

## **FCC Appendix RF Test Data for BLE**

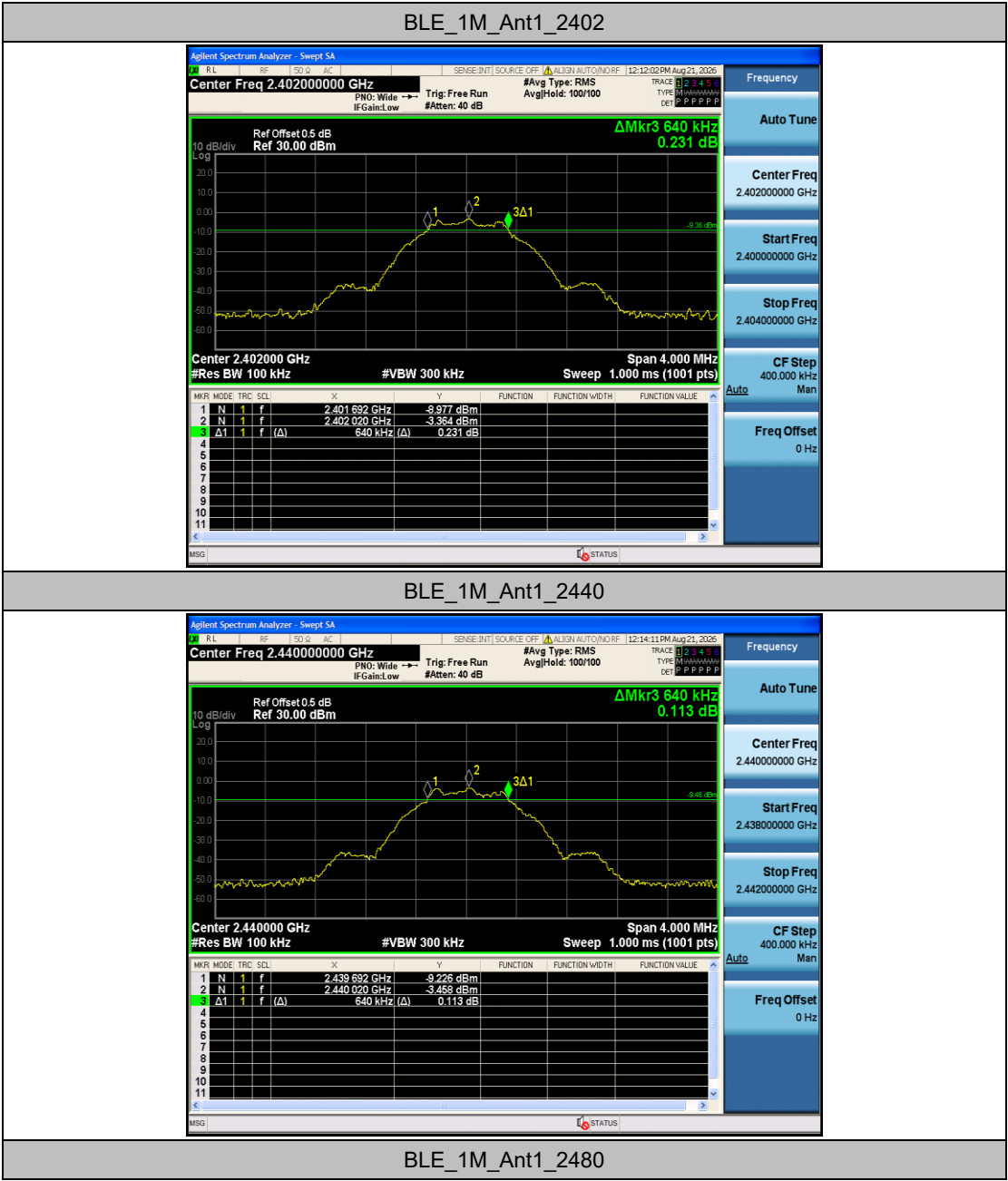
**FCC ID** : 2BPJF-VIPERGEN2650  
**Company** : Nitehog Bulgaria JSC  
**EUT** : Thermal Imaging Camera  
**Model Number** : VIPER GEN2 650LRF  
**Report No.** : CTA26081200701  
**Reviewed By** : Eric Wang

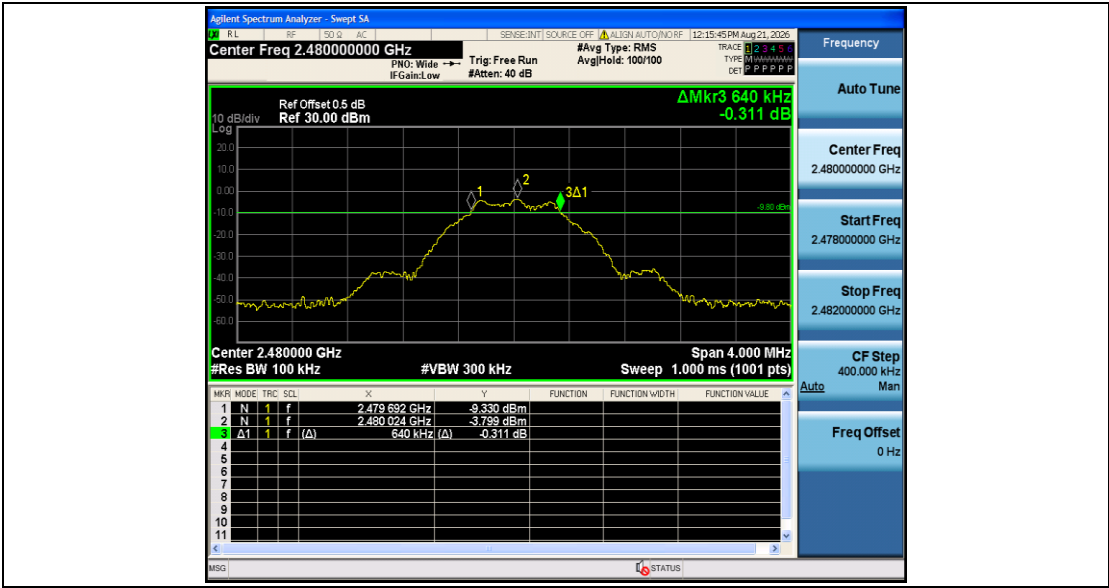
## Appendix A: DTS Bandwidth

### Test Result

| TestMode | Antenna | Freq(MHz) | DTS BW<br>[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|-----------|-----------------|----------|----------|------------|---------|
| BLE_1M   | Ant1    | 2402      | 0.640           | 2401.692 | 2402.332 | 0.5        | PASS    |
|          |         | 2440      | 0.640           | 2439.692 | 2440.332 | 0.5        | PASS    |
|          |         | 2480      | 0.640           | 2479.692 | 2480.332 | 0.5        | PASS    |

Test Graphs



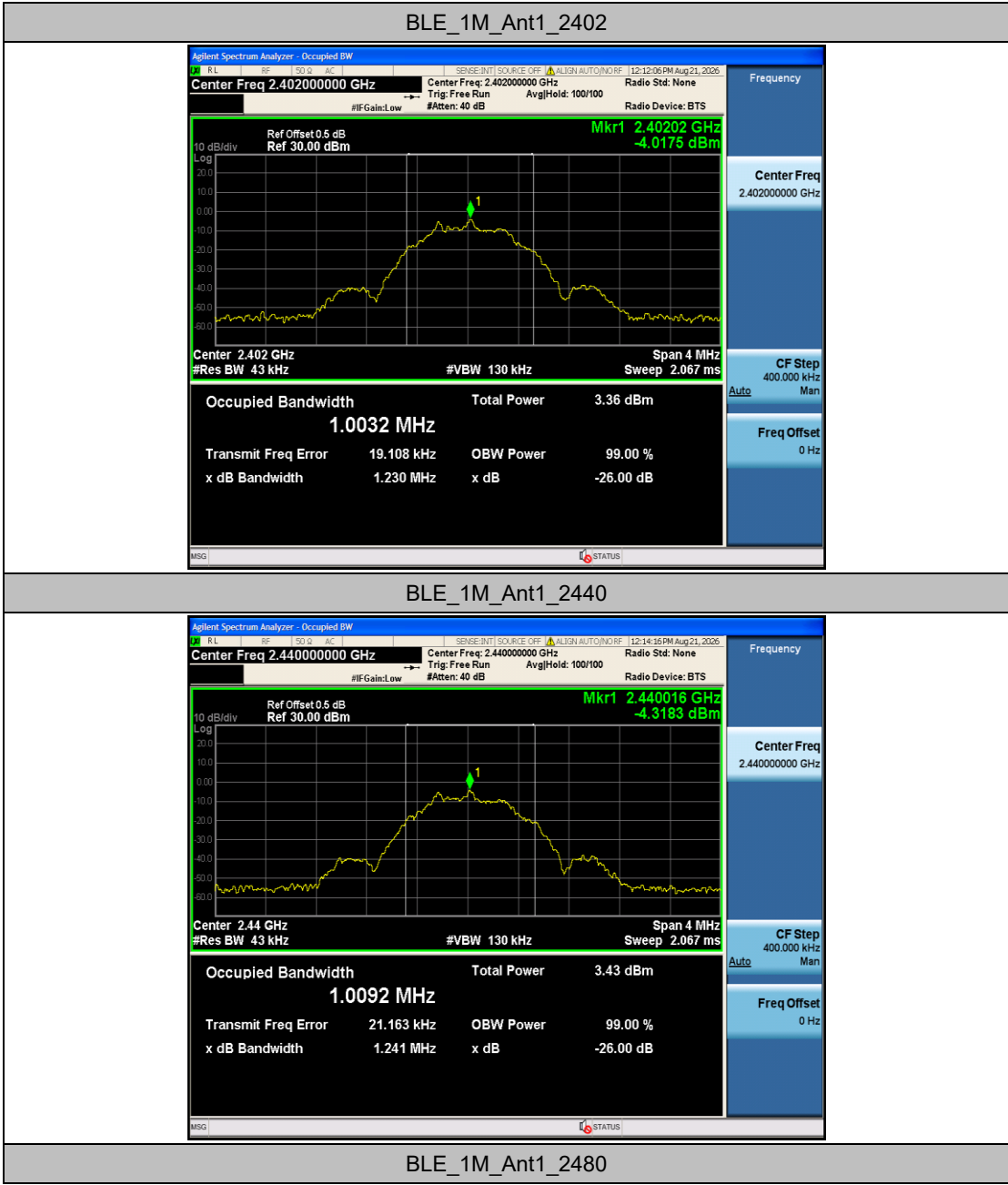


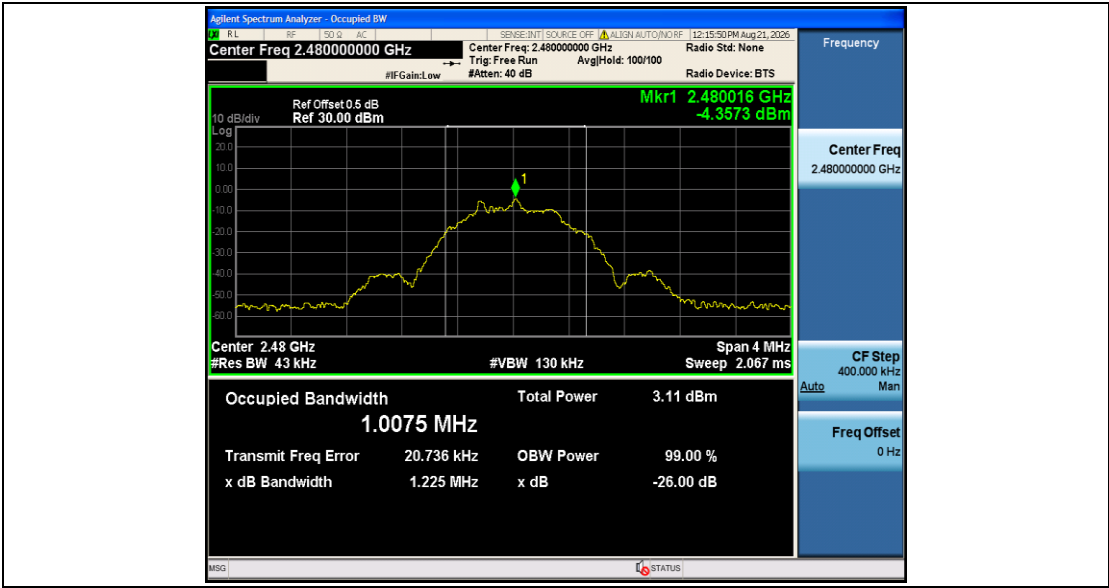
## Appendix B: Occupied Channel Bandwidth

### Test Result

| TestMode | Antenna | Freq(MHz) | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|----------|---------|-----------|-----------|-----------|-----------|------------|---------|
| BLE_1M   | Ant1    | 2402      | 1.0032    | 2401.5175 | 2402.5207 | ---        | ---     |
|          |         | 2440      | 1.0092    | 2439.5166 | 2440.5258 | ---        | ---     |
|          |         | 2480      | 1.0075    | 2479.5170 | 2480.5245 | ---        | ---     |

Test Graphs





## Appendix C: Maximum conducted output power

### Test Result Peak

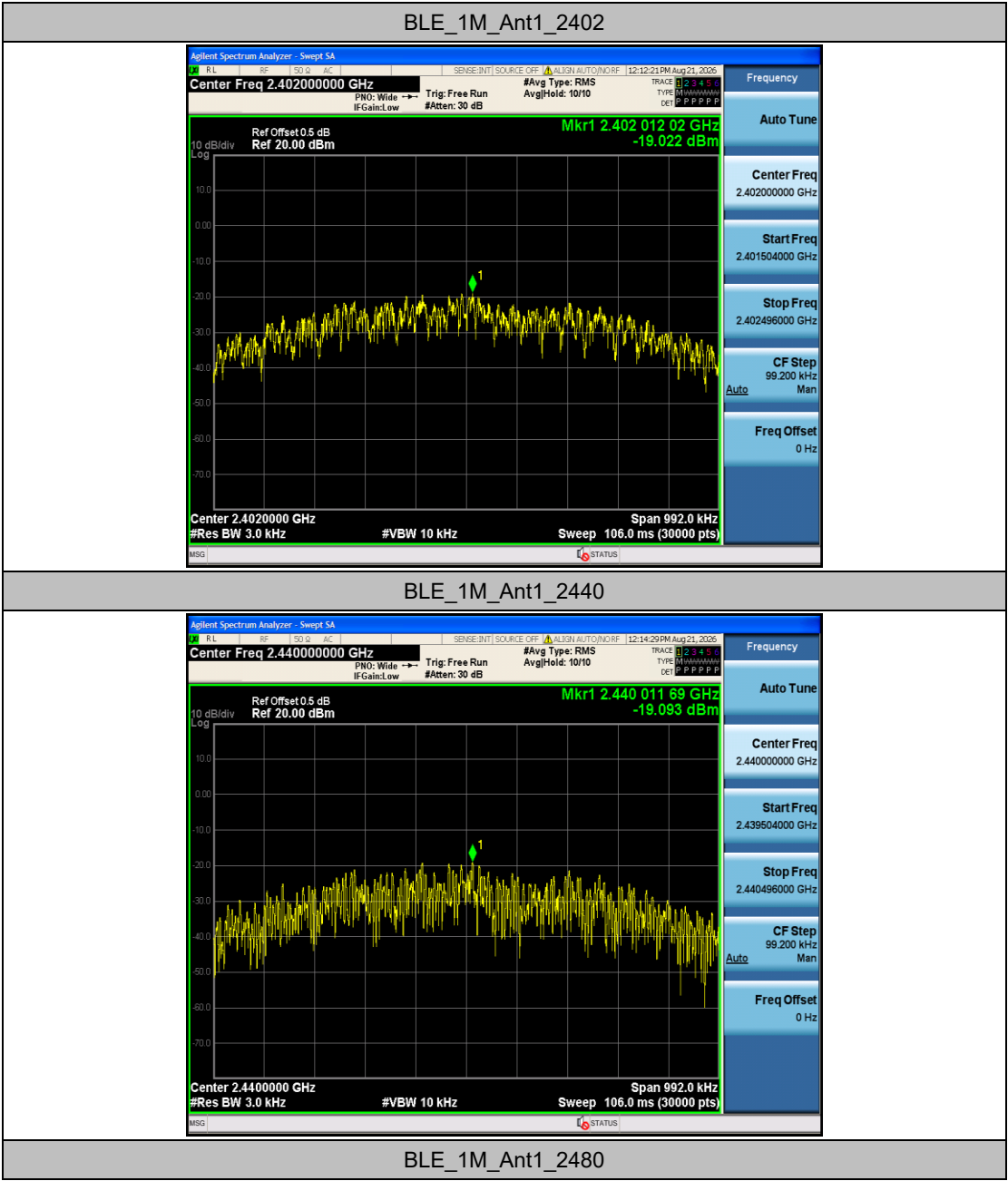
| TestMode | Antenna | Freq(MHz) | Conducted Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|----------|---------|-----------|---------------------------|----------------------|---------|
| BLE_1M   | Ant1    | 2402      | -3.24                     | ≤30                  | PASS    |
|          |         | 2440      | -3.29                     | ≤30                  | PASS    |
|          |         | 2480      | -3.58                     | ≤30                  | PASS    |

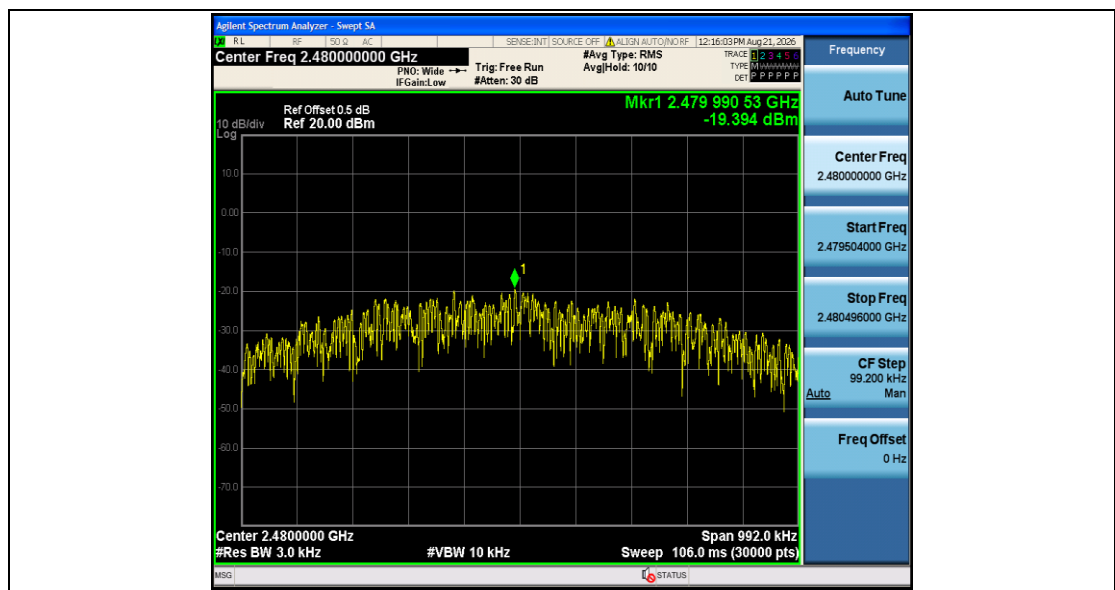
## Appendix D: Maximum power spectral density

### Test Result

| TestMode | Antenna | Freq(MHz) | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|-----------|------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402      | -19.02           | ≤8.00           | PASS    |
|          |         | 2440      | -19.09           | ≤8.00           | PASS    |
|          |         | 2480      | -19.39           | ≤8.00           | PASS    |

Test Graphs





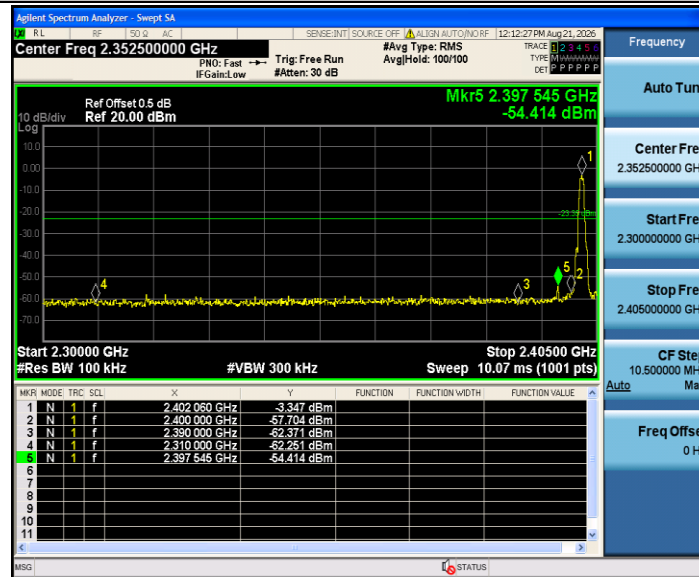
## Appendix E: Band edge measurements

### Test Result

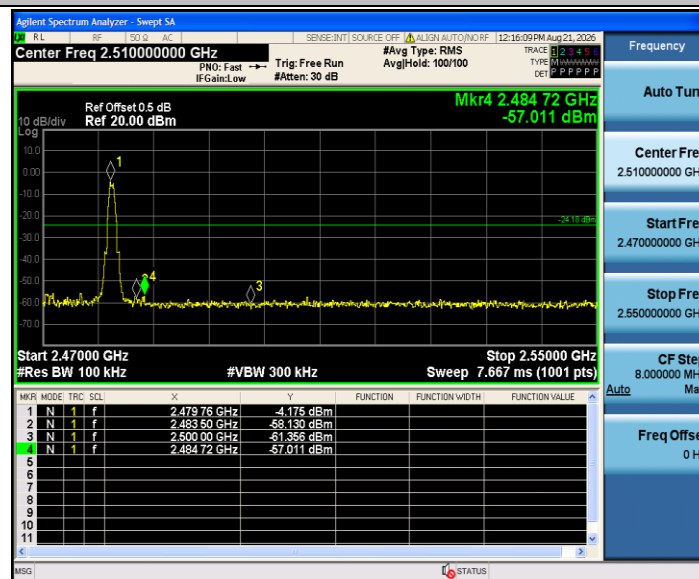
| TestMode | Antenna | Channel | Freq(MHz) | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-----------|---------------|-------------|------------|---------|
| BLE_1M   | Ant1    | Low     | 2402      | -3.35         | -54.41      | ≤-23.35    | PASS    |
|          |         | High    | 2480      | -4.18         | -57.01      | ≤-24.18    | PASS    |

## Test Graphs

BLE\_1M\_Ant1\_Low\_2402



BLE\_1M\_Ant1\_High\_2480

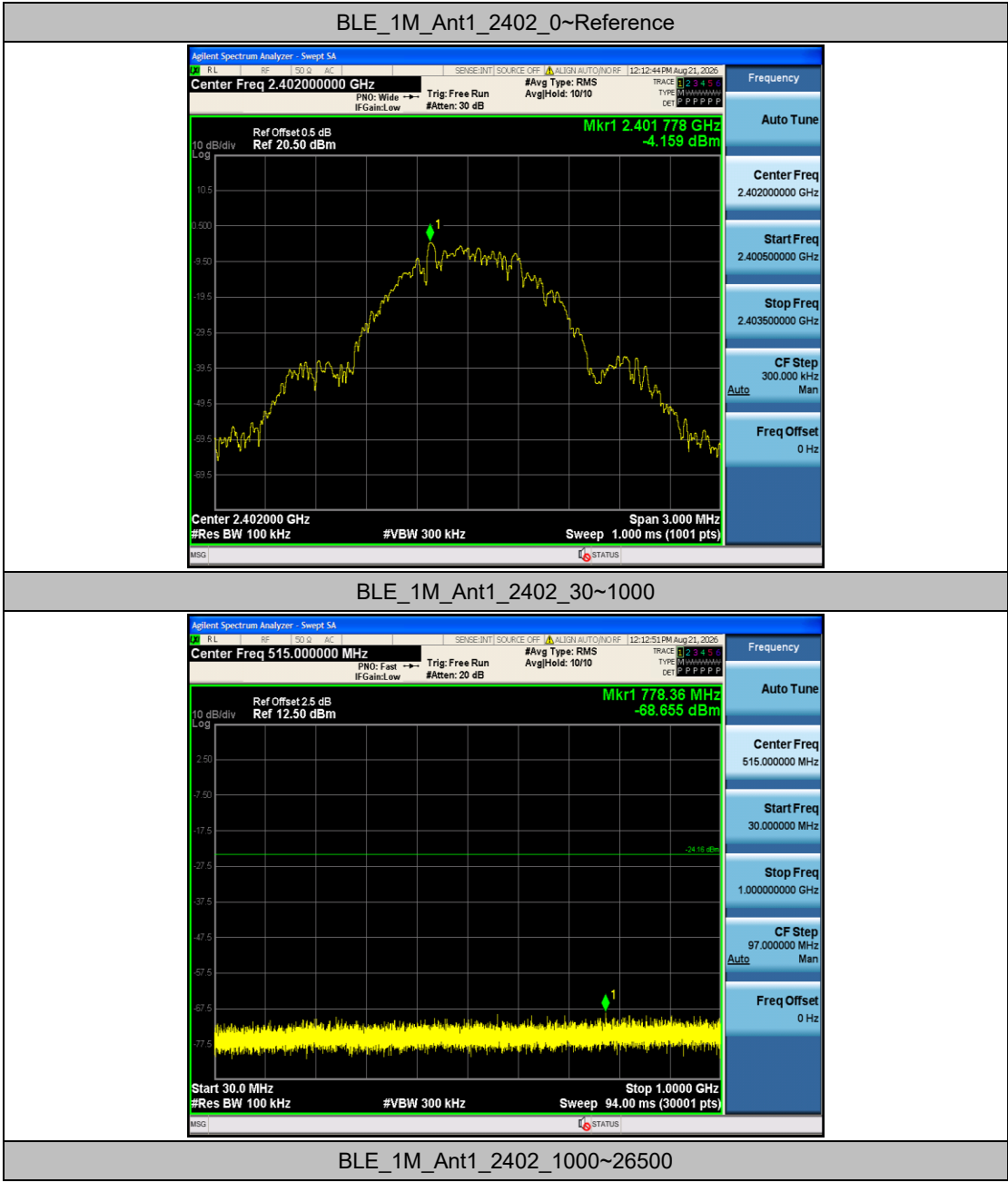


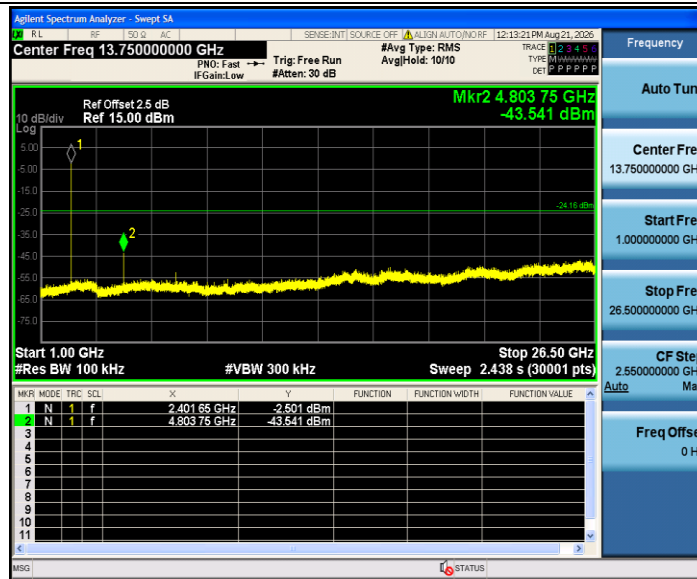
## Appendix F: Conducted Spurious Emission

### Test Result

| TestMode | Antenna | Freq(MHz) | FreqRange<br>[MHz] | RefLevel<br>[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|-----------|--------------------|-------------------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402      | Reference          | -4.16             | -4.16       | ---        | PASS    |
|          |         |           | 30~1000            | -4.16             | -68.66      | ≤-24.16    | PASS    |
|          |         |           | 1000~26500         | -4.16             | -43.54      | ≤-24.16    | PASS    |
|          |         | 2440      | Reference          | -4.22             | -4.22       | ---        | PASS    |
|          |         |           | 30~1000            | -4.22             | -68.94      | ≤-24.22    | PASS    |
|          |         |           | 1000~26500         | -4.22             | -46.03      | ≤-24.22    | PASS    |
|          |         | 2480      | Reference          | -5.12             | -5.12       | ---        | PASS    |
|          |         |           | 30~1000            | -5.12             | -69.22      | ≤-25.12    | PASS    |
|          |         |           | 1000~26500         | -5.12             | -46.34      | ≤-25.12    | PASS    |

Test Graphs

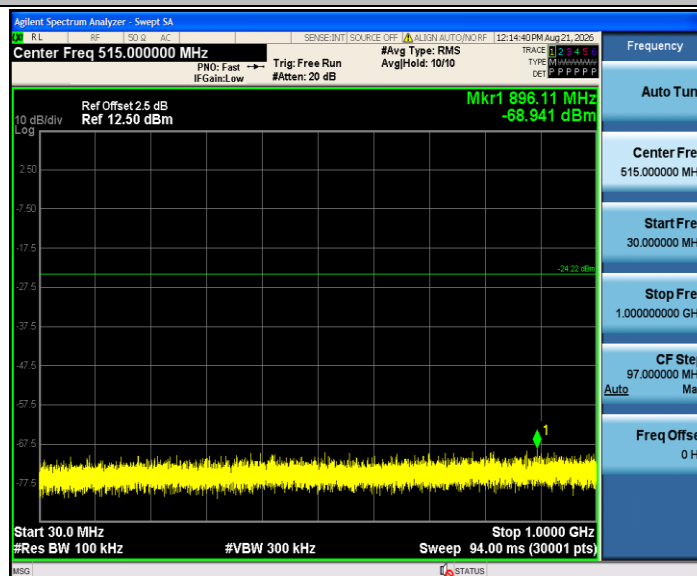




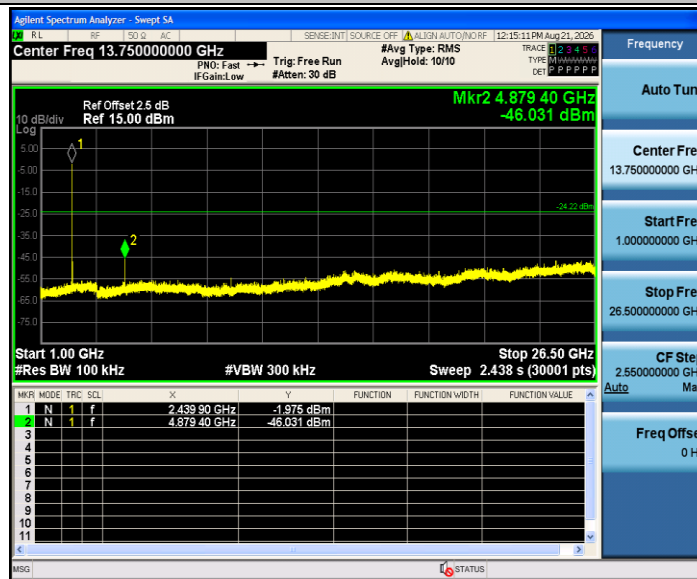
BLE\_1M\_Ant1\_2440\_0~Reference



BLE\_1M\_Ant1\_2440\_30~1000



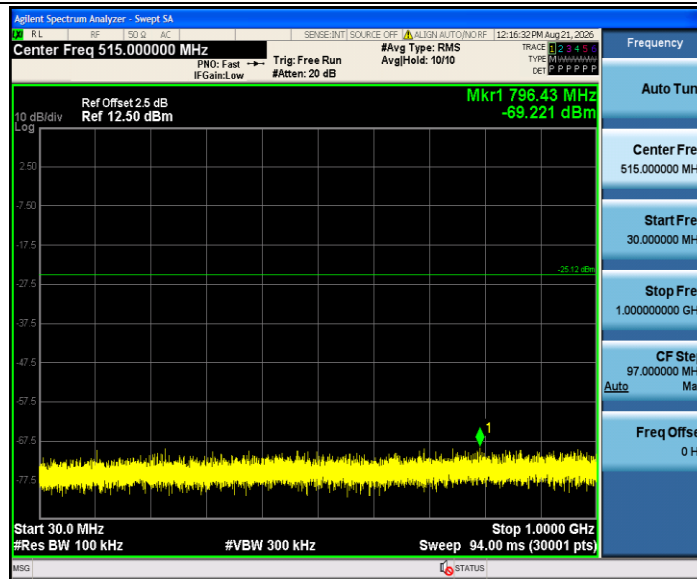
# BLE\_1M\_Ant1\_2440\_1000~26500



# BLE\_1M\_Ant1\_2480\_0~Reference



# BLE\_1M\_Ant1\_2480\_30~1000



BLE\_1M\_Ant1\_2480\_1000~26500

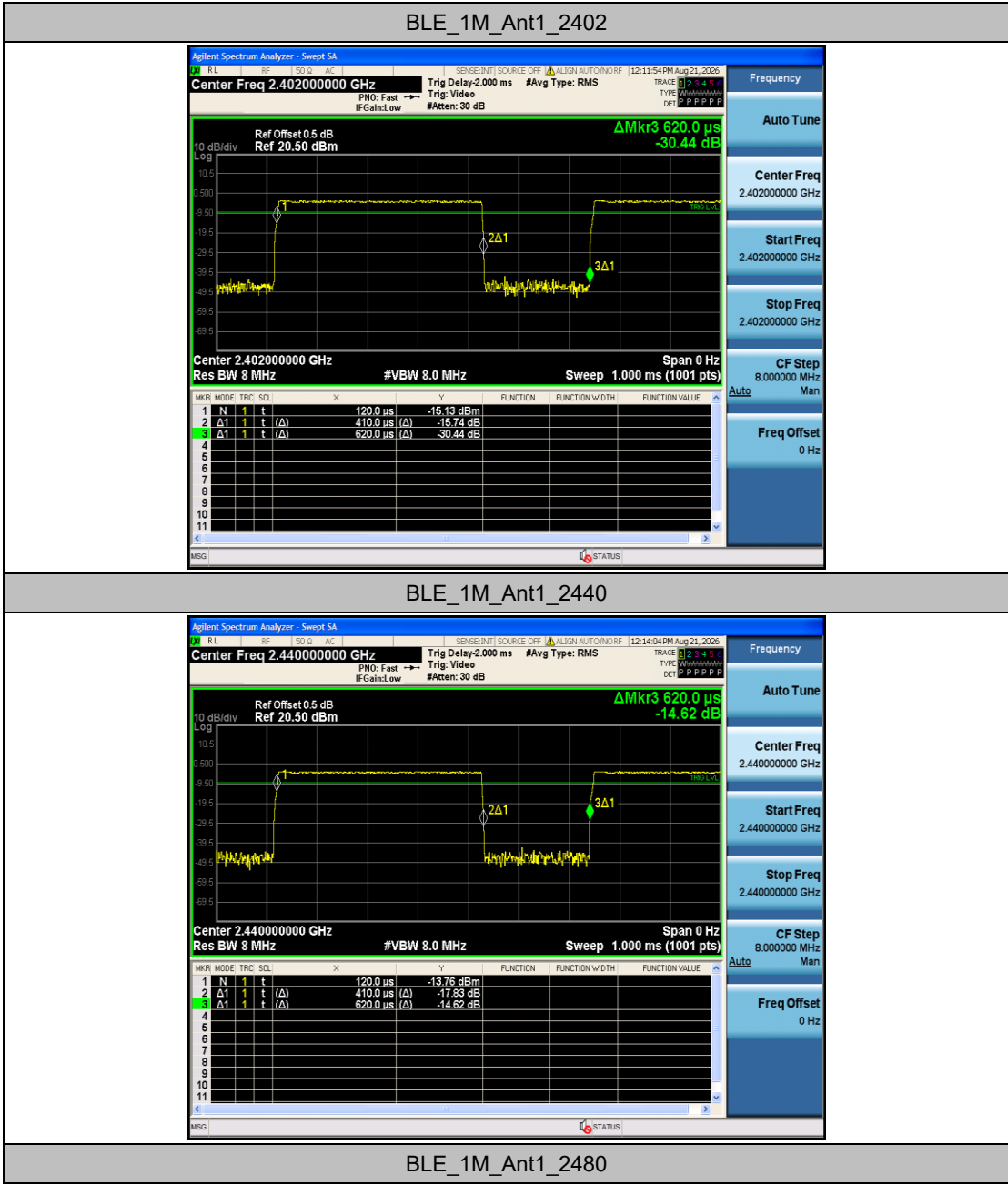


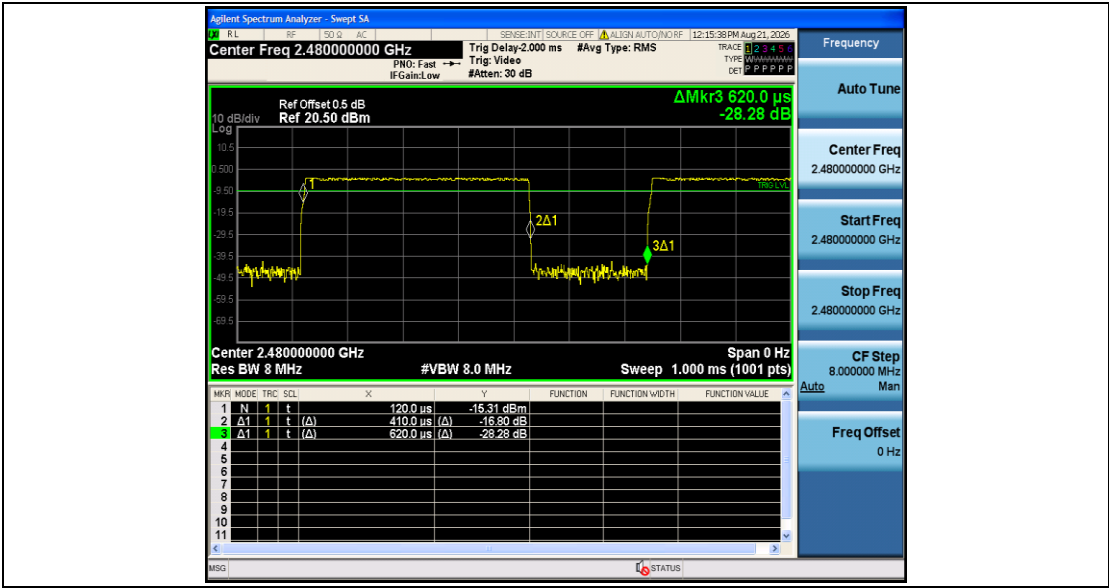
## Appendix G: Duty Cycle

### Test Result

| TestMode | Antenna | Freq(MHz) | ON Time<br>[ms] | Period<br>[ms] | X      | DC<br>[%] | xFactor | Limit | Verdict |
|----------|---------|-----------|-----------------|----------------|--------|-----------|---------|-------|---------|
| BLE_1M   | Ant1    | 2402      | 0.41            | 0.62           | 0.6613 | 66.13     | 1.80    | ---   | ---     |
|          |         | 2440      | 0.41            | 0.62           | 0.6613 | 66.13     | 1.80    | ---   | ---     |
|          |         | 2480      | 0.41            | 0.62           | 0.6613 | 66.13     | 1.80    | ---   | ---     |

# Test Graphs





## Appendix H: Emissions in Restricted Bands

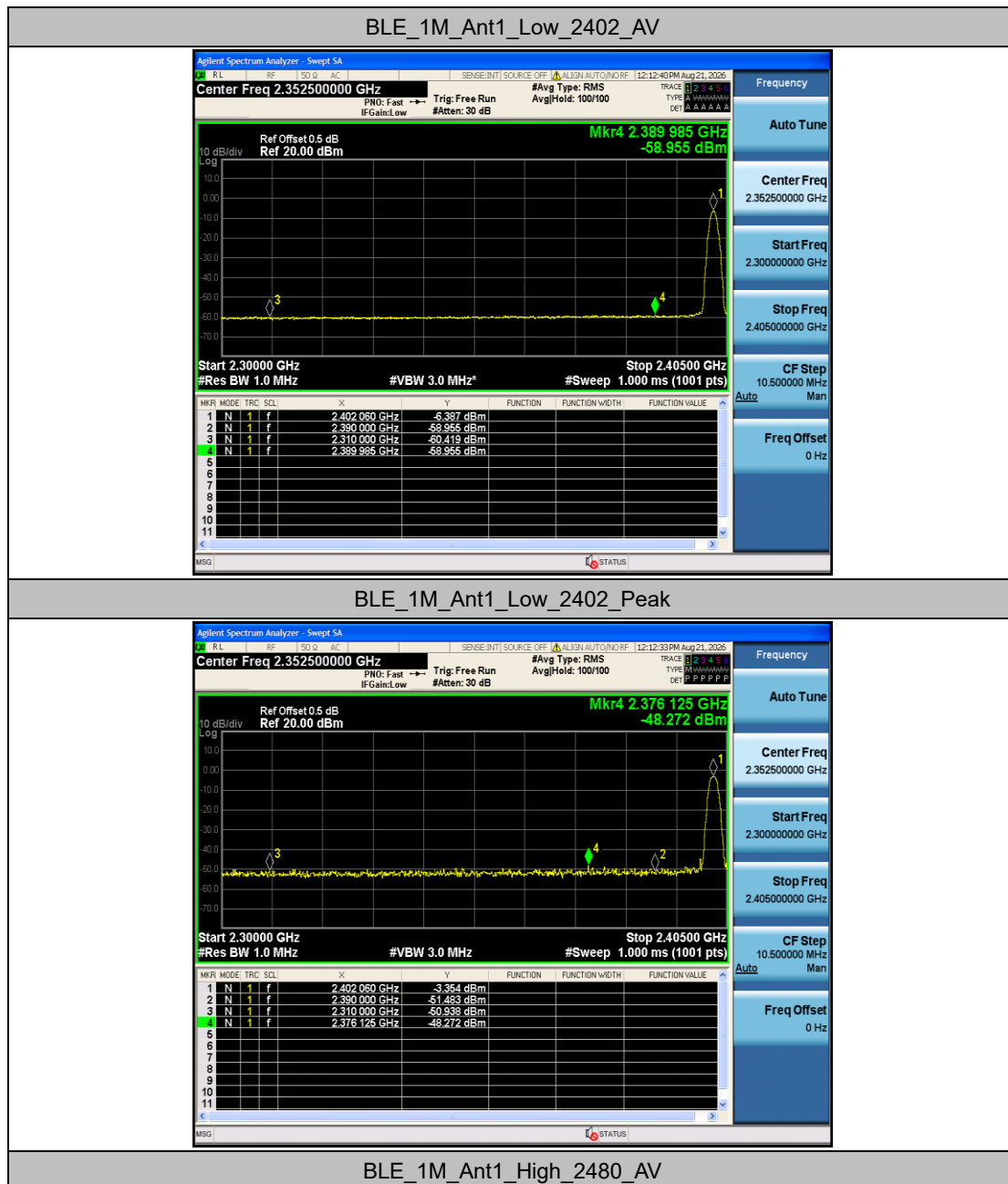
### Test Result

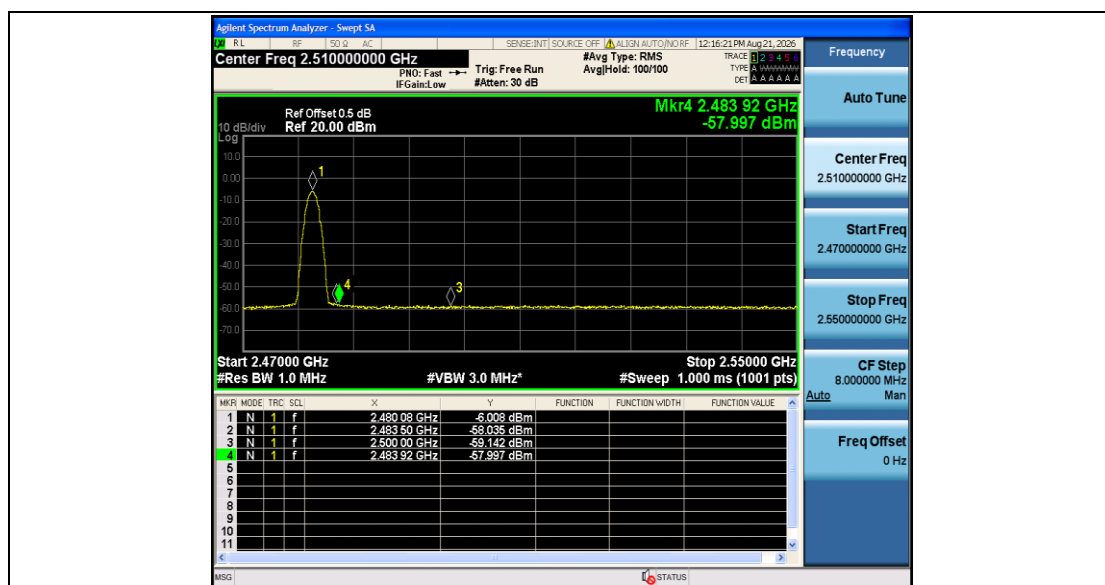
| TestMode | Antenna | ChName | Freq(MHz) | Detector | Freq [MHz] | Result [dBm] | Gain [dB] | DC Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Verdict |
|----------|---------|--------|-----------|----------|------------|--------------|-----------|----------------|-----------------|----------------|---------|
| BLE_1M   | Ant1    | Low    | 2402      | AV       | 2310.000   | -60.42       | 2.00      | 1.80           | 38.58           | ≤54            | PASS    |
|          |         |        |           | AV       | 2389.985   | -58.96       | 2.00      | 1.80           | 40.04           | ≤54            | PASS    |
|          |         |        |           | AV       | 2390.000   | -58.96       | 2.00      | 1.80           | 40.04           | ≤54            | PASS    |
|          |         |        |           | Peak     | 2310.000   | -50.94       | 2.00      | 0.00           | 46.26           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2376.125   | -48.27       | 2.00      | 0.00           | 48.93           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2390.000   | -51.48       | 2.00      | 0.00           | 45.72           | ≤74            | PASS    |
|          |         | High   | 2480      | AV       | 2483.500   | -58.04       | 2.00      | 1.80           | 40.96           | ≤54            | PASS    |
|          |         |        |           | AV       | 2483.920   | -58          | 2.00      | 1.80           | 41.00           | ≤54            | PASS    |
|          |         |        |           | AV       | 2500.000   | -59.14       | 2.00      | 1.80           | 39.86           | ≤54            | PASS    |
|          |         |        |           | Peak     | 2483.500   | -49.48       | 2.00      | 0.00           | 47.72           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2495.280   | -47.53       | 2.00      | 0.00           | 49.67           | ≤74            | PASS    |
|          |         |        |           | Peak     | 2500.000   | -51.54       | 2.00      | 0.00           | 45.66           | ≤74            | PASS    |

Note:

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





BLE\_1M\_Ant1\_High\_2480\_Peak

