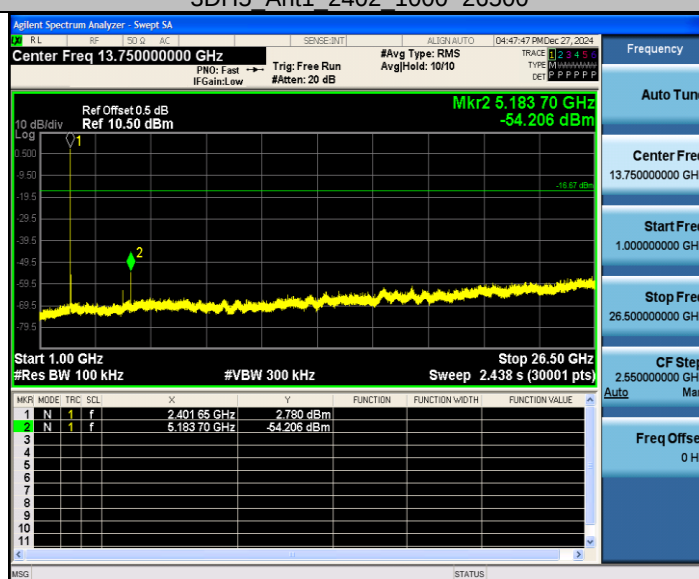
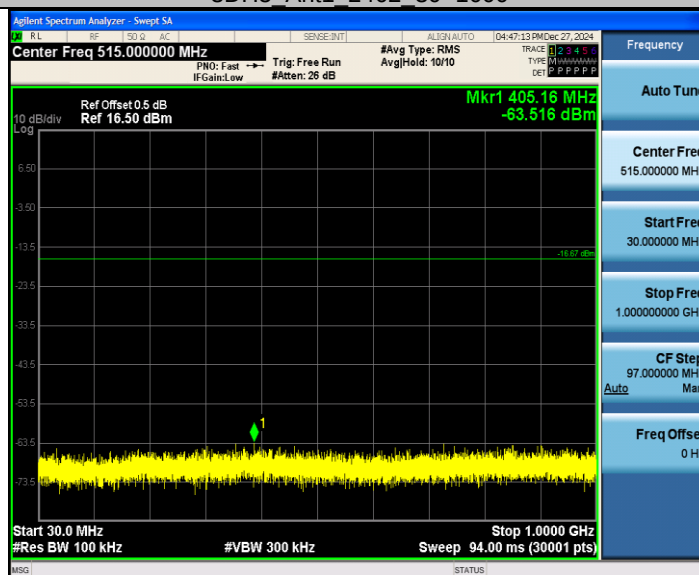
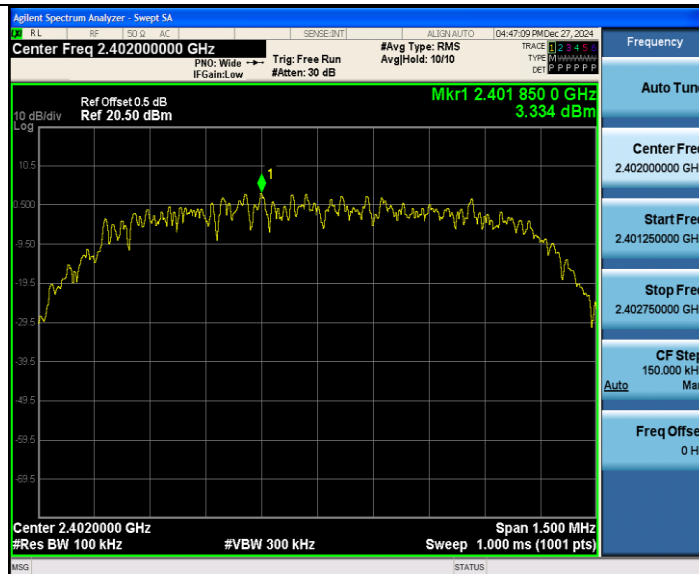
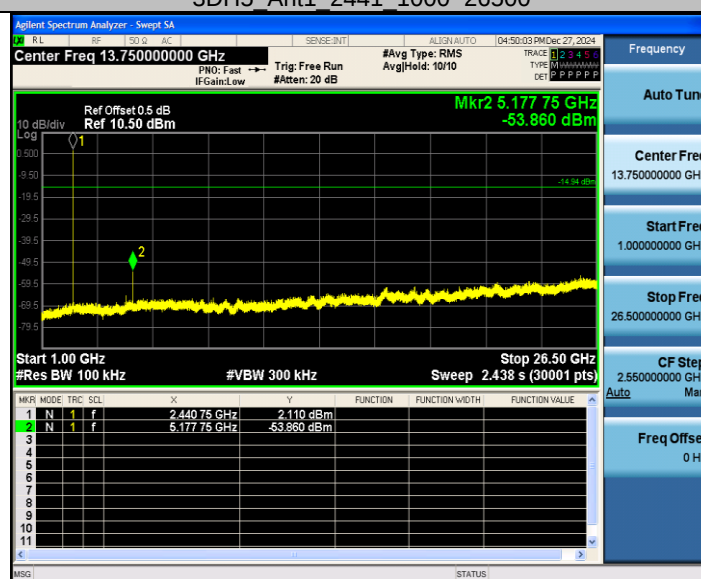
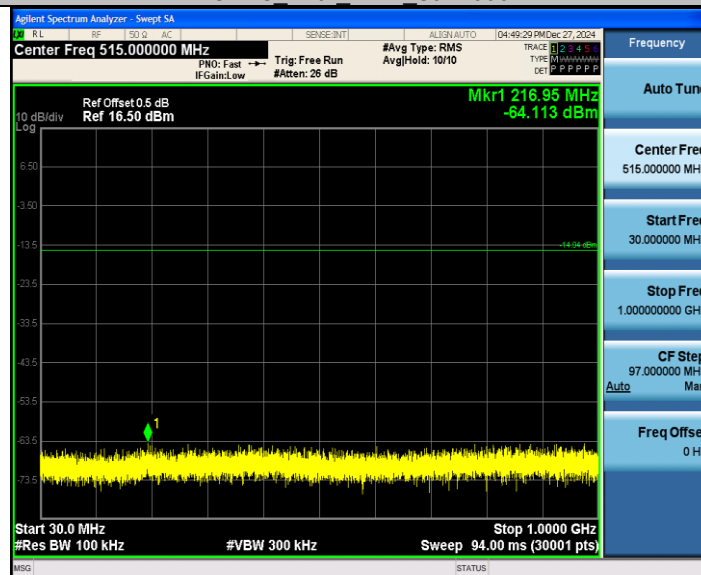




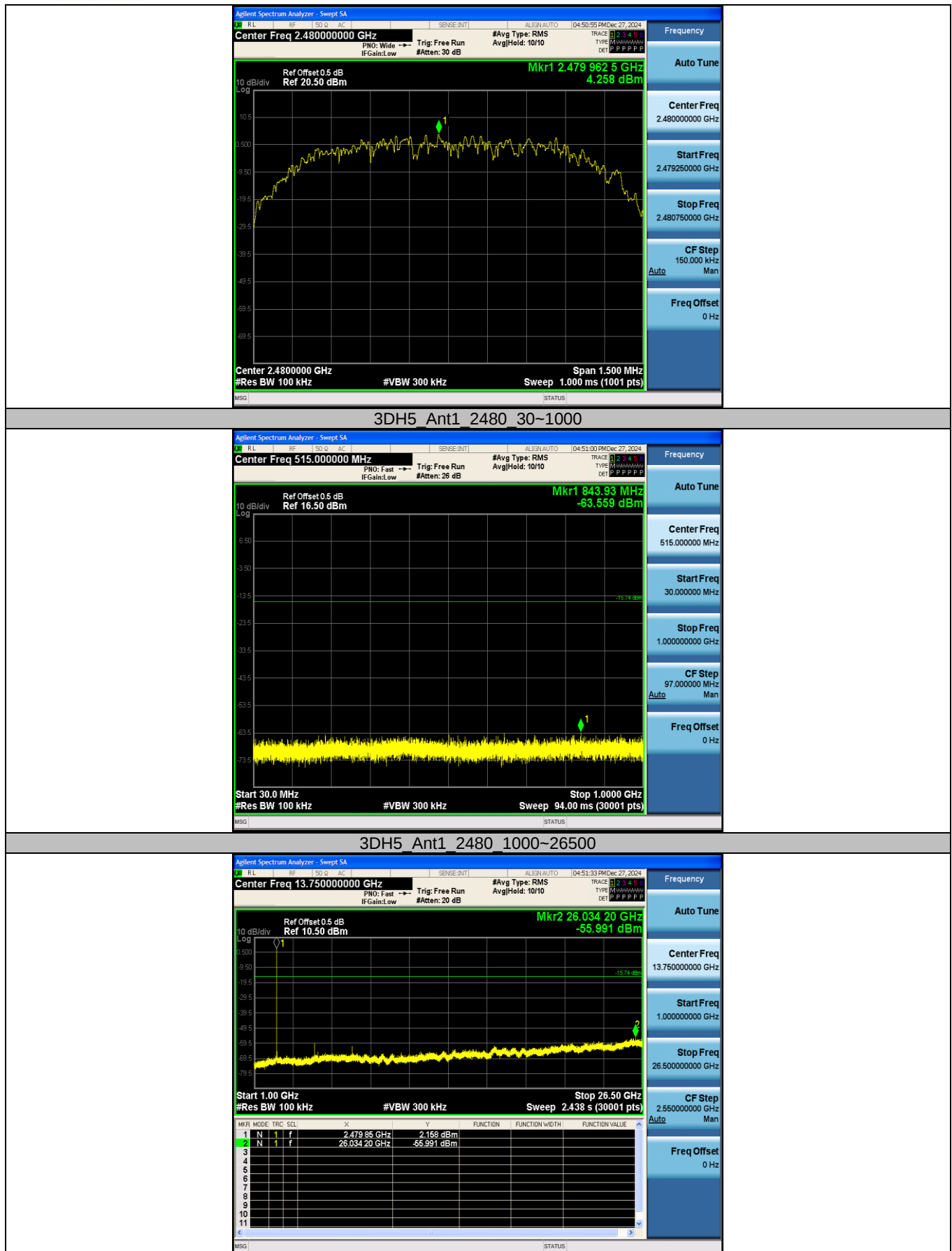


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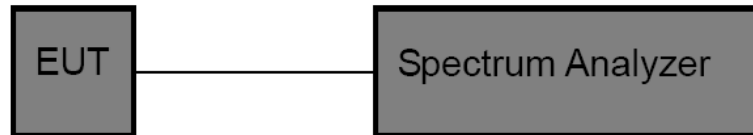


### 3.5. 20dB Bandwidth

#### Limit

N/A

#### Test Configuration



#### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. OCB and 20dB Spectrum Setting:
  - (1) Set RBW = 1% ~ 5% occupied bandwidth.
  - (2) Set the video bandwidth (VBW)  $\geq 3$  RBW.
  - (3) Detector = Peak.
  - (4) Trace mode = Max hold.
  - (5) Sweep = Auto couple.

Note: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

#### Test Mode

Please refer to the clause 2.4.

#### Test Result

| Test Mode | Antenna | Freq(MHz) | OCB [MHz] | 20dB BW [MHz] | 20dB BW*2/3 [MHz] |
|-----------|---------|-----------|-----------|---------------|-------------------|
| DH5       | Ant1    | 2402      | 0.86415   | 0.957         | 0.638             |
|           |         | 2441      | 0.85541   | 0.939         | 0.626             |
|           |         | 2480      | 0.84682   | 0.957         | 0.638             |
| 2DH5      | Ant1    | 2402      | 1.1723    | 1.347         | 0.898             |
|           |         | 2441      | 1.1837    | 1.287         | 0.858             |
|           |         | 2480      | 1.1823    | 1.278         | 0.852             |
| 3DH5      | Ant1    | 2402      | 1.1791    | 1.293         | 0.862             |
|           |         | 2441      | 1.1889    | 1.302         | 0.868             |
|           |         | 2480      | 1.1970    | 1.350         | 0.900             |



99% Bandwidth:

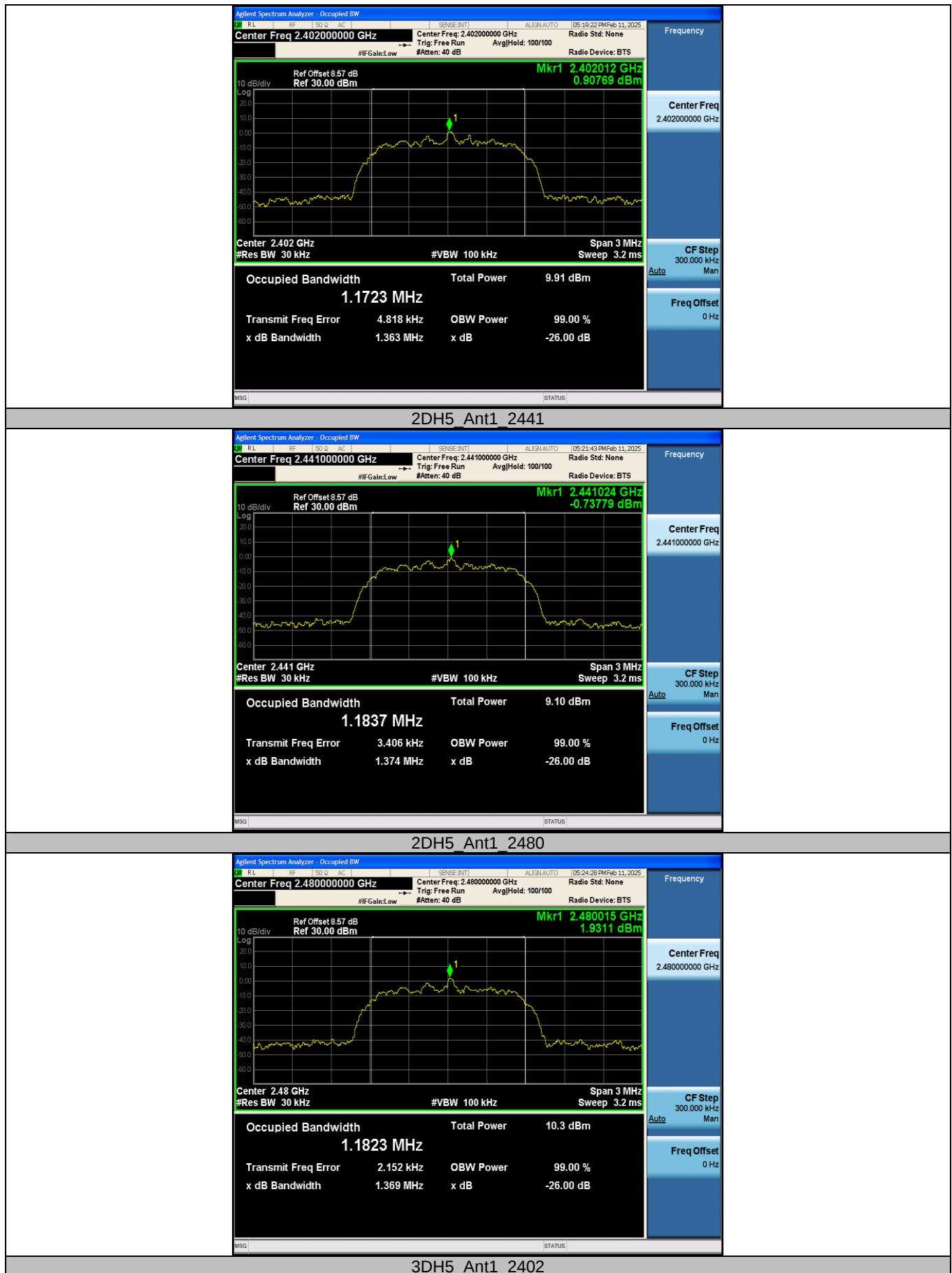


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20dB Bandwidth:



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2DH5 Ant1 2441



2DH5 Ant1 2480



3DH5 Ant1 2402

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3DH5 Ant1 2441



3DH5 Ant1 2480



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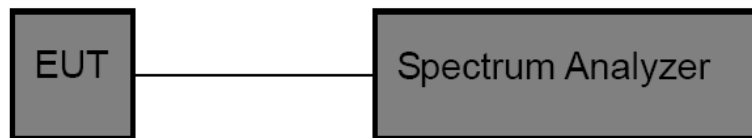
### 3.6. Channel Separation

#### Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(1) / RSS-247 5.1 b

| Test Item          | Limit                                                         | Frequency Range (MHz) |
|--------------------|---------------------------------------------------------------|-----------------------|
| Channel Separation | >25kHz or >two-thirds of the 20 dB bandwidth Which is greater | 2400~2483.5           |

#### Test Configuration



#### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. Spectrum Setting:
  - (1) Set RBW = 100 kHz.
  - (2) Set the video bandwidth (VBW)  $\geq 3$  RBW.
  - (3) Detector = Peak.
  - (4) Trace mode = Max hold.
  - (5) Sweep = Auto couple.

#### Test Mode

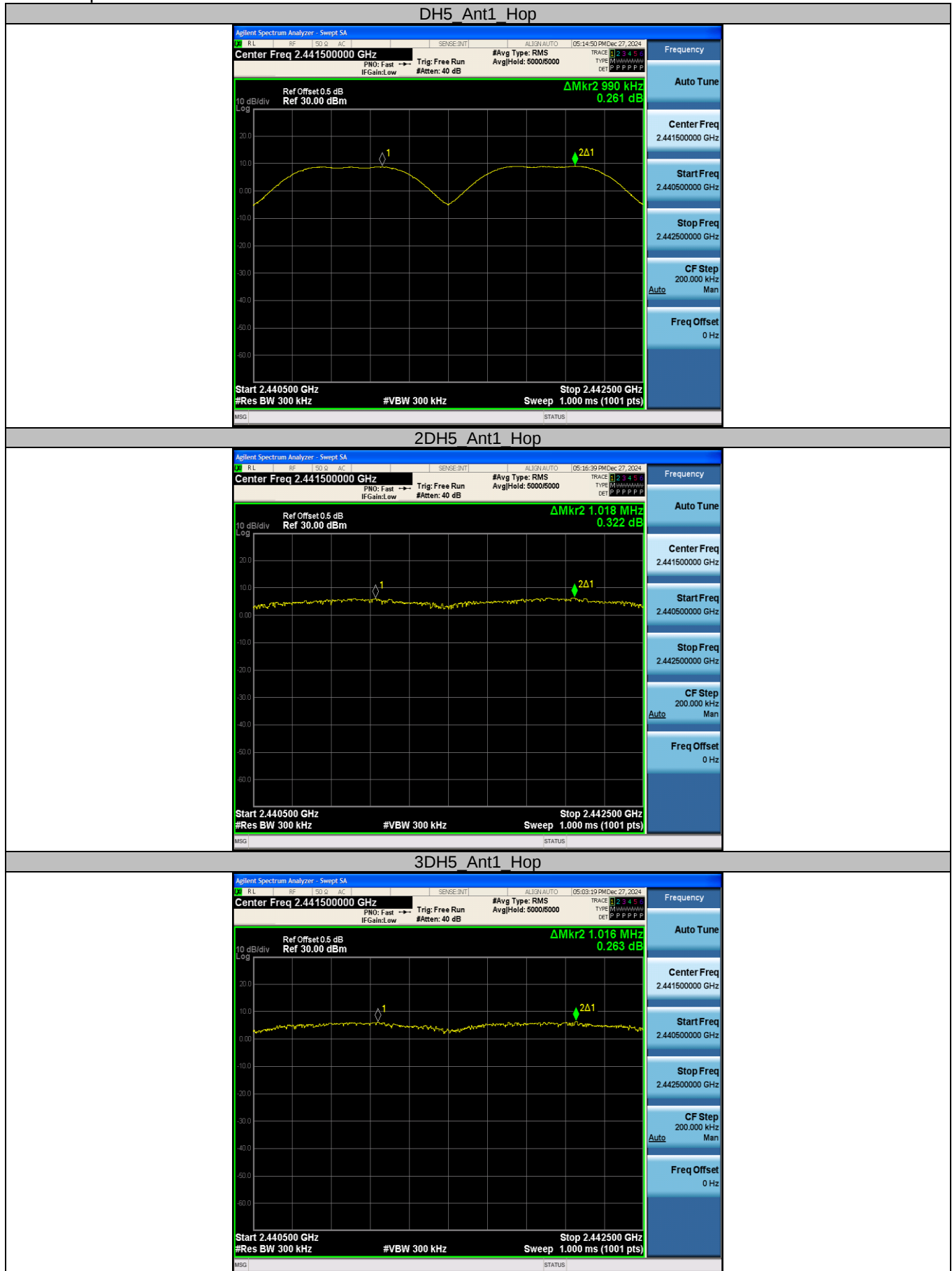
Please refer to the clause 2.4.

#### Test Result

| Test Mode | Antenna | Freq(MHz) | Result[MHz] | Limit[MHz]   | Verdict |
|-----------|---------|-----------|-------------|--------------|---------|
| DH5       | Ant1    | Hop       | 0.990       | $\geq 0.626$ | PASS    |
| 2DH5      | Ant1    | Hop       | 1.018       | $\geq 0.858$ | PASS    |
| 3DH5      | Ant1    | Hop       | 1.016       | $\geq 0.868$ | PASS    |



## Test Graphs



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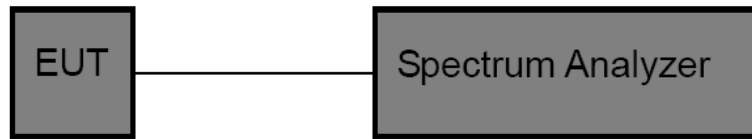
### 3.7. Number of Hopping Channel

#### Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(iii) / RSS-247 5.1 d

| Section                          | Test Item                 | Limit     |
|----------------------------------|---------------------------|-----------|
| 15.247 (a)(iii)<br>RSS-247 5.1 d | Number of Hopping Channel | $\geq 15$ |

#### Test Configuration



#### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. Spectrum Setting:
  - (1) Peak Detector: RBW=100 kHz, VBW $\geq$ RBW, Sweep time= Auto.

#### Test Mode

Please refer to the clause 2.4.

#### Test Result

| Test Mode | Antenna | Freq(MHz) | Result[Num] | Limit[Num] | Verdict |
|-----------|---------|-----------|-------------|------------|---------|
| DH5       | Ant1    | Hop       | 79          | $\geq 15$  | PASS    |
| 2DH5      | Ant1    | Hop       | 79          | $\geq 15$  | PASS    |
| 3DH5      | Ant1    | Hop       | 79          | $\geq 15$  | PASS    |



## Test Graphs



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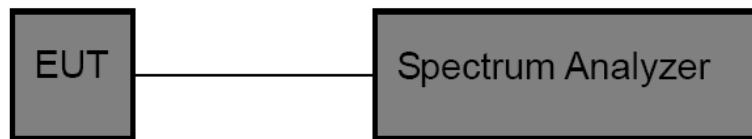
### 3.8. Dwell Time

#### Limit

#### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(iii) / RSS-247 5.1 d

| Section                          | Test Item                 | Limit   |
|----------------------------------|---------------------------|---------|
| 15.247 (a)(iii)<br>RSS-247 5.1 d | Average Time of Occupancy | 0.4 sec |

#### Test Configuration



#### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. Spectrum Setting:
  - (1) Spectrum Setting: RBW=1MHz, VBW $\geq$ RBW.
  - (2) Use video trigger with the trigger level set to enable triggering only on full pulses.
  - (3) Sweep Time is more than once pulse time.
  - (4) Set the center frequency on any frequency would be measure and set the frequency span to zero.
  - (5) Measure the maximum time duration of one single pulse.
  - (6) Set the EUT for packet transmitting.

#### Test Mode

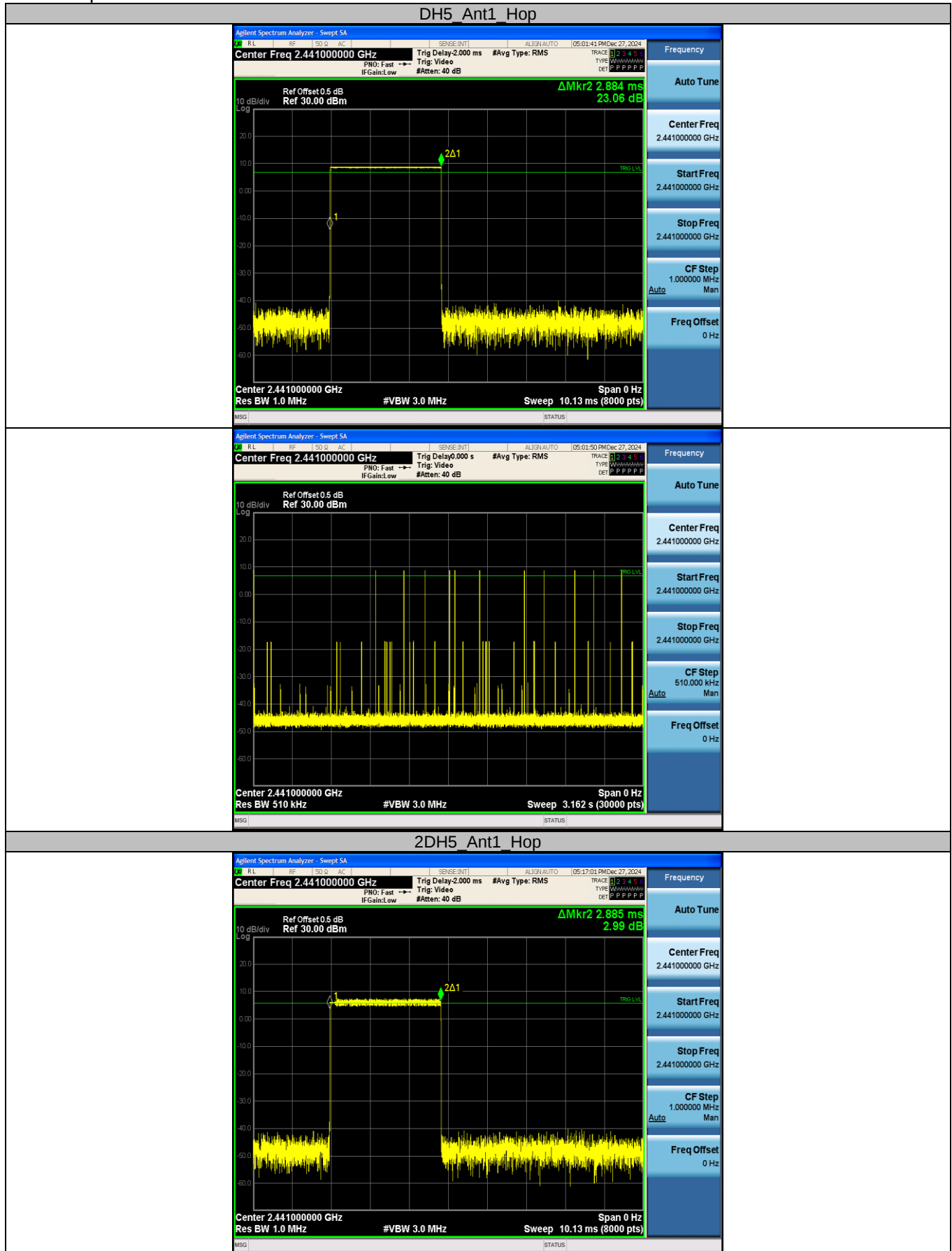
Please refer to the clause 2.4.

#### Test Result

| Test Mode | Antenna | Freq(MHz) | Burst Width [ms] | Total Hops [Num] | Result[s] | Limit[s]   | Verdict |
|-----------|---------|-----------|------------------|------------------|-----------|------------|---------|
| DH5       | Ant1    | Hop       | 2.884            | 120              | 0.346     | $\leq 0.4$ | PASS    |
| 2DH5      | Ant1    | Hop       | 2.885            | 90               | 0.260     | $\leq 0.4$ | PASS    |
| 3DH5      | Ant1    | Hop       | 2.888            | 130              | 0.375     | $\leq 0.4$ | PASS    |



## Test Graphs

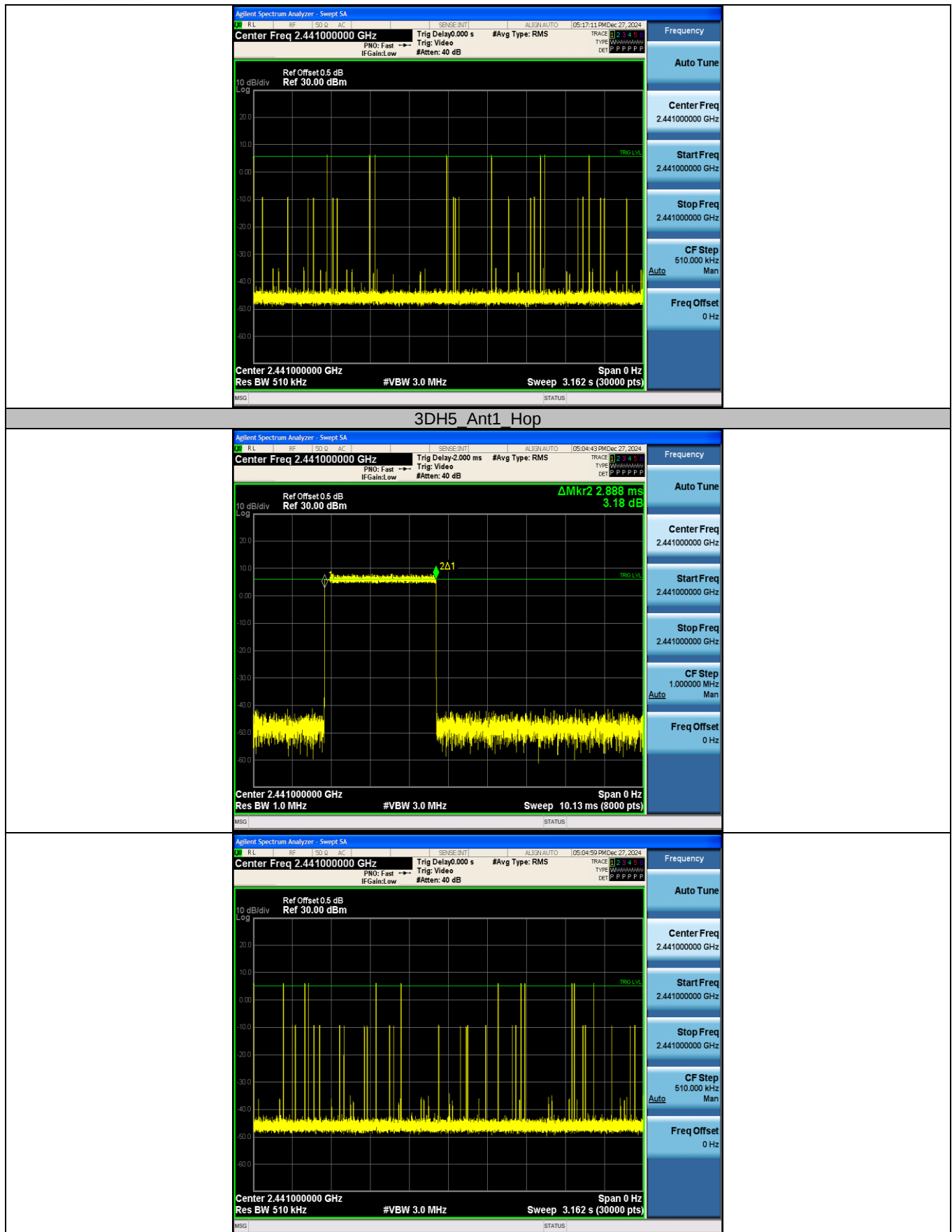


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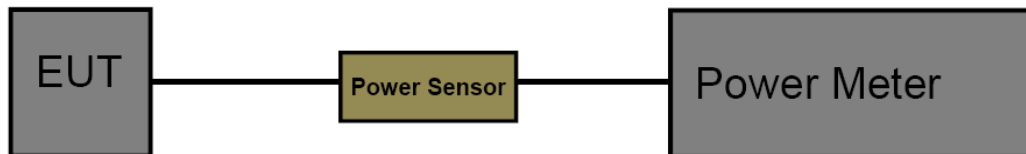
### 3.9. Peak Output Power

#### Limit

#### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(1) / RSS-247 5.4 b

| Section                       | Test Item                      | Limit                                                                                     | Frequency Range (MHz) |
|-------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|-----------------------|
| FCC CFR 47 Part 15.247 (b)(1) | Maximum Conducted Output Power | Hopping Channels $\geq 75$ , Power $< 1\text{W}$ (30dBm); Others $< 125\text{mW}$ (21dBm) | 2400~2483.5           |
| ISED RSS-247 5.4 d            | Maximum Conducted Output Power | 1 Watt or 30dBm                                                                           | 2400~2483.5           |
|                               | EIRP                           | 4 Watt or 36dBm                                                                           | 2400~2483.5           |

#### Test Configuration



#### Test Procedure

1. The maximum conducted output power may be measured using a broadband Peak RF power meter.
2. Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor.
3. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.  
Record the measurement data.

#### Test Mode

Please refer to the clause 2.4.

**Test Result**

Model: WCN3988 A1

| Test Mode | Antenna | Freq(MHz) | Conducted Peak Power[dBm] | Conducted Limit[dBm] | EIRP[dBm] | EIRP Limit[dBm] | Verdict |
|-----------|---------|-----------|---------------------------|----------------------|-----------|-----------------|---------|
| DH5       | Ant1    | 2402      | 8.54                      | ≤30                  | 14.18     | ≤36             | PASS    |
|           |         | 2441      | 8.86                      | ≤30                  | 14.50     | ≤36             | PASS    |
|           |         | 2480      | 9.31                      | ≤30                  | 14.95     | ≤36             | PASS    |
| 2DH5      | Ant1    | 2402      | 7.78                      | ≤30                  | 13.42     | ≤36             | PASS    |
|           |         | 2441      | 8.06                      | ≤30                  | 13.70     | ≤36             | PASS    |
|           |         | 2480      | 8.69                      | ≤30                  | 14.33     | ≤36             | PASS    |
| 3DH5      | Ant1    | 2402      | 8.20                      | ≤30                  | 13.84     | ≤36             | PASS    |
|           |         | 2441      | 8.53                      | ≤30                  | 14.17     | ≤36             | PASS    |
|           |         | 2480      | 9.02                      | ≤30                  | 14.66     | ≤36             | PASS    |

Model: WCN3988 A2

| Test Mode | Antenna | Freq(MHz) | Conducted Peak Power[dBm] | Conducted Limit[dBm] | EIRP[dBm] | EIRP Limit[dBm] | Verdict |
|-----------|---------|-----------|---------------------------|----------------------|-----------|-----------------|---------|
| DH5       | Ant1    | 2402      | 8.59                      | ≤30                  | 14.23     | ≤36             | PASS    |
|           |         | 2441      | 8.91                      | ≤30                  | 14.55     | ≤36             | PASS    |
|           |         | 2480      | 9.28                      | ≤30                  | 14.92     | ≤36             | PASS    |
| 2DH5      | Ant1    | 2402      | 7.82                      | ≤30                  | 13.46     | ≤36             | PASS    |
|           |         | 2441      | 8.10                      | ≤30                  | 13.74     | ≤36             | PASS    |
|           |         | 2480      | 8.66                      | ≤30                  | 14.30     | ≤36             | PASS    |
| 3DH5      | Ant1    | 2402      | 8.25                      | ≤30                  | 13.89     | ≤36             | PASS    |
|           |         | 2441      | 8.50                      | ≤30                  | 14.14     | ≤36             | PASS    |
|           |         | 2480      | 9.04                      | ≤30                  | 14.68     | ≤36             | PASS    |

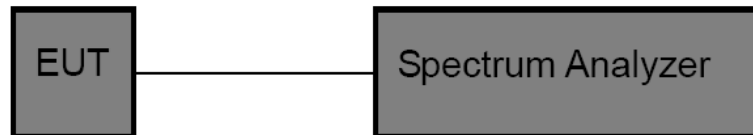


### 3.10. Duty Cycle

#### Limit

None, for report purposes only.

#### Test Configuration



#### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.
3. Spectrum Setting:  
Set analyzer center frequency to test channel center frequency.  
Set the span to 0Hz.  
Set the RBW to 10MHz.  
Set the VBW to 10MHz.  
Detector: Peak.  
Sweep time: Auto.  
Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

#### Test Mode

Please refer to the clause 2.4.

#### Test Result

| Test Mode | Antenna | Freq(MHz) | ON Time [ms] | Period [ms] | DC [%] | 1/T Minimum VBW (kHz) | Final Setting for VBW (kHz) |
|-----------|---------|-----------|--------------|-------------|--------|-----------------------|-----------------------------|
| DH5       | Ant1    | 2402      | 2.89         | 3.75        | 77.07  | 0.35                  | 1                           |
|           |         | 2441      | 2.89         | 3.75        | 77.07  | 0.35                  | 1                           |
|           |         | 2480      | 2.89         | 3.75        | 77.07  | 0.35                  | 1                           |
| 2DH5      | Ant1    | 2402      | 2.88         | 3.75        | 76.80  | 0.35                  | 1                           |
|           |         | 2441      | 2.88         | 3.75        | 76.80  | 0.35                  | 1                           |
|           |         | 2480      | 2.89         | 3.75        | 77.07  | 0.35                  | 1                           |
| 3DH5      | Ant1    | 2402      | 2.88         | 3.74        | 77.01  | 0.35                  | 1                           |
|           |         | 2441      | 2.89         | 3.75        | 77.07  | 0.35                  | 1                           |
|           |         | 2480      | 2.89         | 3.75        | 77.07  | 0.35                  | 1                           |



## Test Graphs



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### 3.11. Antenna Requirement

#### Requirement

##### **FCC CFR Title 47 Part 15 Subpart C Section 15.203**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

##### **FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i)**

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### Test Result

The directional gain of the antenna is less than 6dBi, please refer to the EUT internal photographs antenna photo.

##### **RSS-Gen Issue 5 Section 6.8**

The applicant for equipment certification, as per RSP-100, must provide a list of all antenna types that may be used with the licence-exempt transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. Licence-exempt transmitters that have received equipment certification may operate with different types of antennas. However, it is not permissible to exceed the maximum equivalent isotropically radiated power(e.i.r.p.) limits specified in the applicable standard (RSS) for licence-exempt apparatus.

#### Result

PASS.

The EUT has 1 antenna: a FPC Antenna for BT.

Note: ☐ Antenna use a permanently attached antenna which is not replaceable.  
☒ Not using a standard antenna jack or electrical connector for antenna replacement.  
☐ The antenna has to be professionally installed (please provide method of installation).  
Which in accordance to RSS-Gen 6.8, please refer to the internal photos.

\*\*\*\*\*THE END OF REPORT\*\*\*\*\*