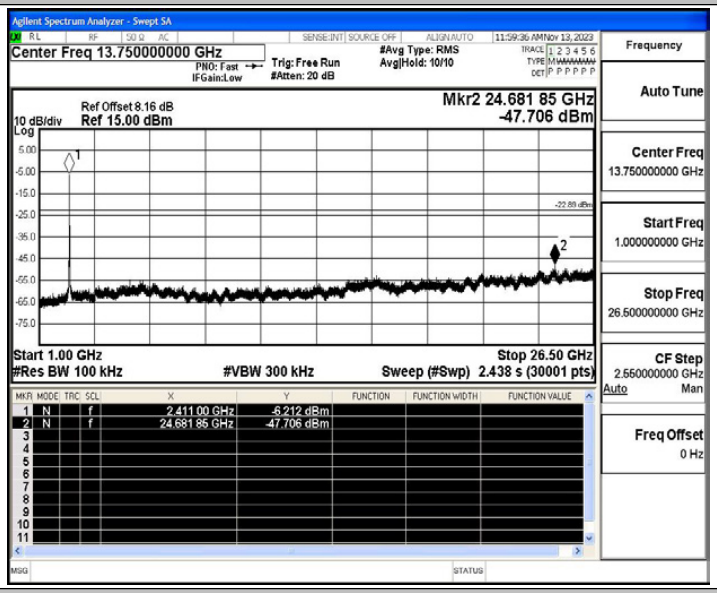

11G_Ant1_2462_1000~26500



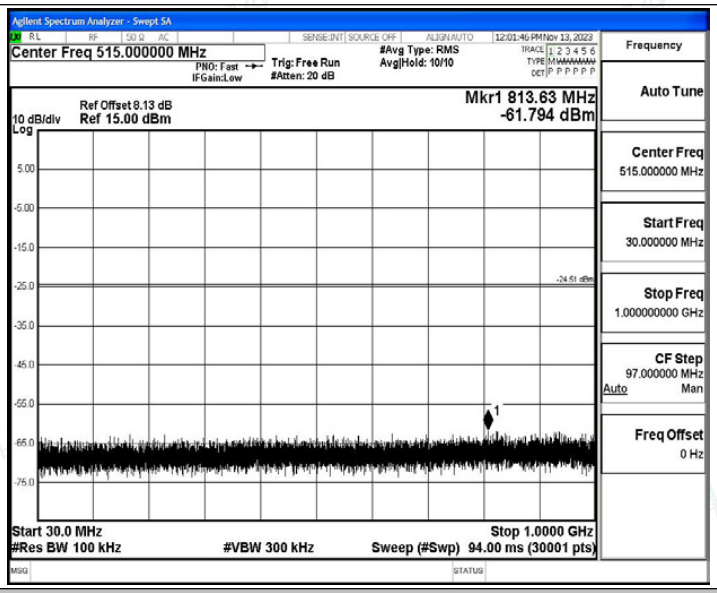

11N20SISO_Ant1_2412_30~1000



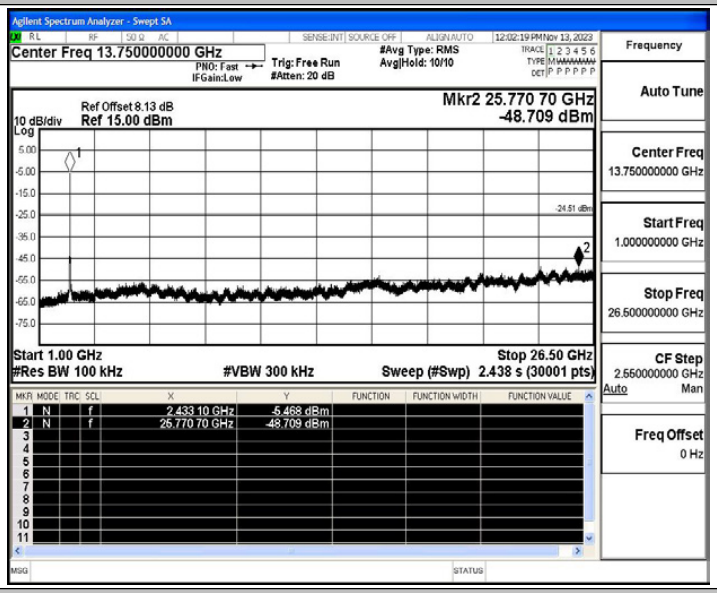

11N20SISO_Ant1_2412_1000~26500




11N20SISO_Ant1_2437_30~1000




11N20SISO_Ant1_2437_1000~26500




11N20SISO_Ant1_2462_30~1000