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Test Report No.: W7L-P22050002RF02



11G\_Ant1\_2462

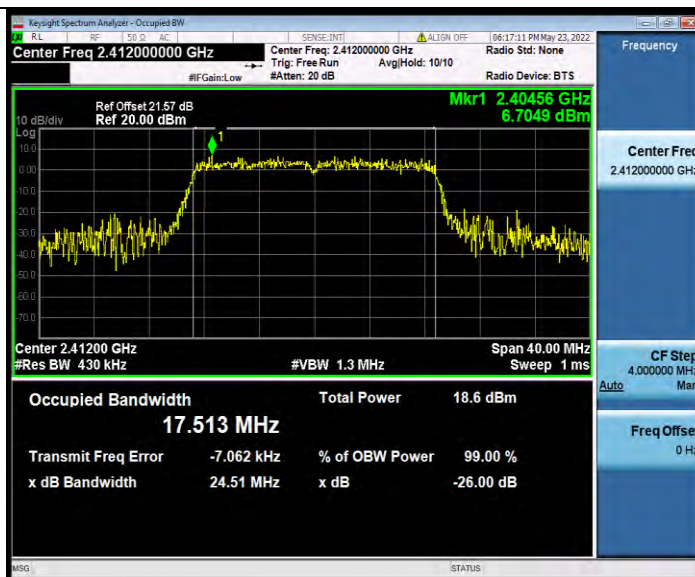


11N20SISO\_Ant1\_2412

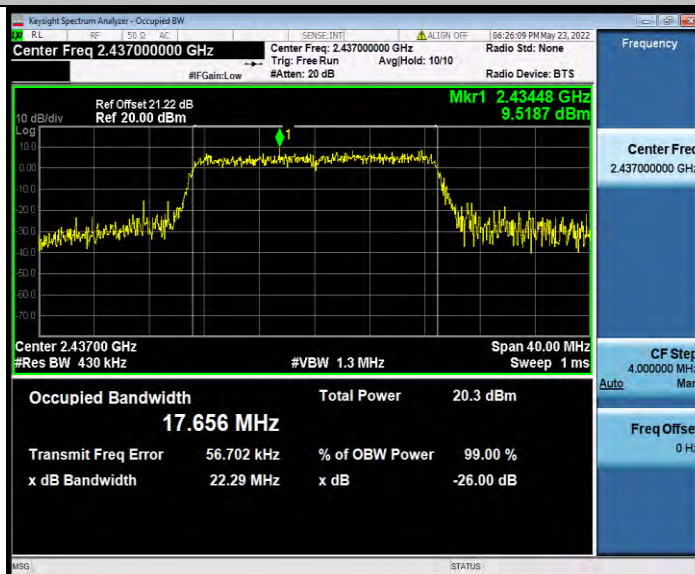


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11N20SISO\_Ant1\_2437

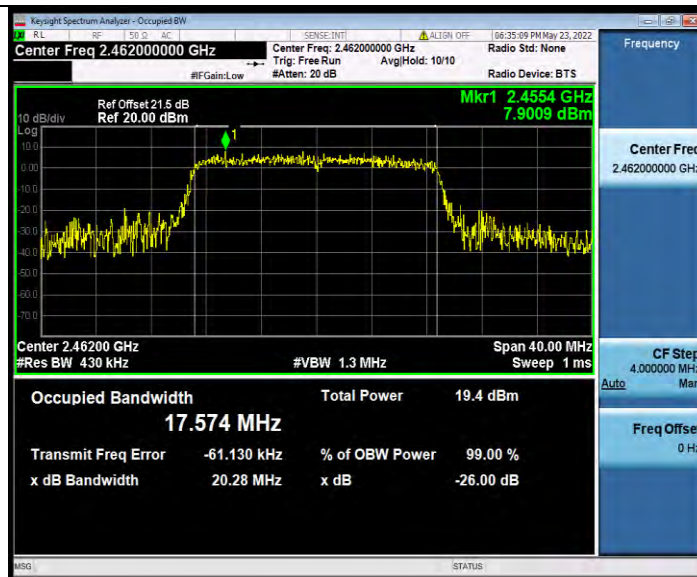


11N20SISO\_Ant1\_2462

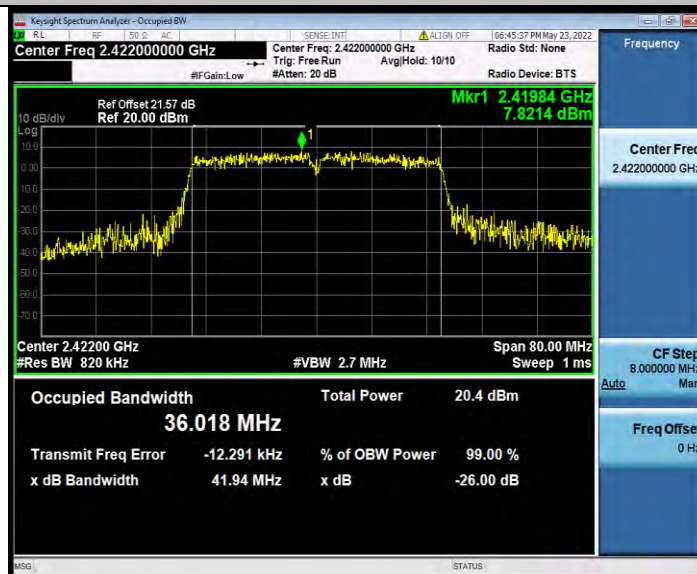


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11N40SISO\_Ant1\_2422

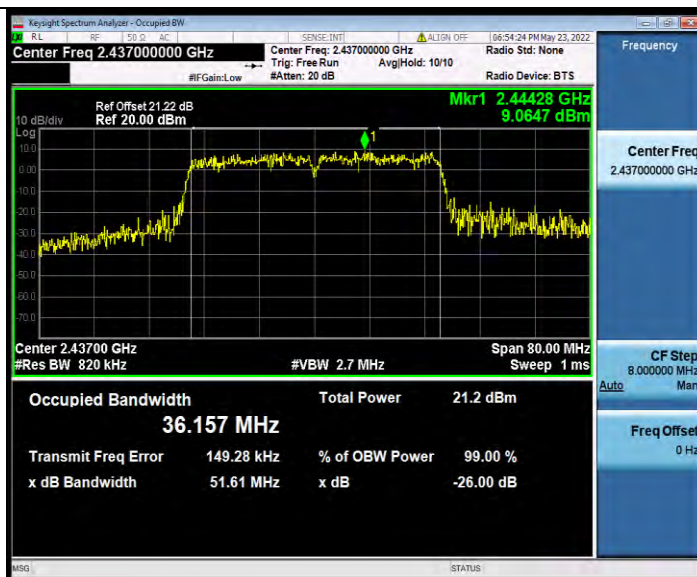


11N40SISO\_Ant1\_2437

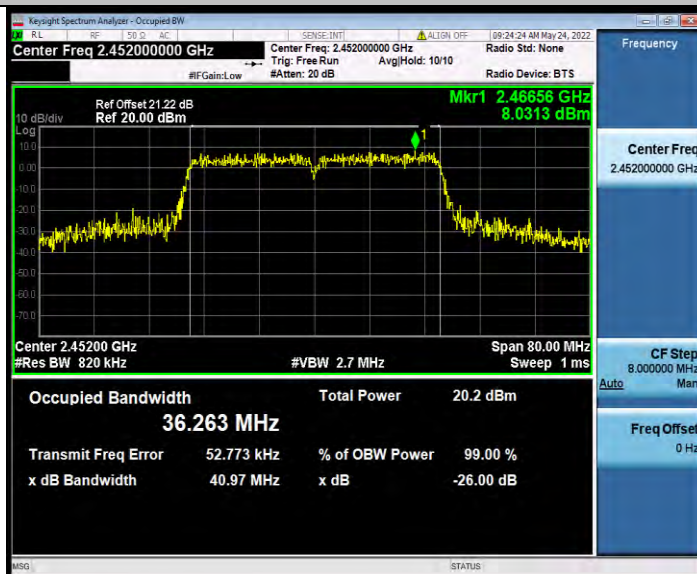


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11N40SISO\_Ant1\_2452



**MAXIMUM CONDUCTED OUTPUT POWER****TEST RESULT**

| TestMode      | Antenna | Freq.<br>(MHz) | Average<br>Power[dBm] | Peak<br>Power[dBm] | Peak<br>Power[mw] | Limit<br>[dBm] | Verdict | Power<br>setting |
|---------------|---------|----------------|-----------------------|--------------------|-------------------|----------------|---------|------------------|
| 11B           | Ant1    | 2412           | 18.42                 | 21.67              | 146.89            | ≤30            | PASS    | 17               |
|               |         | 2437           | 21.22                 | 24.18              | 261.82            | ≤30            | PASS    | 17               |
|               |         | 2462           | 19.53                 | 22.73              | 187.50            | ≤30            | PASS    | 17               |
| 11G           | Ant1    | 2412           | 15.83                 | 23.15              | 206.54            | ≤30            | PASS    | 15               |
|               |         | 2437           | 18.40                 | 24.83              | <b>304.09</b>     | ≤30            | PASS    | 15               |
|               |         | 2462           | 16.89                 | 23.88              | 244.34            | ≤30            | PASS    | 15               |
| 11N20<br>SISO | Ant1    | 2412           | 15.05                 | 22.65              | 184.08            | ≤30            | PASS    | 14               |
|               |         | 2437           | 17.95                 | 24.54              | 284.45            | ≤30            | PASS    | 14               |
|               |         | 2462           | 16.24                 | 23.32              | 214.78            | ≤30            | PASS    | 14               |
| 11N40<br>SISO | Ant1    | 2422           | 16.18                 | 23.35              | 216.27            | ≤30            | PASS    | 14               |
|               |         | 2437           | 17.76                 | 24.71              | 295.80            | ≤30            | PASS    | 14               |
|               |         | 2452           | 14.86                 | 22.54              | 179.47            | ≤30            | PASS    | 13               |



## **MAXIMUM POWER SPECTRAL DENSITY TEST RESULT**

| TestMode  | Antenna | Freq(MHz) | Result<br>[dBm/3kHz] | Limit<br>[dBm/3kHz] | Verdict |
|-----------|---------|-----------|----------------------|---------------------|---------|
| 11B       | Ant1    | 2412      | -0.98                | ≤8.00               | PASS    |
|           |         | 2437      | 0.82                 | ≤8.00               | PASS    |
|           |         | 2462      | -0.42                | ≤8.00               | PASS    |
| 11G       | Ant1    | 2412      | -8.93                | ≤8.00               | PASS    |
|           |         | 2437      | -7.97                | ≤8.00               | PASS    |
|           |         | 2462      | -8.50                | ≤8.00               | PASS    |
| 11N20SISO | Ant1    | 2412      | -9.73                | ≤8.00               | PASS    |
|           |         | 2437      | -8.15                | ≤8.00               | PASS    |
|           |         | 2462      | -8.97                | ≤8.00               | PASS    |
| 11N40SISO | Ant1    | 2422      | -11.60               | ≤8.00               | PASS    |
|           |         | 2437      | -10.95               | ≤8.00               | PASS    |
|           |         | 2452      | -11.02               | ≤8.00               | PASS    |



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## TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437



11B\_Ant1\_2462



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11G\_Ant1\_2412

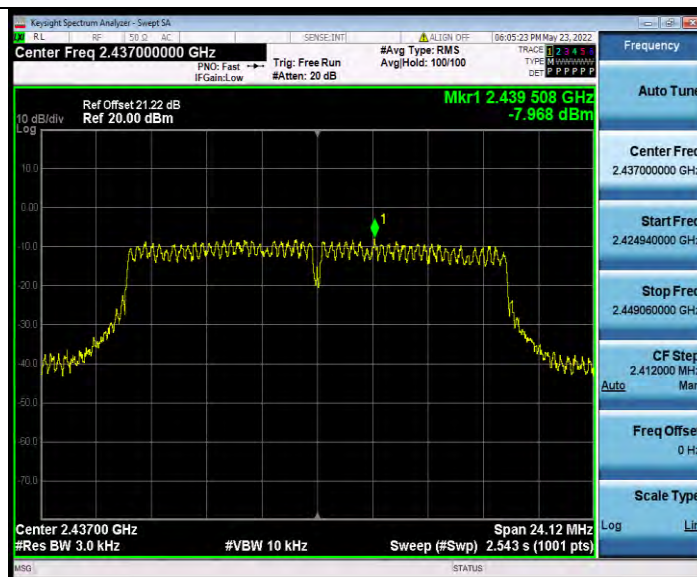


11G\_Ant1\_2437

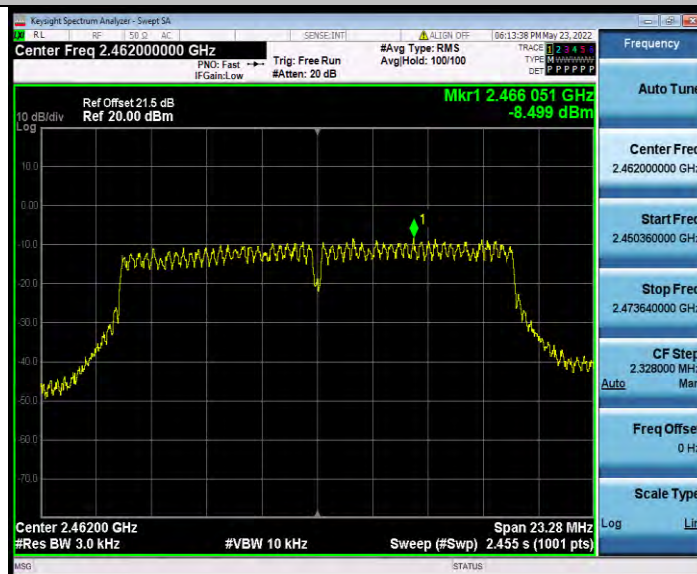


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11G\_Ant1\_2462

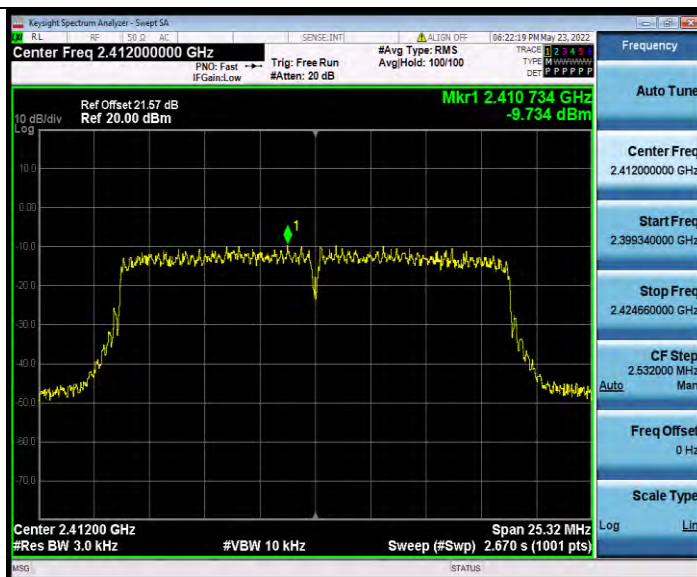


11N20SISO\_Ant1\_2412



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11N20SISO\_Ant1\_2437

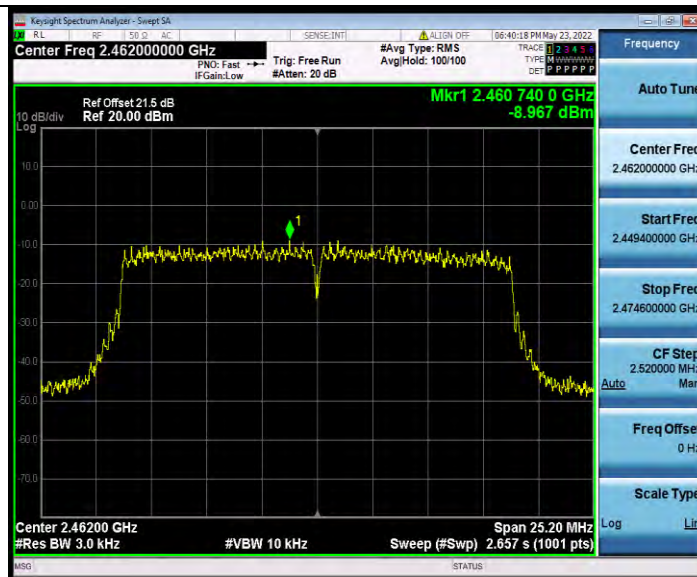


11N20SISO\_Ant1\_2462

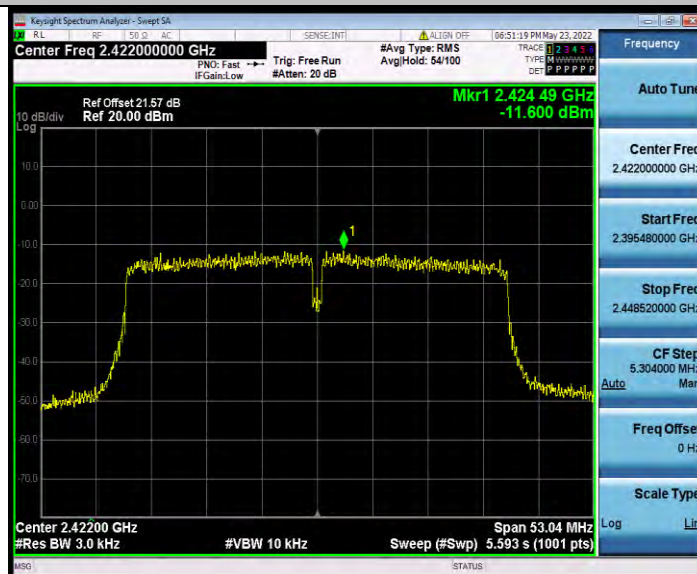


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11N40SISO\_Ant1\_2422



11N40SISO\_Ant1\_2437



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11N40SISO\_Ant1\_2452



**REFERENCE LEVEL MEASUREMENT****TEST RESULT**

| TestMode  | Antenna | Freq(MHz) | Max.Point[MHz] | Result[dBm] |
|-----------|---------|-----------|----------------|-------------|
| 11B       | Ant1    | 2412      | 2413.01        | 9.68        |
|           |         | 2437      | 2438.00        | 11.49       |
|           |         | 2462      | 2461.00        | 10.02       |
| 11G       | Ant1    | 2412      | 2409.52        | 3.85        |
|           |         | 2437      | 2438.28        | 6.55        |
|           |         | 2462      | 2464.47        | 4.94        |
| 11N20SISO | Ant1    | 2412      | 2413.27        | 3.87        |
|           |         | 2437      | 2438.27        | 5.31        |
|           |         | 2462      | 2454.54        | 4.17        |
| 11N40SISO | Ant1    | 2422      | 2415.74        | 2.16        |
|           |         | 2437      | 2440.75        | 2.84        |
|           |         | 2452      | 2464.50        | 1.81        |



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## TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437



11B\_Ant1\_2462



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Test Report No.: W7L-P22050002RF02



11G\_Ant1\_2412



11G\_Ant1\_2437



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11G\_Ant1\_2462



11N20SISO\_Ant1\_2412



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11N20SISO\_Ant1\_2437



11N20SISO\_Ant1\_2462



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11N40SISO\_Ant1\_2422



11N40SISO\_Ant1\_2437



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11N40SISO\_Ant1\_2452



**BAND EDGE MEASUREMENTS****TEST RESULT**

| TestMode  | Antenna | ChName | Freq(MHz) | RefLevel<br>[dBm] | Result<br>[dBm] | Limit[dBm] | Verdict |
|-----------|---------|--------|-----------|-------------------|-----------------|------------|---------|
| 11B       | Ant1    | Low    | 2412      | 9.68              | -42.00          | ≤-10.32    | PASS    |
|           |         | High   | 2462      | 10.02             | -44.29          | ≤-9.98     | PASS    |
| 11G       | Ant1    | Low    | 2412      | 3.85              | -28.38          | ≤-16.15    | PASS    |
|           |         | High   | 2462      | 4.94              | -38.34          | ≤-15.06    | PASS    |
| 11N20SISO | Ant1    | Low    | 2412      | 3.87              | -27.90          | ≤-16.13    | PASS    |
|           |         | High   | 2462      | 4.17              | -41.29          | ≤-15.83    | PASS    |
| 11N40SISO | Ant1    | Low    | 2422      | 2.16              | -29.31          | ≤-17.84    | PASS    |
|           |         | High   | 2452      | 1.81              | -35.12          | ≤-18.19    | PASS    |

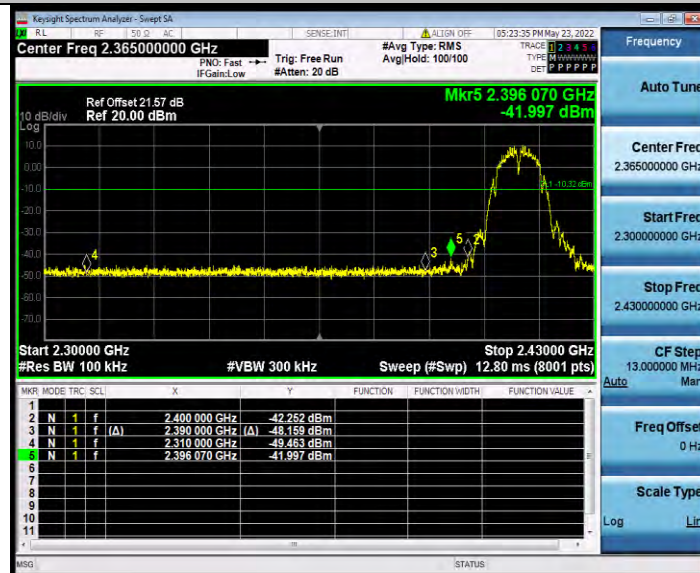


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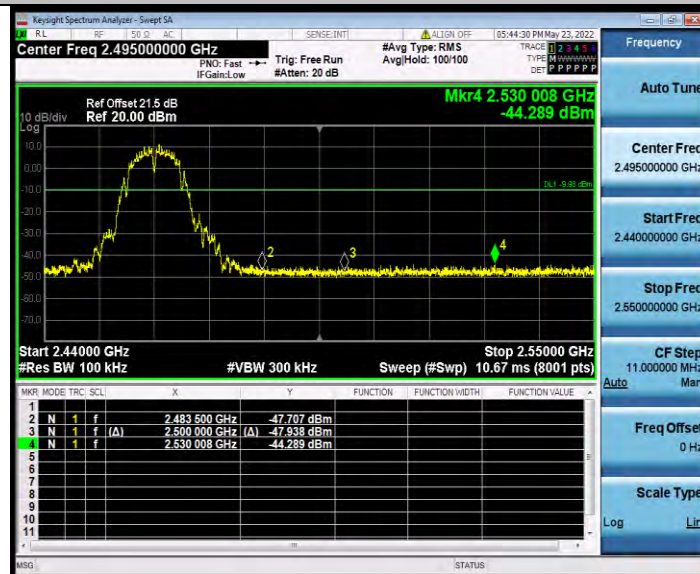
Test Report No.: W7L-P22050002RF02

## TEST GRAPHS

11B\_Ant1\_Low\_2412



11B\_Ant1\_High\_2462

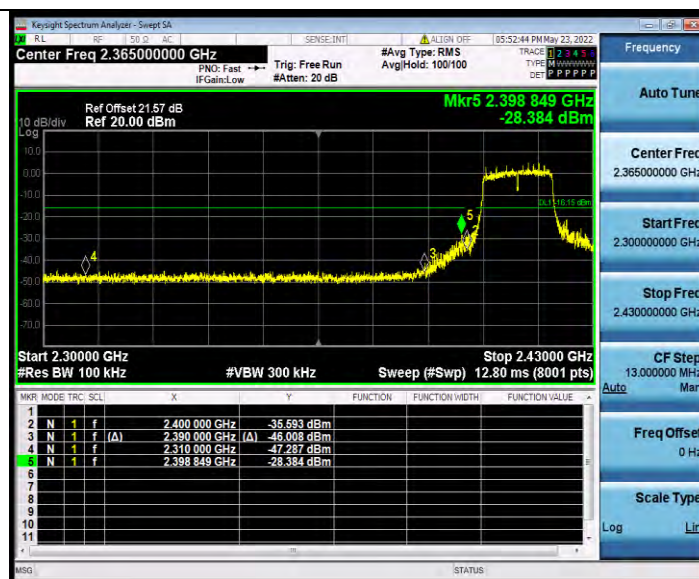


11G\_Ant1\_Low\_2412

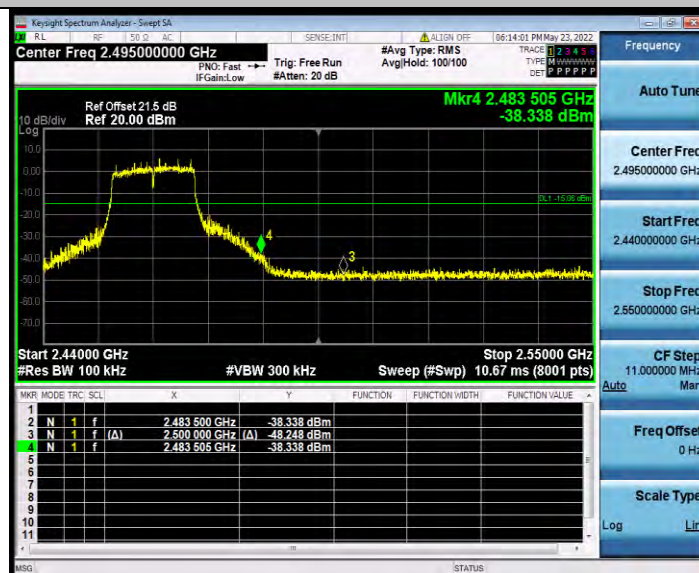


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11G\_Ant1\_High\_2462

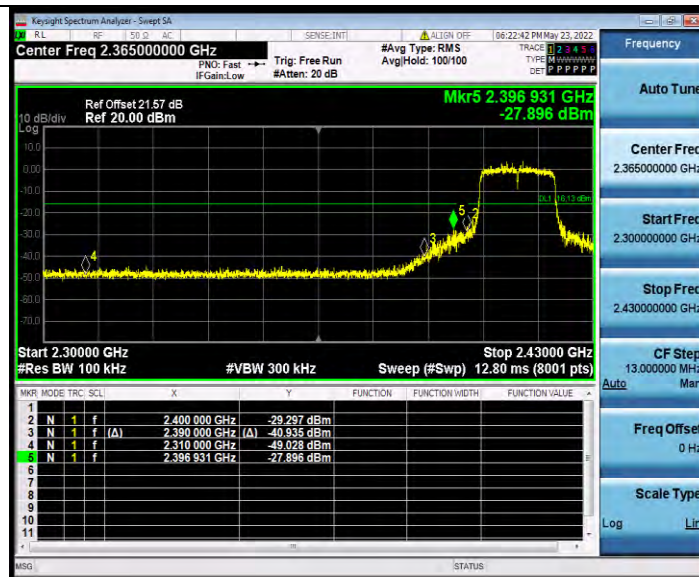


11N20SISO\_Ant1\_Low\_2412

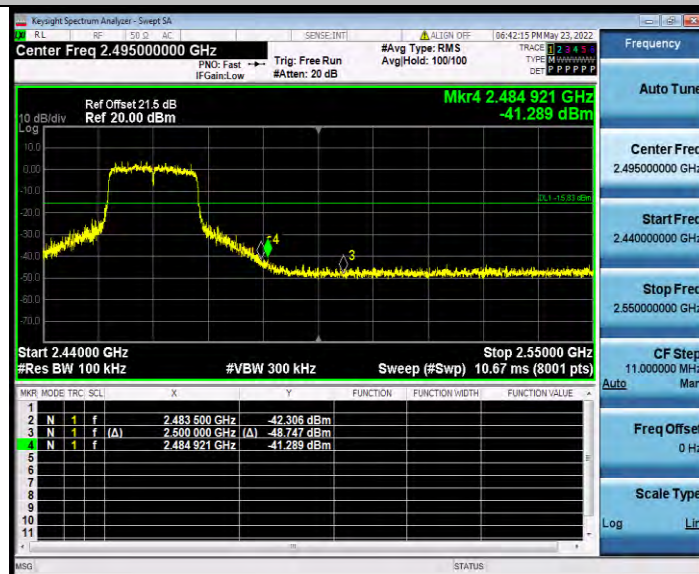


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11N20SISO\_Ant1\_High\_2462

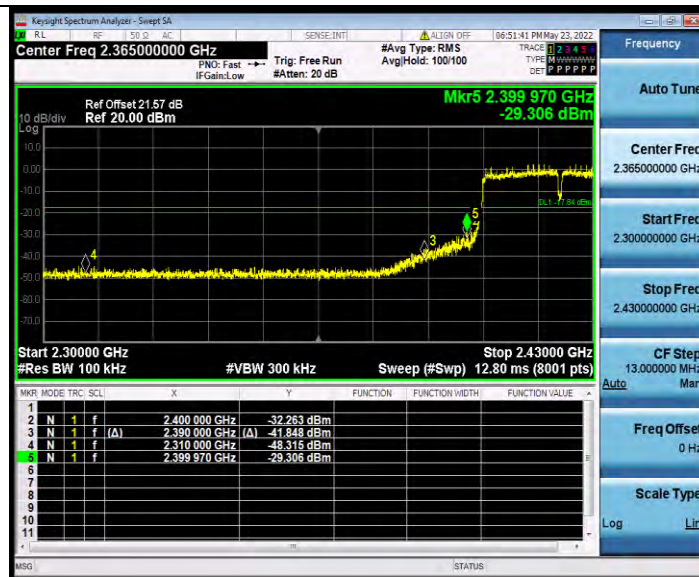


11N40SISO\_Ant1\_Low\_2422

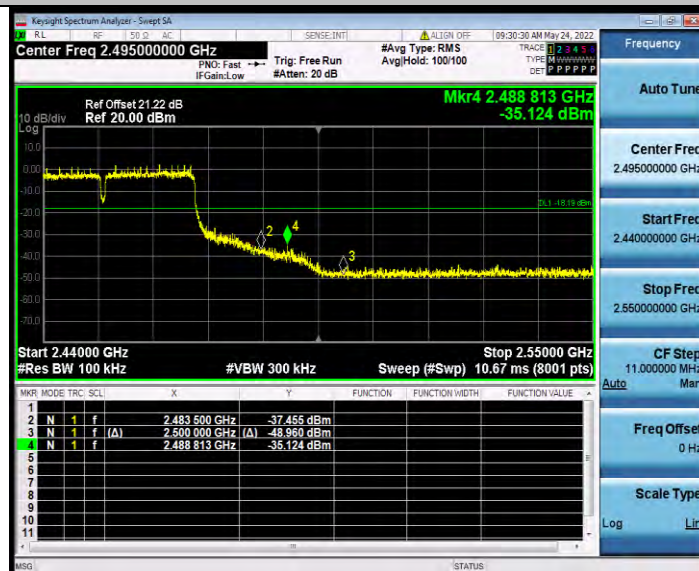


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11N40SISO\_Ant1\_High\_2452



**CONDUCTED SPURIOUS EMISSION****TEST RESULT**

| TestMode  | Antenna | Freq(MHz) | FreqRange<br>[Mhz] | RefLevel<br>[dBm] | Result<br>[dBm] | Limit<br>[dBm] | Verdict |
|-----------|---------|-----------|--------------------|-------------------|-----------------|----------------|---------|
| 11B       | Ant1    | 2412      | 30~1000            | 9.68              | -43.26          | ≤-10.32        | PASS    |
|           |         |           | 1000~26500         | 9.68              | -26.91          | ≤-10.32        | PASS    |
|           |         | 2437      | 30~1000            | 11.49             | -42.91          | ≤-8.51         | PASS    |
|           |         |           | 1000~26500         | 11.49             | -27.51          | ≤-8.51         | PASS    |
|           |         | 2462      | 30~1000            | 10.02             | -43.49          | ≤-9.98         | PASS    |
|           |         |           | 1000~26500         | 10.02             | -27.52          | ≤-9.98         | PASS    |
| 11G       | Ant1    | 2412      | 30~1000            | 3.85              | -43.27          | ≤-16.15        | PASS    |
|           |         |           | 1000~26500         | 3.85              | -27.04          | ≤-16.15        | PASS    |
|           |         | 2437      | 30~1000            | 6.55              | -43.18          | ≤-13.45        | PASS    |
|           |         |           | 1000~26500         | 6.55              | -27.91          | ≤-13.45        | PASS    |
|           |         | 2462      | 30~1000            | 4.94              | -43.07          | ≤-15.06        | PASS    |
|           |         |           | 1000~26500         | 4.94              | -26.86          | ≤-15.06        | PASS    |
| 11N20SISO | Ant1    | 2412      | 30~1000            | 3.87              | -43.22          | ≤-16.13        | PASS    |
|           |         |           | 1000~26500         | 3.87              | -27.39          | ≤-16.13        | PASS    |
|           |         | 2437      | 30~1000            | 5.31              | -43.76          | ≤-14.69        | PASS    |
|           |         |           | 1000~26500         | 5.31              | -28.06          | ≤-14.69        | PASS    |
|           |         | 2462      | 30~1000            | 4.17              | -43.49          | ≤-15.83        | PASS    |
|           |         |           | 1000~26500         | 4.17              | -27.91          | ≤-15.83        | PASS    |
| 11N40SISO | Ant1    | 2422      | 30~1000            | 2.16              | -42.01          | ≤-17.84        | PASS    |
|           |         |           | 1000~26500         | 2.16              | -26.42          | ≤-17.84        | PASS    |
|           |         | 2437      | 30~1000            | 2.84              | -43.82          | ≤-17.16        | PASS    |
|           |         |           | 1000~26500         | 2.84              | -27.38          | ≤-17.16        | PASS    |
|           |         | 2452      | 30~1000            | 1.81              | -43.37          | ≤-18.19        | PASS    |
|           |         |           | 1000~26500         | 1.81              | -27.57          | ≤-18.19        | PASS    |

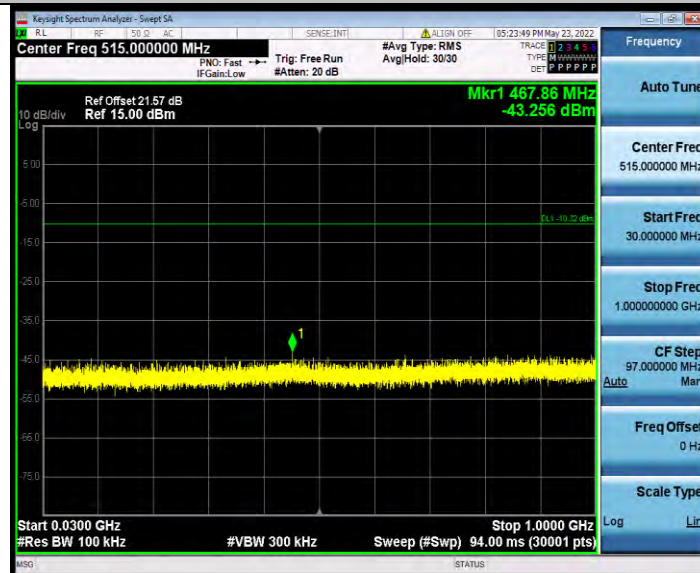


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## TEST GRAPHS

11B\_Ant1\_2412\_30~1000



11B\_Ant1\_2412\_1000~26500

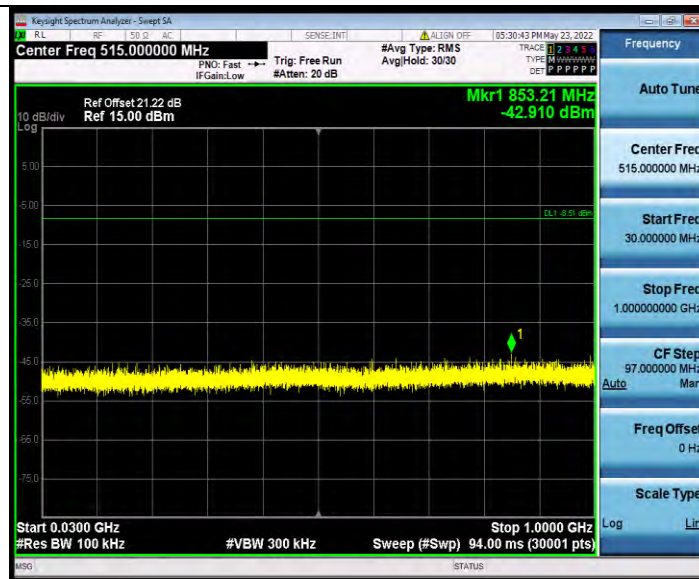


11B\_Ant1\_2437\_30~1000



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11B\_Ant1\_2437\_1000~26500

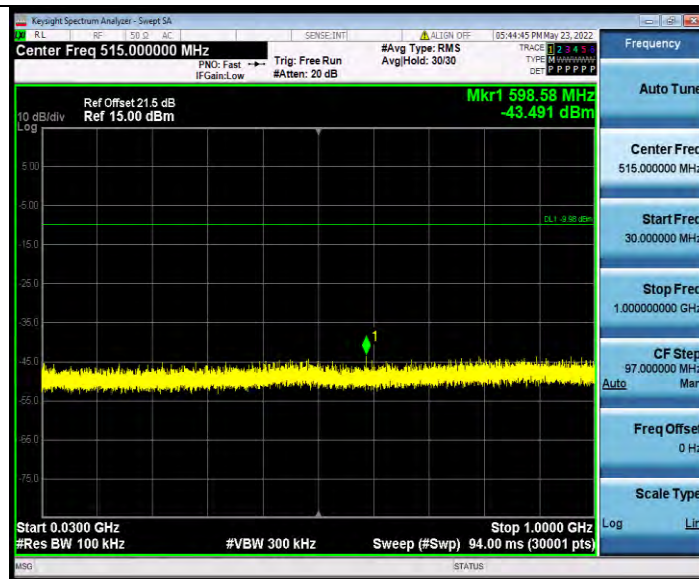


11B\_Ant1\_2462\_30~1000



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11B\_Ant1\_2462\_1000~26500

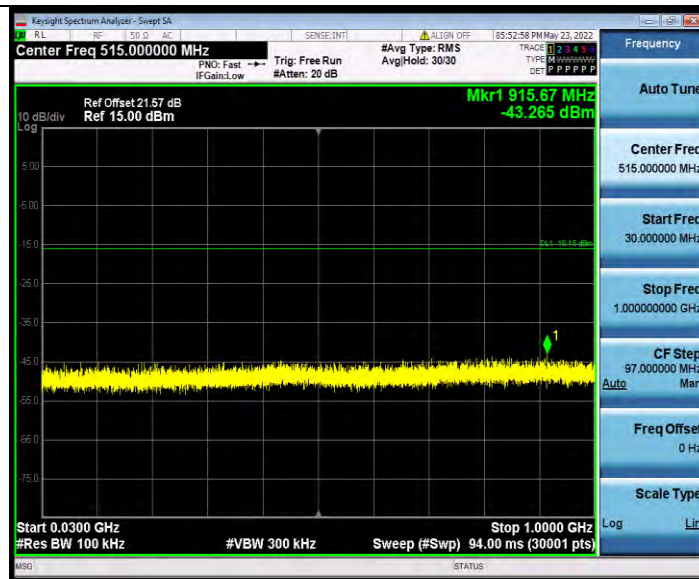


11G\_Ant1\_2412\_30~1000



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11G\_Ant1\_2412\_1000~26500



11G\_Ant1\_2437\_30~1000



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Test Report No.: W7L-P22050002RF02



11G\_Ant1\_2437\_1000~26500

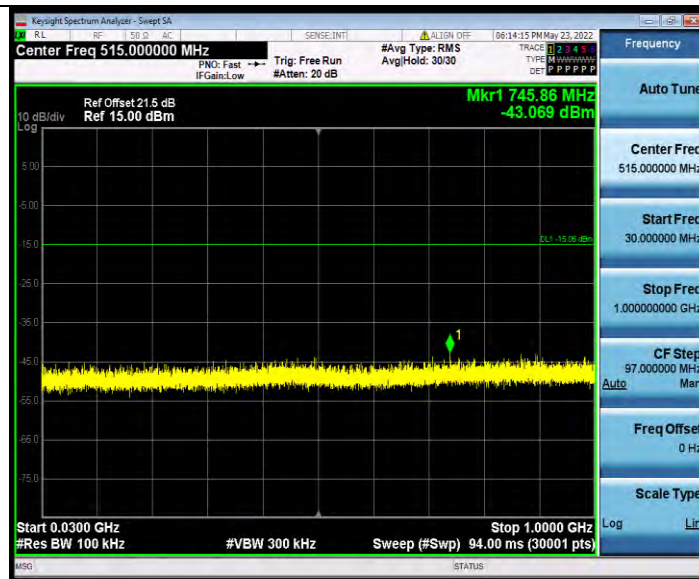


11G\_Ant1\_2462\_30~1000



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11G\_Ant1\_2462\_1000~26500

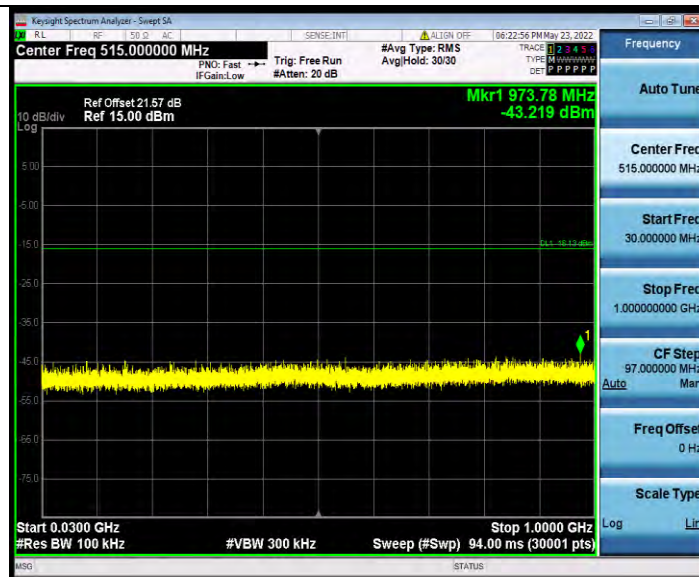


11N20SISO\_Ant1\_2412\_30~1000



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11N20SISO\_Ant1\_2412\_1000~26500



11N20SISO\_Ant1\_2437\_30~1000



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11N20SISO\_Ant1\_2437\_1000~26500

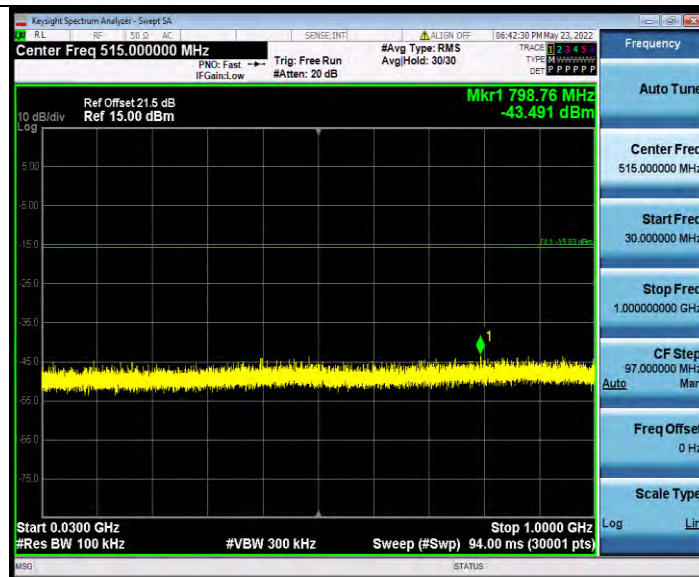


11N20SISO\_Ant1\_2462\_30~1000



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11N20SISO\_Ant1\_2462\_1000~26500

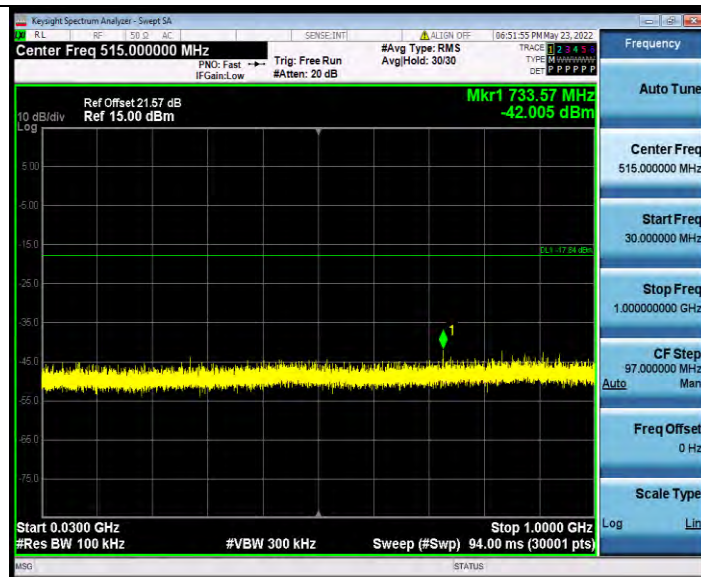


11N40SISO\_Ant1\_2422\_30~1000



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11N40SISO\_Ant1\_2422\_1000~26500



11N40SISO\_Ant1\_2437\_30~1000



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11N40SISO\_Ant1\_2437\_1000~26500

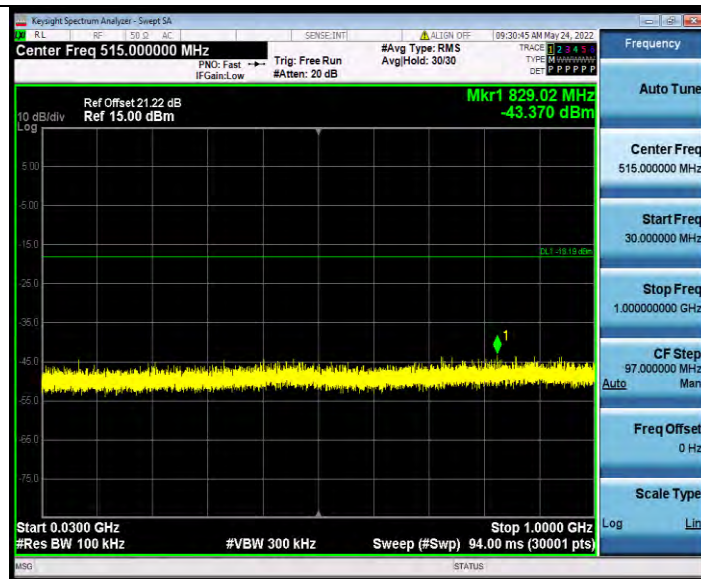


11N40SISO\_Ant1\_2452\_30~1000



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11N40SISO\_Ant1\_2452\_1000~26500



**DUTY CYCLE****TEST RESULT**

| TestMode  | Antenna | Freq(MHz) | Transmission<br>Duration [ms] | Transmission<br>Period [ms] | Duty Cycle<br>[%] | Verdict |
|-----------|---------|-----------|-------------------------------|-----------------------------|-------------------|---------|
| 11B       | Ant1    | 2412      | 8.22                          | 8.30                        | 99.04             | ---     |
|           |         | 2437      | 8.22                          | 8.30                        | 99.04             | ---     |
|           |         | 2462      | 8.22                          | 8.30                        | 99.04             | ---     |
| 11G       | Ant1    | 2412      | 1.36                          | 1.43                        | 95.10             | ---     |
|           |         | 2437      | 1.37                          | 1.44                        | 95.14             | ---     |
|           |         | 2462      | 1.36                          | 1.43                        | 95.10             | ---     |
| 11N20SISO | Ant1    | 2412      | 1.15                          | 1.23                        | 93.50             | ---     |
|           |         | 2437      | 1.15                          | 1.27                        | 90.55             | ---     |
|           |         | 2462      | 1.15                          | 1.24                        | 92.74             | ---     |
| 11N40SISO | Ant1    | 2422      | 0.58                          | 0.65                        | 89.23             | ---     |
|           |         | 2437      | 0.57                          | 0.65                        | 87.69             | ---     |
|           |         | 2452      | 0.58                          | 0.67                        | 86.57             | ---     |

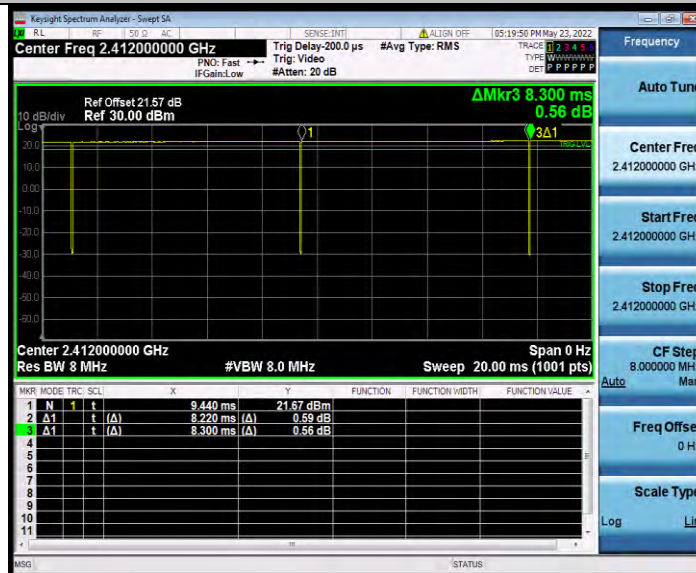


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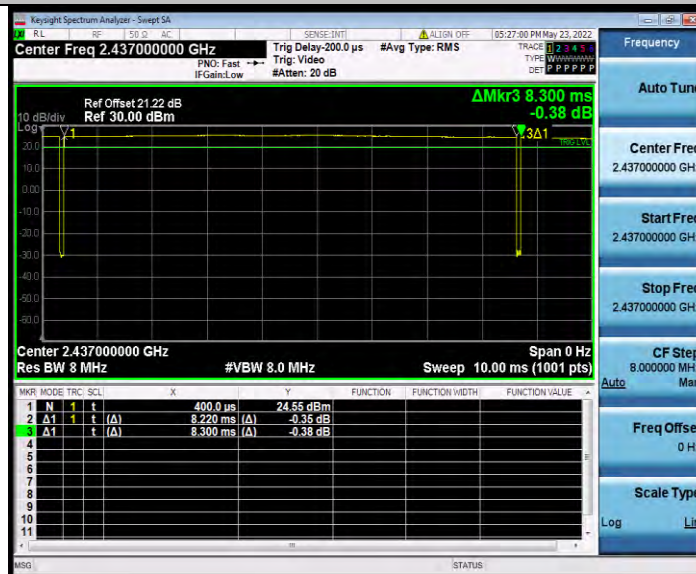
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## TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437

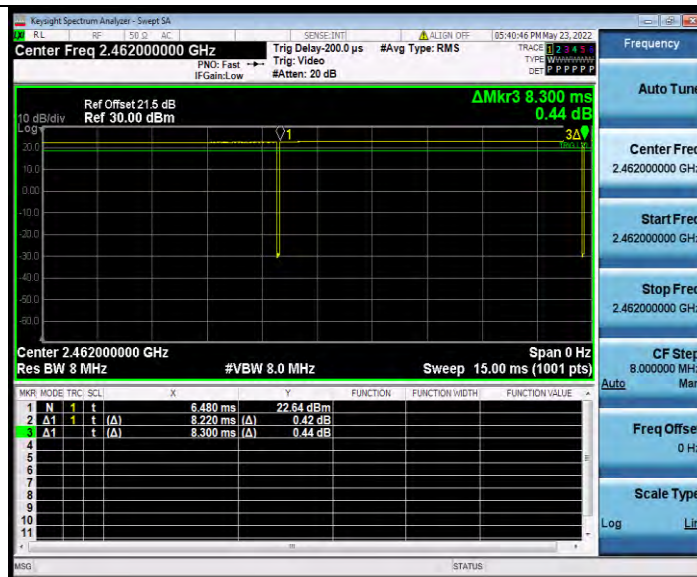


11B\_Ant1\_2462

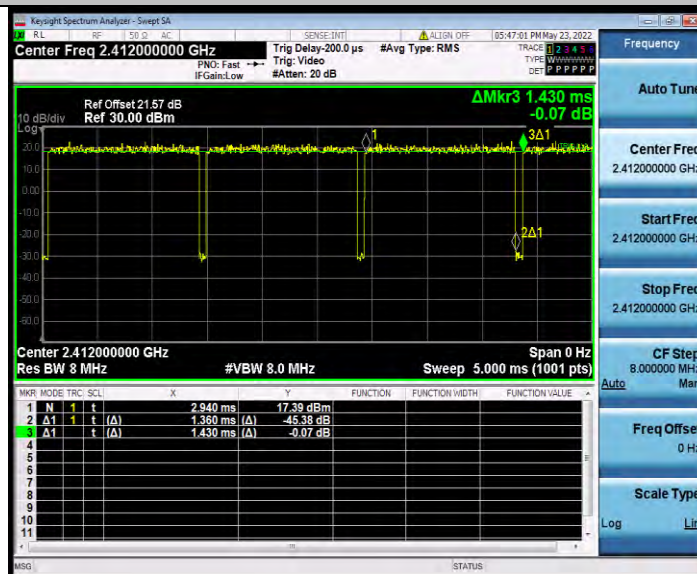


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11G\_Ant1\_2412

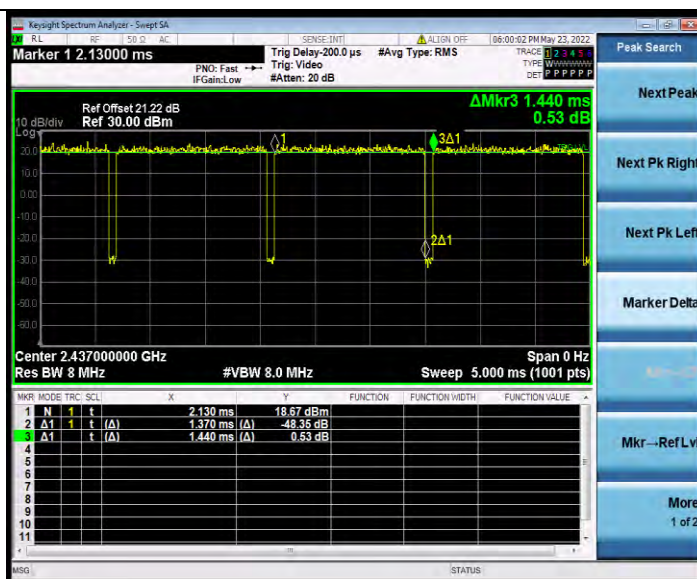


11G\_Ant1\_2437

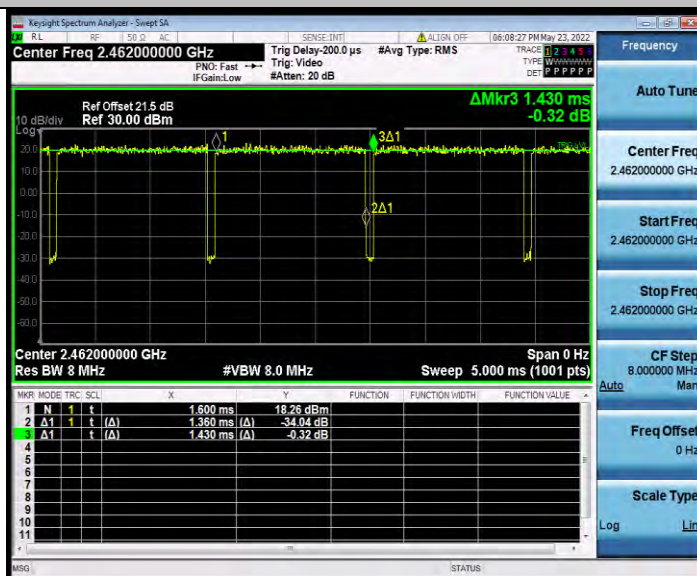


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11G\_Ant1\_2462

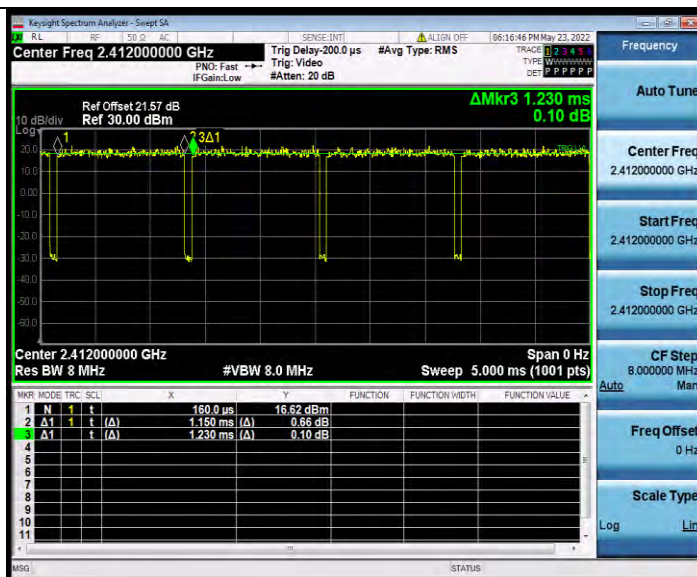


11N20SISO\_Ant1\_2412

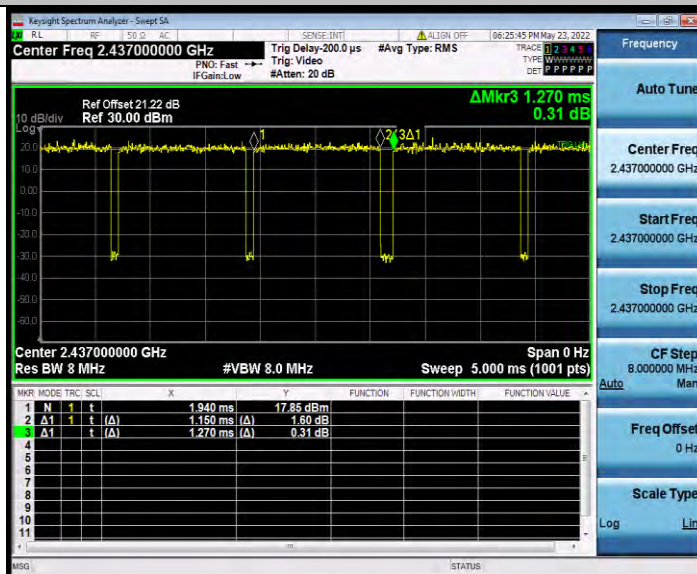


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11N20SISO\_Ant1\_2437

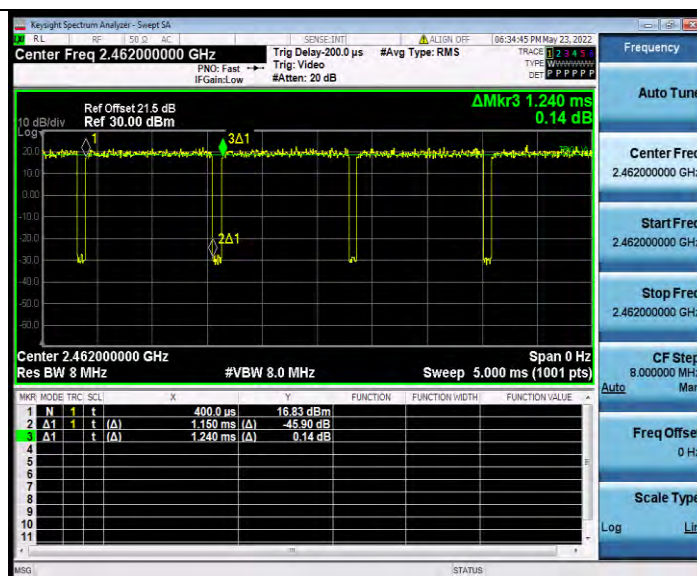


11N20SISO\_Ant1\_2462

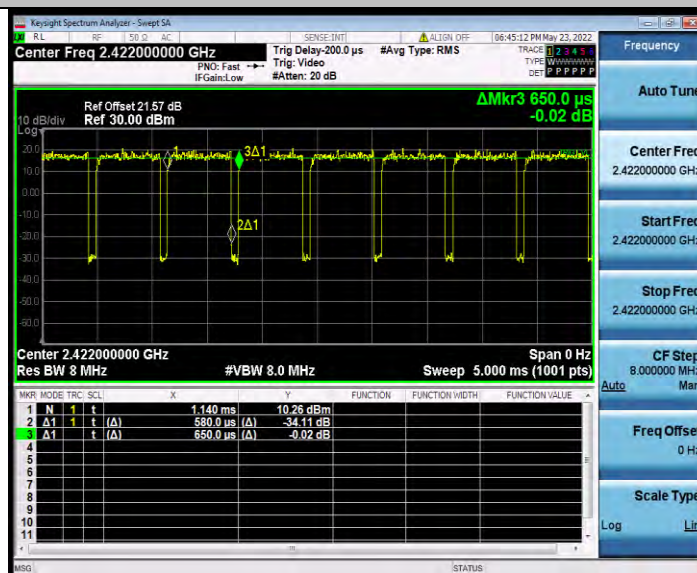


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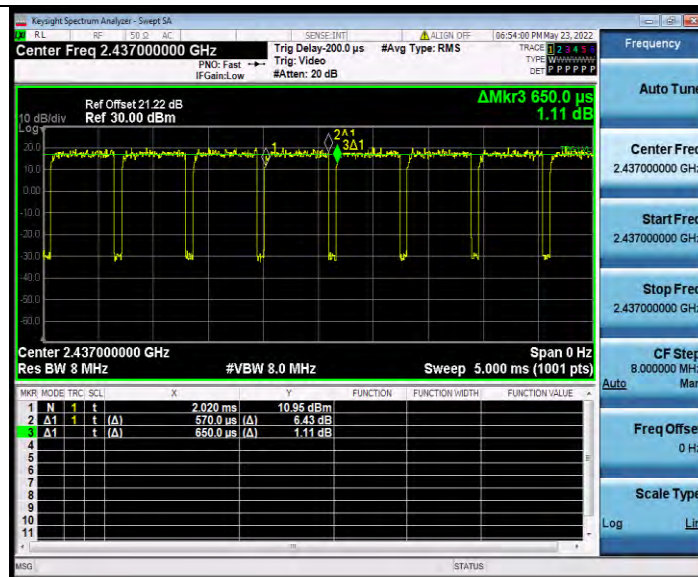
Test Report No.: W7L-P22050002RF02



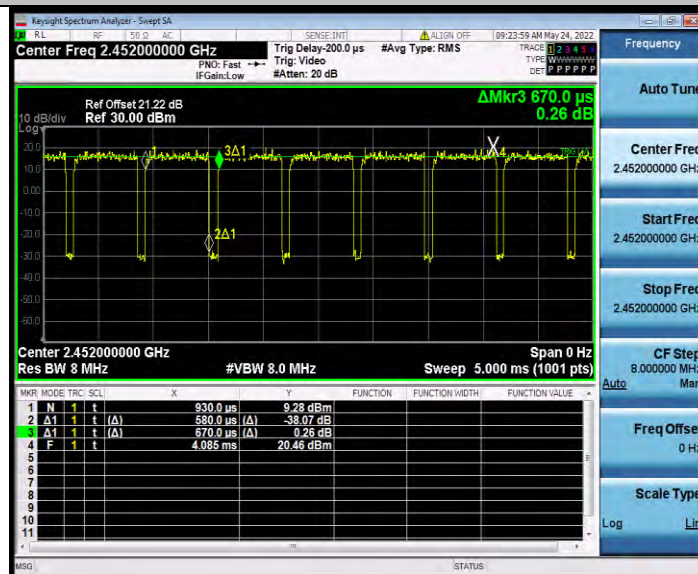
11N40SISO\_Ant1\_2422



11N40SISO\_Ant1\_2437



11N40SISO\_Ant1\_2452





Test Report No.: W7L-P22050002RF02

## 7 Appendix 2 BLE

### DTS BANDWIDTH

#### TEST RESULT

| TestMode | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|----------------|--------------|----------|----------|------------|---------|
| BLE_125K | Ant1    | 2402           | 0.680        | 2401.660 | 2402.340 | 0.5        | PASS    |
|          |         | 2440           | 0.680        | 2439.656 | 2440.336 | 0.5        | PASS    |
|          |         | 2480           | 0.680        | 2479.656 | 2480.336 | 0.5        | PASS    |
| BLE_1M   | Ant1    | 2402           | 0.640        | 2401.676 | 2402.316 | 0.5        | PASS    |
|          |         | 2440           | 0.656        | 2439.672 | 2440.328 | 0.5        | PASS    |
|          |         | 2480           | 0.720        | 2479.636 | 2480.356 | 0.5        | PASS    |
| BLE_2M   | Ant1    | 2402           | 1.120        | 2401.424 | 2402.544 | 0.5        | PASS    |
|          |         | 2440           | 1.232        | 2439.360 | 2440.592 | 0.5        | PASS    |
|          |         | 2480           | 1.228        | 2479.352 | 2480.580 | 0.5        | PASS    |
| BLE_500K | Ant1    | 2402           | 0.660        | 2401.676 | 2402.336 | 0.5        | PASS    |
|          |         | 2440           | 0.644        | 2439.676 | 2440.320 | 0.5        | PASS    |
|          |         | 2480           | 0.648        | 2479.676 | 2480.324 | 0.5        | PASS    |



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Test Report No.: W7L-P22050002RF02

## TEST GRAPHS

BLE\_125K\_Ant1\_2402



BLE\_125K\_Ant1\_2440



BLE\_125K\_Ant1\_2480



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Test Report No.: W7L-P22050002RF02



BLE\_1M\_Ant1\_2402

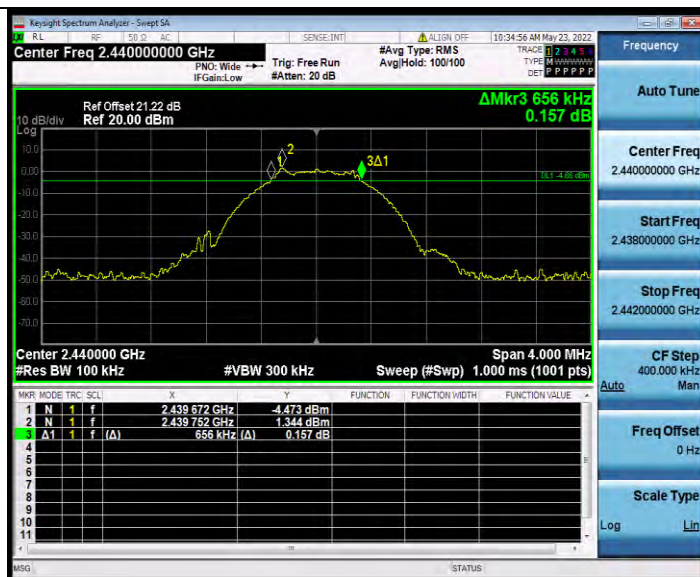


BLE\_1M\_Ant1\_2440



BUREAU  
VERITAS

Test Report No.: W7L-P22050002RF02



BLE\_1M\_Ant1\_2480



BLE\_2M\_Ant1\_2402



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VERITAS

Test Report No.: W7L-P22050002RF02



BLE\_2M\_Ant1\_2440



BLE\_2M\_Ant1\_2480



BUREAU  
VERITAS

Test Report No.: W7L-P22050002RF02



BLE\_500K\_Ant1\_2402

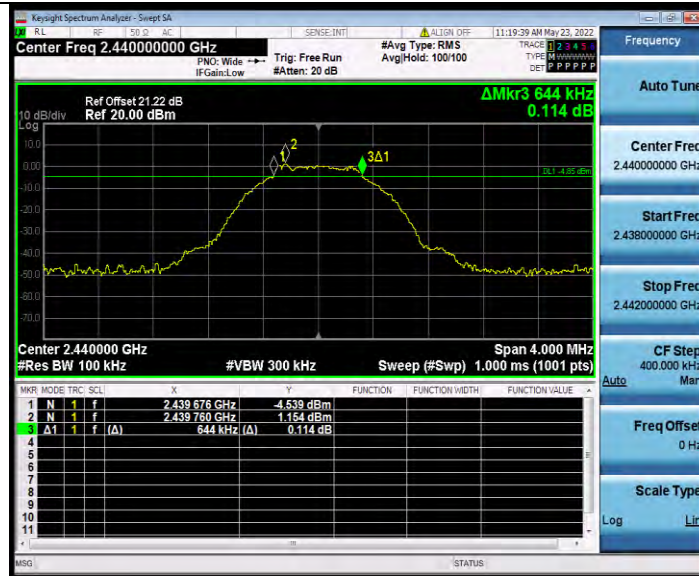


BLE\_500K\_Ant1\_2440



BUREAU  
VERITAS

Test Report No.: W7L-P22050002RF02



BLE\_500K\_Ant1\_2480



**OCCUPIED CHANNEL BANDWIDTH****TEST RESULT**

| TestMode | Antenna | Frequency[MHz] | OCB [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|----------------|-----------|----------|----------|------------|---------|
| BLE_125K | Ant1    | 2402           | 1.0402    | 2401.476 | 2402.516 | ---        | ---     |
|          |         | 2440           | 1.0415    | 2439.475 | 2440.517 | ---        | ---     |
|          |         | 2480           | 1.0418    | 2479.474 | 2480.516 | ---        | ---     |
| BLE_1M   | Ant1    | 2402           | 1.0122    | 2401.496 | 2402.508 | ---        | ---     |
|          |         | 2440           | 1.0089    | 2439.495 | 2440.504 | ---        | ---     |
|          |         | 2480           | 1.0089    | 2479.496 | 2480.505 | ---        | ---     |
| BLE_2M   | Ant1    | 2402           | 2.0216    | 2401.004 | 2403.026 | ---        | ---     |
|          |         | 2440           | 2.0192    | 2439.004 | 2441.023 | ---        | ---     |
|          |         | 2480           | 2.0254    | 2479.000 | 2481.025 | ---        | ---     |
| BLE_500K | Ant1    | 2402           | 1.0148    | 2401.488 | 2402.503 | ---        | ---     |
|          |         | 2440           | 1.0146    | 2439.489 | 2440.504 | ---        | ---     |
|          |         | 2480           | 1.0082    | 2479.492 | 2480.501 | ---        | ---     |

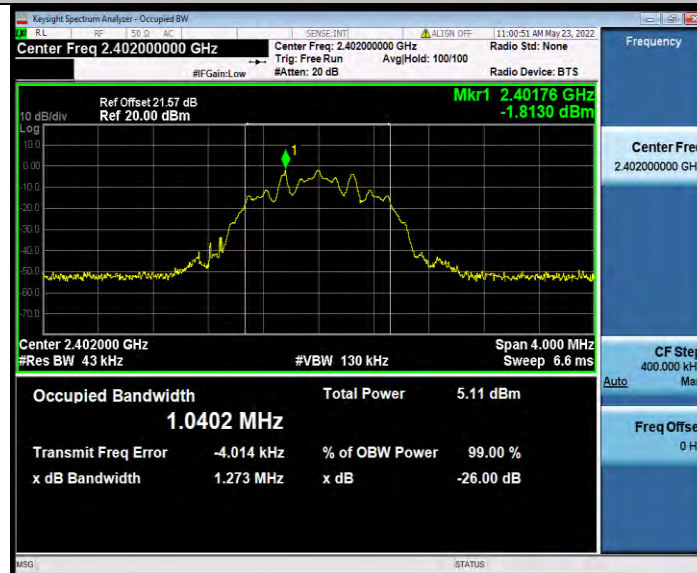


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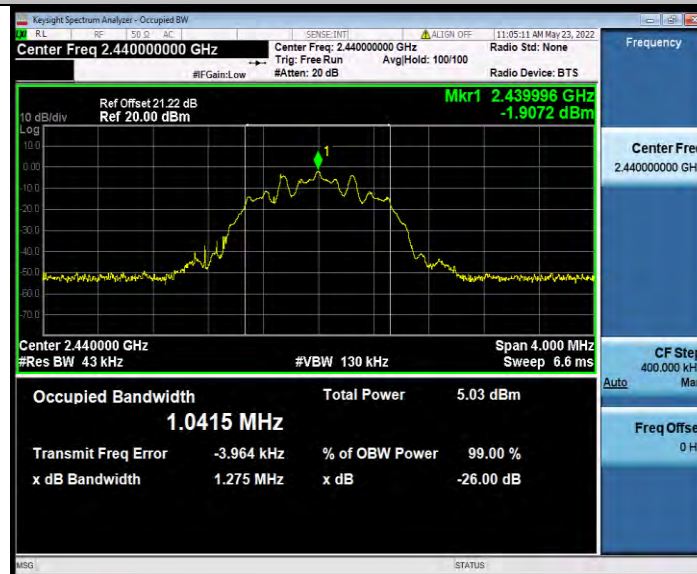
Test Report No.: W7L-P22050002RF02

## TEST GRAPHS

BLE\_125K\_Ant1\_2402



BLE\_125K\_Ant1\_2440



BLE\_125K\_Ant1\_2480



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Test Report No.: W7L-P22050002RF02



BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440



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Test Report No.: W7L-P22050002RF02



BLE\_1M\_Ant1\_2480



BLE\_2M\_Ant1\_2402

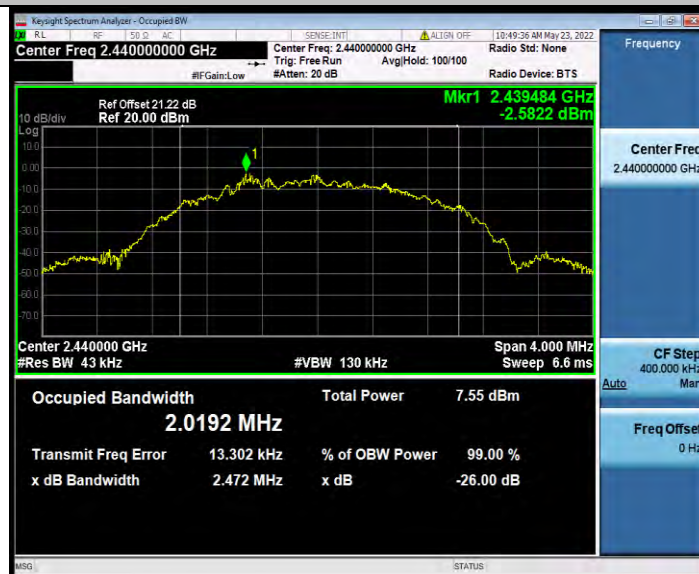


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Test Report No.: W7L-P22050002RF02



BLE\_2M\_Ant1\_2440



BLE\_2M\_Ant1\_2480

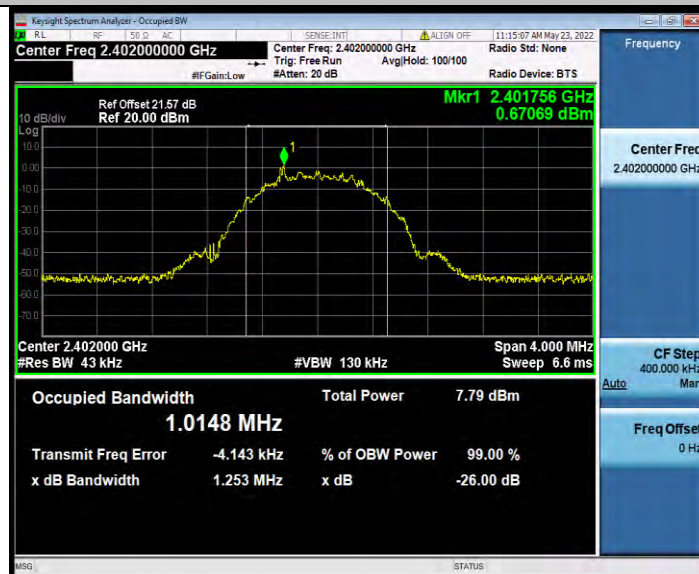


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Test Report No.: W7L-P22050002RF02



BLE\_500K\_Ant1\_2402



BLE\_500K\_Ant1\_2440