



## Appendix B

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

Product Name: ICBlocks Screen-Free Coding Robot Kit

Trade Mark: N/A

Test Model: ICA0123

#### Environmental Conditions

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



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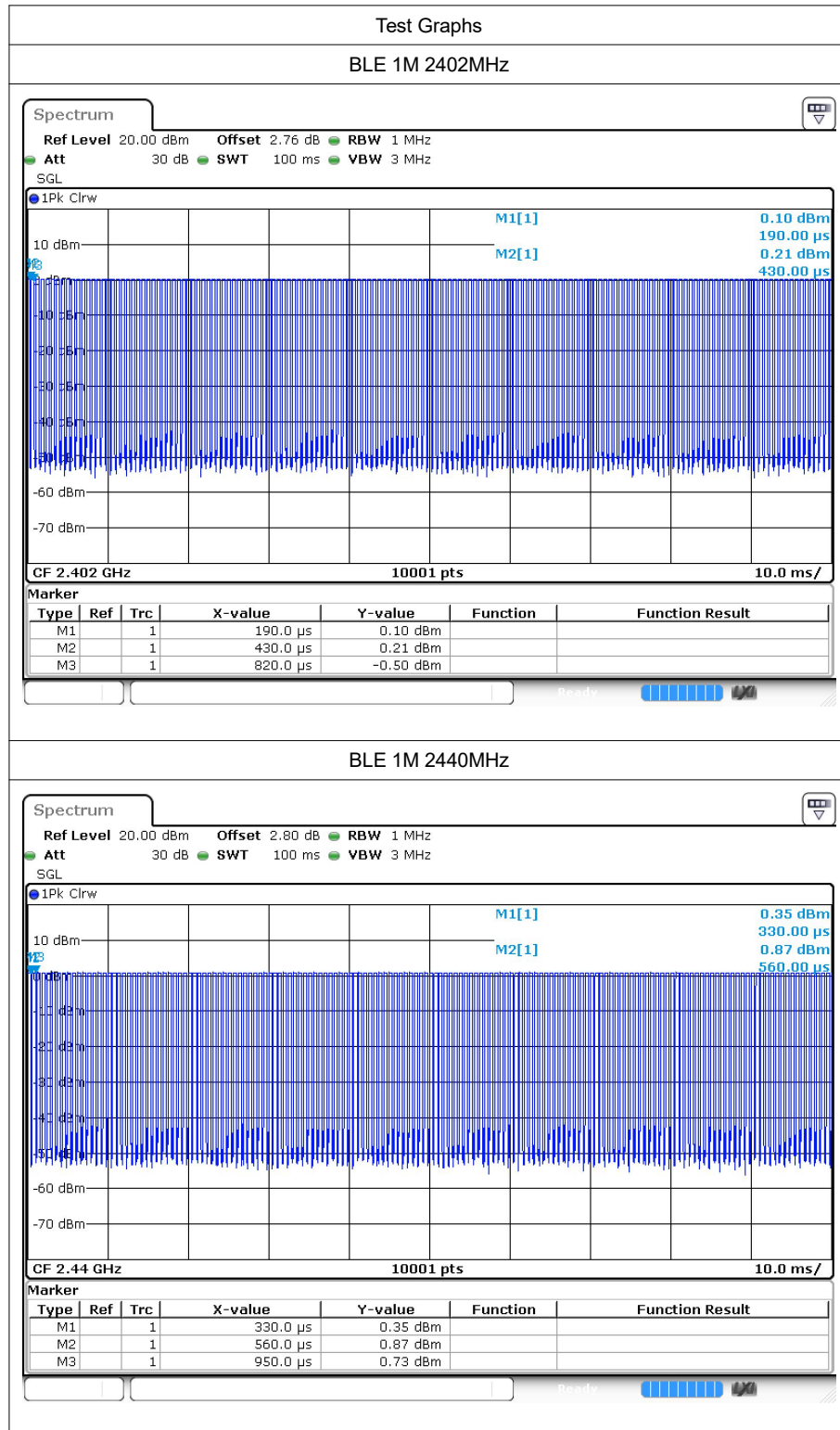


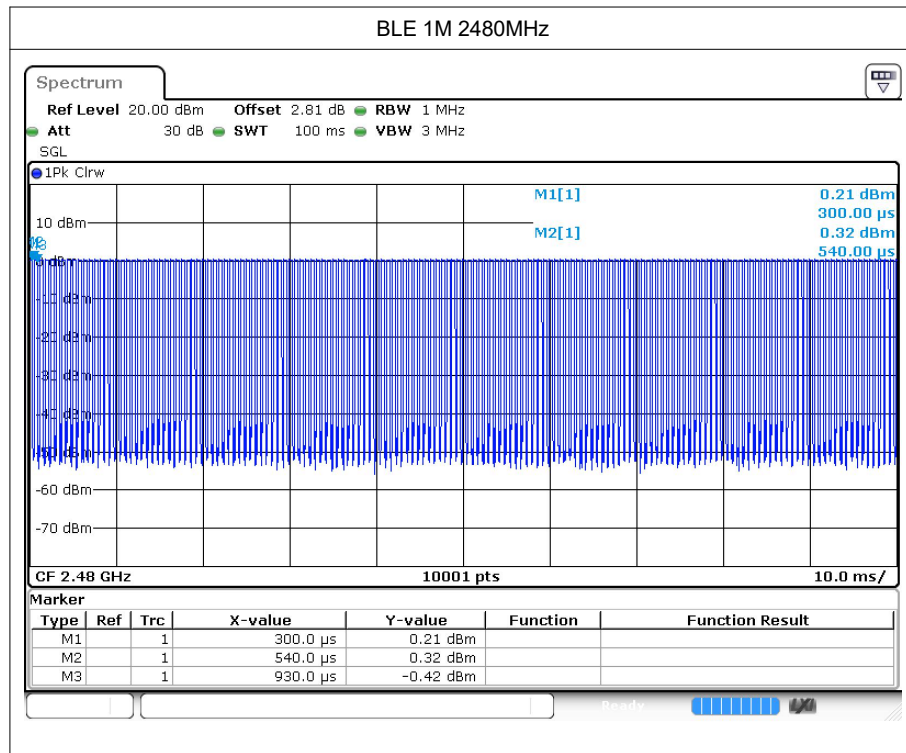
# 1 Duty Cycle

## 1.1 Test Result

| Mode   | Frequency (MHz) | Duty Cycle (%) | Correction Factor | 1/T (kHz) |
|--------|-----------------|----------------|-------------------|-----------|
| BLE 1M | 2402            | 64             | 1.94              | 2.56      |
| BLE 1M | 2440            | 64.72          | 1.89              | 2.56      |
| BLE 1M | 2480            | 64.57          | 1.9               | 2.56      |

## 1.2 Test Graphs





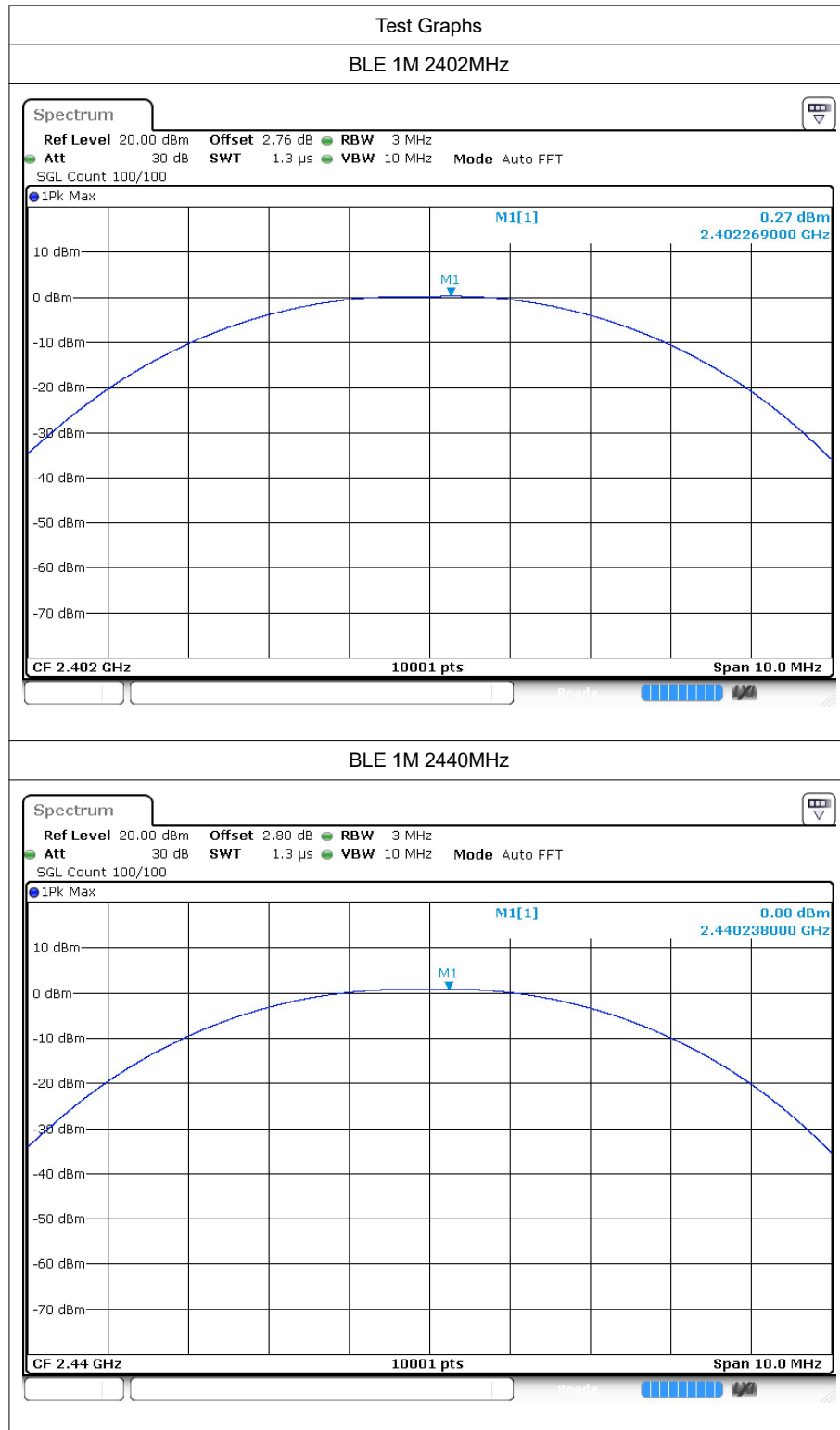


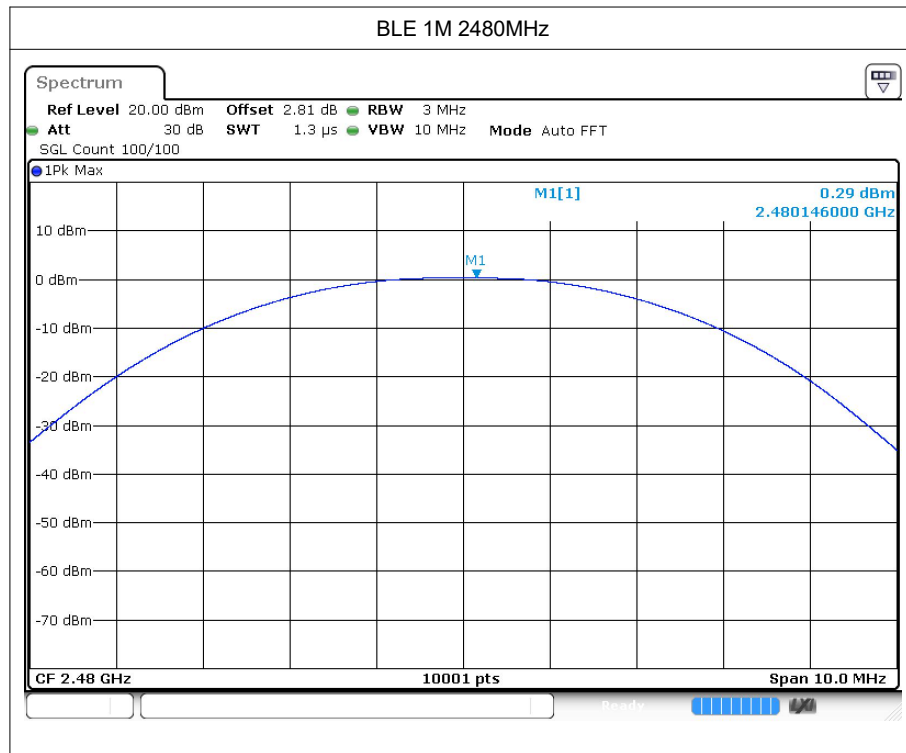
## 2 Maximum Conducted Output Power

### 2.1 Test Result

| Mode   | Frequency (MHz) | Conducted Power<br>(dBm) | Limit (dBm) | Verdict |
|--------|-----------------|--------------------------|-------------|---------|
| BLE 1M | 2402            | 0.27                     | 30          | Pass    |
| BLE 1M | 2440            | 0.88                     | 30          | Pass    |
| BLE 1M | 2480            | 0.29                     | 30          | Pass    |

## 2.2 Test Graphs





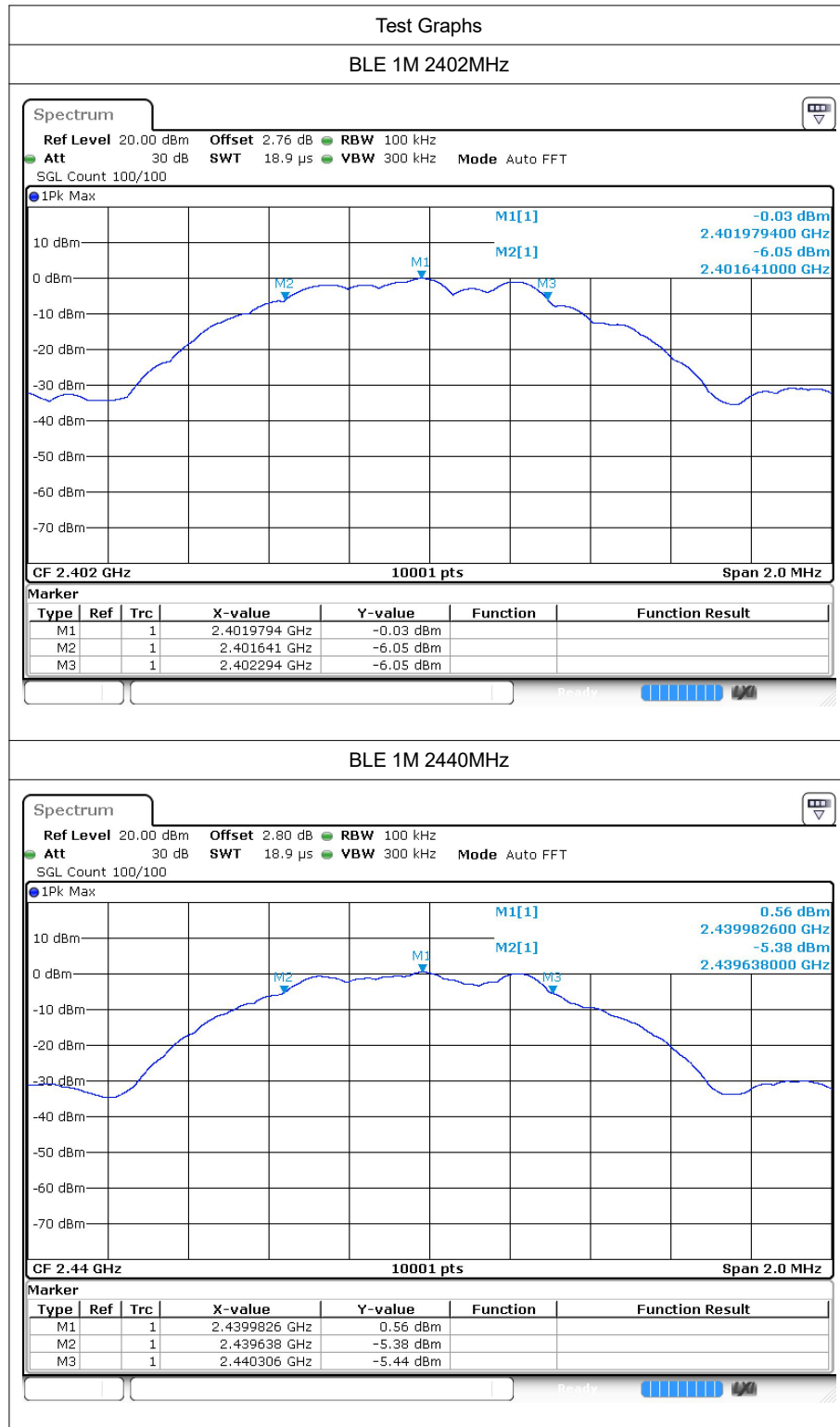


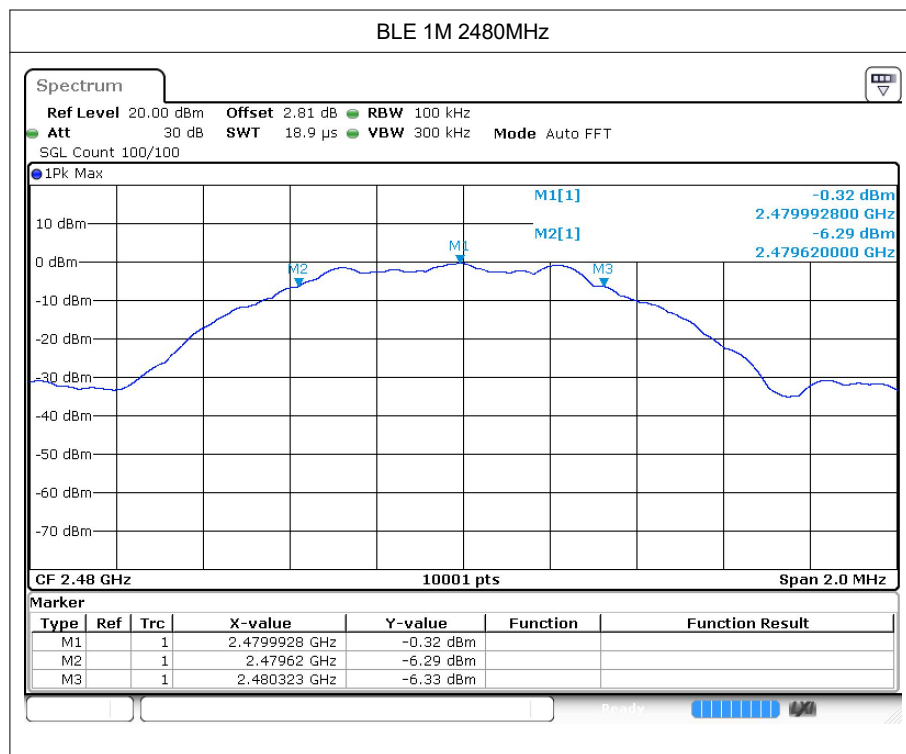
### 3 -6dB Bandwidth

#### 3.1 Test Result

| Mode   | Frequency (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|--------|-----------------|-----------------------|-----------------------------|---------|
| BLE 1M | 2402            | 0.652                 | 0.5                         | Pass    |
| BLE 1M | 2440            | 0.668                 | 0.5                         | Pass    |
| BLE 1M | 2480            | 0.703                 | 0.5                         | Pass    |

## 3.2 Test Graphs



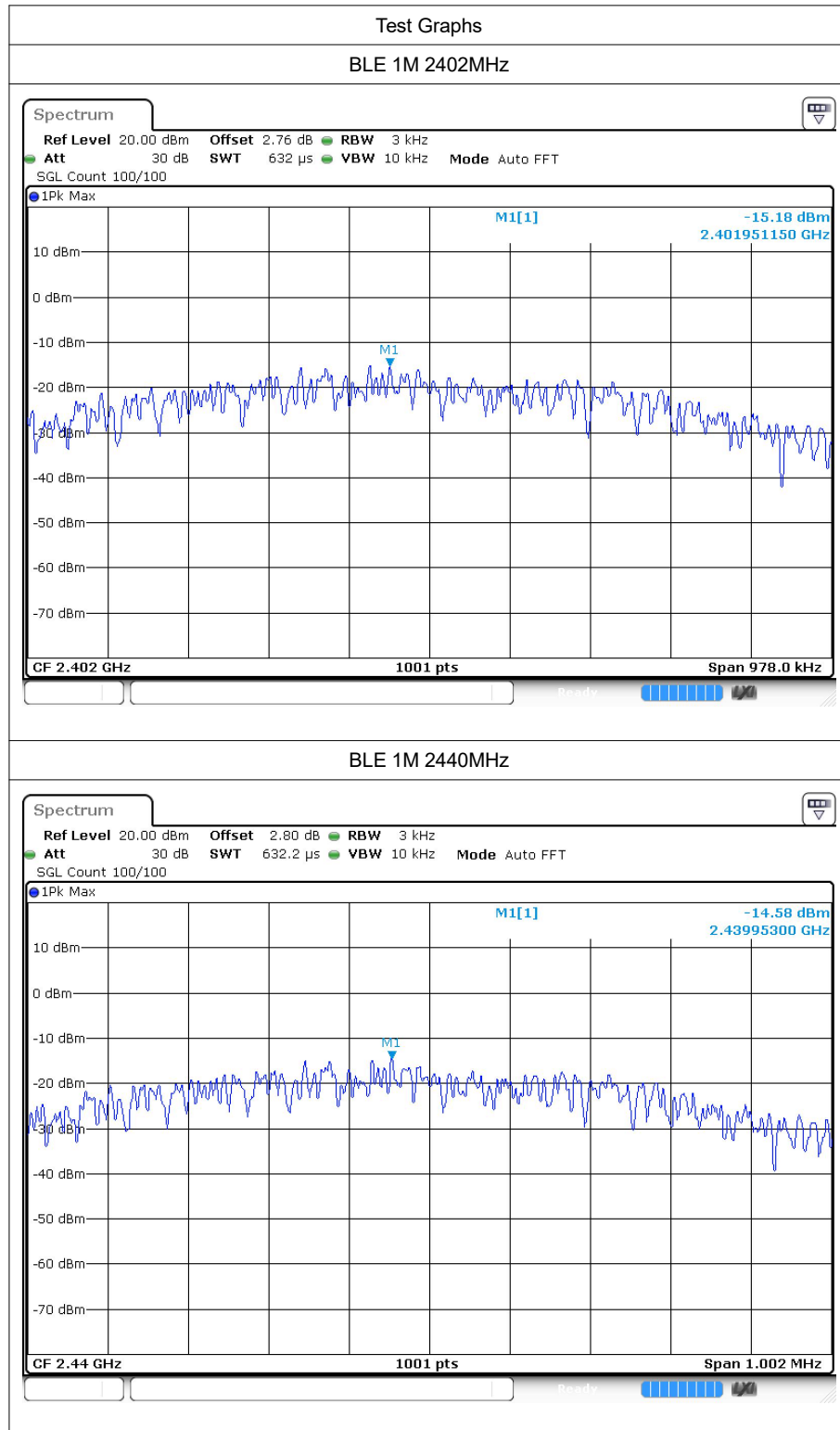


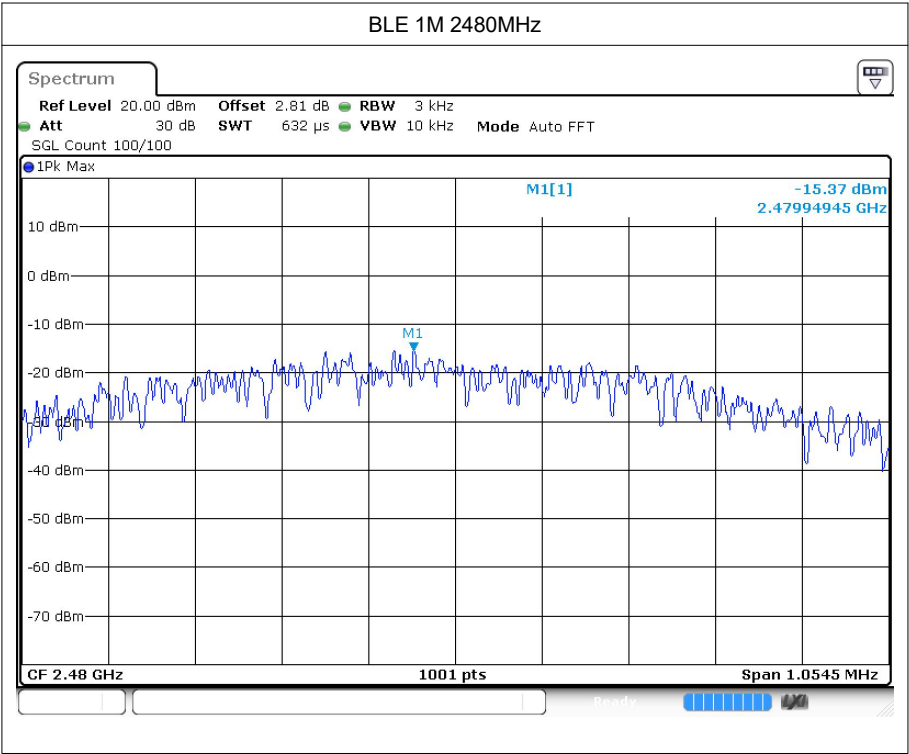
## 4 Maximum Power Spectral Density Level

### 4.1 Test Result

| Mode   | Frequency (MHz) | Conducted PSD<br>(dBm/3-100kHz) | Limit<br>(dBm/3kHz) | Verdict |
|--------|-----------------|---------------------------------|---------------------|---------|
| BLE 1M | 2402            | -15.18                          | $\leq 8$            | Pass    |
| BLE 1M | 2440            | -14.58                          | $\leq 8$            | Pass    |
| BLE 1M | 2480            | -15.37                          | $\leq 8$            | Pass    |

## 4.2 Test Graphs





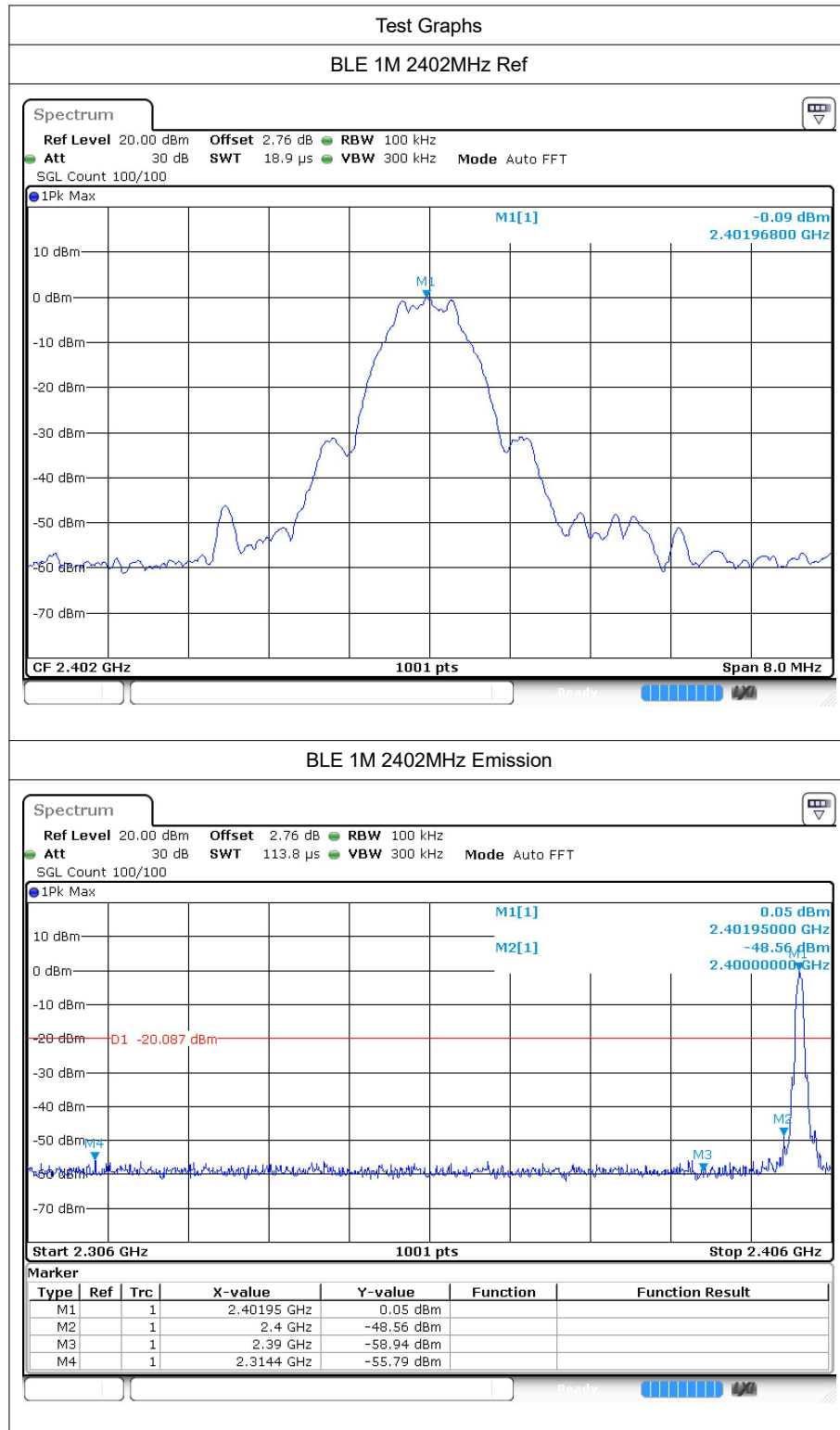


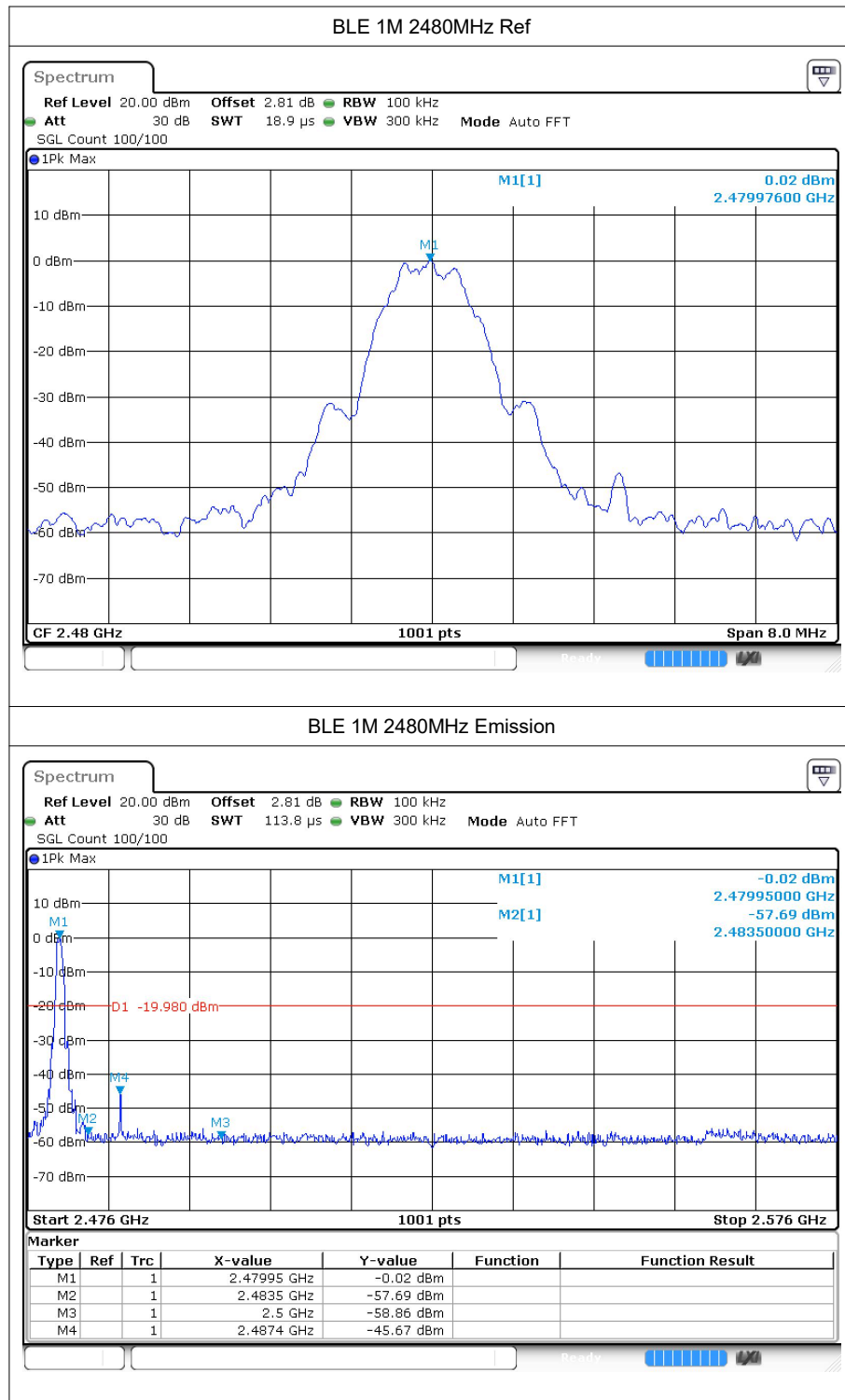
## 5 Band Edge

### 5.1 Test Result

| Mode   | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|--------|-----------------|-----------------|-------------|---------|
| BLE 1M | 2402            | -55.69          | -20         | Pass    |
| BLE 1M | 2480            | -45.69          | -20         | Pass    |

## 5.2 Test Graphs



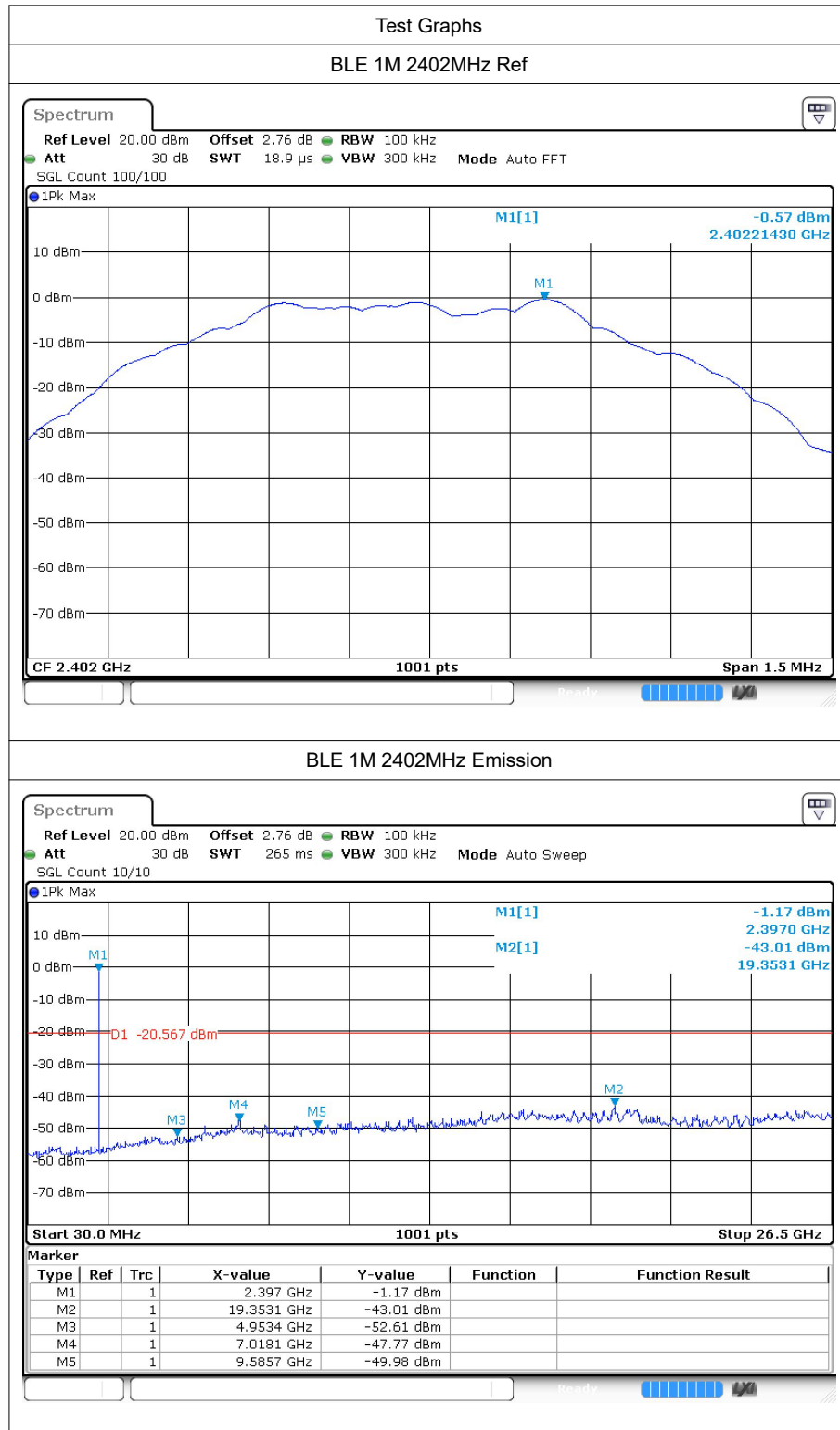


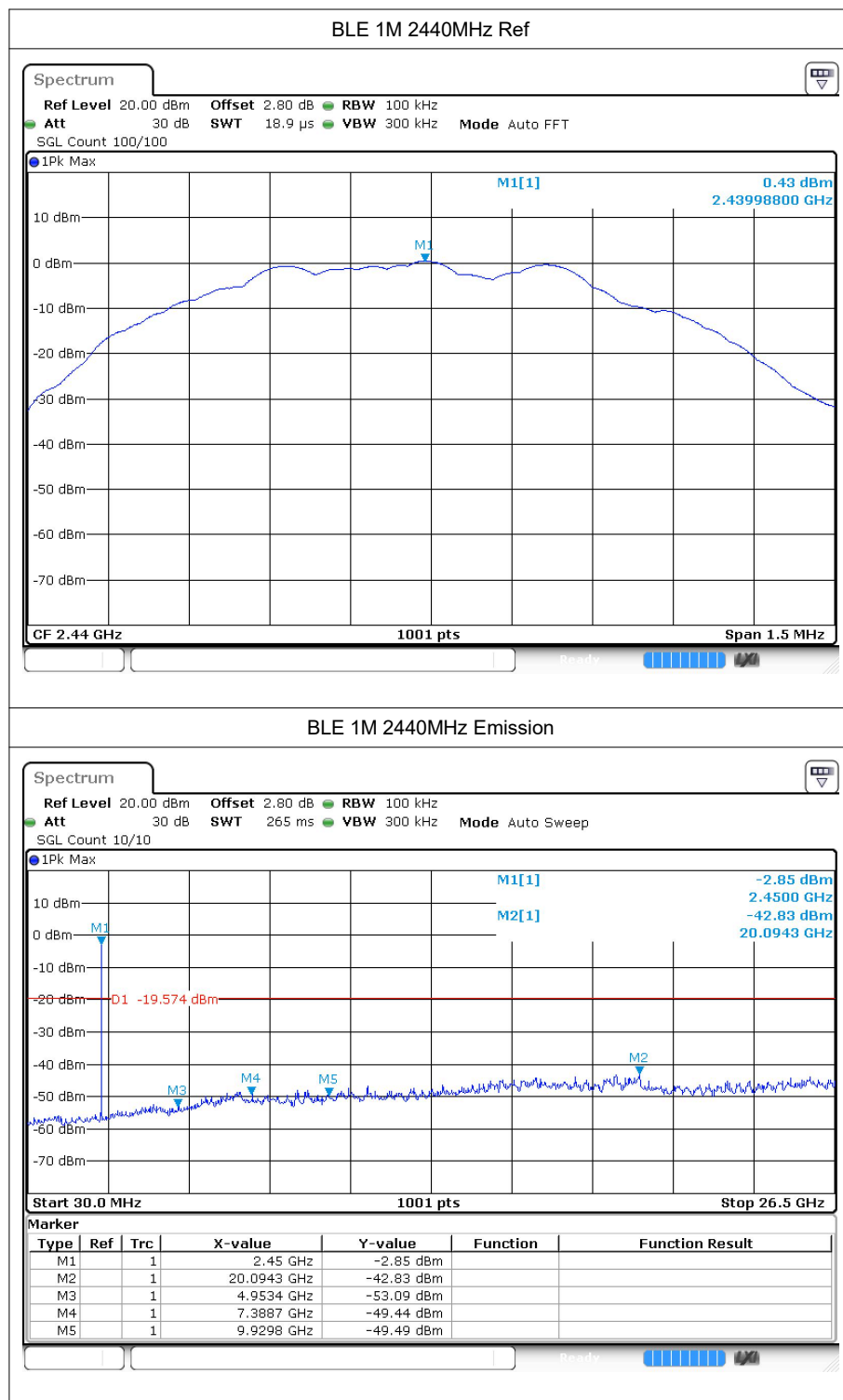
## 6 Conducted RF Spurious Emission

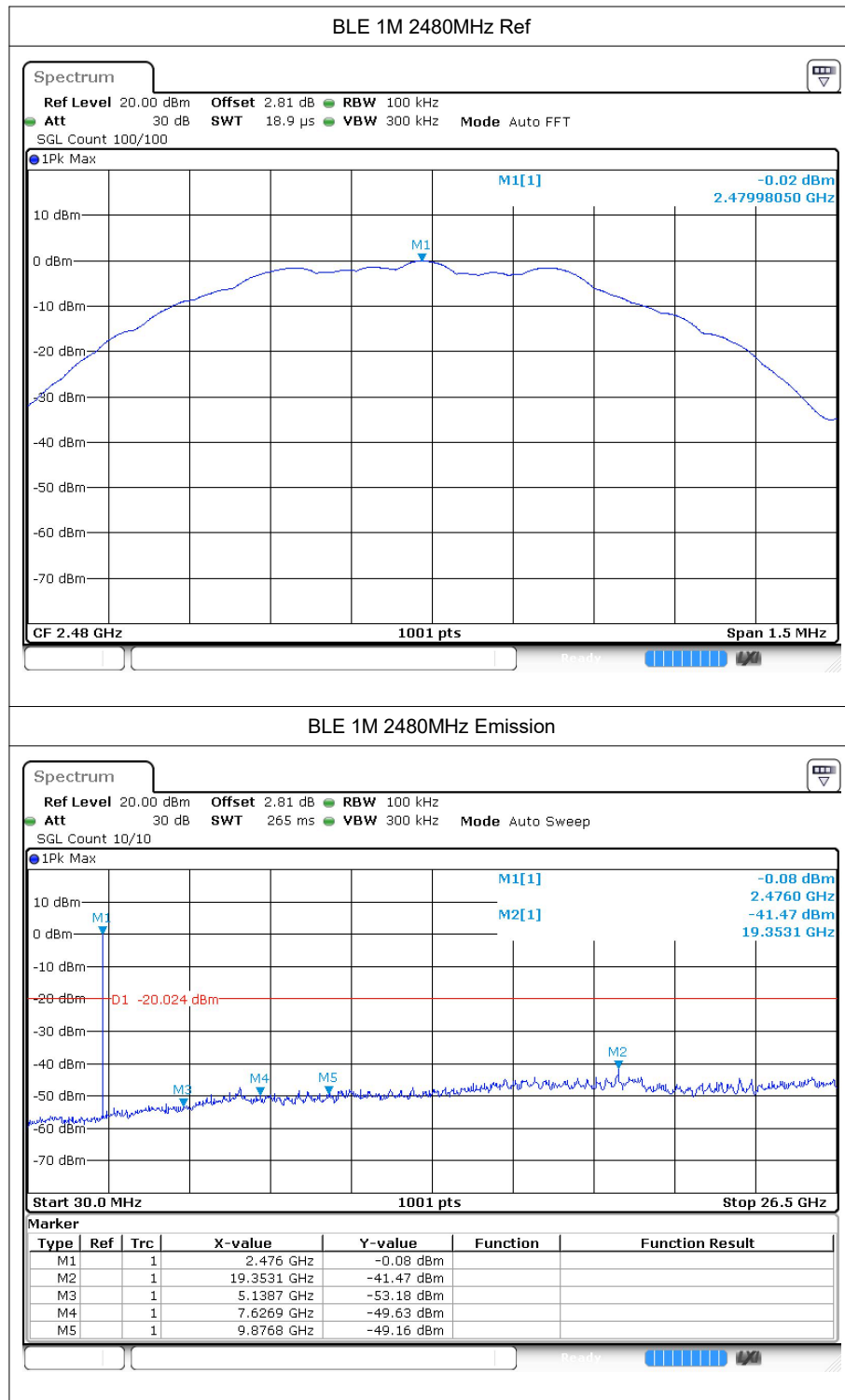
### 6.1 Test Result

| Mode   | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|--------|-----------------|-----------------|-------------|---------|
| BLE 1M | 2402            | -42.44          | -20         | Pass    |
| BLE 1M | 2440            | -43.26          | -20         | Pass    |
| BLE 1M | 2480            | -41.45          | -20         | Pass    |

## 6.2 Test Graphs







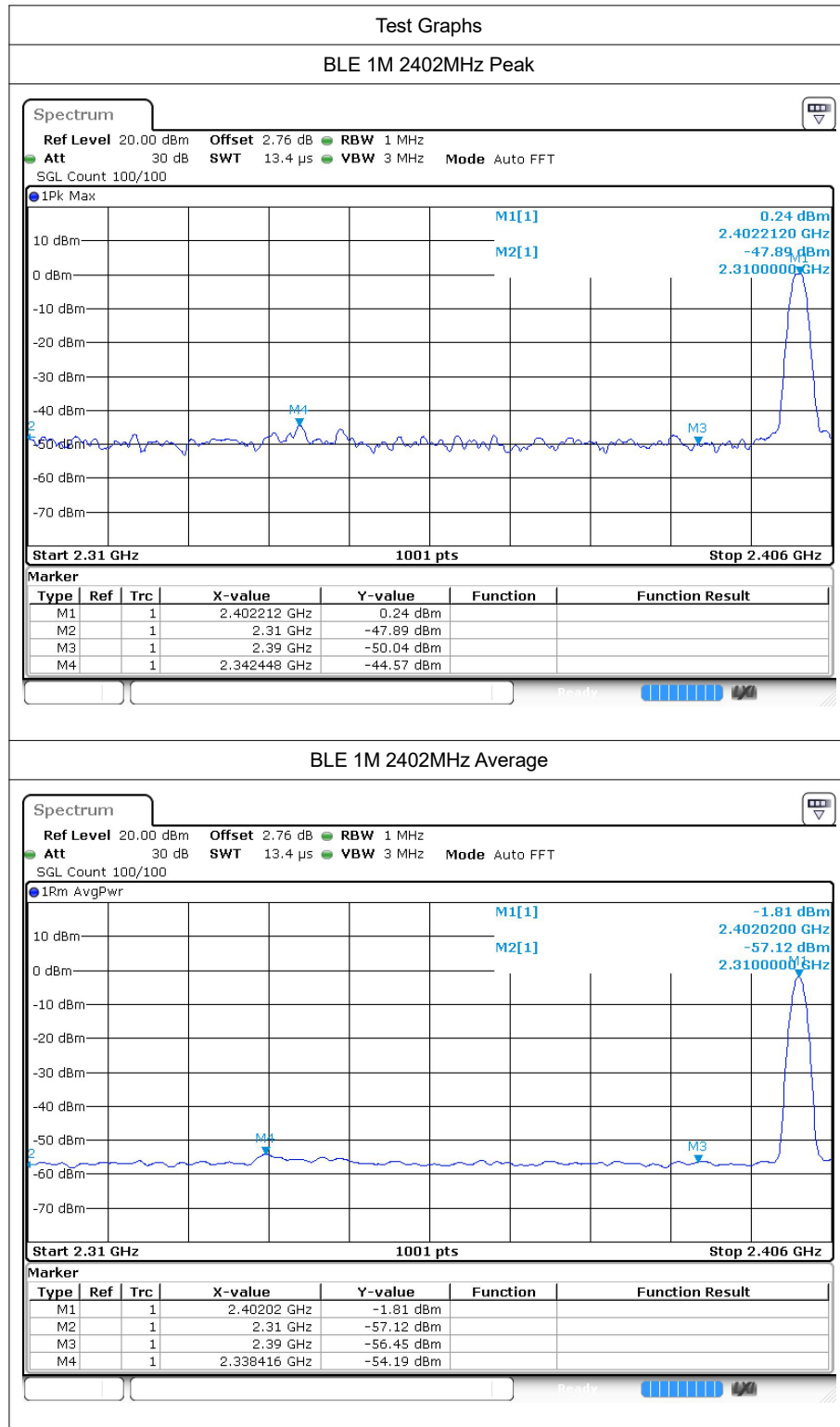


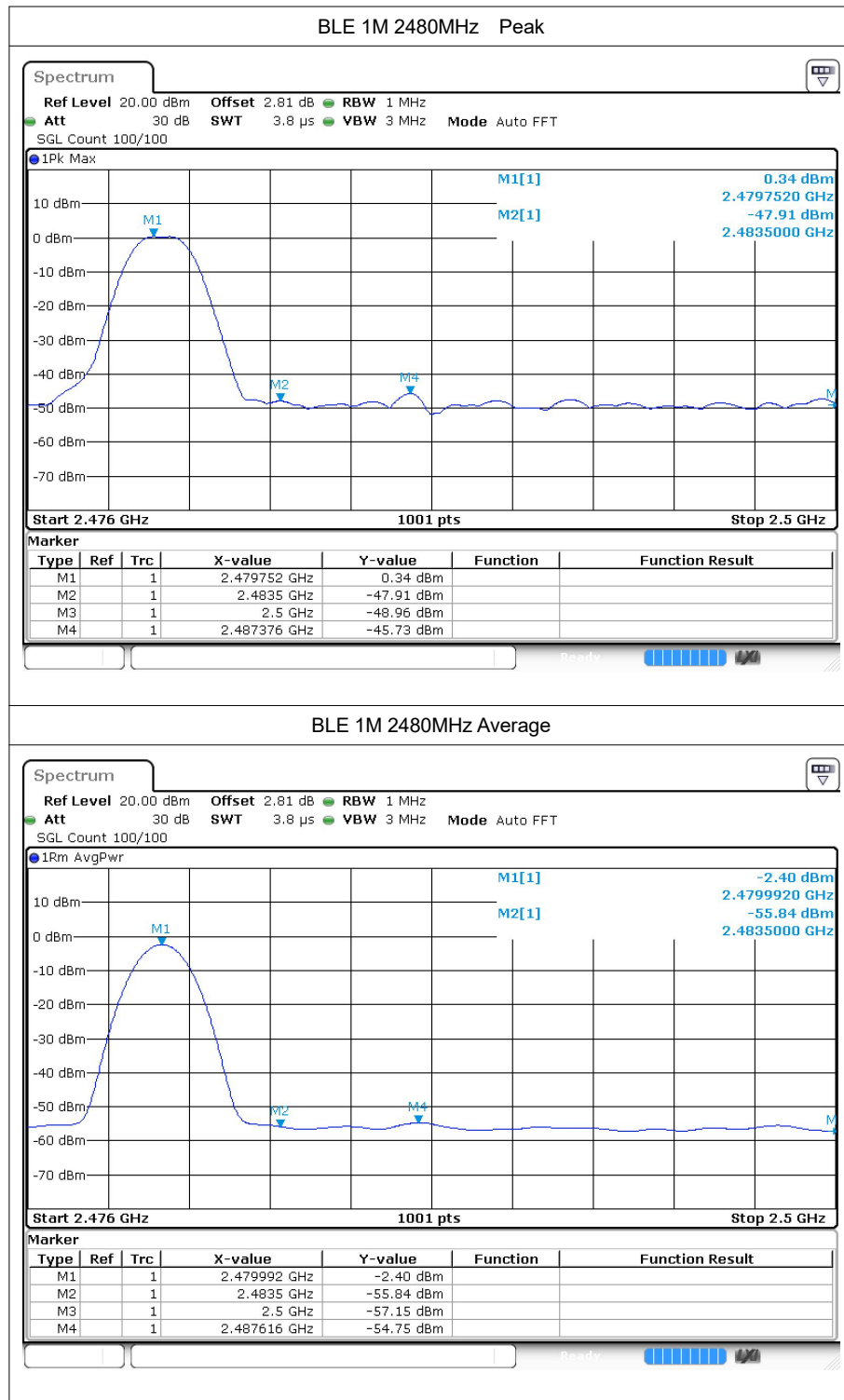
## 7 Restrict Band

### 7.1 Test Result

| Mode   | Frequency<br>(MHz) | Spur Freq<br>(MHz) | Power<br>(dBm) | Gain<br>(dBi) | Duty<br>Factor | E<br>(dBuV/m) | Detector | Limit<br>(dBuV/m) | Verdict |
|--------|--------------------|--------------------|----------------|---------------|----------------|---------------|----------|-------------------|---------|
| BLE 1M | 2402               | 2310               | -47.89         | 2.499         | -              | 49.84         | Peak     | 74                | Pass    |
| BLE 1M | 2402               | 2310               | -57.12         | 2.499         | 1.94           | 42.55         | Average  | 54                | Pass    |
| BLE 1M | 2402               | 2342.448           | -44.56         | 2.499         | -              | 53.17         | Peak     | 74                | Pass    |
| BLE 1M | 2402               | 2338.416           | -54.18         | 2.499         | 1.94           | 45.49         | Average  | 54                | Pass    |
| BLE 1M | 2402               | 2390               | -50.04         | 2.499         | -              | 47.69         | Peak     | 74                | Pass    |
| BLE 1M | 2402               | 2390               | -56.45         | 2.499         | 1.94           | 43.22         | Average  | 54                | Pass    |
| BLE 1M | 2480               | 2483.5             | -47.91         | 2.499         | -              | 49.82         | Peak     | 74                | Pass    |
| BLE 1M | 2480               | 2483.5             | -55.84         | 2.499         | 1.9            | 43.79         | Average  | 54                | Pass    |
| BLE 1M | 2480               | 2487.376           | -45.72         | 2.499         | -              | 52.01         | Peak     | 74                | Pass    |
| BLE 1M | 2480               | 2487.616           | -54.74         | 2.499         | 1.9            | 44.89         | Average  | 54                | Pass    |
| BLE 1M | 2480               | 2500               | -48.96         | 2.499         | -              | 48.77         | Peak     | 74                | Pass    |
| BLE 1M | 2480               | 2500               | -57.15         | 2.499         | 1.9            | 42.48         | Average  | 54                | Pass    |

## 7.2 Test Graphs





---The End---