



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Wireless Earphones

Test Model: A12

Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.8° C   |
| Relative Humidity: | 52.1%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Summer Wu |
| Supervised by:     | Nick Peng |





## B.1 DTS Bandwidth

### Test Result

| TestMode | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|----------------|--------------|----------|----------|------------|---------|
| BLE_2M   | Ant1    | 2402           | 1.088        | 2401.440 | 2402.528 | 0.5        | PASS    |
|          |         | 2440           | 1.148        | 2439.428 | 2440.576 | 0.5        | PASS    |
|          |         | 2480           | 1.124        | 2479.440 | 2480.564 | 0.5        | PASS    |



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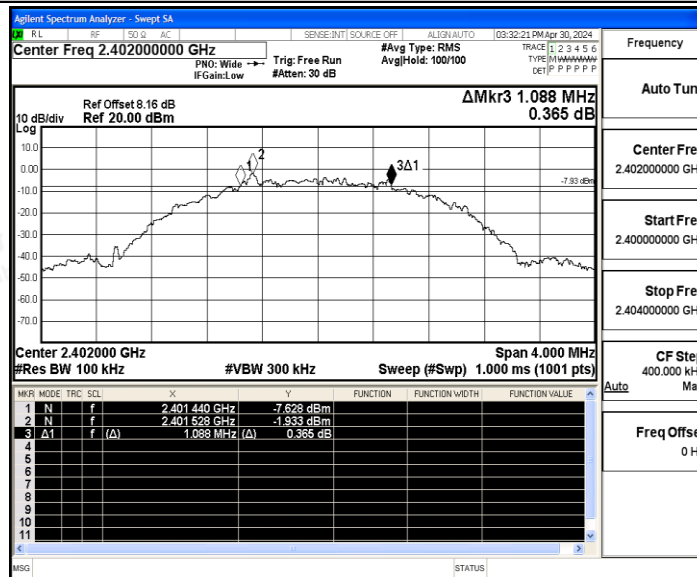
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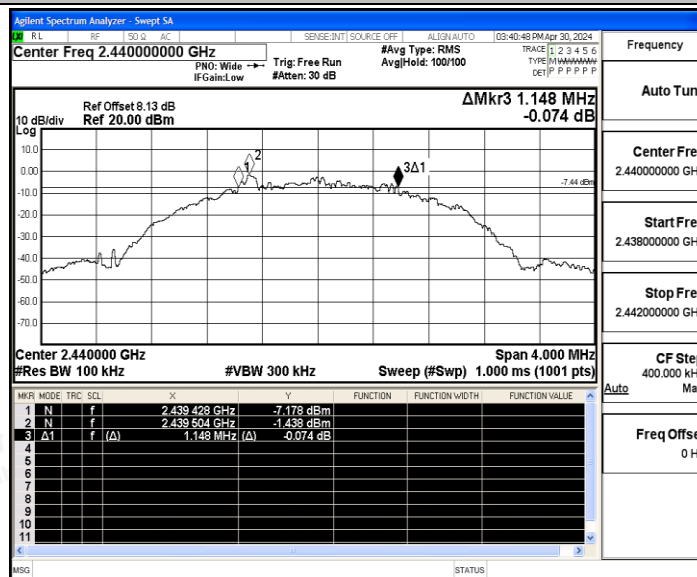


## Test Graphs

BLE\_2M\_Ant1\_2402



BLE\_2M\_Ant1\_2440



BLE\_2M\_Ant1\_2480

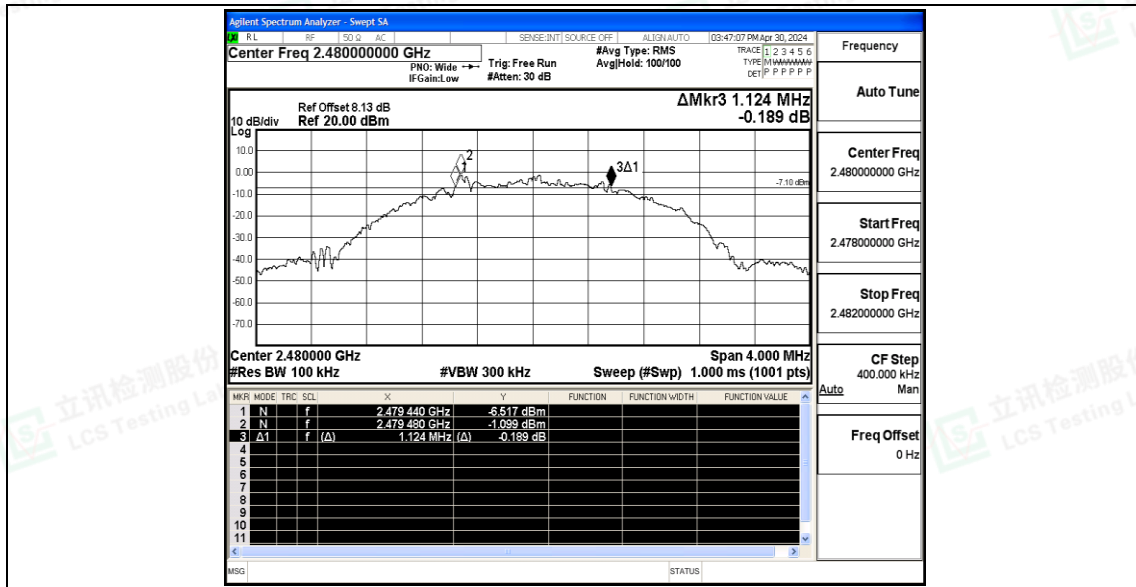


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B.2 Maximum conducted output power

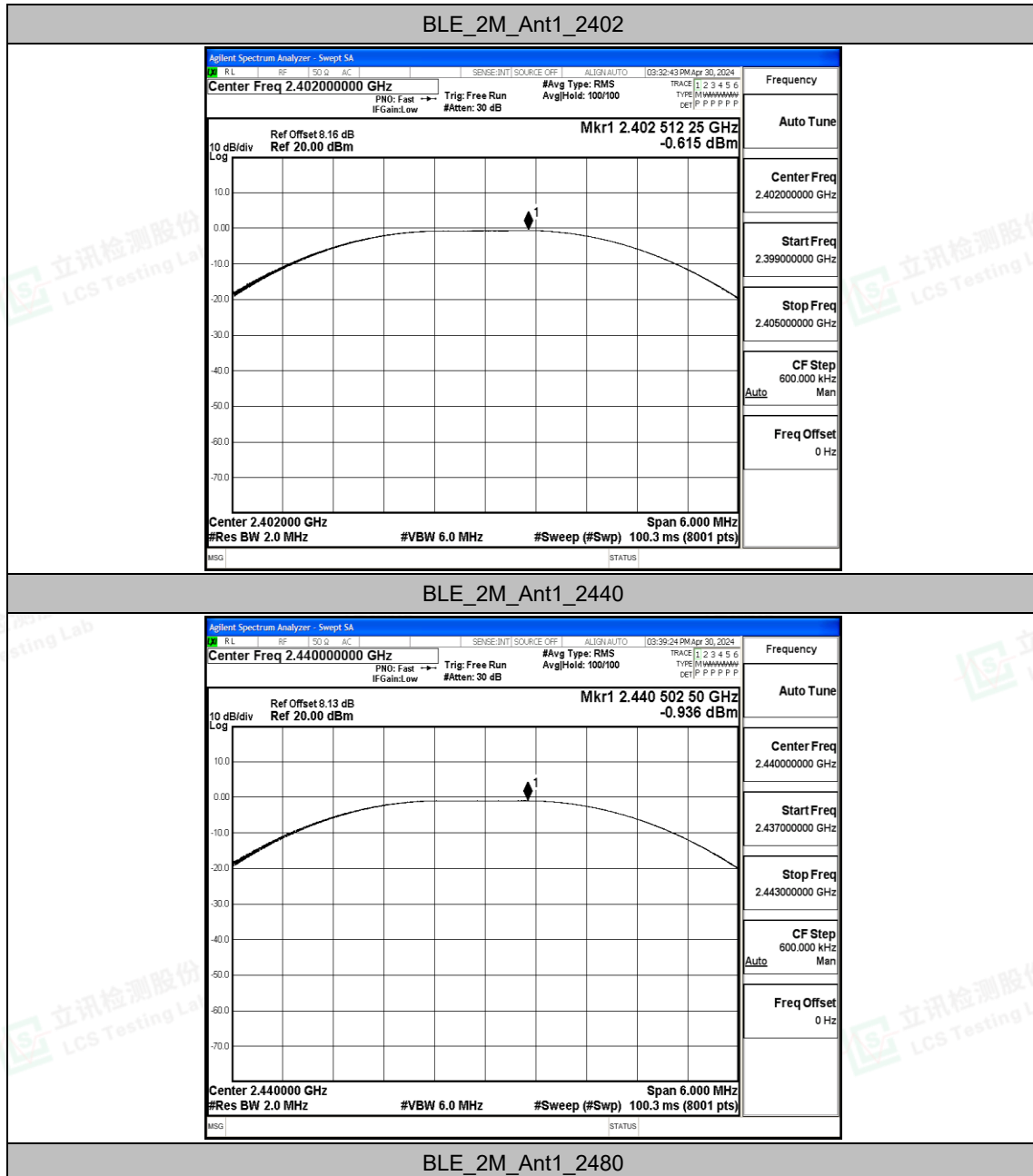
Test Result

| TestMode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|---------|
| BLE_2M   | Ant1    | 2402    | -0.62       | ≤30        | PASS    |
|          |         | 2440    | -0.94       | ≤30        | PASS    |
|          |         | 2480    | 0.20        | ≤30        | PASS    |





## Test Graphs

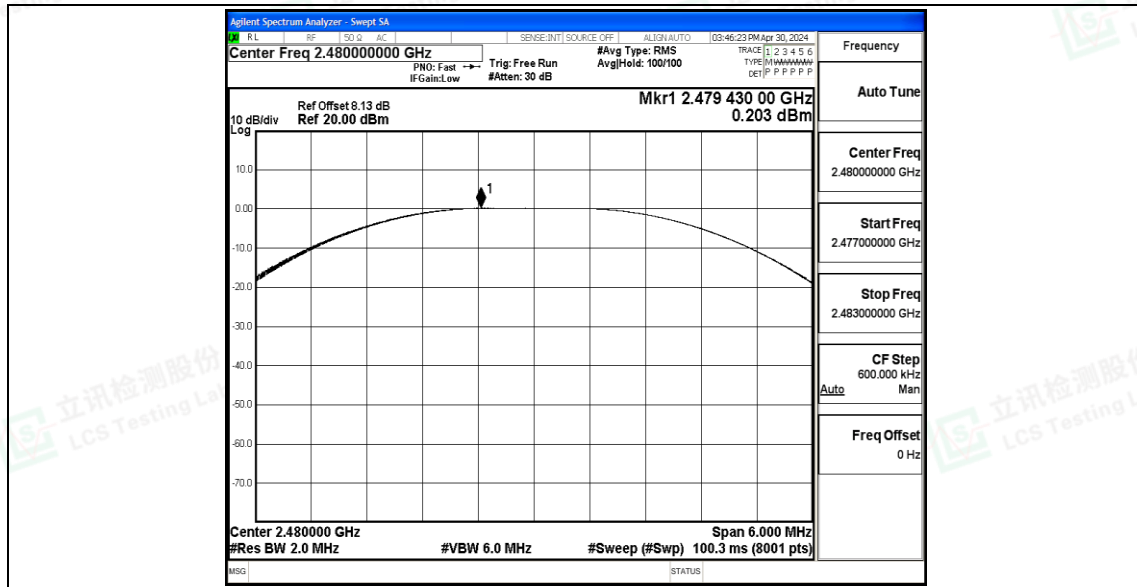


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### B.3 Maximum power spectral density

#### Test Result

| TestMode | Antenna | Frequency[MHz] | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|----------------|------------------|-----------------|---------|
| BLE_2M   | Ant1    | 2402           | -20.13           | ≤8.00           | PASS    |
|          |         | 2440           | -20.36           | ≤8.00           | PASS    |
|          |         | 2480           | -19.46           | ≤8.00           | PASS    |



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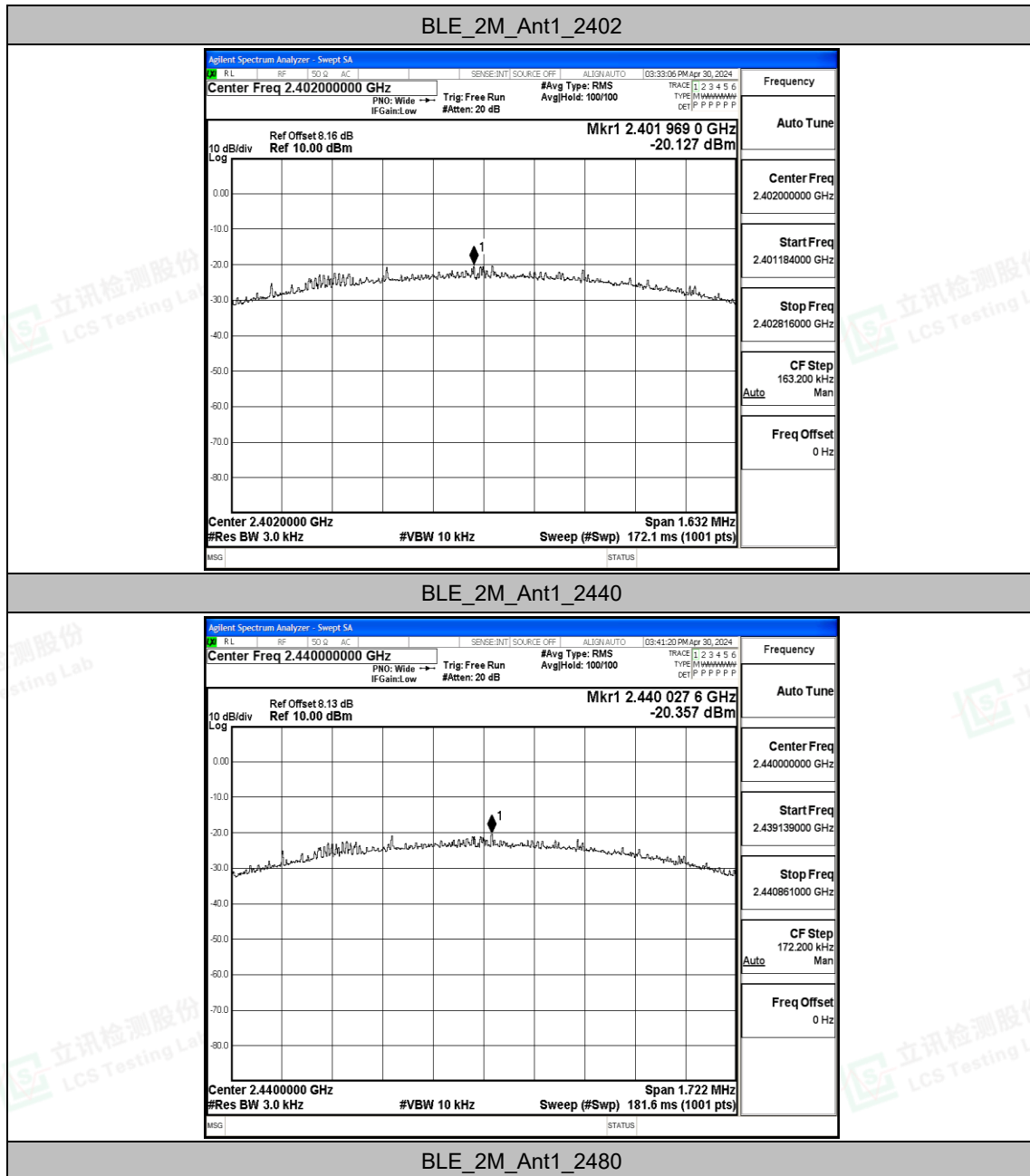
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## Test Graphs

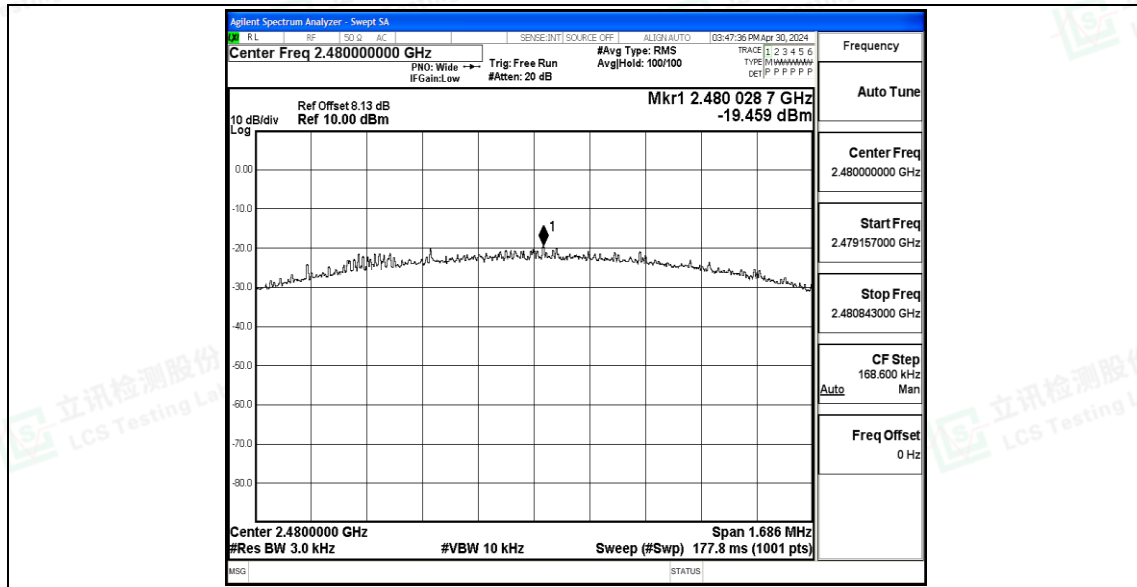


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## B.4 Band edge measurements

### Test Result

| TestMode | Antenna | Channel | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|----------------|---------------|-------------|------------|---------|
| BLE_2M   | Ant1    | Low     | 2402           | -1.81         | -47.4       | ≤-21.81    | PASS    |
|          |         | High    | 2480           | -0.28         | -49.32      | ≤-20.28    | PASS    |

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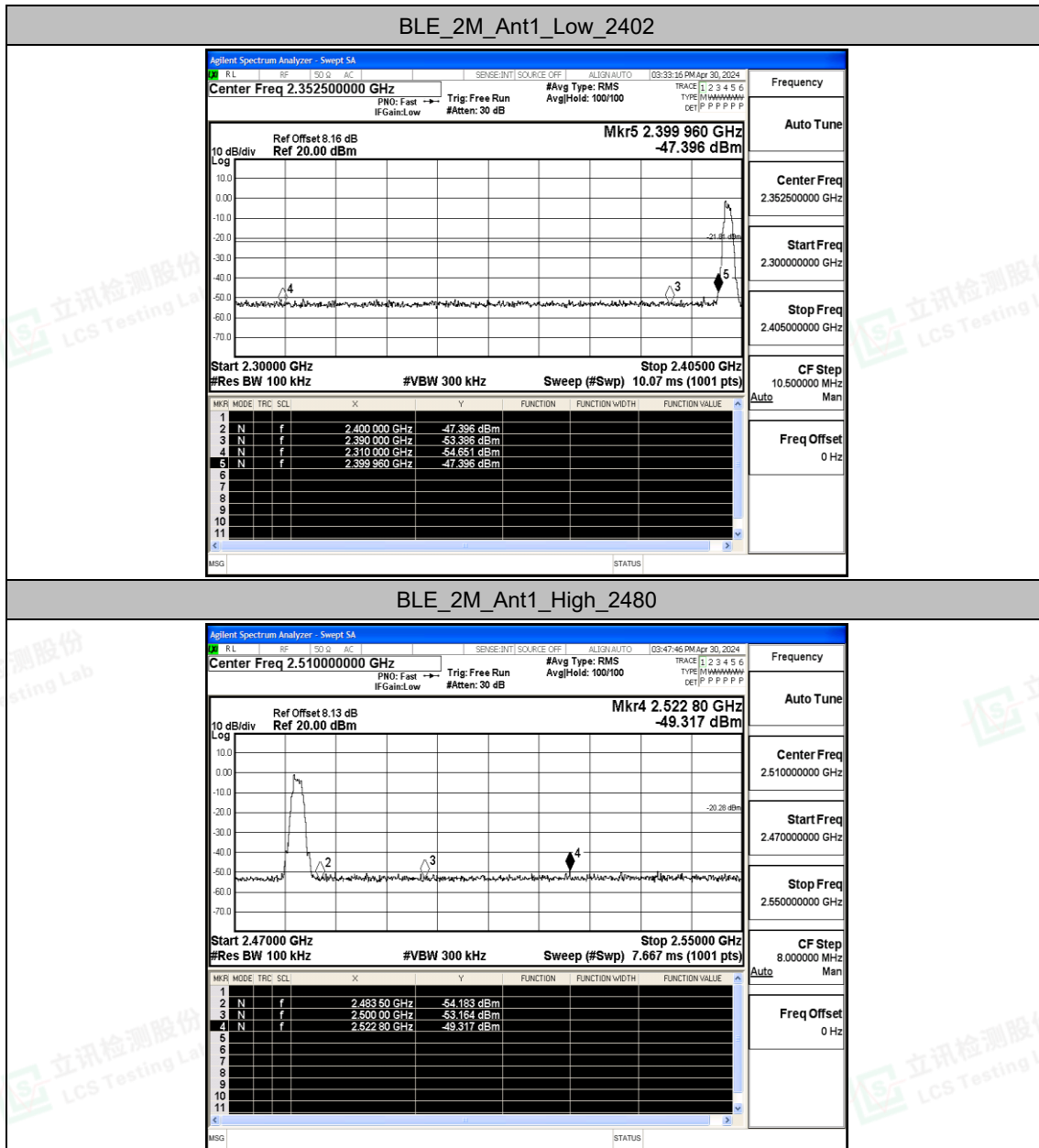
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## Test Graphs



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## B.5 Conducted Spurious Emission

### Test Result

| TestMode | Antenna | Frequency[MHz] | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|----------------|-----------------|----------------|-------------|------------|---------|
| BLE_2M   | Ant1    | 2402           | 30~1000         | -1.81          | -62.02      | ≤-21.81    | PASS    |
|          |         |                | 1000~26500      | -1.81          | -48.91      | ≤-21.81    | PASS    |
|          |         | 2440           | 30~1000         | -2.70          | -61.86      | ≤-22.7     | PASS    |
|          |         |                | 1000~26500      | -2.70          | -48.73      | ≤-22.7     | PASS    |
|          |         | 2480           | 30~1000         | -0.28          | -59.24      | ≤-20.28    | PASS    |
|          |         |                | 1000~26500      | -0.28          | -48.91      | ≤-20.28    | PASS    |



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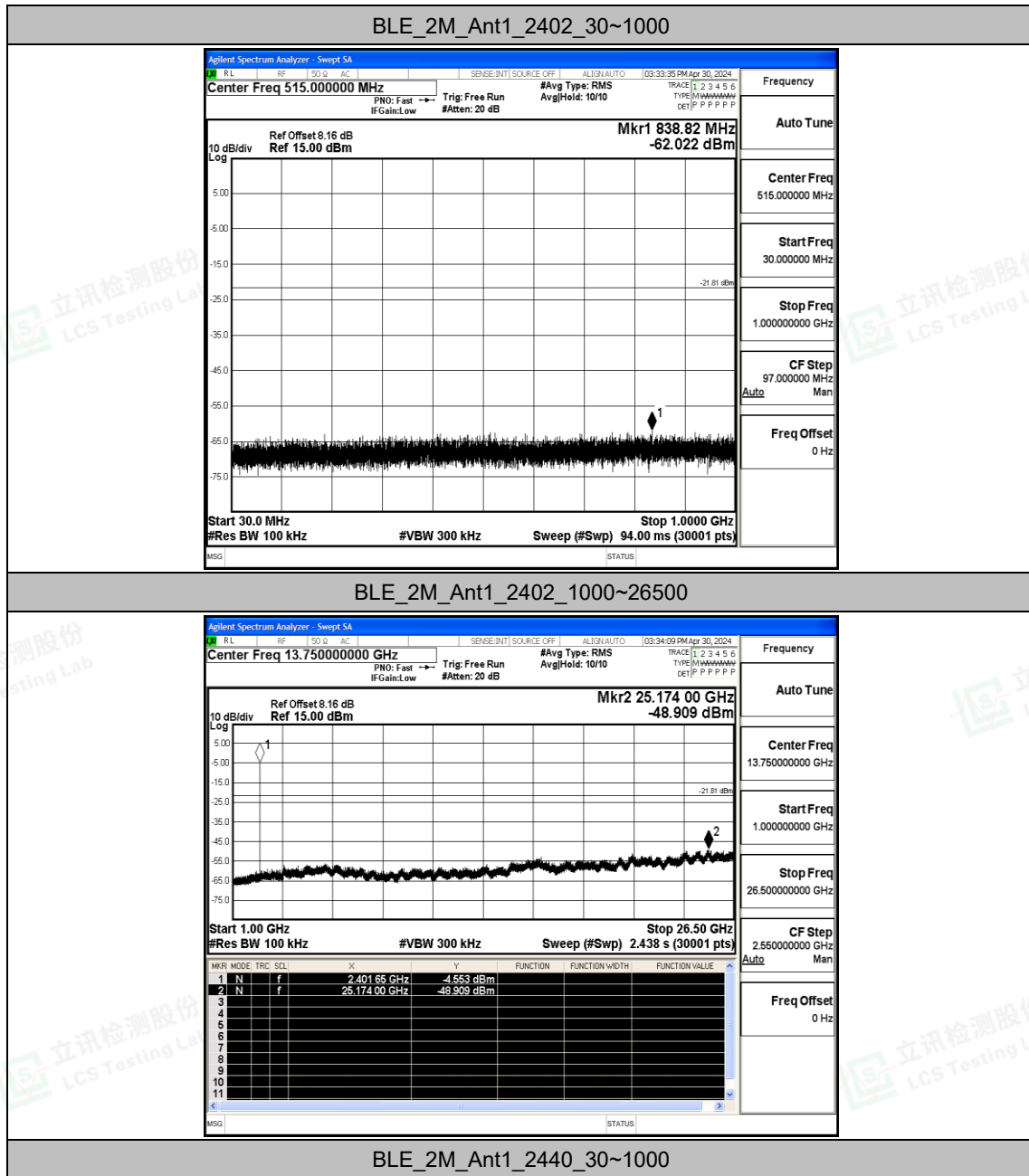
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## Test Graphs

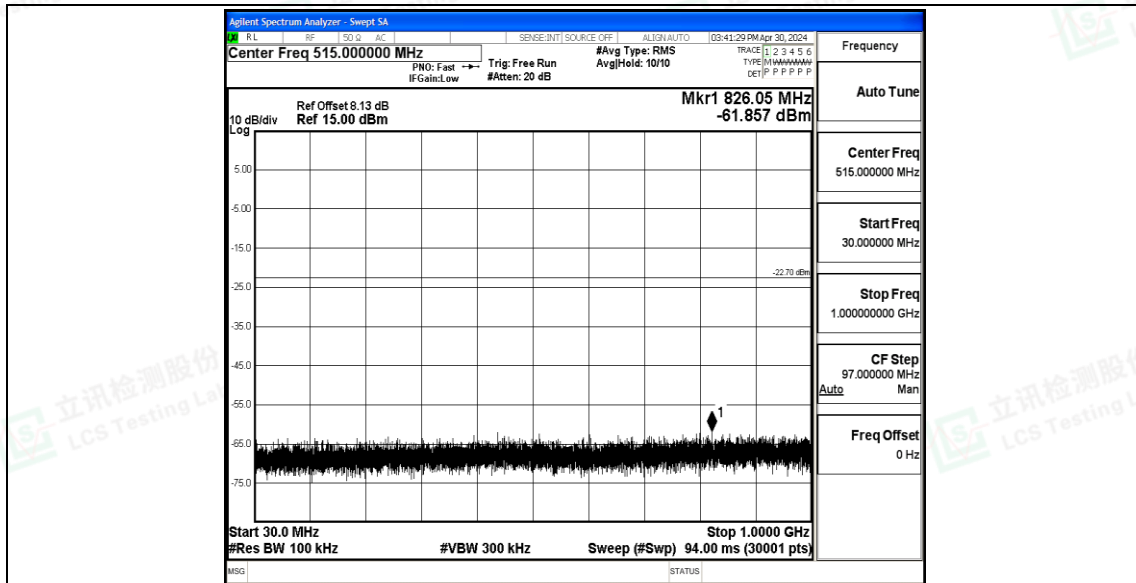


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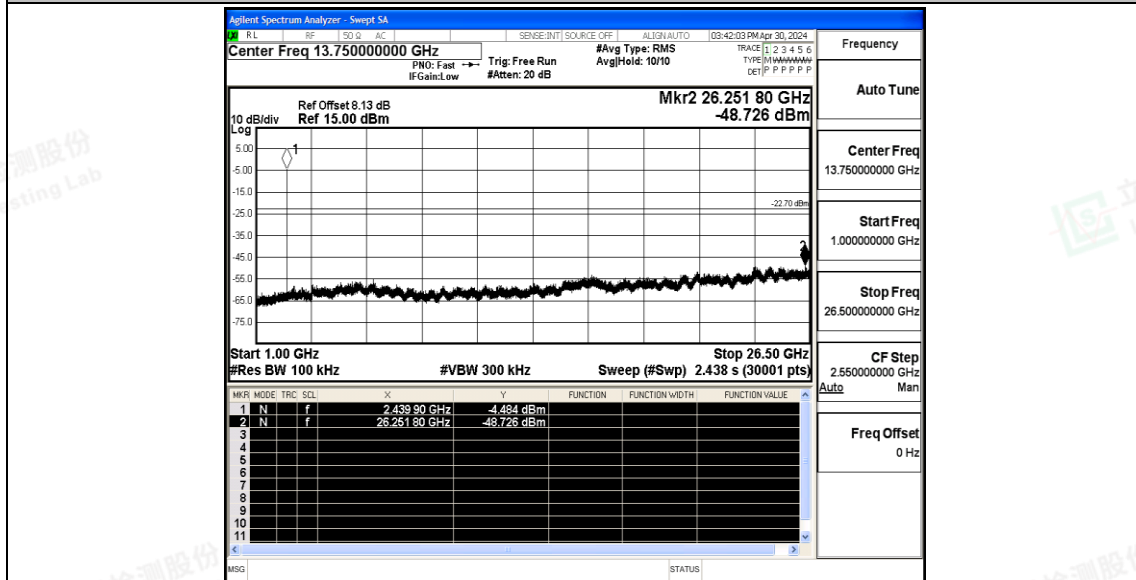
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BLE\_2M\_Ant1\_2440\_1000~26500



BLE\_2M\_Ant1\_2480\_30~1000

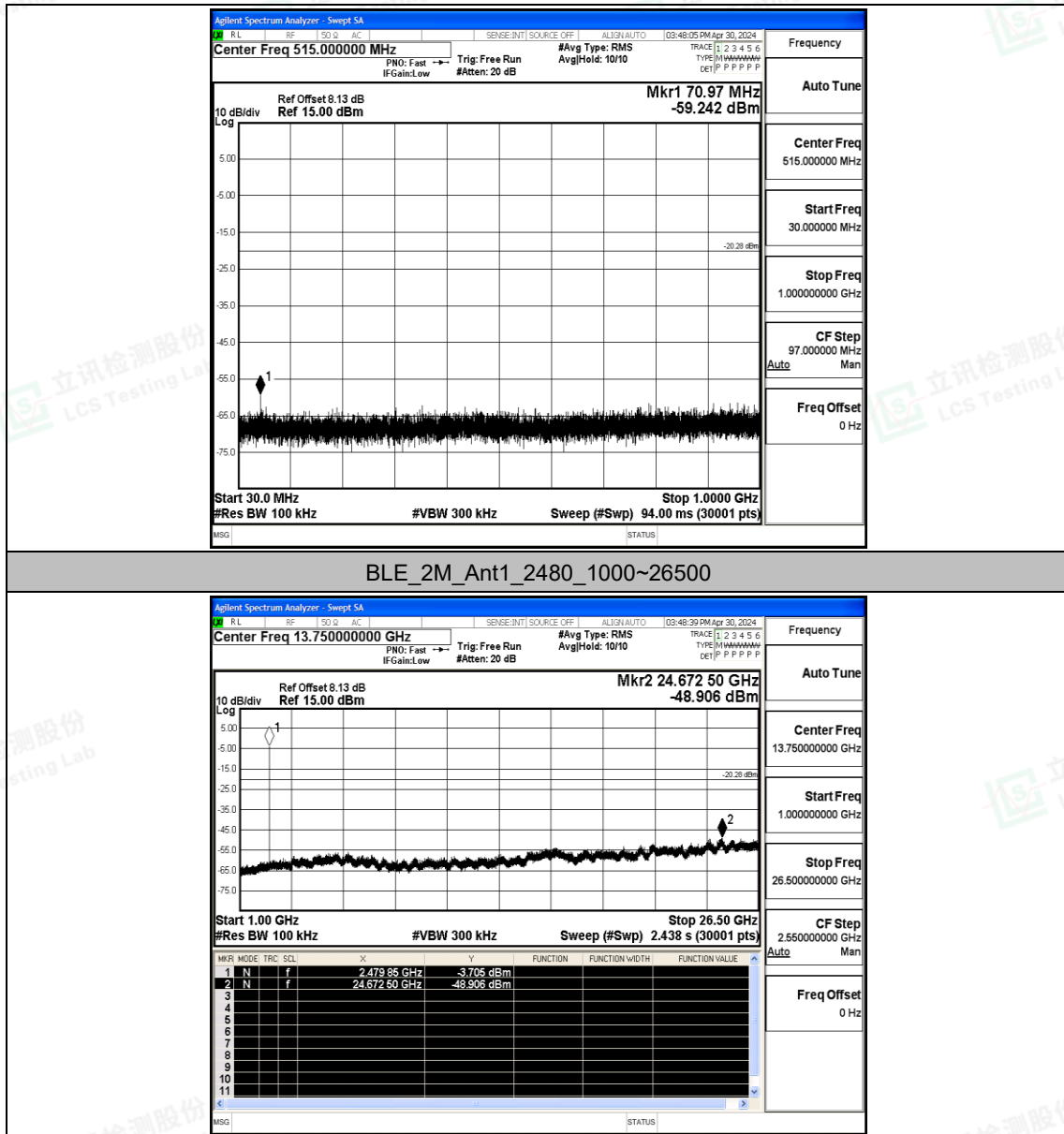


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## Reference level measurement

### Test Result

| TestMode | Antenna | Freq(MHz) | Max.Point[MHz] | Result[dBm] |
|----------|---------|-----------|----------------|-------------|
| BLE_2M   | Ant1    | 2402      | 2401.53        | -1.81       |
|          |         | 2440      | 2440.03        | -2.70       |
|          |         | 2480      | 2479.50        | -0.28       |



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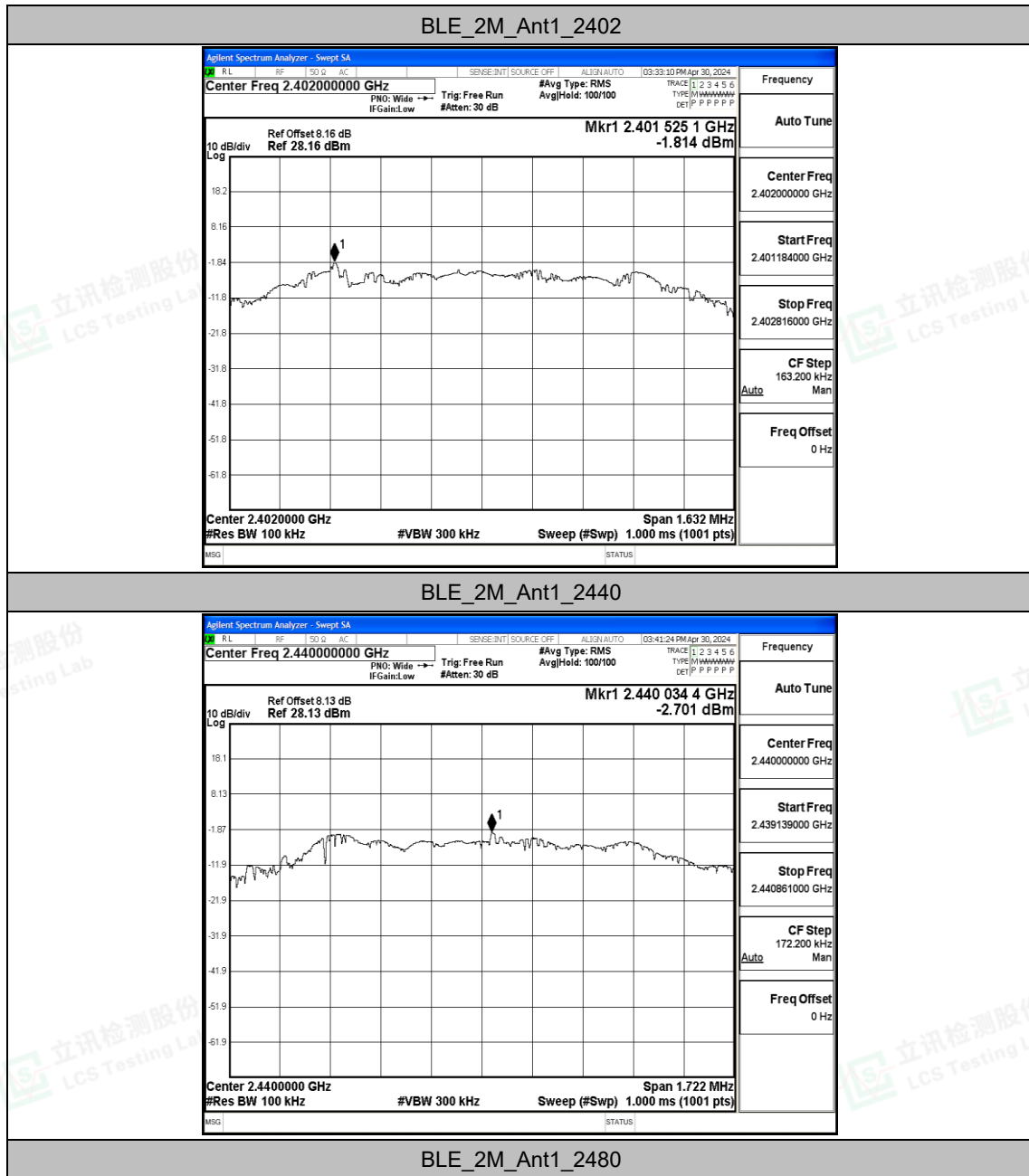
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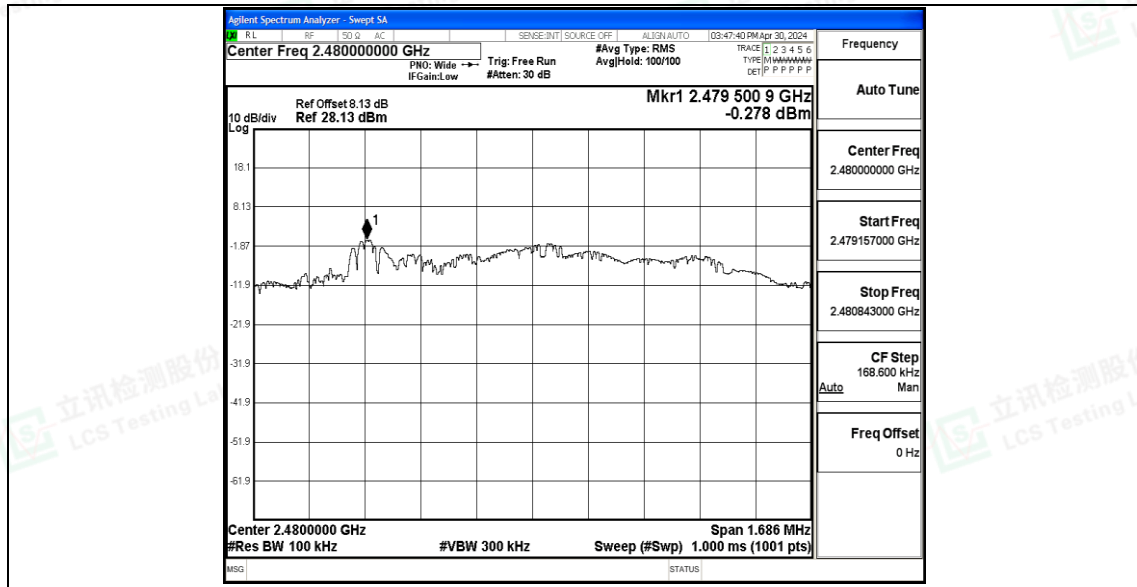


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## B.6 Duty Cycle

### Test Result

| TestMode | Antenna | Frequency[MHz] | ON Time [ms] | Period [ms] | Duty Cycle [%] | Duty Cycle Factor[dB] | 1/T Factor[dB] |
|----------|---------|----------------|--------------|-------------|----------------|-----------------------|----------------|
| BLE_2M   | Ant1    | 2402           | 0.83         | 1.25        | 66.40          | 1.78                  | 1.20           |
|          |         | 2440           | 0.83         | 1.25        | 66.40          | 1.78                  | 1.20           |
|          |         | 2480           | 0.83         | 1.25        | 66.40          | 1.78                  | 1.20           |



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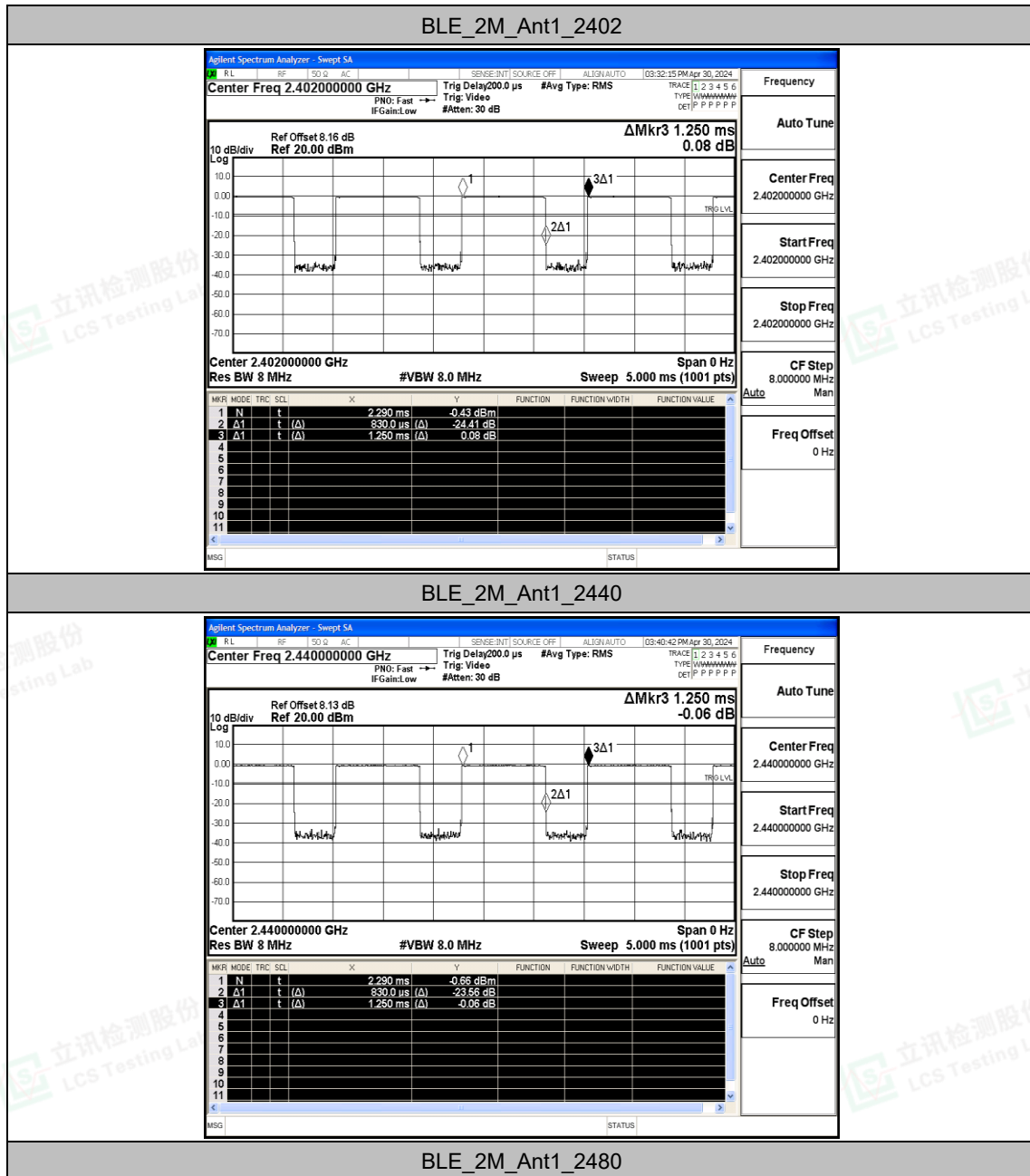
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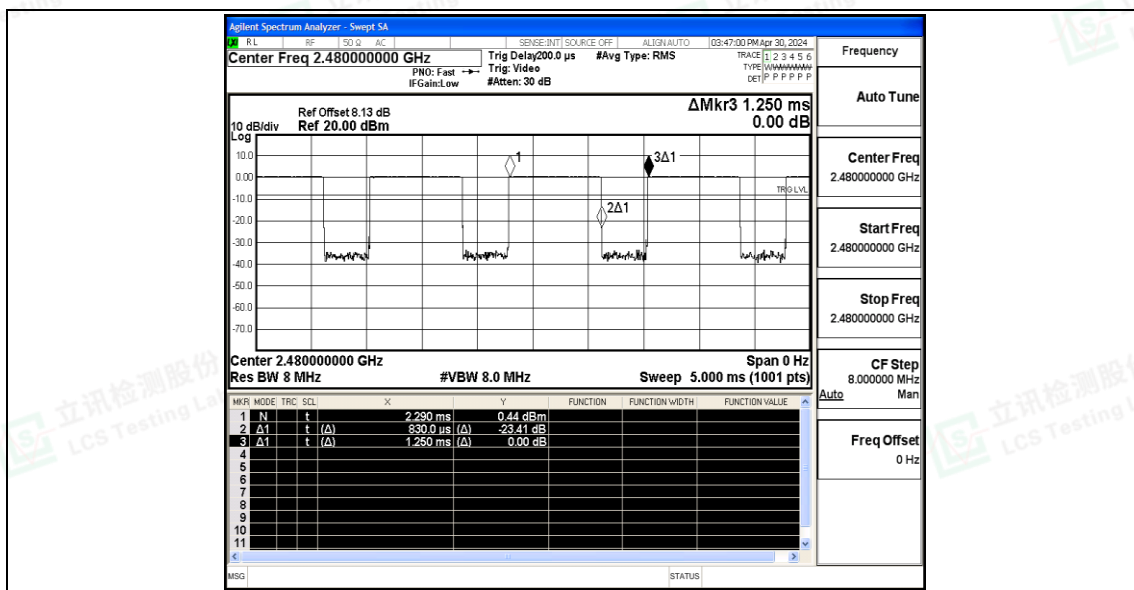


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## B.7 Emissions in Restricted Bands

### Test Result

| TestMode | Antenna | ChName | Frequenc<br>y[MHz] | Detector | Freq<br>[MHz] | Result<br>[dBm] | Limit<br>[dBm] | Result<br>[dBuV/m] | Limit<br>[dBuV/m] | Verdict |
|----------|---------|--------|--------------------|----------|---------------|-----------------|----------------|--------------------|-------------------|---------|
| BLE_2M   | Ant1    | Low    | 2402               | AV       | 2310.000      | -48.22          | ≤-41.20        | 46.98              | ≤54               | PASS    |
|          |         |        |                    | AV       | 2311.865      | -47.08          | ≤-41.20        | 48.12              | ≤54               | PASS    |
|          |         |        |                    | AV       | 2390.000      | -47.54          | ≤-41.20        | 47.66              | ≤54               | PASS    |
|          |         |        |                    | Peak     | 2310.000      | -40.93          | ≤-21.20        | 54.27              | ≤74               | PASS    |
|          |         |        |                    | Peak     | 2344.205      | -38.21          | ≤-21.20        | 56.99              | ≤74               | PASS    |
|          |         |        |                    | Peak     | 2390.000      | -42.27          | ≤-21.20        | 52.93              | ≤74               | PASS    |
|          |         | High   | 2480               | AV       | 2483.500      | -47.57          | ≤-41.20        | 47.63              | ≤54               | PASS    |
|          |         |        |                    | AV       | 2493.360      | -46.95          | ≤-41.20        | 48.25              | ≤54               | PASS    |
|          |         |        |                    | AV       | 2500.000      | -47.73          | ≤-41.20        | 47.47              | ≤54               | PASS    |
|          |         |        |                    | Peak     | 2483.500      | -41.78          | ≤-21.20        | 53.42              | ≤74               | PASS    |
|          |         |        |                    | Peak     | 2486.960      | -38.88          | ≤-21.20        | 56.32              | ≤74               | PASS    |
|          |         |        |                    | Peak     | 2500.000      | -41.42          | ≤-21.20        | 53.78              | ≤74               | PASS    |

#### Note:

1. The Antenna Gain is compensated in the graph. The Correction Factor 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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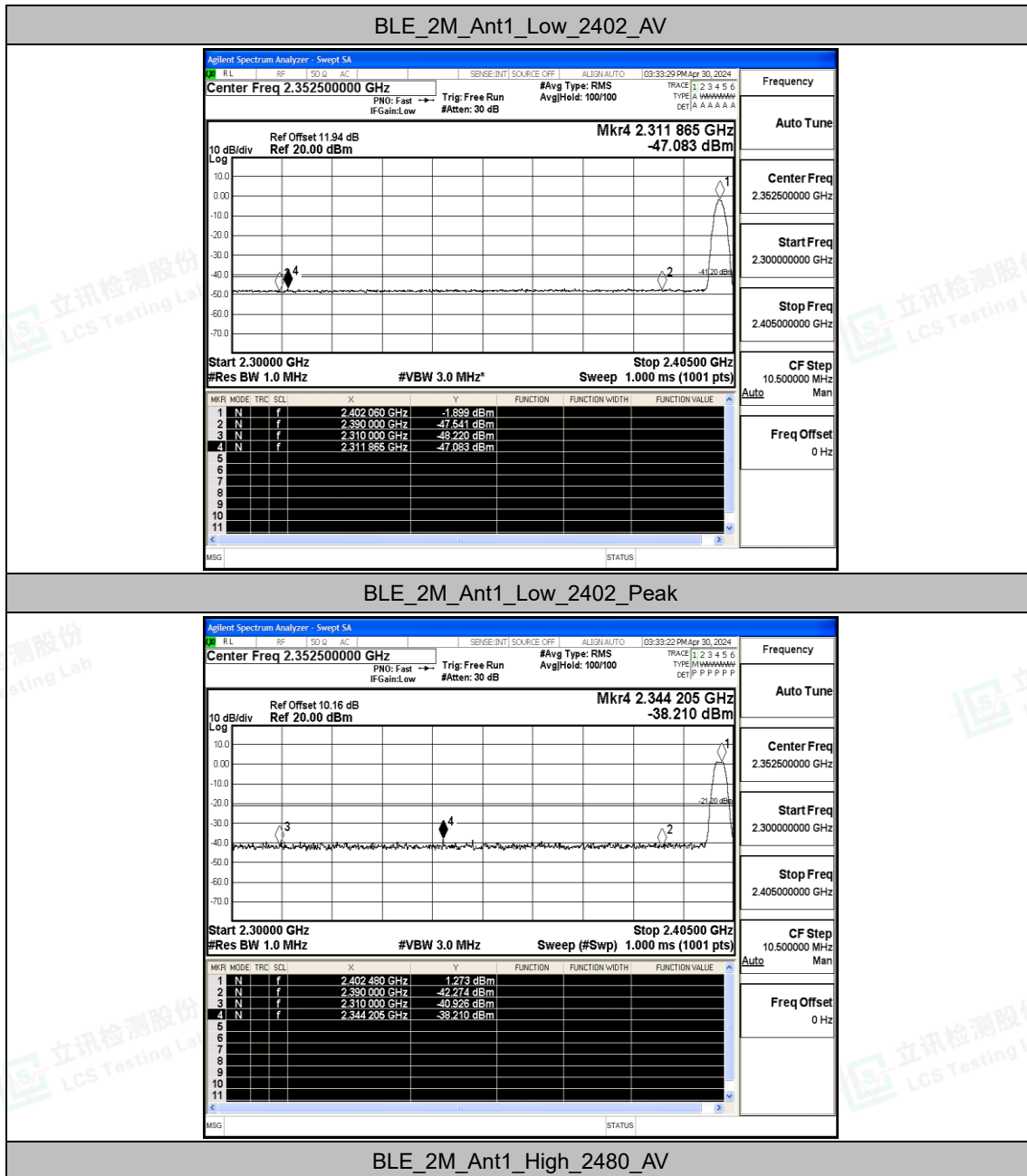
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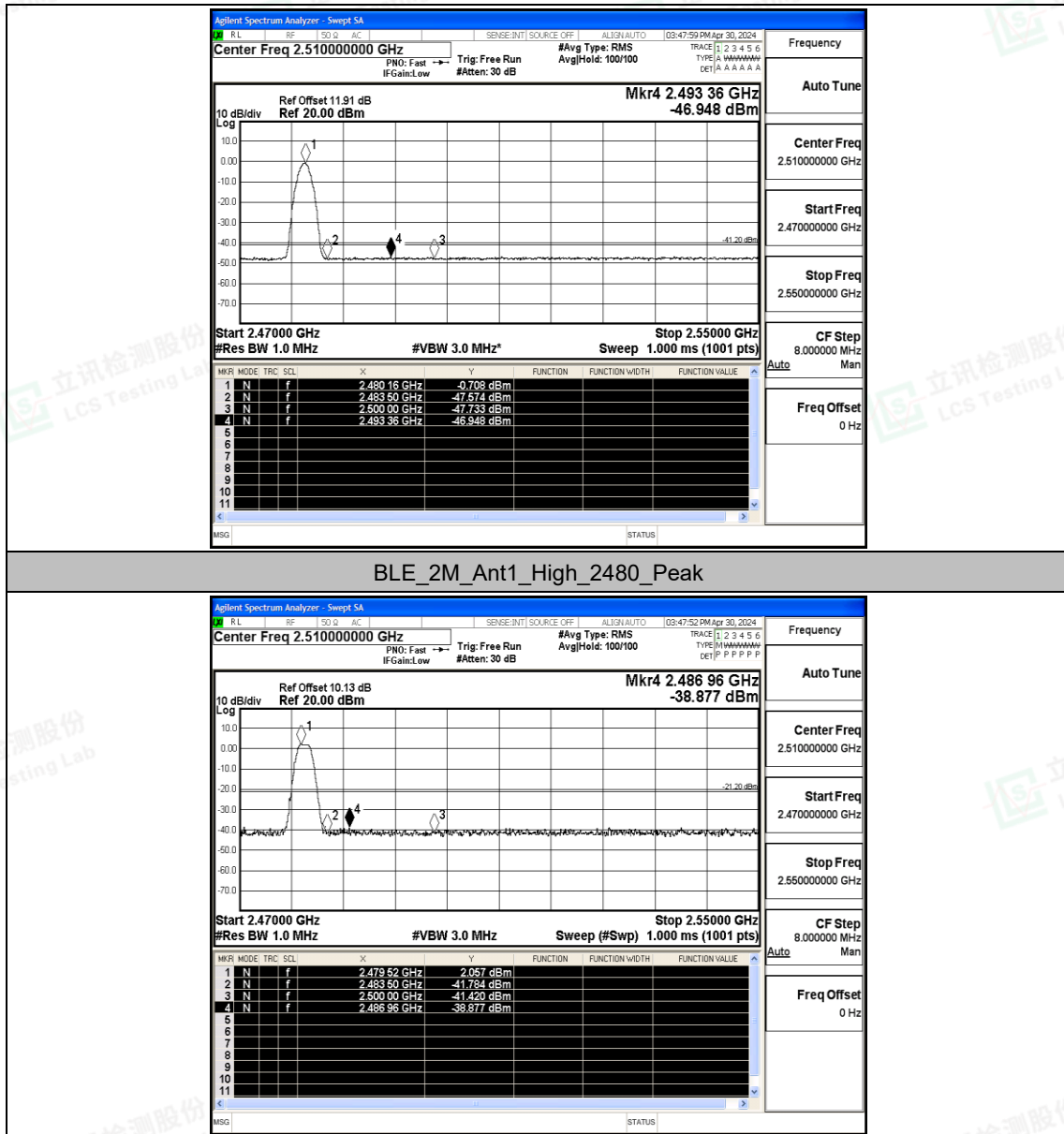
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