

Appendix Test Data for BT(BLE) (Conducted Measurement)

Product Name: NucBox

Trade Mark: GMKtec

Test Model: G1

FCC ID: 2AXUD-G1

Environmental Conditions

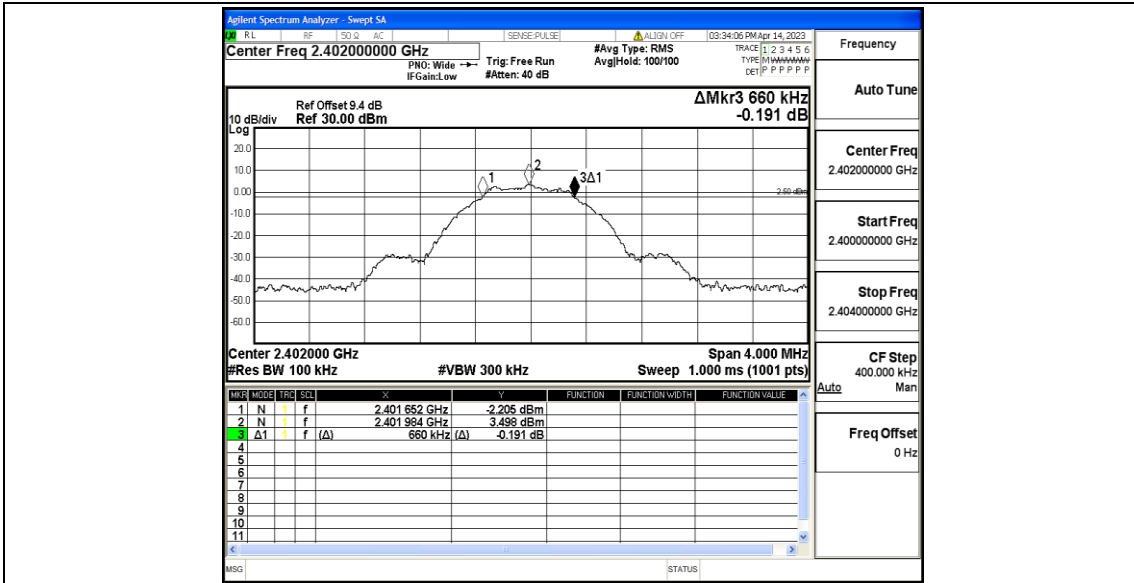
| | |
|--------------------|-----------|
| Temperature: | 25.5°C |
| Relative Humidity: | 55% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Anna Hu |
| Supervised by: | Hugo Chen |
| NOTE | N/A |

Appendix A: DTS Bandwidth

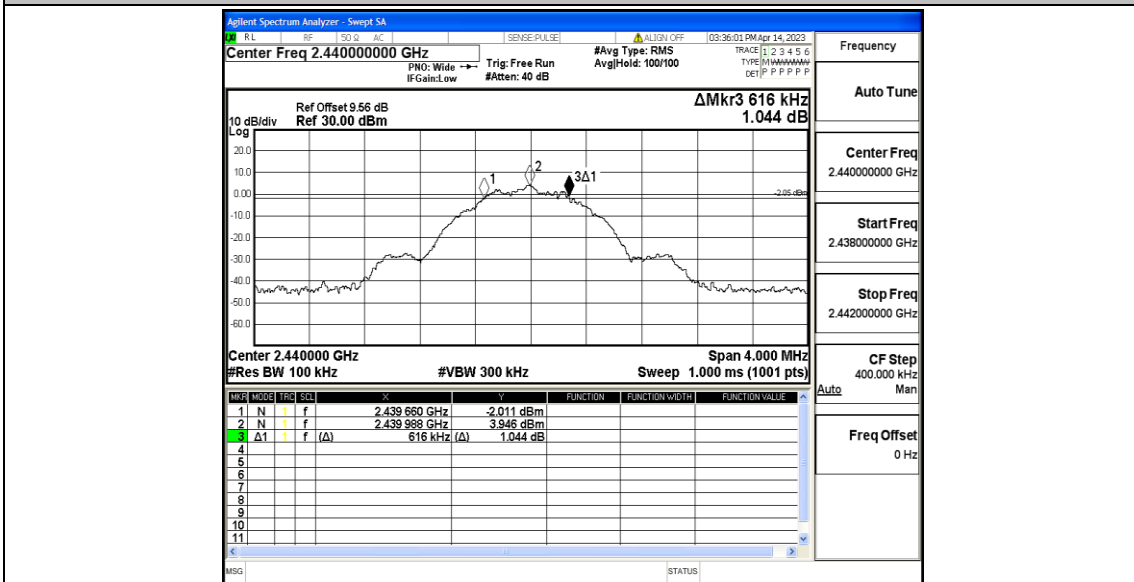
Test Result

| TestMode | Antenna | Channel | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|----------|---------|---------|--------------|----------|----------|------------|---------|
| BLE_1M | Ant1 | 2402 | 0.660 | 2401.652 | 2402.312 | 0.5 | PASS |
| | | 2440 | 0.616 | 2439.660 | 2440.276 | 0.5 | PASS |
| | | 2480 | 0.648 | 2479.652 | 2480.300 | 0.5 | PASS |
| BLE_2M | Ant1 | 2402 | 1.124 | 2401.472 | 2402.596 | 0.5 | PASS |
| | | 2440 | 0.956 | 2439.428 | 2440.384 | 0.5 | PASS |
| | | 2480 | 1.064 | 2479.516 | 2480.580 | 0.5 | PASS |

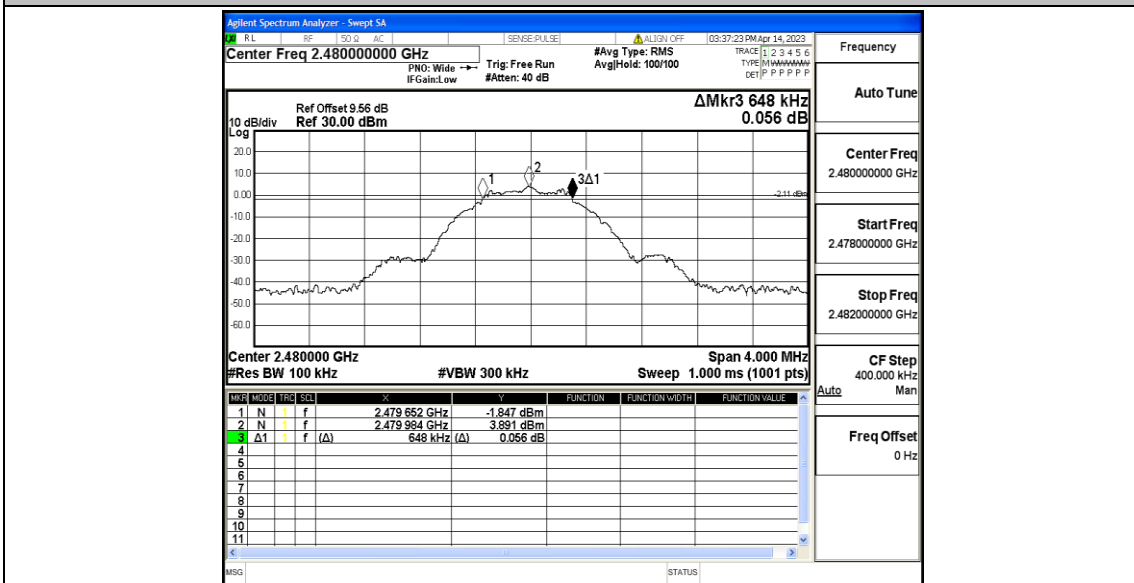
Test Graphs



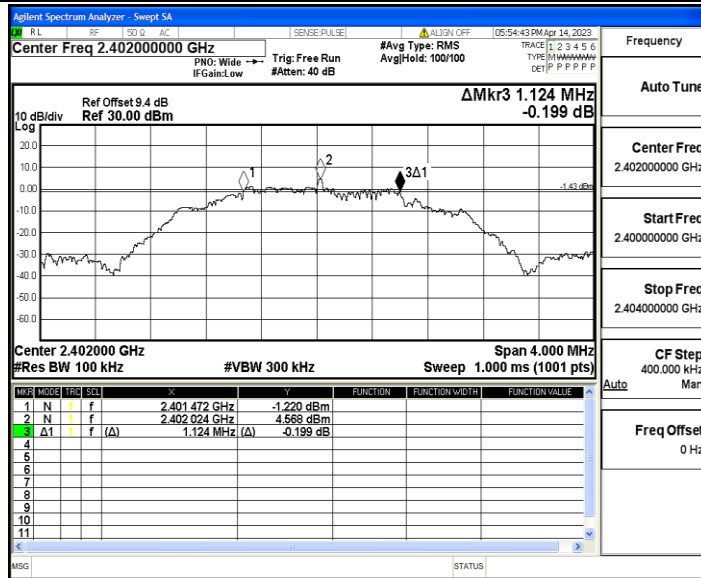
BLE_1M_Ant1_2402



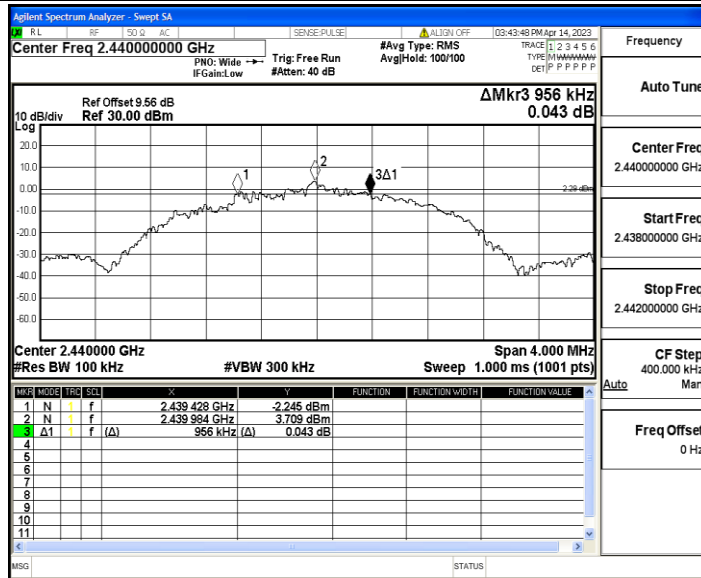
BLE_1M_Ant1_2440



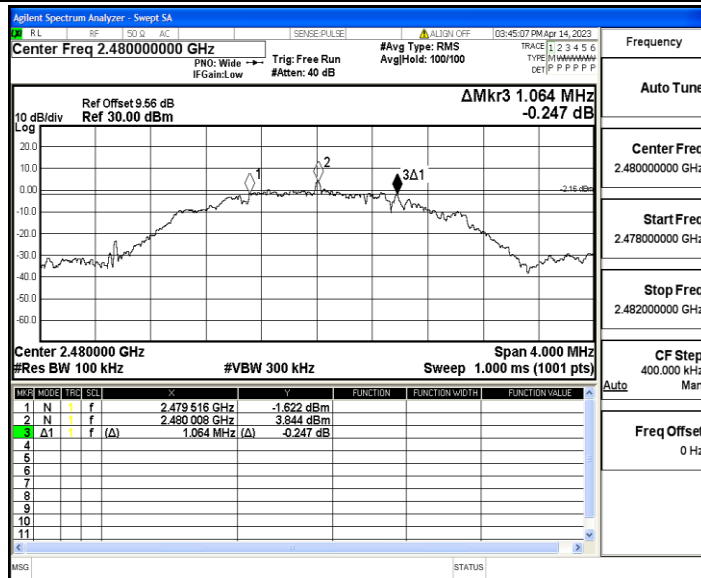
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



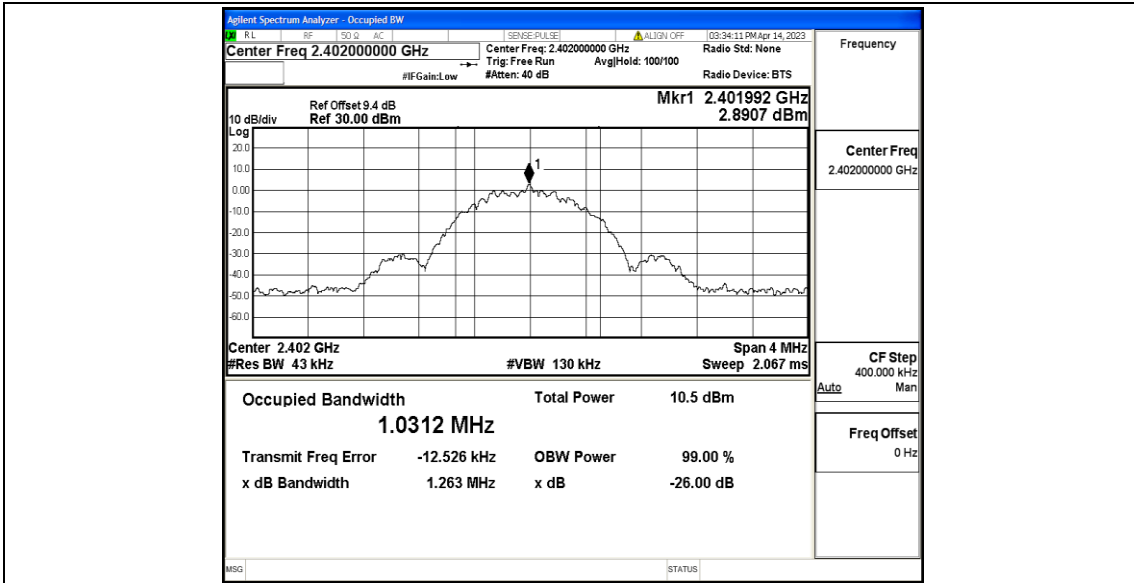
BLE_2M_Ant1_2480

Appendix B: Occupied Channel Bandwidth

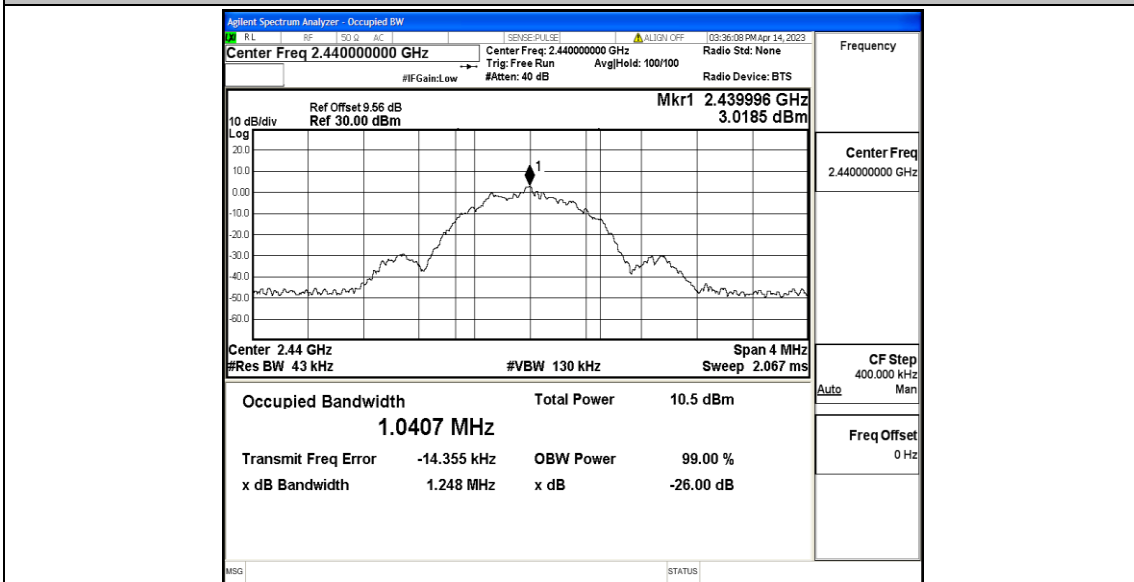
Test Result

| TestMode | Antenna | Channel | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|----------|---------|---------|-----------|-----------|-----------|------------|---------|
| BLE_1M | Ant1 | 2402 | 1.0312 | 2401.4719 | 2402.5031 | --- | --- |
| | | 2440 | 1.0407 | 2439.4653 | 2440.5060 | --- | --- |
| | | 2480 | 1.0206 | 2479.4771 | 2480.4977 | --- | --- |
| BLE_2M | Ant1 | 2402 | 2.0578 | 2401.0124 | 2403.0702 | --- | --- |
| | | 2440 | 2.0714 | 2438.9772 | 2441.0486 | --- | --- |
| | | 2480 | 2.0599 | 2478.9974 | 2481.0573 | --- | --- |

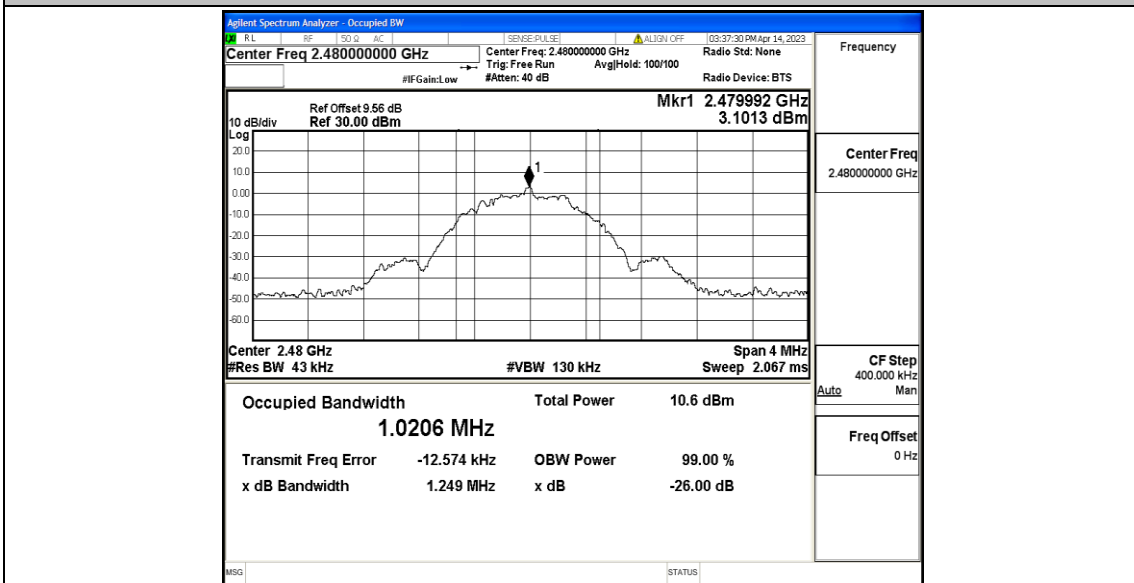
Test Graphs



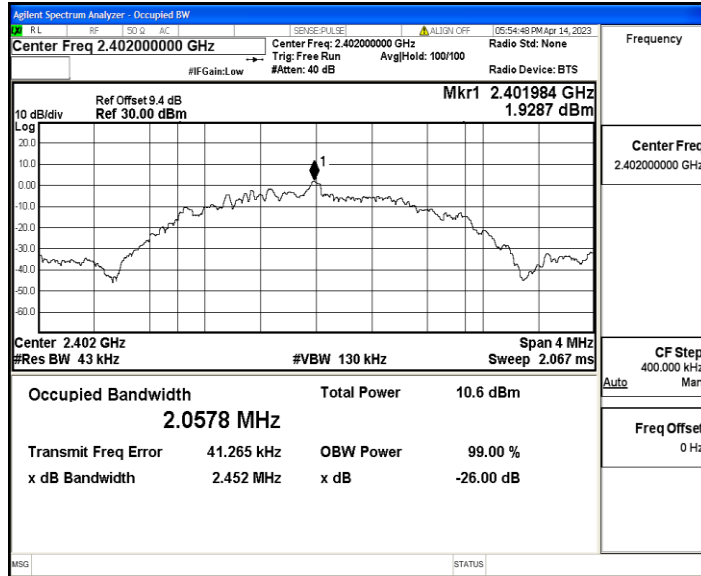
BLE_1M_Ant1_2402



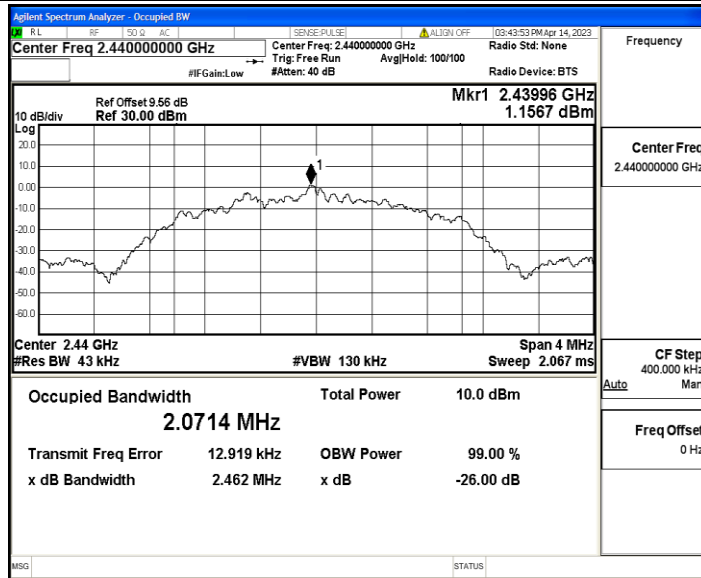
BLE_1M_Ant1_2440



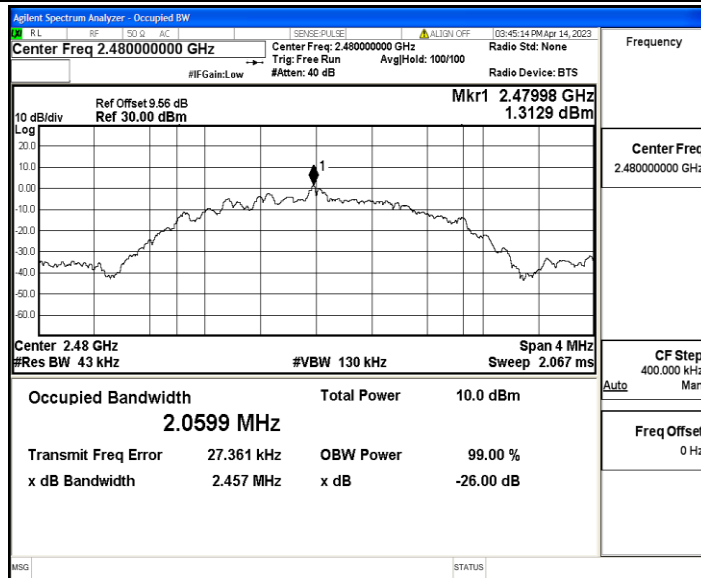
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



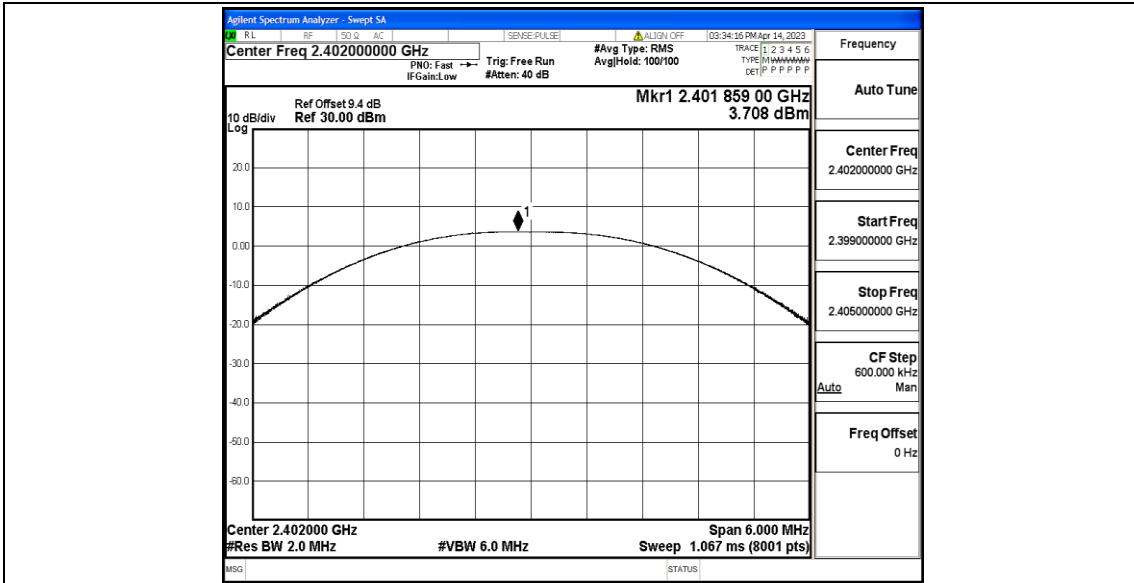
BLE_2M_Ant1_2480

Appendix C: Maximum Peak conducted output power

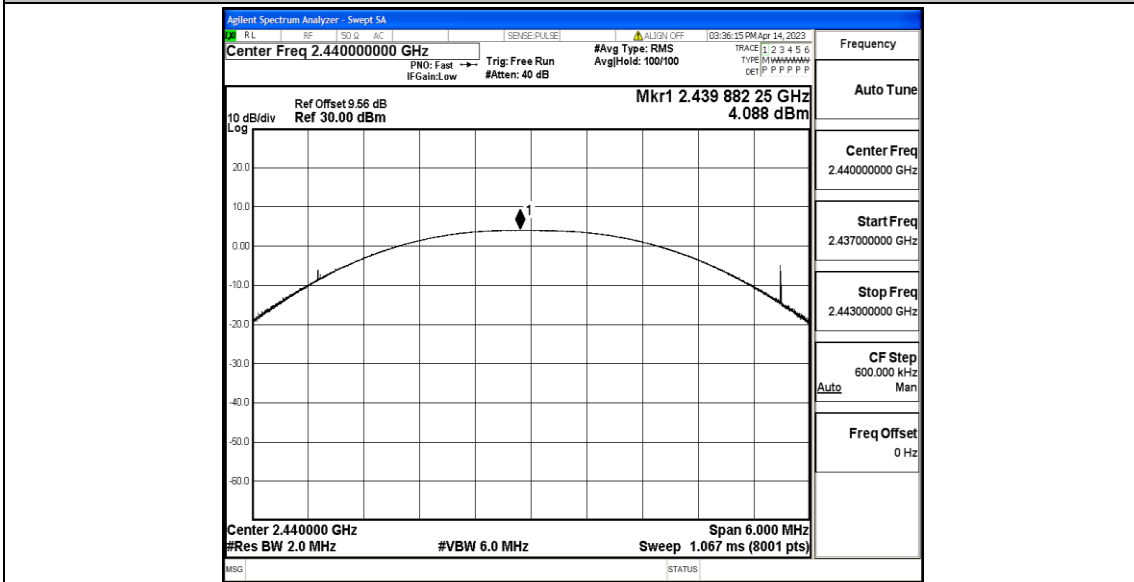
Test Result

| TestMode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|---------|
| BLE_1M | Ant1 | 2402 | 3.71 | ≤30 | PASS |
| | | 2440 | 4.09 | ≤30 | PASS |
| | | 2480 | 4.07 | ≤30 | PASS |
| BLE_2M | Ant1 | 2402 | 4.83 | ≤30 | PASS |
| | | 2440 | 4.27 | ≤30 | PASS |
| | | 2480 | 4.17 | ≤30 | PASS |

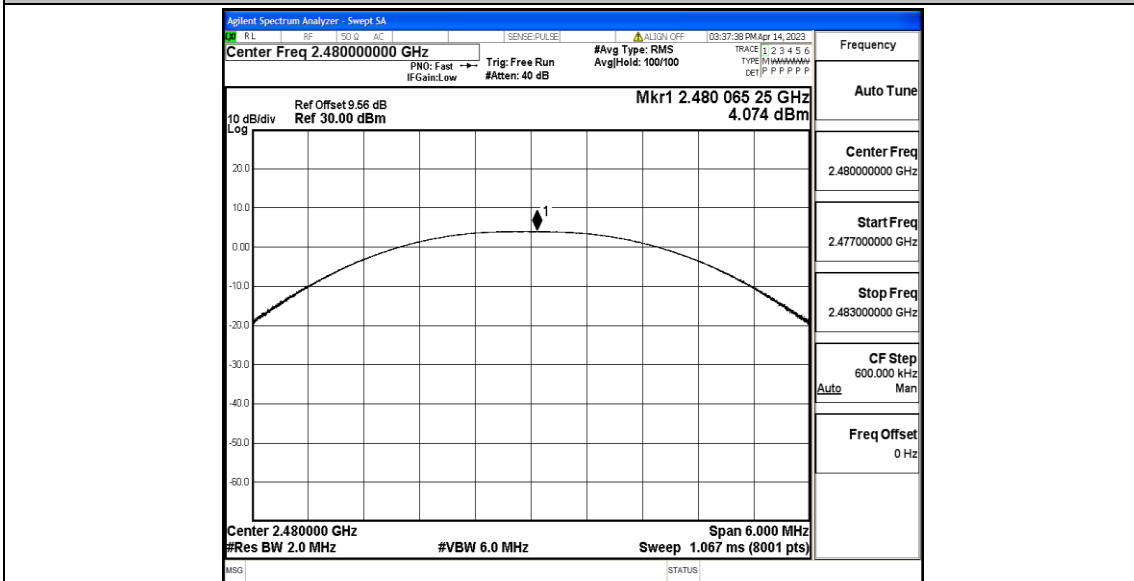
Test Graphs



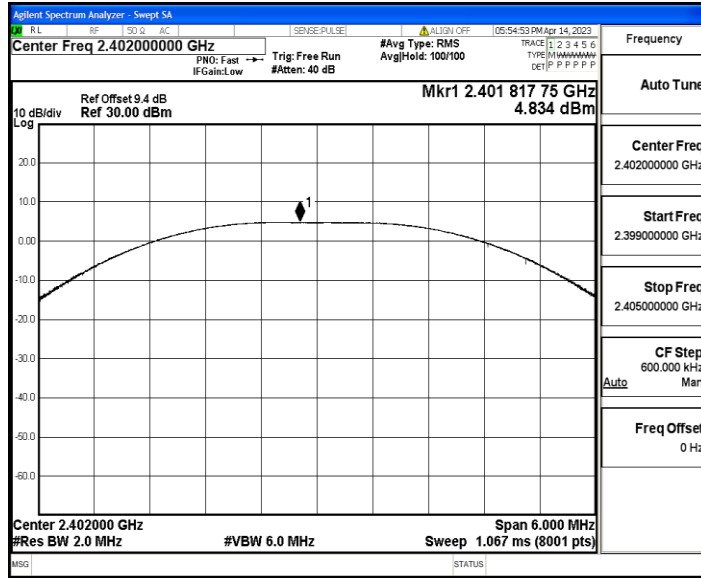
BLE_1M_Ant1_2402



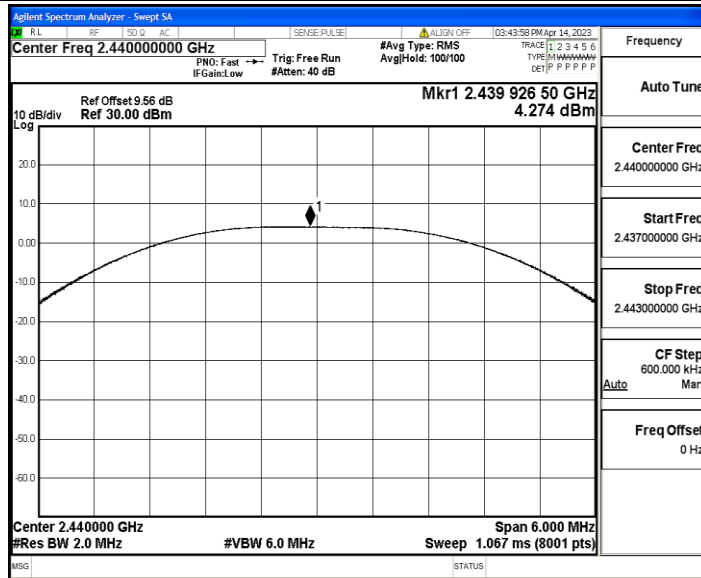
BLE_1M_Ant1_2440



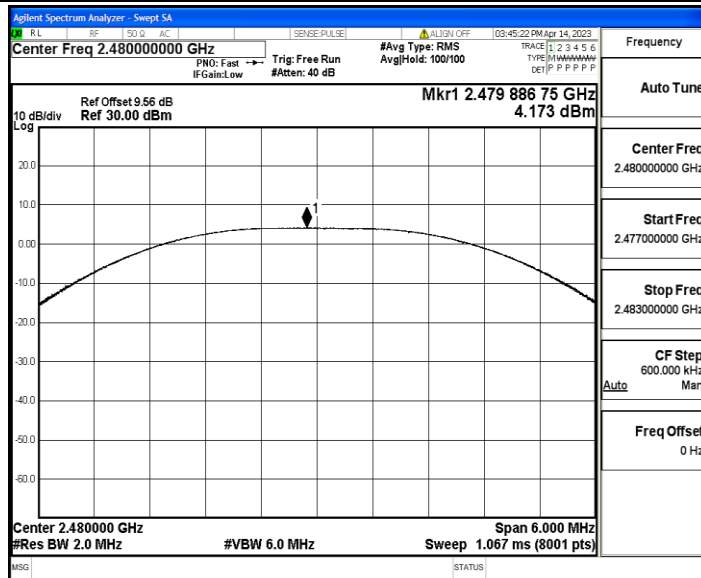
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



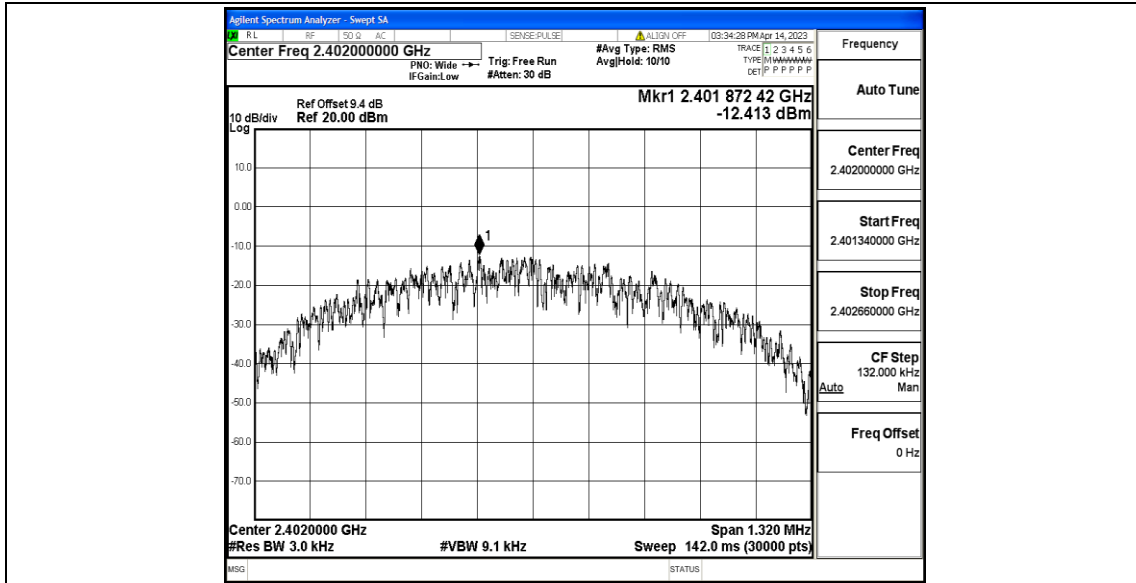
BLE_2M_Ant1_2480

Appendix D: Maximum power spectral density

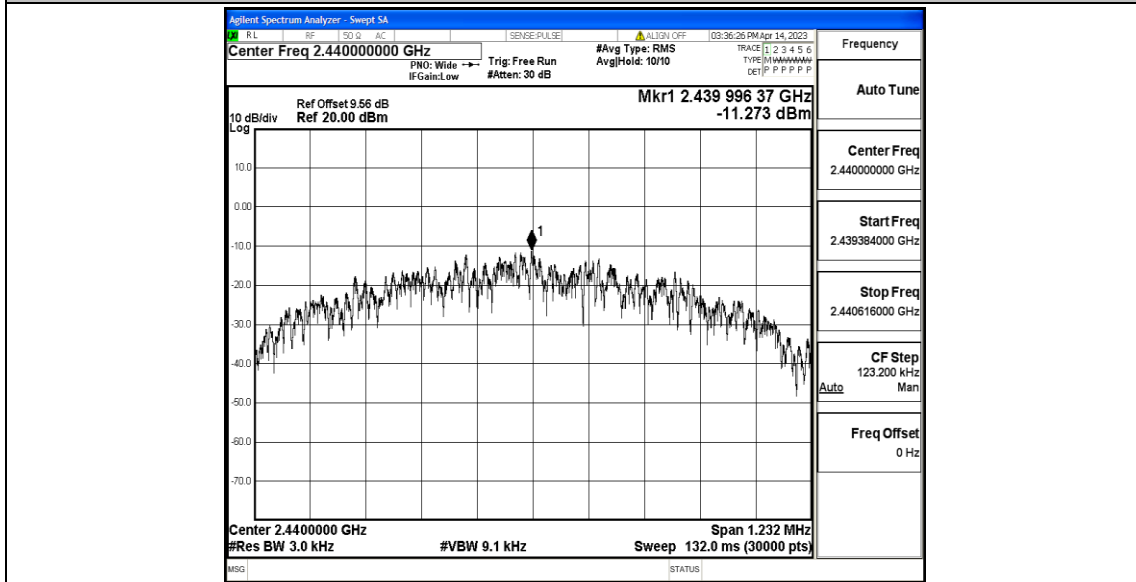
Test Result

| TestMode | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|---------|----------------------|-----------------|---------|
| BLE_1M | Ant1 | 2402 | -12.41 | ≤8.00 | PASS |
| | | 2440 | -11.27 | ≤8.00 | PASS |
| | | 2480 | -12.25 | ≤8.00 | PASS |
| BLE_2M | Ant1 | 2402 | -11.44 | ≤8.00 | PASS |
| | | 2440 | -12.12 | ≤8.00 | PASS |
| | | 2480 | -14.17 | ≤8.00 | PASS |

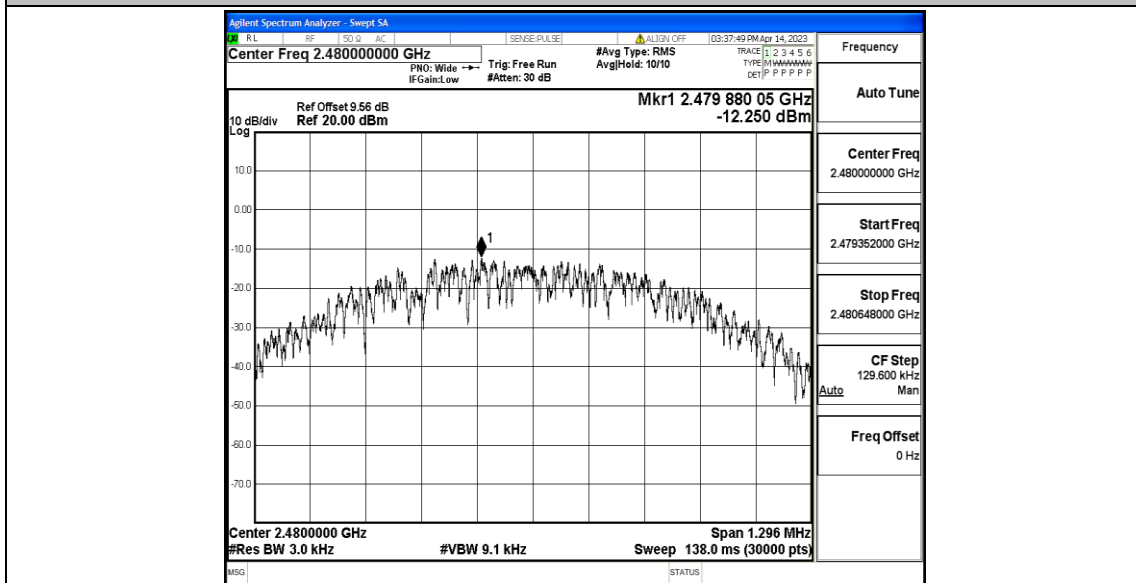
Test Graphs



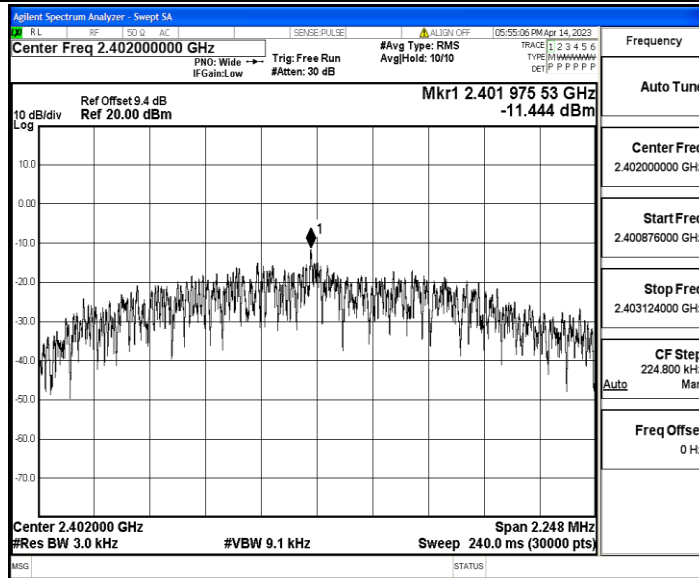
BLE_1M_Ant1_2402



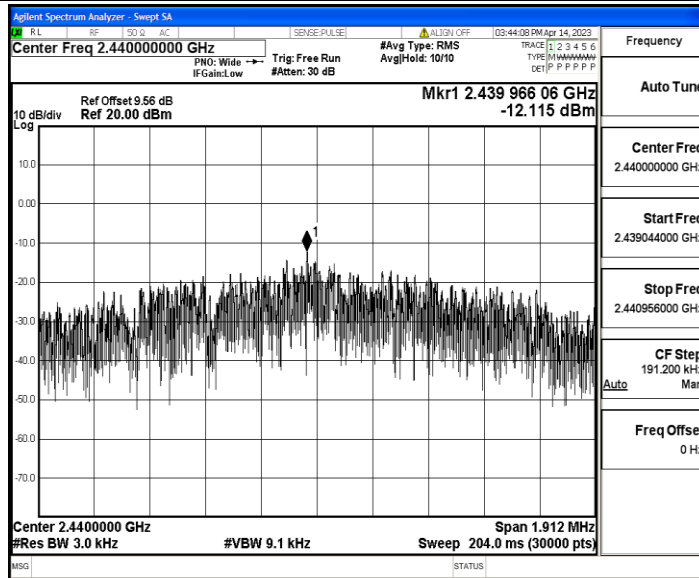
BLE_1M_Ant1_2440



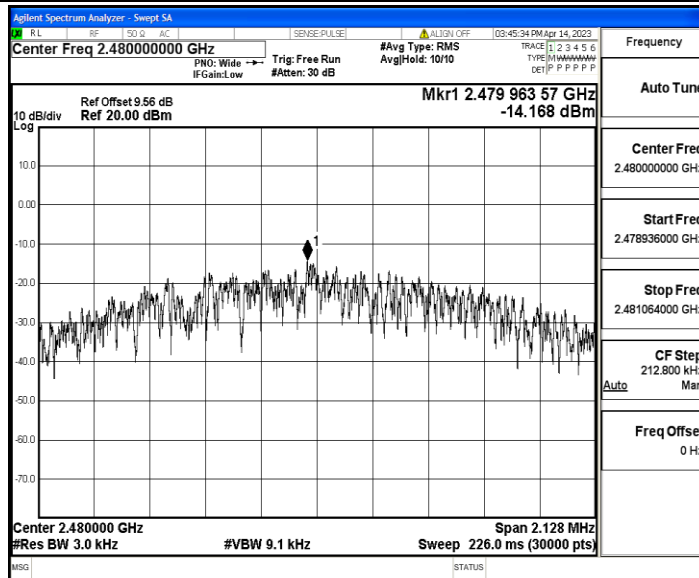
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



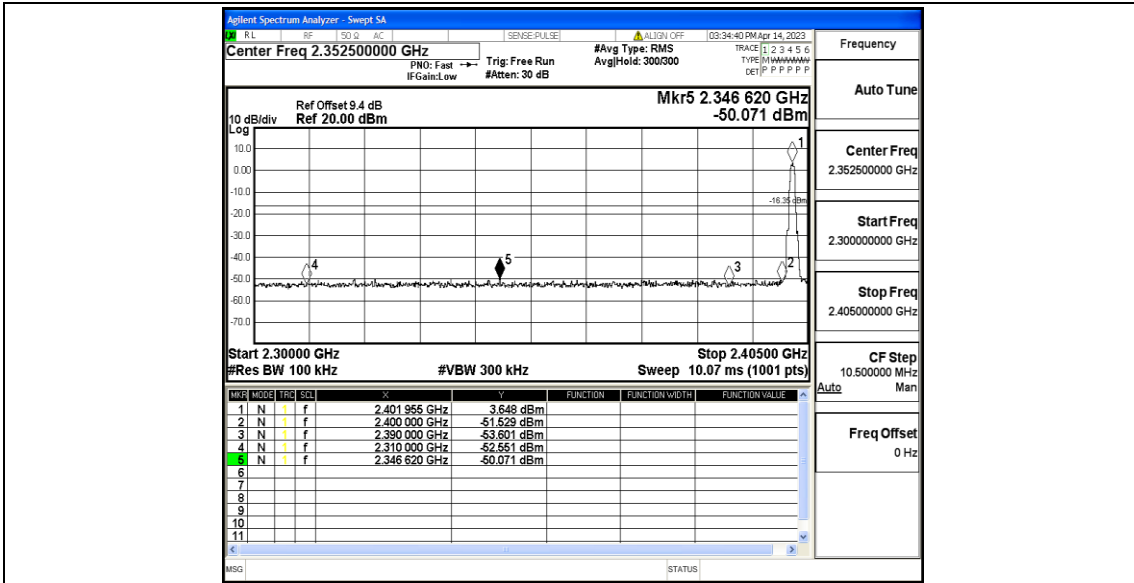
BLE_2M_Ant1_2480

Appendix E: Band edge measurements

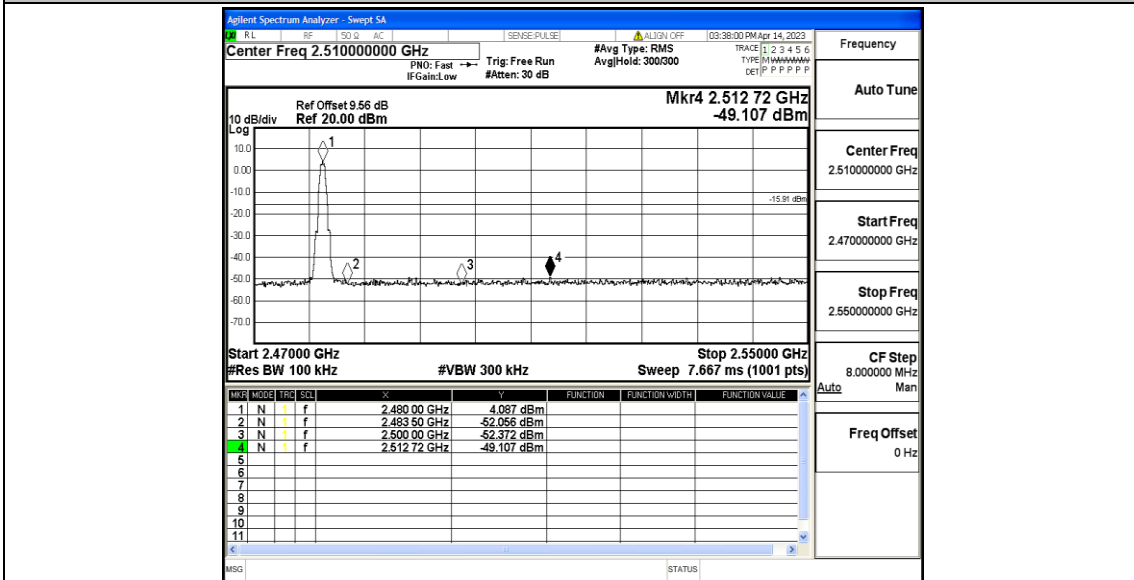
Test Result

| TestMode | Antenna | ChName | Channel | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|--------|---------|---------------|-------------|------------|---------|
| BLE_1M | Ant1 | Low | 2402 | 3.65 | -50.07 | ≤-16.35 | PASS |
| | | High | 2480 | 4.09 | -49.11 | ≤-15.91 | PASS |
| BLE_2M | Ant1 | Low | 2402 | 4.04 | -28.24 | ≤-15.96 | PASS |
| | | High | 2480 | 3.95 | -48.92 | ≤-16.05 | PASS |

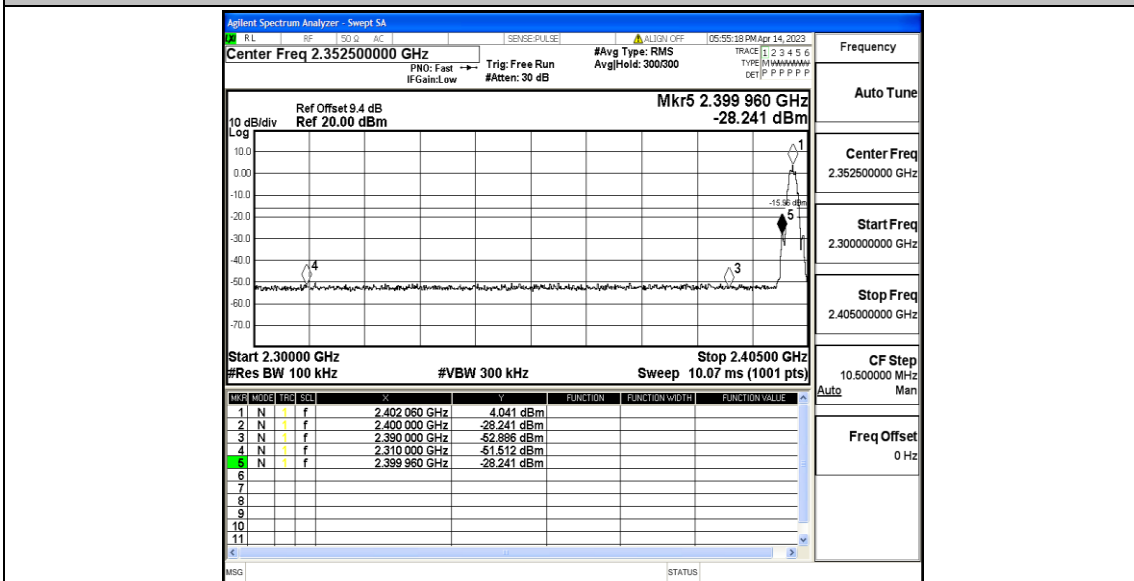
Test Graphs



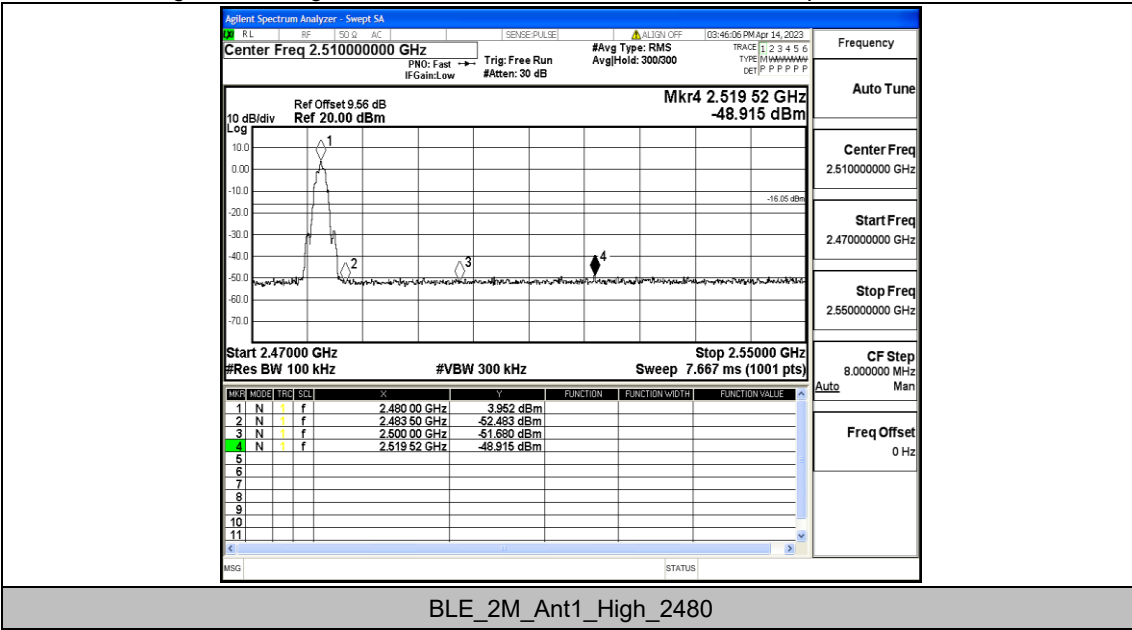
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



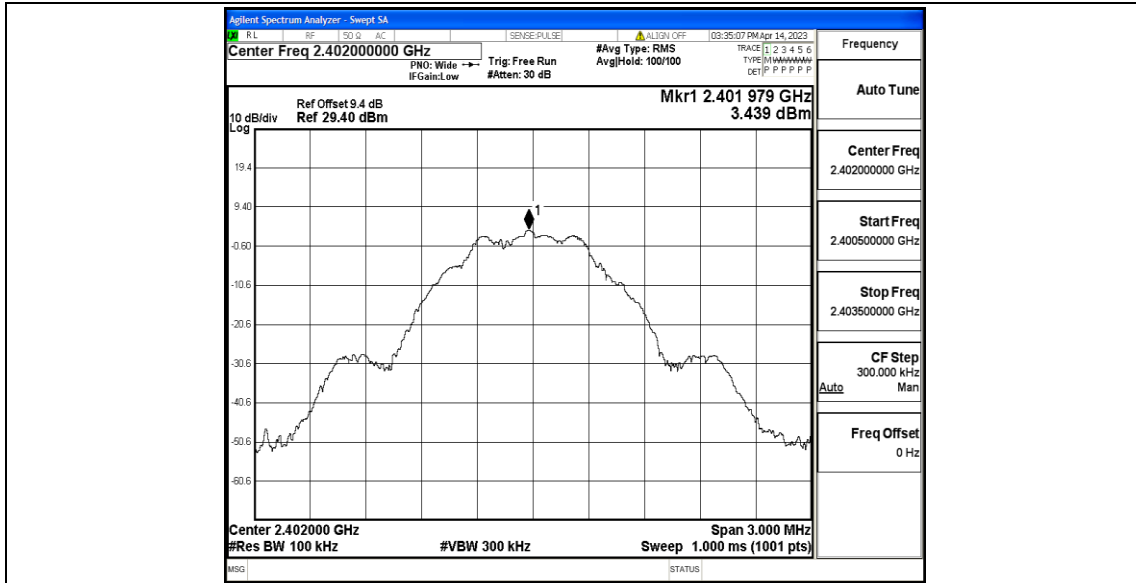
BLE_2M_Ant1_High_2480

Appendix F: Conducted Spurious Emission

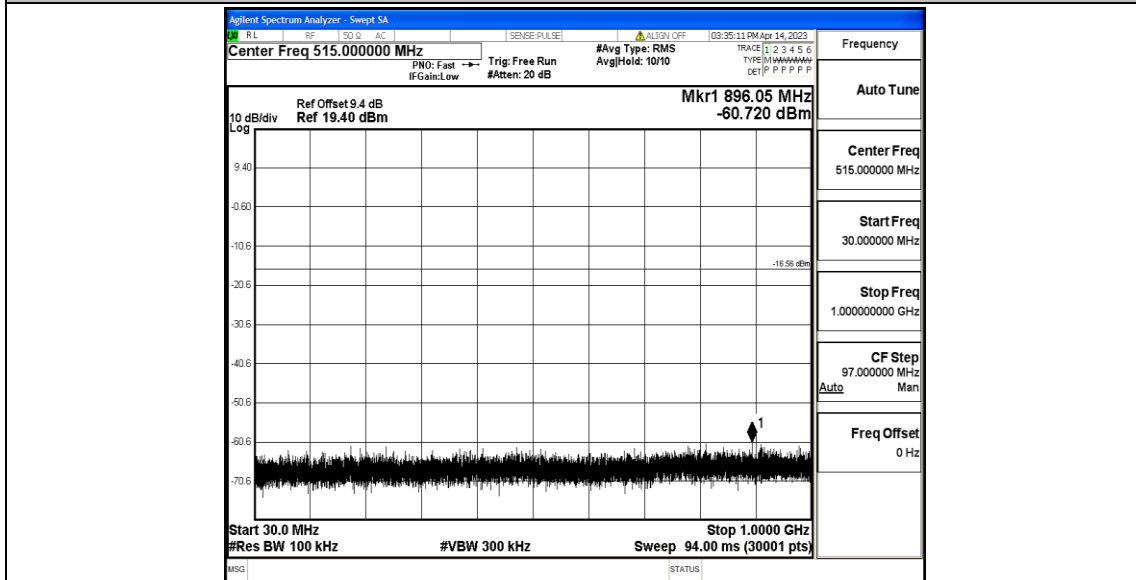
Test Result

| TestMode | Antenna | Channel | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|--------------------|-------------------|-------------|------------|---------|
| BLE_1M | Ant1 | 2402 | Reference | 3.44 | 3.44 | --- | PASS |
| | | | 30~1000 | 3.44 | -60.72 | ≤-16.56 | PASS |
| | | | 1000~26500 | 3.44 | -51.03 | ≤-16.56 | PASS |
| | | 2440 | Reference | 3.84 | 3.84 | --- | PASS |
| | | | 30~1000 | 3.84 | -60.79 | ≤-16.16 | PASS |
| | | | 1000~26500 | 3.84 | -50.78 | ≤-16.16 | PASS |
| | | 2480 | Reference | 3.84 | 3.84 | --- | PASS |
| | | | 30~1000 | 3.84 | -61.36 | ≤-16.16 | PASS |
| | | | 1000~26500 | 3.84 | -50.93 | ≤-16.16 | PASS |
| BLE_2M | Ant1 | 2402 | Reference | 4.66 | 4.66 | --- | PASS |
| | | | 30~1000 | 4.66 | -60.86 | ≤-15.34 | PASS |
| | | | 1000~26500 | 4.66 | -51.41 | ≤-15.34 | PASS |
| | | 2440 | Reference | 3.82 | 3.82 | --- | PASS |
| | | | 30~1000 | 3.82 | -60.98 | ≤-16.18 | PASS |
| | | | 1000~26500 | 3.82 | -50.34 | ≤-16.18 | PASS |
| | | 2480 | Reference | 3.92 | 3.92 | --- | PASS |
| | | | 30~1000 | 3.92 | -60.76 | ≤-16.08 | PASS |
| | | | 1000~26500 | 3.92 | -51.21 | ≤-16.08 | PASS |

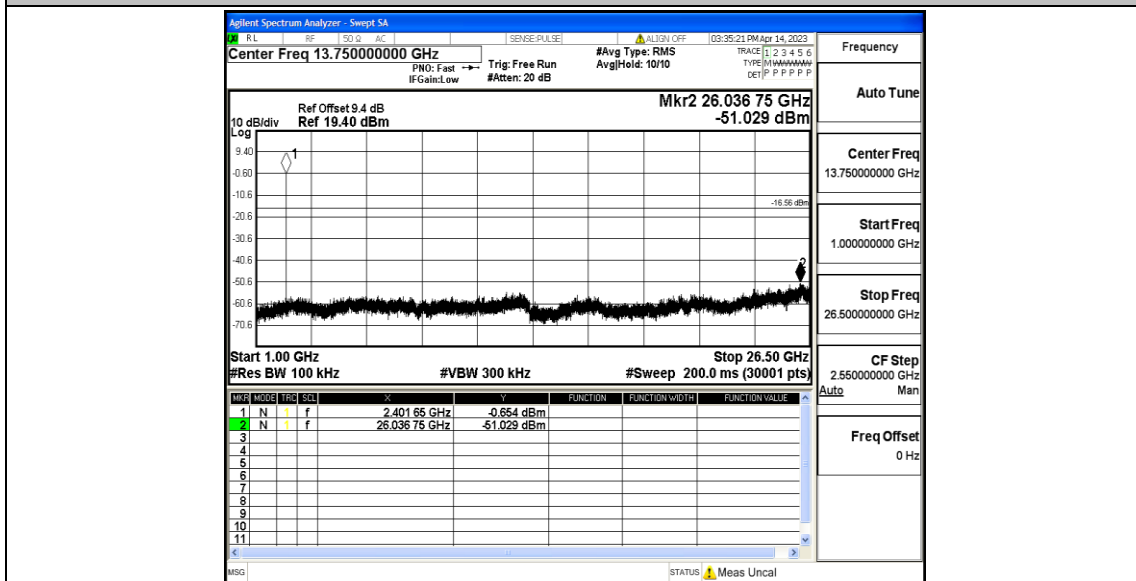
Test Graphs



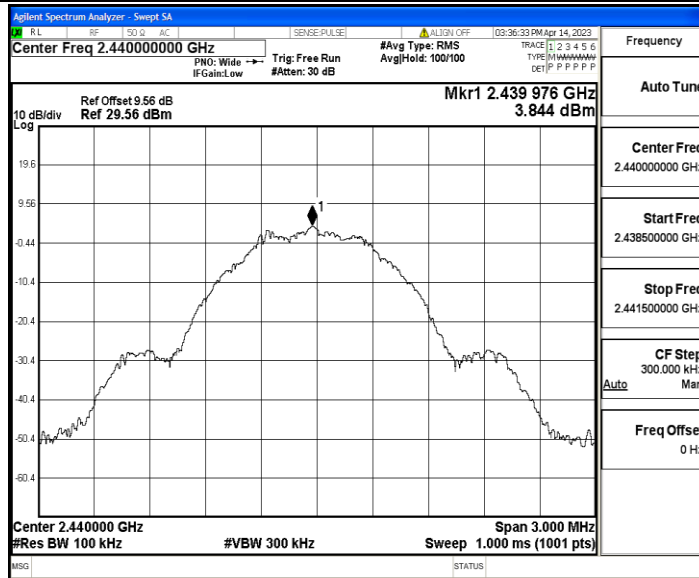
BLE_1M_Ant1_2402_0~Reference



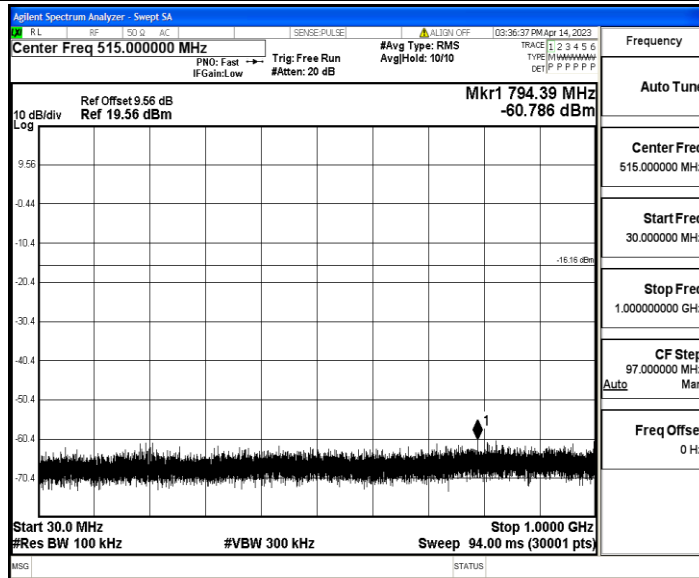
BLE_1M_Ant1_2402_30~1000



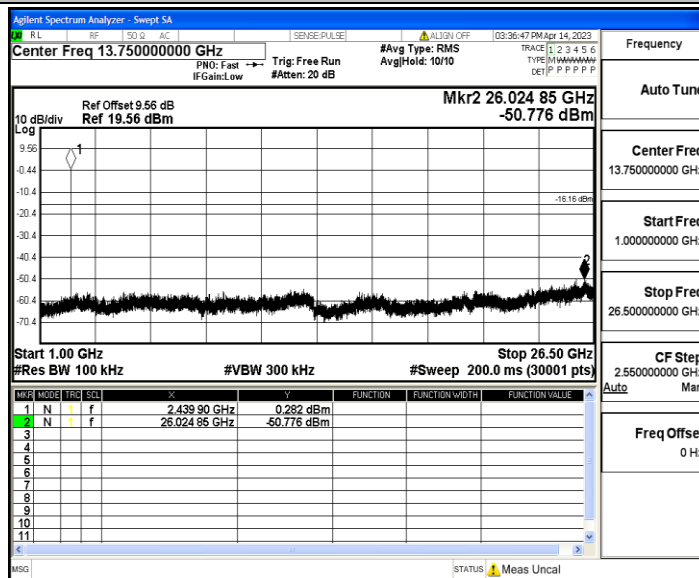
BLE_1M_Ant1_2402_1000~26500



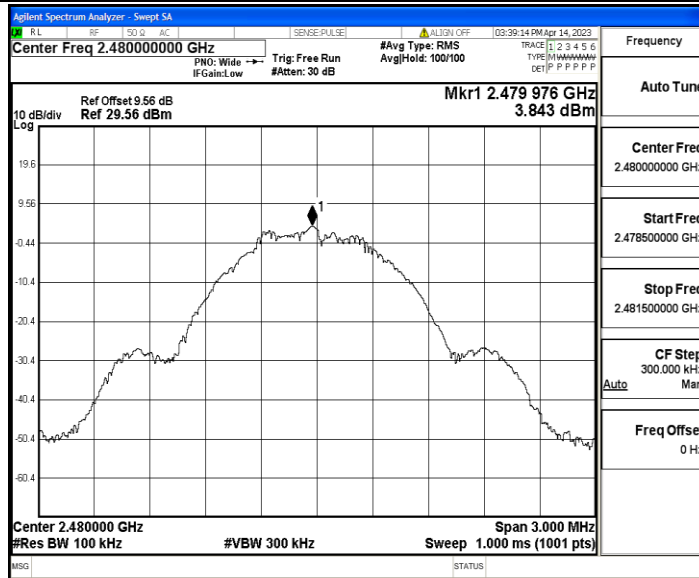
BLE_1M_Ant1_2440_0~Reference



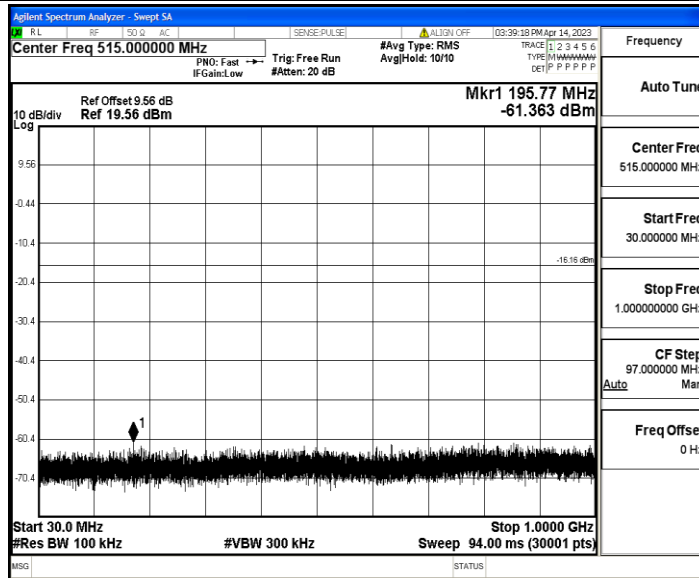
BLE_1M_Ant1_2440_30~1000



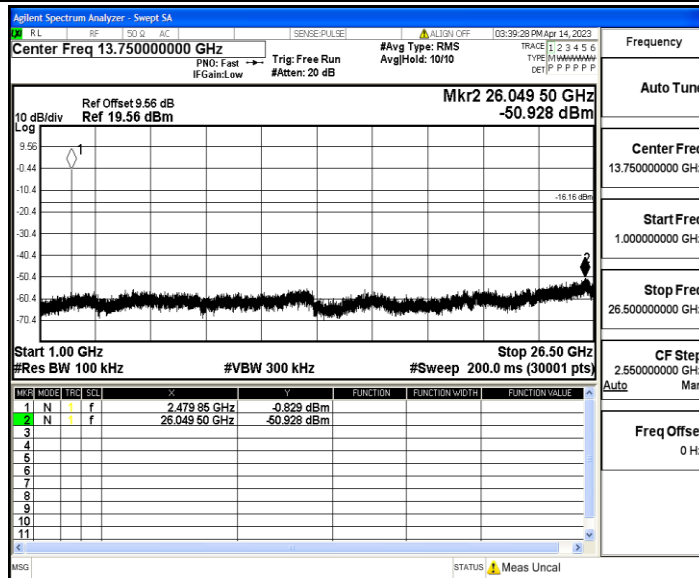
BLE_1M_Ant1_2440_1000~26500



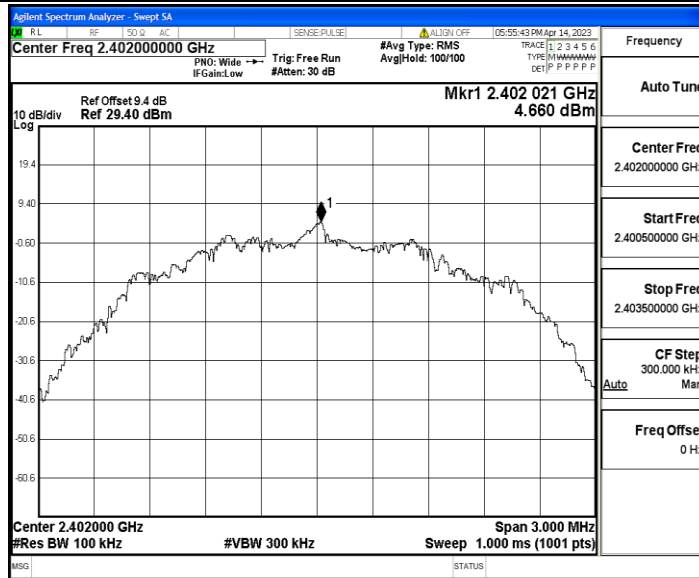
BLE_1M_Ant1_2480_0~Reference



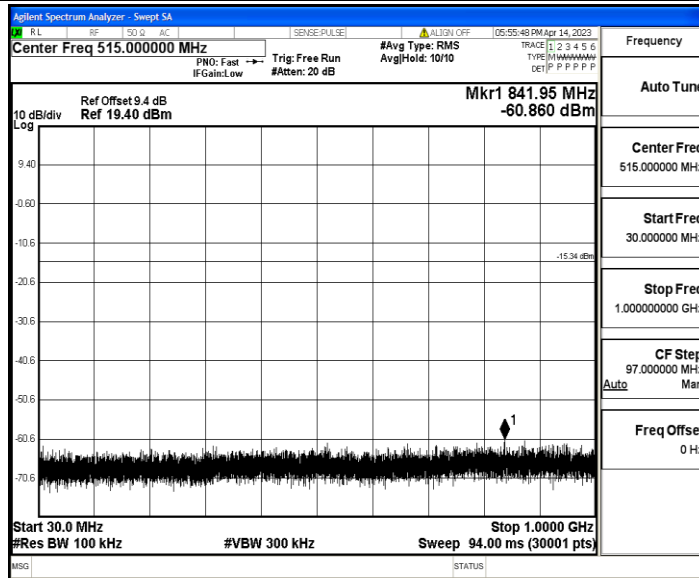
BLE_1M_Ant1_2480_30~1000



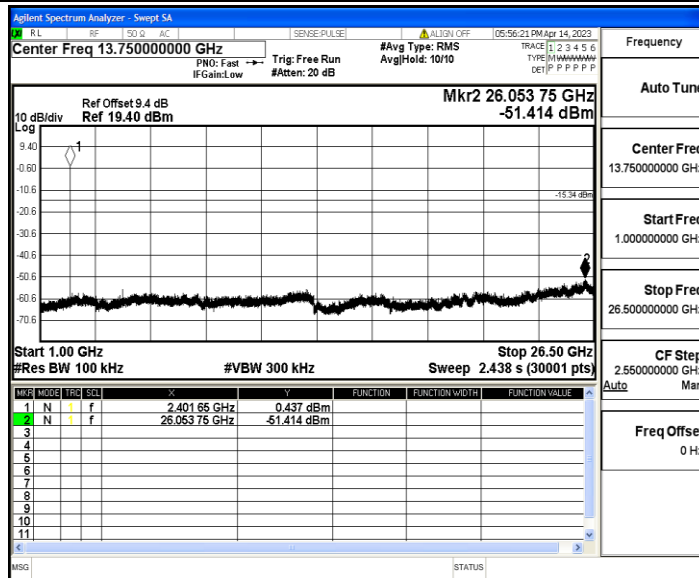
BLE_1M_Ant1_2480_1000~26500



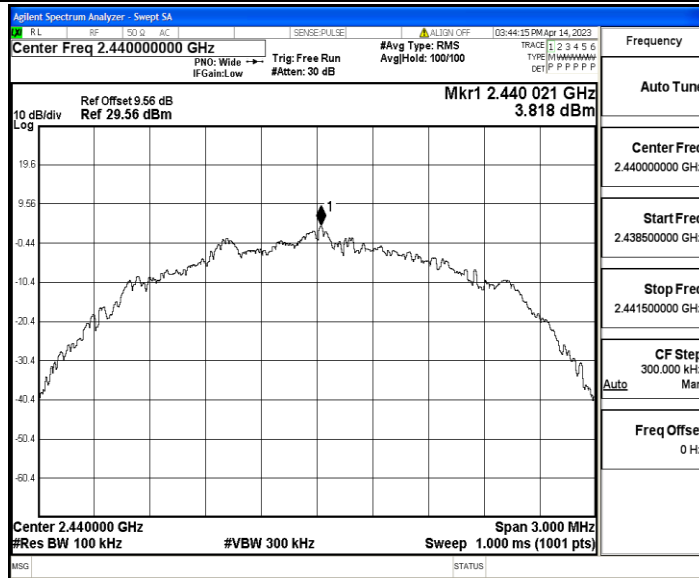
BLE_2M_Ant1_2402_0~Reference



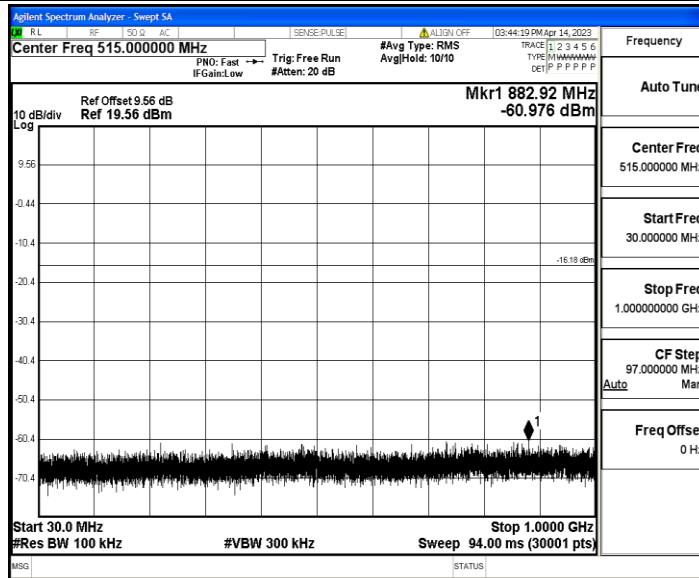
BLE_2M_Ant1_2402_30~1000



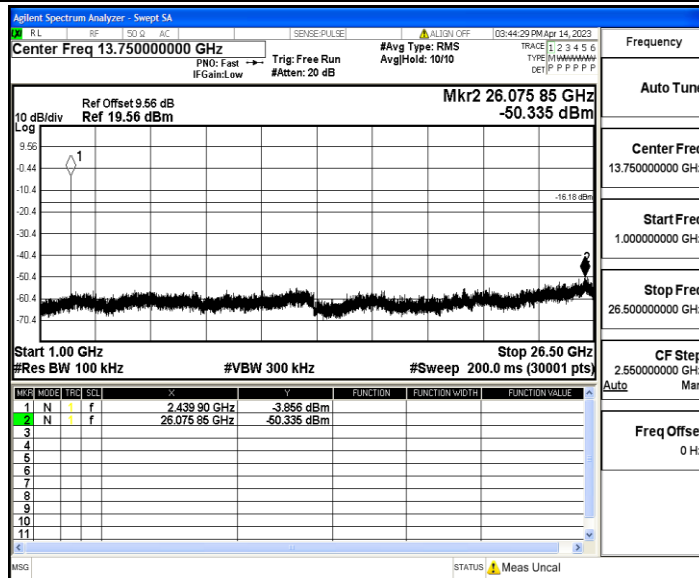
BLE_2M_Ant1_2402_1000~26500



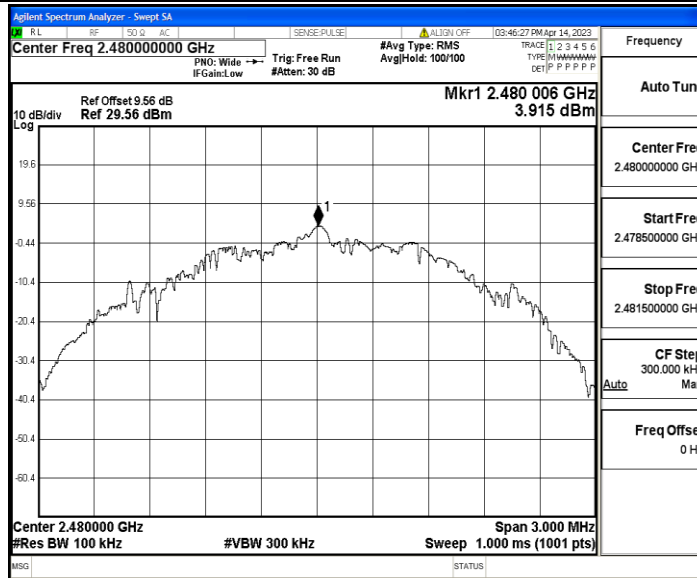
BLE_2M_Ant1_2440_0~Reference



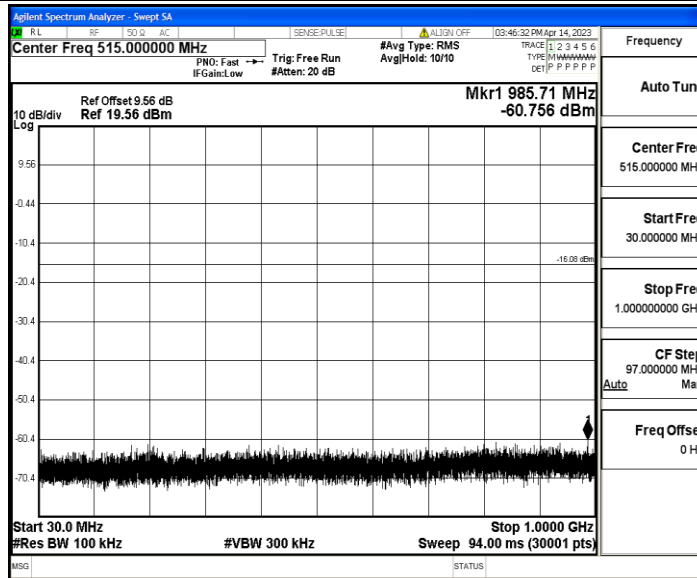
BLE_2M_Ant1_2440_30~1000



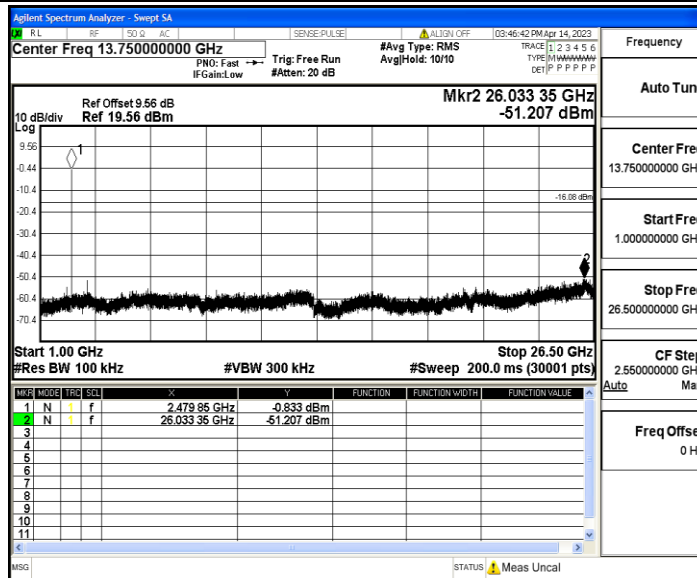
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



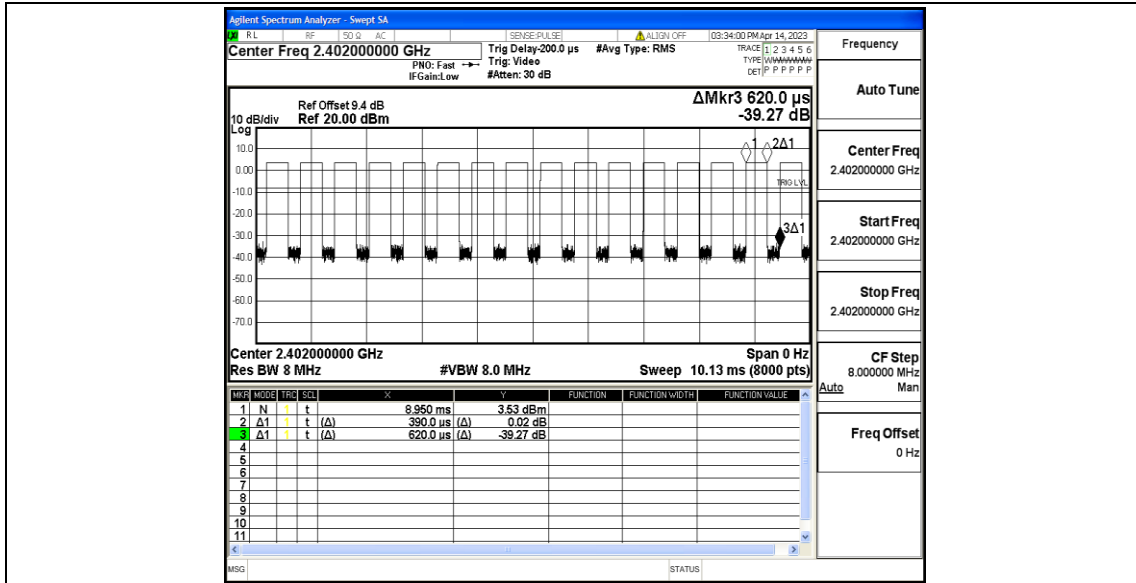
BLE_2M_Ant1_2480_1000~26500

Appendix G: Duty Cycle

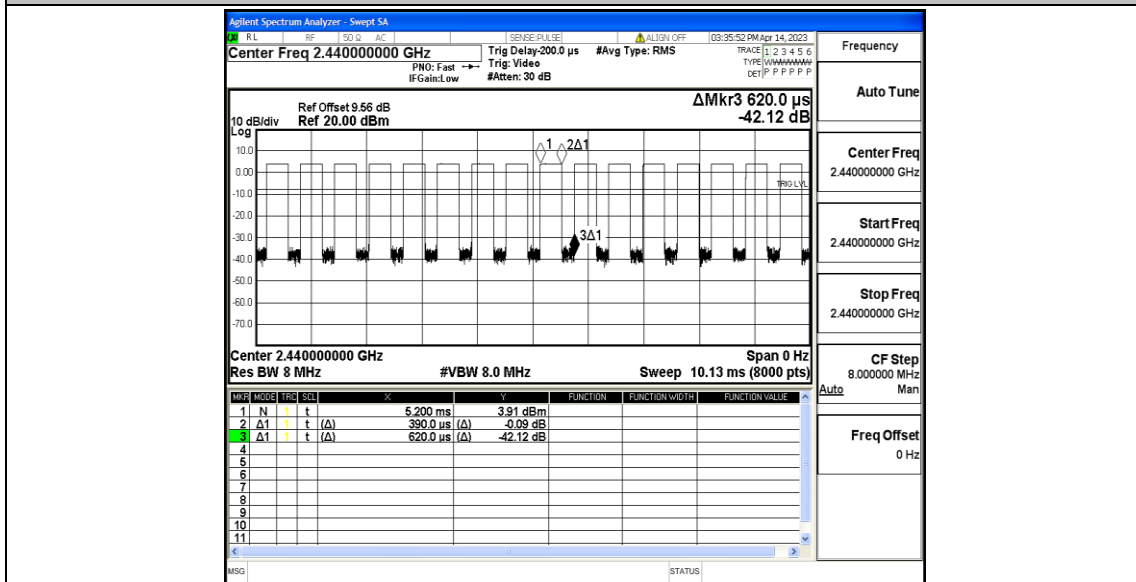
Test Result

| TestMode | Antenna | Channel | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] | 1/T[kHz] |
|----------|---------|---------|----------------------------|--------------------------|----------------|----------|
| BLE_1M | Ant1 | 2402 | 0.39 | 0.62 | 62.90 | 2.56 |
| | | 2440 | 0.39 | 0.62 | 62.90 | 2.56 |
| | | 2480 | 0.39 | 0.62 | 62.90 | 2.56 |
| BLE_2M | Ant1 | 2402 | 0.21 | 0.62 | 33.87 | 4.76 |
| | | 2440 | 0.21 | 0.63 | 33.33 | 4.76 |
| | | 2480 | 0.21 | 0.63 | 33.33 | 4.76 |

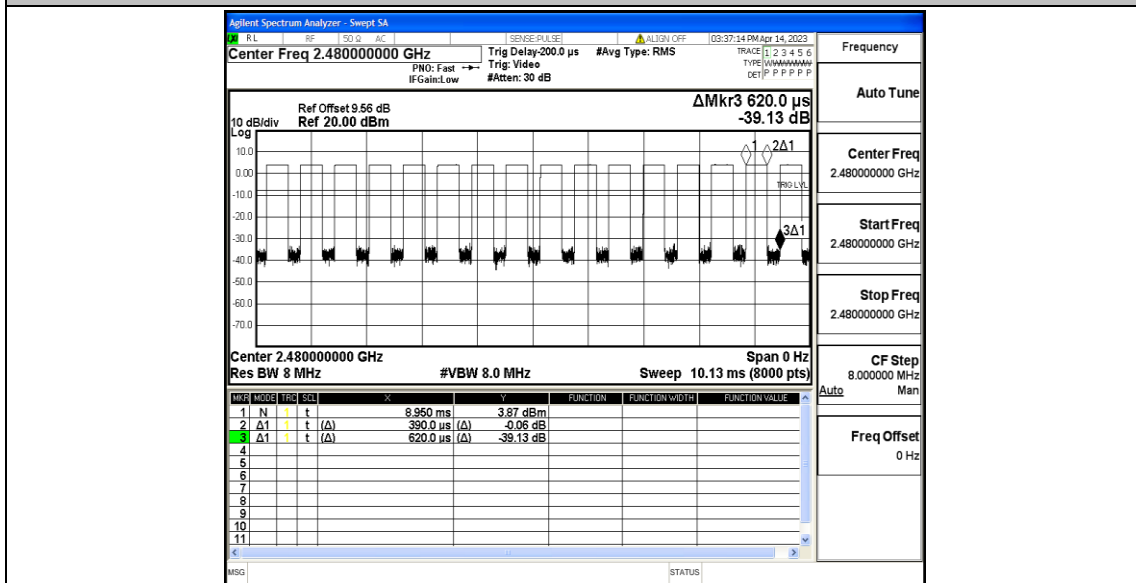
Test Graphs



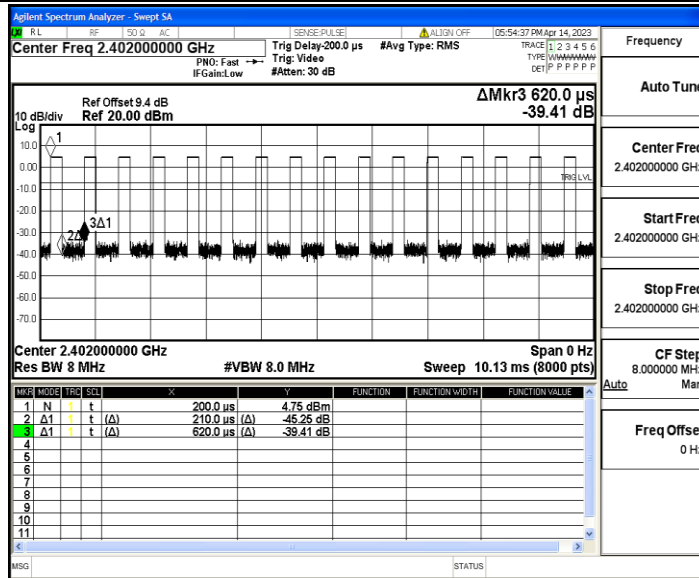
BLE_1M_Ant1_2402



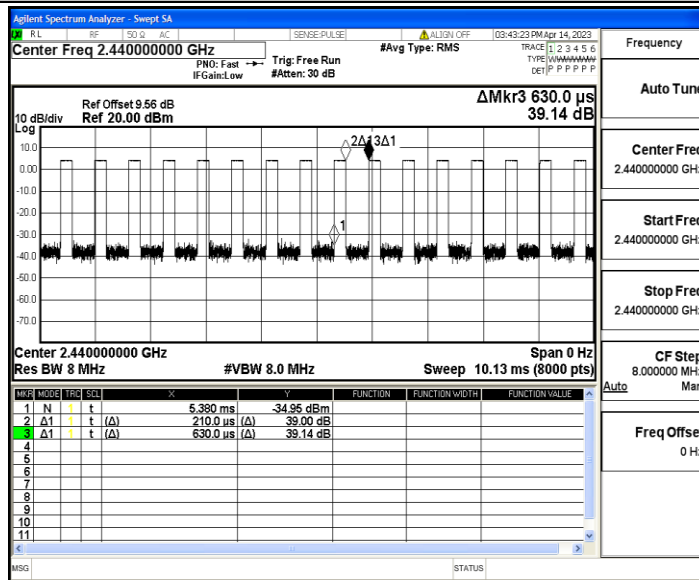
BLE_1M_Ant1_2440



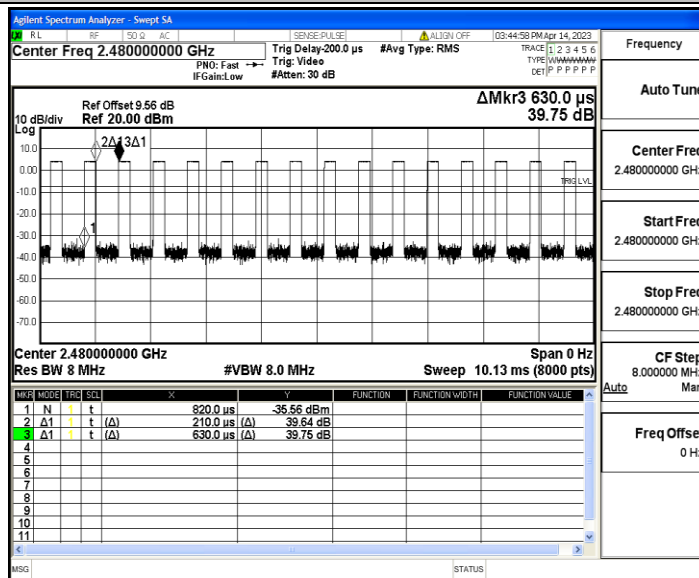
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

Appendix H: Emissions in Restricted Bands

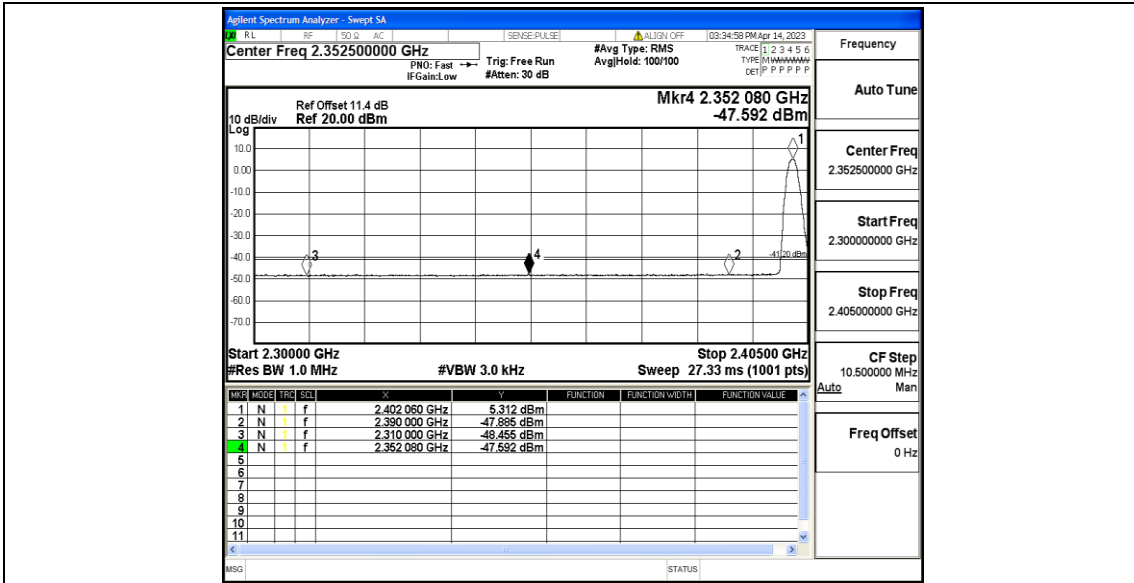
Test Result

| TestMode | Antenna | ChName | Channel | Detector | Freq. [MHz] | Result [dBm] | Limit [dBm] | Verdict |
|----------|---------|--------|---------|----------|-------------|--------------|-------------|---------|
| BLE_1M | Ant1 | Low | 2402 | AV | 2310.000 | -48.46 | ≤-41.20 | PASS |
| | | | | AV | 2352.080 | -47.59 | ≤-41.20 | PASS |
| | | | | AV | 2390.000 | -47.89 | ≤-41.20 | PASS |
| | | | | Peak | 2310.000 | -43 | ≤-21.20 | PASS |
| | | | | Peak | 2330.345 | -38.78 | ≤-21.20 | PASS |
| | | | | Peak | 2390.000 | -41.64 | ≤-21.20 | PASS |
| | | High | 2480 | AV | 2483.500 | -46.6 | ≤-41.20 | PASS |
| | | | | AV | 2483.520 | -46.6 | ≤-41.20 | PASS |
| | | | | AV | 2500.000 | -47.68 | ≤-41.20 | PASS |
| | | | | Peak | 2483.500 | -40.69 | ≤-21.20 | PASS |
| | | | | Peak | 2494.640 | -38.03 | ≤-21.20 | PASS |
| | | | | Peak | 2500.000 | -41.19 | ≤-21.20 | PASS |
| BLE_2M | Ant1 | Low | 2402 | AV | 2310.000 | -48.14 | ≤-41.20 | PASS |
| | | | | AV | 2384.000 | -47.32 | ≤-41.20 | PASS |
| | | | | AV | 2390.000 | -47.76 | ≤-41.20 | PASS |
| | | | | Peak | 2310.000 | -42.14 | ≤-21.20 | PASS |
| | | | | Peak | 2359.955 | -38.79 | ≤-21.20 | PASS |
| | | | | Peak | 2390.000 | -40.35 | ≤-21.20 | PASS |
| | | High | 2480 | AV | 2483.500 | -44.18 | ≤-41.20 | PASS |
| | | | | AV | 2483.520 | -44.18 | ≤-41.20 | PASS |
| | | | | AV | 2500.000 | -47.28 | ≤-41.20 | PASS |
| | | | | Peak | 2483.500 | -39.2 | ≤-21.20 | PASS |
| | | | | Peak | 2487.200 | -37.31 | ≤-21.20 | PASS |
| | | | | Peak | 2500.000 | -41.18 | ≤-21.20 | PASS |

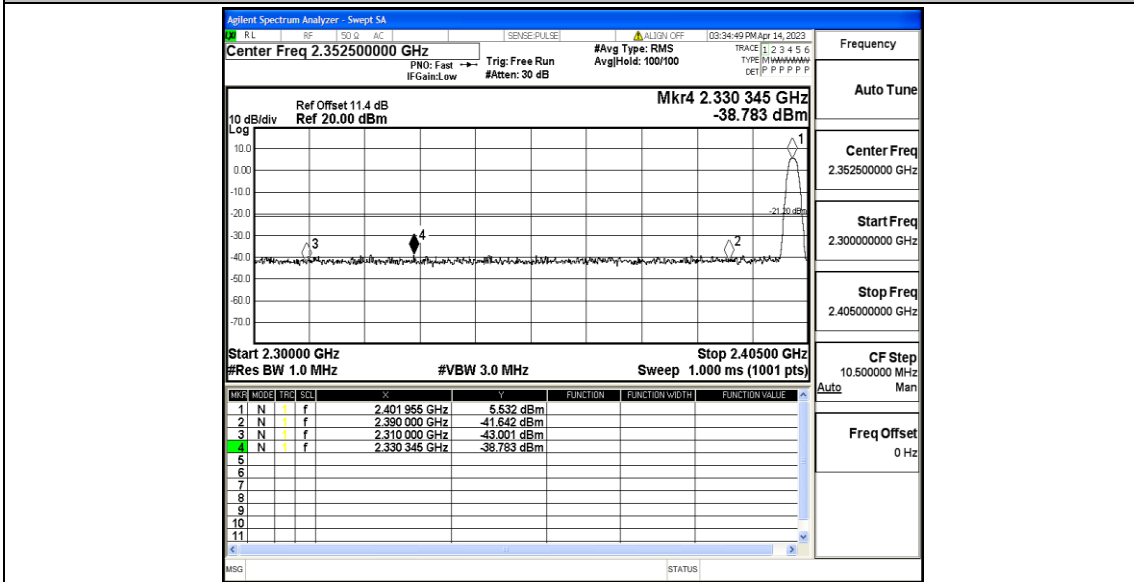
Note:

1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. 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.

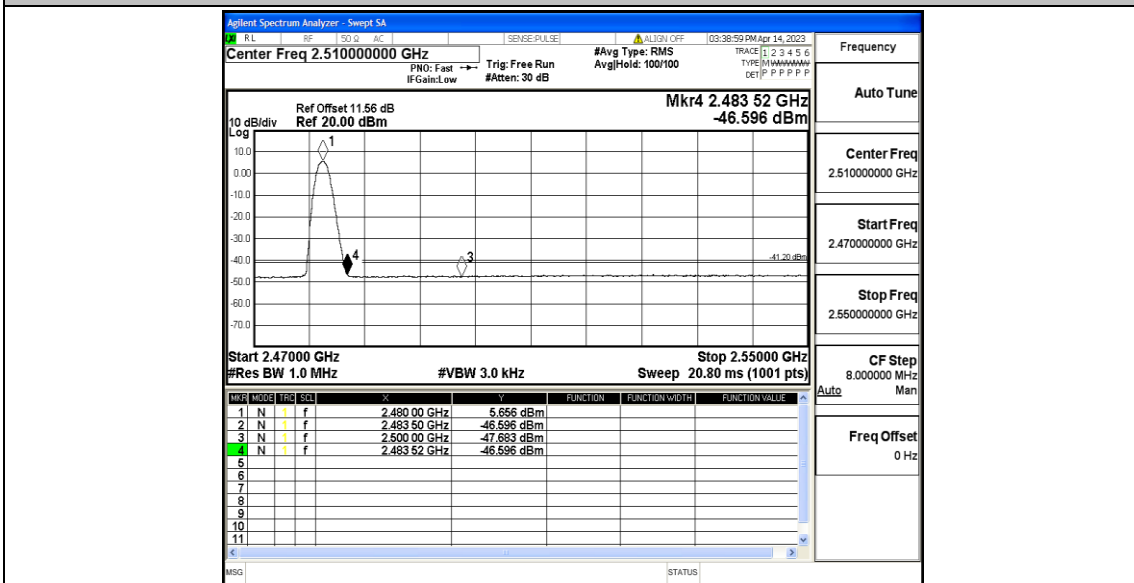
Test Graphs



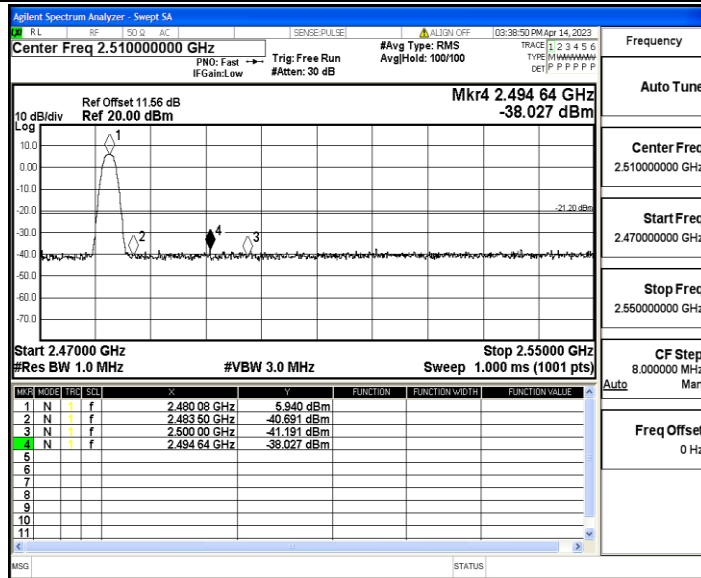
BLE_1M_Ant1_Low_2402_AV



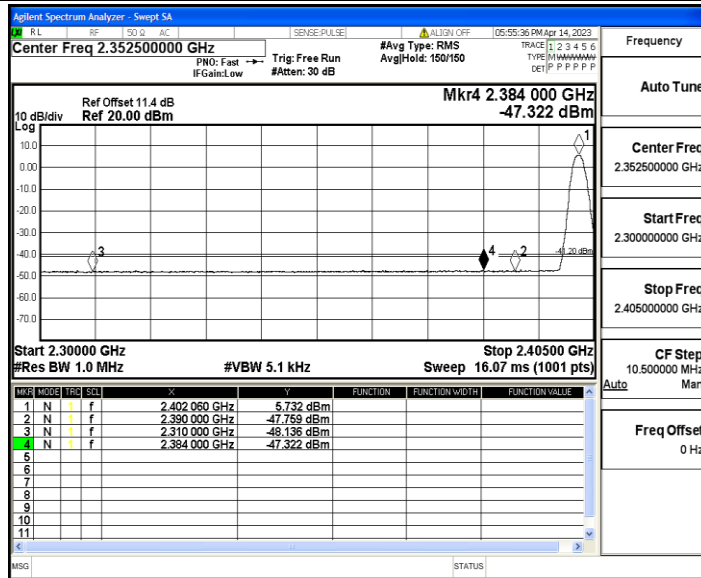
BLE_1M_Ant1_Low_2402_Peak



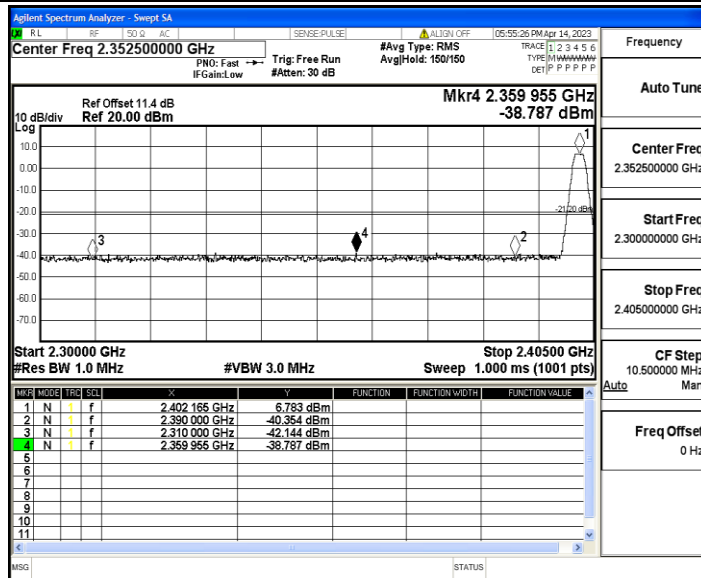
BLE_1M_Ant1_High_2480_AV



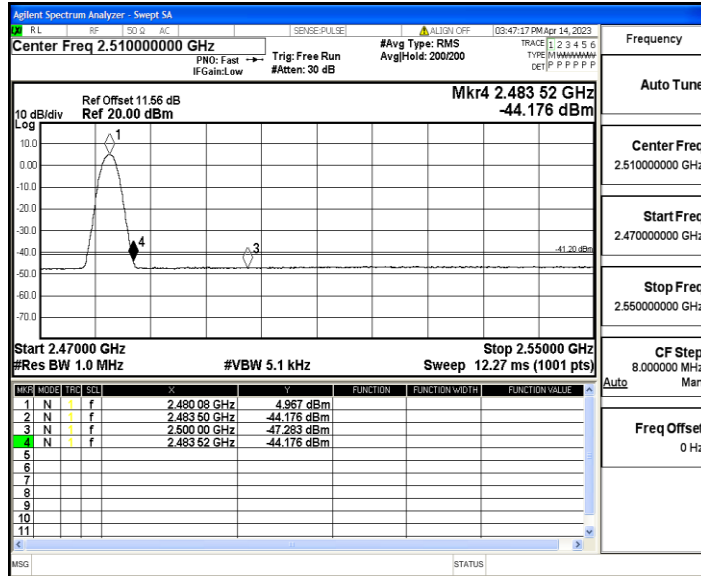
BLE_1M_Ant1_High_2480_Peak



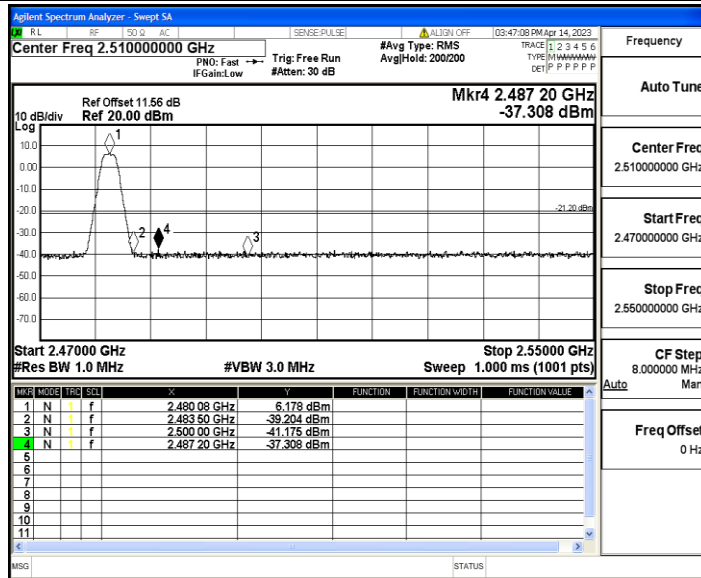
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak