



## Appendix Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Earbuds

Trade Mark: CAT

Test Model: CAT-BTEARBUD

FCC ID: 2APC6-CATBTEARBUD

### Environmental Conditions

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

## Appendix A: 20dB Emission Bandwidth

### Test Result

| Test Mode | Antenna | Frequency<br>[MHz] | 20db EBW<br>[MHz] | FL<br>[MHz] | FH<br>[MHz] | Limit<br>[MHz] | Verdict |
|-----------|---------|--------------------|-------------------|-------------|-------------|----------------|---------|
| DH5       | Ant1    | 2402               | 0.957             | 2401.520    | 2402.477    | ---            | ---     |
| DH5       | Ant1    | 2441               | 0.948             | 2440.526    | 2441.474    | ---            | ---     |
| DH5       | Ant1    | 2480               | 0.960             | 2479.526    | 2480.486    | ---            | ---     |
| 2DH5      | Ant1    | 2402               | 1.275             | 2401.358    | 2402.633    | ---            | ---     |
| 2DH5      | Ant1    | 2441               | 1.287             | 2440.358    | 2441.645    | ---            | ---     |
| 2DH5      | Ant1    | 2480               | 1.278             | 2479.370    | 2480.648    | ---            | ---     |

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





## Test Graphs





DH5-Ant1-2480



2DH5-Ant1-2402





2DH5-Ant1-2441



2DH5-Ant1-2480





## 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 |
|-----------|---------|--------------------|--------------|-------------|-------------|----------------|---------|
| DH5       | Ant1    | 2402               | 0.87760      | 2401.5511   | 2402.4287   | ---            | ---     |
| DH5       | Ant1    | 2441               | 0.87325      | 2440.5500   | 2441.4233   | ---            | ---     |
| DH5       | Ant1    | 2480               | 0.88482      | 2479.5482   | 2480.4330   | ---            | ---     |
| 2DH5      | Ant1    | 2402               | 1.1943       | 2401.3958   | 2402.5901   | ---            | ---     |
| 2DH5      | Ant1    | 2441               | 1.1960       | 2440.3942   | 2441.5902   | ---            | ---     |
| 2DH5      | Ant1    | 2480               | 1.2019       | 2479.3935   | 2480.5954   | ---            | ---     |

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



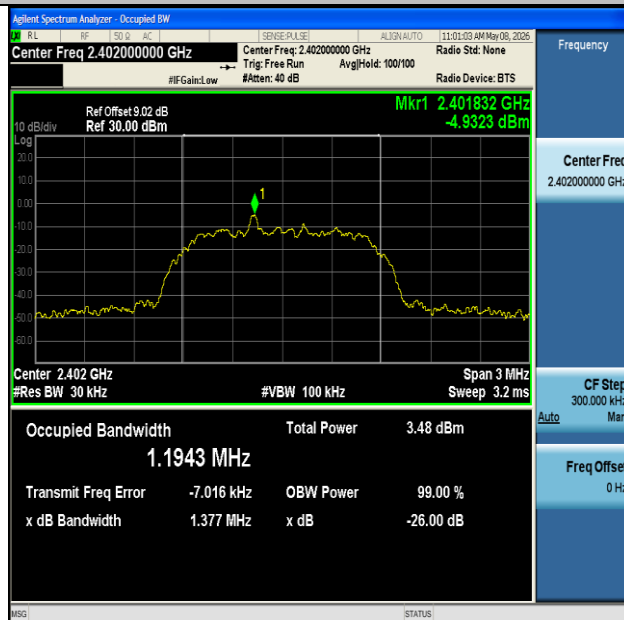


## Test Graphs





DH5-Ant1-2480



2DH5-Ant1-2402





2DH5-Ant1-2441



2DH5-Ant1-2480





## Appendix C: Maximum peak conducted output power

### Test Result

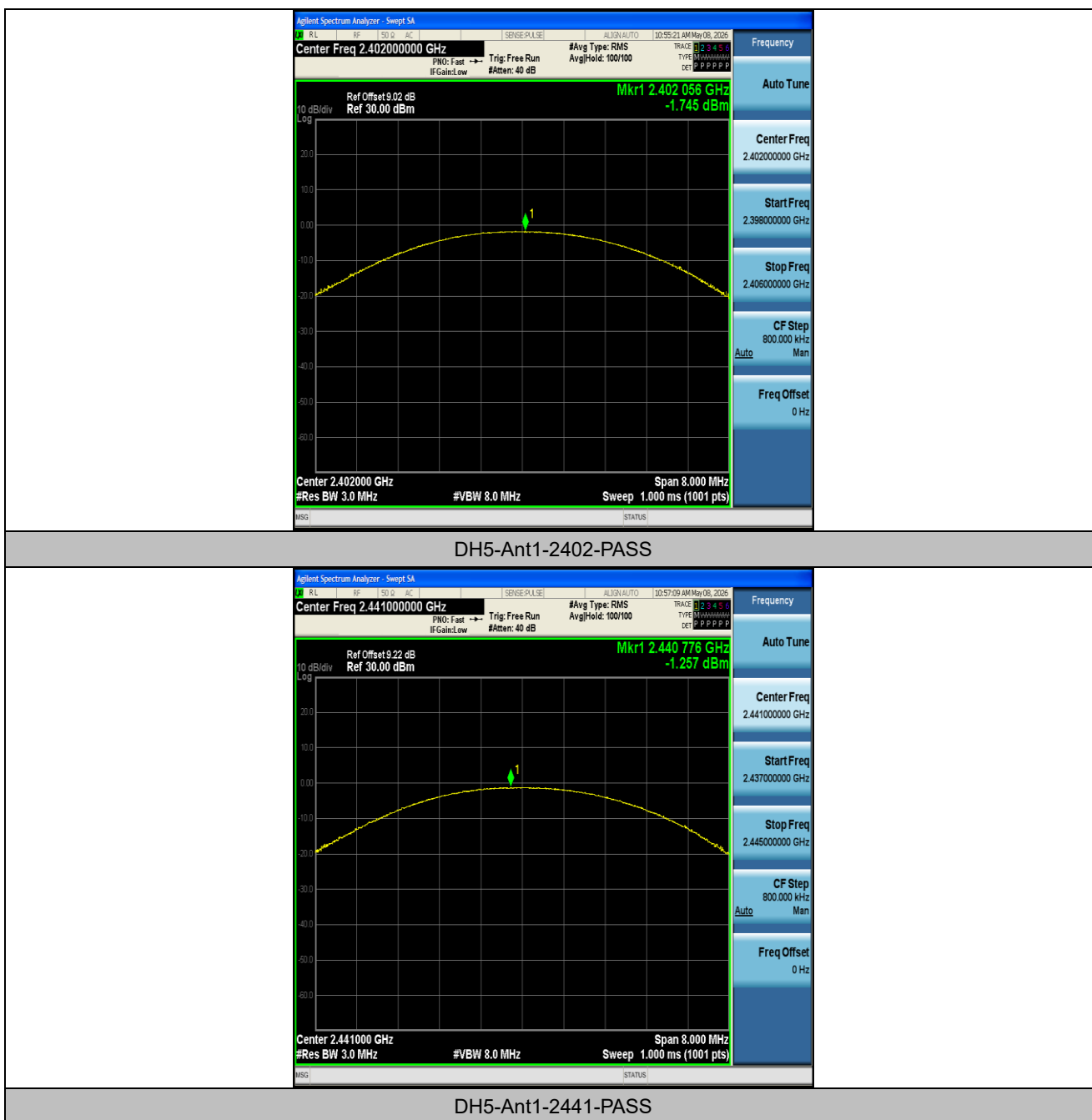
| Test Mode | Antenna | Frequency [MHz] | Conducted Peak Power [dBm] | Conducted Limit [dBm] | Verdict |
|-----------|---------|-----------------|----------------------------|-----------------------|---------|
| DH5       | Ant1    | 2402            | -1.75                      | ≤30                   | PASS    |
| DH5       | Ant1    | 2441            | -1.26                      | ≤30                   | PASS    |
| DH5       | Ant1    | 2480            | -1.74                      | ≤30                   | PASS    |
| 2DH5      | Ant1    | 2402            | -0.97                      | ≤20.97                | PASS    |
| 2DH5      | Ant1    | 2441            | -0.53                      | ≤20.97                | PASS    |
| 2DH5      | Ant1    | 2480            | -0.88                      | ≤20.97                | PASS    |

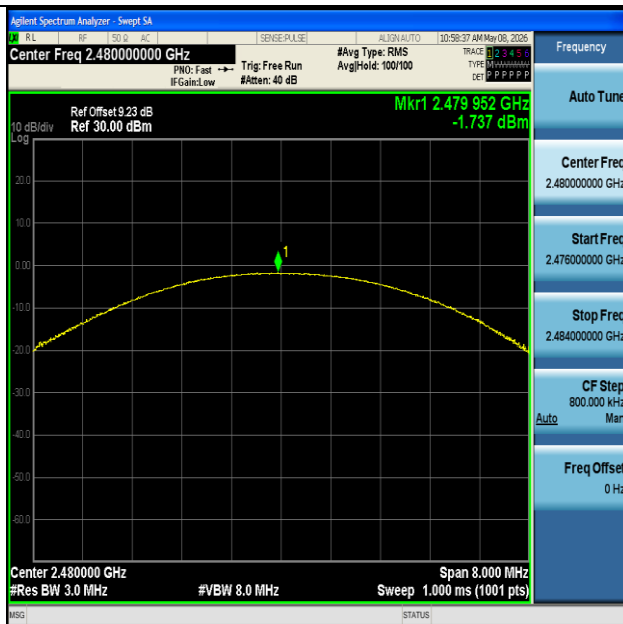
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



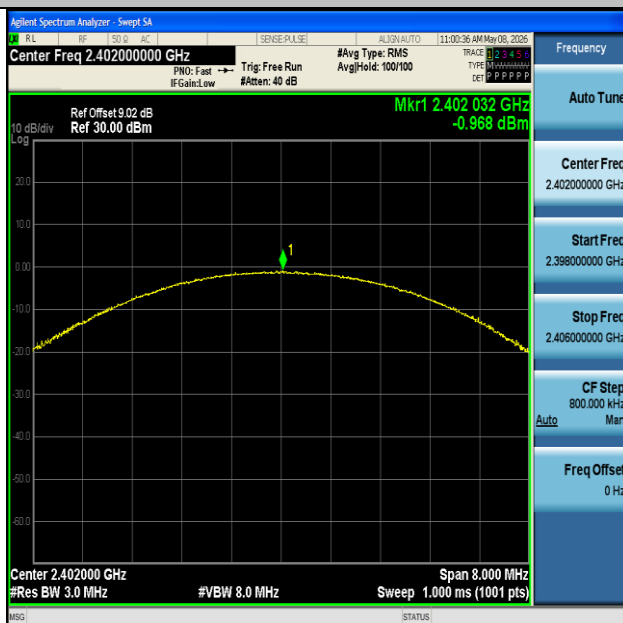


## Test Graphs



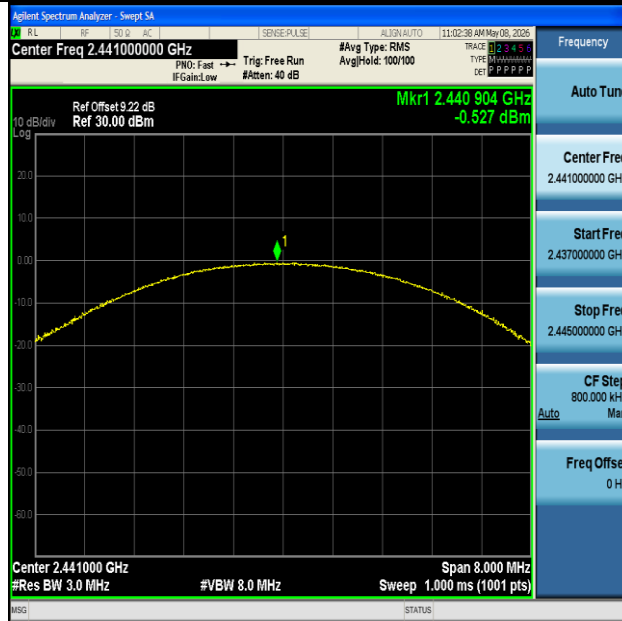


DH5-Ant1-2480-PASS

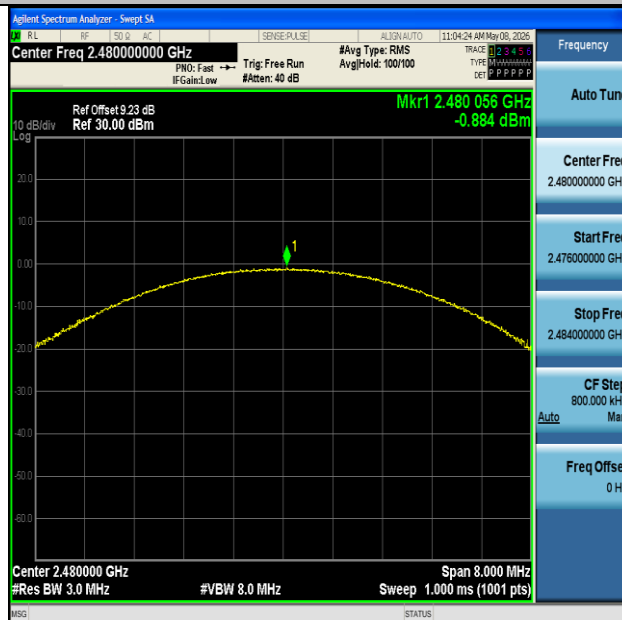


2DH5-Ant1-2402-PASS





2DH5-Ant1-2441-PASS



2DH5-Ant1-2480-PASS





## Appendix D: Carrier frequency separation

### Test Result

| Test Mode | Antenna | Frequency<br>[MHz] | Result<br>[MHz] | Limit<br>[MHz] | Verdict |
|-----------|---------|--------------------|-----------------|----------------|---------|
| DH5       | Ant1    | Hop                | 1.138           | $\geq 0.960$   | PASS    |
| 2DH5      | Ant1    | Hop                | 1.108           | $\geq 0.858$   | PASS    |

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





## Test Graphs





## Appendix E: Time of occupancy

### Test Result

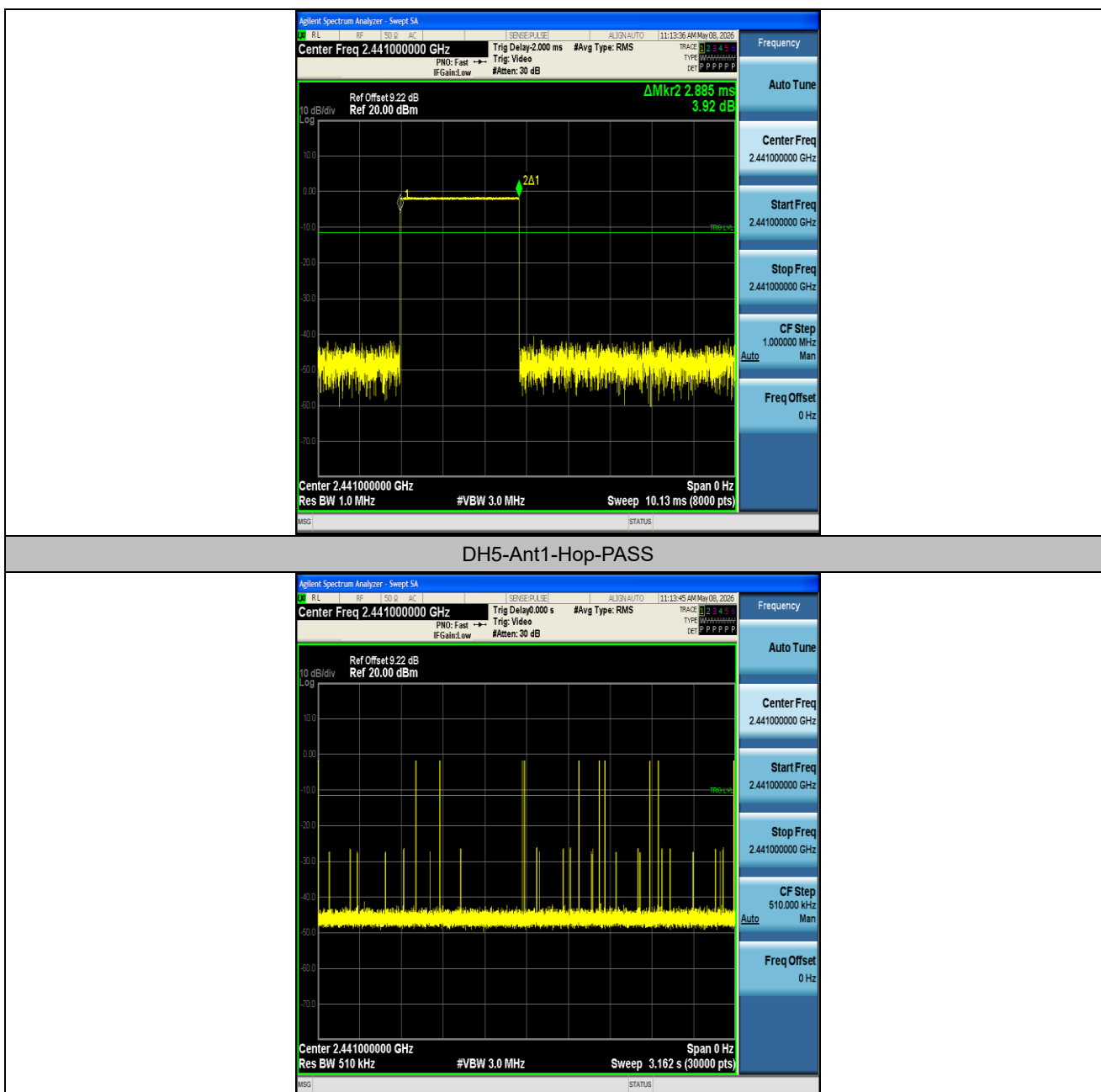
| Test Mode | Antenna | Frequency<br>[MHz] | Burst Width<br>[ms] | TotalHops<br>[Num] | Result<br>[s] | Limit<br>[s] | Verdict |
|-----------|---------|--------------------|---------------------|--------------------|---------------|--------------|---------|
| DH5       | Ant1    | Hop                | 2.885               | 110                | 0.317         | ≤0.4         | PASS    |
| 2DH5      | Ant1    | Hop                | 2.891               | 70                 | 0.202         | ≤0.4         | PASS    |

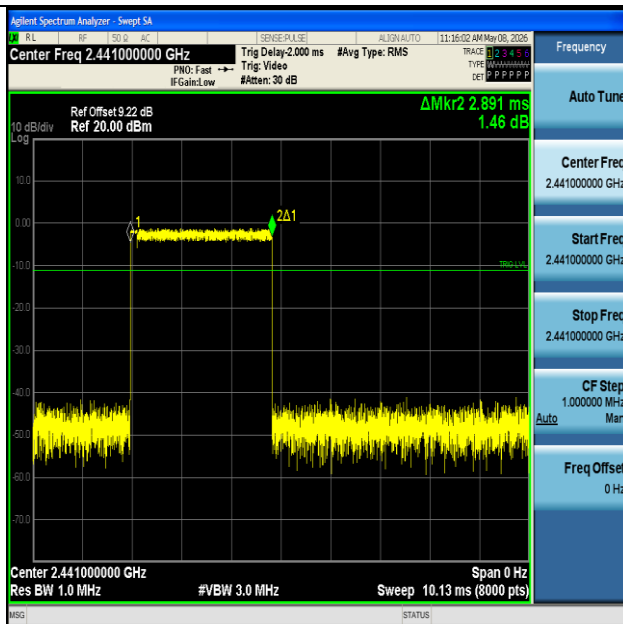
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



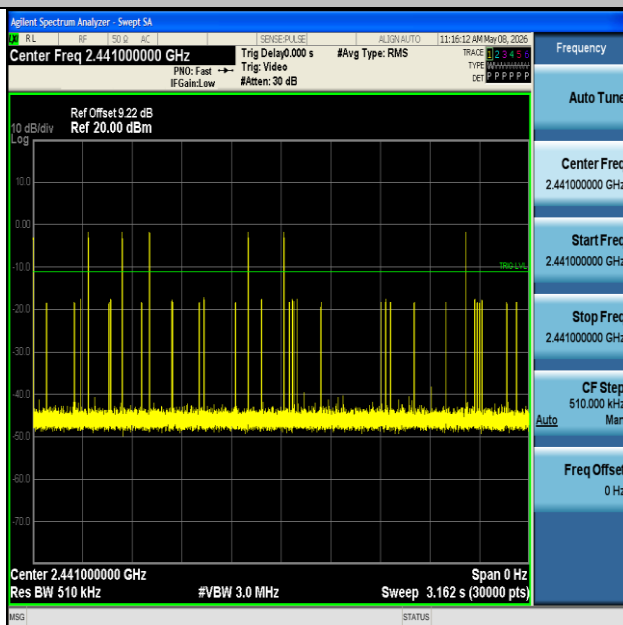


## Test Graphs





### 2DH5-Ant1-Hop-PASS





## Appendix F: Number of hopping channels

### Test Result

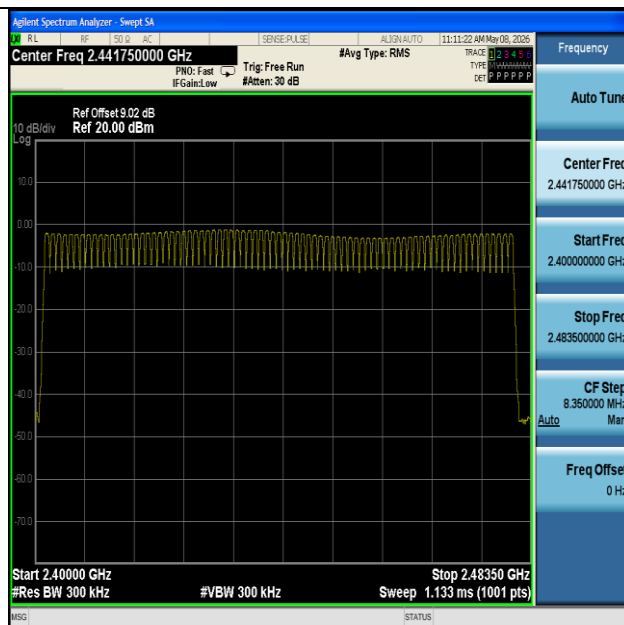
| Test Mode | Antenna | Frequency<br>[MHz] | Result<br>[Num] | Limit<br>[Num] | Verdict |
|-----------|---------|--------------------|-----------------|----------------|---------|
| DH5       | Ant1    | Hop                | 79              | ≥15            | PASS    |
| 2DH5      | Ant1    | Hop                | 79              | ≥15            | PASS    |

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

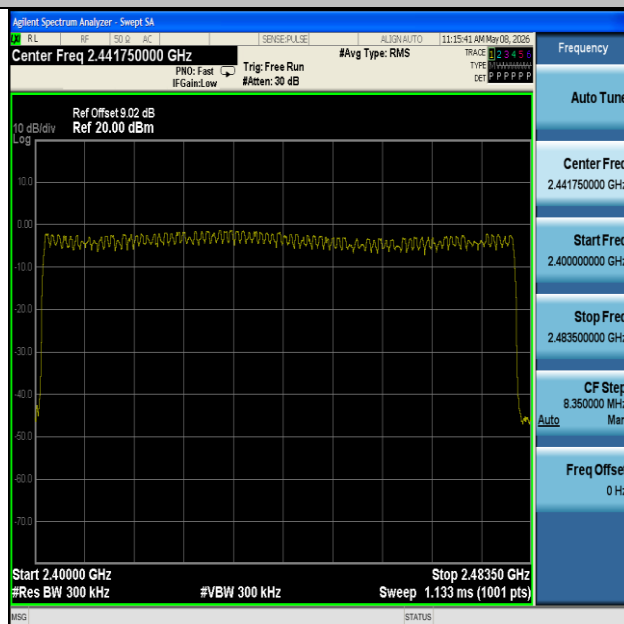




## Test Graphs



DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS





## Appendix G: Band edge measurements

### Test Result

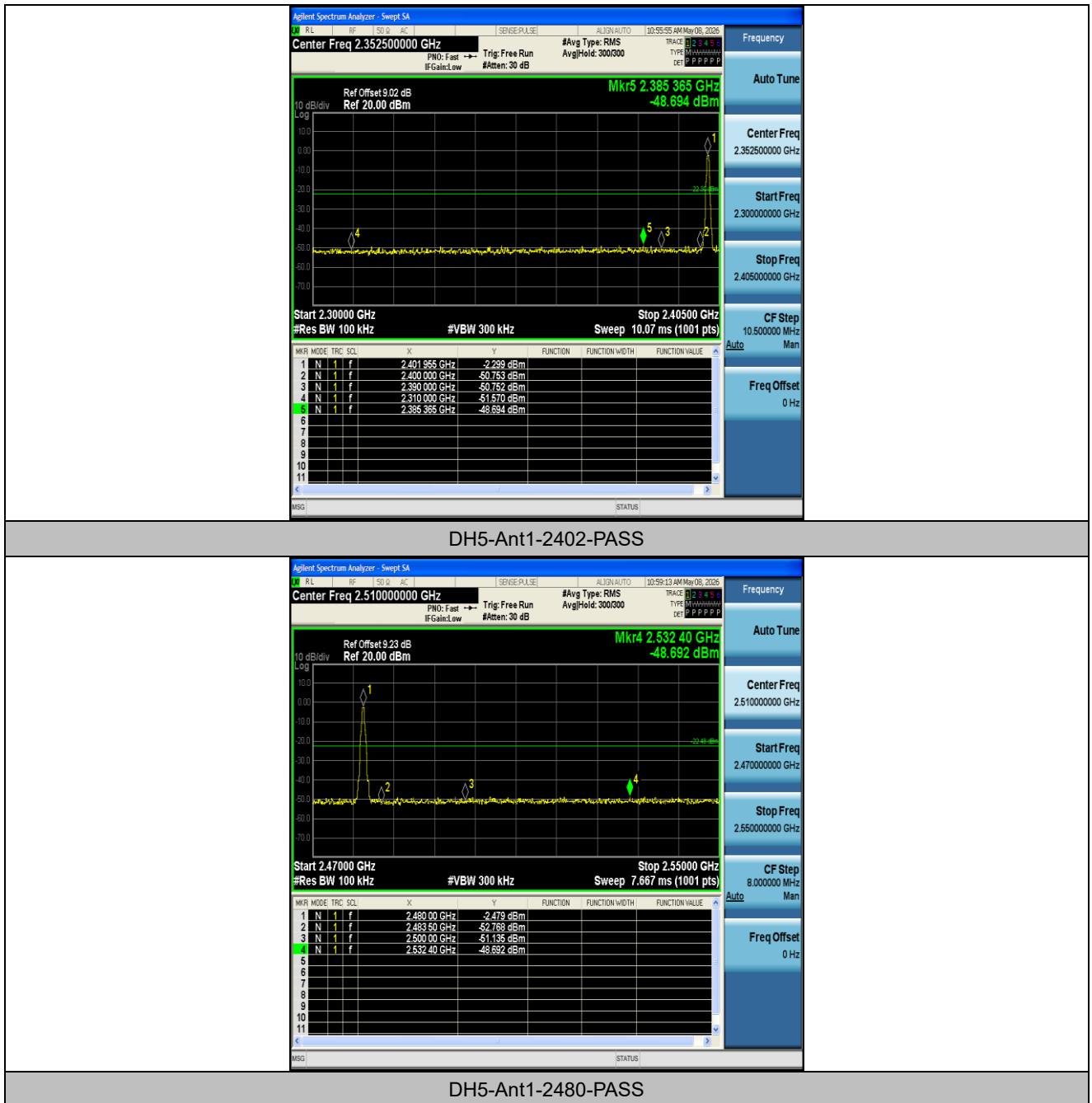
| Test Mode | Antenna | Ch.Name | Frequency [MHz] | RefLevel [dBm] | Result [dBm] | Limit [dBm]   | Verdict |
|-----------|---------|---------|-----------------|----------------|--------------|---------------|---------|
| DH5       | Ant1    | Low     | 2402            | -2.30          | -48.69       | $\leq -22.3$  | PASS    |
| DH5       | Ant1    | High    | 2480            | -2.48          | -48.69       | $\leq -22.48$ | PASS    |
| DH5       | Ant1    | Low     | Hop_2402        | -2.91          | -48.79       | $\leq -22.91$ | PASS    |
| DH5       | Ant1    | High    | Hop_2480        | -2.61          | -48.22       | $\leq -22.61$ | PASS    |
| 2DH5      | Ant1    | Low     | 2402            | -2.35          | -48.32       | $\leq -22.35$ | PASS    |
| 2DH5      | Ant1    | High    | 2480            | -5.27          | -48.5        | $\leq -25.27$ | PASS    |
| 2DH5      | Ant1    | Low     | Hop_2402        | -6.71          | -48.76       | $\leq -26.71$ | PASS    |
| 2DH5      | Ant1    | High    | Hop_2480        | -5.42          | -48.26       | $\leq -25.42$ | PASS    |

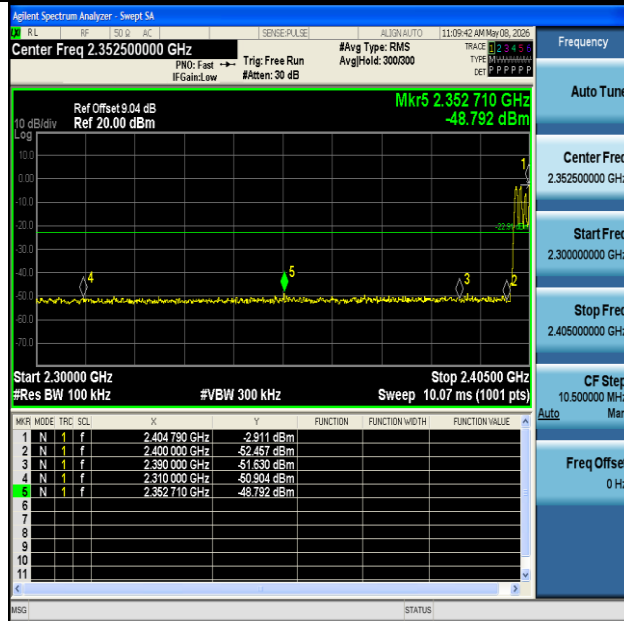
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



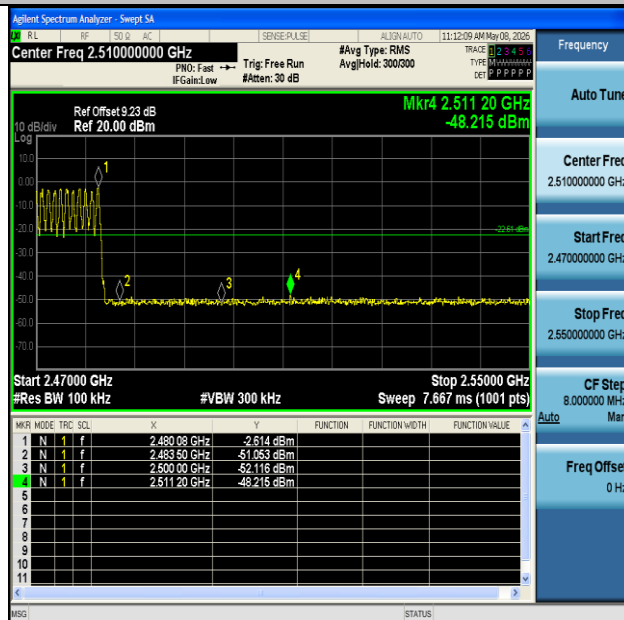


## Test Graphs



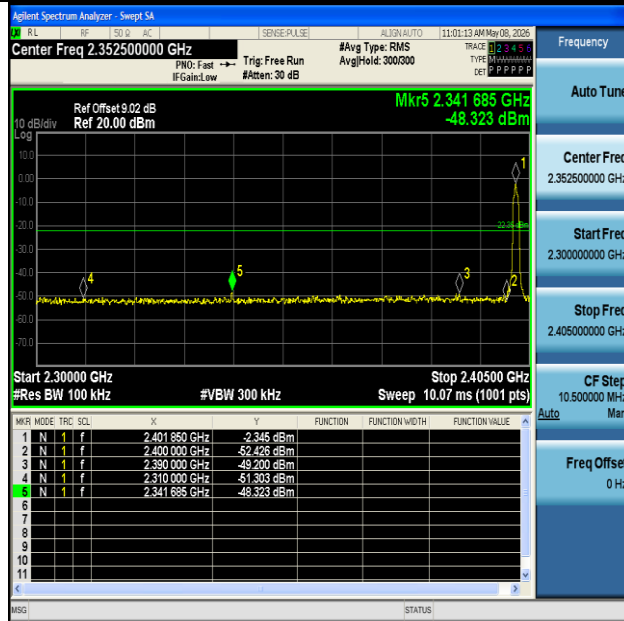


DH5-Ant1-Hop\_2402-PASS

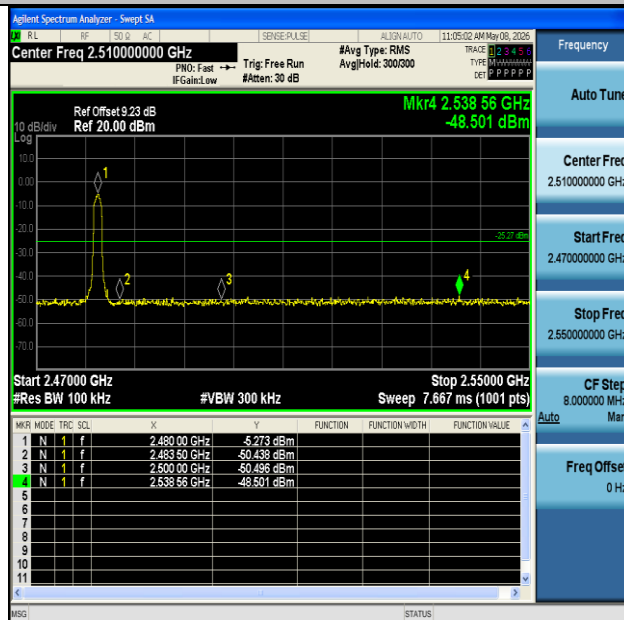


DH5-Ant1-Hop\_2480-PASS



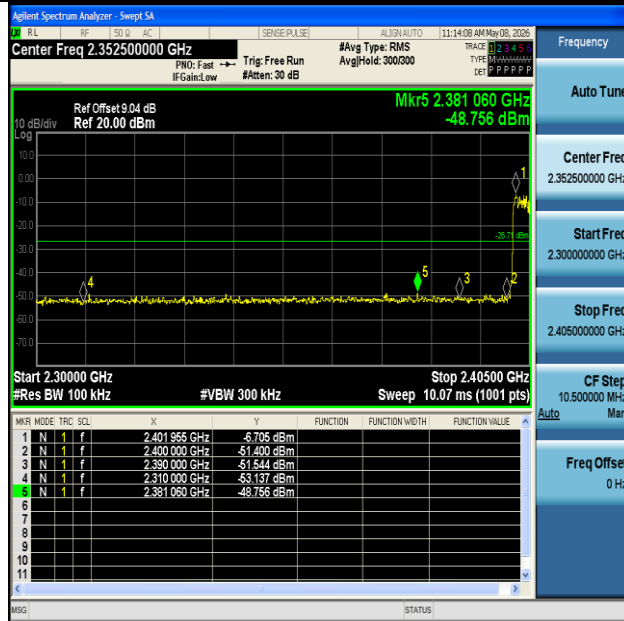


2DH5-Ant1-2402-PASS

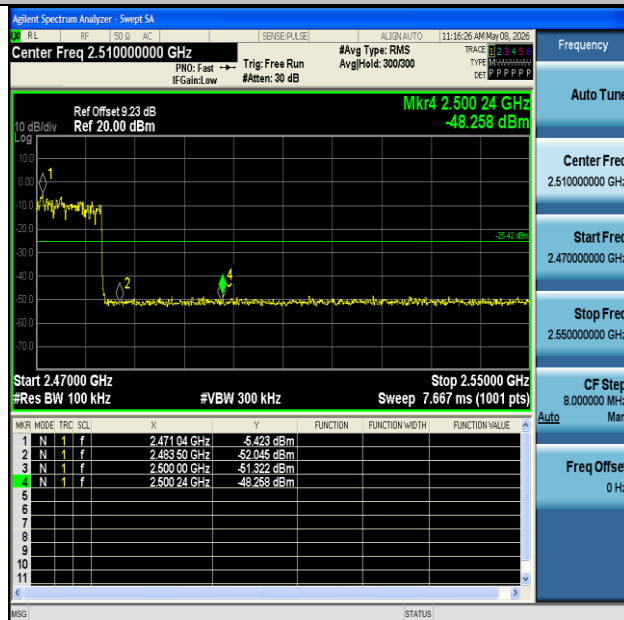


2DH5-Ant1-2480-PASS





2DH5-Ant1-Hop\_2402-PASS



2DH5-Ant1-Hop\_2480-PASS





## Appendix H: Conducted Spurious Emission

### Test Result

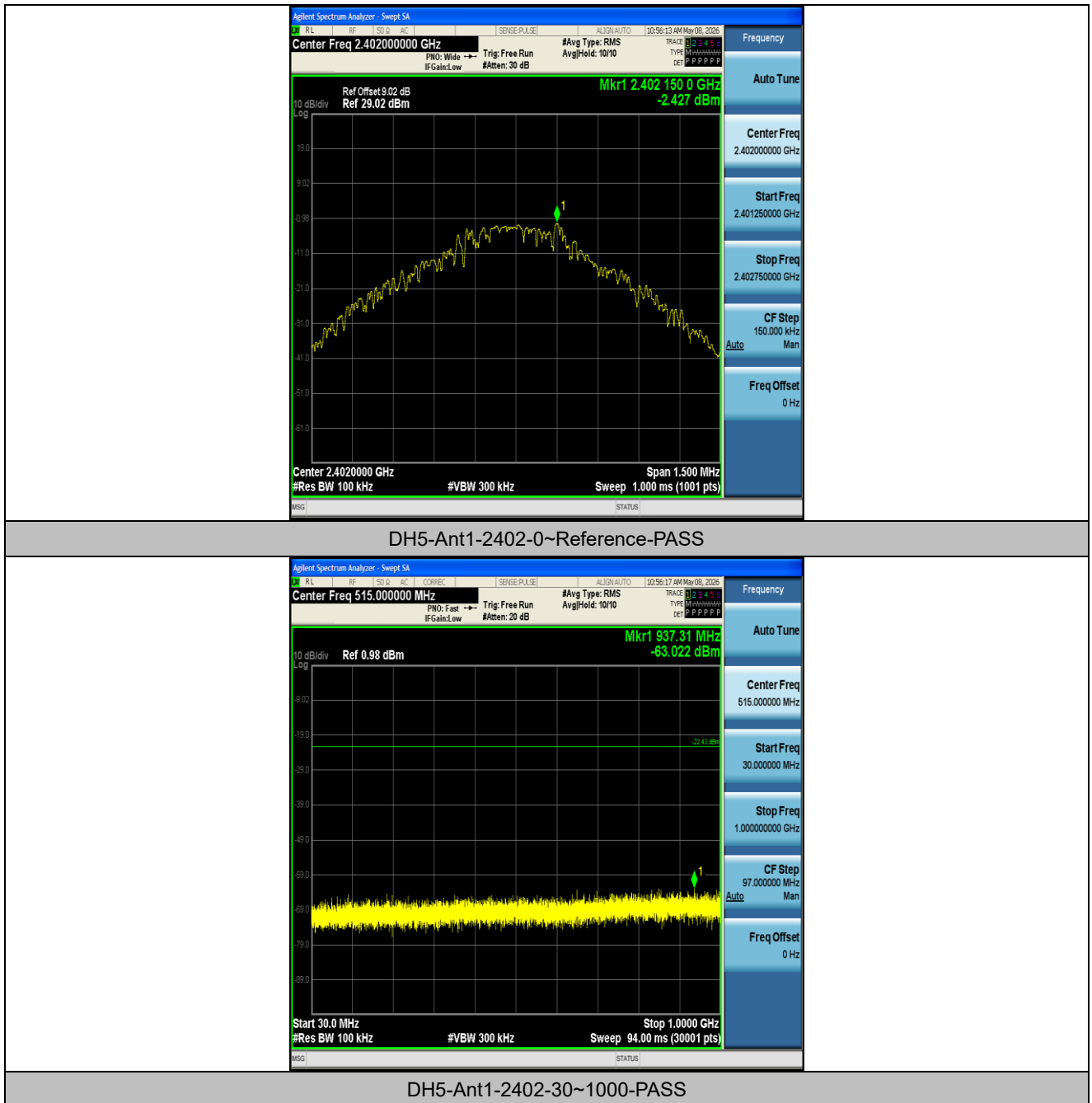
| Test Mode | Antenna | Frequency [MHz] | Freq. Range [MHz] | Ref. Level [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|-----------|---------|-----------------|-------------------|------------------|--------------|-------------|---------|
| DH5       | Ant1    | 2402            | 0~Reference       | -2.43            | -2.43        | ---         | PASS    |
| DH5       | Ant1    | 2402            | 30~1000           | -2.43            | -63.02       | ≤-22.43     | PASS    |
| DH5       | Ant1    | 2402            | 1000~26500        | -2.43            | -38.01       | ≤-22.43     | PASS    |
| DH5       | Ant1    | 2441            | 0~Reference       | -2.58            | -2.58        | ---         | PASS    |
| DH5       | Ant1    | 2441            | 30~1000           | -2.58            | -62.6        | ≤-22.58     | PASS    |
| DH5       | Ant1    | 2441            | 1000~26500        | -2.58            | -37.15       | ≤-22.58     | PASS    |
| DH5       | Ant1    | 2480            | 0~Reference       | -2.94            | -2.94        | ---         | PASS    |
| DH5       | Ant1    | 2480            | 30~1000           | -2.94            | -62.89       | ≤-22.94     | PASS    |
| DH5       | Ant1    | 2480            | 1000~26500        | -2.94            | -37.17       | ≤-22.94     | PASS    |
| 2DH5      | Ant1    | 2402            | 0~Reference       | -2.38            | -2.38        | ---         | PASS    |
| 2DH5      | Ant1    | 2402            | 30~1000           | -2.38            | -62.26       | ≤-22.38     | PASS    |
| 2DH5      | Ant1    | 2402            | 1000~26500        | -2.38            | -37.55       | ≤-22.38     | PASS    |
| 2DH5      | Ant1    | 2441            | 0~Reference       | -3.85            | -3.85        | ---         | PASS    |
| 2DH5      | Ant1    | 2441            | 30~1000           | -3.85            | -63.19       | ≤-23.85     | PASS    |
| 2DH5      | Ant1    | 2441            | 1000~26500        | -3.85            | -36.7        | ≤-23.85     | PASS    |
| 2DH5      | Ant1    | 2480            | 0~Reference       | -2.78            | -2.78        | ---         | PASS    |
| 2DH5      | Ant1    | 2480            | 30~1000           | -2.78            | -62.86       | ≤-22.78     | PASS    |
| 2DH5      | Ant1    | 2480            | 1000~26500        | -2.78            | -37.39       | ≤-22.78     | PASS    |

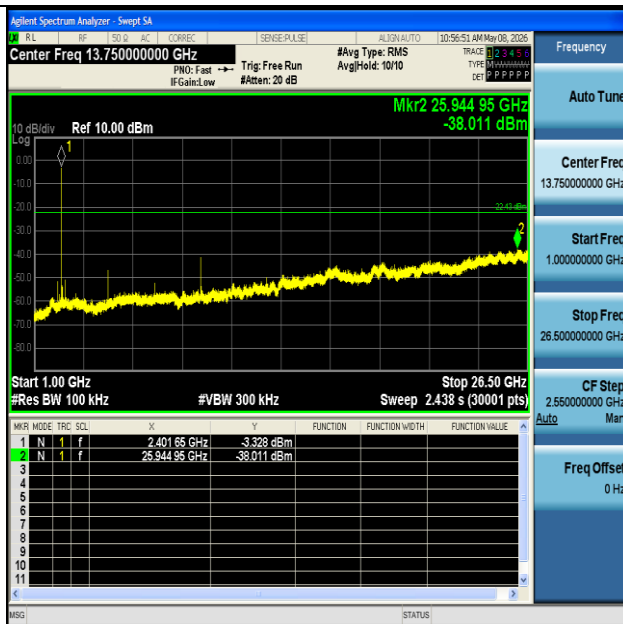
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



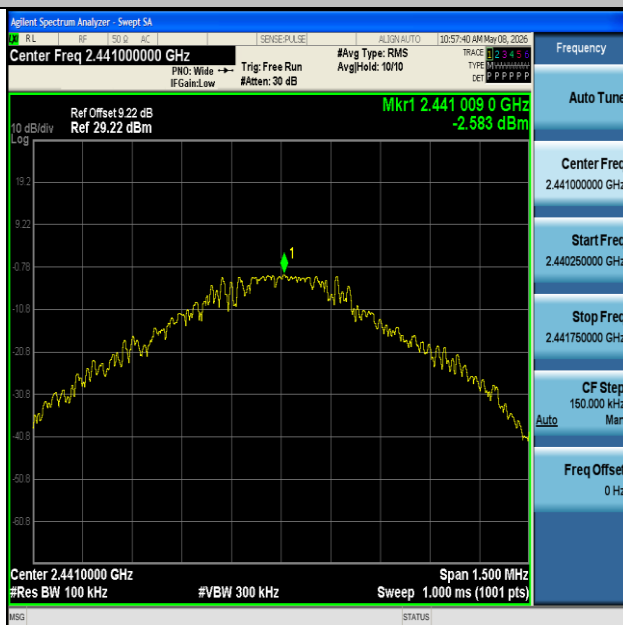


## Test Graphs



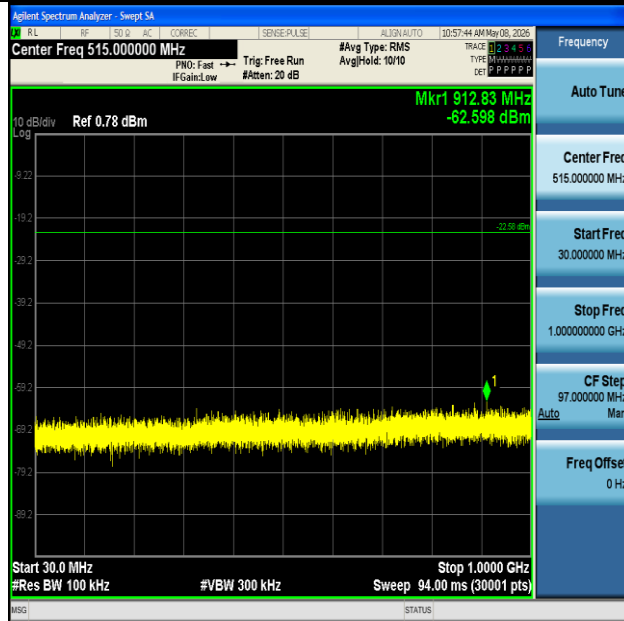


DH5-Ant1-2402-1000~26500-PASS

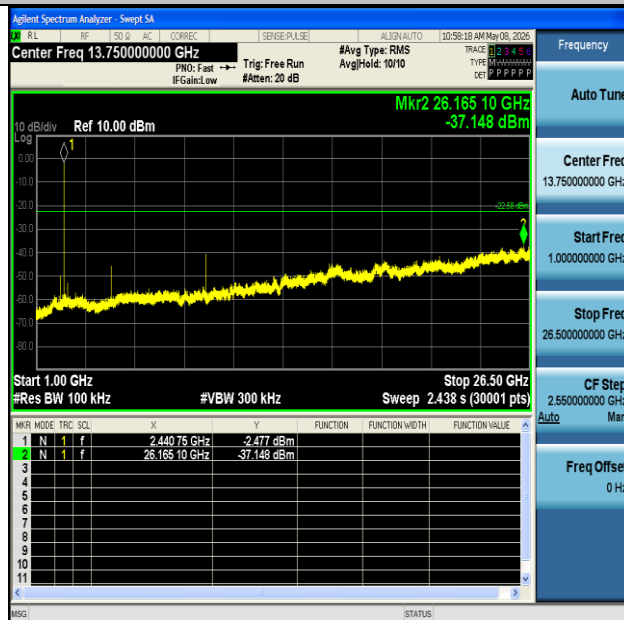


DH5-Ant1-2441-0~Reference-PASS



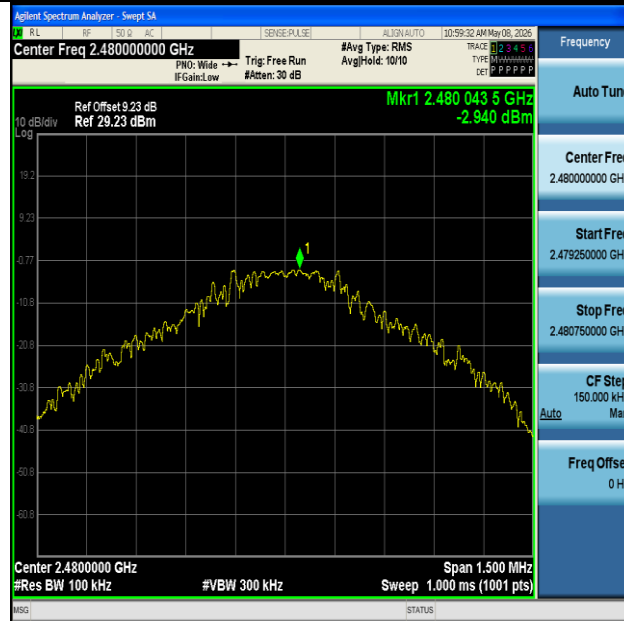


DH5-Ant1-2441-30~1000-PASS

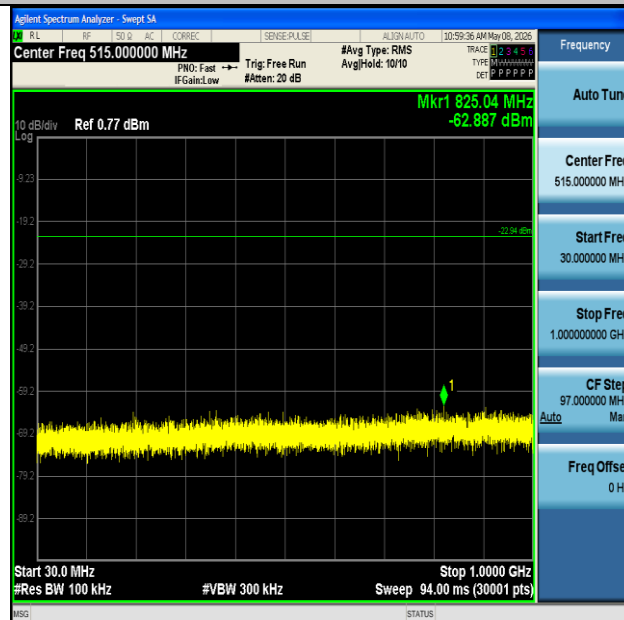


DH5-Ant1-2441-1000~26500-PASS



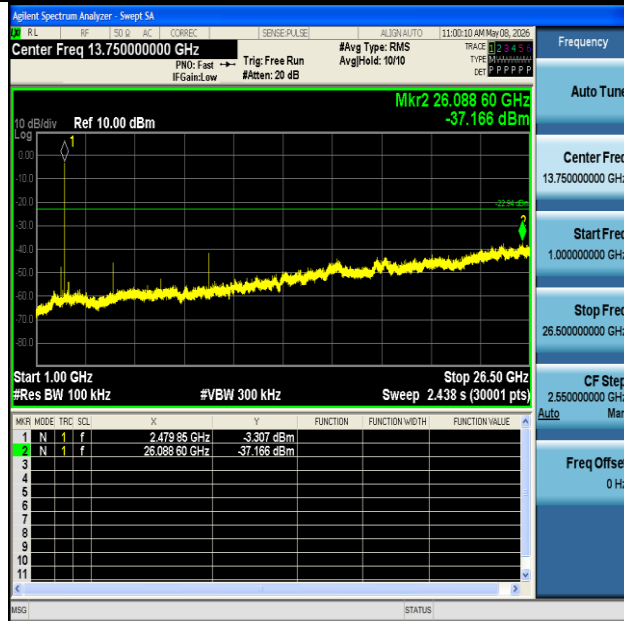


DH5-Ant1-2480-0~Reference-PASS



DH5-Ant1-2480-30~1000-PASS



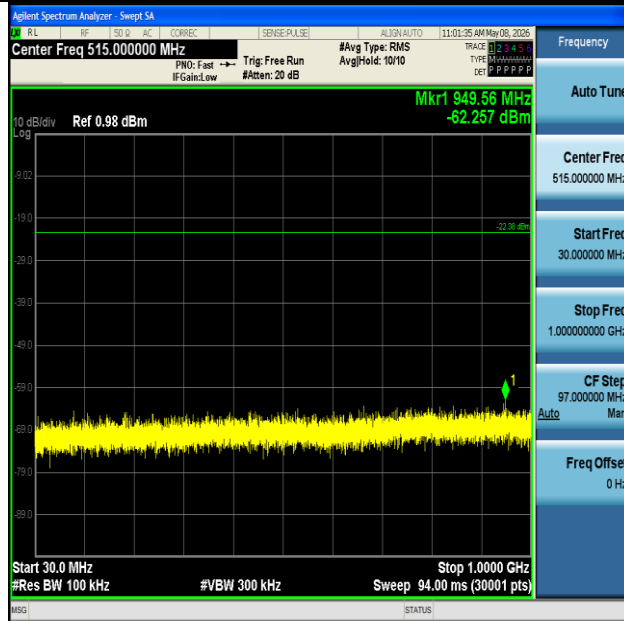


DH5-Ant1-2480-1000~26500-PASS

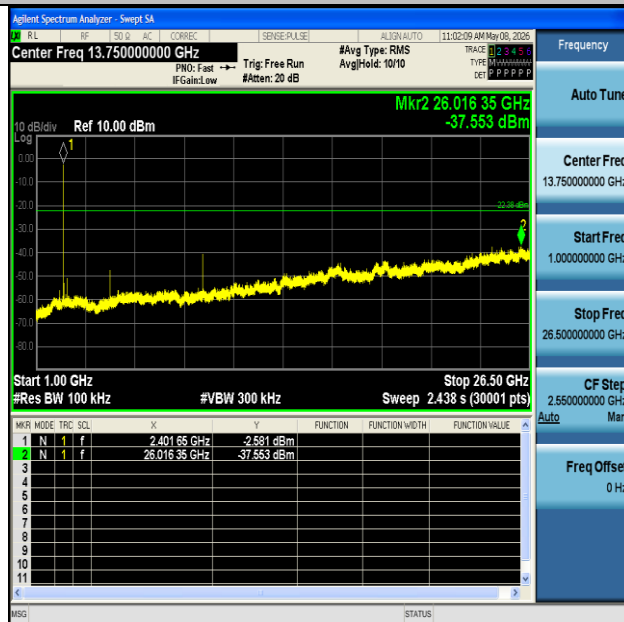


2DH5-Ant1-2402-0~Reference-PASS





2DH5-Ant1-2402-30~1000-PASS

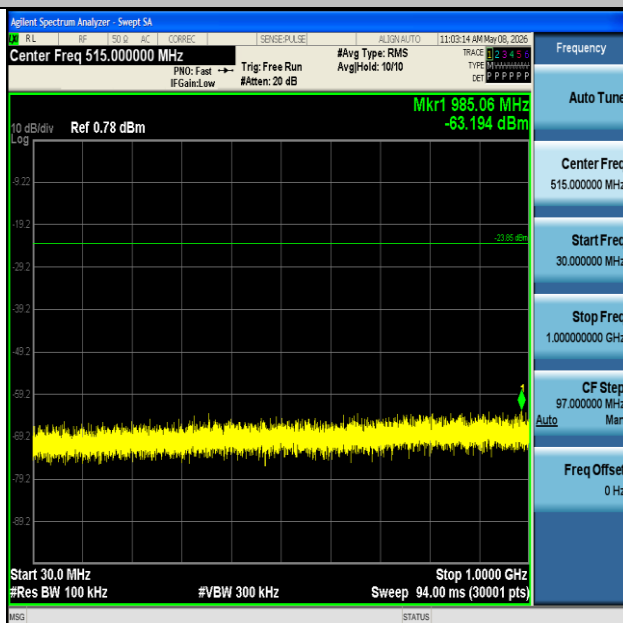


2DH5-Ant1-2402-1000~26500-PASS



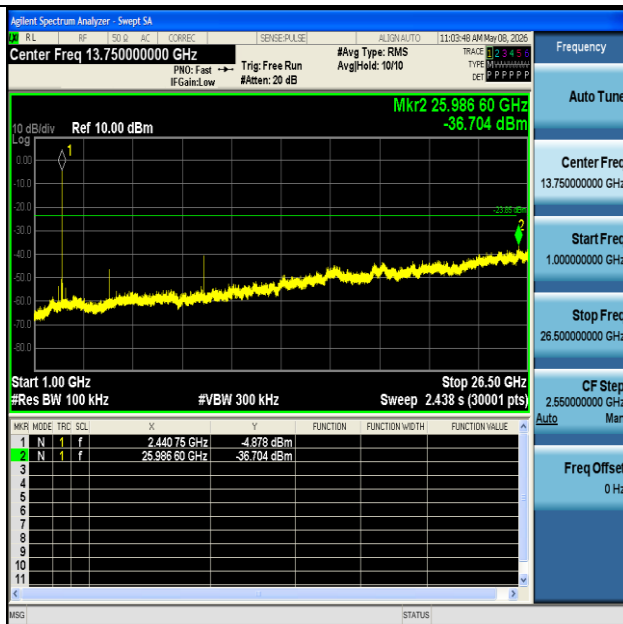


2DH5-Ant1-2441-0~Reference-PASS

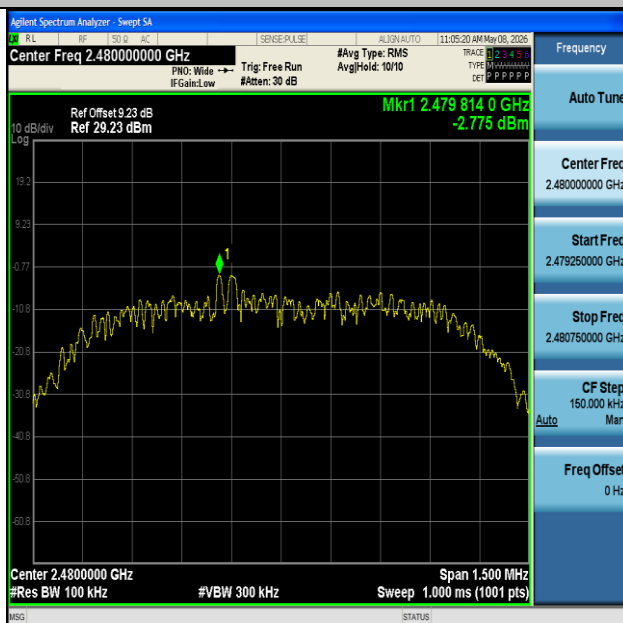


2DH5-Ant1-2441-30~1000-PASS



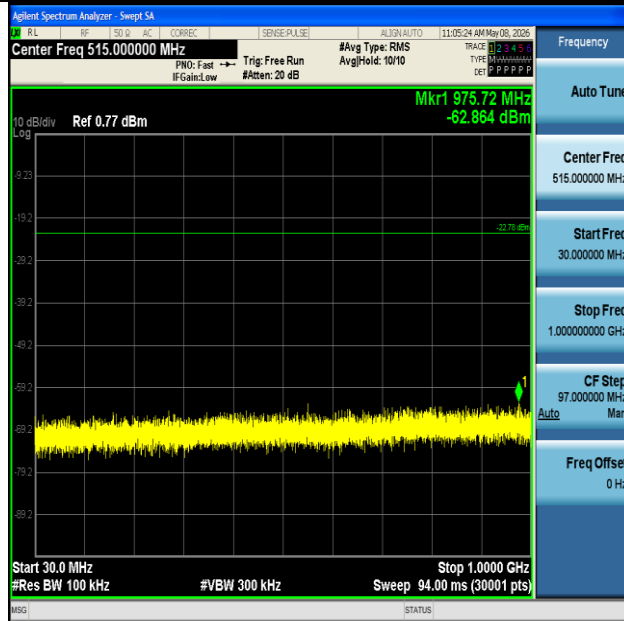


2DH5-Ant1-2441-1000~26500-PASS

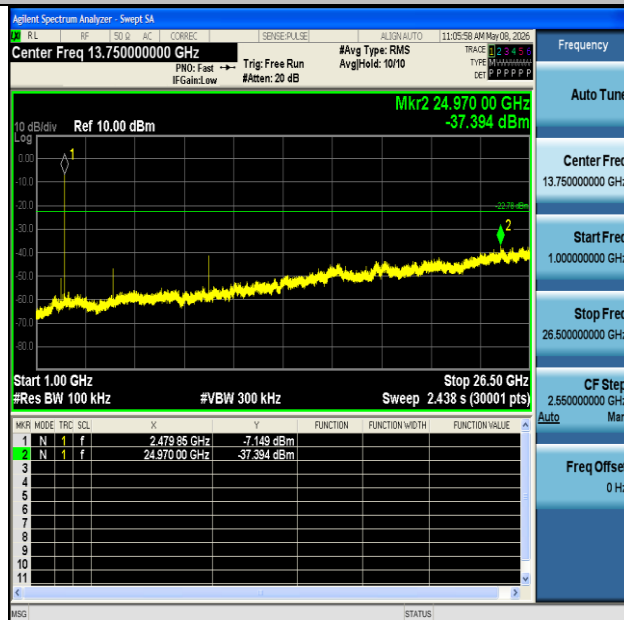


2DH5-Ant1-2480-0~Reference-PASS





2DH5-Ant1-2480-30~1000-PASS



2DH5-Ant1-2480-1000~26500-PASS





## Appendix I: Duty Cycle

### Test Result

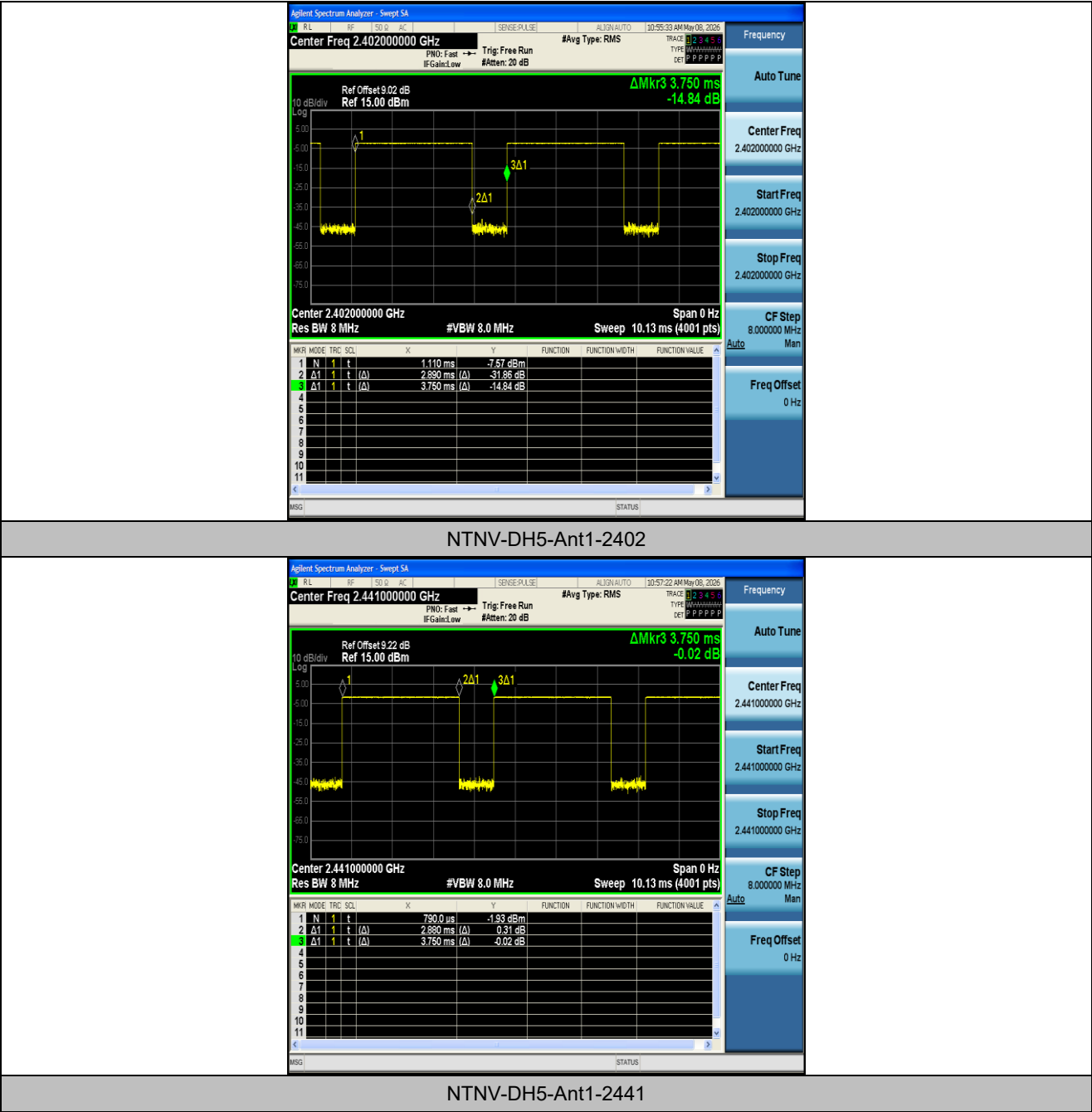
| Test Mode | Antenna | Frequency<br>[MHz] | ON Time<br>[ms] | Period<br>[ms] | Duty Cycle<br>[%] | Duty Cycle<br>Factor<br>[dB] |
|-----------|---------|--------------------|-----------------|----------------|-------------------|------------------------------|
| DH5       | Ant1    | 2402               | 2.89            | 3.75           | 77.07             | 1.13                         |
| DH5       | Ant1    | 2441               | 2.88            | 3.75           | 76.80             | 1.15                         |
| DH5       | Ant1    | 2480               | 2.89            | 3.75           | 77.07             | 1.13                         |
| 2DH5      | Ant1    | 2402               | 2.89            | 3.75           | 77.07             | 1.13                         |
| 2DH5      | Ant1    | 2441               | 2.89            | 3.75           | 77.07             | 1.13                         |
| 2DH5      | Ant1    | 2480               | 2.89            | 3.75           | 77.07             | 1.13                         |

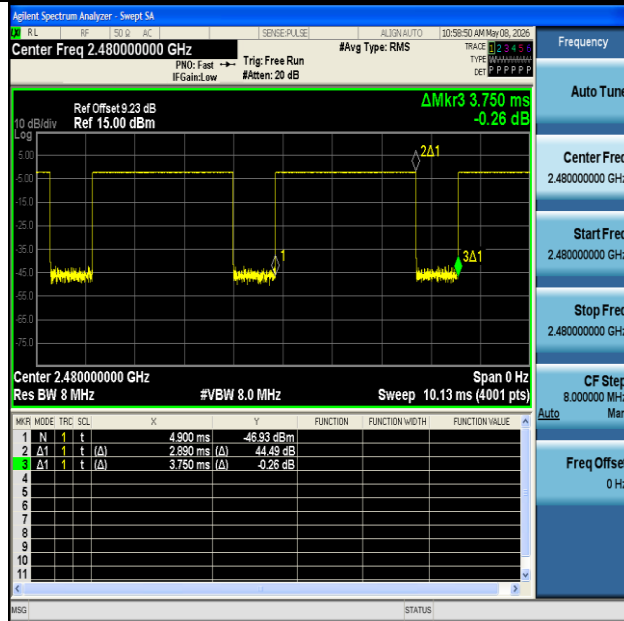
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



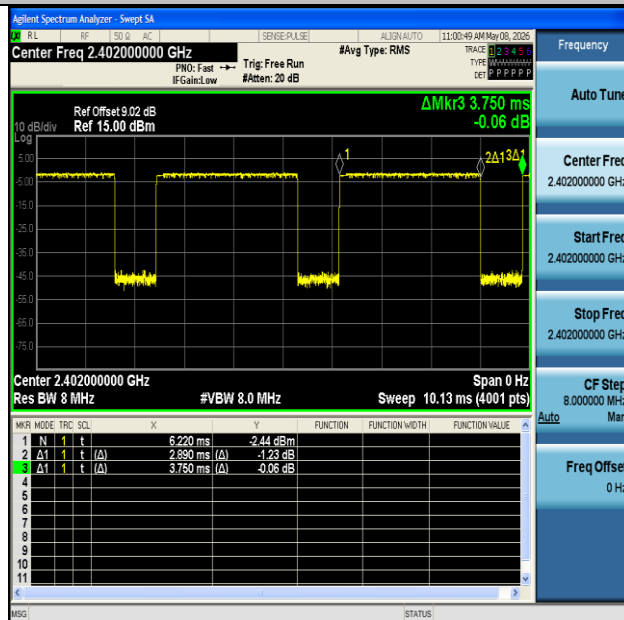


Test Graphs





NTNV-DH5-Ant1-2480

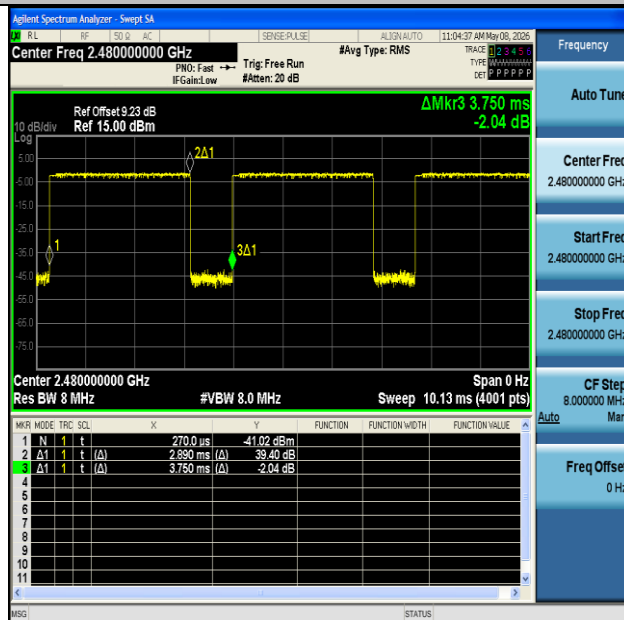


NTNV-2DH5-Ant1-2402





NTNV-2DH5-Ant1-2441



NTNV-2DH5-Ant1-2480

