



Appendix B

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

Product Name: POWERED MONITOR SPEAKERS

Trade Mark: Klipsch

Test Model: R-51PM-1

Environmental Conditions

| | |
|--------------------|-------------|
| Temperature: | 25.2°C |
| Relative Humidity: | 51.4% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Simba Huang |
| Supervised by: | Seal Chen |



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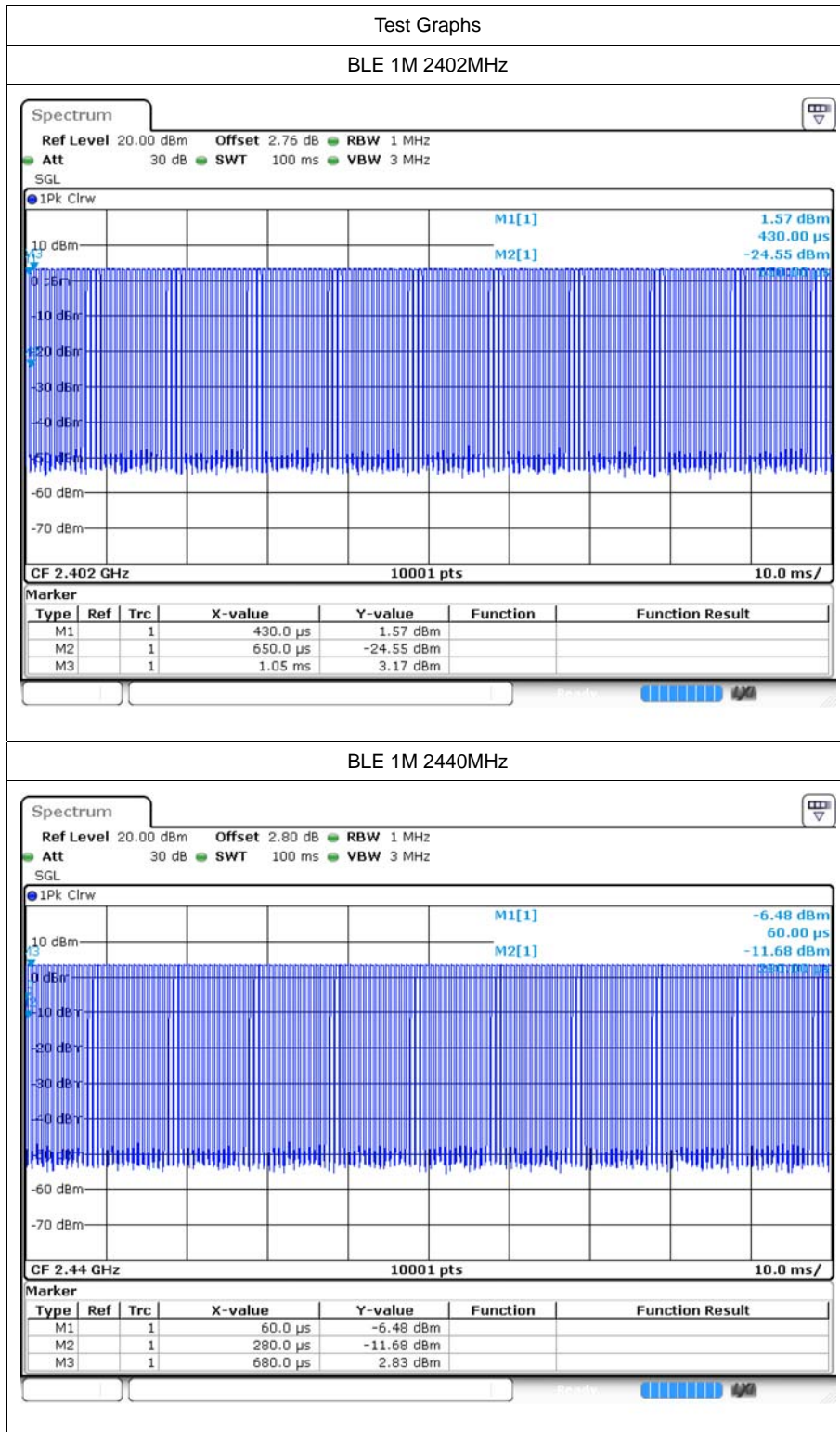


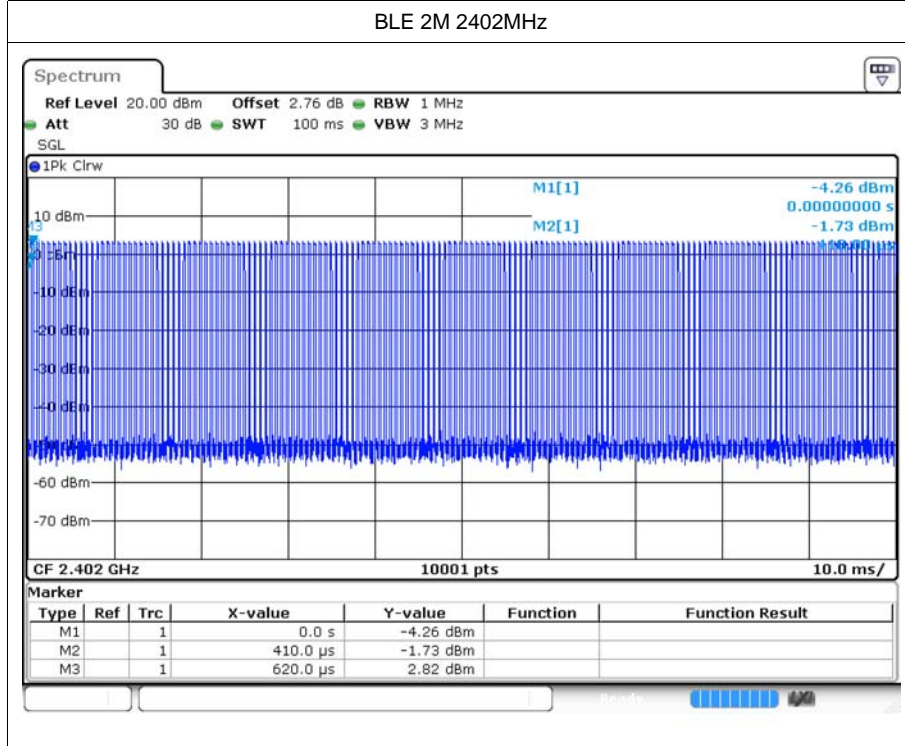
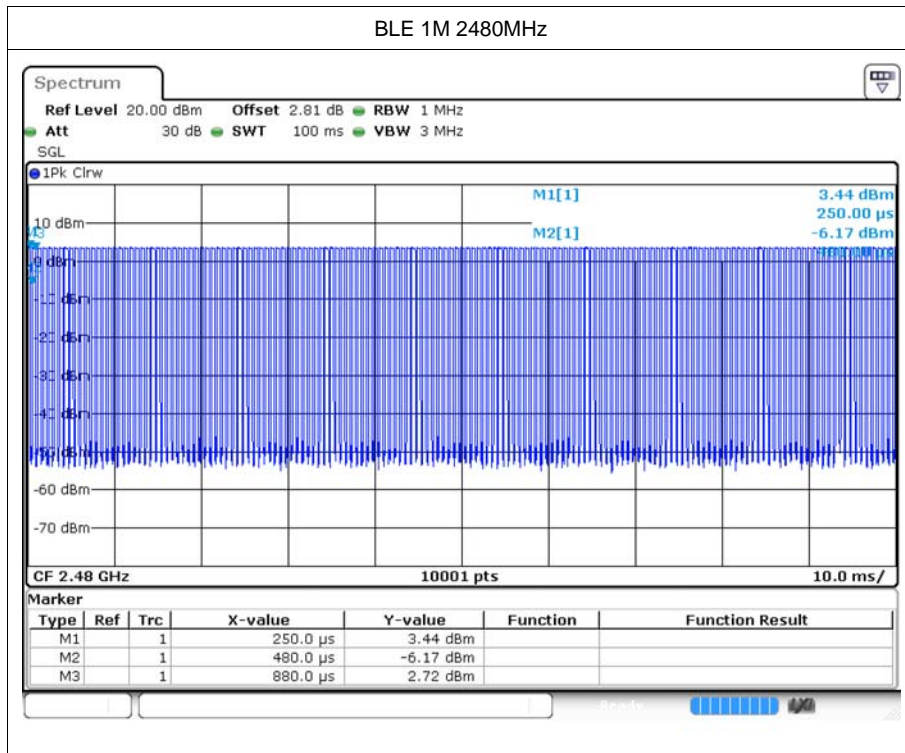
1 Duty Cycle

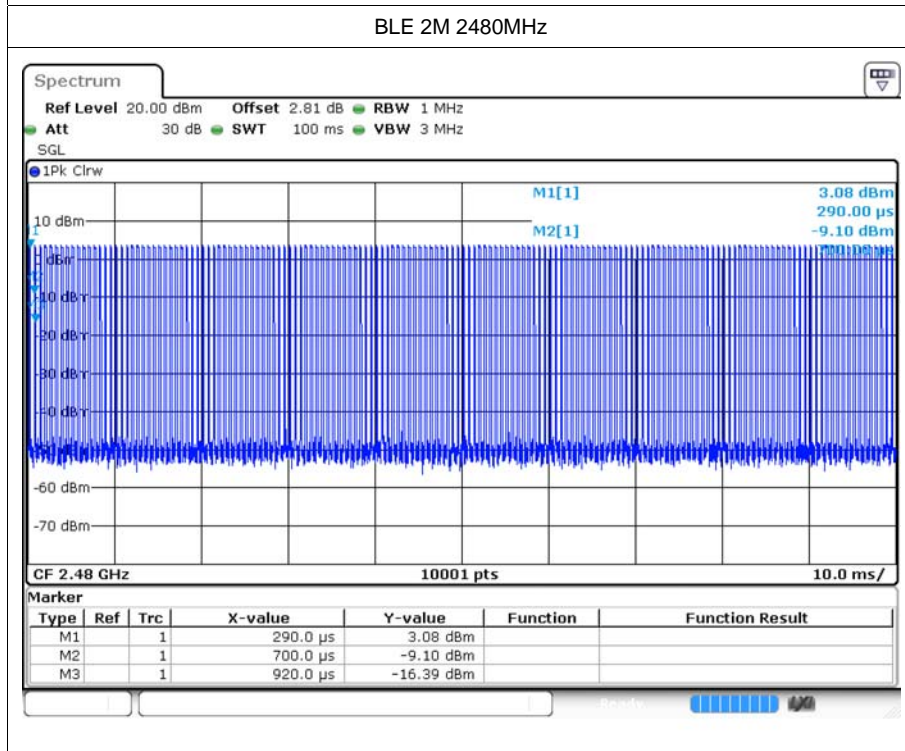
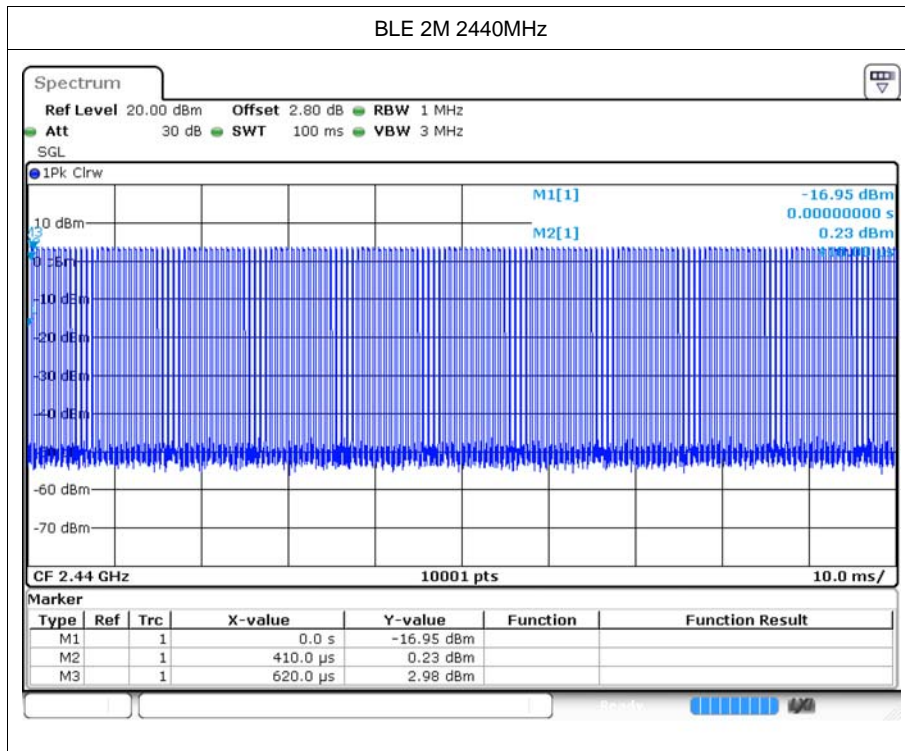
1.1 Test Result

| Mode | Frequency (MHz) | Duty Cycle (%) | 1/T (kHz) |
|--------|-----------------|----------------|-----------|
| BLE 1M | 2402 | 65.59 | 2.5 |
| BLE 1M | 2440 | 65.6 | 2.5 |
| BLE 1M | 2480 | 64.8 | 2.5 |
| BLE 2M | 2402 | 36.01 | 4.76 |
| BLE 2M | 2440 | 36.01 | 4.76 |
| BLE 2M | 2480 | 36 | 4.55 |

1.2 Test Graphs







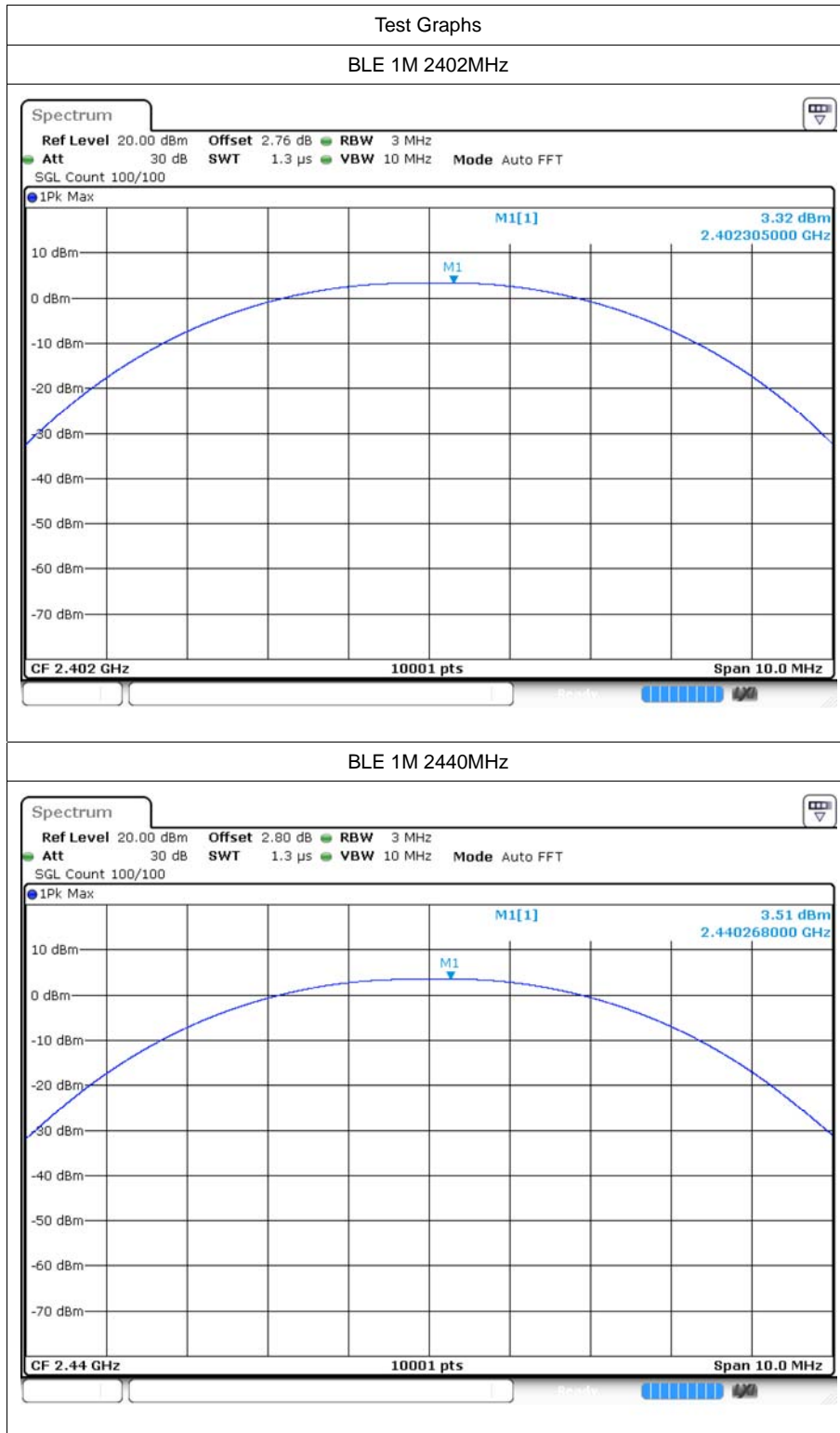


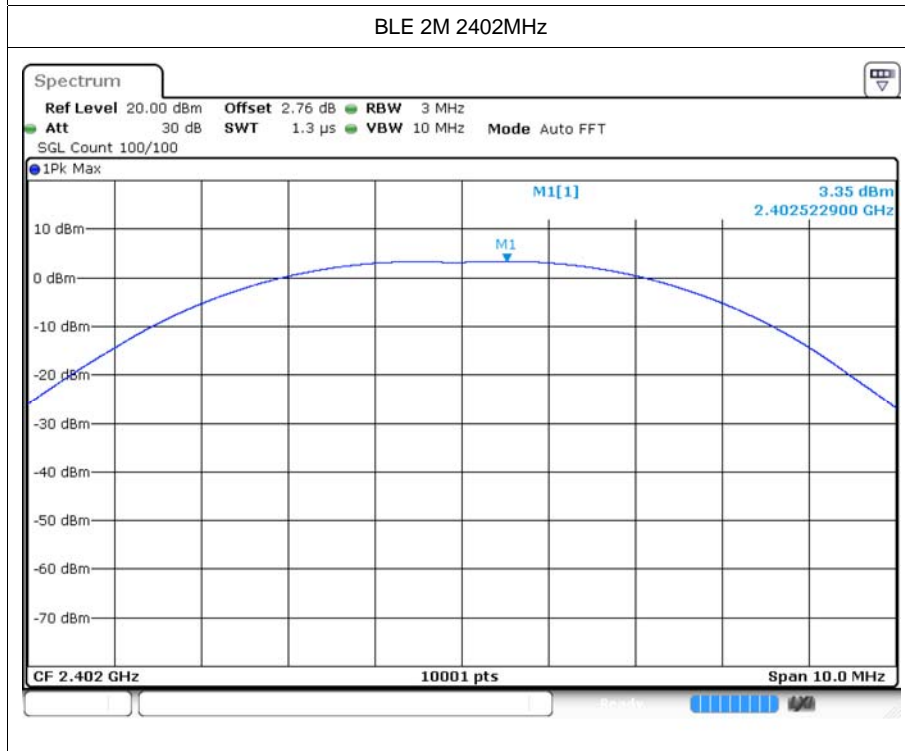
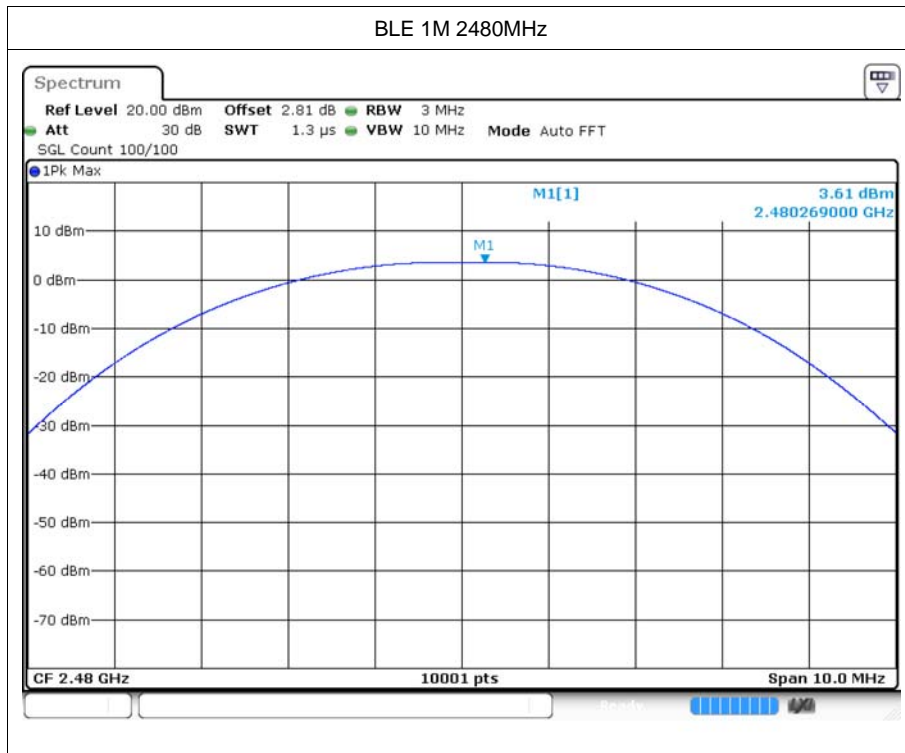
2 Maximum Conducted Output Power

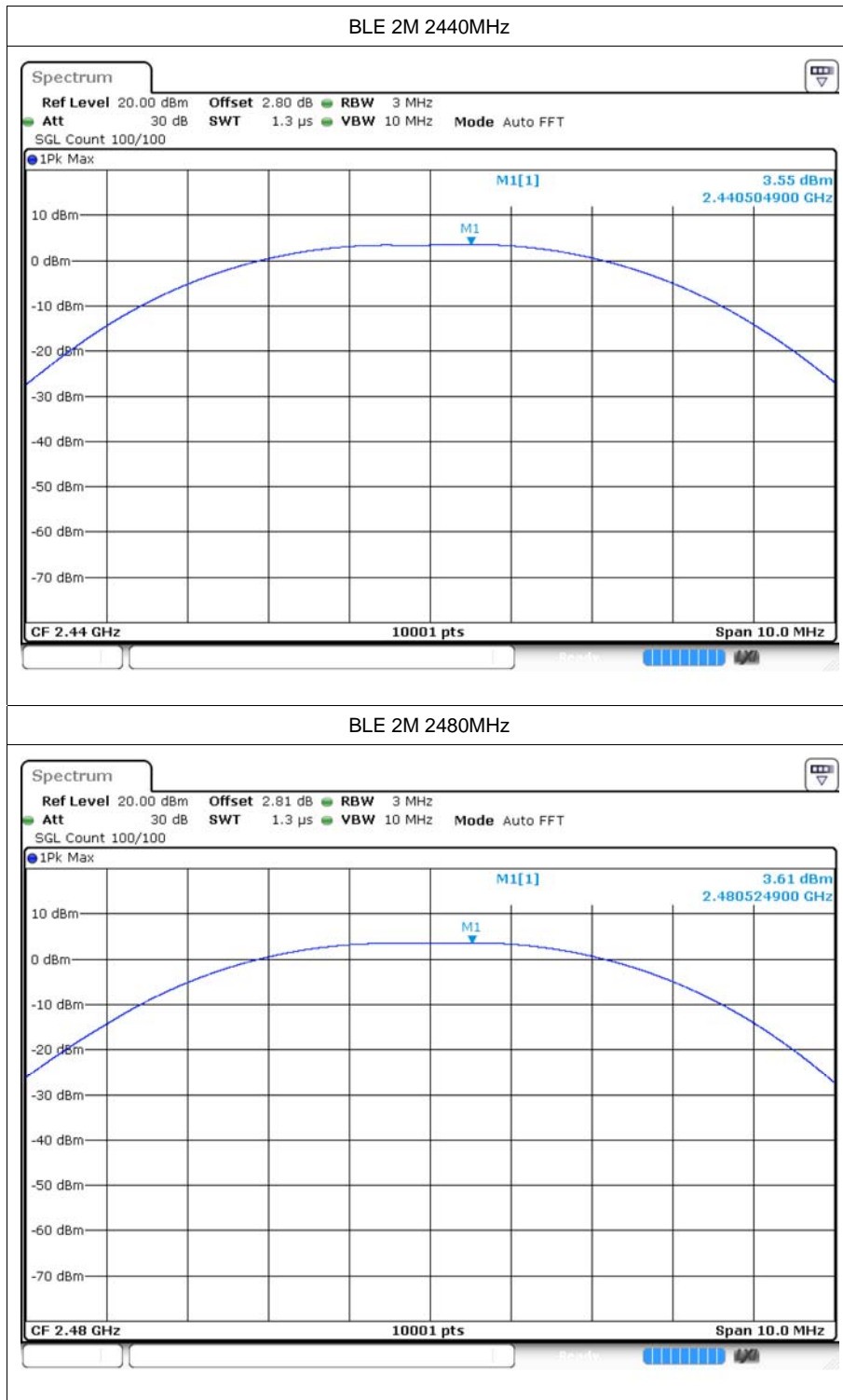
2.1 Test Result

| Mode | Frequency (MHz) | Conducted Power (dBm) | Limit (dBm) | Verdict |
|--------|-----------------|-----------------------|-------------|---------|
| BLE 1M | 2402 | 3.32 | 30 | Pass |
| BLE 1M | 2440 | 3.51 | 30 | Pass |
| BLE 1M | 2480 | 3.61 | 30 | Pass |
| BLE 2M | 2402 | 3.35 | 30 | Pass |
| BLE 2M | 2440 | 3.55 | 30 | Pass |
| BLE 2M | 2480 | 3.61 | 30 | Pass |

2.2 Test Graphs







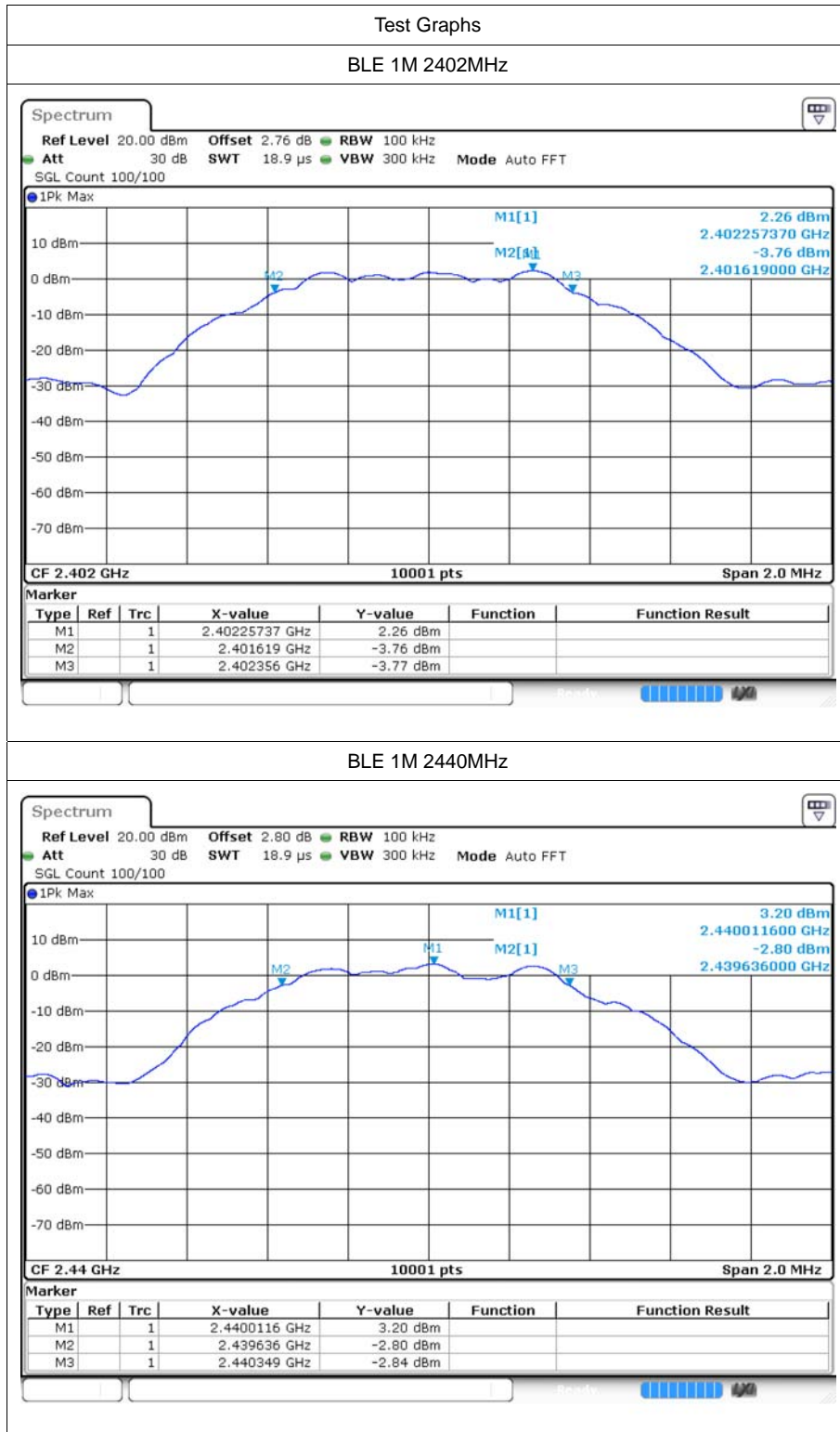


3 -6dB Bandwidth

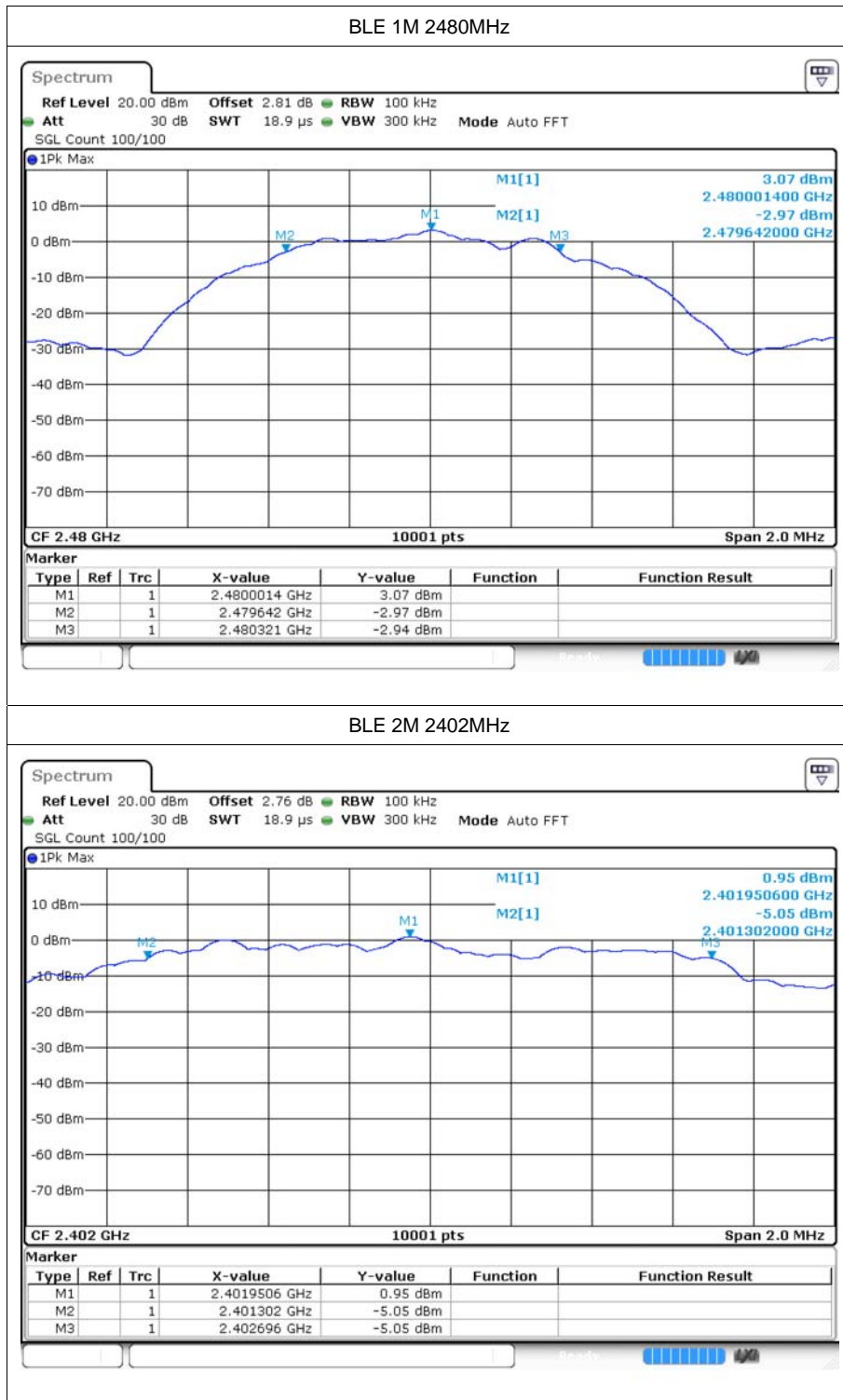
3.1 Test Result

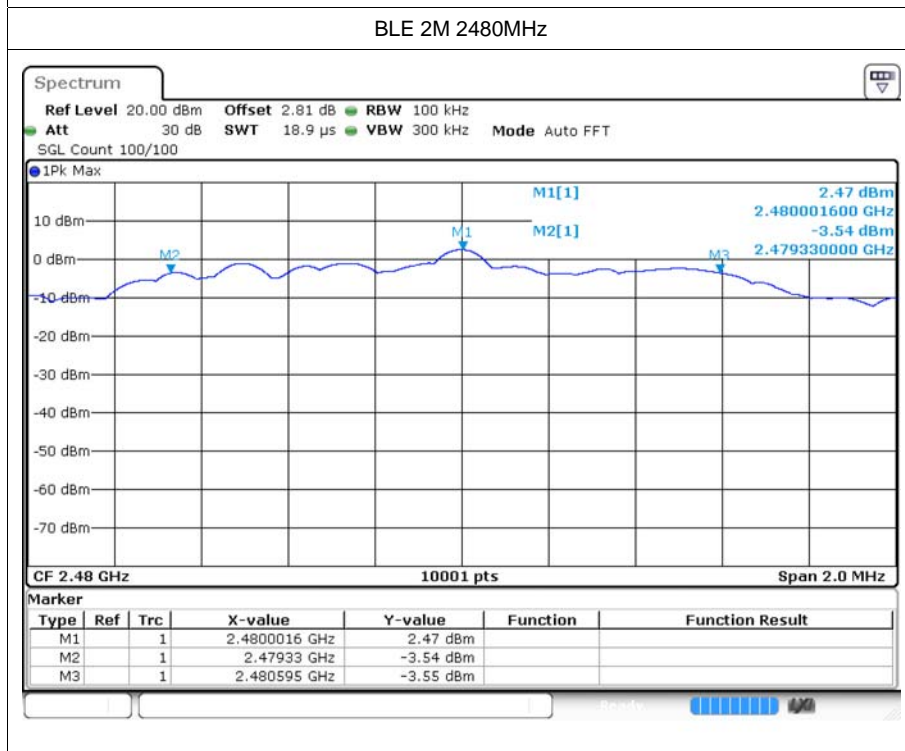
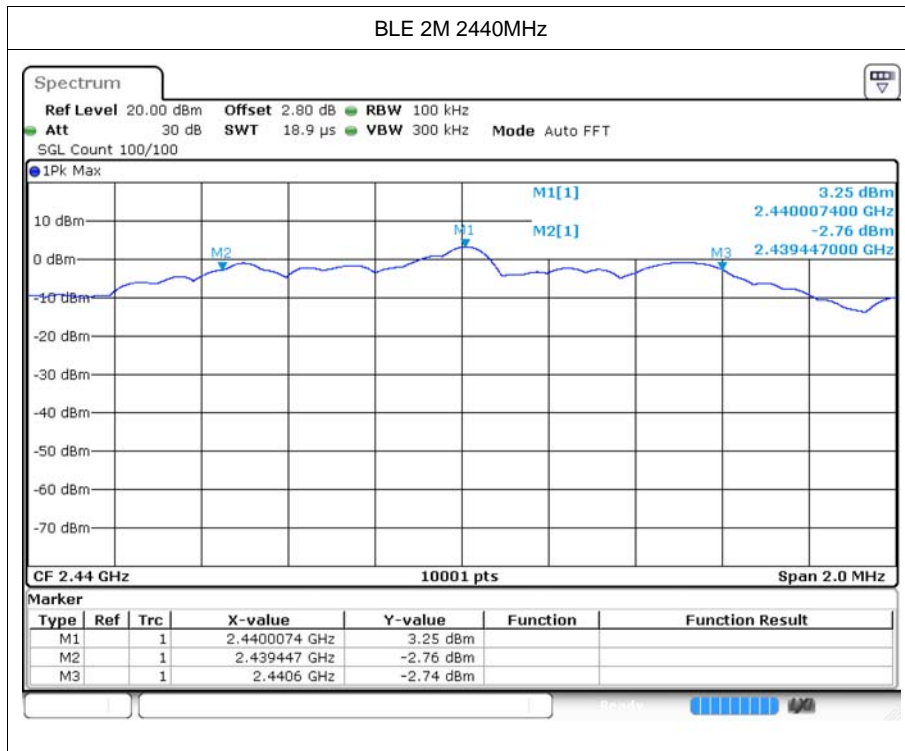
| Mode | Frequency (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|--------|-----------------|-----------------------|-----------------------------|---------|
| BLE 1M | 2402 | 0.737 | 0.5 | Pass |
| BLE 1M | 2440 | 0.713 | 0.5 | Pass |
| BLE 1M | 2480 | 0.679 | 0.5 | Pass |
| BLE 2M | 2402 | 1.394 | 0.5 | Pass |
| BLE 2M | 2440 | 1.153 | 0.5 | Pass |
| BLE 2M | 2480 | 1.265 | 0.5 | Pass |

3.2 Test Graphs



BLE 1M 2440MHz



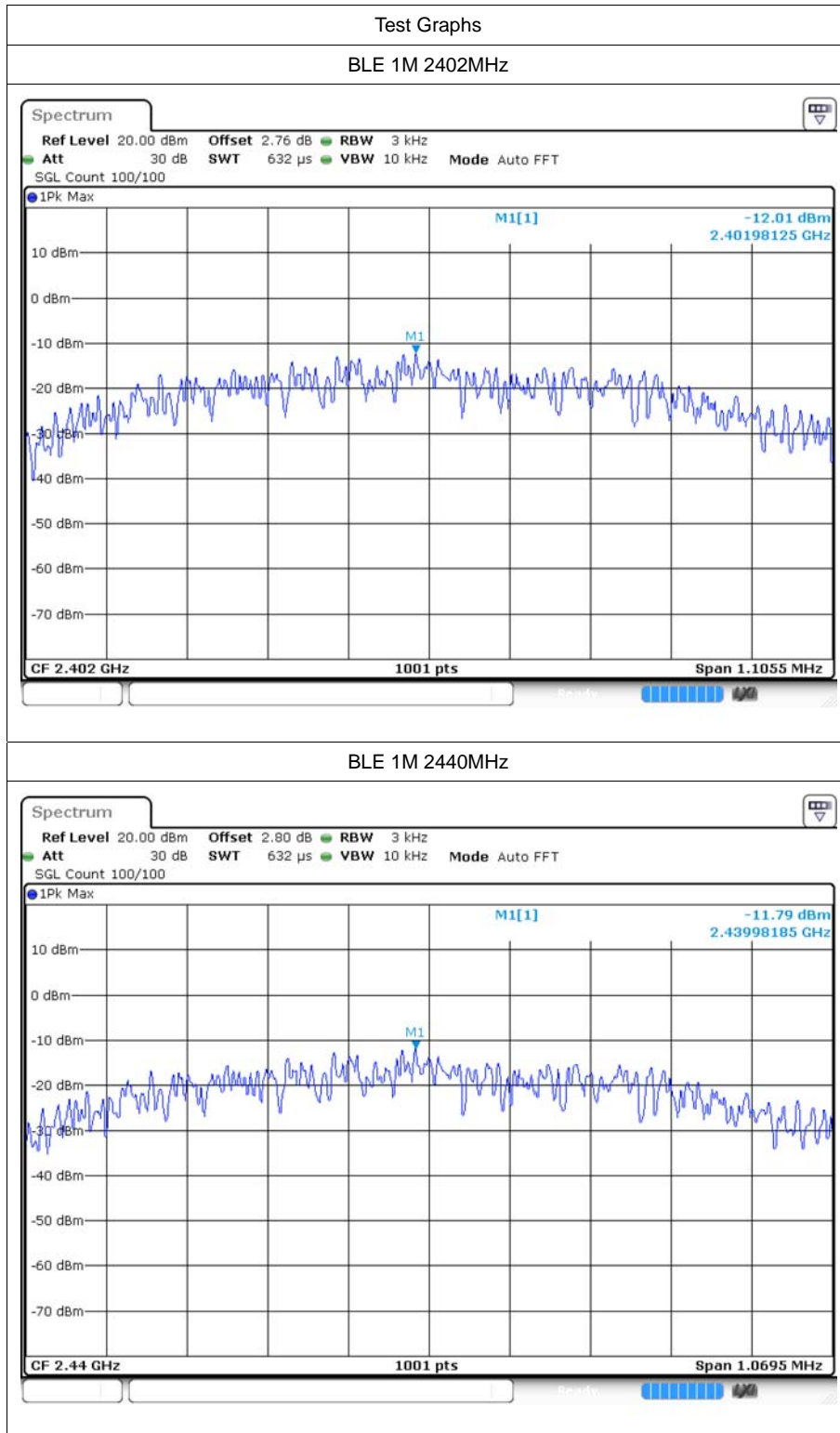


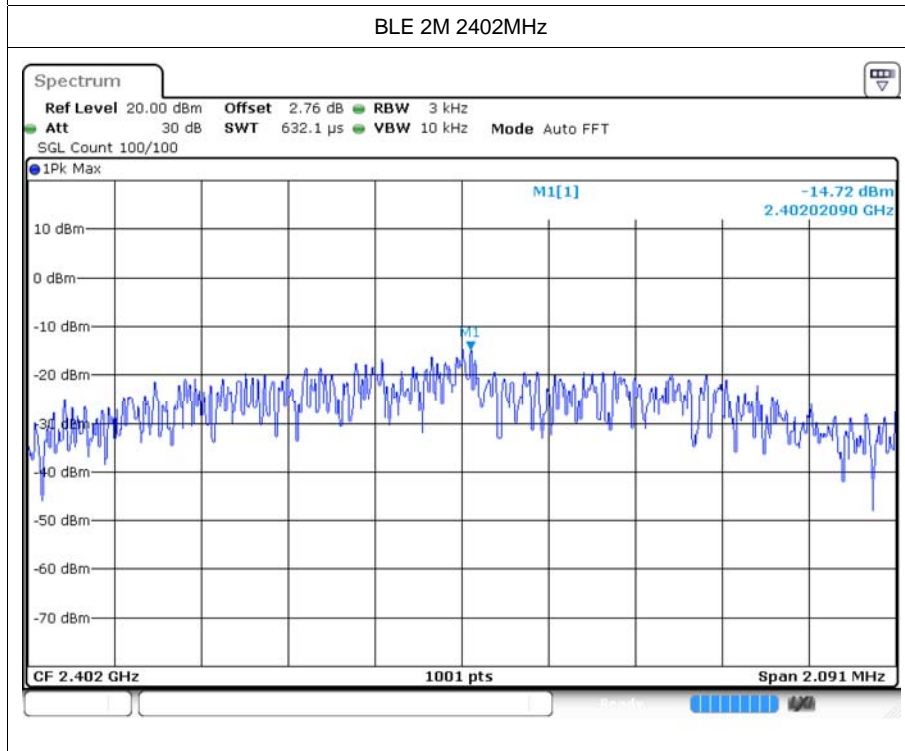
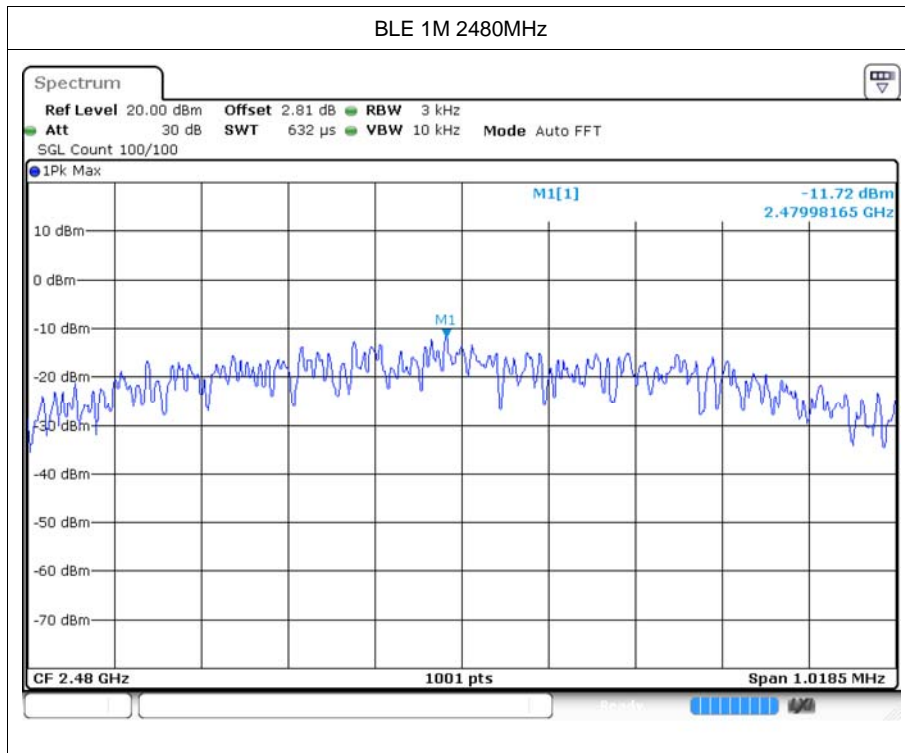
4 Maximum Power Spectral Density Level

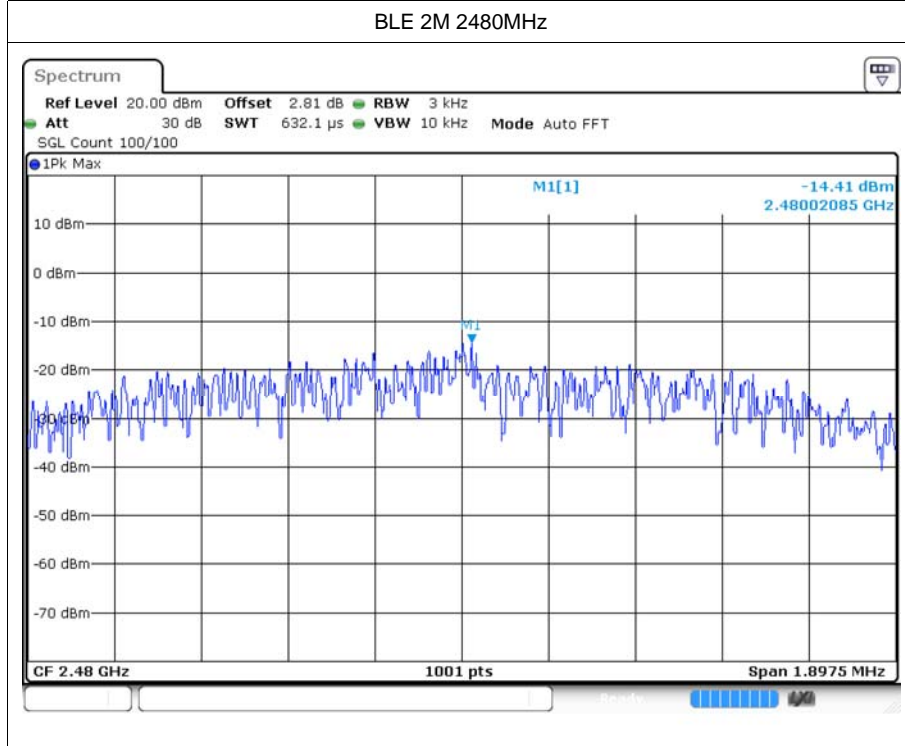
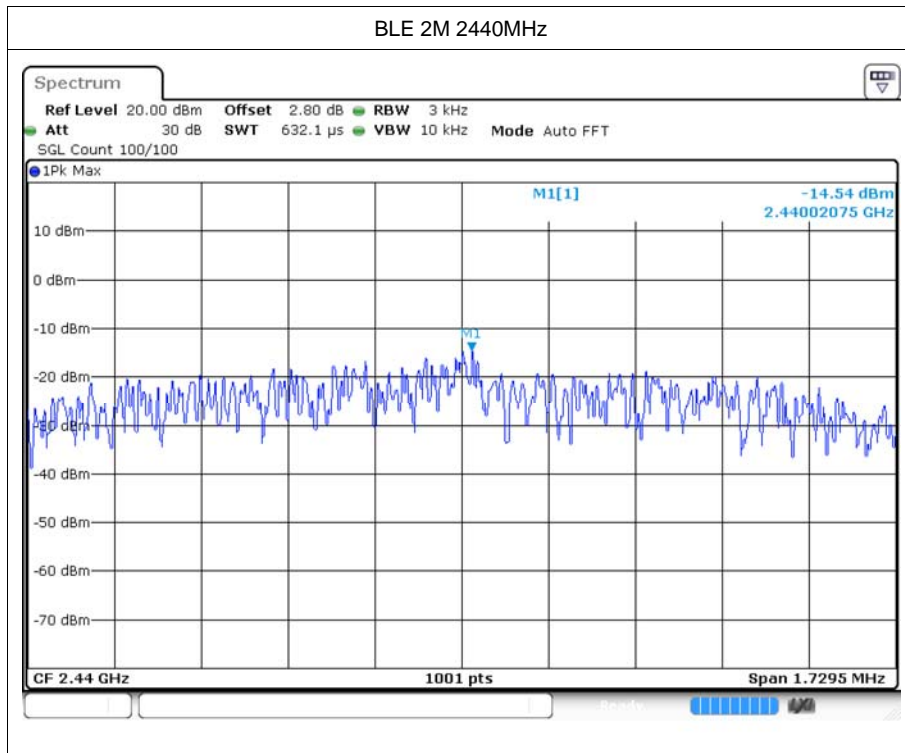
4.1 Test Result

| Mode | Frequency (MHz) | Conducted PSD (dBm/3-100kHz) | Limit (dBm/3kHz) | Verdict |
|--------|-----------------|---------------------------------|---------------------|---------|
| BLE 1M | 2402 | -12.01 | ≤8 | Pass |
| BLE 1M | 2440 | -11.79 | ≤8 | Pass |
| BLE 1M | 2480 | -11.72 | ≤8 | Pass |
| BLE 2M | 2402 | -14.72 | ≤8 | Pass |
| BLE 2M | 2440 | -14.54 | ≤8 | Pass |
| BLE 2M | 2480 | -14.41 | ≤8 | Pass |

4.2 Test Graphs







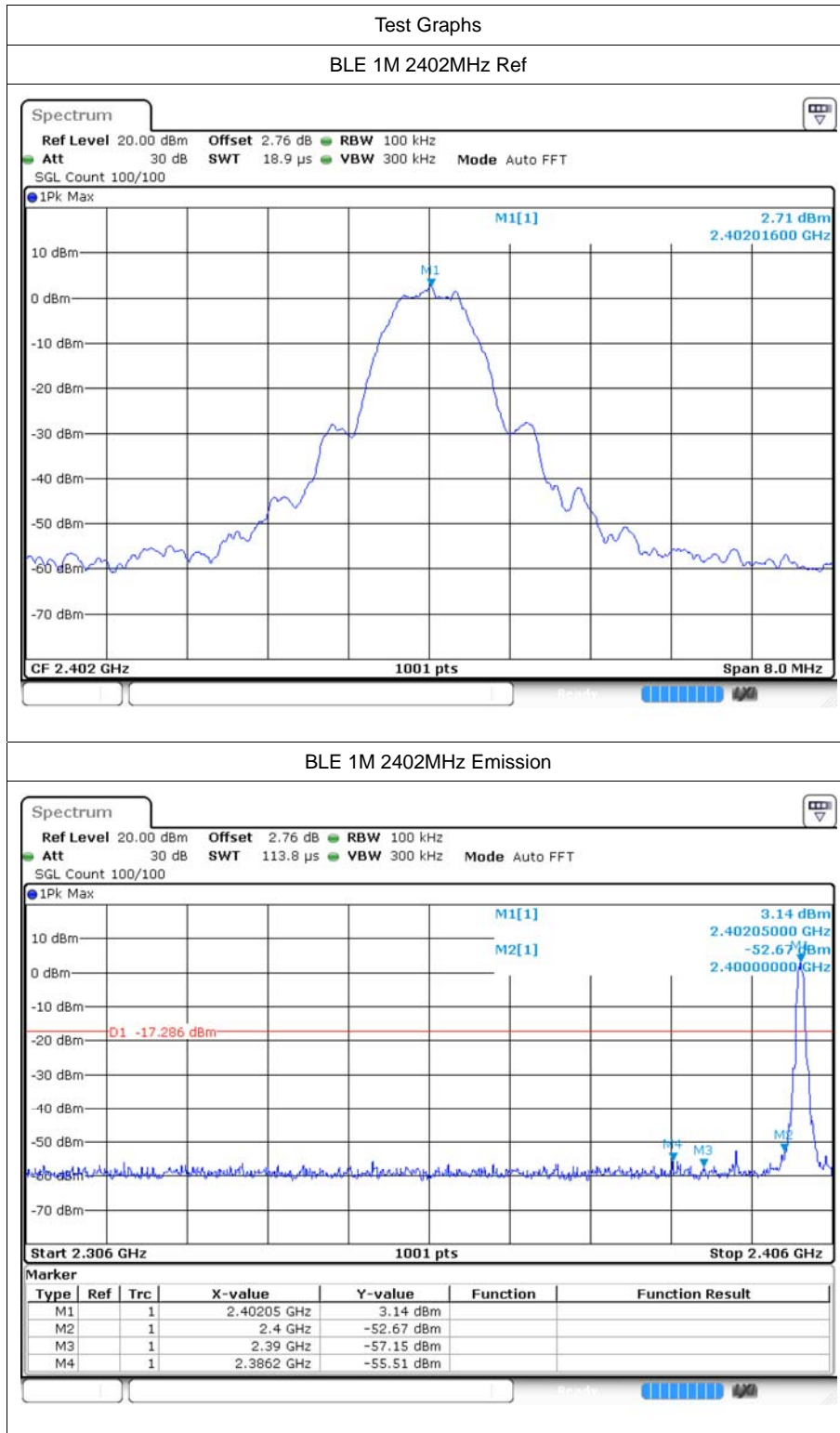


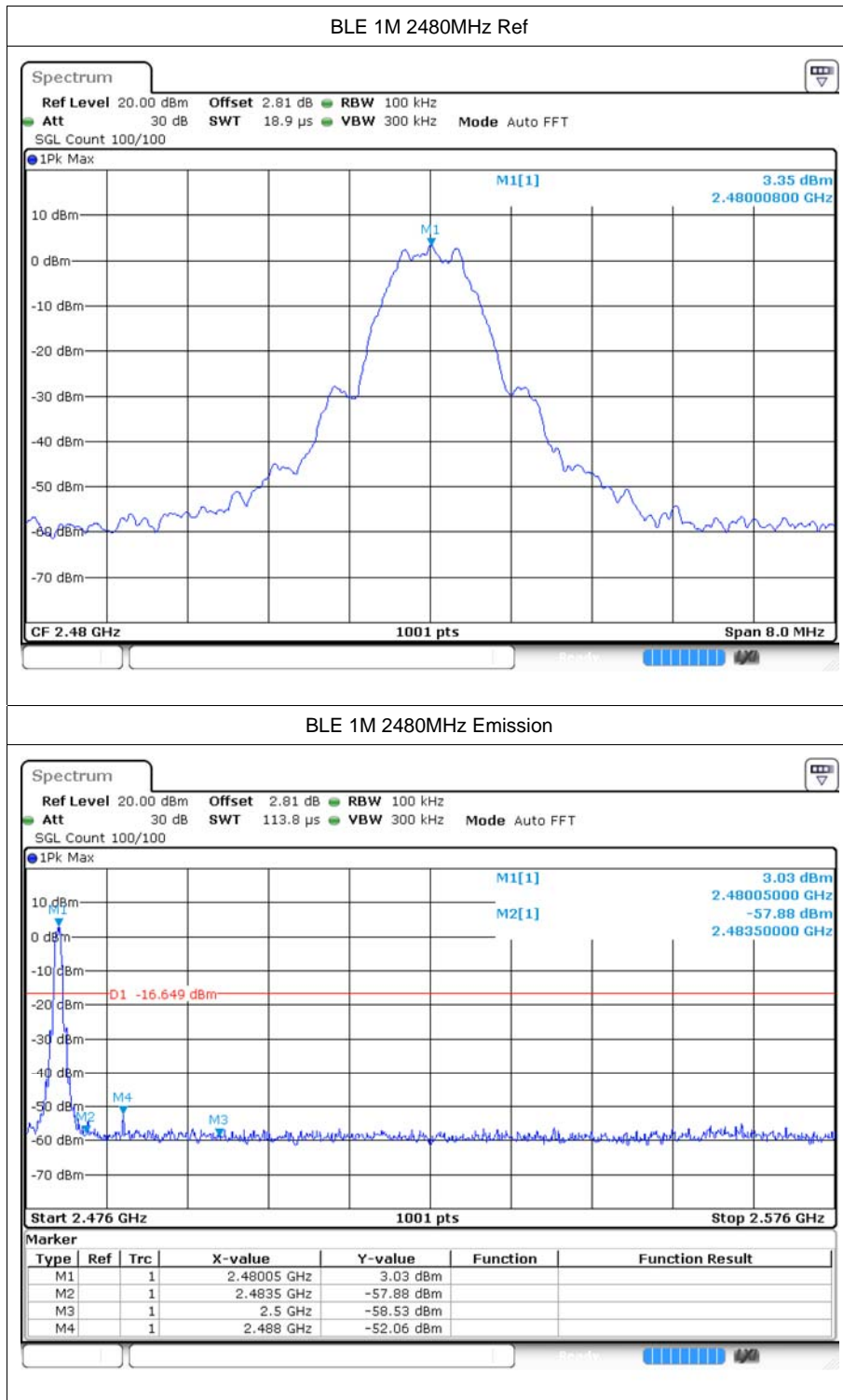
5 Band Edge

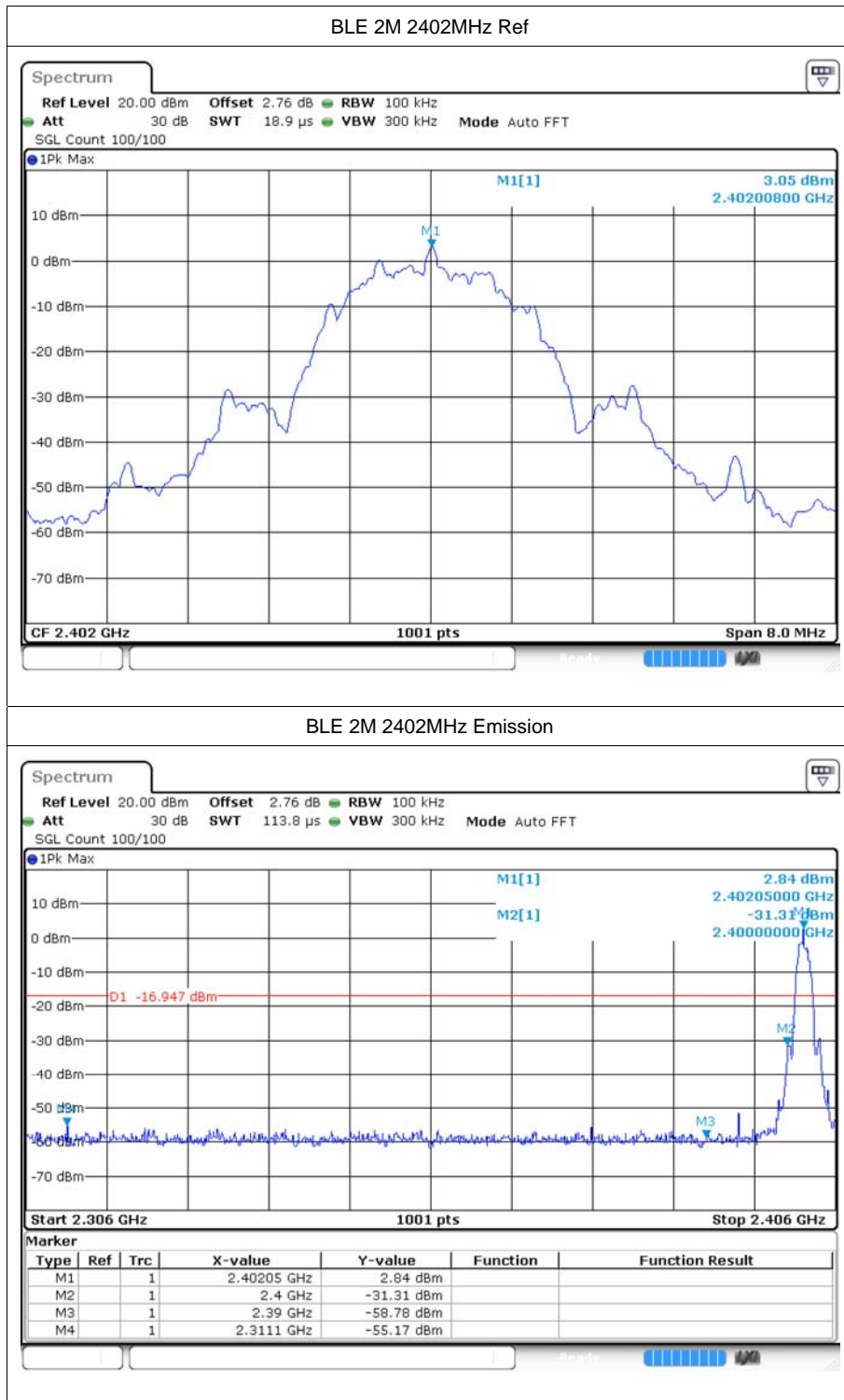
5.1 Test Result

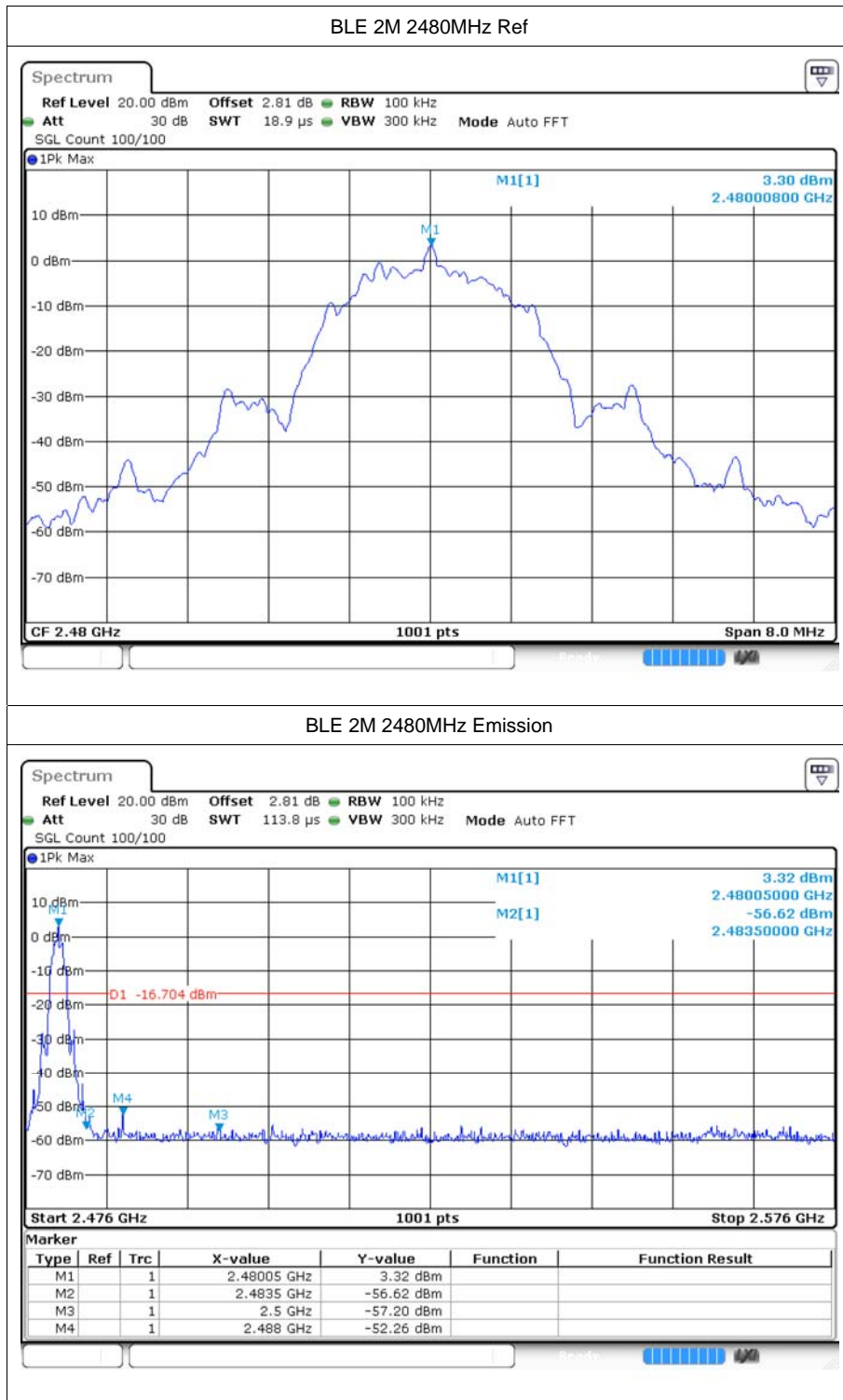
| Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|--------|-----------------|-----------------|-------------|---------|
| BLE 1M | 2402 | -58.21 | -20 | Pass |
| BLE 1M | 2480 | -55.4 | -20 | Pass |
| BLE 2M | 2402 | -58.21 | -20 | Pass |
| BLE 2M | 2480 | -55.56 | -20 | Pass |

5.2 Test Graphs









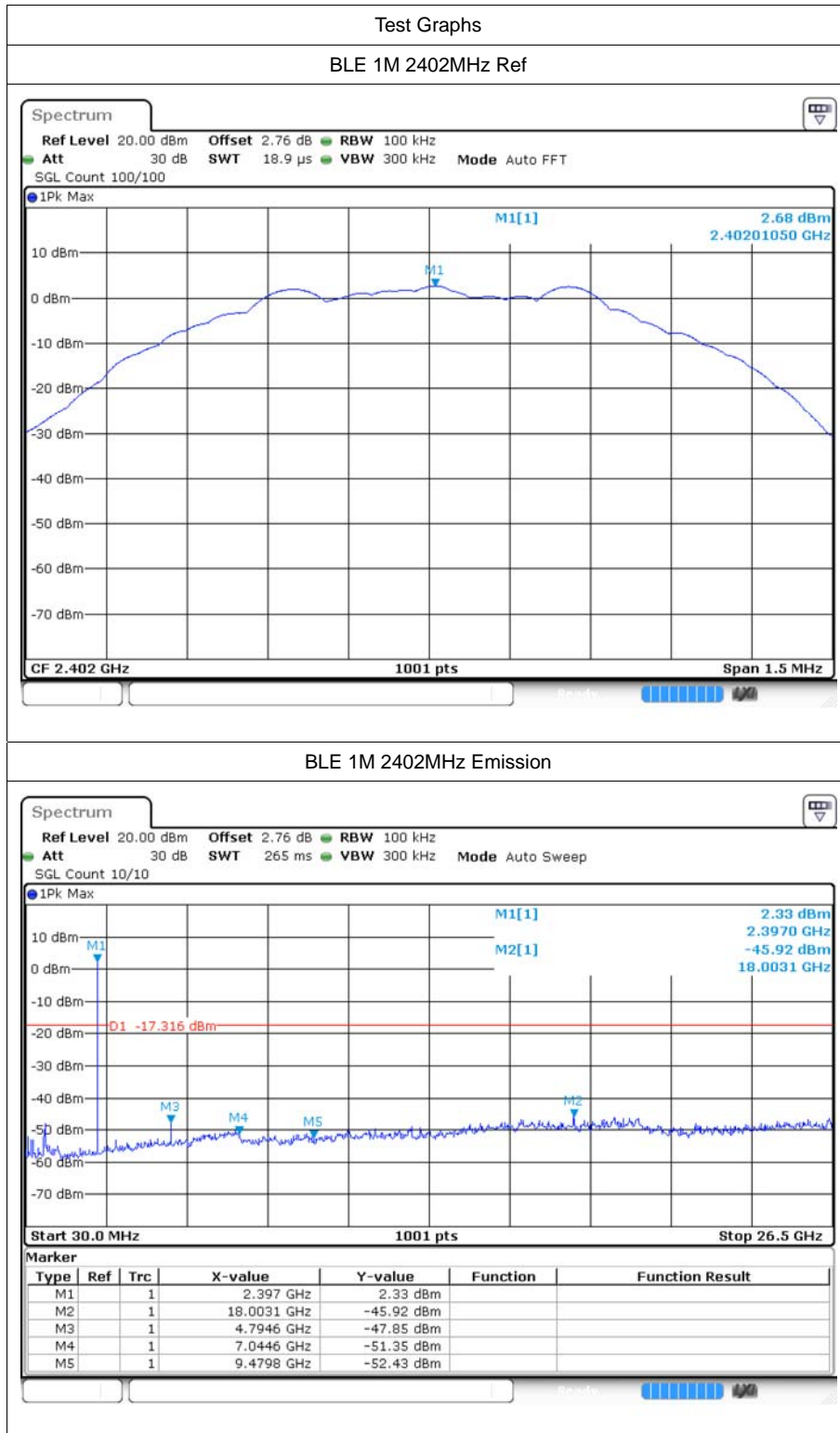


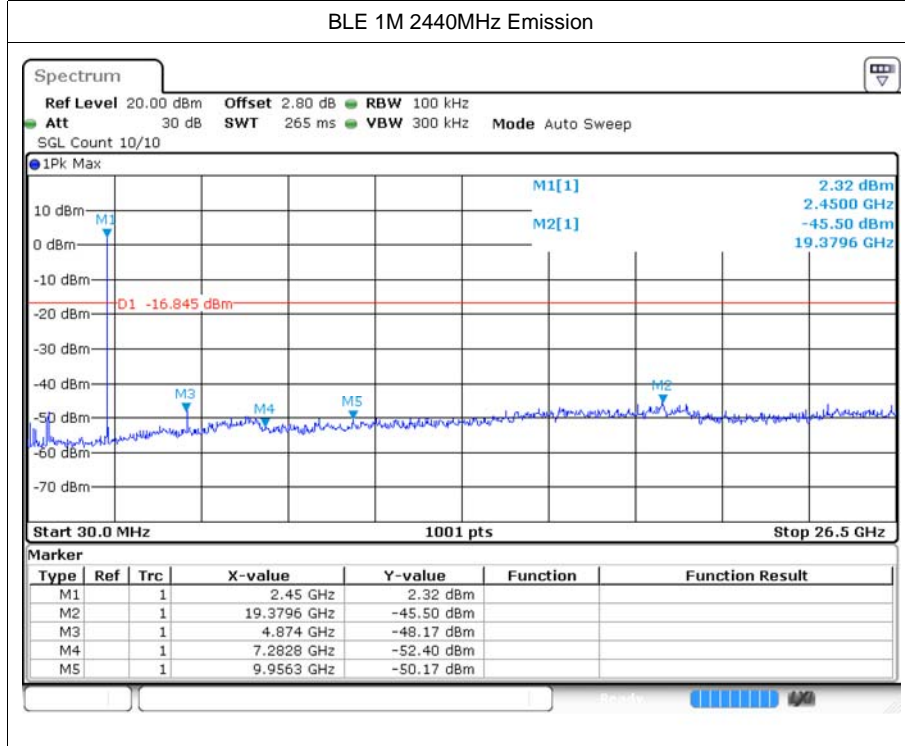
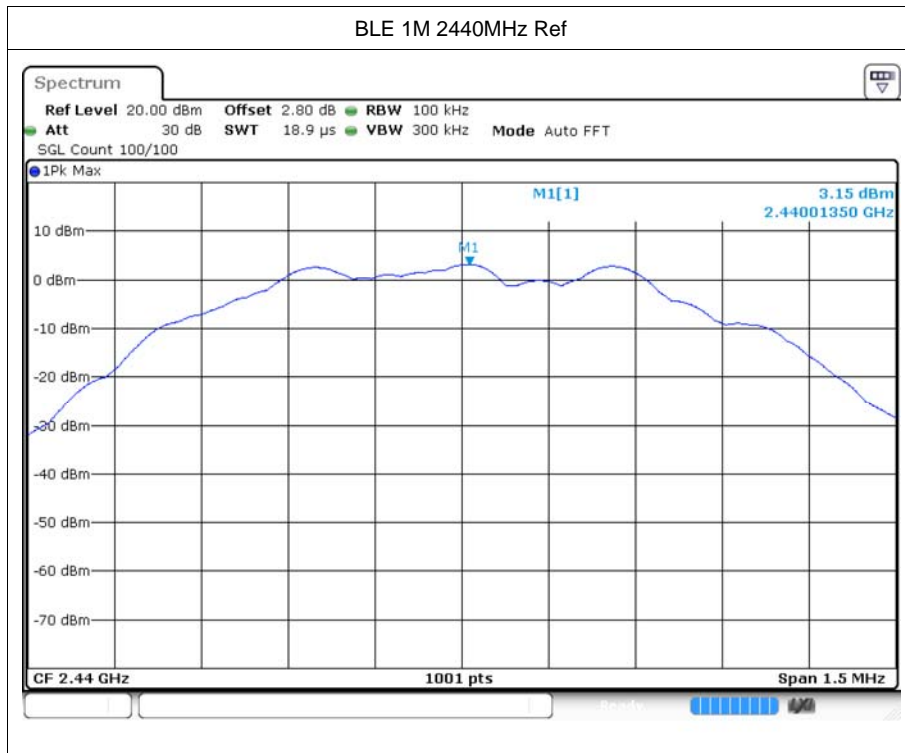
6 Conducted RF Spurious Emission

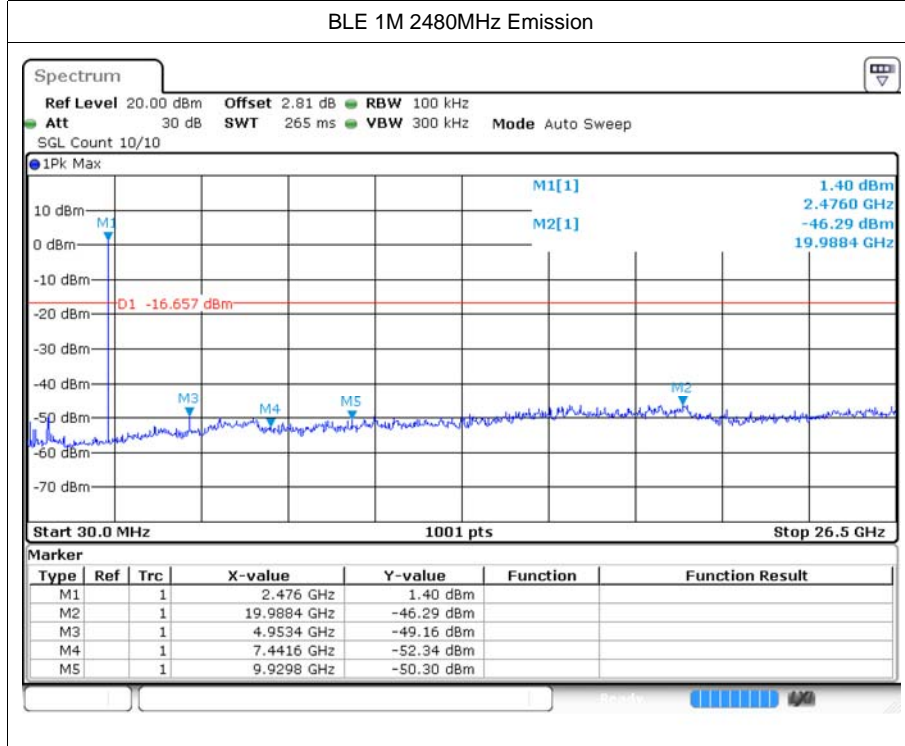
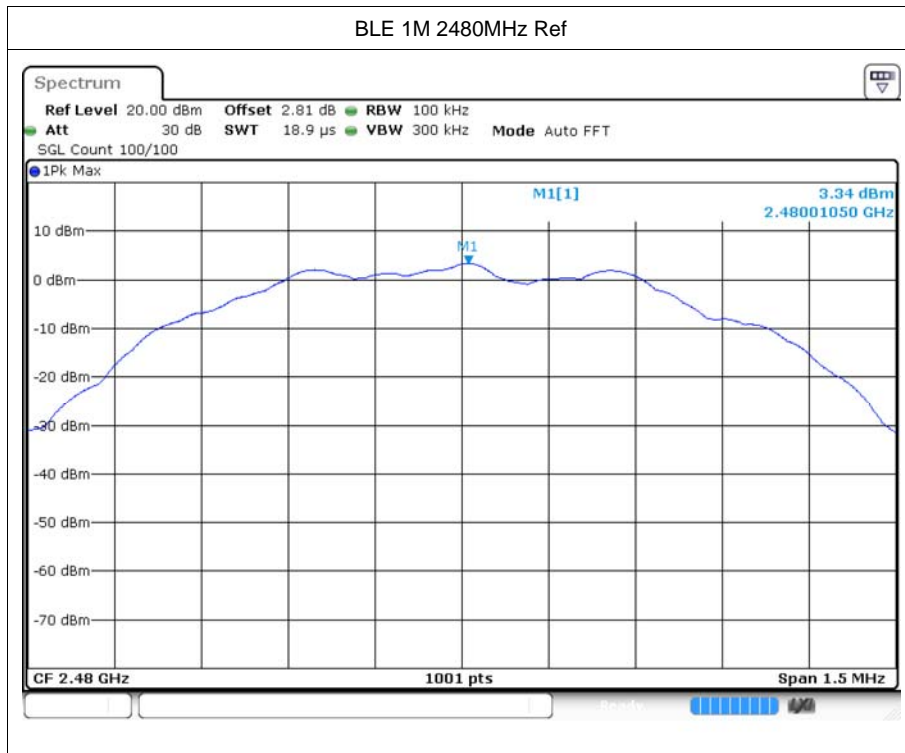
6.1 Test Result

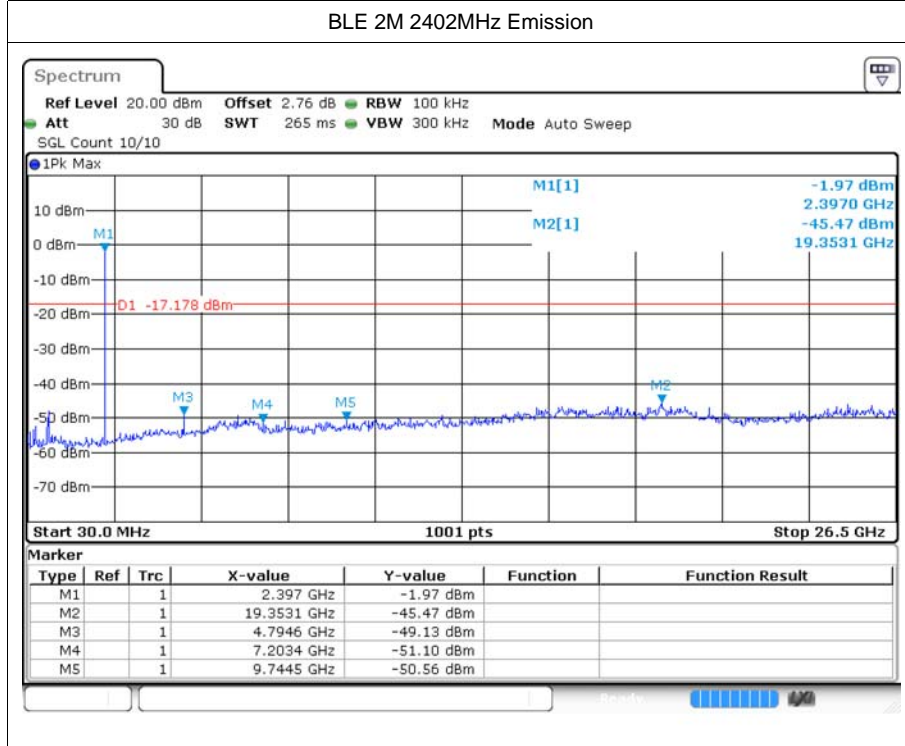
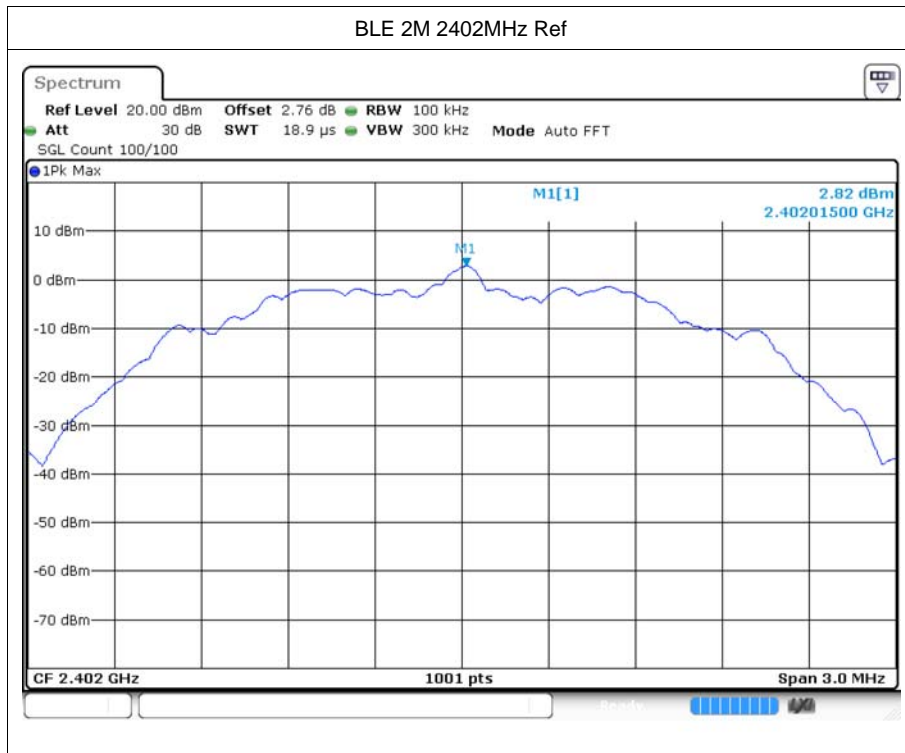
| Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|--------|-----------------|-----------------|-------------|---------|
| BLE 1M | 2402 | -48.6 | -20 | Pass |
| BLE 1M | 2440 | -48.64 | -20 | Pass |
| BLE 1M | 2480 | -49.63 | -20 | Pass |
| BLE 2M | 2402 | -48.29 | -20 | Pass |
| BLE 2M | 2440 | -48.84 | -20 | Pass |
| BLE 2M | 2480 | -49.09 | -20 | Pass |

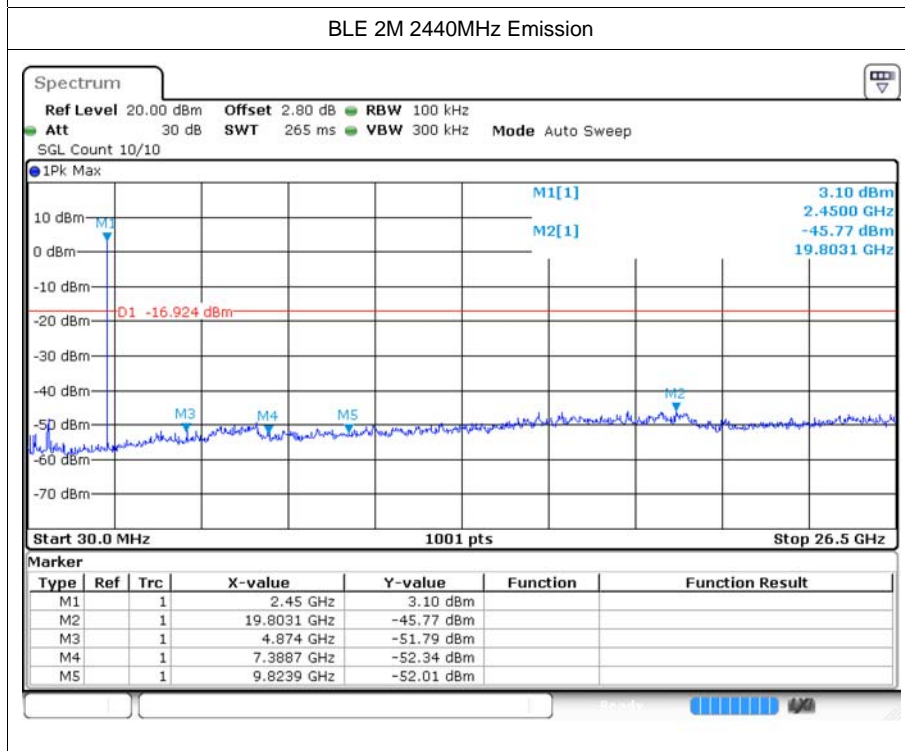
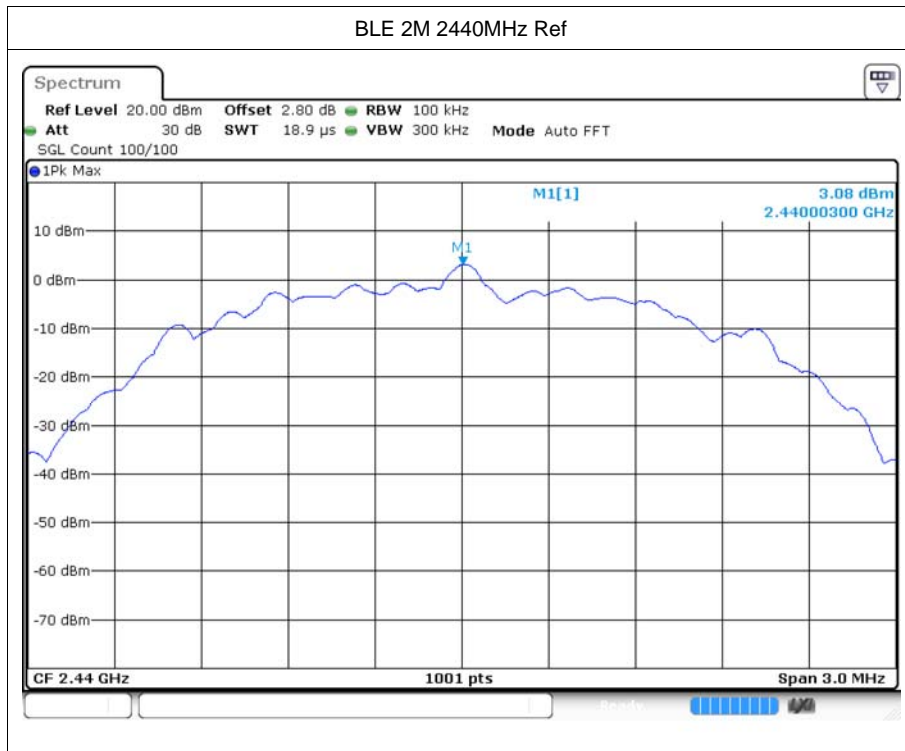
6.2 Test Graphs

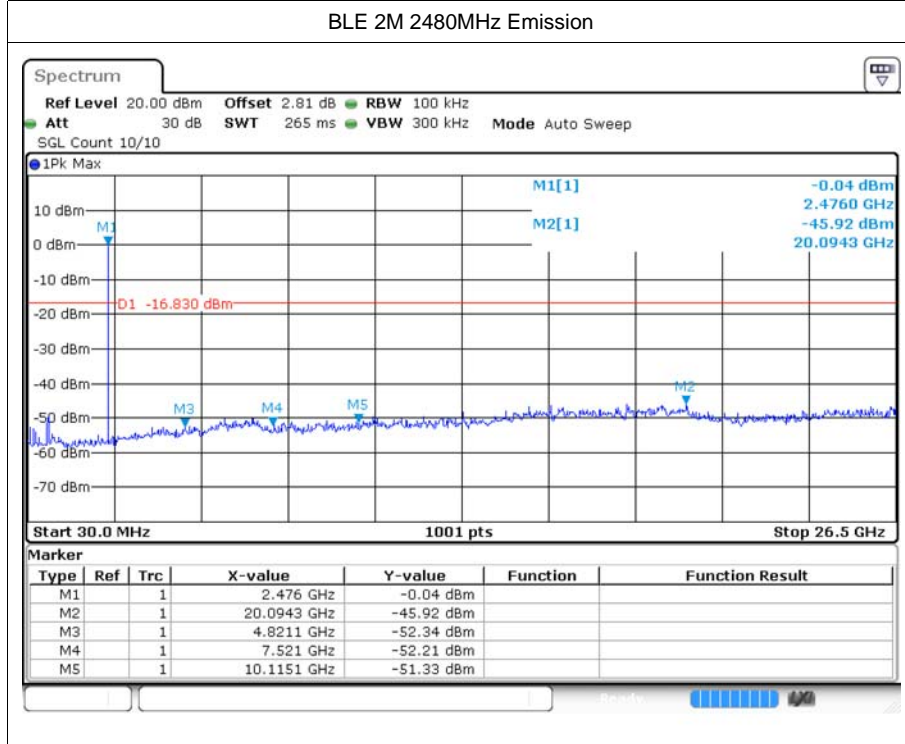
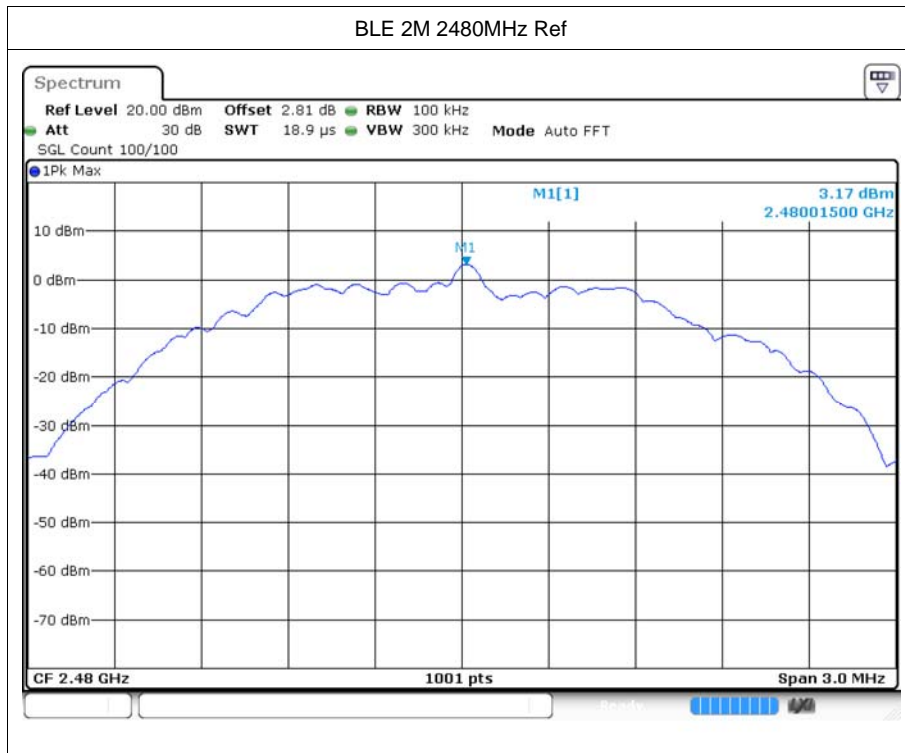












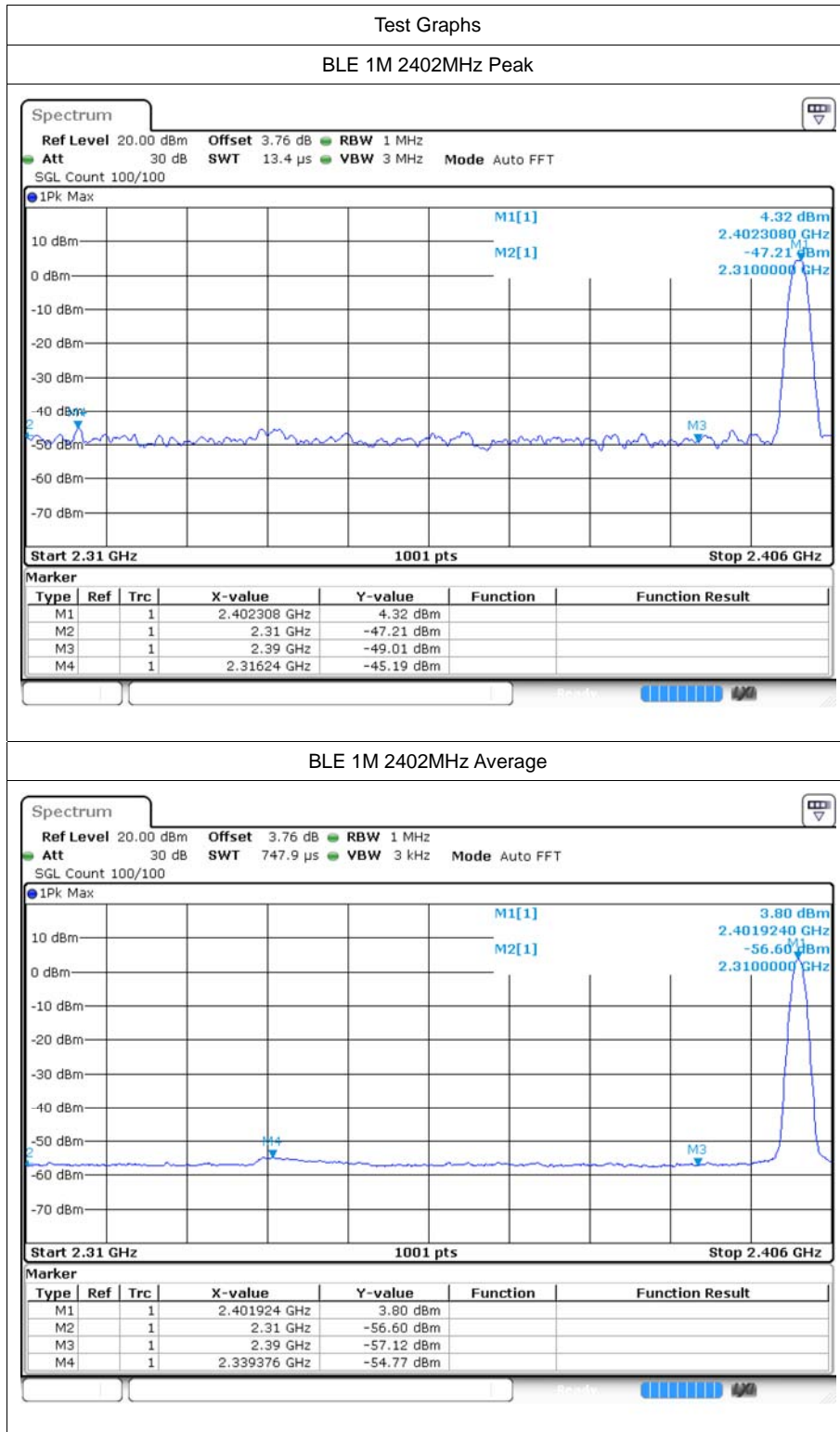


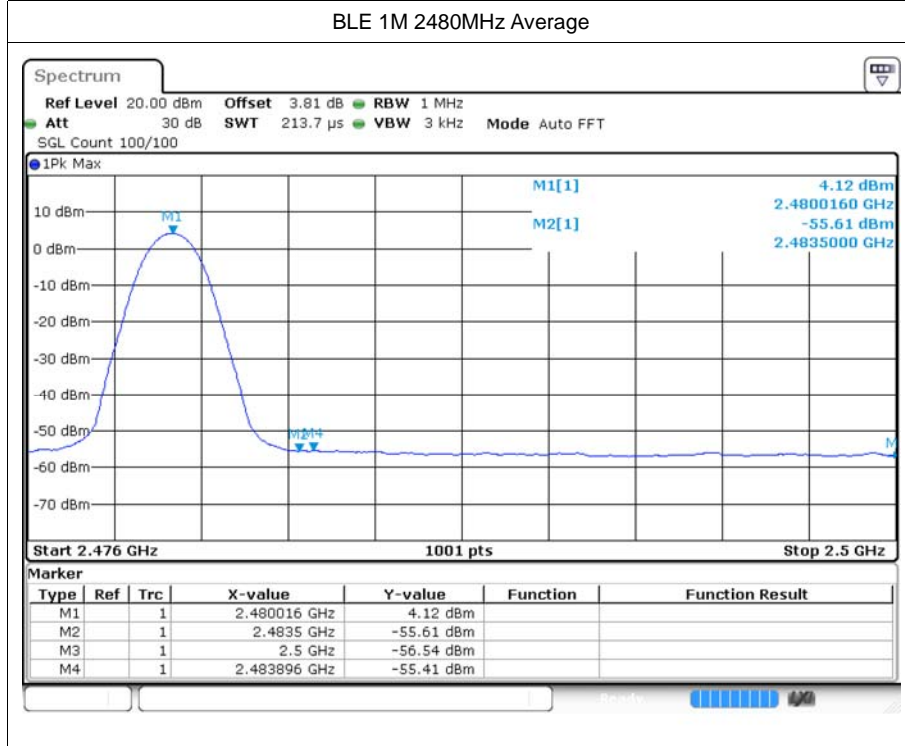
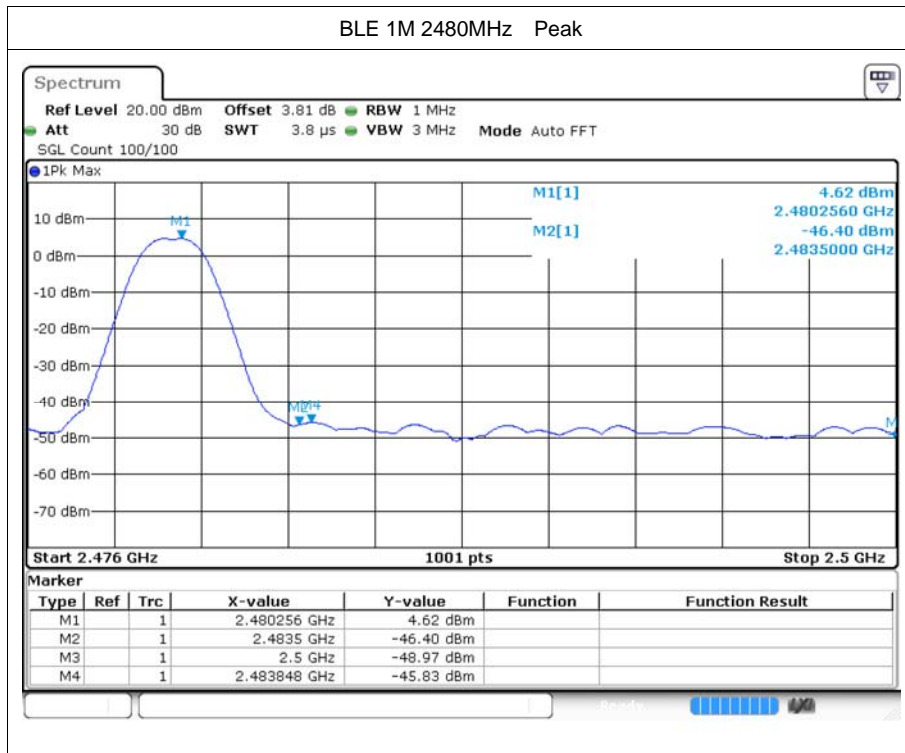
7 Restrict Band

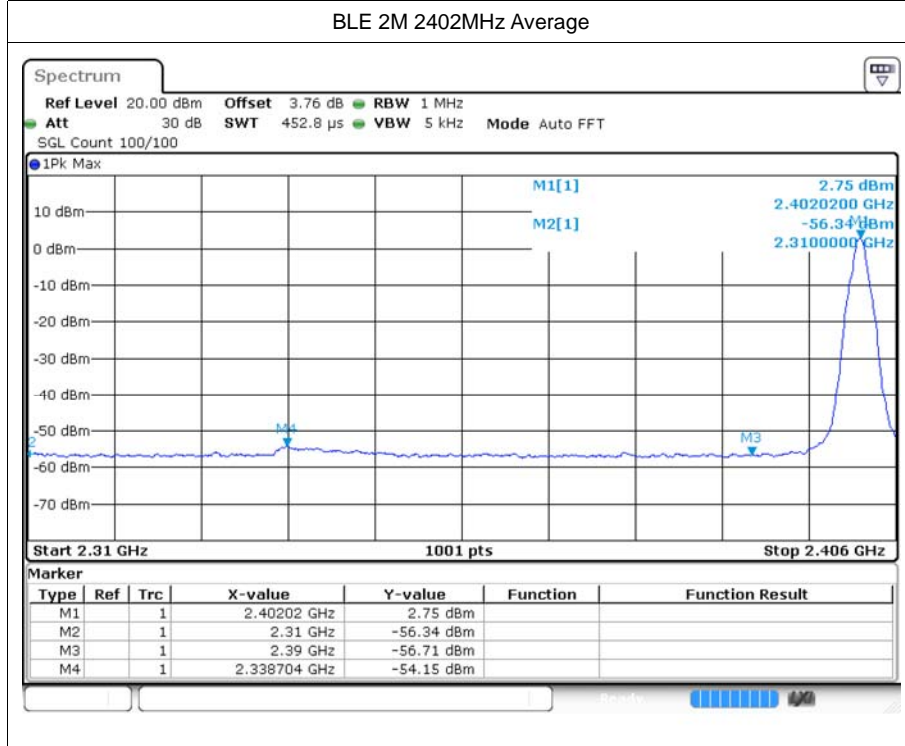
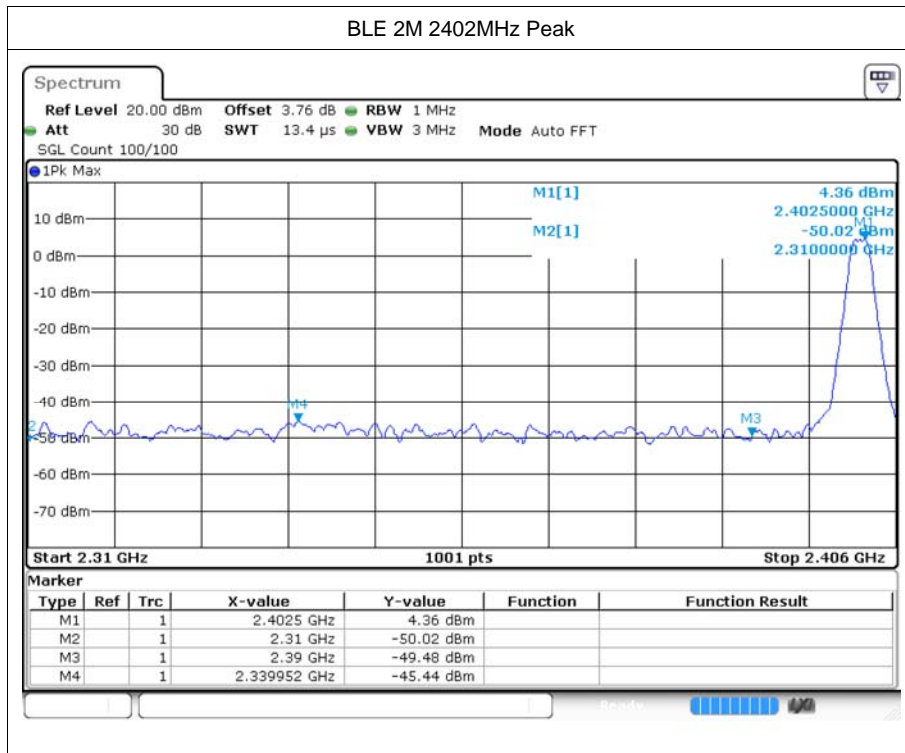
7.1 Test Result

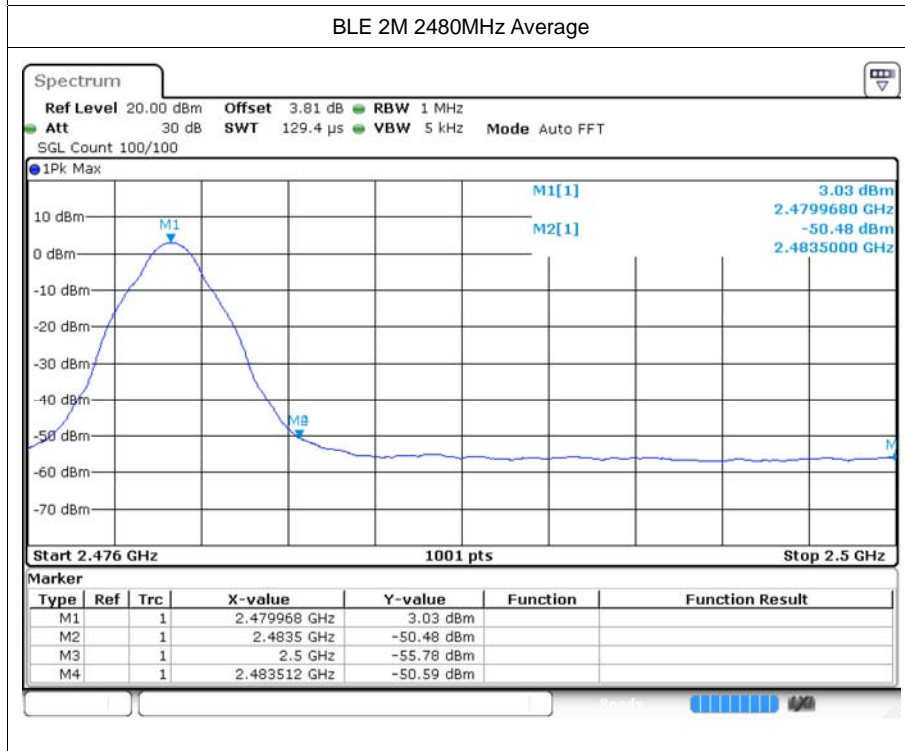
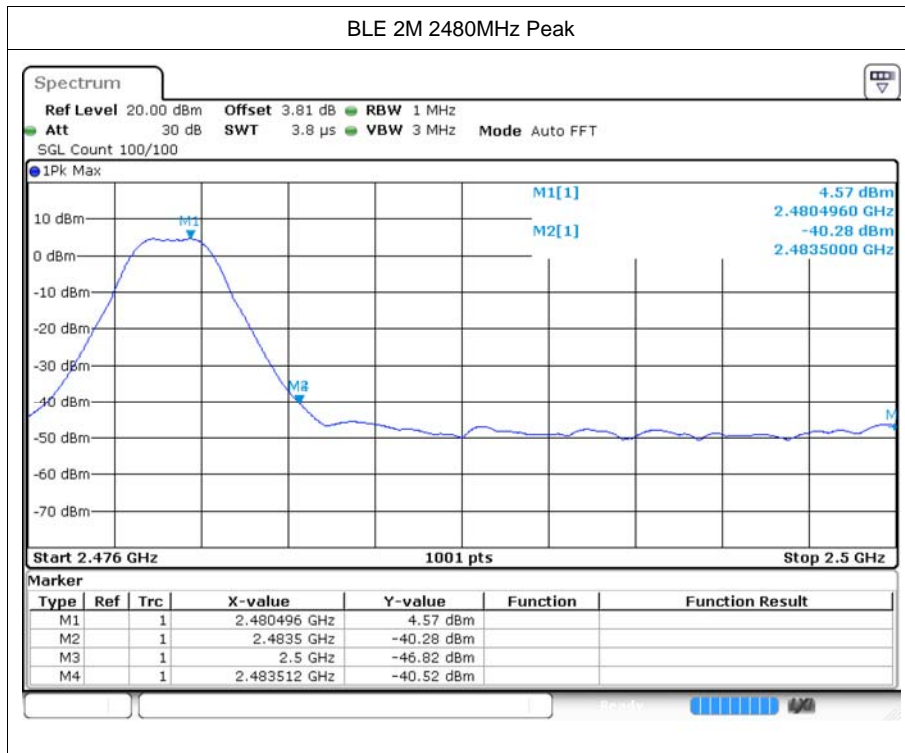
| Mode | Frequency (MHz) | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|--------|-----------------|-----------------|-------------|------------|------------|----------|----------------|---------|
| BLE 1M | 2402 | 2310 | -47.21 | 2 | 50.05 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2310 | -56.59 | 2 | 40.67 | Average | 54 | Pass |
| BLE 1M | 2402 | 2316.24 | -45.18 | 2 | 52.08 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2339.376 | -54.76 | 2 | 42.5 | Average | 54 | Pass |
| BLE 1M | 2402 | 2390 | -49 | 2 | 48.26 | Peak | 74 | Pass |
| BLE 1M | 2402 | 2390 | -57.11 | 2 | 40.15 | Average | 54 | Pass |
| BLE 1M | 2480 | 2483.5 | -46.33 | 2 | 50.93 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2483.5 | -55.59 | 2 | 41.67 | Average | 54 | Pass |
| BLE 1M | 2480 | 2483.848 | -45.82 | 2 | 51.44 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2483.896 | -55.4 | 2 | 41.86 | Average | 54 | Pass |
| BLE 1M | 2480 | 2500 | -48.97 | 2 | 48.29 | Peak | 74 | Pass |
| BLE 1M | 2480 | 2500 | -56.53 | 2 | 40.73 | Average | 54 | Pass |
| BLE 2M | 2402 | 2310 | -50.01 | 2 | 47.25 | Peak | 74 | Pass |
| BLE 2M | 2402 | 2310 | -56.34 | 2 | 40.92 | Average | 54 | Pass |
| BLE 2M | 2402 | 2339.952 | -45.44 | 2 | 51.82 | Peak | 74 | Pass |
| BLE 2M | 2402 | 2338.704 | -54.14 | 2 | 43.12 | Average | 54 | Pass |
| BLE 2M | 2402 | 2390 | -49.48 | 2 | 47.78 | Peak | 74 | Pass |
| BLE 2M | 2402 | 2390 | -56.71 | 2 | 40.55 | Average | 54 | Pass |
| BLE 2M | 2480 | 2483.5 | -40.52 | 2 | 56.74 | Peak | 74 | Pass |
| BLE 2M | 2480 | 2483.5 | -50.58 | 2 | 46.68 | Average | 54 | Pass |
| BLE 2M | 2480 | 2483.512 | -40.52 | 2 | 56.74 | Peak | 74 | Pass |
| BLE 2M | 2480 | 2483.512 | -50.58 | 2 | 46.68 | Average | 54 | Pass |
| BLE 2M | 2480 | 2500 | -46.81 | 2 | 50.45 | Peak | 74 | Pass |
| BLE 2M | 2480 | 2500 | -55.77 | 2 | 41.49 | Average | 54 | Pass |

7.2 Test Graphs









---The End---