

## Annex for FCC Bluetooth BR&EDR

Test Report No. : CTL2103245011-WF01

### Appendix A: 20dB Emission Bandwidth

#### Test Result

| TestMode | Antenna | Channel | 20db<br>EBW[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|------------------|----------|----------|------------|---------|
| DH5      | Ant1    | 2402    | 0.966            | 2401.526 | 2402.492 | ---        | PASS    |
|          |         | 2441    | 0.963            | 2440.526 | 2441.489 | ---        | PASS    |
|          |         | 2480    | 0.966            | 2479.523 | 2480.489 | ---        | PASS    |
| 2DH5     | Ant1    | 2402    | 1.320            | 2401.334 | 2402.654 | ---        | PASS    |
|          |         | 2441    | 1.296            | 2440.355 | 2441.651 | ---        | PASS    |
|          |         | 2480    | 1.296            | 2479.355 | 2480.651 | ---        | PASS    |
| 3DH5     | Ant1    | 2402    | 1.302            | 2401.343 | 2402.645 | ---        | PASS    |
|          |         | 2441    | 1.305            | 2440.343 | 2441.648 | ---        | PASS    |
|          |         | 2480    | 1.305            | 2479.343 | 2480.648 | ---        | PASS    |

## Test Graphs

DH5\_Ant1\_2402



DH5\_Ant1\_2441



DH5\_Ant1\_2480



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 | Channel | OCB [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|-----------|----------|----------|------------|---------|
| DH5      | Ant1    | 2402    | 0.86124   | 2401.564 | 2402.426 | ---        | PASS    |
|          |         | 2441    | 0.85929   | 2440.563 | 2441.422 | ---        | PASS    |
|          |         | 2480    | 0.85945   | 2479.561 | 2480.421 | ---        | PASS    |
| 2DH5     | Ant1    | 2402    | 1.1688    | 2401.411 | 2402.579 | ---        | PASS    |
|          |         | 2441    | 1.1690    | 2440.409 | 2441.578 | ---        | PASS    |
|          |         | 2480    | 1.1695    | 2479.408 | 2480.578 | ---        | PASS    |
| 3DH5     | Ant1    | 2402    | 1.1764    | 2401.403 | 2402.579 | ---        | PASS    |
|          |         | 2441    | 1.1767    | 2440.402 | 2441.579 | ---        | PASS    |
|          |         | 2480    | 1.1781    | 2479.401 | 2480.579 | ---        | PASS    |

## Test Graphs

DH5\_Ant1\_2402



DH5\_Ant1\_2441



DH5\_Ant1\_2480



2DHS\_Ant1\_2402



2DHS\_Ant1\_2441



### 2DH5\_Ant1\_2480



### 3DH5\_Ant1\_2402



### 3DH5\_Ant1\_2441



3DH5\_Ant1\_2480



## Appendix C: Maximum conducted output power

### Test Result

| TestMode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|---------|
| DH5      | Ant1    | 2402    | 3.97        | <=20.97    | PASS    |
|          |         | 2441    | 4.67        | <=20.97    | PASS    |
|          |         | 2480    | 4.85        | <=20.97    | PASS    |
| 2DH5     | Ant1    | 2402    | 6.49        | <=20.97    | PASS    |
|          |         | 2441    | 7.18        | <=20.97    | PASS    |
|          |         | 2480    | 7.3         | <=20.97    | PASS    |
| 3DH5     | Ant1    | 2402    | 6.77        | <=20.97    | PASS    |
|          |         | 2441    | 7.43        | <=20.97    | PASS    |
|          |         | 2480    | 7.57        | <=20.97    | PASS    |

## Test Graphs

DH5\_Ant1\_2402



DH5\_Ant1\_2441



DH5\_Ant1\_2480



2DH5\_Ant1\_2402



2DH5\_Ant1\_2441



# 2DH5\_Ant1\_2480



# 3DH5\_Ant1\_2402



# 3DH5\_Ant1\_2441



3DH5\_Ant1\_2480



## Appendix D: Carrier frequency separation

### Test Result

| TestMode | Antenna | Channel | Result[MHz] | Limit[MHz]   | Verdict |
|----------|---------|---------|-------------|--------------|---------|
| DH5      | Ant1    | Hop     | 0.86        | $\geq 0.644$ | PASS    |
| 2DH5     | Ant1    | Hop     | 1.306       | $\geq 0.880$ | PASS    |
| 3DH5     | Ant1    | Hop     | 1.144       | $\geq 0.870$ | PASS    |

## Test Graphs

DH5\_Ant1\_Hop



2DH5\_Ant1\_Hop



3DH5\_Ant1\_Hop



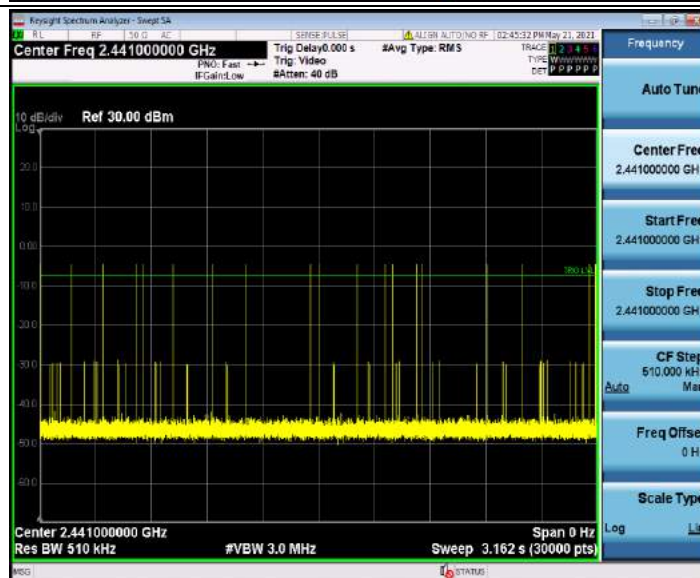
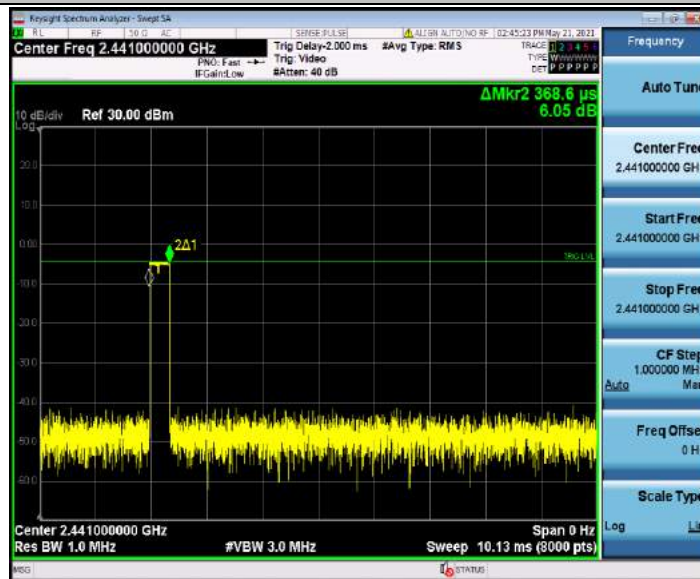
## Appendix E: Time of occupancy

### Test Result

| TestMode | Antenna | Channel | BurstWidth<br>[ms] | TotalHops<br>[Num] | Result[s] | Limit[s] | Verdict |
|----------|---------|---------|--------------------|--------------------|-----------|----------|---------|
| DH1      | Ant1    | Hop     | 0.37               | 190                | 0.07      | <=0.4    | PASS    |
| DH3      | Ant1    | Hop     | 1.63               | 170                | 0.276     | <=0.4    | PASS    |
| DH5      | Ant1    | Hop     | 2.87               | 120                | 0.345     | <=0.4    | PASS    |
| 2DH1     | Ant1    | Hop     | 0.38               | 130                | 0.049     | <=0.4    | PASS    |
| 2DH3     | Ant1    | Hop     | 1.63               | 130                | 0.212     | <=0.4    | PASS    |
| 2DH5     | Ant1    | Hop     | 2.88               | 110                | 0.316     | <=0.4    | PASS    |
| 3DH1     | Ant1    | Hop     | 0.38               | 150                | 0.057     | <=0.4    | PASS    |
| 3DH3     | Ant1    | Hop     | 1.63               | 140                | 0.228     | <=0.4    | PASS    |
| 3DH5     | Ant1    | Hop     | 2.88               | 90                 | 0.259     | <=0.4    | PASS    |

## Test Graphs

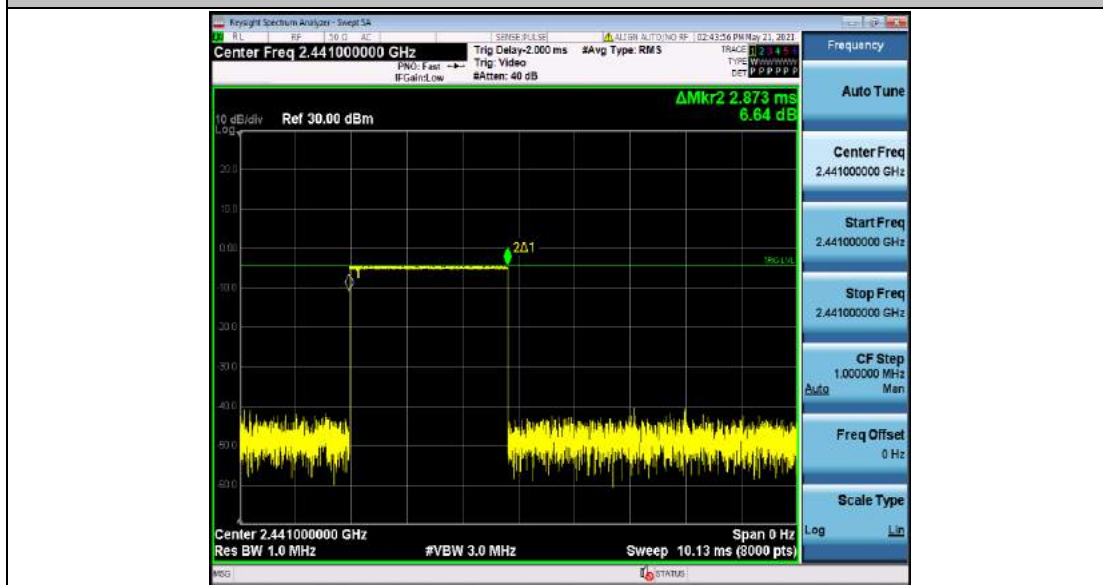
DH1\_Ant1\_Hop

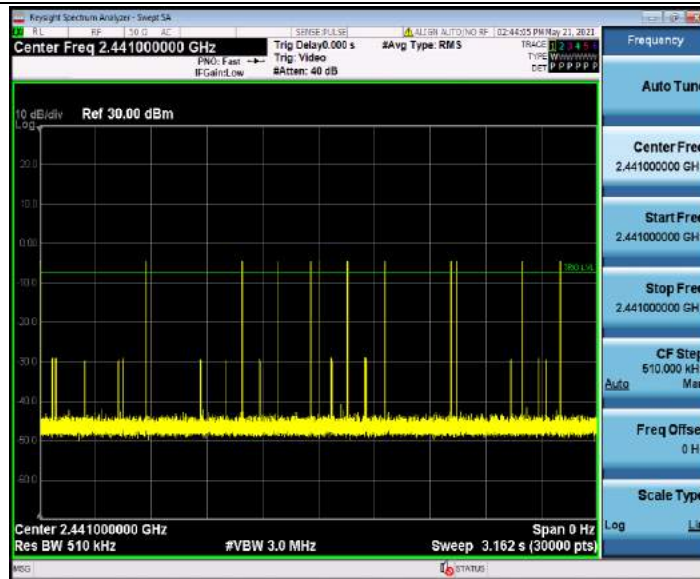


DH3\_Ant1\_Hop

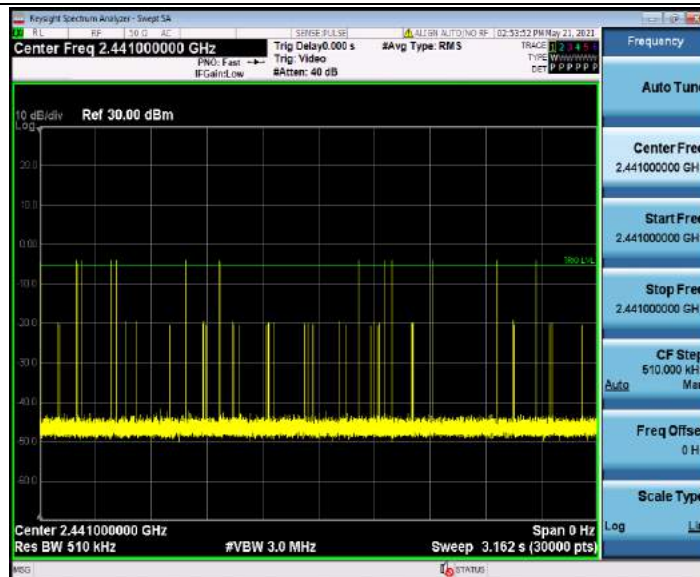
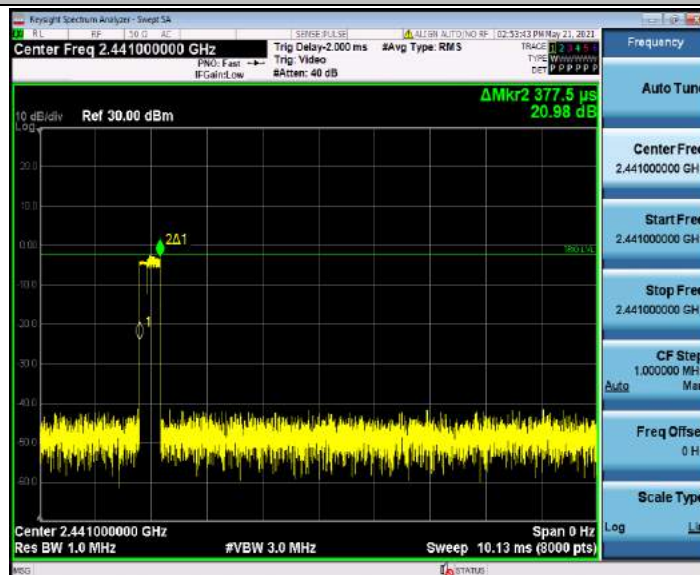


DH5\_Ant1\_Hop

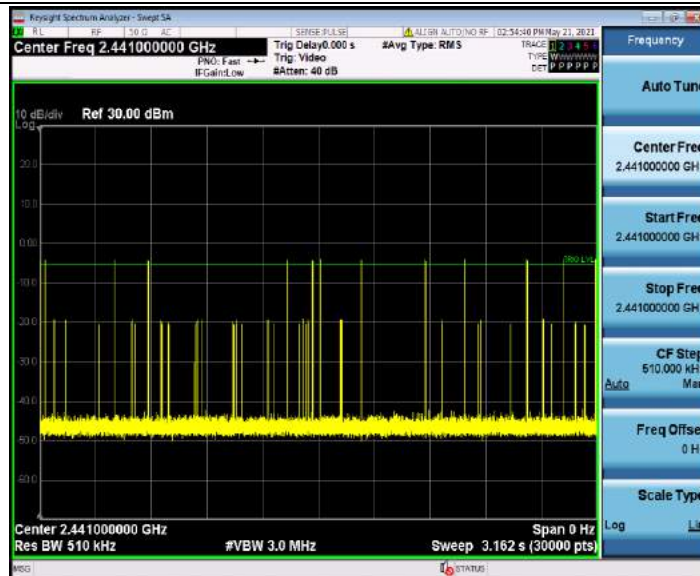
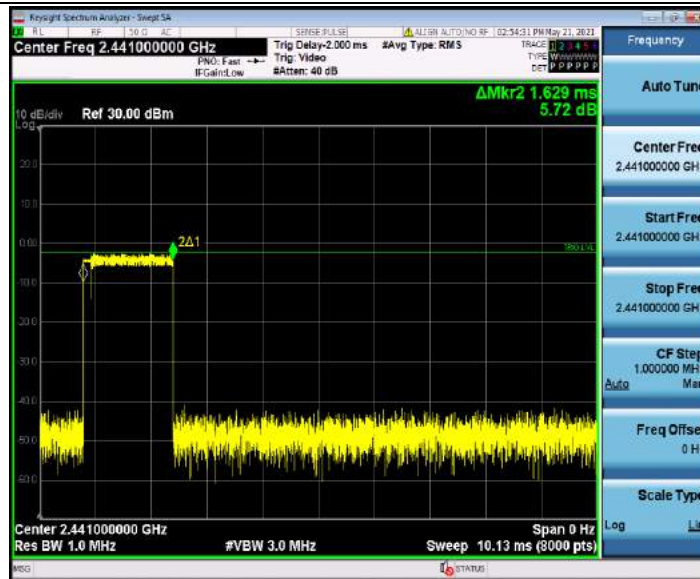




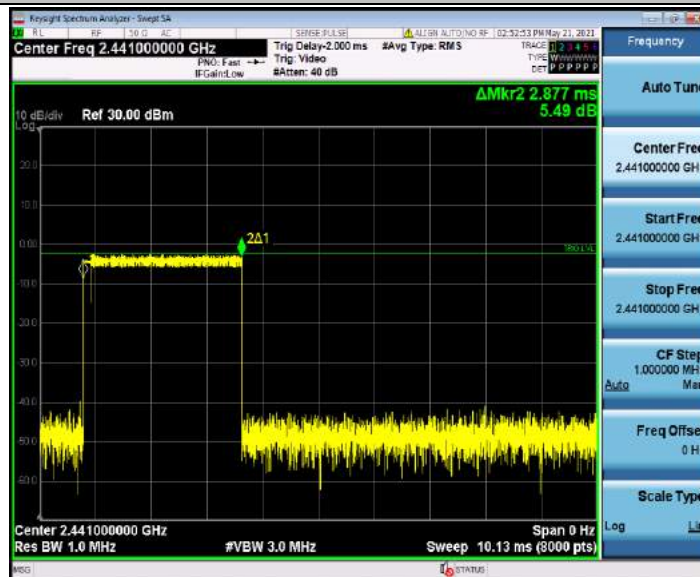
2DH1\_Ant1\_Hop

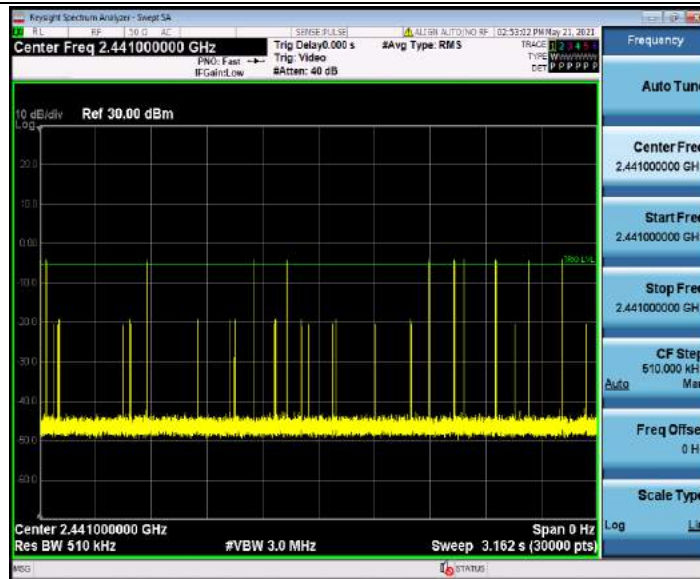


2DH3\_Ant1\_Hop

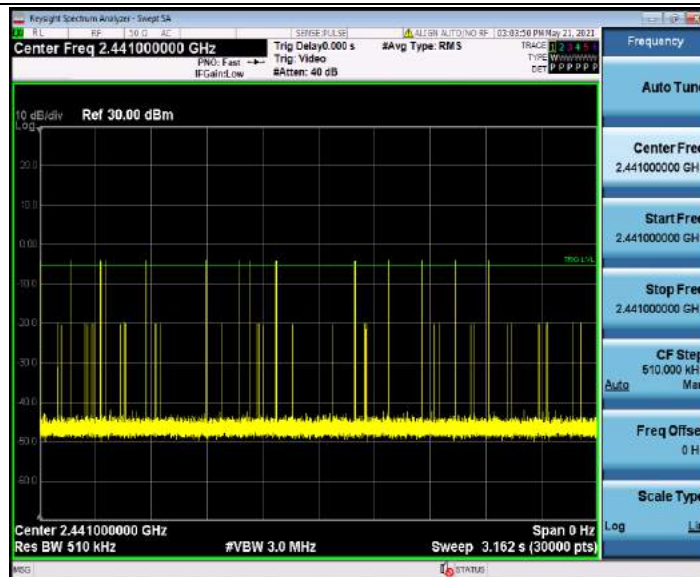
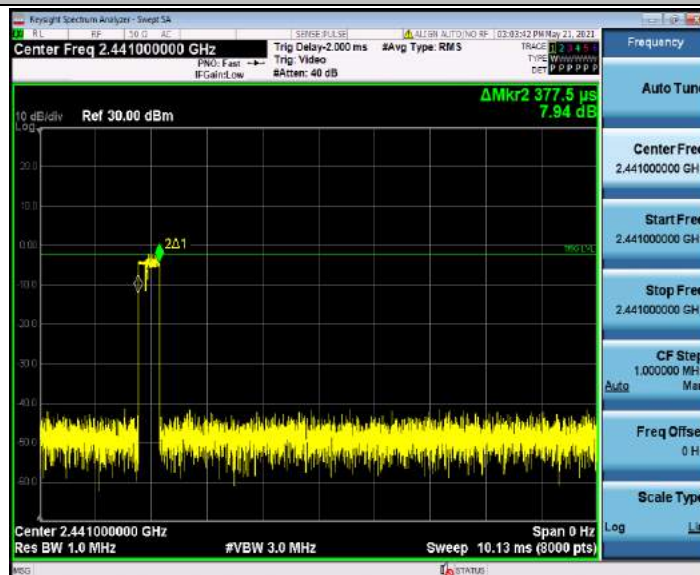


2DH5\_Ant1\_Hop

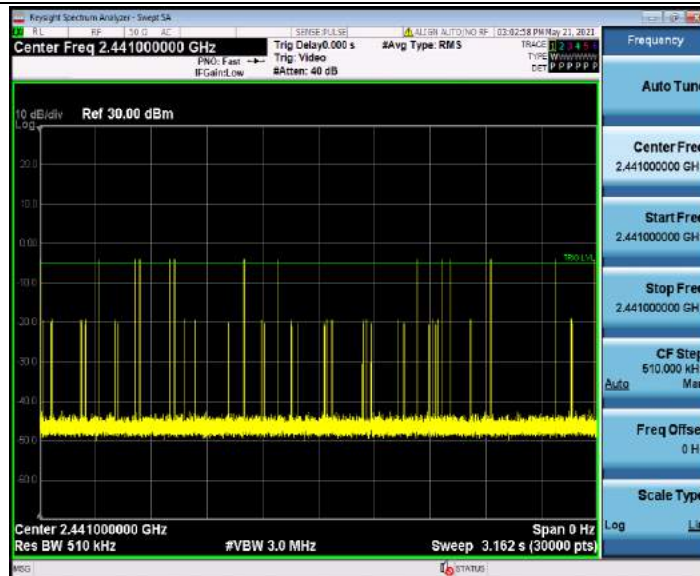
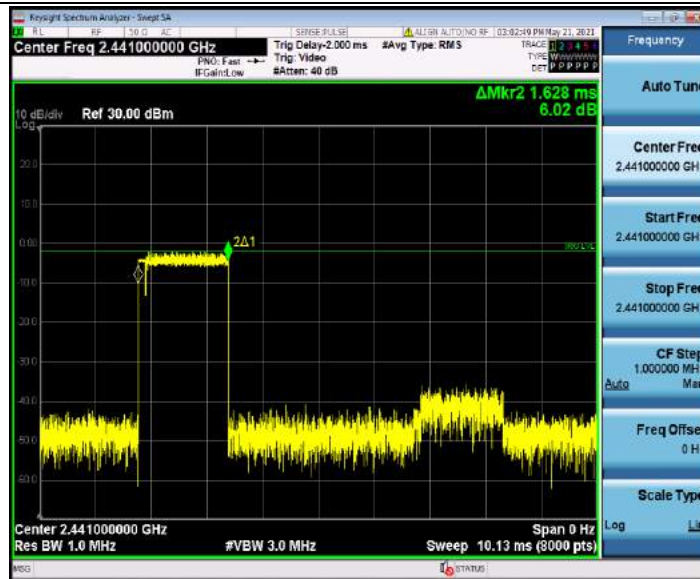




3DH1\_Ant1\_Hop

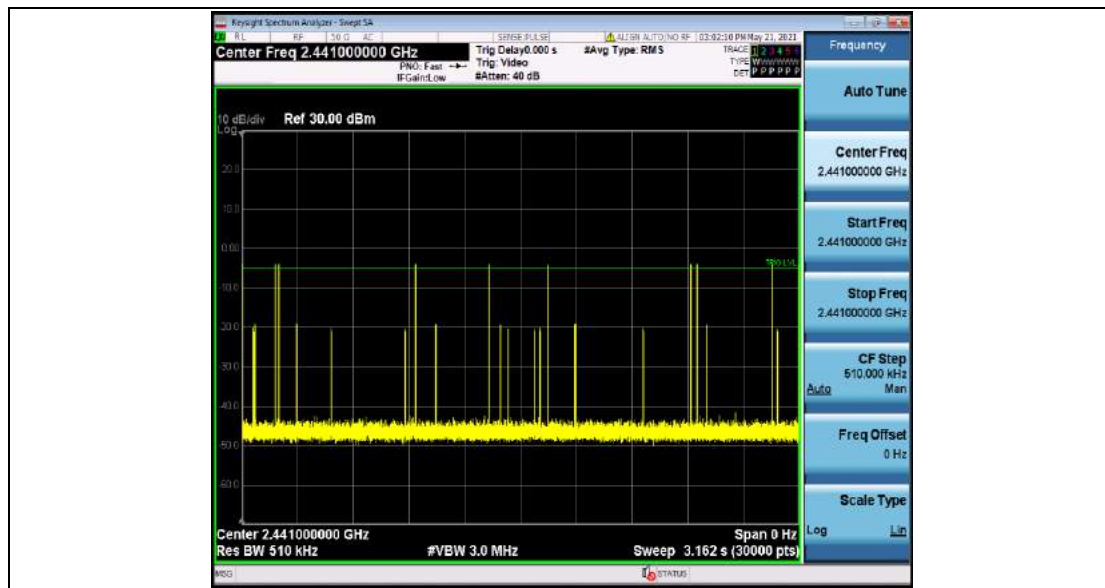


3DH3\_Ant1\_Hop



3DH5\_Ant1\_Hop





## Appendix F: Number of hopping channels

### Test Result

| TestMode | Antenna | Channel | 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

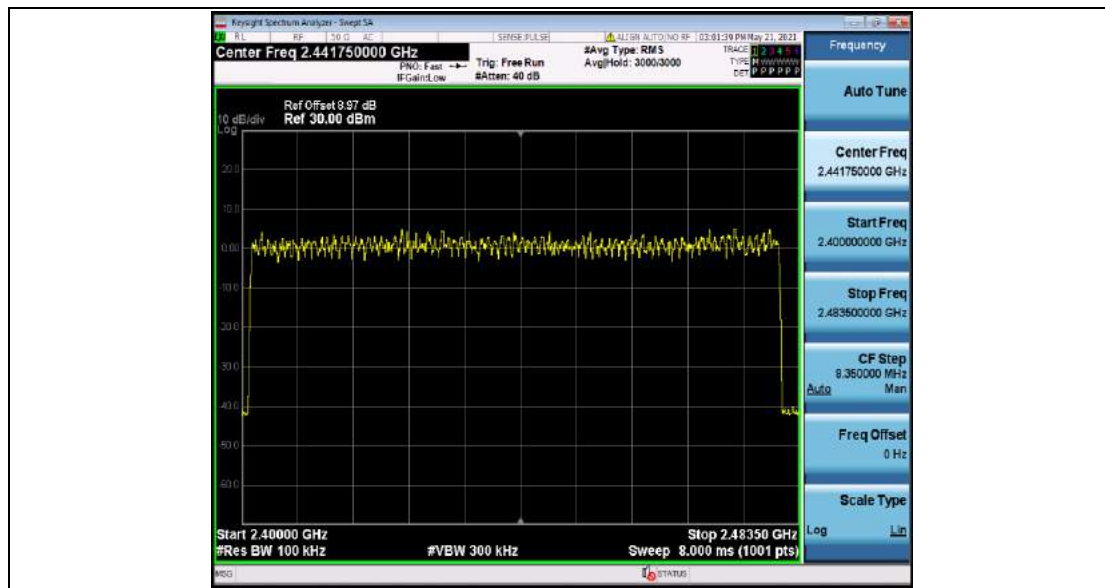
DH5\_Ant1\_Hop



2DH5\_Ant1\_Hop



3DH5\_Ant1\_Hop



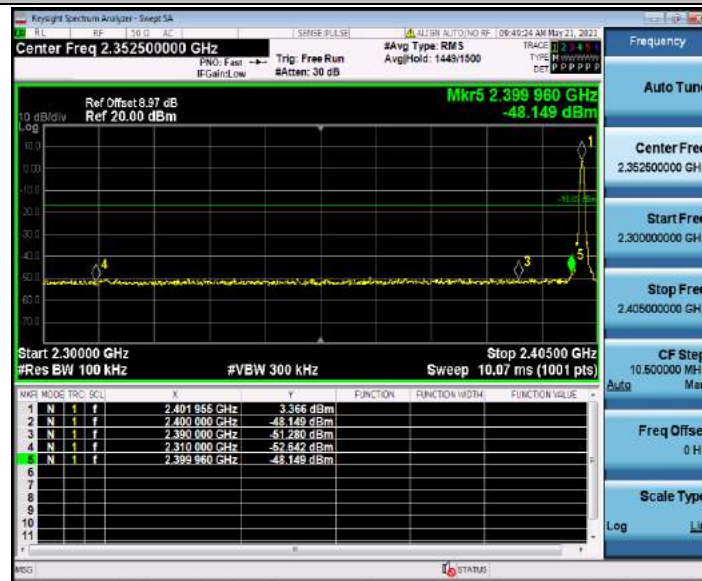
## Appendix G: Band edge measurements

### Test Result

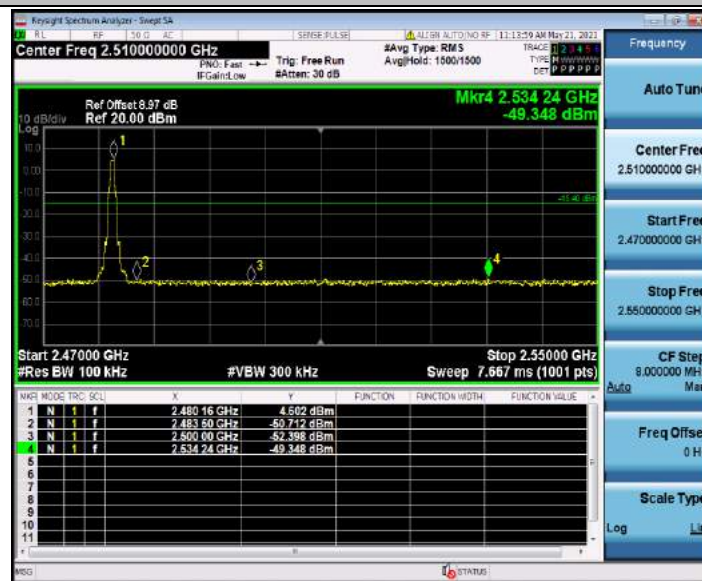
| TestMode | Antenna | ChName | Channel  | RefLevel<br>[dBm] | Result<br>[dBm] | Limit<br>[dBm] | Verdict |
|----------|---------|--------|----------|-------------------|-----------------|----------------|---------|
| DH5      | Ant1    | Low    | 2402     | 3.37              | -48.15          | <=-16.63       | PASS    |
|          |         | High   | 2480     | 4.60              | -49.35          | <=-15.4        | PASS    |
|          |         | Low    | Hop_2402 | 3.62              | -49.79          | -16.38         | PASS    |
|          |         | High   | Hop_2480 | 4.68              | -48.89          | -15.33         | PASS    |
| 2DH5     | Ant1    | Low    | 2402     | 3.95              | -49.67          | <=-16.05       | PASS    |
|          |         | High   | 2480     | 4.67              | -49.19          | <=-15.33       | PASS    |
|          |         | Low    | Hop_2402 | 3.06              | -49.79          | -16.94         | PASS    |
|          |         | High   | Hop_2480 | 4.93              | -49.31          | -15.07         | PASS    |
| 3DH5     | Ant1    | Low    | 2402     | 4.07              | -49.34          | <=-15.93       | PASS    |
|          |         | High   | 2480     | 4.98              | -48.87          | <=-15.02       | PASS    |
|          |         | Low    | Hop_2402 | 3.42              | -49.77          | -16.59         | PASS    |
|          |         | High   | Hop_2480 | 4.72              | -49.22          | -15.28         | PASS    |

## Test Graphs

DH5\_Ant1\_Low\_2402



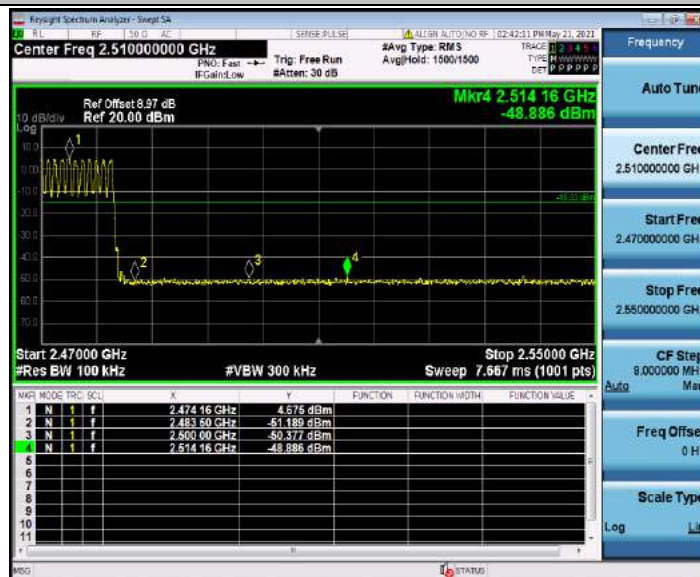
DH5\_Ant1\_High\_2480



DH5\_Ant1\_Low\_Hop\_2402



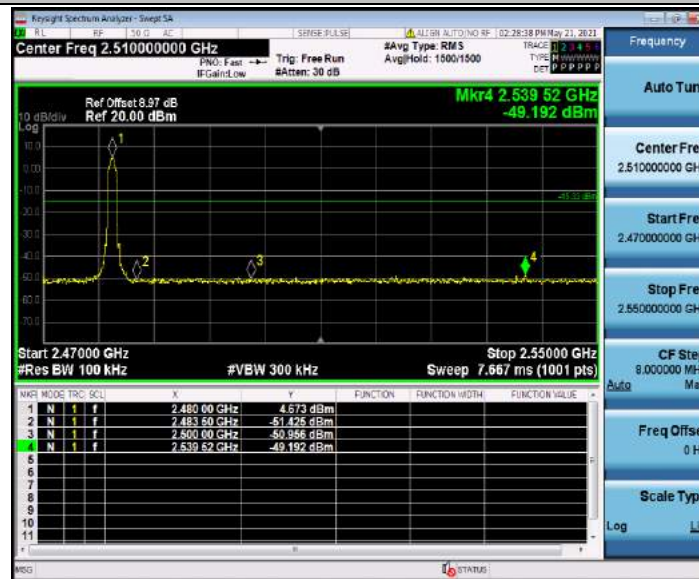
DH5\_Ant1\_High\_Hop\_2480



2DH5\_Ant1\_Low\_2402



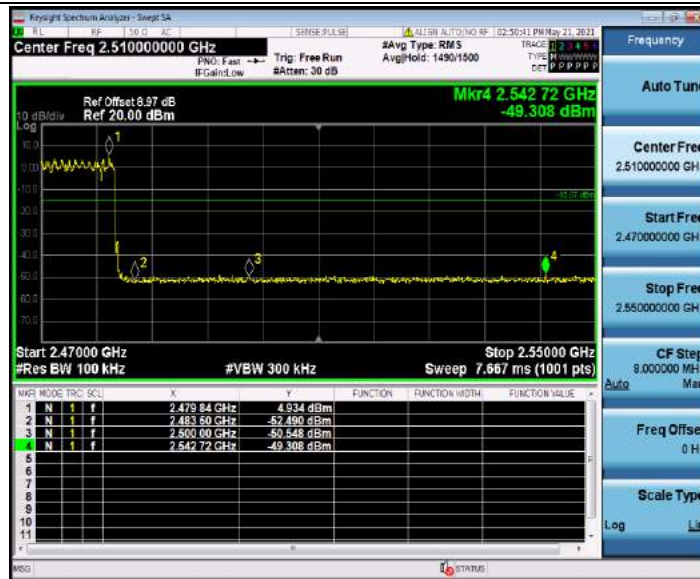
# 2DH5\_Ant1\_High\_2480



# 2DH5\_Ant1\_Low\_Hop\_2402



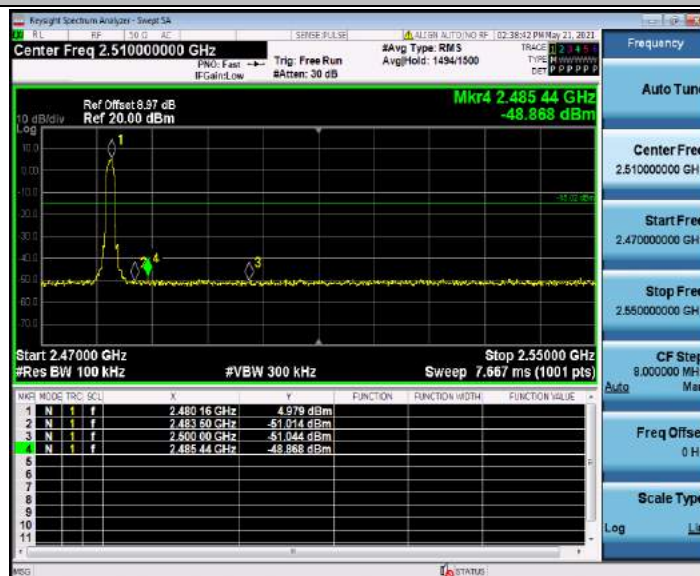
# 2DH5\_Ant1\_High\_Hop\_2480



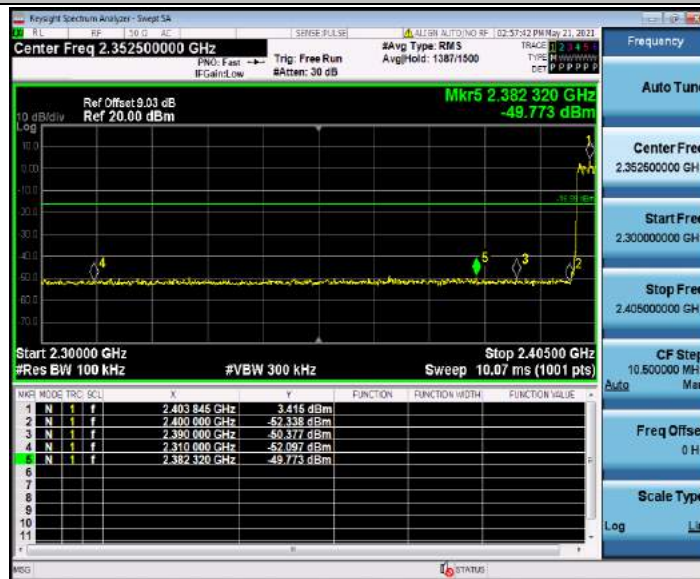
3DH5\_Ant1\_Low\_2402



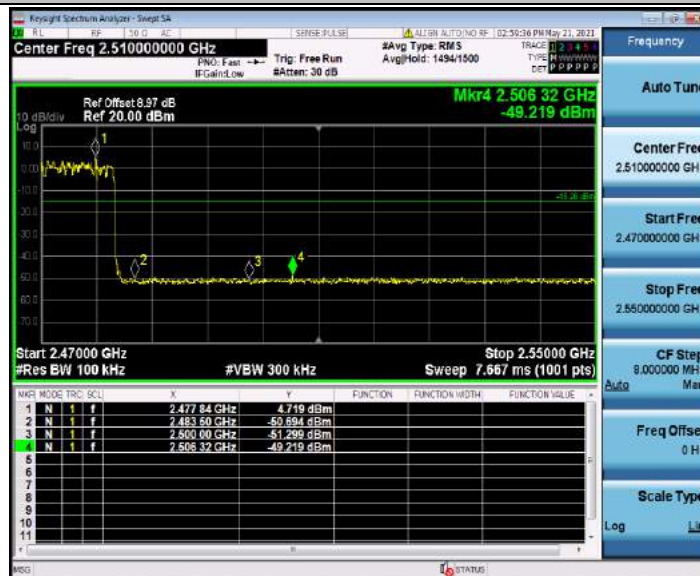
3DH5\_Ant1\_High\_2480



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



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

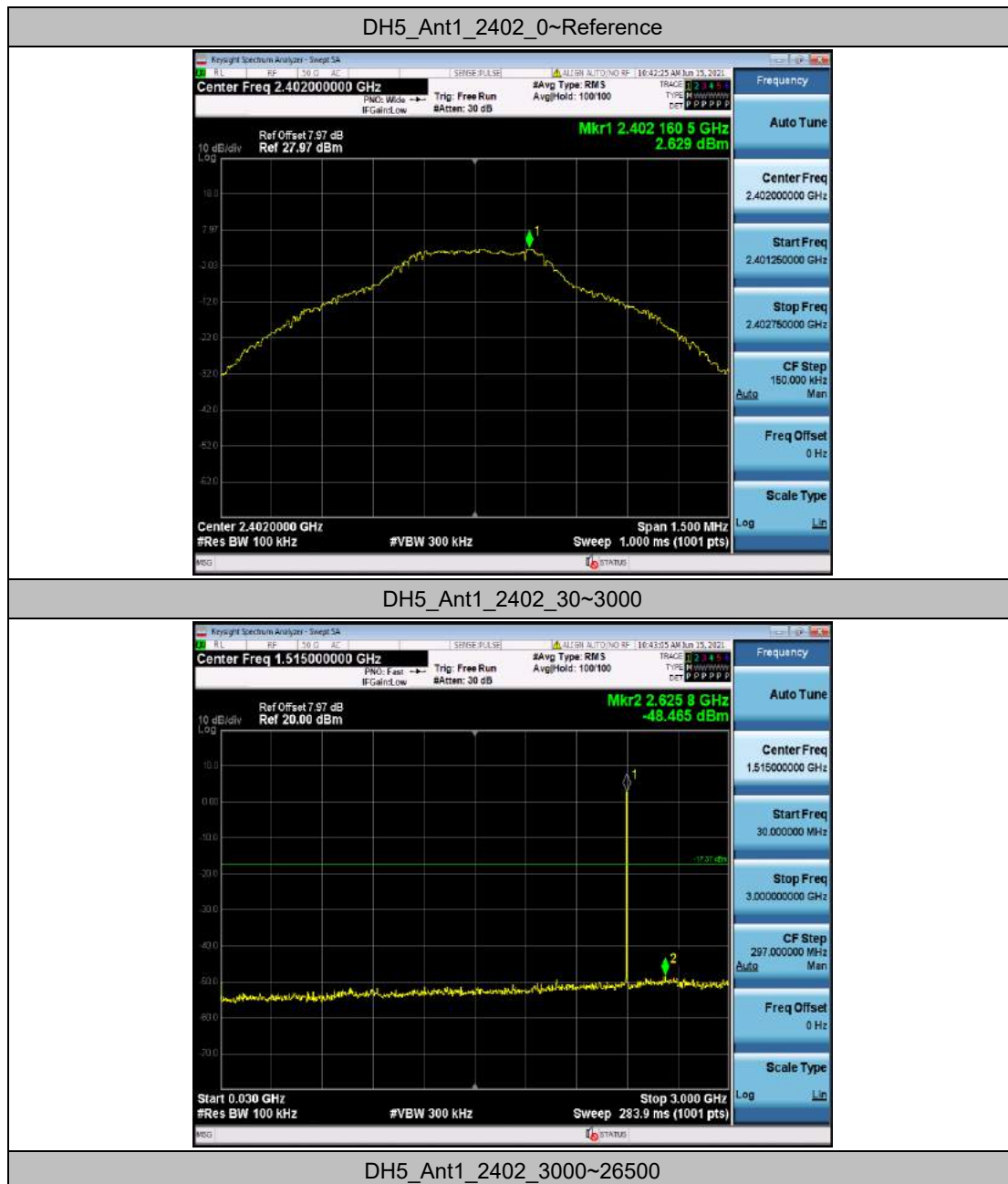


## Appendix H: Conducted Spurious Emission

### Test Result

| TestMode | Antenna | Channel | FreqRange<br>[MHz] | RefLevel<br>[dBm] | Result<br>[dBm] | Limit<br>[dBm] | Verdict |
|----------|---------|---------|--------------------|-------------------|-----------------|----------------|---------|
| DH5      | Ant1    | 2402    | Reference          | 2.63              | 2.63            | ---            | PASS    |
|          |         |         | 30~3000            | 2.63              | -48.47          | <=-17.37       | PASS    |
|          |         |         | 3000~26500         | 2.63              | -38.48          | <=-17.37       | PASS    |
|          |         | 2441    | Reference          | 2.96              | 2.96            | ---            | PASS    |
|          |         |         | 30~3000            | 2.96              | -48.43          | <=-17.04       | PASS    |
|          |         |         | 3000~26500         | 2.96              | -38.26          | <=-17.04       | PASS    |
|          |         | 2480    | Reference          | 3.67              | 3.67            | ---            | PASS    |
|          |         |         | 30~3000            | 3.67              | -47.95          | <=-16.33       | PASS    |
|          |         |         | 3000~26500         | 3.67              | -38.1           | <=-16.33       | PASS    |
| 2DH5     | Ant1    | 2402    | Reference          | 3.15              | 3.15            | ---            | PASS    |
|          |         |         | 30~3000            | 3.15              | -48.45          | <=-16.85       | PASS    |
|          |         |         | 3000~26500         | 3.15              | -38.29          | <=-16.85       | PASS    |
|          |         | 2441    | Reference          | 3.77              | 3.77            | ---            | PASS    |
|          |         |         | 30~3000            | 3.77              | -48.86          | <=-16.23       | PASS    |
|          |         |         | 3000~26500         | 3.77              | -37.83          | <=-16.23       | PASS    |
|          |         | 2480    | Reference          | 3.95              | 3.95            | ---            | PASS    |
|          |         |         | 30~3000            | 3.95              | -48.99          | <=-16.05       | PASS    |
|          |         |         | 3000~26500         | 3.95              | -38.29          | <=-16.05       | PASS    |
| 3DH5     | Ant1    | 2402    | Reference          | 3.28              | 3.28            | ---            | PASS    |
|          |         |         | 30~3000            | 3.28              | -48.5           | <=-16.72       | PASS    |
|          |         |         | 3000~26500         | 3.28              | -38.01          | <=-16.72       | PASS    |
|          |         | 2441    | Reference          | 3.95              | 3.95            | ---            | PASS    |
|          |         |         | 30~3000            | 3.95              | -48.01          | <=-16.06       | PASS    |
|          |         |         | 3000~26500         | 3.95              | -38.05          | <=-16.06       | PASS    |
|          |         | 2480    | Reference          | 2.99              | 2.99            | ---            | PASS    |
|          |         |         | 30~3000            | 2.99              | -47.83          | <=-17.01       | PASS    |
|          |         |         | 3000~26500         | 2.99              | -36.67          | <=-17.01       | PASS    |

## Test Graphs





DH5\_Ant1\_2441\_0~Reference



DH5\_Ant1\_2441\_30~3000



### DH5\_Ant1\_2441\_3000~26500



### DH5\_Ant1\_2480\_0~Reference



### DH5\_Ant1\_2480\_30~3000



DH5\_Ant1\_2480\_3000~26500



2DH5\_Ant1\_2402\_0~Reference



## 2DH5\_Ant1\_2402\_30~3000



## 2DH5\_Ant1\_2402\_3000~26500



## 2DH5\_Ant1\_2441\_0~Reference



2DH5\_Ant1\_2441\_30~3000



2DH5\_Ant1\_2441\_3000~26500



# 2DH5\_Ant1\_2480\_0~Reference



# 2DH5\_Ant1\_2480\_30~3000



# 2DH5\_Ant1\_2480\_3000~26500



3DH5\_Ant1\_2402\_0~Reference



3DH5\_Ant1\_2402\_30~3000



### 3DH5\_Ant1\_2402\_3000~26500



### 3DH5\_Ant1\_2441\_0~Reference



### 3DH5\_Ant1\_2441\_30~3000



3DH5\_Ant1\_2441\_3000~26500



3DH5\_Ant1\_2480\_0~Reference



### 3DH5\_Ant1\_2480\_30~3000



### 3DH5\_Ant1\_2480\_3000~26500

