# Appendix Test Data for BLE (Conducted Measurement)

**Product Name: bird feeder camera**

**Trade Mark: /**

**Test Model: V8-WNQ-02**

**FCC ID: 2AY58-V8-WNQ-02**

## Environmental Conditions

| | |
|---|---|
| Temperature: | 23.5℃ |
| Relative Humidity: | 58% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Allen Lai |
| Supervised by: | Max Zhang |
| NOTE | N/A |

## Appendix A: DTS Bandwidth

### Test Result

| Test Mode | Antenna | Frequency [MHz] | DTS BW [MHz] | FL [MHz] | FH [MHz] | Limit [MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 0.652 | 2401.676 | 2402.328 | 0.5 | PASS |
| BLE_1M | Ant1 | 2440 | 0.660 | 2439.672 | 2440.332 | 0.5 | PASS |
| BLE_1M | Ant1 | 2480 | 0.660 | 2479.676 | 2480.336 | 0.5 | PASS |
| BLE_2M | Ant1 | 2402 | 1.252 | 2401.348 | 2402.600 | 0.5 | PASS |
| BLE_2M | Ant1 | 2440 | 1.128 | 2439.440 | 2440.568 | 0.5 | PASS |
| BLE_2M | Ant1 | 2480 | 1.164 | 2479.416 | 2480.580 | 0.5 | PASS |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

## Test Graphs


BLE_1M-Ant1-2402-PASS


BLE_1M-Ant1-2440-PASS


BLE_1M-Ant1-2480-PASS


BLE_2M-Ant1-2402-PASS


BLE_2M-Ant1-2440-PASS


BLE_2M-Ant1-2480-PASS

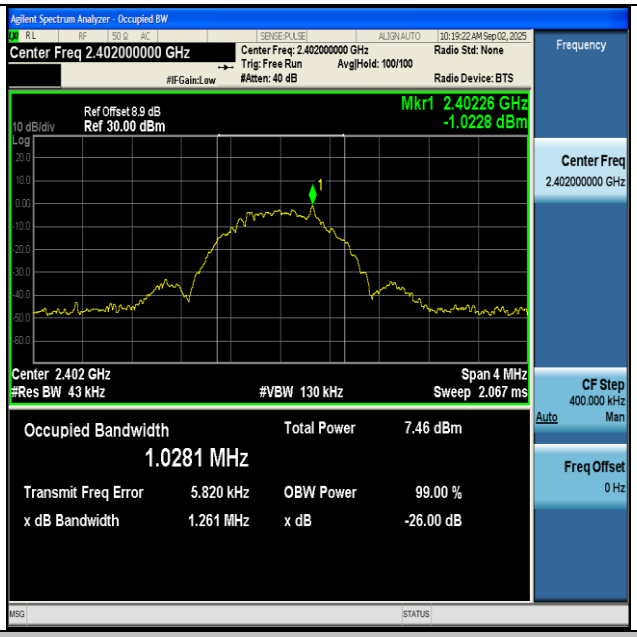
# Appendix B: Occupied Channel Bandwidth

## Test Result

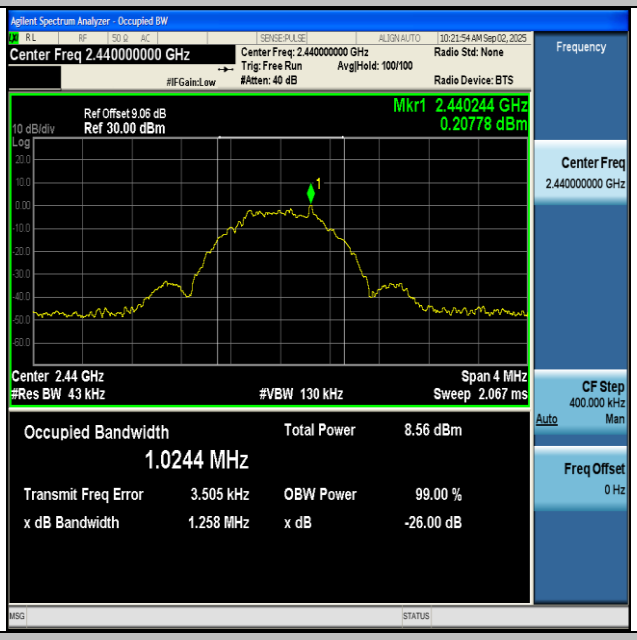
| Test Mode | Antenna | Frequency [MHz] | OCB [MHz] | FL [MHz] | FH [MHz] | Limit [MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 1.0281 | 2401.4918 | 2402.5199 | --- | --- |
| BLE_1M | Ant1 | 2440 | 1.0244 | 2439.4913 | 2440.5157 | --- | --- |
| BLE_1M | Ant1 | 2480 | 1.0256 | 2479.4914 | 2480.5170 | --- | --- |
| BLE_2M | Ant1 | 2402 | 2.0688 | 2400.9860 | 2403.0548 | --- | --- |
| BLE_2M | Ant1 | 2440 | 2.0768 | 2438.9818 | 2441.0586 | --- | --- |
| BLE_2M | Ant1 | 2480 | 2.0772 | 2478.9792 | 2481.0564 | --- | --- |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

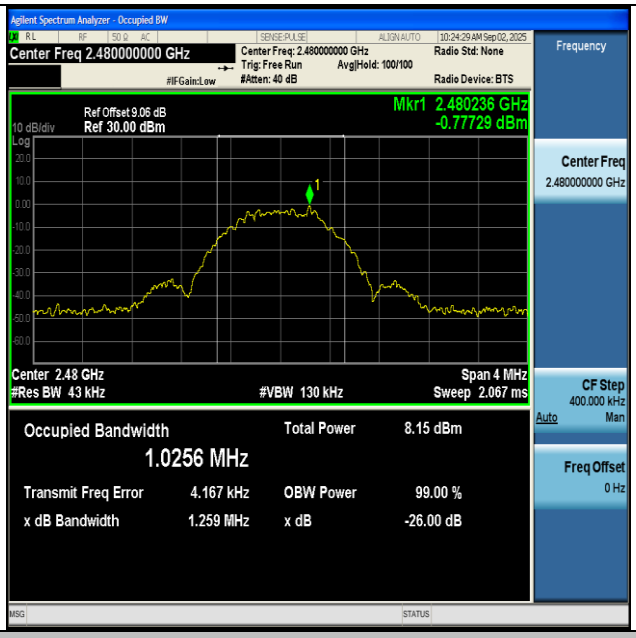
## Test Graphs



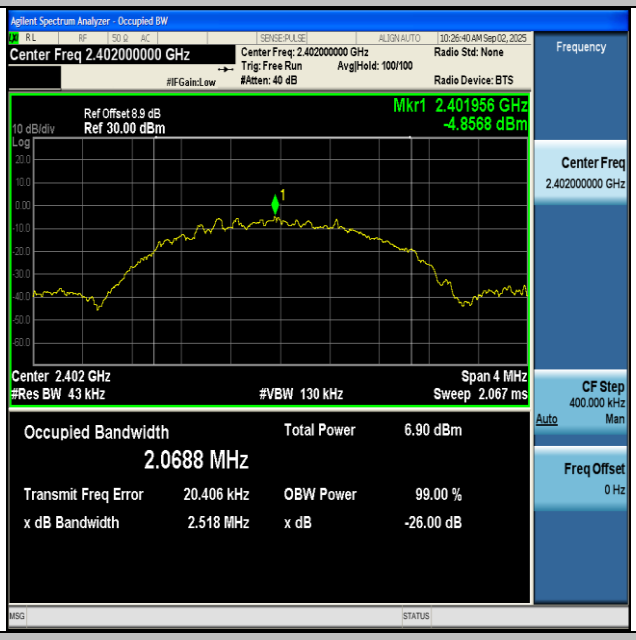

BLE_1M-Ant1-2402



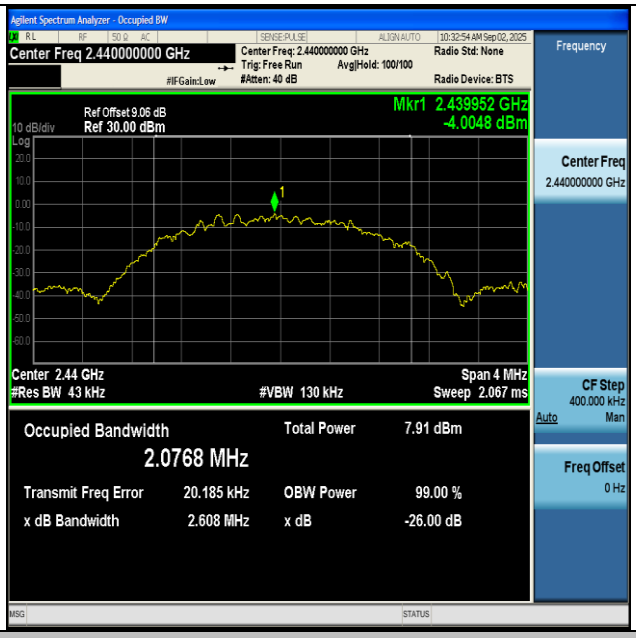

BLE_1M-Ant1-2440



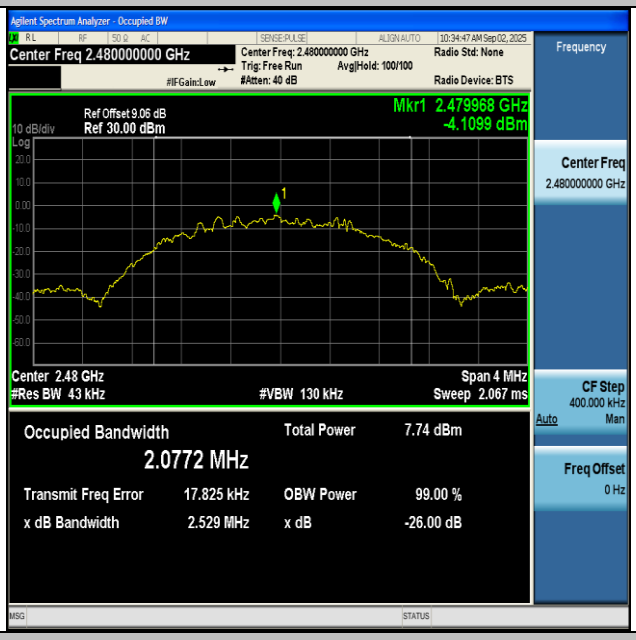

BLE_1M-Ant1-2480




BLE_2M-Ant1-2402




BLE_2M-Ant1-2440




BLE_2M-Ant1-2480

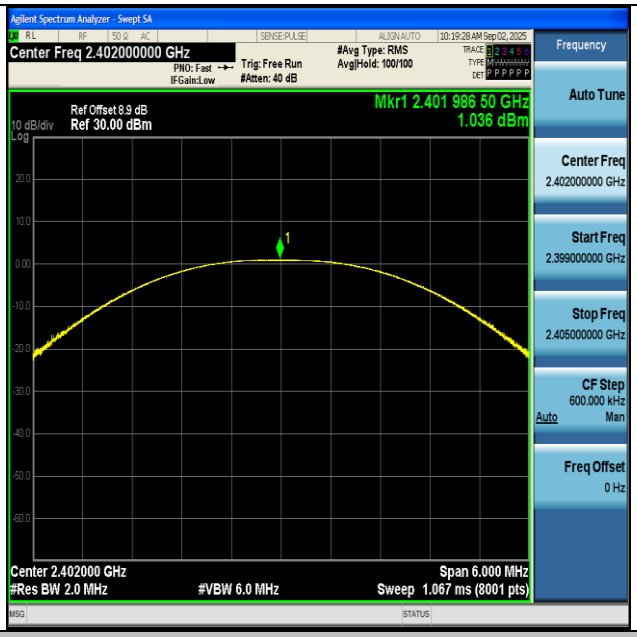
# Appendix C: Maximum peak conducted output power

## Test Result Peak

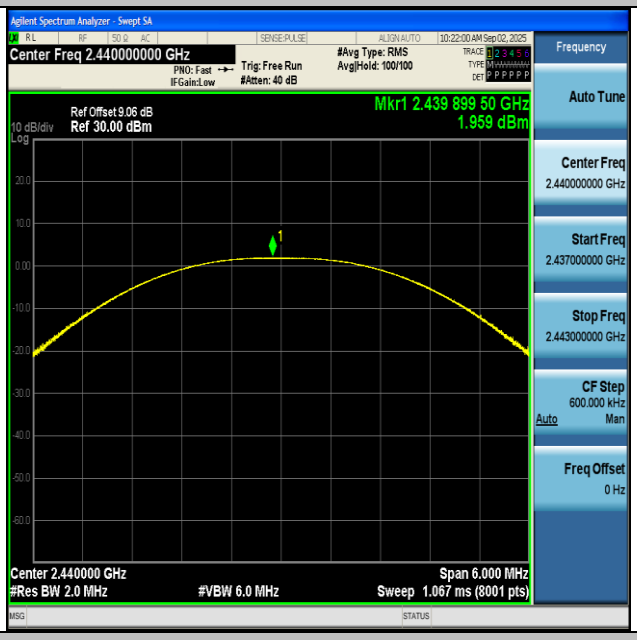
| Test Mode | Antenna | Frequency [MHz] | Conducted Peak Power [dBm] | Conducted Limit [dBm] | Verdict |
|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 1.04 | ≤30 | PASS |
| BLE_1M | Ant1 | 2440 | 1.96 | ≤30 | PASS |
| BLE_1M | Ant1 | 2480 | 1.61 | ≤30 | PASS |
| BLE_2M | Ant1 | 2402 | 0.98 | ≤30 | PASS |
| BLE_2M | Ant1 | 2440 | 1.91 | ≤30 | PASS |
| BLE_2M | Ant1 | 2480 | 1.63 | ≤30 | PASS |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

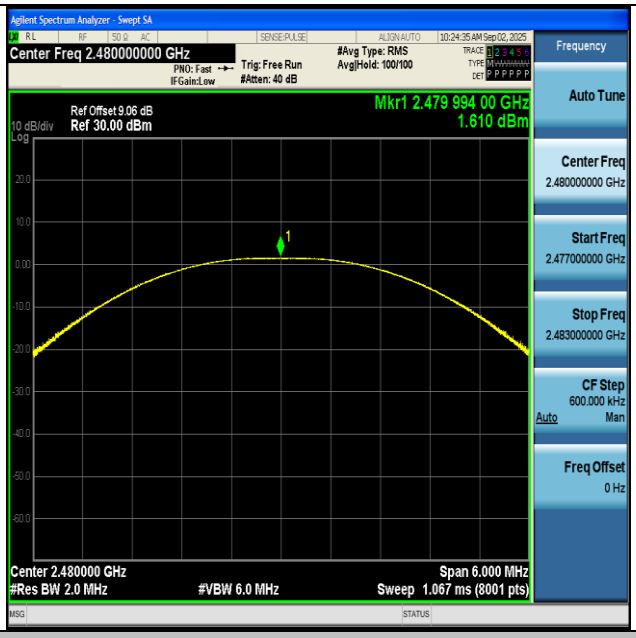
## Test Graphs Peak



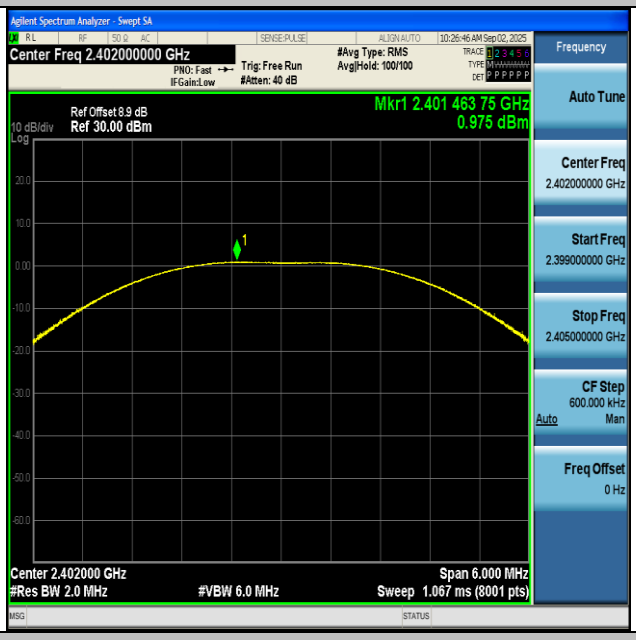

BLE_1M-Ant1-2402-PASS



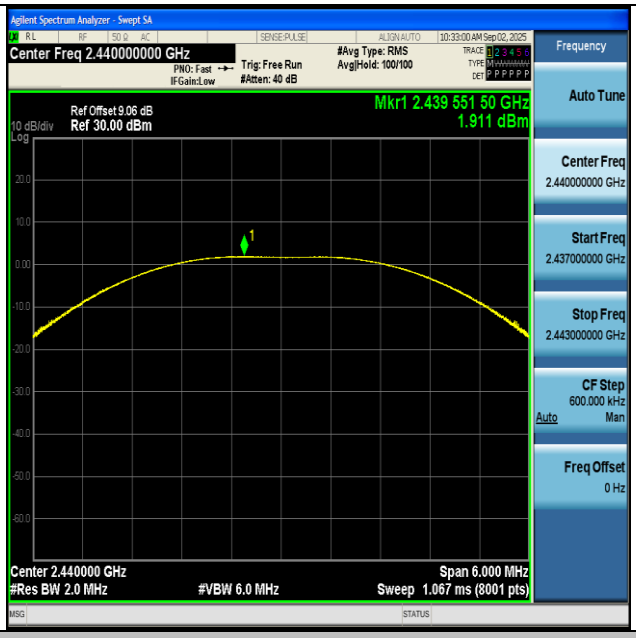

BLE_1M-Ant1-2440-PASS



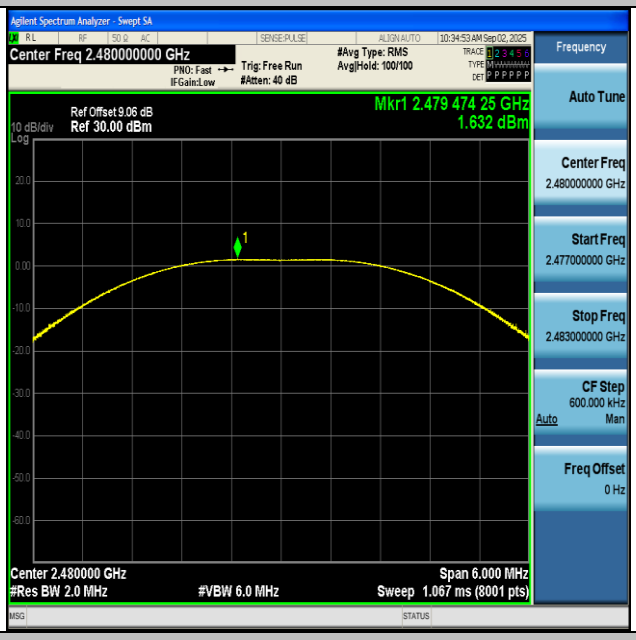

BLE_1M-Ant1-2480-PASS




BLE_2M-Ant1-2402-PASS




BLE_2M-Ant1-2440-PASS




BLE_2M-Ant1-2480-PASS

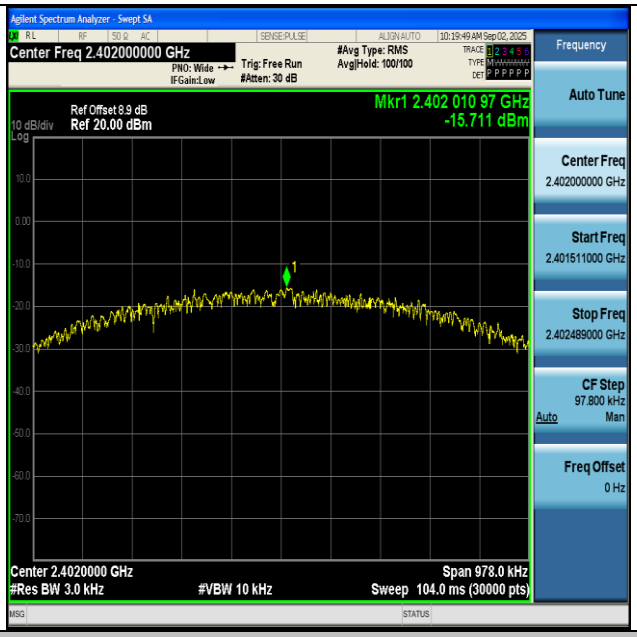
# Appendix D: Maximum peak power spectral density

## Test Result

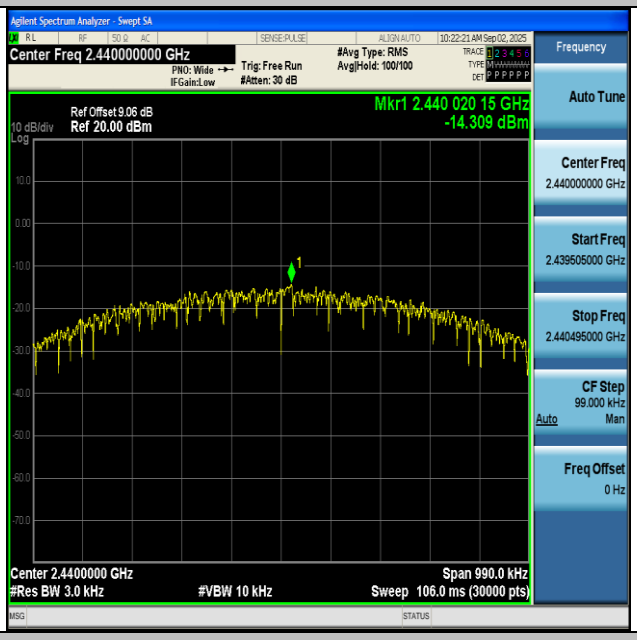
| Test Mode | Antenna | Frequency [MHz] | Result [dBm/3kHz] | Limit [dBm/3kHz] | Verdict |
|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | -15.71 | ≤8.00 | PASS |
| BLE_1M | Ant1 | 2440 | -14.31 | ≤8.00 | PASS |
| BLE_1M | Ant1 | 2480 | -14.67 | ≤8.00 | PASS |
| BLE_2M | Ant1 | 2402 | -18.59 | ≤8.00 | PASS |
| BLE_2M | Ant1 | 2440 | -17.67 | ≤8.00 | PASS |
| BLE_2M | Ant1 | 2480 | -17.93 | ≤8.00 | PASS |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

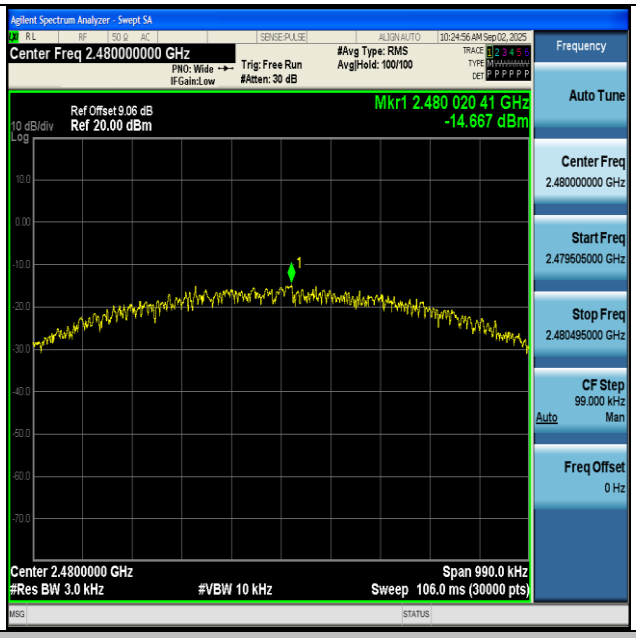
## Test Graphs



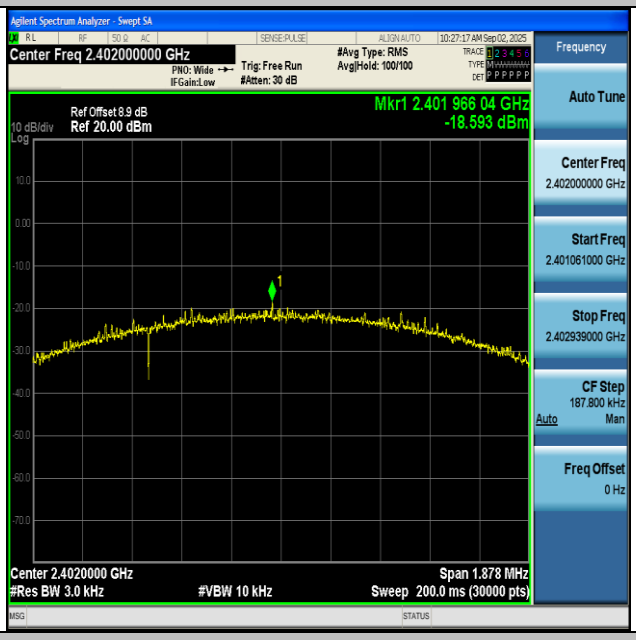

BLE_1M-Ant1-2402-PASS



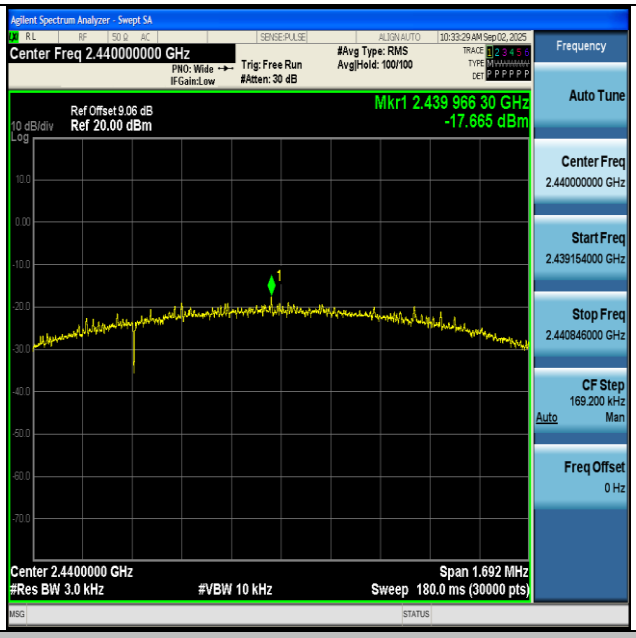

BLE_1M-Ant1-2440-PASS




BLE_1M-Ant1-2480-PASS




BLE_2M-Ant1-2402-PASS




BLE_2M-Ant1-2440-PASS


BLE_2M-Ant1-2480-PASS

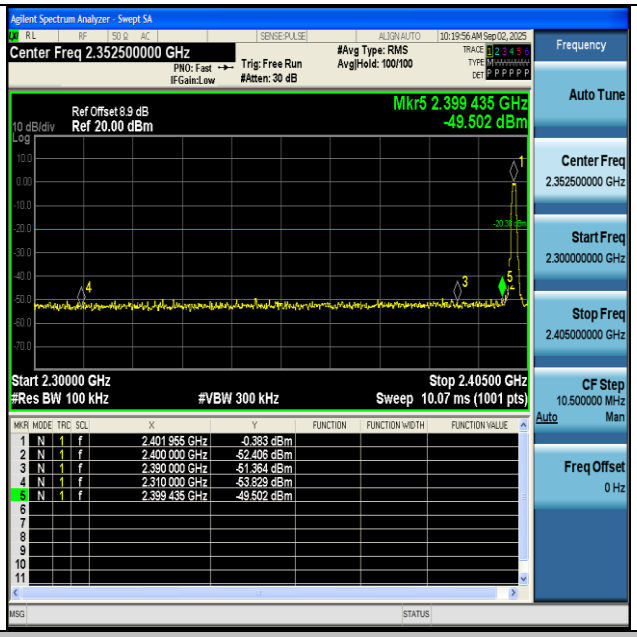
# Appendix E: Band edge measurements

## Test Result

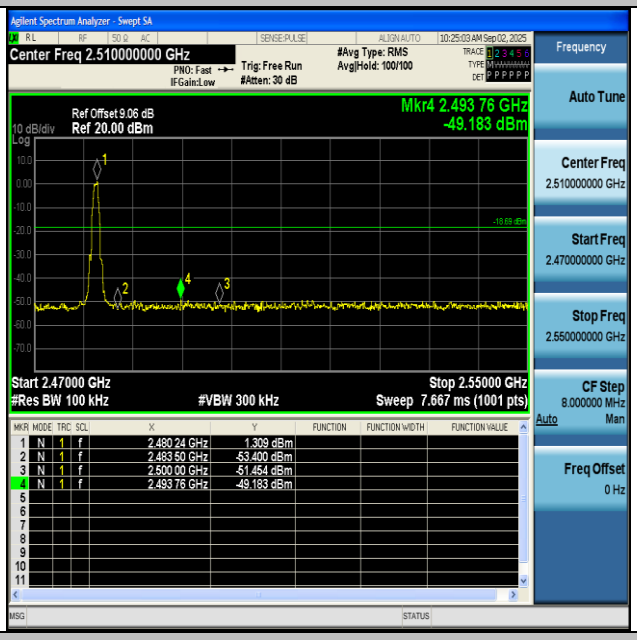
| Test Mode | Antenna | Ch. Name | Frequency [MHz] | Ref. Level [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | Low | 2402 | -0.38 | -49.5 | ≤-20.38 | PASS |
| BLE_1M | Ant1 | High | 2480 | 1.31 | -49.18 | ≤-18.69 | PASS |
| BLE_2M | Ant1 | Low | 2402 | -1.59 | -33.45 | ≤-21.59 | PASS |
| BLE_2M | Ant1 | High | 2480 | -0.11 | -48.52 | ≤-20.11 | PASS |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

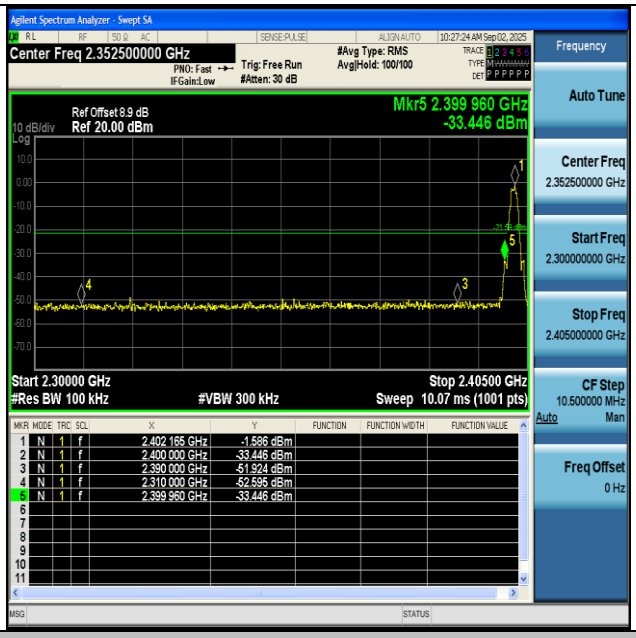
## Test Graphs



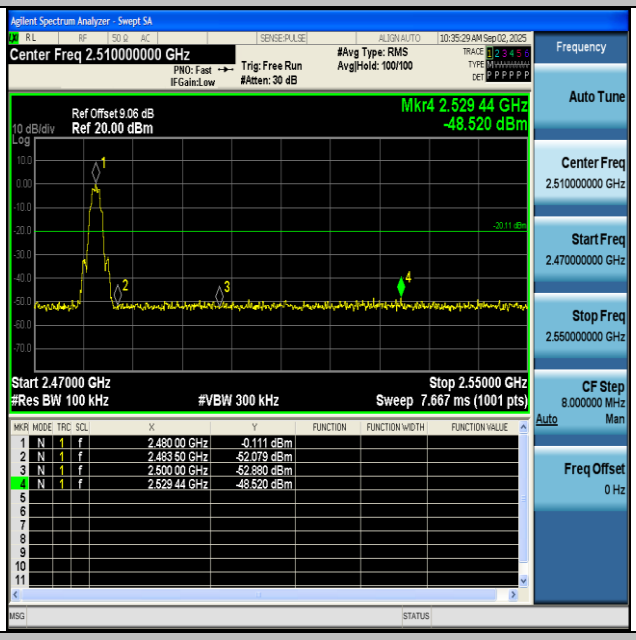

BLE_1M-Ant1-2402-PASS




BLE_1M-Ant1-2480-PASS




BLE_2M-Ant1-2402-PASS




BLE_2M-Ant1-2480-PASS

# Appendix F: Conducted Spurious Emission

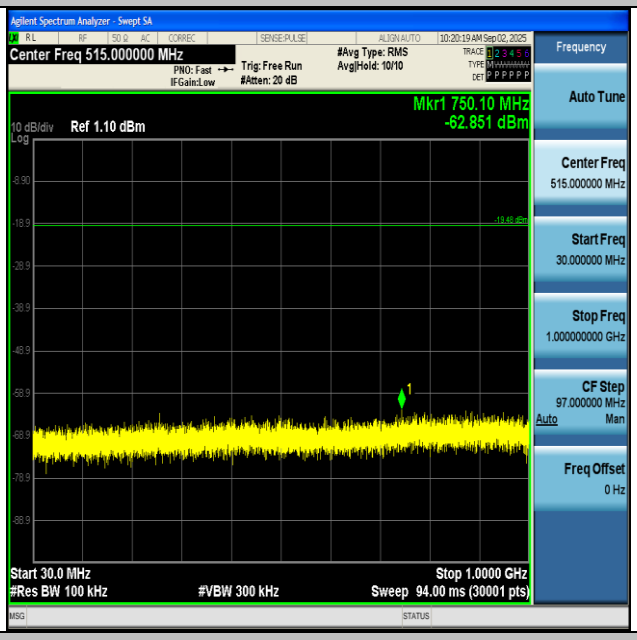
## Test Result

| Test Mode | Antenna | Frequency [MHz] | Freq. Range [MHz] | Ref. Level [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 0~Reference | 0.52 | 0.52 | --- | PASS |
| BLE_1M | Ant1 | 2402 | 30~1000 | 0.52 | -62.85 | ≤-19.48 | PASS |
| BLE_1M | Ant1 | 2402 | 1000~26500 | 0.52 | -44.84 | ≤-19.48 | PASS |
| BLE_1M | Ant1 | 2440 | 0~Reference | 0.66 | 0.66 | --- | PASS |
| BLE_1M | Ant1 | 2440 | 30~1000 | 0.66 | -63.12 | ≤-19.34 | PASS |
| BLE_1M | Ant1 | 2440 | 1000~26500 | 0.66 | -45.59 | ≤-19.34 | PASS |
| BLE_1M | Ant1 | 2480 | 0~Reference | 0.52 | 0.52 | --- | PASS |
| BLE_1M | Ant1 | 2480 | 30~1000 | 0.52 | -61.53 | ≤-19.48 | PASS |
| BLE_1M | Ant1 | 2480 | 1000~26500 | 0.52 | -45.44 | ≤-19.48 | PASS |
| BLE_2M | Ant1 | 2402 | 0~Reference | -0.64 | -0.64 | --- | PASS |
| BLE_2M | Ant1 | 2402 | 30~1000 | -0.64 | -62.63 | ≤-20.64 | PASS |
| BLE_2M | Ant1 | 2402 | 1000~26500 | -0.64 | -44.85 | ≤-20.64 | PASS |
| BLE_2M | Ant1 | 2440 | 0~Reference | 0.24 | 0.24 | --- | PASS |
| BLE_2M | Ant1 | 2440 | 30~1000 | 0.24 | -61.42 | ≤-19.76 | PASS |
| BLE_2M | Ant1 | 2440 | 1000~26500 | 0.24 | -45.45 | ≤-19.76 | PASS |
| BLE_2M | Ant1 | 2480 | 0~Reference | -0.04 | -0.04 | --- | PASS |
| BLE_2M | Ant1 | 2480 | 30~1000 | -0.04 | -62.7 | ≤-20.04 | PASS |
| BLE_2M | Ant1 | 2480 | 1000~26500 | -0.04 | -45.51 | ≤-20.04 | PASS |

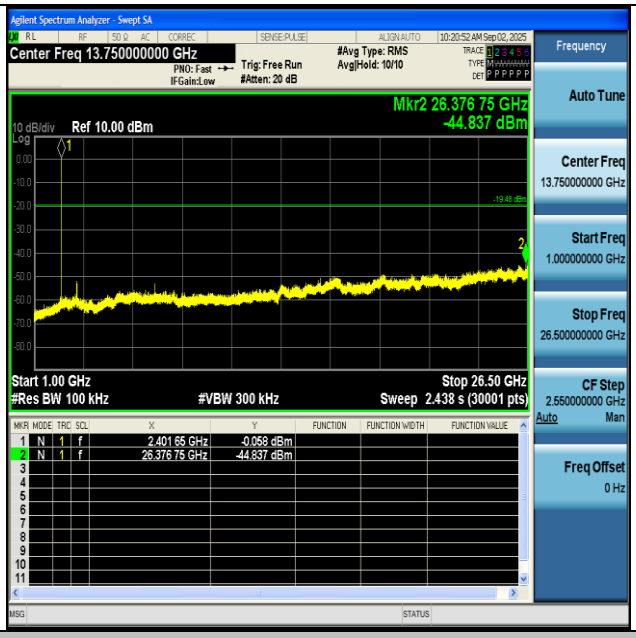
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.

## Test Graphs


BLE_1M-Ant1-2402-0~Reference-PASS

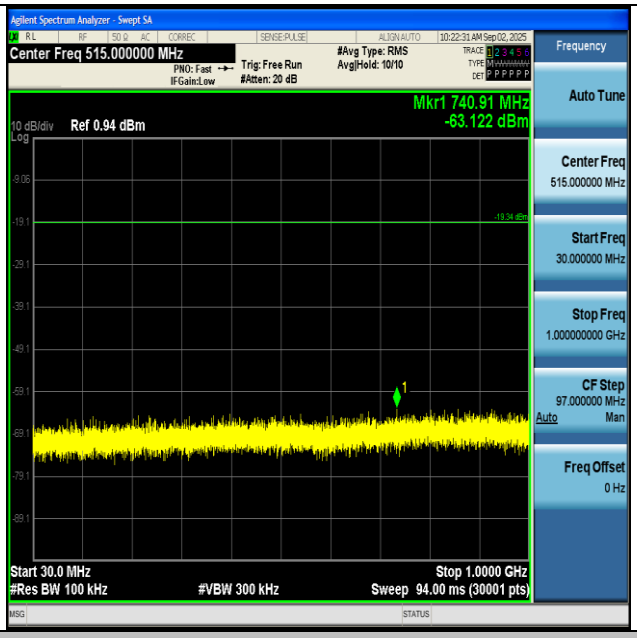



BLE_1M-Ant1-2402-30~1000-PASS

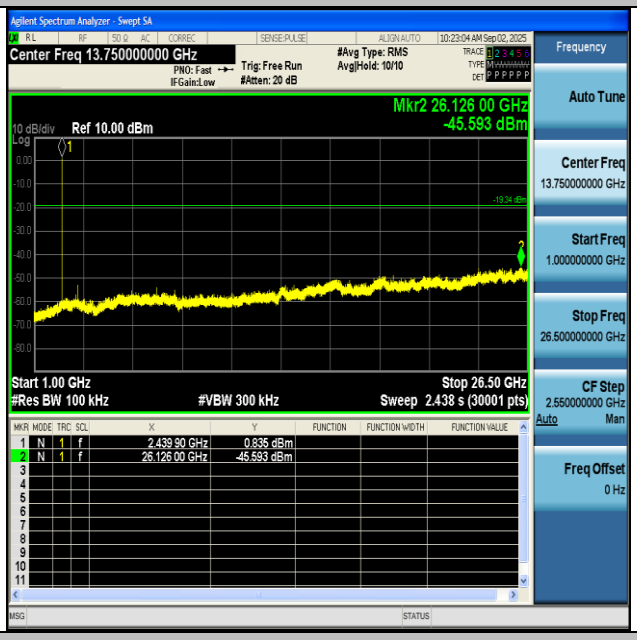



BLE_1M-Ant1-2402-1000~26500-PASS

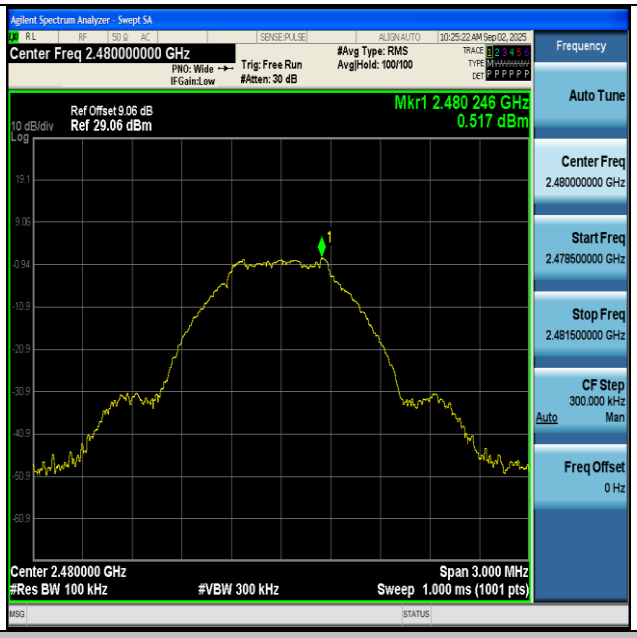

BLE_1M-Ant1-2440-0~Reference-PASS



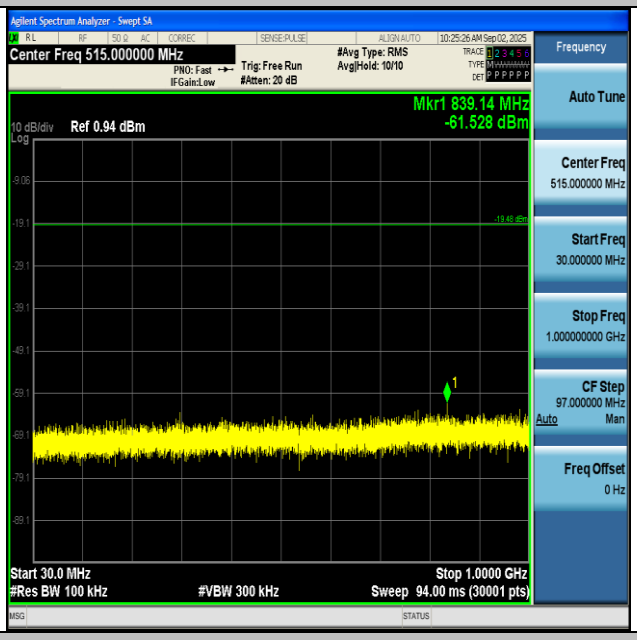

BLE_1M-Ant1-2440-30~1000-PASS



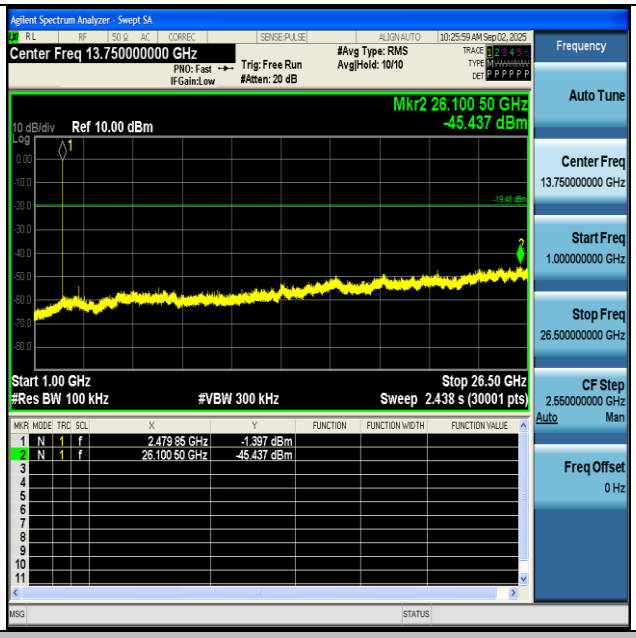

BLE_1M-Ant1-2440-1000~26500-PASS



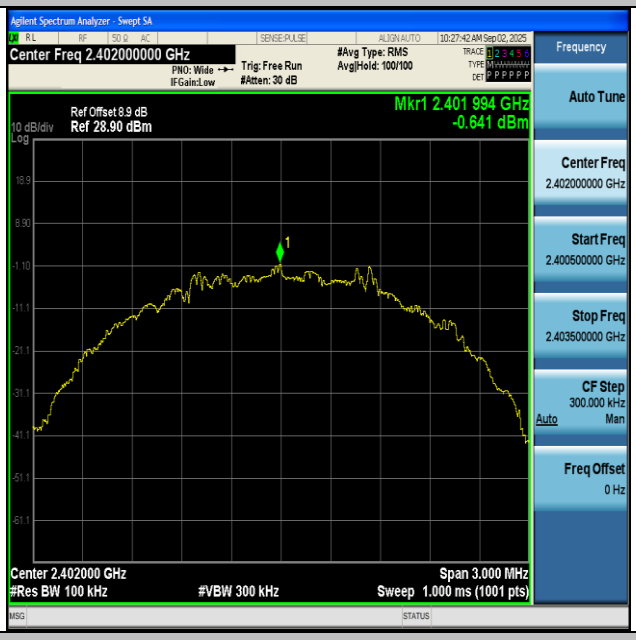

BLE_1M-Ant1-2480-0~Reference-PASS



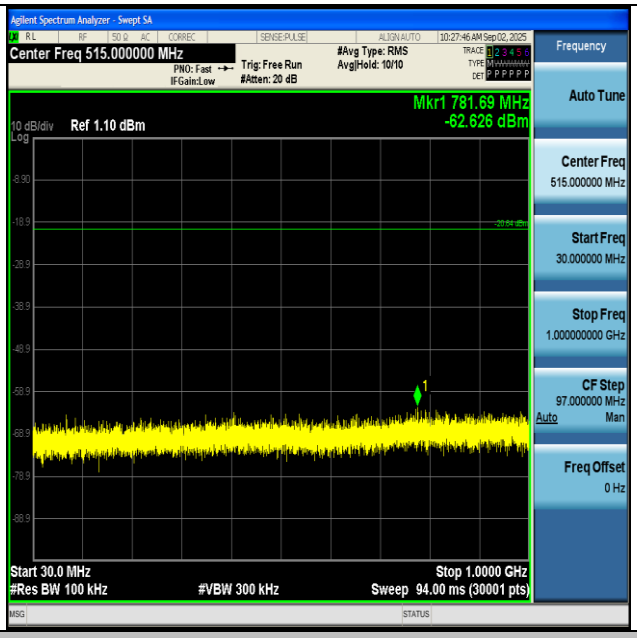

BLE_1M-Ant1-2480-30~1000-PASS



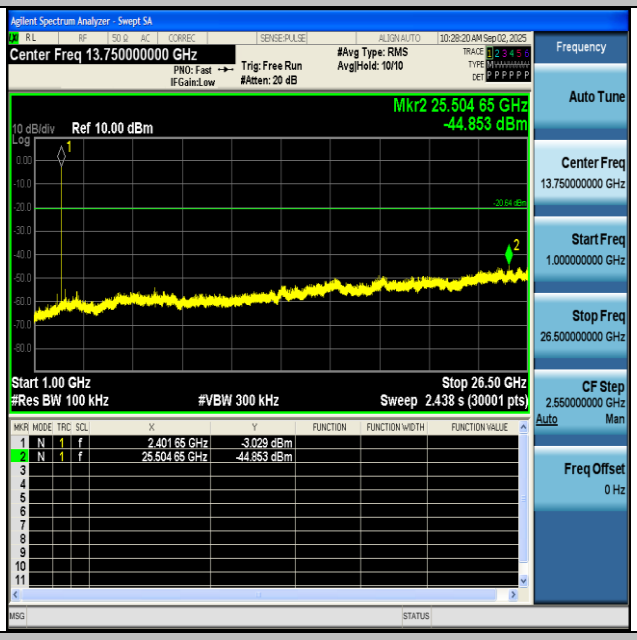

BLE_1M-Ant1-2480-1000~26500-PASS




BLE_2M-Ant1-2402-0~Reference-PASS

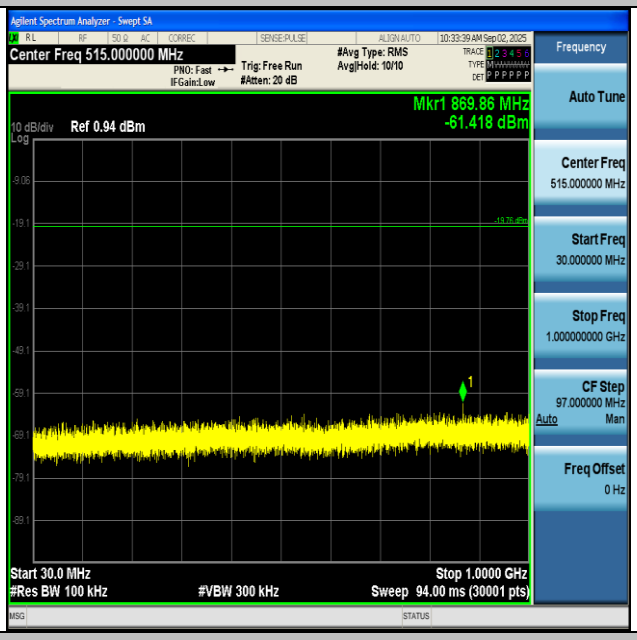



BLE_2M-Ant1-2402-30~1000-PASS

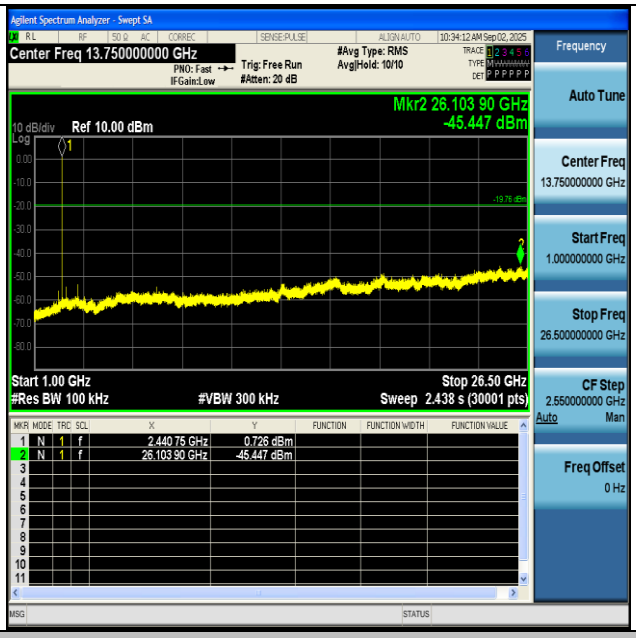



BLE_2M-Ant1-2402-1000~26500-PASS


BLE_2M-Ant1-2440-0~Reference-PASS

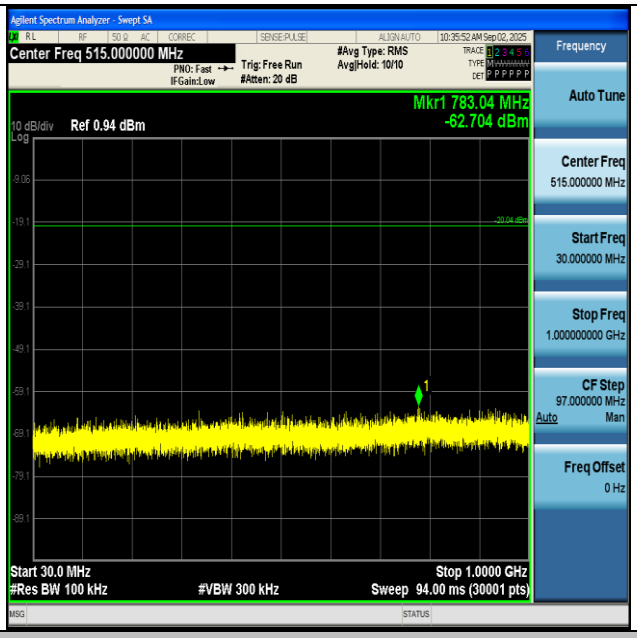



BLE_2M-Ant1-2440-30~1000-PASS

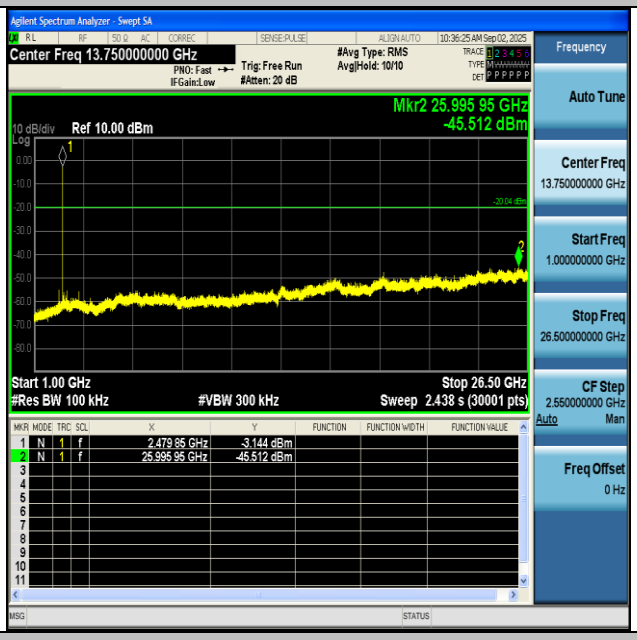



BLE_2M-Ant1-2440-1000~26500-PASS


BLE_2M-Ant1-2480-0~Reference-PASS




BLE_2M-Ant1-2480-30~1000-PASS




BLE_2M-Ant1-2480-1000~26500-PASS

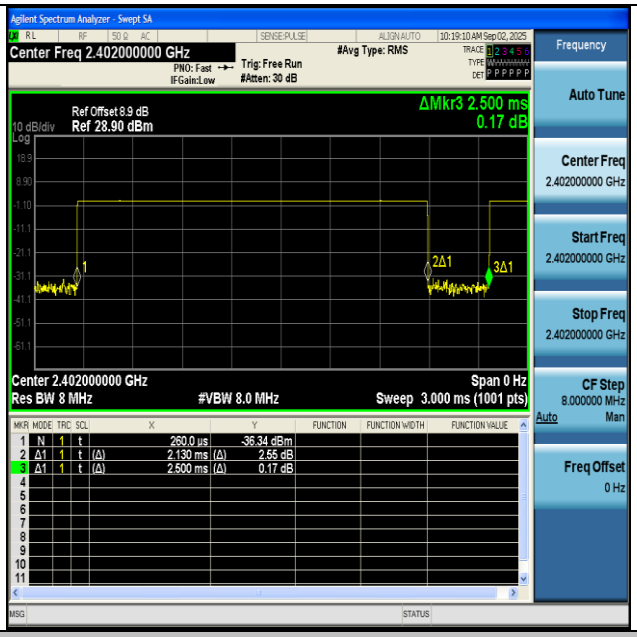
# Appendix G: Duty Cycle

## Test Result

| Test Mode | Antenna | Frequency [MHz] | ON Time [ms] | Period [ms] | Duty Cycle [%] | Duty Cycle Factor [dB] |
|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 2.13 | 2.50 | 85.20 | 0.70 |
| BLE_1M | Ant1 | 2440 | 2.13 | 2.51 | 84.86 | 0.71 |
| BLE_1M | Ant1 | 2480 | 2.12 | 2.50 | 84.80 | 0.72 |
| BLE_2M | Ant1 | 2402 | 1.06 | 1.87 | 56.68 | 2.47 |
| BLE_2M | Ant1 | 2440 | 1.07 | 1.88 | 56.91 | 2.45 |
| BLE_2M | Ant1 | 2480 | 1.07 | 1.88 | 56.91 | 2.45 |

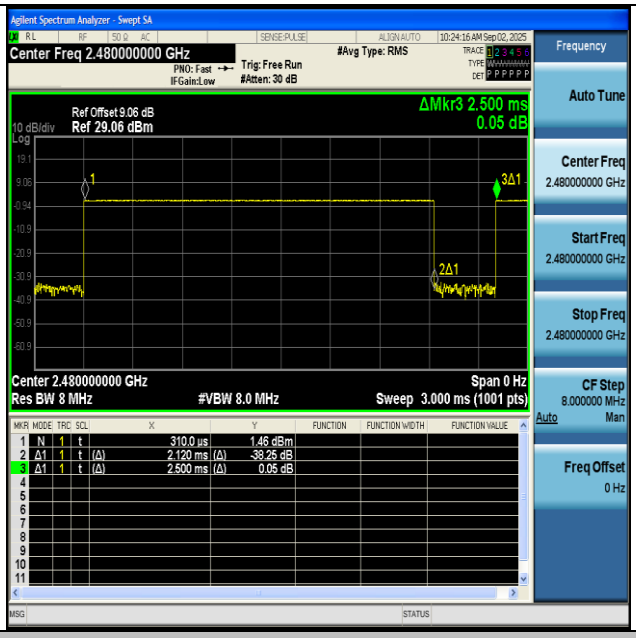
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

## Test Graphs

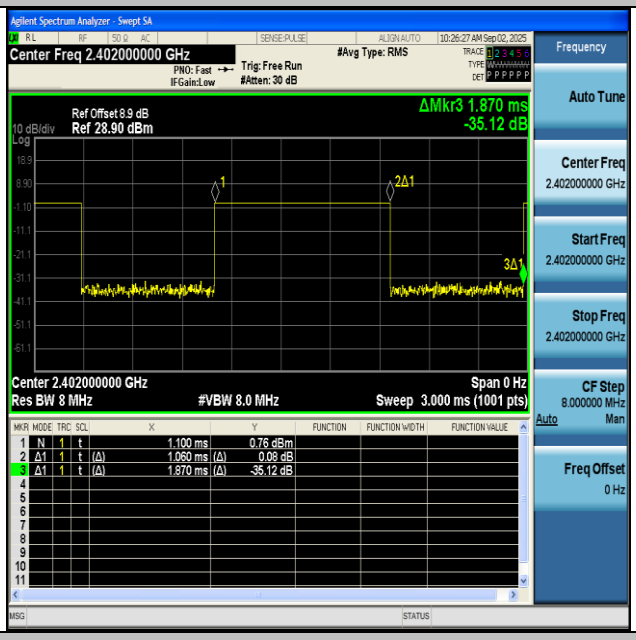



NTNV-BLE_1M-Ant1-2402


NTNV-BLE_1M-Ant1-2440




NTNV-BLE_1M-Ant1-2480

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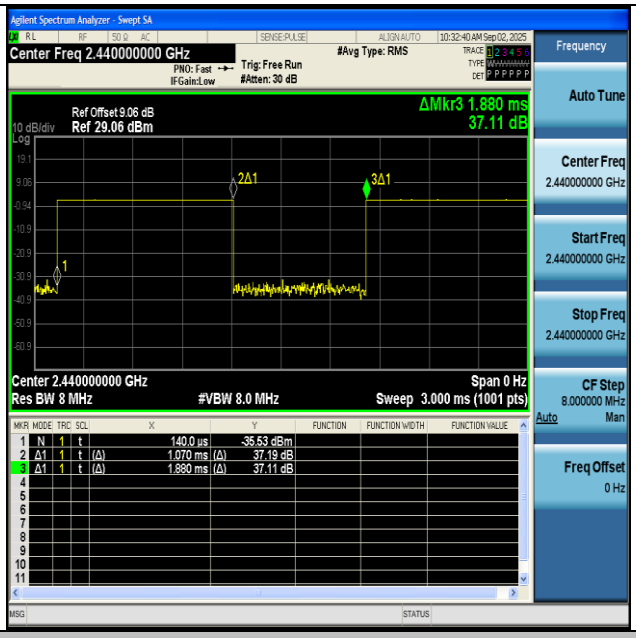


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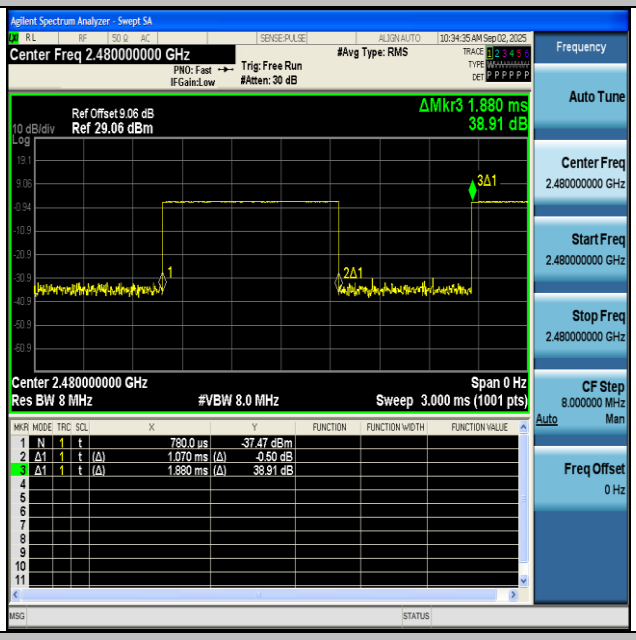


NTNV-BLE_2M-Ant1-2480