



## Appendix Test Data for BLE (Conducted Measurement)

Product Name: True Wireless Noise Cancellation Earphones

Trade Mark: HAYLOU

Test Model: HT02

FCC ID: 2AMQ6-HT02

### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.5°C    |
| Relative Humidity: | 58%       |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Allen Lai |
| Supervised by:     | Max Zhang |
| NOTE               | N/A       |

## Appendix A: DTS Bandwidth

### Test Result

| Test Mode | Antenna | Frequency<br>[MHz] | DTS BW<br>[MHz] | FL<br>[MHz] | FH<br>[MHz] | Limit<br>[MHz] | Verdict |
|-----------|---------|--------------------|-----------------|-------------|-------------|----------------|---------|
| BLE_1M    | Ant1    | 2402               | 0.660           | 2401.700    | 2402.360    | 0.5            | PASS    |
| BLE_1M    | Ant1    | 2440               | 0.720           | 2439.664    | 2440.384    | 0.5            | PASS    |
| BLE_1M    | Ant1    | 2480               | 0.712           | 2479.668    | 2480.380    | 0.5            | PASS    |
| BLE_2M    | Ant1    | 2402               | 1.108           | 2401.472    | 2402.580    | 0.5            | PASS    |
| BLE_2M    | Ant1    | 2440               | 1.224           | 2439.392    | 2440.616    | 0.5            | PASS    |
| BLE_2M    | Ant1    | 2480               | 1.364           | 2479.352    | 2480.716    | 0.5            | PASS    |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





## Test Graphs



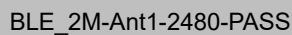


BLE\_1M-Ant1-2480-PASS



BLE\_2M-Ant1-2402-PASS







## Appendix B: Occupied Channel Bandwidth

### Test Result

| Test Mode | Antenna | Frequency<br>[MHz] | OCB<br>[MHz] | FL<br>[MHz] | FH<br>[MHz] | Limit<br>[MHz] | Verdict |
|-----------|---------|--------------------|--------------|-------------|-------------|----------------|---------|
| BLE_1M    | Ant1    | 2402               | 1.0294       | 2401.5149   | 2402.5443   | ---            | ---     |
| BLE_1M    | Ant1    | 2440               | 1.0263       | 2439.5183   | 2440.5446   | ---            | ---     |
| BLE_1M    | Ant1    | 2480               | 1.0210       | 2479.5228   | 2480.5438   | ---            | ---     |
| BLE_2M    | Ant1    | 2402               | 2.0314       | 2401.0275   | 2403.0589   | ---            | ---     |
| BLE_2M    | Ant1    | 2440               | 2.0384       | 2439.0218   | 2441.0602   | ---            | ---     |
| BLE_2M    | Ant1    | 2480               | 2.0481       | 2479.0220   | 2481.0701   | ---            | ---     |

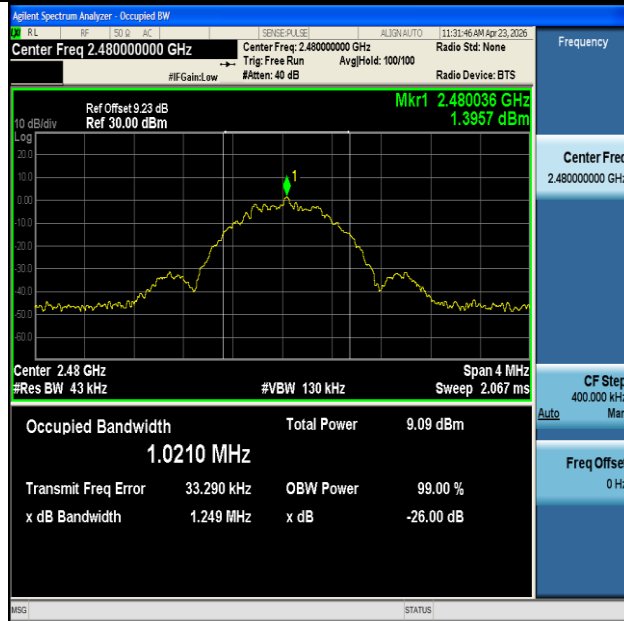
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





## Test Graphs



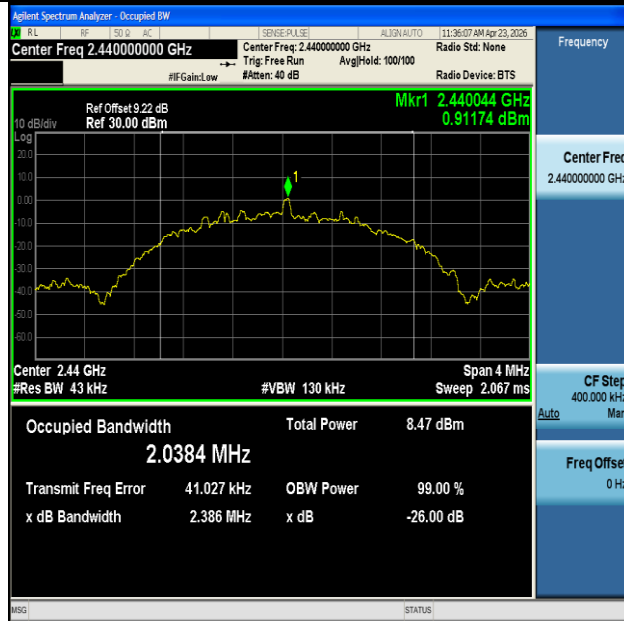


BLE\_1M-Ant1-2480



BLE\_2M-Ant1-2402





BLE\_2M-Ant1-2440



BLE\_2M-Ant1-2480





## Appendix C: Maximum peak conducted output power

### Test Result Peak

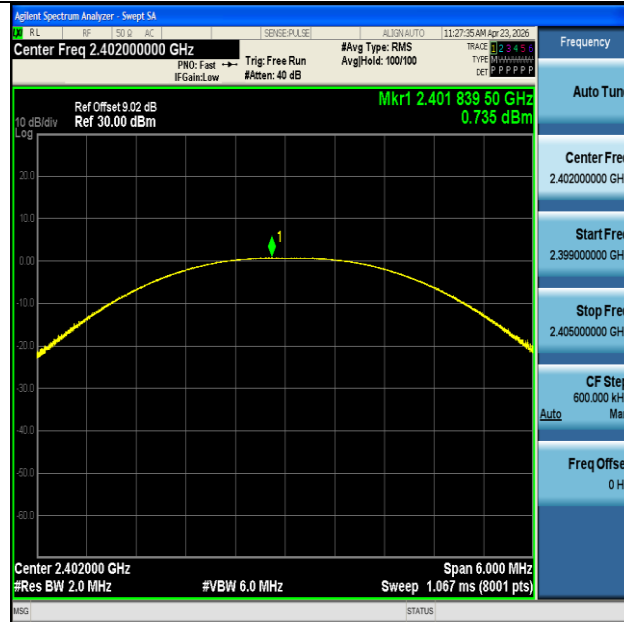
| Test Mode | Antenna | Frequency [MHz] | Conducted Peak Power [dBm] | Conducted Limit [dBm] | Verdict |
|-----------|---------|-----------------|----------------------------|-----------------------|---------|
| BLE_1M    | Ant1    | 2402            | 0.74                       | ≤30                   | PASS    |
| BLE_1M    | Ant1    | 2440            | 1.94                       | ≤30                   | PASS    |
| BLE_1M    | Ant1    | 2480            | 2.30                       | ≤30                   | PASS    |
| BLE_2M    | Ant1    | 2402            | 0.88                       | ≤30                   | PASS    |
| BLE_2M    | Ant1    | 2440            | 2.12                       | ≤30                   | PASS    |
| BLE_2M    | Ant1    | 2480            | 2.46                       | ≤30                   | PASS    |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

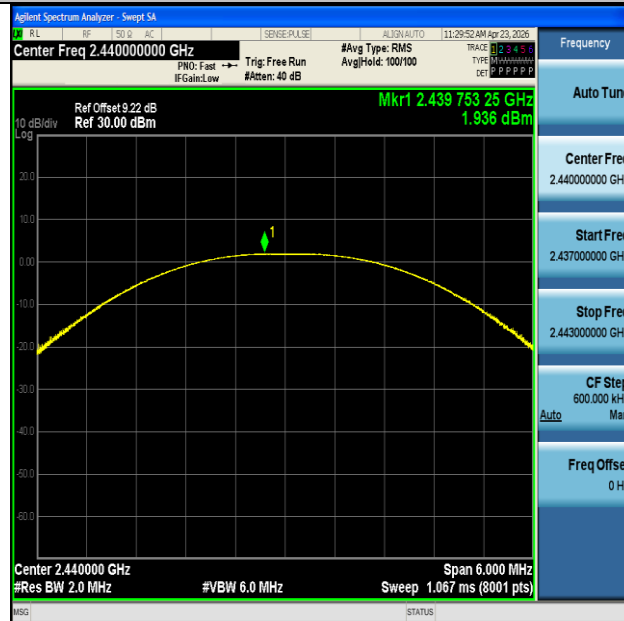




## Test Graphs Peak

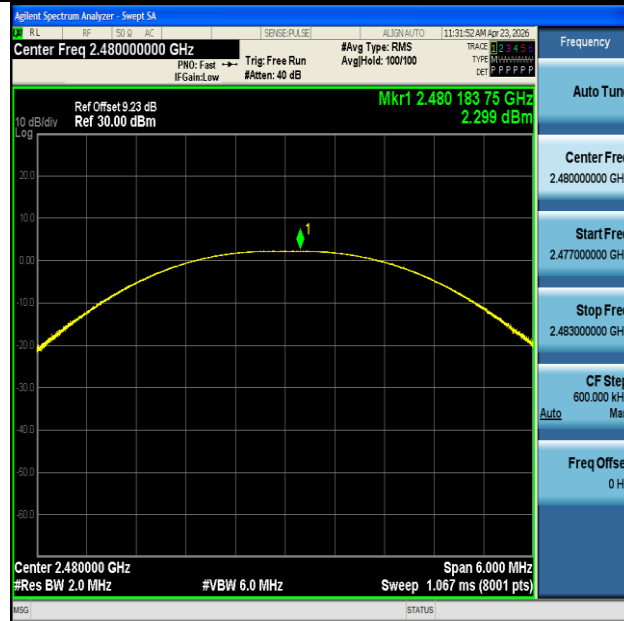


BLE\_1M-Ant1-2402-PASS

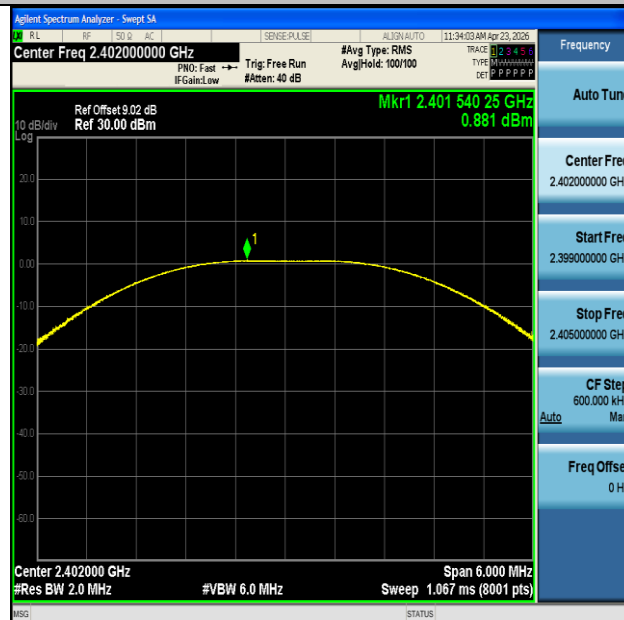


BLE\_1M-Ant1-2440-PASS



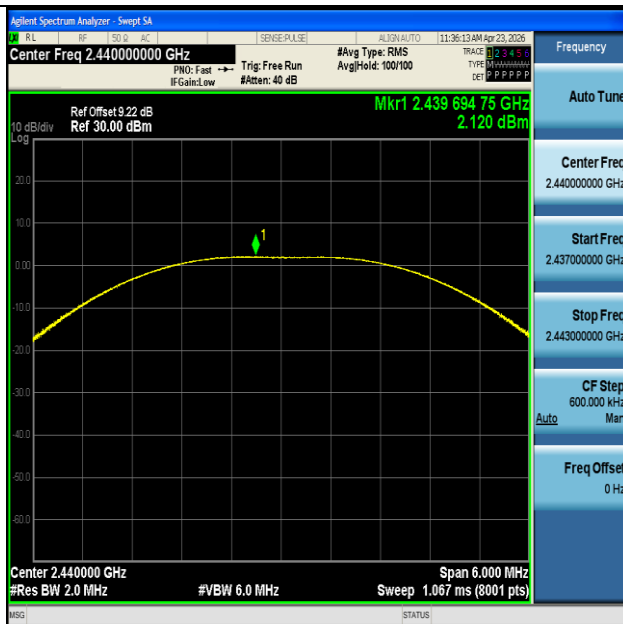


BLE\_1M-Ant1-2480-PASS

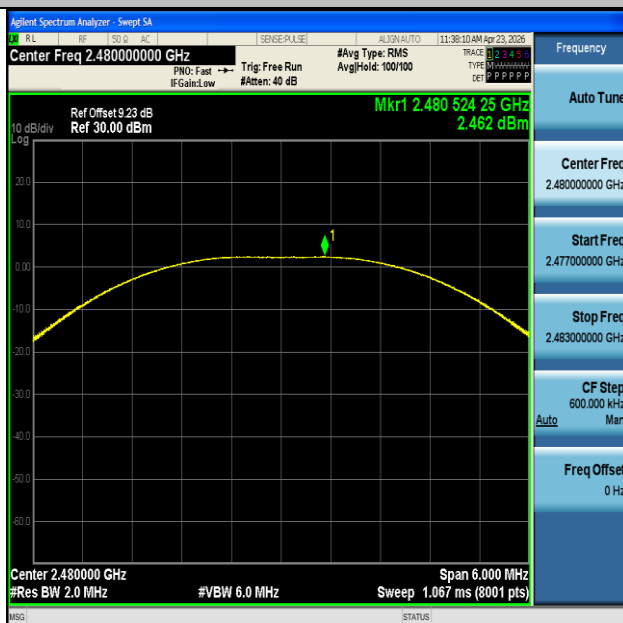


BLE\_2M-Ant1-2402-PASS





BLE\_2M-Ant1-2440-PASS



BLE\_2M-Ant1-2480-PASS





## Appendix D: Maximum peak power spectral density

### Test Result

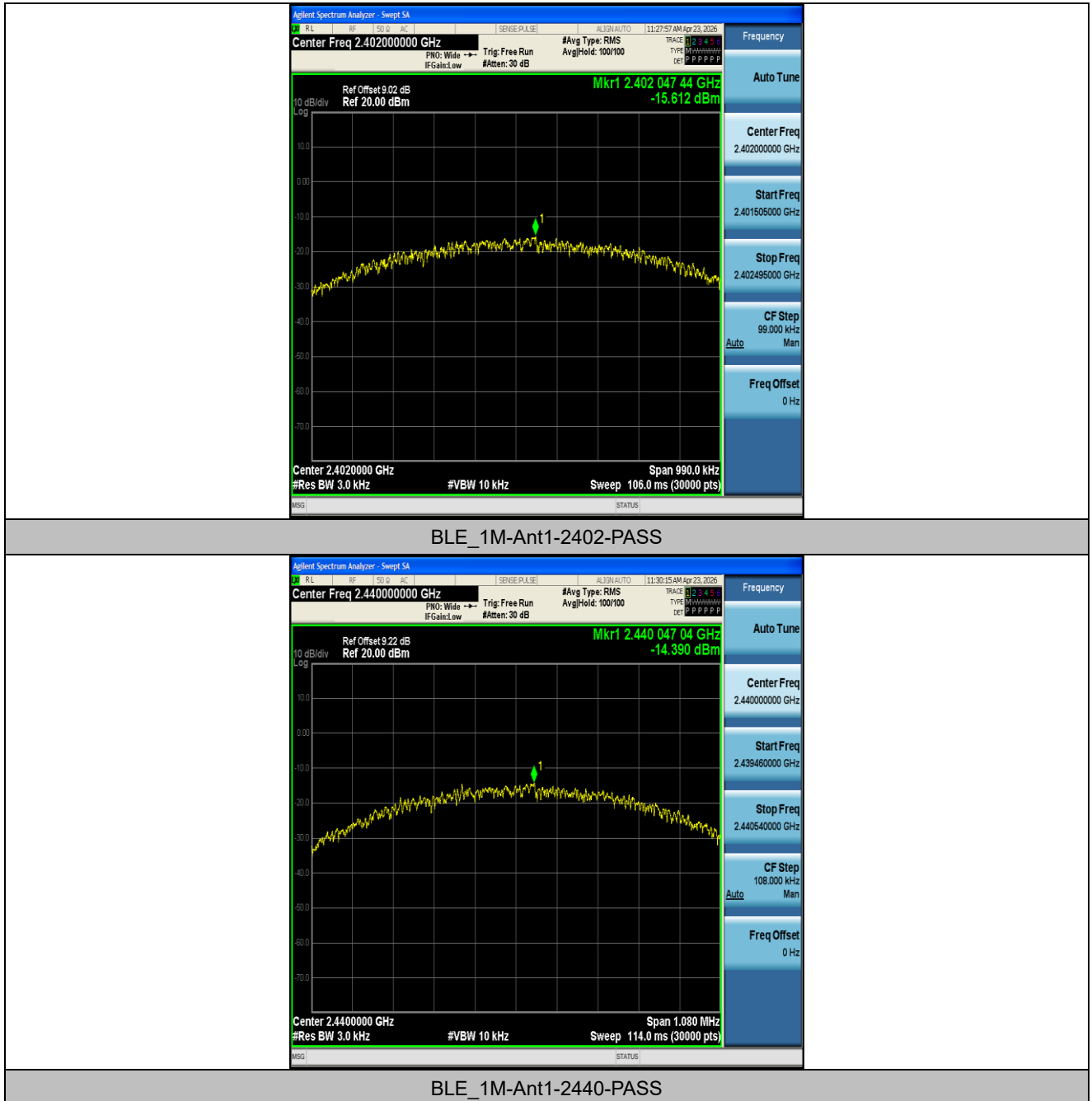
| Test Mode | Antenna | Frequency<br>[MHz] | Result<br>[dBm/3kHz] | Limit<br>[dBm/3kHz] | Verdict |
|-----------|---------|--------------------|----------------------|---------------------|---------|
| BLE_1M    | Ant1    | 2402               | -15.61               | ≤8.00               | PASS    |
| BLE_1M    | Ant1    | 2440               | -14.39               | ≤8.00               | PASS    |
| BLE_1M    | Ant1    | 2480               | -14.01               | ≤8.00               | PASS    |
| BLE_2M    | Ant1    | 2402               | -16.92               | ≤8.00               | PASS    |
| BLE_2M    | Ant1    | 2440               | -15.85               | ≤8.00               | PASS    |
| BLE_2M    | Ant1    | 2480               | -15.23               | ≤8.00               | PASS    |

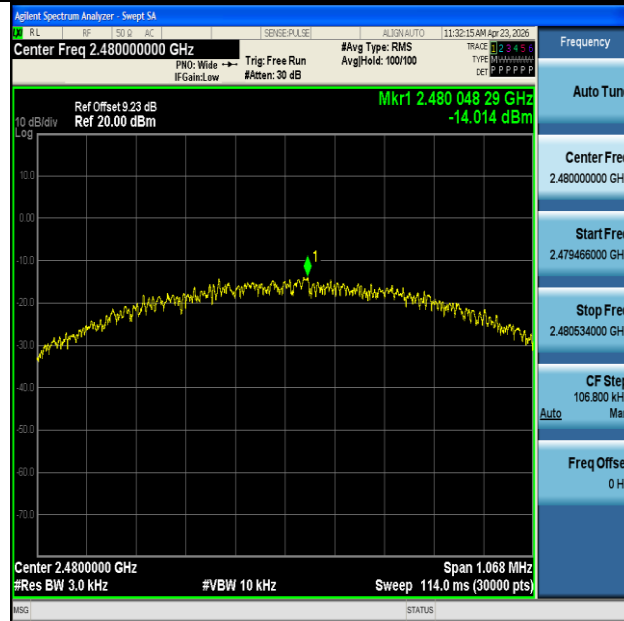
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





## Test Graphs





BLE\_1M-Ant1-2480-PASS



BLE\_2M-Ant1-2402-PASS





BLE\_2M-Ant1-2440-PASS



BLE\_2M-Ant1-2480-PASS





## Appendix E: Band edge measurements

### Test Result

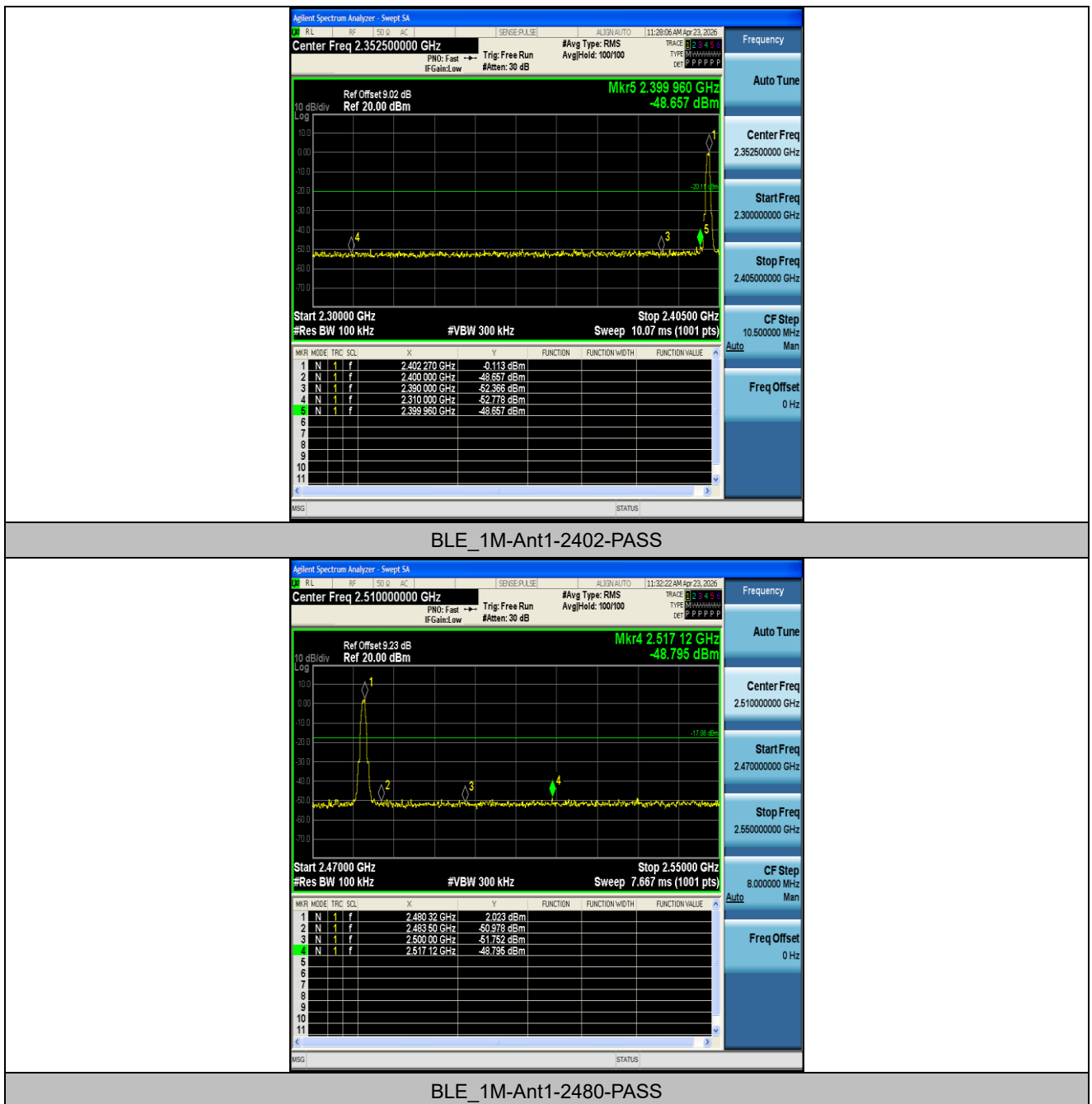
| Test Mode | Antenna | Ch. Name | Frequency [MHz] | Ref. Level [dBm] | Result [dBm] | Limit [dBm]   | Verdict |
|-----------|---------|----------|-----------------|------------------|--------------|---------------|---------|
| BLE_1M    | Ant1    | Low      | 2402            | -0.11            | -48.66       | $\leq -20.11$ | PASS    |
| BLE_1M    | Ant1    | High     | 2480            | 2.02             | -48.8        | $\leq -17.98$ | PASS    |
| BLE_2M    | Ant1    | Low      | 2402            | -0.35            | -36.34       | $\leq -20.35$ | PASS    |
| BLE_2M    | Ant1    | High     | 2480            | -0.18            | -49.25       | $\leq -20.18$ | PASS    |

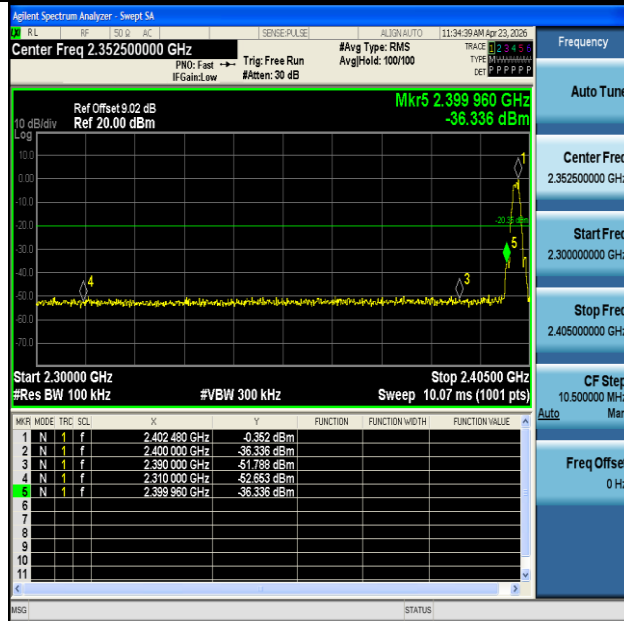
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



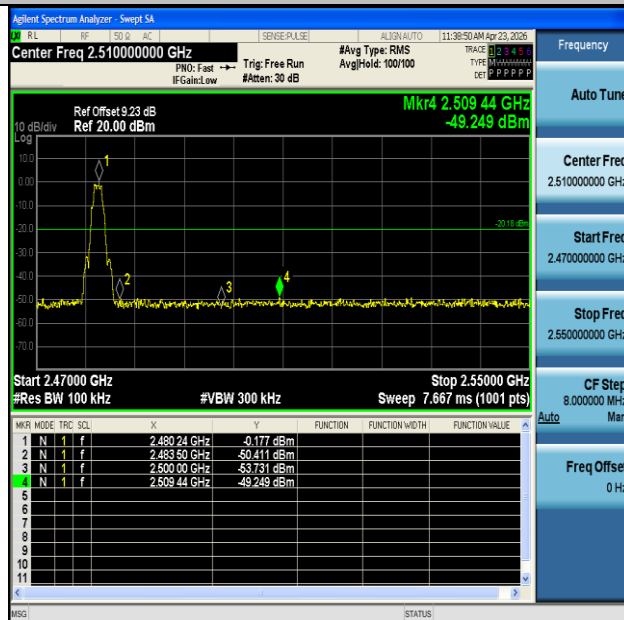


## Test Graphs





BLE\_2M-Ant1-2402-PASS



BLE\_2M-Ant1-2480-PASS





## Appendix F: Conducted Spurious Emission

### Test Result

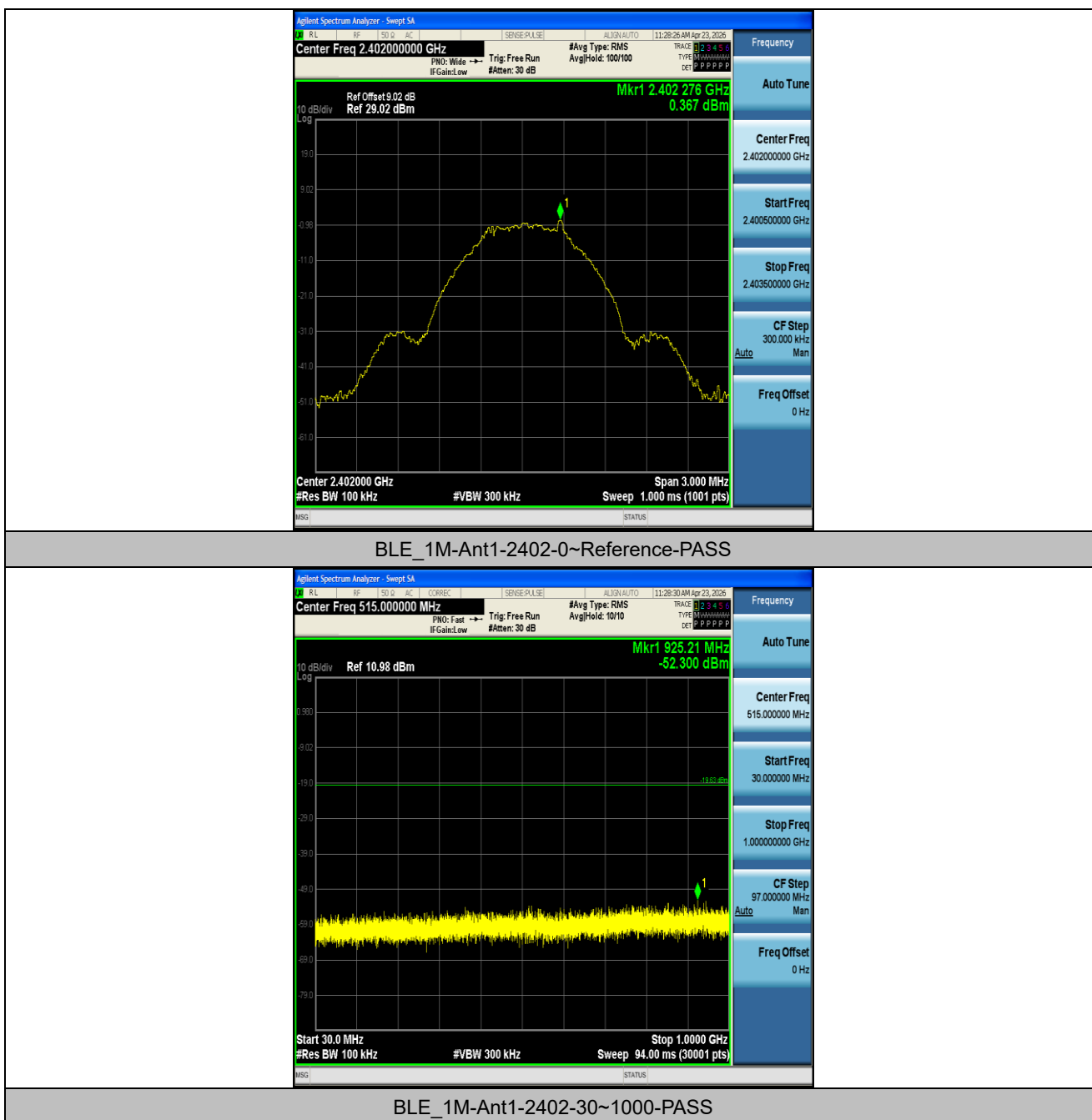
| Test Mode | Antenna | Frequency [MHz] | Freq. Range [MHz] | Ref. Level [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|-----------|---------|-----------------|-------------------|------------------|--------------|-------------|---------|
| BLE_1M    | Ant1    | 2402            | 0~Reference       | 0.37             | 0.37         | ---         | PASS    |
| BLE_1M    | Ant1    | 2402            | 30~1000           | 0.37             | -52.3        | ≤-19.63     | PASS    |
| BLE_1M    | Ant1    | 2402            | 1000~26500        | 0.37             | -26.55       | ≤-19.63     | PASS    |
| BLE_1M    | Ant1    | 2440            | 0~Reference       | 1.37             | 1.37         | ---         | PASS    |
| BLE_1M    | Ant1    | 2440            | 30~1000           | 1.37             | -52.17       | ≤-18.63     | PASS    |
| BLE_1M    | Ant1    | 2440            | 1000~26500        | 1.37             | -27.77       | ≤-18.63     | PASS    |
| BLE_1M    | Ant1    | 2480            | 0~Reference       | 1.02             | 1.02         | ---         | PASS    |
| BLE_1M    | Ant1    | 2480            | 30~1000           | 1.02             | -52.3        | ≤-18.98     | PASS    |
| BLE_1M    | Ant1    | 2480            | 1000~26500        | 1.02             | -27.13       | ≤-18.98     | PASS    |
| BLE_2M    | Ant1    | 2402            | 0~Reference       | 0.40             | 0.40         | ---         | PASS    |
| BLE_2M    | Ant1    | 2402            | 30~1000           | 0.40             | -52.36       | ≤-19.6      | PASS    |
| BLE_2M    | Ant1    | 2402            | 1000~26500        | 0.40             | -27.78       | ≤-19.6      | PASS    |
| BLE_2M    | Ant1    | 2440            | 0~Reference       | 0.44             | 0.44         | ---         | PASS    |
| BLE_2M    | Ant1    | 2440            | 30~1000           | 0.44             | -51.39       | ≤-19.56     | PASS    |
| BLE_2M    | Ant1    | 2440            | 1000~26500        | 0.44             | -27.44       | ≤-19.56     | PASS    |
| BLE_2M    | Ant1    | 2480            | 0~Reference       | 1.48             | 1.48         | ---         | PASS    |
| BLE_2M    | Ant1    | 2480            | 30~1000           | 1.48             | -52.63       | ≤-18.52     | PASS    |
| BLE_2M    | Ant1    | 2480            | 1000~26500        | 1.48             | -27.36       | ≤-18.52     | PASS    |

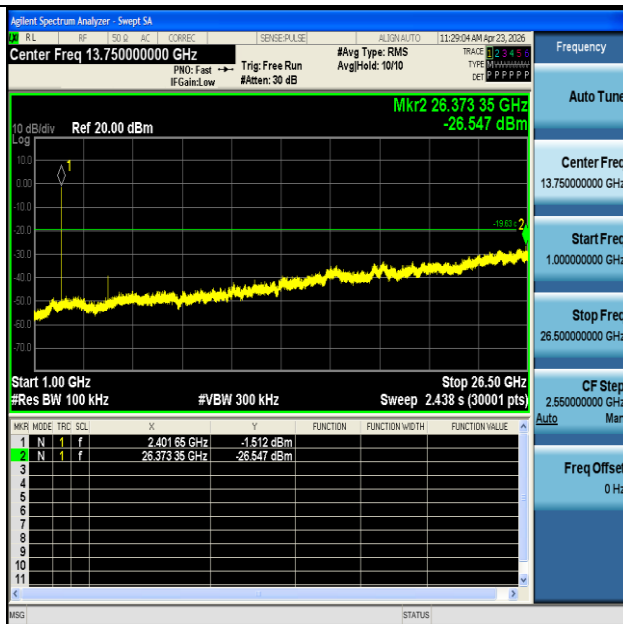
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



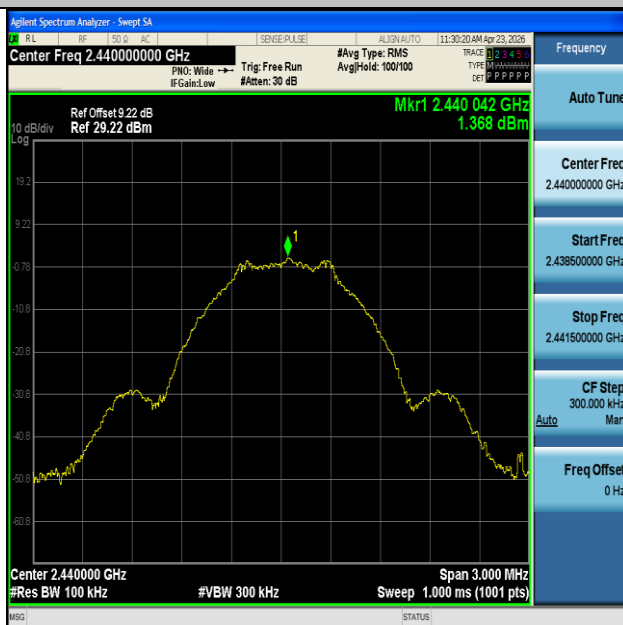


## Test Graphs



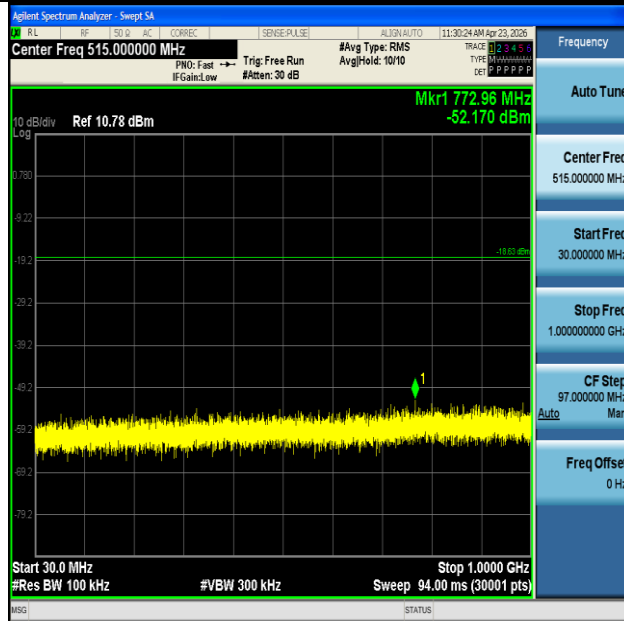


BLE\_1M-Ant1-2402-1000~26500-PASS

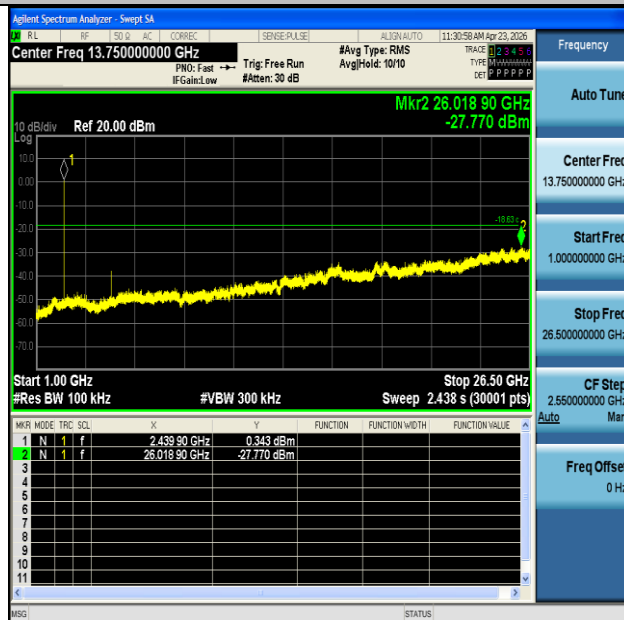


BLE\_1M-Ant1-2440-0~Reference-PASS





BLE\_1M-Ant1-2440-30~1000-PASS

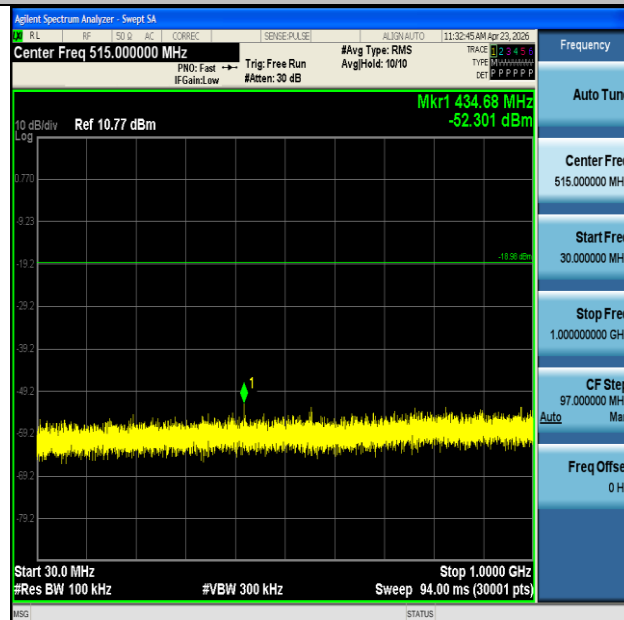


BLE\_1M-Ant1-2440-1000~26500-PASS



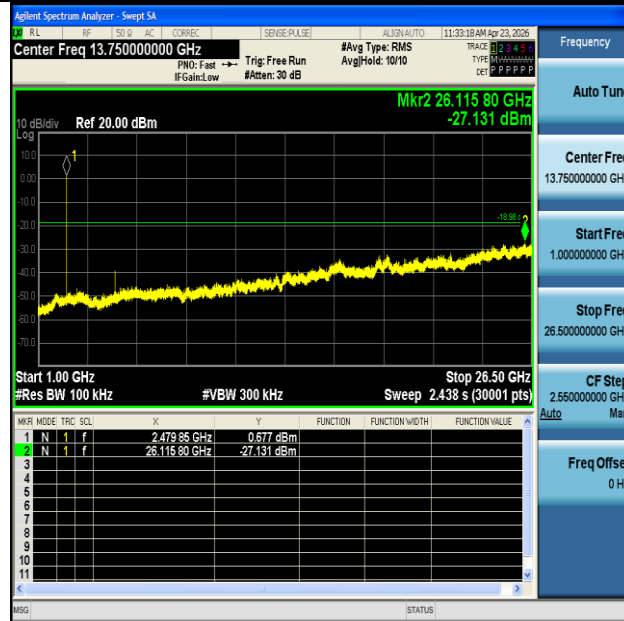


BLE\_1M-Ant1-2480-0~Reference-PASS

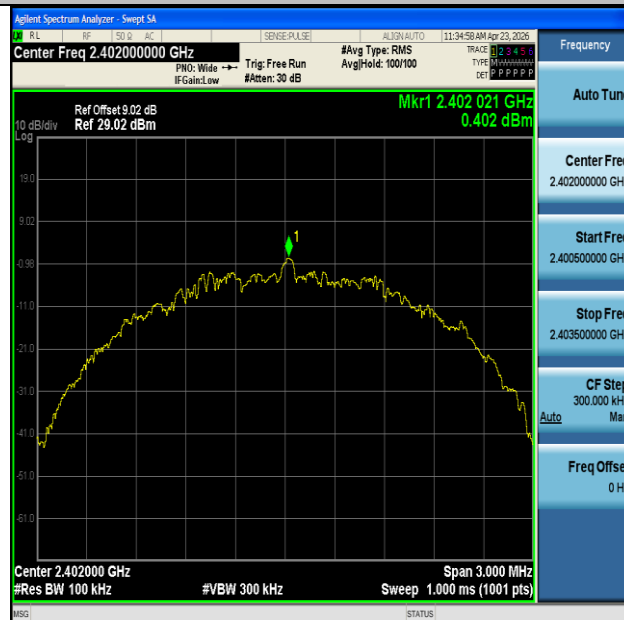


BLE\_1M-Ant1-2480-30~1000-PASS





BLE\_1M-Ant1-2480-1000~26500-PASS

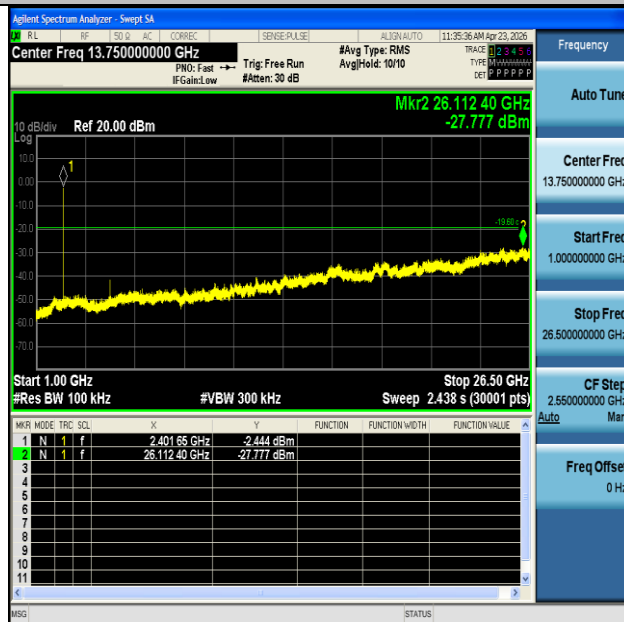


BLE\_2M-Ant1-2402-0~Reference-PASS



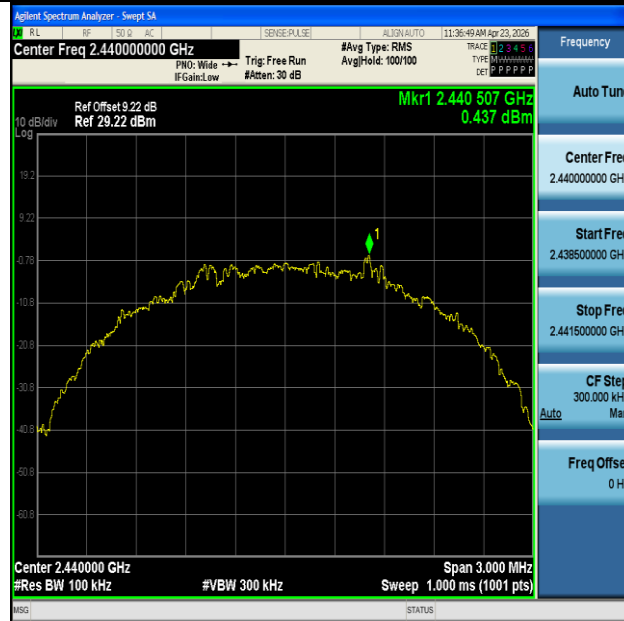


BLE\_2M-Ant1-2402-30~1000-PASS

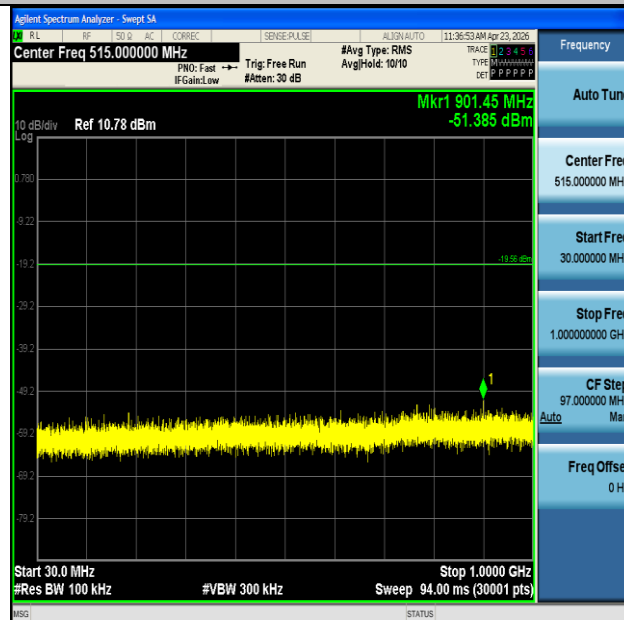


BLE\_2M-Ant1-2402-1000~26500-PASS



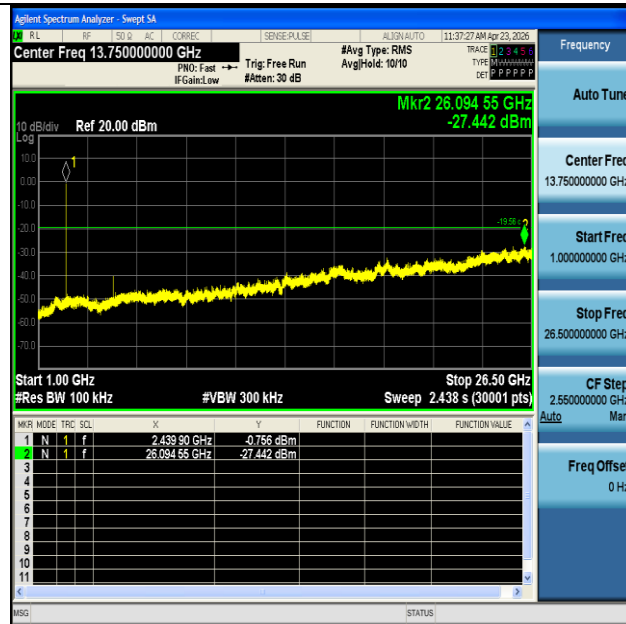


BLE\_2M-Ant1-2440-0~Reference-PASS

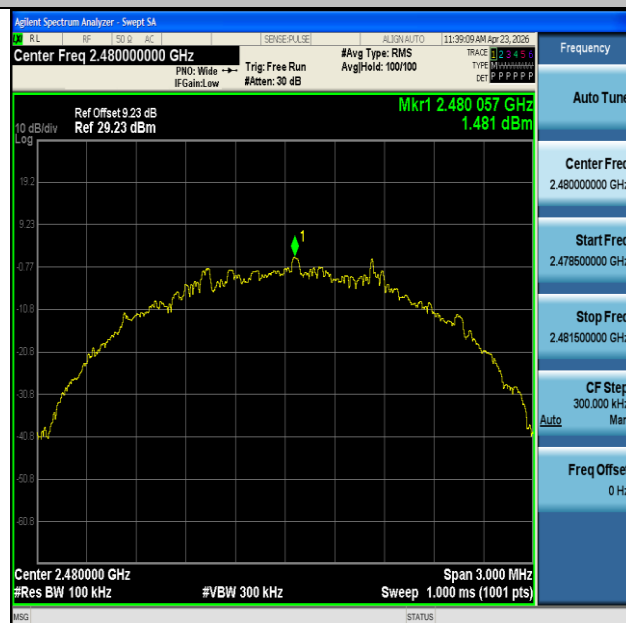


BLE\_2M-Ant1-2440-30~1000-PASS



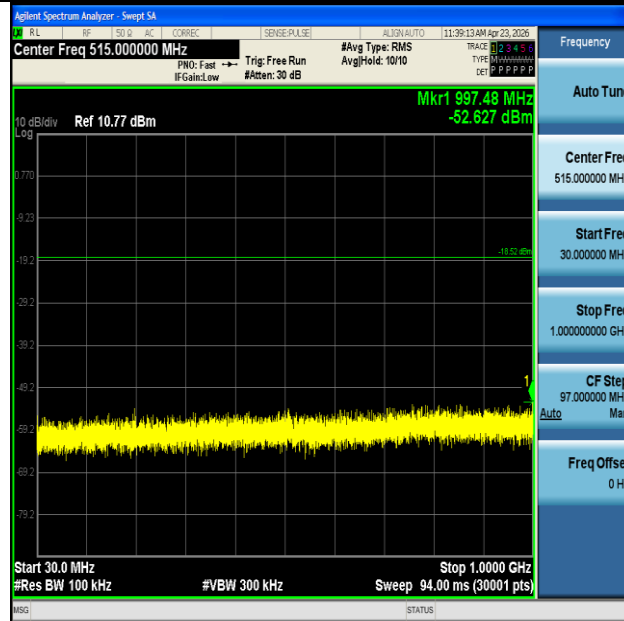


BLE\_2M-Ant1-2440-1000~26500-PASS

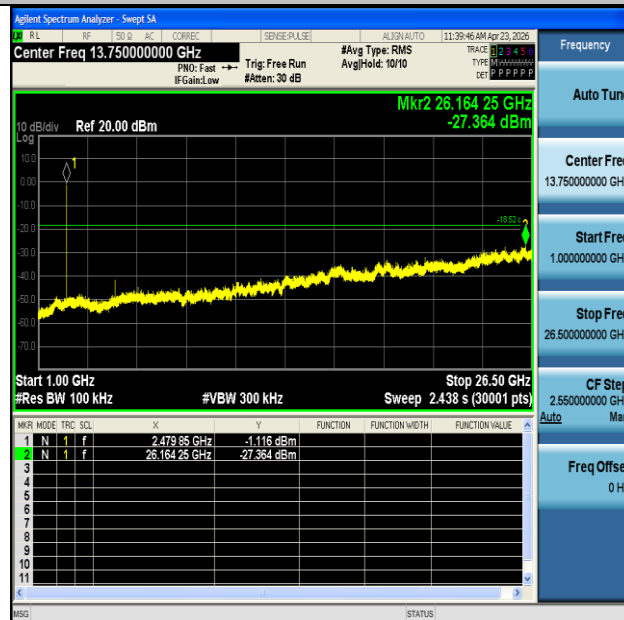


BLE\_2M-Ant1-2480-0~Reference-PASS





BLE\_2M-Ant1-2480-30~1000-PASS



BLE\_2M-Ant1-2480-1000~26500-PASS





## Appendix G: Duty Cycle

### Test Result

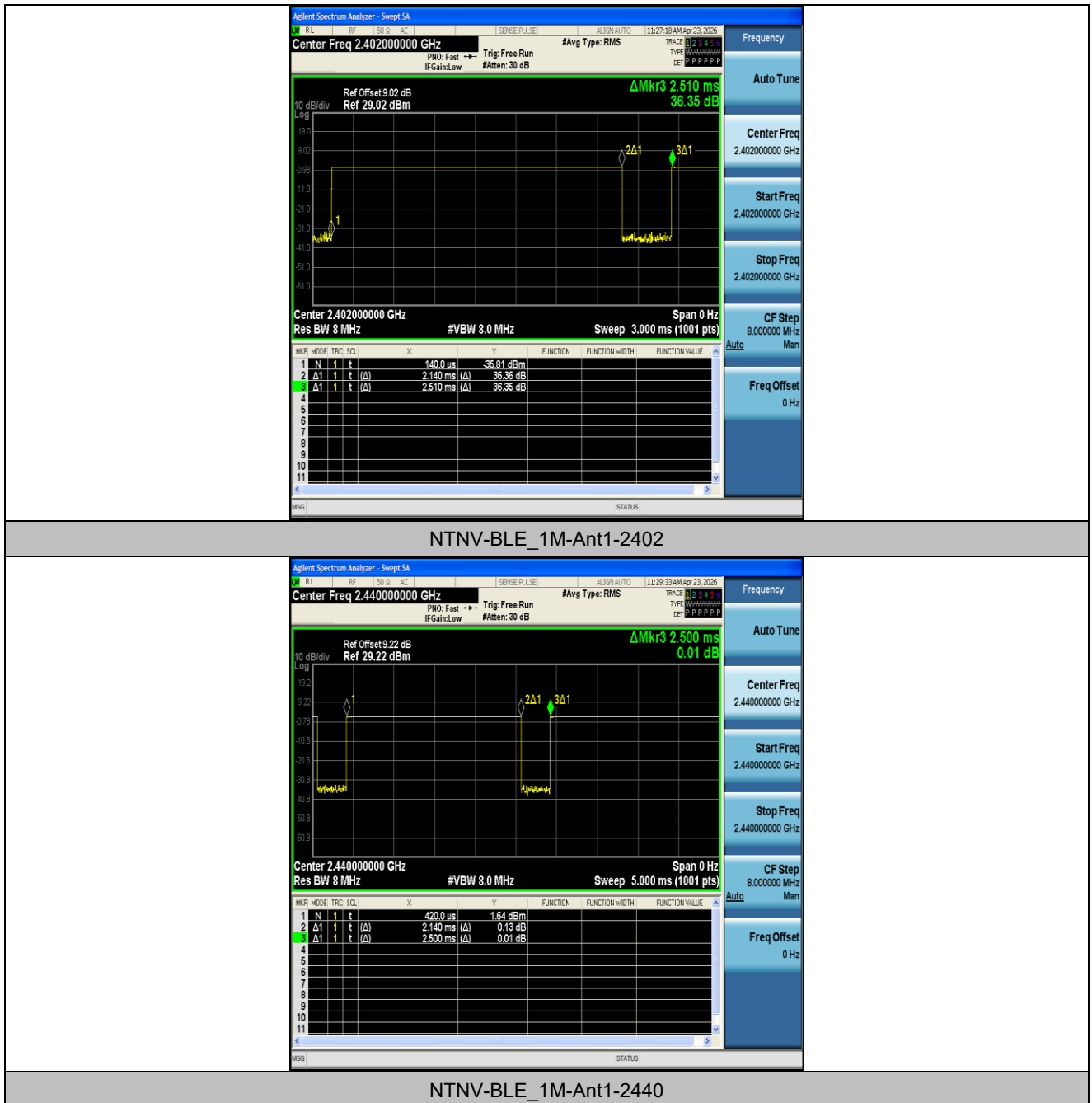
| Test Mode | Antenna | Frequency<br>[MHz] | ON Time<br>[ms] | Period<br>[ms] | Duty Cycle<br>[%] | Duty Cycle<br>Factor<br>[dB] |
|-----------|---------|--------------------|-----------------|----------------|-------------------|------------------------------|
| BLE_1M    | Ant1    | 2402               | 2.14            | 2.51           | 85.26             | 0.69                         |
| BLE_1M    | Ant1    | 2440               | 2.14            | 2.50           | 85.60             | 0.68                         |
| BLE_1M    | Ant1    | 2480               | 2.14            | 2.50           | 85.60             | 0.68                         |
| BLE_2M    | Ant1    | 2402               | 1.09            | 2.50           | 43.60             | 3.61                         |
| BLE_2M    | Ant1    | 2440               | 1.08            | 2.50           | 43.20             | 3.65                         |
| BLE_2M    | Ant1    | 2480               | 1.08            | 2.50           | 43.20             | 3.65                         |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



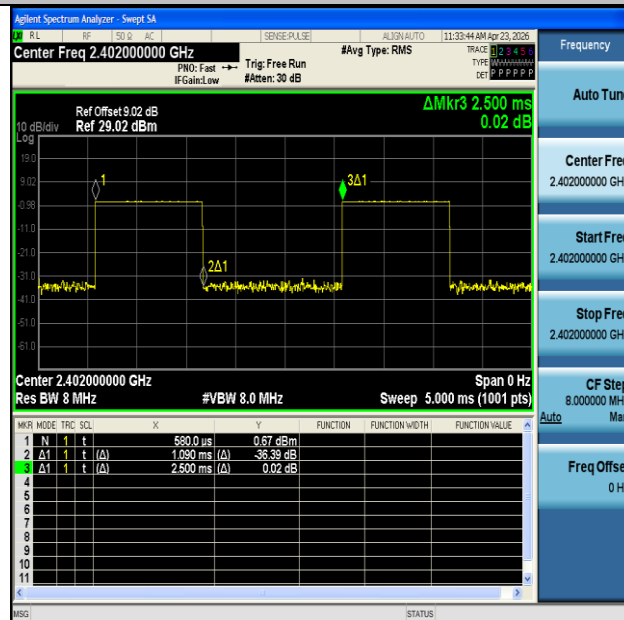


## Test Graphs



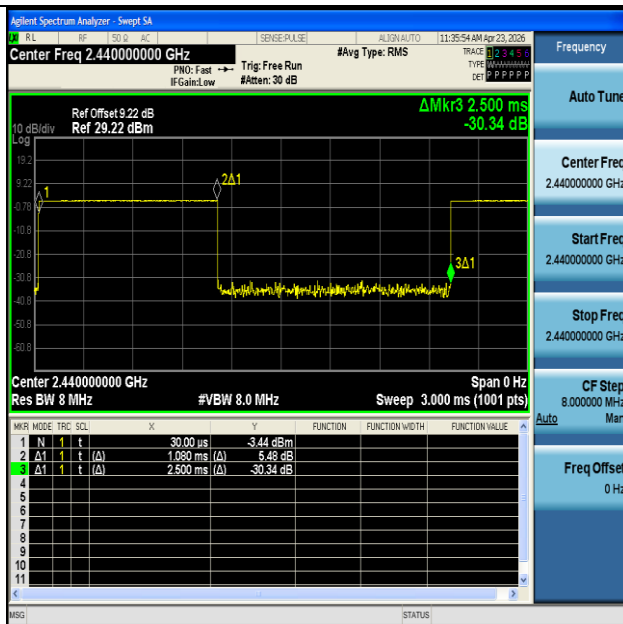


NTNV-BLE\_1M-Ant1-2480

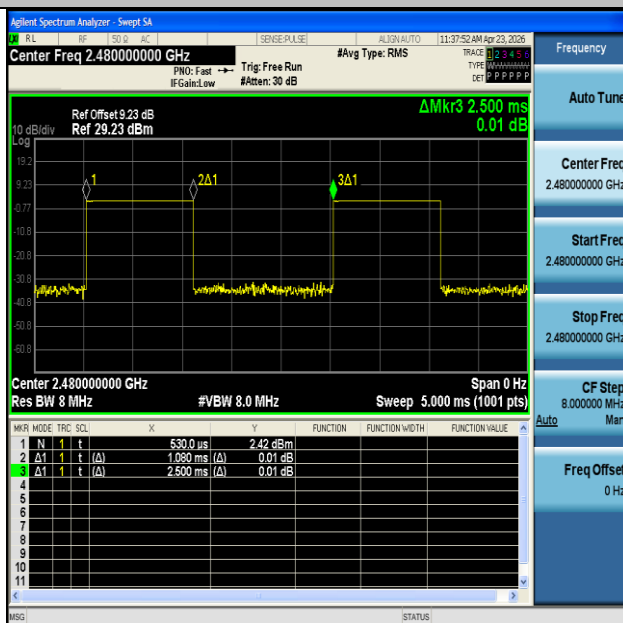


NTNV-BLE\_2M-Ant1-2402





NTNV-BLE\_2M-Ant1-2440



NTNV-BLE\_2M-Ant1-2480

