

## Appendix A

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

**Product Name: Waterless Aroma Diffuser**

**Test Model: A318**

#### Environmental Conditions

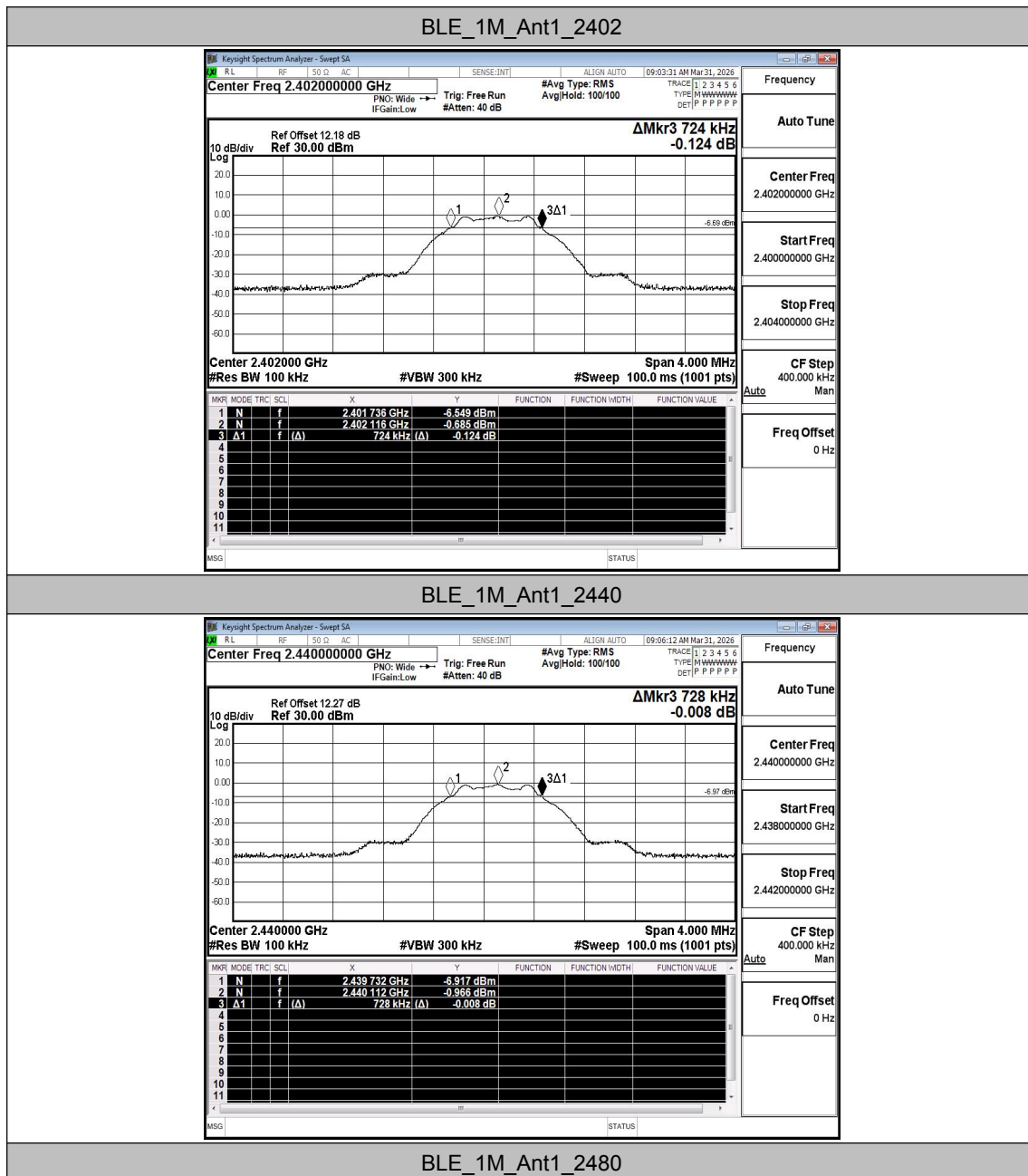
|                    |              |
|--------------------|--------------|
| Temperature:       | 24.1°C       |
| Relative Humidity: | 52.2%        |
| ATM Pressure:      | 100.0 kPa    |
| Test Engineer:     | Zhang hai    |
| Supervised by:     | Fengliu Tang |

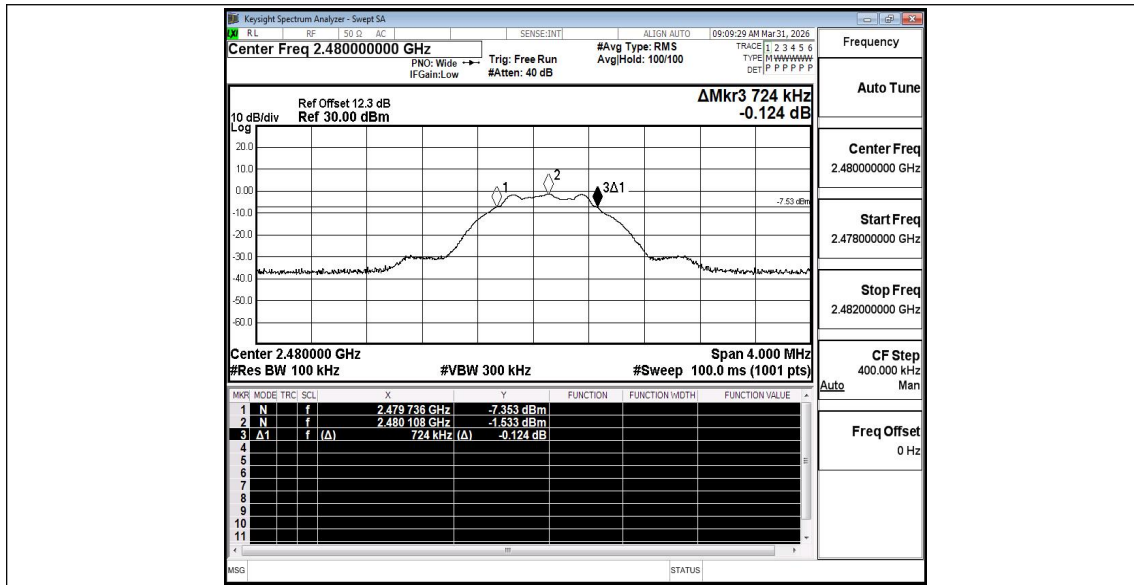
## A.1 DTS Bandwidth

### Test Result

| TestMode | Antenna | Freq(MHz) | DTS BW<br>[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|-----------|-----------------|----------|----------|------------|---------|
| BLE_1M   | Ant1    | 2402      | 0.724           | 2401.736 | 2402.460 | 0.5        | PASS    |
|          |         | 2440      | 0.728           | 2439.732 | 2440.460 | 0.5        | PASS    |
|          |         | 2480      | 0.724           | 2479.736 | 2480.460 | 0.5        | PASS    |

## Test Graphs



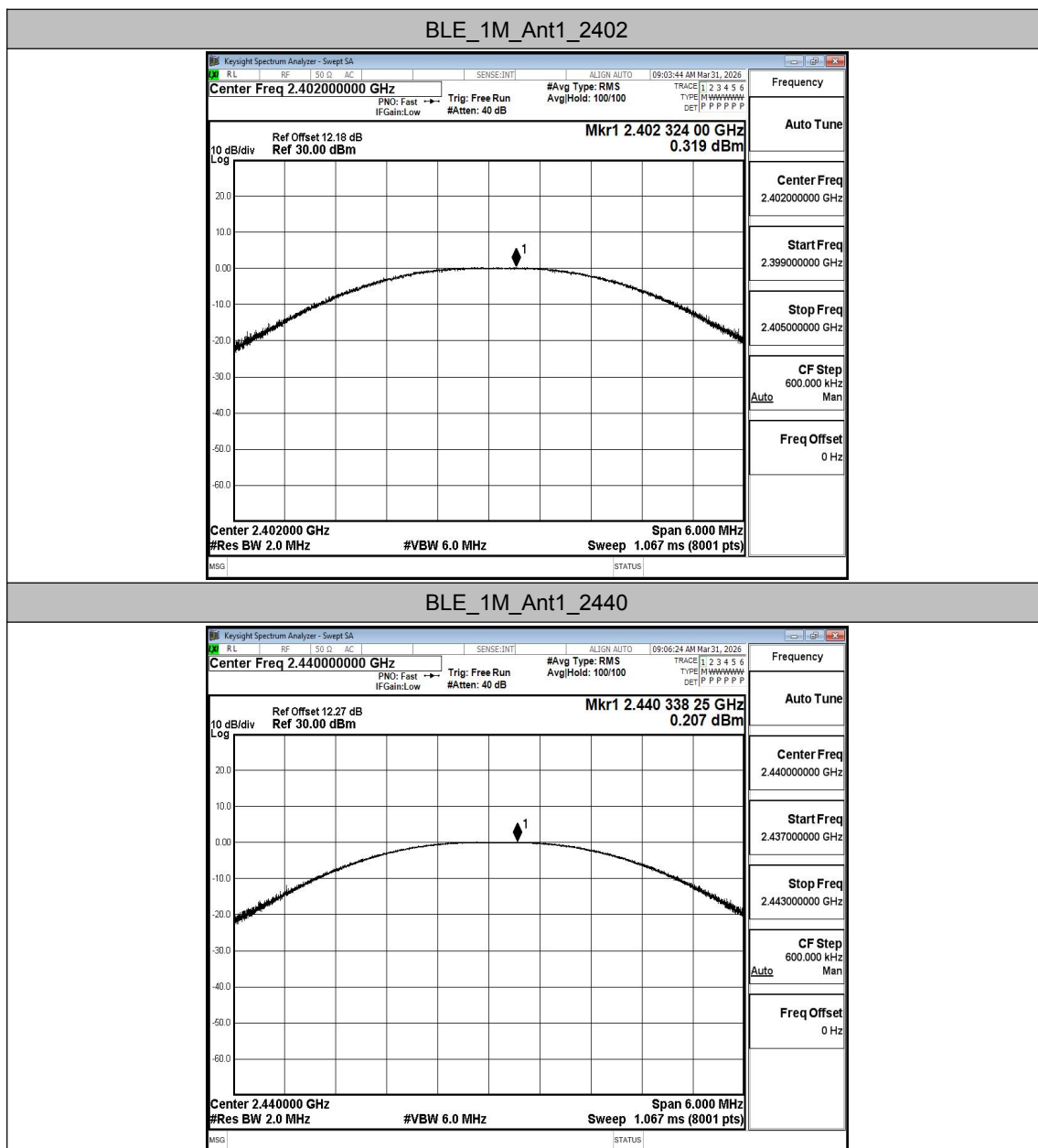


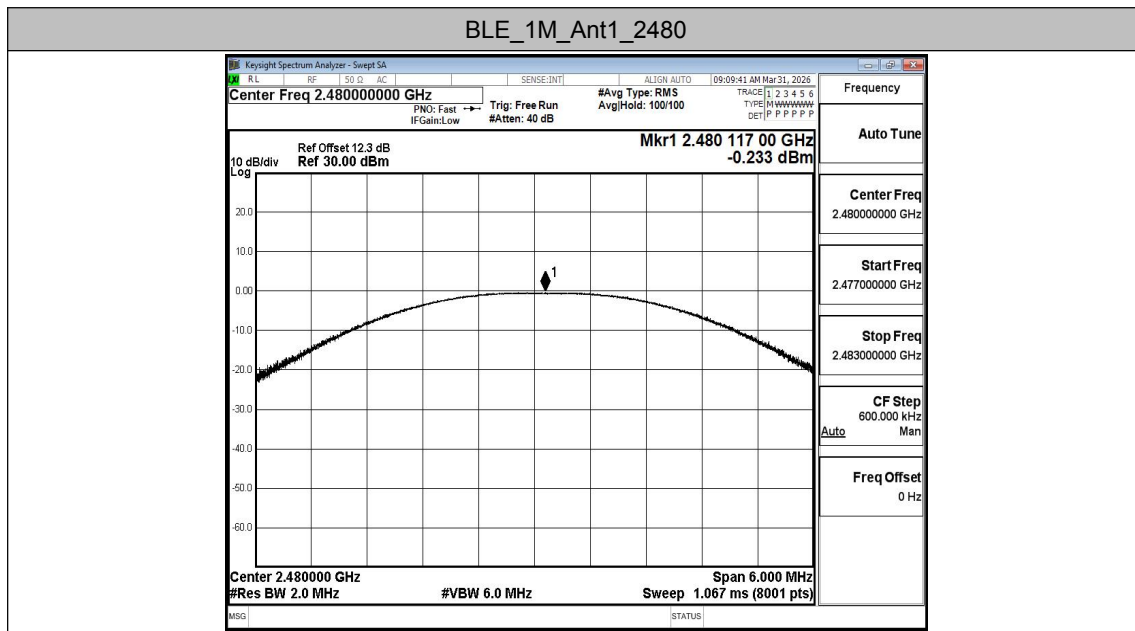
## A.2 Maximum Peak conducted output power

### Test Result Peak

| TestMode | Antenna | Freq(MHz) | Conducted Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|----------|---------|-----------|---------------------------|----------------------|---------|
| BLE_1M   | Ant1    | 2402      | 0.32                      | ≤30                  | PASS    |
|          |         | 2440      | 0.21                      | ≤30                  | PASS    |
|          |         | 2480      | -0.23                     | ≤30                  | PASS    |

### Test Graphs Peak



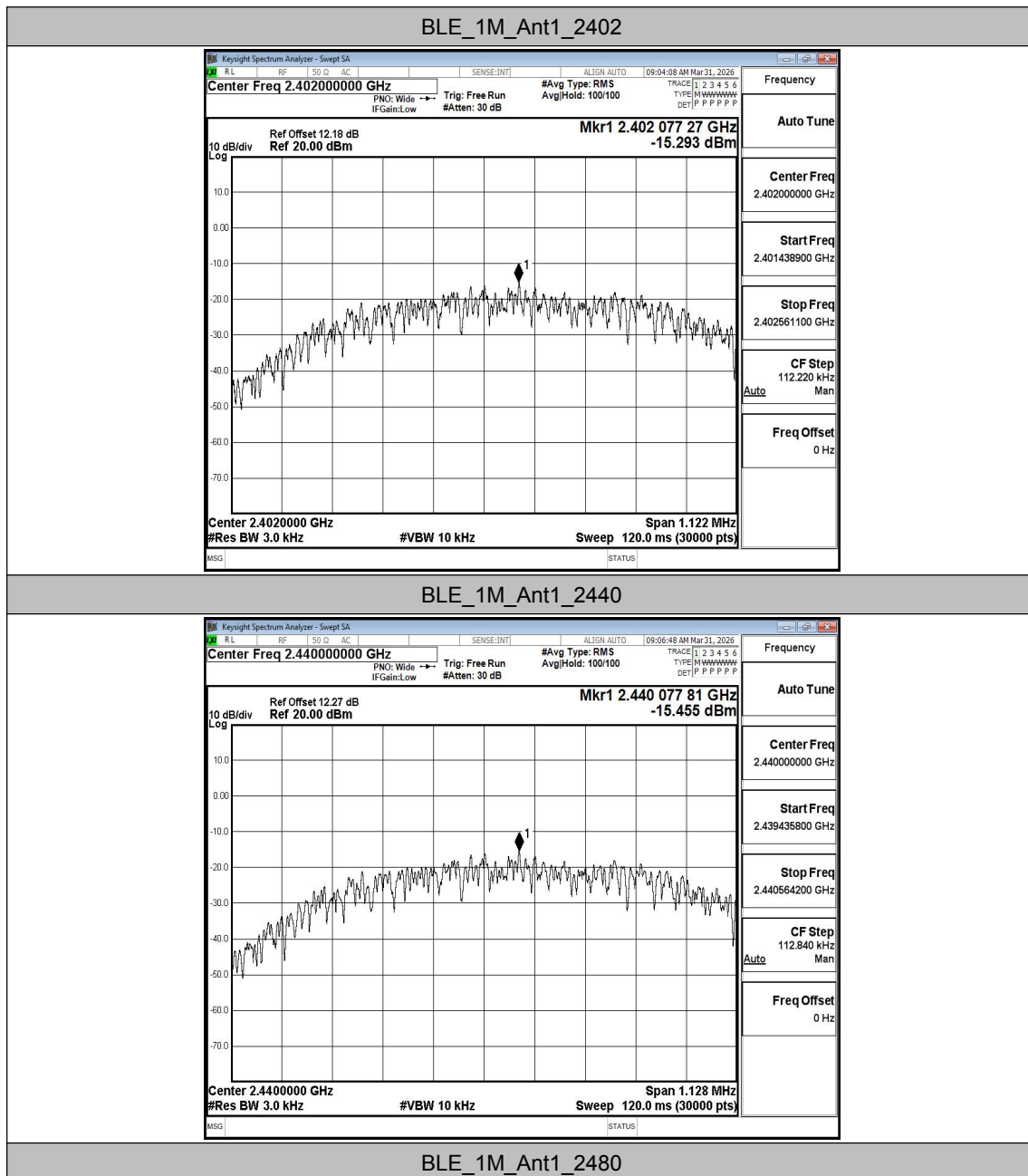


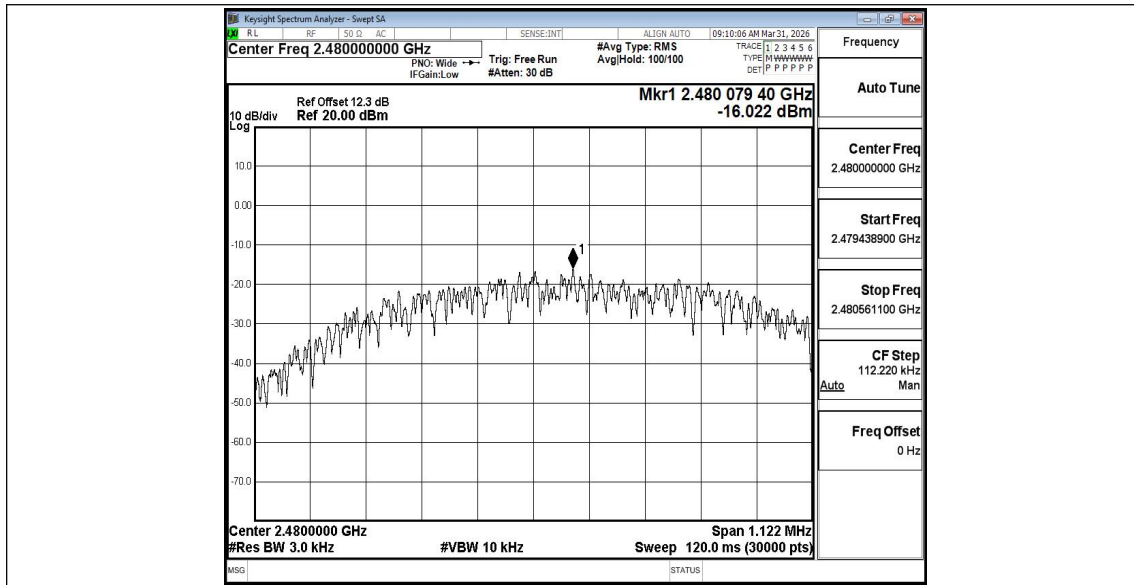
## A.3 Maximum power spectral density

### Test Result

| TestMode | Antenna | Freq(MHz) | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|-----------|------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402      | -15.29           | ≤8.00           | PASS    |
|          |         | 2440      | -15.46           | ≤8.00           | PASS    |
|          |         | 2480      | -16.02           | ≤8.00           | PASS    |

## Test Graphs



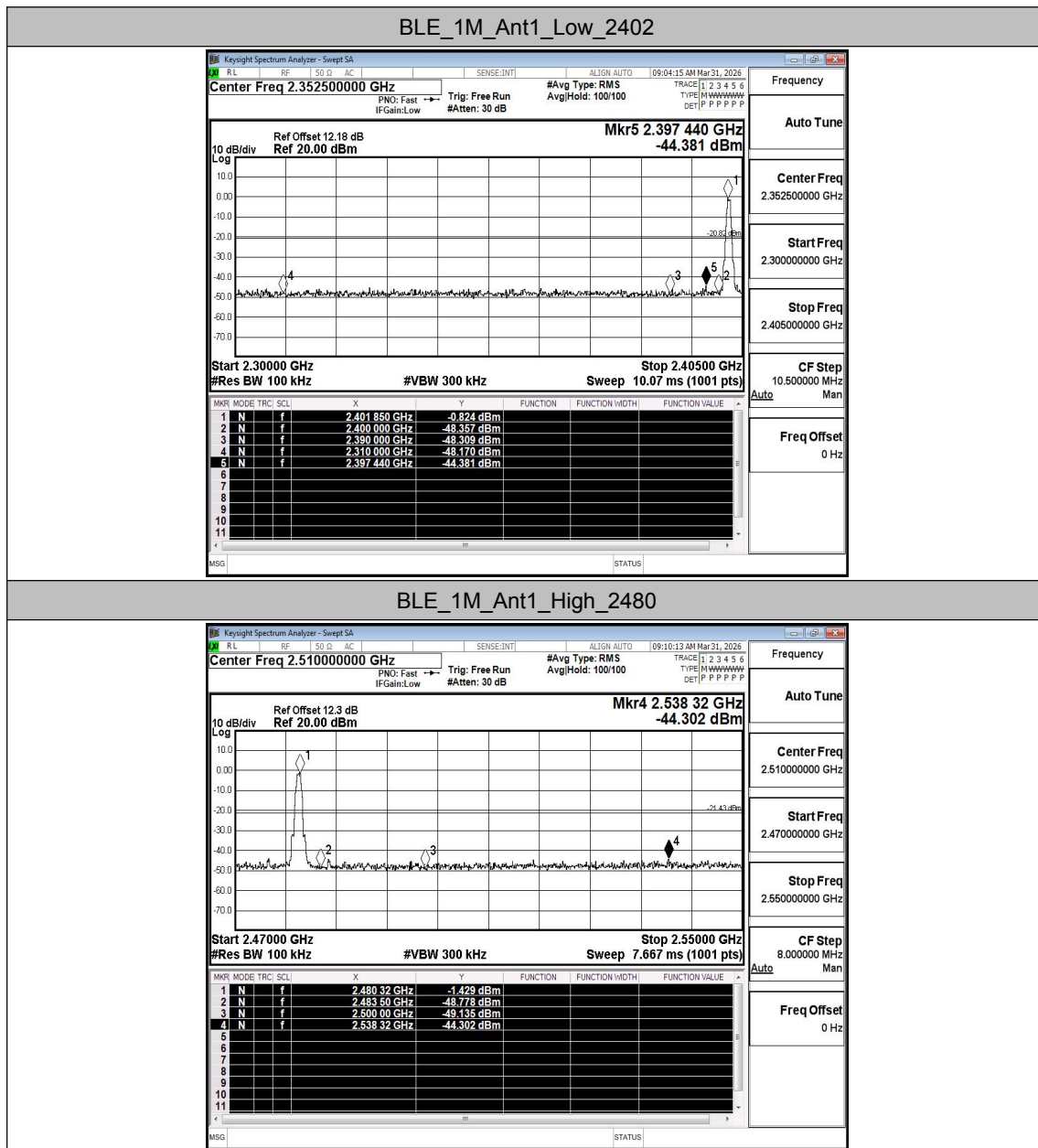


## A.4 Band edge measurements

### Test Result

| TestMode | Antenna | ChName | Freq(MHz) | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|--------|-----------|---------------|-------------|------------|---------|
| BLE_1M   | Ant1    | Low    | 2402      | -0.82         | -44.38      | ≤-20.82    | PASS    |
|          |         | High   | 2480      | -1.43         | -44.3       | ≤-21.43    | PASS    |

## Test Graphs

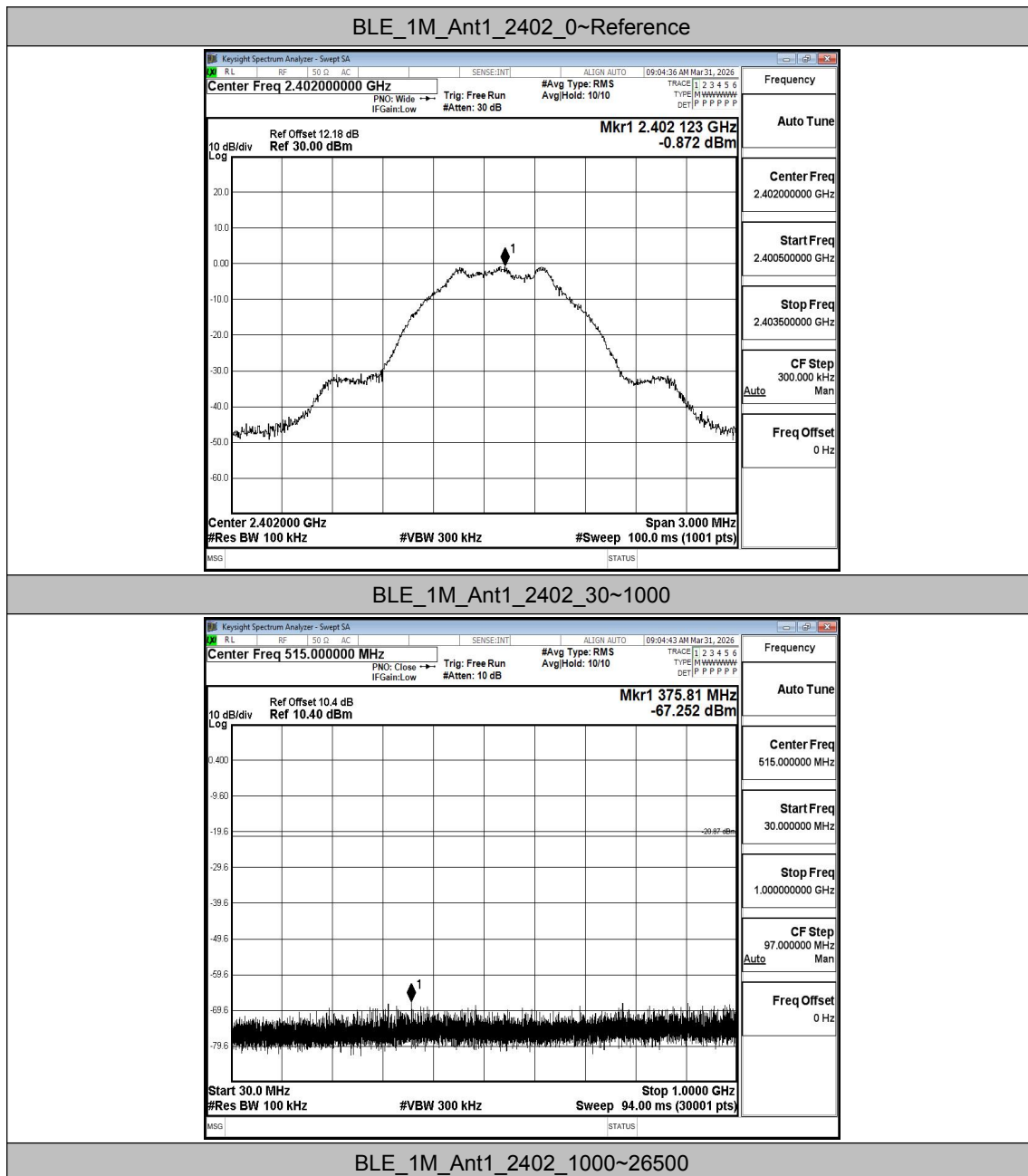


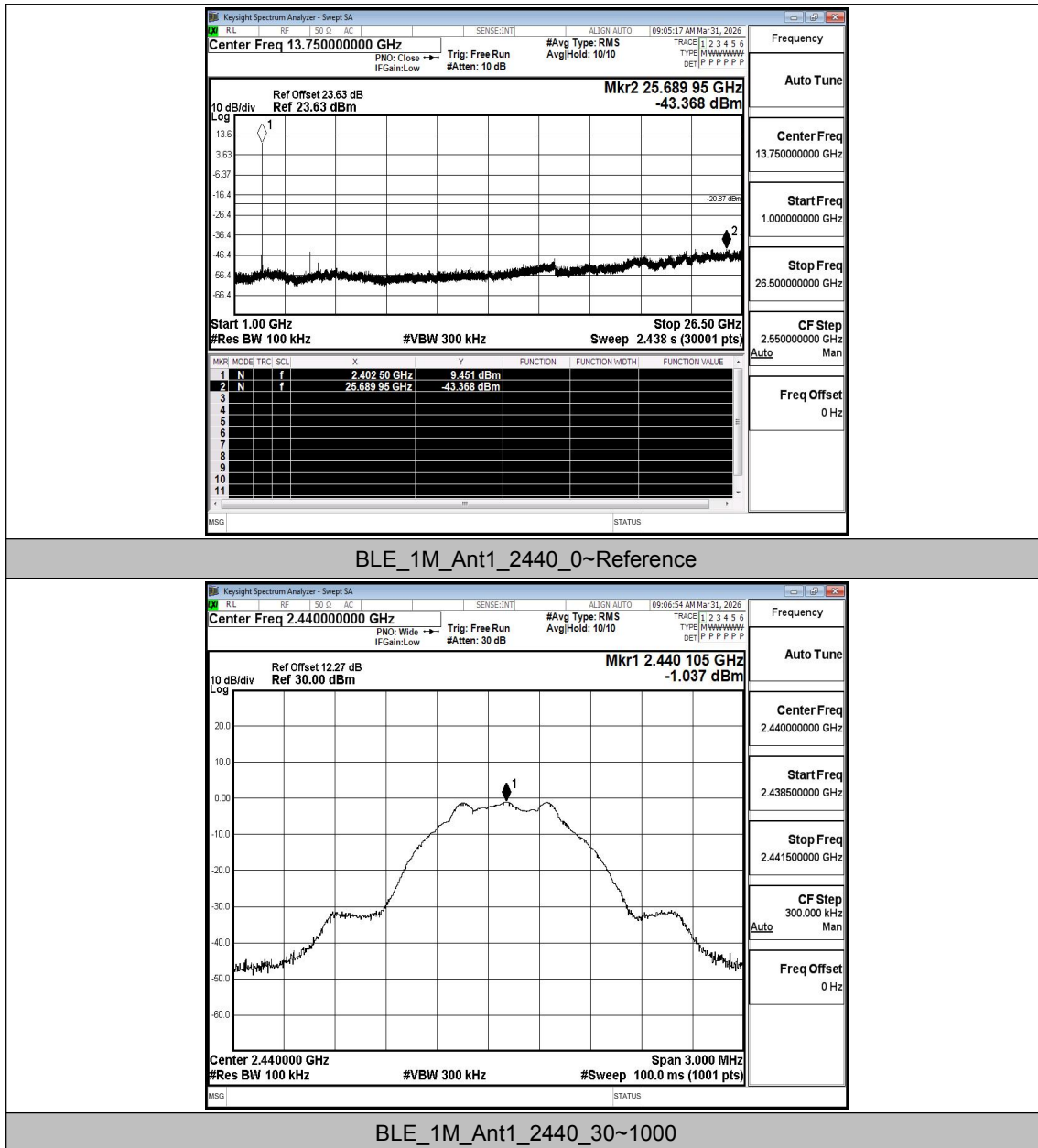
## A.5 Conducted Spurious Emission

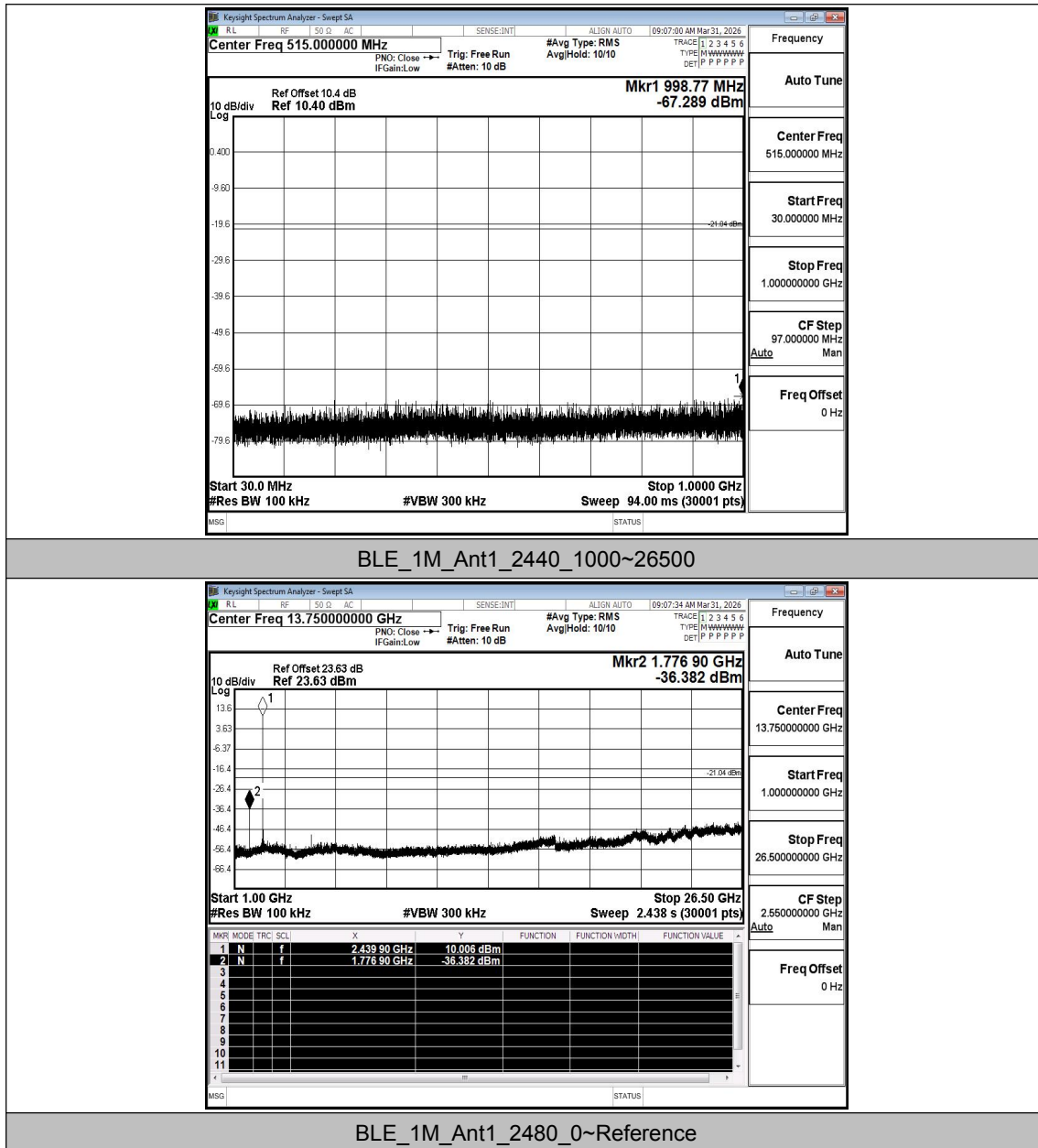
### Test Result

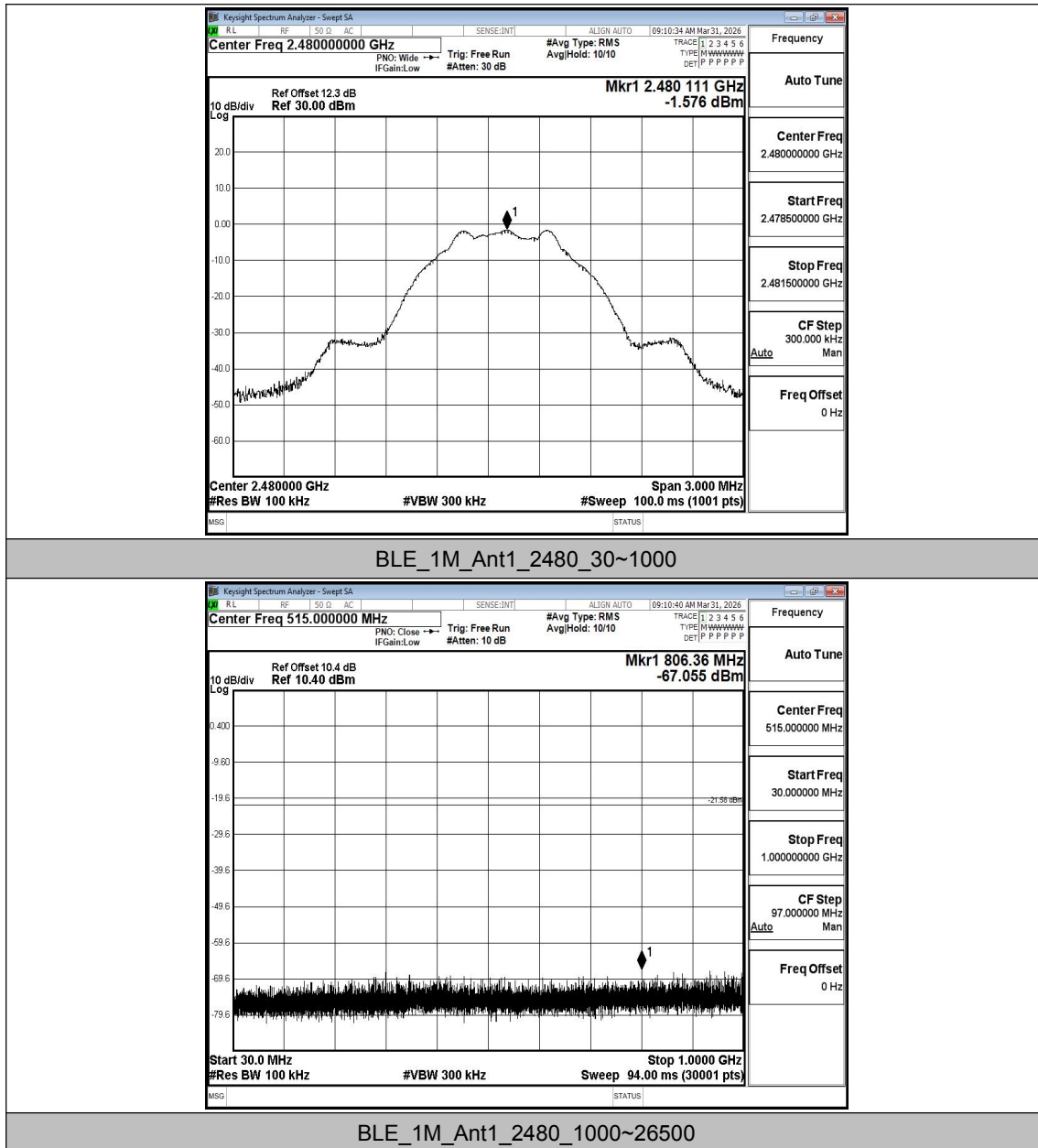
| TestMode | Antenna | Freq(MHz) | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|-----------|-----------------|----------------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402      | Reference       | -0.87          | -0.87       | ---        | PASS    |
|          |         |           | 30~1000         | -0.87          | -67.25      | ≤-20.87    | PASS    |
|          |         |           | 1000~26500      | -0.87          | -43.37      | ≤-20.87    | PASS    |
|          |         | 2440      | Reference       | -1.04          | -1.04       | ---        | PASS    |
|          |         |           | 30~1000         | -1.04          | -67.29      | ≤-21.04    | PASS    |
|          |         |           | 1000~26500      | -1.04          | -36.38      | ≤-21.04    | PASS    |
|          |         | 2480      | Reference       | -1.58          | -1.58       | ---        | PASS    |
|          |         |           | 30~1000         | -1.58          | -67.06      | ≤-21.58    | PASS    |
|          |         |           | 1000~26500      | -1.58          | -31.33      | ≤-21.58    | PASS    |

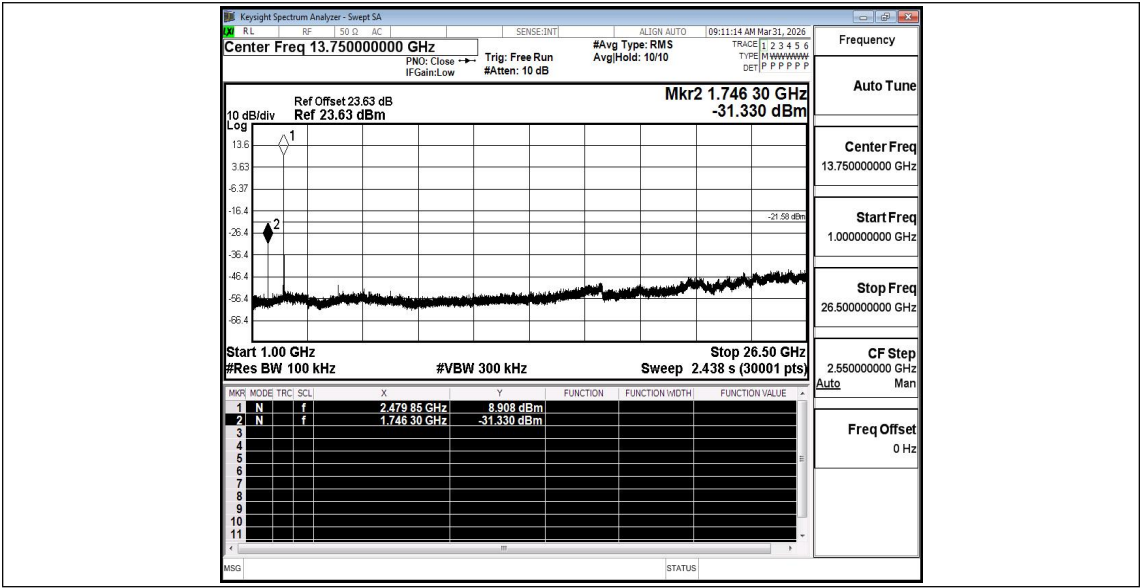
## Test Graphs









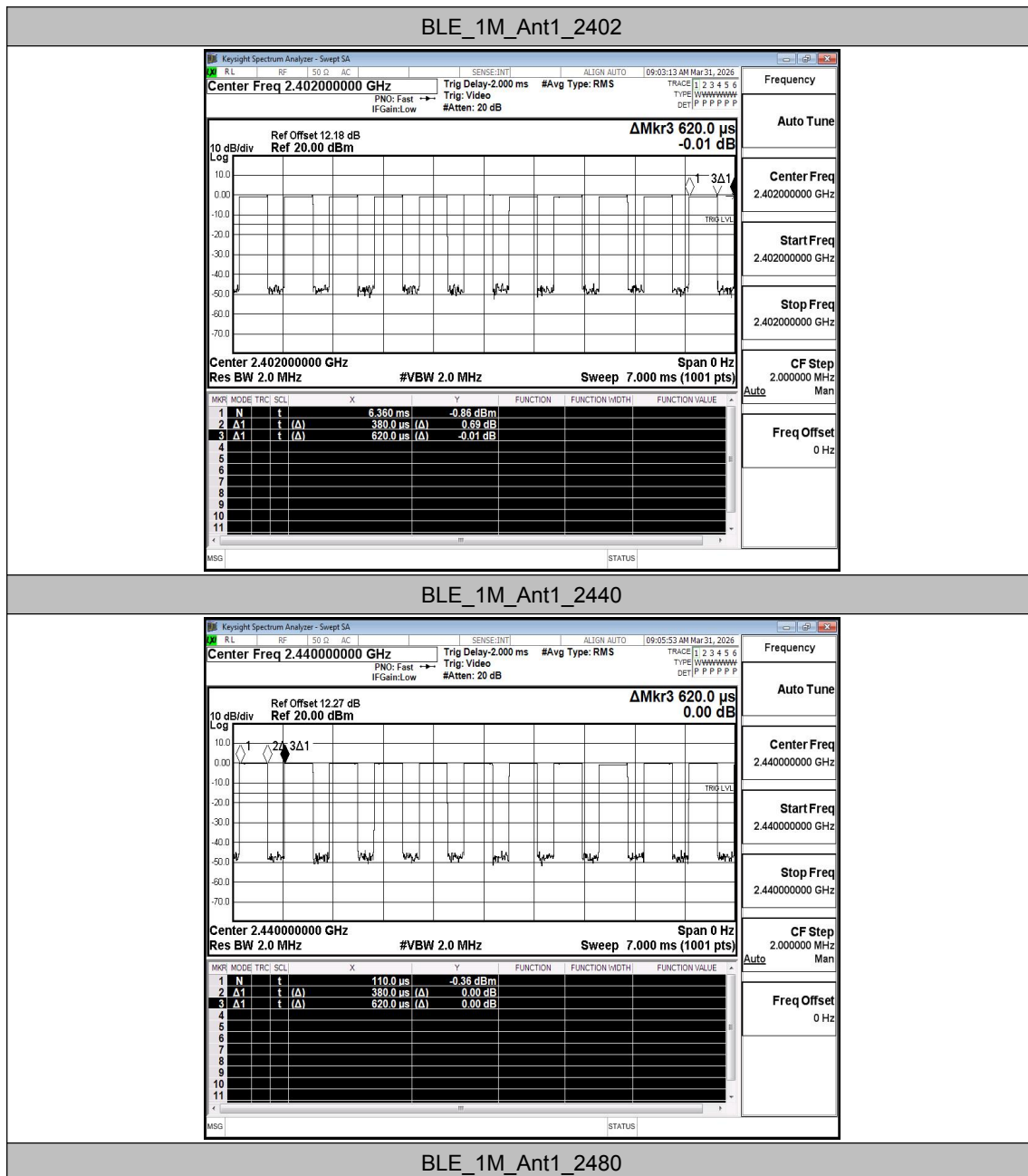


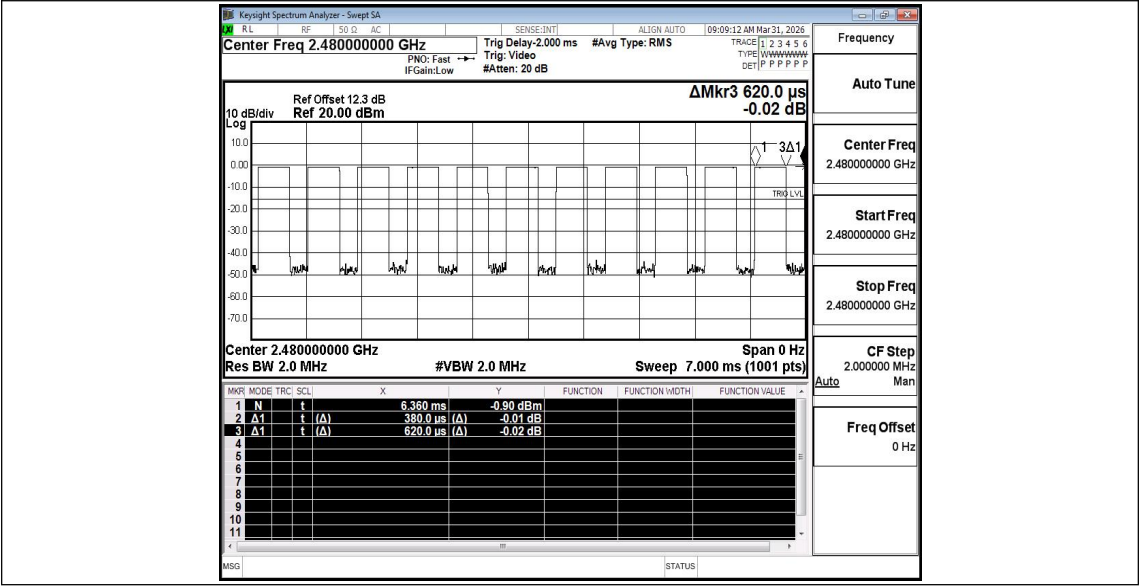
## A.6 Duty Cycle

### Test Result

| TestMode | Antenna | Freq(MHz) | ON Time<br>[ms] | Period<br>[ms] | X      | DC<br>[%] | xFactor | Limit | Verdict |
|----------|---------|-----------|-----------------|----------------|--------|-----------|---------|-------|---------|
| BLE_1M   | Ant1    | 2402      | 0.38            | 0.62           | 0.6129 | 61.29     | 2.13    | ---   | ---     |
|          |         | 2440      | 0.38            | 0.62           | 0.6129 | 61.29     | 2.13    | ---   | ---     |
|          |         | 2480      | 0.38            | 0.62           | 0.6129 | 61.29     | 2.13    | ---   | ---     |

## 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   | -56.91       | ≤-46.47     | 3.14       | 2.13           | 43.56           | ≤54            | PASS    |
|          |         |        |           | AV       | 2319.110   | -56.06       | ≤-46.47     | 3.14       | 2.13           | 44.41           | ≤54            | PASS    |
|          |         |        |           | AV       | 2390.000   | -56.78       | ≤-46.47     | 3.14       | 2.13           | 43.69           | ≤54            | PASS    |
|          |         |        |           | Peak     | 2310.000   | -49.6        | ≤-24.34     | 3.14       | 0.00           | 48.74           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2382.635   | -44.51       | ≤-24.34     | 3.14       | 0.00           | 53.83           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2390.000   | -49.41       | ≤-24.34     | 3.14       | 0.00           | 48.93           | ≤74            | PASS    |
|          |         | High   | 2480      | AV       | 2483.500   | -54.83       | ≤-46.47     | 3.14       | 2.13           | 45.64           | ≤54            | PASS    |
|          |         |        |           | AV       | 2484.640   | -51.76       | ≤-46.47     | 3.14       | 2.13           | 48.71           | ≤54            | PASS    |
|          |         |        |           | AV       | 2500.000   | -56.25       | ≤-46.47     | 3.14       | 2.13           | 44.22           | ≤54            | PASS    |
|          |         |        |           | Peak     | 2483.500   | -47.59       | ≤-24.34     | 3.14       | 0.00           | 50.75           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2484.880   | -36.03       | ≤-24.34     | 3.14       | 0.00           | 62.31           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2500.000   | -48.74       | ≤-24.34     | 3.14       | 0.00           | 49.60           | ≤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

