

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

Product Name: GravaStar Sirius Plus True Wireless Noise Cancelling Earbuds

Trade Mark: GravaStar

Test Model: P9 PLUS

FCC ID: 2ASXF-P9PLUS

### Environmental Conditions

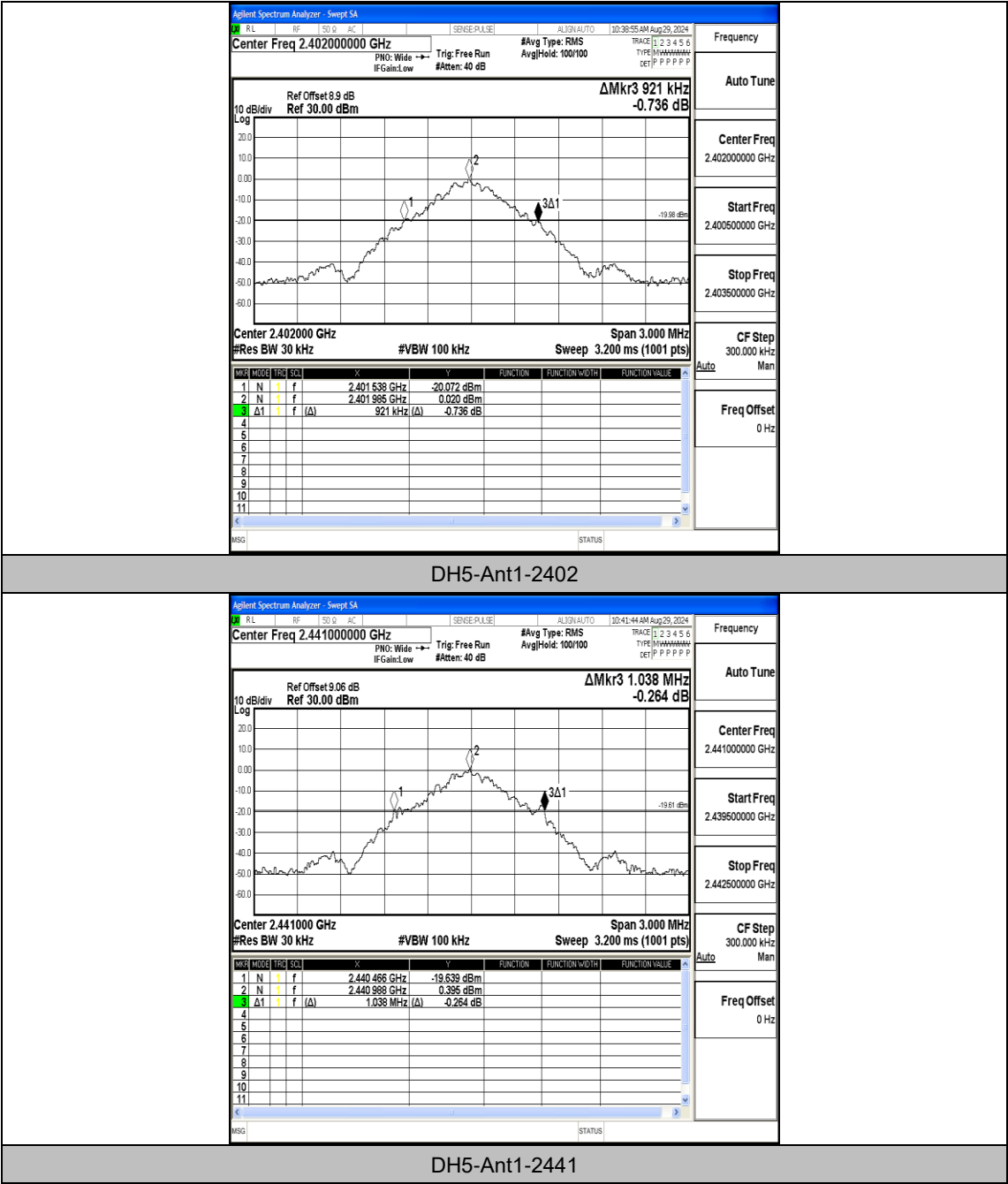
|                    |           |
|--------------------|-----------|
| Temperature:       | 23.8℃     |
| Relative Humidity: | 58%       |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Allen Lai |
| Supervised by:     | Hugo Chen |
| NOTE               | N/A       |

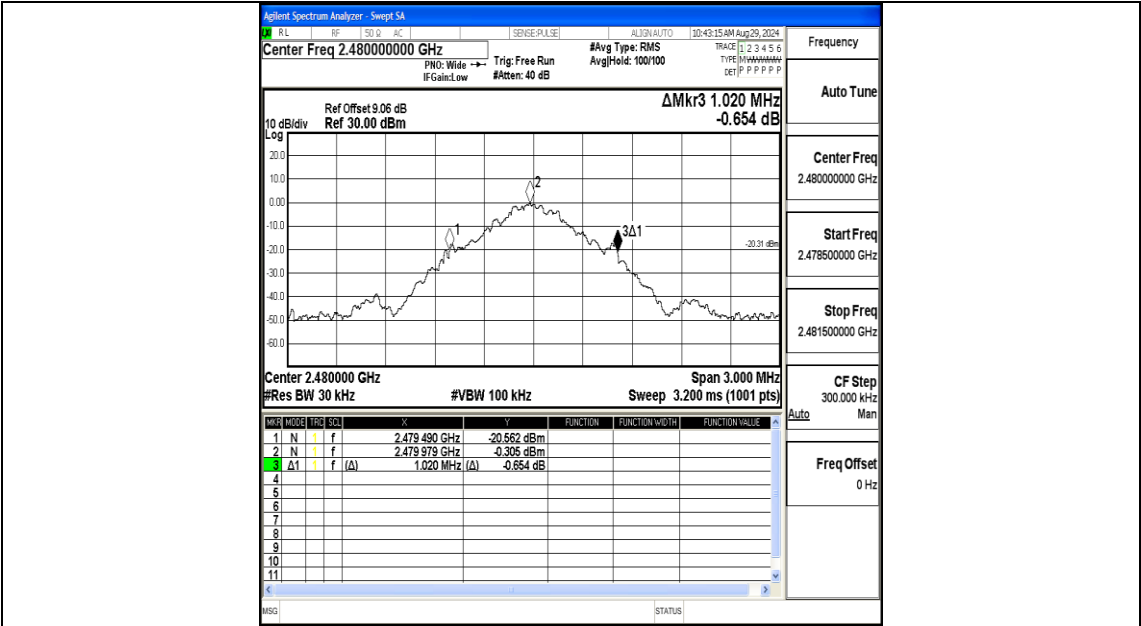
## Appendix A: 20dB Emission Bandwidth

### Test Result

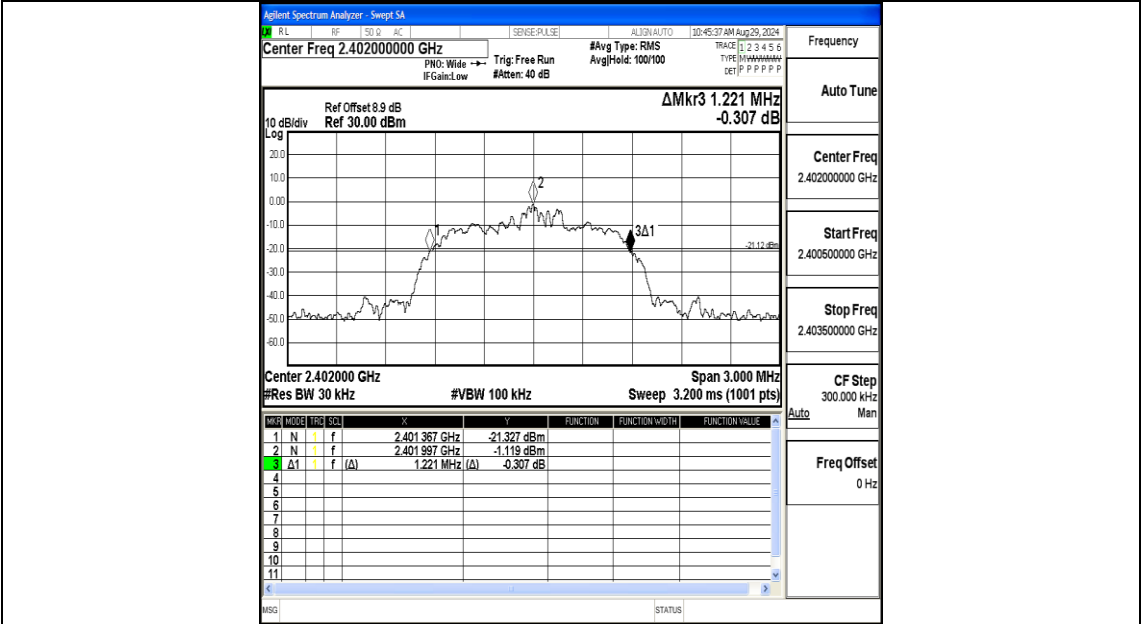
| TestMode | Antenna | Frequency[MHz] | 20db<br>EBW[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|----------------|------------------|----------|----------|------------|---------|
| DH5      | Ant1    | 2402           | 0.921            | 2401.538 | 2402.459 | ---        | ---     |
| DH5      | Ant1    | 2441           | 1.038            | 2440.466 | 2441.504 | ---        | ---     |
| DH5      | Ant1    | 2480           | 1.020            | 2479.490 | 2480.510 | ---        | ---     |
| 2DH5     | Ant1    | 2402           | 1.221            | 2401.367 | 2402.588 | ---        | ---     |
| 2DH5     | Ant1    | 2441           | 1.185            | 2440.391 | 2441.576 | ---        | ---     |
| 2DH5     | Ant1    | 2480           | 1.191            | 2479.385 | 2480.576 | ---        | ---     |
| 3DH5     | Ant1    | 2402           | 1.203            | 2401.397 | 2402.600 | ---        | ---     |
| 3DH5     | Ant1    | 2441           | 1.242            | 2440.358 | 2441.600 | ---        | ---     |
| 3DH5     | Ant1    | 2480           | 1.260            | 2479.349 | 2480.609 | ---        | ---     |

Test Graphs

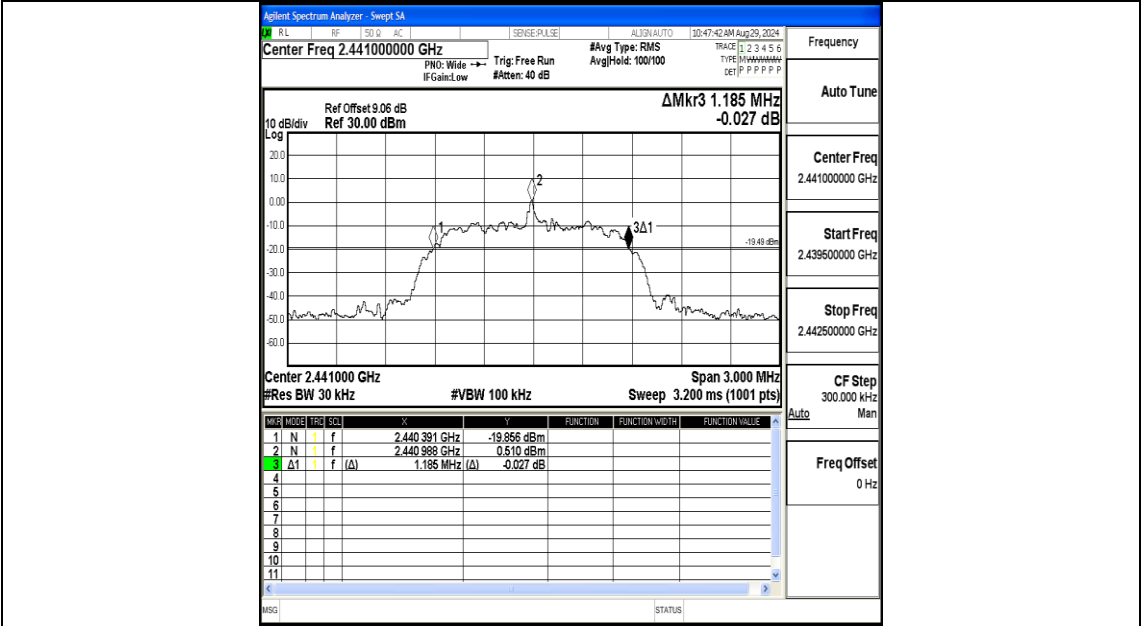




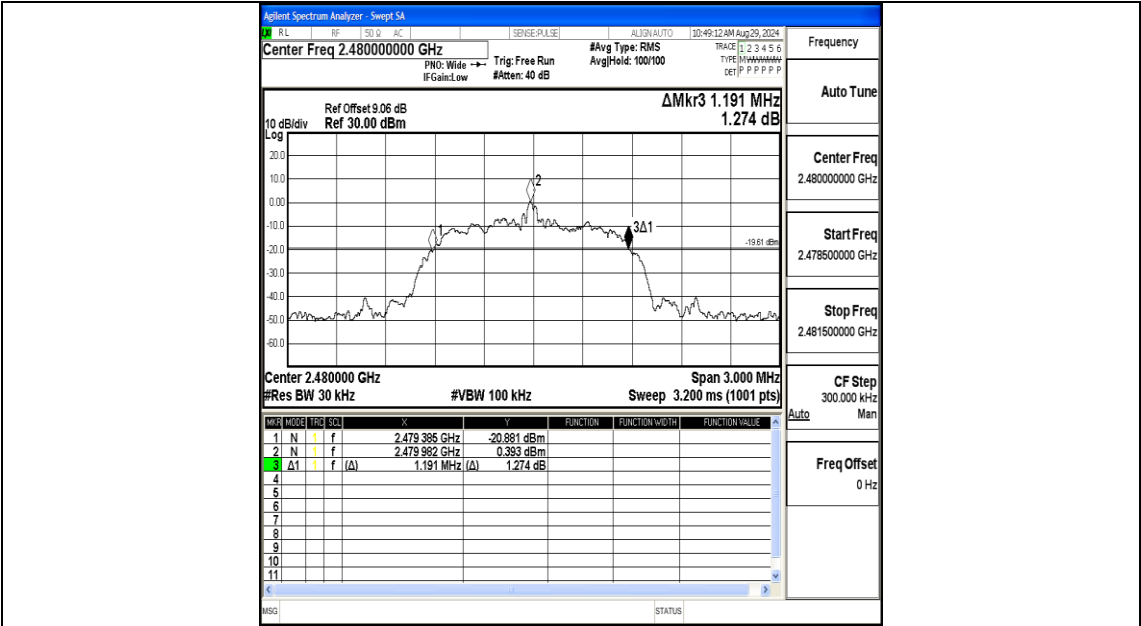
DH5-Ant1-2480



2DH5-Ant1-2402



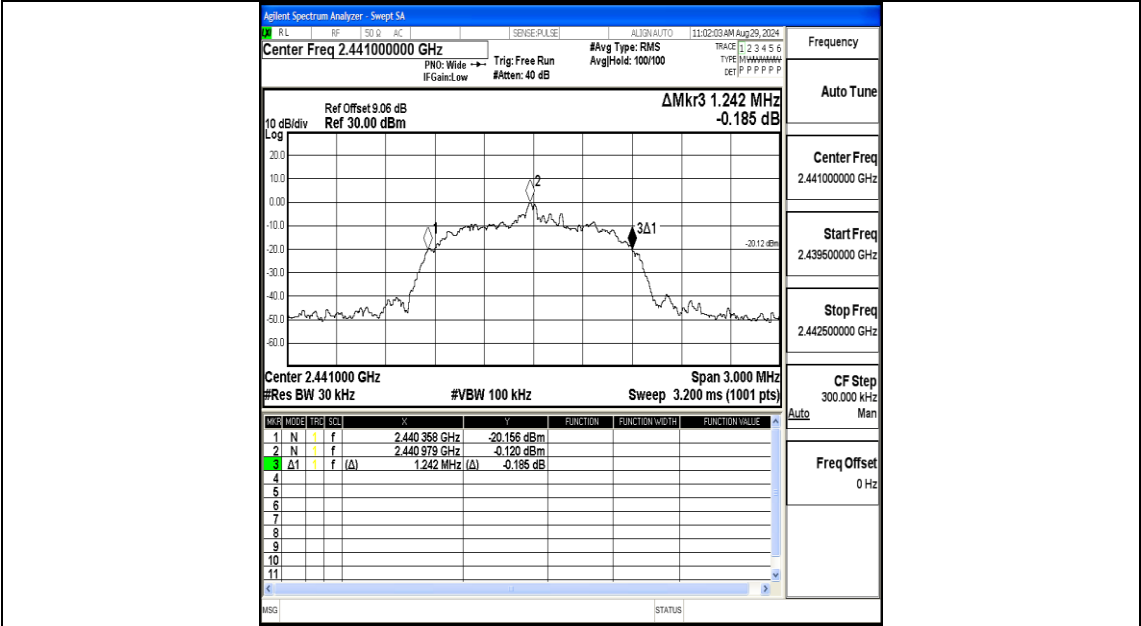
2DH5-Ant1-2441



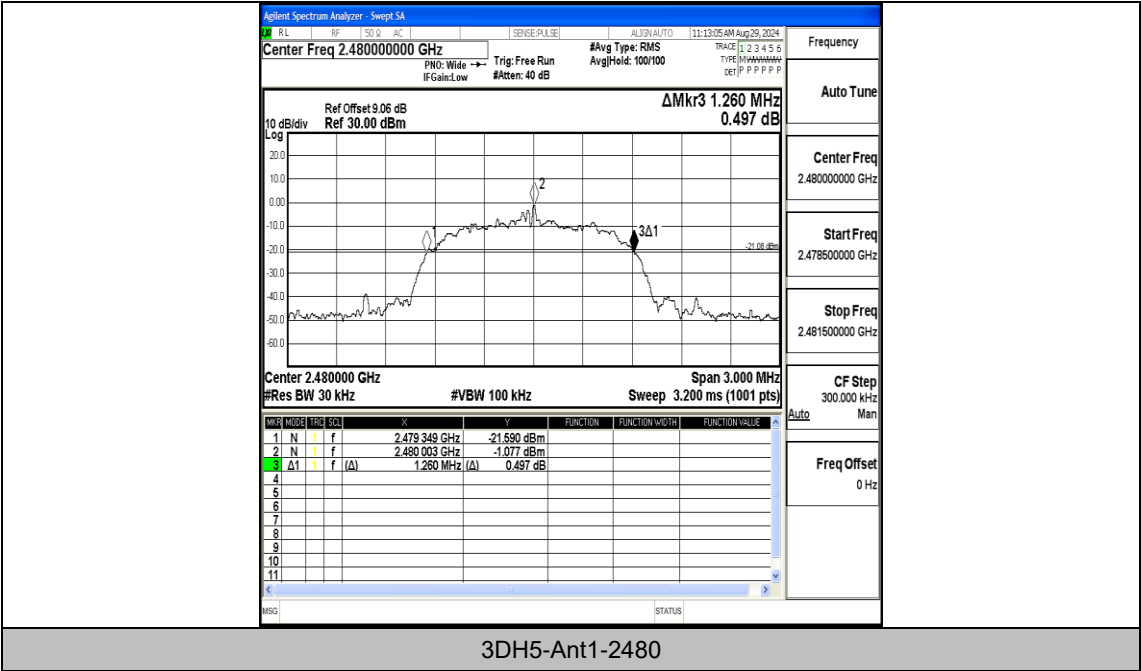
2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-Ant1-2441

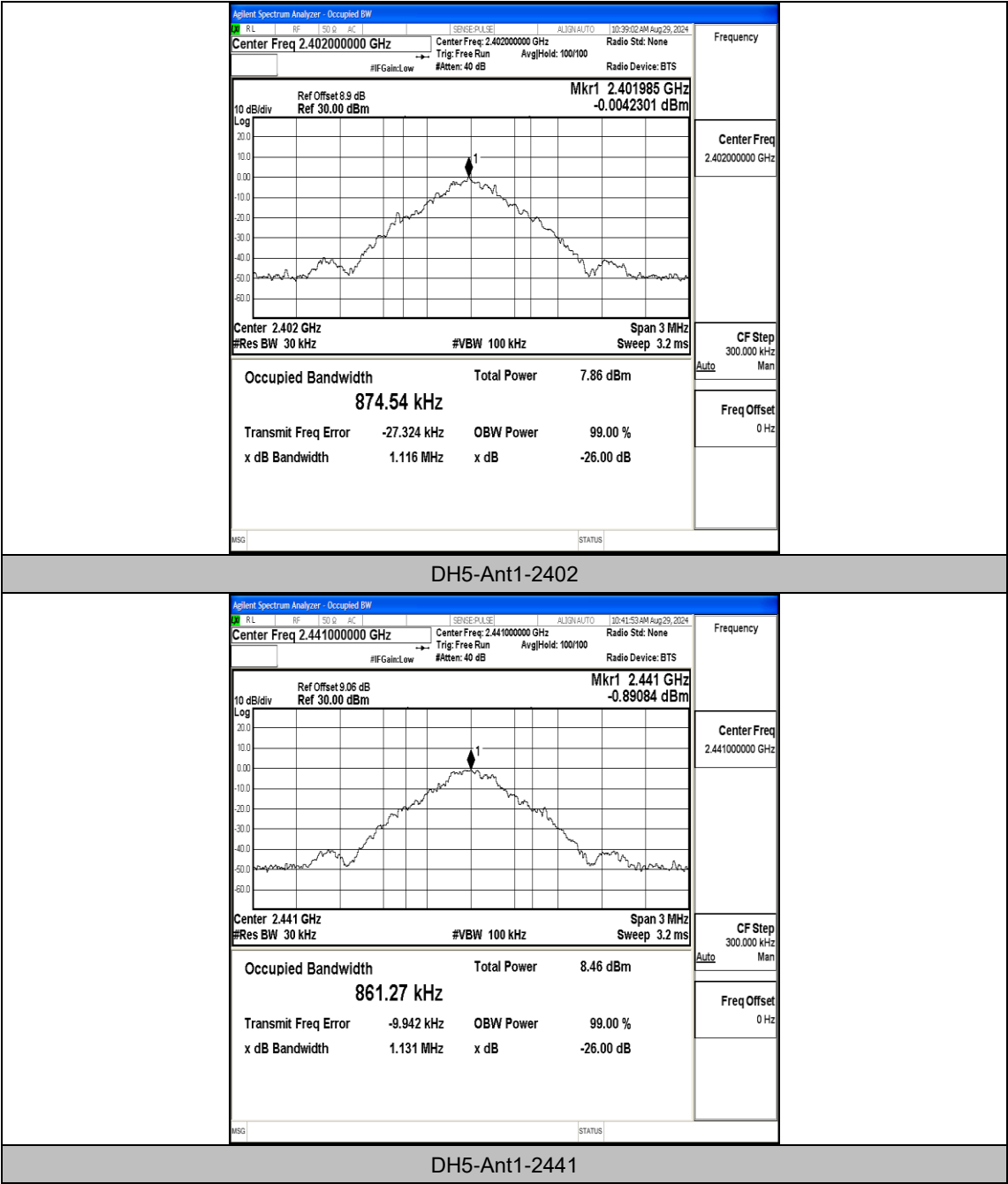


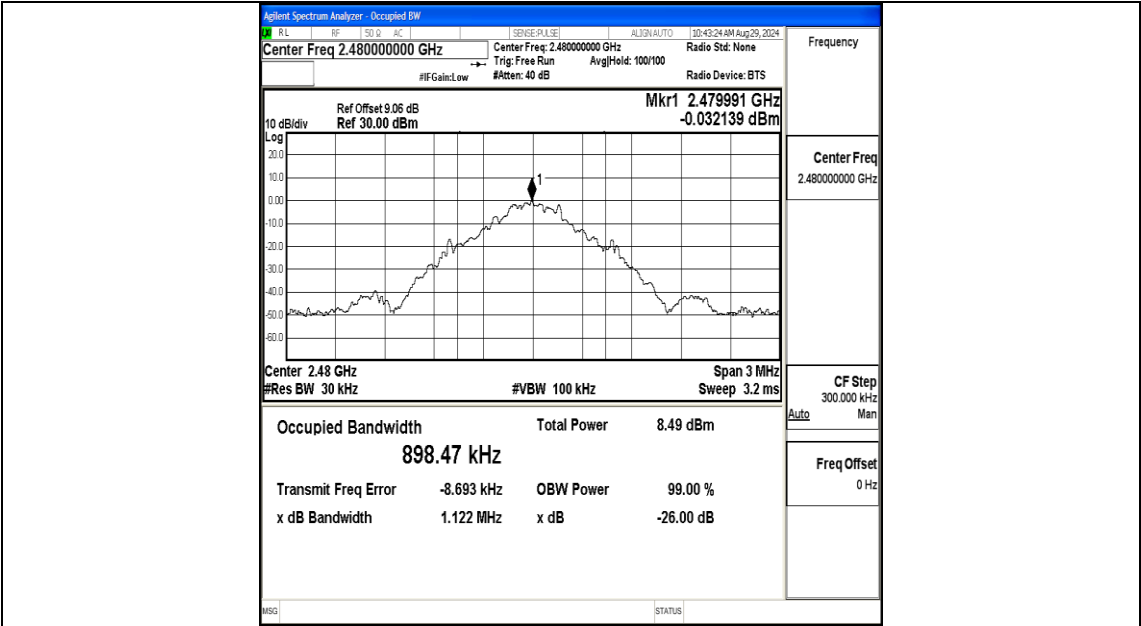
## Appendix B: Occupied Channel Bandwidth

### Test Result

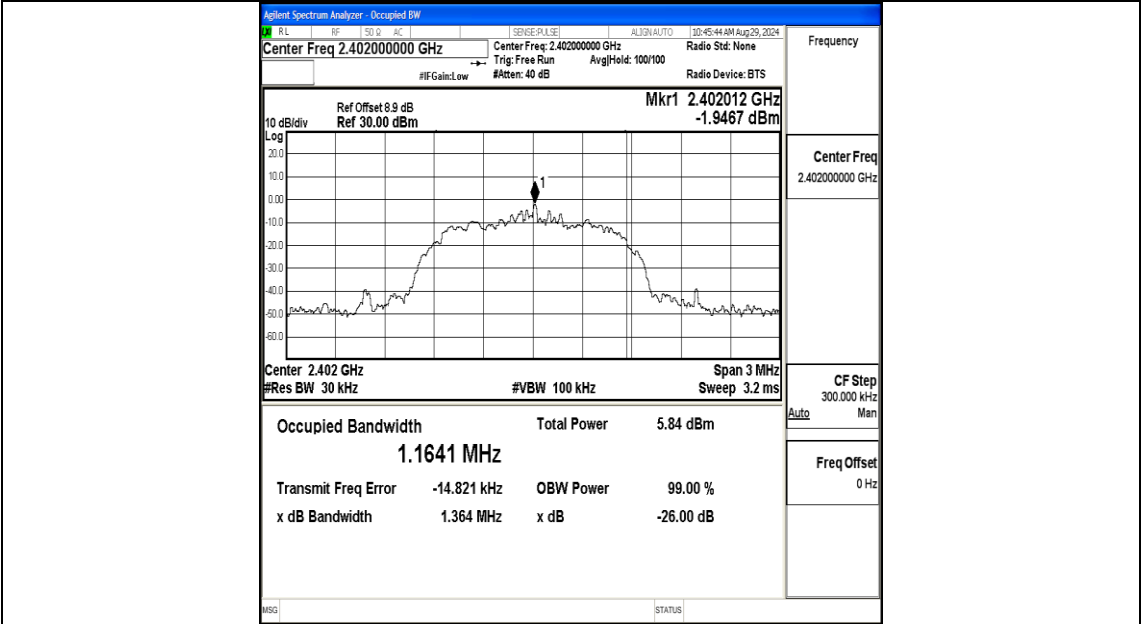
| TestMode | Antenna | Frequency[MHz] | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|----------|---------|----------------|-----------|-----------|-----------|------------|---------|
| DH5      | Ant1    | 2402           | 0.87454   | 2401.5354 | 2402.4100 | ---        | ---     |
| DH5      | Ant1    | 2441           | 0.86127   | 2440.5594 | 2441.4207 | ---        | ---     |
| DH5      | Ant1    | 2480           | 0.89847   | 2479.5421 | 2480.4405 | ---        | ---     |
| 2DH5     | Ant1    | 2402           | 1.1641    | 2401.4031 | 2402.5672 | ---        | ---     |
| 2DH5     | Ant1    | 2441           | 1.1384    | 2440.4183 | 2441.5567 | ---        | ---     |
| 2DH5     | Ant1    | 2480           | 1.1487    | 2479.4106 | 2480.5593 | ---        | ---     |
| 3DH5     | Ant1    | 2402           | 1.1481    | 2401.4207 | 2402.5688 | ---        | ---     |
| 3DH5     | Ant1    | 2441           | 1.1581    | 2440.4135 | 2441.5716 | ---        | ---     |
| 3DH5     | Ant1    | 2480           | 1.1379    | 2479.4215 | 2480.5594 | ---        | ---     |

Test Graphs

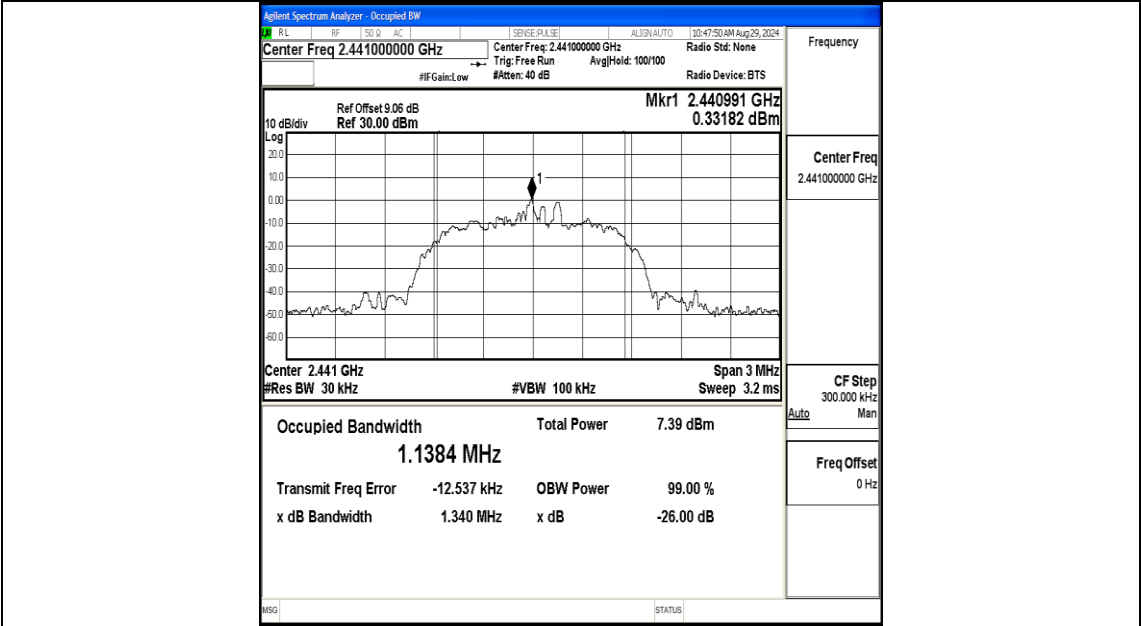




DH5-Ant1-2480

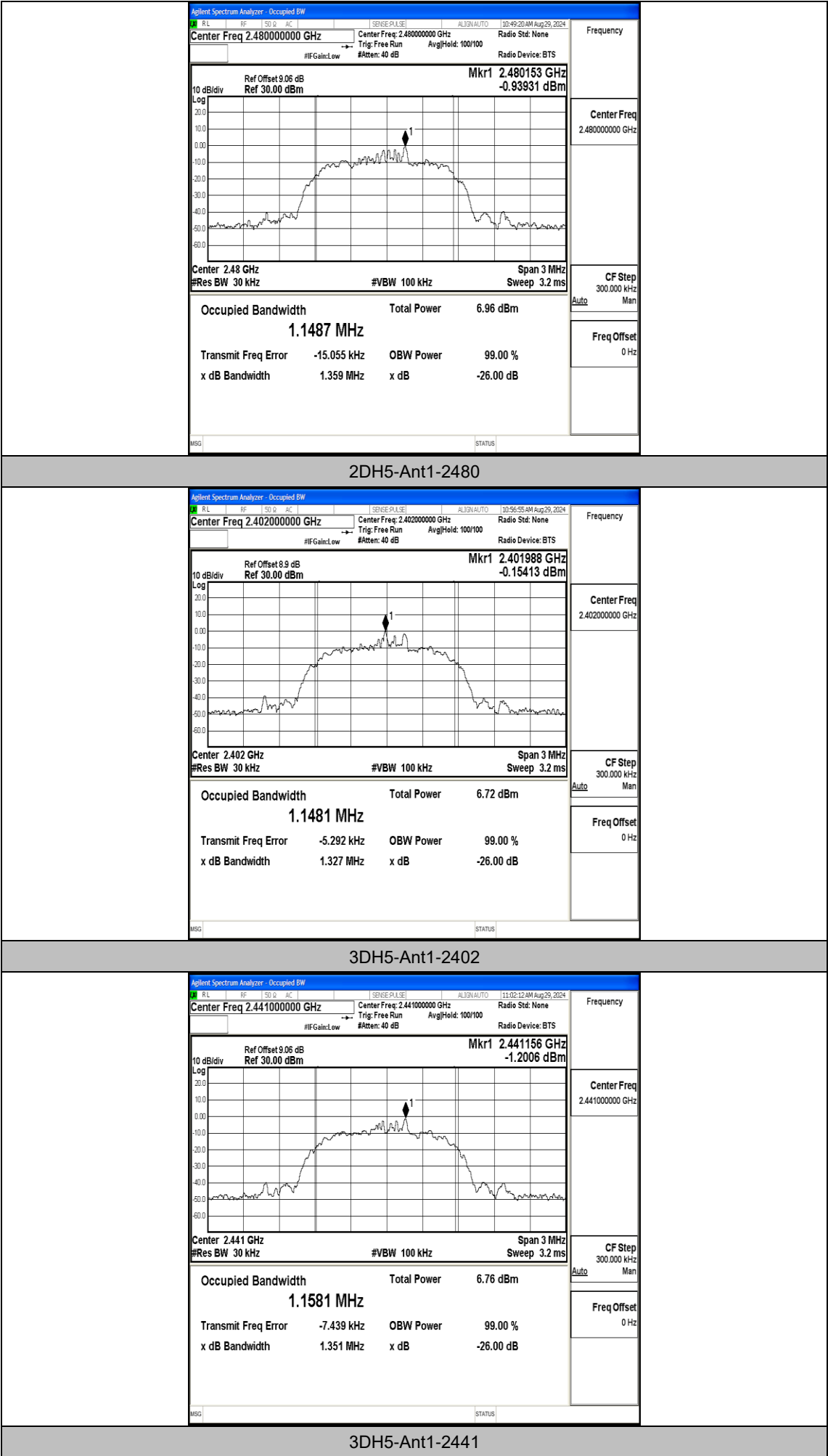


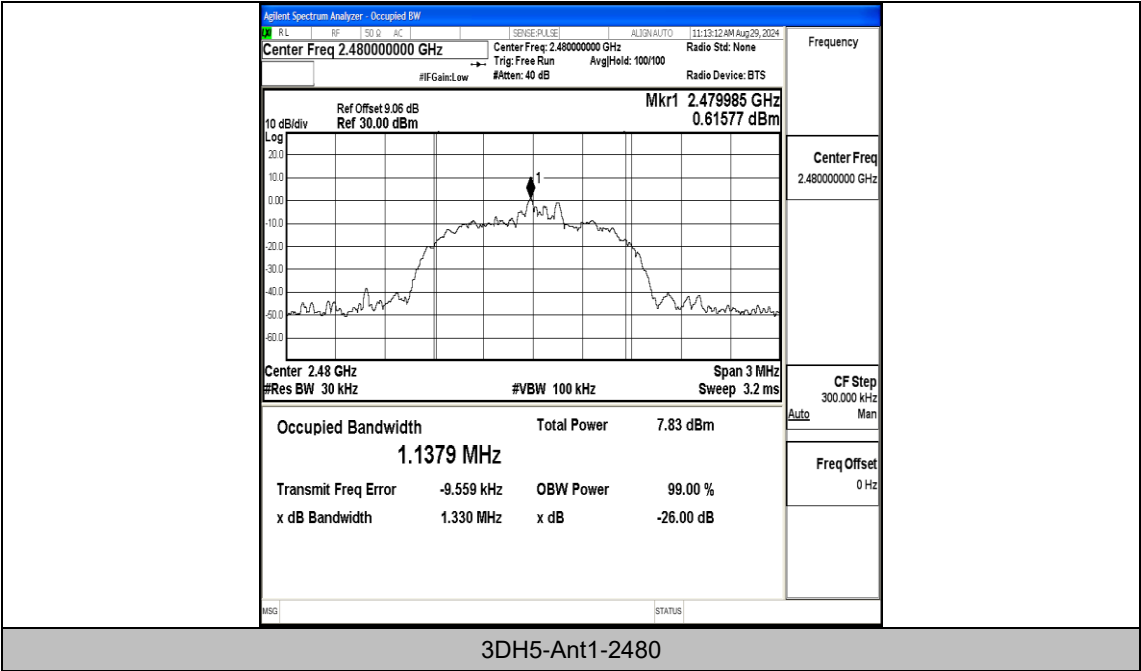
2DH5-Ant1-2402



2DH5-Ant1-2441





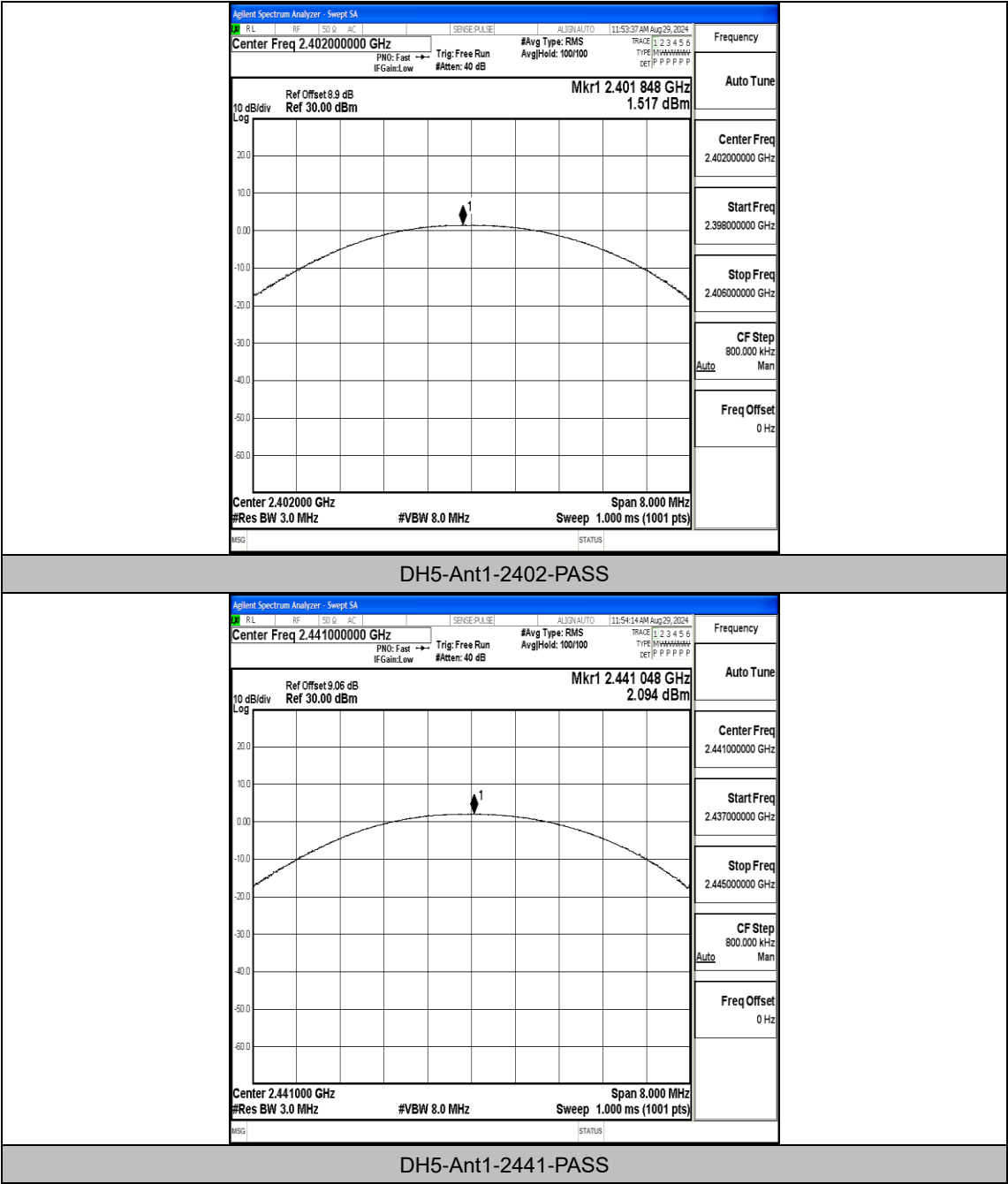


## Appendix C: Maximum peak conducted output power

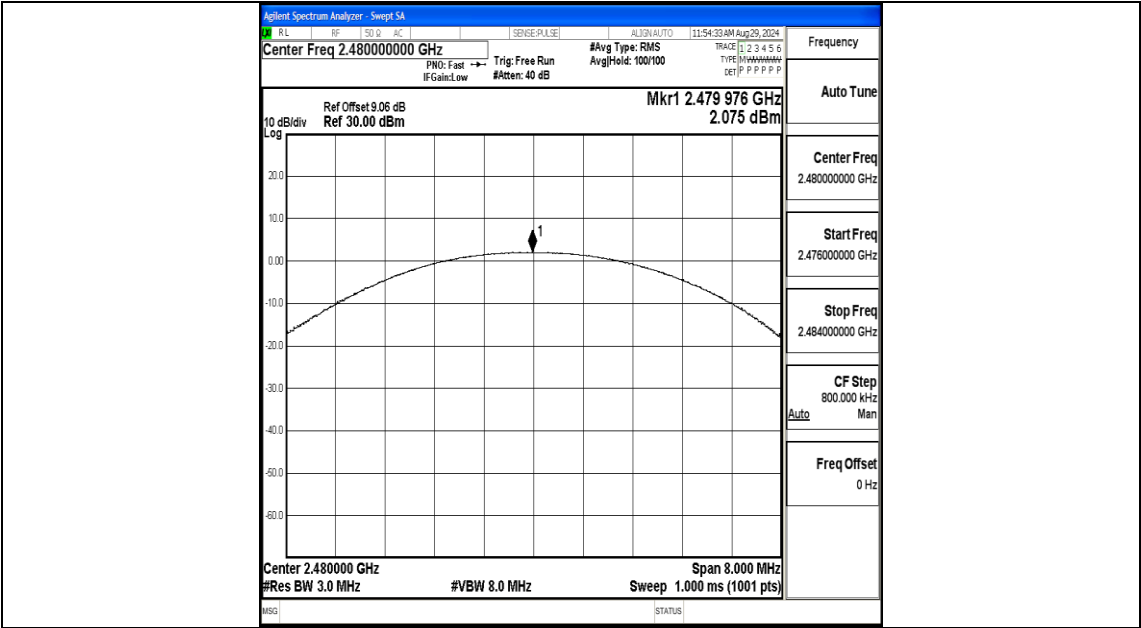
### Test Result

| Test Mode | Antenna | Frequency[MHz] | Conducted Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|-----------|---------|----------------|---------------------------|----------------------|---------|
| DH5       | Ant1    | 2402           | 1.52                      | ≤20.97               | PASS    |
| DH5       | Ant1    | 2441           | 2.09                      | ≤20.97               | PASS    |
| DH5       | Ant1    | 2480           | 2.08                      | ≤20.97               | PASS    |
| 2DH5      | Ant1    | 2402           | 1.52                      | ≤20.97               | PASS    |
| 2DH5      | Ant1    | 2441           | 1.98                      | ≤20.97               | PASS    |
| 2DH5      | Ant1    | 2480           | 1.98                      | ≤20.97               | PASS    |
| 3DH5      | Ant1    | 2402           | 1.45                      | ≤20.97               | PASS    |
| 3DH5      | Ant1    | 2441           | 2.07                      | ≤20.97               | PASS    |
| 3DH5      | Ant1    | 2480           | 2.01                      | ≤20.97               | PASS    |

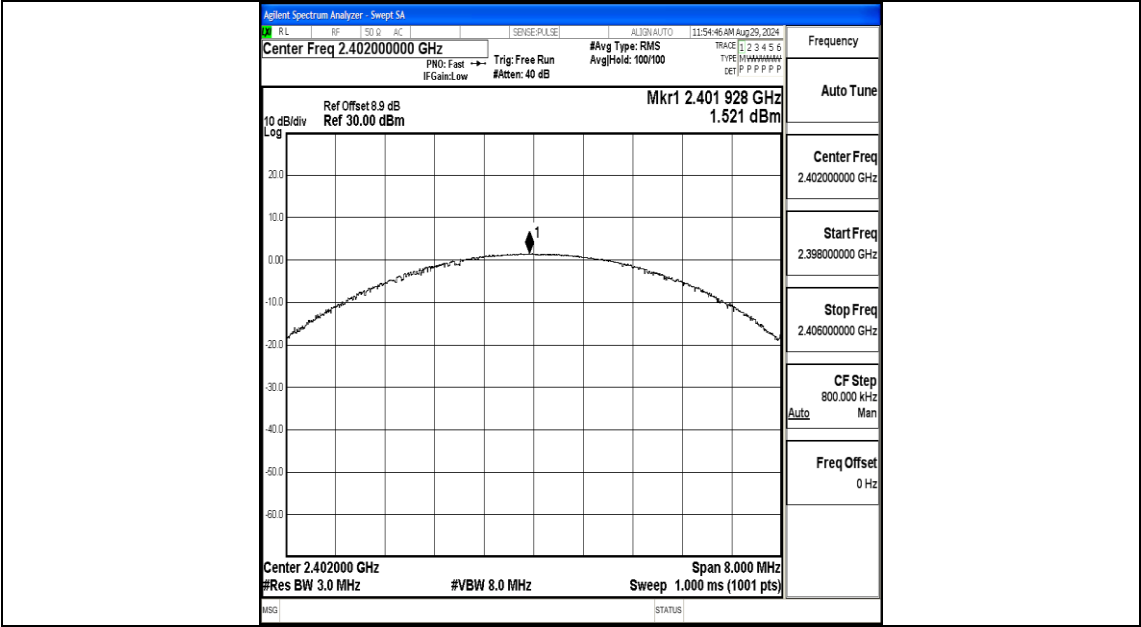
Test Graphs



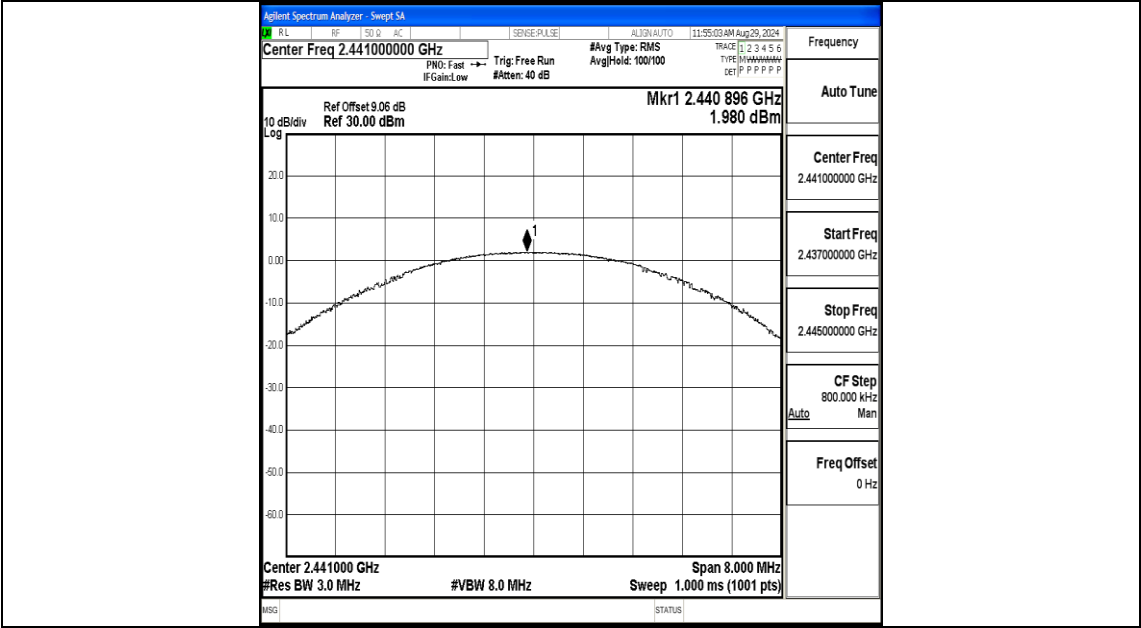
DH5-Ant1-2441-PASS



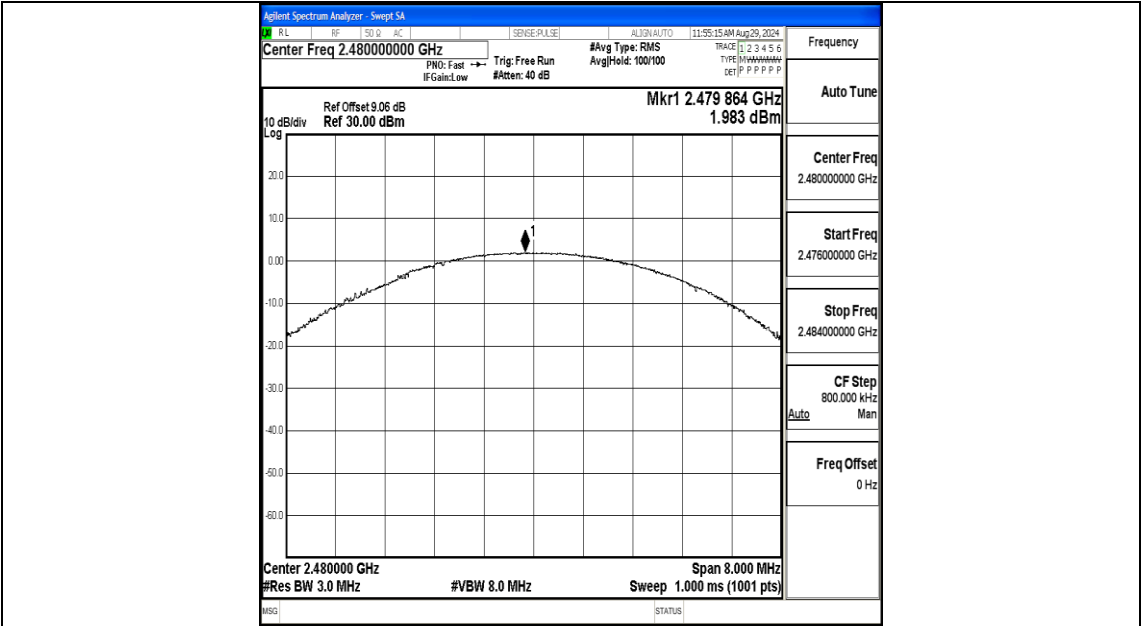
DH5-Ant1-2480-PASS



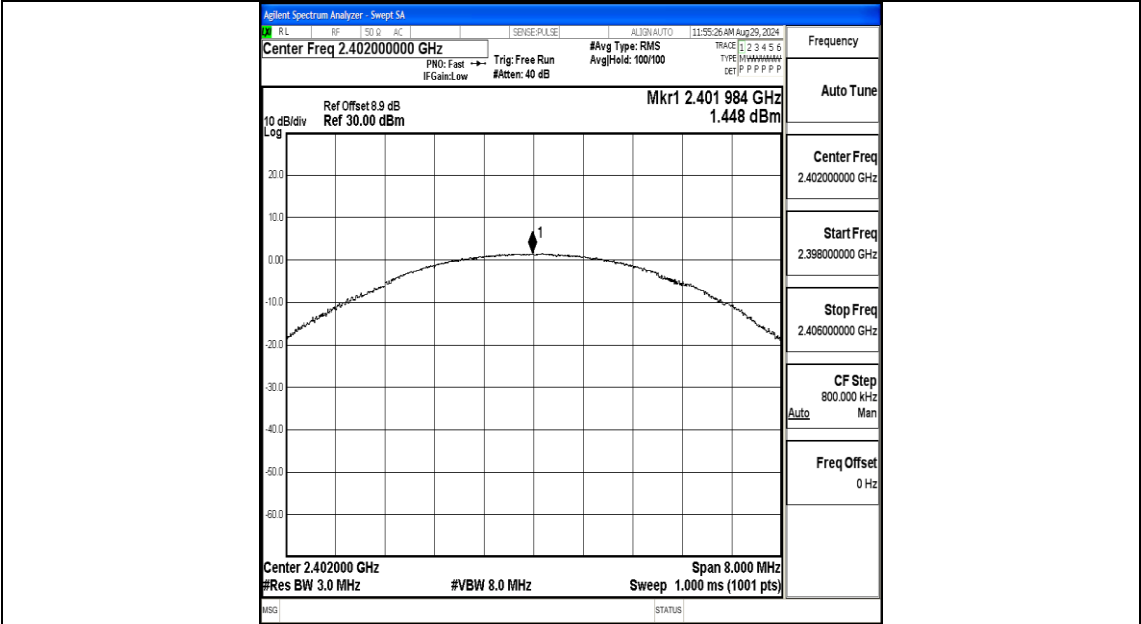
2DH5-Ant1-2402-PASS



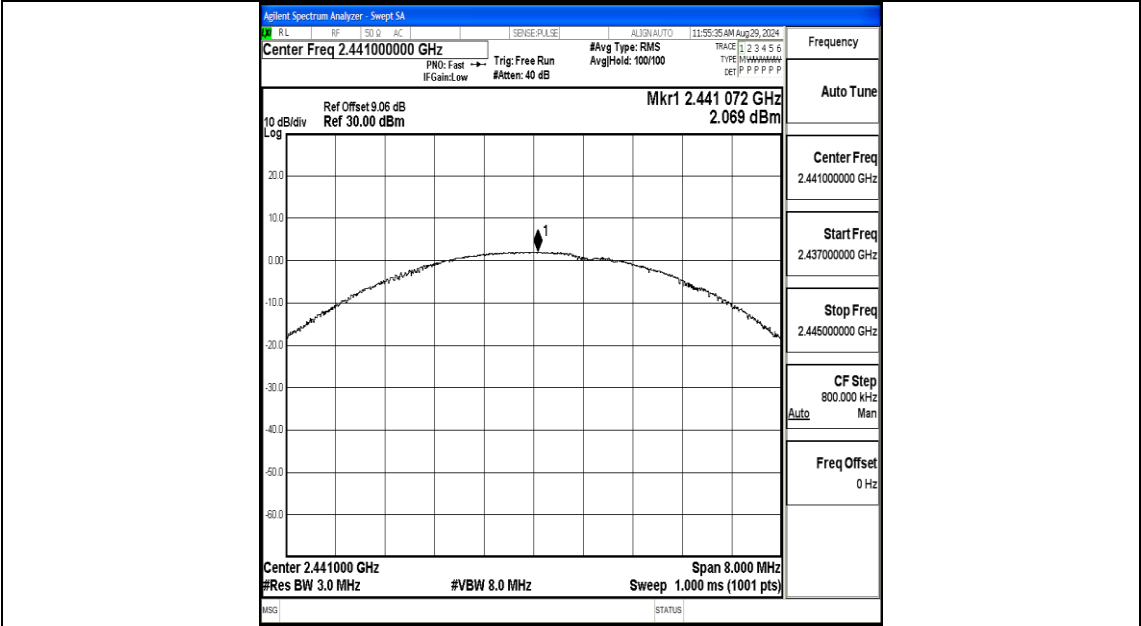
2DH5-Ant1-2441-PASS



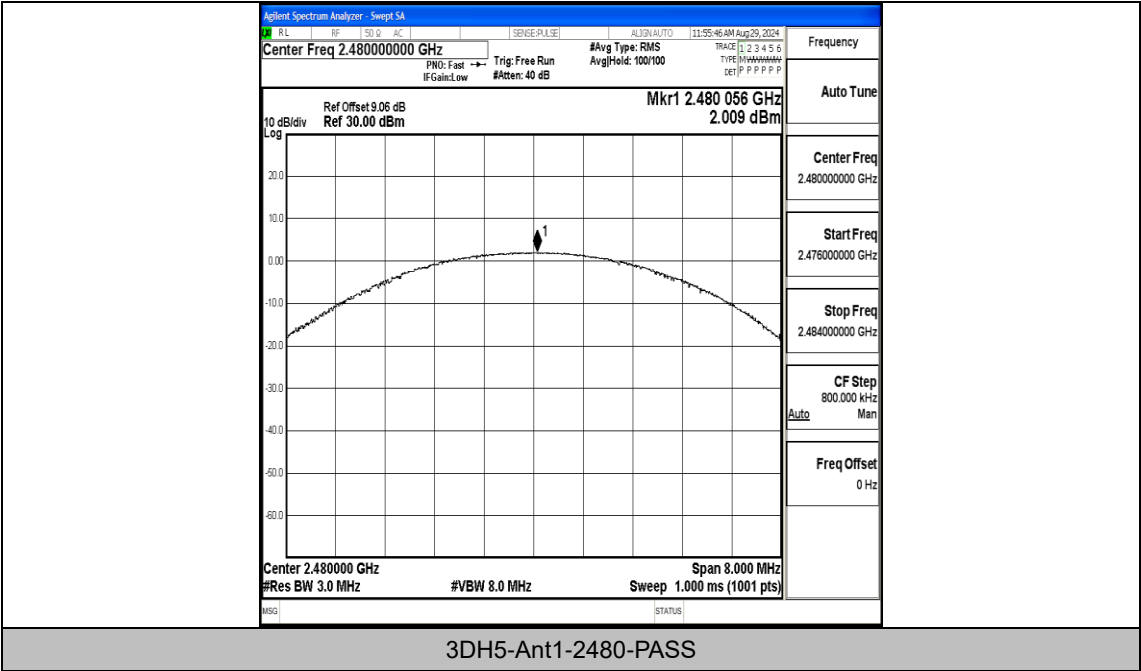
2DH5-Ant1-2480-PASS



3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS



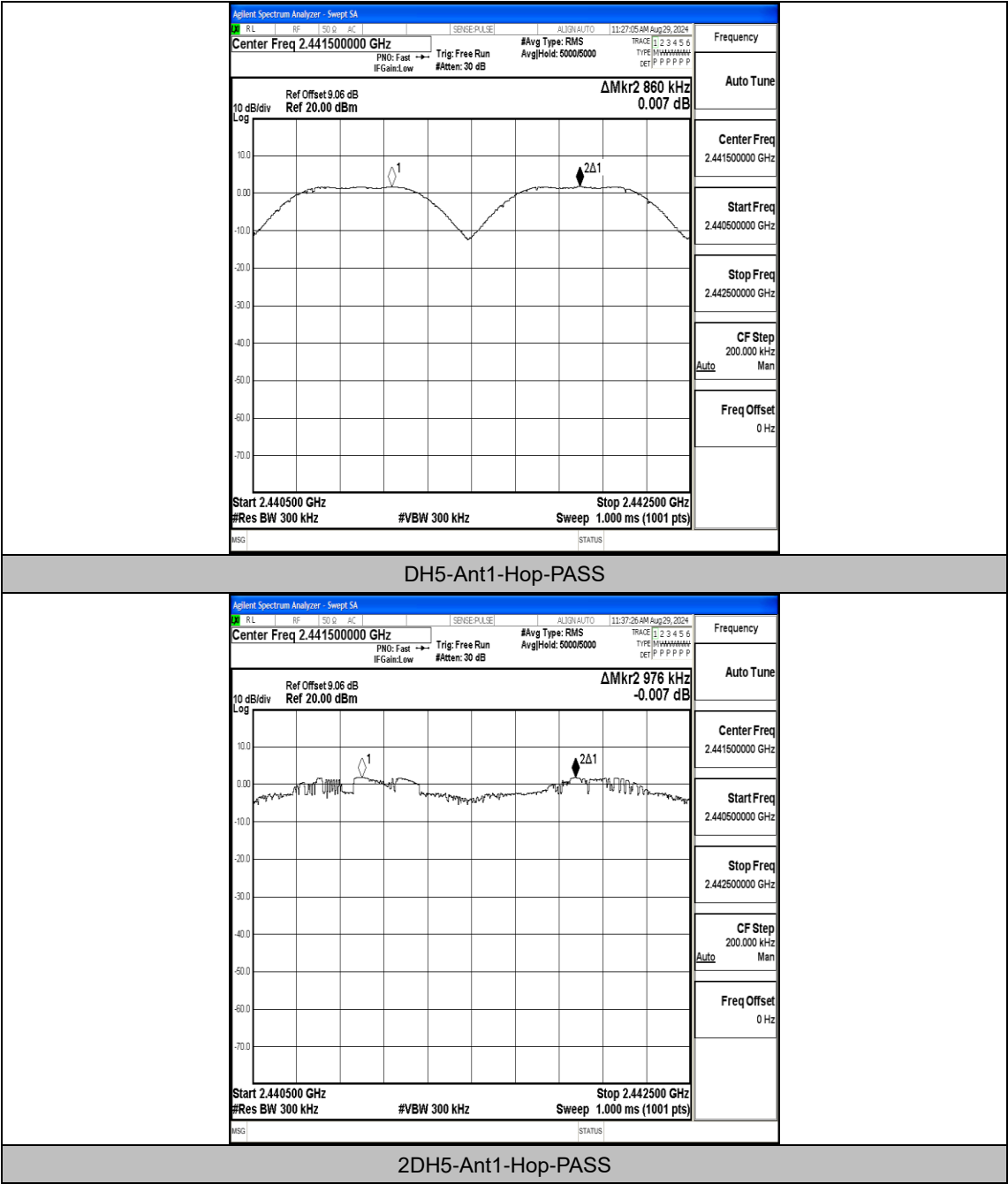
## Appendix D: Carrier frequency separation

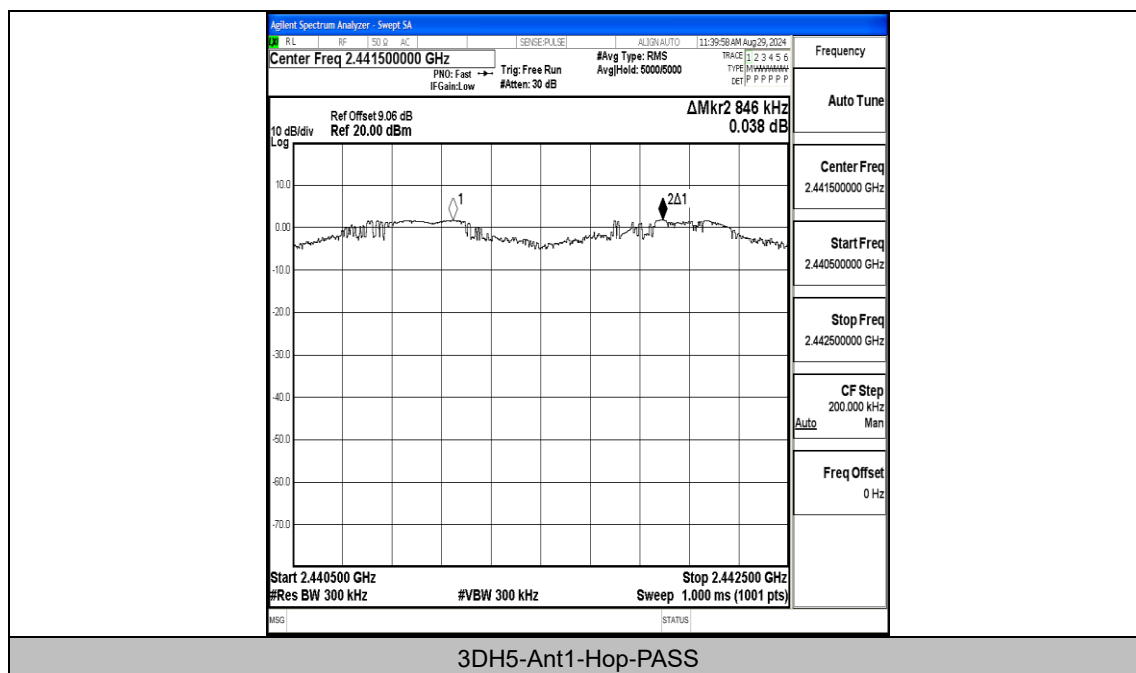
### Test Result

| TestMode | Antenna | Frequency[MHz] | Result[MHz] | Limit[MHz]   | Verdict |
|----------|---------|----------------|-------------|--------------|---------|
| DH5      | Ant1    | Hop            | 0.860       | $\geq 0.692$ | PASS    |
| 2DH5     | Ant1    | Hop            | 0.976       | $\geq 0.814$ | PASS    |
| 3DH5     | Ant1    | Hop            | 0.846       | $\geq 0.840$ | PASS    |



Test Graphs



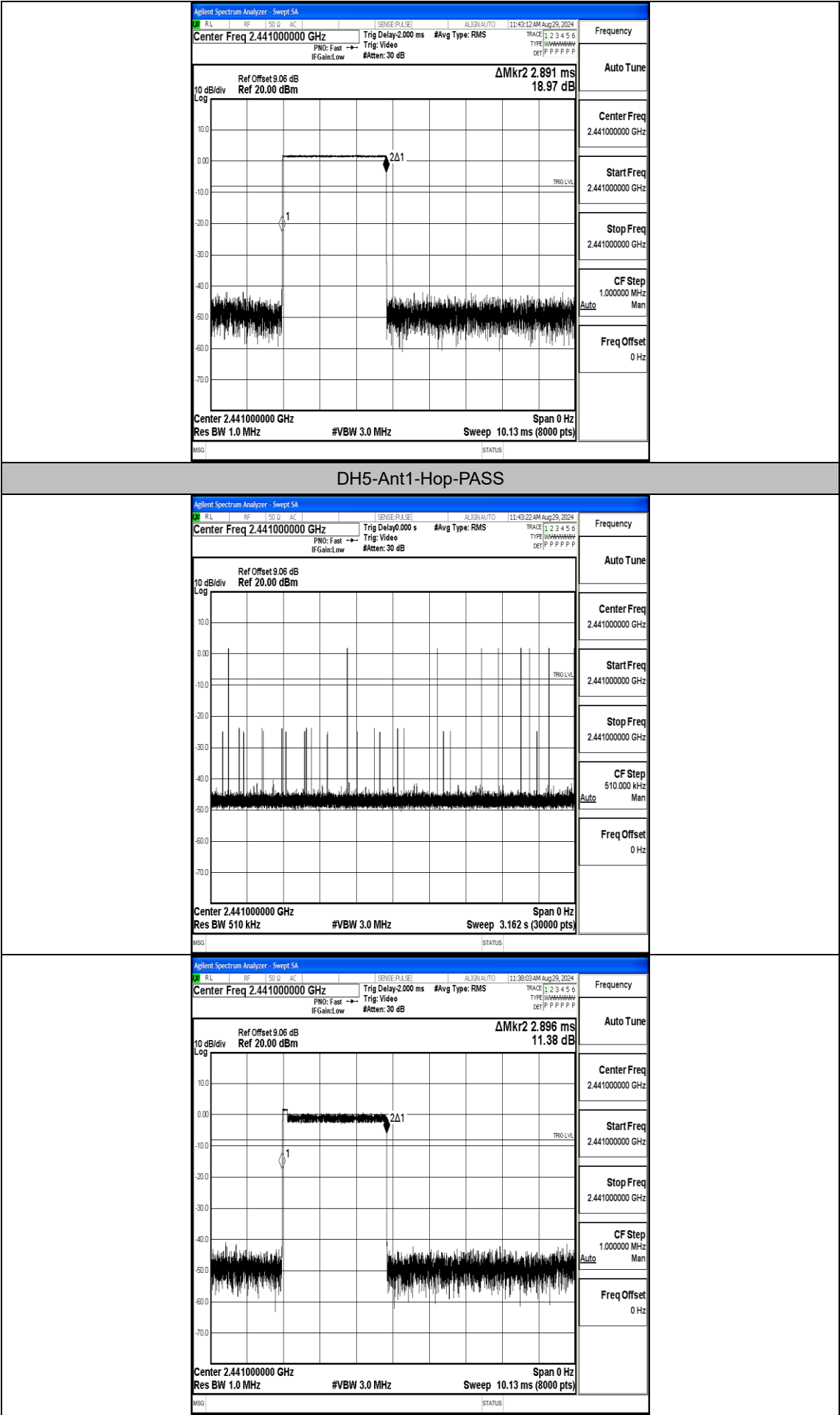


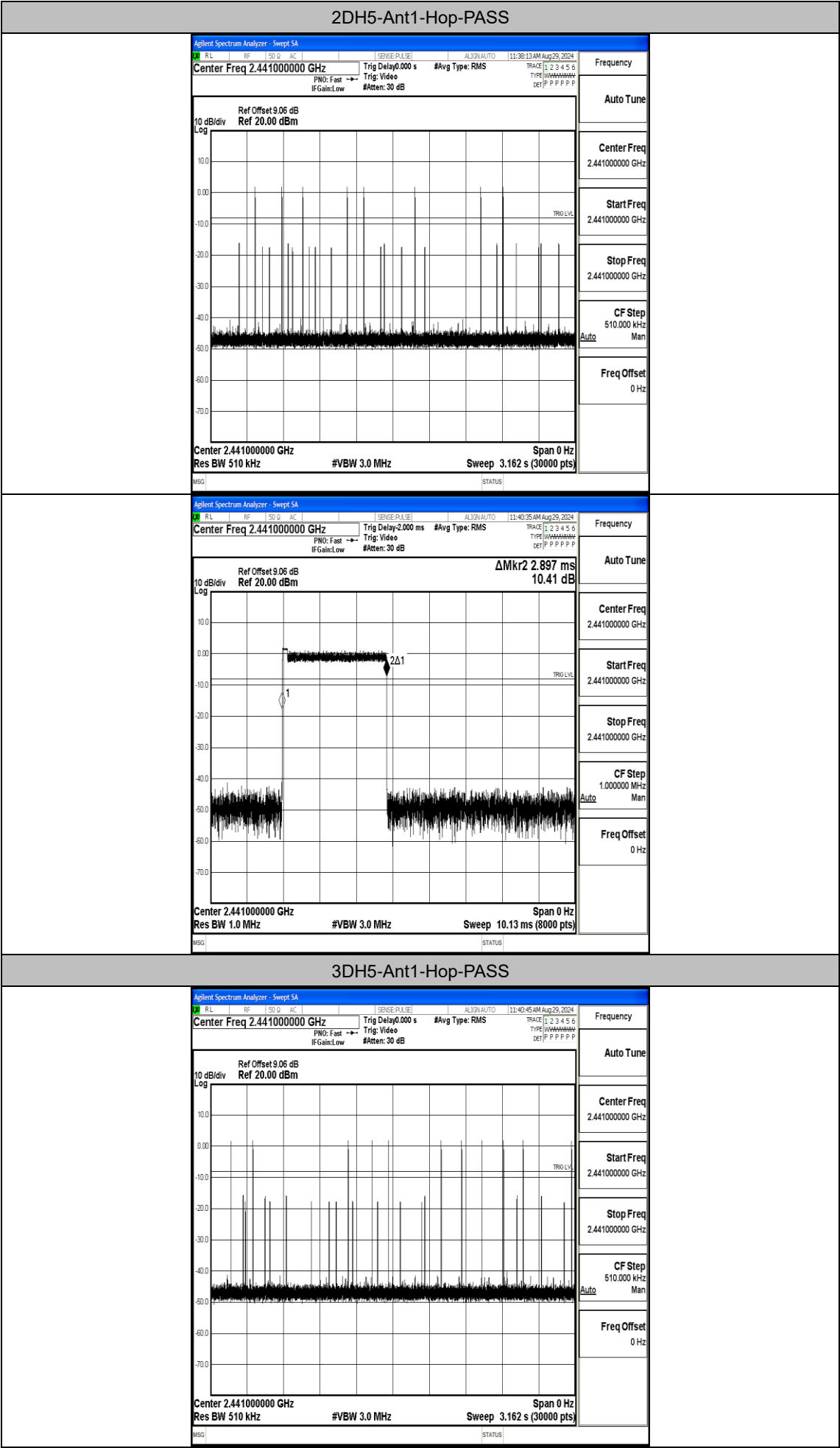
## Appendix E: Time of occupancy

### Test Result

| TestMode | Antenna | Frequency[MHz] | BurstWidth<br>[ms] | TotalHops<br>[Num] | Result[s] | Limit[s] | Verdict |
|----------|---------|----------------|--------------------|--------------------|-----------|----------|---------|
| DH5      | Ant1    | Hop            | 2.891              | 100                | 0.289     | ≤0.4     | PASS    |
| 2DH5     | Ant1    | Hop            | 2.896              | 100                | 0.29      | ≤0.4     | PASS    |
| 3DH5     | Ant1    | Hop            | 2.897              | 120                | 0.348     | ≤0.4     | PASS    |

Test Graphs



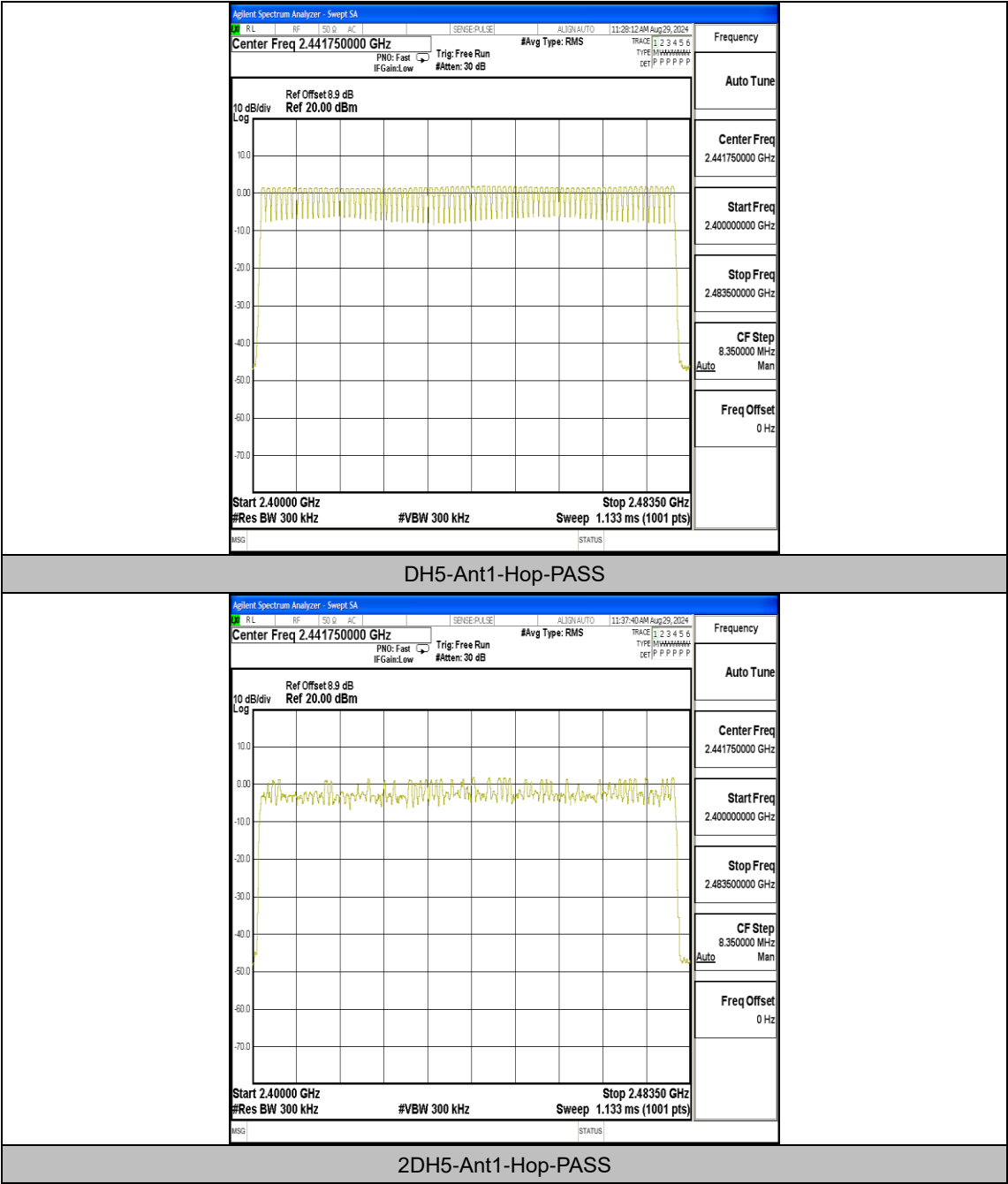


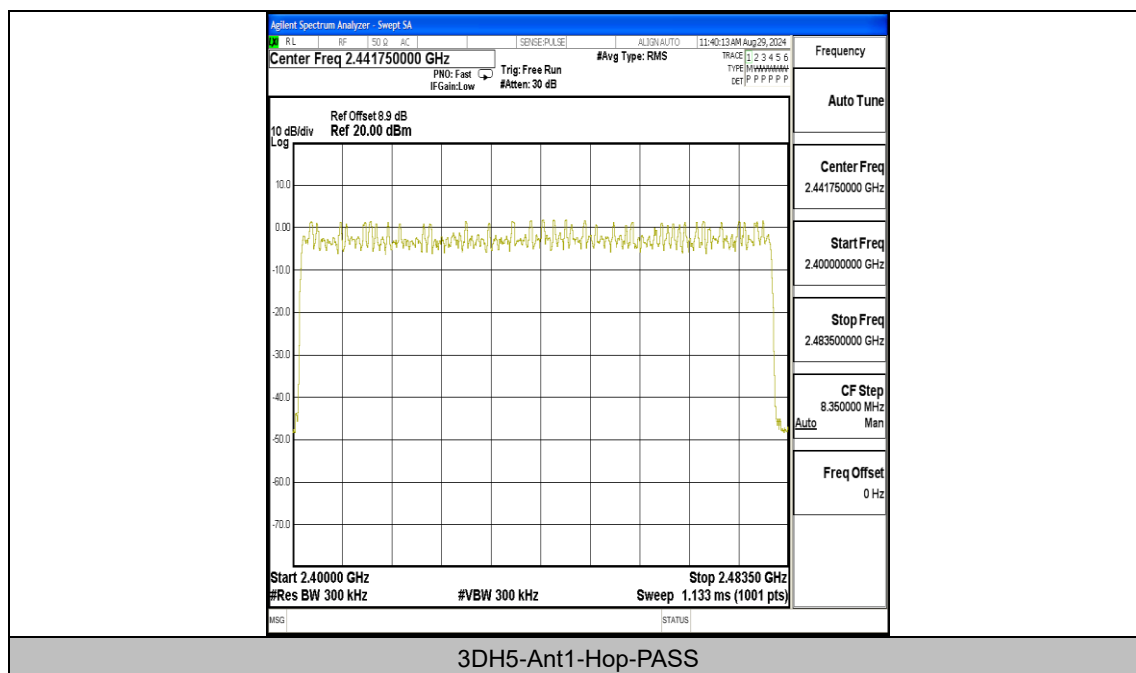
## Appendix F: Number of hopping channels

### Test Result

| TestMode | Antenna | Frequency[MHz] | Result[Num] | Limit[Num] | Verdict |
|----------|---------|----------------|-------------|------------|---------|
| DH5      | Ant1    | Hop            | 79          | ≥15        | PASS    |
| 2DH5     | Ant1    | Hop            | 79          | ≥15        | PASS    |
| 3DH5     | Ant1    | Hop            | 79          | ≥15        | PASS    |

Test Graphs





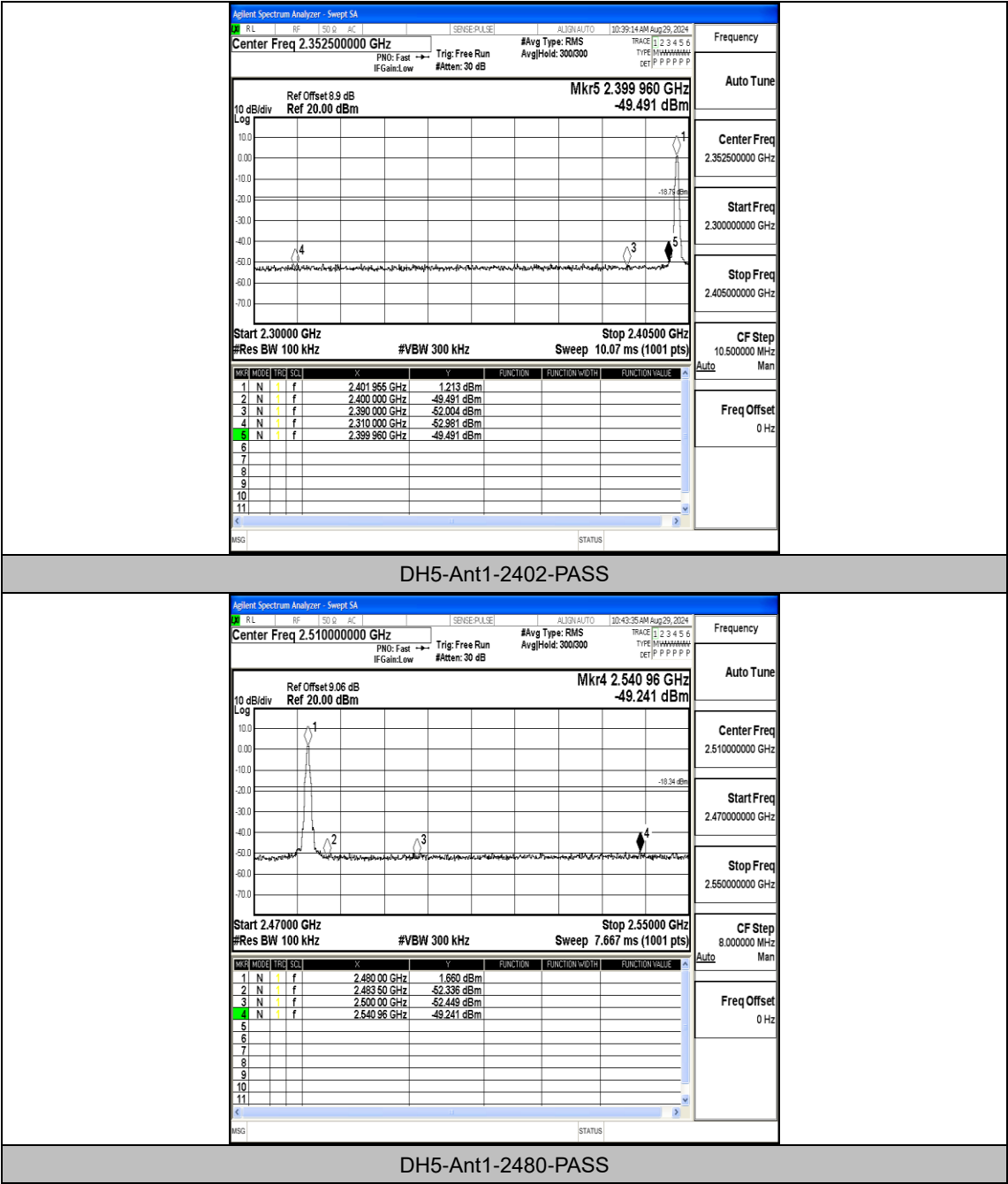


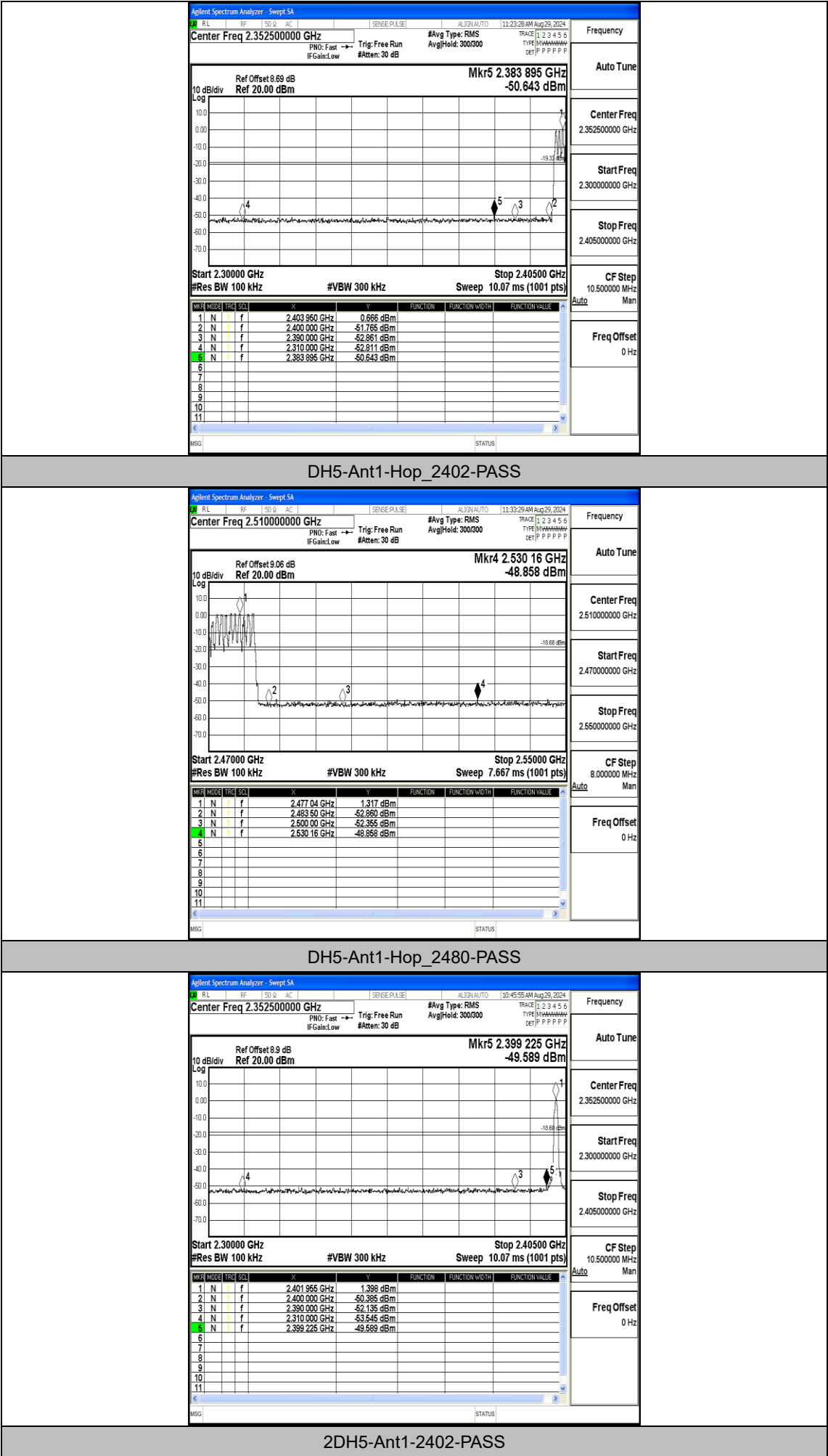
## Appendix G: Band edge measurements

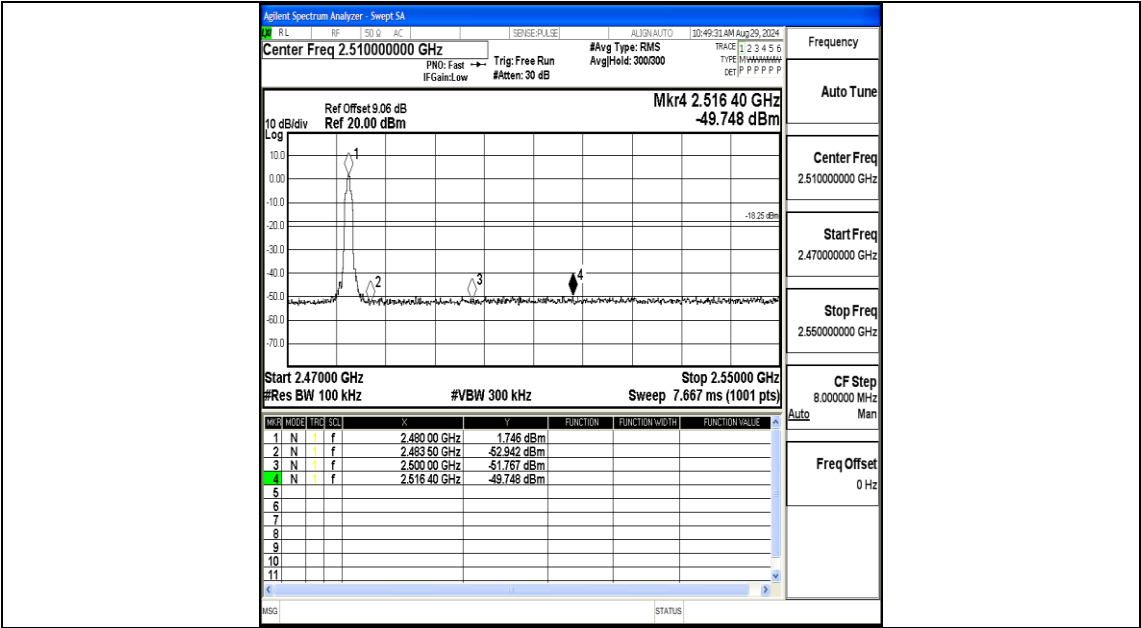
### Test Result

| TestMode | Antenna | ChName | Frequency[MHz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|----------|---------|--------|----------------|----------------|--------------|-------------|---------|
| DH5      | Ant1    | Low    | 2402           | 1.21           | -49.49       | ≤-18.79     | PASS    |
| DH5      | Ant1    | High   | 2480           | 1.66           | -49.24       | ≤-18.34     | PASS    |
| DH5      | Ant1    | Low    | Hop_2402       | 0.67           | -50.64       | ≤-19.33     | PASS    |
| DH5      | Ant1    | High   | Hop_2480       | 1.32           | -48.86       | ≤-18.68     | PASS    |
| 2DH5     | Ant1    | Low    | 2402           | 1.40           | -49.59       | ≤-18.6      | PASS    |
| 2DH5     | Ant1    | High   | 2480           | 1.75           | -49.75       | ≤-18.25     | PASS    |
| 2DH5     | Ant1    | Low    | Hop_2402       | -3.95          | -50.26       | ≤-23.95     | PASS    |
| 2DH5     | Ant1    | High   | Hop_2480       | 1.70           | -48.89       | ≤-18.3      | PASS    |
| 3DH5     | Ant1    | Low    | 2402           | -0.48          | -49.17       | ≤-20.48     | PASS    |
| 3DH5     | Ant1    | High   | 2480           | 1.76           | -49.03       | ≤-18.25     | PASS    |
| 3DH5     | Ant1    | Low    | Hop_2402       | -0.63          | -50.66       | ≤-20.63     | PASS    |
| 3DH5     | Ant1    | High   | Hop_2480       | 1.51           | -49.55       | ≤-18.49     | PASS    |

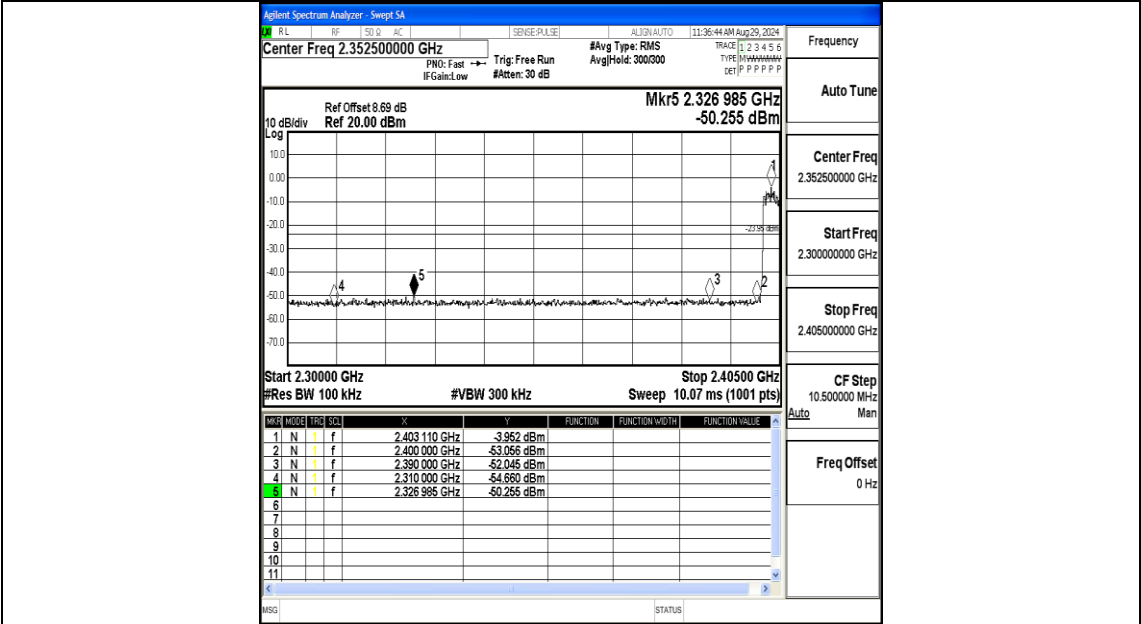
Test Graphs



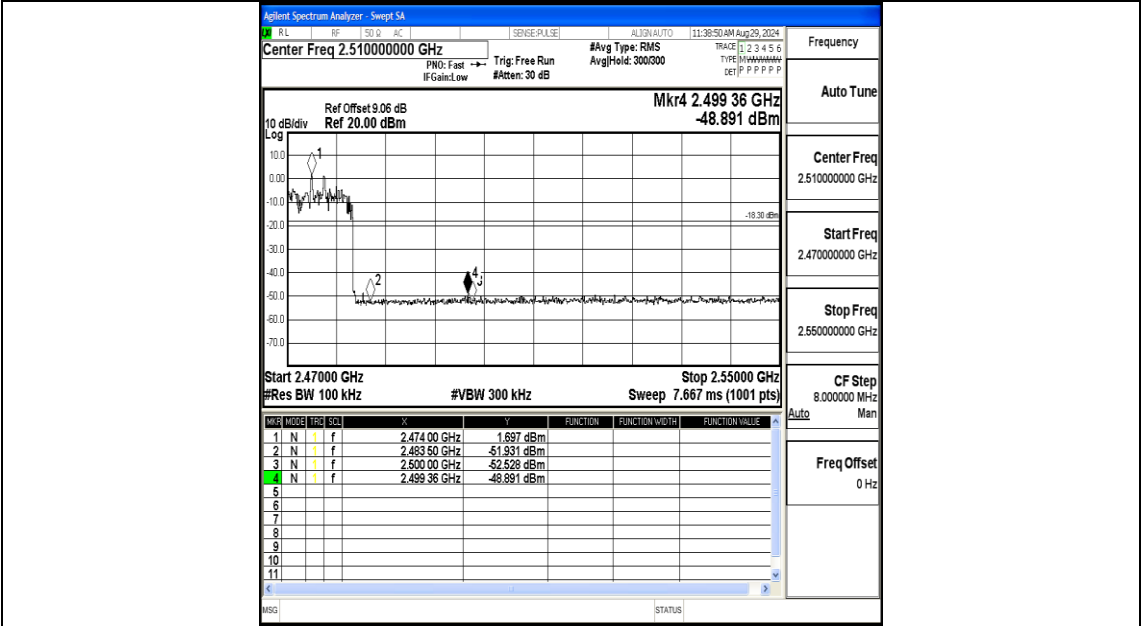




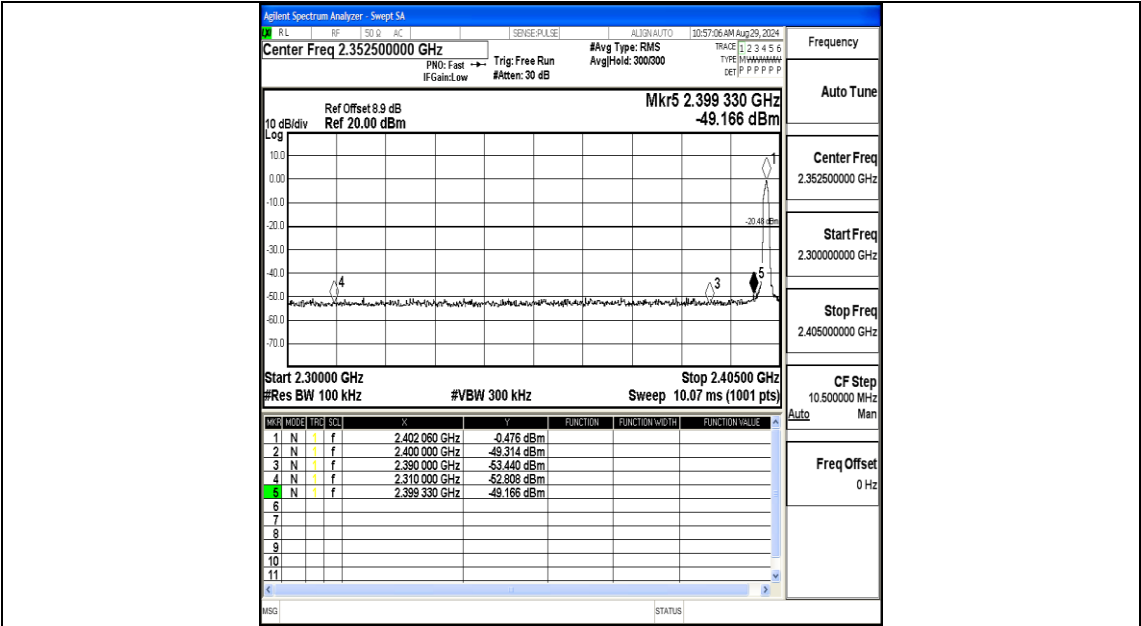
2DH5-Ant1-2480-PASS



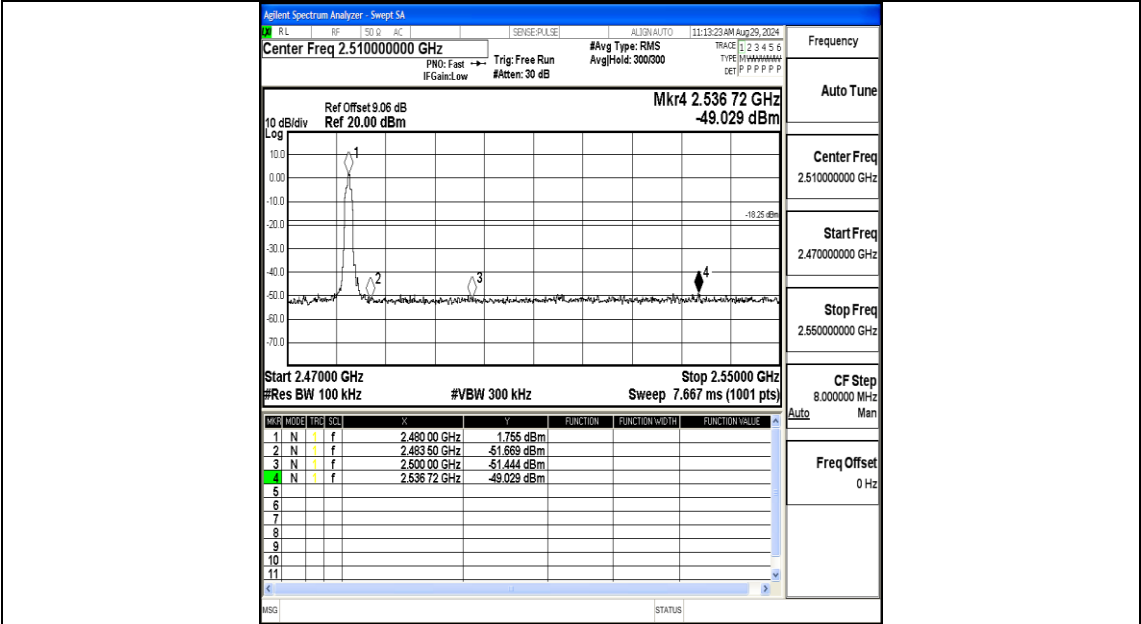
2DH5-Ant1-Hop\_2402-PASS



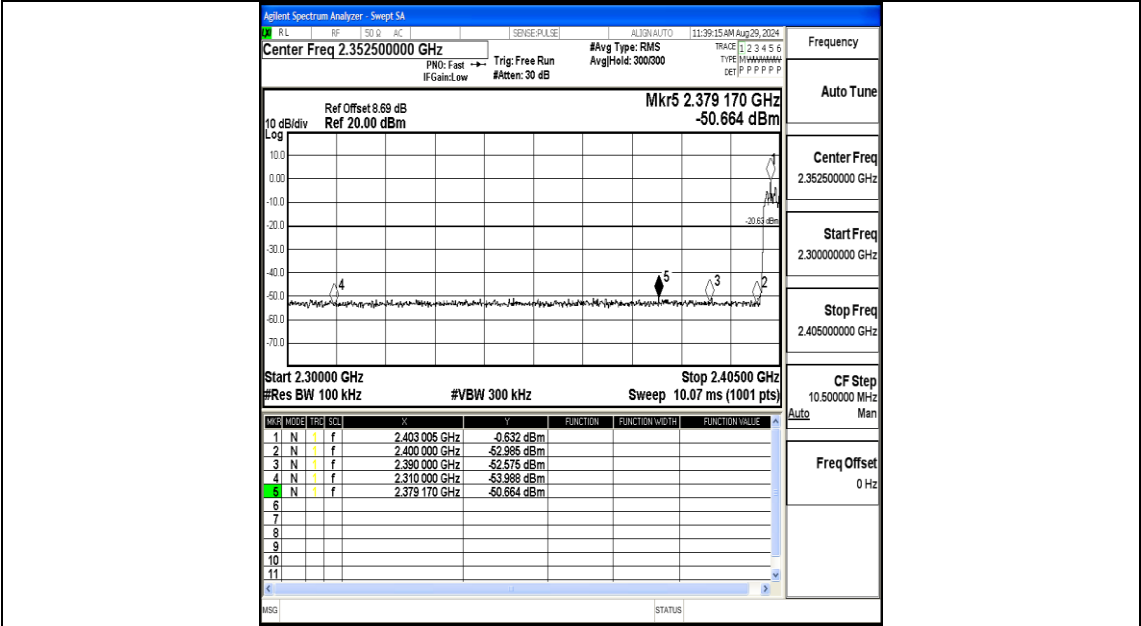
2DH5-Ant1-Hop\_2480-PASS



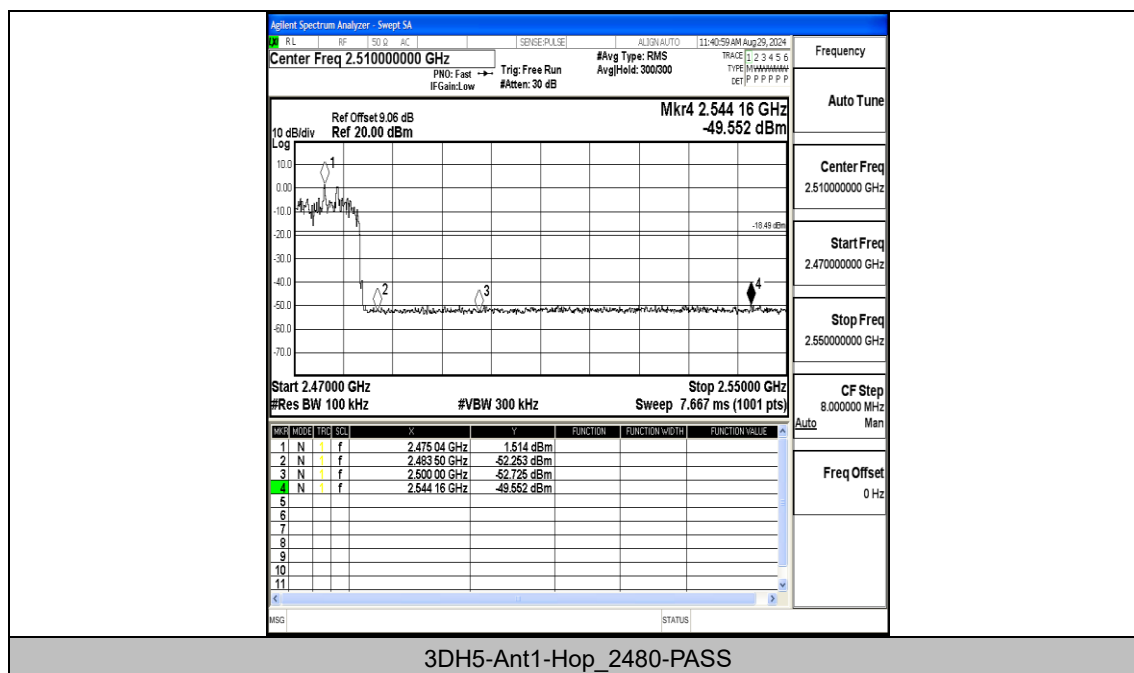
3DH5-Ant1-2402-PASS



3DH5-Ant1-2480-PASS



3DH5-Ant1-Hop\_2402-PASS

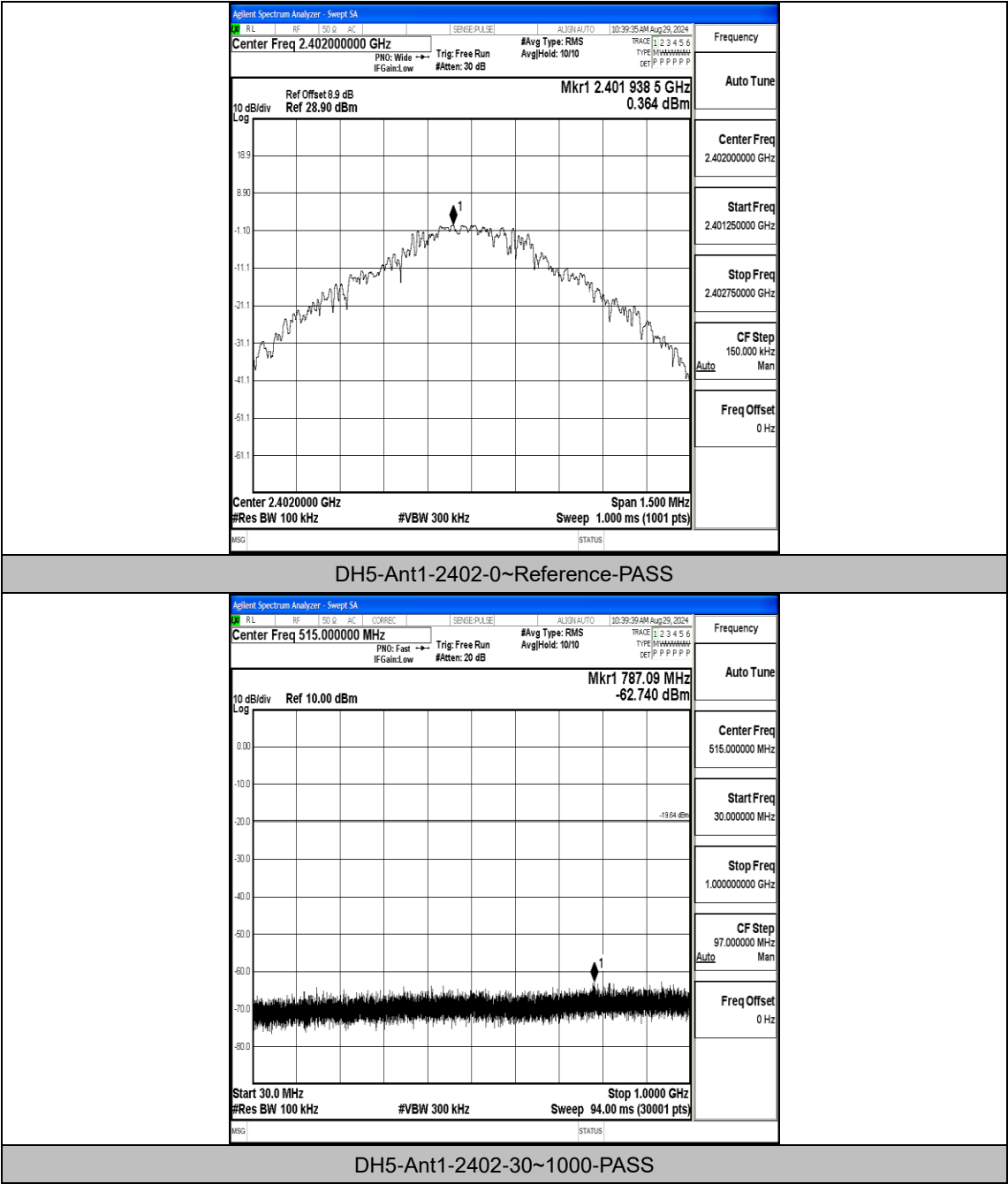


## Appendix H: Conducted Spurious Emission

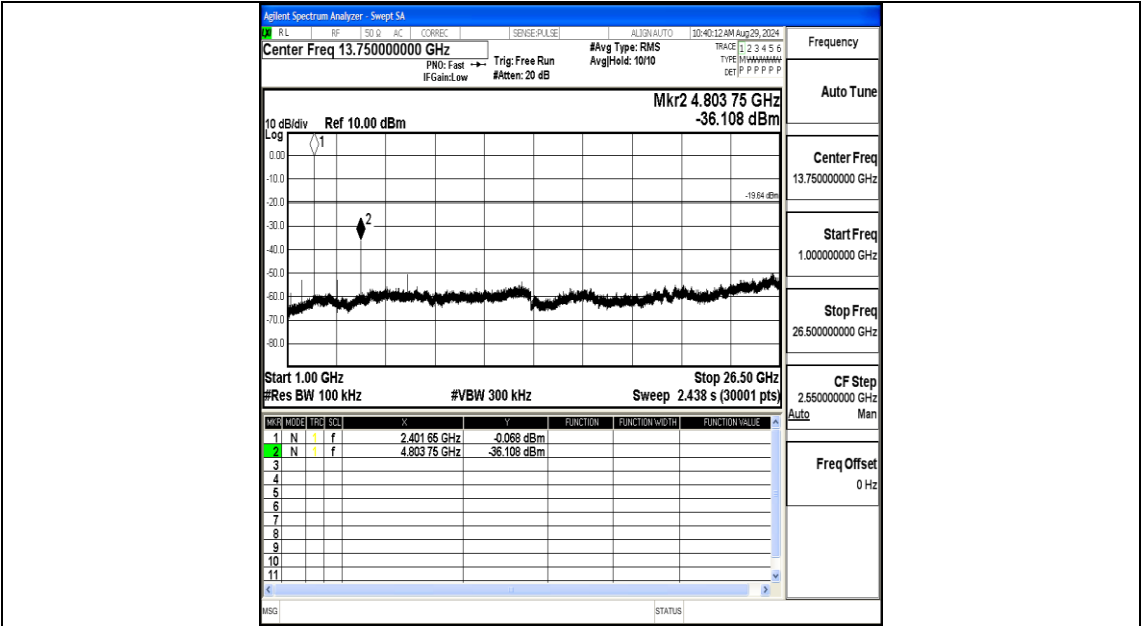
### Test Result

| TestMode | Antenna | Frequency[MHz] | FreqRange [MHz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|----------|---------|----------------|-----------------|----------------|--------------|-------------|---------|
| DH5      | Ant1    | 2402           | 0~Reference     | 0.36           | 0.36         | ---         | PASS    |
| DH5      | Ant1    | 2402           | 30~1000         | 0.36           | -62.74       | ≤-19.64     | PASS    |
| DH5      | Ant1    | 2402           | 1000~26500      | 0.36           | -36.11       | ≤-19.64     | PASS    |
| DH5      | Ant1    | 2441           | 0~Reference     | 0.83           | 0.83         | ---         | PASS    |
| DH5      | Ant1    | 2441           | 30~1000         | 0.83           | -62.5        | ≤-19.17     | PASS    |
| DH5      | Ant1    | 2441           | 1000~26500      | 0.83           | -36.82       | ≤-19.17     | PASS    |
| DH5      | Ant1    | 2480           | 0~Reference     | 1.11           | 1.11         | ---         | PASS    |
| DH5      | Ant1    | 2480           | 30~1000         | 1.11           | -62.66       | ≤-18.89     | PASS    |
| DH5      | Ant1    | 2480           | 1000~26500      | 1.11           | -37.97       | ≤-18.89     | PASS    |
| 2DH5     | Ant1    | 2402           | 0~Reference     | -1.67          | -1.67        | ---         | PASS    |
| 2DH5     | Ant1    | 2402           | 30~1000         | -1.67          | -62.62       | ≤-21.67     | PASS    |
| 2DH5     | Ant1    | 2402           | 1000~26500      | -1.67          | -43.9        | ≤-21.67     | PASS    |
| 2DH5     | Ant1    | 2441           | 0~Reference     | -1.14          | -1.14        | ---         | PASS    |
| 2DH5     | Ant1    | 2441           | 30~1000         | -1.14          | -62.73       | ≤-21.14     | PASS    |
| 2DH5     | Ant1    | 2441           | 1000~26500      | -1.14          | -42.58       | ≤-21.14     | PASS    |
| 2DH5     | Ant1    | 2480           | 0~Reference     | 0.78           | 0.78         | ---         | PASS    |
| 2DH5     | Ant1    | 2480           | 30~1000         | 0.78           | -62.08       | ≤-19.22     | PASS    |
| 2DH5     | Ant1    | 2480           | 1000~26500      | 0.78           | -43.32       | ≤-19.22     | PASS    |
| 3DH5     | Ant1    | 2402           | 0~Reference     | -2.76          | -2.76        | ---         | PASS    |
| 3DH5     | Ant1    | 2402           | 30~1000         | -2.76          | -61.89       | ≤-22.76     | PASS    |
| 3DH5     | Ant1    | 2402           | 1000~26500      | -2.76          | -36.86       | ≤-22.76     | PASS    |
| 3DH5     | Ant1    | 2441           | 0~Reference     | 0.78           | 0.78         | ---         | PASS    |
| 3DH5     | Ant1    | 2441           | 30~1000         | 0.78           | -62.93       | ≤-19.22     | PASS    |
| 3DH5     | Ant1    | 2441           | 1000~26500      | 0.78           | -36.62       | ≤-19.22     | PASS    |
| 3DH5     | Ant1    | 2480           | 0~Reference     | -3.89          | -3.89        | ---         | PASS    |
| 3DH5     | Ant1    | 2480           | 30~1000         | -3.89          | -62.61       | ≤-23.89     | PASS    |
| 3DH5     | Ant1    | 2480           | 1000~26500      | -3.89          | -44.78       | ≤-23.89     | PASS    |

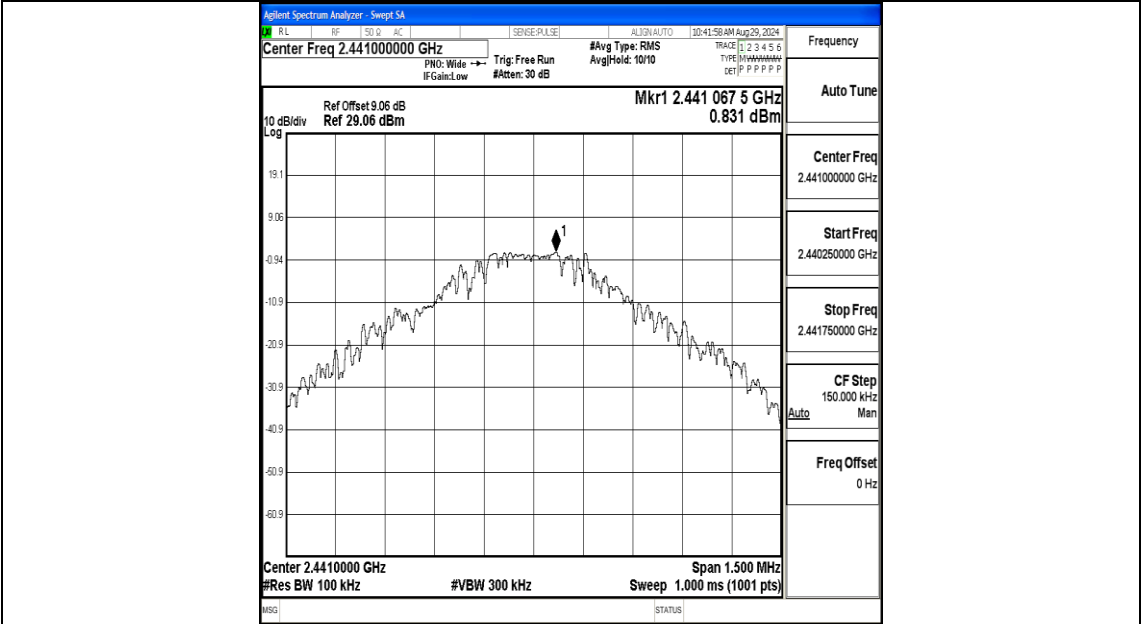
Test Graphs



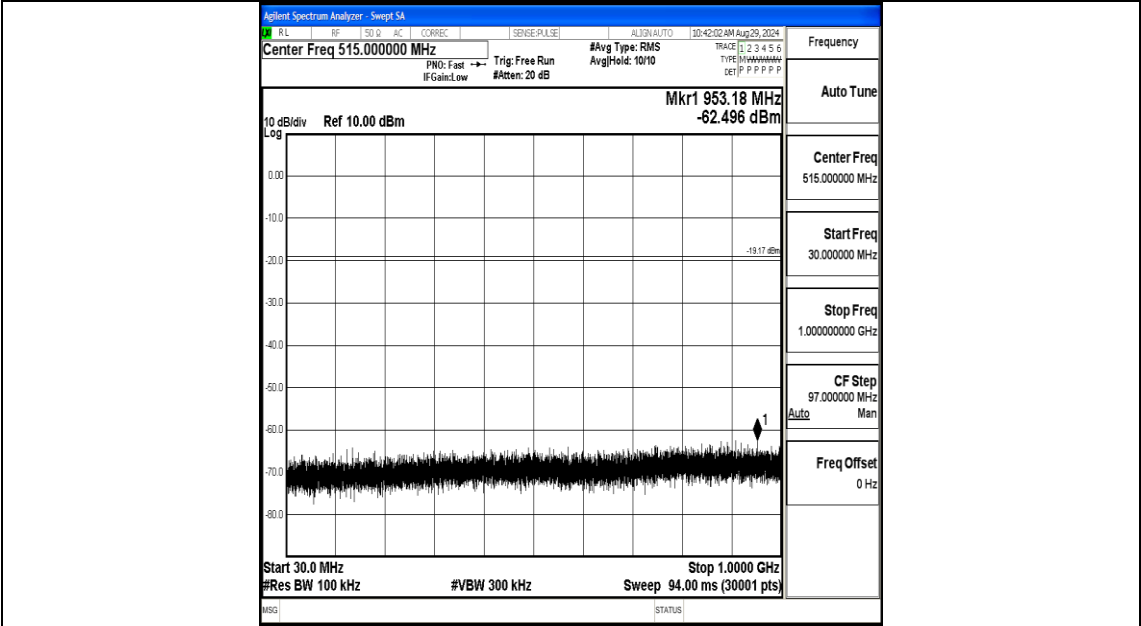




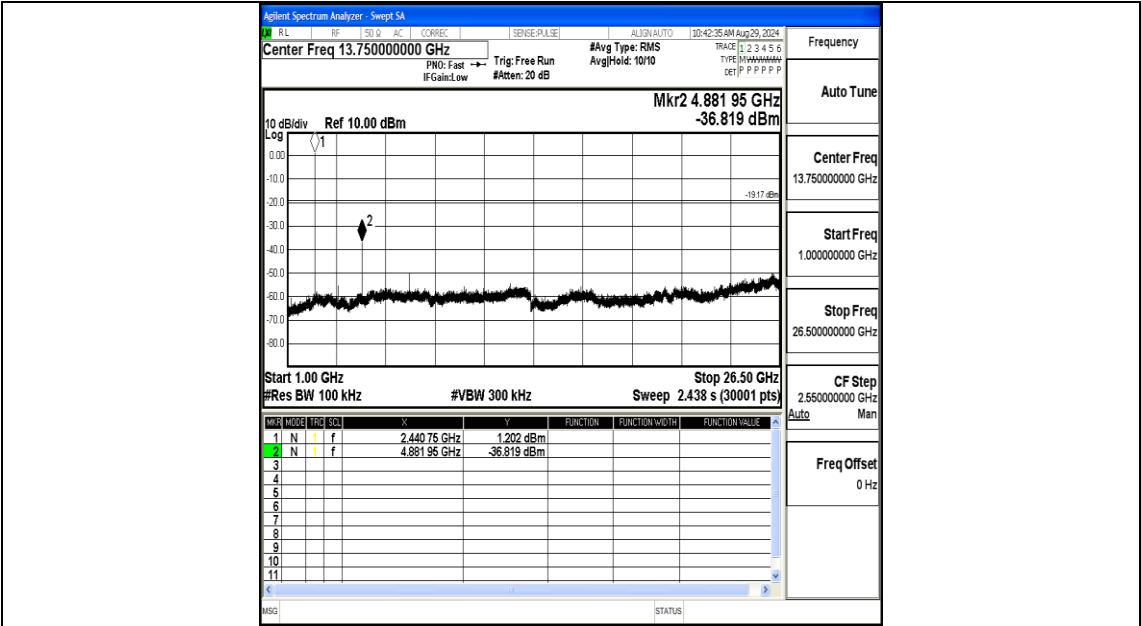
DH5-Ant1-2402-1000~26500-PASS



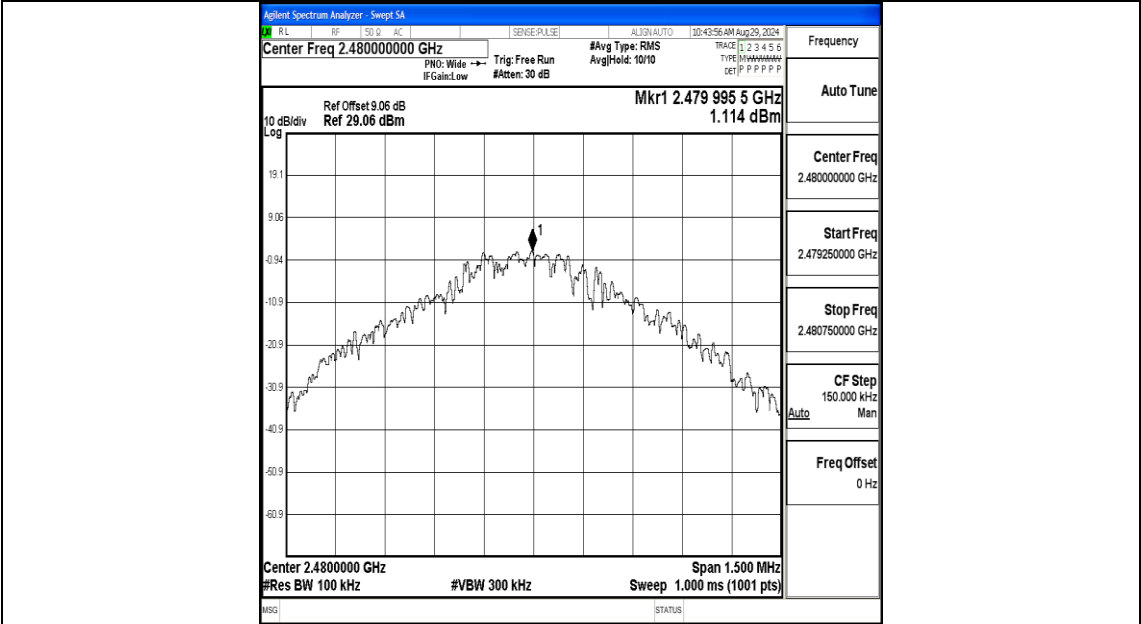
DH5-Ant1-2441-0~Reference-PASS



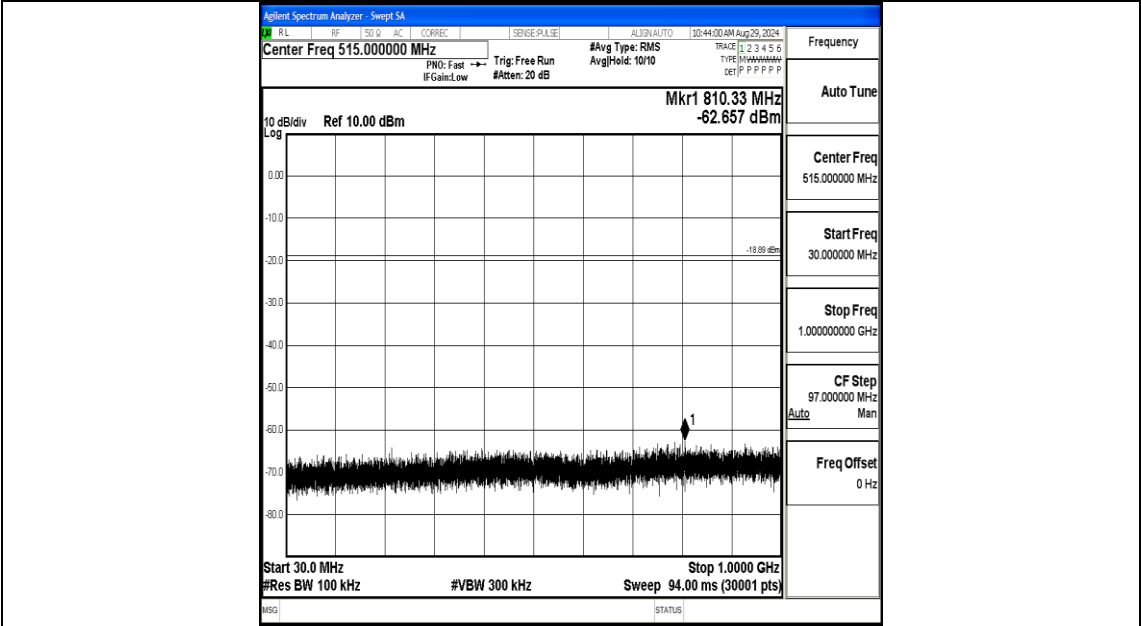
DH5-Ant1-2441-30~1000-PASS



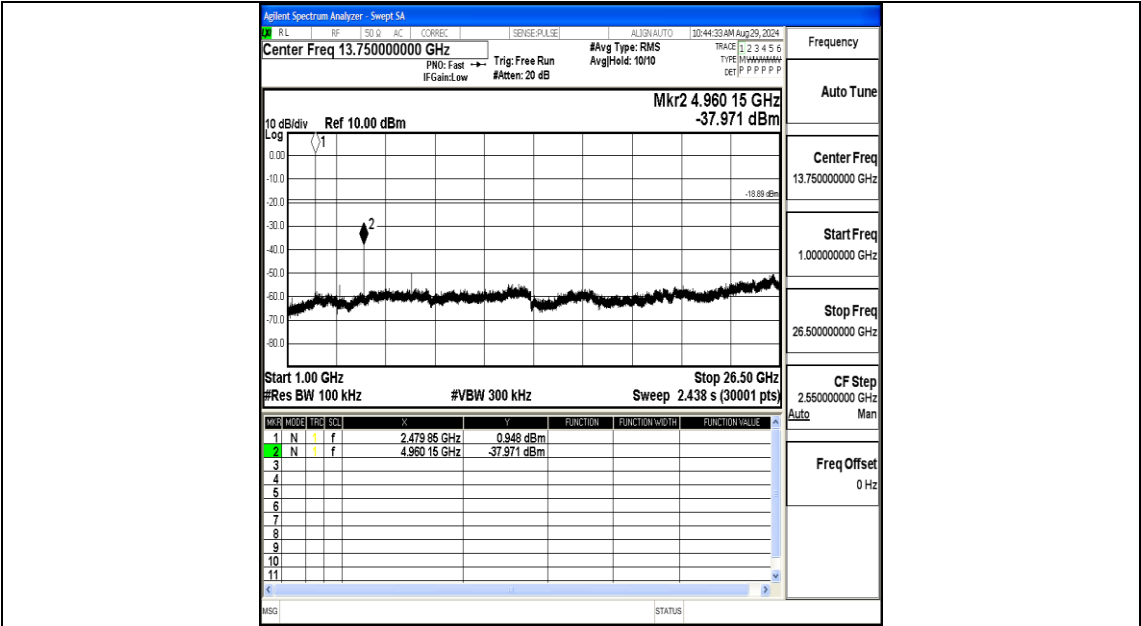
DH5-Ant1-2441-1000~26500-PASS



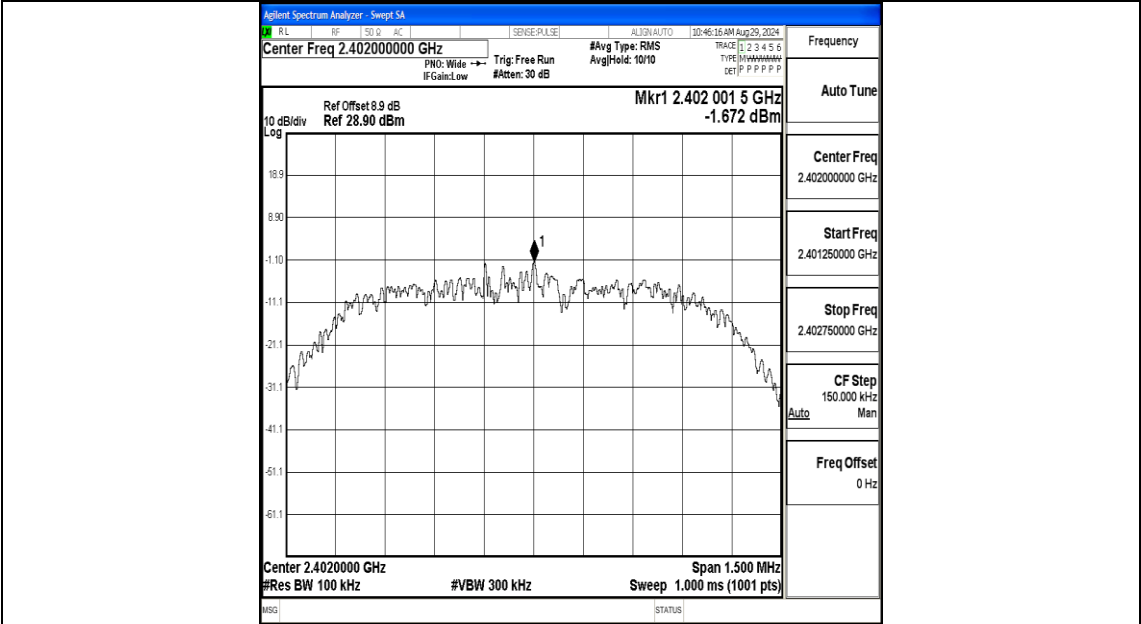
DH5-Ant1-2480-0~Reference-PASS



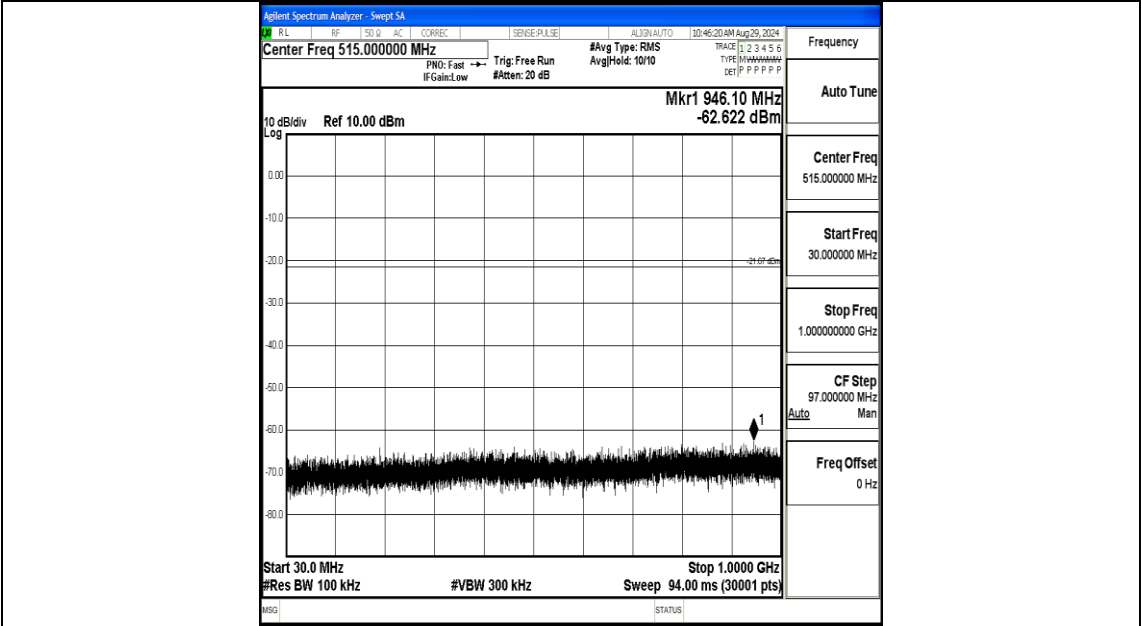
DH5-Ant1-2480-30~1000-PASS



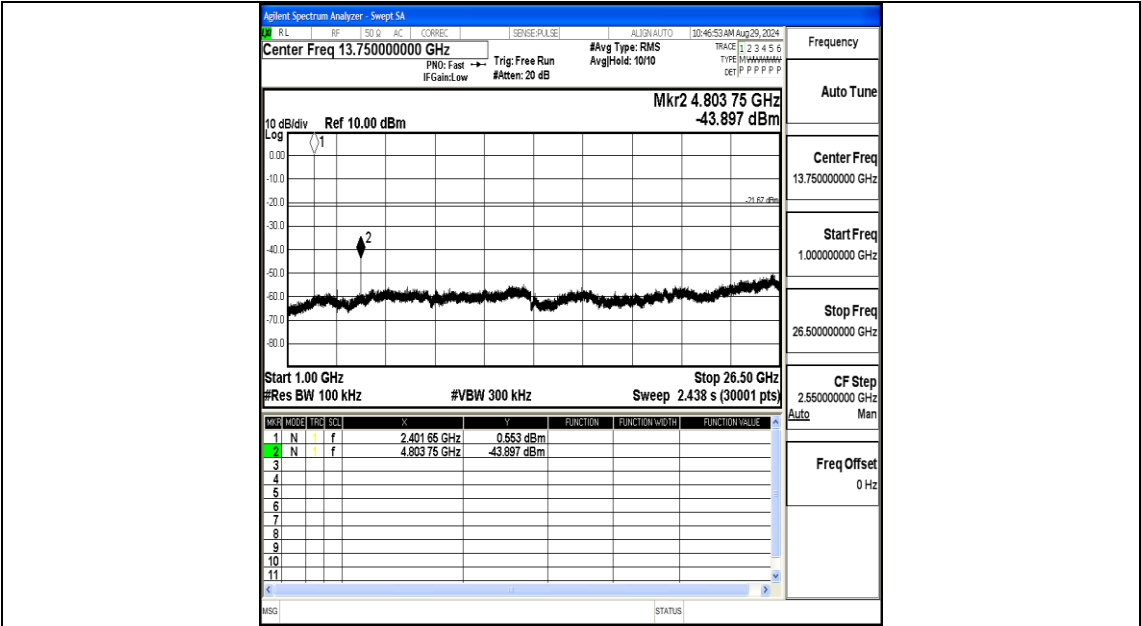
DH5-Ant1-2480-1000~26500-PASS



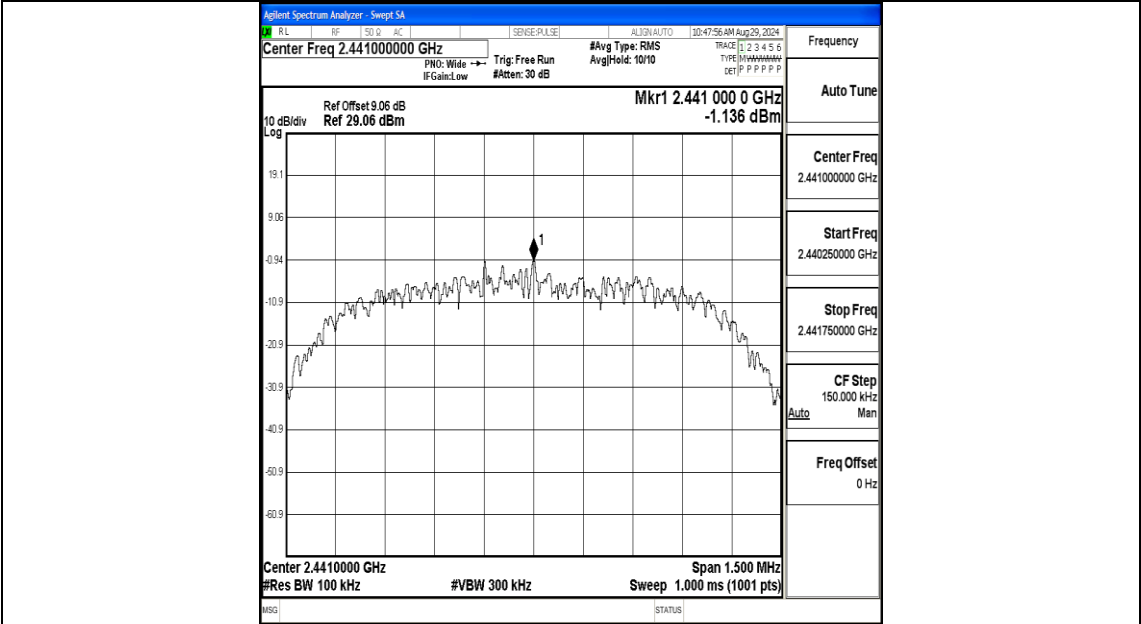
2DH5-Ant1-2402-0~Reference-PASS



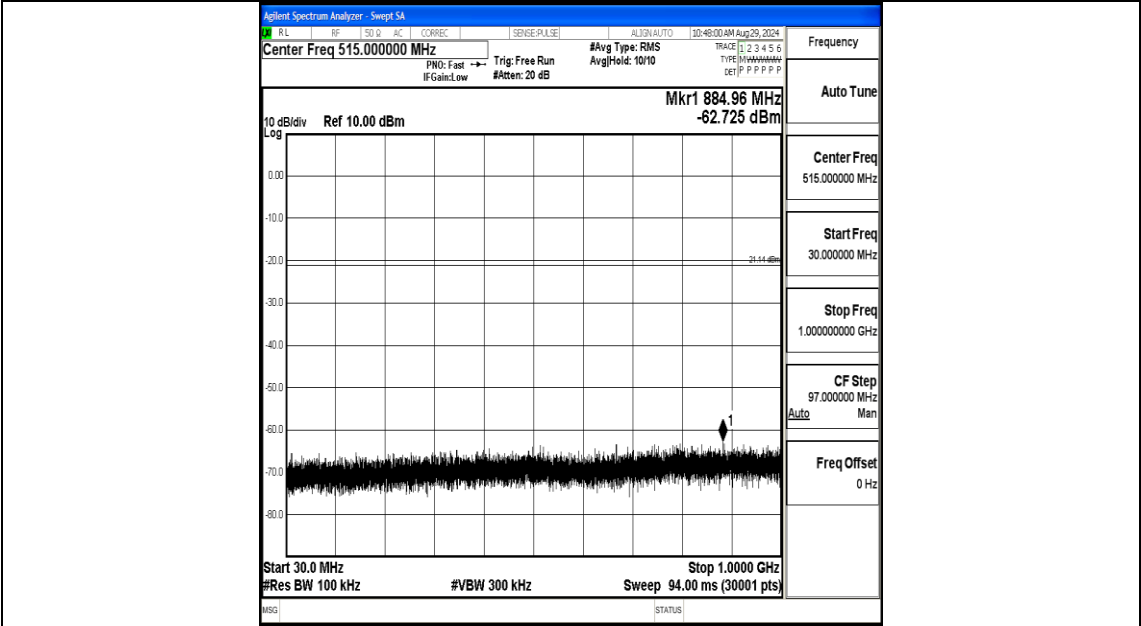
2DH5-Ant1-2402-30~1000-PASS



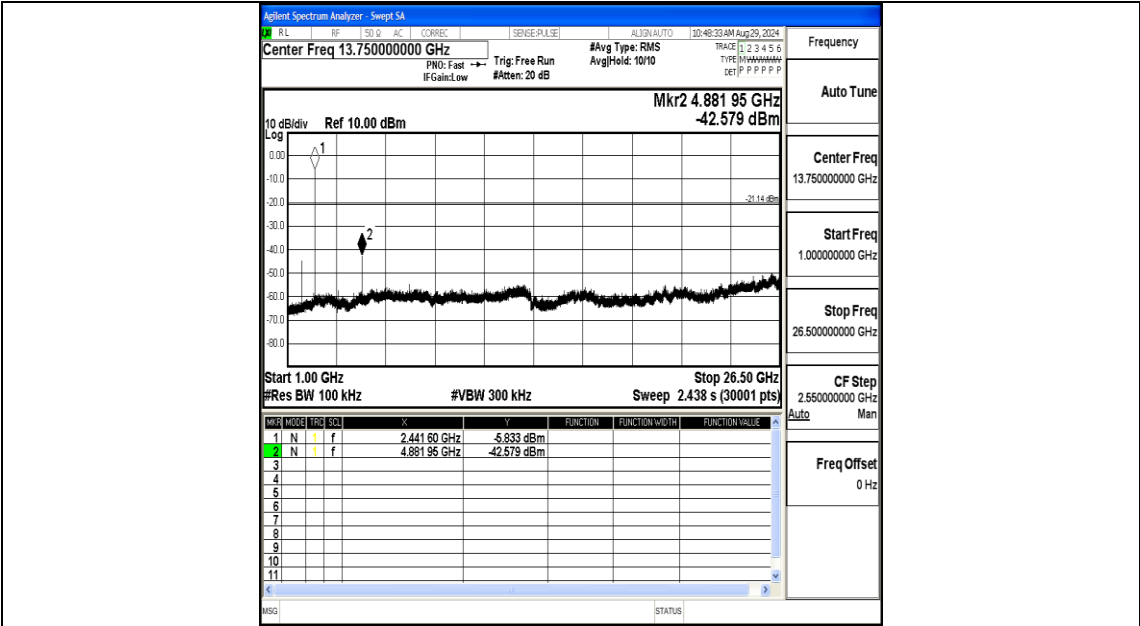
2DH5-Ant1-2402-1000~26500-PASS



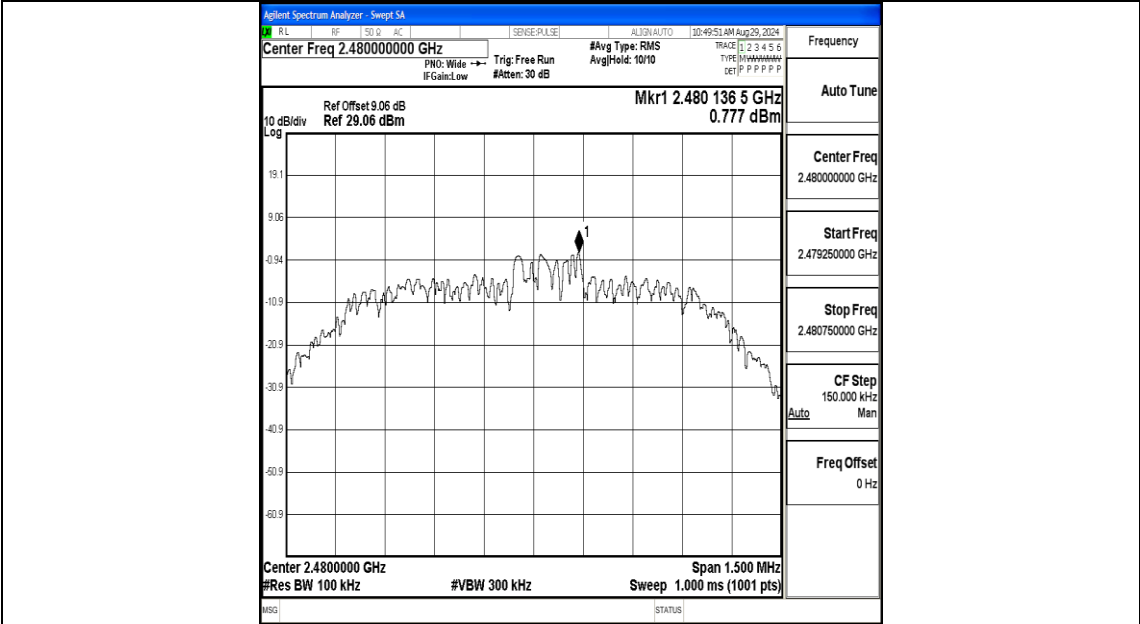
2DH5-Ant1-2441-0~Reference-PASS



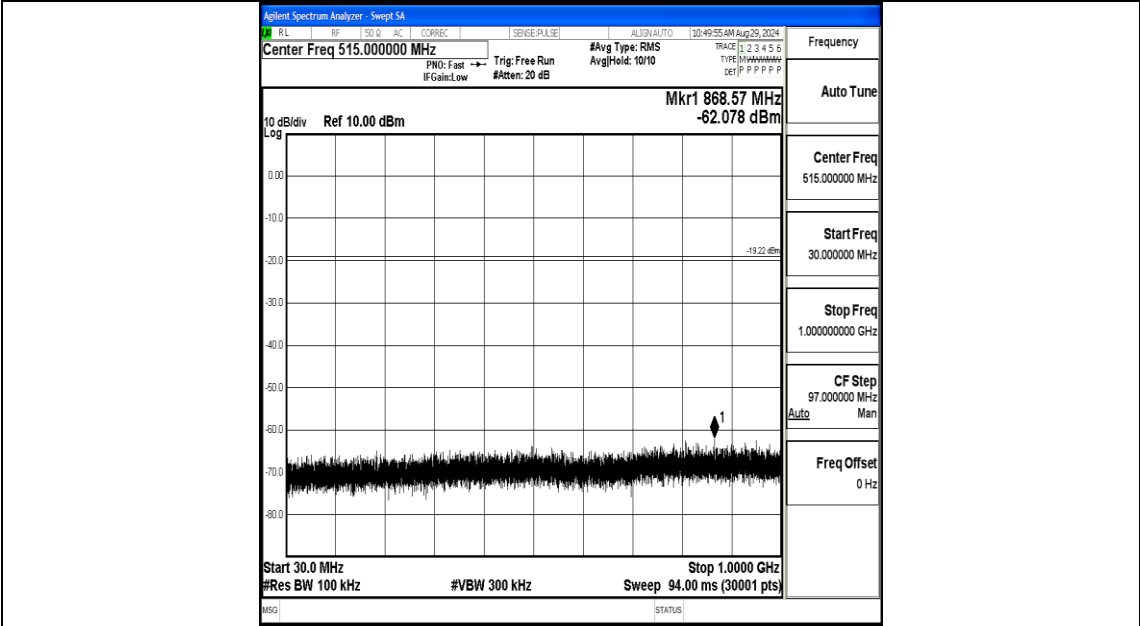
2DH5-Ant1-2441-30~1000-PASS



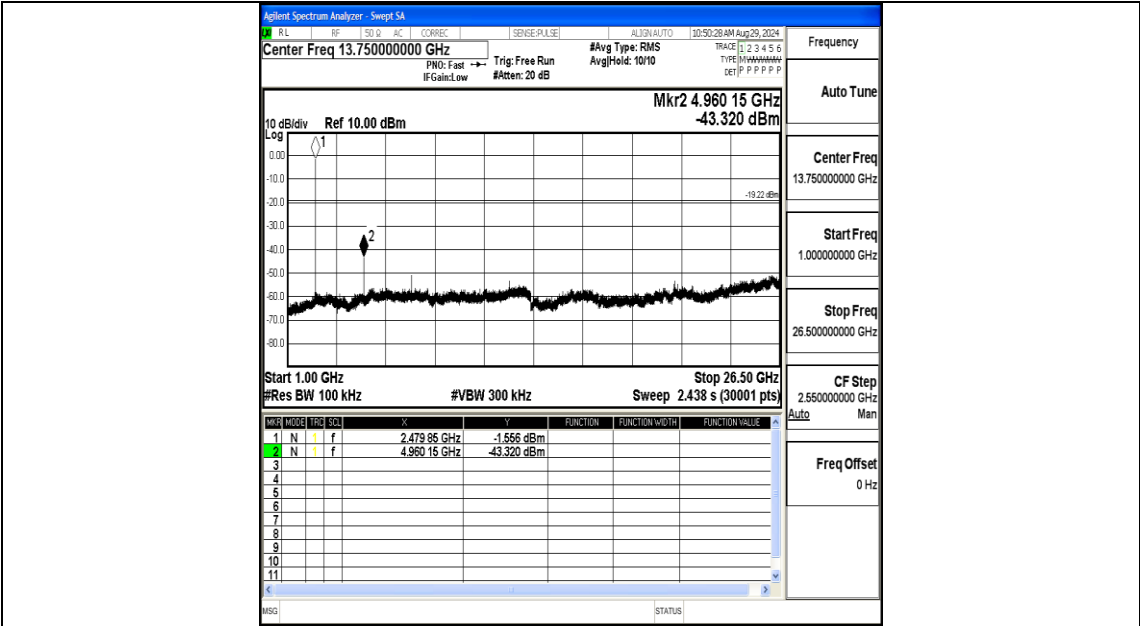
2DH5-Ant1-2441-1000~26500-PASS



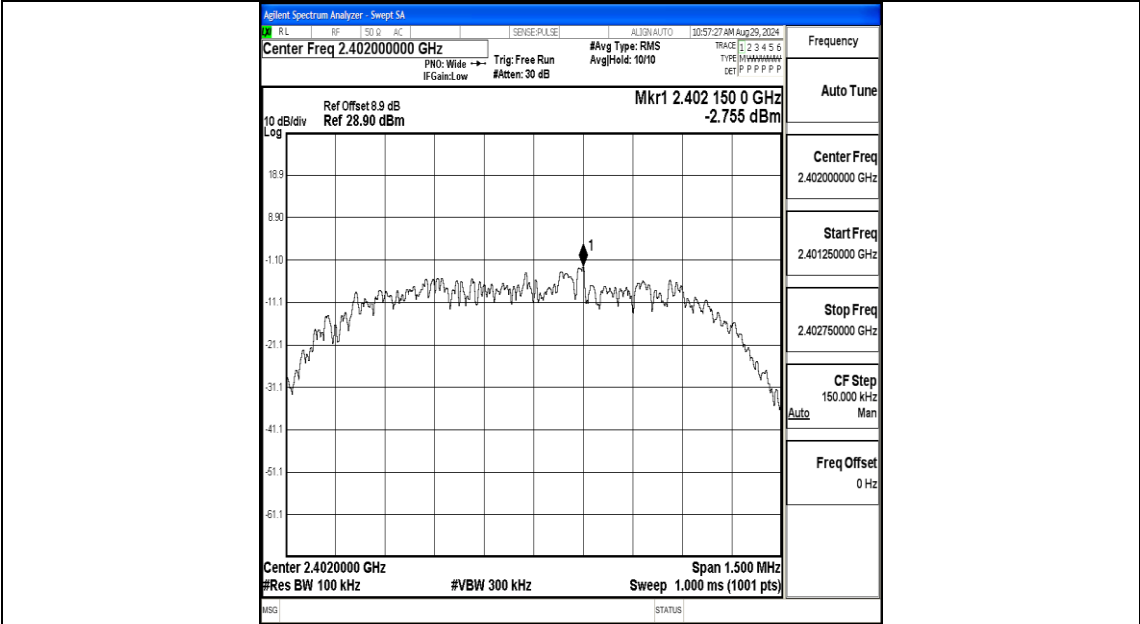
2DH5-Ant1-2480-0~Reference-PASS



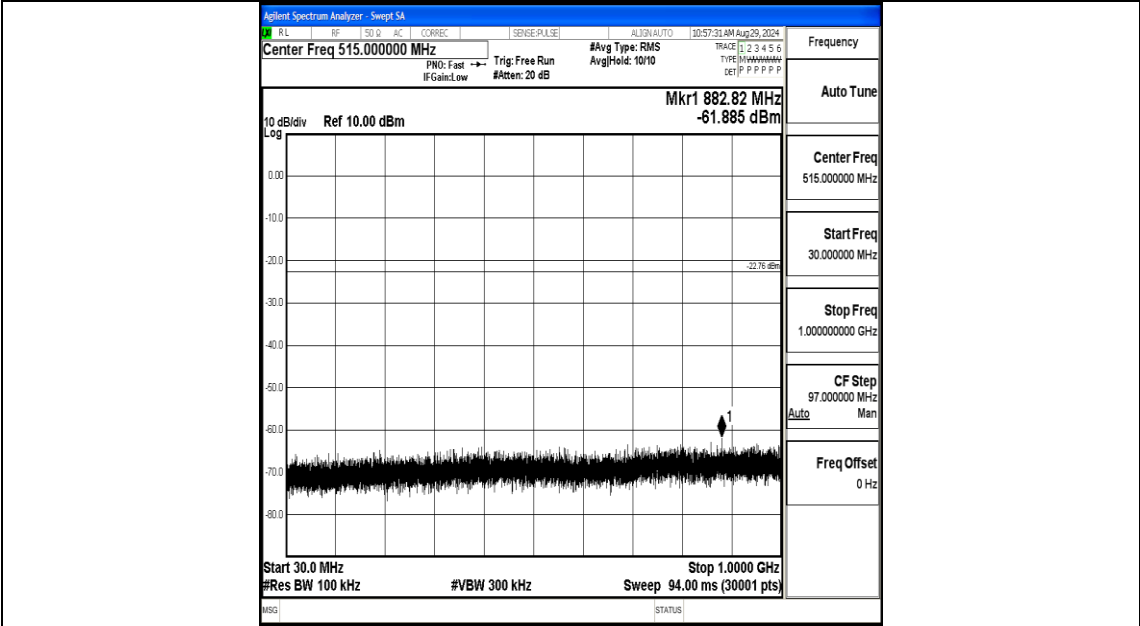
2DH5-Ant1-2480-30~1000-PASS



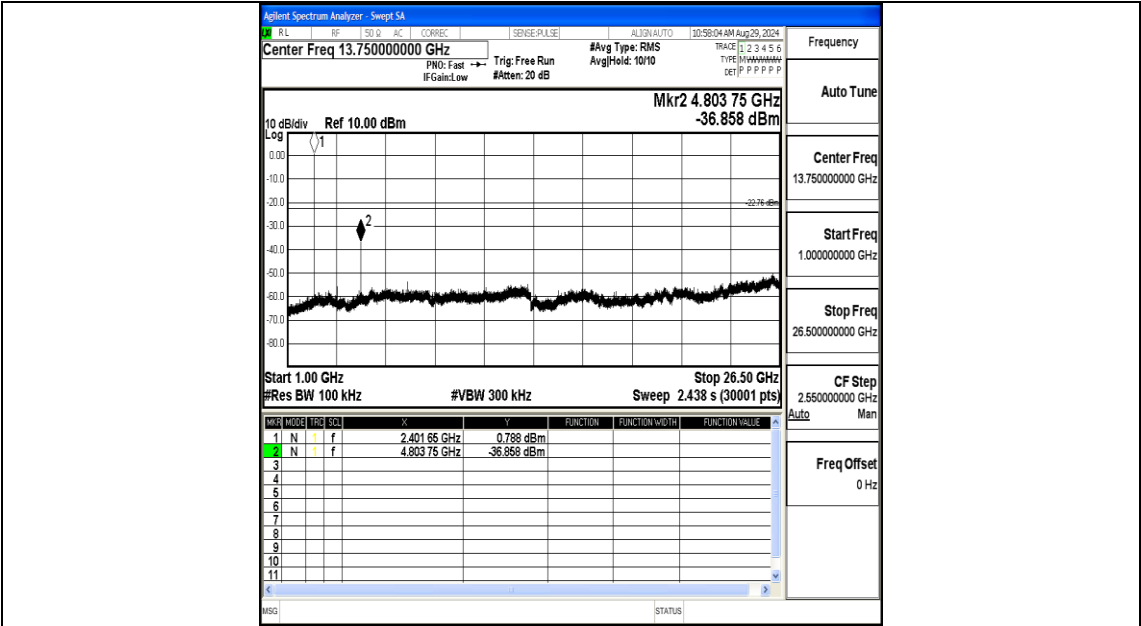
2DH5-Ant1-2480-1000~26500-PASS



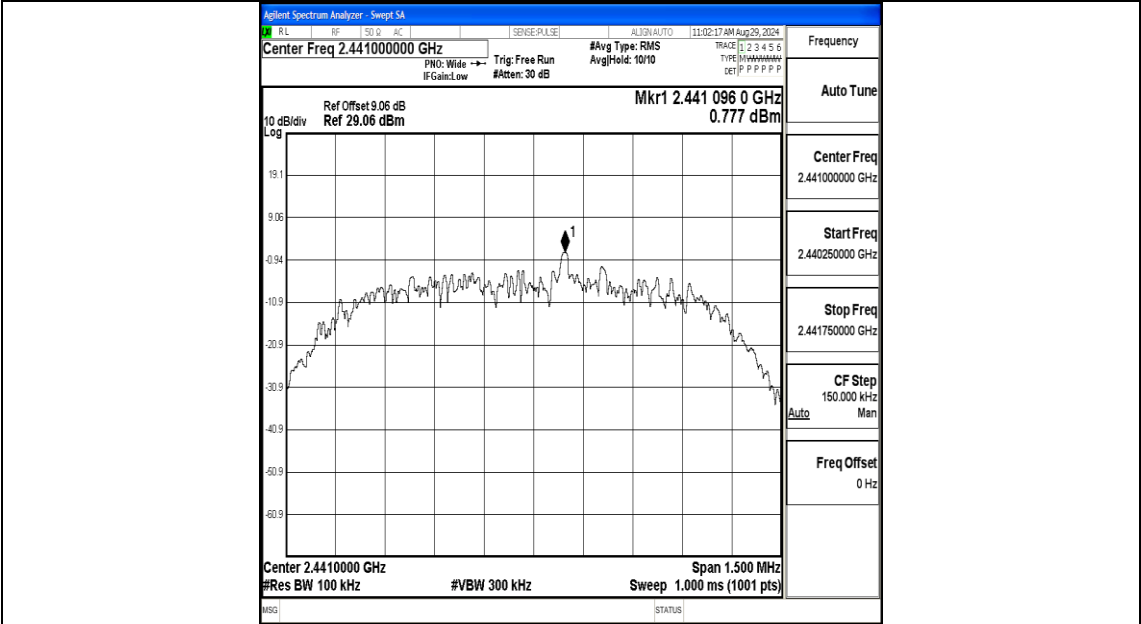
3DH5-Ant1-2402-0~Reference-PASS



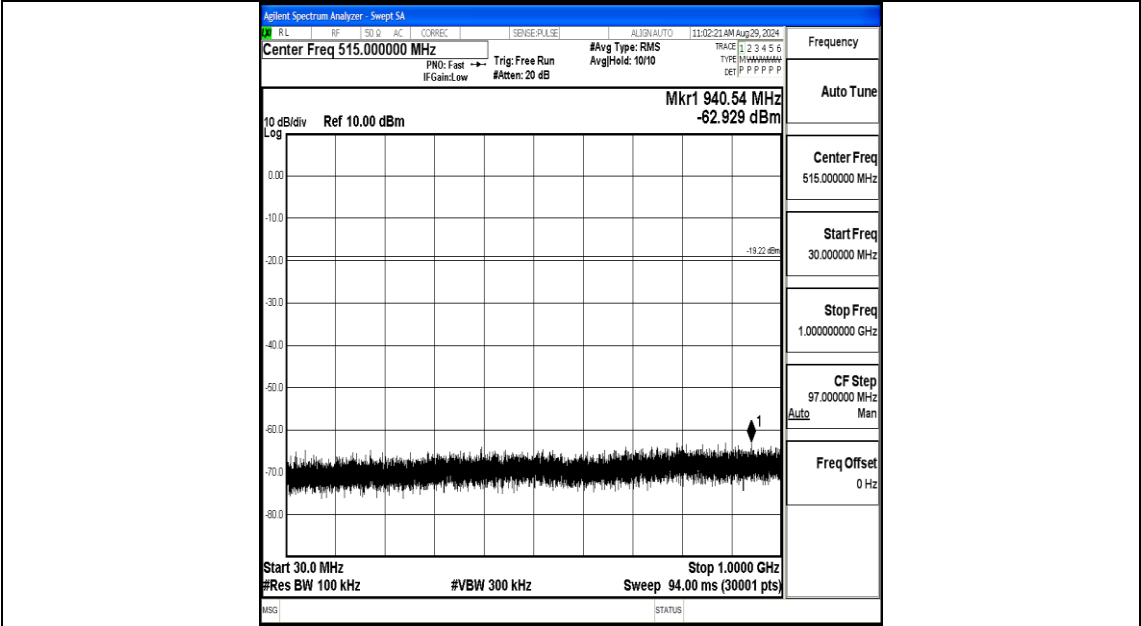
3DH5-Ant1-2402-30~1000-PASS



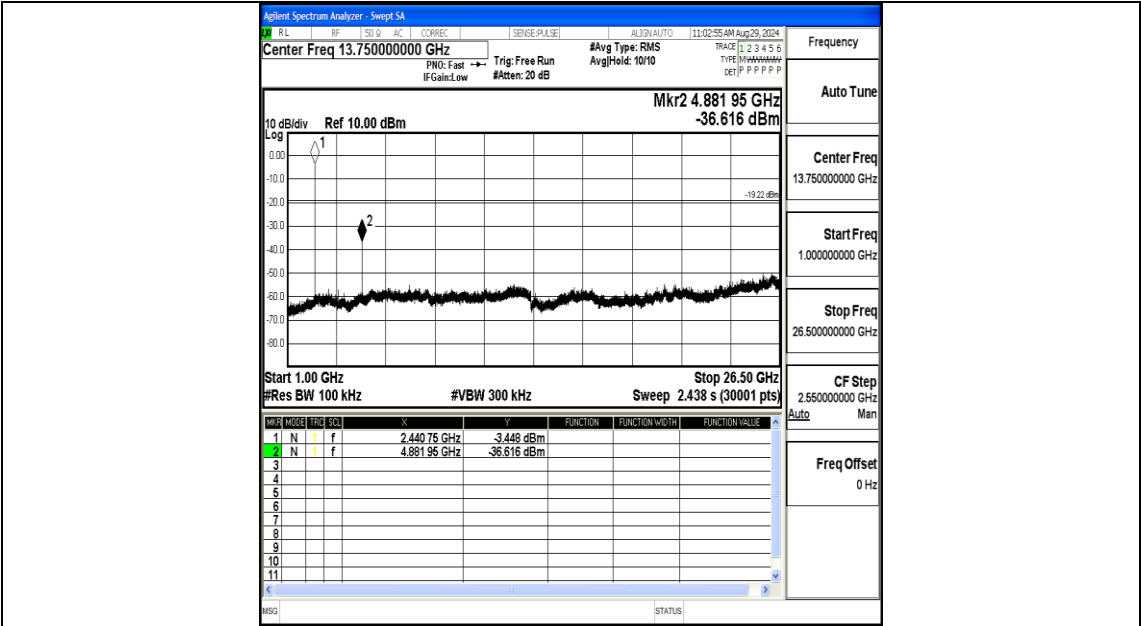
3DH5-Ant1-2402-1000~26500-PASS



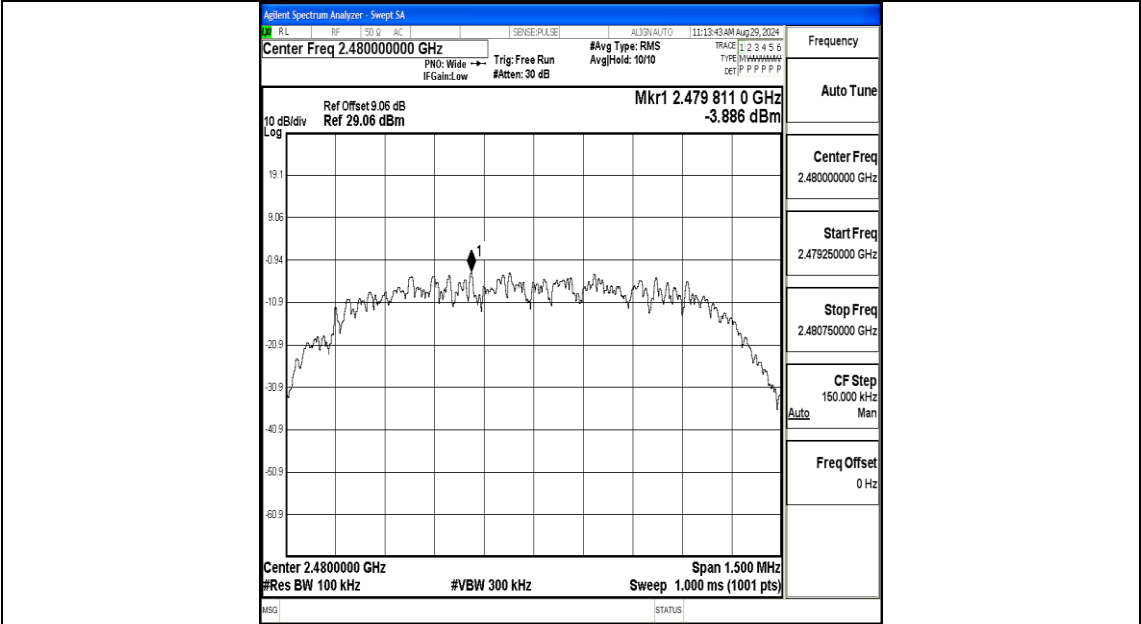
3DH5-Ant1-2441-0~Reference-PASS



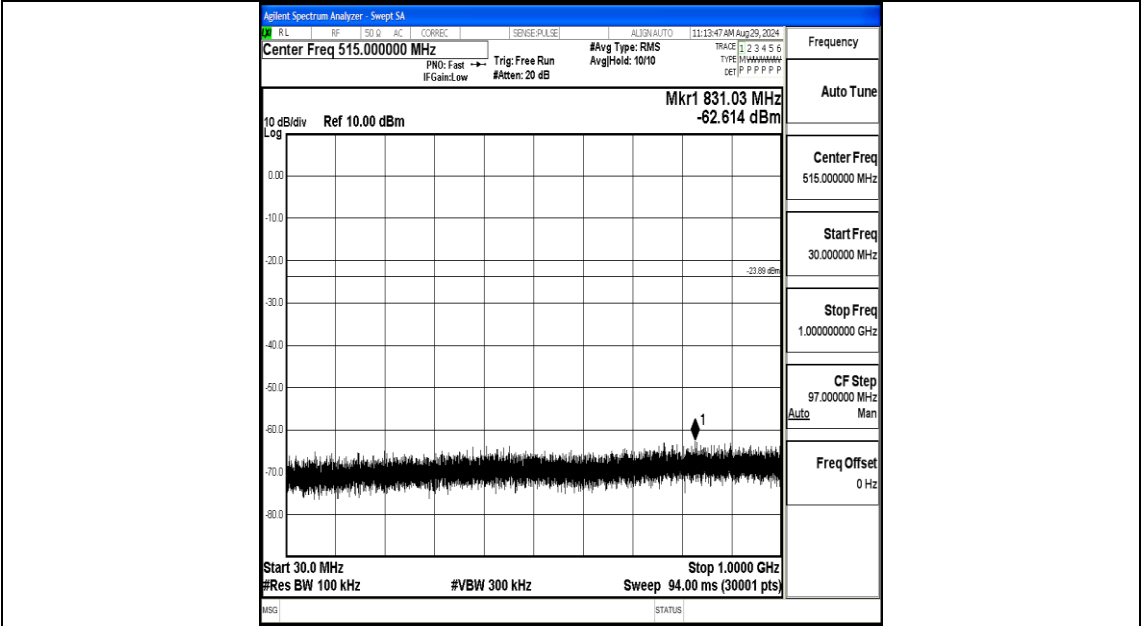
3DH5-Ant1-2441-30~1000-PASS



3DH5-Ant1-2441-1000~26500-PASS

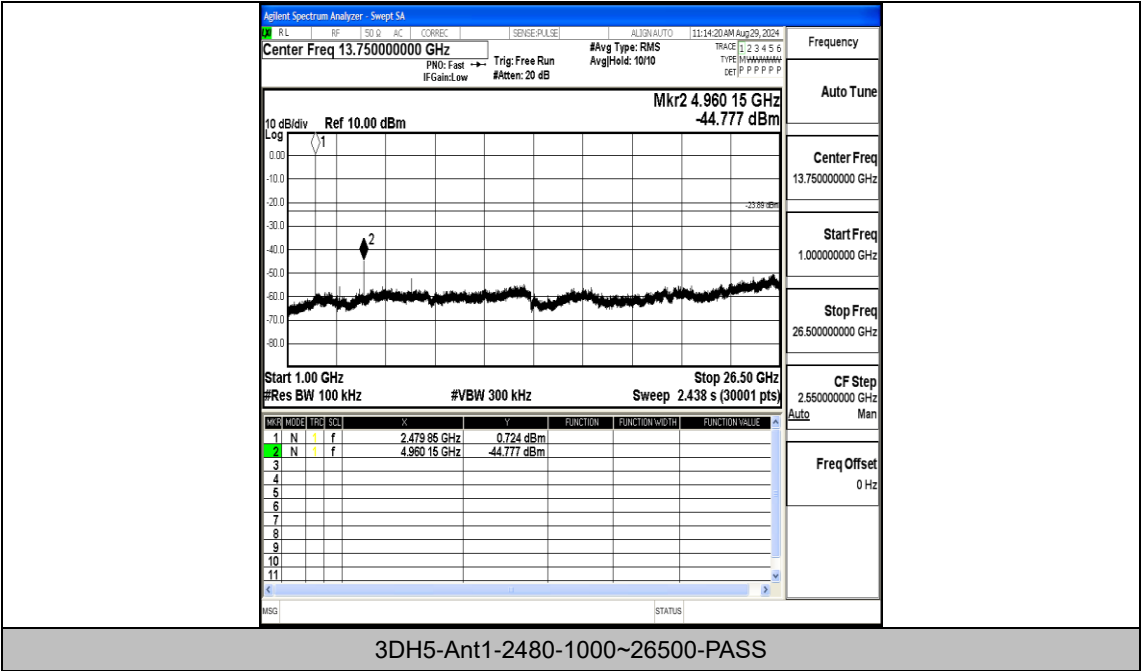


3DH5-Ant1-2480-0~Reference-PASS



3DH5-Ant1-2480-30~1000-PASS



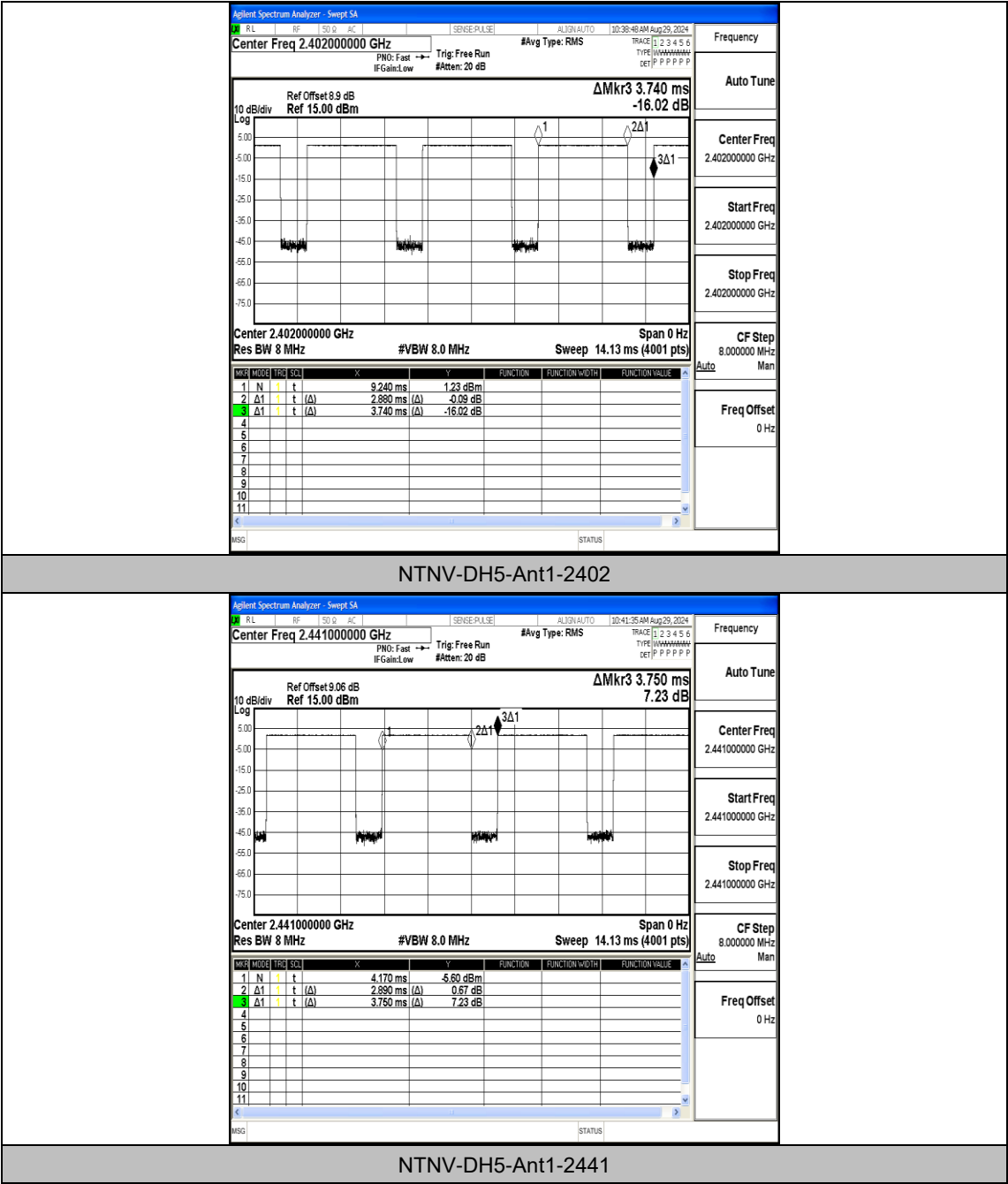


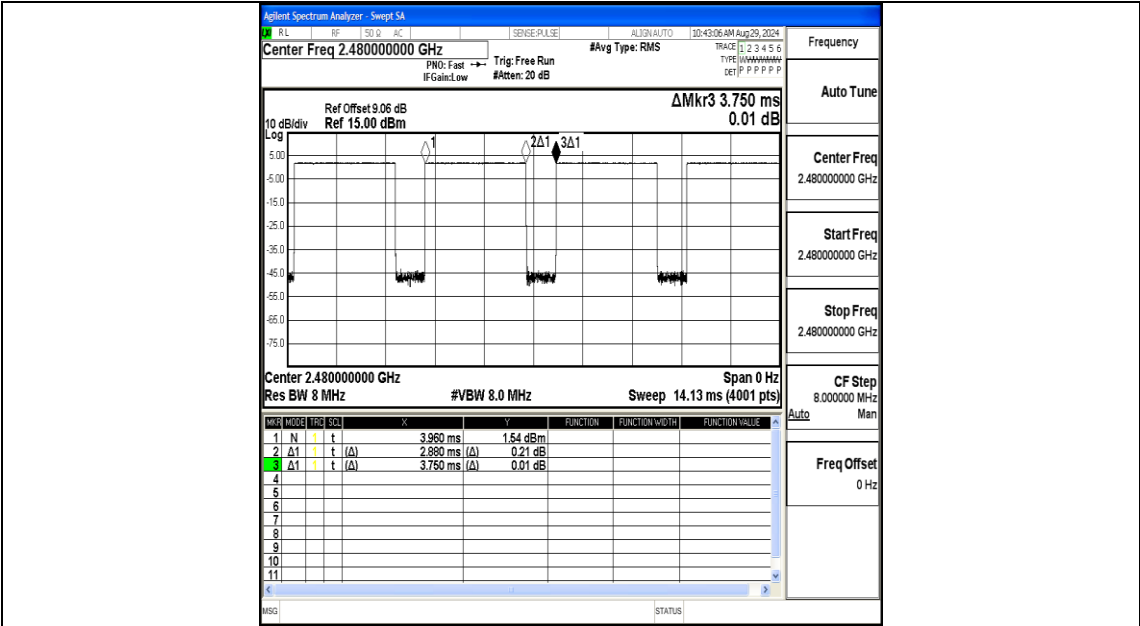
## Appendix I: Duty Cycle

### Test Result

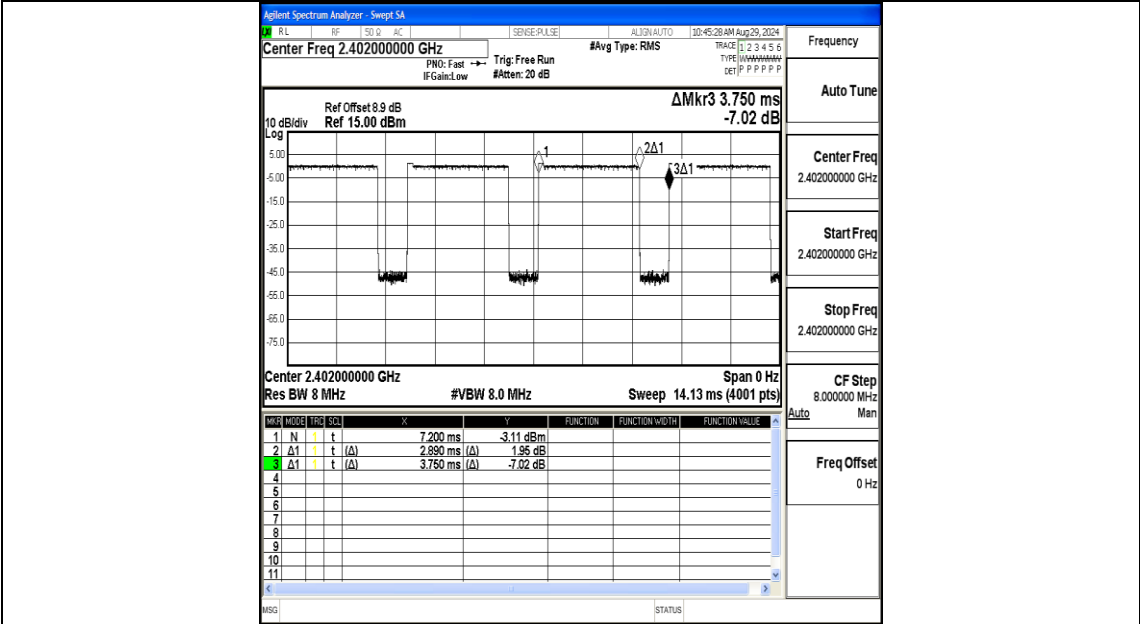
| TestMode | Antenna | Frequency[MHz] | ON Time[ms] | Period[ms] | Duty Cycle[%] | Duty Cycle Factor[dB] |
|----------|---------|----------------|-------------|------------|---------------|-----------------------|
| DH5      | Ant1    | 2402           | 2.88        | 3.74       | 77.01         | 1.13                  |
| DH5      | Ant1    | 2441           | 2.89        | 3.75       | 77.07         | 1.13                  |
| DH5      | Ant1    | 2480           | 2.88        | 3.75       | 76.80         | 1.15                  |
| 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                  |
| 3DH5     | Ant1    | 2402           | 2.89        | 3.75       | 77.07         | 1.13                  |
| 3DH5     | Ant1    | 2441           | 2.89        | 3.75       | 77.07         | 1.13                  |
| 3DH5     | Ant1    | 2480           | 2.89        | 3.75       | 77.07         | 1.13                  |

Test Graphs

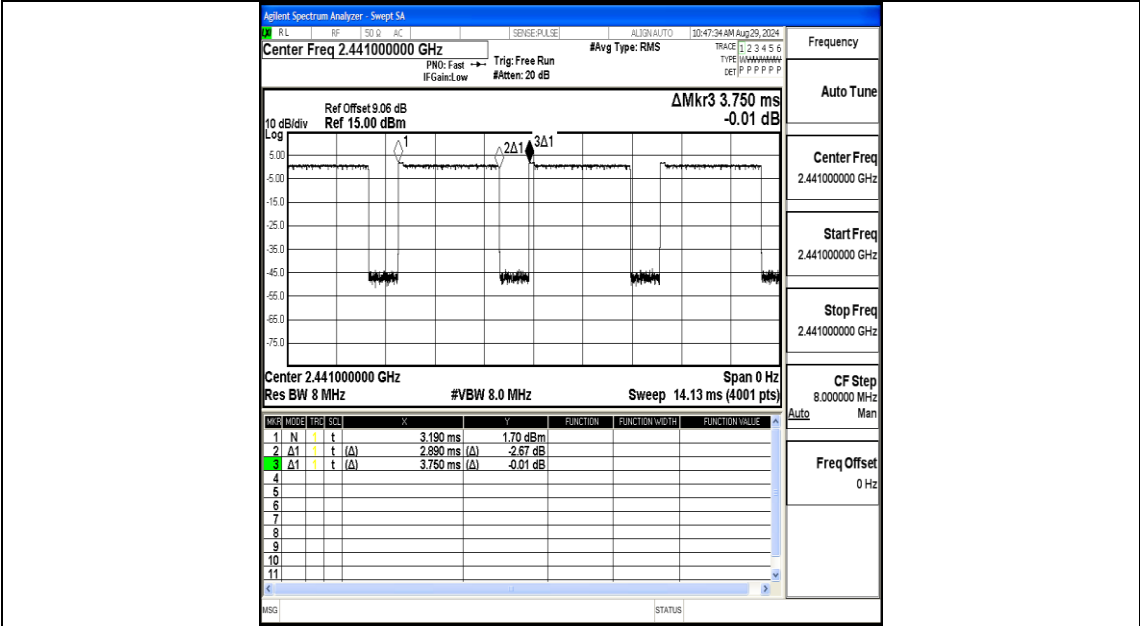




NTNV-DH5-Ant1-2480



NTNV-2DH5-Ant1-2402



NTNV-2DH5-Ant1-2441

