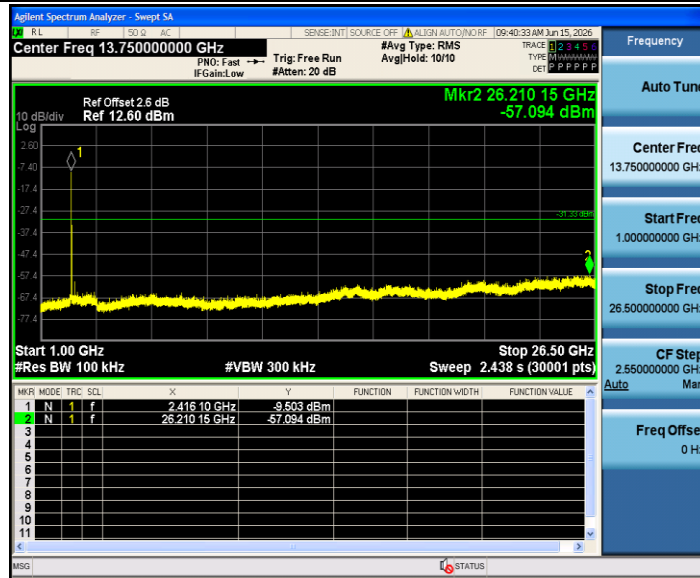
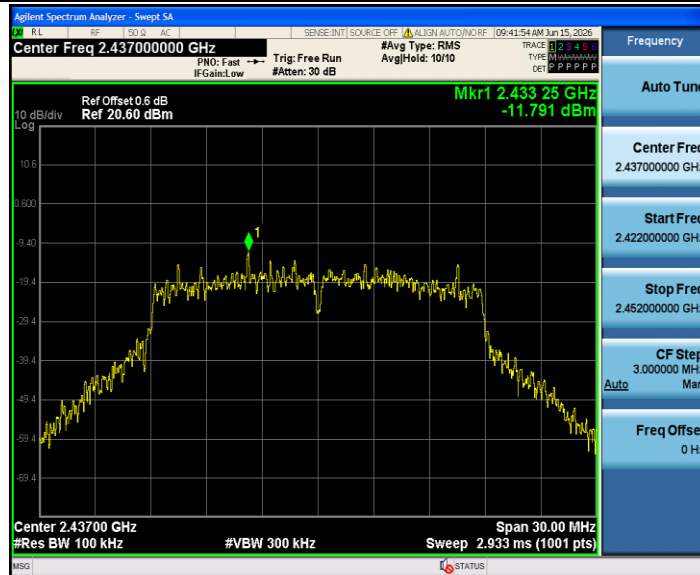


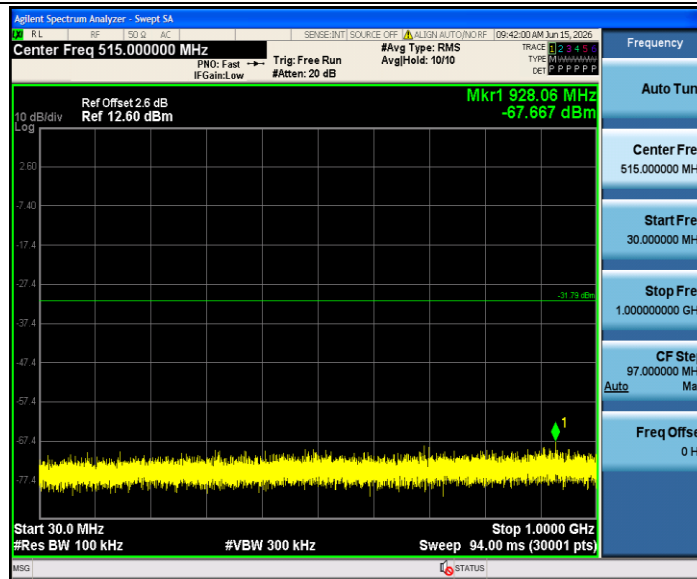
# 11N20SISO\_Ant0\_2412\_1000~26500



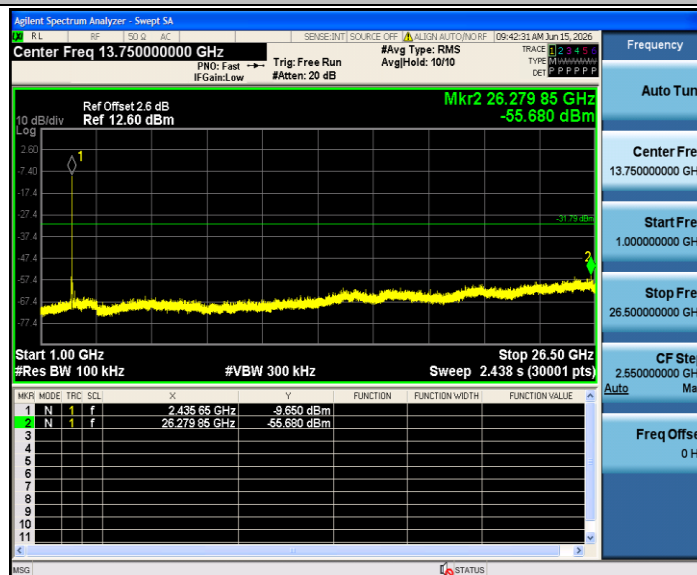
# 11N20SISO\_Ant0\_2437\_0~Reference



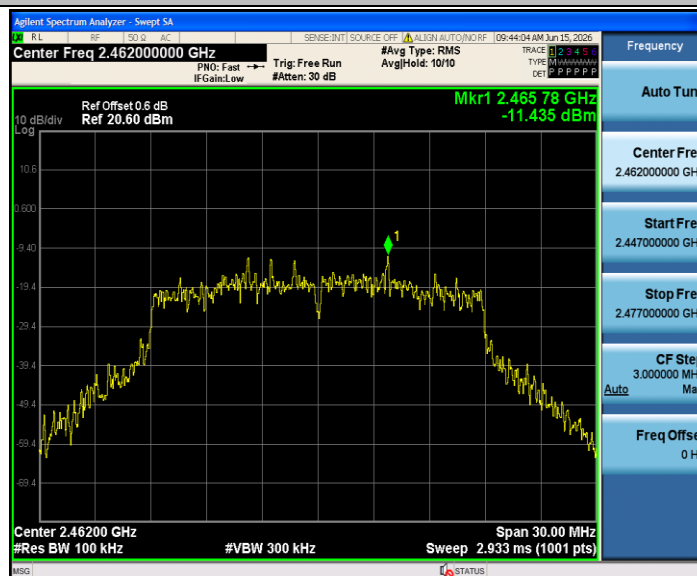
# 11N20SISO\_Ant0\_2437\_30~1000



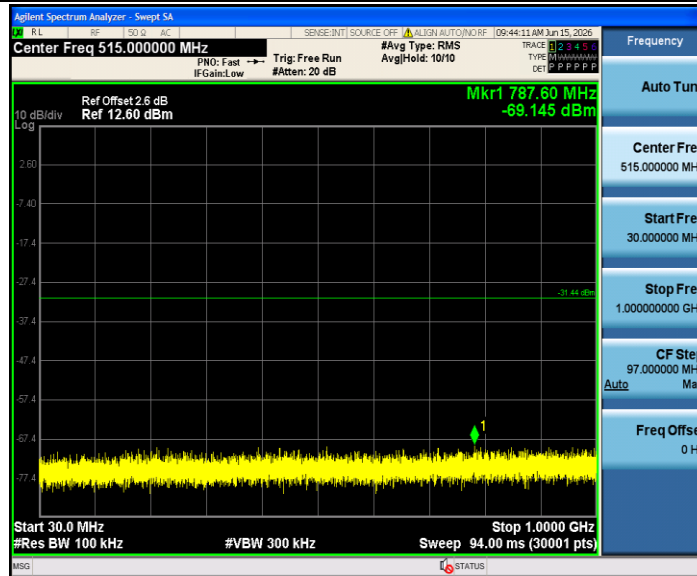
11N20SISO\_Ant0\_2437\_1000~26500



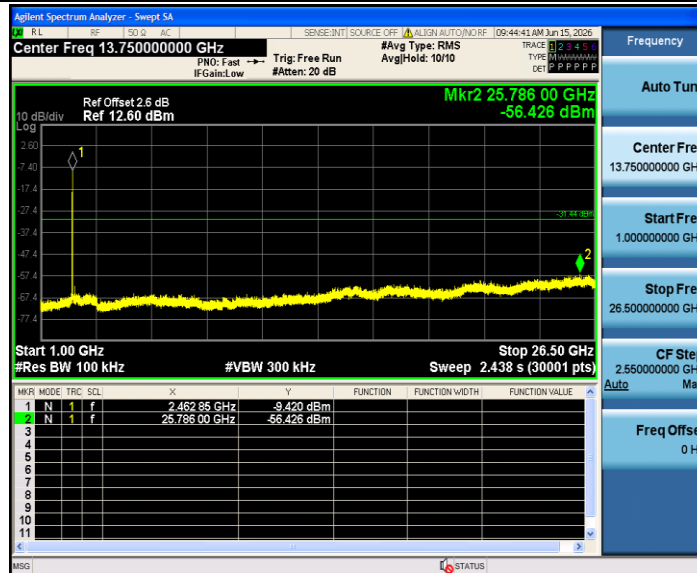
11N20SISO\_Ant0\_2462\_0~Reference



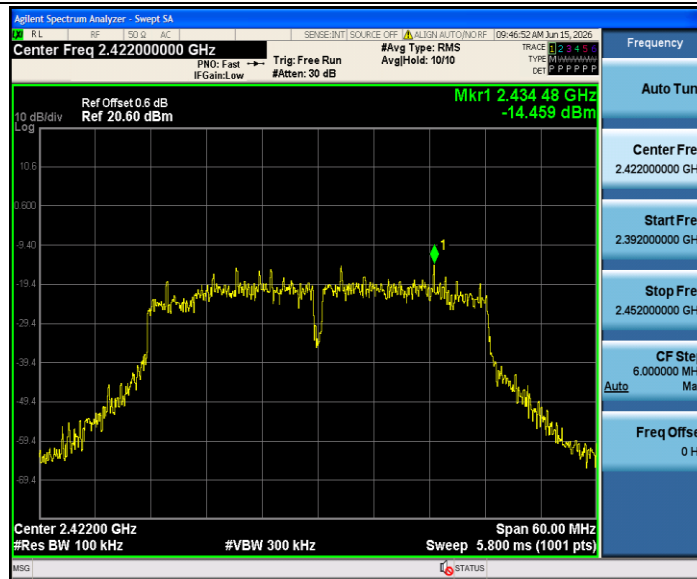
# 11N20SISO\_Ant0\_2462\_30~1000



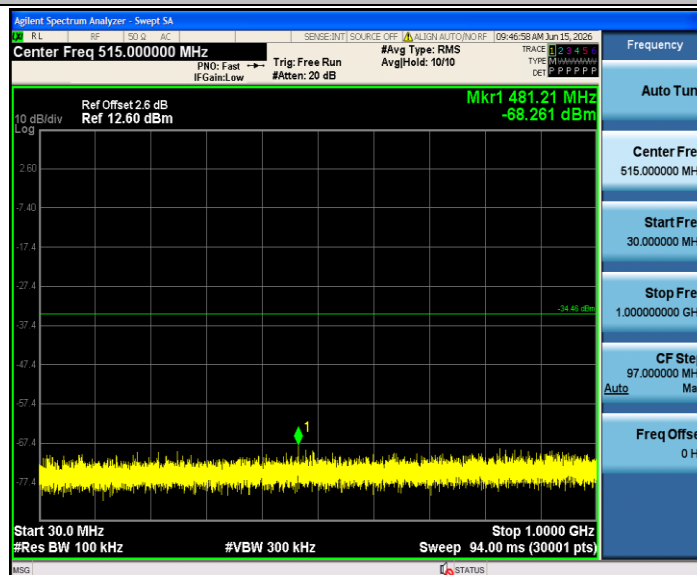
# 11N20SISO\_Ant0\_2462\_1000~26500



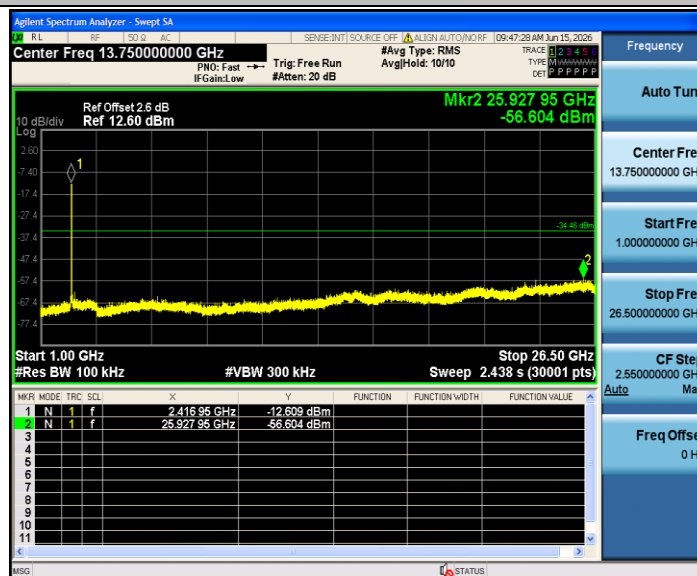
# 11N40SISO\_Ant0\_2422\_0~Reference



11N40SISO\_Ant0\_2422\_30~1000



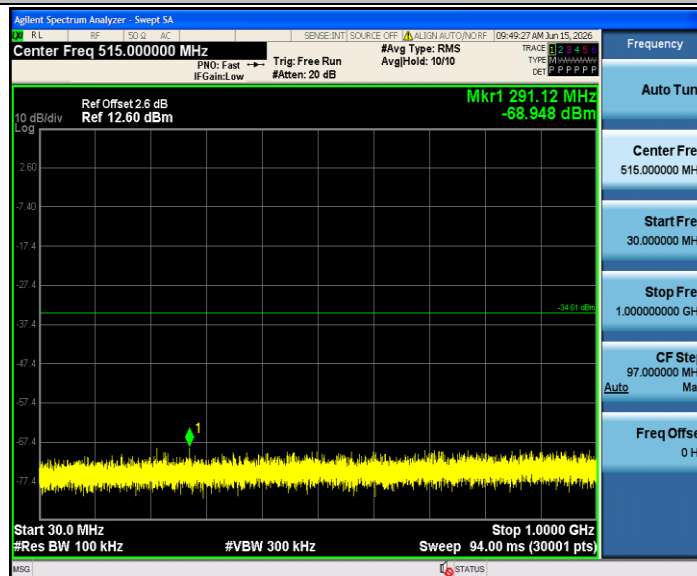
11N40SISO\_Ant0\_2422\_1000~26500



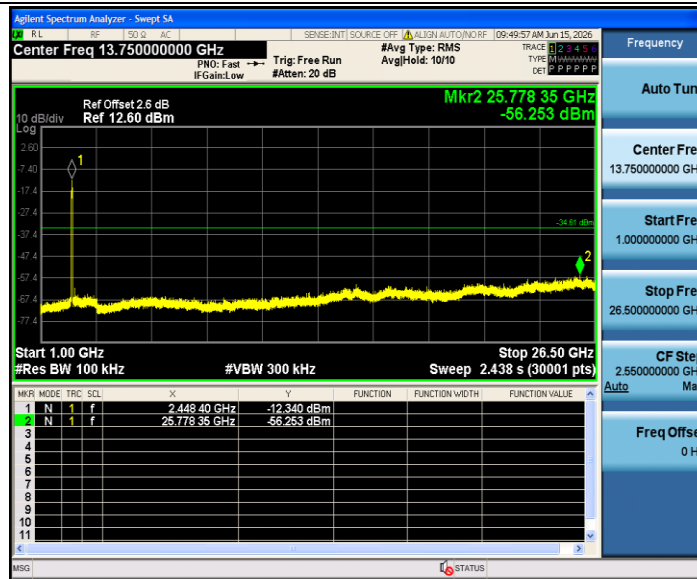
# 11N40SISO\_Ant0\_2437\_0~Reference



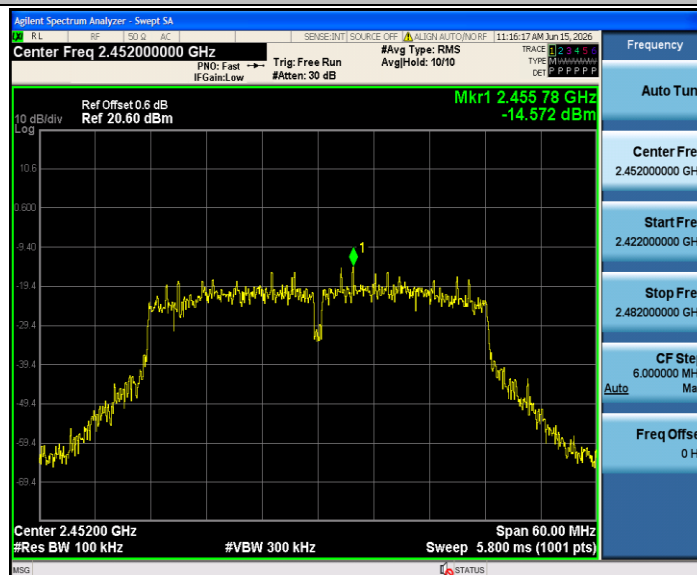
# 11N40SISO\_Ant0\_2437\_30~1000



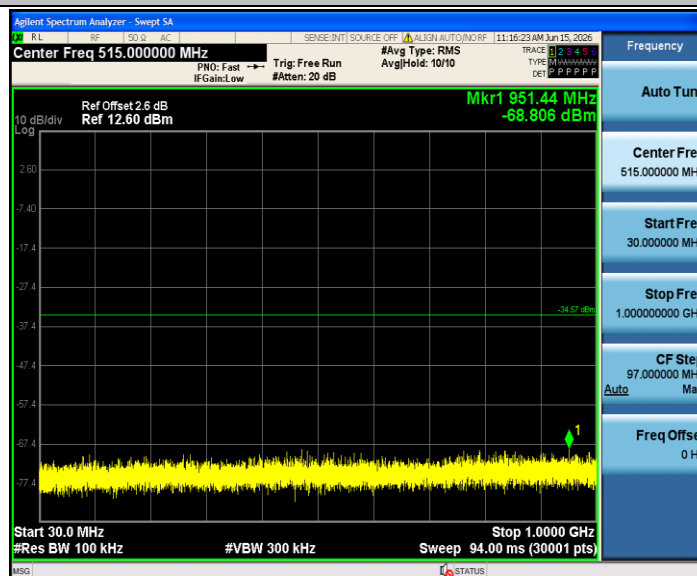
# 11N40SISO\_Ant0\_2437\_1000~26500



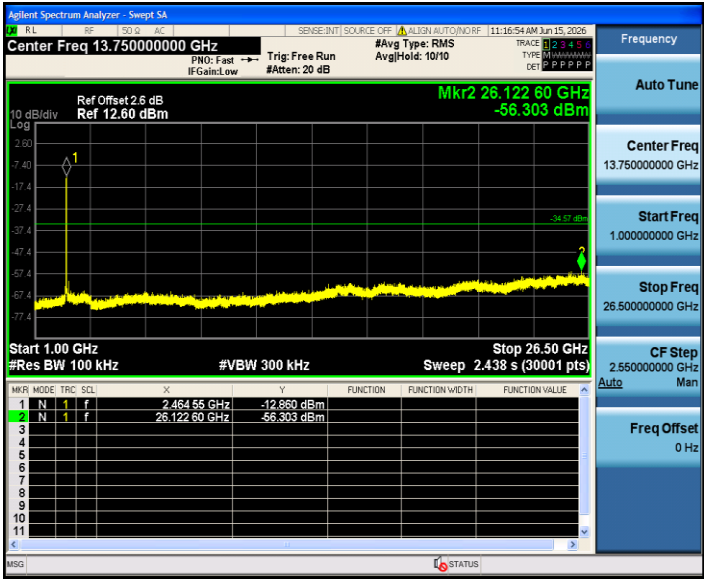
11N40SISO\_Ant0\_2452\_0~Reference



11N40SISO\_Ant0\_2452\_30~1000



11N40SISO\_Ant0\_2452\_1000~26500



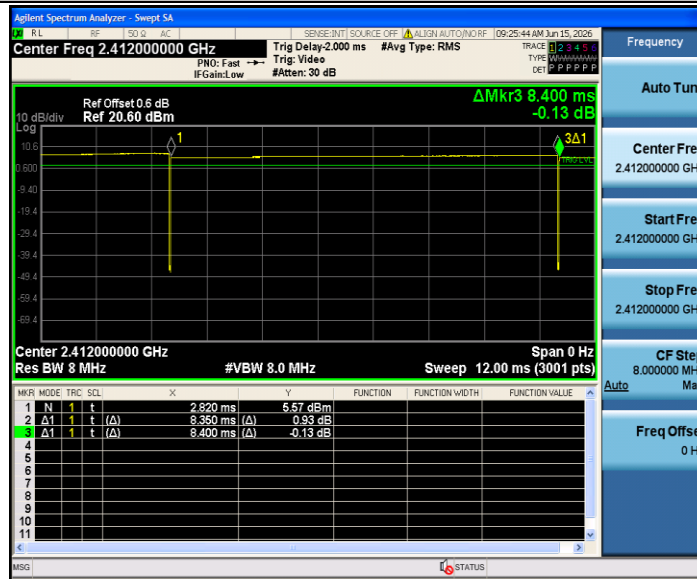
## Appendix G: Duty Cycle

### Test Result

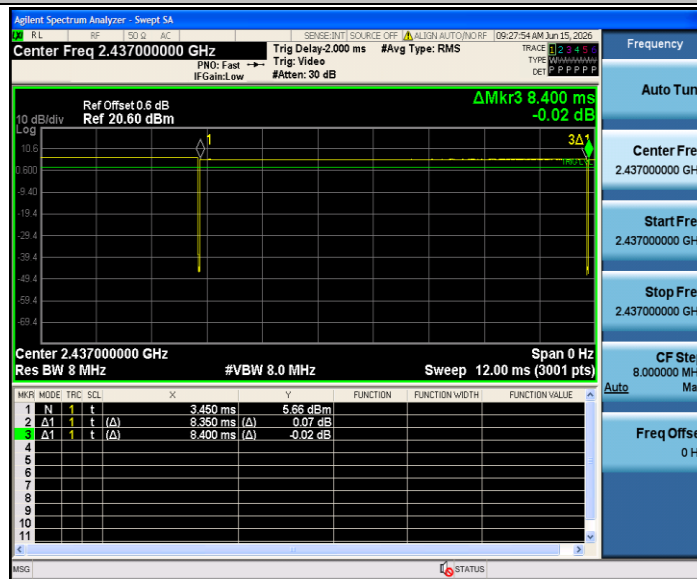
| TestMode  | Antenna | Frequency[MHz] | Transmission<br>Duration<br>[ms] | Transmission<br>Period [ms] | Duty<br>Cycle<br>[%] | DC Factor<br>[dB] | T Factor<br>[dB] |
|-----------|---------|----------------|----------------------------------|-----------------------------|----------------------|-------------------|------------------|
| 11B       | Ant0    | 2412           | 8.35                             | 8.40                        | 99.40                | 0.03              | 0.12             |
|           |         | 2437           | 8.35                             | 8.40                        | 99.40                | 0.03              | 0.12             |
|           |         | 2462           | 8.35                             | 8.40                        | 99.40                | 0.03              | 0.12             |
| 11G       | Ant0    | 2412           | 0.15                             | 0.20                        | 75.00                | 1.25              | 6.67             |
|           |         | 2437           | 0.14                             | 0.19                        | 73.68                | 1.33              | 7.14             |
|           |         | 2462           | 0.15                             | 0.20                        | 75.00                | 1.25              | 6.67             |
| 11N20SISO | Ant0    | 2412           | 0.18                             | 0.23                        | 78.26                | 1.06              | 5.56             |
|           |         | 2437           | 0.18                             | 0.22                        | 81.82                | 0.87              | 5.56             |
|           |         | 2462           | 0.18                             | 0.23                        | 78.26                | 1.06              | 5.56             |
| 11N40SISO | Ant0    | 2422           | 0.18                             | 0.23                        | 78.26                | 1.06              | 5.56             |
|           |         | 2437           | 0.18                             | 0.22                        | 81.82                | 0.87              | 5.56             |
|           |         | 2452           | 0.18                             | 0.23                        | 78.26                | 1.06              | 5.56             |

## Test Graphs

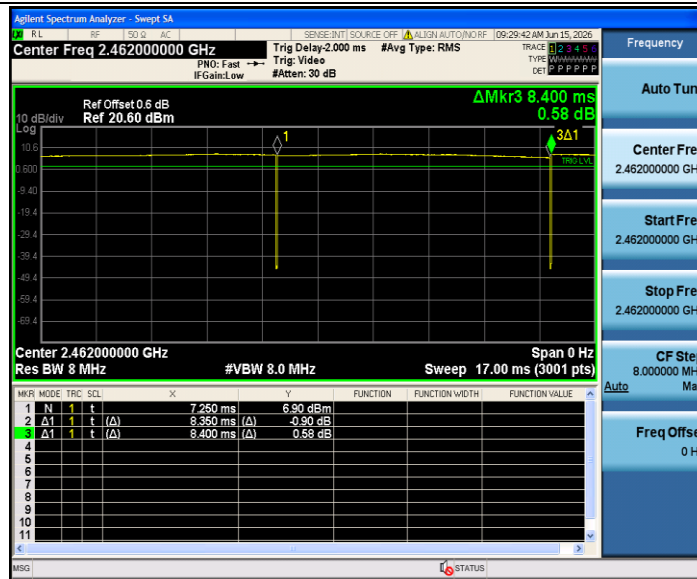
11B\_Ant0\_2412



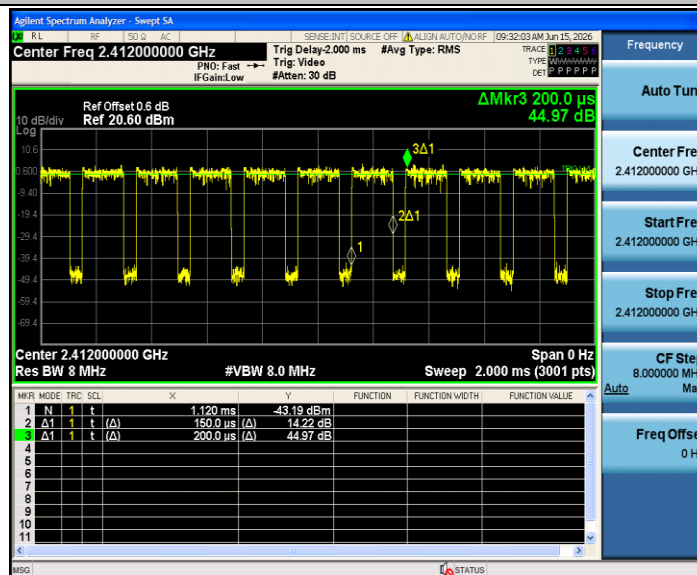
11B\_Ant0\_2437



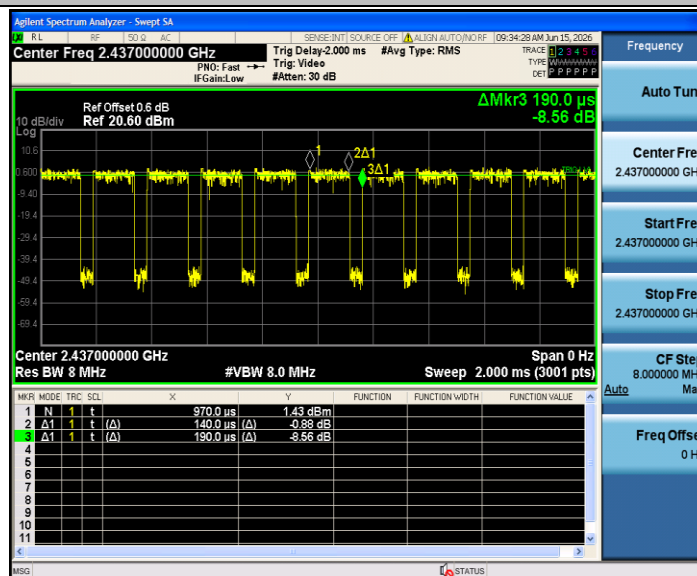
11B\_Ant0\_2462



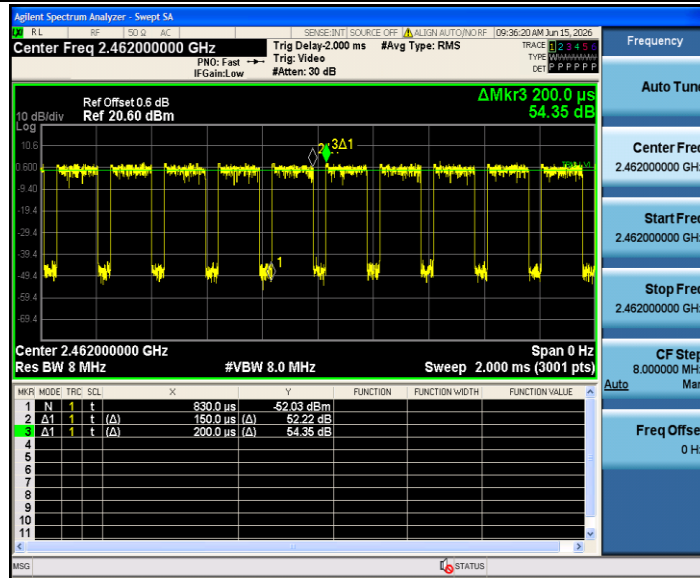
11G\_Ant0\_2412



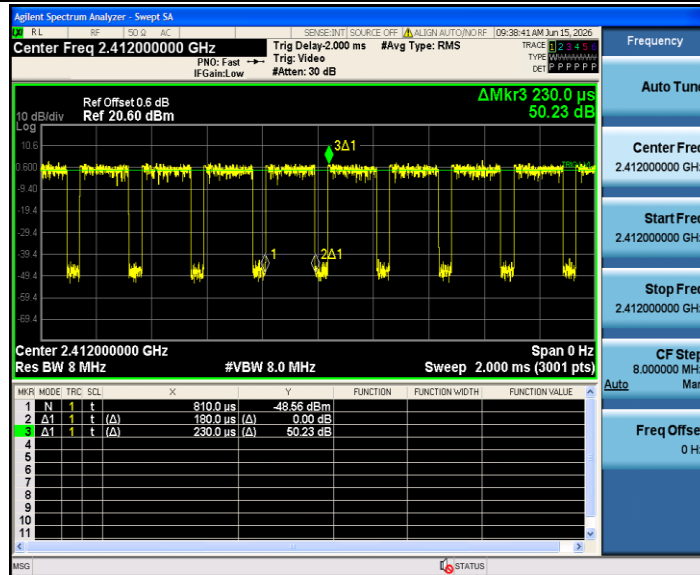
11G\_Ant0\_2437



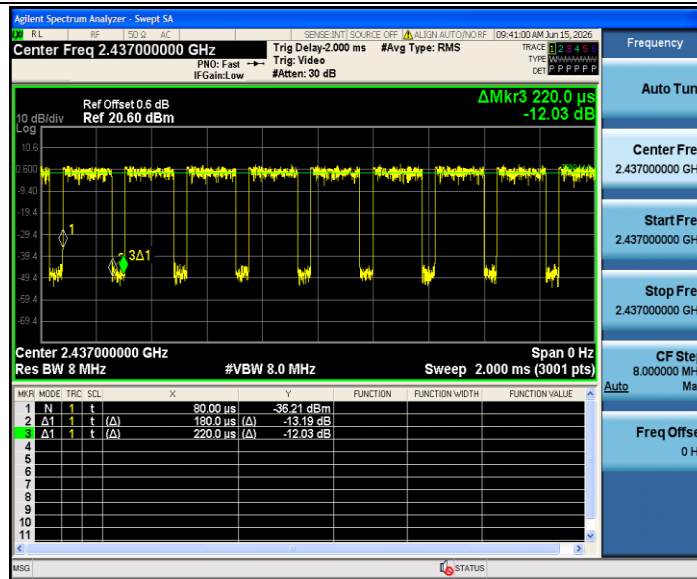
# 11G\_Ant0\_2462



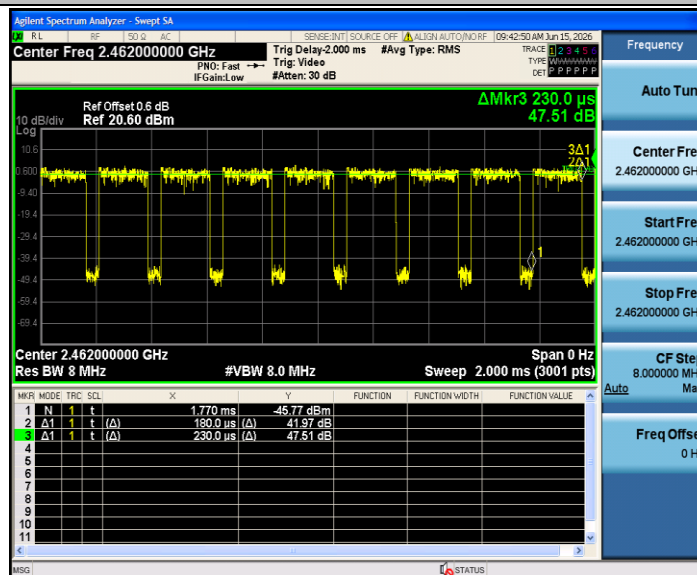
# 11N20SISO\_Ant0\_2412



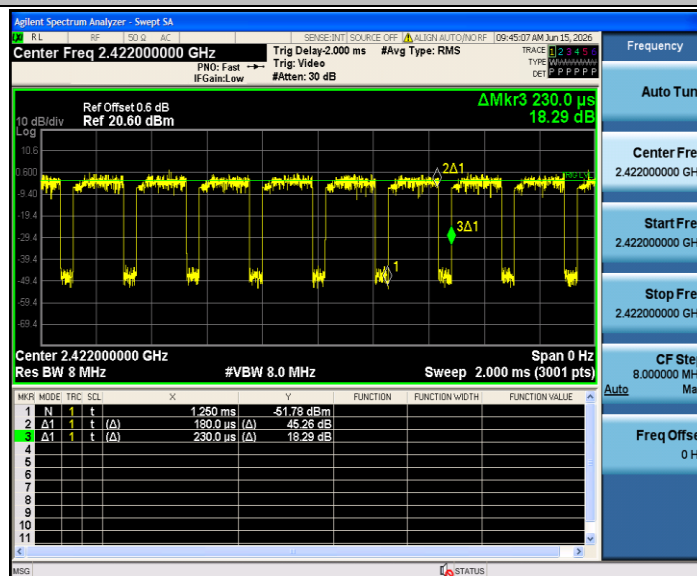
# 11N20SISO\_Ant0\_2437



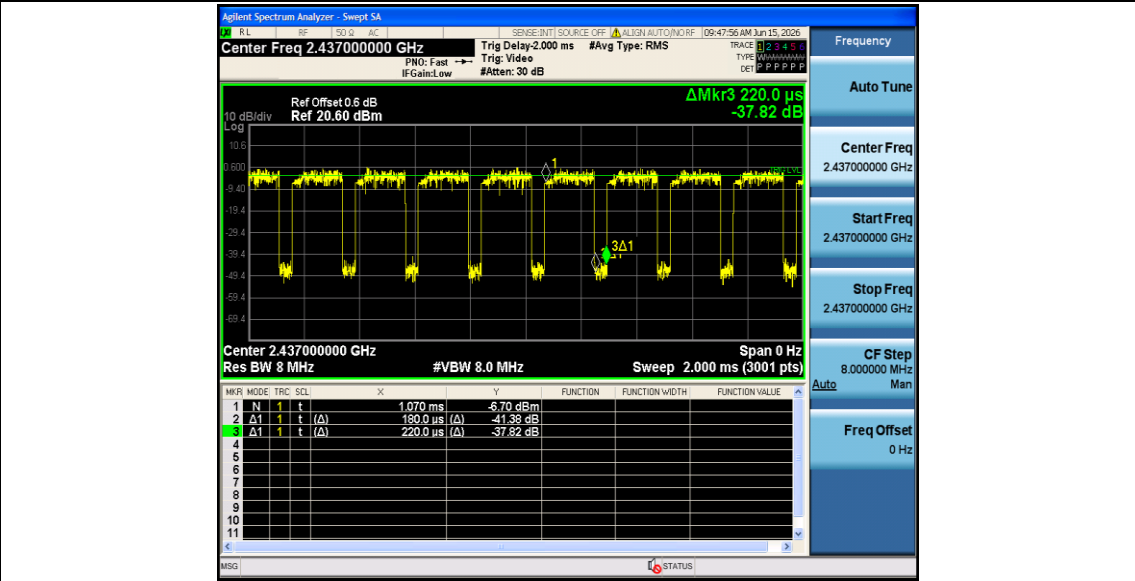
11N20SISO\_Ant0\_2462



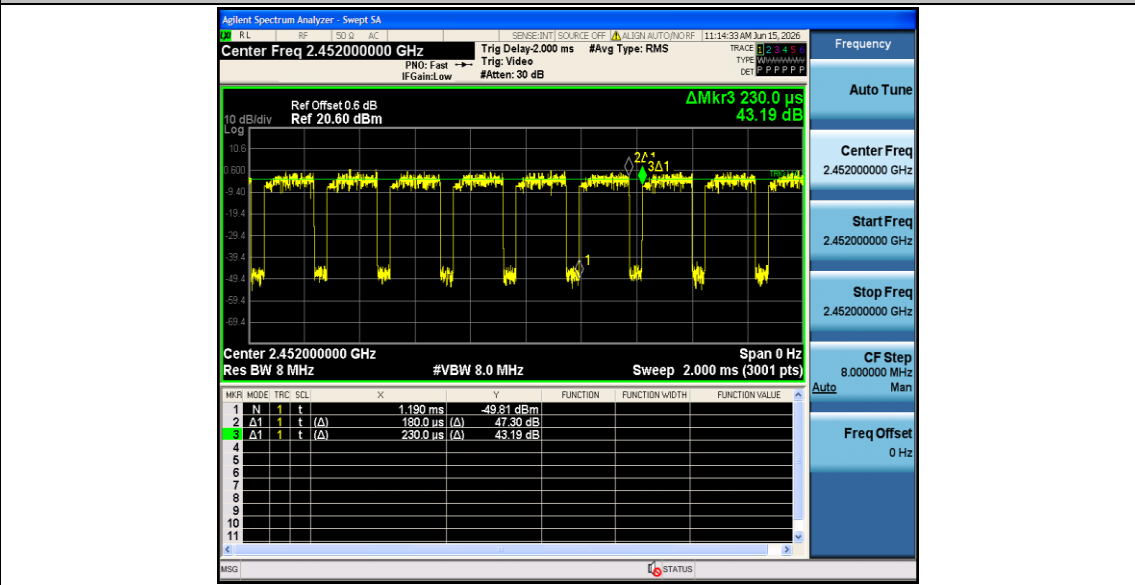
11N40SISO\_Ant0\_2422



## 11N40SISO\_Ant0\_2437



## 11N40SISO\_Ant0\_2452



## Appendix H: Emissions in Restricted Bands

### Test Result

| TestMod<br>e  | Antenn<br>a | ChNam<br>e | Frequenc<br>y[MHz] | Detector | Freq<br>[MHz] | Result<br>[dBm] | Gain<br>[dB] | DC<br>Factor<br>[dB] | Result<br>[dBuV/m] | Limit<br>[dBuV/m] | Verdict |
|---------------|-------------|------------|--------------------|----------|---------------|-----------------|--------------|----------------------|--------------------|-------------------|---------|
| 11B           | Ant0        | Low        | 2412               | AV       | 2310.000      | -60.83          | 2.00         | 0.03                 | 36.40              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2387.490      | -59.03          | 2.00         | 0.03                 | 38.20              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2390.000      | -59.5           | 2.00         | 0.03                 | 37.73              | ≤54               | PASS    |
|               |             |            |                    | Peak     | 2310.000      | -52.71          | 2.00         | 0.00                 | 44.49              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2318.200      | -49             | 2.00         | 0.00                 | 48.20              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2390.000      | -51.52          | 2.00         | 0.00                 | 45.68              | ≤74               | PASS    |
|               |             | High       | 2462               | AV       | 2483.500      | -58.91          | 2.00         | 0.03                 | 38.32              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2488.290      | -58.64          | 2.00         | 0.03                 | 38.59              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2500.000      | -59.14          | 2.00         | 0.03                 | 38.09              | ≤54               | PASS    |
|               |             |            |                    | Peak     | 2483.500      | -51.51          | 2.00         | 0.00                 | 45.69              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2494.560      | -48.12          | 2.00         | 0.00                 | 49.08              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2500.000      | -49.53          | 2.00         | 0.00                 | 47.67              | ≤74               | PASS    |
| 11G           | Ant0        | Low        | 2412               | AV       | 2310.000      | -60.29          | 2.00         | 1.25                 | 38.16              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2356.030      | -59.07          | 2.00         | 1.25                 | 39.38              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2390.000      | -59.96          | 2.00         | 1.25                 | 38.49              | ≤54               | PASS    |
|               |             |            |                    | Peak     | 2310.000      | -52.1           | 2.00         | 0.00                 | 45.10              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2383.850      | -48.82          | 2.00         | 0.00                 | 48.38              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2390.000      | -52             | 2.00         | 0.00                 | 45.20              | ≤74               | PASS    |
|               |             | High       | 2462               | AV       | 2483.500      | -59.52          | 2.00         | 1.25                 | 38.93              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2486.200      | -58.62          | 2.00         | 1.25                 | 39.83              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2500.000      | -59.3           | 2.00         | 1.25                 | 39.15              | ≤54               | PASS    |
|               |             |            |                    | Peak     | 2483.500      | -50.94          | 2.00         | 0.00                 | 46.26              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2487.190      | -49.56          | 2.00         | 0.00                 | 47.64              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2500.000      | -51.87          | 2.00         | 0.00                 | 45.33              | ≤74               | PASS    |
| 11N20SI<br>SO | Ant0        | Low        | 2412               | AV       | 2310.000      | -59.76          | 2.00         | 1.06                 | 38.50              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2371.110      | -58.88          | 2.00         | 1.06                 | 39.38              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2390.000      | -59.48          | 2.00         | 1.06                 | 38.78              | ≤54               | PASS    |
|               |             |            |                    | Peak     | 2310.000      | -51.22          | 2.00         | 0.00                 | 45.98              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2389.960      | -48.28          | 2.00         | 0.00                 | 48.92              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2390.000      | -48.28          | 2.00         | 0.00                 | 48.92              | ≤74               | PASS    |
|               |             | High       | 2462               | AV       | 2483.500      | -59.45          | 2.00         | 1.06                 | 38.81              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2499.510      | -58.53          | 2.00         | 1.06                 | 39.73              | ≤54               | PASS    |
|               |             |            |                    | AV       | 2500.000      | -59.49          | 2.00         | 1.06                 | 38.77              | ≤54               | PASS    |
|               |             |            |                    | Peak     | 2483.500      | -51.56          | 2.00         | 0.00                 | 45.64              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2491.040      | -48.75          | 2.00         | 0.00                 | 48.45              | ≤74               | PASS    |
|               |             |            |                    | Peak     | 2500.000      | -50.64          | 2.00         | 0.00                 | 46.56              | ≤74               | PASS    |

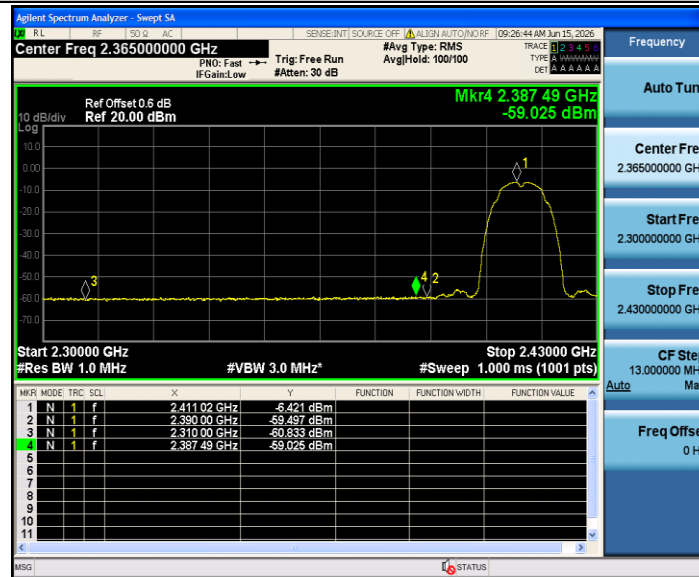
|               |      |      |      |      |          |        |      |      |       |     |      |
|---------------|------|------|------|------|----------|--------|------|------|-------|-----|------|
| 11N40SI<br>SO | Ant0 | Low  | 2422 | AV   | 2310.000 | -60.01 | 2.00 | 1.06 | 38.25 | ≤54 | PASS |
|               |      |      |      | AV   | 2387.600 | -59.08 | 2.00 | 1.06 | 39.18 | ≤54 | PASS |
|               |      |      |      | AV   | 2390.000 | -59.8  | 2.00 | 1.06 | 38.46 | ≤54 | PASS |
|               |      |      |      | Peak | 2310.000 | -52.94 | 2.00 | 0.00 | 44.26 | ≤74 | PASS |
|               |      |      |      | Peak | 2375.300 | -49.13 | 2.00 | 0.00 | 48.07 | ≤74 | PASS |
|               |      |      |      | Peak | 2390.000 | -52.17 | 2.00 | 0.00 | 45.03 | ≤74 | PASS |
|               |      | High | 2452 | AV   | 2483.500 | -58.61 | 2.00 | 1.06 | 39.65 | ≤54 | PASS |
|               |      |      |      | AV   | 2487.500 | -58.37 | 2.00 | 1.06 | 39.89 | ≤54 | PASS |
|               |      |      |      | AV   | 2500.000 | -59.62 | 2.00 | 1.06 | 38.64 | ≤54 | PASS |
|               |      |      |      | Peak | 2483.500 | -52    | 2.00 | 0.00 | 45.20 | ≤74 | PASS |
|               |      |      |      | Peak | 2492.000 | -48.3  | 2.00 | 0.00 | 48.90 | ≤74 | PASS |
|               |      |      |      | Peak | 2500.000 | -51.43 | 2.00 | 0.00 | 45.77 | ≤74 | PASS |

Note:

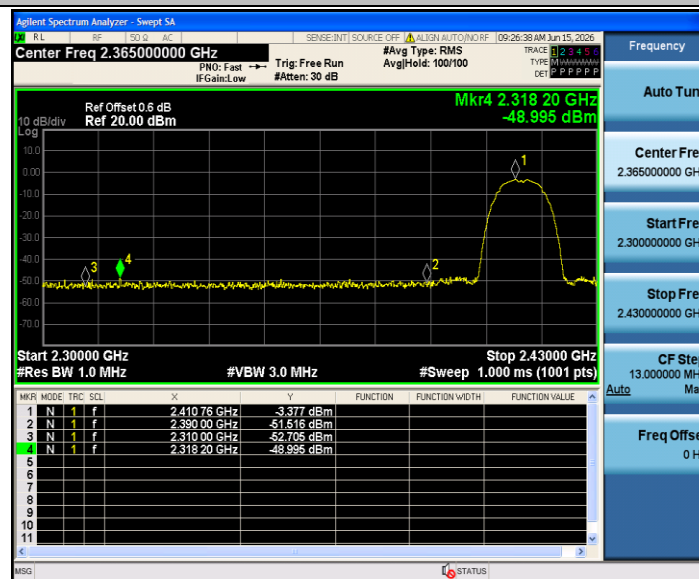
1. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

## Test Graphs

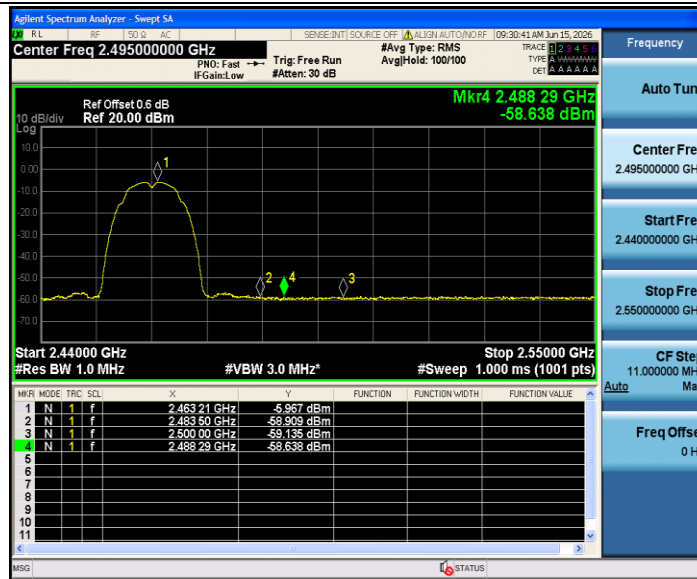
11B\_Ant0\_Low\_2412\_AV



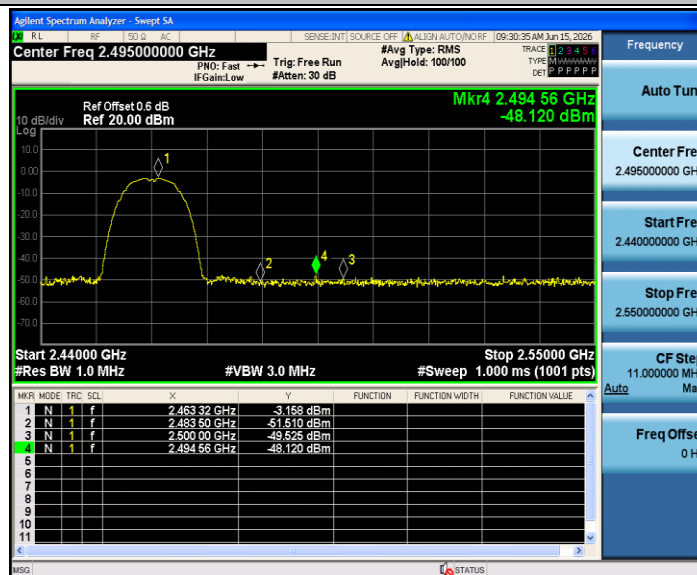
11B\_Ant0\_Low\_2412\_Peak



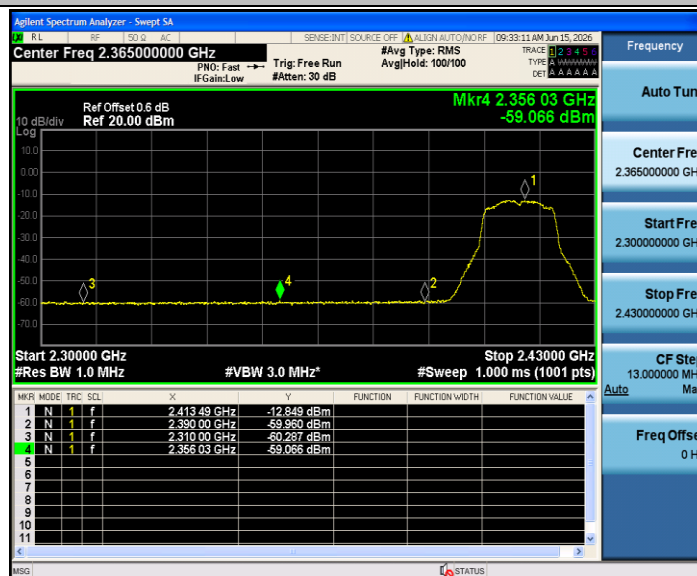
11B\_Ant0\_High\_2462\_AV



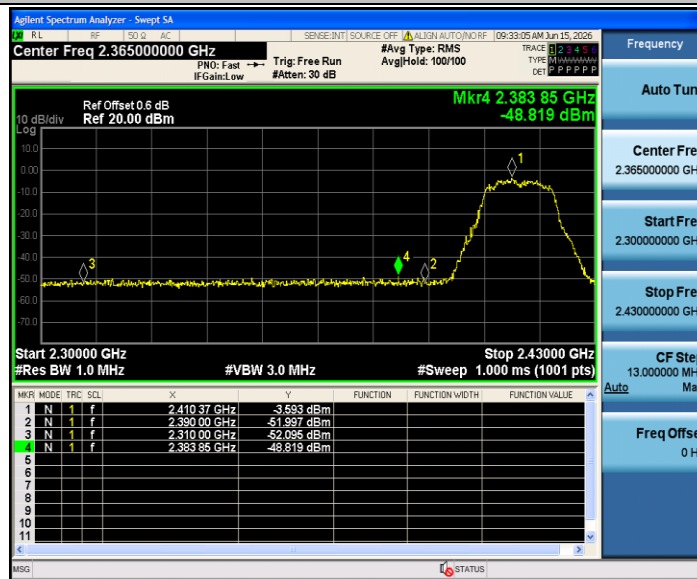
11B\_Ant0\_High\_2462\_Peak



11G\_Ant0\_Low\_2412\_AV



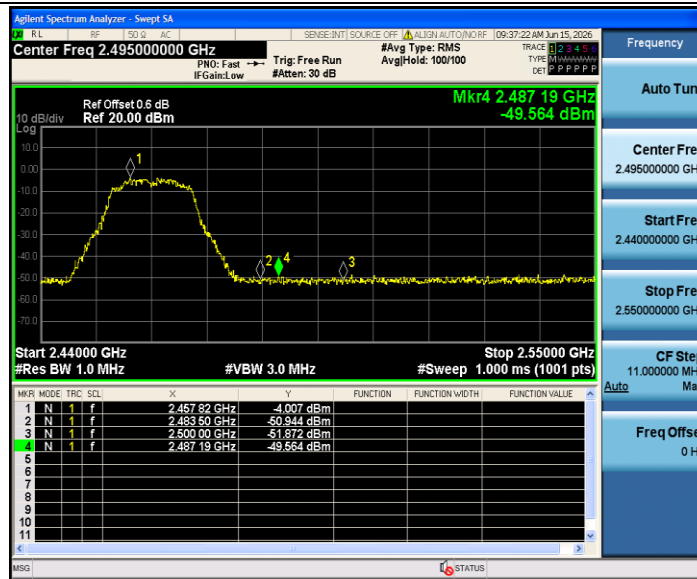
# 11G\_Ant0\_Low\_2412\_Peak



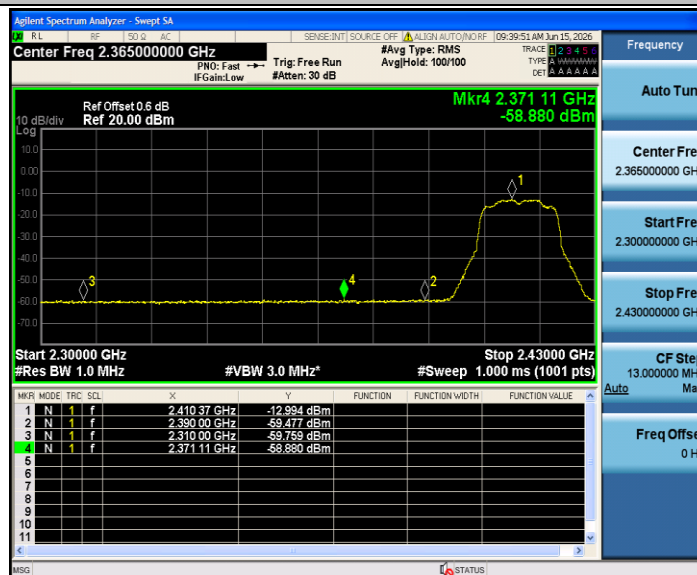
# 11G\_Ant0\_High\_2462\_AV



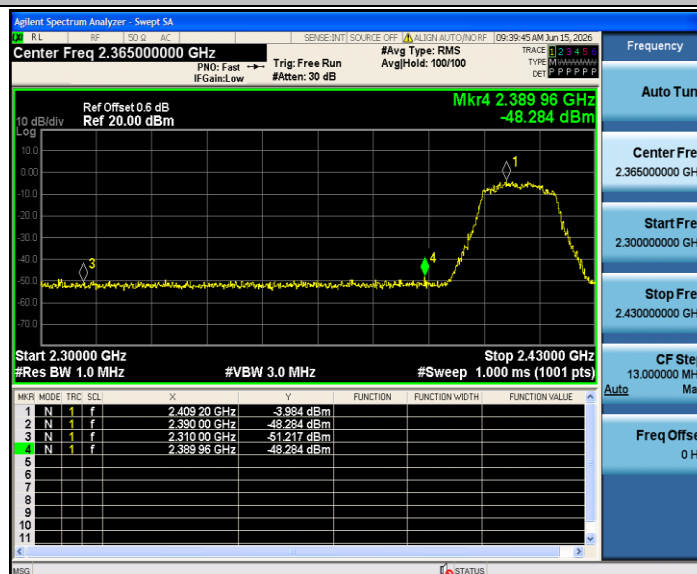
# 11G\_Ant0\_High\_2462\_Peak



11N20SISO\_Ant0\_Low\_2412\_AV



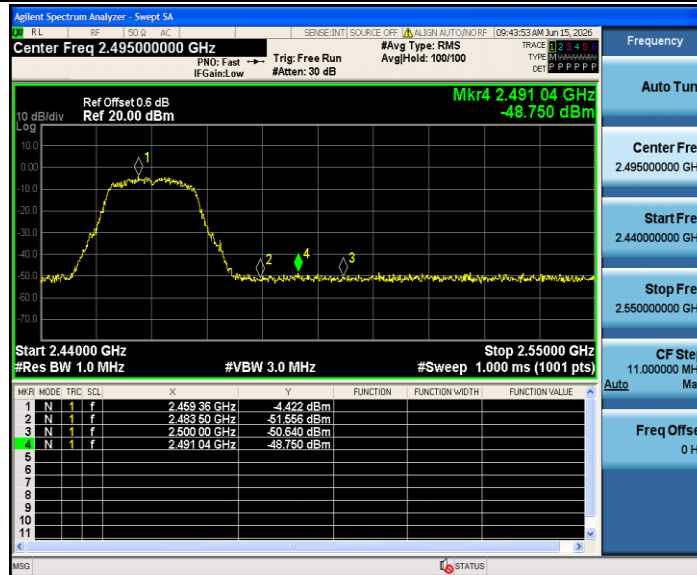
11N20SISO\_Ant0\_Low\_2412\_Peak



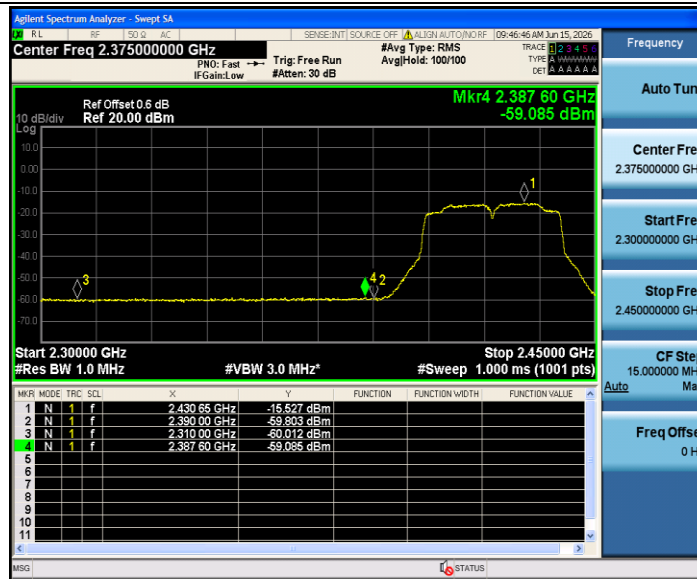
# 11N20SISO\_Ant0\_High\_2462\_AV



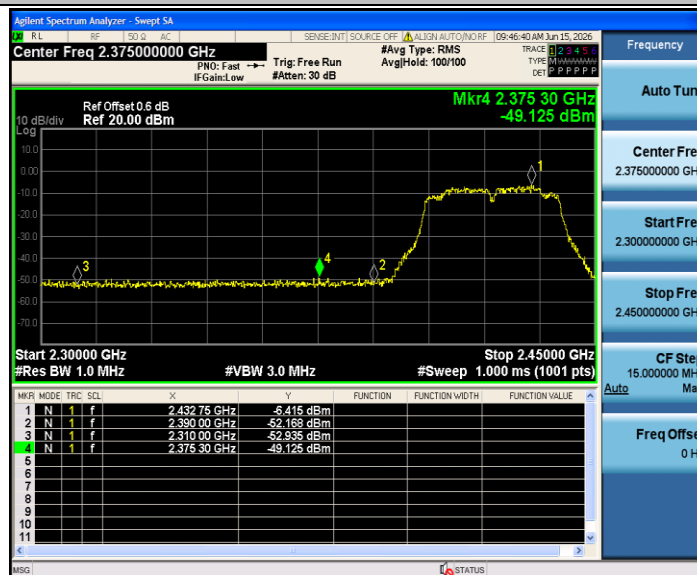
# 11N20SISO\_Ant0\_High\_2462\_Peak



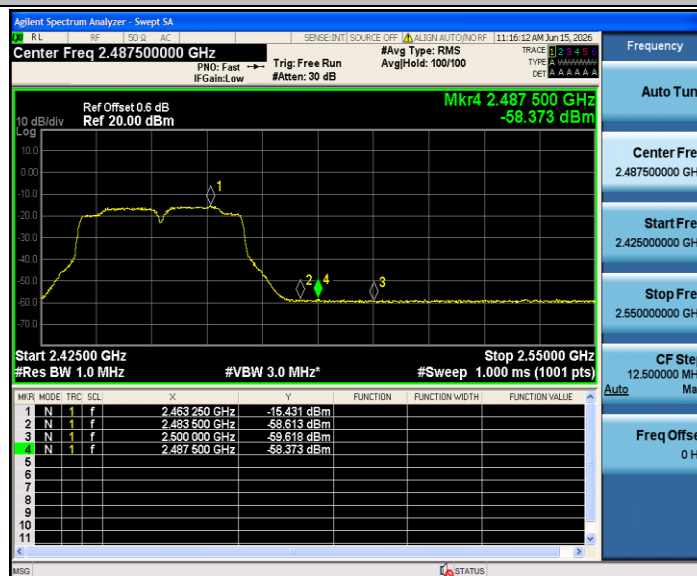
# 11N40SISO\_Ant0\_Low\_2422\_AV



11N40SISO\_Ant0\_Low\_2422\_Peak



11N40SISO\_Ant0\_High\_2452\_AV



# 11N40SISO\_Ant0\_High\_2452\_Peak



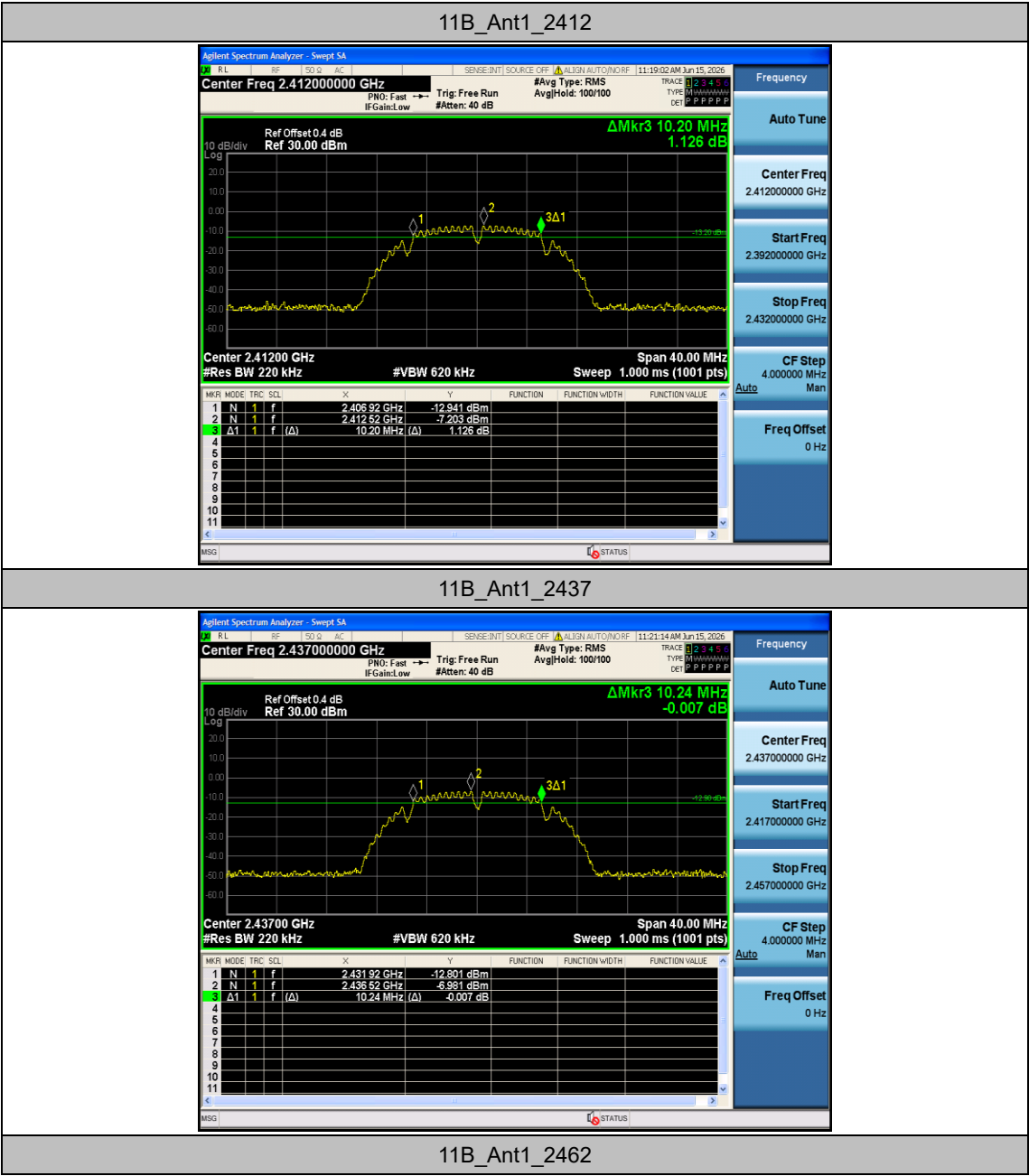
## FCC Appendix RF Test Data for 2.4GWIFI Antenna 1

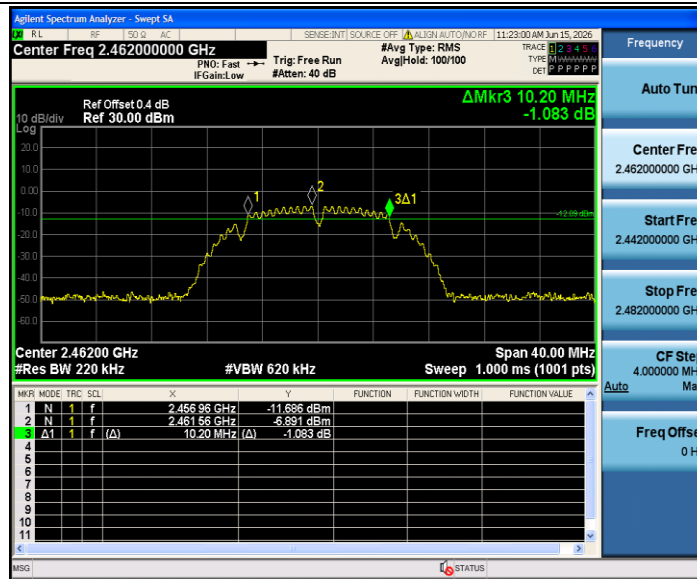
### Appendix A: DTS Bandwidth

#### Test Result

| TestMode  | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-----------|---------|----------------|--------------|----------|----------|------------|---------|
| 11B       | Ant1    | 2412           | 10.200       | 2406.920 | 2417.120 | 0.5        | PASS    |
|           |         | 2437           | 10.240       | 2431.920 | 2442.160 | 0.5        | PASS    |
|           |         | 2462           | 10.200       | 2456.960 | 2467.160 | 0.5        | PASS    |
| 11G       | Ant1    | 2412           | 15.880       | 2404.120 | 2420.000 | 0.5        | PASS    |
|           |         | 2437           | 15.720       | 2429.040 | 2444.760 | 0.5        | PASS    |
|           |         | 2462           | 15.840       | 2454.080 | 2469.920 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2412           | 16.960       | 2403.680 | 2420.640 | 0.5        | PASS    |
|           |         | 2437           | 16.840       | 2428.680 | 2445.520 | 0.5        | PASS    |
|           |         | 2462           | 17.080       | 2453.400 | 2470.480 | 0.5        | PASS    |
| 11N40SISO | Ant1    | 2422           | 34.960       | 2405.120 | 2440.080 | 0.5        | PASS    |
|           |         | 2437           | 35.200       | 2419.720 | 2454.920 | 0.5        | PASS    |
|           |         | 2452           | 35.840       | 2434.320 | 2470.160 | 0.5        | PASS    |

Test Graphs





11G\_Ant1\_2412



11G\_Ant1\_2437







11N20SISO\_Ant1\_2462



11N40SISO\_Ant1\_2422



# 11N40SISO\_Ant1\_2437



# 11N40SISO\_Ant1\_2452



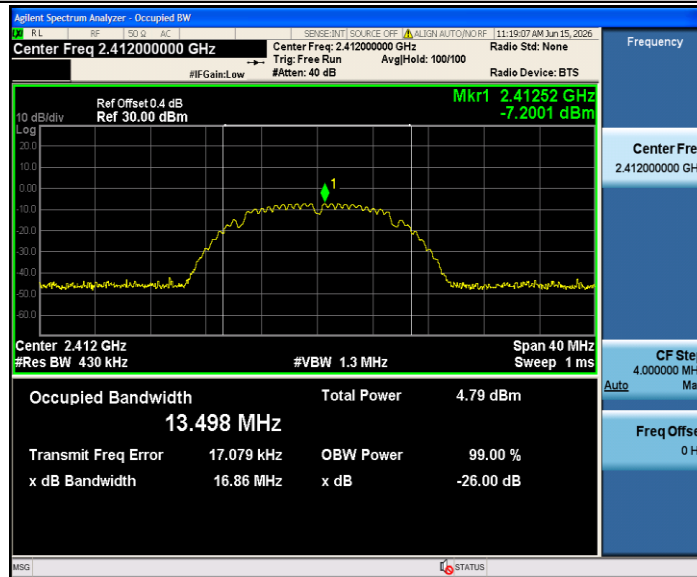
## Appendix B: Occupied Channel Bandwidth

### Test Result

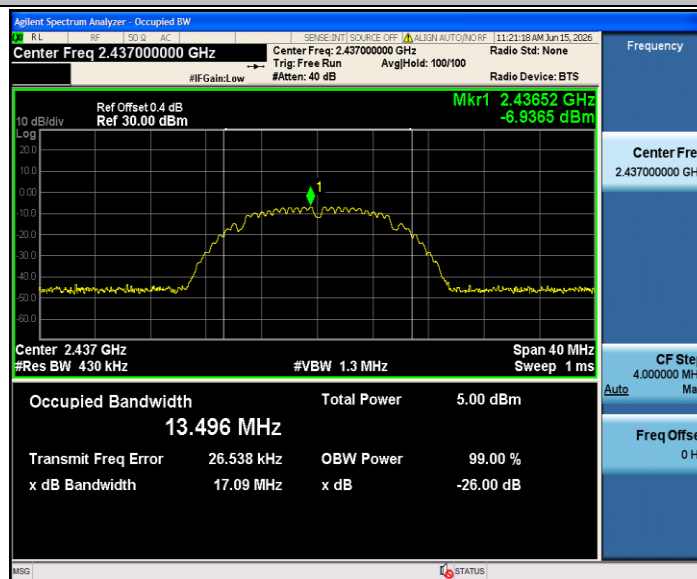
| TestMode  | Antenna | Channel Frequency[MHz] | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|-----------|---------|------------------------|-----------|-----------|-----------|------------|---------|
| 11B       | Ant1    | 2412                   | 13.498    | 2405.2681 | 2418.7661 | ---        | ---     |
|           |         | 2437                   | 13.496    | 2430.2785 | 2443.7745 | ---        | ---     |
|           |         | 2462                   | 13.486    | 2455.2932 | 2468.7792 | ---        | ---     |
| 11G       | Ant1    | 2412                   | 16.890    | 2403.5790 | 2420.4690 | ---        | ---     |
|           |         | 2437                   | 16.898    | 2428.5741 | 2445.4721 | ---        | ---     |
|           |         | 2462                   | 16.888    | 2453.6231 | 2470.5111 | ---        | ---     |
| 11N20SISO | Ant1    | 2412                   | 17.986    | 2403.0334 | 2421.0194 | ---        | ---     |
|           |         | 2437                   | 17.925    | 2428.0437 | 2445.9687 | ---        | ---     |
|           |         | 2462                   | 17.974    | 2453.0602 | 2471.0342 | ---        | ---     |
| 11N40SISO | Ant1    | 2422                   | 36.074    | 2404.1271 | 2440.2011 | ---        | ---     |
|           |         | 2437                   | 36.113    | 2419.0909 | 2455.2039 | ---        | ---     |
|           |         | 2452                   | 36.121    | 2434.0856 | 2470.2066 | ---        | ---     |

## Test Graphs

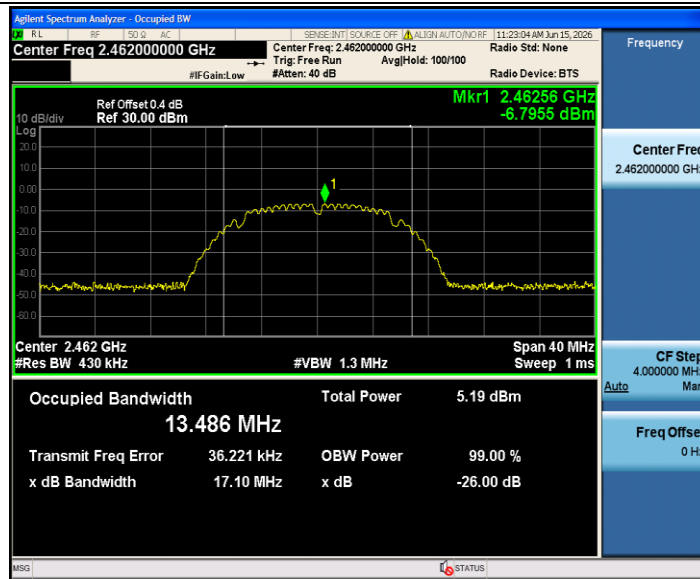
11B\_Ant1\_2412



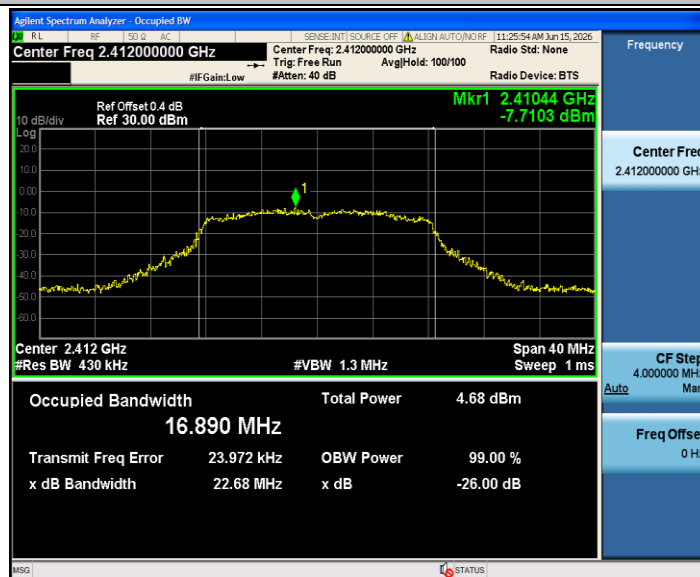
11B\_Ant1\_2437



11B\_Ant1\_2462



11G\_Ant1\_2412



11G\_Ant1\_2437

