



## Appendix B

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

Product Name: SMART TASBEEH RING

Trade Mark: N/A

Test Model: QB702 LITE

Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 24.3° C     |
| Relative Humidity: | 52.4%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Emiya lin   |
| Supervised by:     | Simba Huang |



## Contents

Page

### COVER PAGE

|     |                                            |    |
|-----|--------------------------------------------|----|
| 1   | Duty Cycle .....                           | 3  |
| 1.1 | Test Result .....                          | 3  |
| 1.2 | Test Graphs .....                          | 4  |
| 2   | Maximum Conducted Output Power .....       | 7  |
| 2.1 | Test Result .....                          | 7  |
| 2.2 | Test Graphs .....                          | 8  |
| 3   | -6dB Bandwidth .....                       | 11 |
| 3.1 | Test Result .....                          | 11 |
| 3.2 | Test Graphs .....                          | 12 |
| 4   | Maximum Power Spectral Density Level ..... | 15 |
| 4.1 | Test Result .....                          | 15 |
| 4.2 | Test Graphs .....                          | 16 |
| 5   | Band Edge .....                            | 19 |
| 5.1 | Test Result .....                          | 19 |
| 5.2 | Test Graphs .....                          | 20 |
| 6   | Conducted RF Spurious Emission .....       | 24 |
| 6.1 | Test Result .....                          | 24 |
| 6.2 | Test Graphs .....                          | 25 |
| 7   | Restrict Band .....                        | 31 |
| 7.1 | Test Result .....                          | 31 |
| 7.2 | Test Graphs .....                          | 32 |

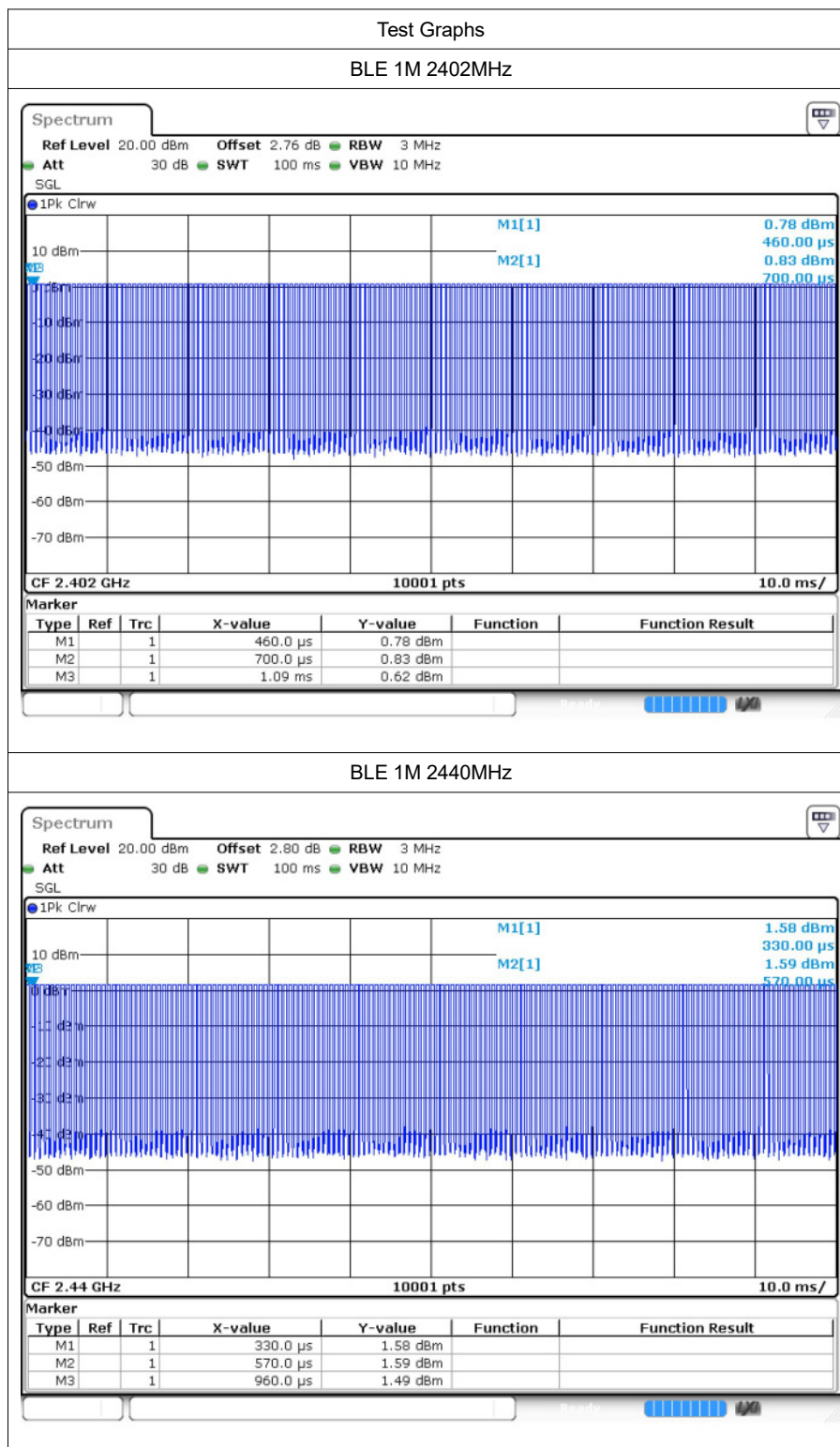


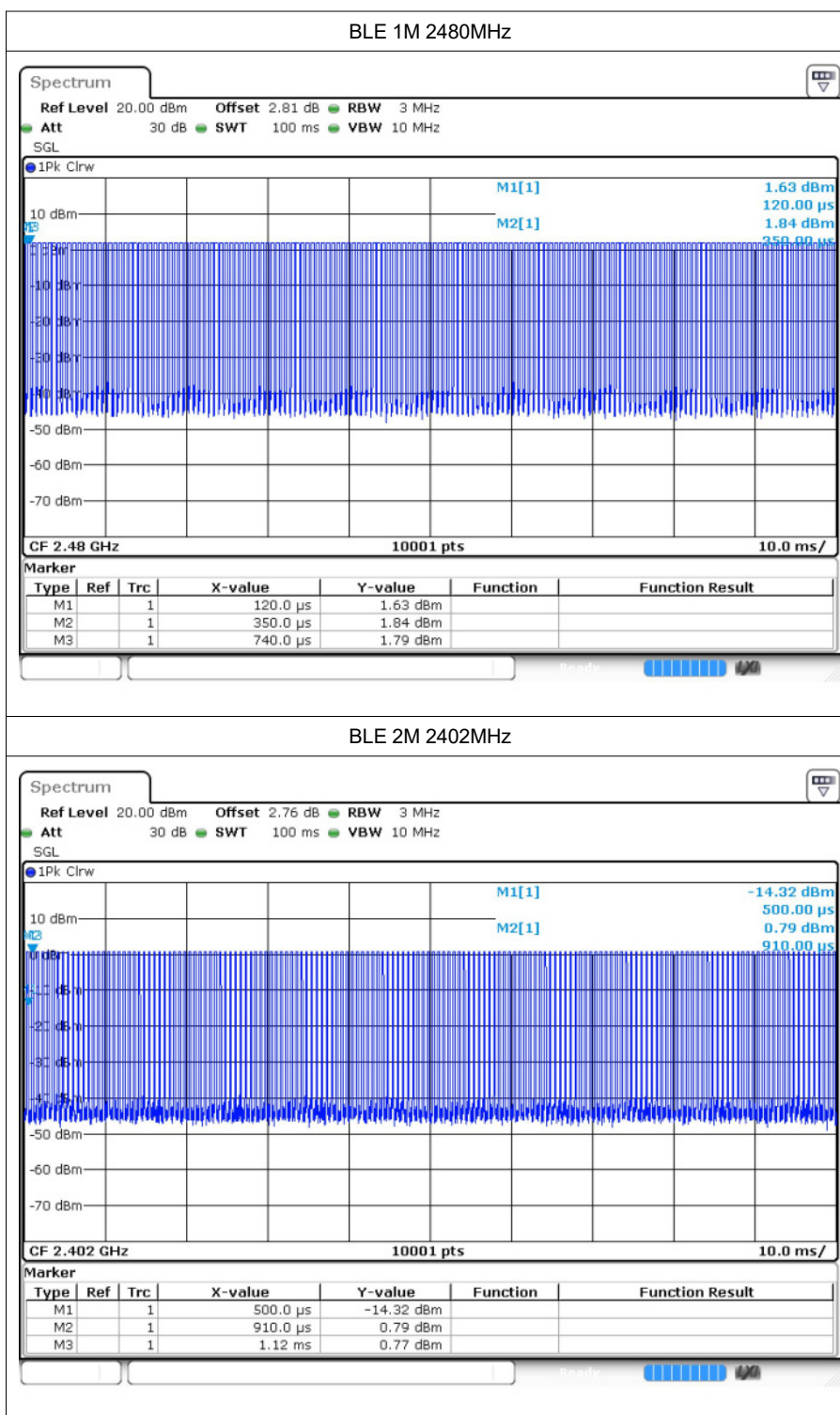
# 1 Duty Cycle

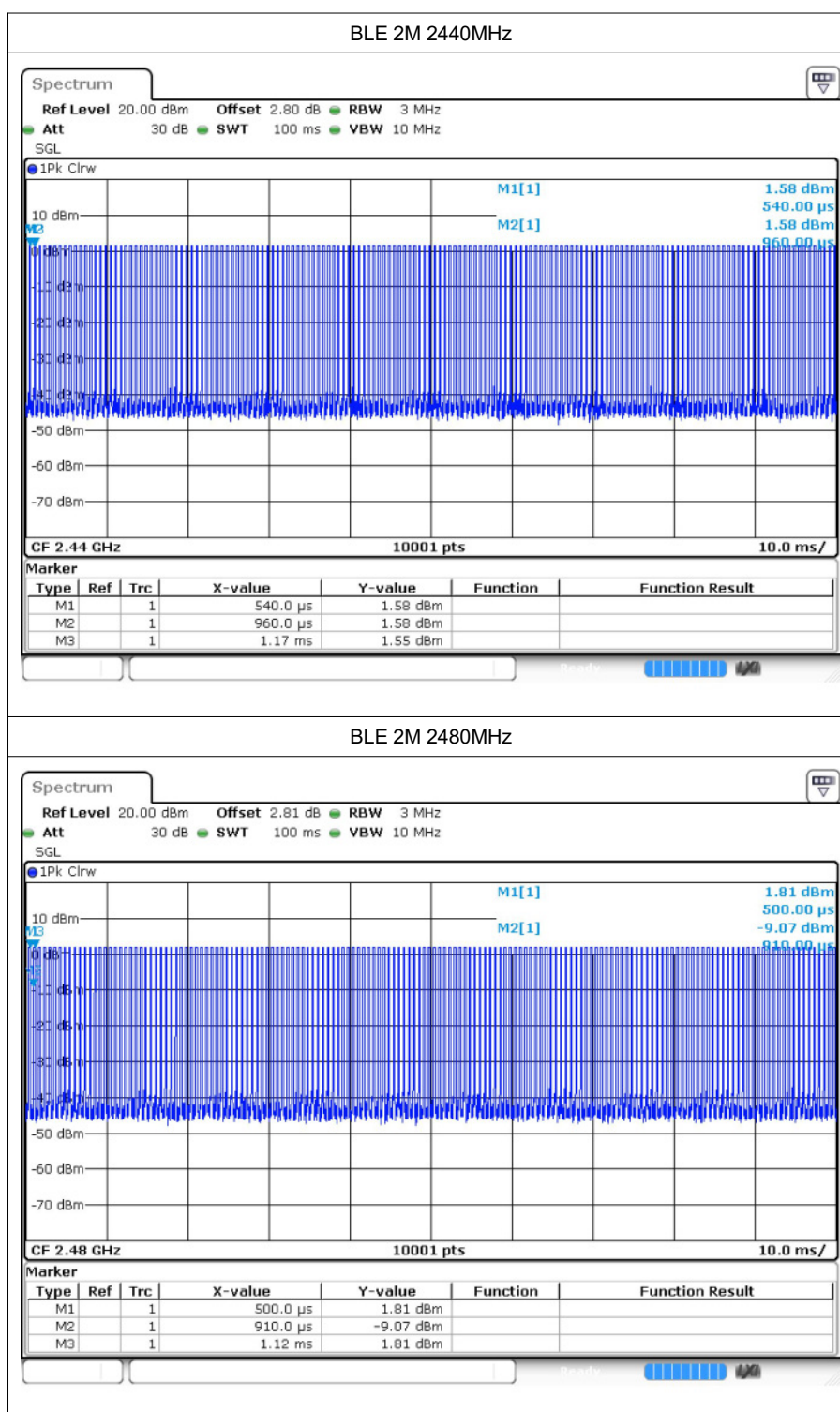
## 1.1 Test Result

| Mode   | Frequency (MHz) | Duty Cycle (%) | Correction Factor | 1/T (kHz) |
|--------|-----------------|----------------|-------------------|-----------|
| BLE 1M | 2402            | 63.99          | 1.94              | 2.56      |
| BLE 1M | 2440            | 64.1           | 1.93              | 2.56      |
| BLE 1M | 2480            | 64             | 1.94              | 2.56      |
| BLE 2M | 2402            | 35.2           | 4.54              | 4.76      |
| BLE 2M | 2440            | 35.15          | 4.54              | 4.76      |
| BLE 2M | 2480            | 34.58          | 4.61              | 4.76      |

## 1.2 Test Graphs







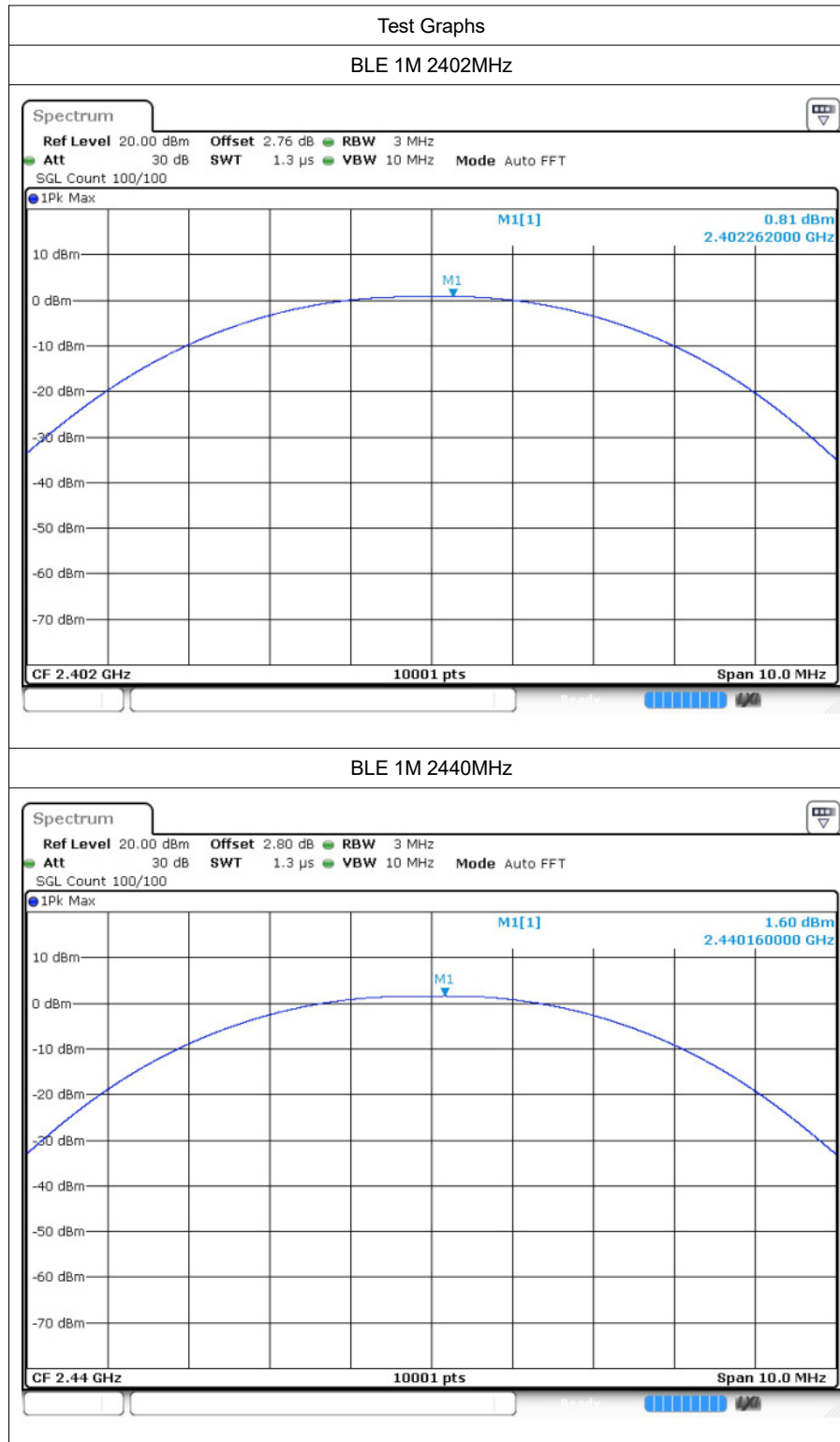


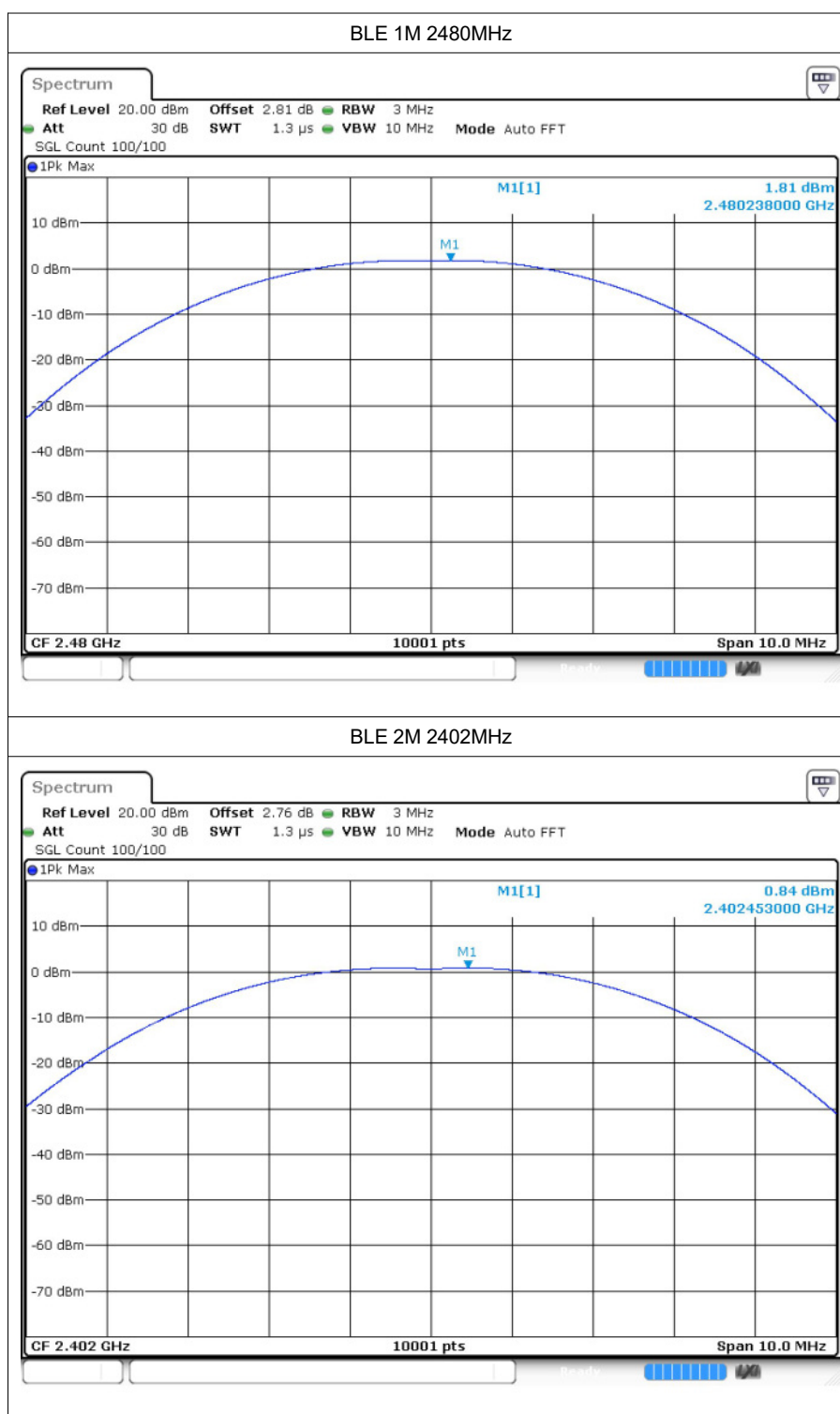
## 2 Maximum Conducted Output Power

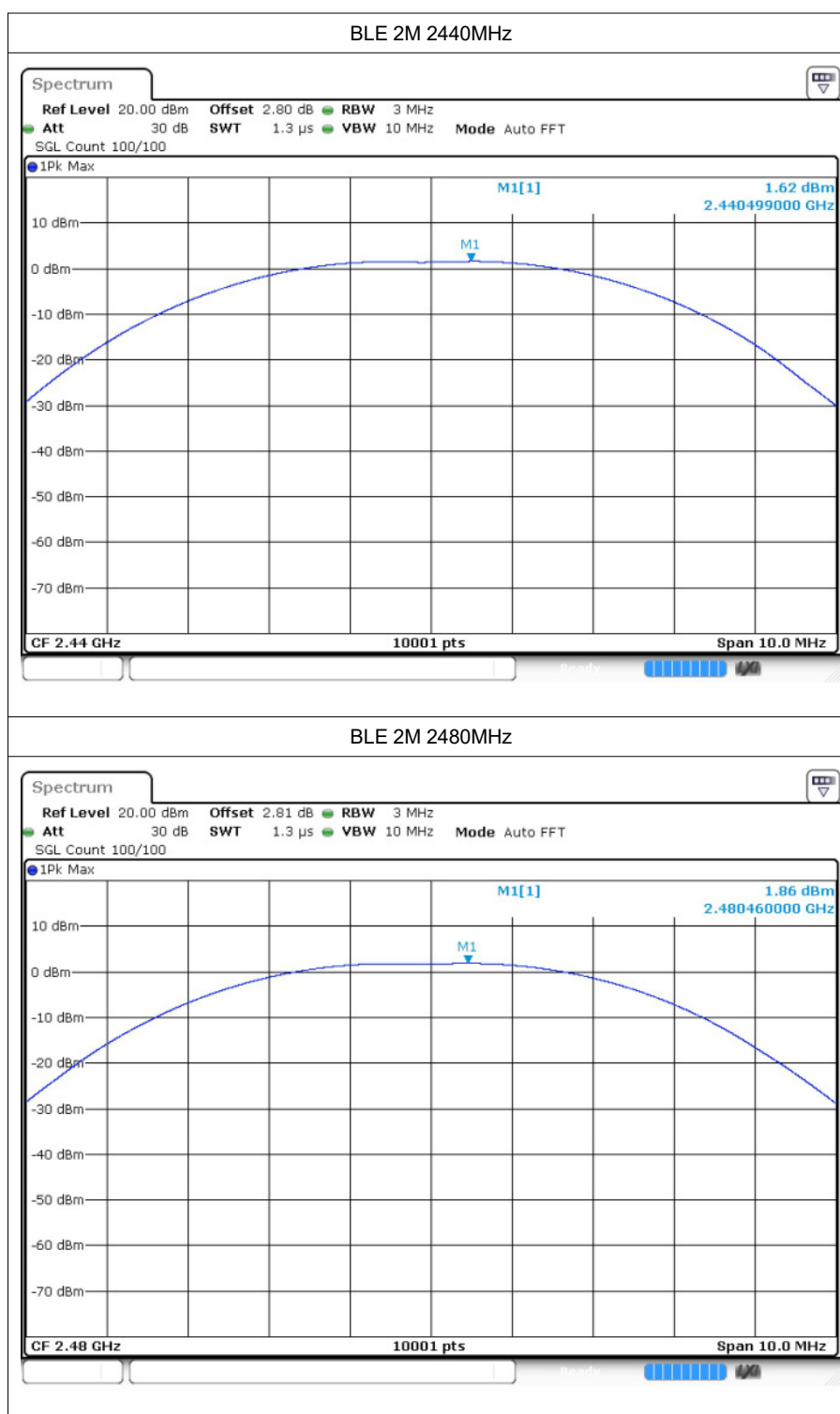
### 2.1 Test Result

| Mode   | Frequency (MHz) | Conducted Power<br>(dBm) | Limit (dBm) | Verdict |
|--------|-----------------|--------------------------|-------------|---------|
| BLE 1M | 2402            | 0.81                     | 30          | Pass    |
| BLE 1M | 2440            | 1.6                      | 30          | Pass    |
| BLE 1M | 2480            | 1.81                     | 30          | Pass    |
| BLE 2M | 2402            | 0.84                     | 30          | Pass    |
| BLE 2M | 2440            | 1.62                     | 30          | Pass    |
| BLE 2M | 2480            | 1.86                     | 30          | Pass    |

## 2.2 Test Graphs







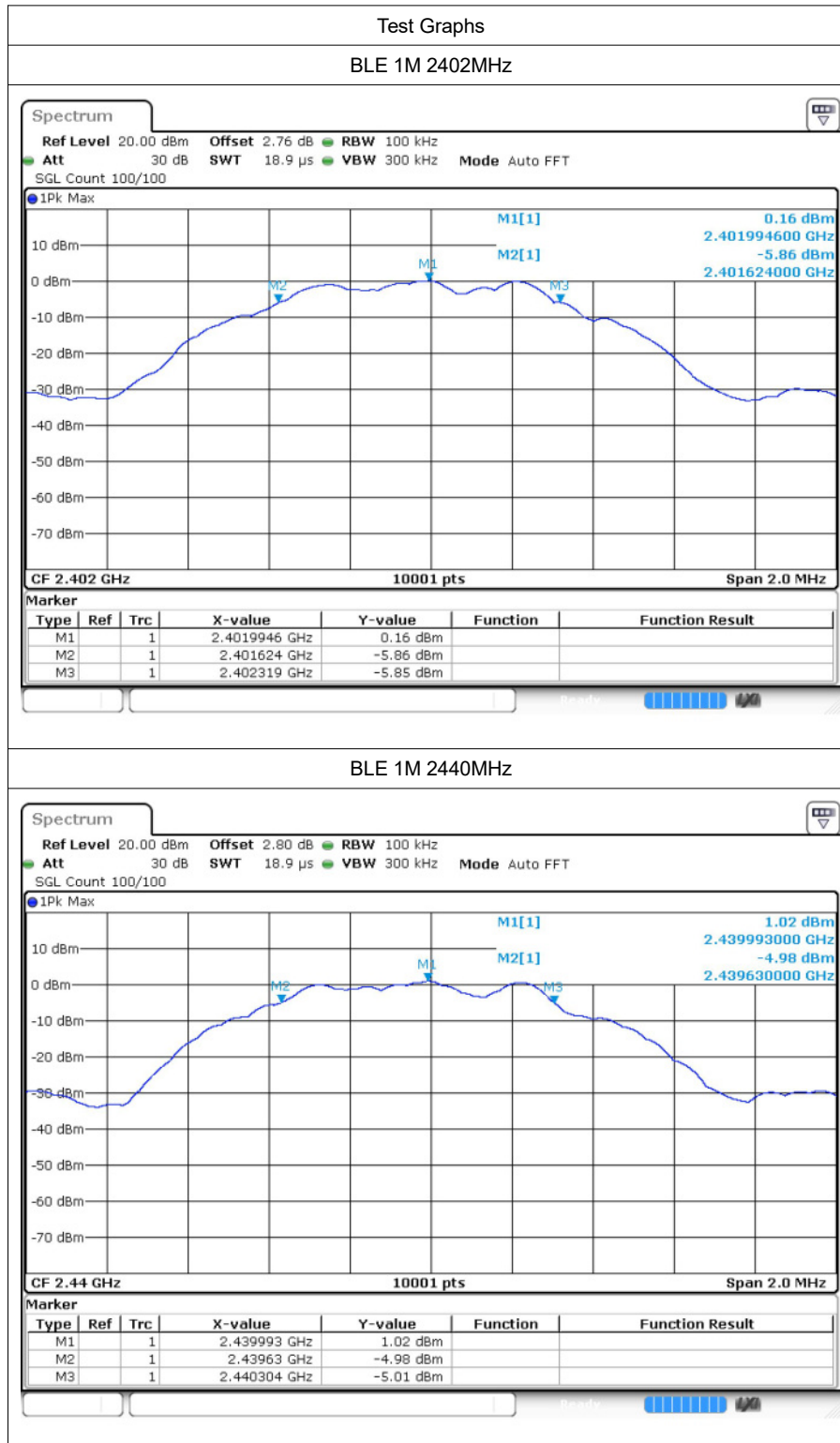


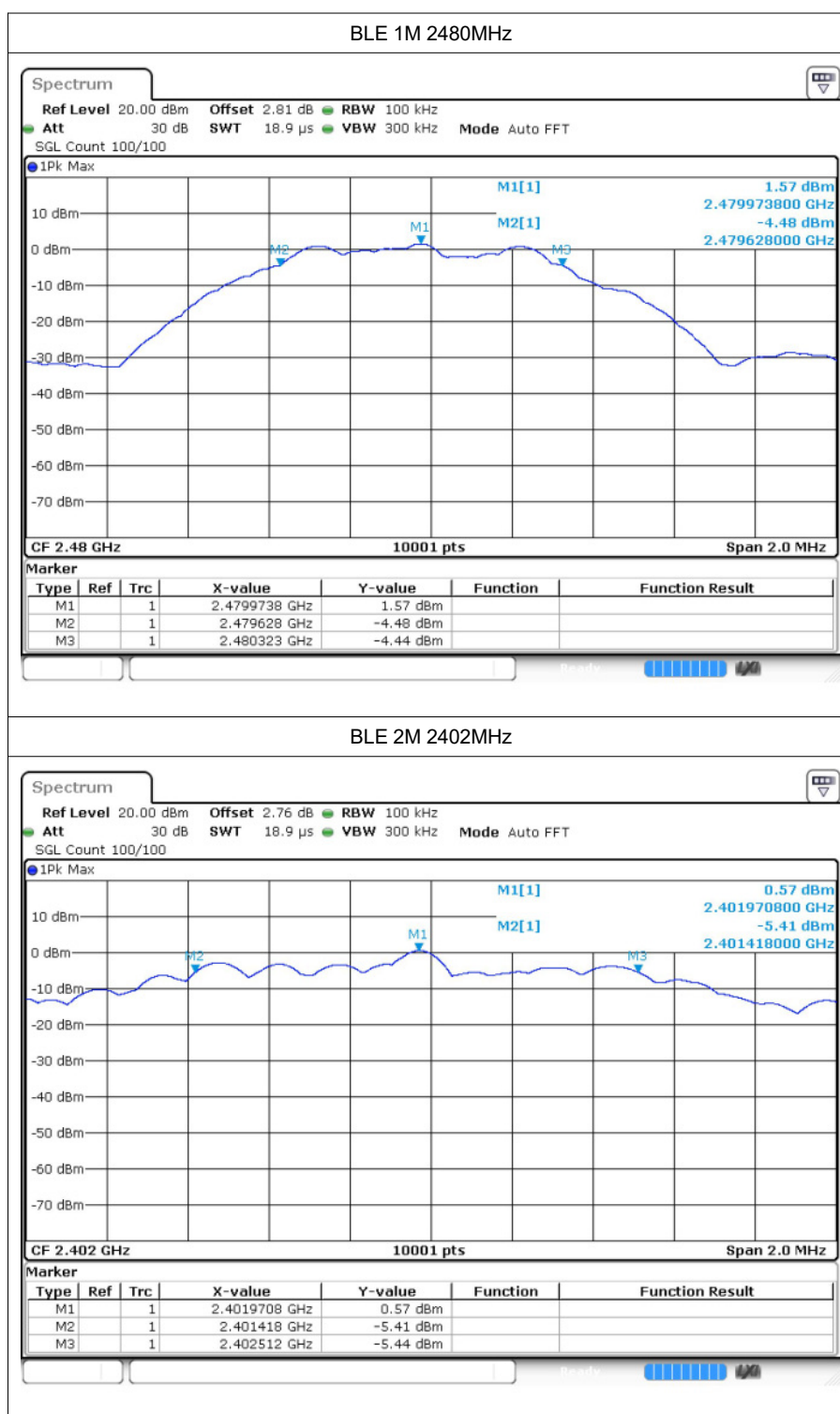
### 3 -6dB Bandwidth

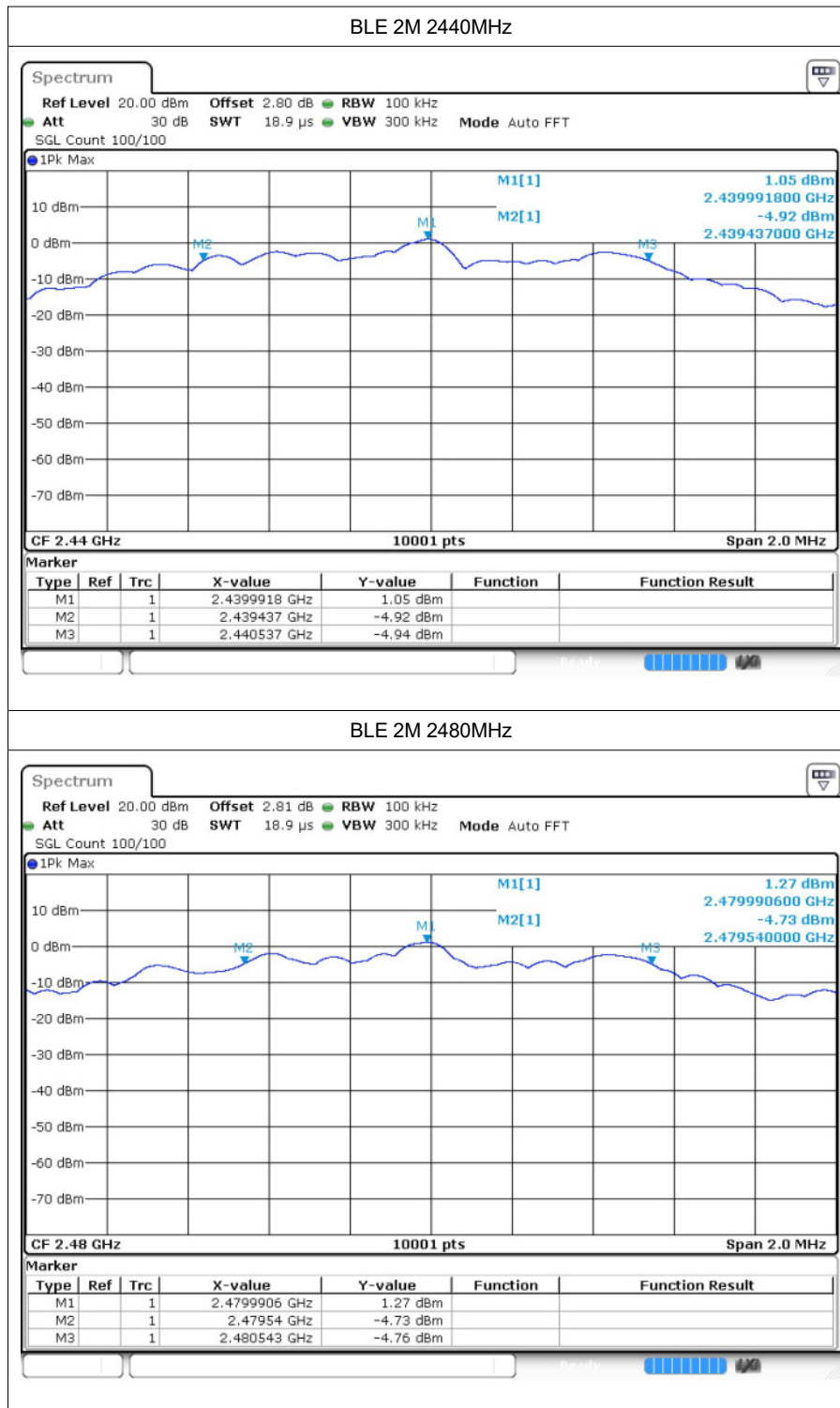
#### 3.1 Test Result

| Mode   | Frequency (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|--------|-----------------|-----------------------|-----------------------------|---------|
| BLE 1M | 2402            | 0.695                 | 0.5                         | Pass    |
| BLE 1M | 2440            | 0.674                 | 0.5                         | Pass    |
| BLE 1M | 2480            | 0.695                 | 0.5                         | Pass    |
| BLE 2M | 2402            | 1.094                 | 0.5                         | Pass    |
| BLE 2M | 2440            | 1.101                 | 0.5                         | Pass    |
| BLE 2M | 2480            | 1.003                 | 0.5                         | Pass    |

## 3.2 Test Graphs





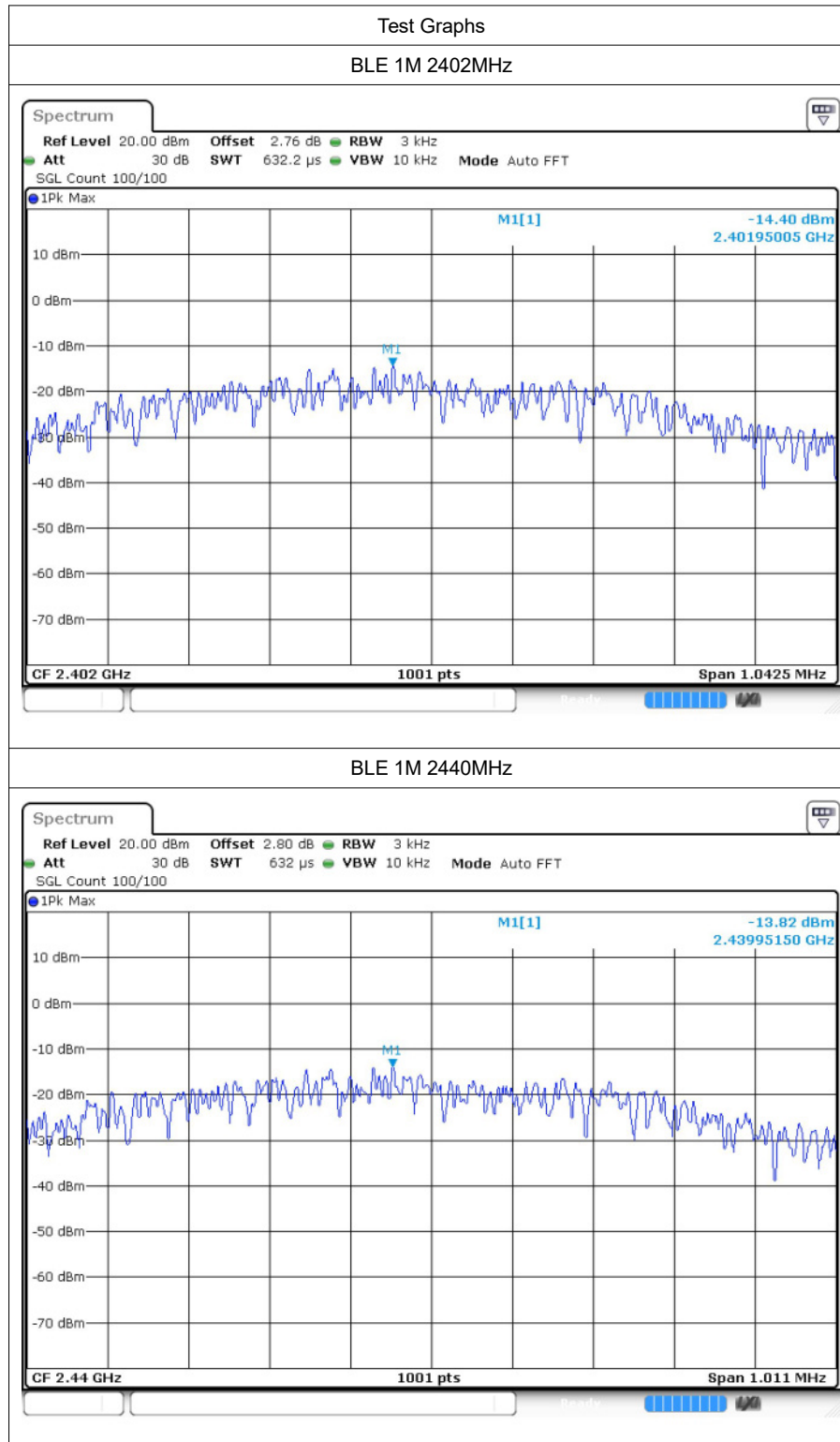


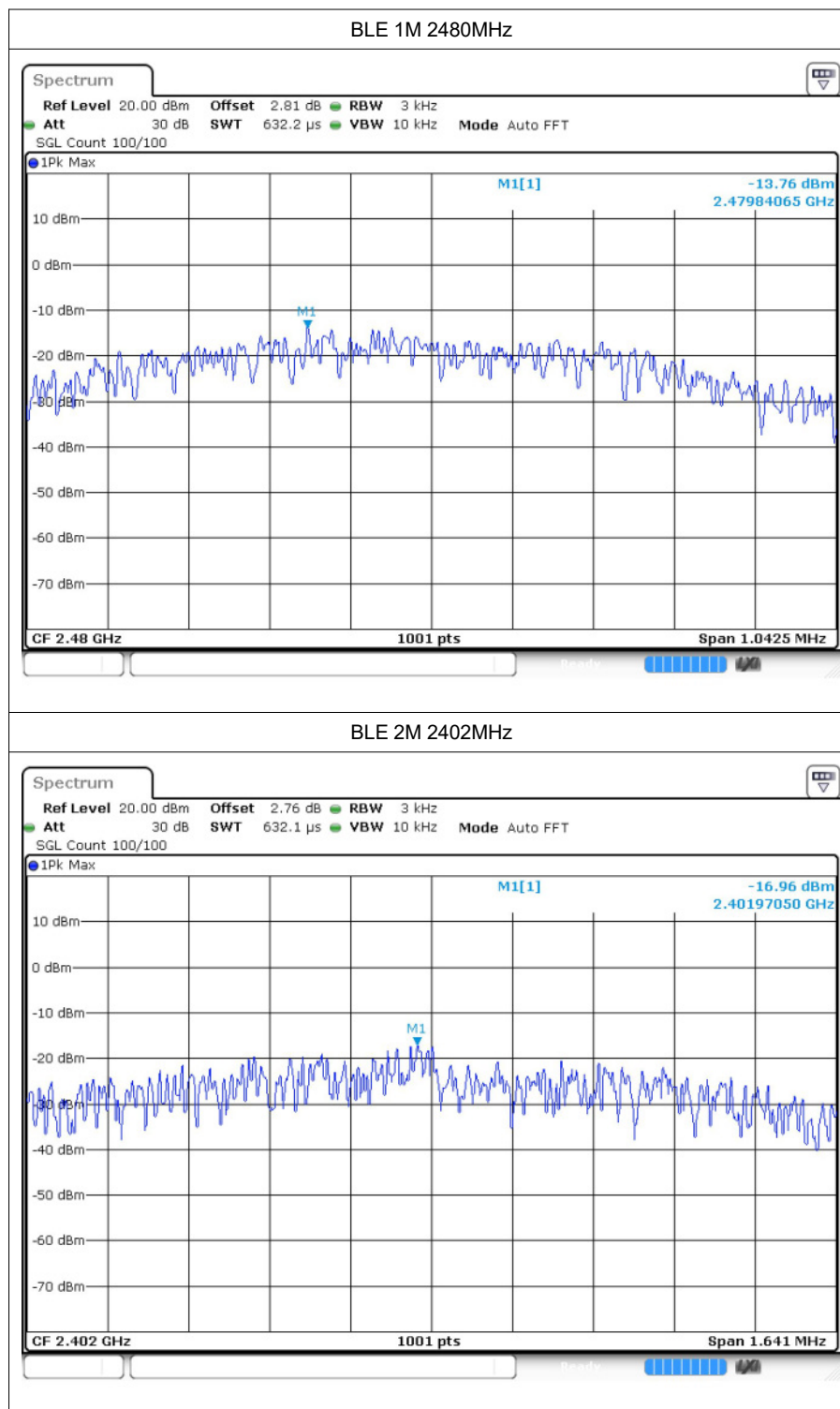
## 4 Maximum Power Spectral Density Level

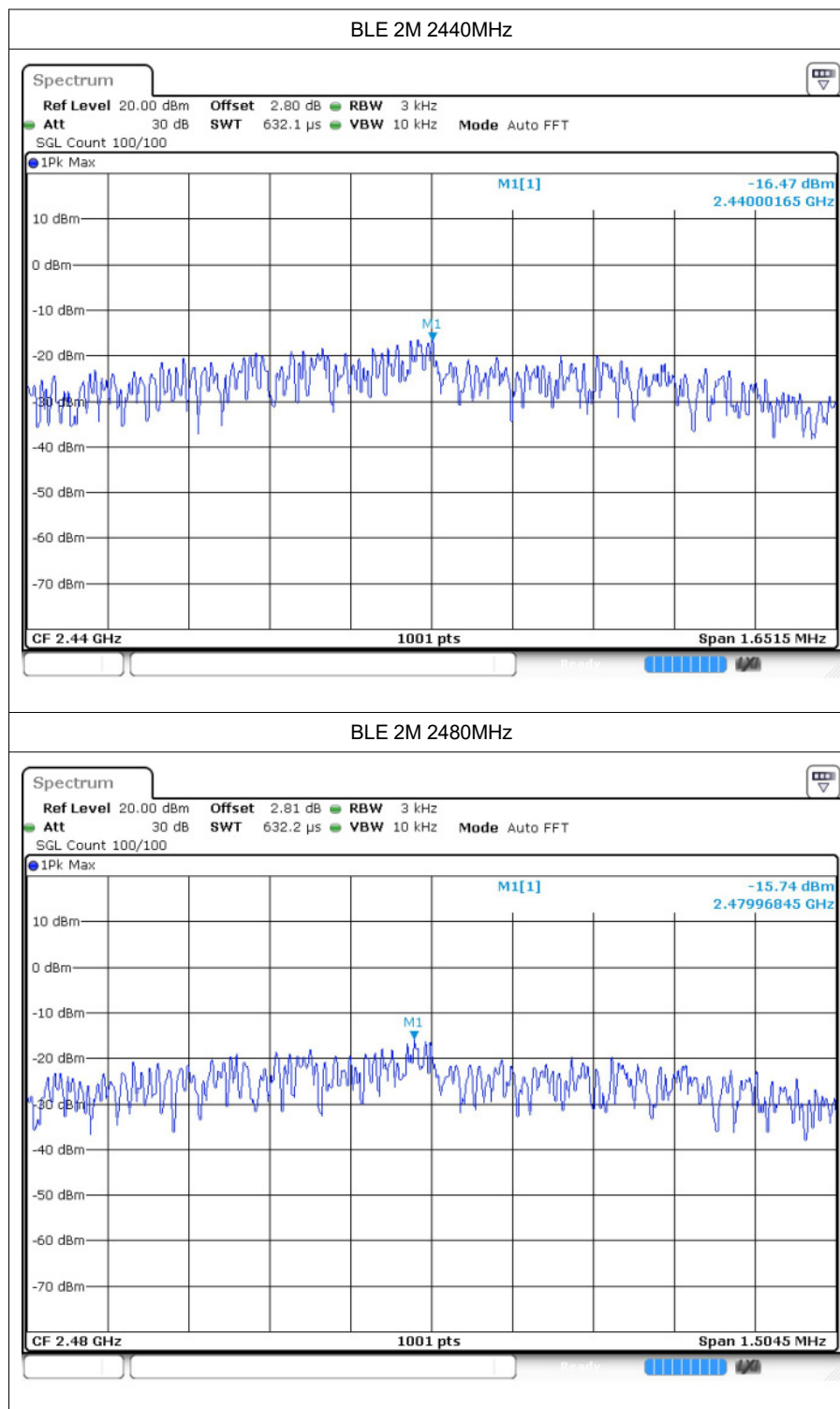
### 4.1 Test Result

| Mode   | Frequency (MHz) | Conducted PSD<br>(dBm/3kHz) | Limit<br>(dBm/3kHz) | Verdict |
|--------|-----------------|-----------------------------|---------------------|---------|
| BLE 1M | 2402            | -14.4                       | $\leq 8$            | Pass    |
| BLE 1M | 2440            | -13.82                      | $\leq 8$            | Pass    |
| BLE 1M | 2480            | -13.76                      | $\leq 8$            | Pass    |
| BLE 2M | 2402            | -16.96                      | $\leq 8$            | Pass    |
| BLE 2M | 2440            | -16.47                      | $\leq 8$            | Pass    |
| BLE 2M | 2480            | -15.74                      | $\leq 8$            | Pass    |

## 4.2 Test Graphs







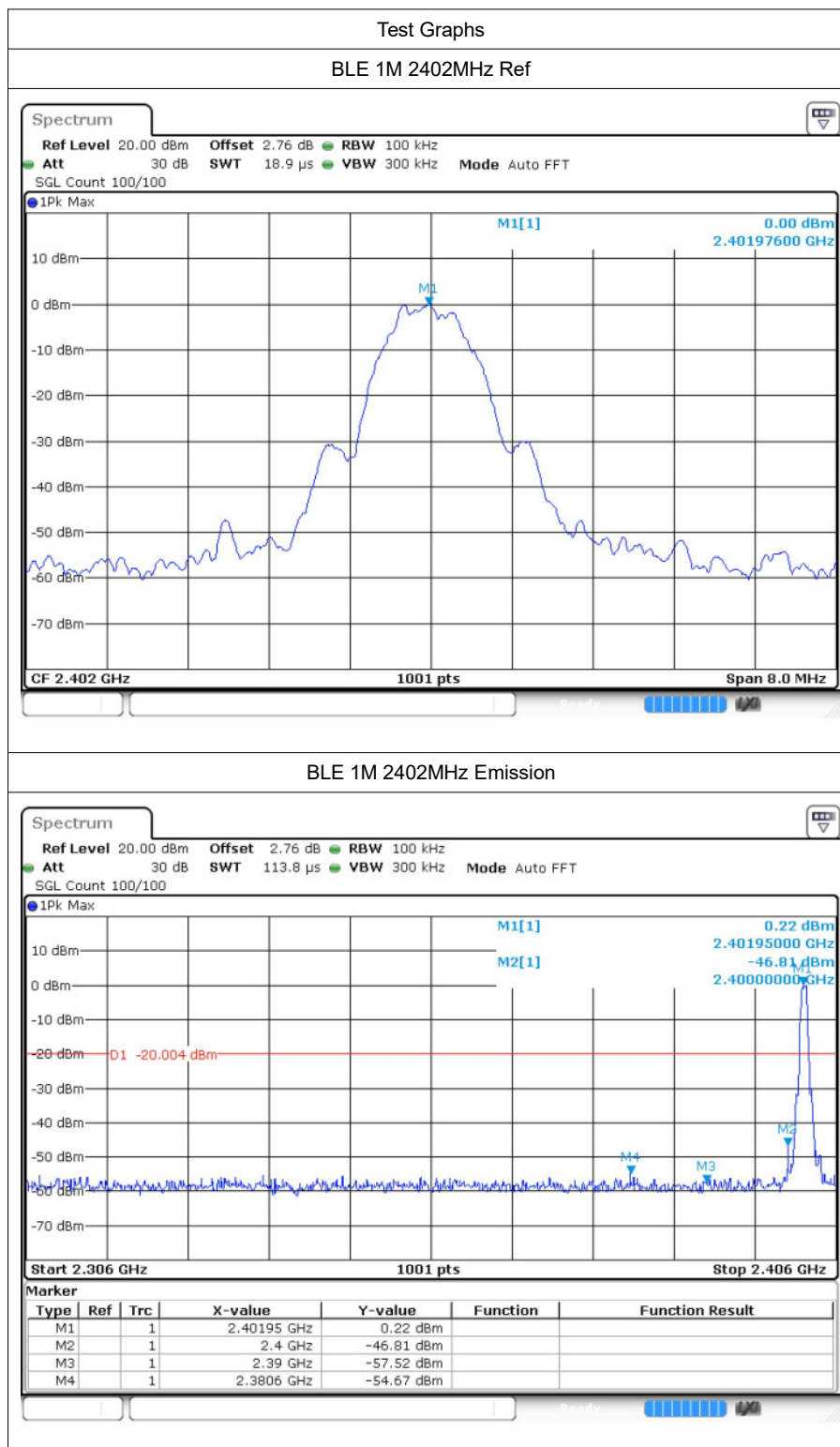


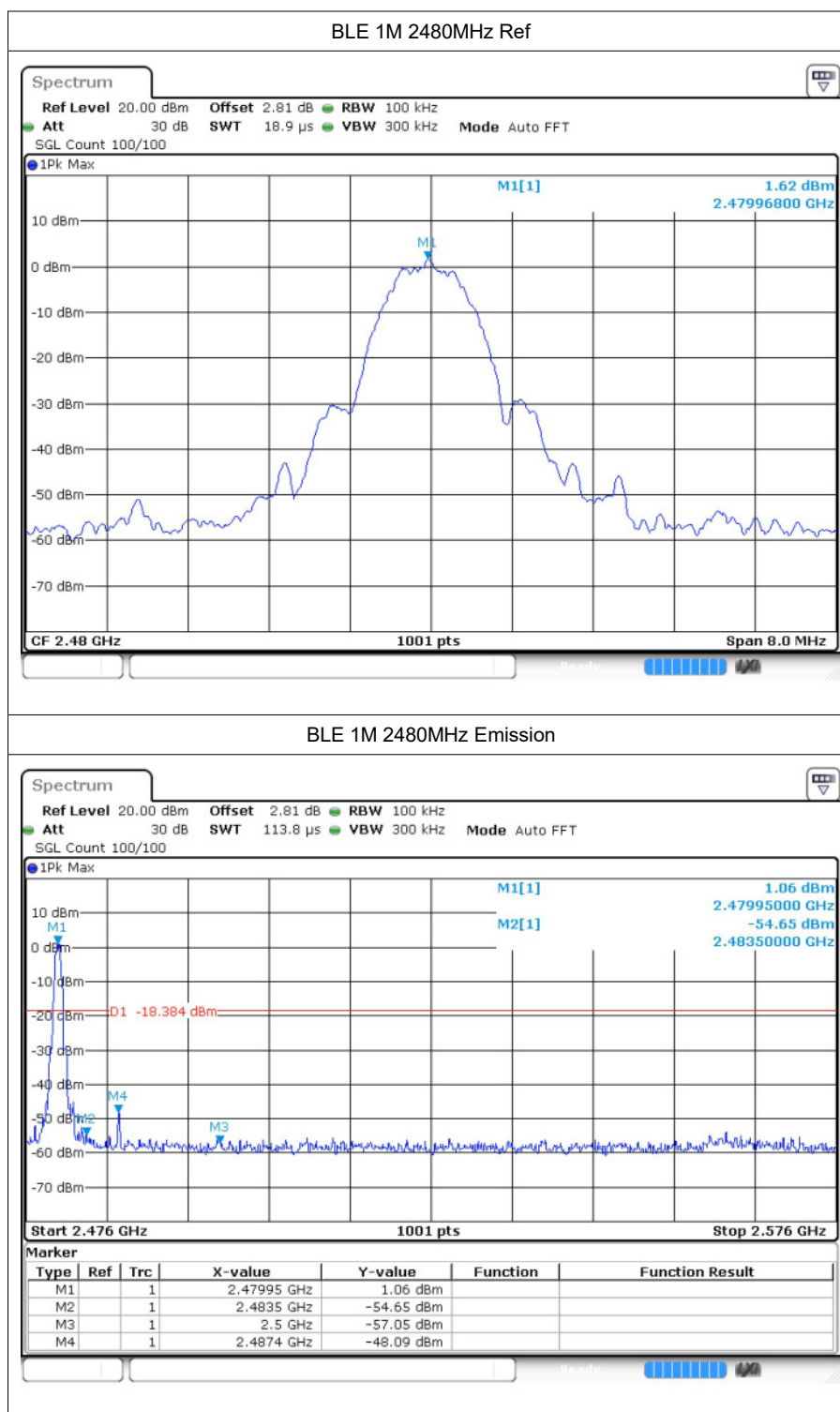
## 5 Band Edge

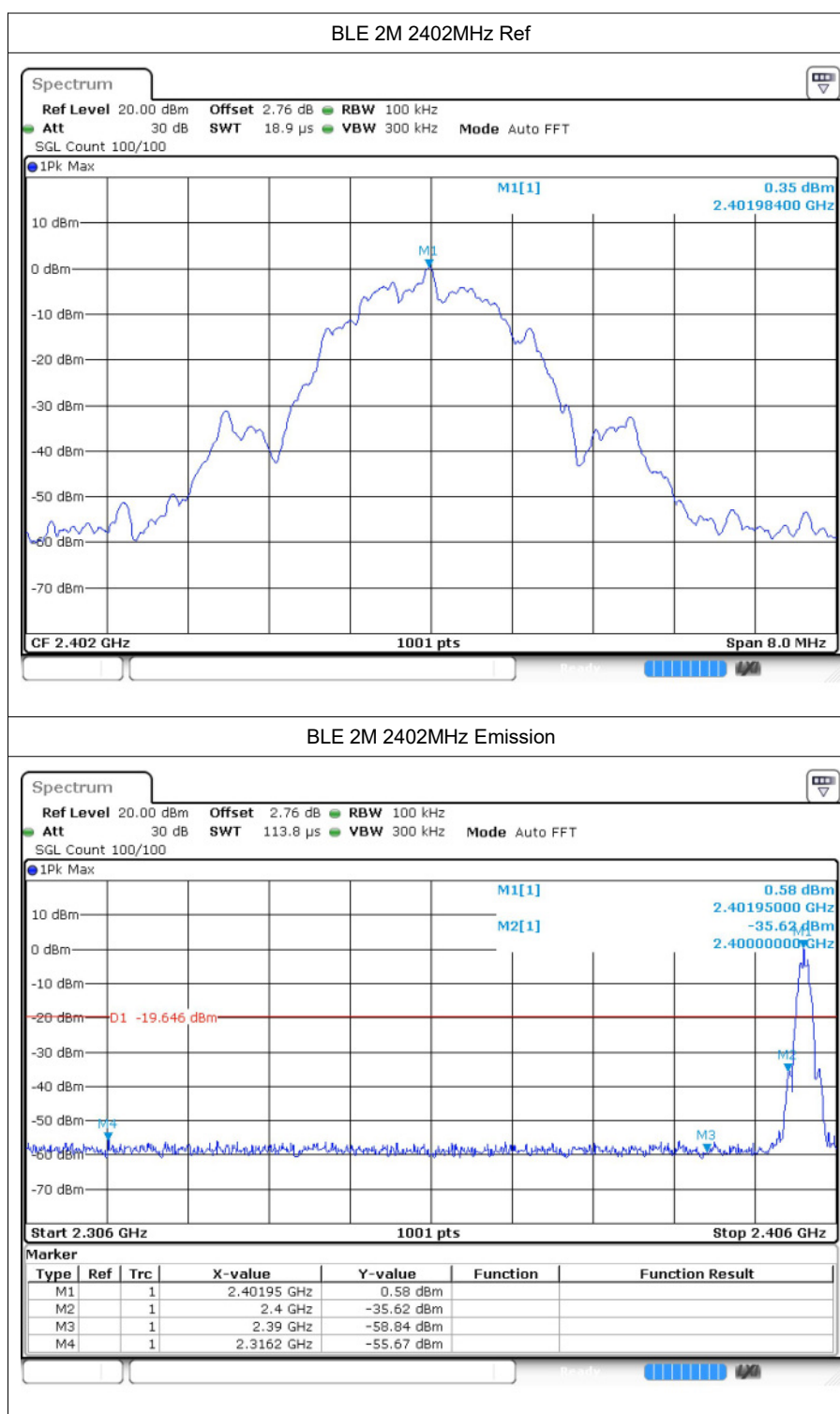
### 5.1 Test Result

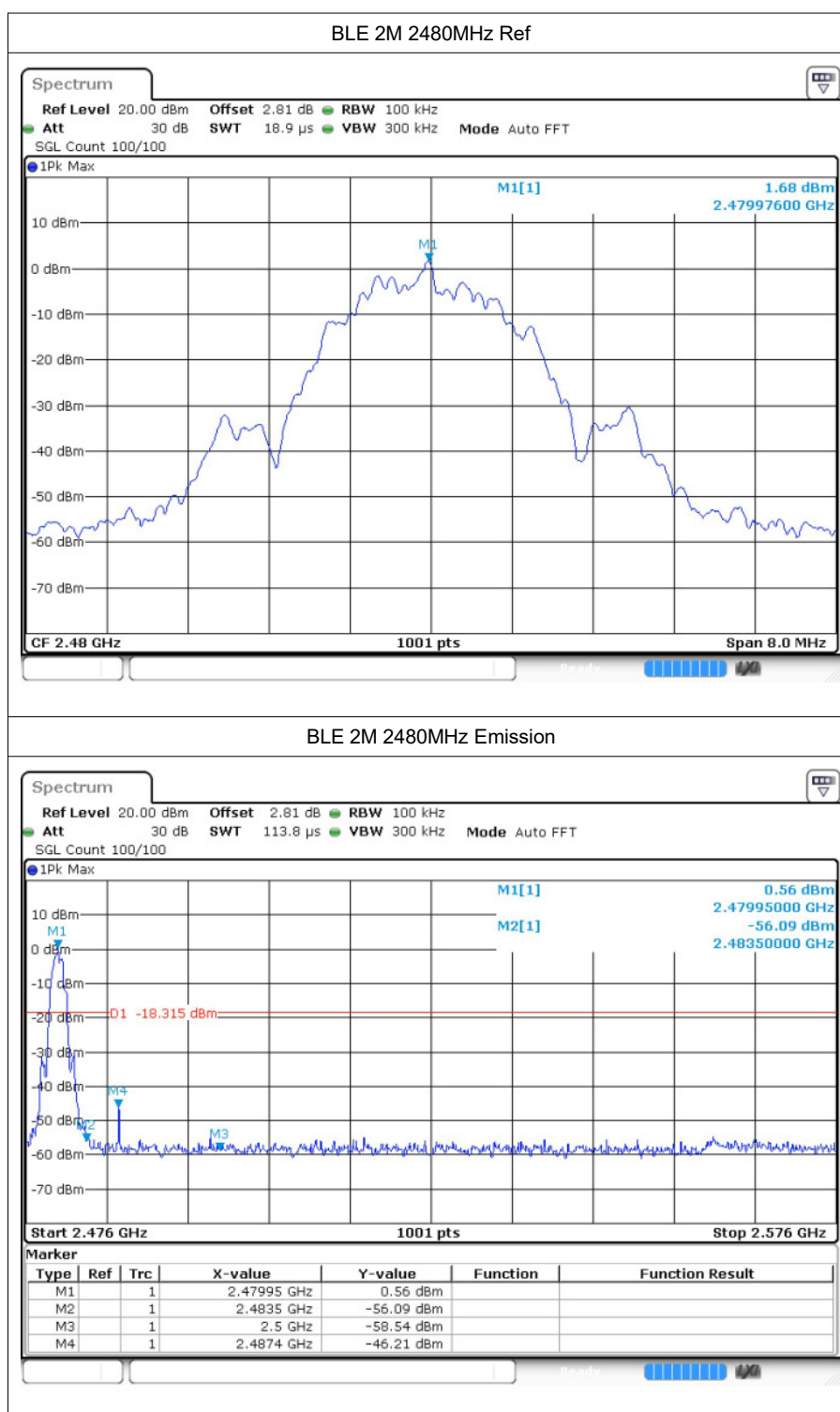
| Mode   | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|--------|-----------------|-----------------|-------------|---------|
| BLE 1M | 2402            | -54.66          | -20         | Pass    |
| BLE 1M | 2480            | -49.7           | -20         | Pass    |
| BLE 2M | 2402            | -56.02          | -20         | Pass    |
| BLE 2M | 2480            | -47.89          | -20         | Pass    |

## 5.2 Test Graphs









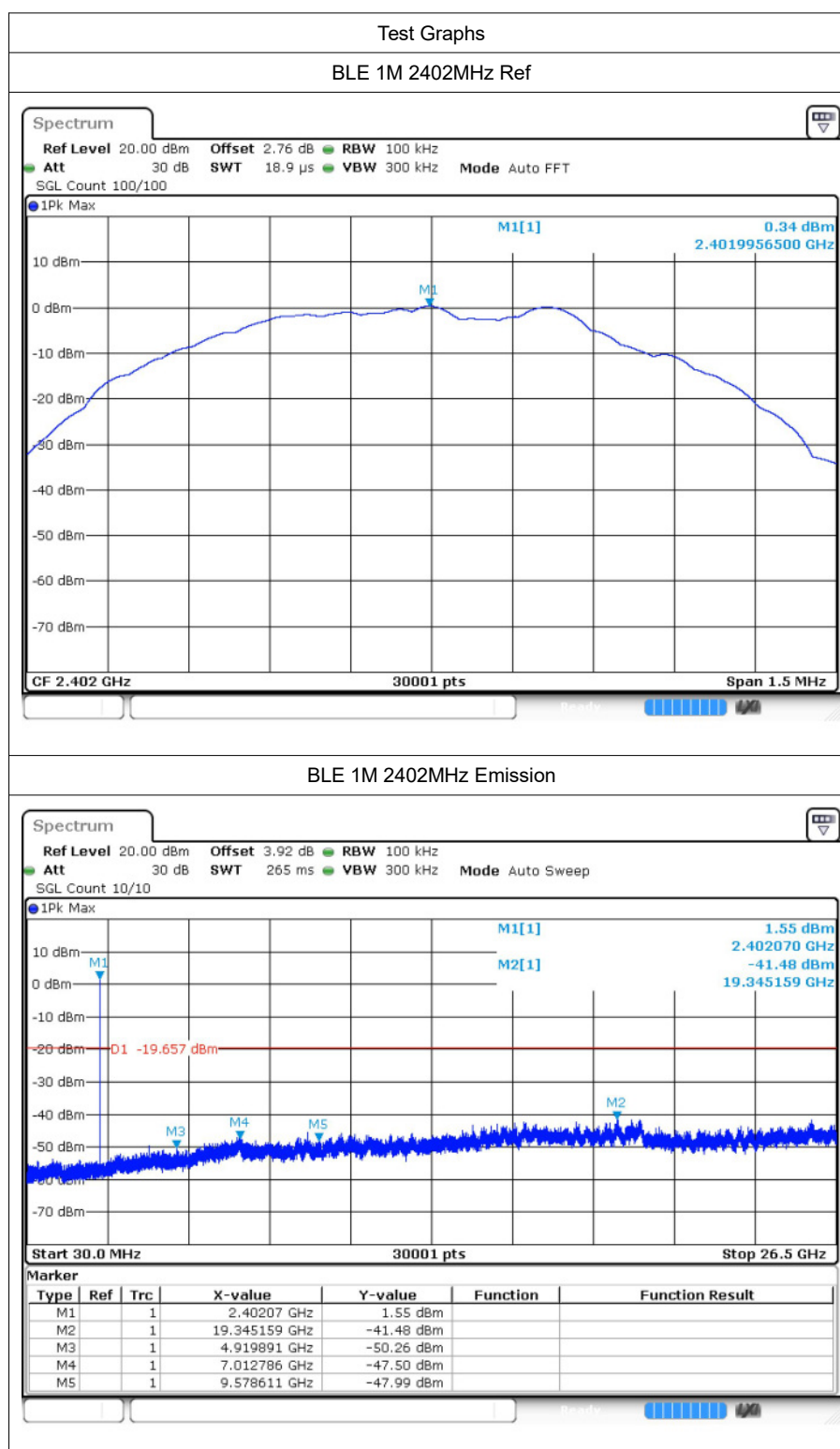


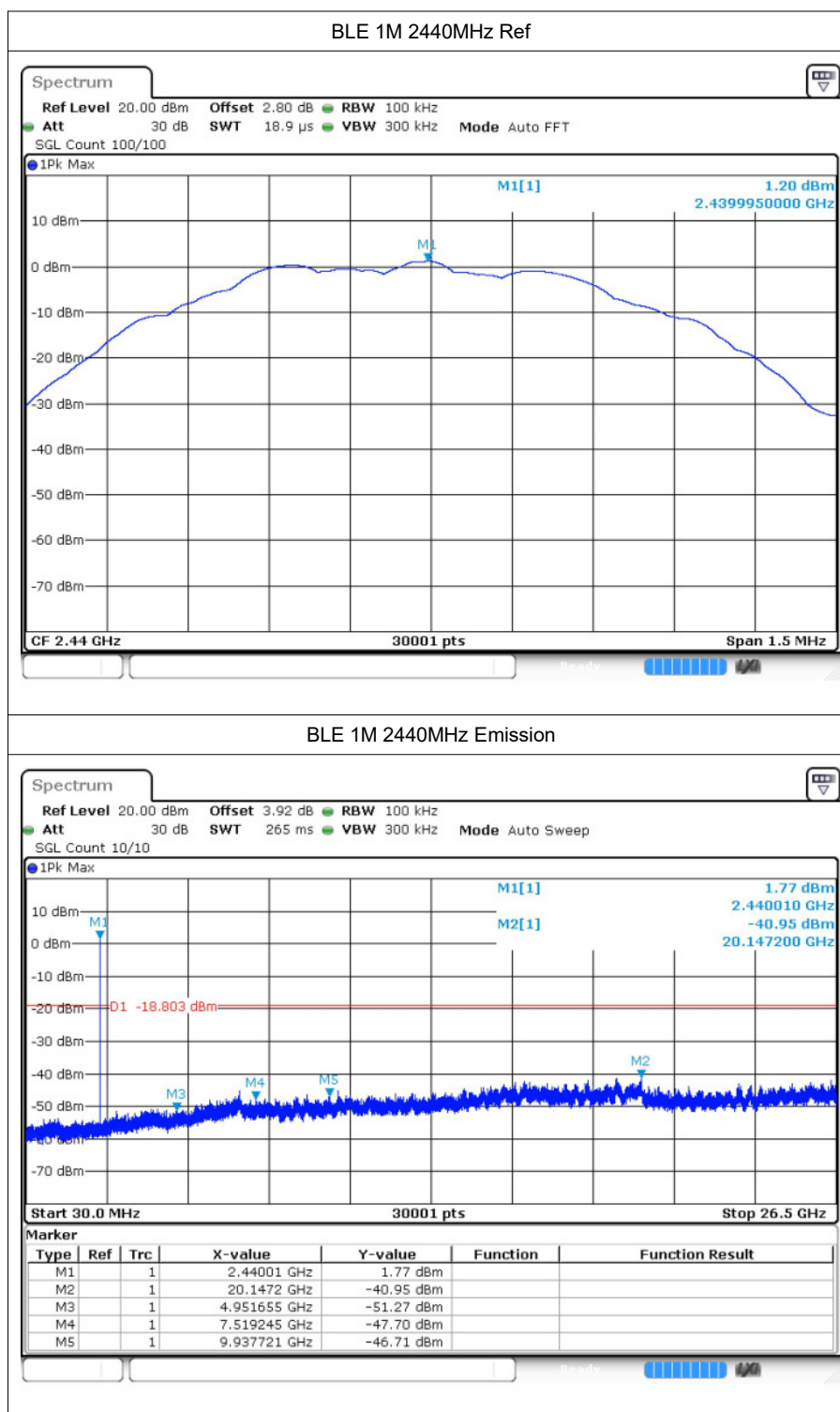
## 6 Conducted RF Spurious Emission

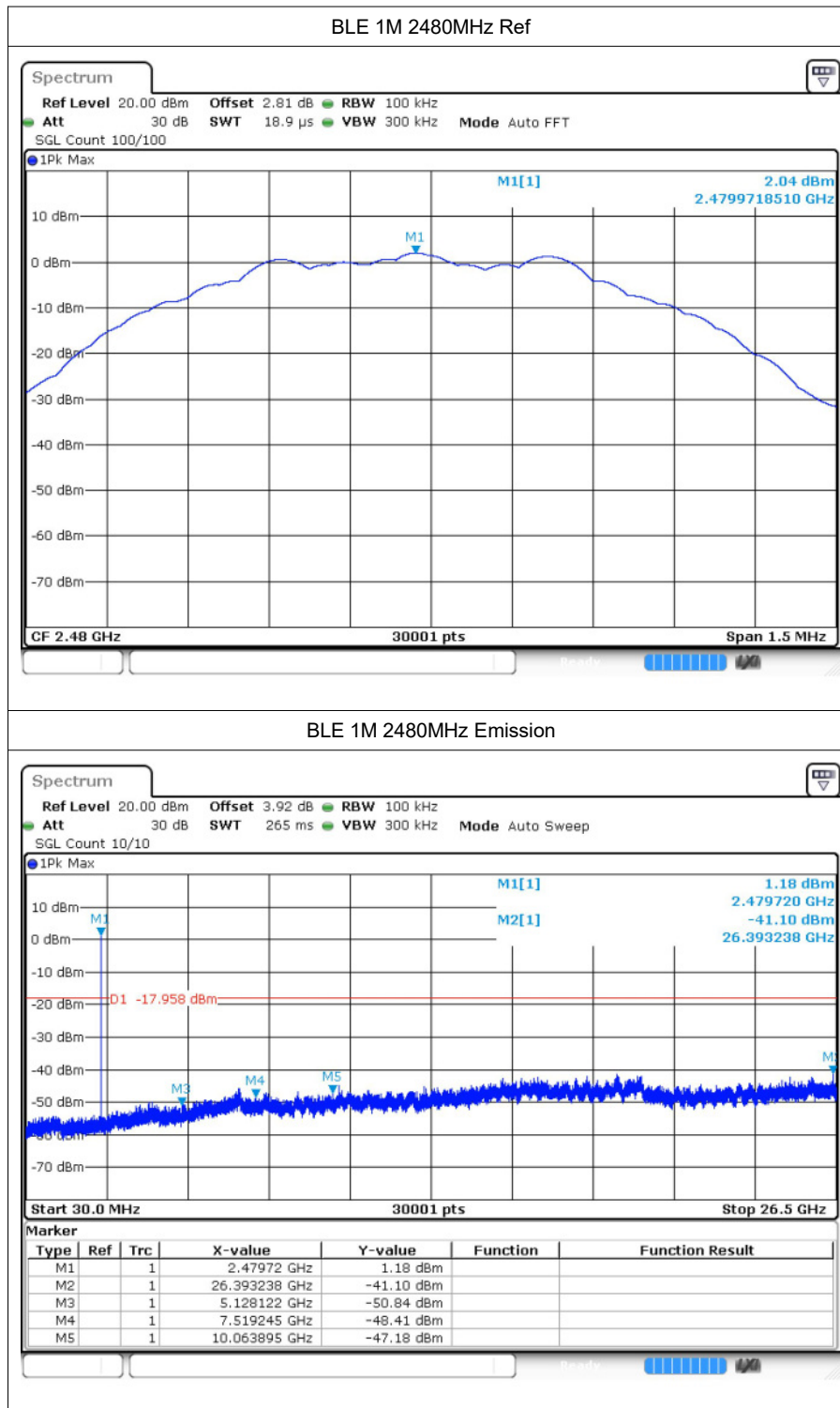
### 6.1 Test Result

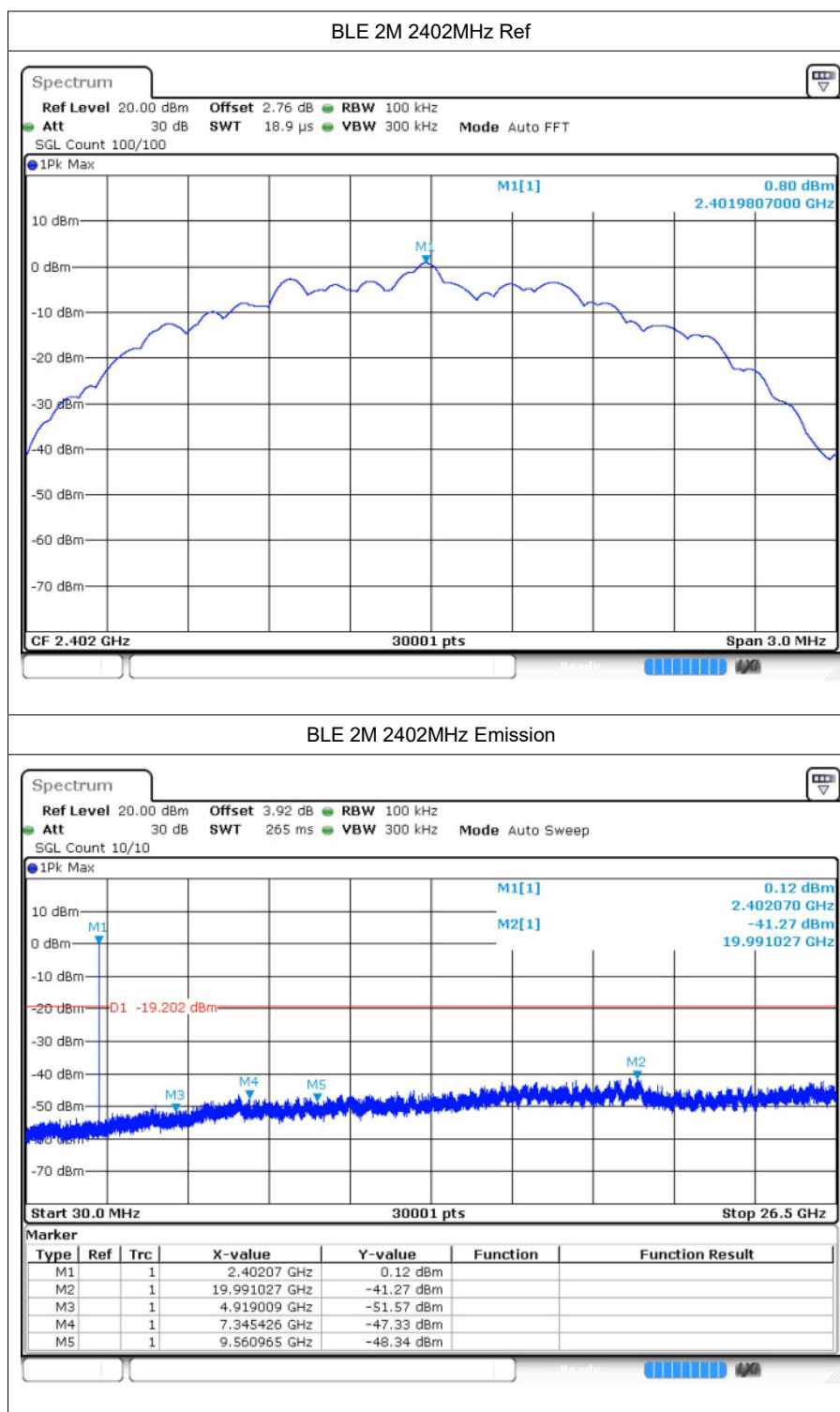
| Mode   | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|--------|-----------------|-----------------|-------------|---------|
| BLE 1M | 2402            | -41.81          | -20         | Pass    |
| BLE 1M | 2440            | -42.14          | -20         | Pass    |
| BLE 1M | 2480            | -43.14          | -20         | Pass    |
| BLE 2M | 2402            | -42.06          | -20         | Pass    |
| BLE 2M | 2440            | -42.85          | -20         | Pass    |
| BLE 2M | 2480            | -43.39          | -20         | Pass    |

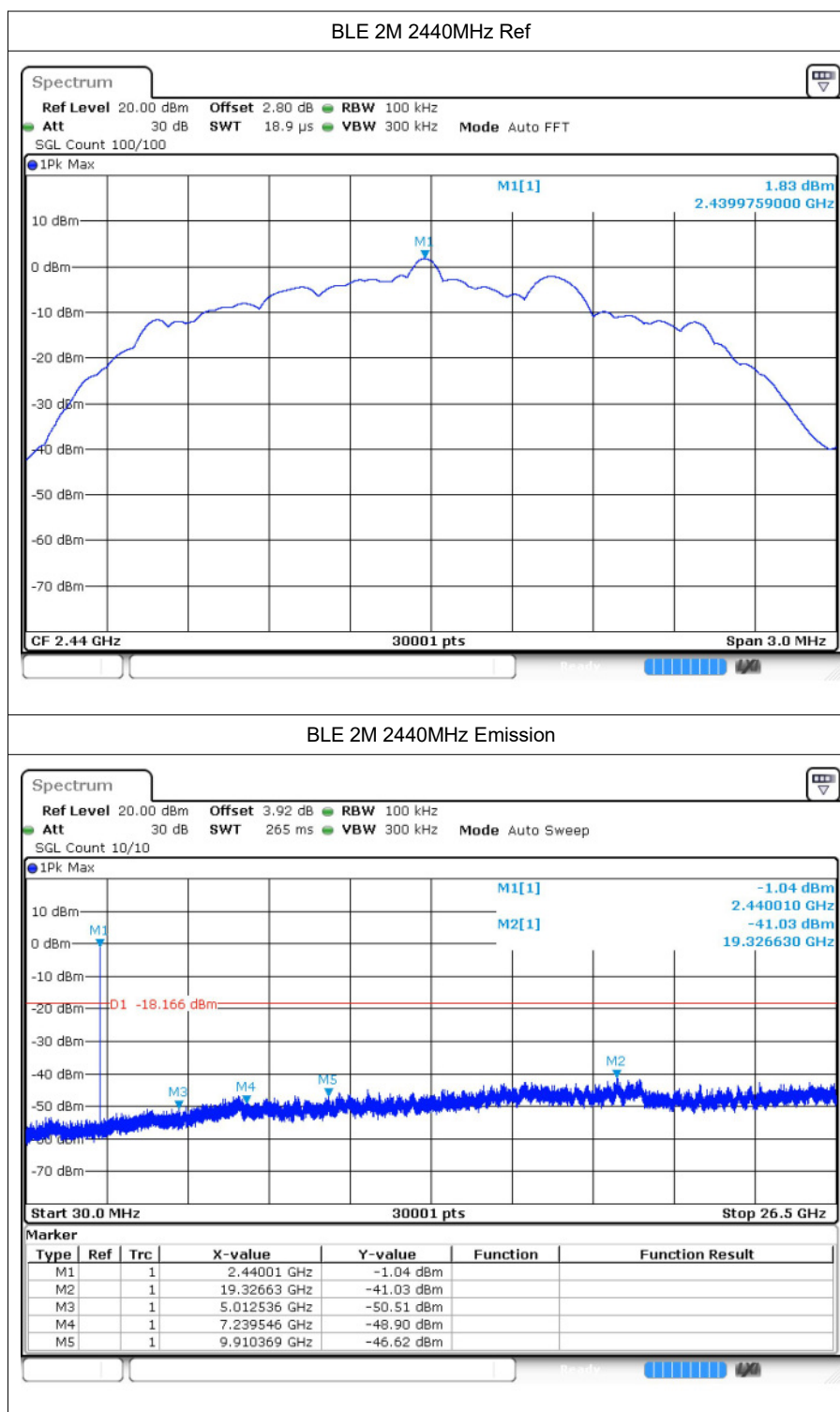
## 6.2 Test Graphs

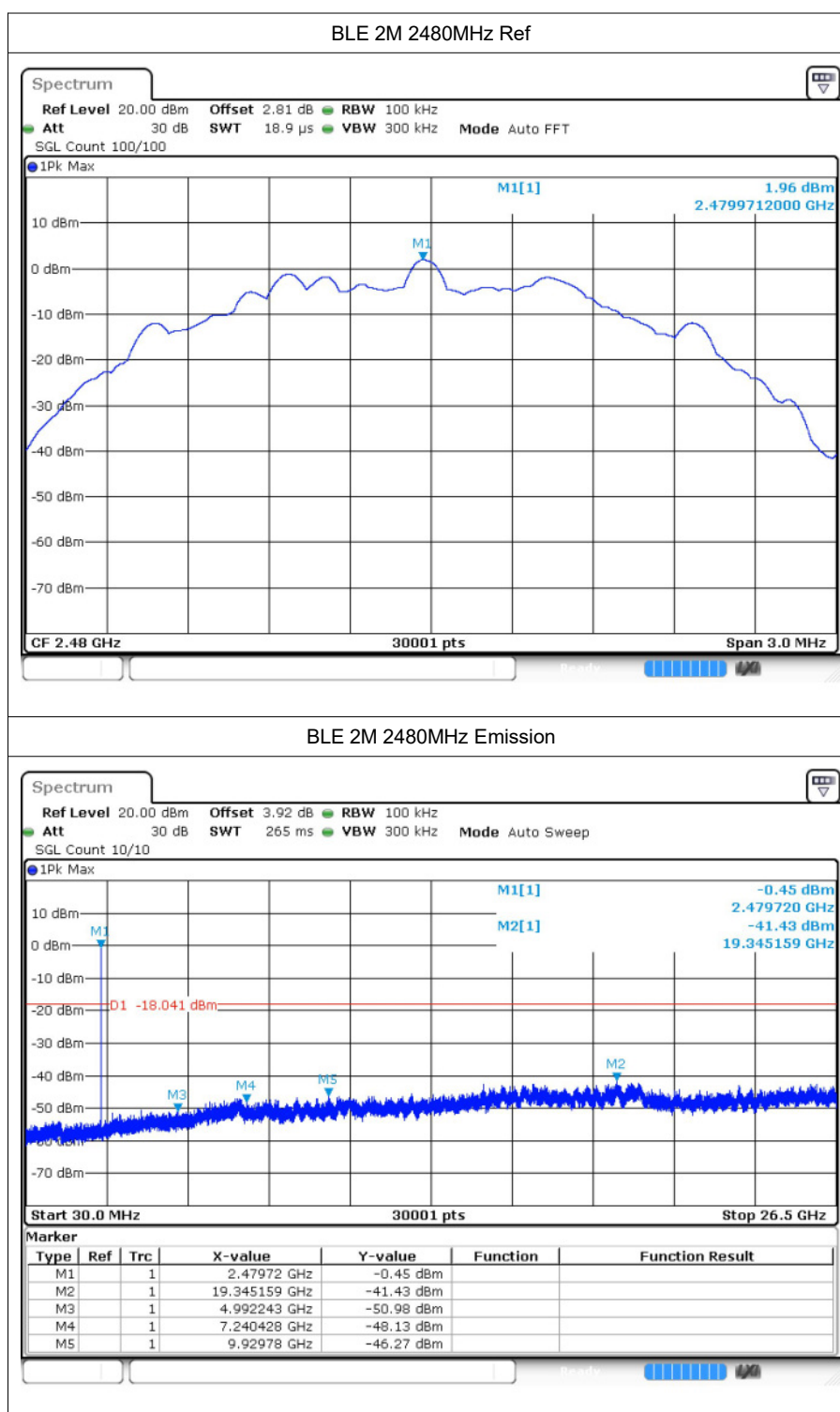












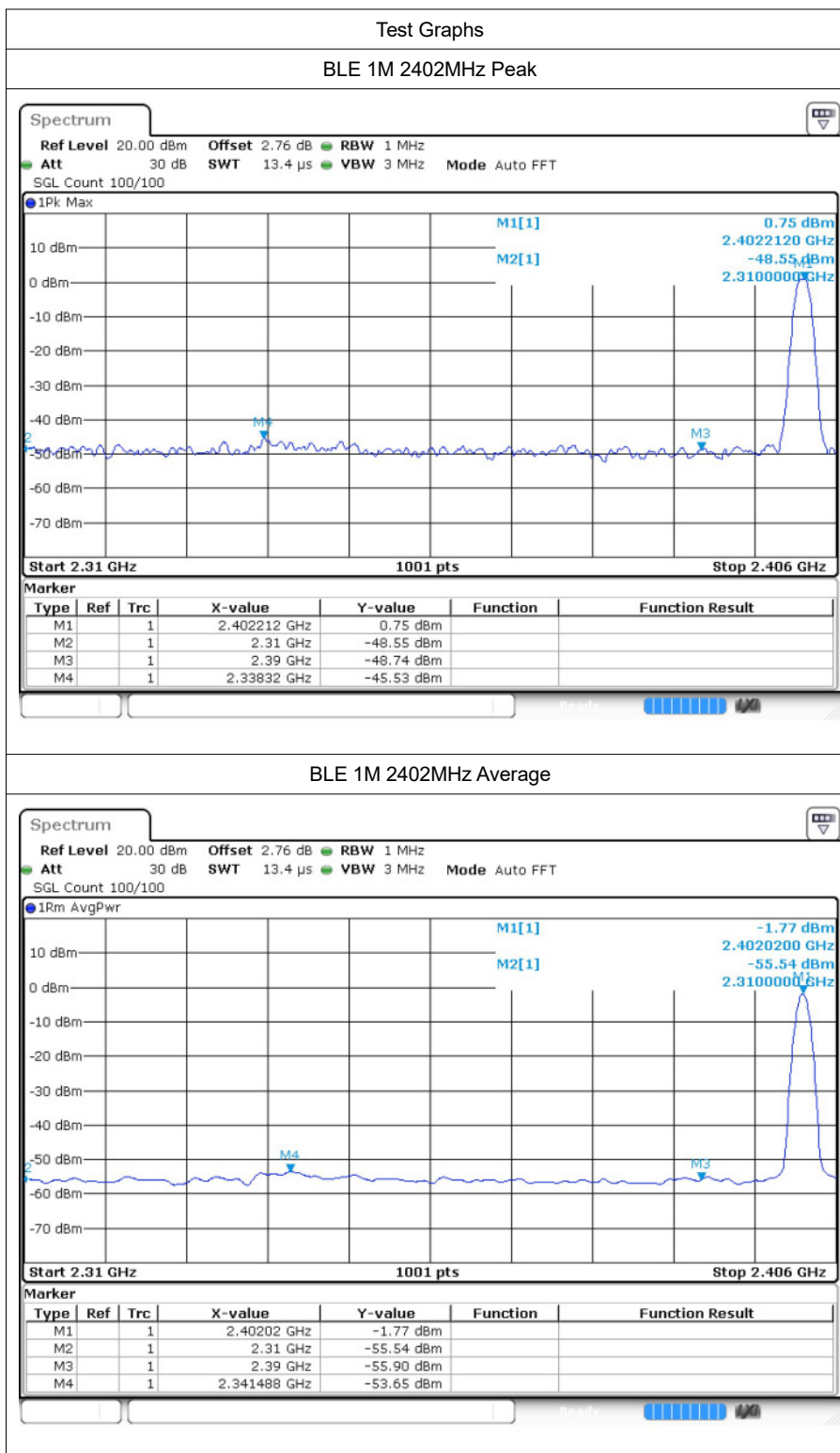


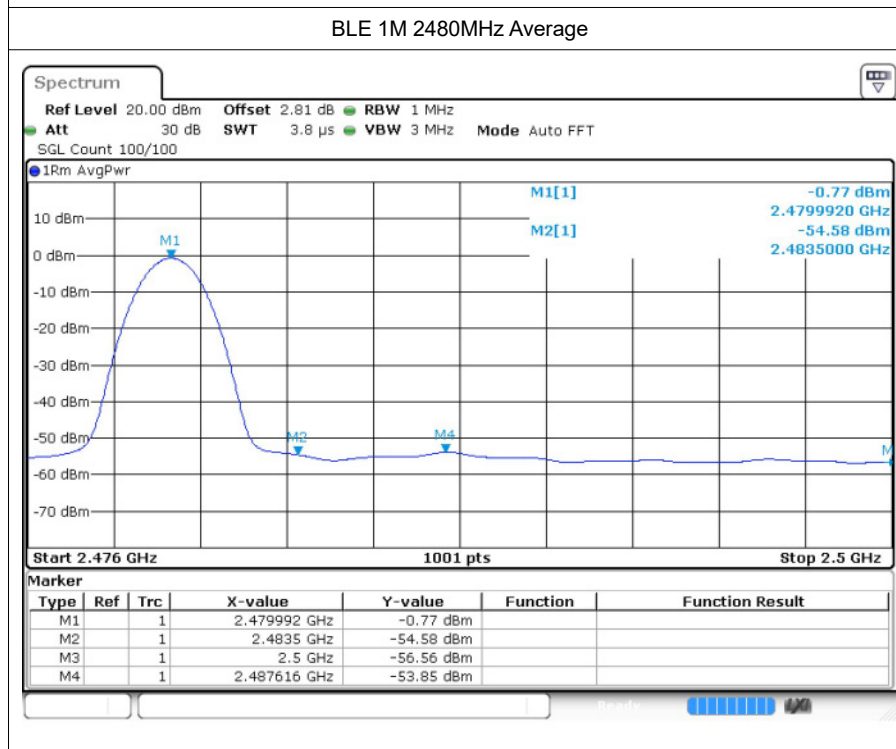
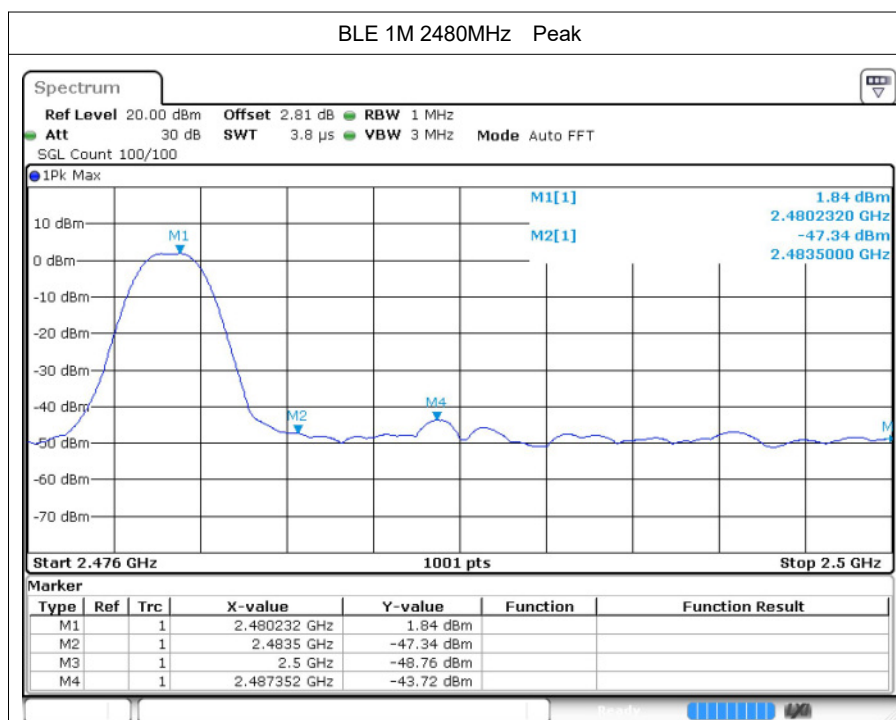
## 7 Restrict Band

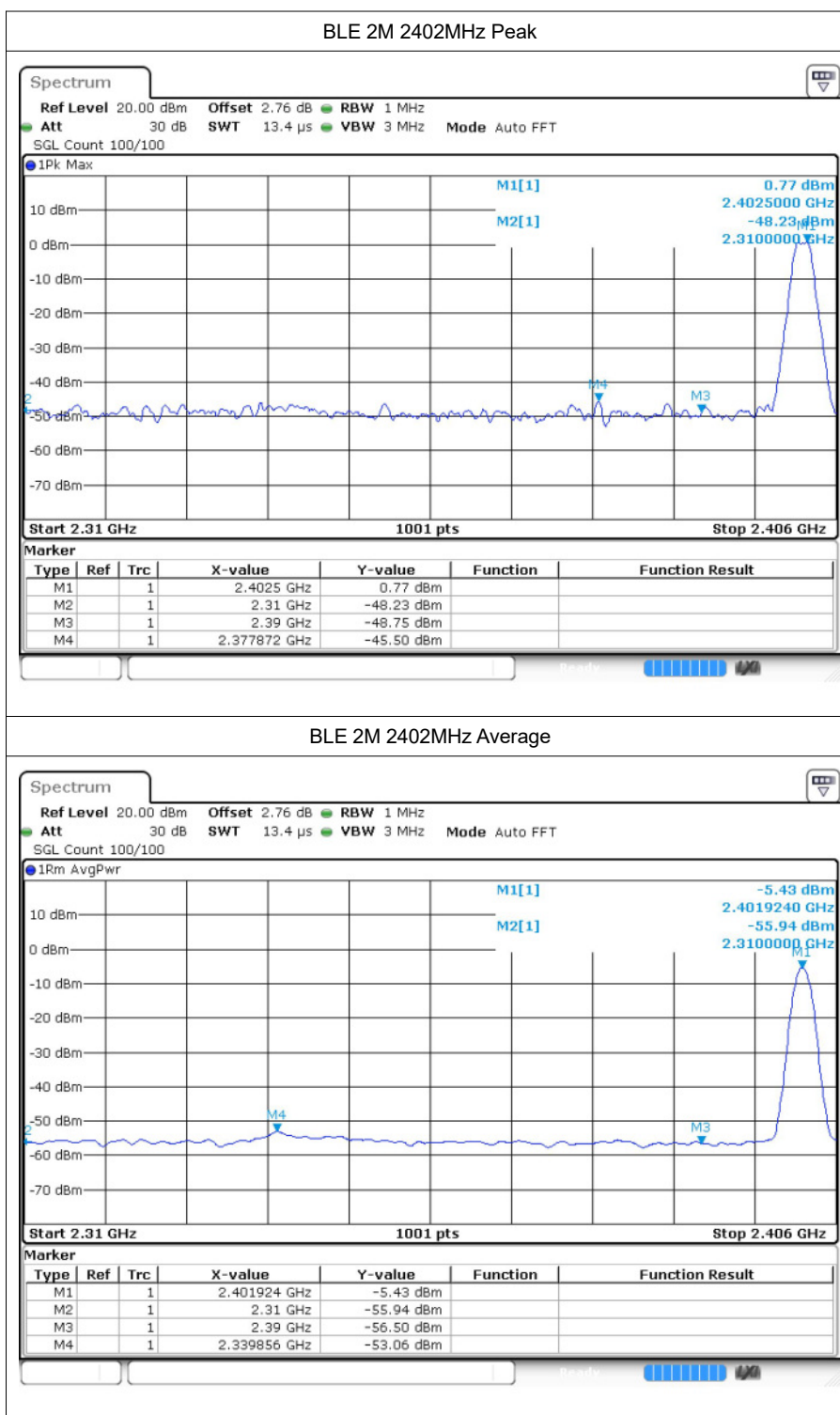
### 7.1 Test Result

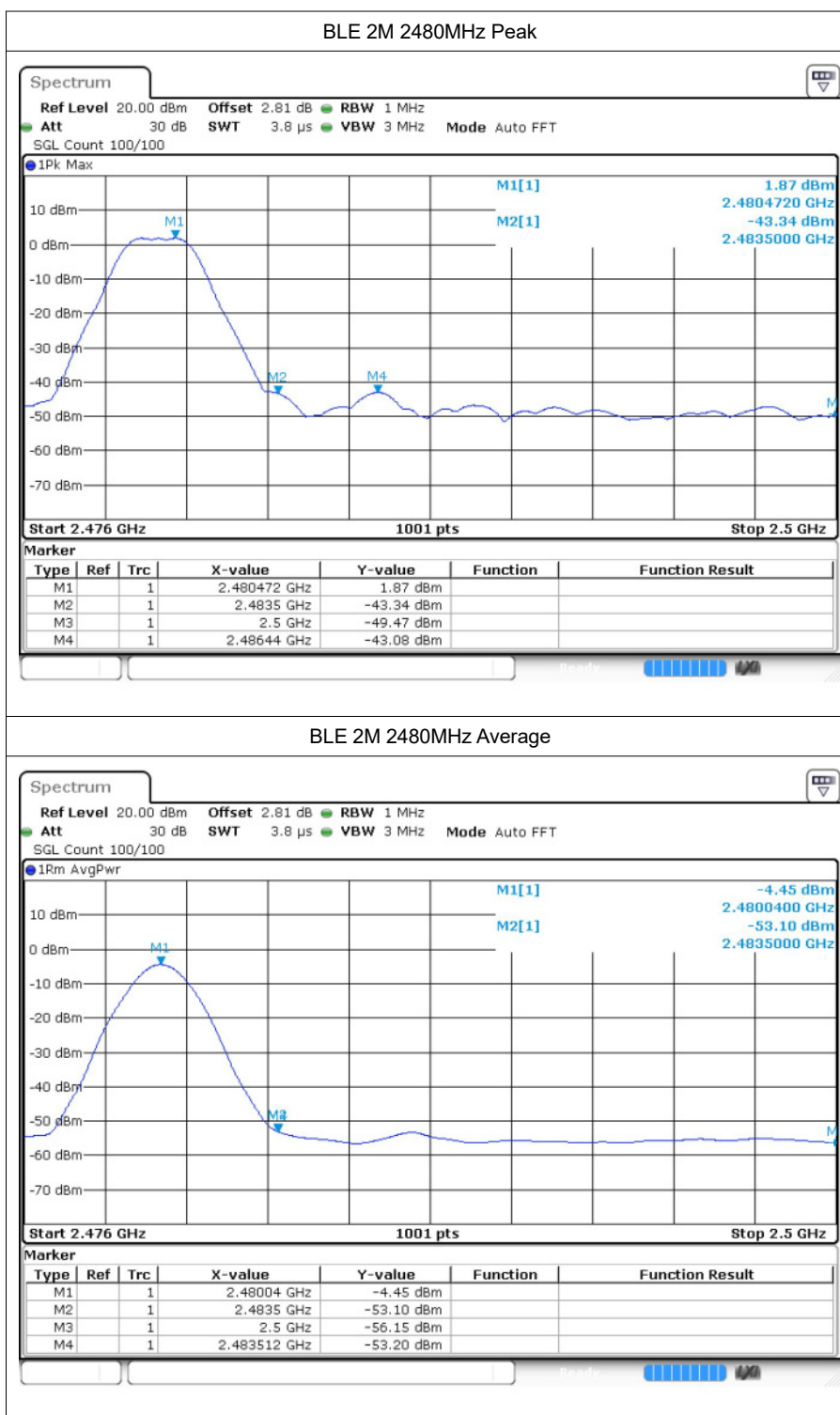
| Mode   | Frequency (MHz) | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|--------|-----------------|-----------------|-------------|------------|-------------|------------|----------|----------------|---------|
| BLE 1M | 2402            | 2310            | -48.55      | 3          | -           | 49.68      | Peak     | 74             | Pass    |
| BLE 1M | 2402            | 2310            | -55.54      | 3          | 1.94        | 44.63      | Average  | 54             | Pass    |
| BLE 1M | 2402            | 2338.32         | -45.53      | 3          | -           | 52.70      | Peak     | 74             | Pass    |
| BLE 1M | 2402            | 2341.488        | -53.64      | 3          | 1.94        | 46.53      | Average  | 54             | Pass    |
| BLE 1M | 2402            | 2390            | -48.74      | 3          | -           | 49.49      | Peak     | 74             | Pass    |
| BLE 1M | 2402            | 2390            | -55.9       | 3          | 1.94        | 44.27      | Average  | 54             | Pass    |
| BLE 1M | 2480            | 2483.5          | -47.34      | 3          | -           | 50.89      | Peak     | 74             | Pass    |
| BLE 1M | 2480            | 2483.5          | -54.58      | 3          | 1.94        | 45.59      | Average  | 54             | Pass    |
| BLE 1M | 2480            | 2487.352        | -43.71      | 3          | -           | 54.52      | Peak     | 74             | Pass    |
| BLE 1M | 2480            | 2487.616        | -53.84      | 3          | 1.94        | 46.33      | Average  | 54             | Pass    |
| BLE 1M | 2480            | 2500            | -48.76      | 3          | -           | 49.47      | Peak     | 74             | Pass    |
| BLE 1M | 2480            | 2500            | -56.56      | 3          | 1.94        | 43.61      | Average  | 54             | Pass    |
| BLE 2M | 2402            | 2310            | -48.23      | 3          | -           | 50.00      | Peak     | 74             | Pass    |
| BLE 2M | 2402            | 2310            | -55.94      | 3          | 4.54        | 46.83      | Average  | 54             | Pass    |
| BLE 2M | 2402            | 2377.872        | -45.49      | 3          | -           | 52.74      | Peak     | 74             | Pass    |
| BLE 2M | 2402            | 2339.856        | -53.06      | 3          | 4.54        | 49.71      | Average  | 54             | Pass    |
| BLE 2M | 2402            | 2390            | -48.75      | 3          | -           | 49.48      | Peak     | 74             | Pass    |
| BLE 2M | 2402            | 2390            | -56.5       | 3          | 4.54        | 46.27      | Average  | 54             | Pass    |
| BLE 2M | 2480            | 2483.5          | -43.34      | 3          | -           | 54.89      | Peak     | 74             | Pass    |
| BLE 2M | 2480            | 2483.5          | -53.1       | 3          | 4.61        | 49.74      | Average  | 54             | Pass    |
| BLE 2M | 2480            | 2486.44         | -43.07      | 3          | -           | 55.16      | Peak     | 74             | Pass    |
| BLE 2M | 2480            | 2483.512        | -53.19      | 3          | 4.61        | 49.65      | Average  | 54             | Pass    |
| BLE 2M | 2480            | 2500            | -49.47      | 3          | -           | 48.76      | Peak     | 74             | Pass    |
| BLE 2M | 2480            | 2500            | -56.15      | 3          | 4.61        | 46.69      | Average  | 54             | Pass    |

## 7.2 Test Graphs









---The End---