



## Appendix E for BT Test Data

**Product Name: Magnetic Bluetooth headphone amplifier**

**Test Model: Tea**

### Environmental Conditions

|                    |              |
|--------------------|--------------|
| Temperature:       | 22.3° C      |
| Relative Humidity: | 52.4%        |
| ATM Pressure:      | 100.0 kPa    |
| Test Engineer:     | <i>kayhu</i> |
| Supervised by:     | <i>Libu</i>  |



## E.1 RF Output Power

### Test Result

| Test Condition | TestMode | Antenna | Channel | EIRP[dBm] | Limit[dBm] | Verdict |
|----------------|----------|---------|---------|-----------|------------|---------|
| NTNV           | DH5      | Ant1    | Hop     | 8.17      | 20         | PASS    |
|                | 2DH5     | Ant1    | Hop     | 7.31      | 20         | PASS    |
|                | 3DH5     | Ant1    | Hop     | 7.09      | 20         | PASS    |

| Test Condition | TestMode | Antenna | Channel | EIRP[dBm] | Limit[dBm] | Verdict |
|----------------|----------|---------|---------|-----------|------------|---------|
| NTNV           | DH5      | Ant1    | Hop     | 8.14      | 20         | PASS    |
|                | 2DH5     | Ant1    | Hop     | 7.14      | 20         | PASS    |
|                | 3DH5     | Ant1    | Hop     | 6.97      | 20         | PASS    |

| Test Condition | TestMode | Antenna | Channel | EIRP[dBm] | Limit[dBm] | Verdict |
|----------------|----------|---------|---------|-----------|------------|---------|
| NTNV           | DH5      | Ant1    | Hop     | 7.08      | 20         | PASS    |
|                | 2DH5     | Ant1    | Hop     | 6.23      | 20         | PASS    |
|                | 3DH5     | Ant1    | Hop     | 5.98      | 20         | PASS    |

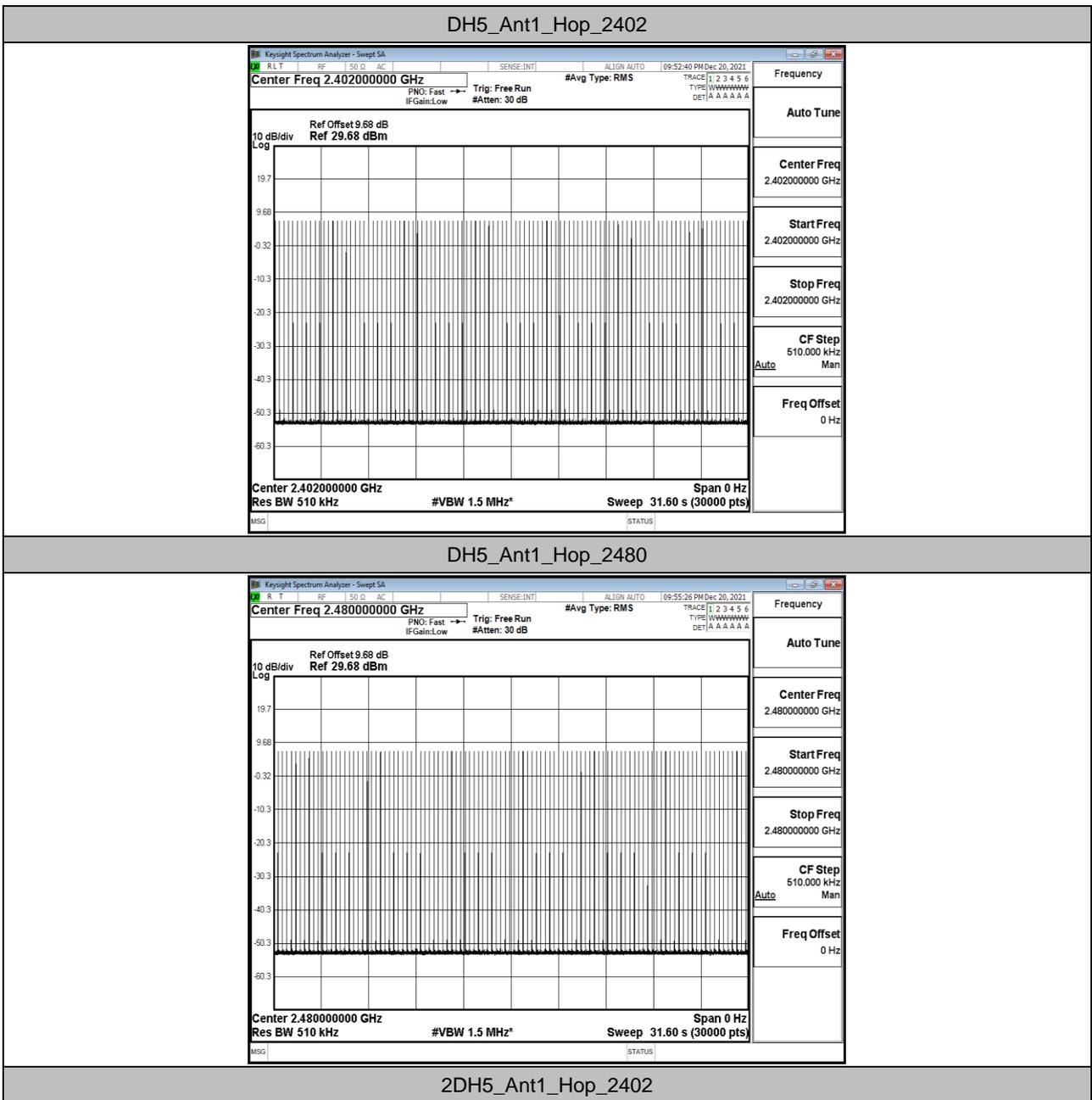
\*\*\*Note: 20 bursts had been captured for power measurement.

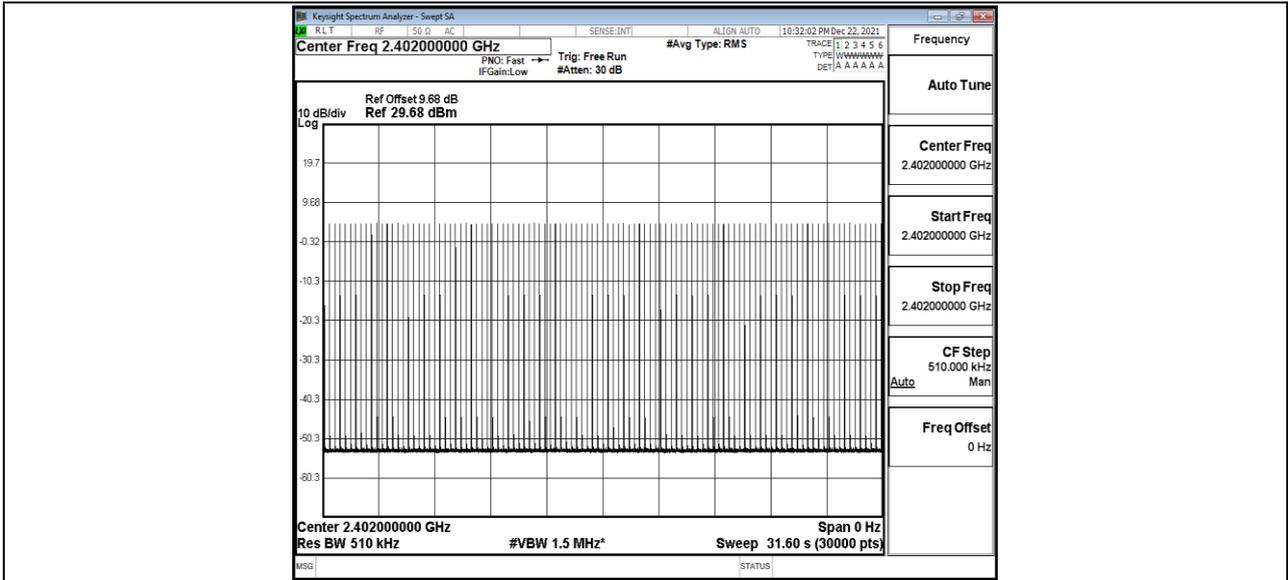


## E.2 Accumulated Transmit Time

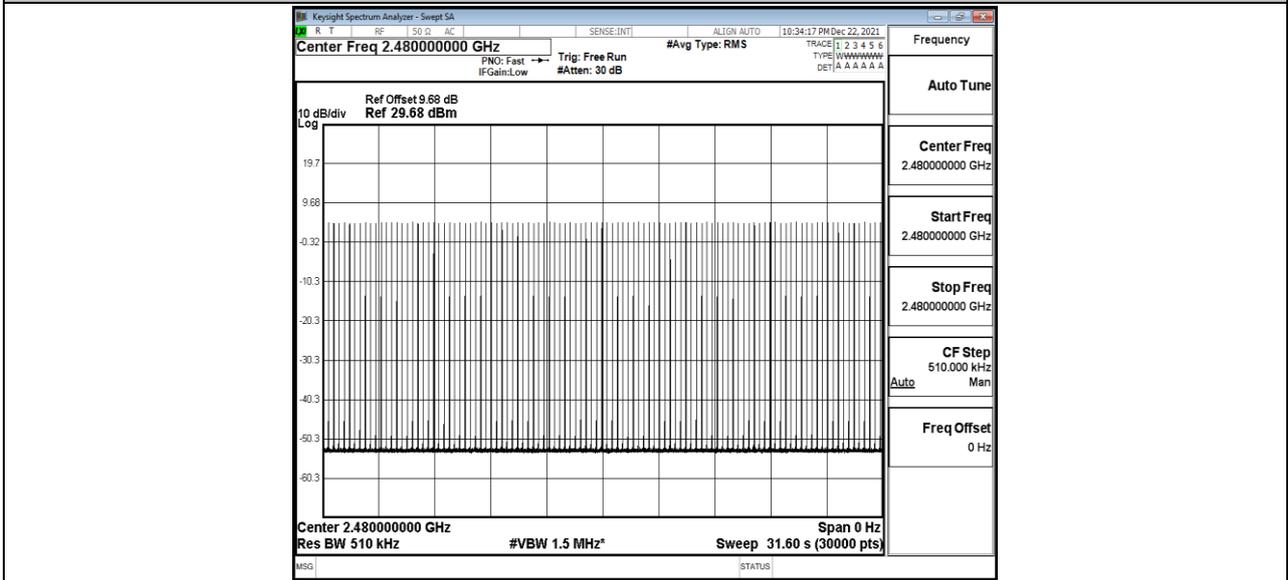
| TestMode | Antenna | Channel  | Result [ms] | Limit[ms] | Verdict |
|----------|---------|----------|-------------|-----------|---------|
| DH5      | Ant1    | Hop_2402 | 308.646     | 400       | PASS    |
|          |         | Hop_2480 | 307.593     | 400       | PASS    |
| 2DH5     | Ant1    | Hop_2402 | 309.700     | 400       | PASS    |
|          |         | Hop_2480 | 309.700     | 400       | PASS    |
| 3DH5     | Ant1    | Hop_2402 | 310.753     | 400       | PASS    |
|          |         | Hop_2480 | 309.700     | 400       | PASS    |

## Test Graphs

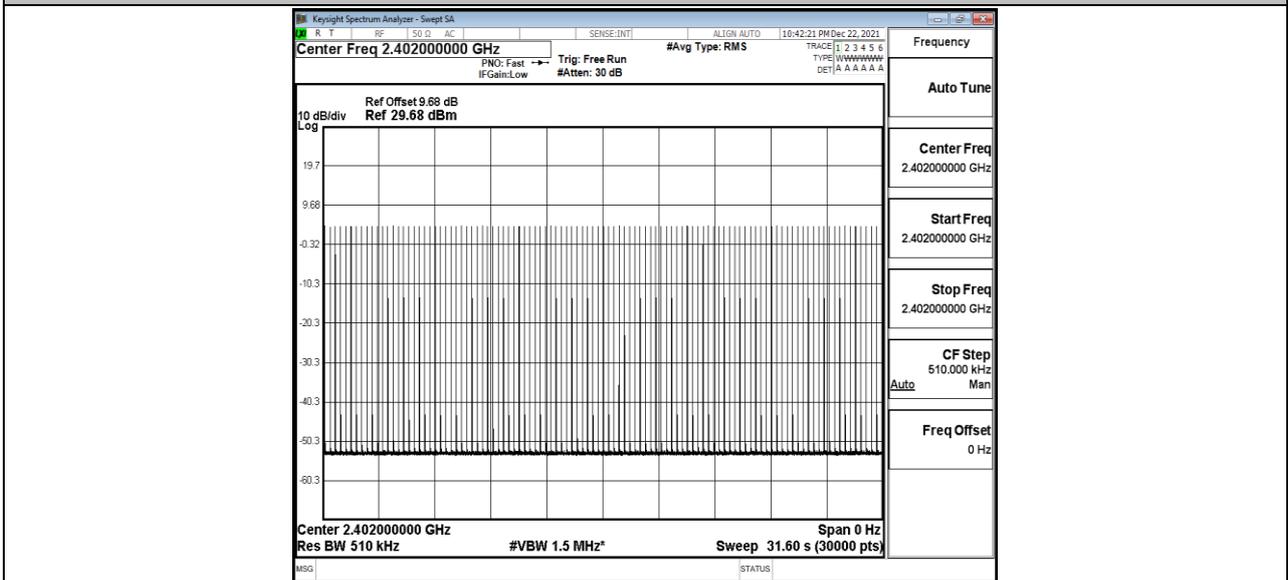




2DH5\_Ant1\_Hop\_2480

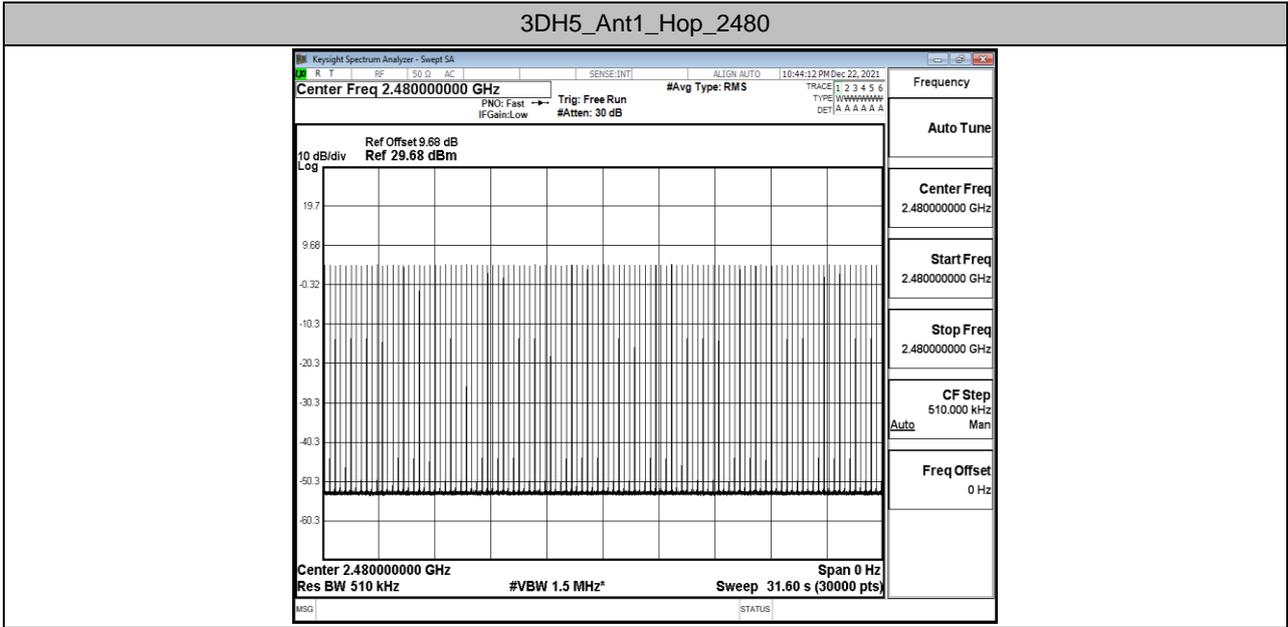


3DH5\_Ant1\_Hop\_2402





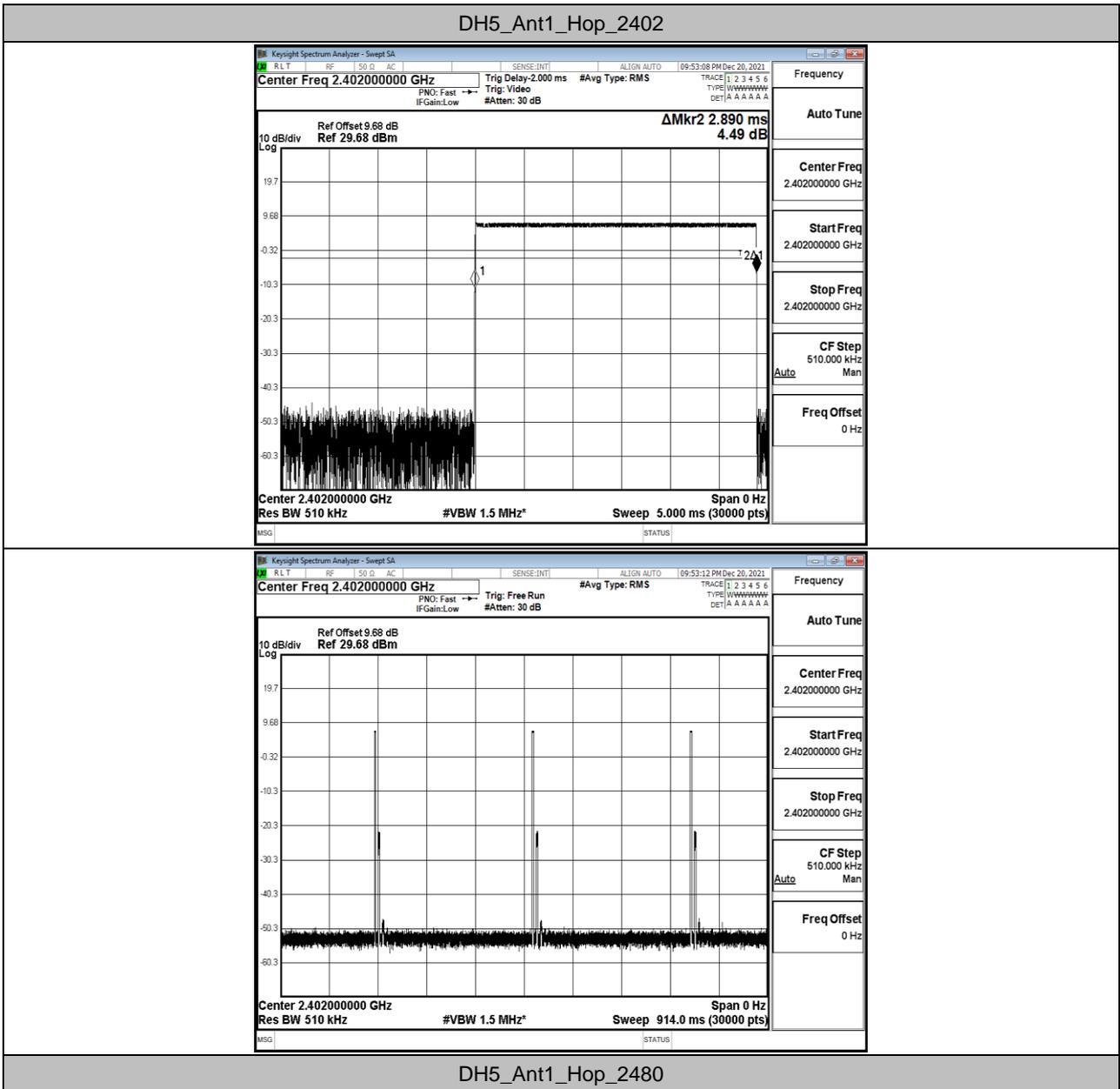
3DH5\_Ant1\_Hop\_2480

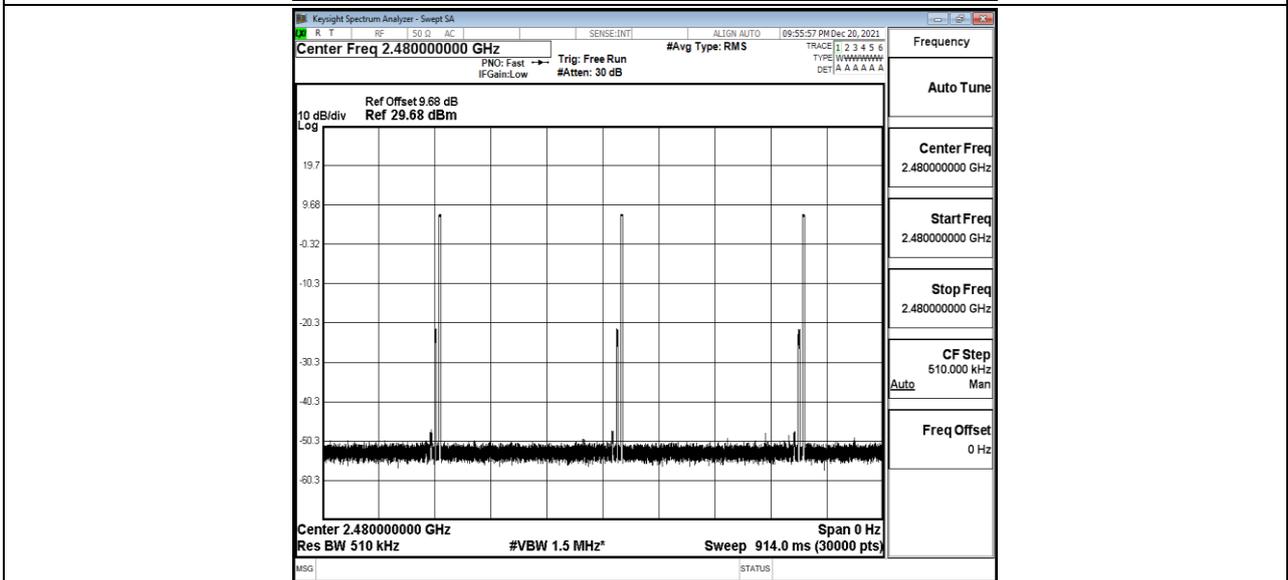
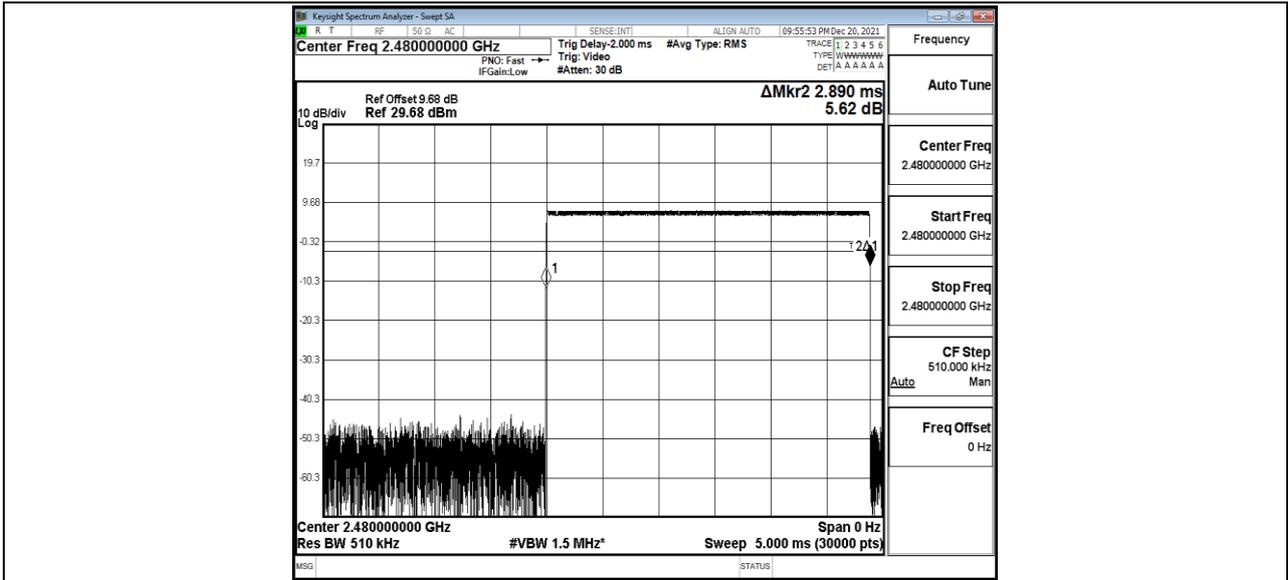




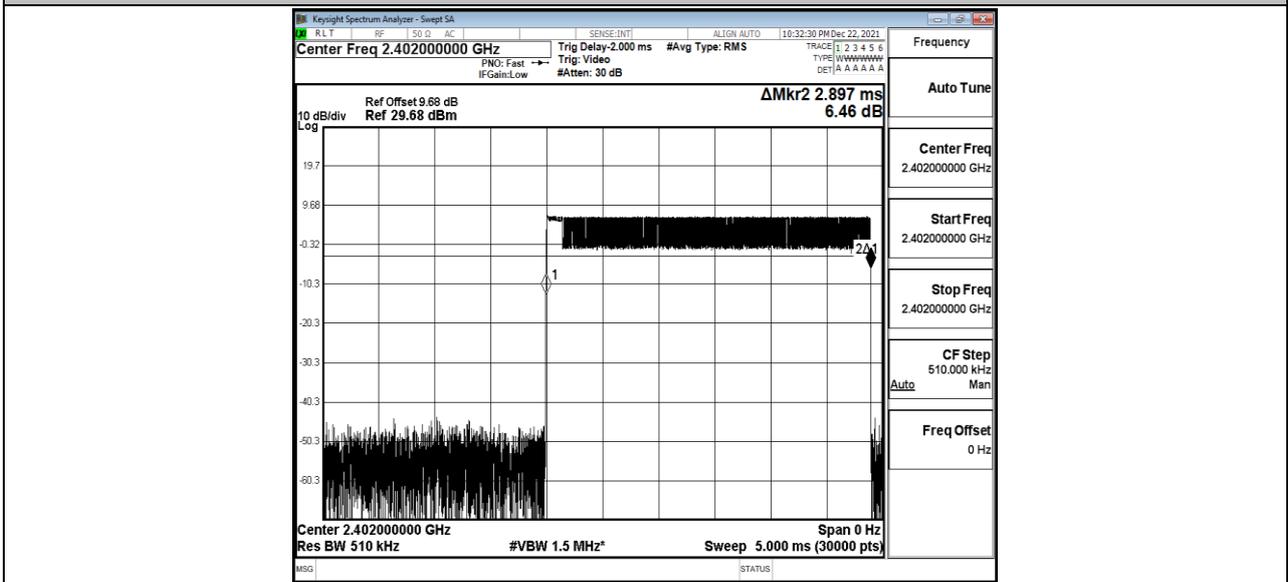
### E.3 Frequency Occupation

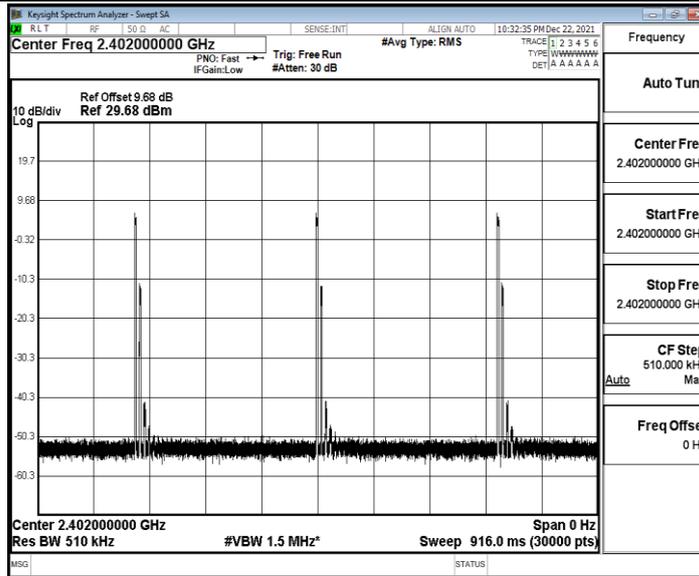
| TestMode | Antenna | Channel  | Result [Num.] | Limit [Num.] | Verdict |
|----------|---------|----------|---------------|--------------|---------|
| DH5      | Ant1    | Hop_2402 | 3             | 1            | PASS    |
|          |         | Hop_2480 | 3             | 1            | PASS    |
| 2DH5     | Ant1    | Hop_2402 | 3             | 1            | PASS    |
|          |         | Hop_2480 | 3             | 1            | PASS    |
| 3DH5     | Ant1    | Hop_2402 | 3             | 1            | PASS    |
|          |         | Hop_2480 | 3             | 1            | PASS    |



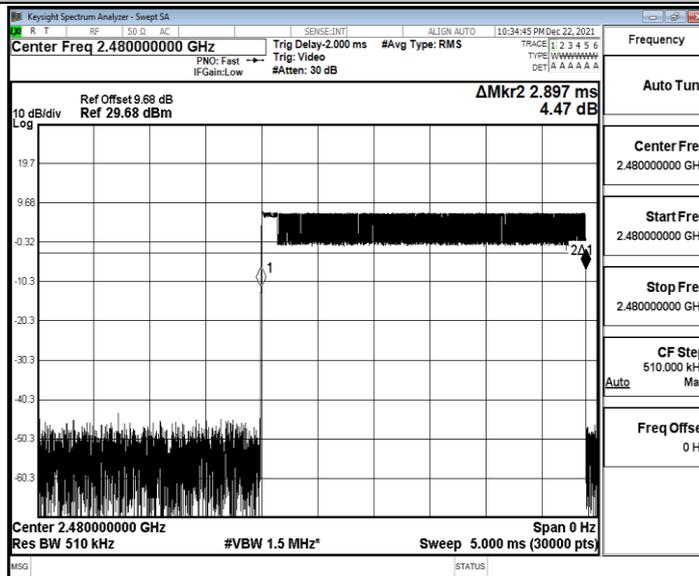


2DH5\_Ant1\_Hop\_2402

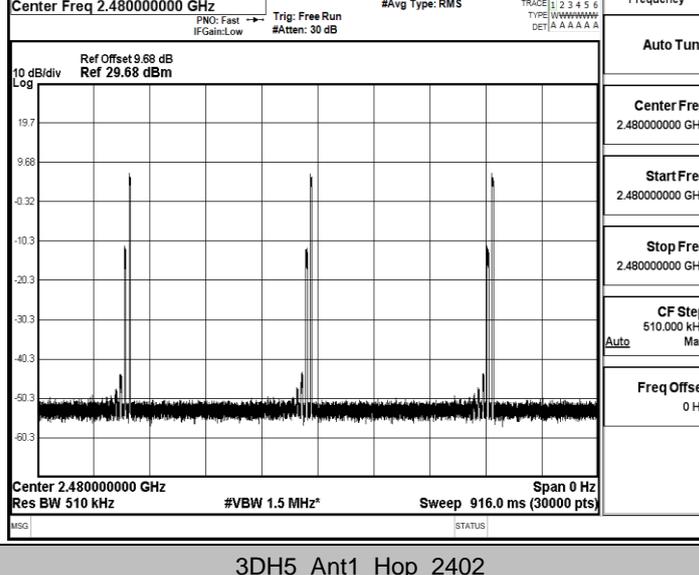




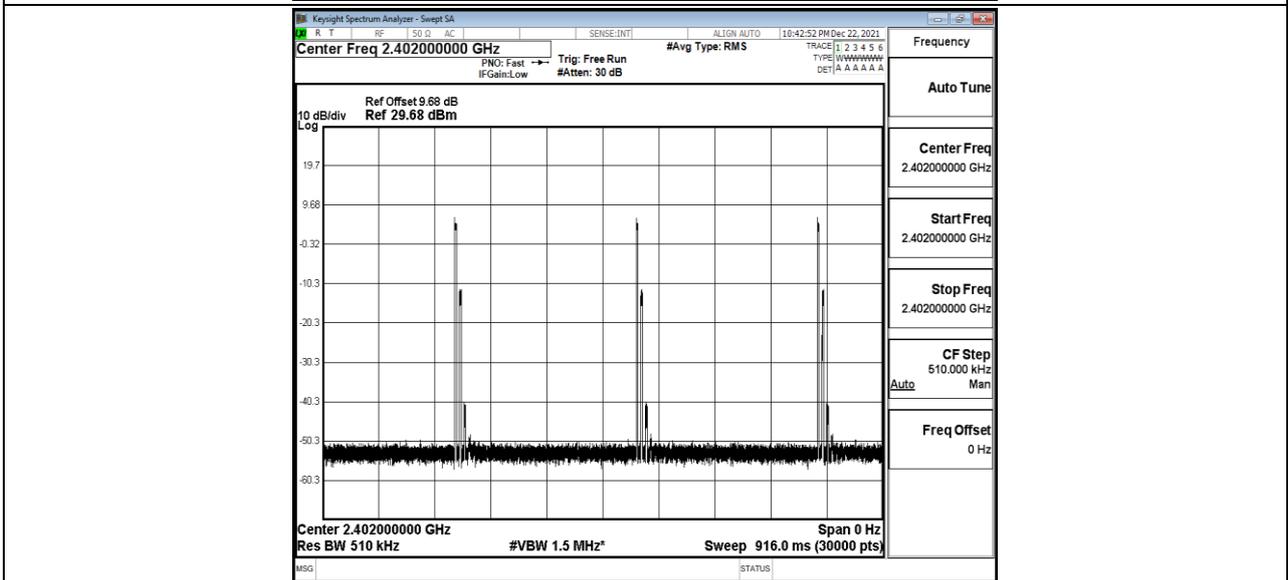
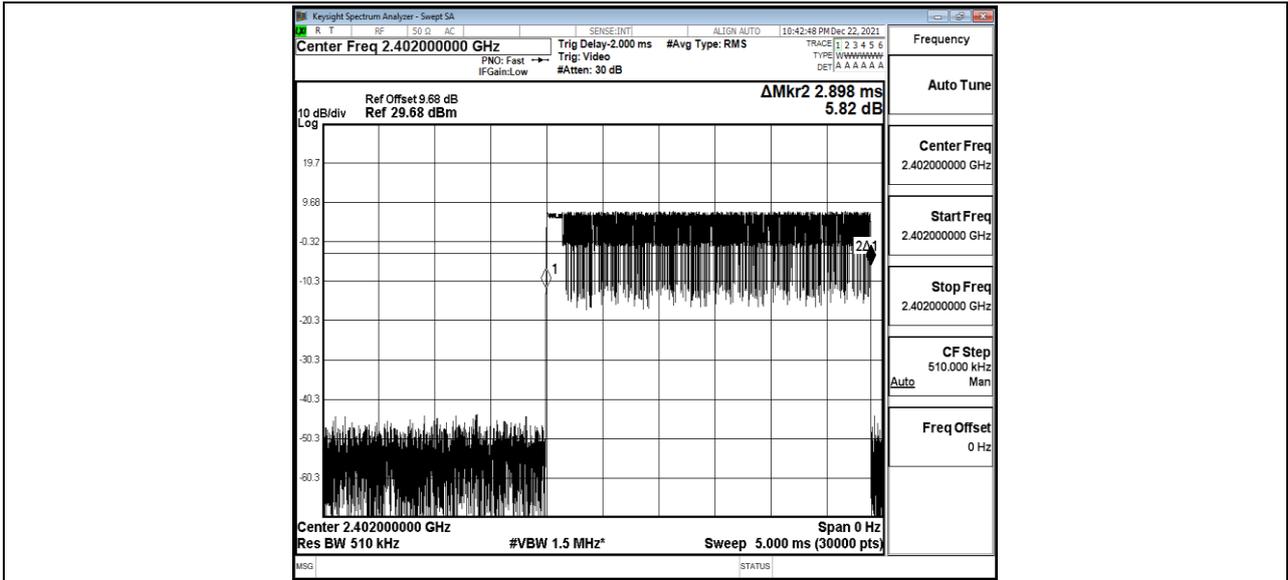
2DH5\_Ant1\_Hop\_2480



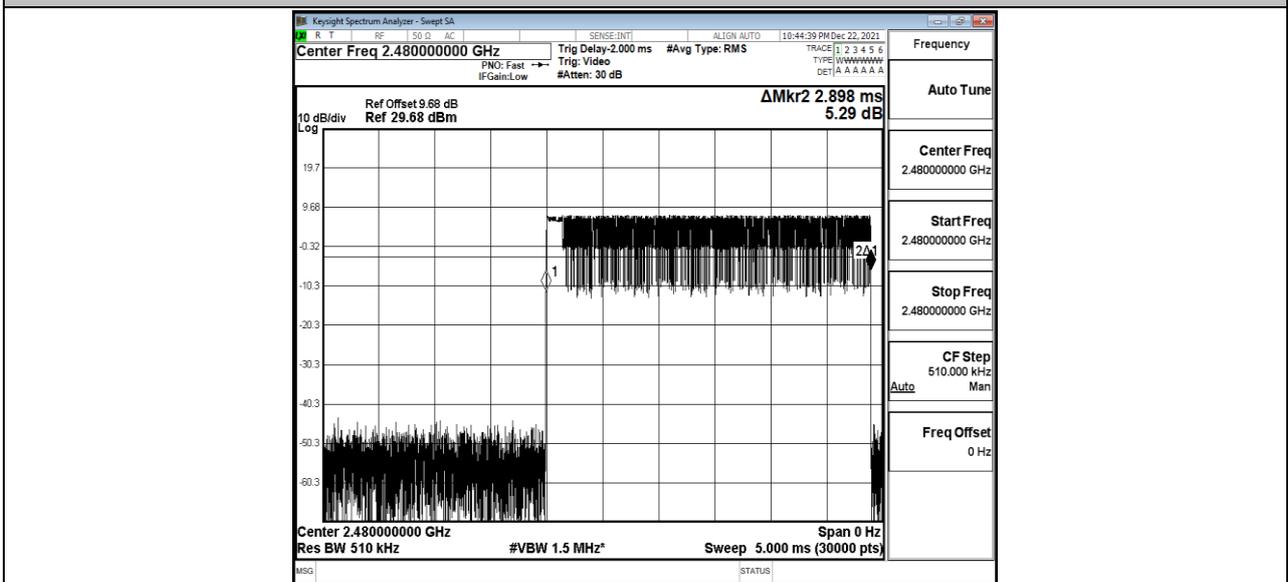
2DH5\_Ant1\_Hop\_2480

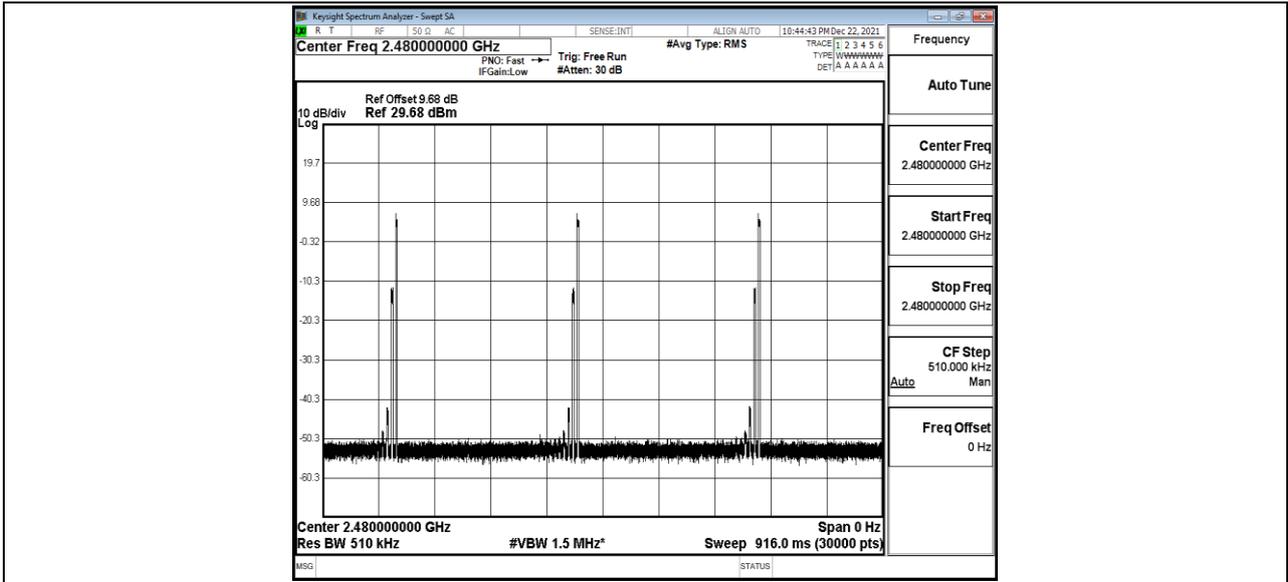


3DH5\_Ant1\_Hop\_2402



3DH5\_Ant1\_Hop\_2480

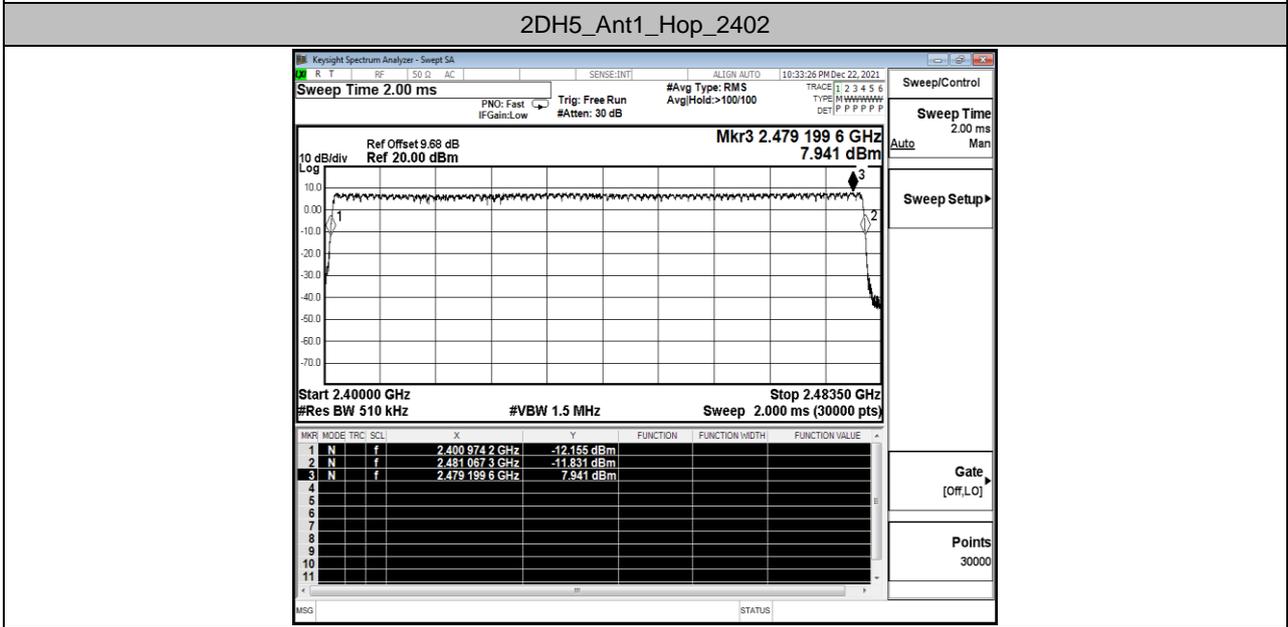
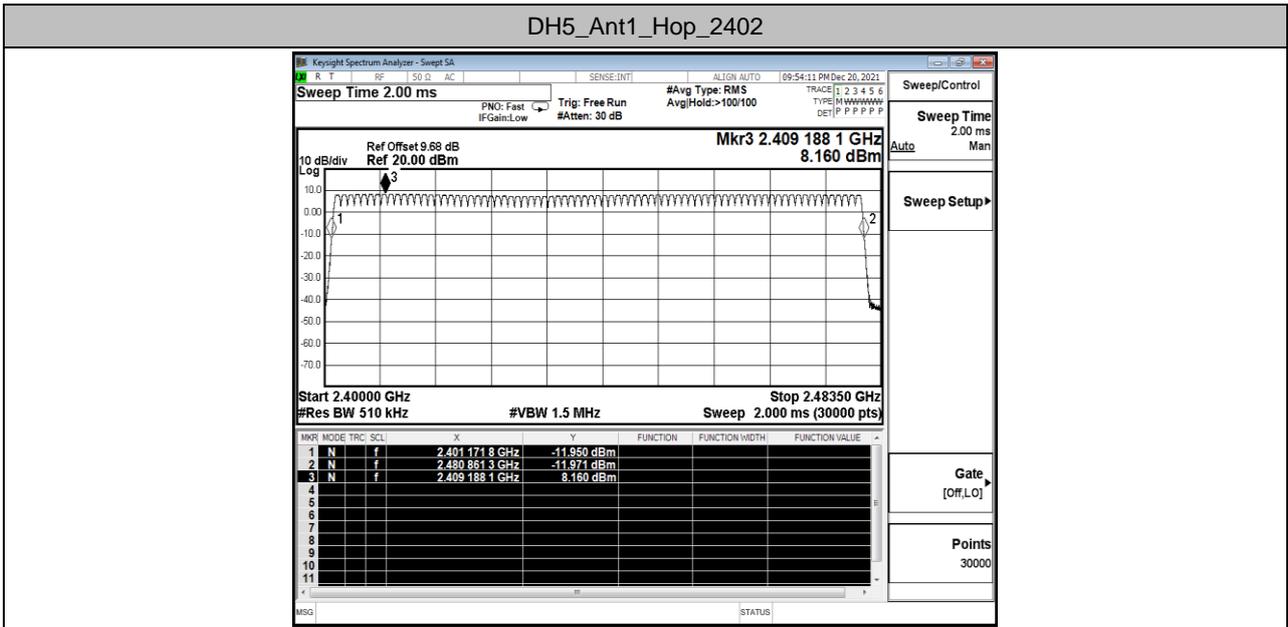




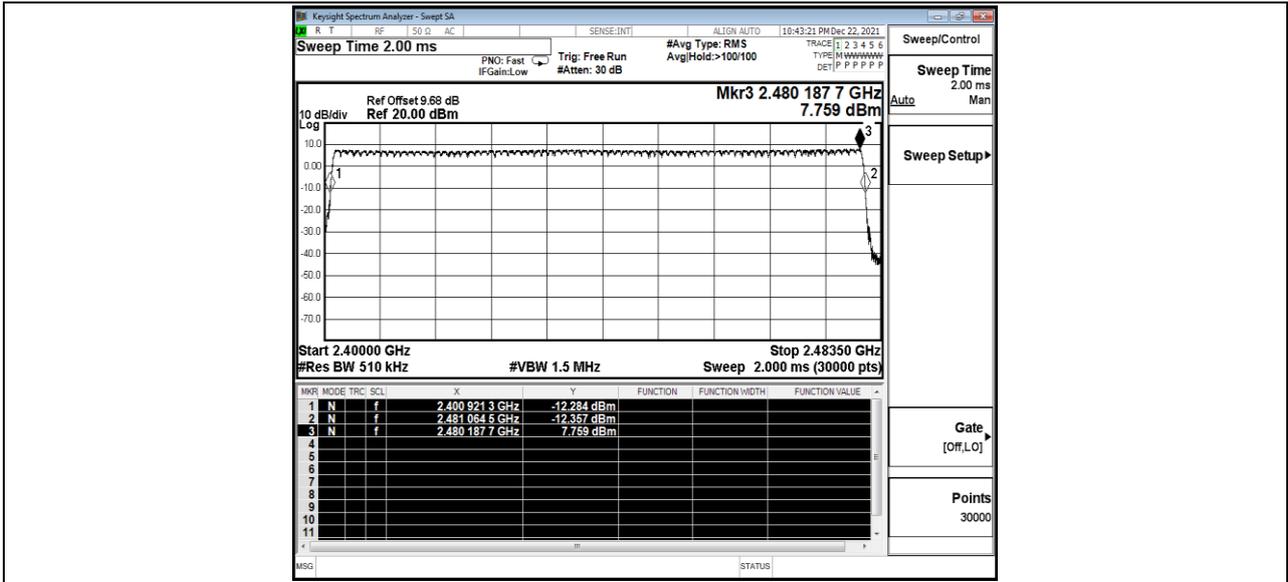


### E.4 Hopping Sequence

| TestMode | Antenna | Channel  | Hop. [Num.] | Limit[Num.] | Band Use [%] | Limit [%] | Verdict |
|----------|---------|----------|-------------|-------------|--------------|-----------|---------|
| DH5      | Ant1    | Hop_2402 | 79          | 15          | 95.44        | 70        | PASS    |
| 2DH5     | Ant1    | Hop_2402 | 79          | 15          | 95.92        | 70        | PASS    |
| 3DH5     | Ant1    | Hop_2402 | 79          | 15          | 95.98        | 70        | PASS    |



**3DH5\_Ant1\_Hop\_2402**



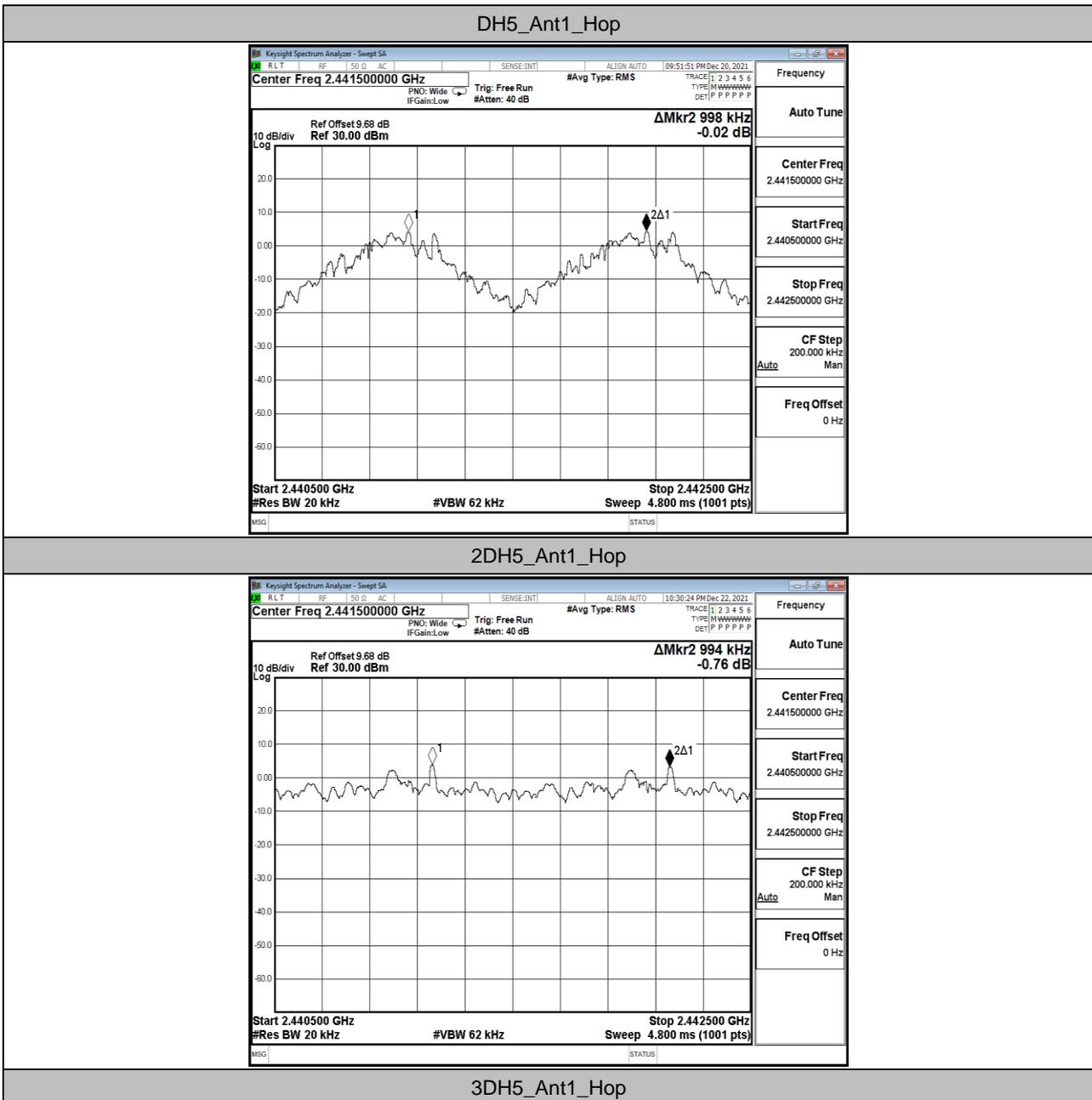


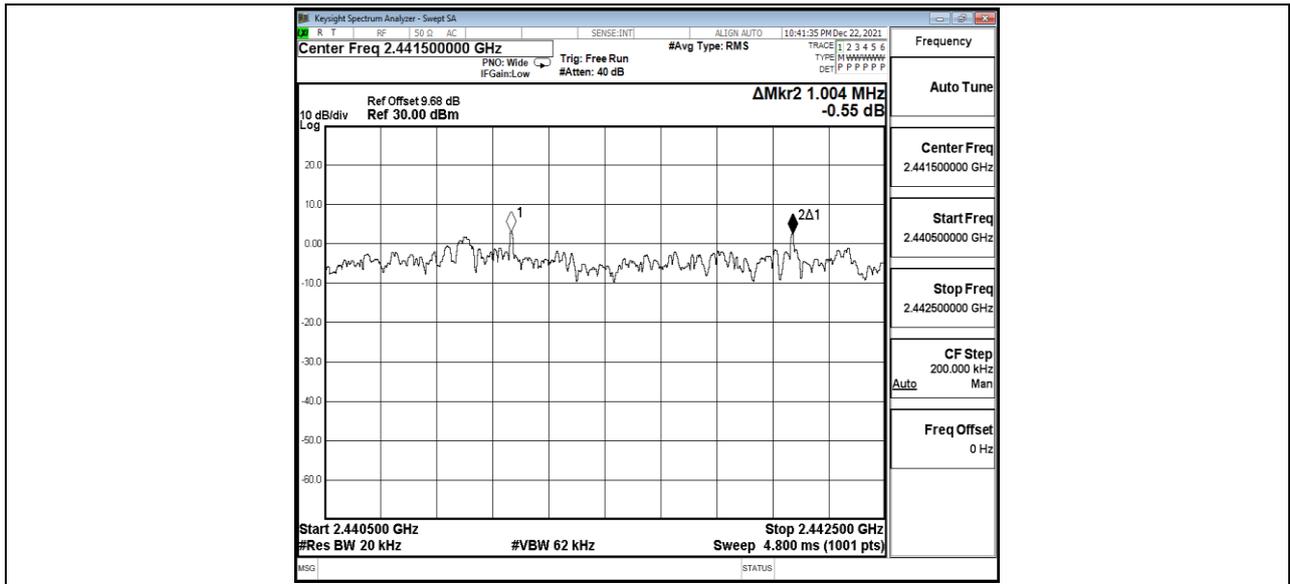
## E.5 Hopping Frequency Separation

### Test Result

| TestMode | Antenna | Channel | Result [MHz] | Limit[MHz] | Verdict |
|----------|---------|---------|--------------|------------|---------|
| DH5      | Ant1    | Hop     | 0.998        | 0.100      | PASS    |
| 2DH5     | Ant1    | Hop     | 0.994        | 0.100      | PASS    |
| 3DH5     | Ant1    | Hop     | 1.004        | 0.100      | PASS    |

### Test Graphs





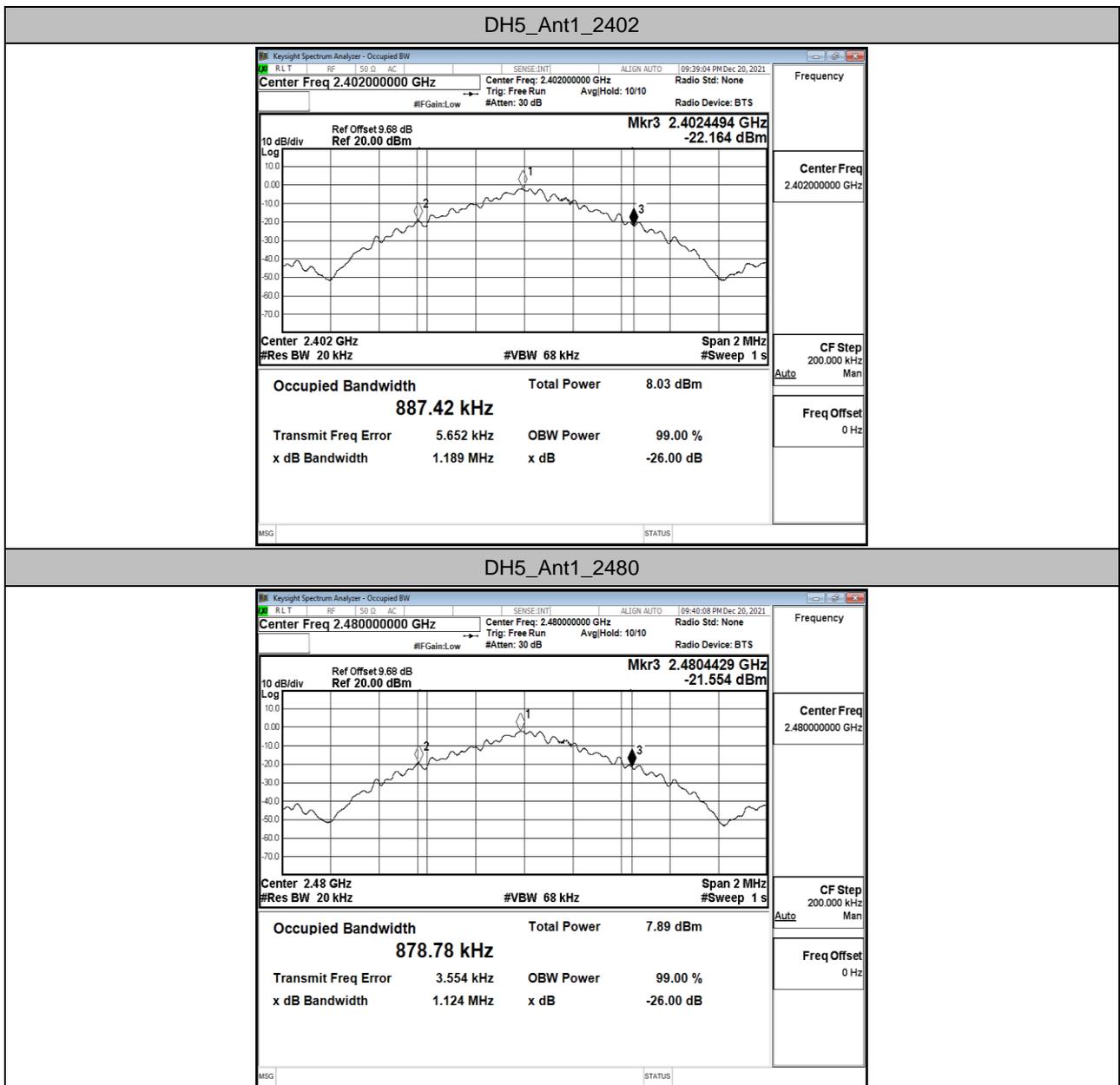


## E.6 Occupied Channel Bandwidth

### Test Result

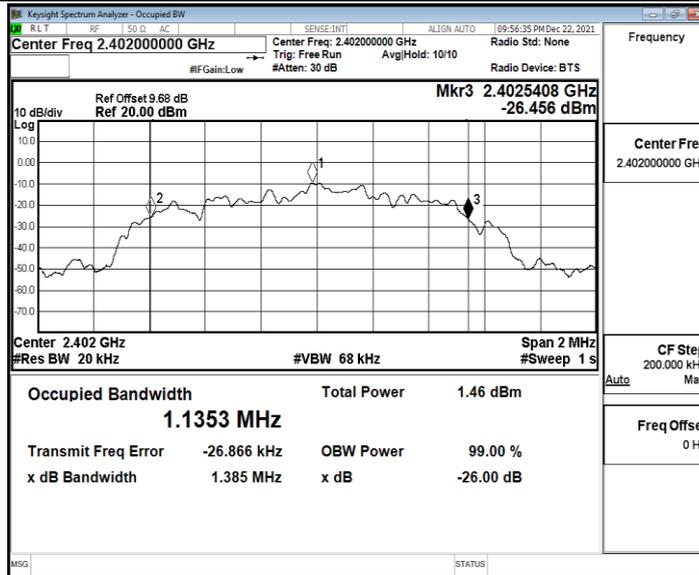
| TestMode | Antenna | Channel | OCB[MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz]     | Verdict |
|----------|---------|---------|----------|-----------|-----------|----------------|---------|
| DH5      | Ant1    | 2402    | 0.88742  | 2401.5619 | 2402.4494 | 2400 to 2483.5 | PASS    |
|          |         | 2480    | 0.87878  | 2479.5642 | 2480.4429 | 2400 to 2483.5 | PASS    |
| 2DH5     | Ant1    | 2402    | 1.1353   | 2401.4055 | 2402.5408 | 2400 to 2483.5 | PASS    |
|          |         | 2480    | 1.1366   | 2479.4065 | 2480.5431 | 2400 to 2483.5 | PASS    |
| 3DH5     | Ant1    | 2402    | 1.1194   | 2401.4409 | 2402.5603 | 2400 to 2483.5 | PASS    |
|          |         | 2480    | 1.1213   | 2479.4410 | 2480.5623 | 2400 to 2483.5 | PASS    |

### Test Graphs

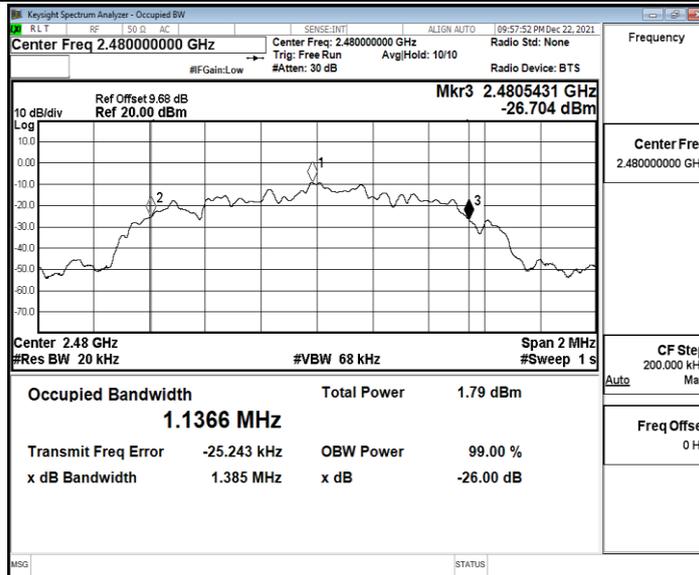




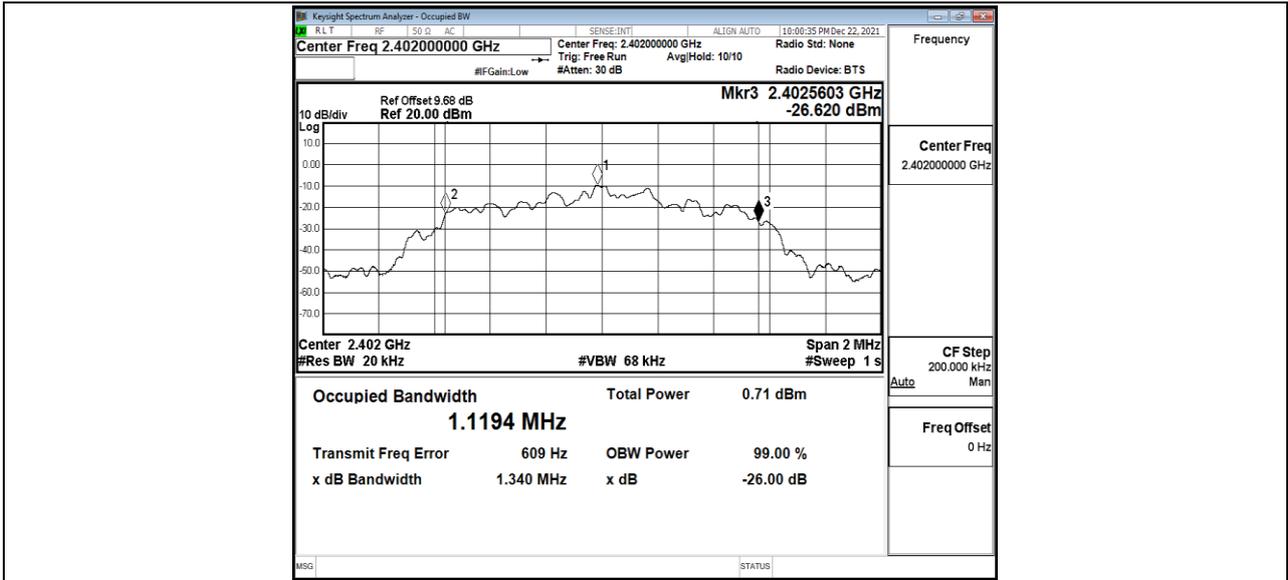
2DH5\_Ant1\_2402



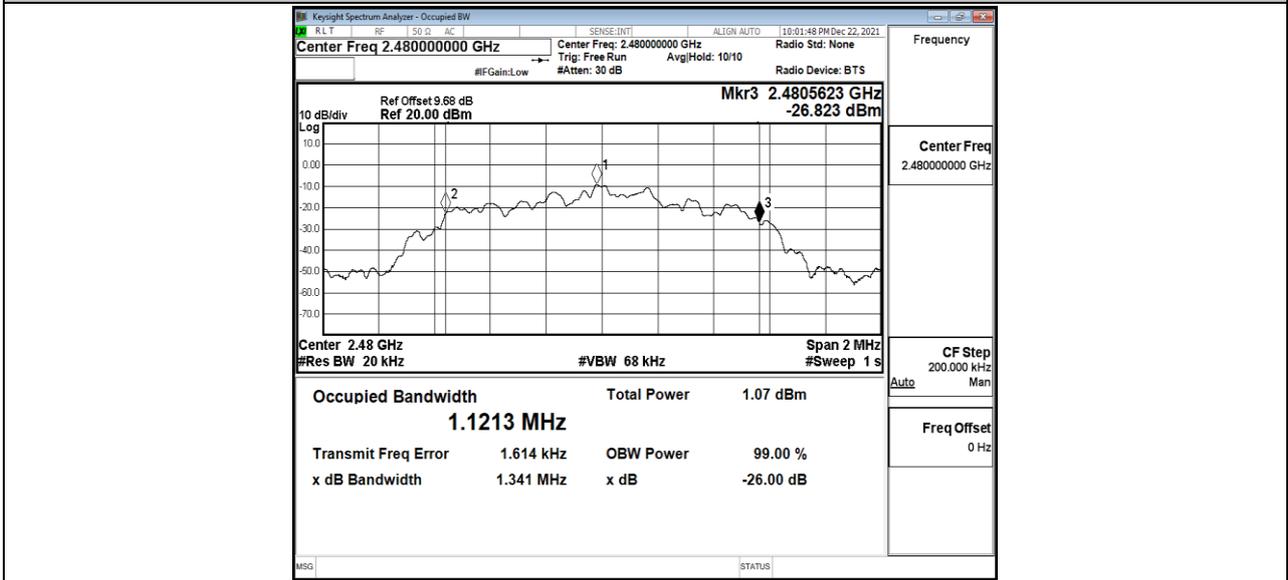
2DH5\_Ant1\_2480



3DH5\_Ant1\_2402



3DH5\_Ant1\_2480





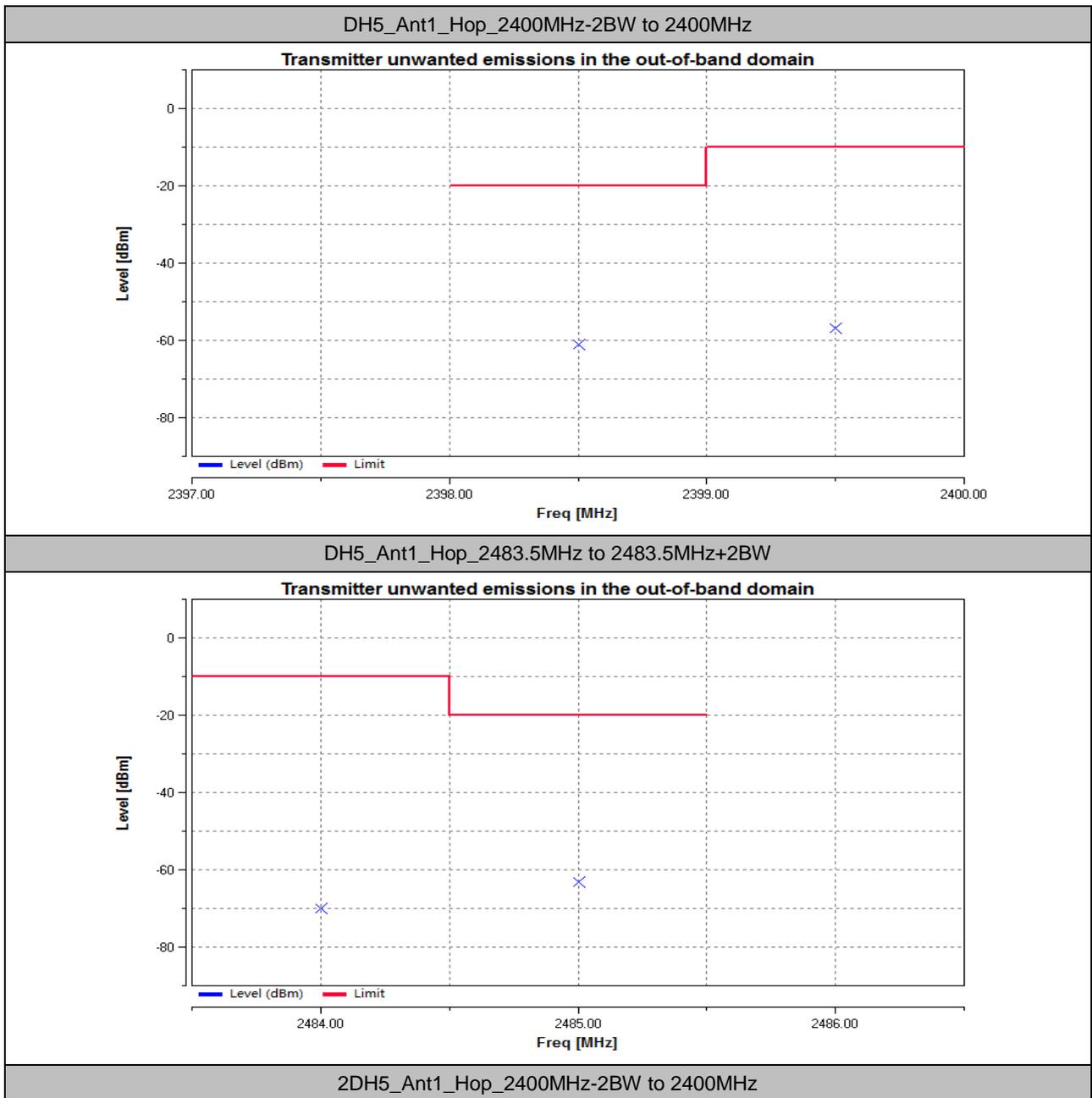
### E.7 Transmitter Unwanted Emissions In The Out-Of-BandDomain

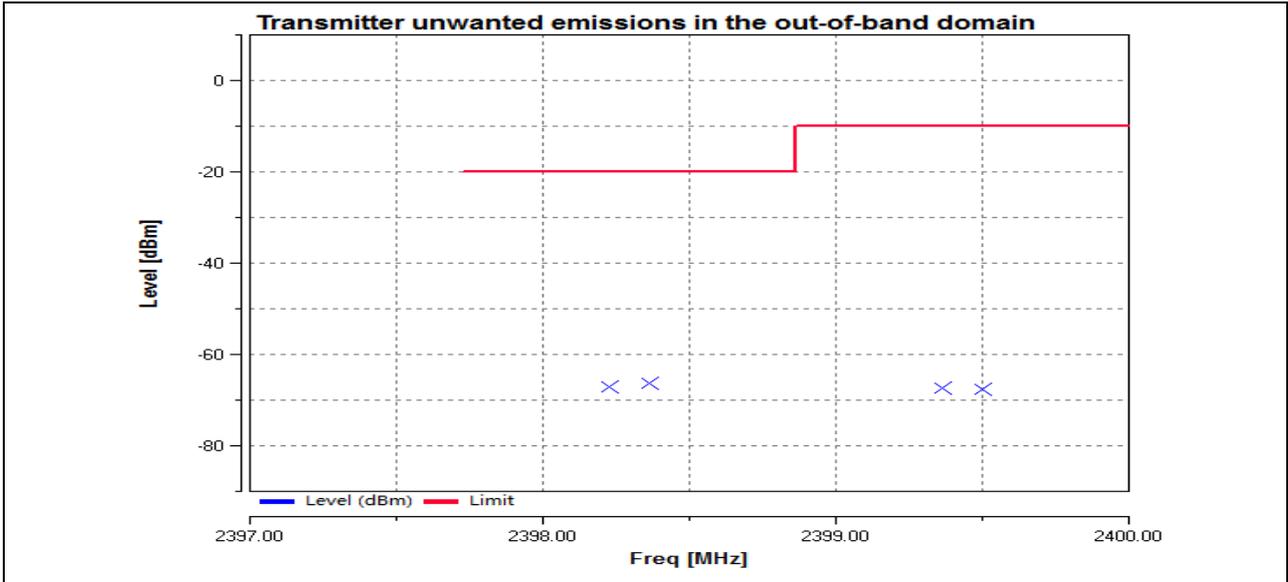
#### Test Result

| TestMode | Antenna | Channel | Freq. [MHz] | Level[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|------------|---------|
| DH5      | Ant1    | Hop     | 2398.5      | -60.94     | -20.00     | PASS    |
|          |         |         | 2399.5      | -56.78     | -10.00     | PASS    |
|          |         |         | 2484        | -69.93     | -10.00     | PASS    |
|          |         |         | 2485        | -63.10     | -20.00     | PASS    |
| 2DH5     | Ant1    | Hop     | 2398.2268   | -67.09     | -20.00     | PASS    |
|          |         |         | 2398.3634   | -66.38     | -20.00     | PASS    |
|          |         |         | 2399.3634   | -67.37     | -10.00     | PASS    |
|          |         |         | 2399.5      | -67.56     | -10.00     | PASS    |
|          |         |         | 2484        | -69.84     | -10.00     | PASS    |
|          |         |         | 2484.1366   | -71.41     | -10.00     | PASS    |
|          |         |         | 2485.1366   | -67.11     | -20.00     | PASS    |
|          |         |         | 2485.2732   | -63.87     | -20.00     | PASS    |
| 3DH5     | Ant1    | Hop     | 2398.2574   | -70.69     | -20.00     | PASS    |
|          |         |         | 2398.3787   | -71.27     | -20.00     | PASS    |
|          |         |         | 2399.3787   | -66.64     | -10.00     | PASS    |
|          |         |         | 2399.5      | -66.54     | -10.00     | PASS    |
|          |         |         | 2484        | -54.49     | -10.00     | PASS    |
|          |         |         | 2484.1213   | -66.33     | -10.00     | PASS    |
|          |         |         | 2485.1213   | -62.77     | -20.00     | PASS    |
|          |         |         | 2485.2426   | -66.94     | -20.00     | PASS    |

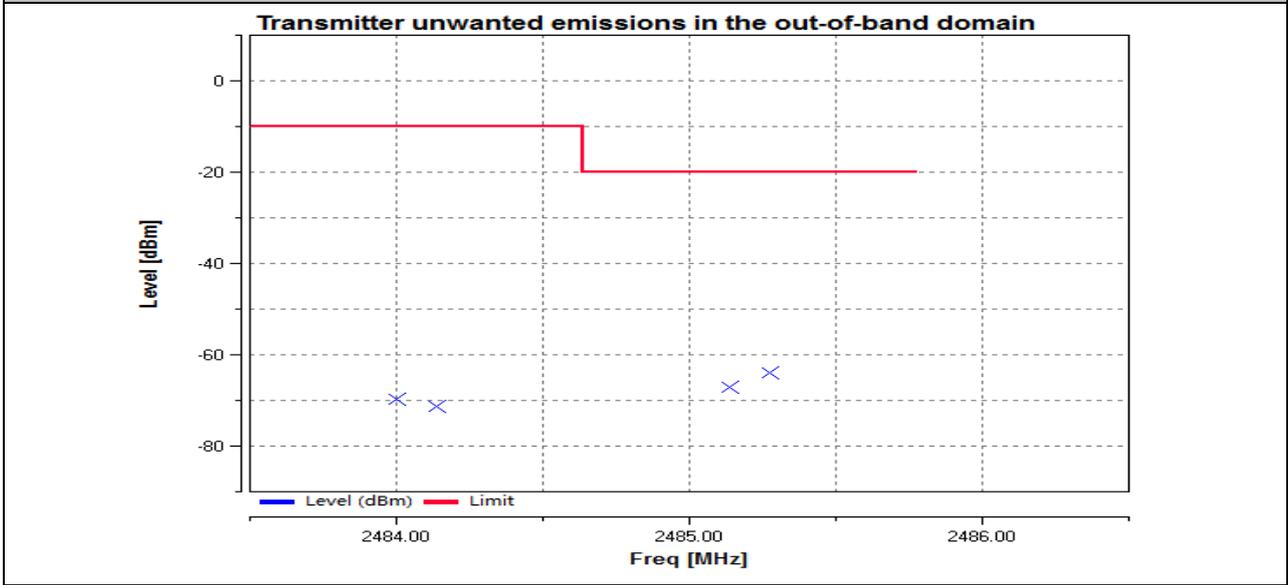


### Test Graphs

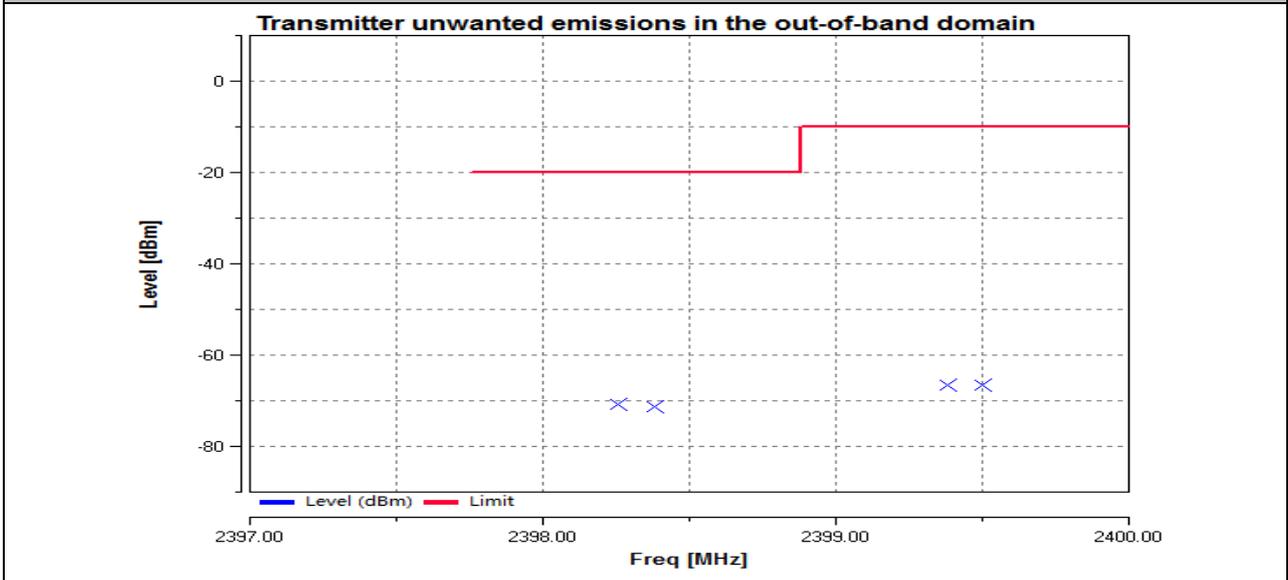


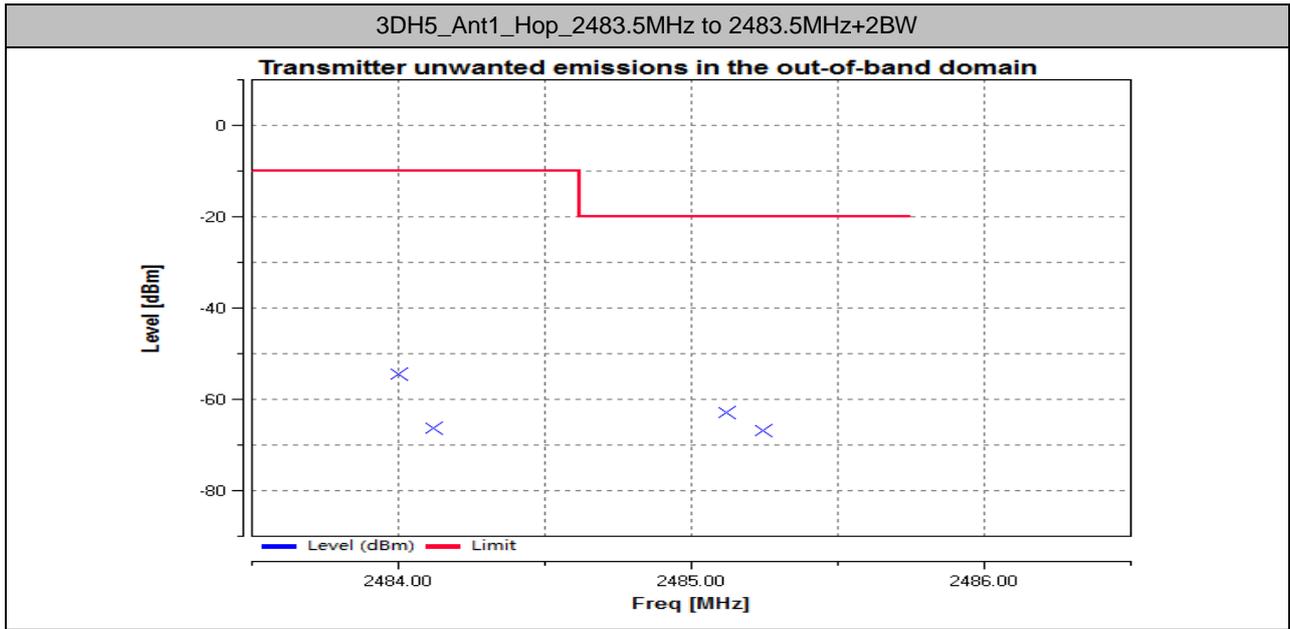


2DH5\_Ant1\_Hop\_2483.5MHz to 2483.5MHz+2BW



3DH5\_Ant1\_Hop\_2400MHz-2BW to 2400MHz





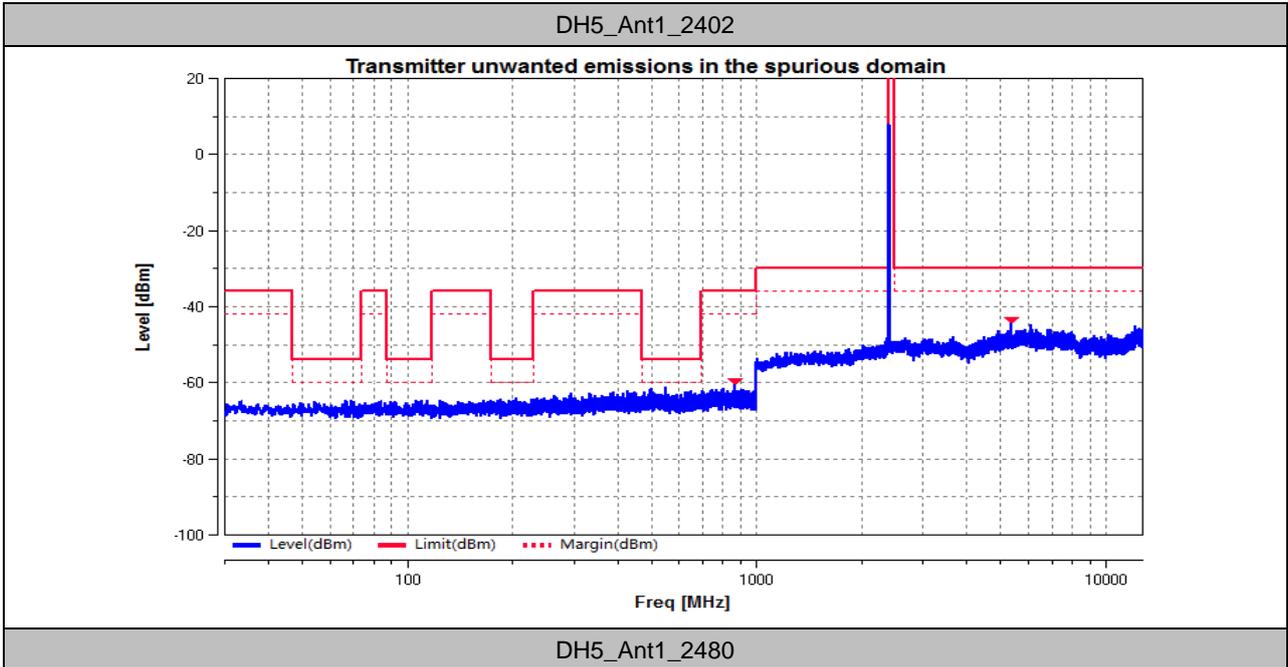


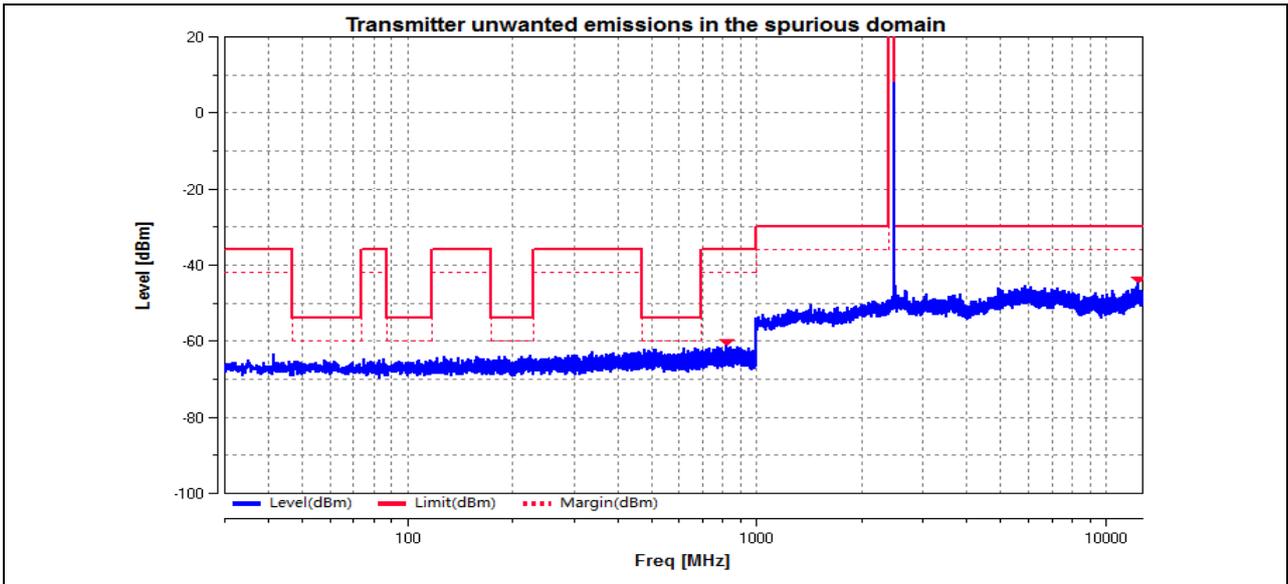
### E.8 Transmitter unwanted emissions in the spurious domain

#### Test Result-Pre-scan

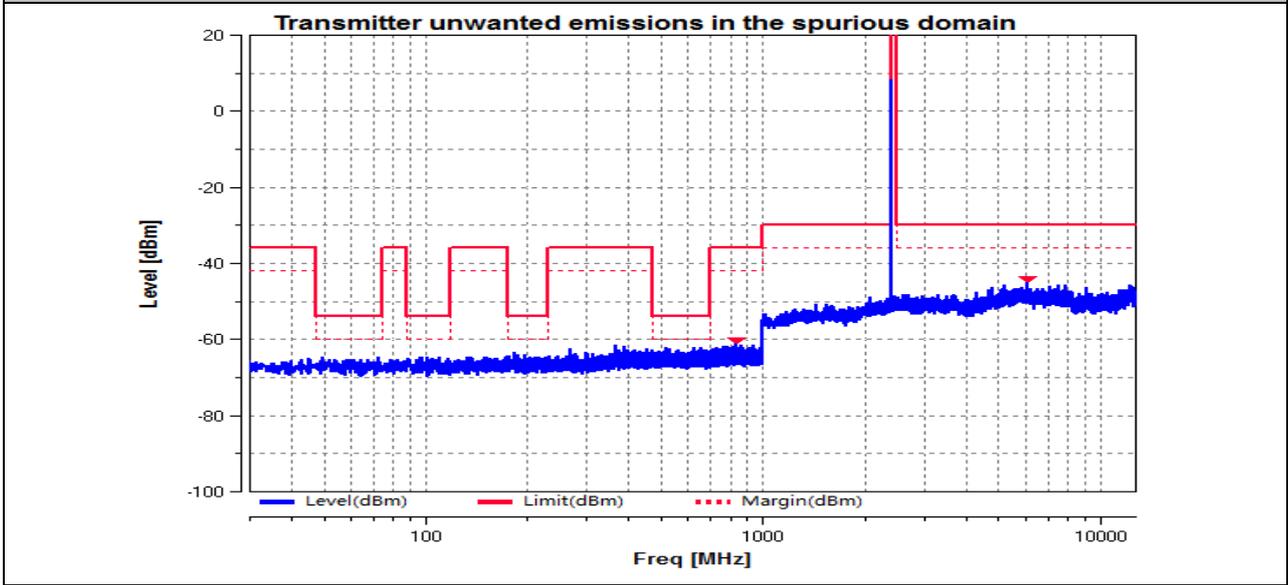
| TestMode | Antenna | Channel | Freq. [MHz] | Level[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|------------|---------|
| DH5      | Ant1    | 2402    | 870.75      | -60.39     | -36        | PASS    |
|          |         |         | 5369.53     | -44.29     | -30        | PASS    |
|          |         | 2480    | 821.52      | -61.1      | -36        | PASS    |
|          |         |         | 12435.69    | -44.59     | -30        | PASS    |
| 2DH5     | Ant1    | 2402    | 830.01      | -61.29     | -36        | PASS    |
|          |         |         | 6086.28     | -45.04     | -30        | PASS    |
|          |         | 2480    | 842.86      | -61.19     | -36        | PASS    |
|          |         |         | 12362.25    | -44.82     | -30        | PASS    |
| 3DH5     | Ant1    | 2402    | 872.45      | -61.12     | -36        | PASS    |
|          |         |         | 2396.78     | -42.9      | -30        | PASS    |
|          |         | 2480    | 906.64      | -61.47     | -36        | PASS    |
|          |         |         | 7619.66     | -45.46     | -30        | PASS    |

#### Test Graphs-Pre-scan

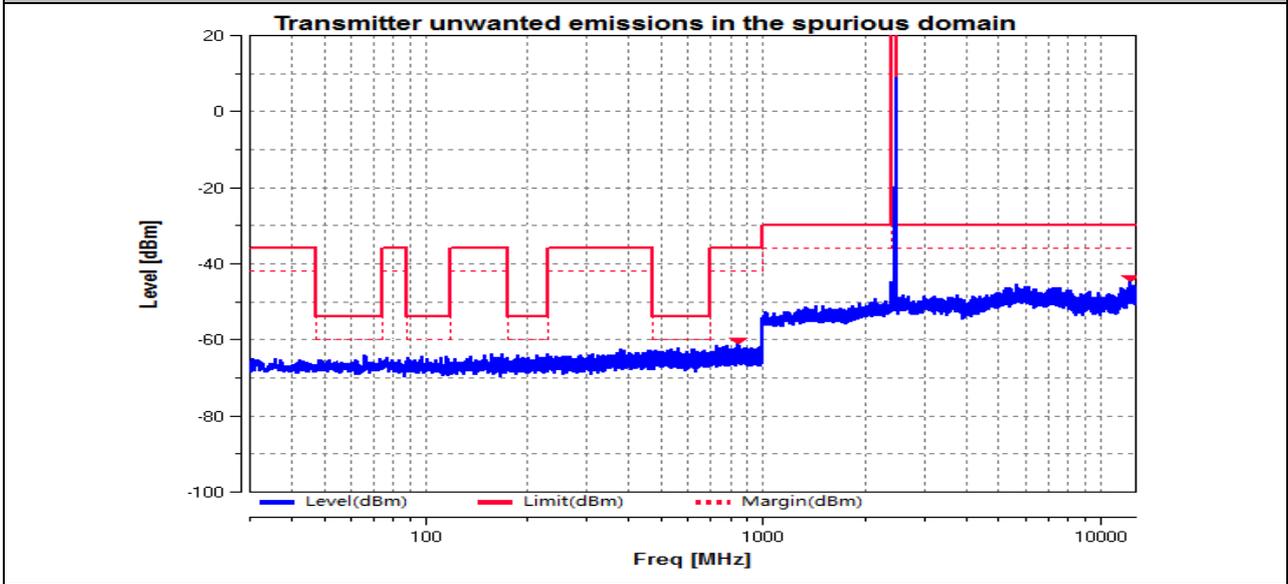




2DH5\_Ant1\_2402

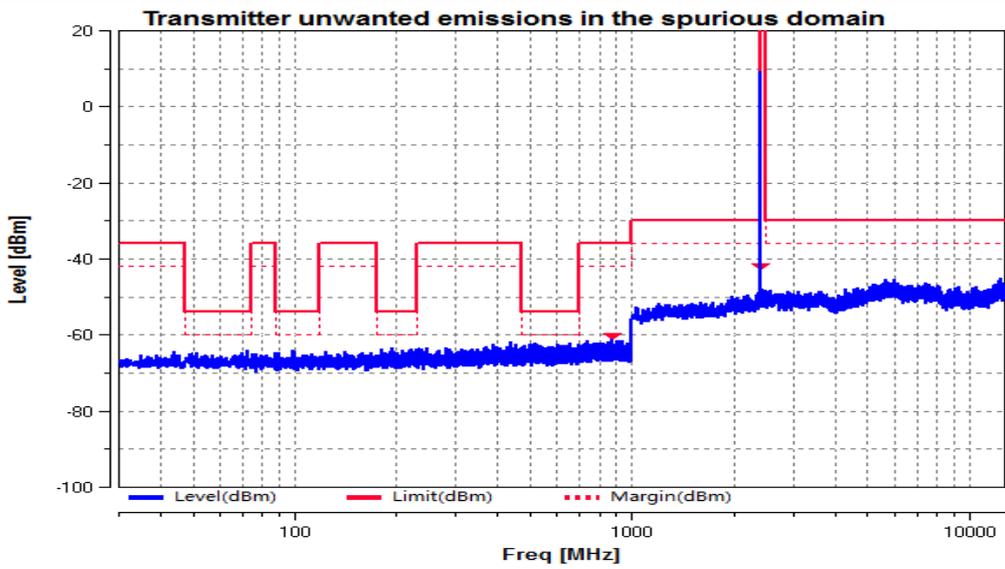


2DH5\_Ant1\_2480

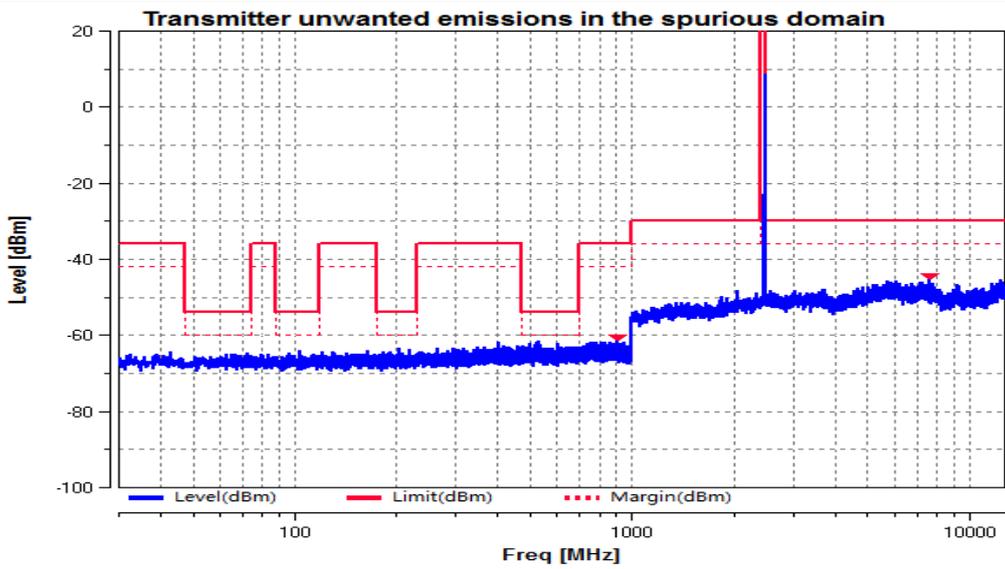




3DH5\_Ant1\_2402



3DH5\_Ant1\_2480





### E.9 Receiver spurious emissions

#### Test Result-Pre-scan

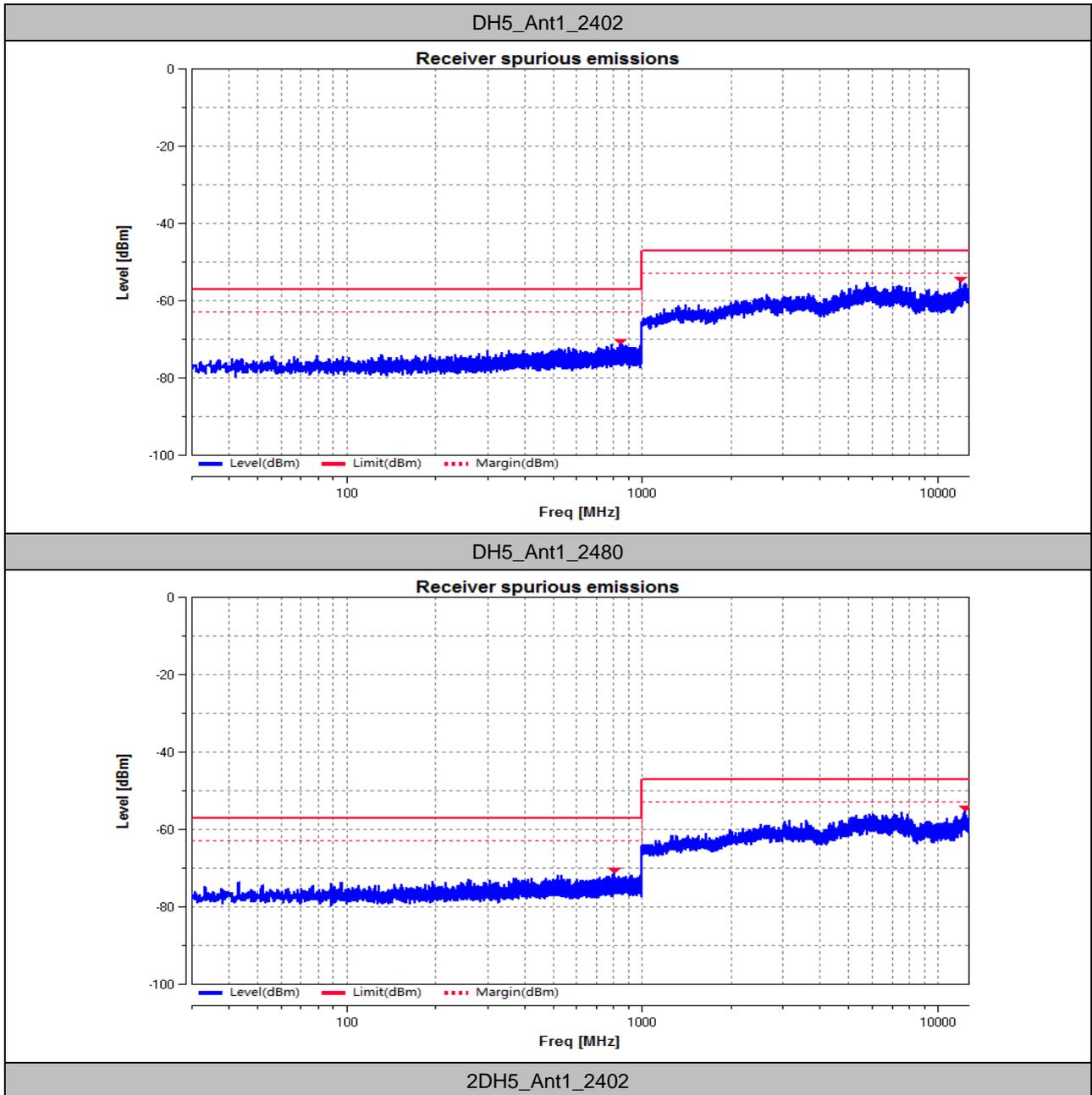
| TestMode | Antenna | Channel | Freq. [MHz] | Level[dBm] | Limit[dBm] | Verdict         |
|----------|---------|---------|-------------|------------|------------|-----------------|
| DH5      | Ant1    | 2402    | 845.29      | -71.29     | -57.00     | PASS            |
|          |         |         | 11896.66    | -55.2      | -47.00     | PASS            |
|          |         | 2480    | 806.73      | -71.32     | -57.00     | PASS            |
|          |         |         | 12381.34    | -55.38     | -47.00     | PASS            |
| 2DH5     | Ant1    | 2402    | 698.45      | -71.63     | -57.00     | PASS            |
|          |         |         | 5770.5      | -53.62     | -47.00     | PASS            |
|          |         | 2480    | 684.14      | -70.41     | -57.00     | PASS            |
|          |         |         | 5763.16     | -54.18     | -47.00     | PASS            |
| 3DH5     | Ant1    | 2402    | 905.06      | -70.9      | -57.00     | PASS            |
|          |         |         | 6086.28     | -54.42     | -47.00     | PASS            |
|          |         | 2480    | 5757.28     | -52.99     | -47        | See table below |

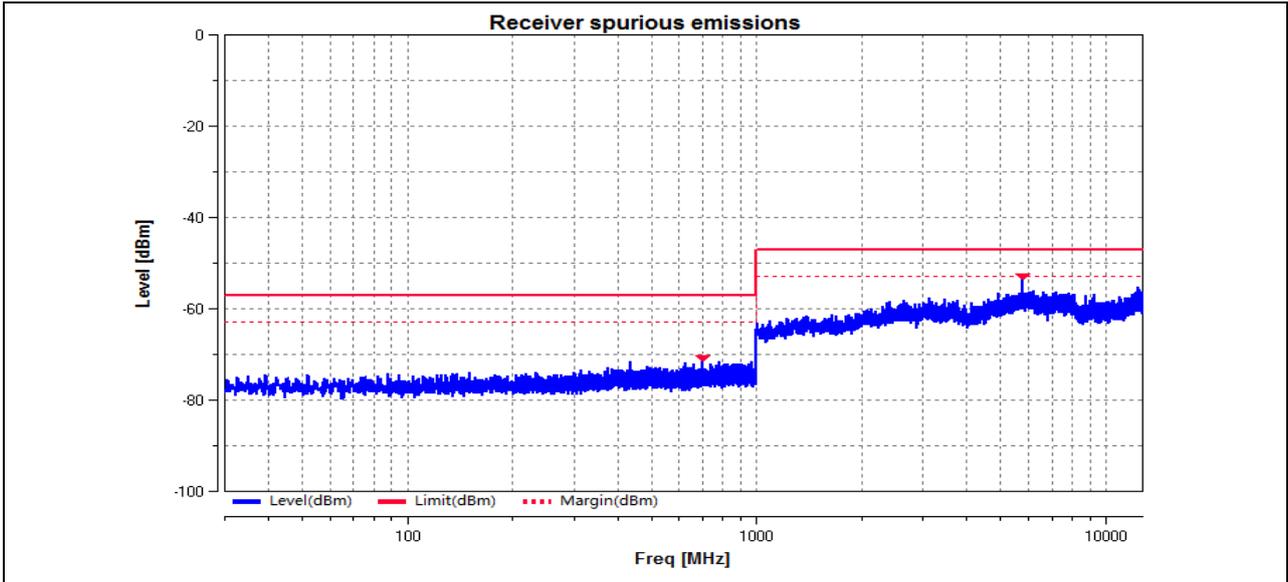
#### Test Result- Emissions identified during the pre-scan

| TestMode | Antenna | Channel | Freq. [MHz] | Level[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|------------|---------|
| 3DH5     | Ant1    | 2480    | 5757.28     | -75.80     | -47        | PASS    |

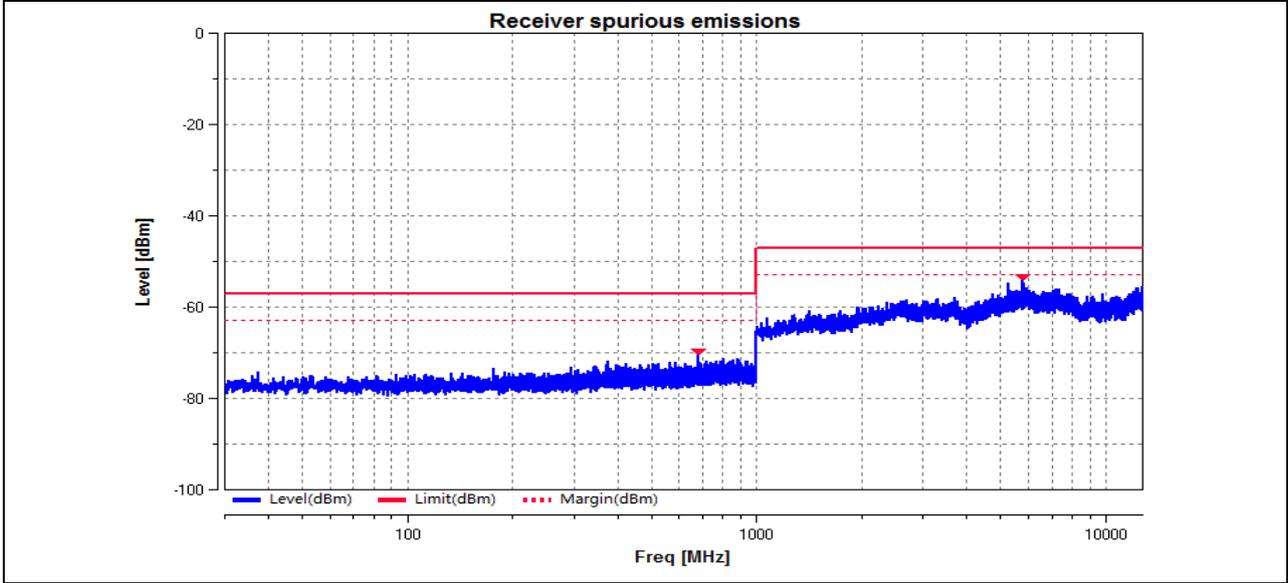


### Test Graphs-Pre-scan

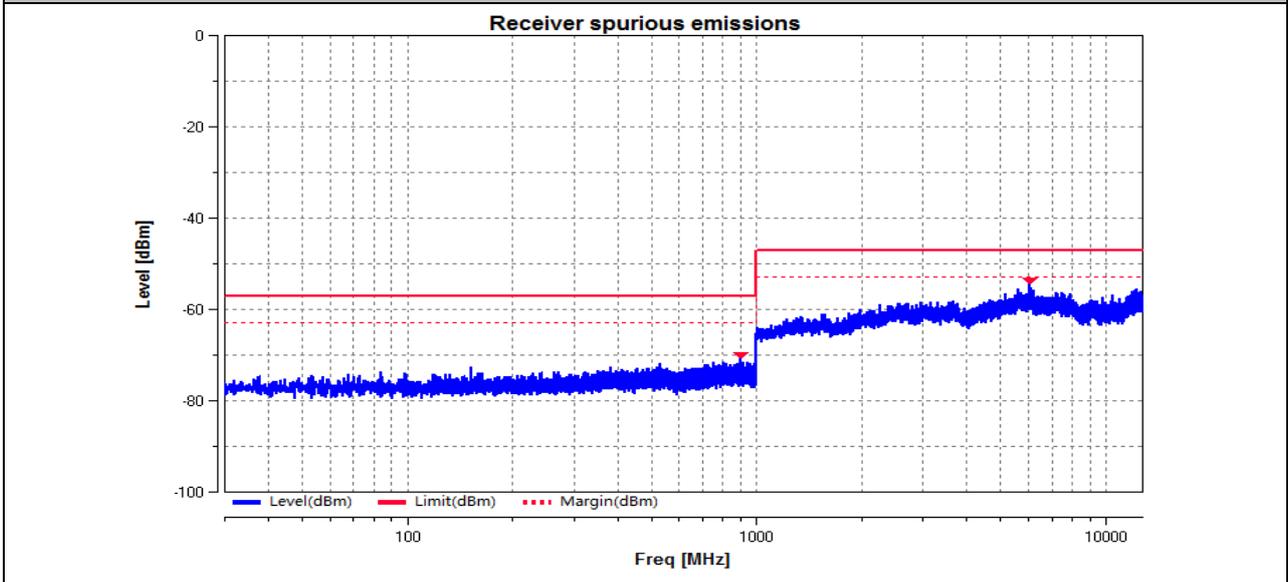


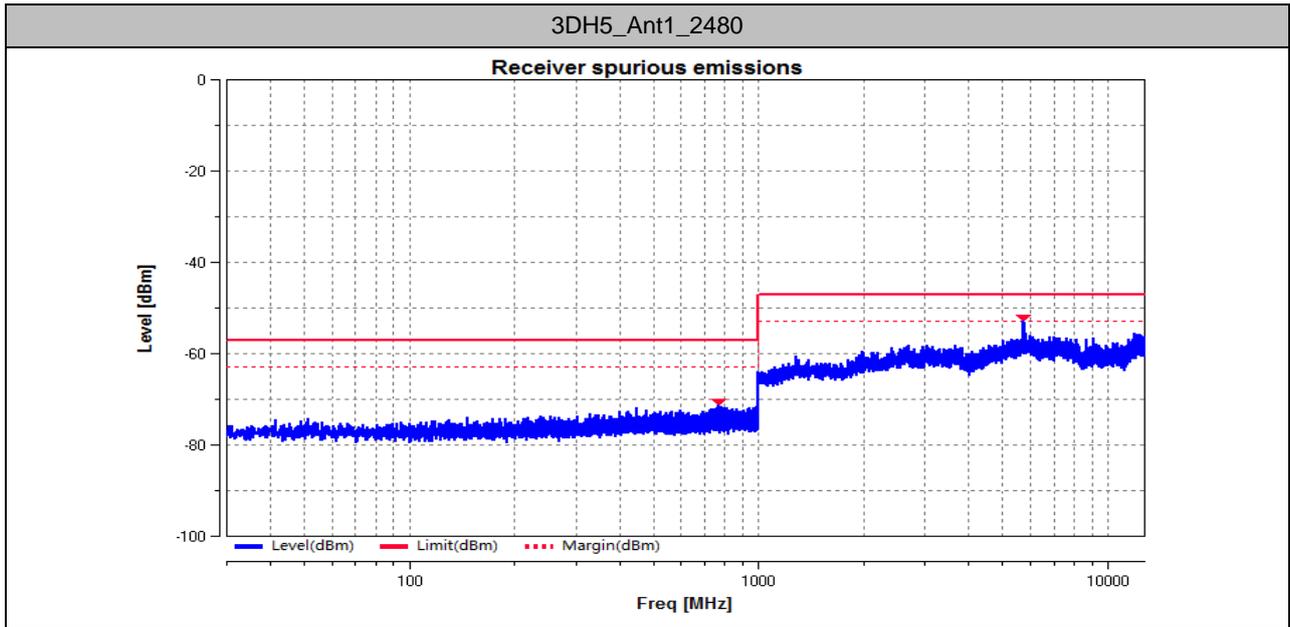


2DH5\_Ant1\_2480

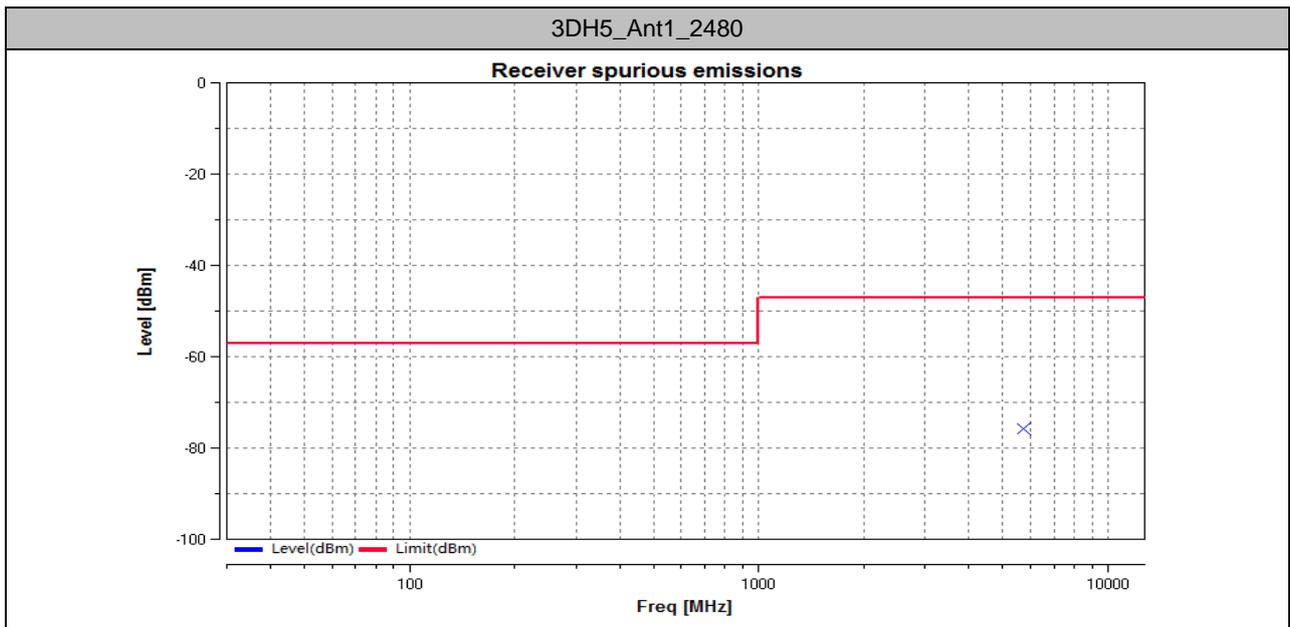


3DH5\_Ant1\_2402





### Test Graphs- Emissions identified during the pre-scan



**E.10 Receiver Blocking**

| Test Mode | Test Channel (MHz) | Wanted Signal Mean Power from Companion Device (dBm) | Blocking Signal Frequency (MHz) | Blocking Signal Power (dBm) |            | Type of Blocking Signal | PER(%)     |       | Test Result |
|-----------|--------------------|--|---------------------------------|-----------------------------|------------|-------------------------|------------|-------|-------------|
|           |                    |  |                                 | Test Value                  | Limit      |                         | Test Value | Limit |             |
| DH1       | 2402               | -70  | 2380                            | -25                         | $\geq -34$ | CW                      | 3.22       | 10    | Pass        |
|           |                    |  | 2504                            | -34                         | $\geq -34$ | CW                      | 4.48       | 10    | Pass        |
|           |                    |  | 2300                            | -23                         | $\geq -34$ | CW                      | 5.37       | 10    | Pass        |
|           |                    |  | 2584                            | -25                         | $\geq -34$ | CW                      | 4.58       | 10    | Pass        |
|           | 2480               | -70  | 2380                            | -25                         | $\geq -34$ | CW                      | 6.76       | 10    | Pass        |
|           |                    |  | 2504                            | -24                         | $\geq -34$ | CW                      | 5.98       | 10    | Pass        |
|           |                    |  | 2300                            | -29                         | $\geq -34$ | CW                      | 5.30       | 10    | Pass        |
|           |                    |  | 2584                            | -23                         | $\geq -34$ | CW                      | 3.71       | 10    | Pass        |
| 2DH1      | 2402               | -68  | 2380                            | -20                         | $\geq -34$ | CW                      | 5.06       | 10    | Pass        |
|           |                    |  | 2504                            | -27                         | $\geq -34$ | CW                      | 5.81       | 10    | Pass        |
|           |                    |  | 2300                            | -17                         | $\geq -34$ | CW                      | 4.40       | 10    | Pass        |
|           |                    |  | 2584                            | -25                         | $\geq -34$ | CW                      | 4.48       | 10    | Pass        |
|           | 2480               | -68  | 2380                            | -29                         | $\geq -34$ | CW                      | 6.71       | 10    | Pass        |
|           |                    |  | 2504                            | -31                         | $\geq -34$ | CW                      | 5.70       | 10    | Pass        |
|           |                    |  | 2300                            | -31                         | $\geq -34$ | CW                      | 6.56       | 10    | Pass        |
|           |                    |  | 2584                            | -21                         | $\geq -34$ | CW                      | 3.35       | 10    | Pass        |
| 3DH1      | 2402               | -68  | 2380                            | -25                         | $\geq -34$ | CW                      | 5.90       | 10    | Pass        |
|           |                    |  | 2504                            | -32                         | $\geq -34$ | CW                      | 5.07       | 10    | Pass        |
|           |                    |  | 2300                            | -23                         | $\geq -34$ | CW                      | 6.88       | 10    | Pass        |
|           |                    |  | 2584                            | -26                         | $\geq -34$ | CW                      | 6.22       | 10    | Pass        |
|           | 2480               | -68  | 2380                            | -26                         | $\geq -34$ | CW                      | 3.47       | 10    | Pass        |
|           |                    |  | 2504                            | -23                         | $\geq -34$ | CW                      | 5.51       | 10    | Pass        |
|           |                    |  | 2300                            | -29                         | $\geq -34$ | CW                      | 5.38       | 10    | Pass        |
|           |                    |  | 2584                            | -22                         | $\geq -34$ | CW                      | 3.83       | 10    | Pass        |