# Appendix Test Data for BLE (Conducted Measurement)

**Product Name: Wireless Mechanical Keyboard**

**Trade Mark: Keychron**

**Test Model: B1 Pro**

**FCC ID: 2BGKB-B1PRO**

# Environmental Conditions

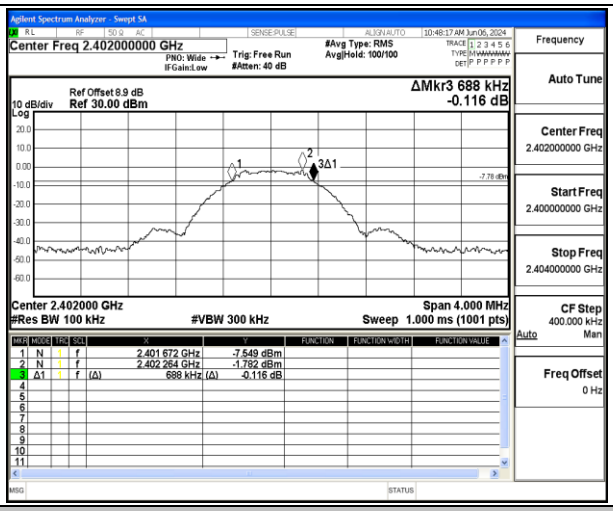
| | |
|---|---|
| Temperature: | 23.8℃ |
| Relative Humidity: | 58% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Allen Lai |
| Supervised by: | Hugo Chen |
| NOTE | N/A |

## Appendix A: DTS Bandwidth

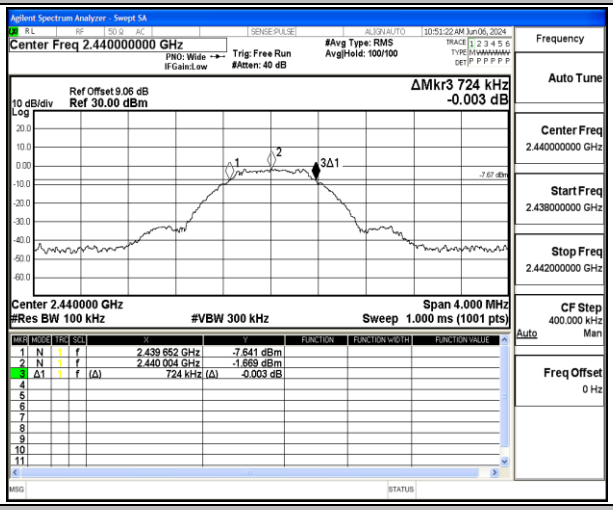
### Test Result

| TestMode | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 0.688 | 2401.672 | 2402.360 | 0.5 | PASS |
| BLE_1M | Ant1 | 2440 | 0.724 | 2439.652 | 2440.376 | 0.5 | PASS |
| BLE_1M | Ant1 | 2480 | 0.740 | 2479.644 | 2480.384 | 0.5 | PASS |

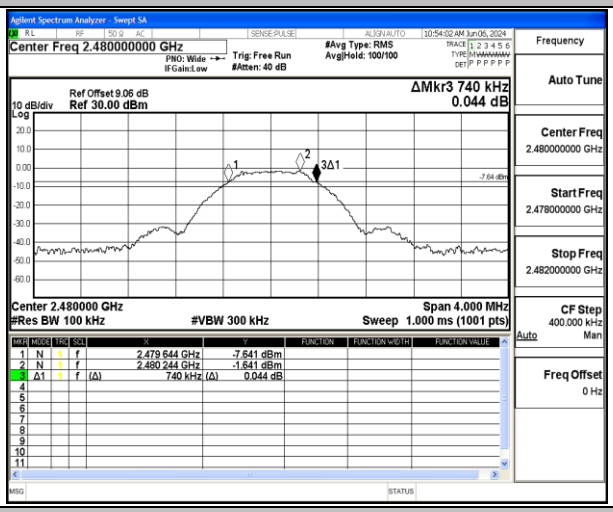
## Test Graphs




BLE_1M-Ant1-2402-PASS




BLE_1M-Ant1-2440-PASS



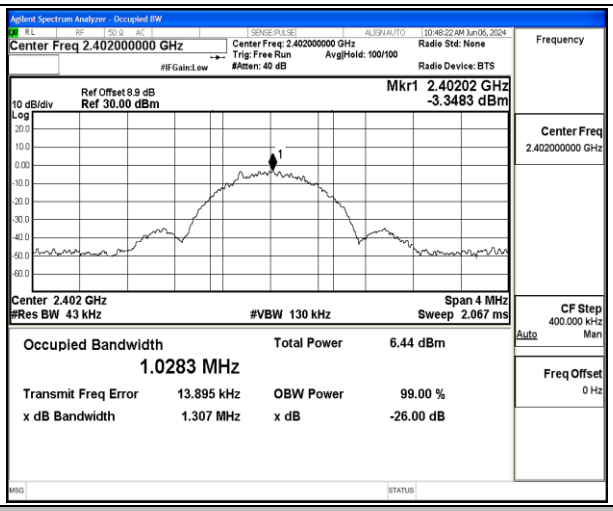

BLE_1M-Ant1-2480-PASS

# Appendix B: Occupied Channel Bandwidth

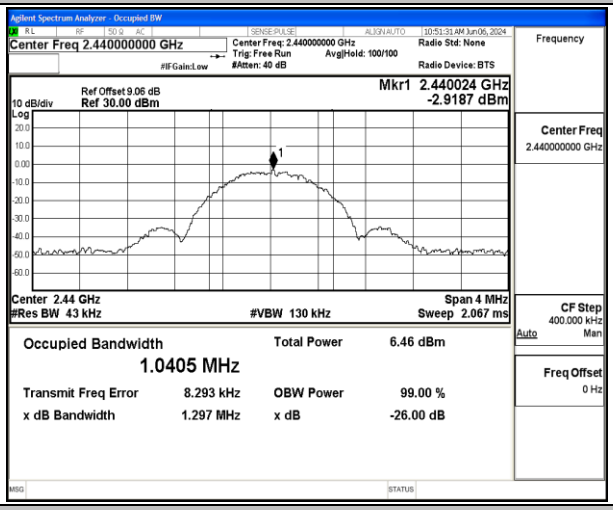
## Test Result

| TestMode | Antenna | Frequency[MHz] | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 1.0283 | 2401.4998 | 2402.5281 | --- | --- |
| BLE_1M | Ant1 | 2440 | 1.0405 | 2439.4880 | 2440.5285 | --- | --- |
| BLE_1M | Ant1 | 2480 | 1.0322 | 2479.4948 | 2480.5270 | --- | --- |

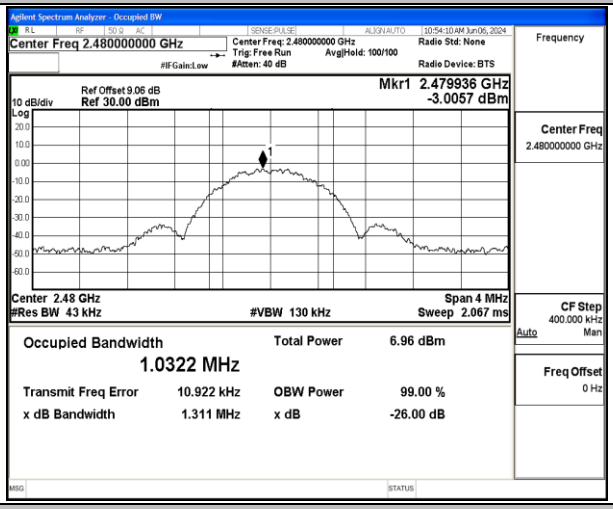
## Test Graphs




BLE_1M-Ant1-2402




BLE_1M-Ant1-2440



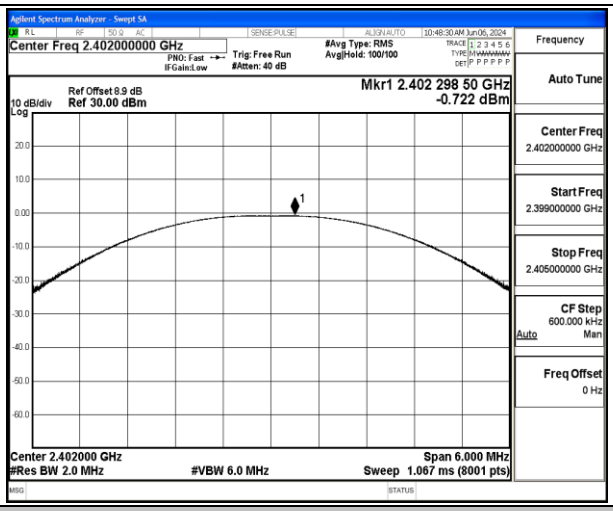

BLE_1M-Ant1-2480

# Appendix C: Maximum peak conducted output power

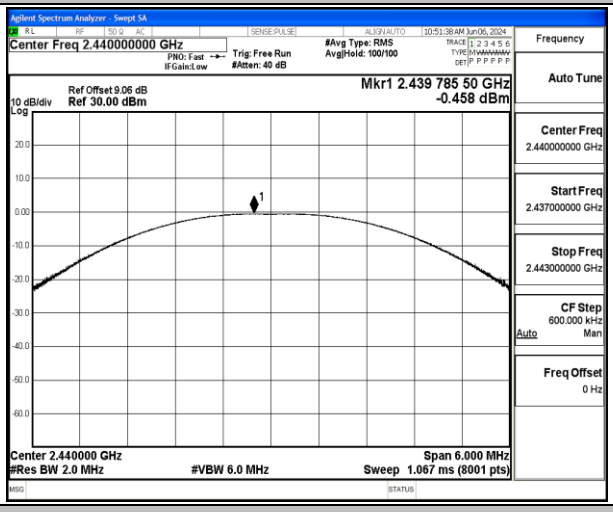
## Test Result Peak

| TestMode | Antenna | Frequency[MHz] | Conducted Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | -0.72 | ≤30 | PASS |
| BLE_1M | Ant1 | 2440 | -0.46 | ≤30 | PASS |
| BLE_1M | Ant1 | 2480 | -0.11 | ≤30 | PASS |

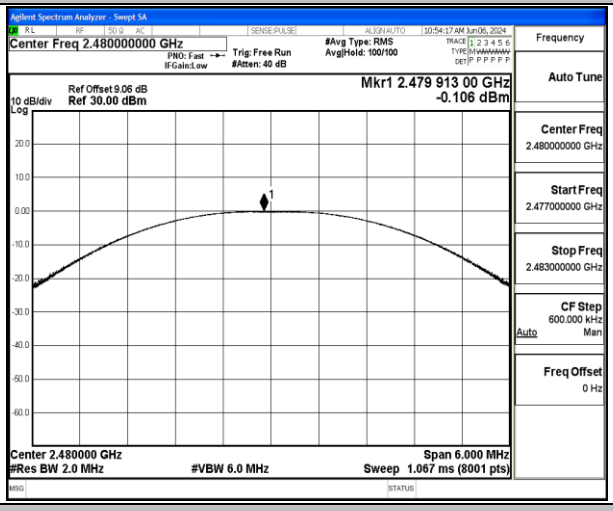
## Test Graphs Peak




BLE_1M-Ant1-2402-PASS




BLE_1M-Ant1-2440-PASS



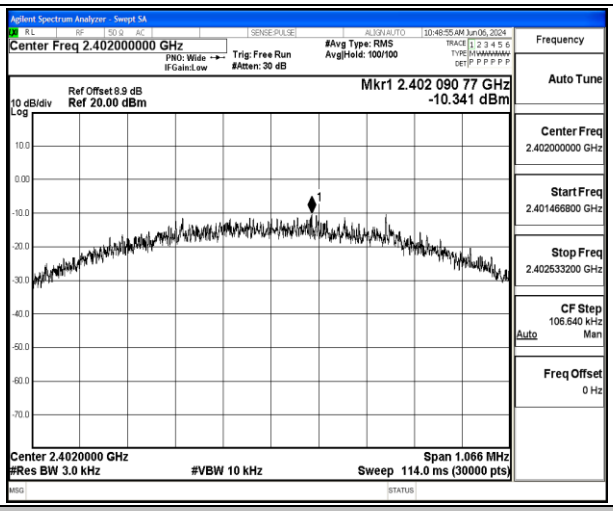

BLE_1M-Ant1-2480-PASS

# Appendix D: Maximum peak power spectral density

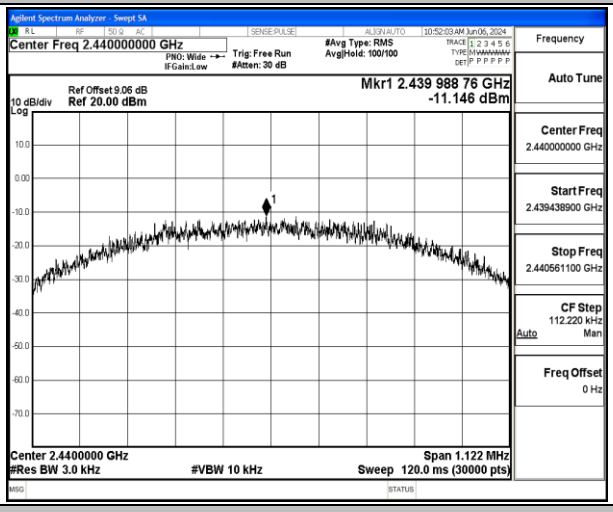
## Test Result

| TestMode | Antenna | Frequency[MHz] | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | -10.34 | ≤8.00 | PASS |
| BLE_1M | Ant1 | 2440 | -11.15 | ≤8.00 | PASS |
| BLE_1M | Ant1 | 2480 | -9.86 | ≤8.00 | PASS |

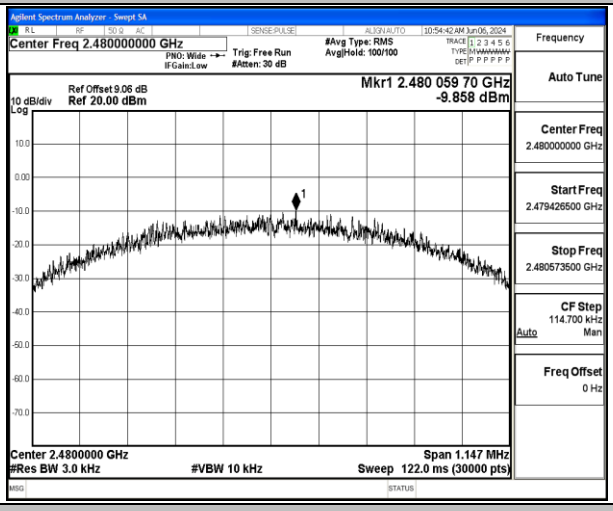
## Test Graphs




BLE_1M-Ant1-2402-PASS




BLE_1M-Ant1-2440-PASS



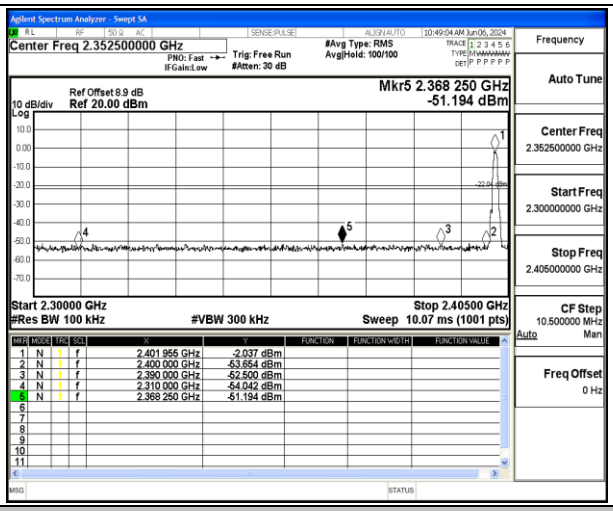

BLE_1M-Ant1-2480-PASS

# Appendix E: Band edge measurements

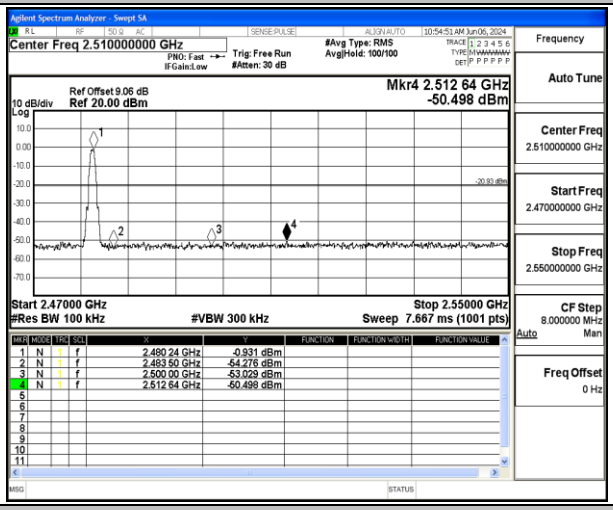
## Test Result

| TestMode | Antenna | ChName | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | Low | 2402 | -2.04 | -51.19 | ≤-22.04 | PASS |
| BLE_1M | Ant1 | High | 2480 | -0.93 | -50.5 | ≤-20.93 | PASS |

## Test Graphs




BLE_1M-Ant1-2402-PASS



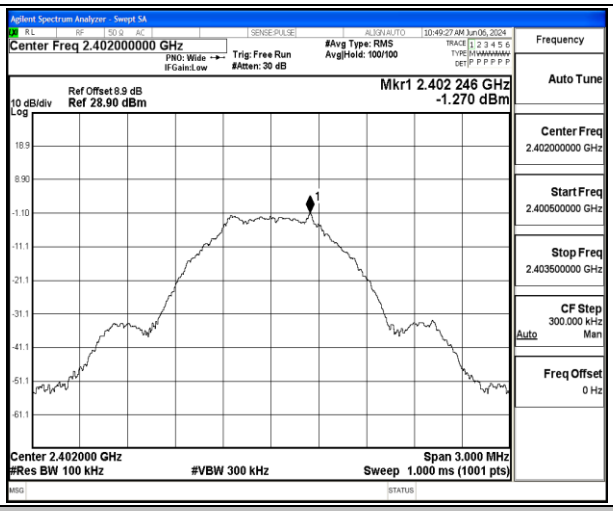

BLE_1M-Ant1-2480-PASS

# Appendix F: Conducted Spurious Emission

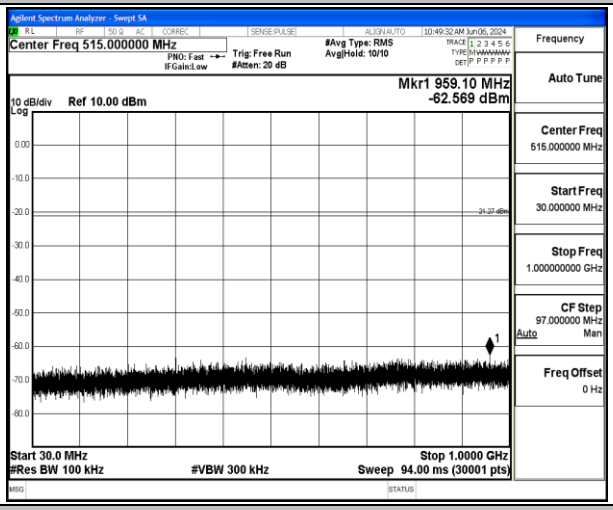
## Test Result

| TestMode | Antenna | Frequency[MHz] | FreqRange[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 0~Reference | -1.27 | -1.27 | --- | PASS |
| BLE_1M | Ant1 | 2402 | 30~1000 | -1.27 | -62.57 | ≤-21.27 | PASS |
| BLE_1M | Ant1 | 2402 | 1000~26500 | -1.27 | -48.95 | ≤-21.27 | PASS |
| BLE_1M | Ant1 | 2440 | 0~Reference | -1.33 | -1.33 | --- | PASS |
| BLE_1M | Ant1 | 2440 | 30~1000 | -1.33 | -61.41 | ≤-21.33 | PASS |
| BLE_1M | Ant1 | 2440 | 1000~26500 | -1.33 | -48.73 | ≤-21.33 | PASS |
| BLE_1M | Ant1 | 2480 | 0~Reference | -0.95 | -0.95 | --- | PASS |
| BLE_1M | Ant1 | 2480 | 30~1000 | -0.95 | -62.59 | ≤-20.95 | PASS |
| BLE_1M | Ant1 | 2480 | 1000~26500 | -0.95 | -50.22 | ≤-20.95 | PASS |

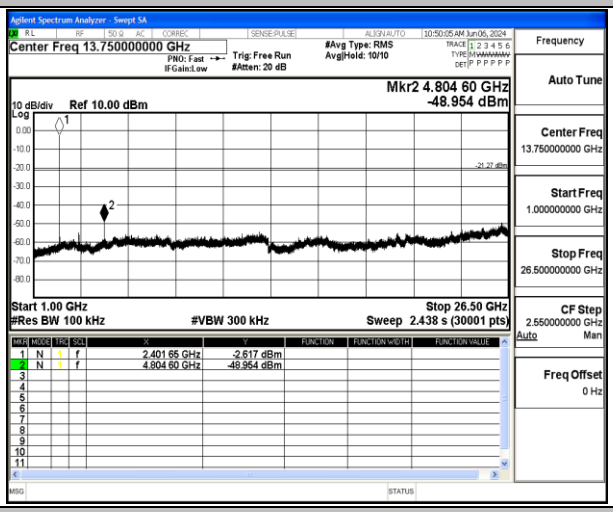
## Test Graphs



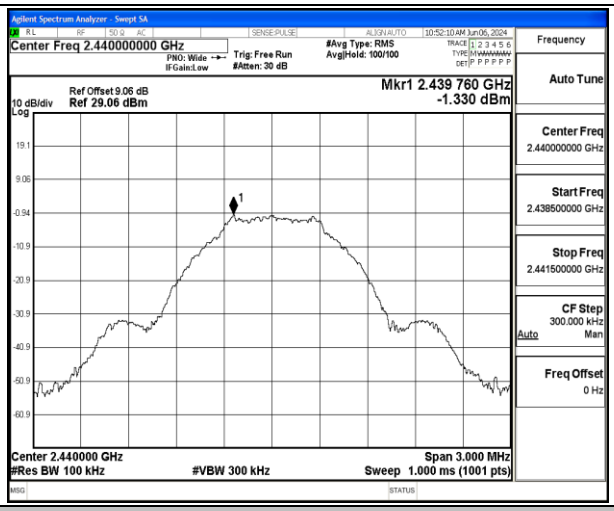

BLE_1M-Ant1-2402-0~Reference-PASS



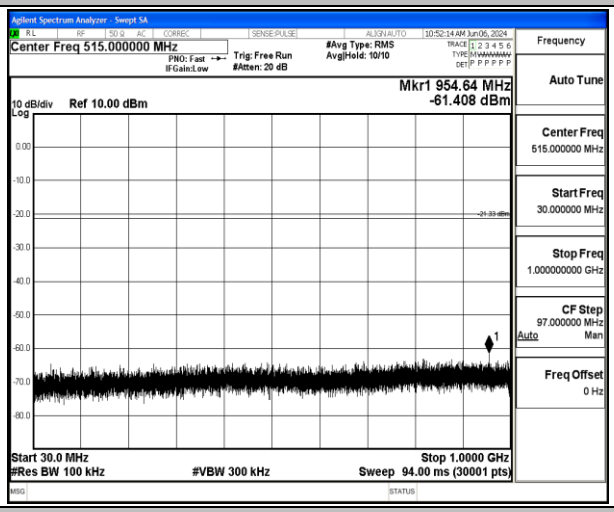

BLE_1M-Ant1-2402-30~1000-PASS



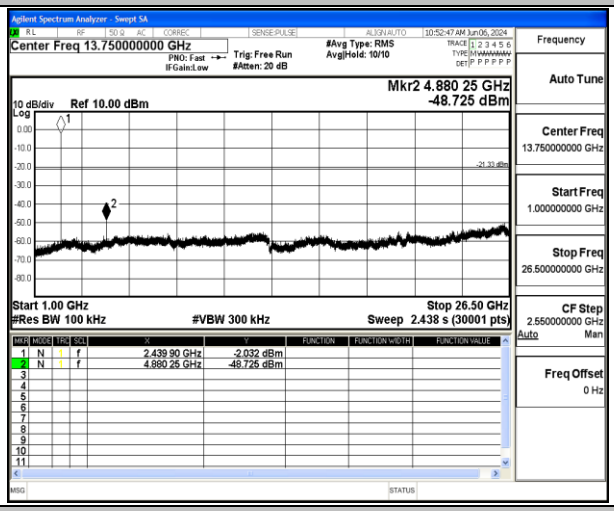

BLE_1M-Ant1-2402-1000~26500-PASS



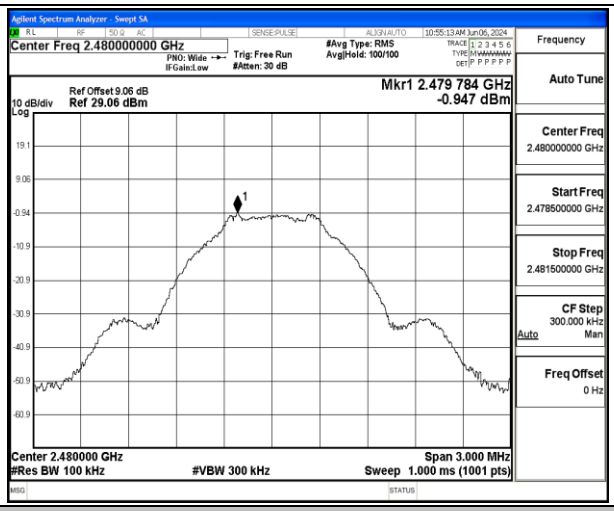

BLE_1M-Ant1-2440-0~Reference-PASS



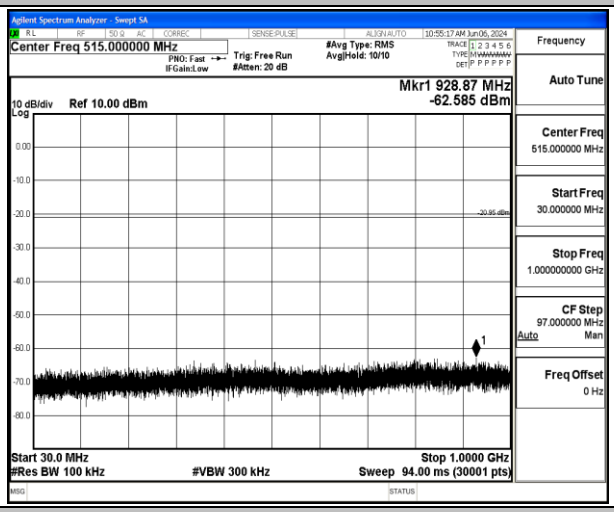

BLE_1M-Ant1-2440-30~1000-PASS



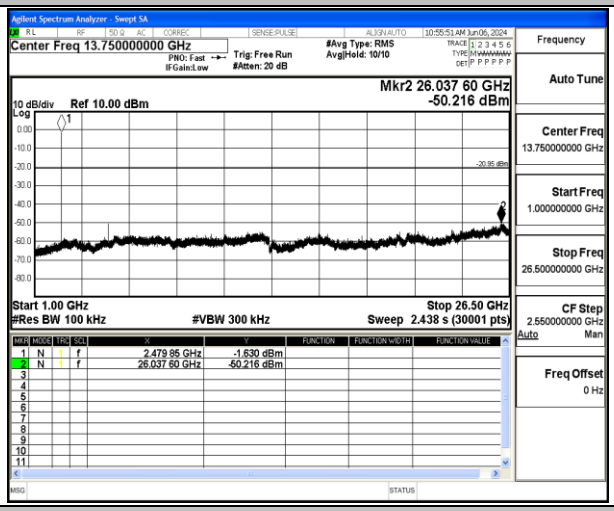

BLE_1M-Ant1-2440-1000~26500-PASS




BLE_1M-Ant1-2480-0~Reference-PASS




BLE_1M-Ant1-2480-30~1000-PASS



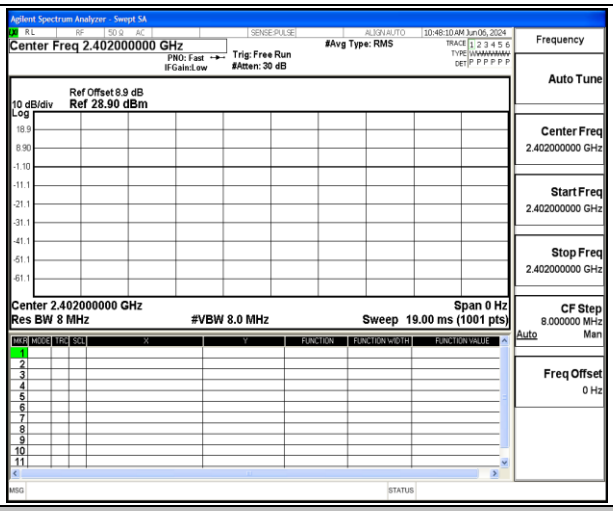

BLE_1M-Ant1-2480-1000~26500-PASS

# Appendix G: Duty Cycle

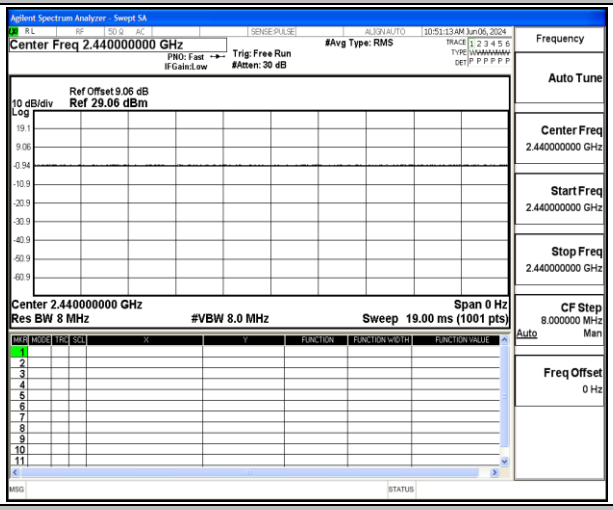
## Test Result

| TestMode | Antenna | Frequency[MHz] | ON Time [ms] | Period [ms] | Duty Cycle [%] | Duty Cycle Factor[dB] |
|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 19.00 | 19.00 | 100.00 | 0.00 |
| BLE_1M | Ant1 | 2440 | 19.00 | 19.00 | 100.00 | 0.00 |
| BLE_1M | Ant1 | 2480 | 19.00 | 19.00 | 100.00 | 0.00 |

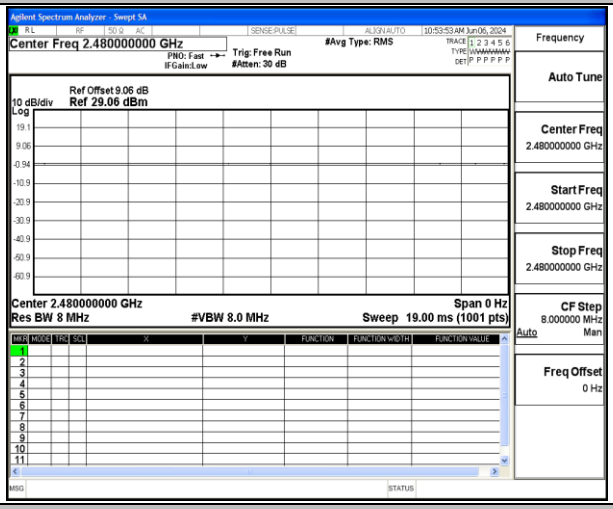
## Test Graphs




NTNV-BLE_1M-Ant1-2402




NTNV-BLE_1M-Ant1-2440




NTNV-BLE_1M-Ant1-2480

# Appendix H: Emissions in Restricted Bands

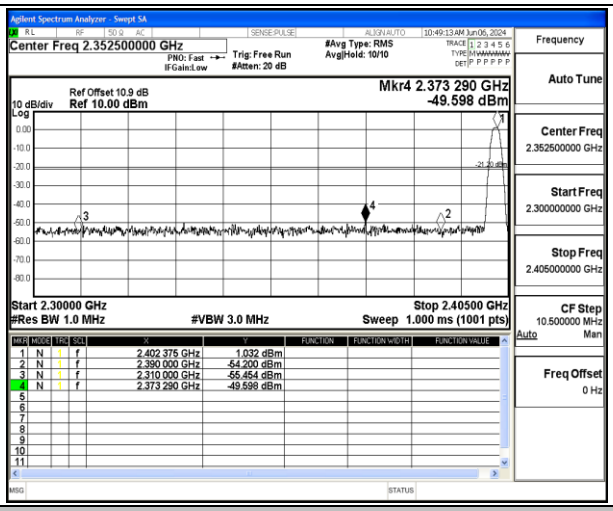
## Test Result

| TestMode | Antenna | ChName | Frequency[MHz] | Detector | Freq [MHz] | Result [dBm] | Limit [dBm] | Result [dBuV/m] | Limit [dBuV/m] | Verdict |
|---|---|---|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | Low | 2402 | Peak | 2390.000 | -54.2 | ≤-21.20 | 41.00 | ≤74 | PASS |
| BLE_1M | Ant1 | Low | 2402 | Peak | 2310.000 | -55.45 | ≤-21.20 | 39.75 | ≤74 | PASS |
| BLE_1M | Ant1 | Low | 2402 | Peak | 2373.290 | -49.6 | ≤-21.20 | 45.60 | ≤74 | PASS |
| BLE_1M | Ant1 | Low | 2402 | AV | 2390.000 | -60.17 | ≤-41.20 | 35.03 | ≤54 | PASS |
| BLE_1M | Ant1 | Low | 2402 | AV | 2310.000 | -60.48 | ≤-41.20 | 34.72 | ≤54 | PASS |
| BLE_1M | Ant1 | Low | 2402 | AV | 2370.035 | -59.38 | ≤-41.20 | 35.82 | ≤54 | PASS |
| BLE_1M | Ant1 | High | 2480 | Peak | 2483.500 | -55.28 | ≤-21.20 | 39.92 | ≤74 | PASS |
| BLE_1M | Ant1 | High | 2480 | Peak | 2500.000 | -52.65 | ≤-21.20 | 42.55 | ≤74 | PASS |
| BLE_1M | Ant1 | High | 2480 | Peak | 2492.560 | -49 | ≤-21.20 | 46.20 | ≤74 | PASS |
| BLE_1M | Ant1 | High | 2480 | AV | 2483.500 | -59.14 | ≤-41.20 | 36.06 | ≤54 | PASS |
| BLE_1M | Ant1 | High | 2480 | AV | 2500.000 | -59.27 | ≤-41.20 | 35.93 | ≤54 | PASS |
| BLE_1M | Ant1 | High | 2480 | AV | 2499.920 | -58.57 | ≤-41.20 | 36.63 | ≤54 | PASS |

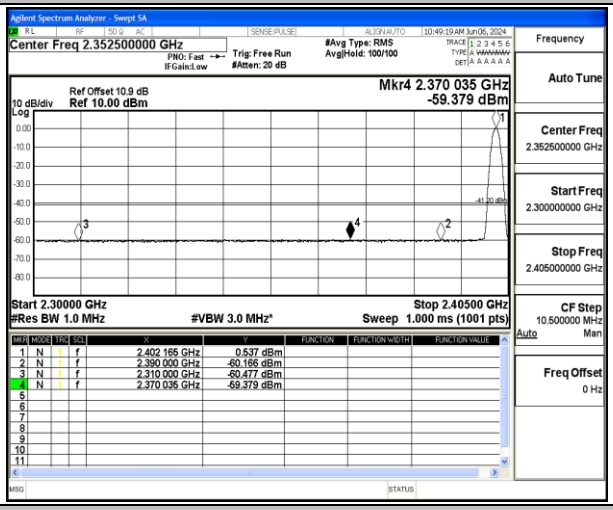
Note：

1. The Antenna Gain is compensated in the graph.
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.

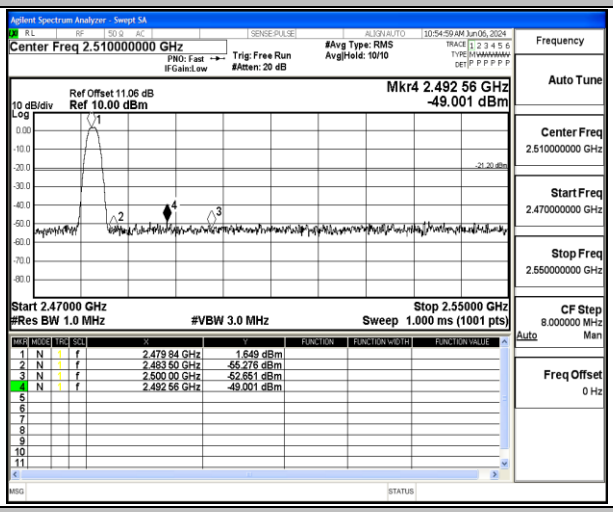
## Test Graphs



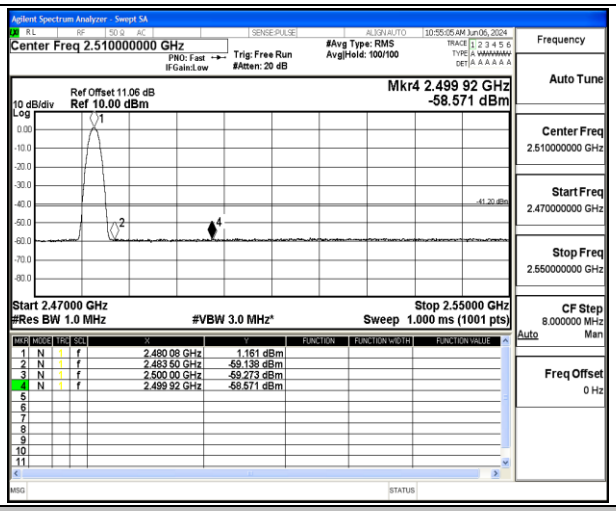

BLE_1M-Ant1-2402-PASS




BLE_1M-Ant1-2402-PASS




BLE_1M-Ant1-2480-PASS




BLE_1M-Ant1-2480-PASS