

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: Tri-Mode Mouse

Test Model: SM822

Environmental Conditions

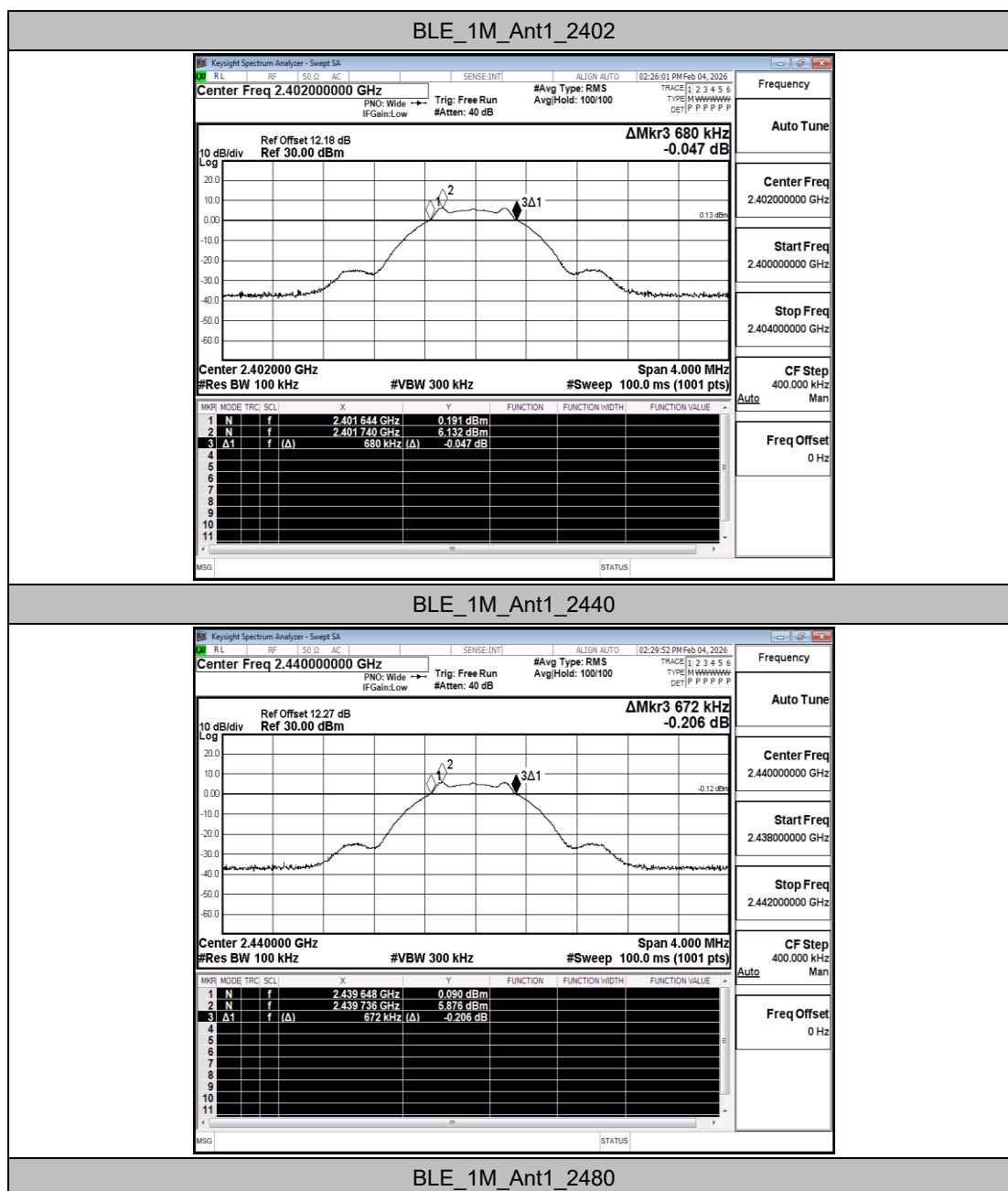
|                    |              |
|--------------------|--------------|
| Temperature:       | 24.3°C       |
| Relative Humidity: | 52.8%        |
| ATM Pressure:      | 100.0 kPa    |
| Test Engineer:     | Zhang hai    |
| Supervised by:     | Fengliu Tang |

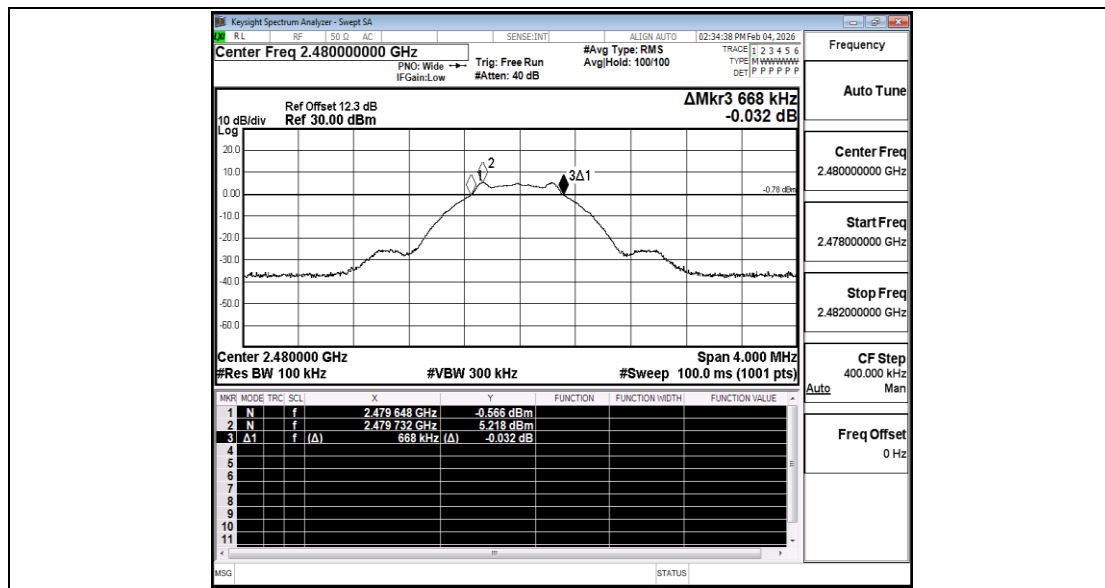
## A.1 DTS Bandwidth

### Test Result

| TestMode | Antenna | Freq(MHz) | DTS BW<br>[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|-----------|-----------------|----------|----------|------------|---------|
| BLE_1M   | Ant1    | 2402      | 0.680           | 2401.644 | 2402.324 | 0.5        | PASS    |
|          |         | 2440      | 0.672           | 2439.648 | 2440.320 | 0.5        | PASS    |
|          |         | 2480      | 0.668           | 2479.648 | 2480.316 | 0.5        | PASS    |

## Test Graphs



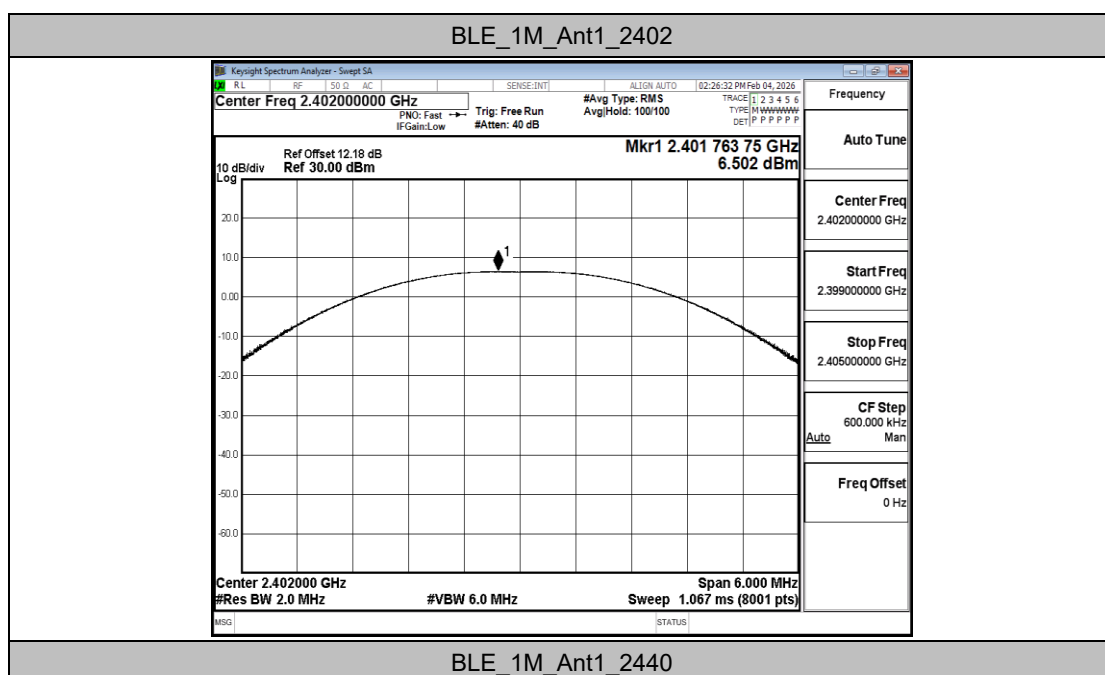


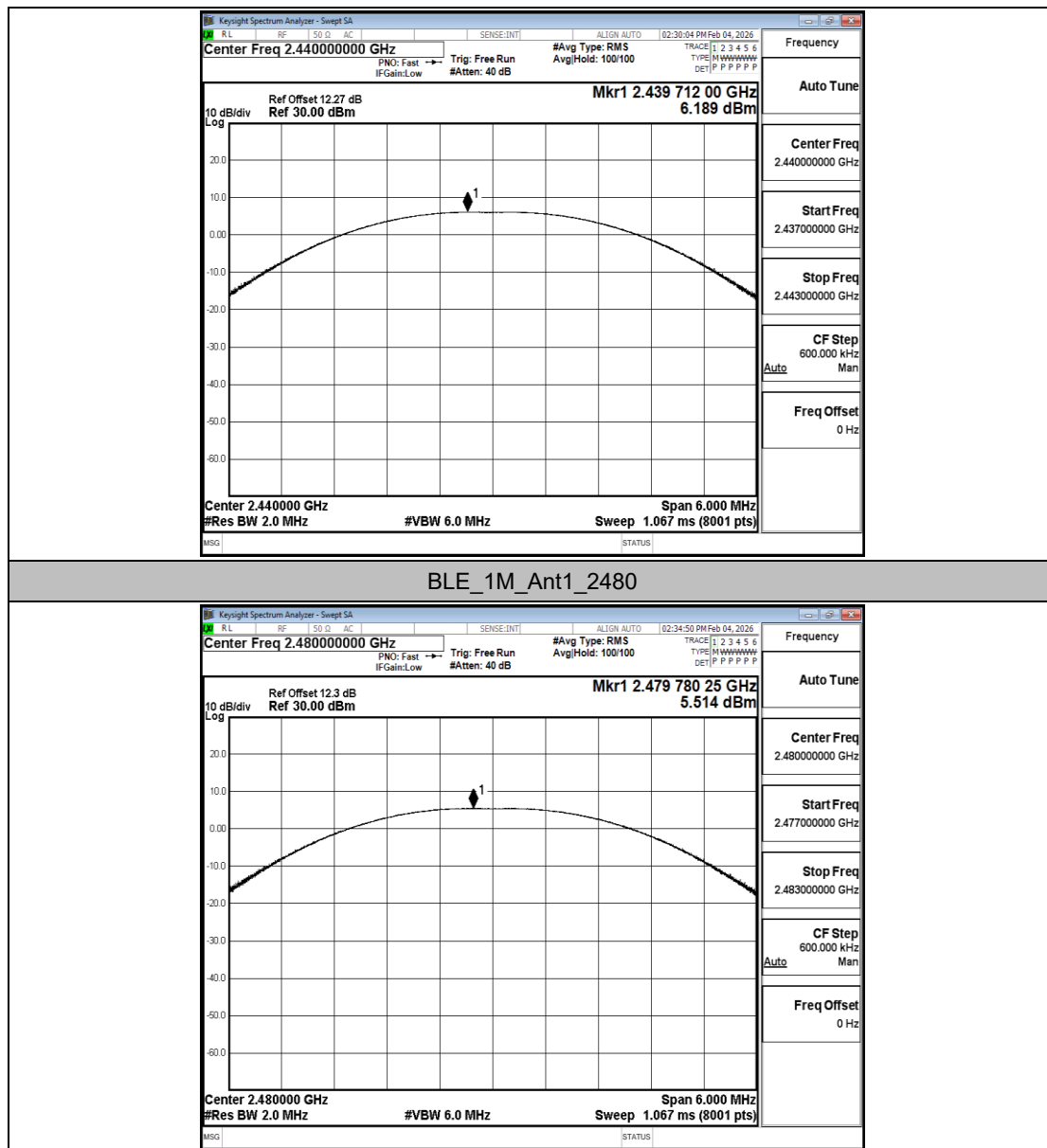
## A.2 Maximum Peak conducted output power

### Test Result Peak

| TestMode | Antenna | Freq(MHz) | Conducted Peak Power[dBm] | Conducted Limit[dBm] | EIRP[dBm] | EIRP Limit[dBm] | Verdict |
|----------|---------|-----------|---------------------------|----------------------|-----------|-----------------|---------|
| BLE_1M   | Ant1    | 2402      | 6.50                      | ≤30                  | 9.53      | ≤36             | PASS    |
|          |         | 2440      | 6.19                      | ≤30                  | 9.22      | ≤36             | PASS    |
|          |         | 2480      | 5.51                      | ≤30                  | 8.54      | ≤36             | PASS    |

### Test Graphs Peak



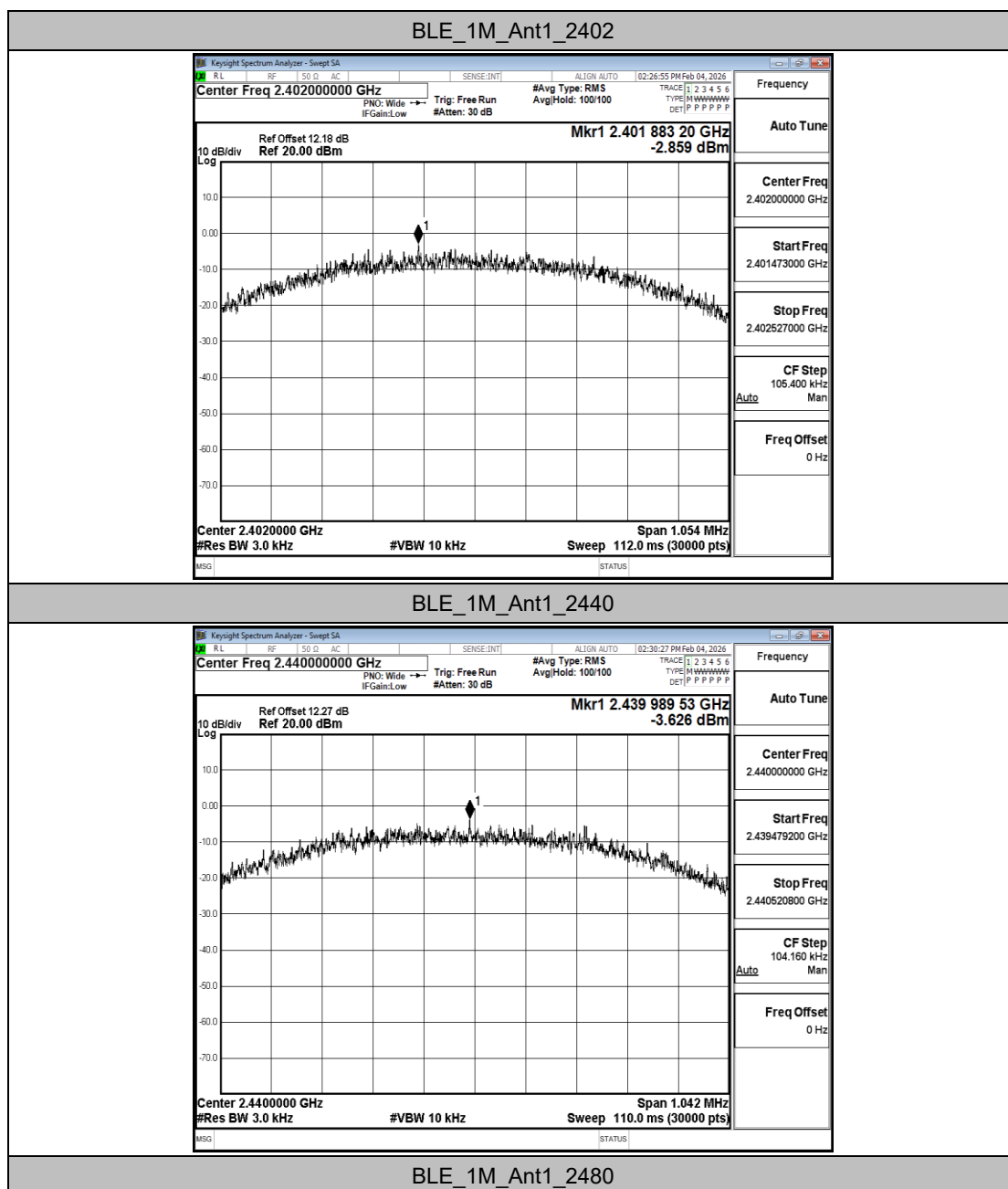


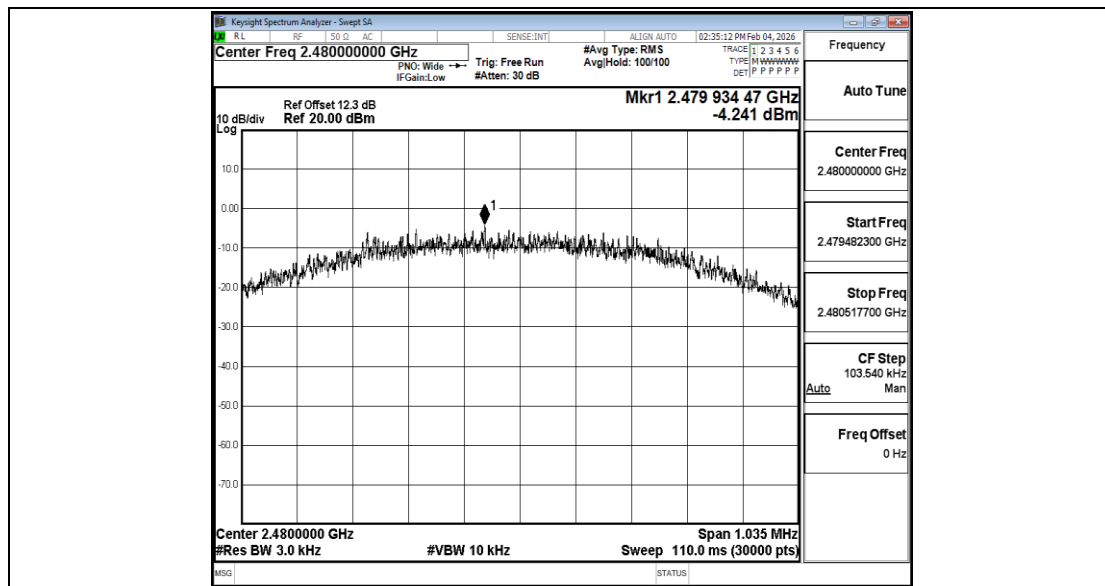
### A.3 Maximum power spectral density

#### Test Result

| TestMode | Antenna | Freq(MHz) | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|-----------|------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402      | -2.86            | ≤8.00           | PASS    |
|          |         | 2440      | -3.63            | ≤8.00           | PASS    |
|          |         | 2480      | -4.24            | ≤8.00           | PASS    |

## Test Graphs



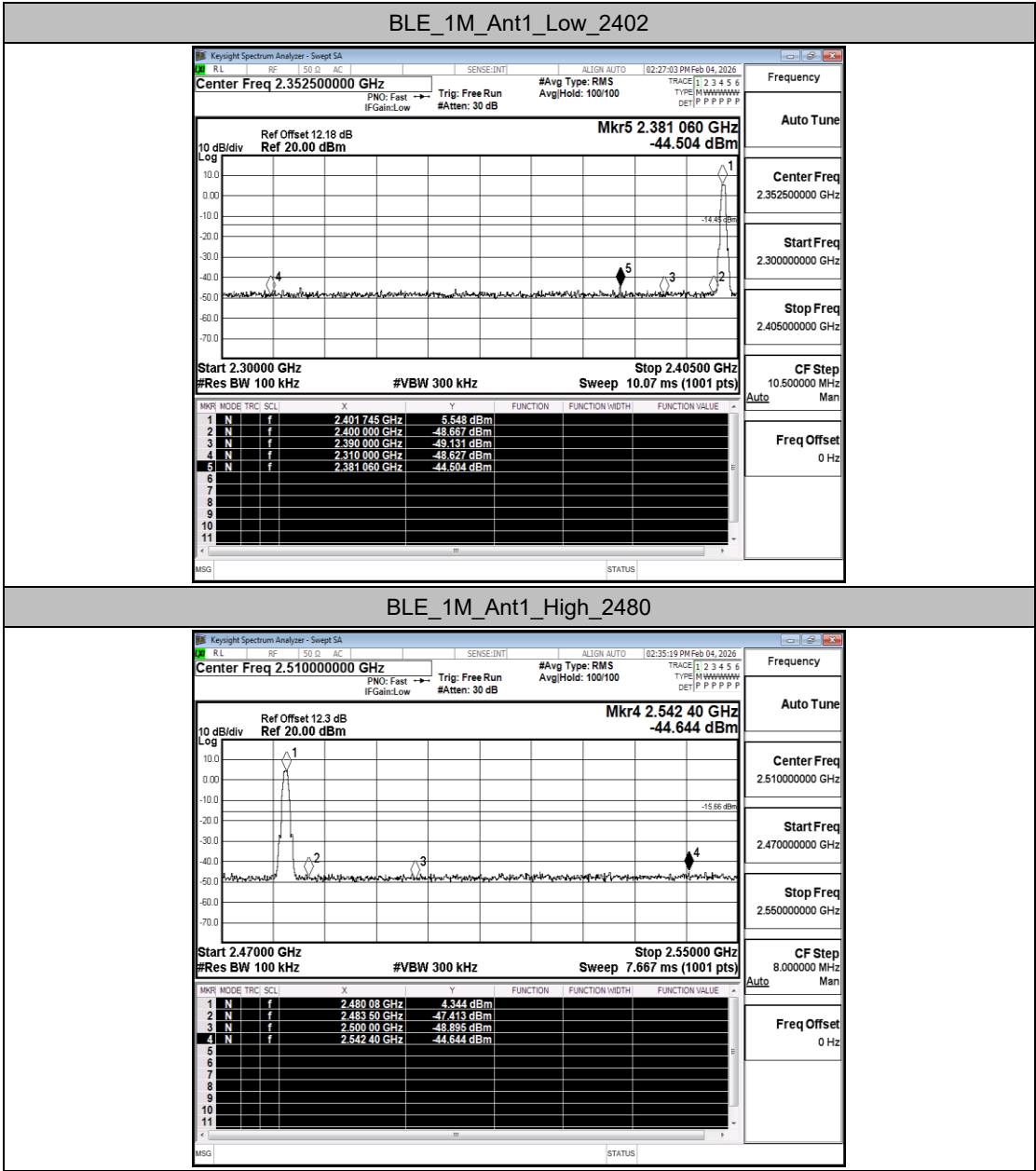


## A.4 Band edge measurements

### Test Result

| TestMode | Antenna | Channel | Freq(MHz) | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-----------|---------------|-------------|------------|---------|
| BLE_1M   | Ant1    | Low     | 2402      | 5.55          | -44.5       | ≤-14.45    | PASS    |
|          |         | High    | 2480      | 4.34          | -44.64      | ≤-15.66    | PASS    |

Test Graphs

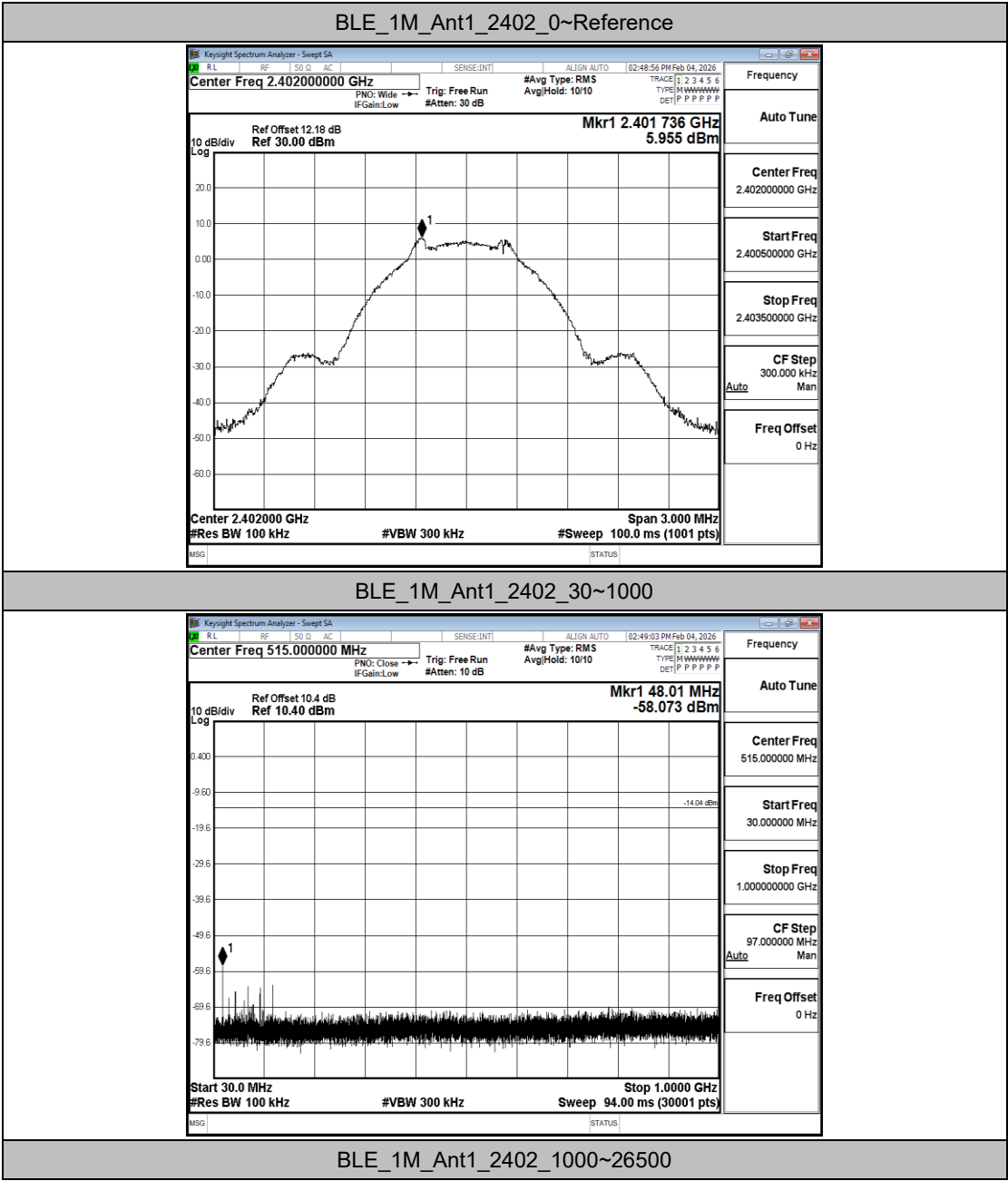


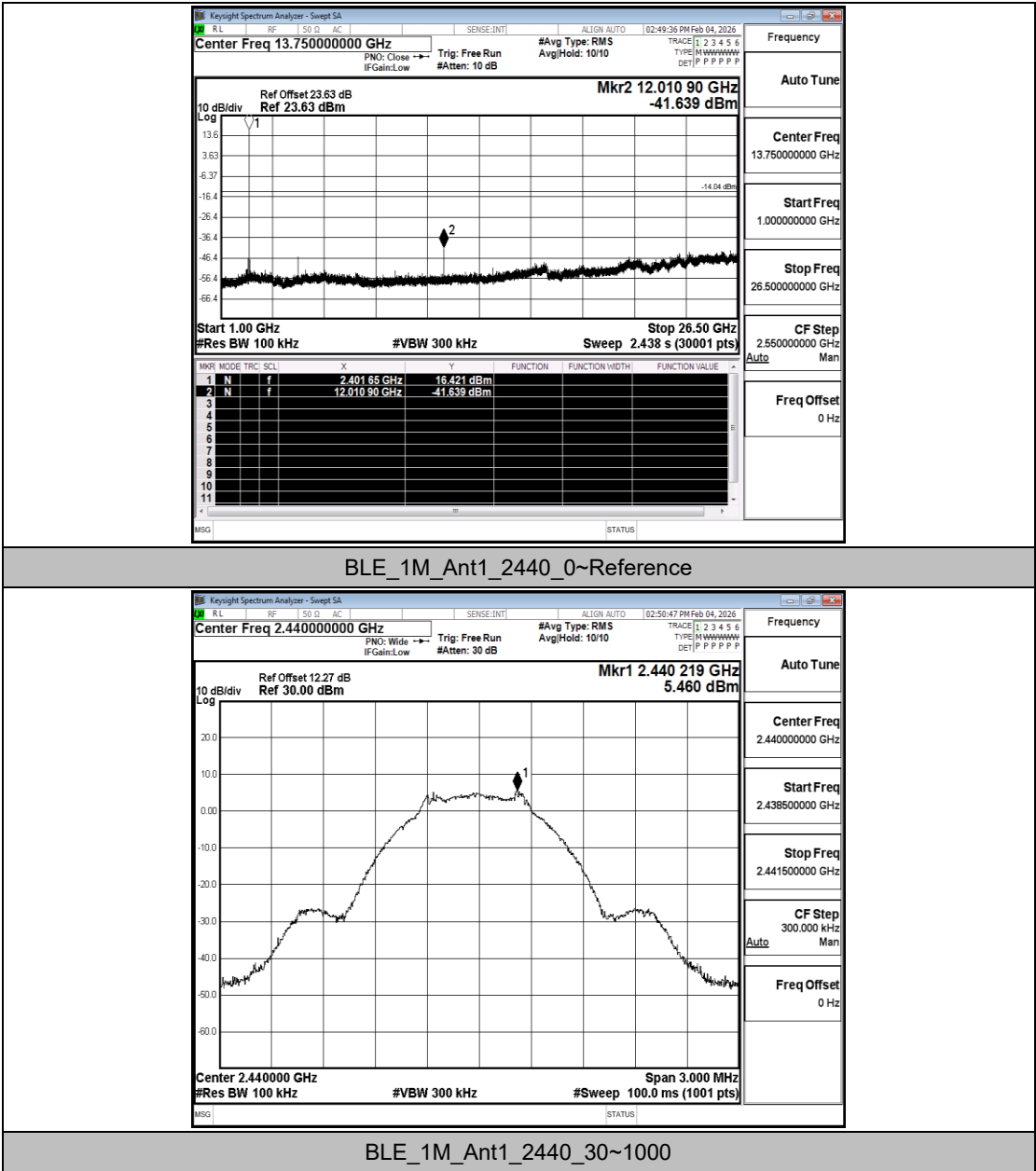
## A.5 Conducted Spurious Emission

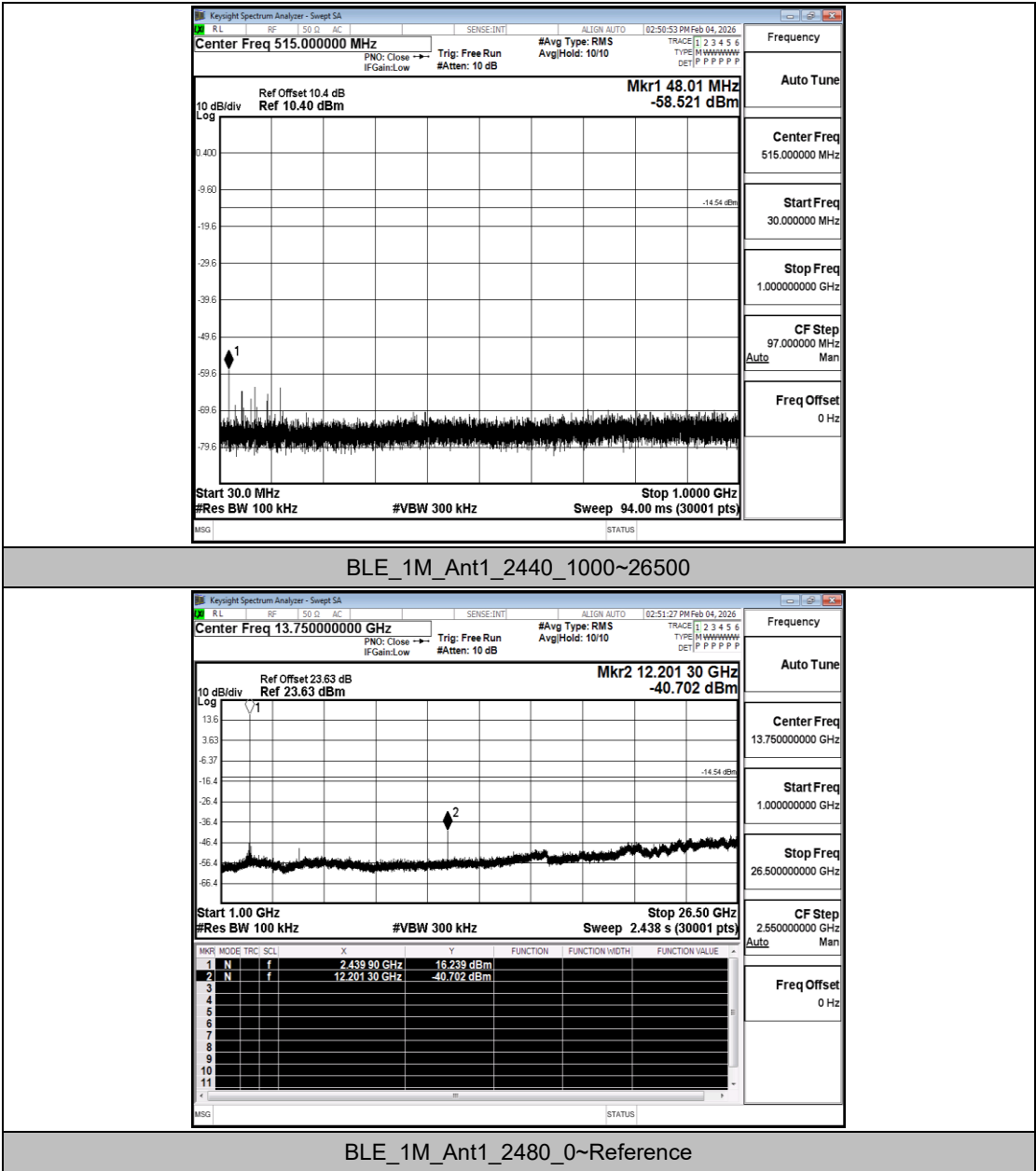
### Test Result

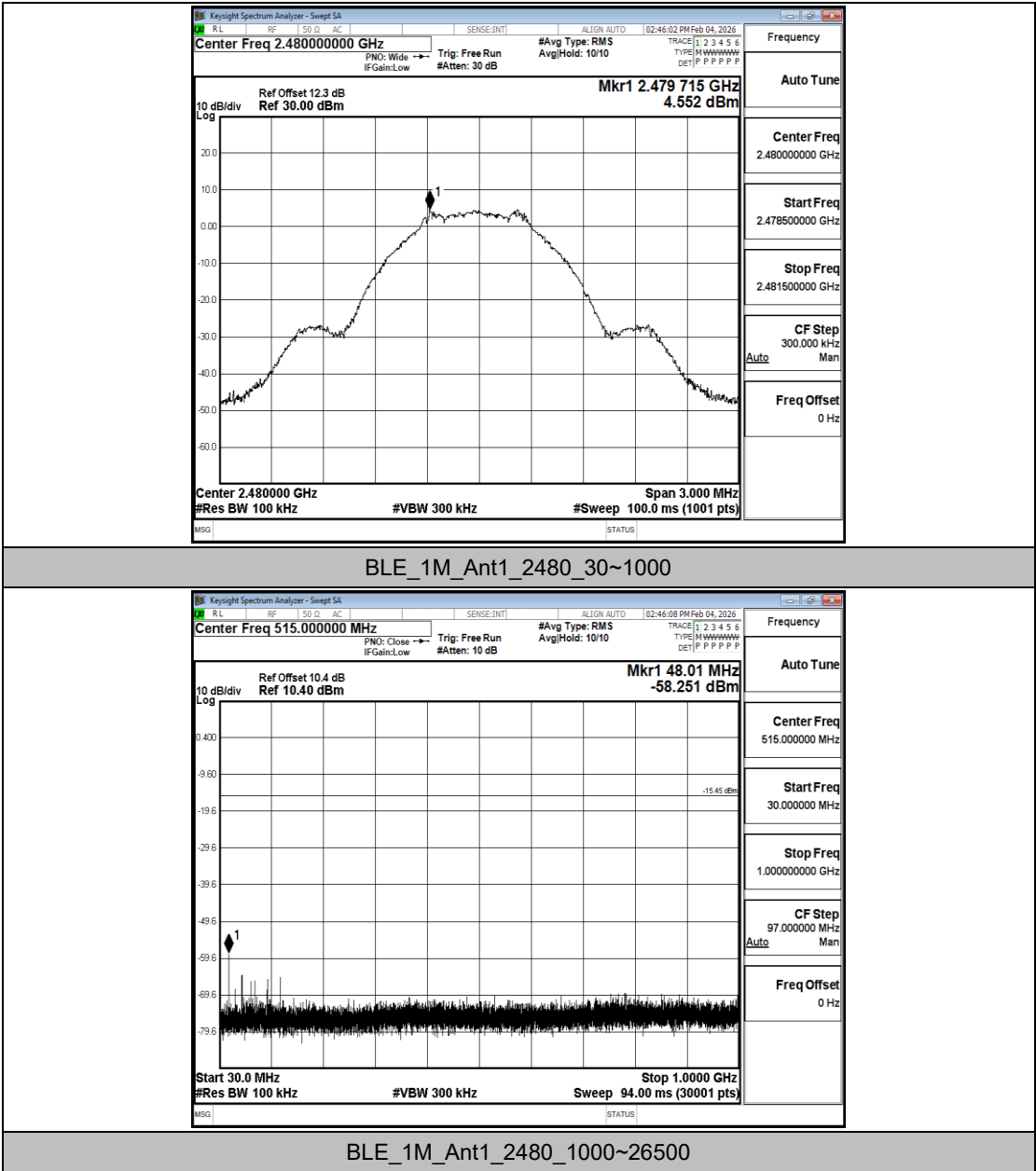
| TestMode | Antenna | Freq(MHz) | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|-----------|-----------------|----------------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402      | Reference       | 5.96           | 5.96        | ---        | PASS    |
|          |         |           | 30~1000         | 5.96           | -58.07      | ≤-14.04    | PASS    |
|          |         |           | 1000~26500      | 5.96           | -41.64      | ≤-14.04    | PASS    |
|          |         | 2440      | Reference       | 5.46           | 5.46        | ---        | PASS    |
|          |         |           | 30~1000         | 5.46           | -58.52      | ≤-14.54    | PASS    |
|          |         |           | 1000~26500      | 5.46           | -40.7       | ≤-14.54    | PASS    |
|          |         | 2480      | Reference       | 4.55           | 4.55        | ---        | PASS    |
|          |         |           | 30~1000         | 4.55           | -58.25      | ≤-15.45    | PASS    |
|          |         |           | 1000~26500      | 4.55           | -40.44      | ≤-15.45    | PASS    |

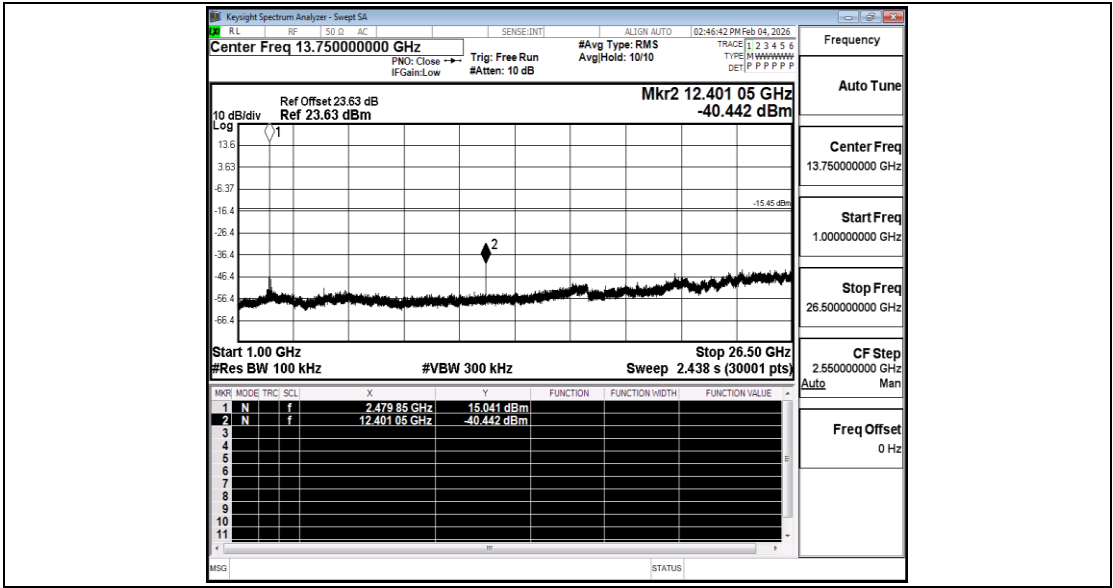
Test Graphs









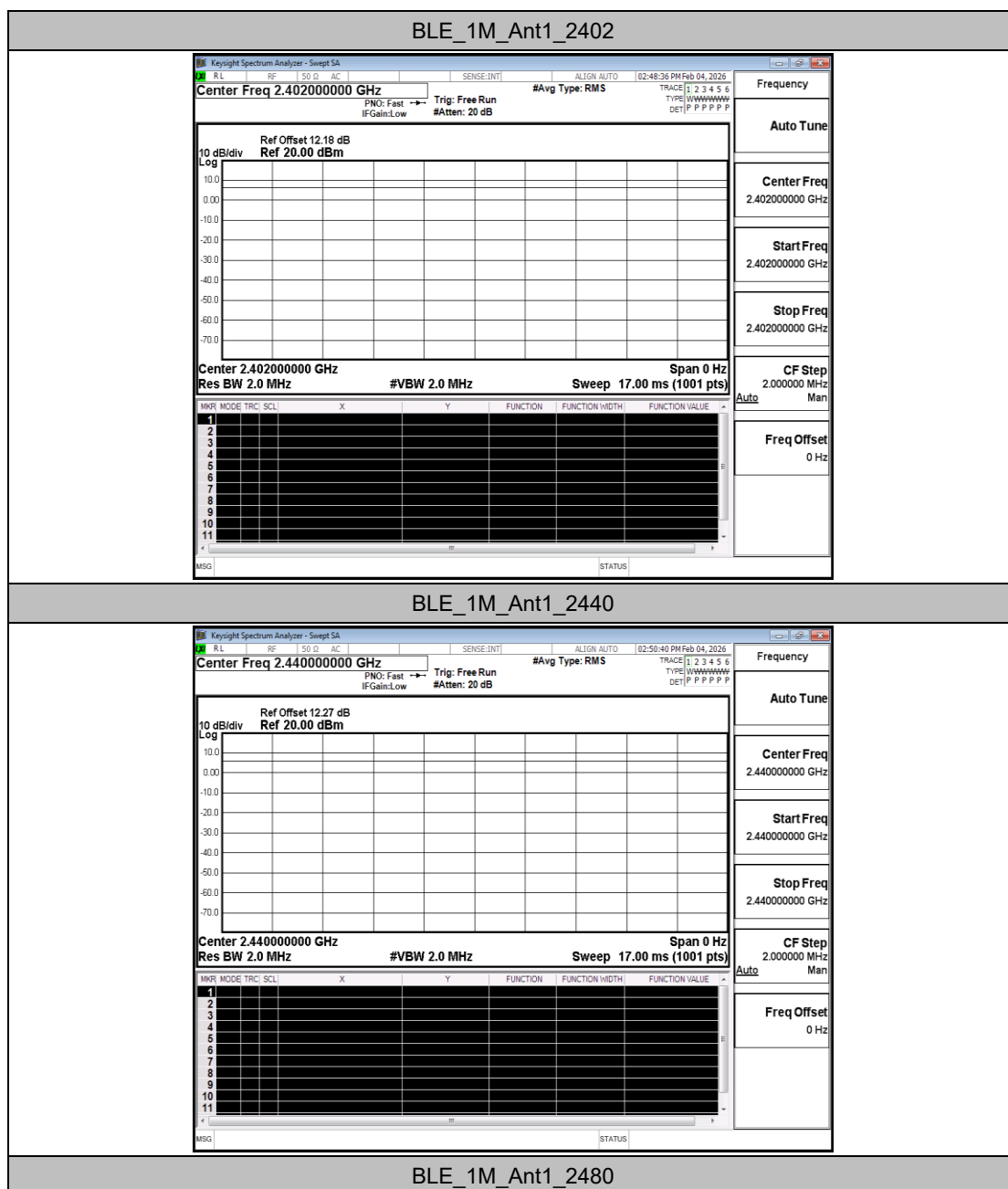


## A.6 Duty Cycle

### Test Result

| TestMode | Antenna | Freq(MHz) | ON<br>Time<br>[ms] | Period<br>[ms] | X      | DC<br>[%] | xFactor | Limit | Verdict |
|----------|---------|-----------|--------------------|----------------|--------|-----------|---------|-------|---------|
| BLE_1M   | Ant1    | 2402      | 17.00              | 17.00          | 1.0000 | 100.00    | 0.00    | ---   | ---     |
|          |         | 2440      | 17.00              | 17.00          | 1.0000 | 100.00    | 0.00    | ---   | ---     |
|          |         | 2480      | 17.00              | 17.00          | 1.0000 | 100.00    | 0.00    | ---   | ---     |

## Test Graphs





## A.7 Emissions in Restricted Bands

### Test Result

| TestMode | Antenna | ChName | Freq(MHz) | Detector | Freq [MHz] | Result [dBm] | Limit [dBm] | Gain [dBi] | DC Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Verdict |
|----------|---------|--------|-----------|----------|------------|--------------|-------------|------------|----------------|-----------------|----------------|---------|
| BLE_1M   | Ant1    | Low    | 2402      | AV       | 2310.000   | -58.12       | ≤-44.23     | 3.03       | 0.00           | 40.11           | ≤54            | PASS    |
|          |         |        |           | AV       | 2354.285   | -54.01       | ≤-44.23     | 3.03       | 0.00           | 44.22           | ≤54            | PASS    |
|          |         |        |           | AV       | 2390.000   | -57.76       | ≤-44.23     | 3.03       | 0.00           | 40.47           | ≤54            | PASS    |
|          |         |        |           | Peak     | 2310.000   | -49.28       | ≤-24.23     | 3.03       | 0.00           | 48.95           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2354.390   | -45.57       | ≤-24.23     | 3.03       | 0.00           | 52.66           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2390.000   | -51.37       | ≤-24.23     | 3.03       | 0.00           | 46.86           | ≤74            | PASS    |
|          |         | High   | 2480      | AV       | 2483.500   | -56.42       | ≤-44.23     | 3.03       | 0.00           | 41.81           | ≤54            | PASS    |
|          |         |        |           | AV       | 2483.920   | -54.3        | ≤-44.23     | 3.03       | 0.00           | 43.93           | ≤54            | PASS    |
|          |         |        |           | AV       | 2500.000   | -54.48       | ≤-44.23     | 3.03       | 0.00           | 43.75           | ≤54            | PASS    |
|          |         |        |           | Peak     | 2483.500   | -48.62       | ≤-24.23     | 3.03       | 0.00           | 49.61           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2485.360   | -46.96       | ≤-24.23     | 3.03       | 0.00           | 51.27           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2500.000   | -52.24       | ≤-24.23     | 3.03       | 0.00           | 45.99           | ≤74            | PASS    |

Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

