

## **FCC Appendix RF Test Data**

**FCC ID** : 2BOU9-R90

**Company:** : Shenzhen Yuntian Intelligent Terminal Co.,LTD.

**EUT** : SMART LOCK

**Model Number** : R90

**Reviewed By** : Eric Wang

## Appendix A: DTS Bandwidth

### Test Result

| TestMode  | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-----------|---------|----------------|--------------|----------|----------|------------|---------|
| 11B       | Ant1    | 2412           | 9.120        | 2406.960 | 2416.080 | 0.5        | PASS    |
|           |         | 2437           | 9.000        | 2432.000 | 2441.000 | 0.5        | PASS    |
|           |         | 2462           | 9.520        | 2457.000 | 2466.520 | 0.5        | PASS    |
| 11G       | Ant1    | 2412           | 15.720       | 2404.440 | 2420.160 | 0.5        | PASS    |
|           |         | 2437           | 15.480       | 2429.440 | 2444.920 | 0.5        | PASS    |
|           |         | 2462           | 16.280       | 2453.880 | 2470.160 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2412           | 15.960       | 2404.440 | 2420.400 | 0.5        | PASS    |
|           |         | 2437           | 16.200       | 2429.440 | 2445.640 | 0.5        | PASS    |
|           |         | 2462           | 16.720       | 2453.720 | 2470.440 | 0.5        | PASS    |
| 11N40SISO | Ant1    | 2422           | 35.600       | 2404.480 | 2440.080 | 0.5        | PASS    |
|           |         | 2437           | 35.120       | 2419.480 | 2454.600 | 0.5        | PASS    |
|           |         | 2452           | 35.520       | 2434.080 | 2469.600 | 0.5        | PASS    |

## Test Graphs

11B\_Ant1\_2412



11B\_Ant1\_2437



11B\_Ant1\_2462



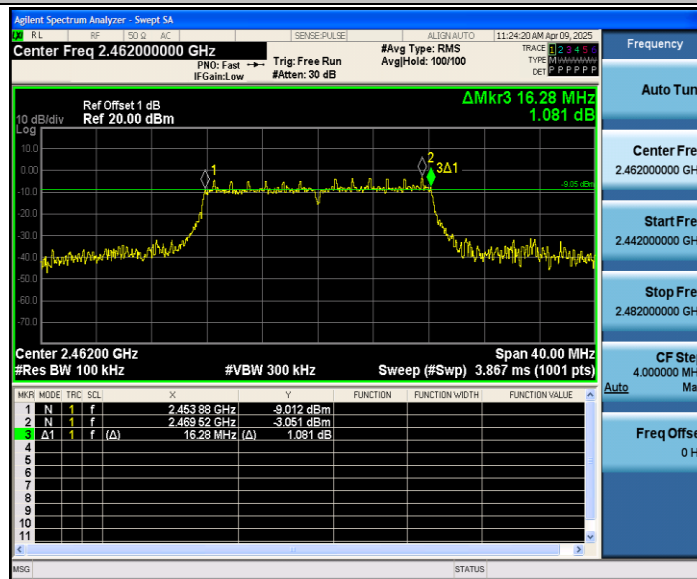
11G\_Ant1\_2412



11G\_Ant1\_2437



# 11G\_Ant1\_2462



# 11N20SISO\_Ant1\_2412



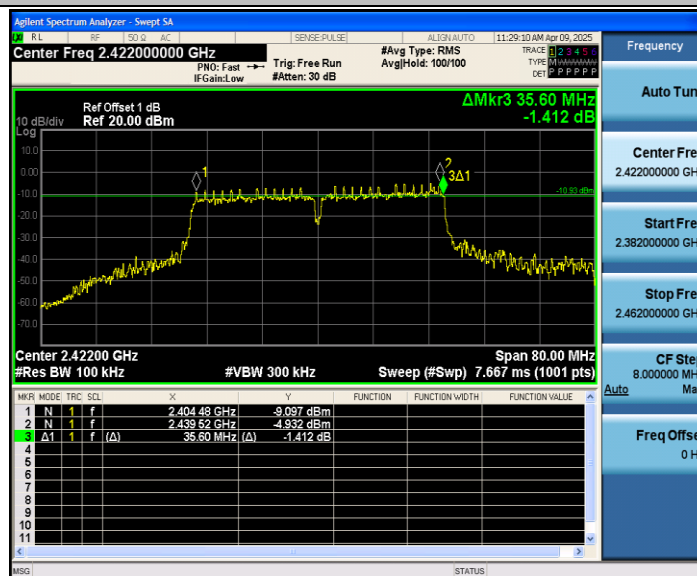
# 11N20SISO\_Ant1\_2437



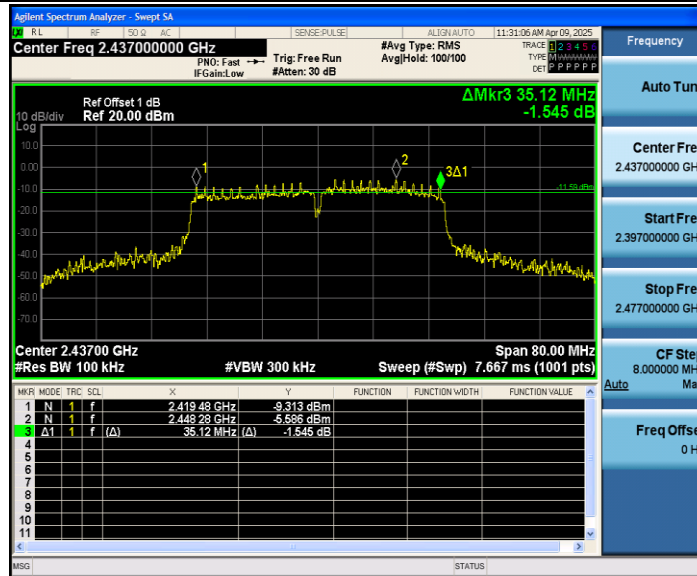
11N20SISO\_Ant1\_2462



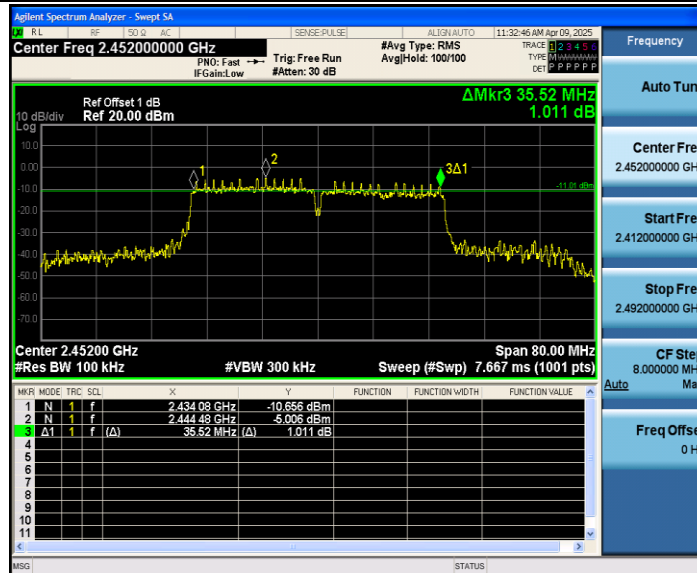
11N40SISO\_Ant1\_2422



# 11N40SISO\_Ant1\_2437



# 11N40SISO\_Ant1\_2452



## Appendix B: Occupied Channel Bandwidth

### Test Result

| TestMode  | Antenna | Channel<br>Frequency[MHz] | OCB<br>[MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|-----------|---------|---------------------------|--------------|-----------|-----------|------------|---------|
| 11B       | Ant1    | 2412                      | 12.337       | 2405.7725 | 2418.1095 | ---        | ---     |
|           |         | 2437                      | 11.637       | 2430.9588 | 2442.5958 | ---        | ---     |
|           |         | 2462                      | 12.706       | 2455.4521 | 2468.1581 | ---        | ---     |
| 11G       | Ant1    | 2412                      | 16.756       | 2403.7782 | 2420.5342 | ---        | ---     |
|           |         | 2437                      | 16.685       | 2428.7772 | 2445.4622 | ---        | ---     |
|           |         | 2462                      | 16.923       | 2453.5901 | 2470.5131 | ---        | ---     |
| 11N20SISO | Ant1    | 2412                      | 17.941       | 2403.2761 | 2421.2171 | ---        | ---     |
|           |         | 2437                      | 17.609       | 2428.3498 | 2445.9588 | ---        | ---     |
|           |         | 2462                      | 18.012       | 2453.1488 | 2471.1608 | ---        | ---     |
| 11N40SISO | Ant1    | 2422                      | 36.354       | 2404.1450 | 2440.4990 | ---        | ---     |
|           |         | 2437                      | 36.037       | 2419.0753 | 2455.1123 | ---        | ---     |
|           |         | 2452                      | 36.352       | 2433.8801 | 2470.2321 | ---        | ---     |

## Test Graphs

11B\_Ant1\_2412



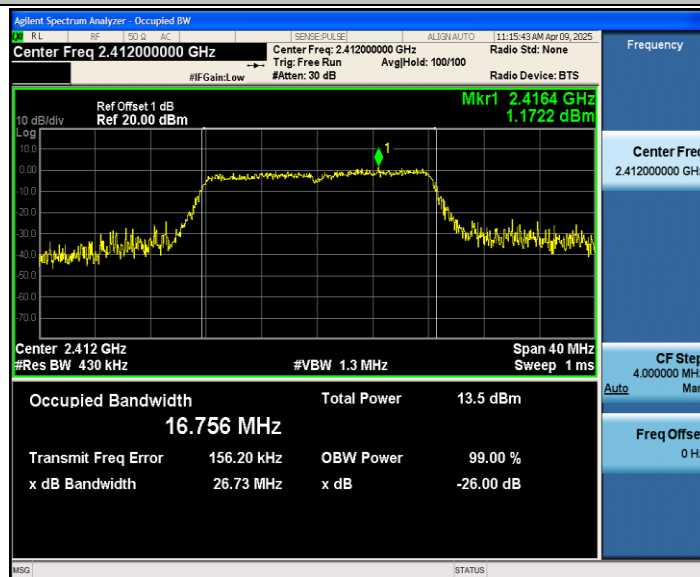
11B\_Ant1\_2437



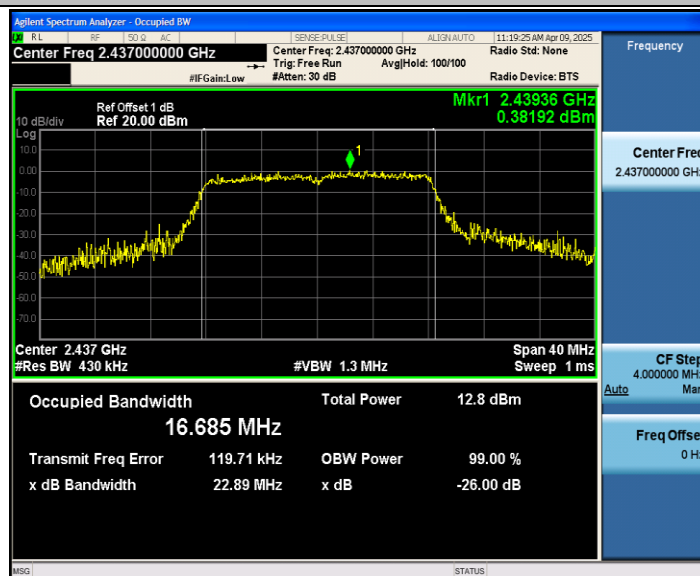
11B\_Ant1\_2462



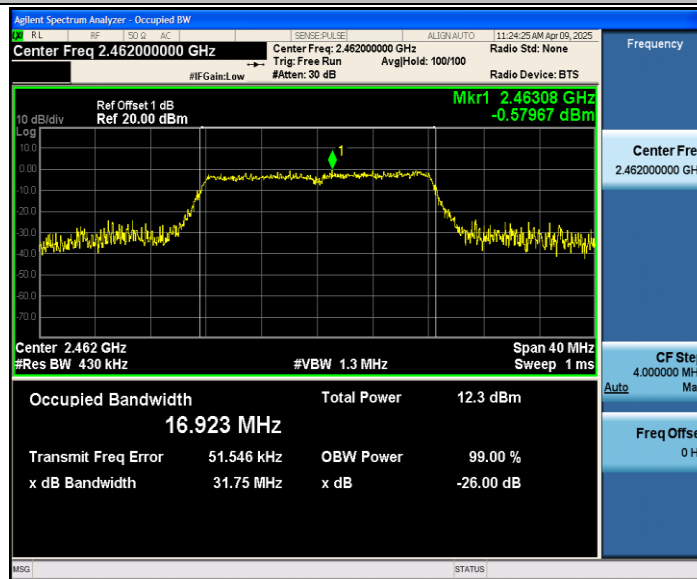
11G\_Ant1\_2412



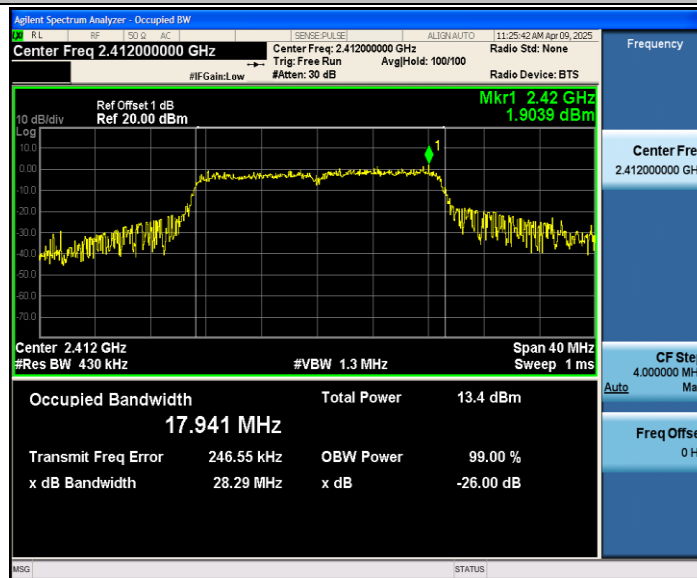
11G\_Ant1\_2437



# 11G\_Ant1\_2462



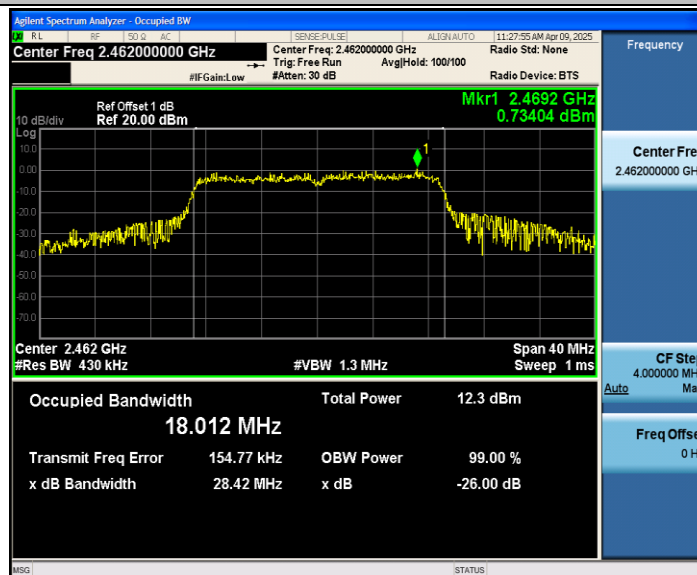
# 11N20SISO\_Ant1\_2412



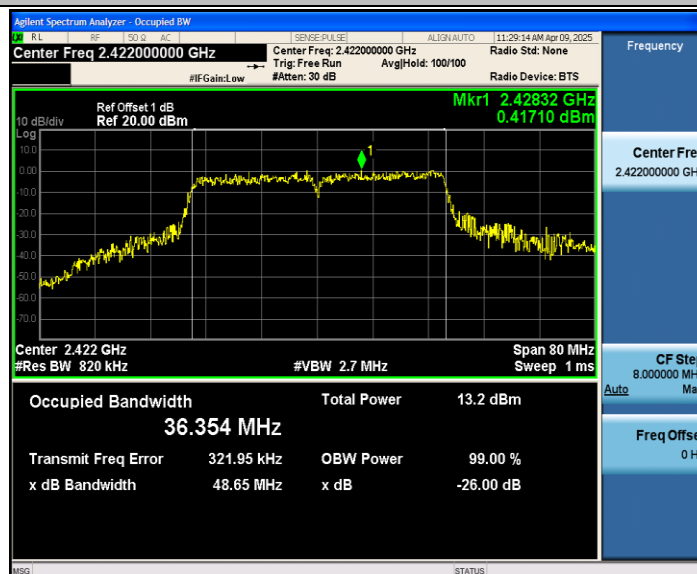
# 11N20SISO\_Ant1\_2437



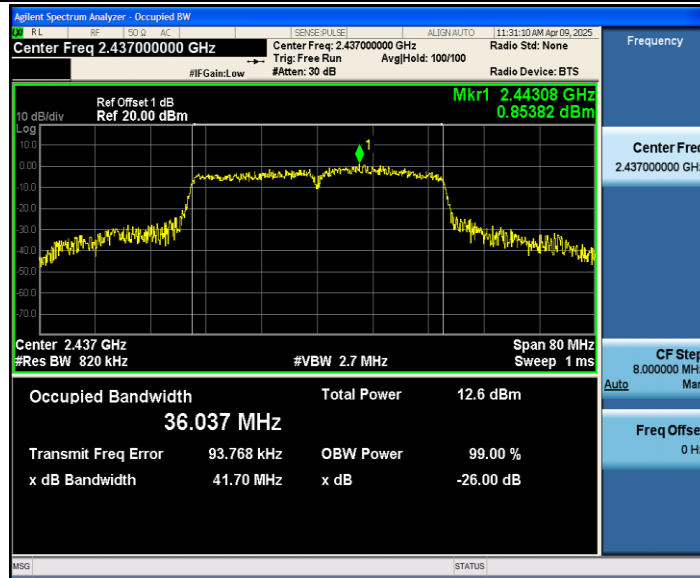
11N20SISO\_Ant1\_2462



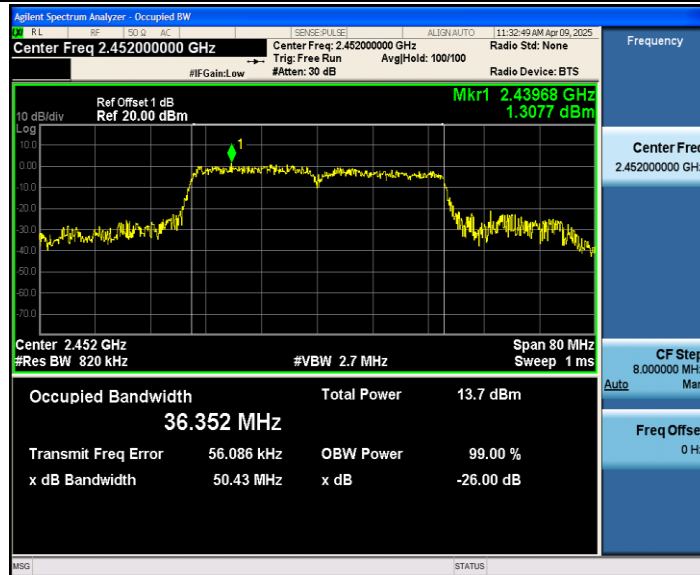
11N40SISO\_Ant1\_2422



# 11N40SISO\_Ant1\_2437



# 11N40SISO\_Ant1\_2452



## Appendix C: Maximum conducted output power

### Test Result Peak

| Test Mode | Antenna | Frequency[MHz] | Peak power [dBm] | Limit [dBm] | Verdict |
|-----------|---------|----------------|------------------|-------------|---------|
| 11B       | Ant1    | 2412           | 15.08            | ≤30.00      | PASS    |
|           |         | 2437           | 13.52            | ≤30.00      | PASS    |
|           |         | 2462           | 14.23            | ≤30.00      | PASS    |
| 11G       | Ant1    | 2412           | 14.13            | ≤30.00      | PASS    |
|           |         | 2437           | 13.57            | ≤30.00      | PASS    |
|           |         | 2462           | 13.03            | ≤30.00      | PASS    |
| 11N20SISO | Ant1    | 2412           | 13.96            | ≤30.00      | PASS    |
|           |         | 2437           | 13.34            | ≤30.00      | PASS    |
|           |         | 2462           | 12.84            | ≤30.00      | PASS    |
| 11N40SISO | Ant1    | 2422           | 13.32            | ≤30.00      | PASS    |
|           |         | 2437           | 12.78            | ≤30.00      | PASS    |
|           |         | 2452           | 13.97            | ≤30.00      | PASS    |

## Appendix D: Maximum power spectral density

### Test Result

| TestMode  | Antenna | Frequency[MHz] | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|-----------|---------|----------------|----------------------|-----------------|---------|
| 11B       | Ant1    | 2412           | -10.95               | ≤8.00           | PASS    |
|           |         | 2437           | -12.58               | ≤8.00           | PASS    |
|           |         | 2462           | -11.67               | ≤8.00           | PASS    |
| 11G       | Ant1    | 2412           | -17.23               | ≤8.00           | PASS    |
|           |         | 2437           | -18.43               | ≤8.00           | PASS    |
|           |         | 2462           | -19.36               | ≤8.00           | PASS    |
| 11N20SISO | Ant1    | 2412           | -17.87               | ≤8.00           | PASS    |
|           |         | 2437           | -18.62               | ≤8.00           | PASS    |
|           |         | 2462           | -19.10               | ≤8.00           | PASS    |
| 11N40SISO | Ant1    | 2422           | -20.67               | ≤8.00           | PASS    |
|           |         | 2437           | -21.91               | ≤8.00           | PASS    |
|           |         | 2452           | -20.18               | ≤8.00           | PASS    |

## Test Graphs

11B\_Ant1\_2412



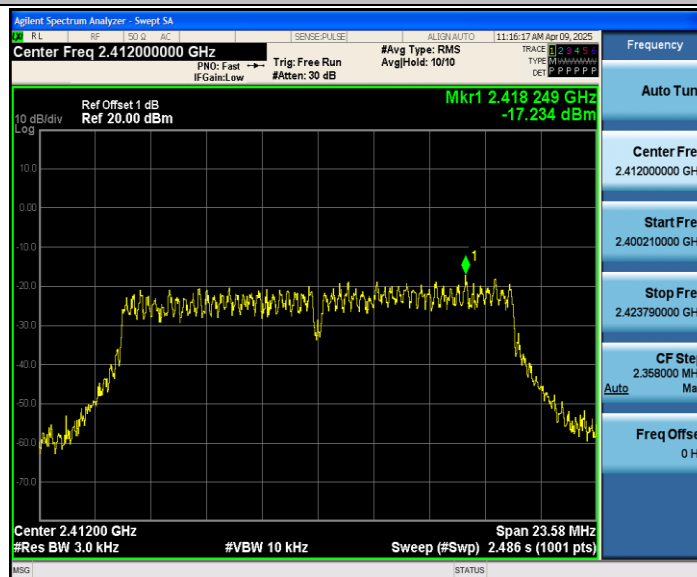
11B\_Ant1\_2437



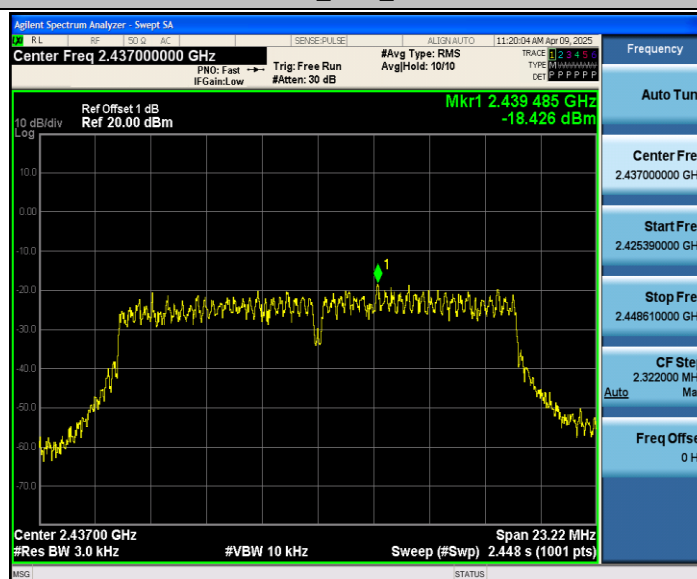
11B\_Ant1\_2462



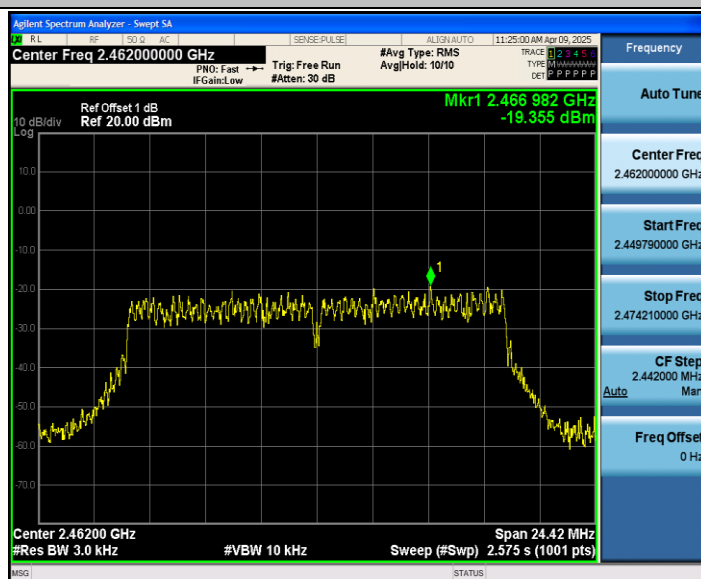
11G\_Ant1\_2412



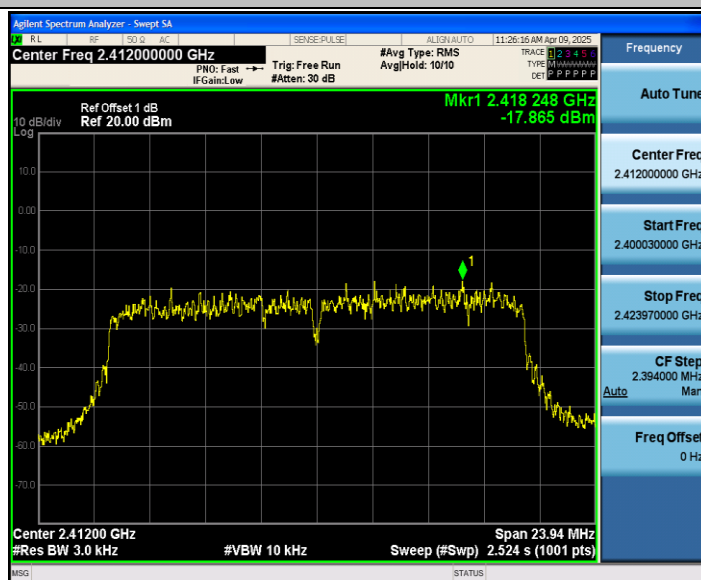
11G\_Ant1\_2437



# 11G\_Ant1\_2462



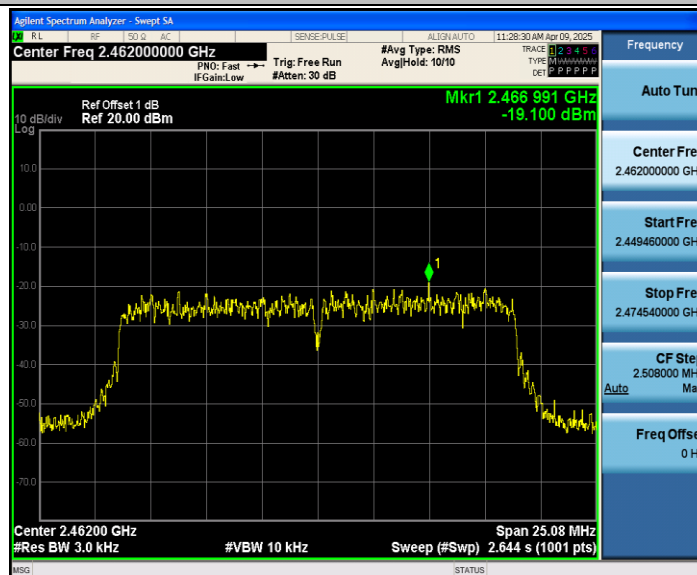
# 11N20SISO\_Ant1\_2412



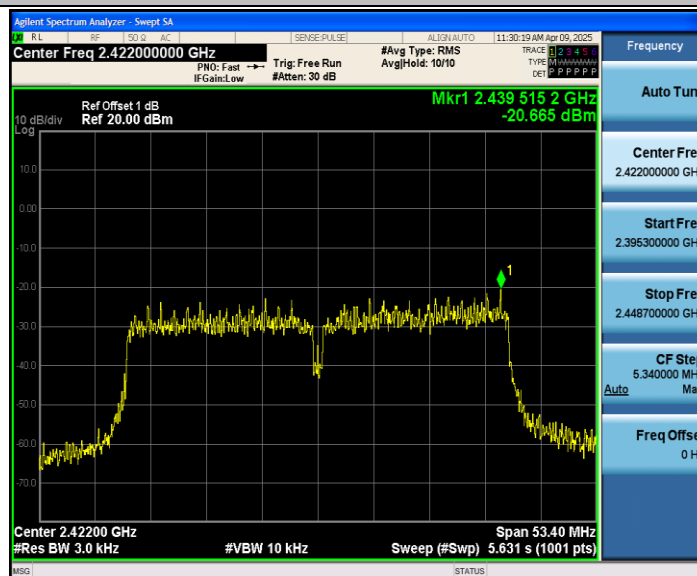
# 11N20SISO\_Ant1\_2437



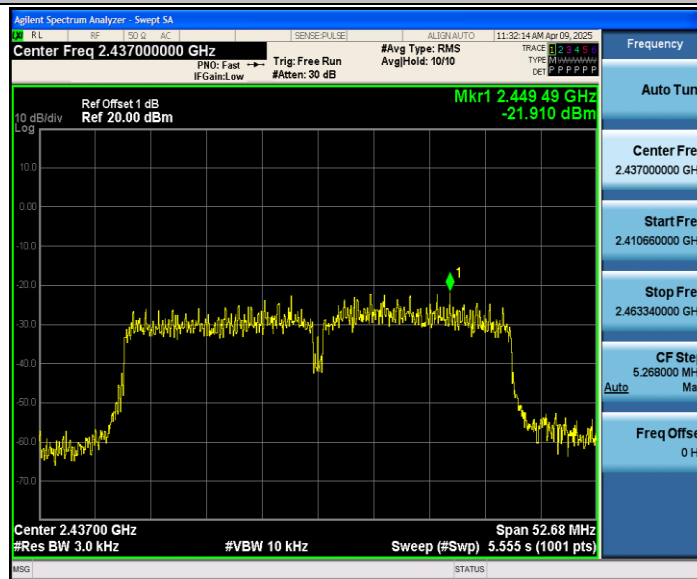
11N20SISO\_Ant1\_2462



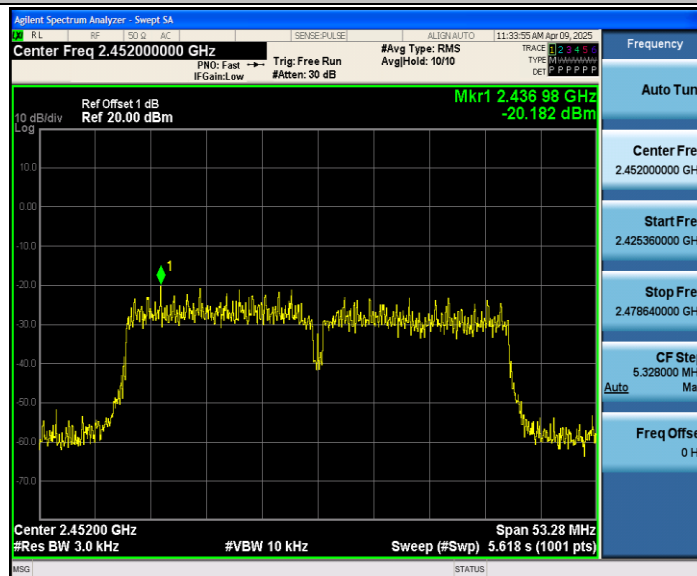
11N40SISO\_Ant1\_2422



# 11N40SISO\_Ant1\_2437



# 11N40SISO\_Ant1\_2452



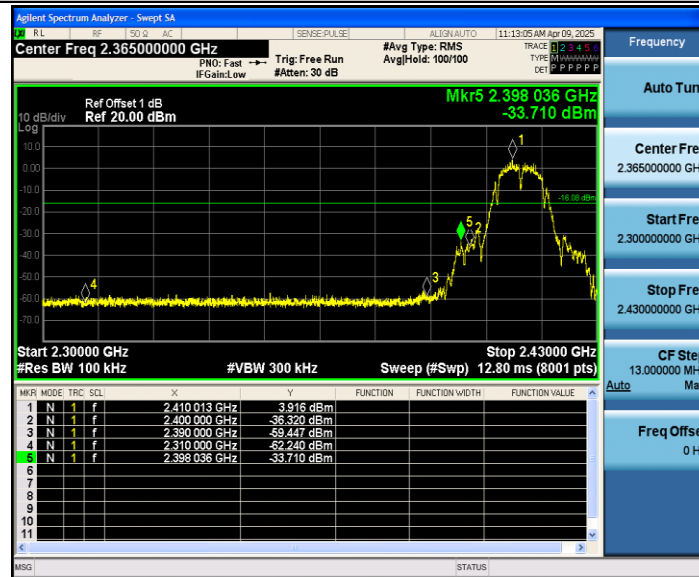
## Appendix E: Band edge measurements

### Test Result

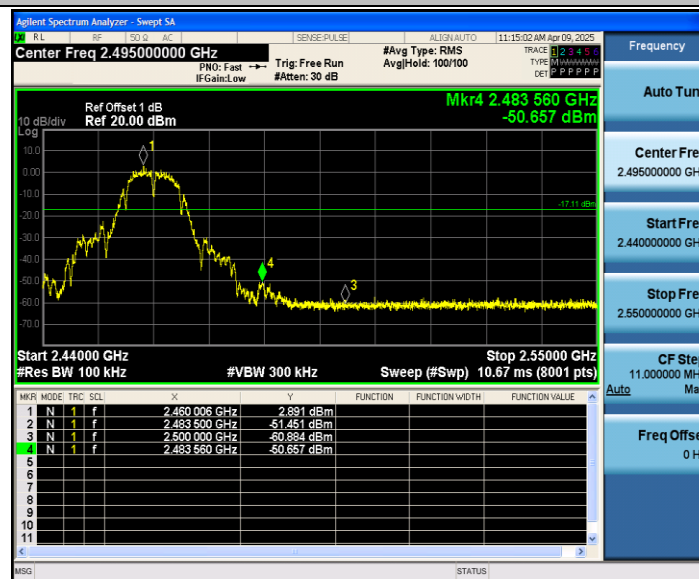
| TestMode  | Antenna | Channel Name | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|--------------|----------------|---------------|-------------|------------|---------|
| 11B       | Ant1    | Low          | 2412           | 3.92          | -33.71      | ≤-16.08    | PASS    |
|           |         | High         | 2462           | 2.89          | -50.66      | ≤-17.11    | PASS    |
| 11G       | Ant1    | Low          | 2412           | -2.30         | -35.35      | ≤-22.3     | PASS    |
|           |         | High         | 2462           | -3.02         | -39.65      | ≤-23.02    | PASS    |
| 11N20SISO | Ant1    | Low          | 2412           | -1.51         | -35.03      | ≤-21.51    | PASS    |
|           |         | High         | 2462           | -3.02         | -39.09      | ≤-23.02    | PASS    |
| 11N40SISO | Ant1    | Low          | 2422           | -5.07         | -38.41      | ≤-25.07    | PASS    |
|           |         | High         | 2452           | -4.80         | -35.2       | ≤-24.8     | PASS    |

## Test Graphs

11B\_Ant1\_Low\_2412



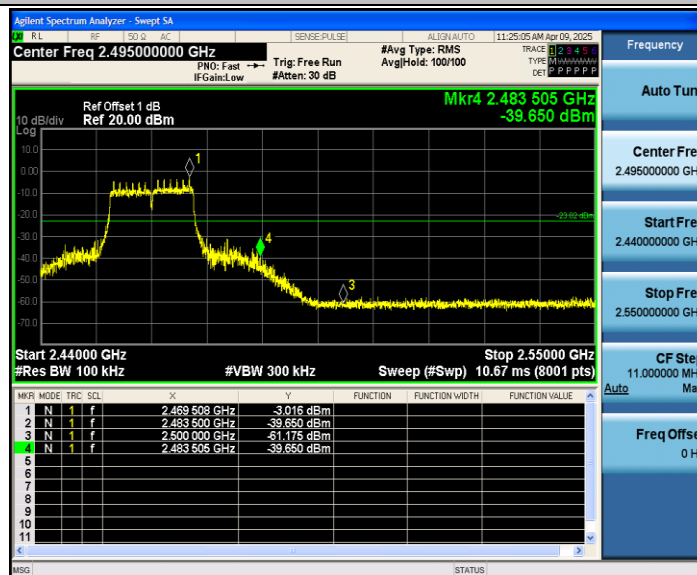
11B\_Ant1\_High\_2462



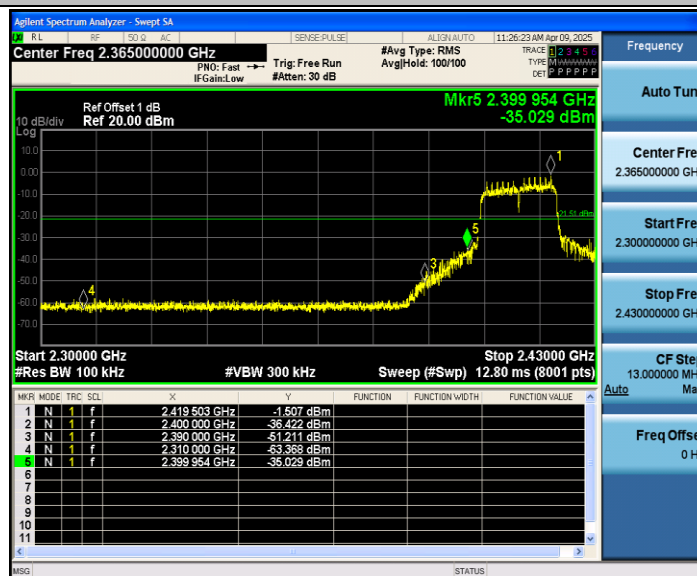
11G\_Ant1\_Low\_2412



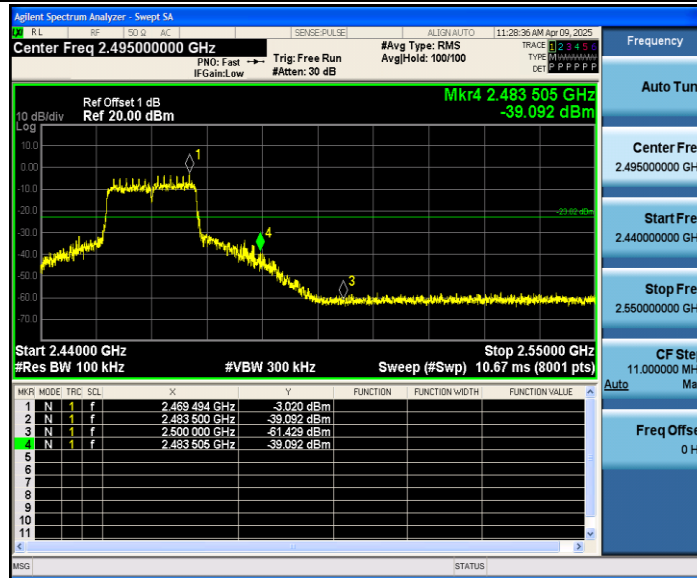
11G\_Ant1\_High\_2462



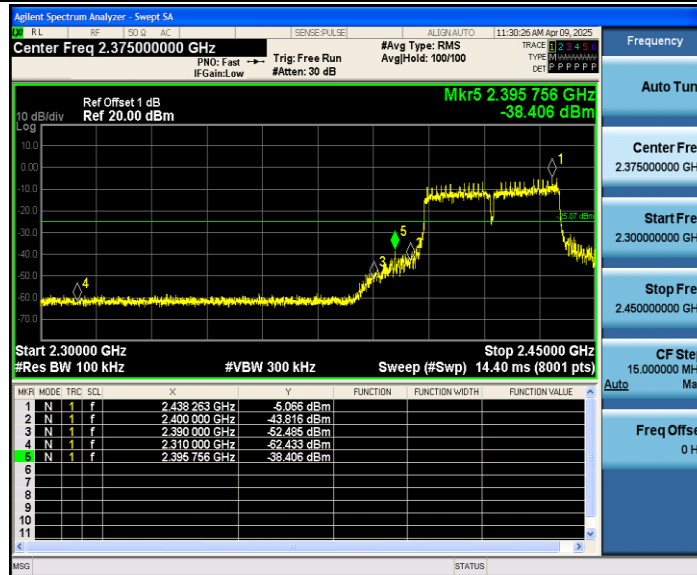
11N20SISO\_Ant1\_Low\_2412



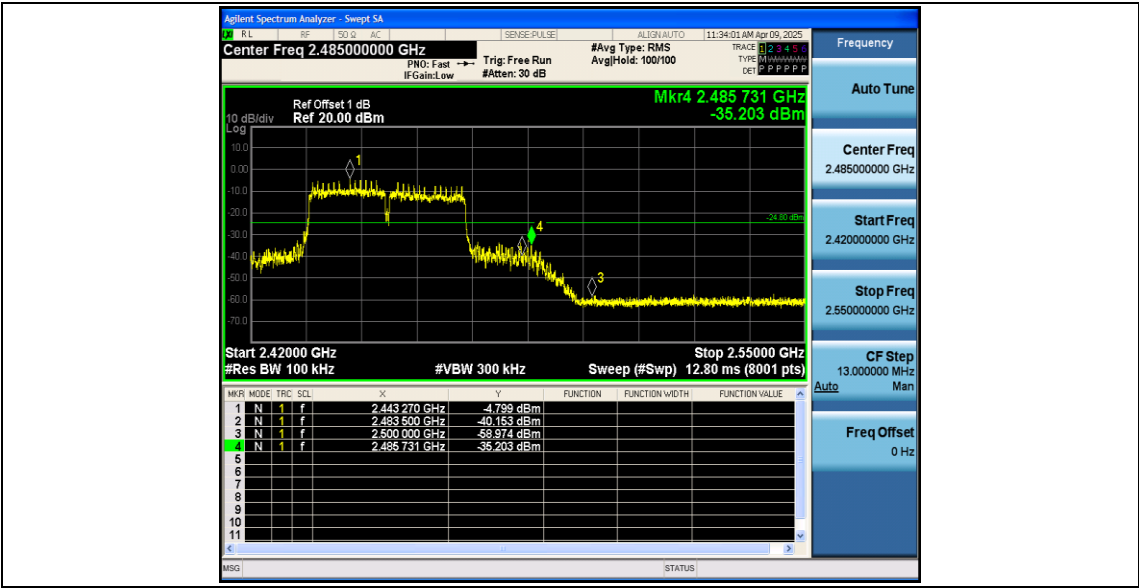
# 11N20SISO\_Ant1\_High\_2462



# 11N40SISO\_Ant1\_Low\_2422



# 11N40SISO\_Ant1\_High\_2452



## Appendix F: Conducted Spurious Emission

### Test Result

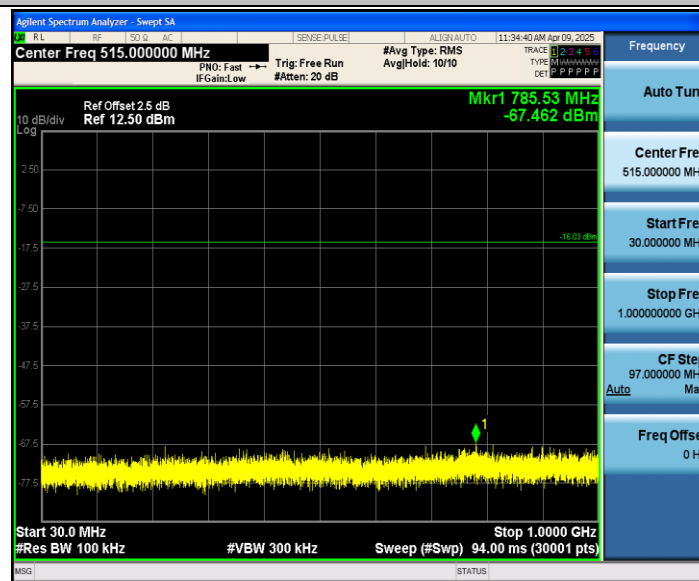
| TestMode  | Antenna | Frequency[MHz] | FreqRange [Mhz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|-----------|---------|----------------|-----------------|----------------|--------------|-------------|---------|
| 11B       | Ant1    | 2412           | Reference       | 3.97           | 3.97         | ---         | PASS    |
|           |         |                | 30~1000         | 3.97           | -67.46       | ≤-16.03     | PASS    |
|           |         |                | 1000~26500      | 3.97           | -39.92       | ≤-16.03     | PASS    |
|           |         | 2437           | Reference       | 2.86           | 2.86         | ---         | PASS    |
|           |         |                | 30~1000         | 2.86           | -67.52       | ≤-17.14     | PASS    |
|           |         |                | 1000~26500      | 2.86           | -37.79       | ≤-17.14     | PASS    |
|           |         | 2462           | Reference       | 3.20           | 3.20         | ---         | PASS    |
|           |         |                | 30~1000         | 3.20           | -68.08       | ≤-16.8      | PASS    |
|           |         |                | 1000~26500      | 3.20           | -30.66       | ≤-16.8      | PASS    |
| 11G       | Ant1    | 2412           | Reference       | -0.75          | -0.75        | ---         | PASS    |
|           |         |                | 30~1000         | -0.75          | -67.85       | ≤-20.75     | PASS    |
|           |         |                | 1000~26500      | -0.75          | -51.63       | ≤-20.75     | PASS    |
|           |         | 2437           | Reference       | -0.99          | -0.99        | ---         | PASS    |
|           |         |                | 30~1000         | -0.99          | -68.04       | ≤-20.99     | PASS    |
|           |         |                | 1000~26500      | -0.99          | -50.81       | ≤-20.99     | PASS    |
|           |         | 2462           | Reference       | -2.32          | -2.32        | ---         | PASS    |
|           |         |                | 30~1000         | -2.32          | -68.21       | ≤-22.32     | PASS    |
|           |         |                | 1000~26500      | -2.32          | -45.4        | ≤-22.32     | PASS    |
| 11N20SISO | Ant1    | 2412           | Reference       | -0.39          | -0.39        | ---         | PASS    |
|           |         |                | 30~1000         | -0.39          | -68.01       | ≤-20.39     | PASS    |
|           |         |                | 1000~26500      | -0.39          | -38.71       | ≤-20.39     | PASS    |
|           |         | 2437           | Reference       | -1.49          | -1.49        | ---         | PASS    |
|           |         |                | 30~1000         | -1.49          | -67.98       | ≤-21.49     | PASS    |
|           |         |                | 1000~26500      | -1.49          | -44.92       | ≤-21.49     | PASS    |
|           |         | 2462           | Reference       | -3.08          | -3.08        | ---         | PASS    |
|           |         |                | 30~1000         | -3.08          | -68.51       | ≤-23.08     | PASS    |
|           |         |                | 1000~26500      | -3.08          | -42.86       | ≤-23.08     | PASS    |
| 11N40SISO | Ant1    | 2422           | Reference       | -4.87          | -4.87        | ---         | PASS    |
|           |         |                | 30~1000         | -4.87          | -68.19       | ≤-24.87     | PASS    |
|           |         |                | 1000~26500      | -4.87          | -53.78       | ≤-24.87     | PASS    |
|           |         | 2437           | Reference       | -4.16          | -4.16        | ---         | PASS    |
|           |         |                | 30~1000         | -4.16          | -67.34       | ≤-24.16     | PASS    |
|           |         |                | 1000~26500      | -4.16          | -48.45       | ≤-24.16     | PASS    |
|           |         | 2452           | Reference       | -3.52          | -3.52        | ---         | PASS    |
|           |         |                | 30~1000         | -3.52          | -67.37       | ≤-23.52     | PASS    |
|           |         |                | 1000~26500      | -3.52          | -49.27       | ≤-23.52     | PASS    |

## Test Graphs

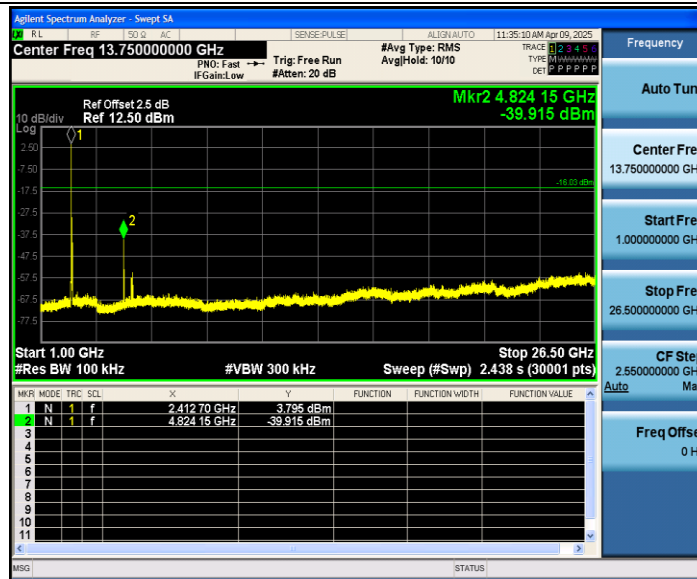
11B\_Ant1\_2412\_0~Reference



11B\_Ant1\_2412\_30~1000



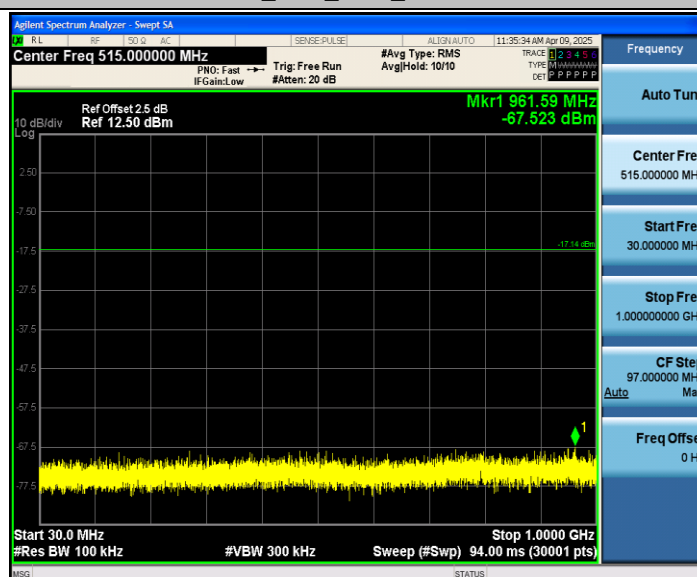
11B\_Ant1\_2412\_1000~26500



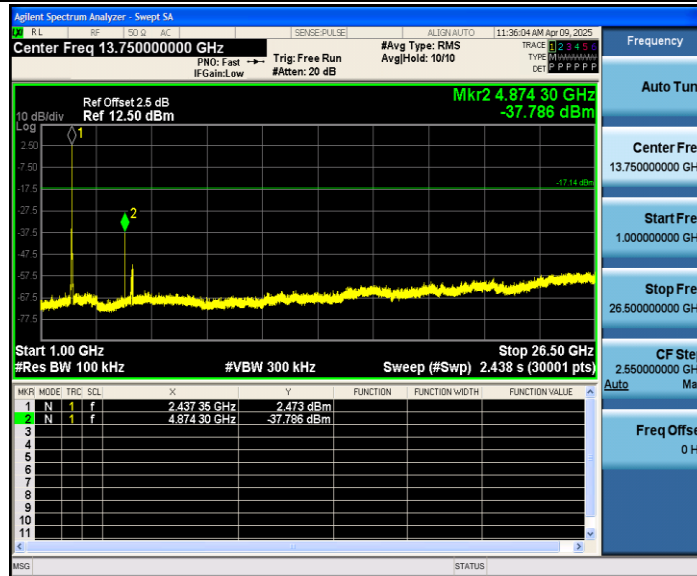
11B\_Ant1\_2437\_0~Reference



11B\_Ant1\_2437\_30~1000



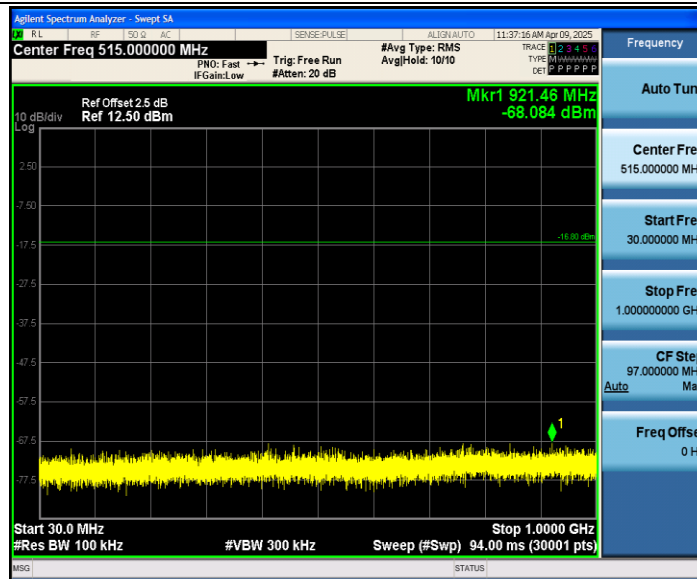
# 11B\_Ant1\_2437\_1000~26500



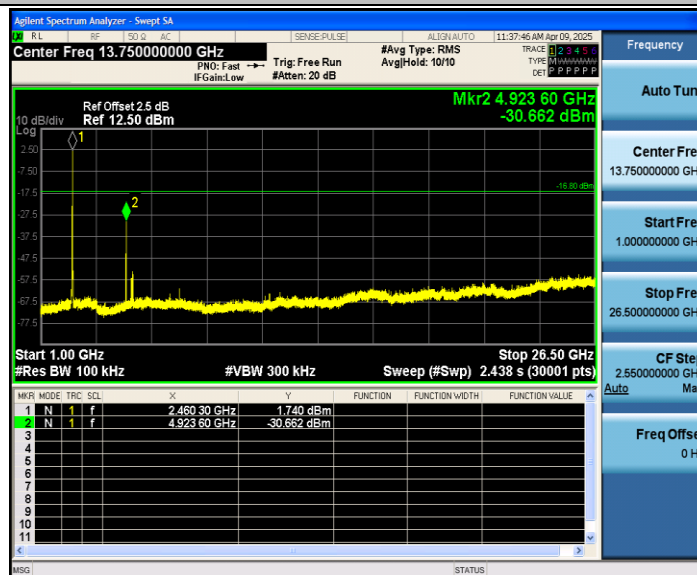
# 11B\_Ant1\_2462\_0~Reference



# 11B\_Ant1\_2462\_30~1000



11B\_Ant1\_2462\_1000~26500



11G\_Ant1\_2412\_0~Reference

