



## Appendix B

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

Product Name: Bluetooth sky light

Test Model: S006

#### Environmental Conditions

|                    |                                                                                                 |
|--------------------|-------------------------------------------------------------------------------------------------|
| Temperature:       | 23.5 ° C                                                                                        |
| Relative Humidity: | 52.2%                                                                                           |
| ATM Pressure:      | 100.0 kPa                                                                                       |
| Test Engineer:     | <br>Nick Peng |
| Supervised by:     | <br>Li Huan |





## B.1 DTS Bandwidth

### Test Result

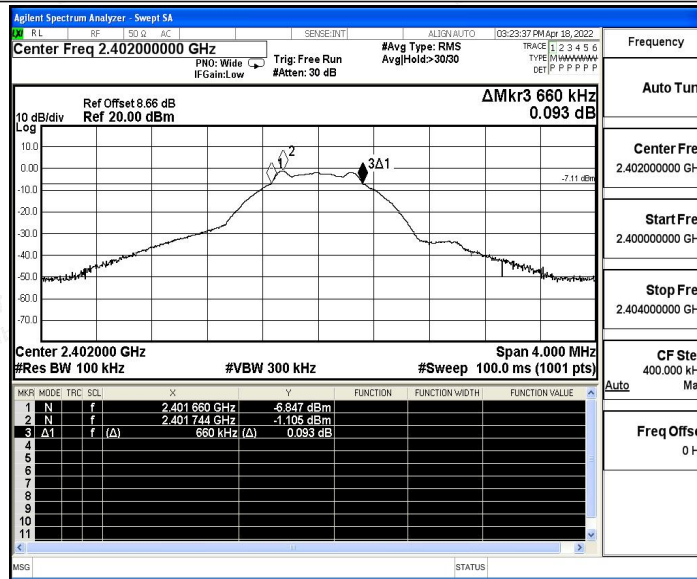
| TestMode | Antenna | Channel | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|--------------|----------|----------|------------|---------|
| BLE_1M   | Ant1    | 2402    | 0.660        | 2401.660 | 2402.320 | 0.5        | PASS    |
|          |         | 2440    | 0.660        | 2439.660 | 2440.320 | 0.5        | PASS    |
|          |         | 2480    | 0.660        | 2479.660 | 2480.320 | 0.5        | PASS    |



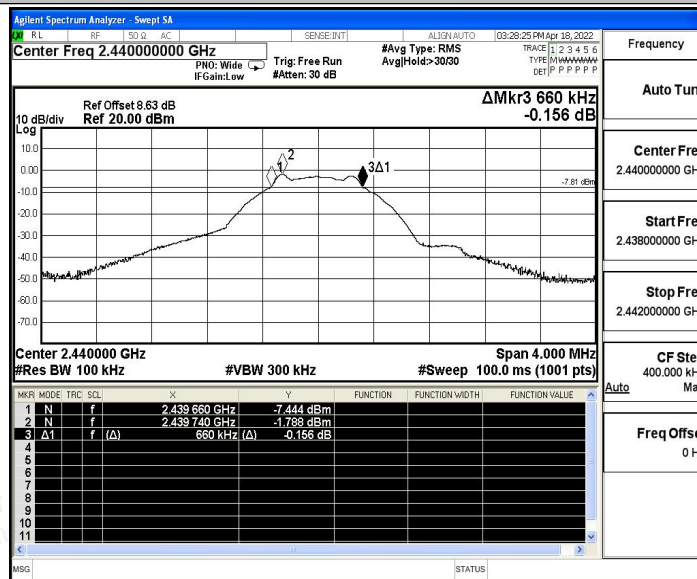


## Test Graphs

BLE\_1M\_Ant1\_2402

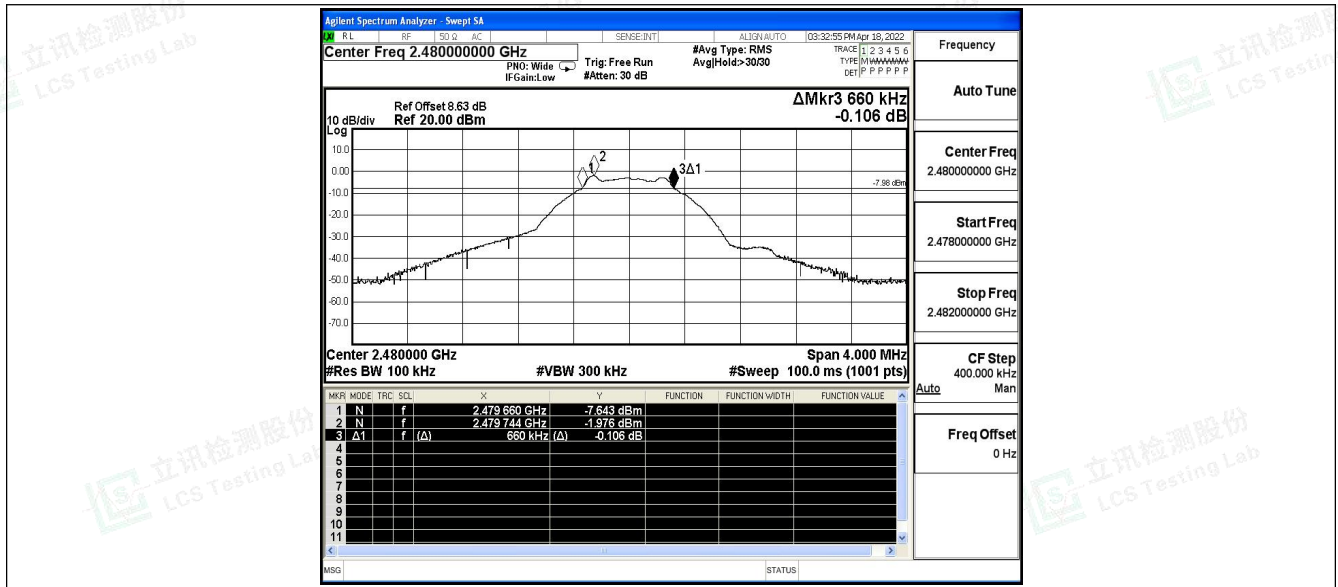


BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480







## B.2 Maximum peak conducted output power

### Test Result

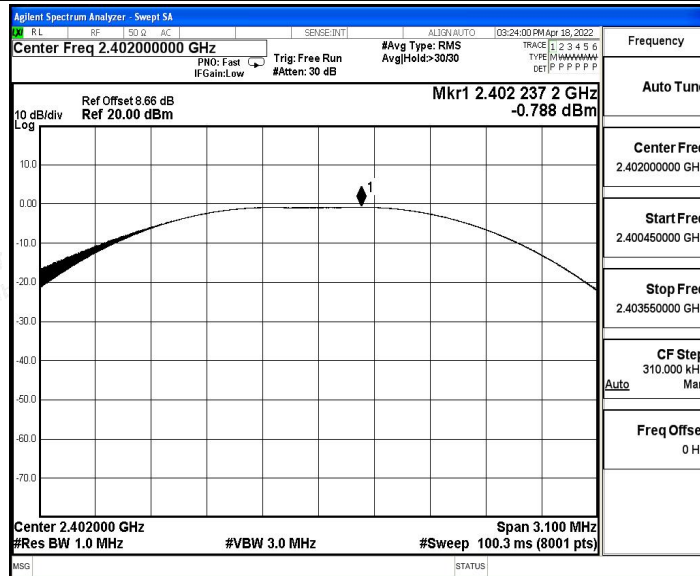
| TestMode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402    | -0.79       | ≤30        | PASS    |
|          |         | 2440    | -1.49       | ≤30        | PASS    |
|          |         | 2480    | -1.7        | ≤30        | PASS    |



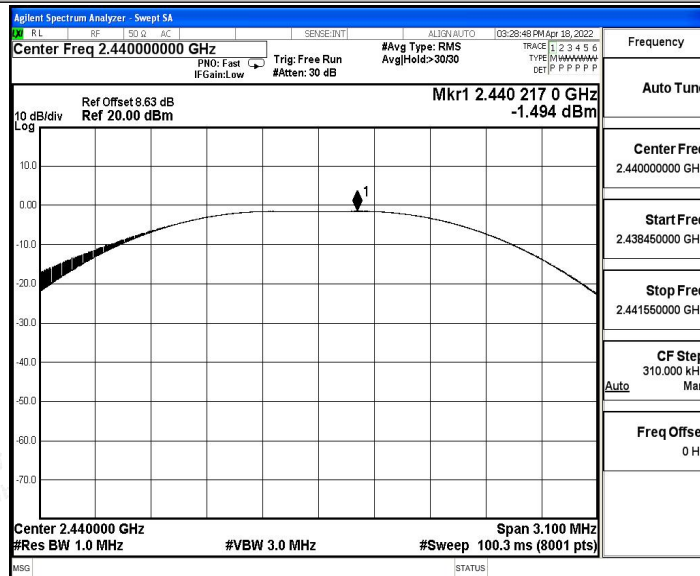


## Test Graphs

BLE\_1M\_Ant1\_2402

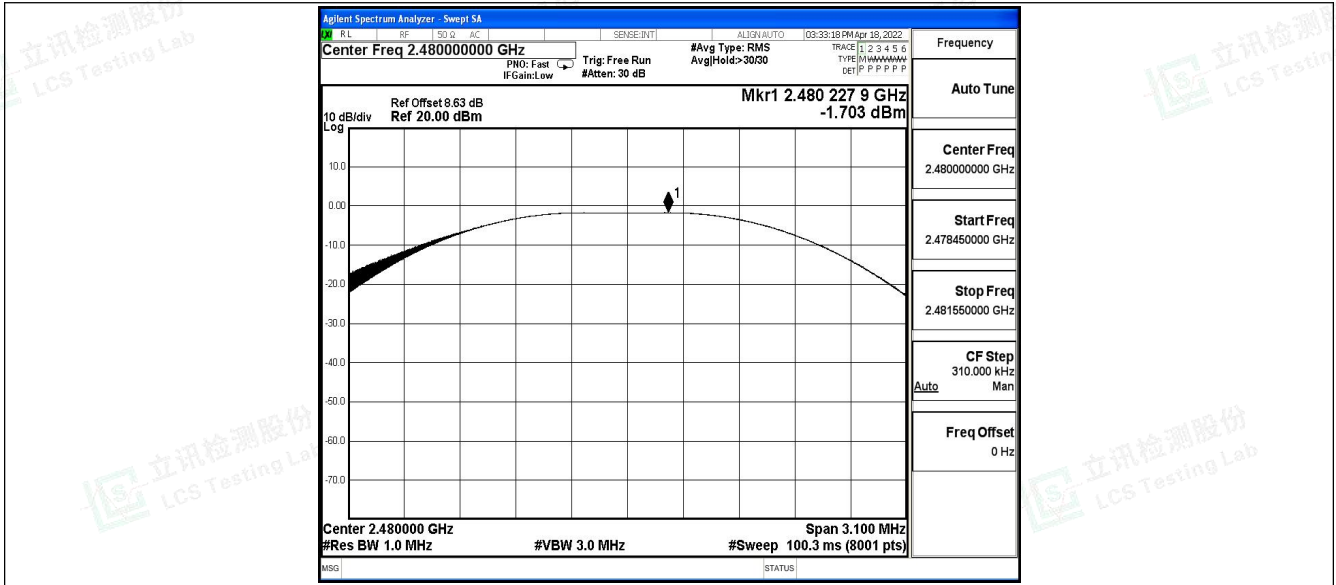


BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480







## B.3 Maximum power spectral density

### Test Result

| TestMode | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|---------|----------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402    | -17.2                | ≤8.00           | PASS    |
|          |         | 2440    | -17.85               | ≤8.00           | PASS    |
|          |         | 2480    | -18.13               | ≤8.00           | PASS    |

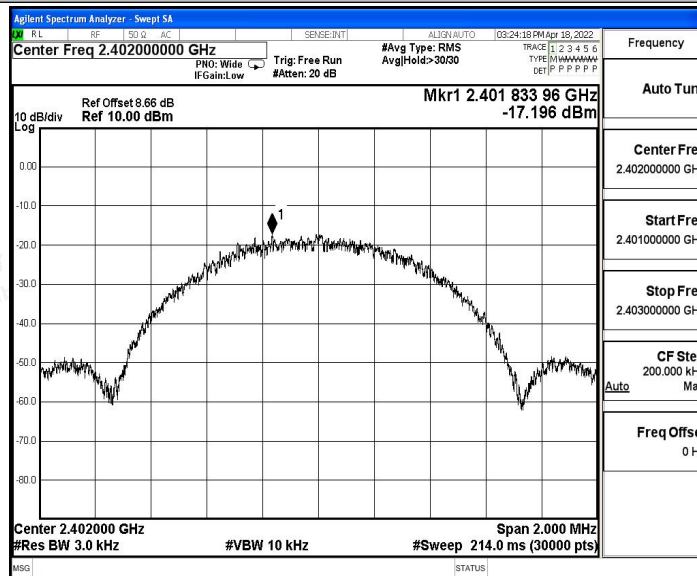


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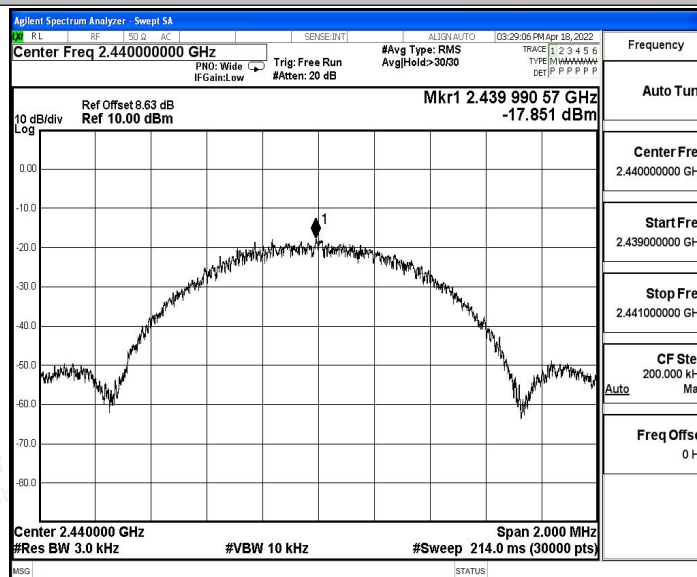


## Test Graphs

BLE\_1M\_Ant1\_2402

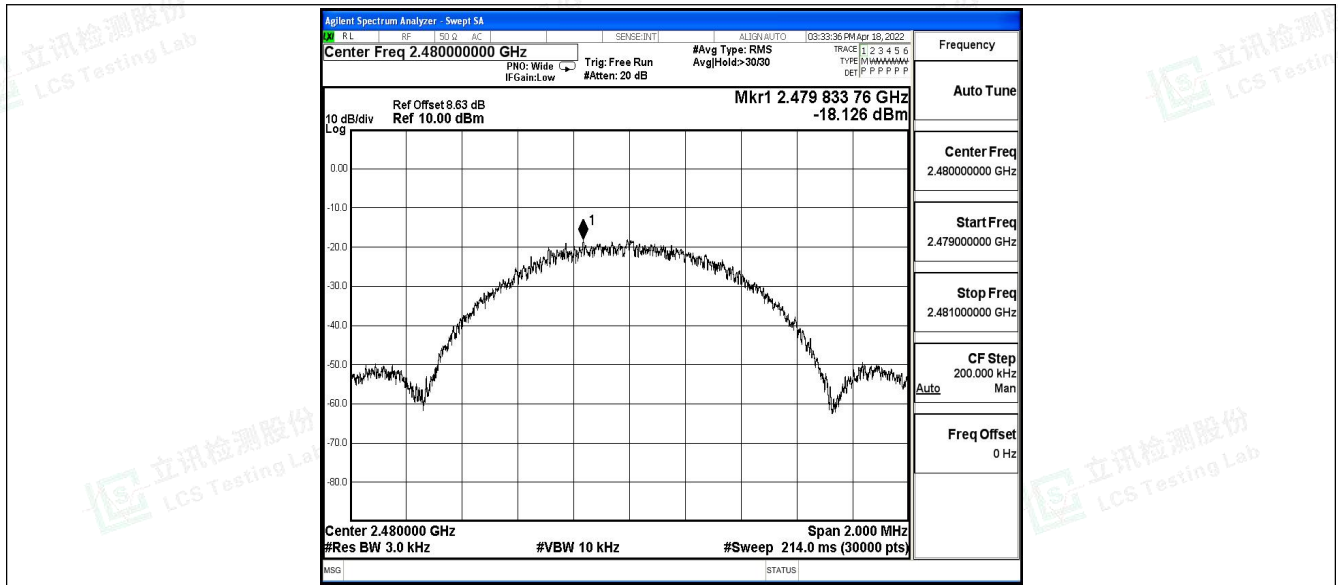


BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480







## B.4 Band edge measurements

### Test Result

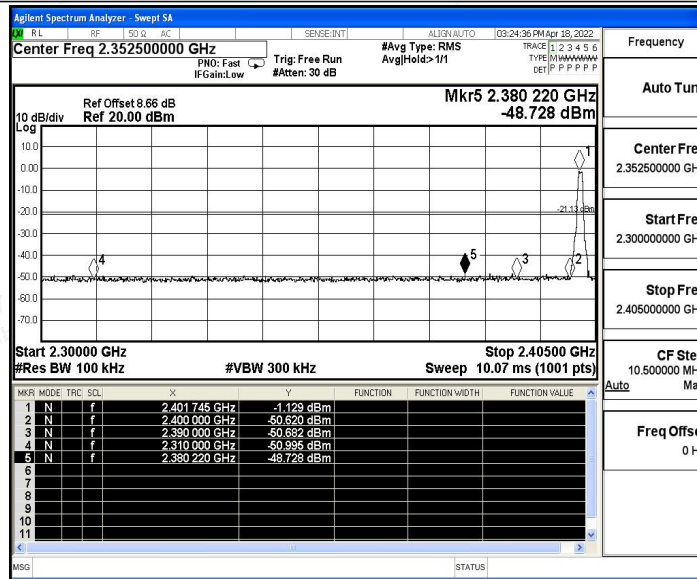
| TestMode | Antenna | ChName | Channel | RefLevel[dBm] | Result[dBm] | Limit[dBm]    | Verdict |
|----------|---------|--------|---------|---------------|-------------|---------------|---------|
| BLE_1M   | Ant1    | Low    | 2402    | -1.13         | -48.73      | $\leq -21.13$ | PASS    |
|          |         | High   | 2480    | -1.94         | -47.72      | $\leq -21.94$ | PASS    |



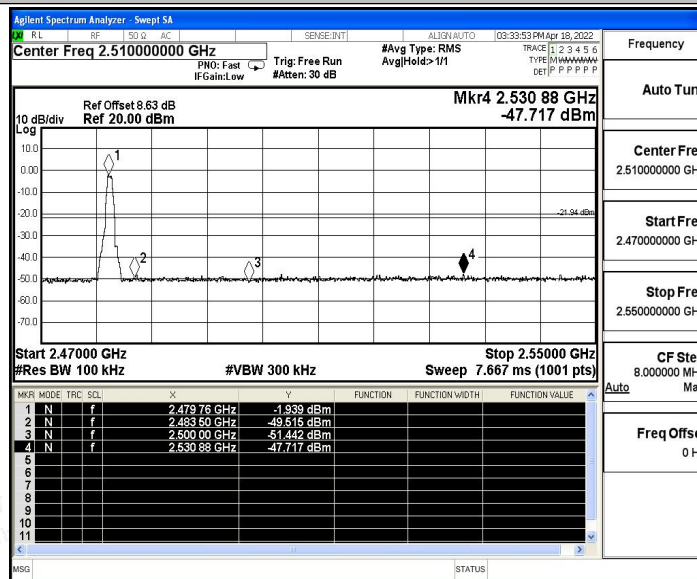


## Test Graphs

BLE\_1M\_Ant1\_Low\_2402



BLE\_1M\_Ant1\_High\_2480





## B.5 Conducted Spurious Emission

### Test Result

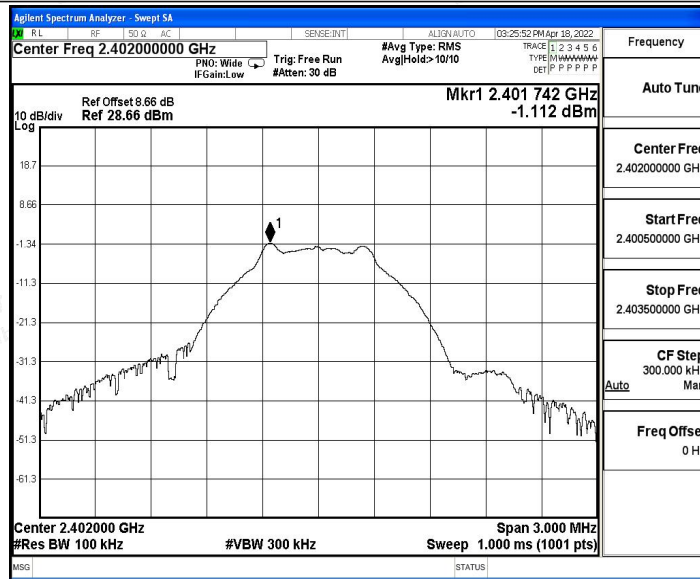
| TestMode | Antenna | Channel | FreqRange<br>[MHz] | RefLevel<br>[dBm] | Result[dBm] | Limit[dBm]    | Verdict |
|----------|---------|---------|--------------------|-------------------|-------------|---------------|---------|
| BLE_1M   | Ant1    | 2402    | Reference          | -1.11             | -1.11       | ---           | PASS    |
|          |         |         | 30~1000            | -1.11             | -60.52      | $\leq -21.11$ | PASS    |
|          |         |         | 1000~26500         | -1.11             | -46.02      | $\leq -21.11$ | PASS    |
|          |         | 2440    | Reference          | -1.78             | -1.78       | ---           | PASS    |
|          |         |         | 30~1000            | -1.78             | -60.64      | $\leq -21.78$ | PASS    |
|          |         |         | 1000~26500         | -1.78             | -46.18      | $\leq -21.78$ | PASS    |
|          |         | 2480    | Reference          | -1.96             | -1.96       | ---           | PASS    |
|          |         |         | 30~1000            | -1.96             | -60.26      | $\leq -21.96$ | PASS    |
|          |         |         | 1000~26500         | -1.96             | -45.57      | $\leq -21.96$ | PASS    |



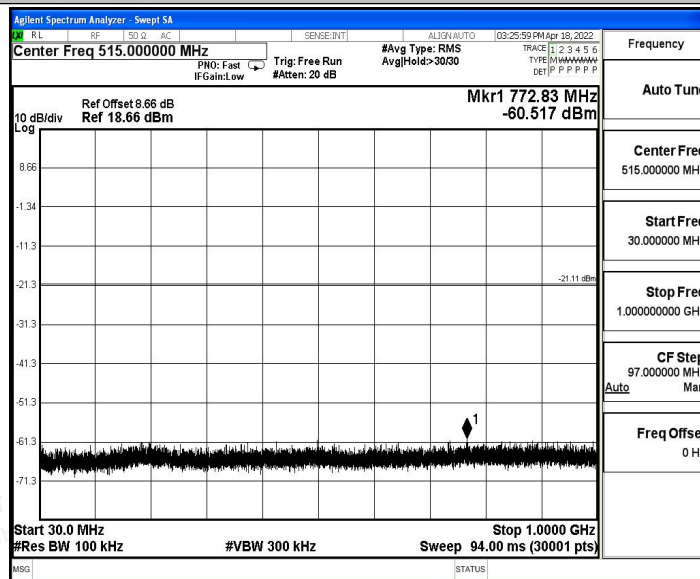


## Test Graphs

BLE\_1M\_Ant1\_2402\_0~Reference

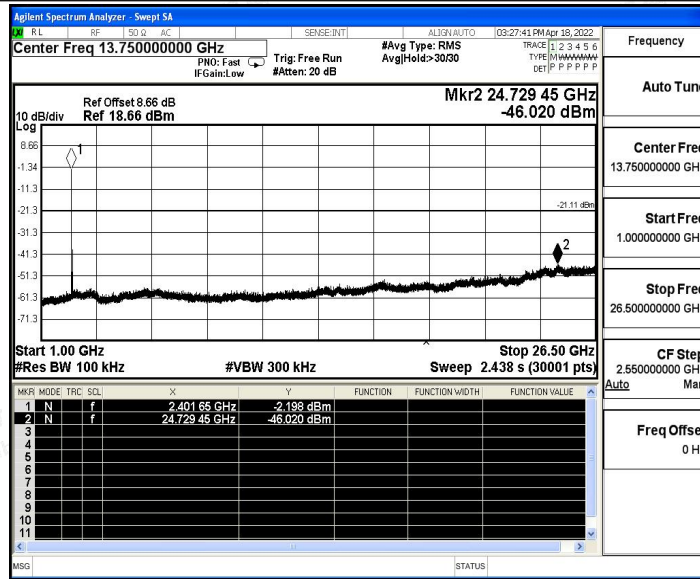


BLE\_1M\_Ant1\_2402\_30~1000

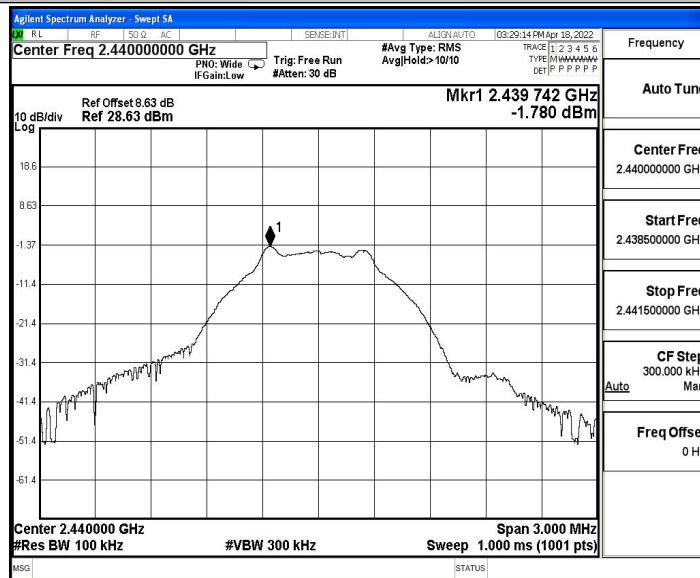


BLE\_1M\_Ant1\_2402\_1000~26500



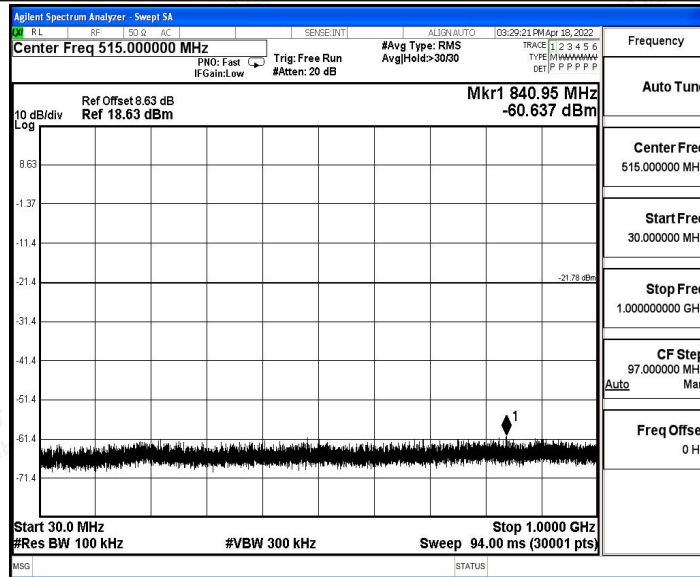


BLE\_1M\_Ant1\_2440\_0~Reference

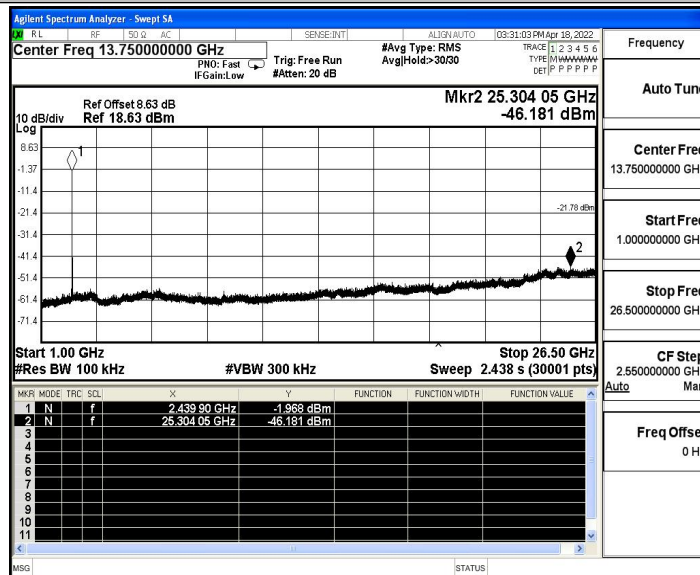


BLE\_1M\_Ant1\_2440\_30~1000



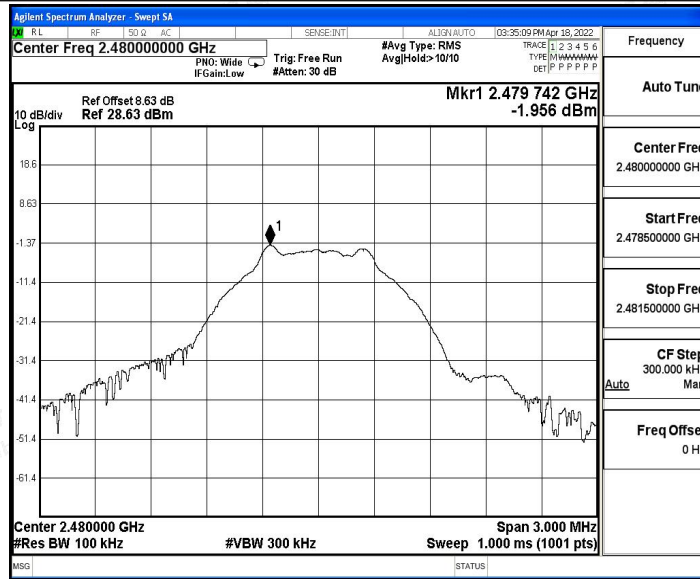


BLE\_1M\_Ant1\_2440\_1000~26500

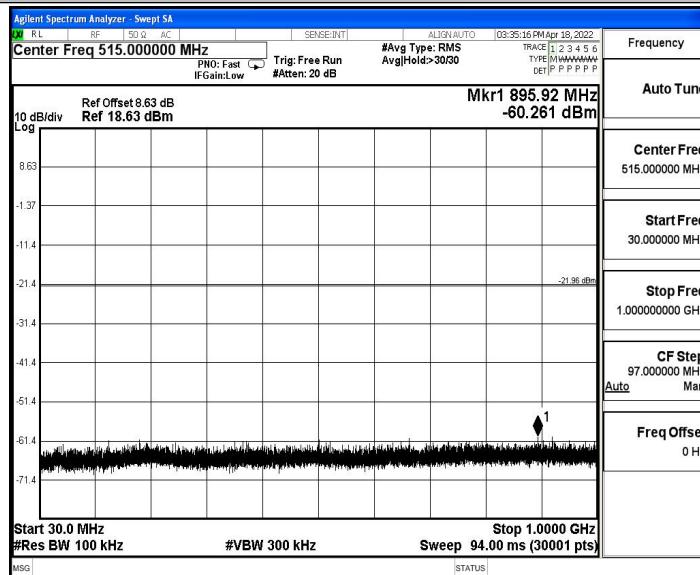


BLE\_1M\_Ant1\_2480\_0~Reference



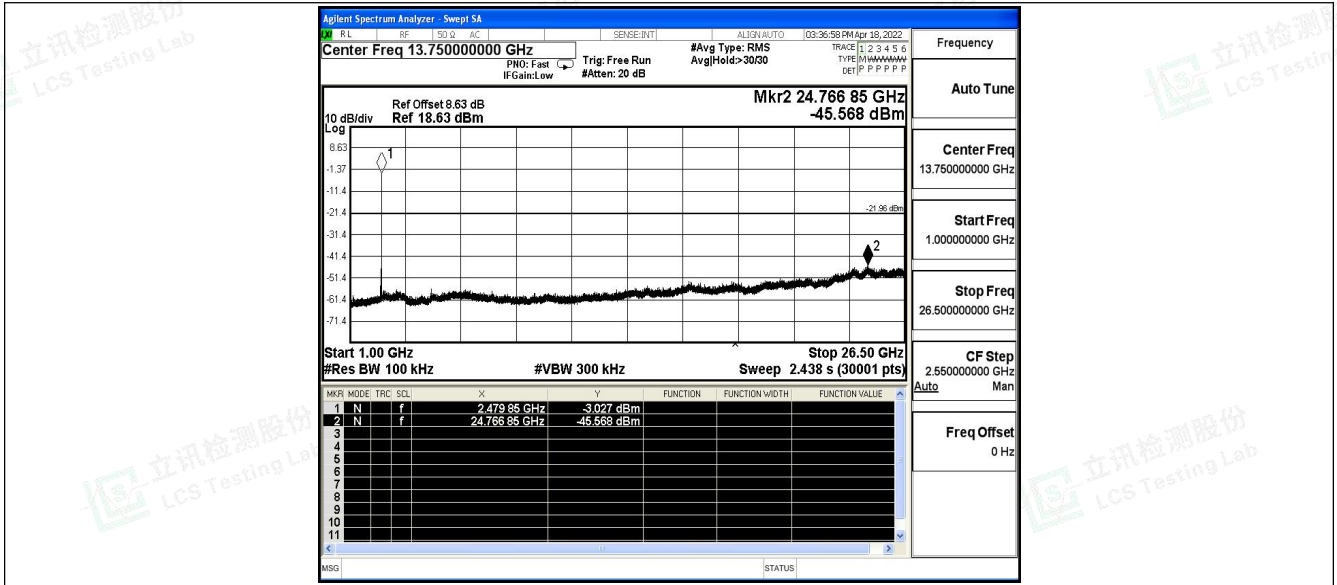


BLE\_1M\_Ant1\_2480\_30~1000



BLE\_1M\_Ant1\_2480\_1000~26500







## B.6 Duty Cycle

### Test Result

| TestMode | Antenna | Channel | ON Time<br>[ms] | Period<br>[ms] | X      | DC [%] | xFactor | Minimum<br>VBW(KHz) | Limit | Verdict |
|----------|---------|---------|-----------------|----------------|--------|--------|---------|---------------------|-------|---------|
| BLE_1M   | Ant1    | 2402    | 1.63            | 1.87           | 0.8717 | 87.17  | 0.60    | 0.613               | ---   | ---     |
|          |         | 2440    | 1.64            | 1.88           | 0.8723 | 87.23  | 0.59    | 0.610               | ---   | ---     |
|          |         | 2480    | 1.63            | 1.87           | 0.8717 | 87.17  | 0.60    | 0.613               | ---   | ---     |

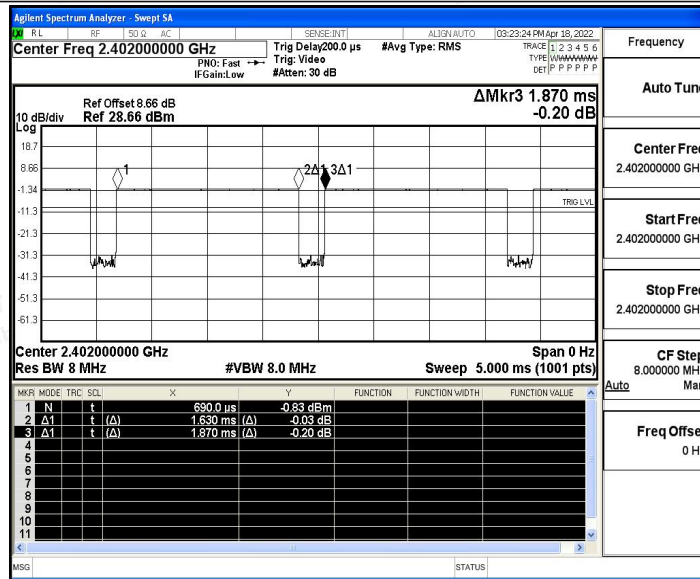


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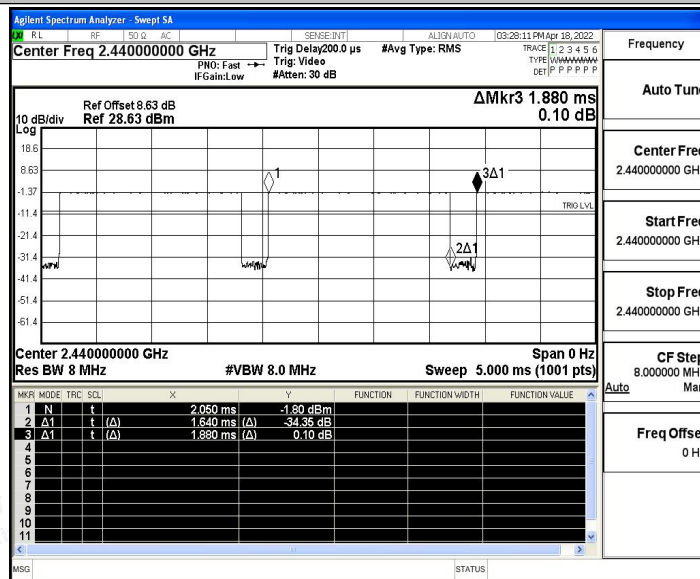


## Test Graphs

BLE\_1M\_Ant1\_2402

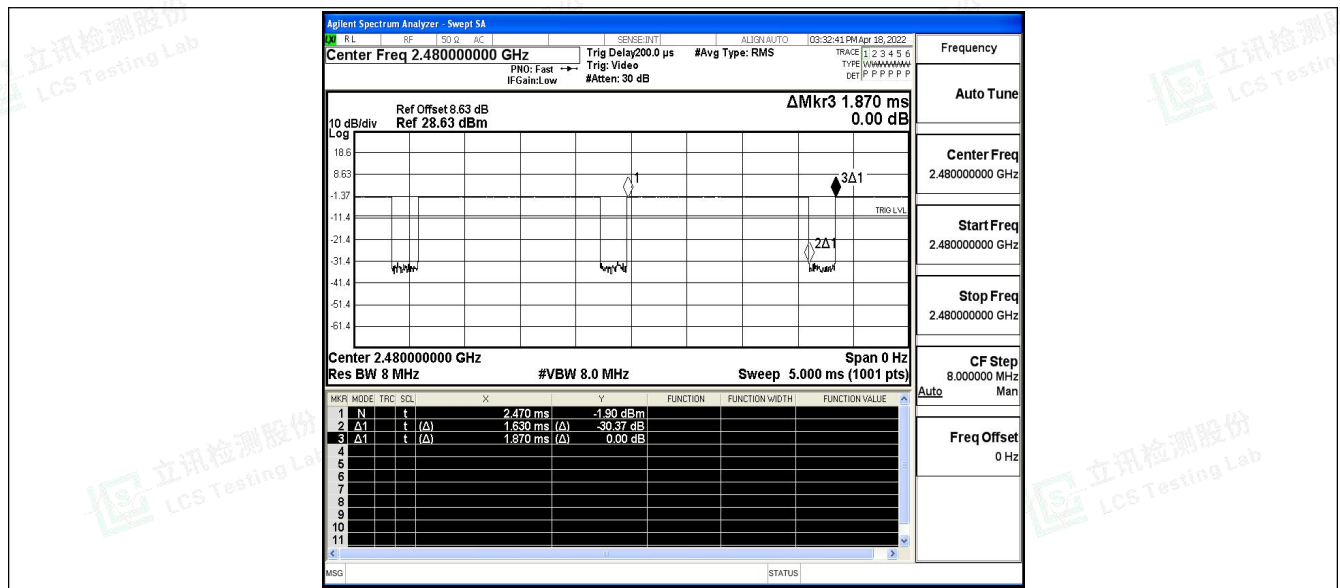


BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480







## B.7 Emissions in Restricted Bands

### Test Result

| TestMode | Antenna | ChName | Channel | Detector | Freq.<br>[MHz] | Result<br>[dBm] | Limit<br>[dBm] | Result<br>[dBuV/m] | Limit<br>[dBuV/m] | Verdict |
|----------|---------|--------|---------|----------|----------------|-----------------|----------------|--------------------|-------------------|---------|
| BLE_1M   | Ant1    | Low    | 2402    | AV       | 2310.000       | -48.09          | ≤-41.20        | 47.11              | ≤54               | PASS    |
|          |         |        |         | AV       | 2388.305       | -47.53          | ≤-41.20        | 47.67              | ≤54               | PASS    |
|          |         |        |         | AV       | 2390.000       | -47.59          | ≤-41.20        | 47.61              | ≤54               | PASS    |
|          |         |        |         | Peak     | 2310.000       | -39.1           | ≤-21.20        | 56.10              | ≤74               | PASS    |
|          |         |        |         | Peak     | 2375.495       | -36.68          | ≤-21.20        | 58.52              | ≤74               | PASS    |
|          |         |        |         | Peak     | 2390.000       | -38.69          | ≤-21.20        | 56.51              | ≤74               | PASS    |
|          |         | High   | 2480    | AV       | 2483.500       | -46.92          | ≤-41.20        | 48.28              | ≤54               | PASS    |
|          |         |        |         | AV       | 2483.520       | -46.92          | ≤-41.20        | 48.28              | ≤54               | PASS    |
|          |         |        |         | AV       | 2500.000       | -47.09          | ≤-41.20        | 48.11              | ≤54               | PASS    |
|          |         |        |         | Peak     | 2483.500       | -38.34          | ≤-21.20        | 56.86              | ≤74               | PASS    |
|          |         |        |         | Peak     | 2487.920       | -36.24          | ≤-21.20        | 58.96              | ≤74               | PASS    |
|          |         |        |         | Peak     | 2500.000       | -37.4           | ≤-21.20        | 57.80              | ≤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.

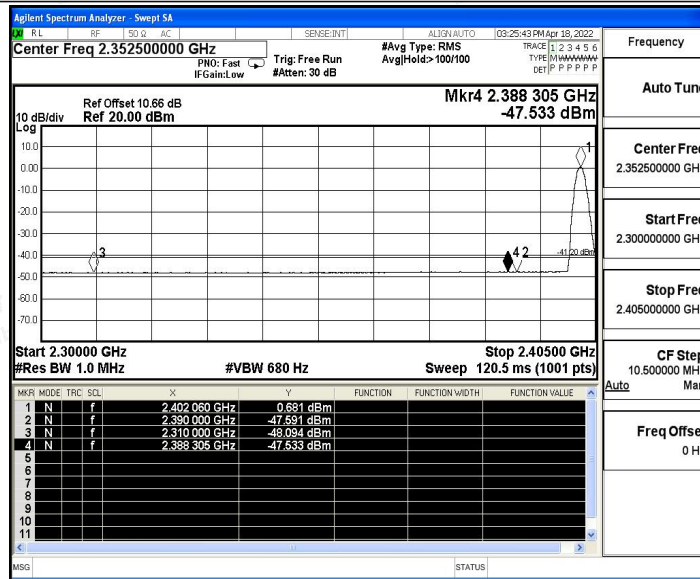


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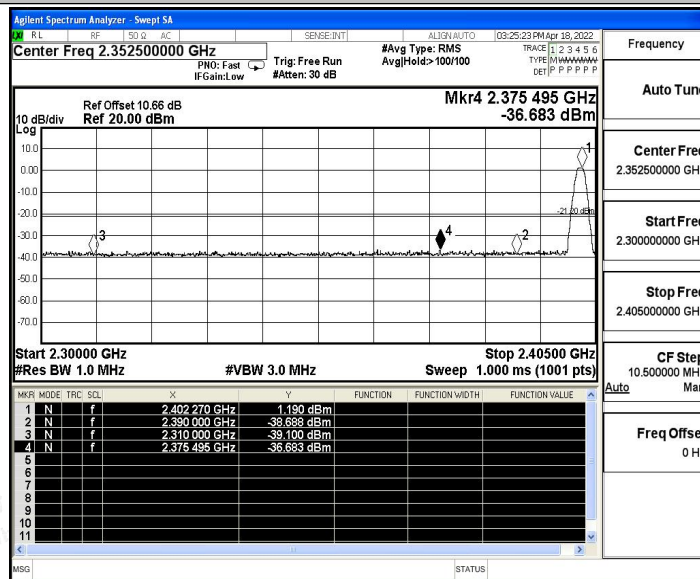


## Test Graphs

BLE\_1M\_Ant1\_Low\_2402\_AV

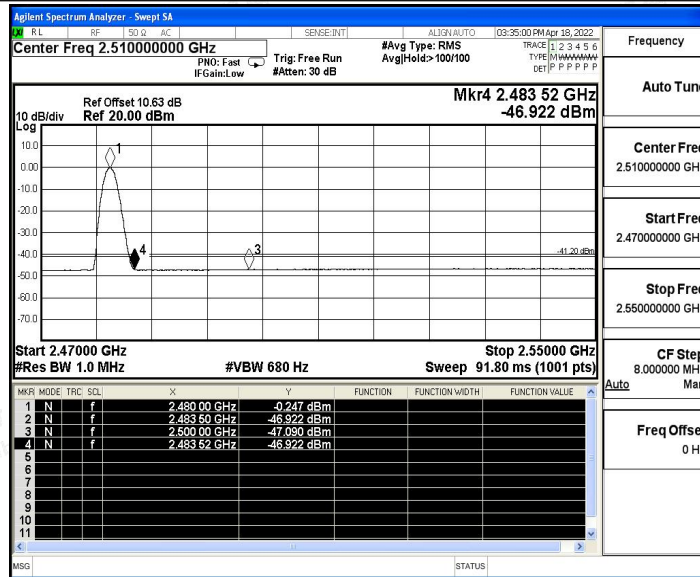


BLE\_1M\_Ant1\_Low\_2402\_Peak



BLE\_1M\_Ant1\_High\_2480\_AV





BLE\_1M\_Ant1\_High\_2480\_Peak

