



## Appendix A

### RF Test Data for BT LE V5.0(DTS)(Conducted Measurement)

Product Name: smart bulb

Trade Mark: N/A

Test Model: BR30 CCT 2-A

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 21.1 ° C  |
| Relative Humidity: | 52.2%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Monkey Li |
| Supervised by:     | Li Huan   |



## A.1 DTS Bandwidth

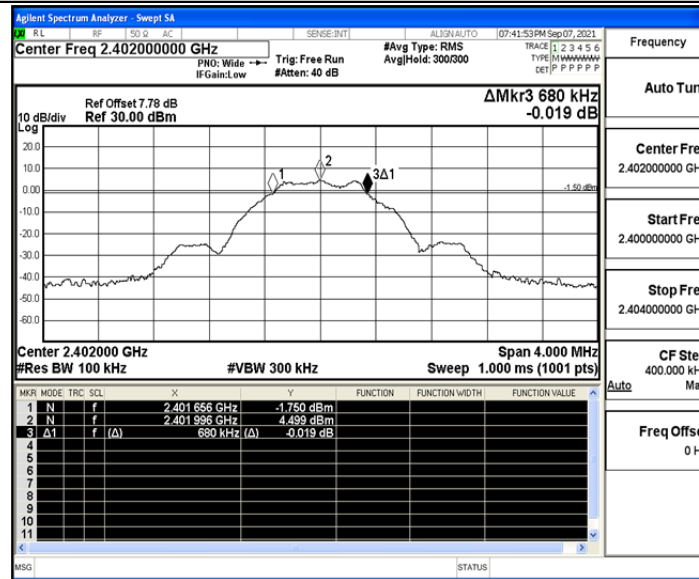
### Test Result

| TestMode | Antenna | Channel | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|--------------|----------|----------|------------|---------|
| BLE_1M   | Ant1    | 2402    | 0.680        | 2401.656 | 2402.336 | ≥0.5       | PASS    |
|          |         | 2440    | 0.668        | 2439.668 | 2440.336 | ≥0.5       | PASS    |
|          |         | 2480    | 0.684        | 2479.660 | 2480.344 | ≥0.5       | PASS    |

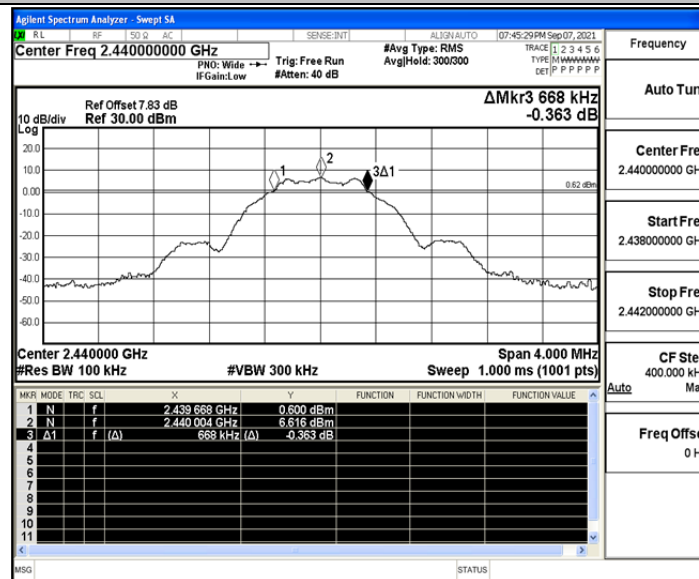


## Test Graphs

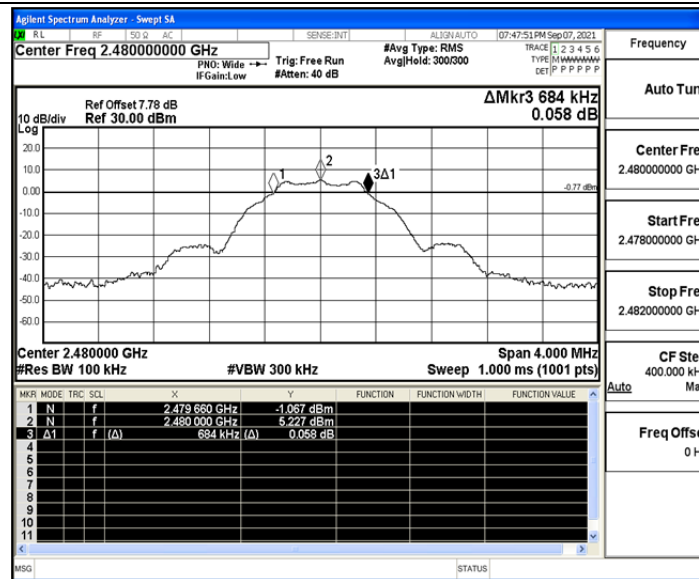
BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480





## A.2 Maximum peak conducted output power

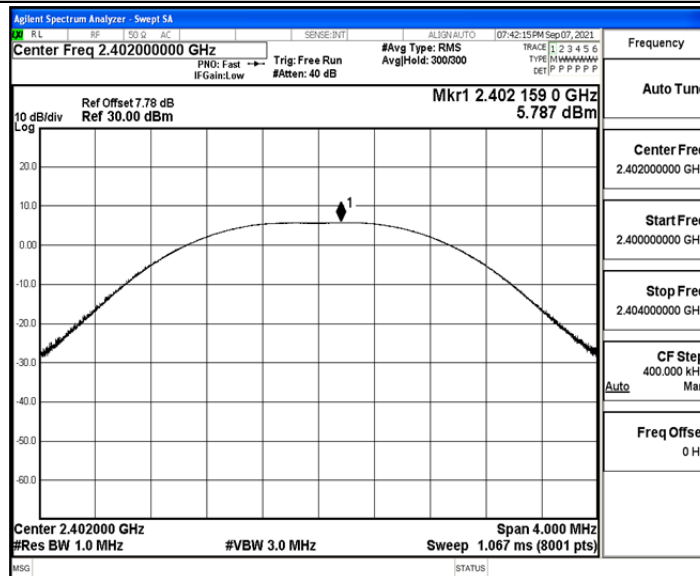
### Test Result

| TestMode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402    | 5.79        | ≤30        | PASS    |
|          |         | 2440    | 7.15        | ≤30        | PASS    |
|          |         | 2480    | 5.76        | ≤30        | PASS    |

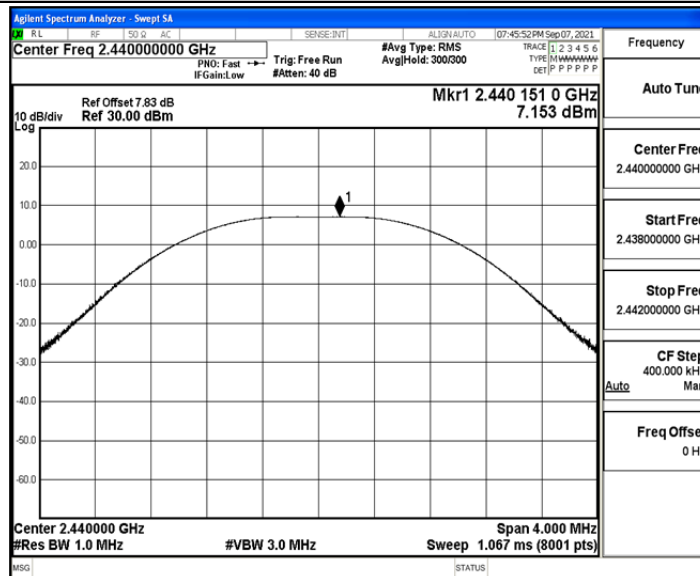


## Test Graphs

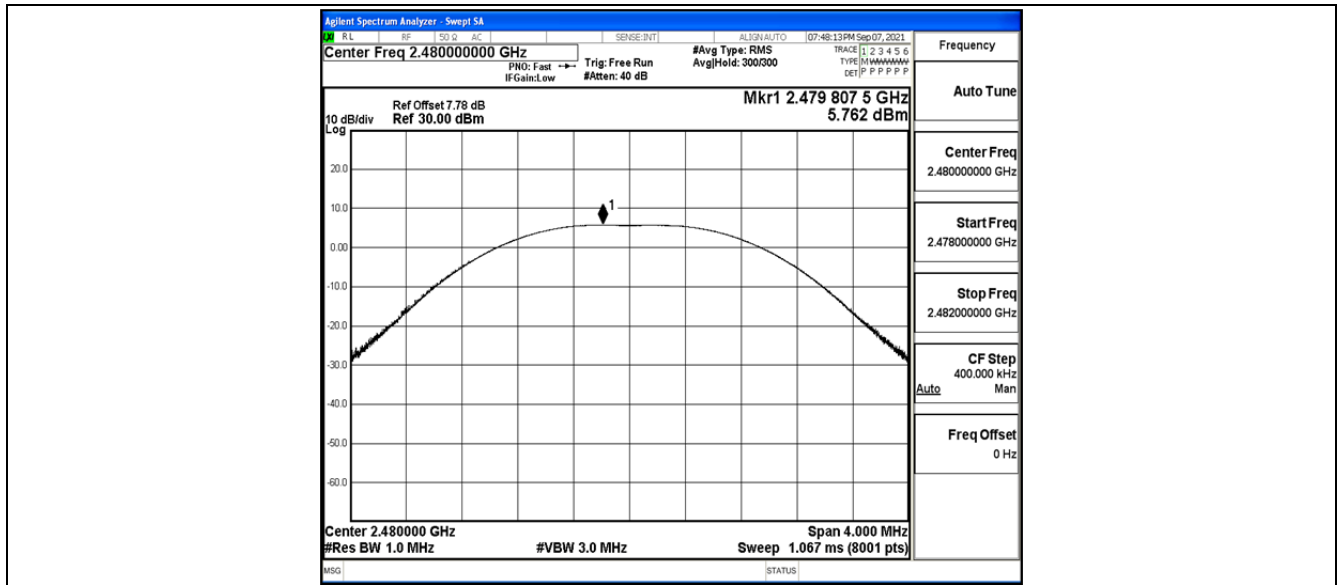
BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480





## A.3 Maximum power spectral density

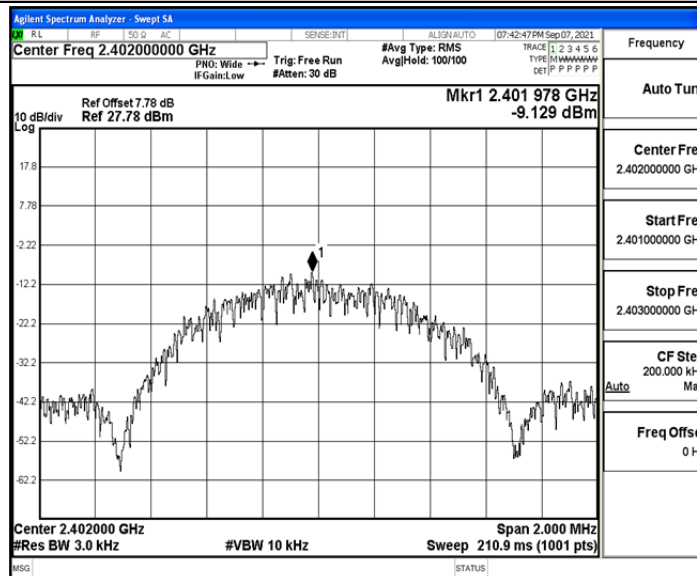
### Test Result

| TestMode | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|---------|----------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402    | -9.13                | ≤8              | PASS    |
|          |         | 2440    | -7.61                | ≤8              | PASS    |
|          |         | 2480    | -9.03                | ≤8              | PASS    |

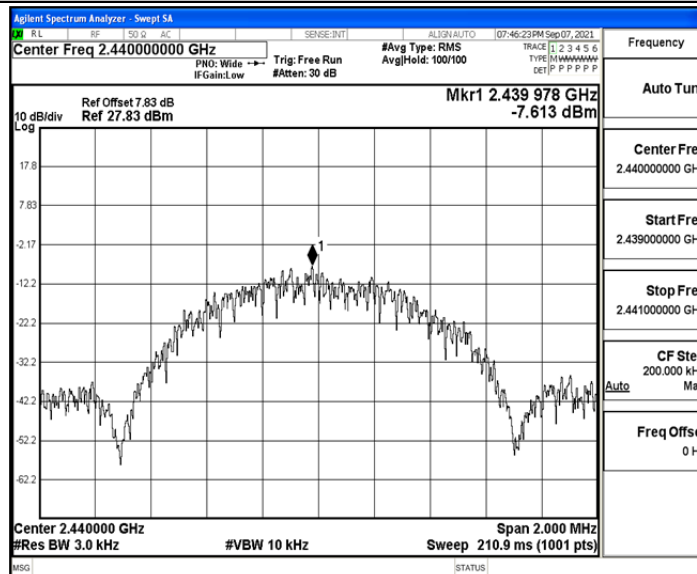


## Test Graphs

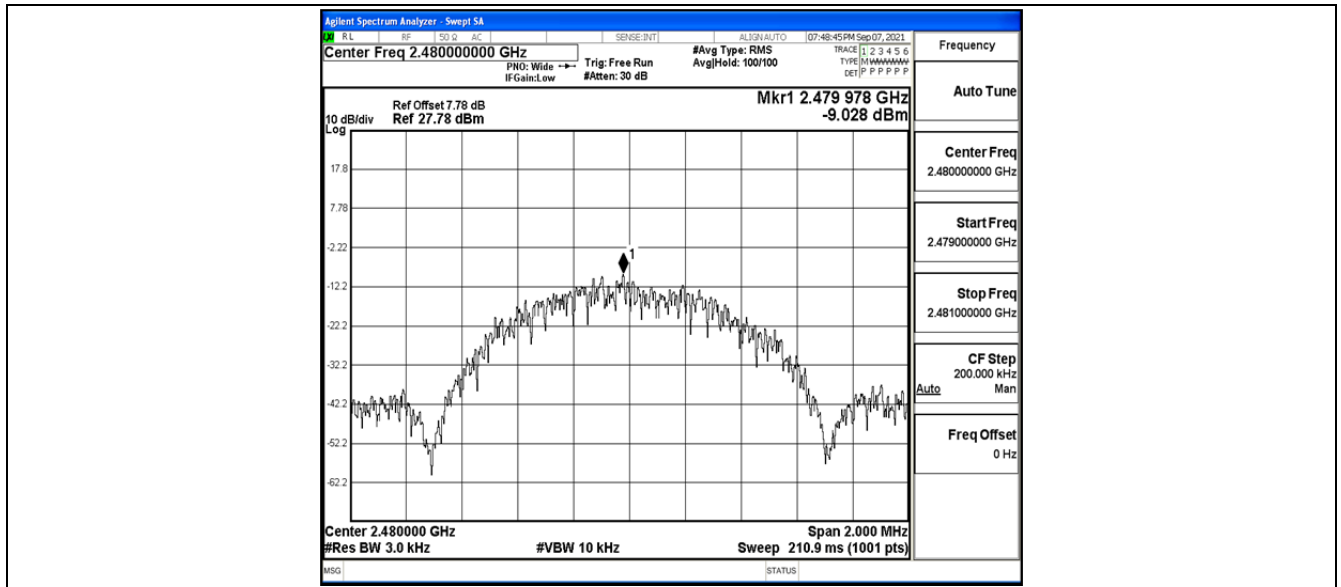
BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480





## A.4 Band edge measurements

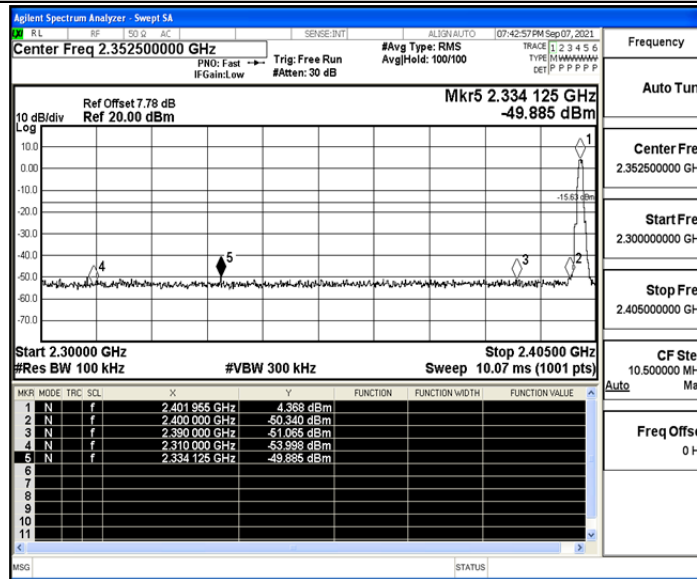
### Test Result

| TestMode | Antenna | ChName | Channel | RefLevel[dBm] | Result[dBm] | Limit[dBm]    | Verdict |
|----------|---------|--------|---------|---------------|-------------|---------------|---------|
| BLE_1M   | Ant1    | Low    | 2402    | 4.37          | -49.89      | $\leq -15.63$ | PASS    |
|          |         | High   | 2480    | 5.09          | -48.69      | $\leq -14.91$ | PASS    |

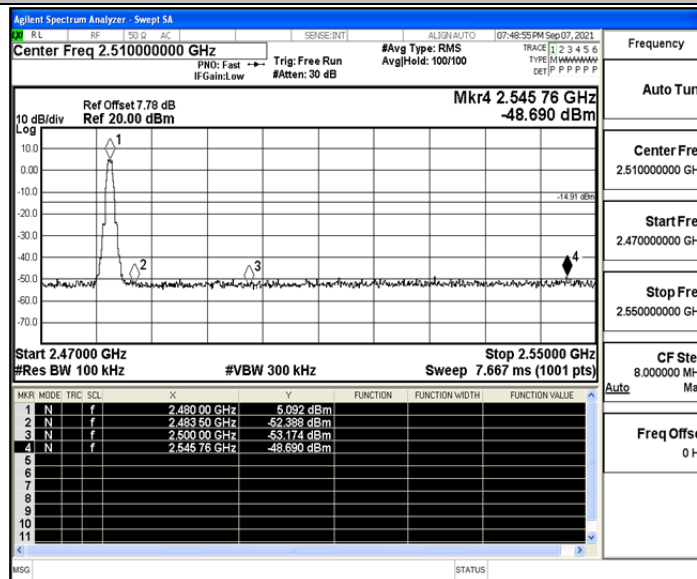


## Test Graphs

BLE\_1M\_Ant1\_Low\_2402



BLE\_1M\_Ant1\_High\_2480





## A.5 Conducted Spurious Emission

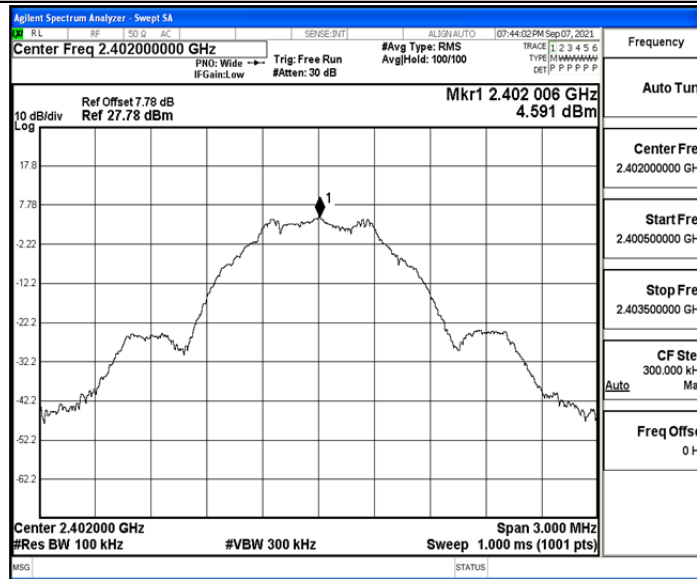
### Test Result

| TestMode | Antenna | Channel | FreqRange<br>[MHz] | RefLevel<br>[dBm] | Result[dBm] | Limit[dBm]    | Verdict |
|----------|---------|---------|--------------------|-------------------|-------------|---------------|---------|
| BLE_1M   | Ant1    | 2402    | Reference          | 4.59              | 4.59        | ---           | PASS    |
|          |         |         | 30~1000            | 4.59              | -60.93      | $\leq -15.41$ | PASS    |
|          |         |         | 1000~26500         | 4.59              | -47.77      | $\leq -15.41$ | PASS    |
|          |         | 2440    | Reference          | 6.53              | 6.53        | ---           | PASS    |
|          |         |         | 30~1000            | 6.53              | -61.69      | $\leq -13.48$ | PASS    |
|          |         |         | 1000~26500         | 6.53              | -47.37      | $\leq -13.48$ | PASS    |
|          |         | 2480    | Reference          | 4.88              | 4.88        | ---           | PASS    |
|          |         |         | 30~1000            | 4.88              | -61.58      | $\leq -15.13$ | PASS    |
|          |         |         | 1000~26500         | 4.88              | -47.29      | $\leq -15.13$ | PASS    |

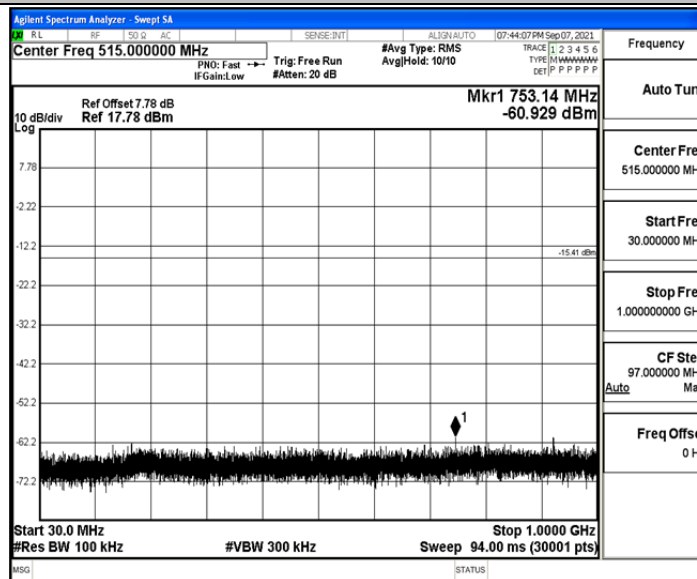


## Test Graphs

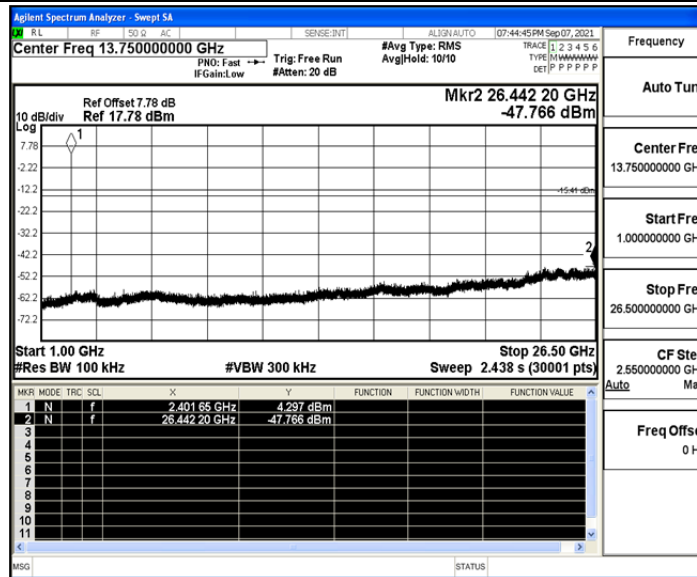
BLE\_1M\_Ant1\_2402\_0~Reference



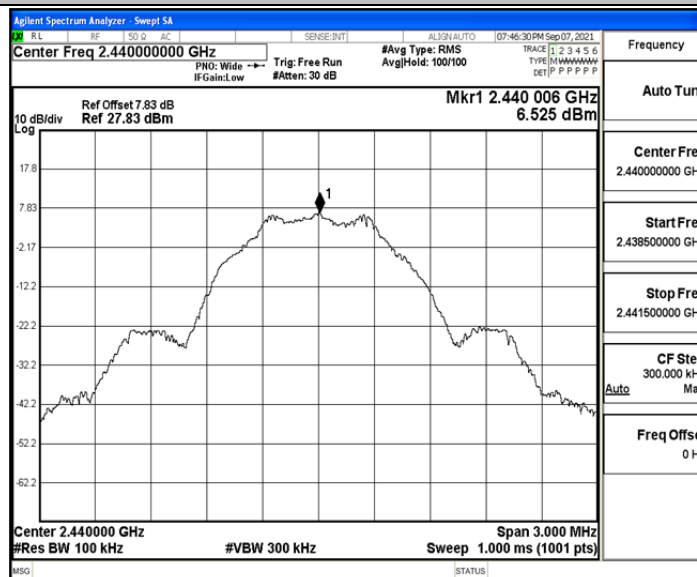
BLE\_1M\_Ant1\_2402\_30~1000



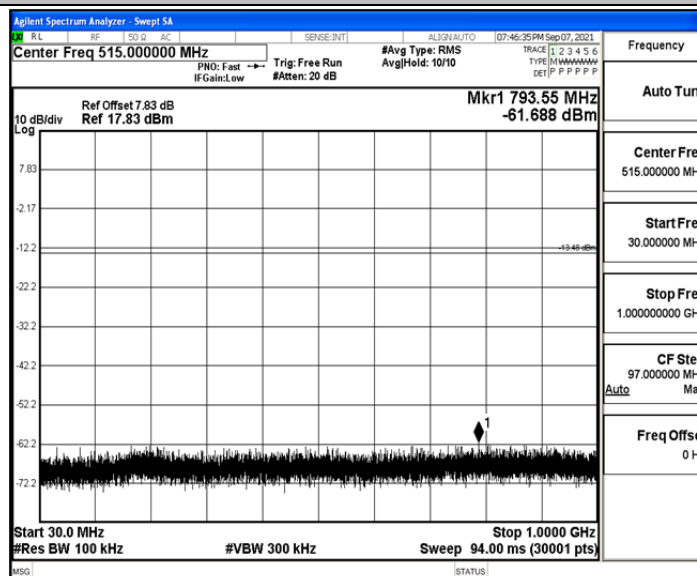
BLE\_1M\_Ant1\_2402\_1000~26500



BLE\_1M\_Ant1\_2440\_0~Reference

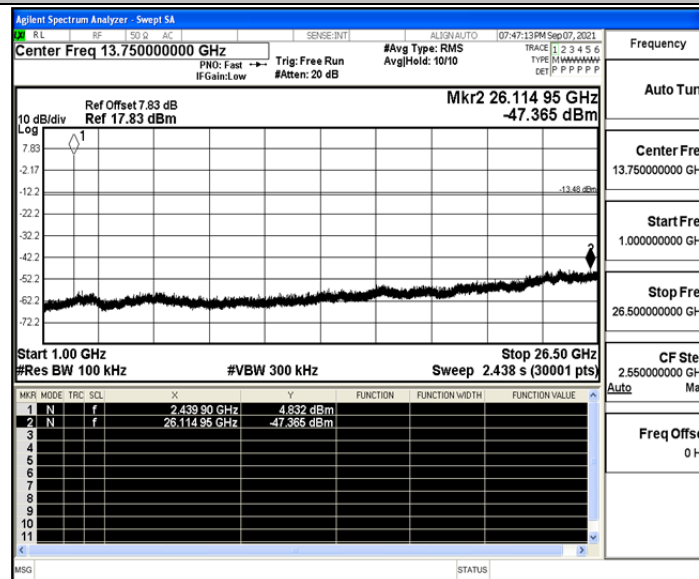


BLE\_1M\_Ant1\_2440\_30~1000

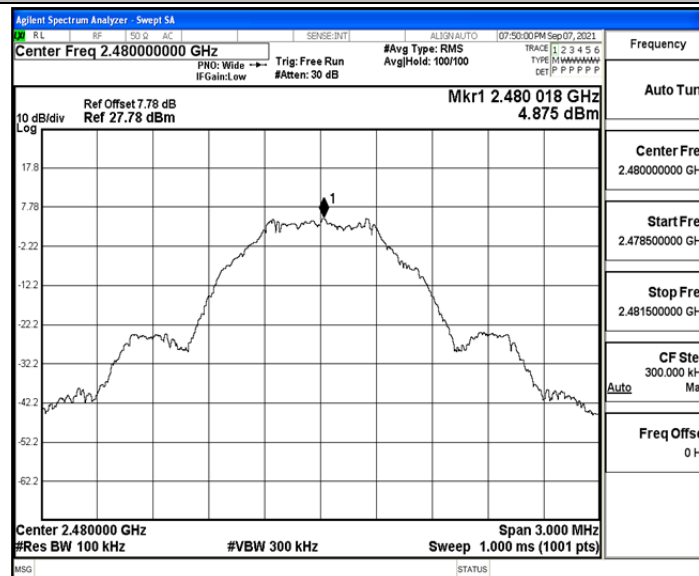




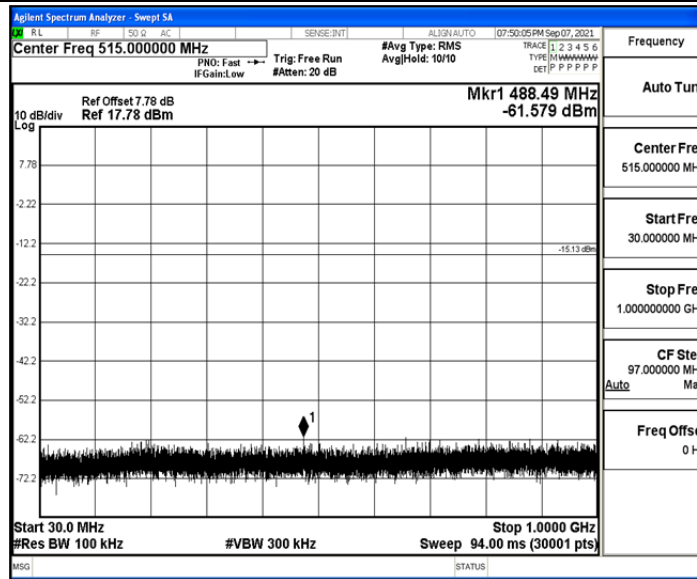
## BLE\_1M\_Ant1\_2440\_1000~26500



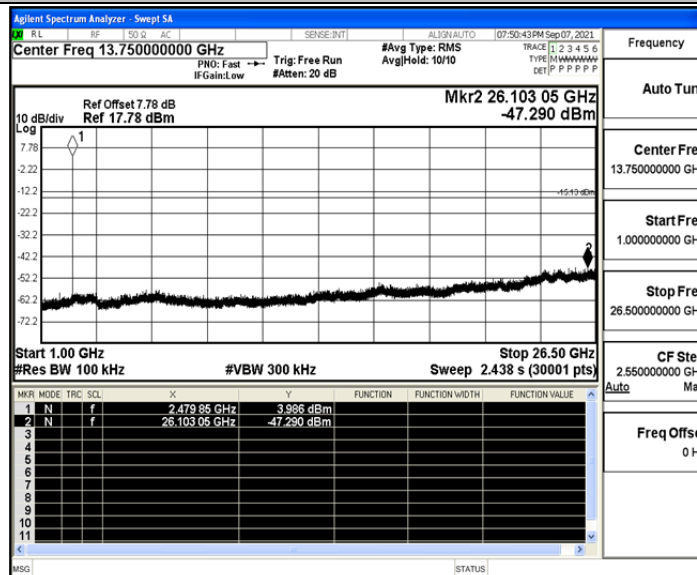
## BLE\_1M\_Ant1\_2480\_0~Reference



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



## BLE\_1M\_Ant1\_2480\_1000~26500





## A.6 Duty Cycle

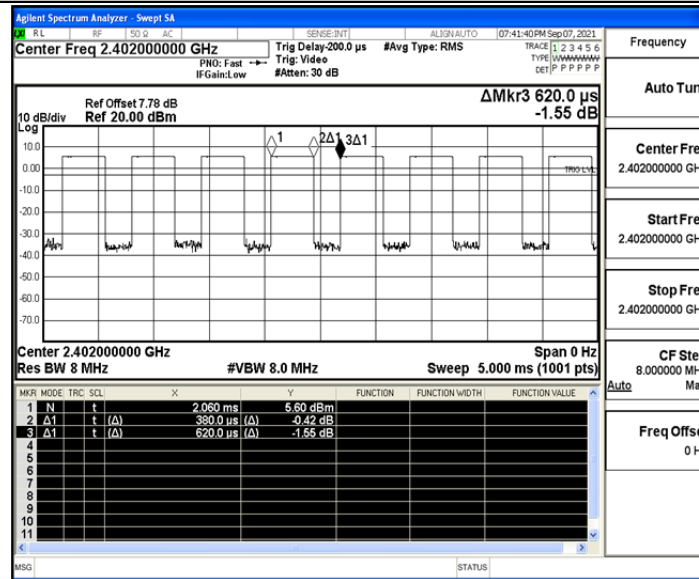
### Test Result

| TestMode | Antenna | Channel | ON Time<br>[ms] | Period<br>[ms] | X      | DC [%] | xFactor | Limit | Verdict |
|----------|---------|---------|-----------------|----------------|--------|--------|---------|-------|---------|
| BLE_1M   | Ant1    | 2402    | 0.38            | 0.62           | 0.6129 | 61.29  | 2.13    | ---   | PASS    |
|          |         | 2440    | 0.38            | 0.62           | 0.6129 | 61.29  | 2.13    | ---   | PASS    |
|          |         | 2480    | 0.39            | 0.63           | 0.6190 | 61.90  | 2.08    | ---   | PASS    |

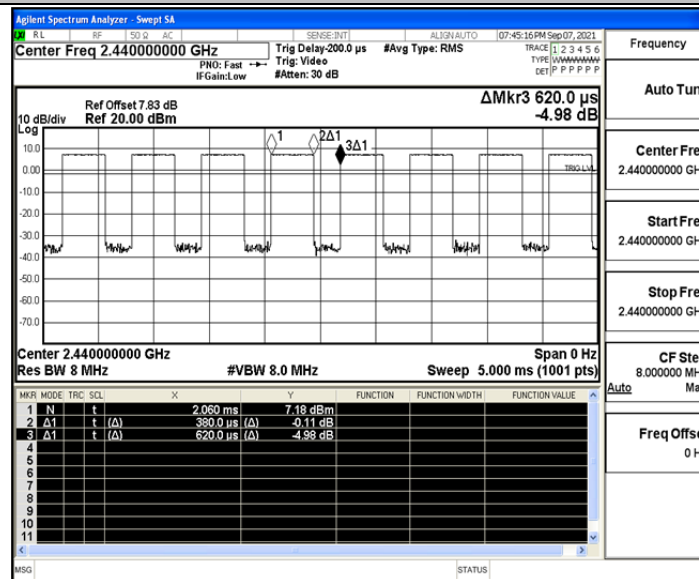


## Test Graphs

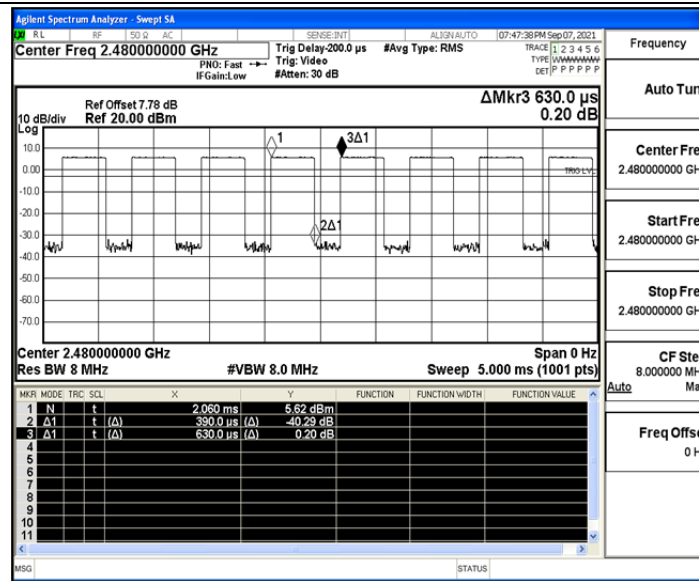
BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480





## A.7 Emissions in Restricted Bands

### Test Result

| TestMode | Antenna | ChName | Channel | Detector | Freq. [MHz] | Result [dBm] | Limit [dBm] | Result [dBuV/m] | Limit [dBuV/m] | Verdict |
|----------|---------|--------|---------|----------|-------------|--------------|-------------|-----------------|----------------|---------|
| BLE_1M   | Ant1    | Low    | 2402    | AV       | 2310.000    | -48.56       | ≤-41.20     | 46.64           | ≤54            | PASS    |
|          |         |        |         | AV       | 2378.435    | -47.61       | ≤-41.20     | 47.59           | ≤54            | PASS    |
|          |         |        |         | AV       | 2390.000    | -48.2        | ≤-41.20     | 47.00           | ≤54            | PASS    |
|          |         |        |         | Peak     | 2310.000    | -41.84       | ≤-21.20     | 53.36           | ≤74            | PASS    |
|          |         |        |         | Peak     | 2332.550    | -38.84       | ≤-21.20     | 56.36           | ≤74            | PASS    |
|          |         |        |         | Peak     | 2390.000    | -41.72       | ≤-21.20     | 53.48           | ≤74            | PASS    |
|          |         | High   | 2480    | AV       | 2483.500    | -45.99       | ≤-41.20     | 49.21           | ≤54            | PASS    |
|          |         |        |         | AV       | 2483.520    | -45.99       | ≤-41.20     | 49.21           | ≤54            | PASS    |
|          |         |        |         | AV       | 2500.000    | -47.66       | ≤-41.20     | 47.54           | ≤54            | PASS    |
|          |         |        |         | Peak     | 2483.500    | -40.14       | ≤-21.20     | 55.06           | ≤74            | PASS    |
|          |         |        |         | Peak     | 2490.720    | -38.11       | ≤-21.20     | 57.09           | ≤74            | PASS    |
|          |         |        |         | Peak     | 2500.000    | -40.32       | ≤-21.20     | 54.88           | ≤74            | PASS    |

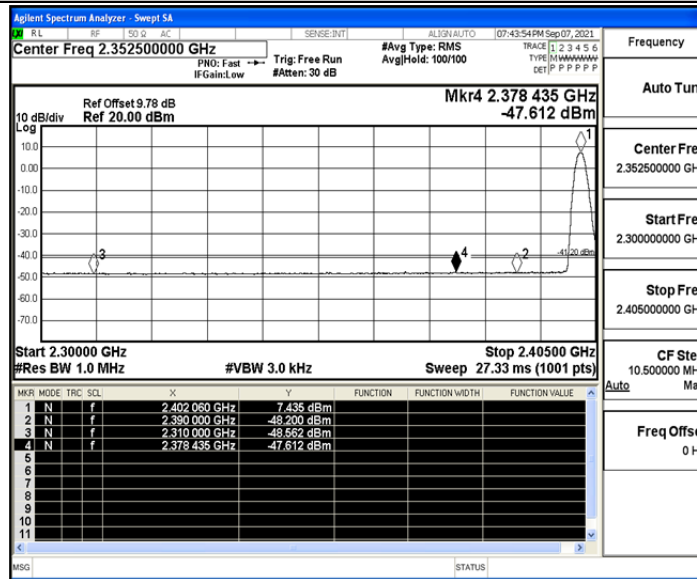
Note:

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.

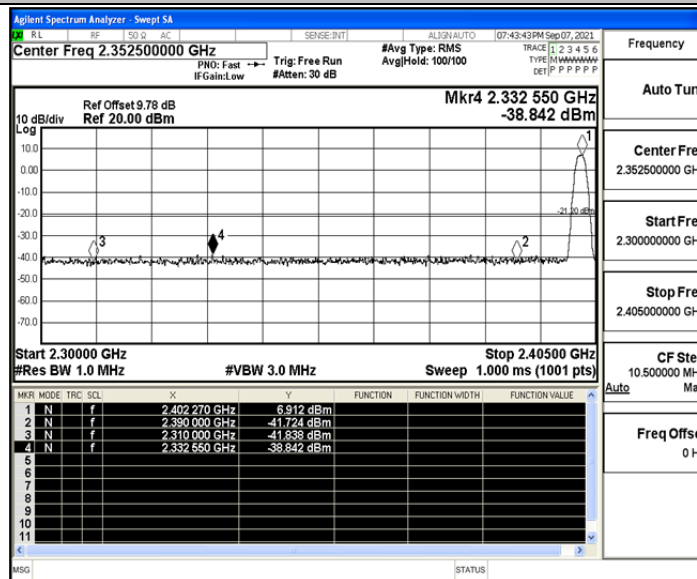


## Test Graphs

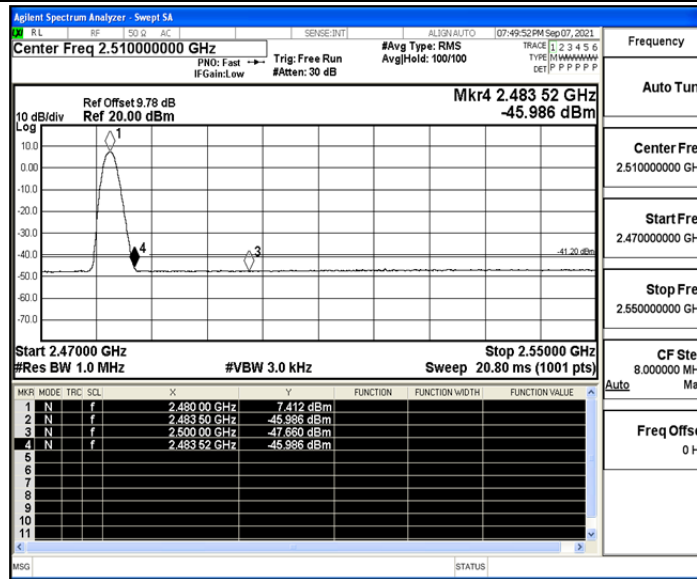
BLE\_1M\_Ant1\_Low\_2402\_AV



BLE\_1M\_Ant1\_Low\_2402\_Peak



BLE\_1M\_Ant1\_High\_2480\_AV



BLE\_1M\_Ant1\_High\_2480\_Peak

