# Appendix B

## RF Test Data for BT (BLE) (Conducted Measurement)

**Product Name: Bluetooth Speakers**

**Trade Mark: N/A**

**Test Model: RQZ-1**

**Environmental Conditions**

| | |
|---|---|
| Temperature: | 25.8℃ |
| Relative Humidity: | 52.4% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Simba Huang |
| Supervised by: | Seal Chen |

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# 1 Duty Cycle

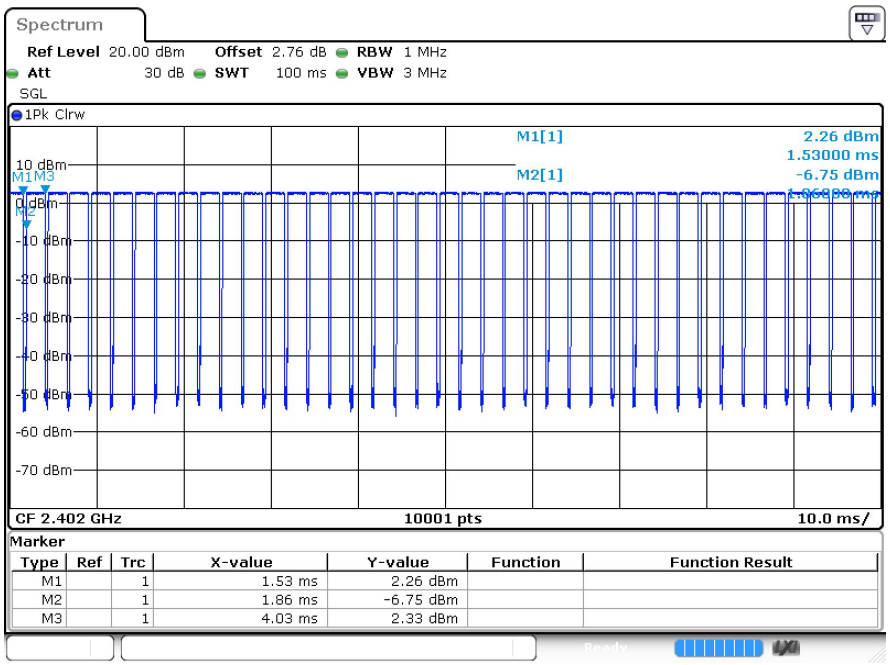
## 1.1 Test Result

| Mode | Frequency (MHz) | Duty Cycle (%) | 1/T (kHz) |
|---|---|---|---|
| BLE 1M | 2402 | 86.9 | 0.46 |
| BLE 1M | 2440 | 86.8 | 0.46 |
| BLE 1M | 2480 | 86.96 | 0.46 |

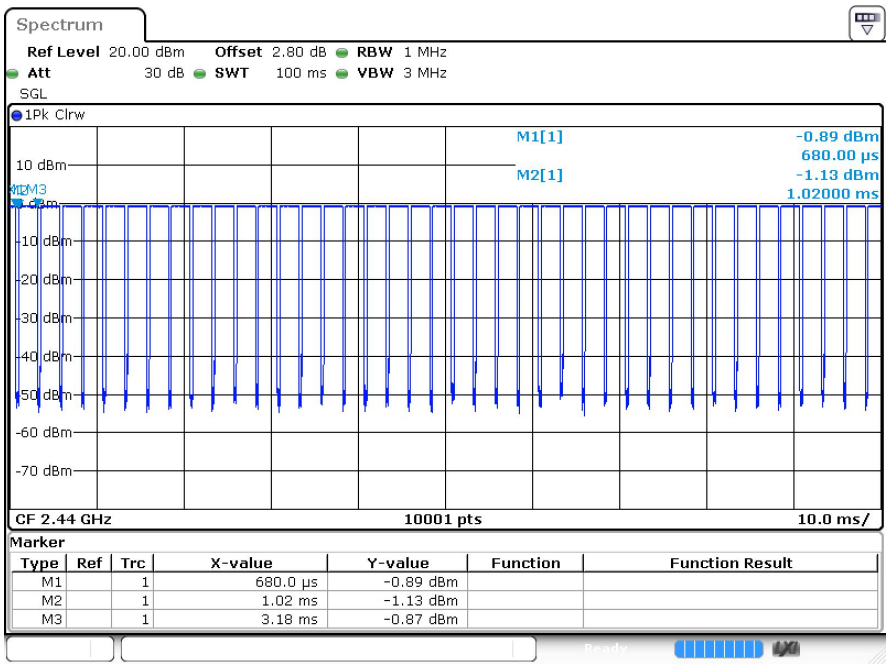
## 1.2 Test Graphs

Test Graphs

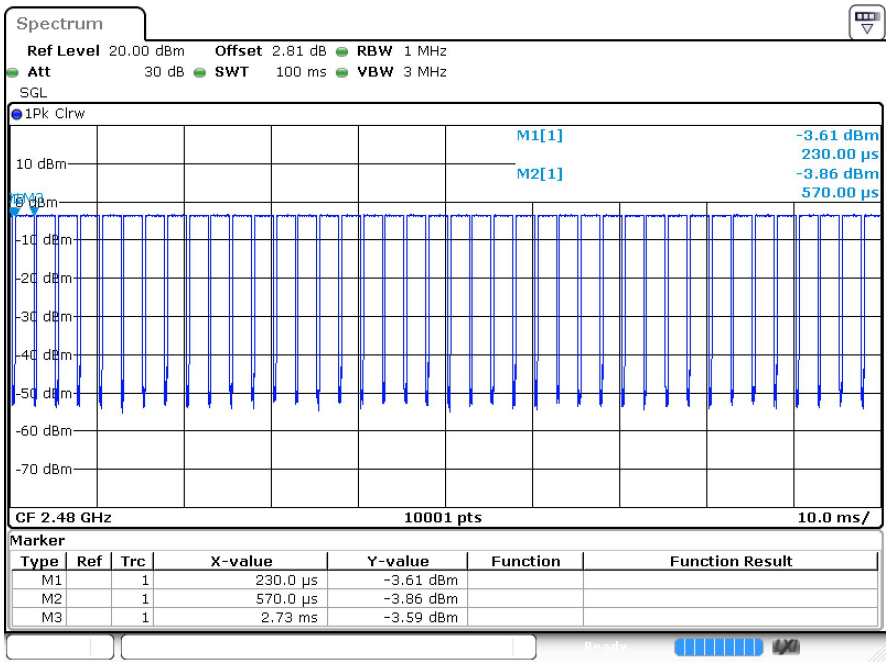
BLE 1M 2402MHz




BLE 1M 2440MHz



BLE 1M 2480MHz



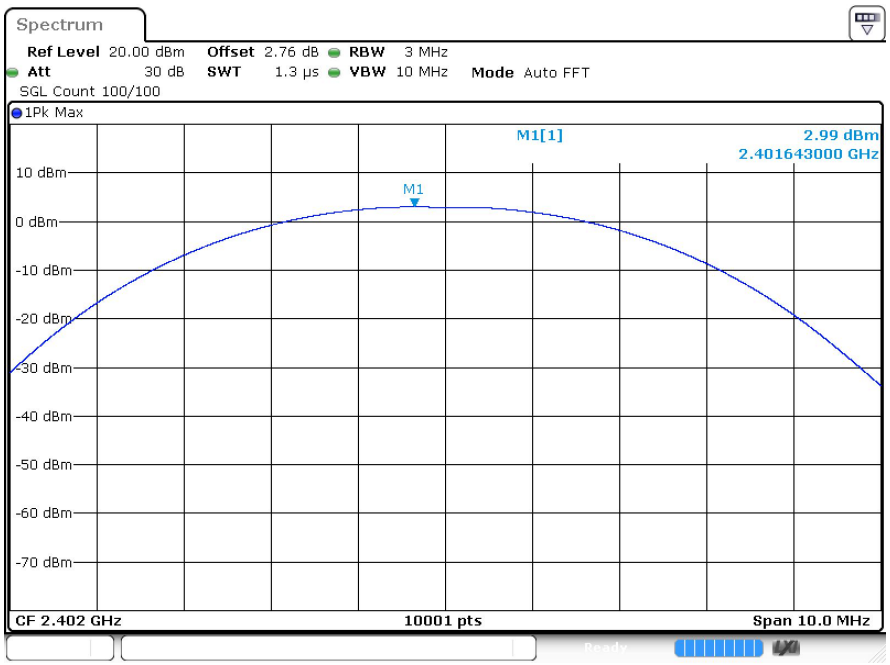
# 2 Maximum Conducted Output Power

## 2.1 Test Result

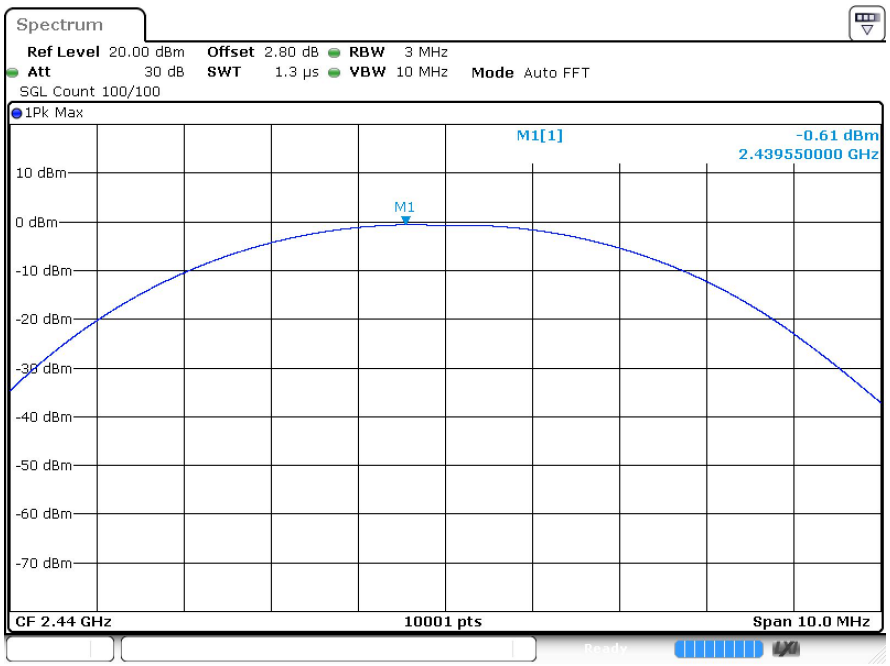
| Mode | Frequency (MHz) | Conducted Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | 2.99 | 30 | Pass |
| BLE 1M | 2440 | -0.61 | 30 | Pass |
| BLE 1M | 2480 | -3.32 | 30 | Pass |

## 2.2 Test Graphs

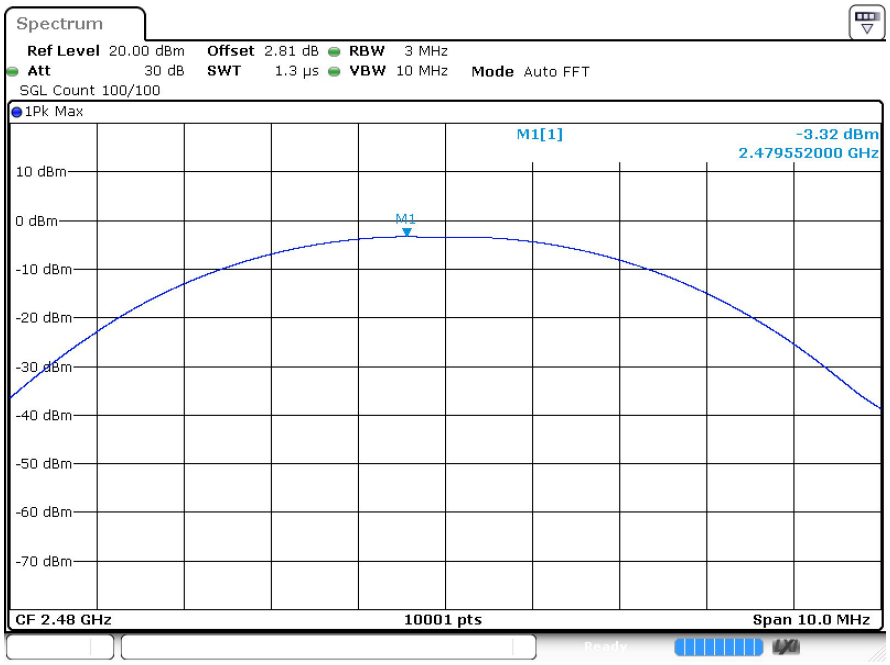
| Test Graphs |
|---|
| BLE 1M 2402MHz |




| BLE 1M 2440MHz |
|---|



BLE 1M 2480MHz



# 3 -6dB Bandwidth

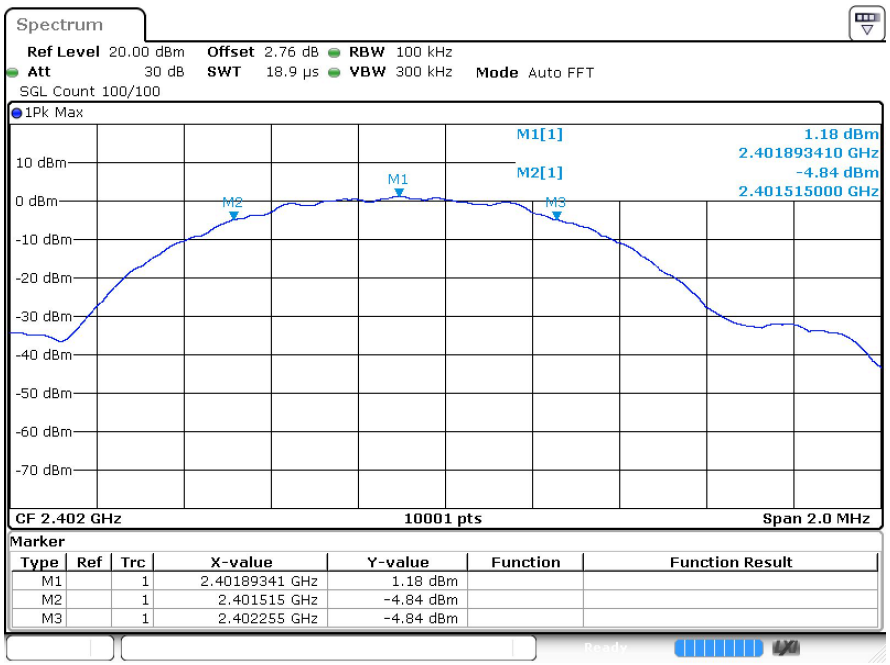
## 3.1 Test Result

| Mode | Frequency (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | 0.739 | 0.5 | Pass |
| BLE 1M | 2440 | 0.643 | 0.5 | Pass |
| BLE 1M | 2480 | 0.656 | 0.5 | Pass |

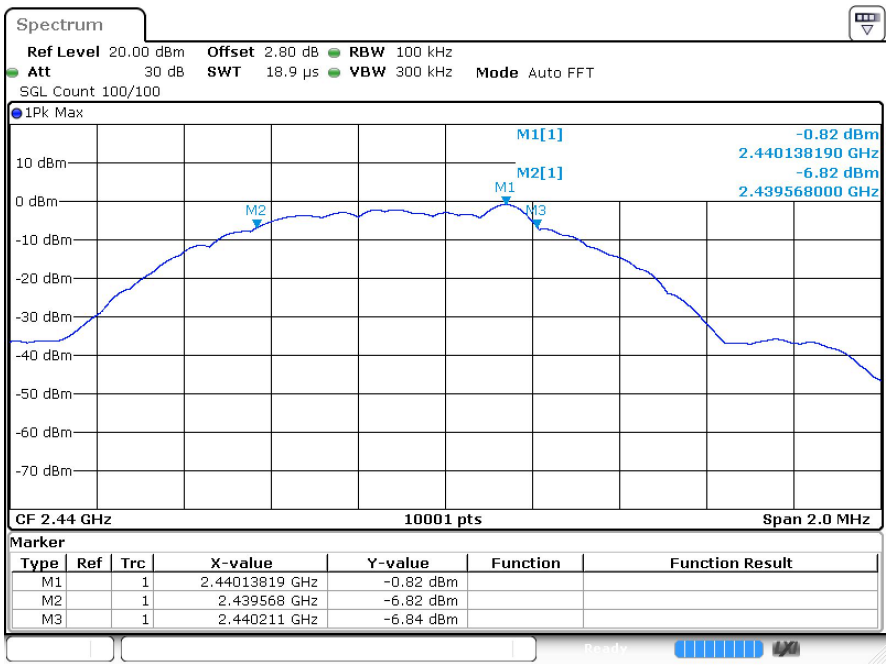
## 3.2 Test Graphs

Test Graphs

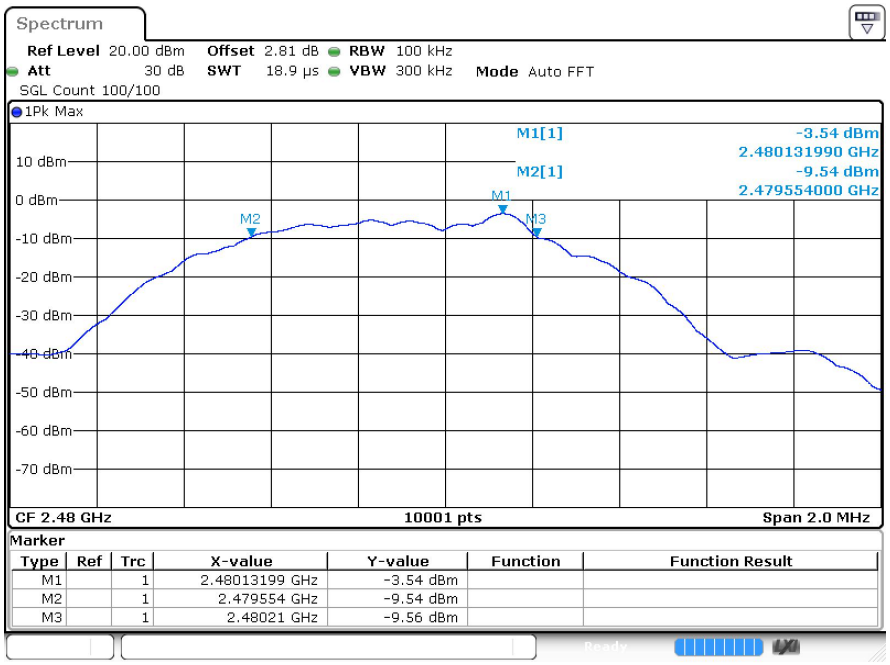
BLE 1M 2402MHz




BLE 1M 2440MHz



BLE 1M 2480MHz



# 4 Maximum Power Spectral Density Level

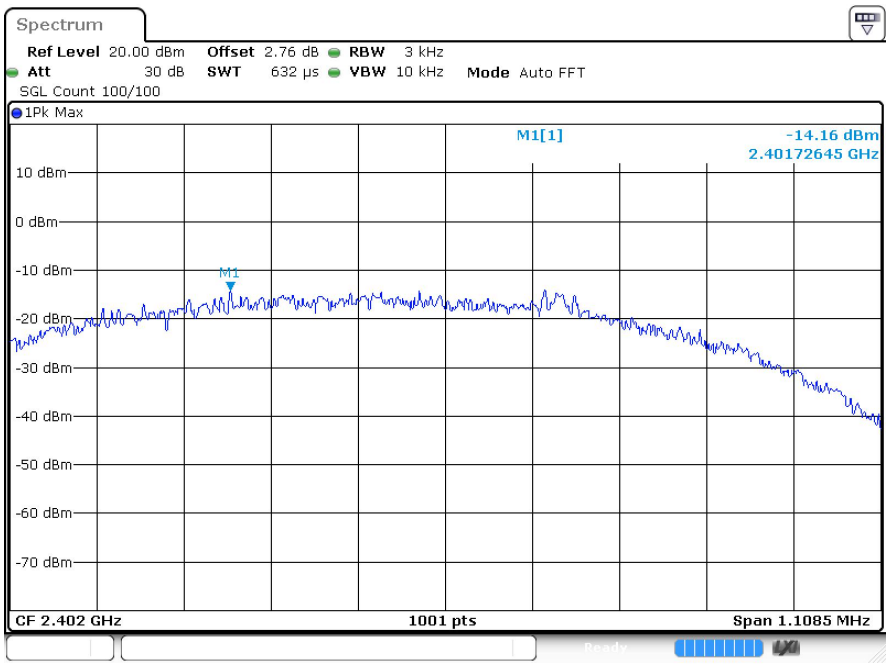
## 4.1 Test Result

| Mode | Frequency (MHz) | Conducted PSD (dBm/3-100kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | -14.16 | ≤8 | Pass |
| BLE 1M | 2440 | -17.5 | ≤8 | Pass |
| BLE 1M | 2480 | -20.18 | ≤8 | Pass |

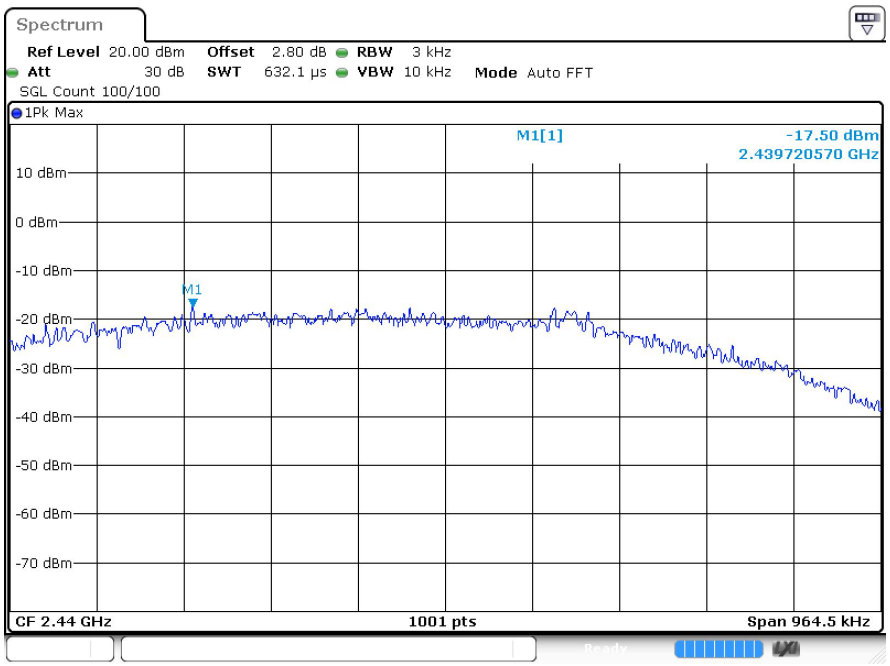
## 4.2 Test Graphs

Test Graphs

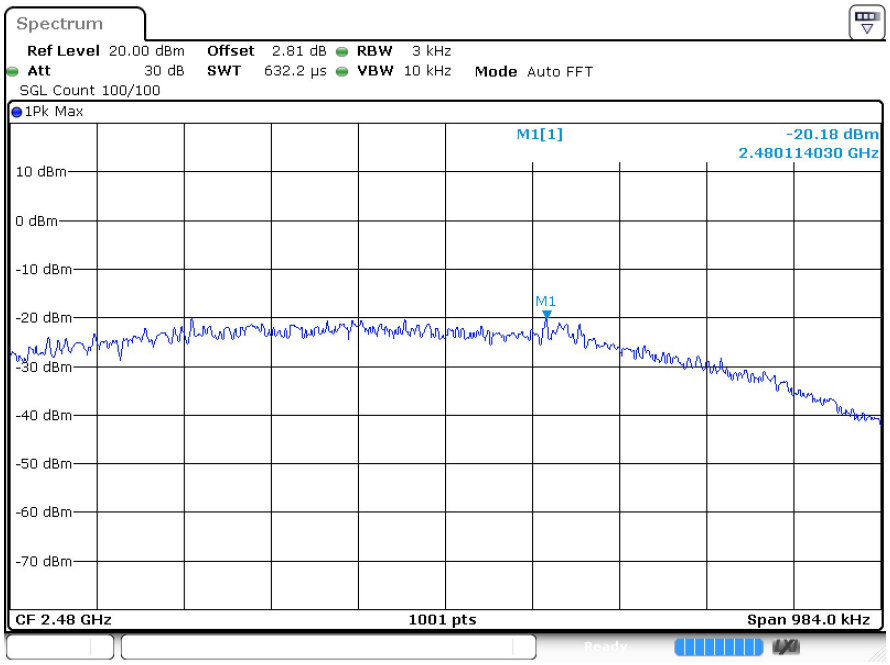
BLE 1M 2402MHz




BLE 1M 2440MHz



BLE 1M 2480MHz



# 5 Band Edge

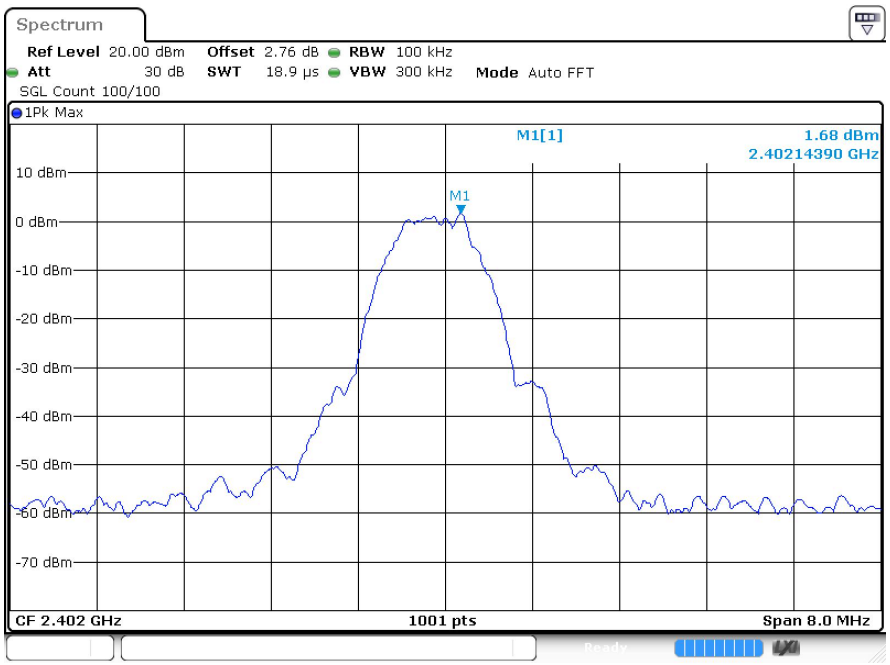
## 5.1 Test Result

| Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | -48.23 | -20 | Pass |
| BLE 1M | 2480 | -51.25 | -20 | Pass |

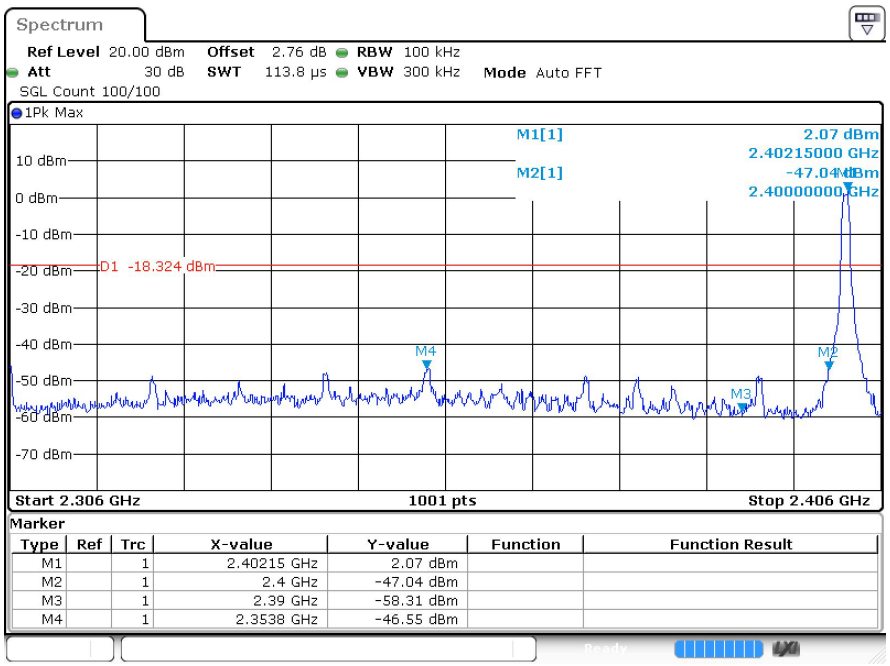
## 5.2 Test Graphs

Test Graphs

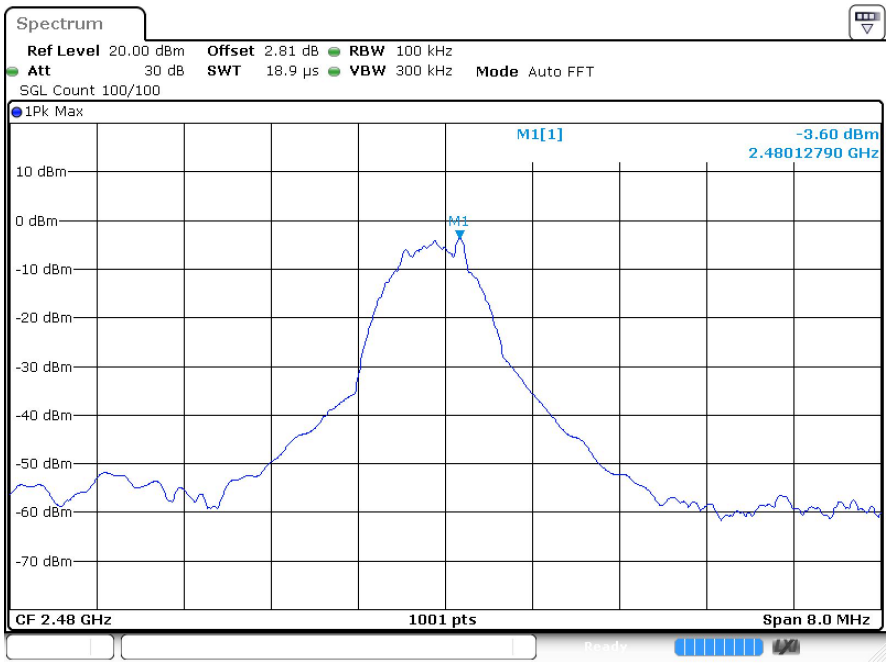
BLE 1M 2402MHz Ref



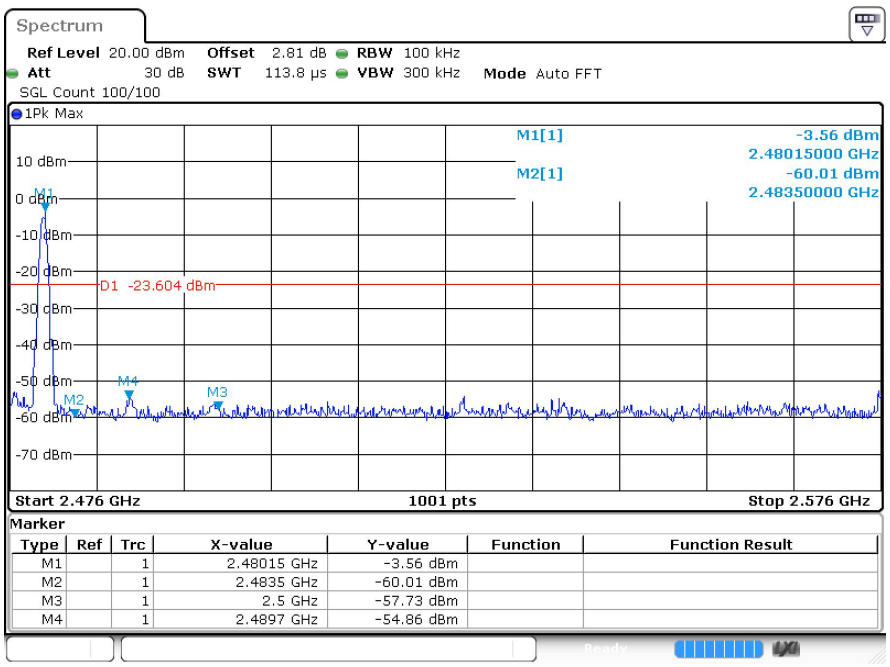

BLE 1M 2402MHz Emission



BLE 1M 2480MHz Ref




BLE 1M 2480MHz Emission




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.48015 GHz | -3.56 dBm | | |
| M2 | | 1 | 2.4835 GHz | -60.01 dBm | | |
| M3 | | 1 | 2.5 GHz | -57.73 dBm | | |
| M4 | | 1 | 2.4897 GHz | -54.86 dBm | | |

# 6 Conducted RF Spurious Emission

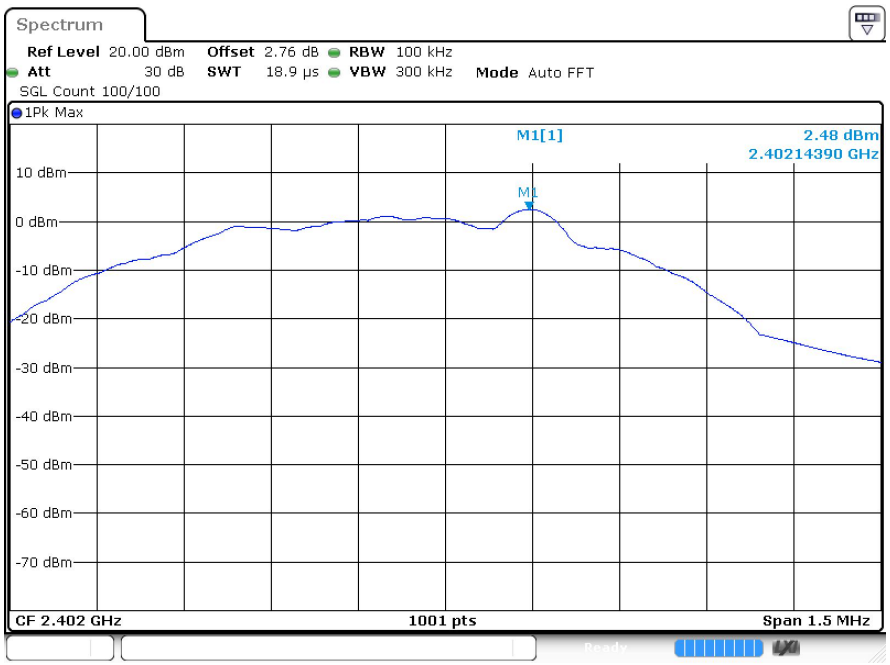
## 6.1 Test Result

| Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | -33.15 | -20 | Pass |
| BLE 1M | 2440 | -35.65 | -20 | Pass |
| BLE 1M | 2480 | -34.71 | -20 | Pass |

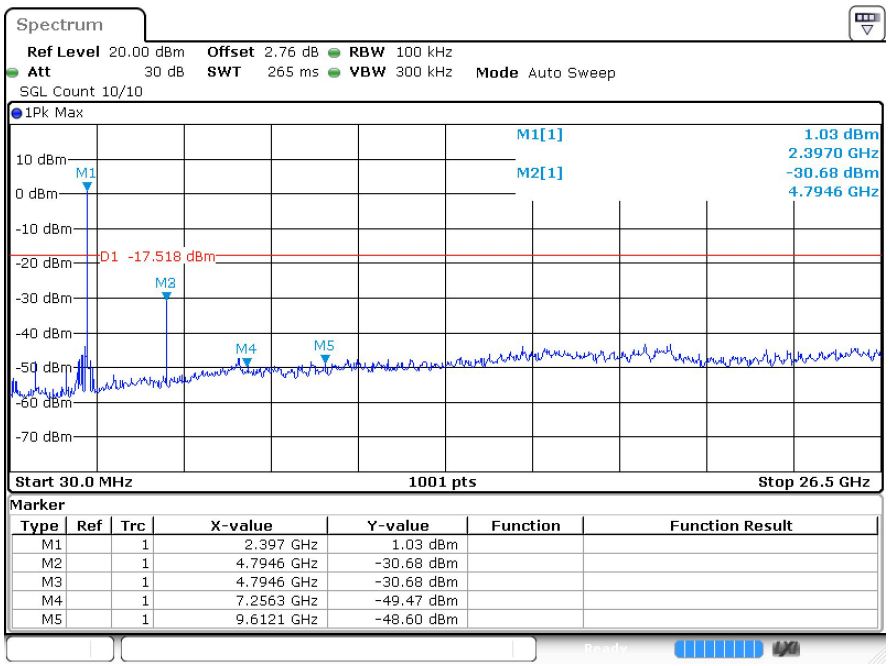
## 6.2 Test Graphs

Test Graphs

BLE 1M 2402MHz Ref



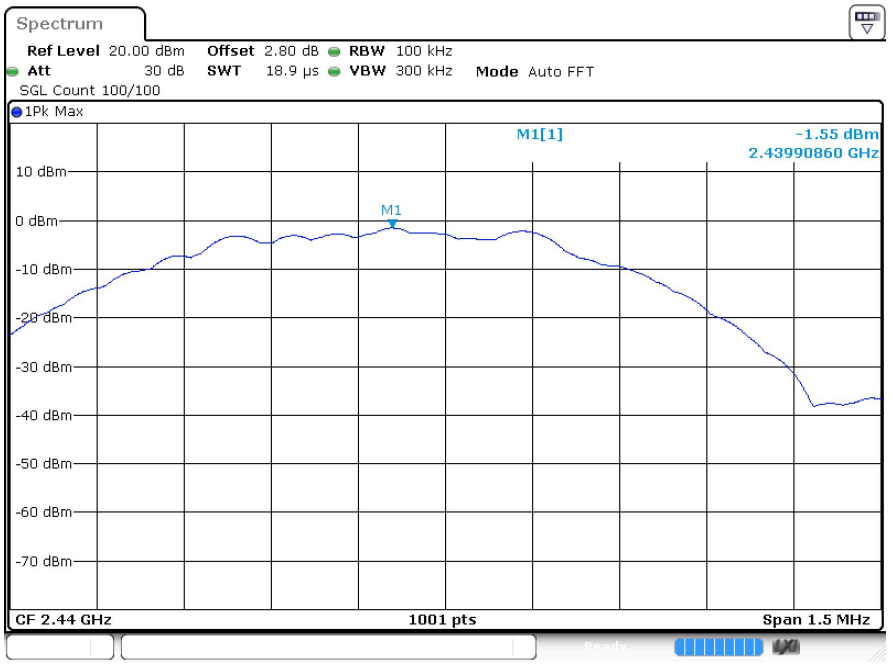

BLE 1M 2402MHz Emission



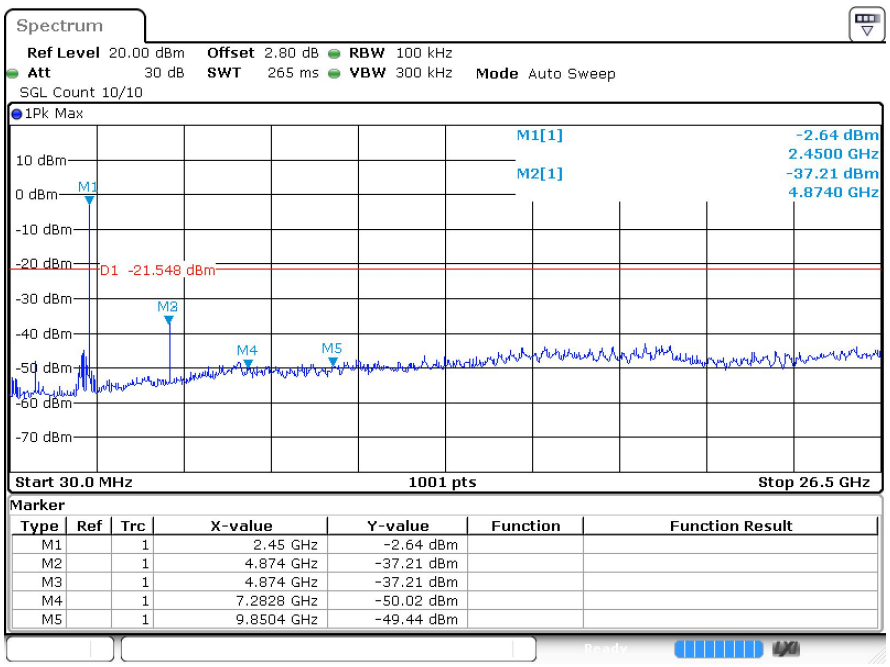

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.397 GHz | 1.03 dBm | | |
| M2 | | 1 | 4.7946 GHz | -30.68 dBm | | |
| M3 | | 1 | 4.7946 GHz | -30.68 dBm | | |
| M4 | | 1 | 7.2563 GHz | -49.47 dBm | | |
| M5 | | 1 | 9.6121 GHz | -48.60 dBm | | |

BLE 1M 2440MHz Ref




BLE 1M 2440MHz Emission

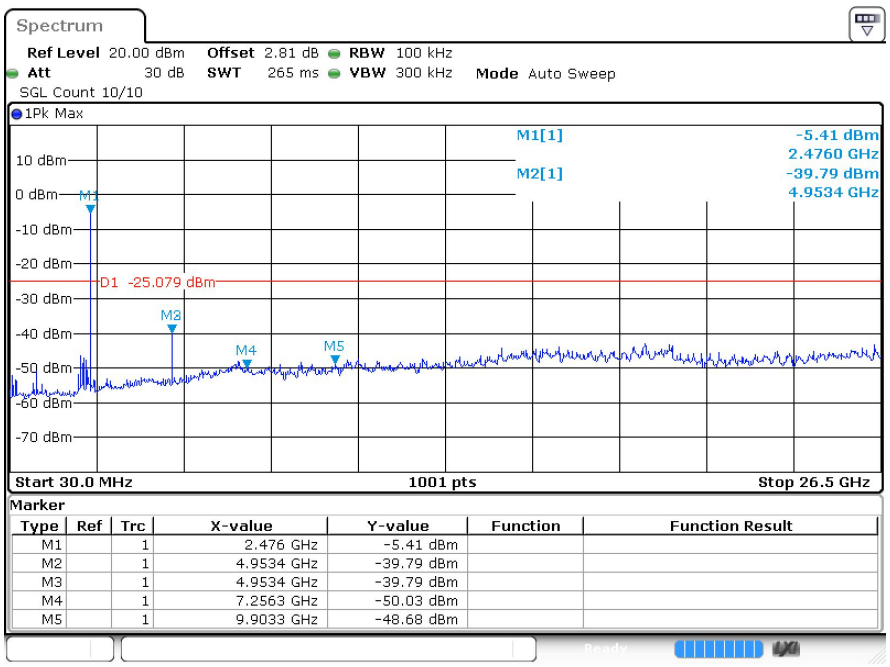



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.45 GHz | -2.64 dBm | | |
| M2 | | 1 | 4.874 GHz | -37.21 dBm | | |
| M3 | | 1 | 4.874 GHz | -37.21 dBm | | |
| M4 | | 1 | 7.2828 GHz | -50.02 dBm | | |
| M5 | | 1 | 9.8504 GHz | -49.44 dBm | | |

BLE 1M 2480MHz Ref

BLE 1M 2480MHz Emission




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.476 GHz | -5.41 dBm | | |
| M2 | | 1 | 4.9534 GHz | -39.79 dBm | | |
| M3 | | 1 | 4.9534 GHz | -39.79 dBm | | |
| M4 | | 1 | 7.2563 GHz | -50.03 dBm | | |
| M5 | | 1 | 9.9033 GHz | -48.68 dBm | | |

# 7 Restrict Band

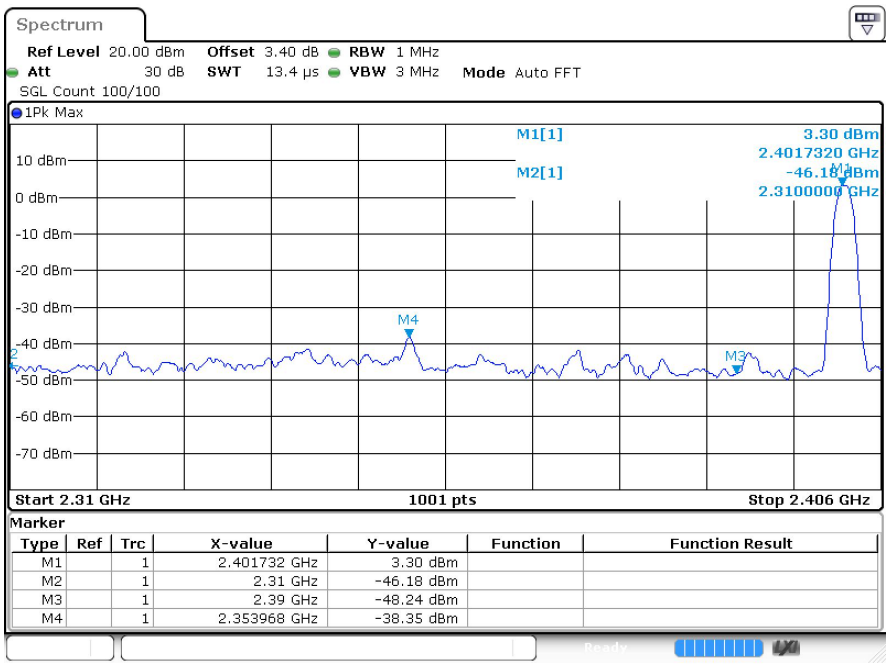
## 7.1 Test Result

| Mode | Frequency (MHz) | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|---|---|---|---|---|---|---|---|---|
| BLE 1M | 2402 | 2310 | -46.17 | 2 | 51.09 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2310 | -56.04 | 2 | 41.22 | Average | 54 | Pass |
| BLE 1M | 2402 | 2353.968 | -38.35 | 2 | 58.91 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2353.872 | -45.99 | 2 | 51.27 | Average | 54 | Pass |
| BLE 1M | 2402 | 2390 | -48.24 | 2 | 49.02 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2390 | -56.92 | 2 | 40.34 | Average | 54 | Pass |
| BLE 1M | 2480 | 2483.5 | -49.23 | 2 | 48.03 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2483.5 | -57.66 | 2 | 39.6 | Average | 54 | Pass |
| BLE 1M | 2480 | 2490.112 | -45.87 | 2 | 51.39 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2489.776 | -55.33 | 2 | 41.93 | Average | 54 | Pass |
| BLE 1M | 2480 | 2500 | -47.67 | 2 | 49.59 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2500 | -57.13 | 2 | 40.13 | Average | 54 | Pass |

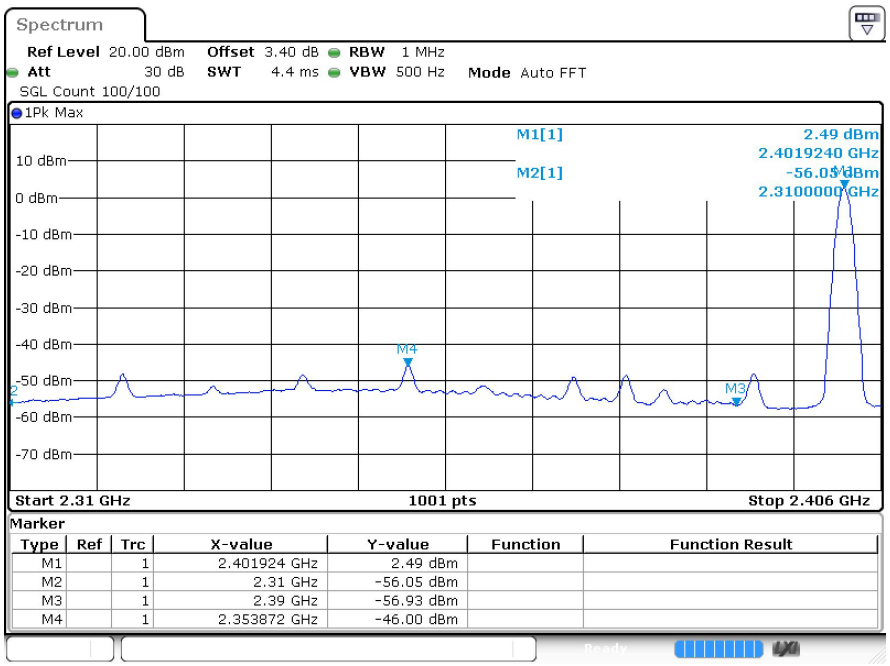
## 7.2 Test Graphs

Test Graphs

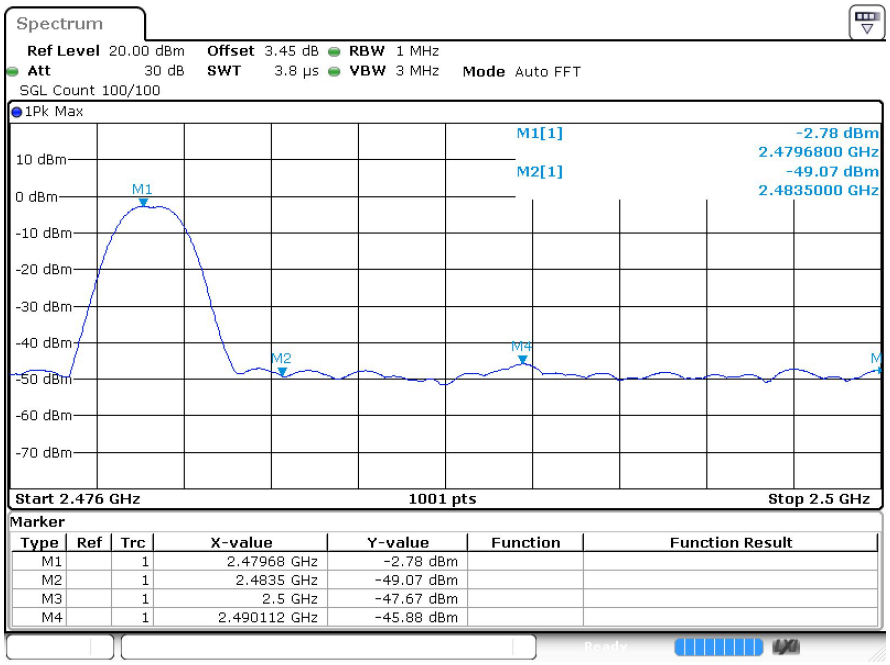
BLE 1M 2402MHz Peak




BLE 1M 2402MHz Average



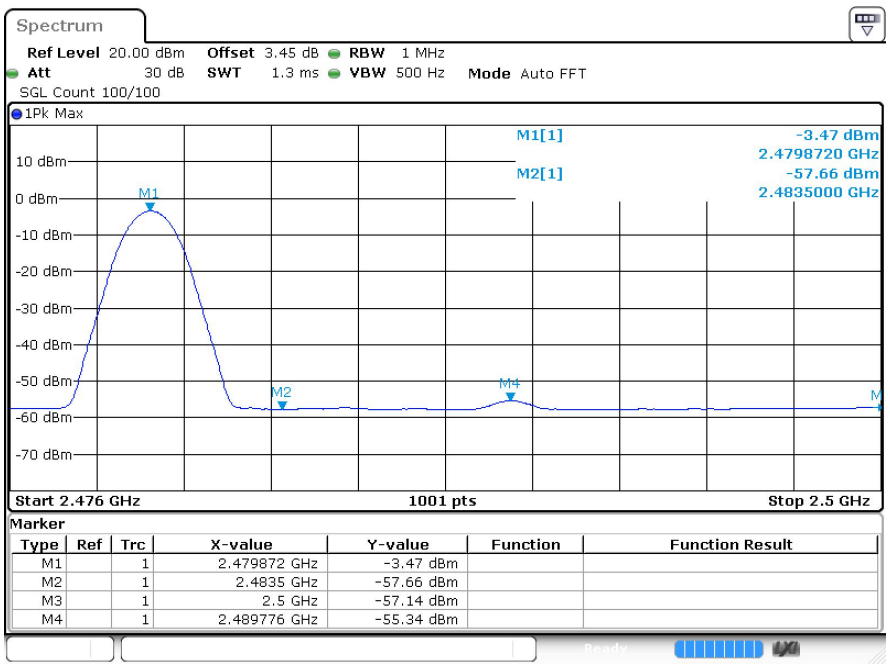
BLE 1M 2480MHz Peak




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.47968 GHz | -2.78 dBm | | |
| M2 | | 1 | 2.4835 GHz | -49.07 dBm | | |
| M3 | | 1 | 2.5 GHz | -47.67 dBm | | |
| M4 | | 1 | 2.490112 GHz | -45.88 dBm | | |

BLE 1M 2480MHz Average




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.479872 GHz | -3.47 dBm | | |
| M2 | | 1 | 2.4835 GHz | -57.66 dBm | | |
| M3 | | 1 | 2.5 GHz | -57.14 dBm | | |
| M4 | | 1 | 2.489776 GHz | -55.34 dBm | | |

---The End---