# Appendix B

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

**Product Name: hunting camera**

**Trade Mark: N/A**

**Test Model: HC30C-W**

**Environmental Conditions**

| | |
|---|---|
| Temperature: | 24.6° C |
| Relative Humidity: | 52.4% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Emiya lin |
| Supervised by: | Simba Haung |

# Contents

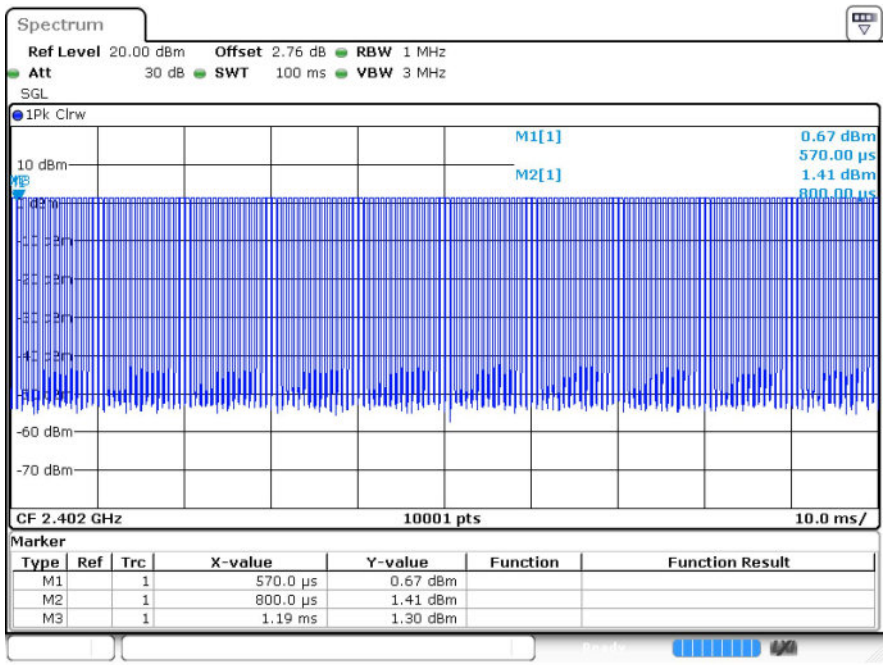
# 1 Duty Cycle

## 1.1 Test Result

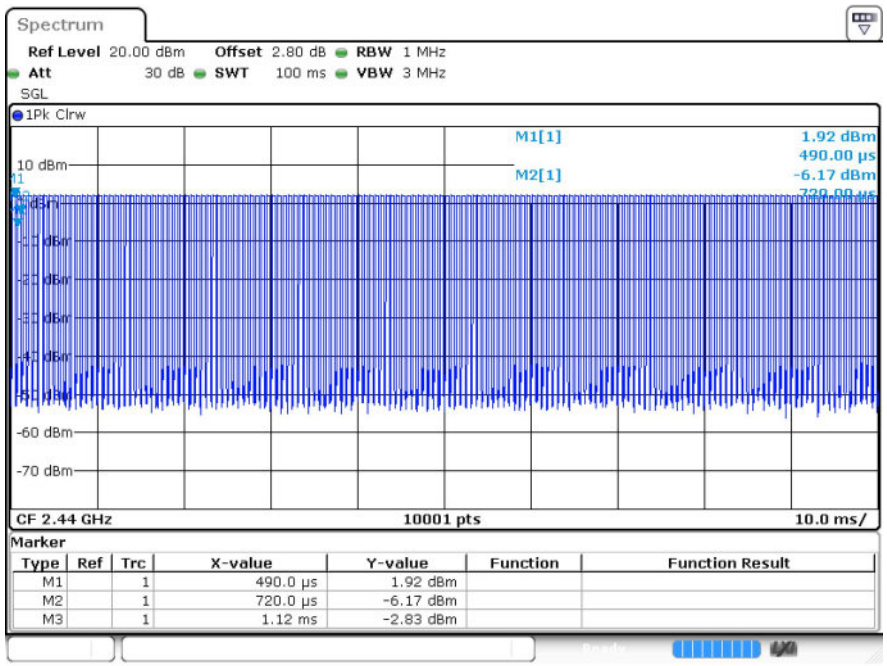
| Mode | Frequency (MHz) | Duty Cycle (%) | Correction Factor | 1/T (kHz) |
|---|---|---|---|---|
| BLE 1M | 2402 | 64.1 | 1.93 | 2.56 |
| BLE 1M | 2440 | 64.32 | 1.92 | 2.5 |
| BLE 1M | 2480 | 64 | 1.94 | 2.56 |
| BLE 2M | 2402 | 34.91 | 4.57 | 4.76 |
| BLE 2M | 2440 | 35.21 | 4.53 | 4.76 |
| BLE 2M | 2480 | 35.2 | 4.54 | 4.76 |

## 1.2 Test Graphs

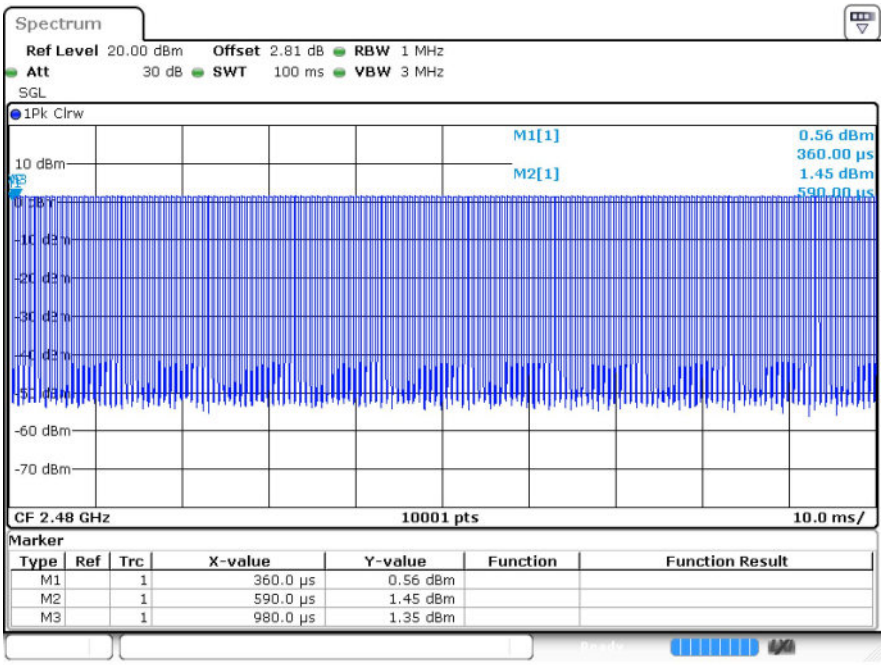
| Test Graphs |
| --- |
| BLE 1M 2402MHz |



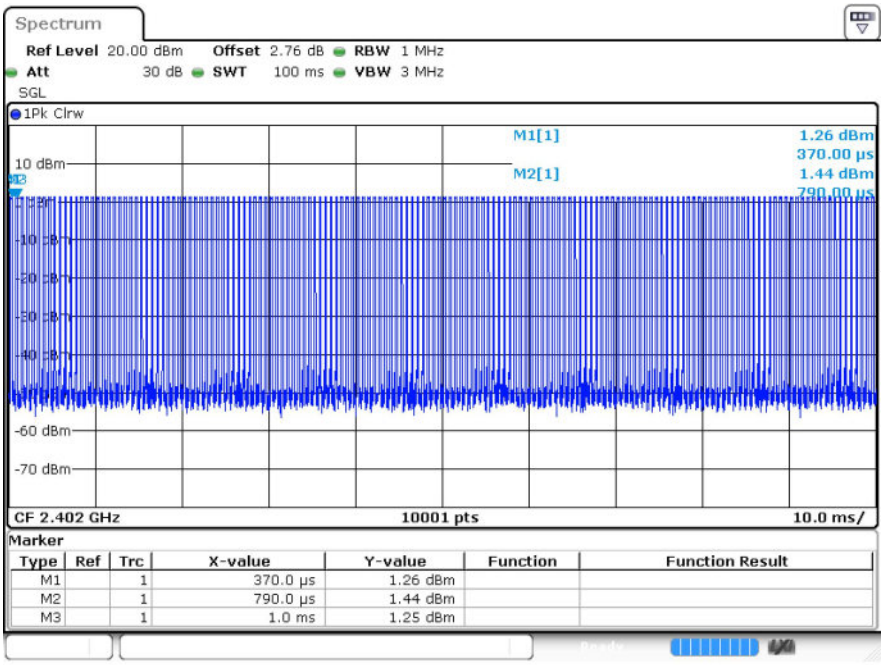

| BLE 1M 2440MHz |
| --- |



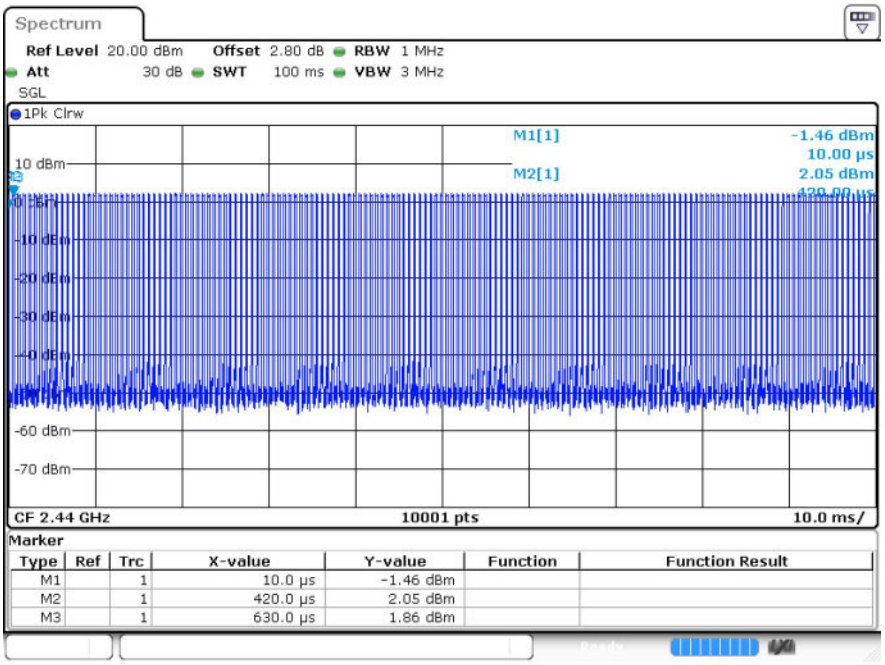
BLE 1M 2480MHz



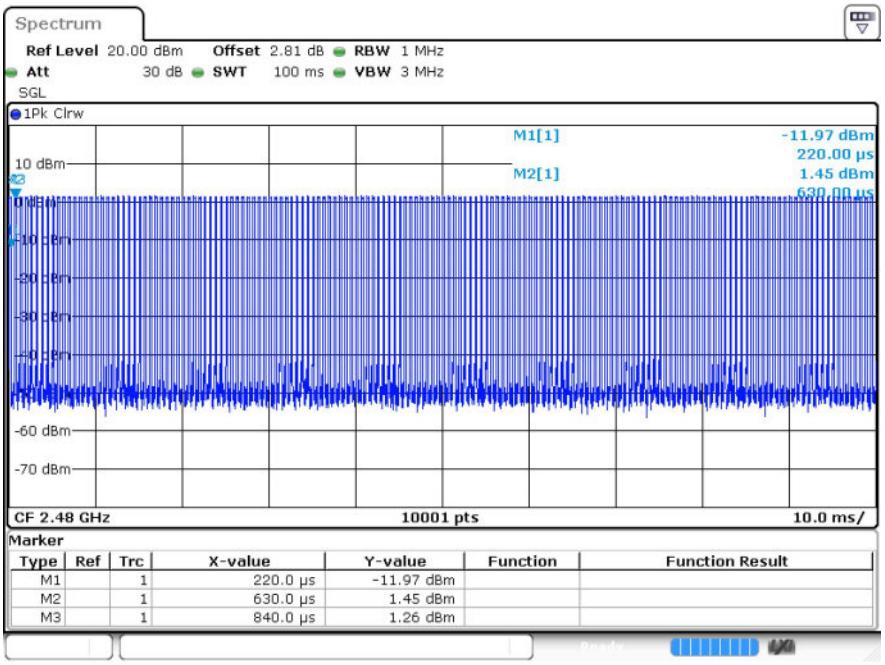

BLE 2M 2402MHz



BLE 2M 2440MHz




BLE 2M 2480MHz

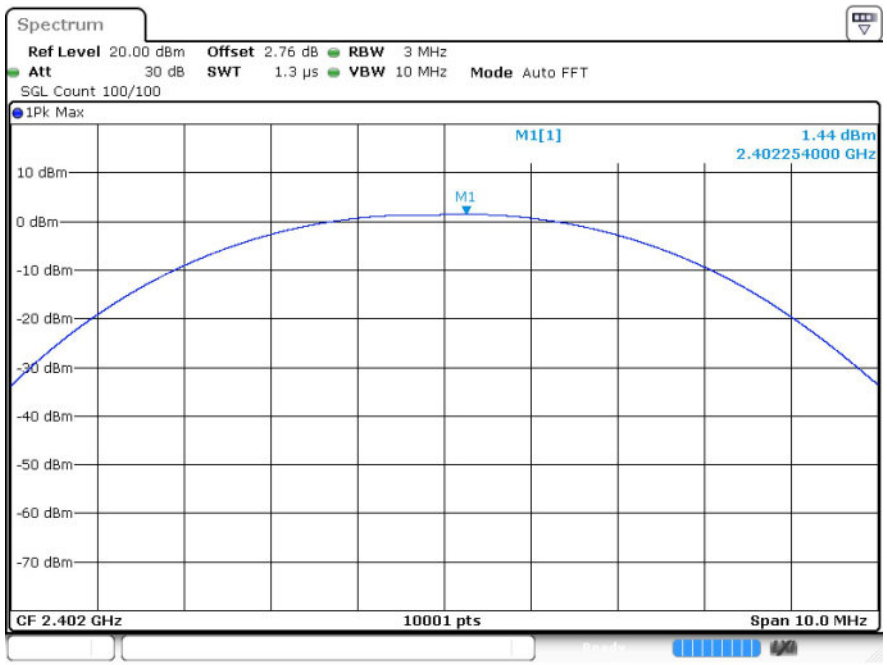
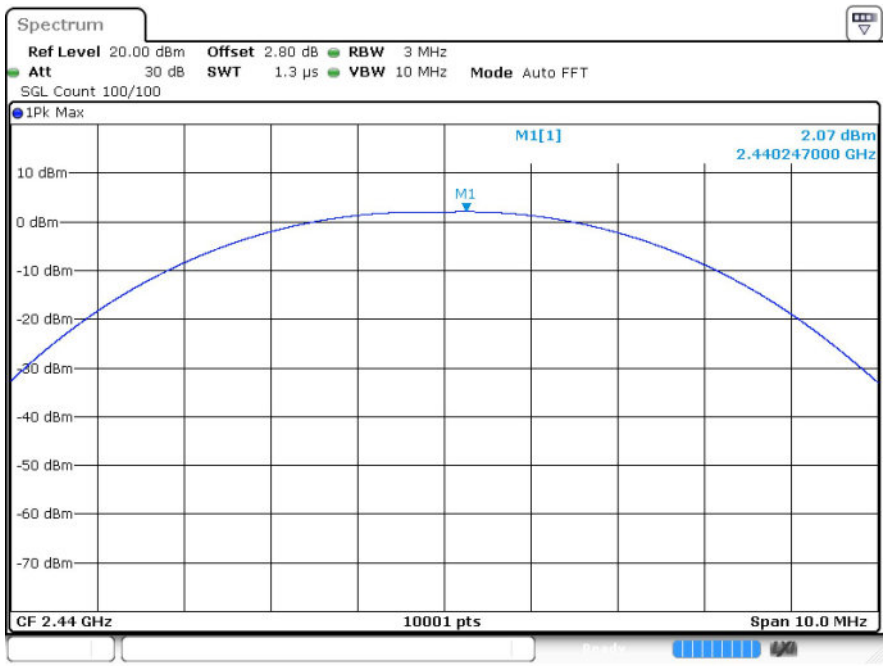


# 2 Maximum Conducted Output Power

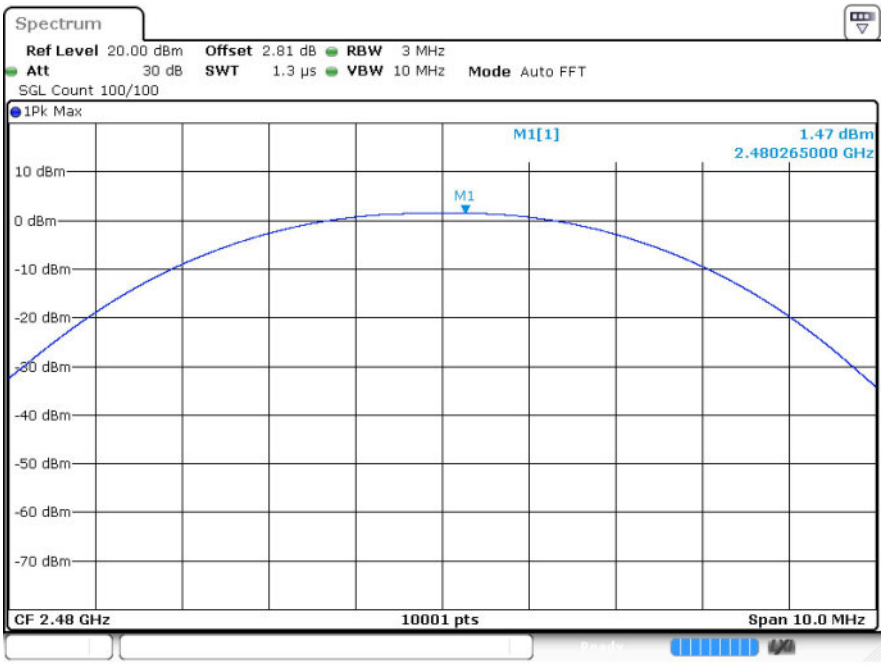
## 2.1 Test Result

| Mode | Frequency (MHz) | Conducted Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | 1.44 | 30 | Pass |
| BLE 1M | 2440 | 2.07 | 30 | Pass |
| BLE 1M | 2480 | 1.47 | 30 | Pass |
| BLE 2M | 2402 | 1.44 | 30 | Pass |
| BLE 2M | 2440 | 2.09 | 30 | Pass |
| BLE 2M | 2480 | 1.46 | 30 | Pass |

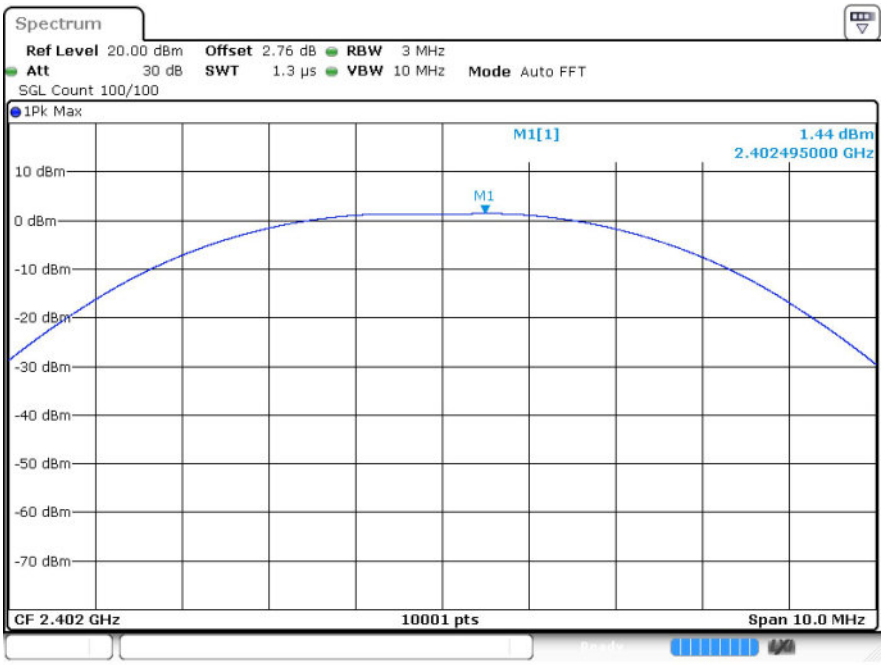
## 2.2 Test Graphs

| Test Graphs |
| --- |
| BLE 1M 2402MHz |
|  |
| BLE 1M 2440MHz |
|  |

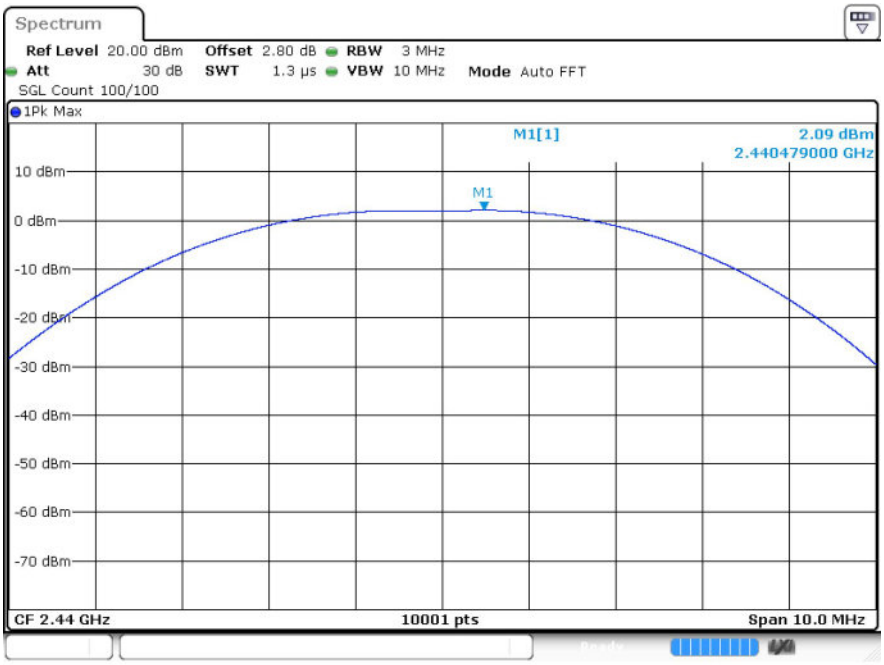
BLE 1M 2480MHz



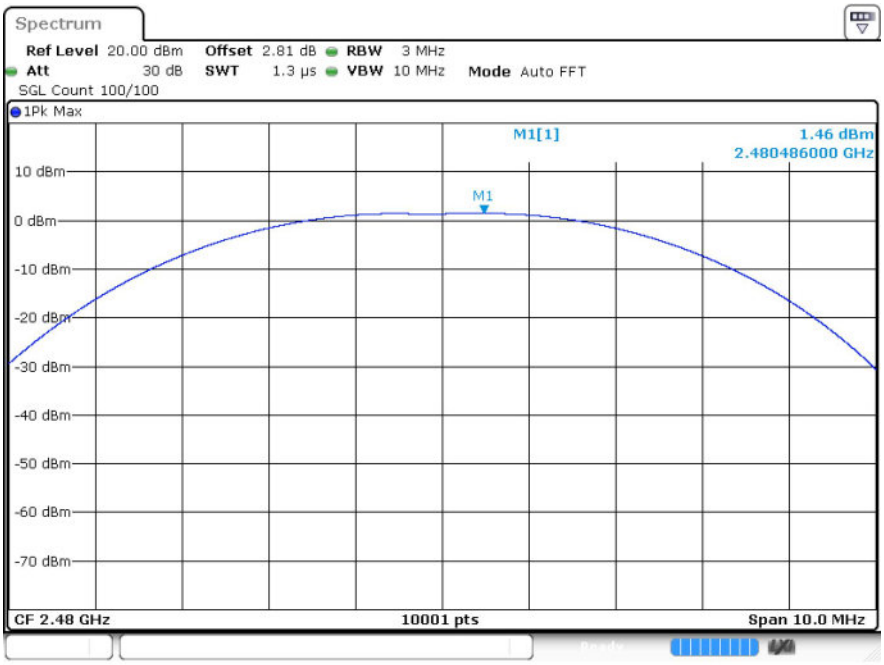

BLE 2M 2402MHz



BLE 2M 2440MHz




BLE 2M 2480MHz



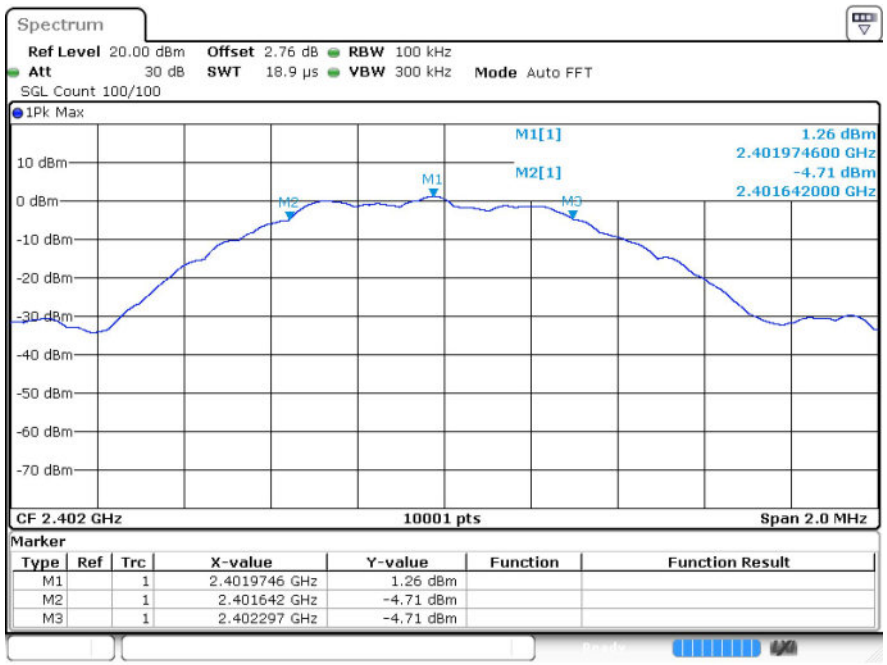
# 3 -6dB Bandwidth

## 3.1 Test Result

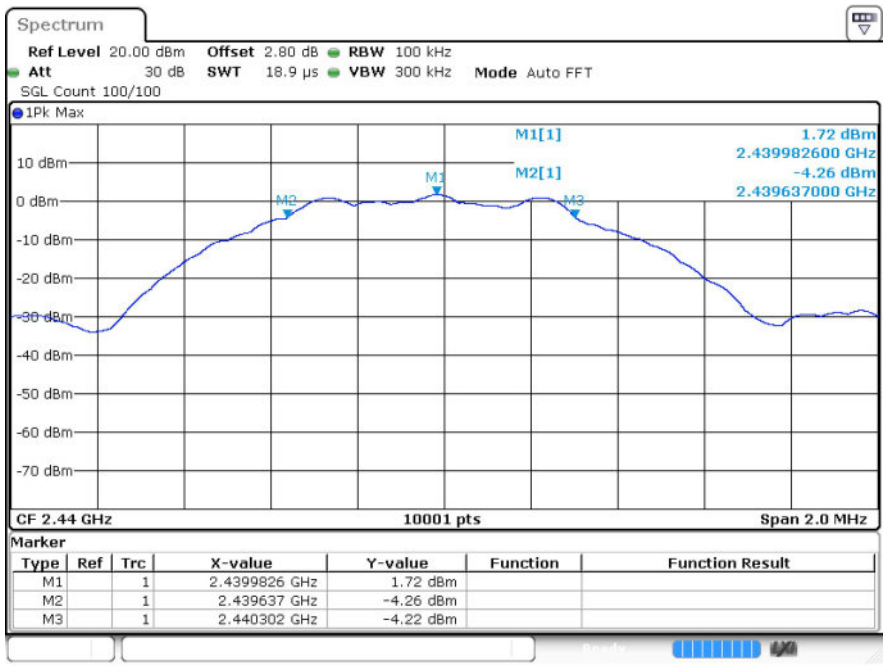
| Mode | Frequency (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | 0.656 | 0.5 | Pass |
| BLE 1M | 2440 | 0.666 | 0.5 | Pass |
| BLE 1M | 2480 | 0.686 | 0.5 | Pass |
| BLE 2M | 2402 | 1.024 | 0.5 | Pass |
| BLE 2M | 2440 | 0.887 | 0.5 | Pass |
| BLE 2M | 2480 | 1.114 | 0.5 | Pass |

## 3.2 Test Graphs

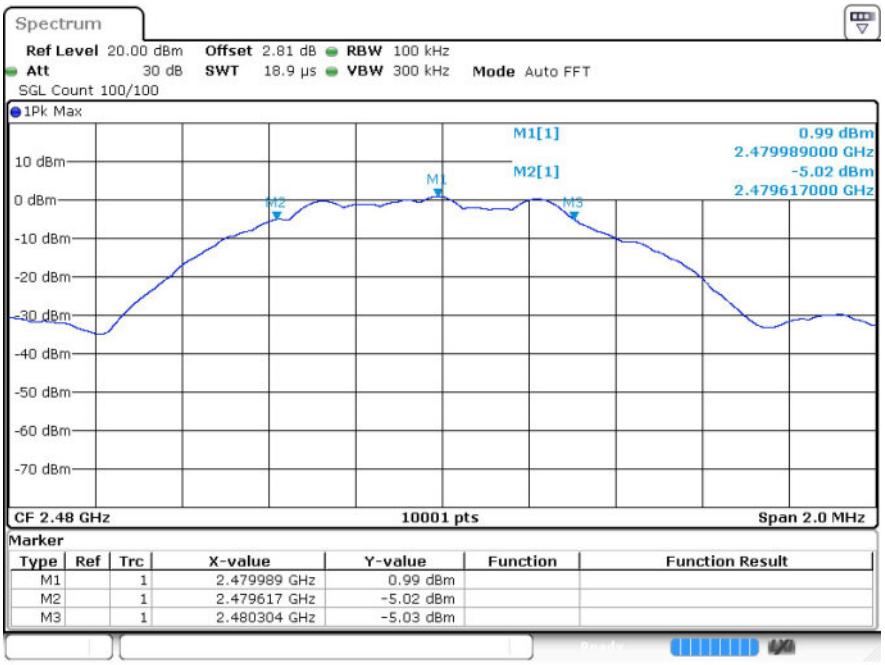
| Test Graphs |
| --- |
| BLE 1M 2402MHz |



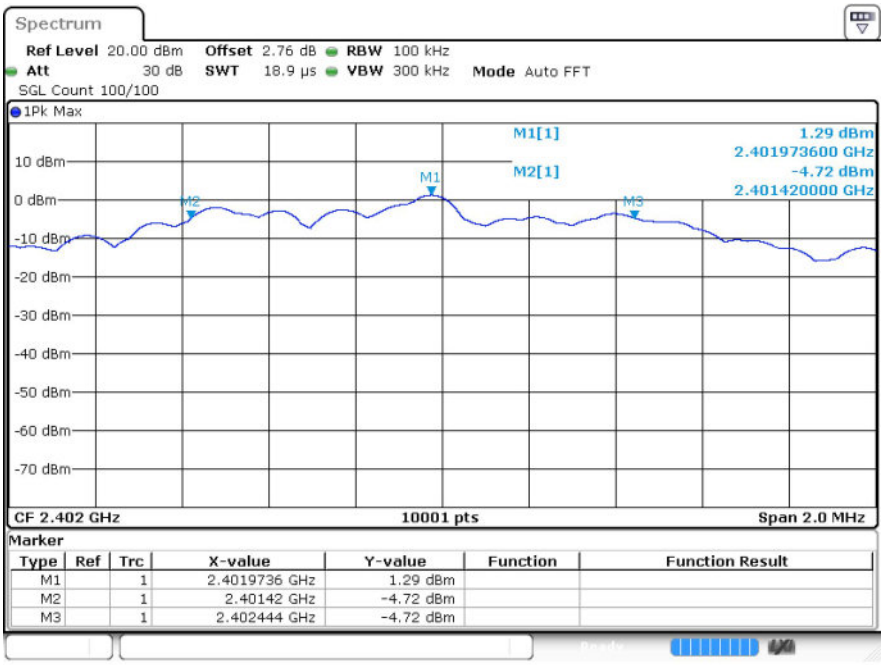

| BLE 1M 2440MHz |
| --- |



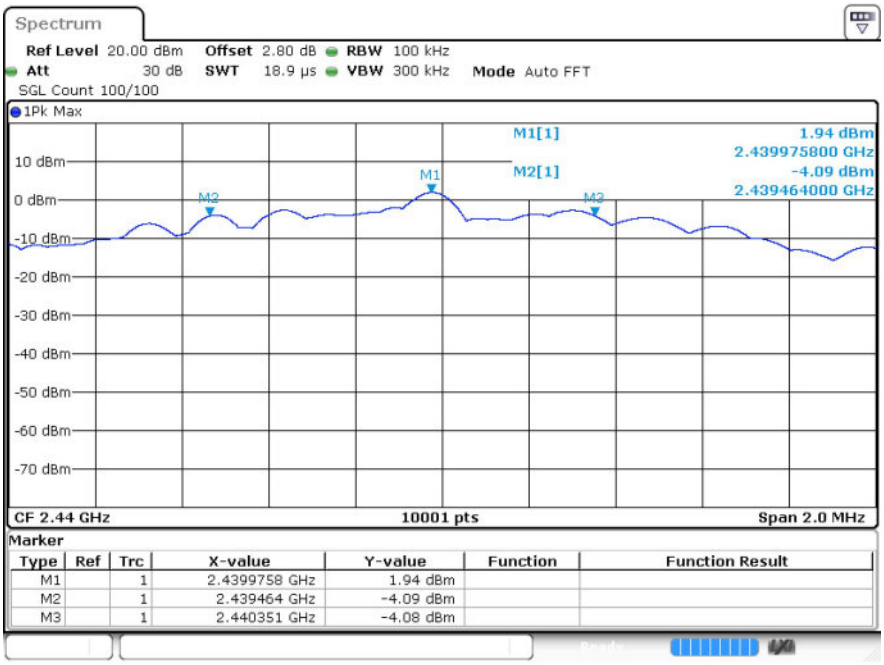
BLE 1M 2480MHz



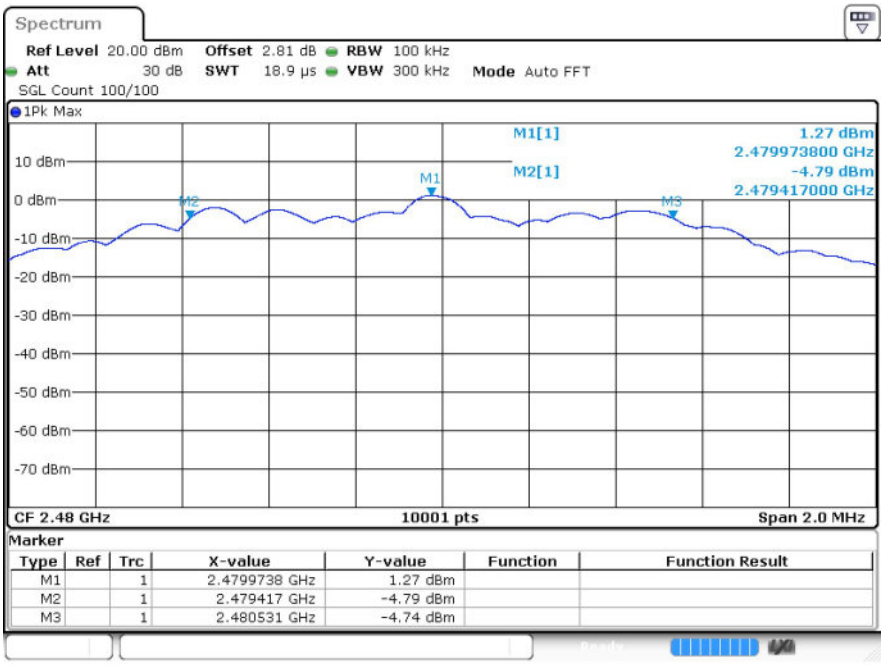

BLE 2M 2402MHz



BLE 2M 2440MHz




BLE 2M 2480MHz

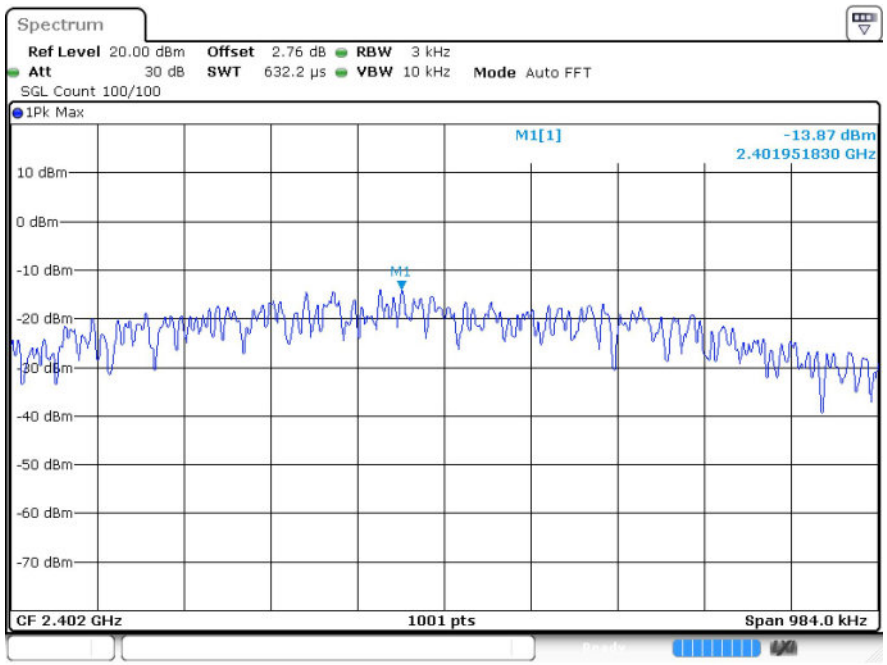
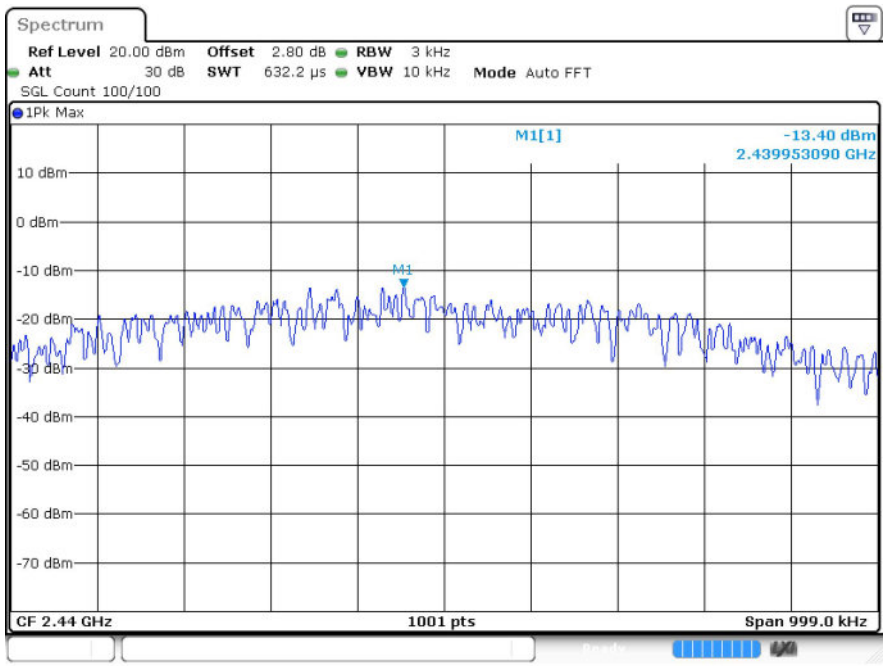


# 4 Maximum Power Spectral Density Level

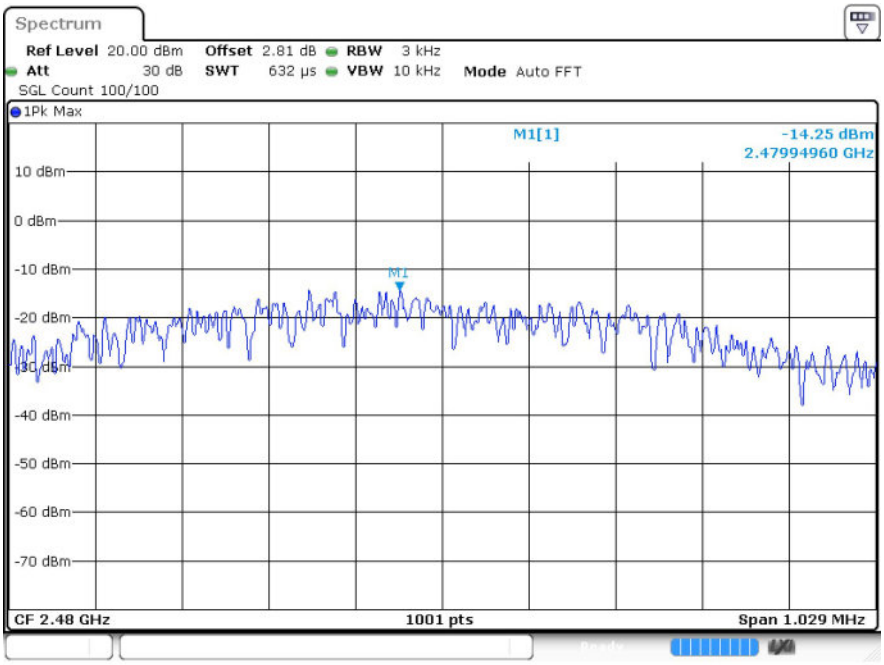
## 4.1 Test Result

| Mode | Frequency (MHz) | Conducted PSD (dBm/3-100kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | -13.87 | ≤8 | Pass |
| BLE 1M | 2440 | -13.4 | ≤8 | Pass |
| BLE 1M | 2480 | -14.25 | ≤8 | Pass |
| BLE 2M | 2402 | -16.58 | ≤8 | Pass |
| BLE 2M | 2440 | -15.87 | ≤8 | Pass |
| BLE 2M | 2480 | -16.11 | ≤8 | Pass |

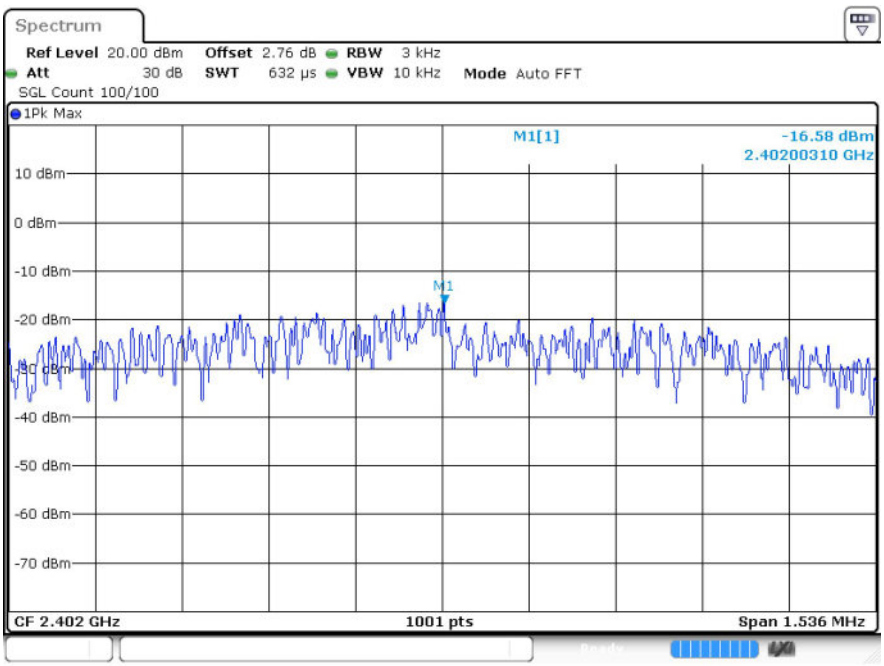
## 4.2 Test Graphs

| Test Graphs |
| --- |
| BLE 1M 2402MHz |
|  |
| BLE 1M 2440MHz |
|  |

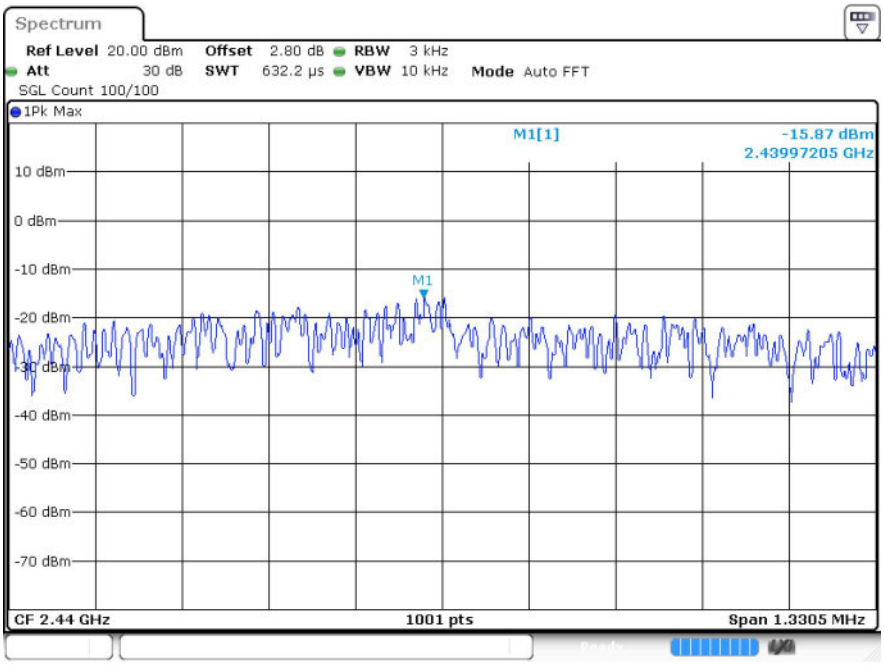
BLE 1M 2480MHz



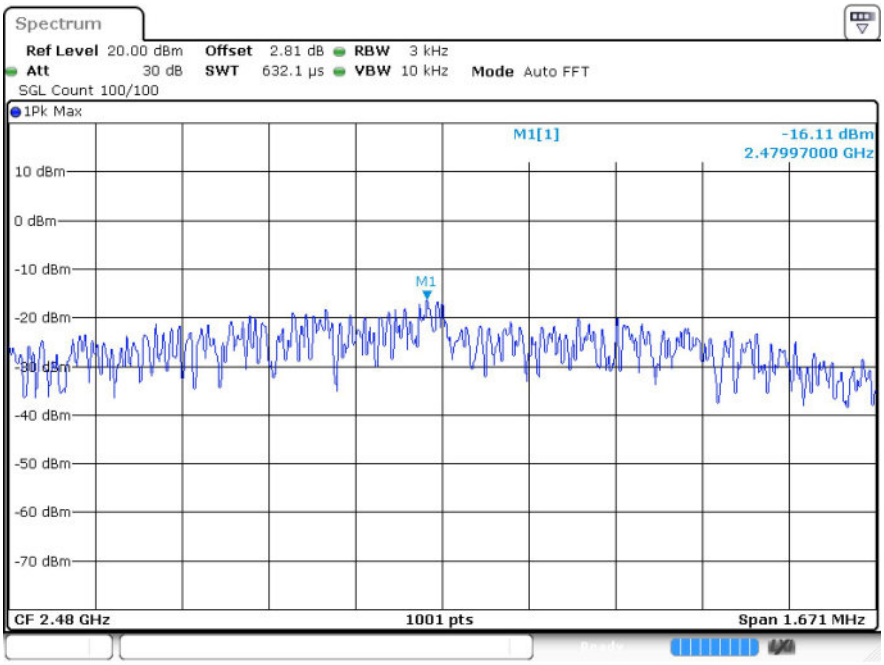

BLE 2M 2402MHz



BLE 2M 2440MHz




BLE 2M 2480MHz



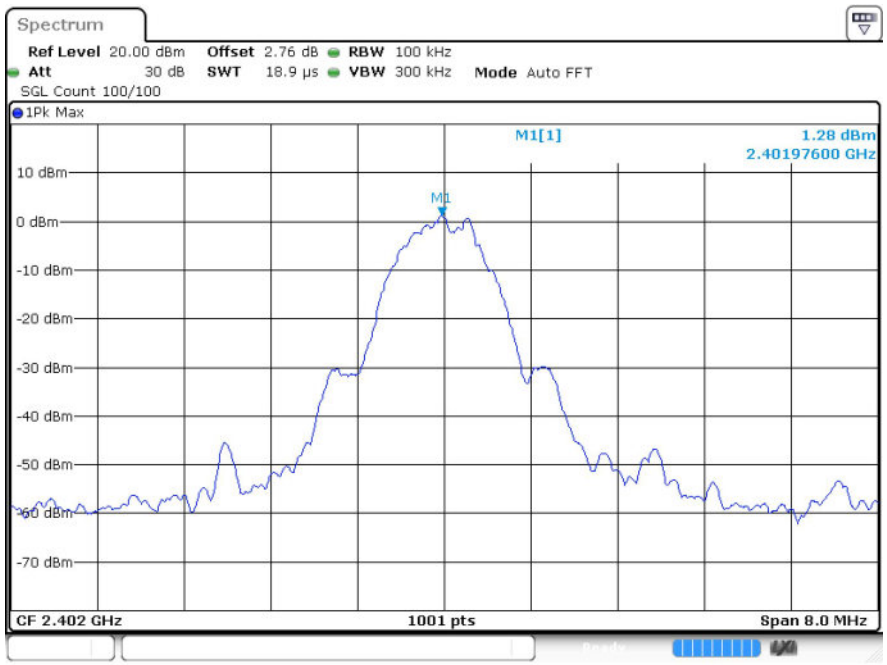
# 5 Band Edge

## 5.1 Test Result

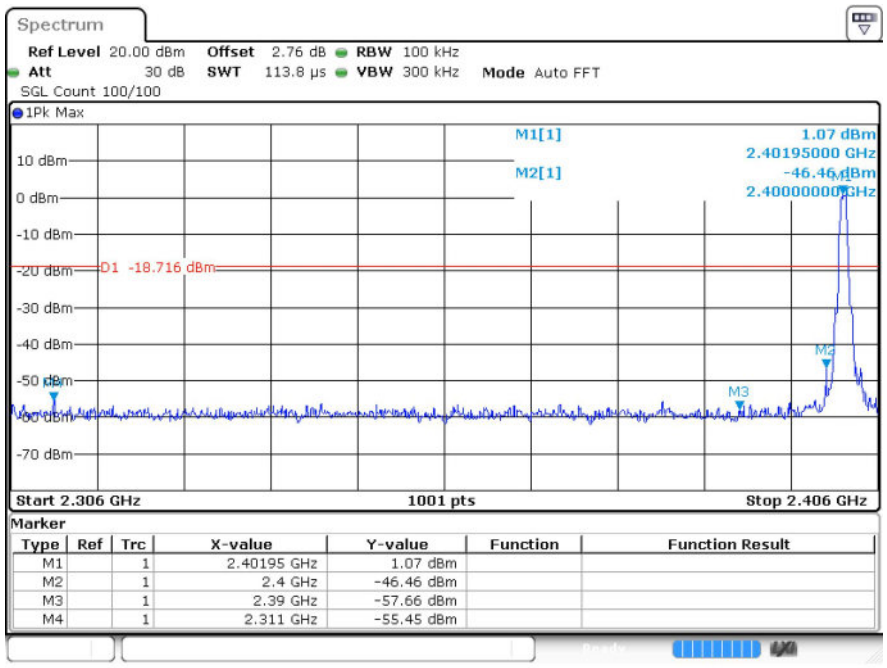
| Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | -56.72 | -20 | Pass |
| BLE 1M | 2480 | -46.6 | -20 | Pass |
| BLE 2M | 2402 | -57.34 | -20 | Pass |
| BLE 2M | 2480 | -47.54 | -20 | Pass |

## 5.2 Test Graphs

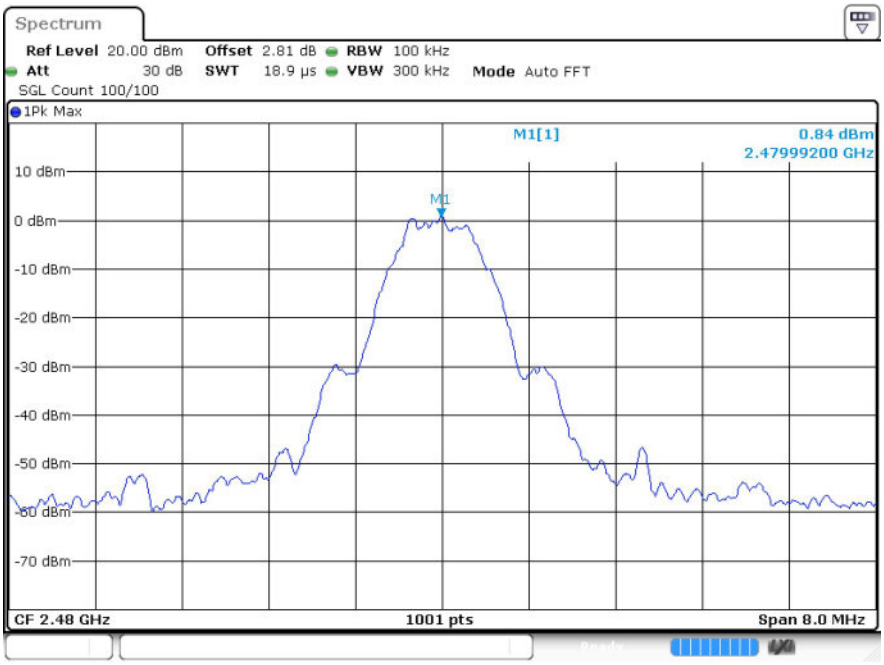
| Test Graphs |
| --- |
| BLE 1M 2402MHz Ref |



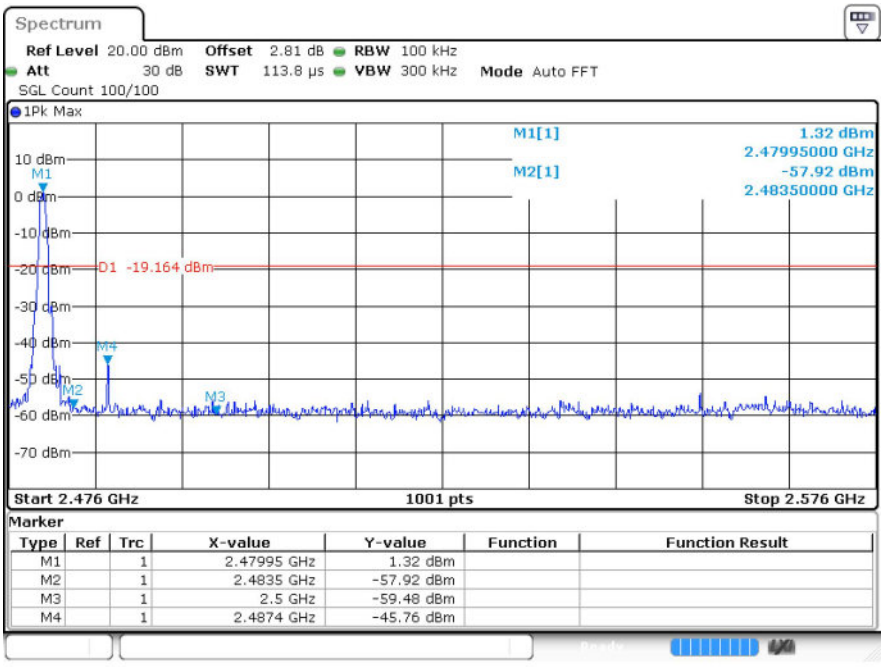

| BLE 1M 2402MHz Emission |
| --- |



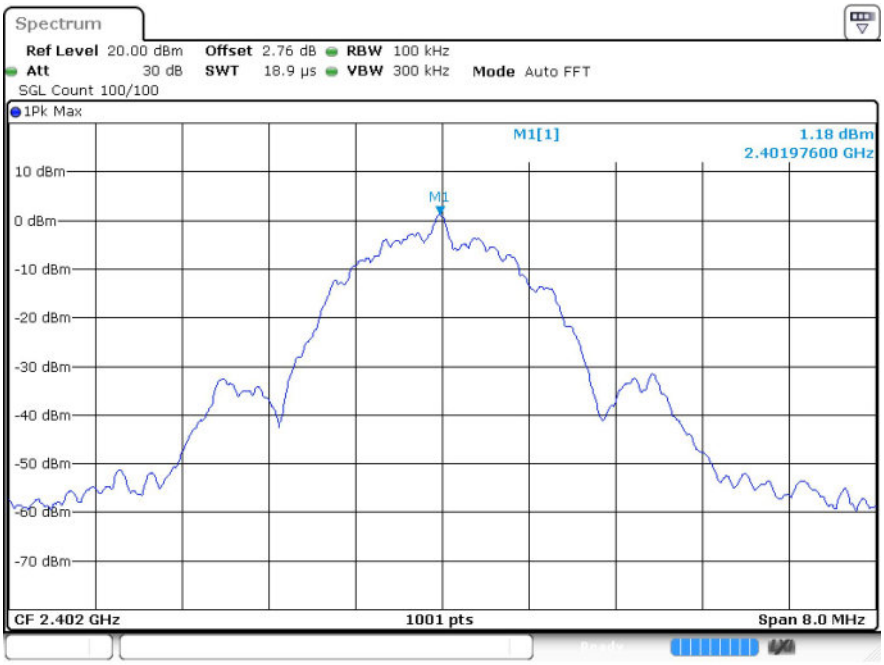
BLE 1M 2480MHz Ref



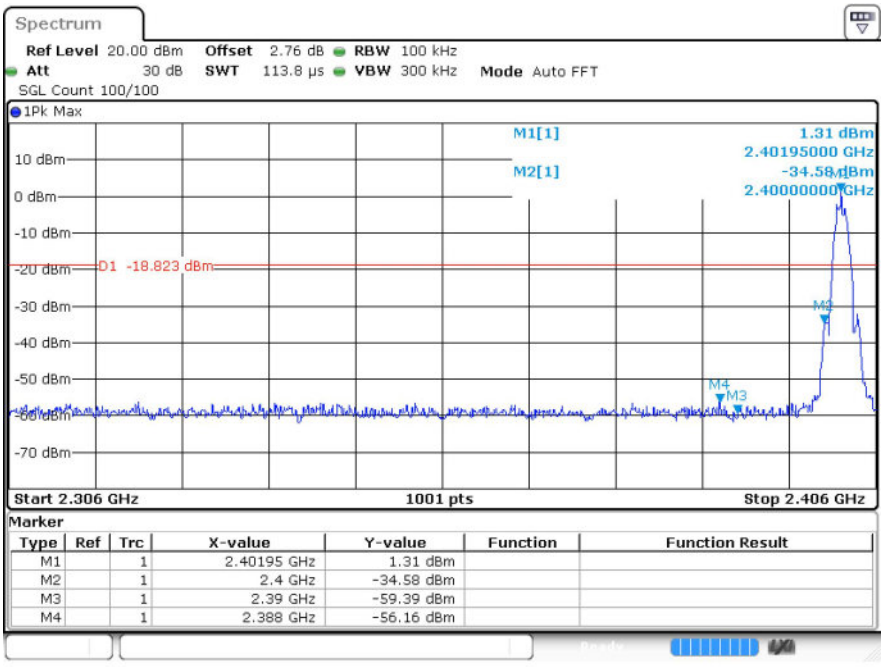

BLE 1M 2480MHz Emission



BLE 2M 2402MHz Ref

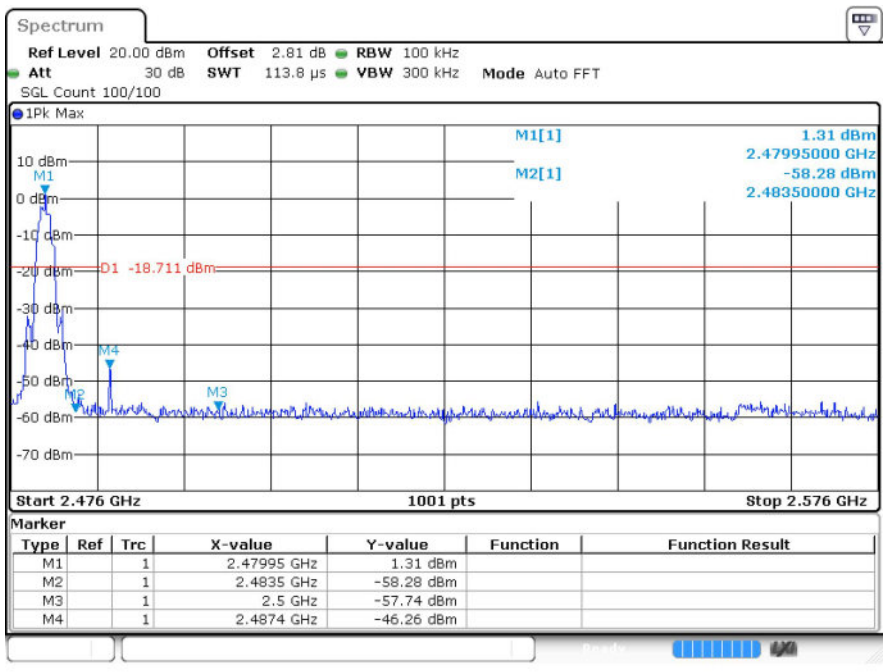



BLE 2M 2402MHz Emission



BLE 2M 2480MHz Ref


BLE 2M 2480MHz Emission



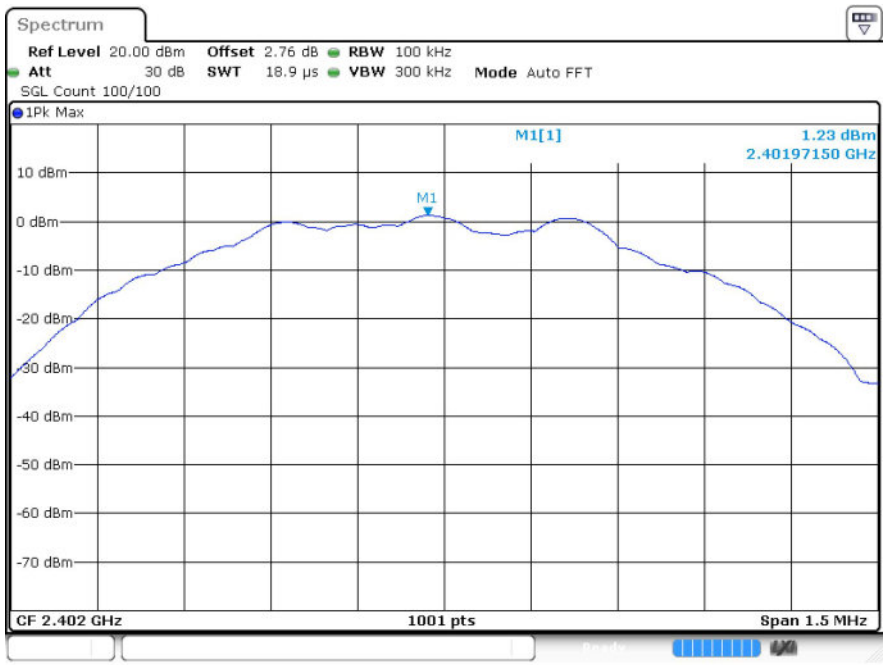
# 6 Conducted RF Spurious Emission

## 6.1 Test Result

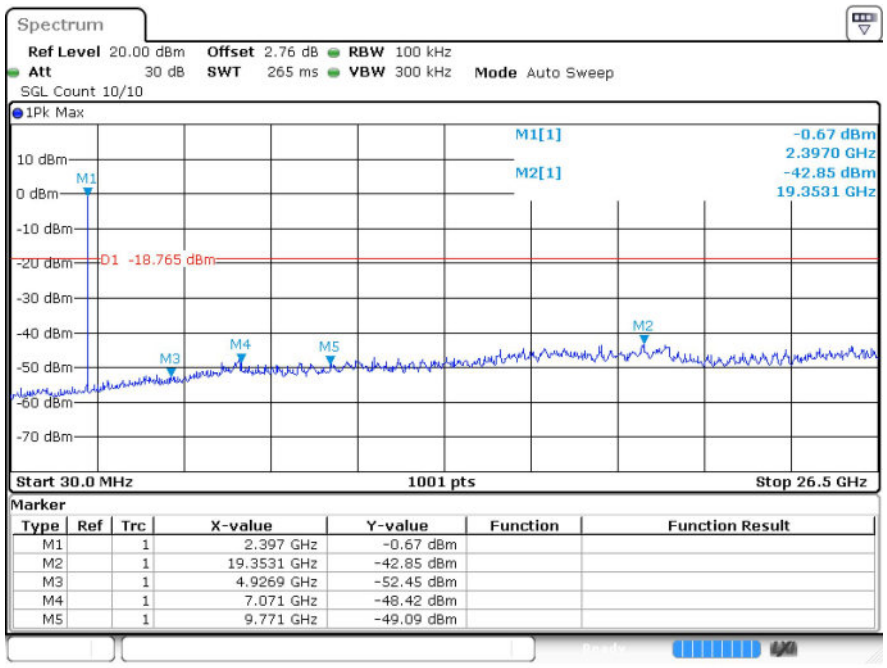
| Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|
| BLE 1M | 2402 | -44.08 | -20 | Pass |
| BLE 1M | 2440 | -44.14 | -20 | Pass |
| BLE 1M | 2480 | -43.76 | -20 | Pass |
| BLE 2M | 2402 | -43.55 | -20 | Pass |
| BLE 2M | 2440 | -44.3 | -20 | Pass |
| BLE 2M | 2480 | -44.76 | -20 | Pass |

## 6.2 Test Graphs

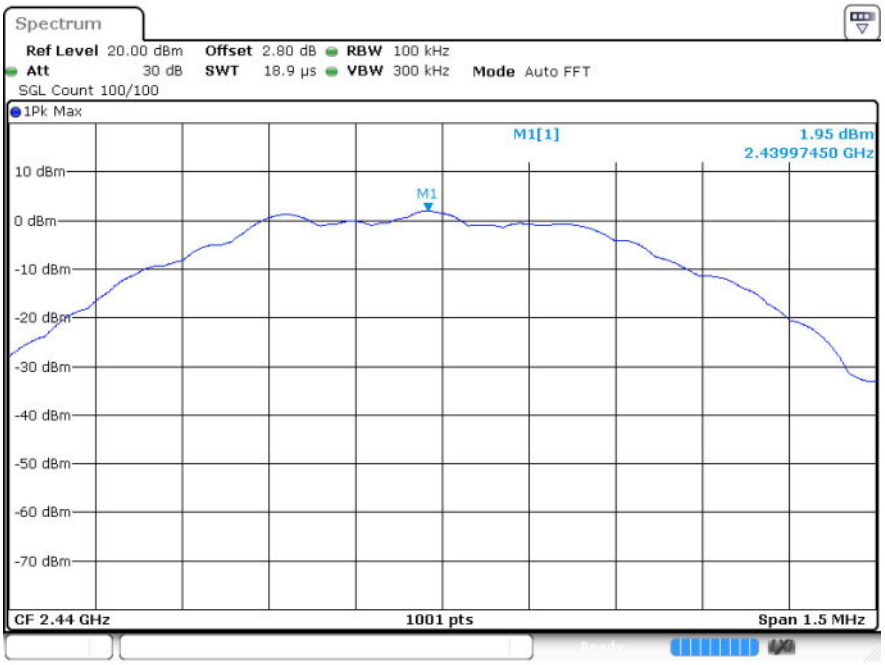
| Test Graphs |
| --- |
| BLE 1M 2402MHz Ref |



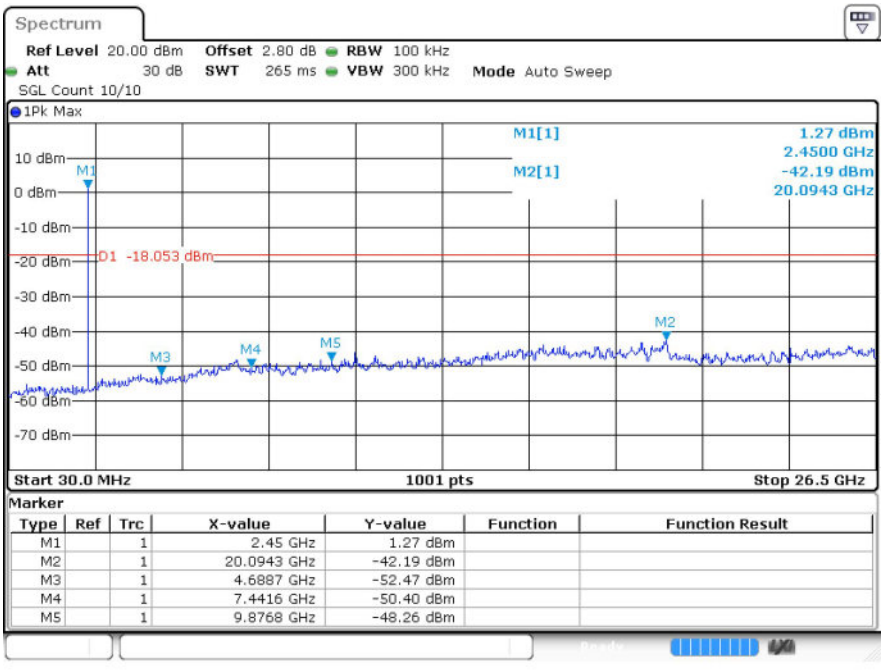

| BLE 1M 2402MHz Emission |
| --- |



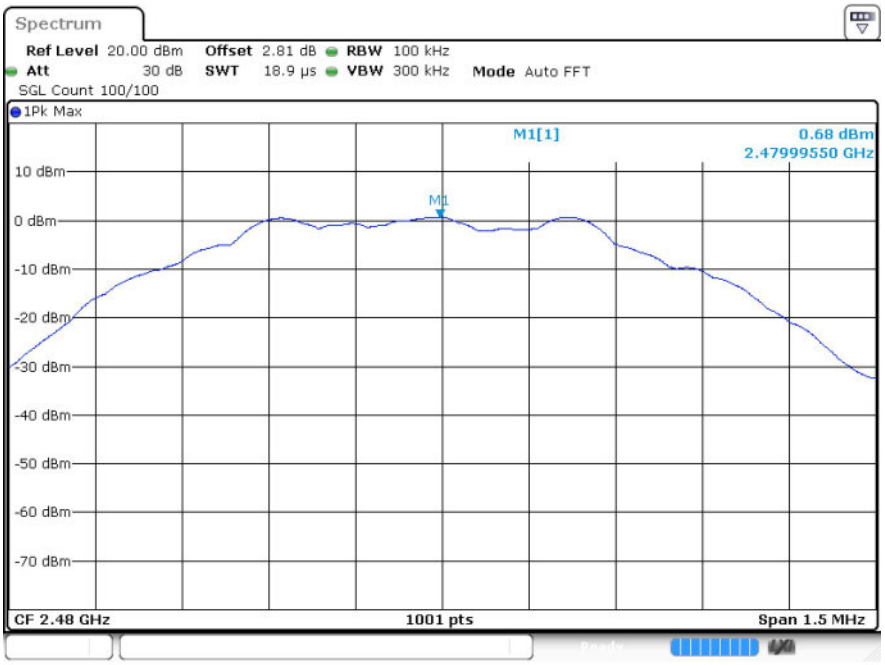
BLE 1M 2440MHz Ref



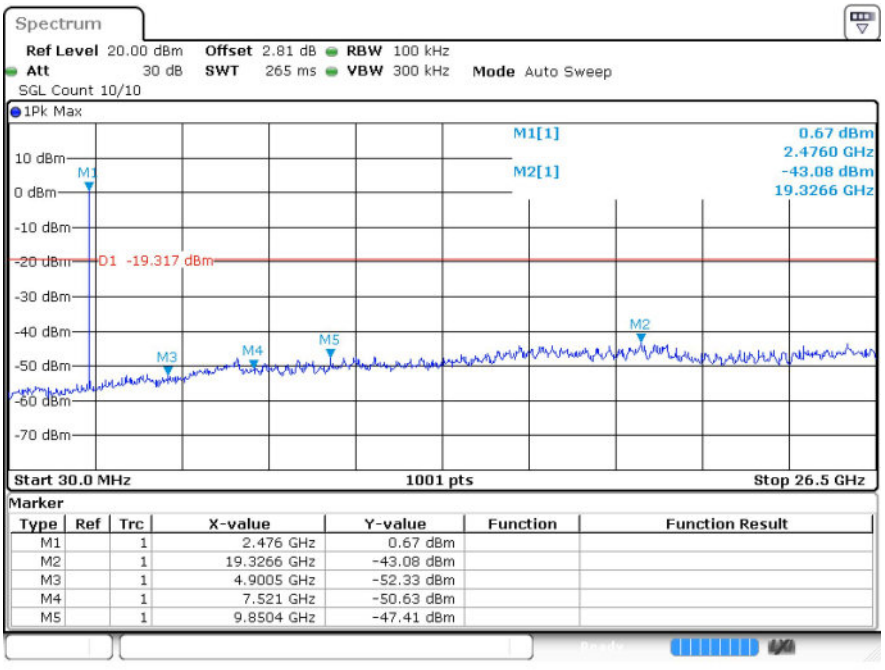

BLE 1M 2440MHz Emission



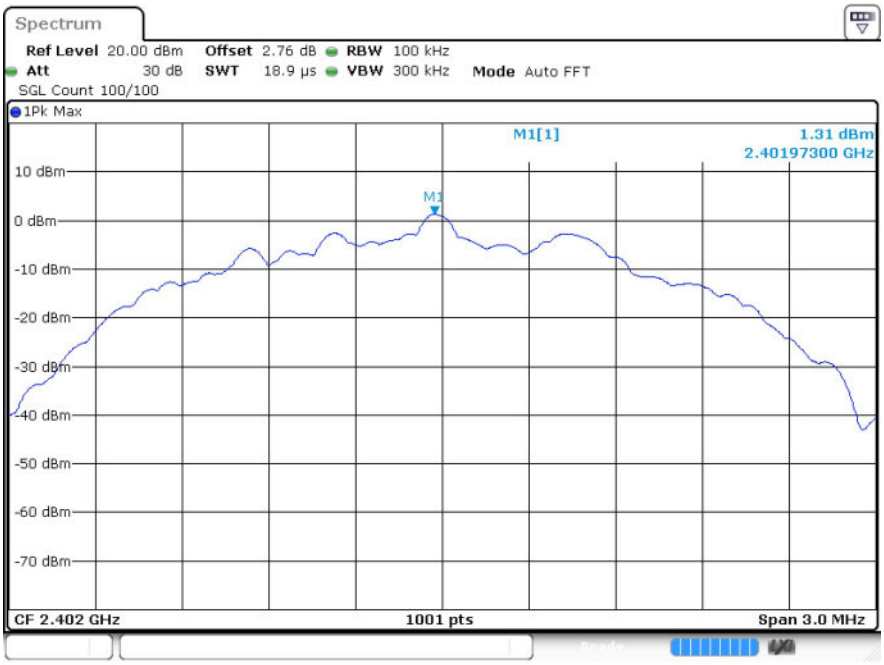
BLE 1M 2480MHz Ref



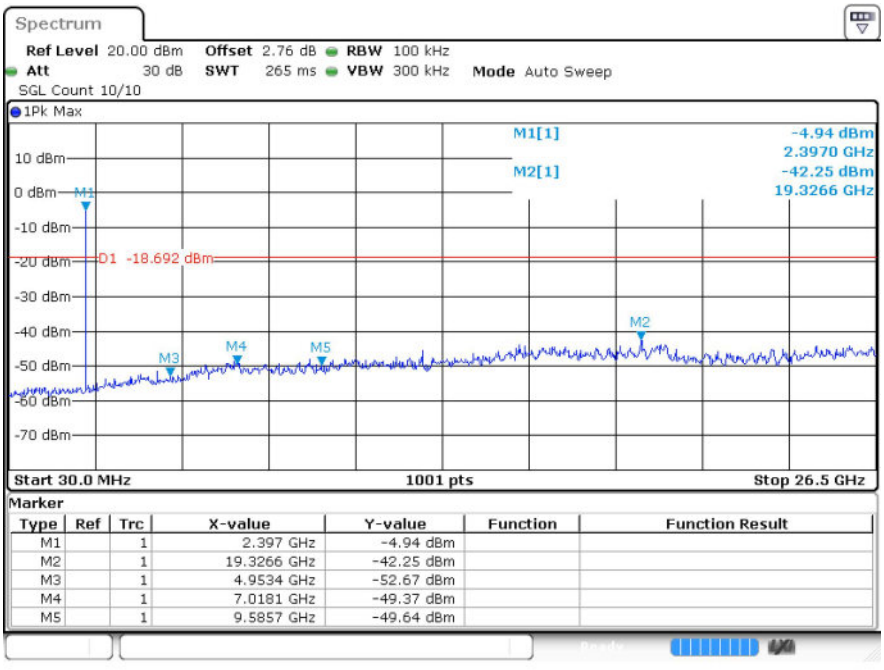

BLE 1M 2480MHz Emission



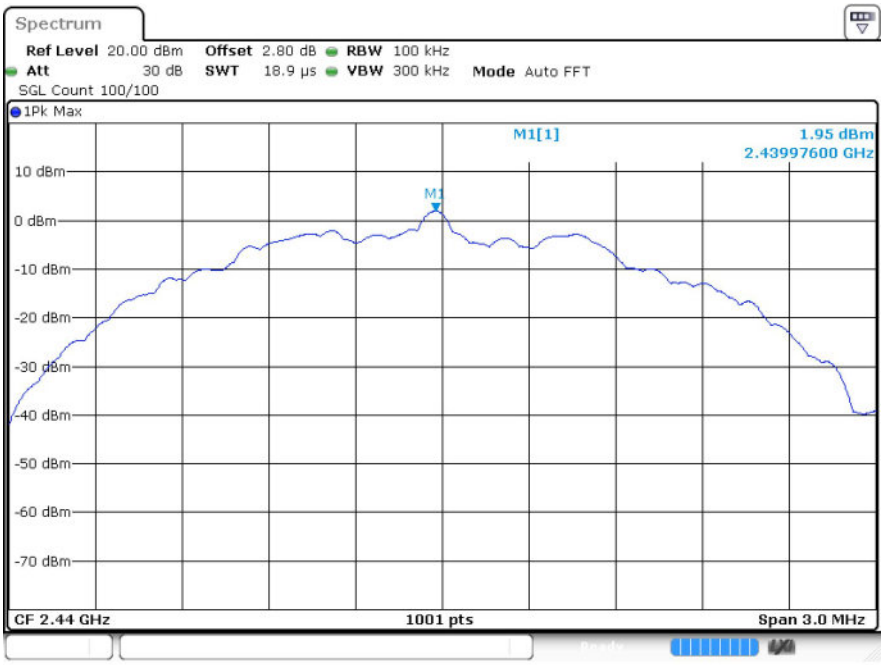
BLE 2M 2402MHz Ref



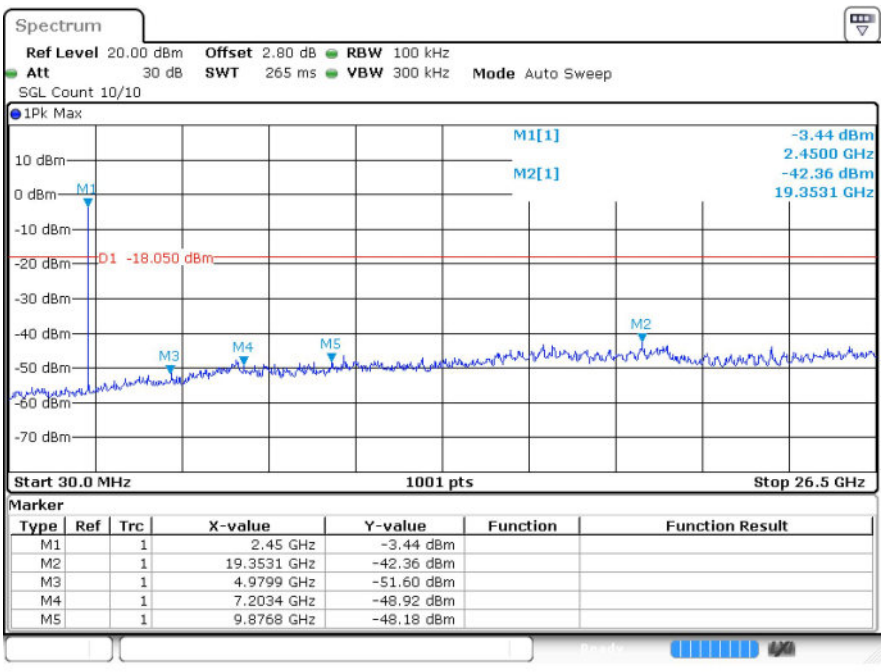

BLE 2M 2402MHz Emission



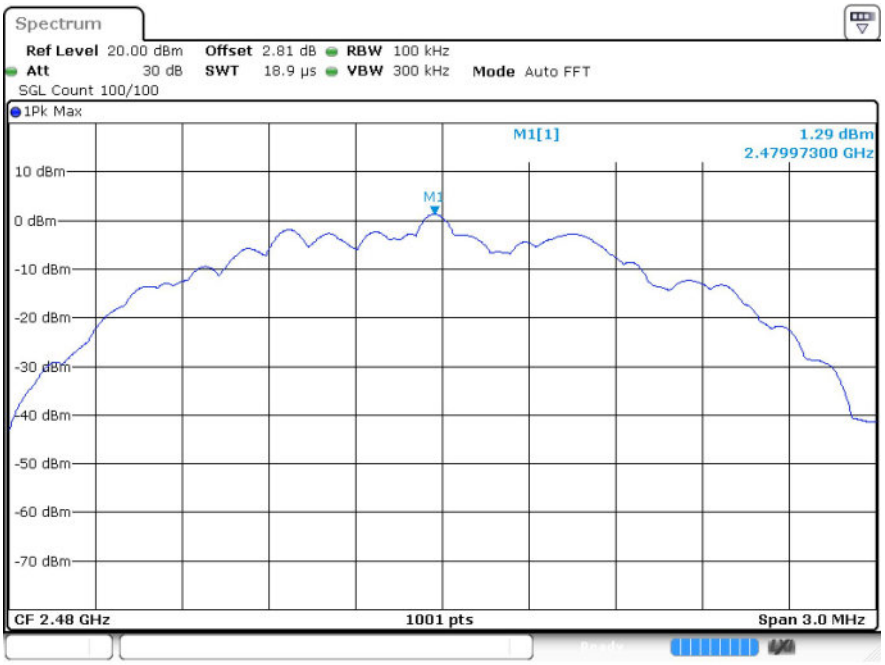
BLE 2M 2440MHz Ref



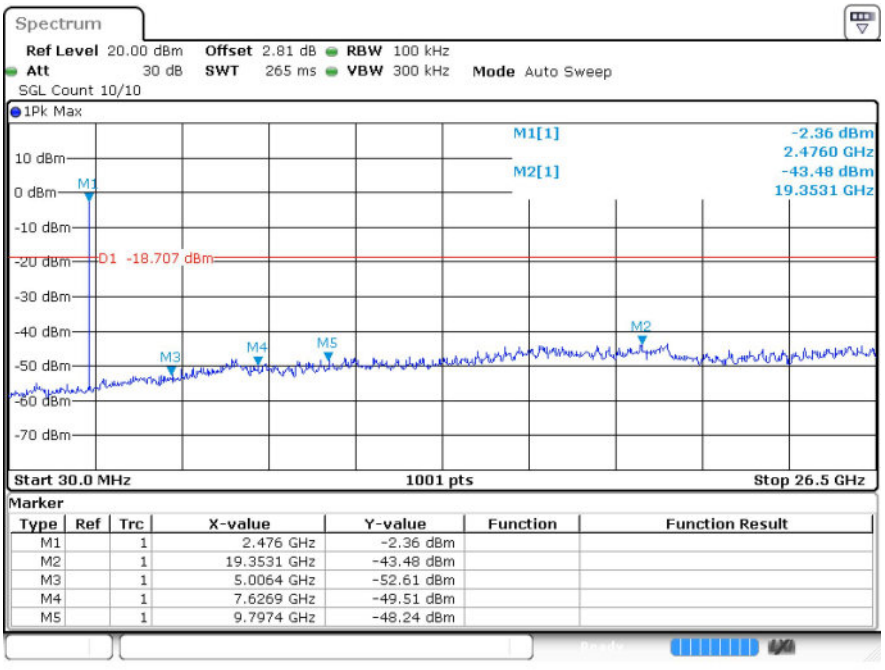

BLE 2M 2440MHz Emission



BLE 2M 2480MHz Ref




BLE 2M 2480MHz Emission



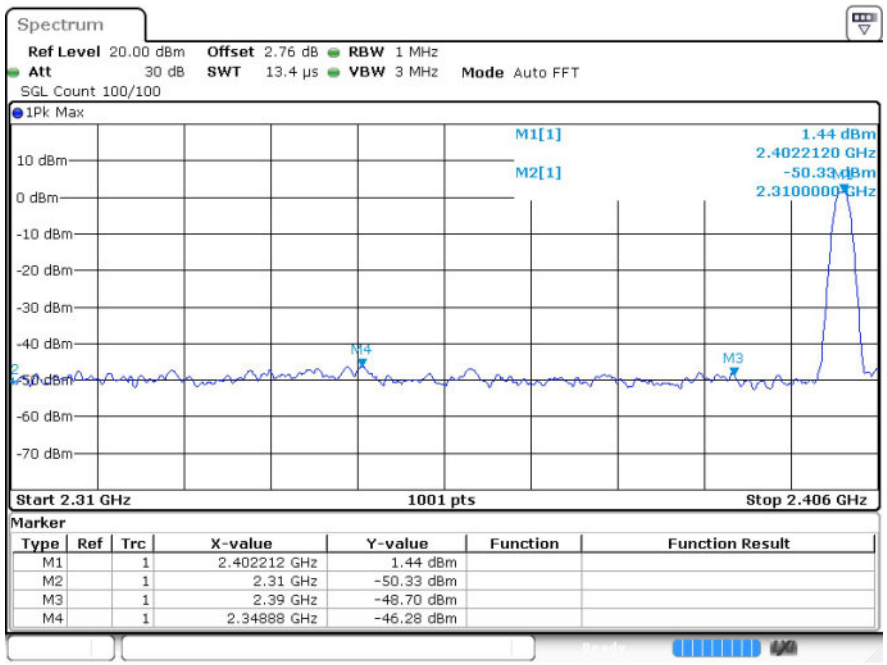
# 7 Restrict Band

## 7.1 Test Result

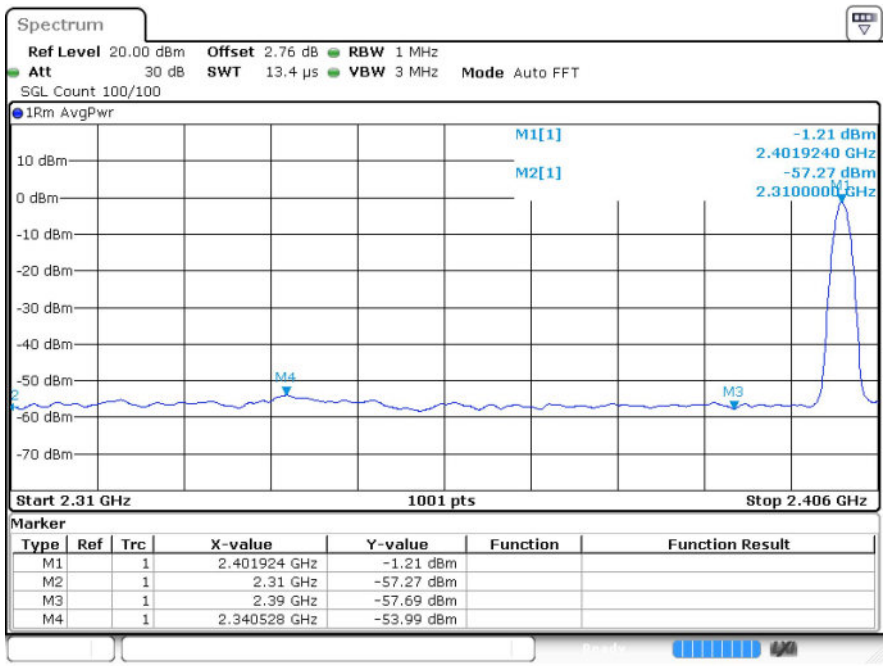
| Mode | Frequency (MHz) | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| BLE 1M | 2402 | 2310 | -50.33 | 2 | - | 46.93 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2310 | -57.27 | 2 | 1.93 | 41.92 | Average | 54 | Pass |
| BLE 1M | 2402 | 2348.88 | -46.27 | 2 | - | 50.99 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2340.528 | -53.99 | 2 | 1.93 | 45.2 | Average | 54 | Pass |
| BLE 1M | 2402 | 2390 | -48.7 | 2 | - | 48.56 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2390 | -57.69 | 2 | 1.93 | 41.5 | Average | 54 | Pass |
| BLE 1M | 2480 | 2483.5 | -48.95 | 2 | - | 48.31 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2483.5 | -55.68 | 2 | 1.94 | 43.52 | Average | 54 | Pass |
| BLE 1M | 2480 | 2487.472 | -45.14 | 2 | - | 52.12 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2487.4 | -54.51 | 2 | 1.94 | 44.69 | Average | 54 | Pass |
| BLE 1M | 2480 | 2500 | -48.54 | 2 | - | 48.72 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2500 | -56.07 | 2 | 1.94 | 43.13 | Average | 54 | Pass |
| BLE 2M | 2402 | 2310 | -48.38 | 2 | - | 48.88 | Peak | 74 | Pass |
| BLE 2M | 2402 | 2310 | -56.95 | 2 | 4.57 | 44.88 | Average | 54 | Pass |
| BLE 2M | 2402 | 2345.904 | -46.06 | 2 | - | 51.2 | Peak | 74 | Pass |
| BLE 2M | 2402 | 2342.448 | -54.43 | 2 | 4.57 | 47.4 | Average | 54 | Pass |
| BLE 2M | 2402 | 2390 | -50.6 | 2 | - | 46.66 | Peak | 74 | Pass |
| BLE 2M | 2402 | 2390 | -56.45 | 2 | 4.57 | 45.38 | Average | 54 | Pass |
| BLE 2M | 2480 | 2483.5 | -48.94 | 2 | - | 48.32 | Peak | 74 | Pass |
| BLE 2M | 2480 | 2483.5 | -55.08 | 2 | 4.54 | 46.72 | Average | 54 | Pass |
| BLE 2M | 2480 | 2487.424 | -44.05 | 2 | - | 53.21 | Peak | 74 | Pass |
| BLE 2M | 2480 | 2487.04 | -55.13 | 2 | 4.54 | 46.67 | Average | 54 | Pass |
| BLE 2M | 2480 | 2500 | -48.96 | 2 | - | 48.3 | Peak | 74 | Pass |
| BLE 2M | 2480 | 2500 | -56.71 | 2 | 4.54 | 45.09 | Average | 54 | Pass |

## 7.2 Test Graphs

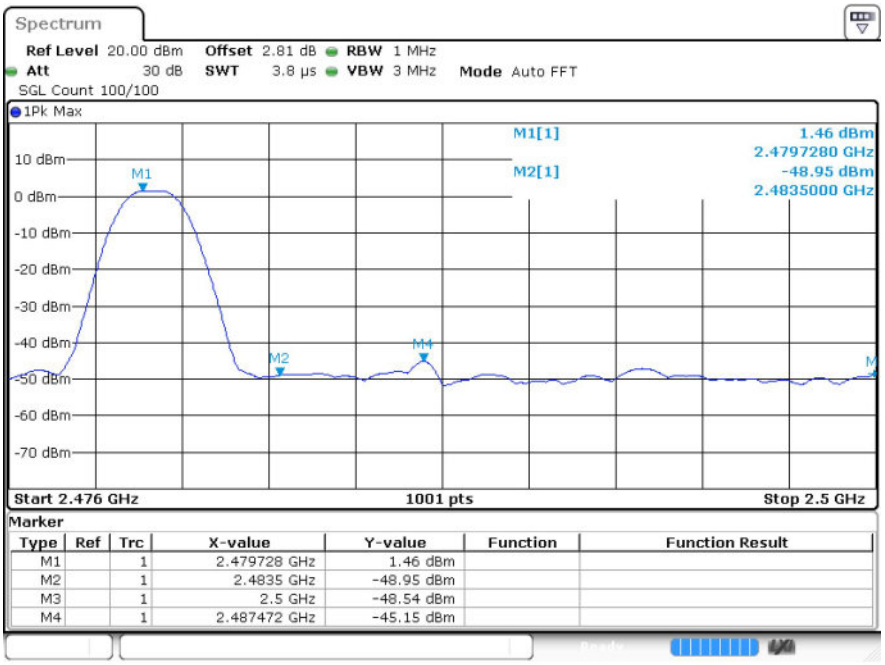
| Test Graphs |
| --- |
| BLE 1M 2402MHz Peak |



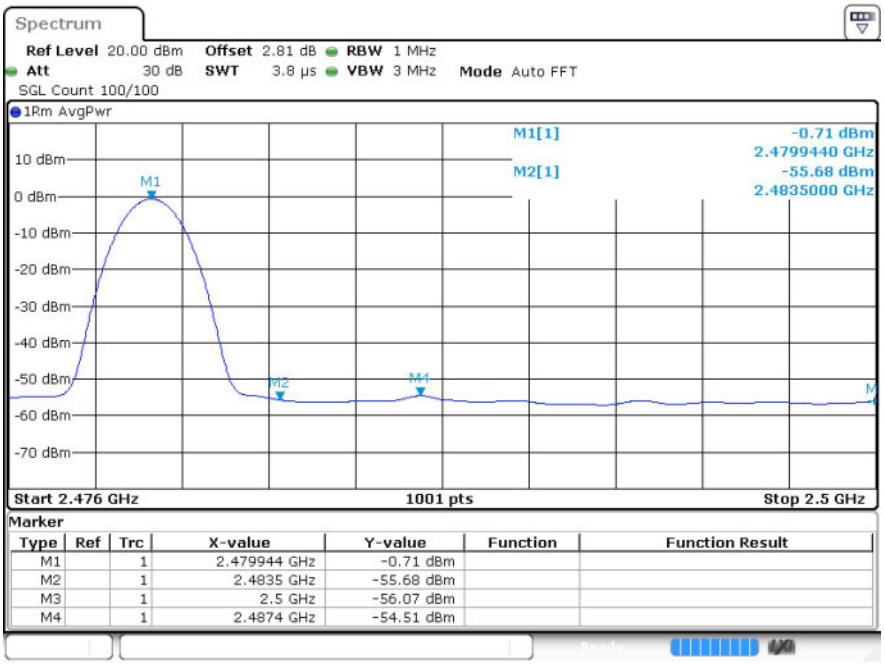

| BLE 1M 2402MHz Average |
| --- |



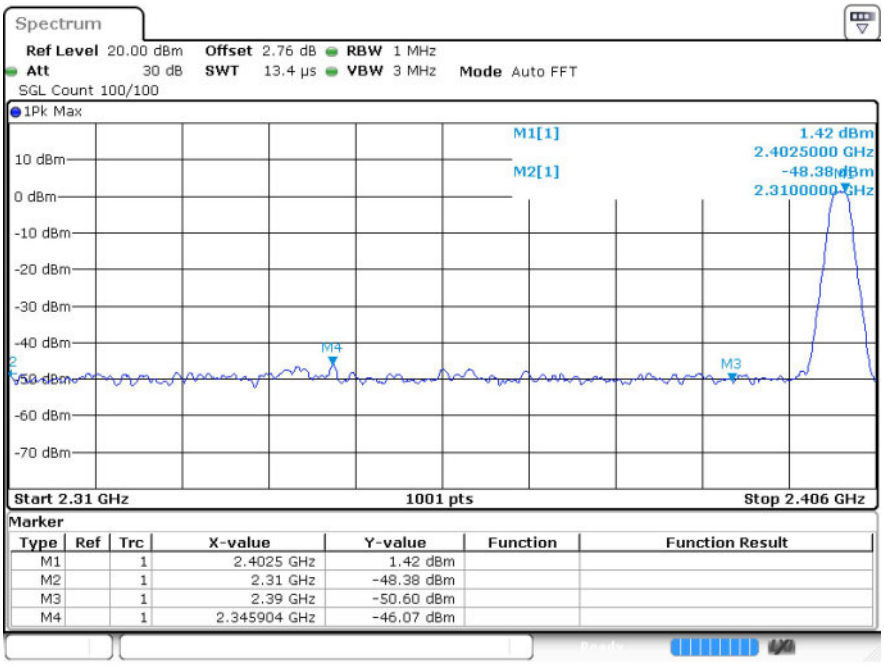
BLE 1M 2480MHz Peak



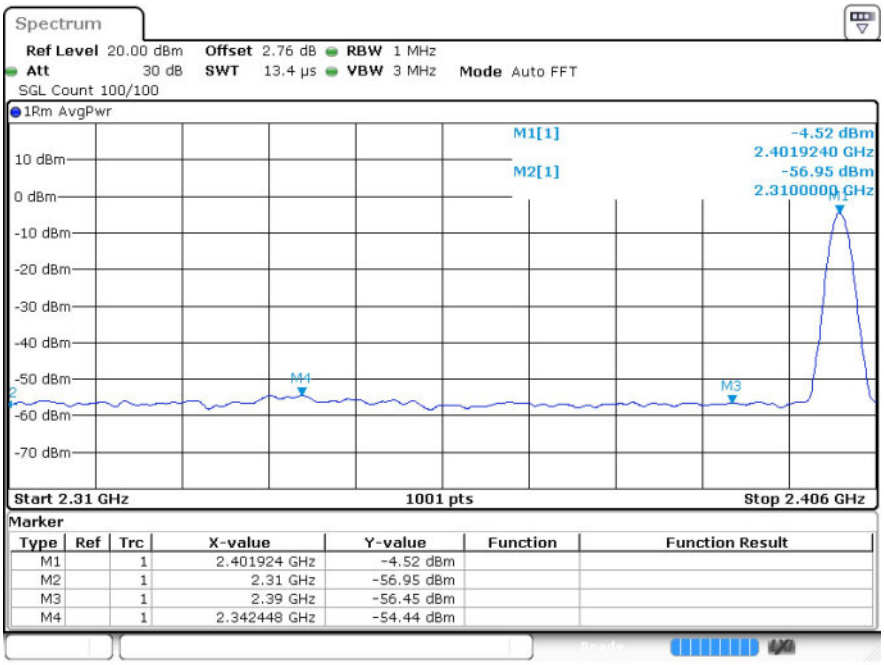

BLE 1M 2480MHz Average



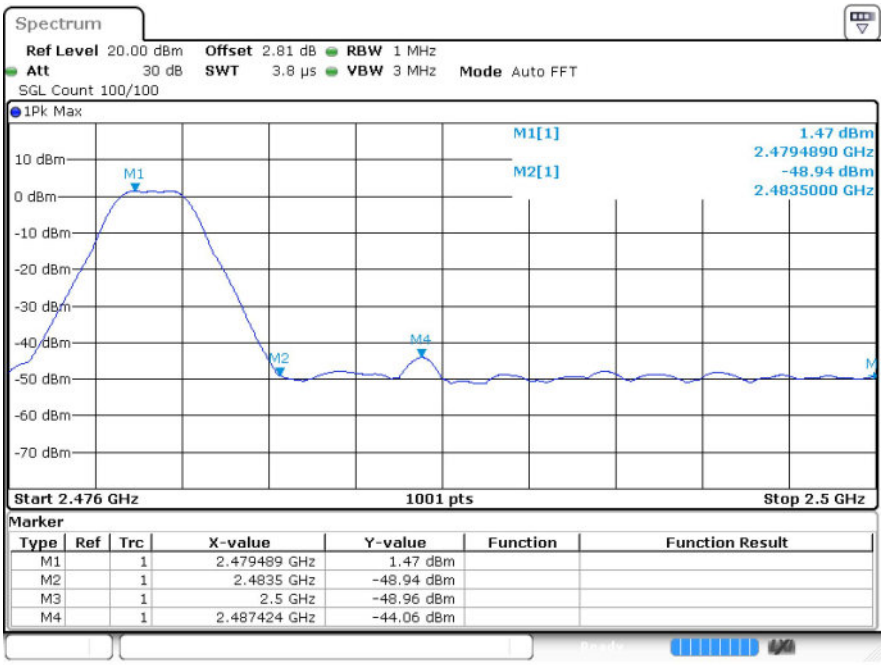
BLE 2M 2402MHz Peak



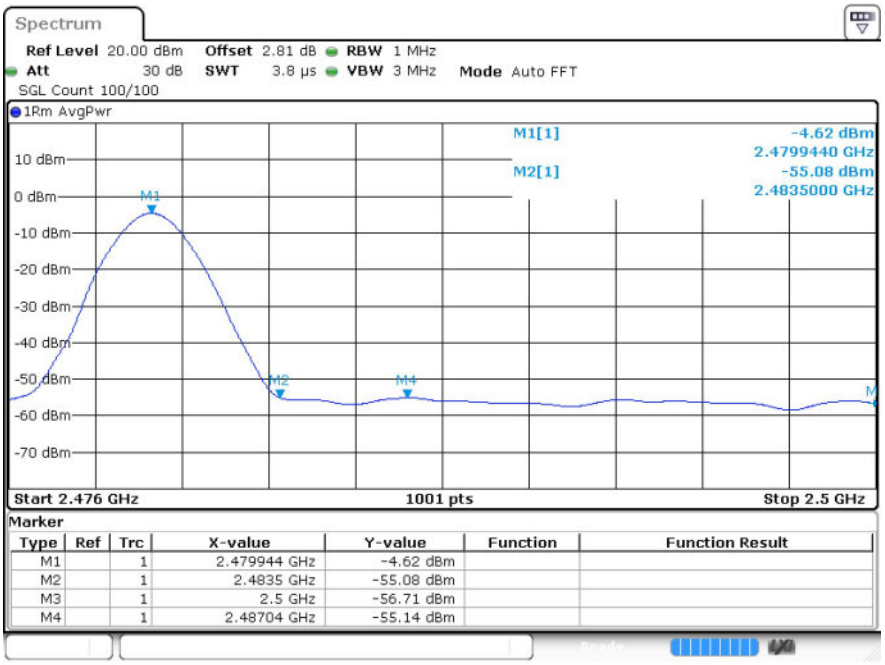

BLE 2M 2402MHz Average



BLE 2M 2480MHz Peak




BLE 2M 2480MHz Average




---The End---