

## **FCC Appendix RF Test Data**

**FCC ID : 2BECA-EP-521**

**Company: : Guangdong Jingge New Energy Technology Co.,Ltd**

**EUT : Solar power system**

**Model Number : EP-521**

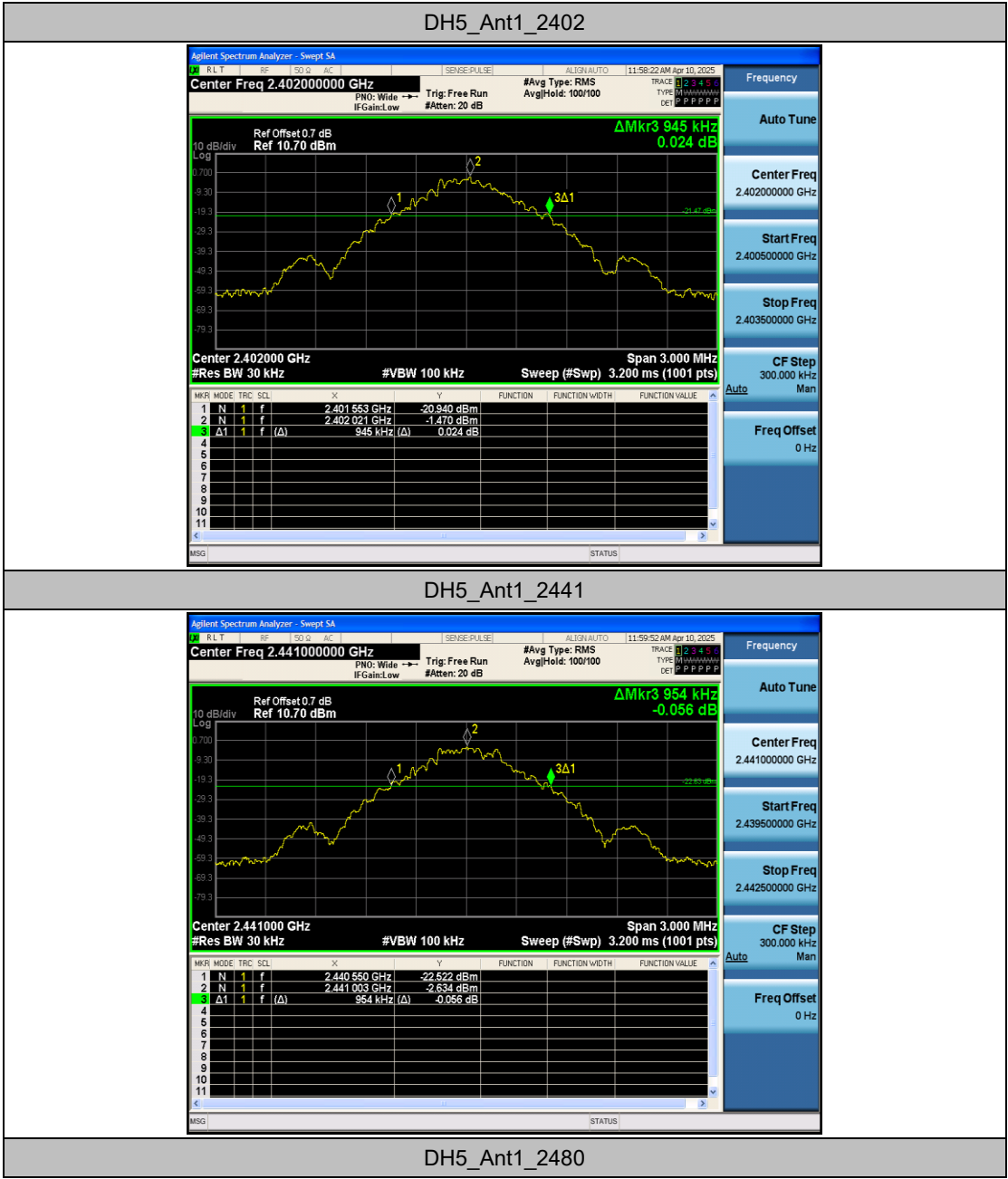
**Reviewed By : Eric Wang**

## Appendix A: 20dB Emission Bandwidth

### Test Result

| TestMode | Antenna | Freq(MHz) | 20dB<br>EBW[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|-----------|------------------|----------|----------|------------|---------|
| DH5      | Ant1    | 2402      | 0.945            | 2401.553 | 2402.498 | ---        | ---     |
|          |         | 2441      | 0.954            | 2440.550 | 2441.504 | ---        | ---     |
|          |         | 2480      | 0.960            | 2479.544 | 2480.504 | ---        | ---     |
| 2DH5     | Ant1    | 2402      | 1.278            | 2401.382 | 2402.660 | ---        | ---     |
|          |         | 2441      | 1.305            | 2440.361 | 2441.666 | ---        | ---     |
|          |         | 2480      | 1.278            | 2479.382 | 2480.660 | ---        | ---     |
| 3DH5     | Ant1    | 2402      | 1.323            | 2401.346 | 2402.669 | ---        | ---     |
|          |         | 2441      | 1.308            | 2440.355 | 2441.663 | ---        | ---     |
|          |         | 2480      | 1.317            | 2479.352 | 2480.669 | ---        | ---     |

# Test Graphs





2DH5\_Ant1\_2402



2DH5\_Ant1\_2441



## 2DH5\_Ant1\_2480



## 3DH5\_Ant1\_2402



## 3DH5\_Ant1\_2441



3DH5\_Ant1\_2480

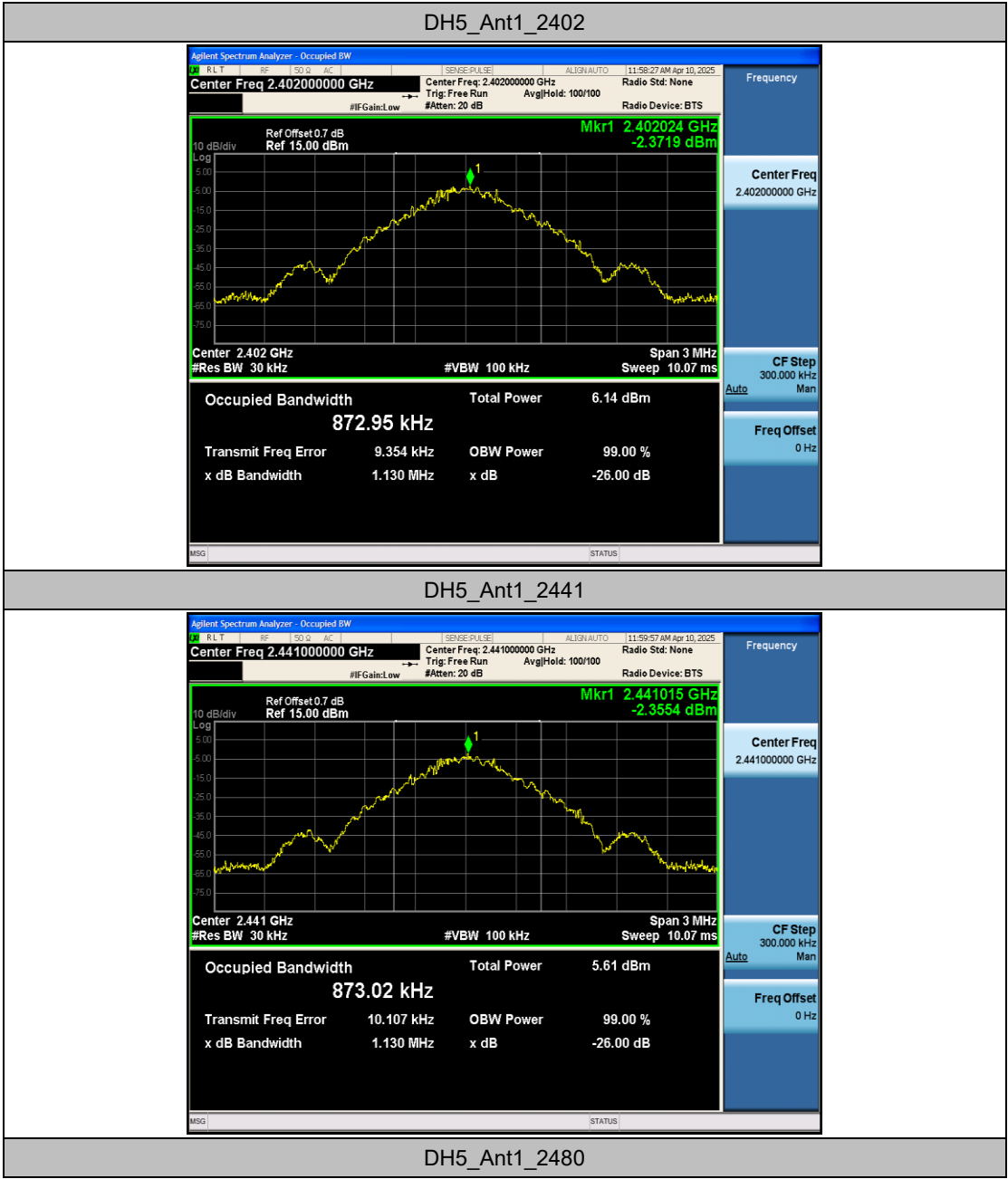


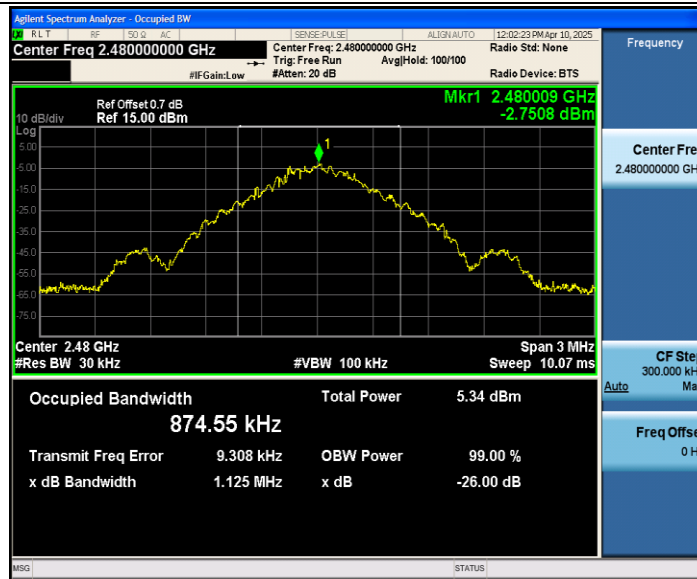
## Appendix B: Occupied Channel Bandwidth

### Test Result

| TestMode | Antenna | Freq(MHz) | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|----------|---------|-----------|-----------|-----------|-----------|------------|---------|
| DH5      | Ant1    | 2402      | 0.87295   | 2401.5729 | 2402.4458 | ---        | ---     |
|          |         | 2441      | 0.87302   | 2440.5736 | 2441.4466 | ---        | ---     |
|          |         | 2480      | 0.87455   | 2479.5720 | 2480.4466 | ---        | ---     |
| 2DH5     | Ant1    | 2402      | 1.1921    | 2401.4152 | 2402.6073 | ---        | ---     |
|          |         | 2441      | 1.1908    | 2440.4152 | 2441.6060 | ---        | ---     |
|          |         | 2480      | 1.1888    | 2479.4163 | 2480.6051 | ---        | ---     |
| 3DH5     | Ant1    | 2402      | 1.1741    | 2401.4228 | 2402.5969 | ---        | ---     |
|          |         | 2441      | 1.1925    | 2440.4145 | 2441.6070 | ---        | ---     |
|          |         | 2480      | 1.1868    | 2479.4181 | 2480.6049 | ---        | ---     |

Test Graphs

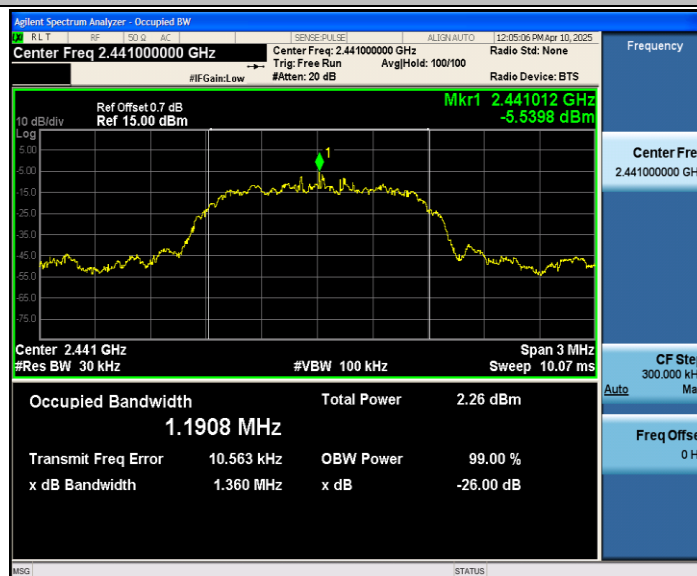




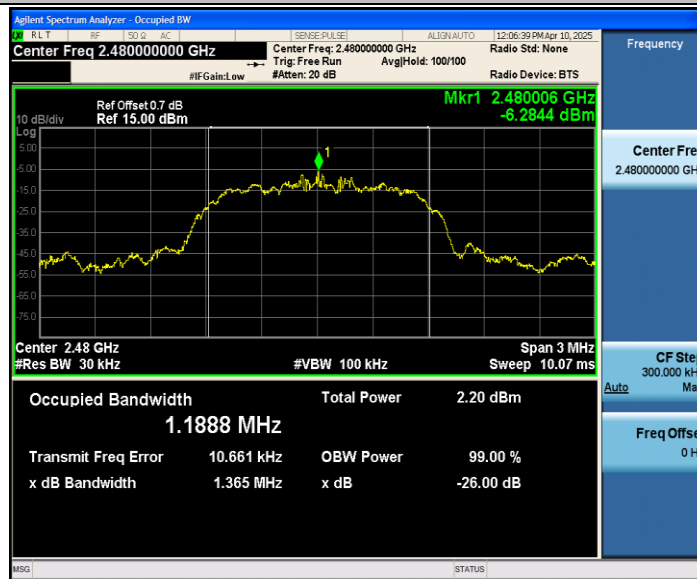
2DH5\_Ant1\_2402



2DH5\_Ant1\_2441



### 2DH5\_Ant1\_2480



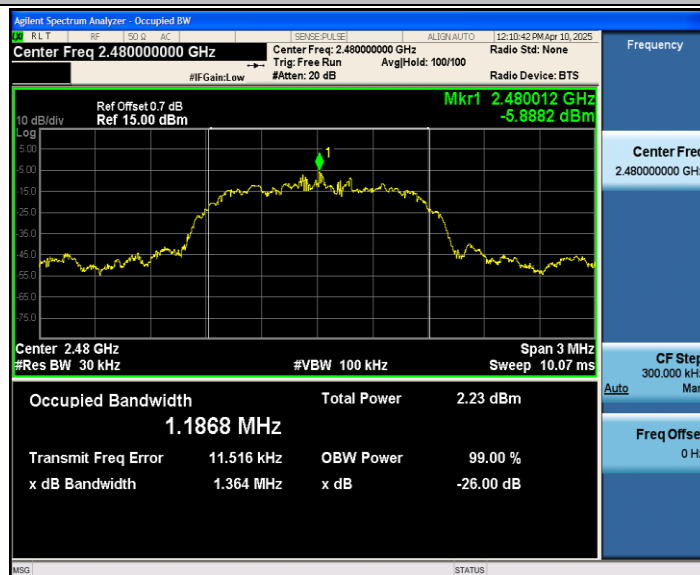
### 3DH5\_Ant1\_2402



### 3DH5\_Ant1\_2441



3DH5\_Ant1\_2480



## Appendix C: Maximum conducted output power

### Test Result Peak

| Test Mode | Antenna | Freq(MHz) | Conducted Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|-----------|---------|-----------|---------------------------|----------------------|---------|
| DH5       | Ant1    | 2402      | 0.32                      | ≤20.97               | PASS    |
|           |         | 2441      | -0.20                     | ≤20.97               | PASS    |
|           |         | 2480      | -0.50                     | ≤20.97               | PASS    |
| 2DH5      | Ant1    | 2402      | -0.49                     | ≤20.97               | PASS    |
|           |         | 2441      | -1.11                     | ≤20.97               | PASS    |
|           |         | 2480      | -1.29                     | ≤20.97               | PASS    |
| 3DH5      | Ant1    | 2402      | -0.52                     | ≤20.97               | PASS    |
|           |         | 2441      | -1.04                     | ≤20.97               | PASS    |
|           |         | 2480      | -1.30                     | ≤20.97               | PASS    |

## Appendix D: Carrier frequency separation

### Test Result

| TestMode | Antenna | Freq(MHz) | Result[MHz] | Limit[MHz]   | Verdict |
|----------|---------|-----------|-------------|--------------|---------|
| DH5      | Ant1    | Hop       | 1.032       | $\geq 0.960$ | PASS    |
| 2DH5     | Ant1    | Hop       | 1.124       | $\geq 0.870$ | PASS    |
| 3DH5     | Ant1    | Hop       | 1.008       | $\geq 0.882$ | PASS    |

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.442000000 GHz

Ref Offset 0.7 dB  
Ref 10.70 dBm

ΔMkr2 1.032 MHz  
-0.120 dB

Start 2.4400000 GHz  
#Res BW 300 kHz  
#VBW 300 kHz  
Sweep (#Swp) 1.000 ms (1001 pts)

Stop 2.4440000 GHz

Frequency

Auto Tune

Center Freq 2.442000000 GHz

Start Freq 2.440000000 GHz

Stop Freq 2.444000000 GHz

CF Step 400.000 kHz  
Auto Man

Freq Offset 0 Hz

2DH5\_Ant1\_Hop

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.442000000 GHz

Ref Offset 0.7 dB  
Ref 10.70 dBm

ΔMkr2 1.124 MHz  
-0.137 dB

Start 2.4400000 GHz  
#Res BW 300 kHz  
#VBW 300 kHz  
Sweep (#Swp) 1.000 ms (1001 pts)

Stop 2.4440000 GHz

Frequency

Auto Tune

Center Freq 2.442000000 GHz

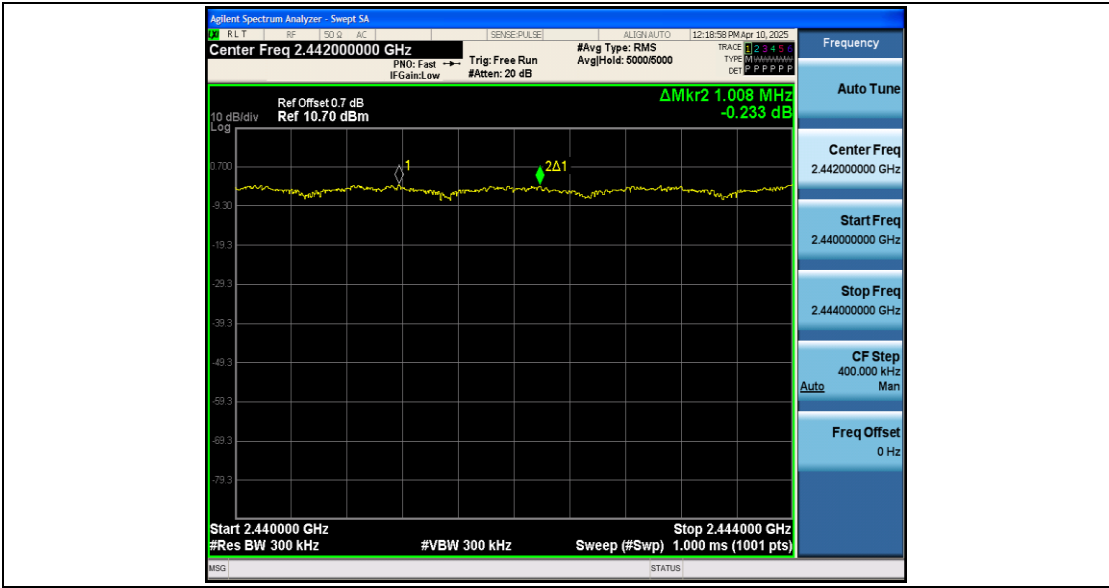
Start Freq 2.440000000 GHz

Stop Freq 2.444000000 GHz

CF Step 400.000 kHz  
Auto Man

Freq Offset 0 Hz

3DH5\_Ant1\_Hop

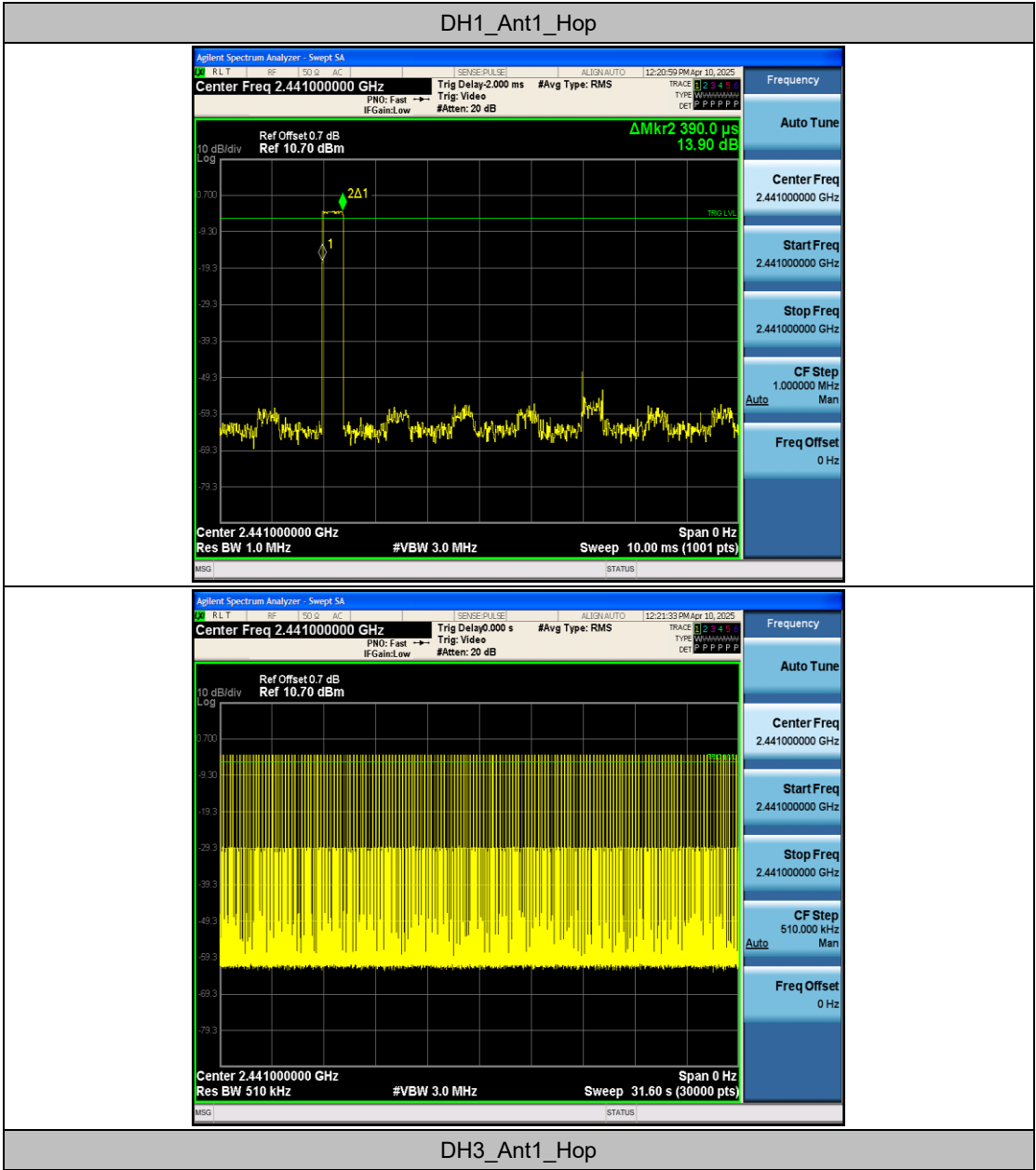


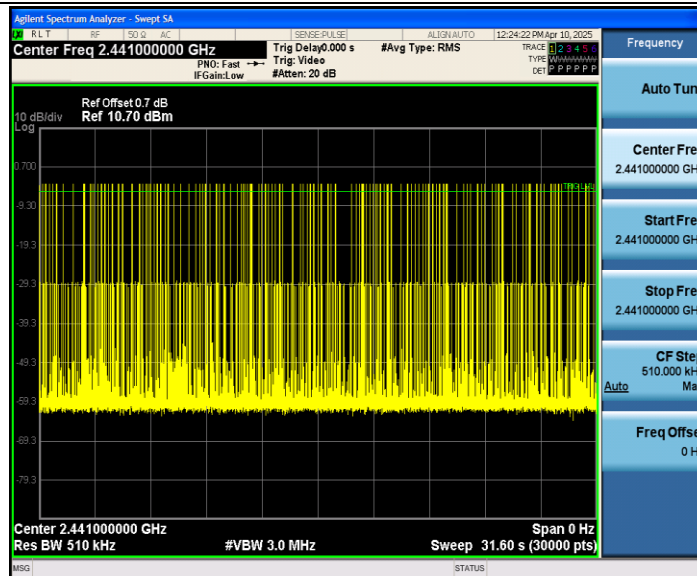
## Appendix E: Time of occupancy

### Test Result

| TestMode | Antenna | Freq(MHz) | BurstWidth<br>[ms] | TotalHops<br>[Num] | Result[s] | Limit[s] | Verdict |
|----------|---------|-----------|--------------------|--------------------|-----------|----------|---------|
| DH1      | Ant1    | Hop       | 0.390              | 316                | 0.123     | ≤0.4     | PASS    |
| DH3      | Ant1    | Hop       | 1.650              | 163                | 0.269     | ≤0.4     | PASS    |
| DH5      | Ant1    | Hop       | 2.900              | 102                | 0.296     | ≤0.4     | PASS    |
| 2DH1     | Ant1    | Hop       | 0.390              | 314                | 0.122     | ≤0.4     | PASS    |
| 2DH3     | Ant1    | Hop       | 1.640              | 153                | 0.251     | ≤0.4     | PASS    |
| 2DH5     | Ant1    | Hop       | 2.890              | 103                | 0.298     | ≤0.4     | PASS    |
| 3DH1     | Ant1    | Hop       | 0.390              | 318                | 0.124     | ≤0.4     | PASS    |
| 3DH3     | Ant1    | Hop       | 1.640              | 161                | 0.264     | ≤0.4     | PASS    |
| 3DH5     | Ant1    | Hop       | 2.900              | 109                | 0.316     | ≤0.4     | PASS    |

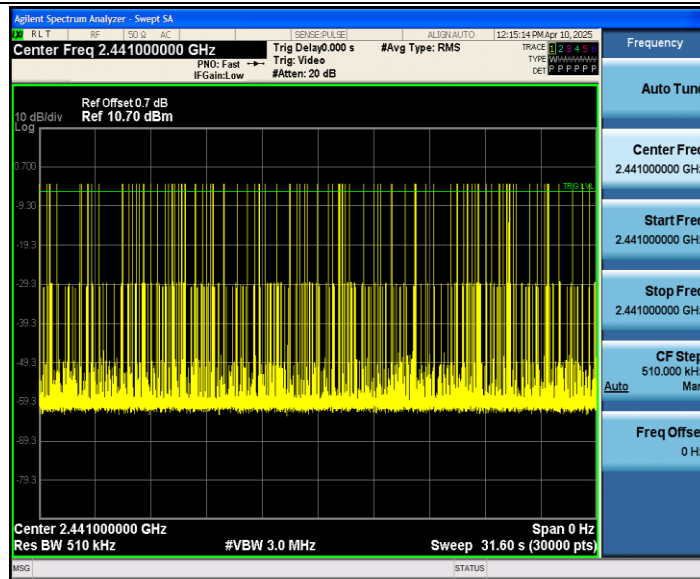
Test Graphs



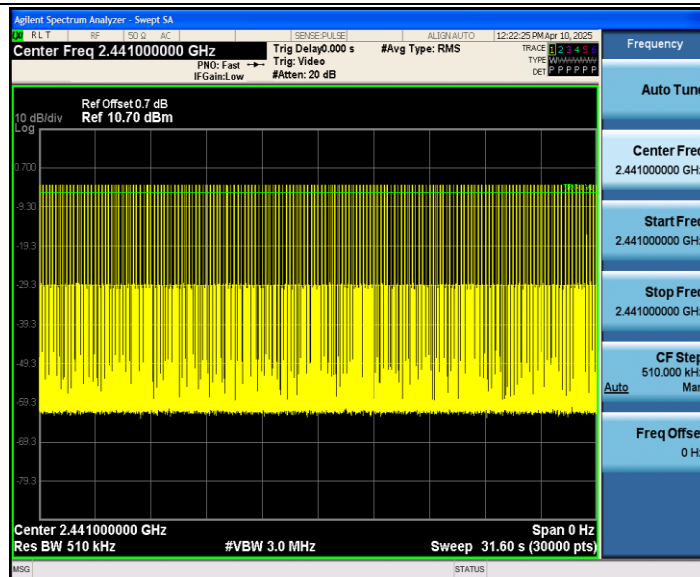
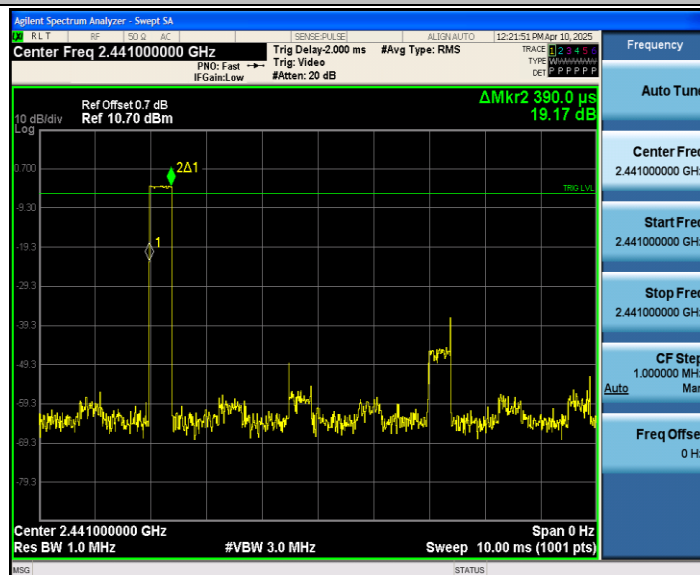


DH5\_Ant1\_Hop

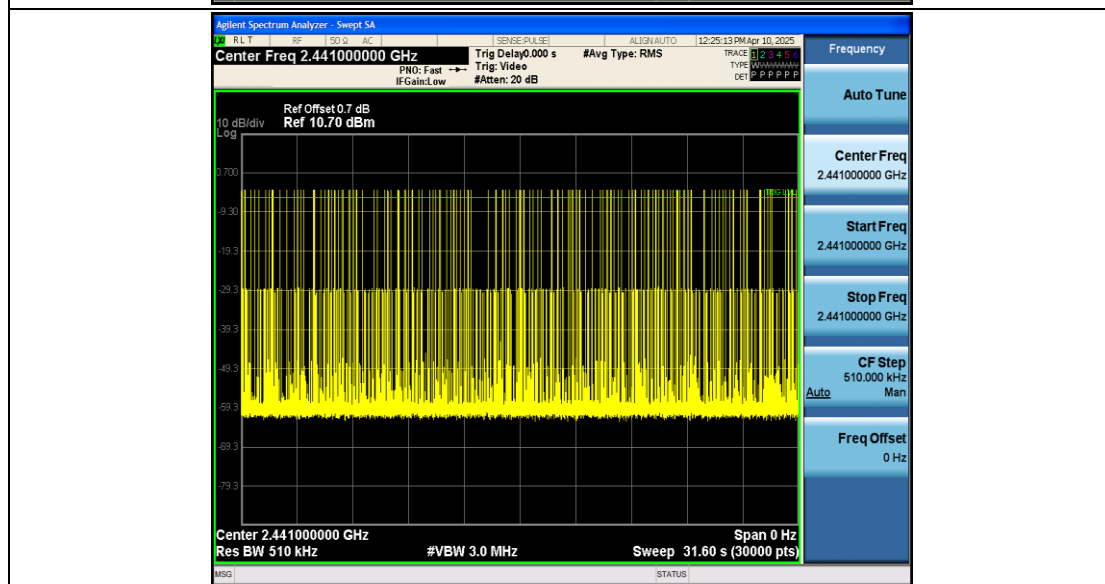




2DH1\_Ant1\_Hop

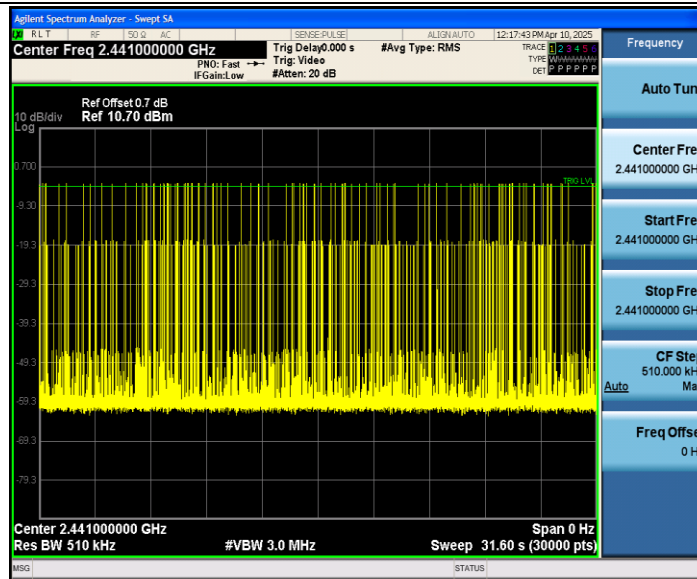


2DH3\_Ant1\_Hop

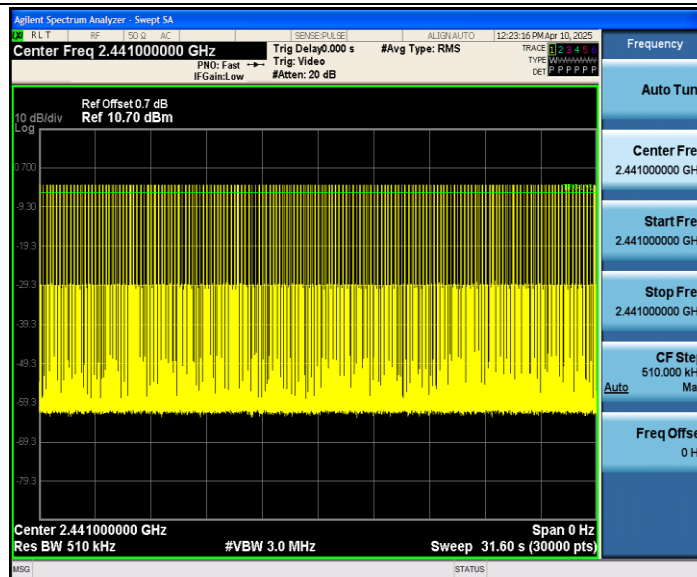
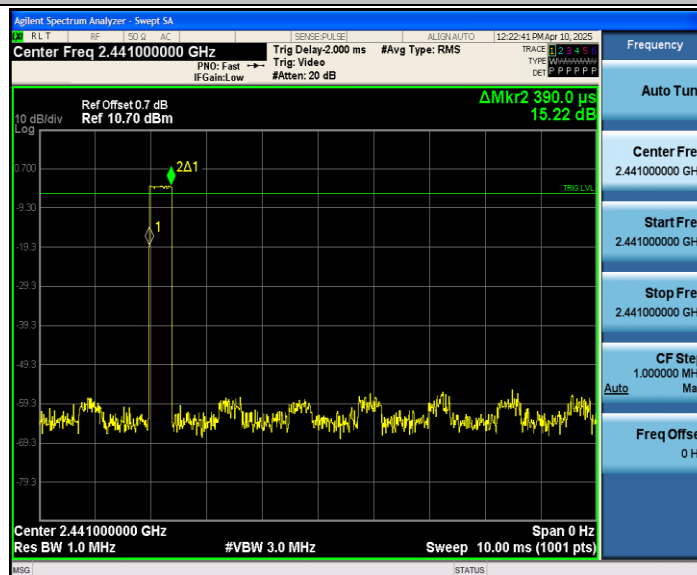


2DH5\_Ant1\_Hop

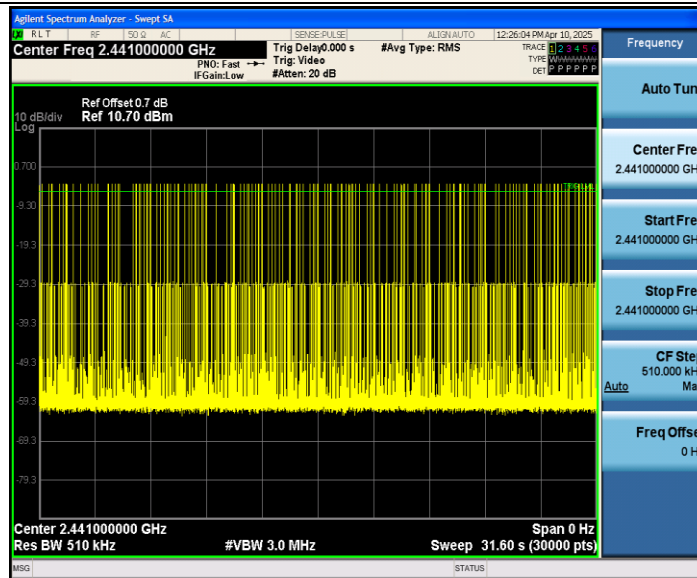




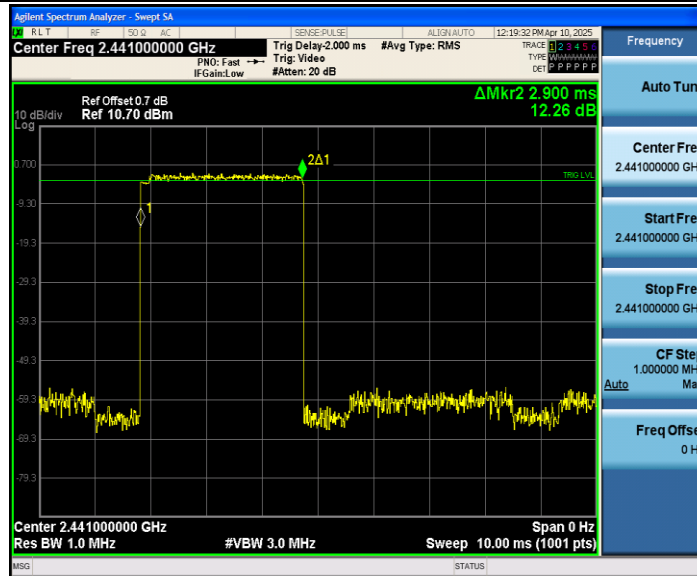
3DH1\_Ant1\_Hop

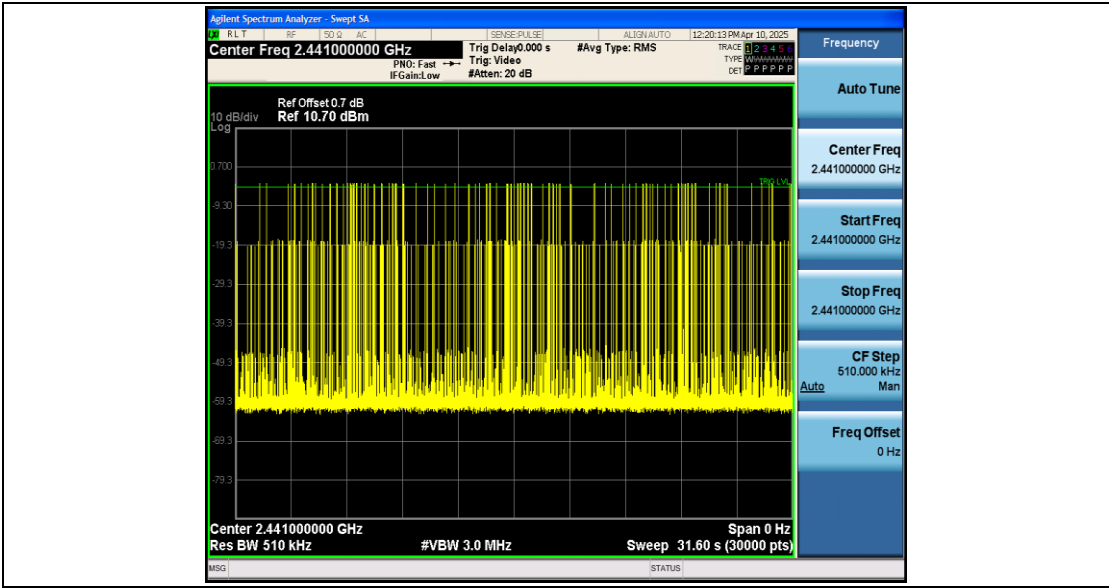


3DH3\_Ant1\_Hop



3DH5\_Ant1\_Hop





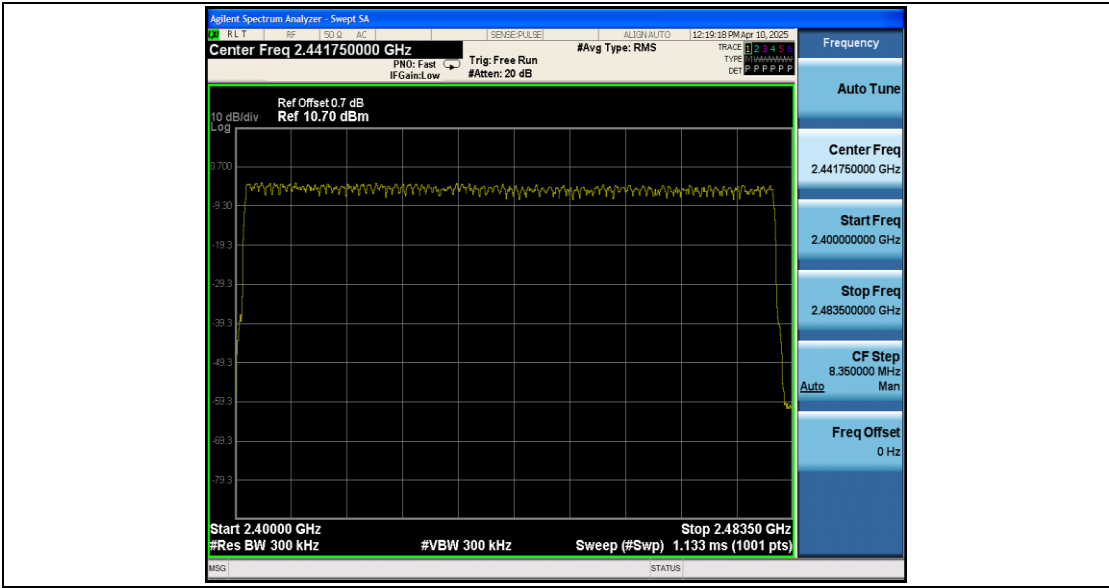
## Appendix F: Number of hopping channels

### Test Result

| TestMode | Antenna | Freq(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



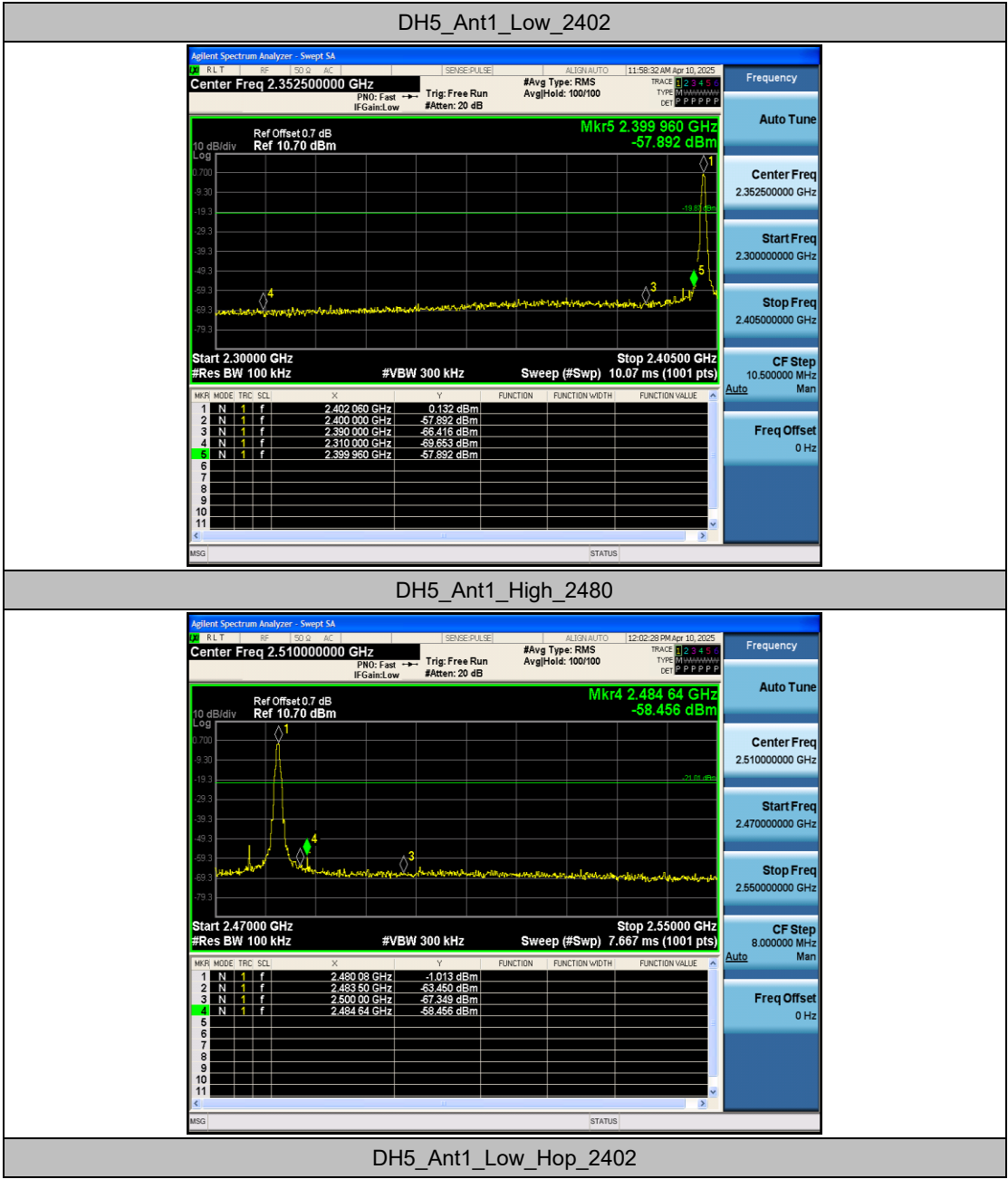


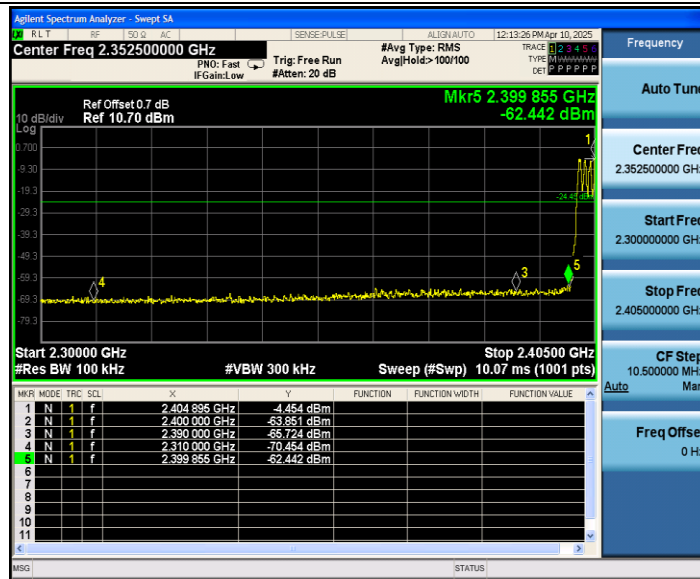
## Appendix G: Band edge measurements

### Test Result

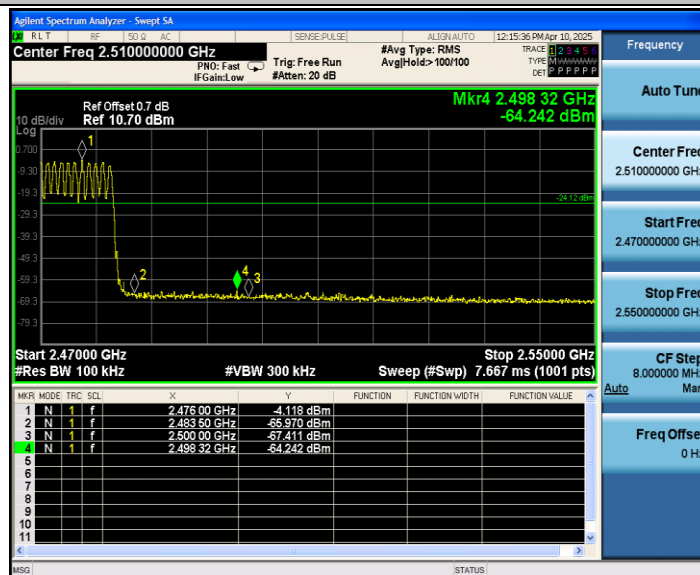
| TestMode | Antenna | ChName | Freq(MHz) | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|----------|---------|--------|-----------|----------------|--------------|-------------|---------|
| DH5      | Ant1    | Low    | 2402      | 0.13           | -57.89       | ≤-19.87     | PASS    |
|          |         | High   | 2480      | -1.01          | -58.46       | ≤-21.01     | PASS    |
|          |         | Low    | Hop_2402  | -4.45          | -62.44       | ≤-24.45     | PASS    |
|          |         | High   | Hop_2480  | -4.12          | -64.24       | ≤-24.12     | PASS    |
| 2DH5     | Ant1    | Low    | 2402      | -3.53          | -58.79       | ≤-23.53     | PASS    |
|          |         | High   | 2480      | -4.69          | -64.27       | ≤-24.69     | PASS    |
|          |         | Low    | Hop_2402  | -3.14          | -62.75       | ≤-23.14     | PASS    |
|          |         | High   | Hop_2480  | -5.21          | -64.52       | ≤-25.21     | PASS    |
| 3DH5     | Ant1    | Low    | 2402      | -3.15          | -54.66       | ≤-23.15     | PASS    |
|          |         | High   | 2480      | -4.18          | -58.59       | ≤-24.18     | PASS    |
|          |         | Low    | Hop_2402  | -6.14          | -63.38       | ≤-26.14     | PASS    |
|          |         | High   | Hop_2480  | -4.06          | -63.9        | ≤-24.06     | PASS    |

# Test Graphs

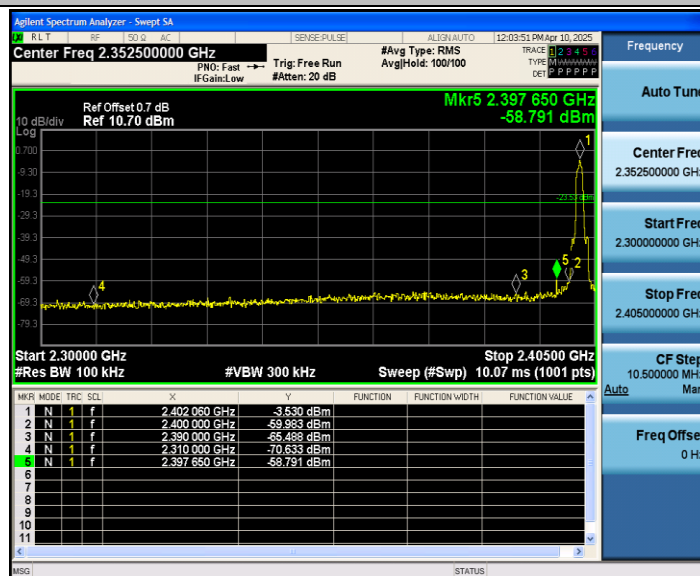




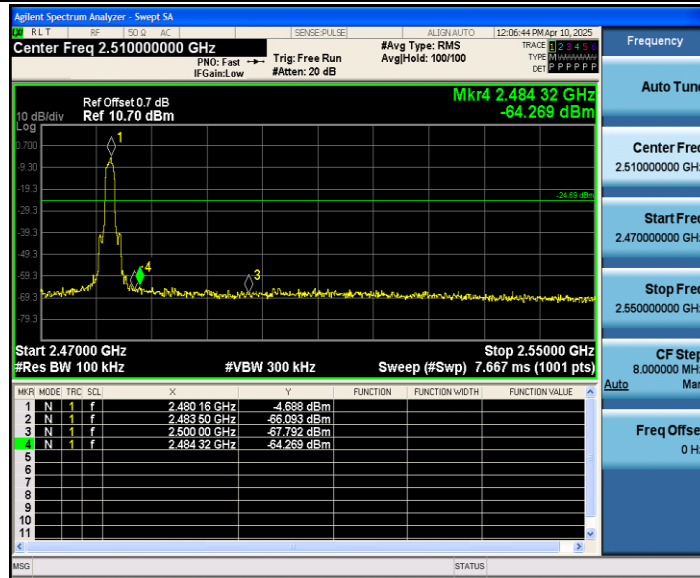
DH5\_Ant1\_High\_Hop\_2480



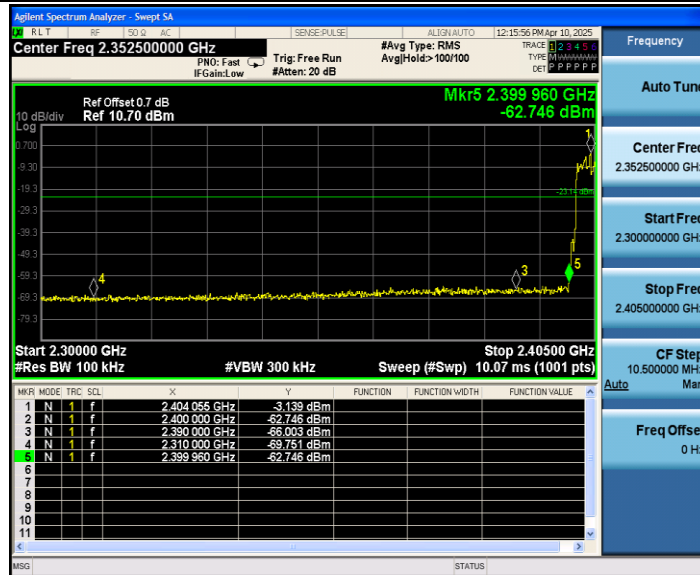
2DH5\_Ant1\_Low\_2402



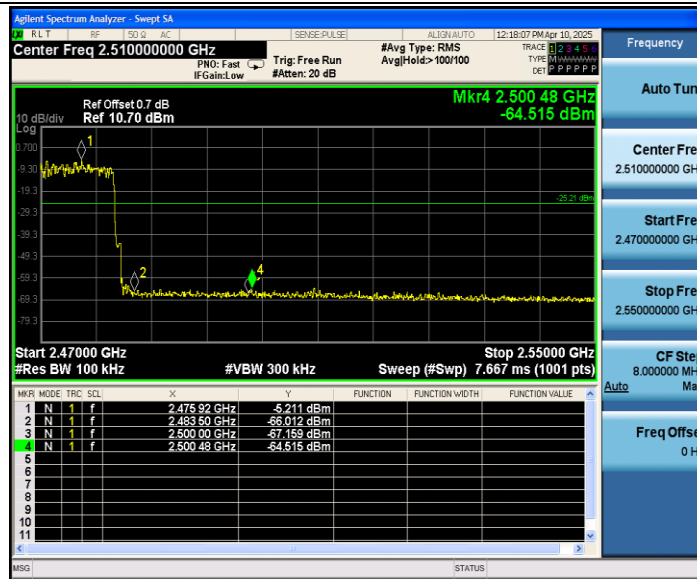
## 2DH5\_Ant1\_High\_2480



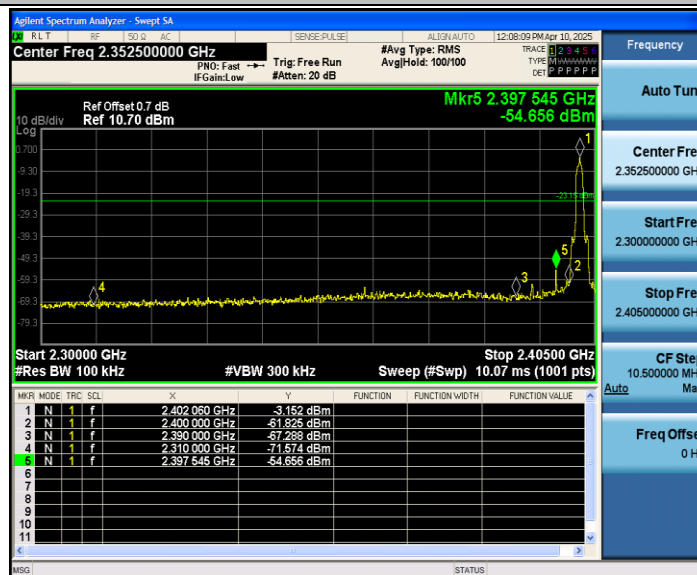
## 2DH5\_Ant1\_Low\_Hop\_2402



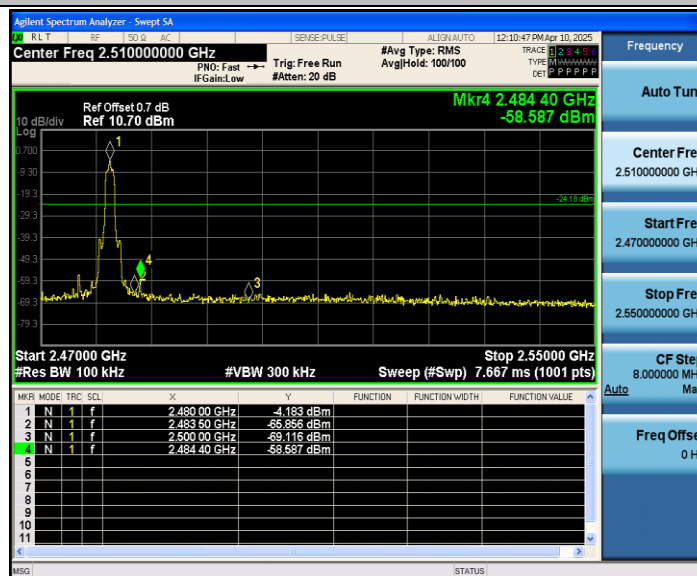
## 2DH5\_Ant1\_High\_Hop\_2480



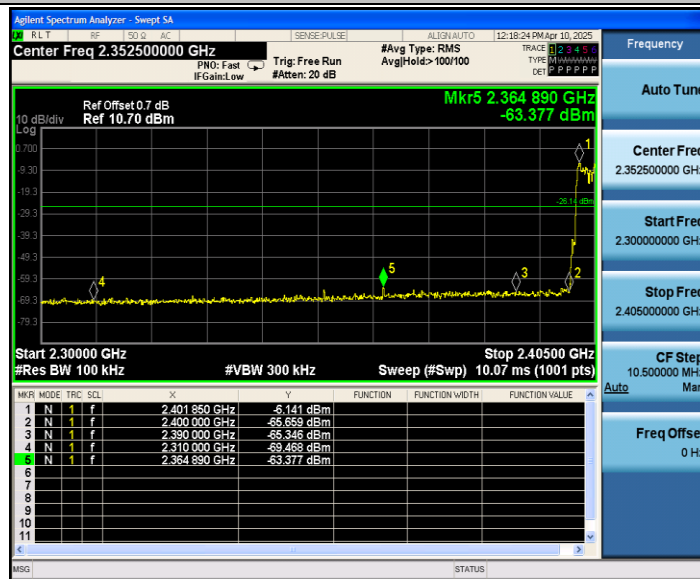
3DH5\_Ant1\_Low\_2402



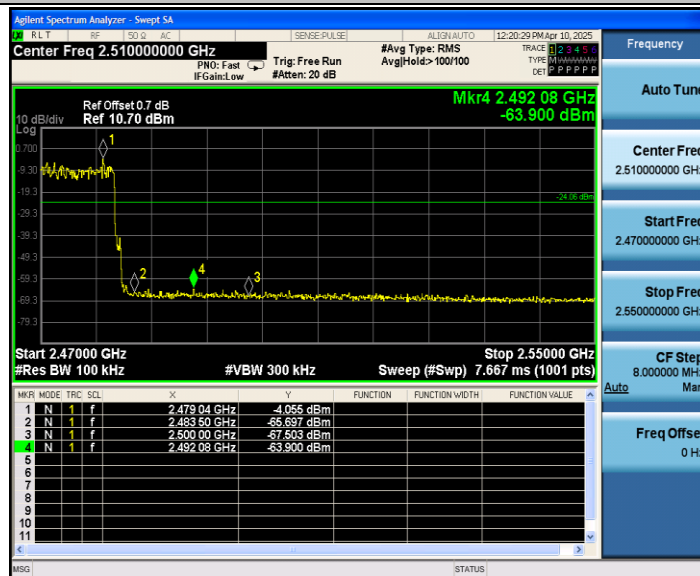
3DH5\_Ant1\_High\_2480



### 3DH5\_Ant1\_Low\_Hop\_2402



### 3DH5\_Ant1\_High\_Hop\_2480

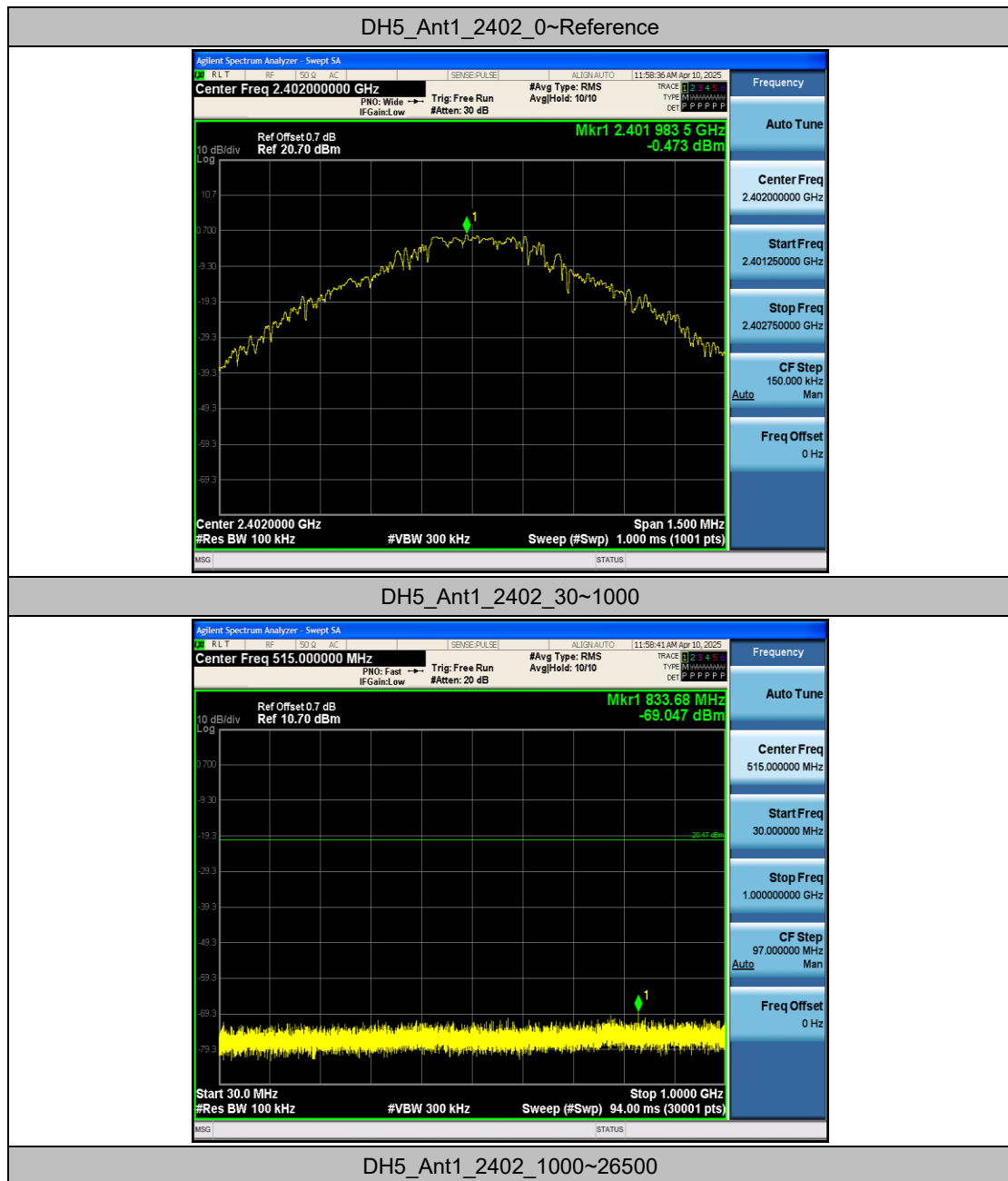


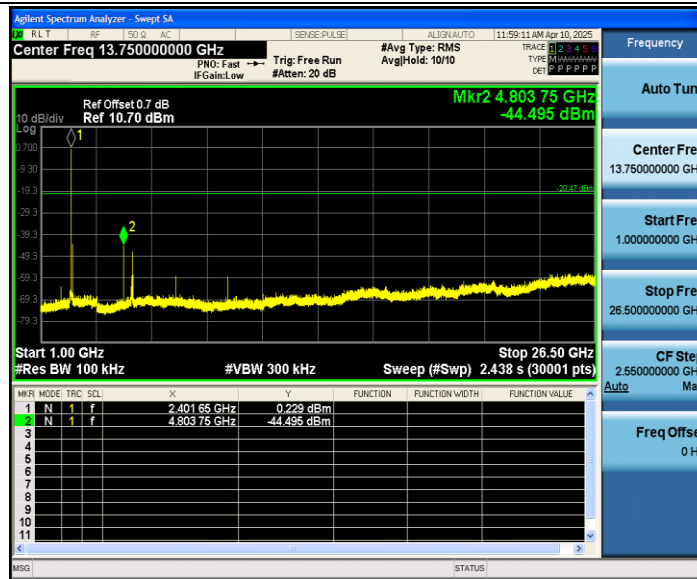
## Appendix H: Conducted Spurious Emission

### Test Result

| TestMode | Antenna | Freq(MHz) | FreqRange [MHz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|----------|---------|-----------|-----------------|----------------|--------------|-------------|---------|
| DH5      | Ant1    | 2402      | Reference       | -0.47          | -0.47        | ---         | PASS    |
|          |         |           | 30~1000         | -0.47          | -69.05       | ≤-20.47     | PASS    |
|          |         |           | 1000~26500      | -0.47          | -44.5        | ≤-20.47     | PASS    |
|          |         | 2441      | Reference       | -1.09          | -1.09        | ---         | PASS    |
|          |         |           | 30~1000         | -1.09          | -69.73       | ≤-21.09     | PASS    |
|          |         |           | 1000~26500      | -1.09          | -44.93       | ≤-21.09     | PASS    |
|          |         | 2480      | Reference       | -1.56          | -1.56        | ---         | PASS    |
|          |         |           | 30~1000         | -1.56          | -69.42       | ≤-21.56     | PASS    |
|          |         |           | 1000~26500      | -1.56          | -44.41       | ≤-21.56     | PASS    |
| 2DH5     | Ant1    | 2402      | Reference       | -6.63          | -6.63        | ---         | PASS    |
|          |         |           | 30~1000         | -6.63          | -69.36       | ≤-26.63     | PASS    |
|          |         |           | 1000~26500      | -6.63          | -51.84       | ≤-26.63     | PASS    |
|          |         | 2441      | Reference       | -7.30          | -7.30        | ---         | PASS    |
|          |         |           | 30~1000         | -7.30          | -69.79       | ≤-27.3      | PASS    |
|          |         |           | 1000~26500      | -7.30          | -48.95       | ≤-27.3      | PASS    |
|          |         | 2480      | Reference       | -4.38          | -4.38        | ---         | PASS    |
|          |         |           | 30~1000         | -4.38          | -69.46       | ≤-24.38     | PASS    |
|          |         |           | 1000~26500      | -4.38          | -50.84       | ≤-24.38     | PASS    |
| 3DH5     | Ant1    | 2402      | Reference       | -3.43          | -3.43        | ---         | PASS    |
|          |         |           | 30~1000         | -3.43          | -70.5        | ≤-23.43     | PASS    |
|          |         |           | 1000~26500      | -3.43          | -50.29       | ≤-23.43     | PASS    |
|          |         | 2441      | Reference       | -3.82          | -3.82        | ---         | PASS    |
|          |         |           | 30~1000         | -3.82          | -69.93       | ≤-23.82     | PASS    |
|          |         |           | 1000~26500      | -3.82          | -52.06       | ≤-23.82     | PASS    |
|          |         | 2480      | Reference       | -5.12          | -5.12        | ---         | PASS    |
|          |         |           | 30~1000         | -5.12          | -69.14       | ≤-25.12     | PASS    |
|          |         |           | 1000~26500      | -5.12          | -52.84       | ≤-25.12     | PASS    |

## Test Graphs





DH5\_Ant1\_2441\_0~Reference



DH5\_Ant1\_2441\_30~1000

