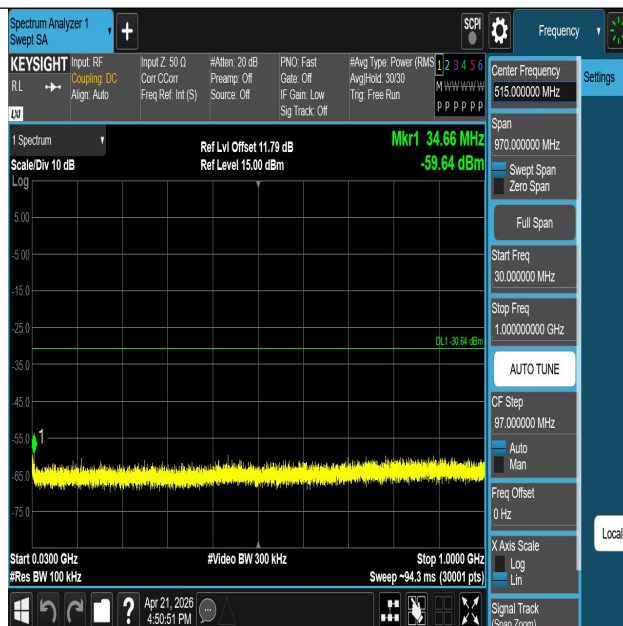
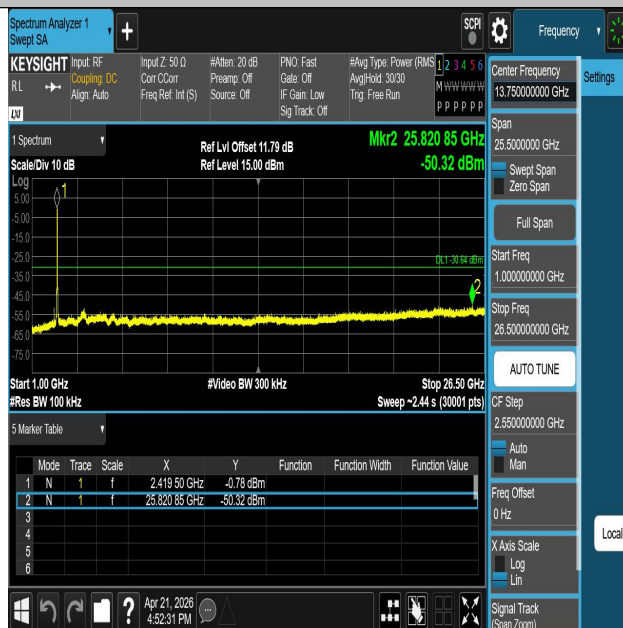
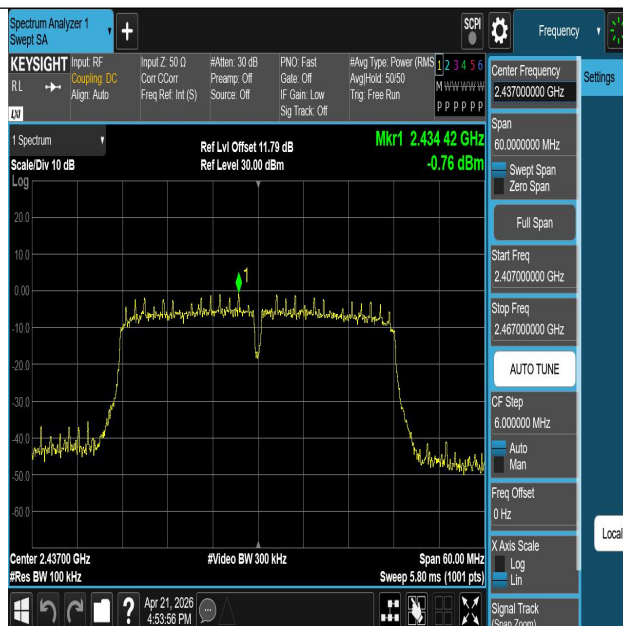




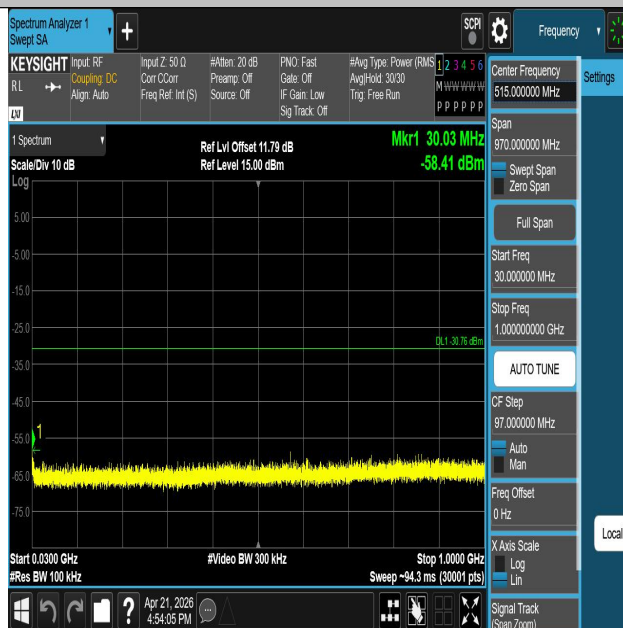
11N40SISO-Ant1-2422-30~1000-PASS



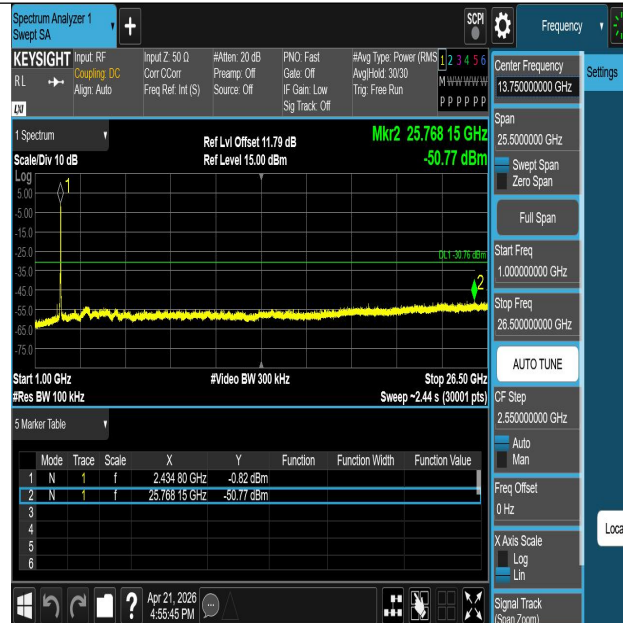
11N40SISO-Ant1-2422-1000~26500-PASS



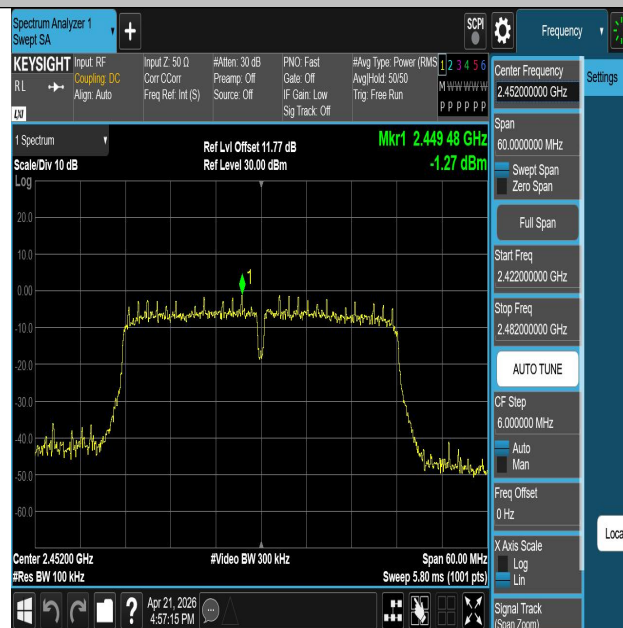
11N40SISO-Ant1-2437-0~Reference-PASS



11N40SISO-Ant1-2437-30~1000-PASS



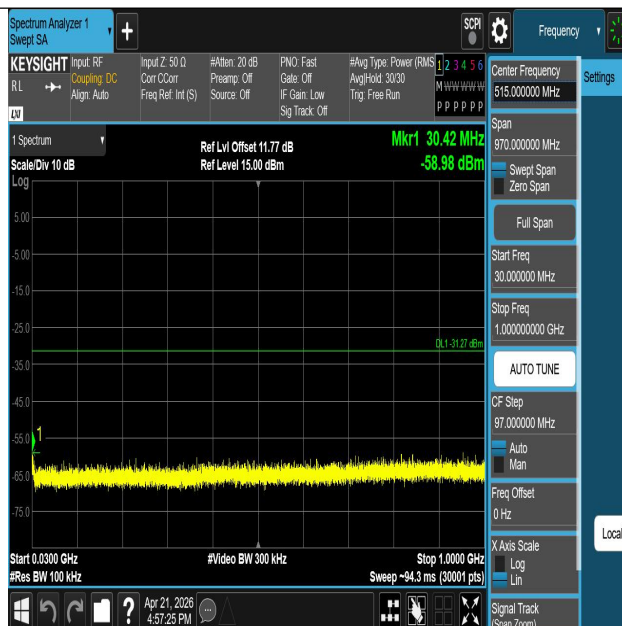
11N40SISO-Ant1-2437-1000~26500-PASS



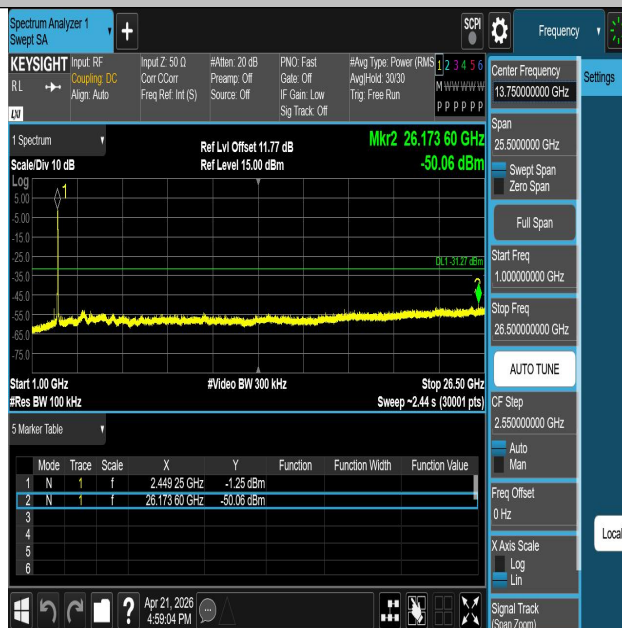
11N40SISO-Ant1-2452-0~Reference-PASS



Report No.: PTC25121907808E-FC02



11N40SISO-Ant1-2452-30~1000-PASS



11N40SISO-Ant1-2452-1000~26500-PASS



## 8 Band Edge Measurement

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement | : Section 15.247(d) In addition, radiated emissions which fall in the restricted bands. as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Test Method      | : ANSI C63.10-2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Test Limit       | : Regulation 15.247 (d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). |

### 8.1 Test Procedure

#### Reference Level:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum; Set to the maximum power setting and enable the EUT transmit continuously.
2. Establish a reference level by using the following procedure:
  - a) Set instrument center frequency to DTS channel center frequency.
  - b) Set the span to  $\geq 1.5$  times the DTS bandwidth.
  - c) Set the RBW = 100 kHz.
  - d) Set the VBW  $\geq [3 \times \text{RBW}]$ .
  - e) Detector = peak.
  - f) Sweep time = No faster than coupled (auto) time.
  - g) Trace mode = max-hold.
  - h) Allow trace to fully stabilize.
  - i) Use the peak marker function to determine the maximum PSD level.

**Note** that the channel found to contain the maximum PSD level can be used to establish the reference level

#### Spurious Emissions Measurement:



Establish an emission level by using the following procedure:

a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

b) Set the RBW = 100 kHz.

c) Set the VBW  $\geq [3 \times \text{RBW}]$ .

d) Detector = peak.

e) Sweep time = No faster than coupled (auto) time.

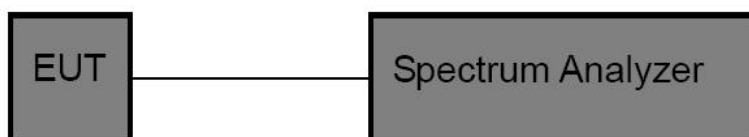
f) Trace mode = max-hold.

g) Allow trace to fully stabilize.

h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

## 8.2 Test Setup

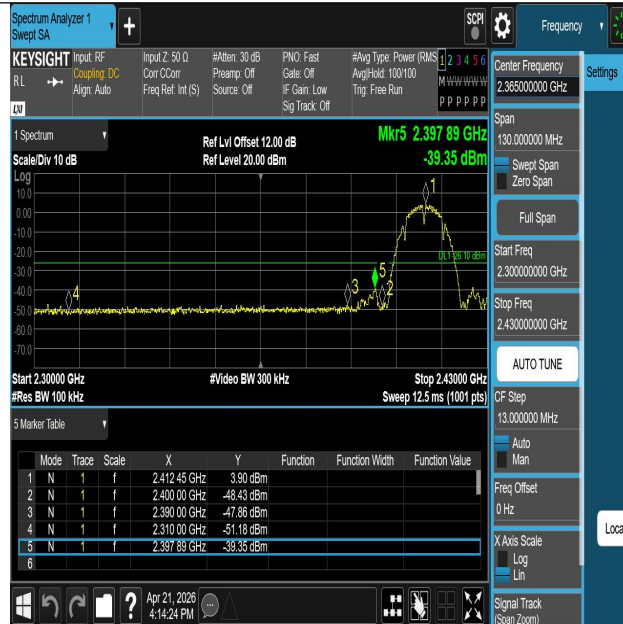


## 8.3 Test Result

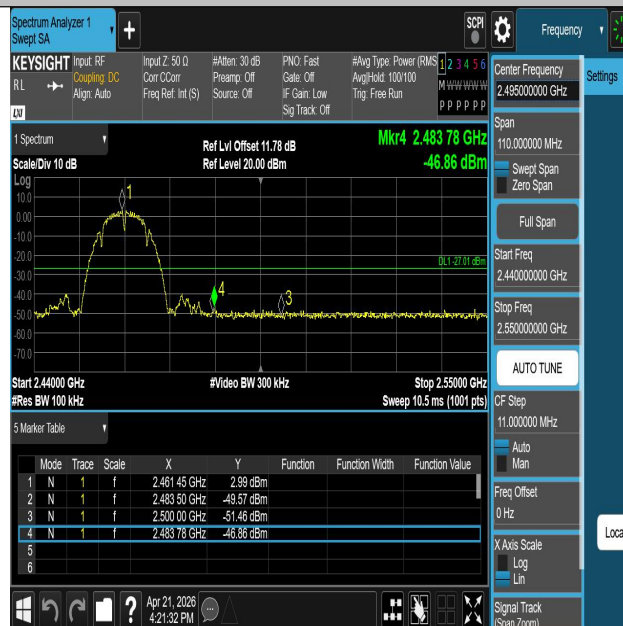
| TestMode  | Antenna | ChName | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm]    | Verdict |
|-----------|---------|--------|----------------|---------------|-------------|---------------|---------|
| 11B       | Ant1    | Low    | 2412           | 3.90          | -39.35      | $\leq -26.1$  | PASS    |
| 11B       | Ant1    | High   | 2462           | 2.99          | -46.86      | $\leq -27.01$ | PASS    |
| 11G       | Ant1    | Low    | 2412           | 2.77          | -36.48      | $\leq -27.23$ | PASS    |
| 11G       | Ant1    | High   | 2462           | 1.90          | -45.29      | $\leq -28.11$ | PASS    |
| 11N20SISO | Ant1    | Low    | 2412           | 2.97          | -36.17      | $\leq -27.03$ | PASS    |
| 11N20SISO | Ant1    | High   | 2462           | 1.11          | -45.38      | $\leq -28.89$ | PASS    |
| 11N40SISO | Ant1    | Low    | 2422           | -0.55         | -36.27      | $\leq -30.55$ | PASS    |
| 11N40SISO | Ant1    | High   | 2452           | -1.23         | -45.39      | $\leq -31.23$ | PASS    |



## Test Graphs:



11B-Ant1-2412-PASS



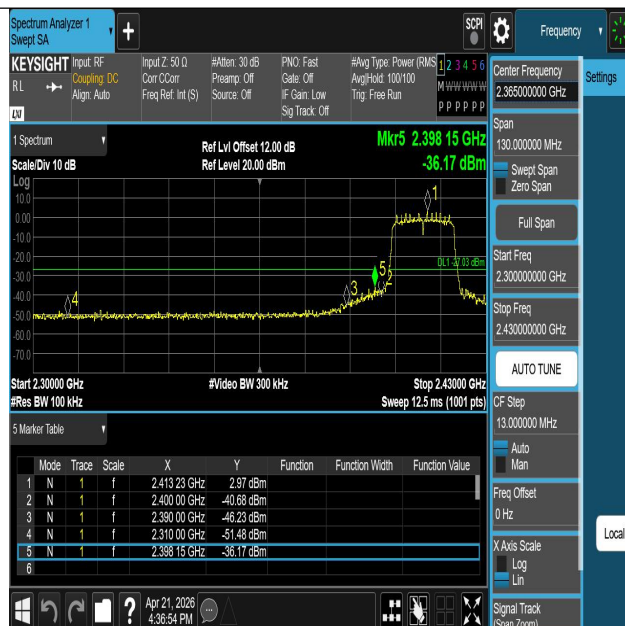
11B-Ant1-2462-PASS



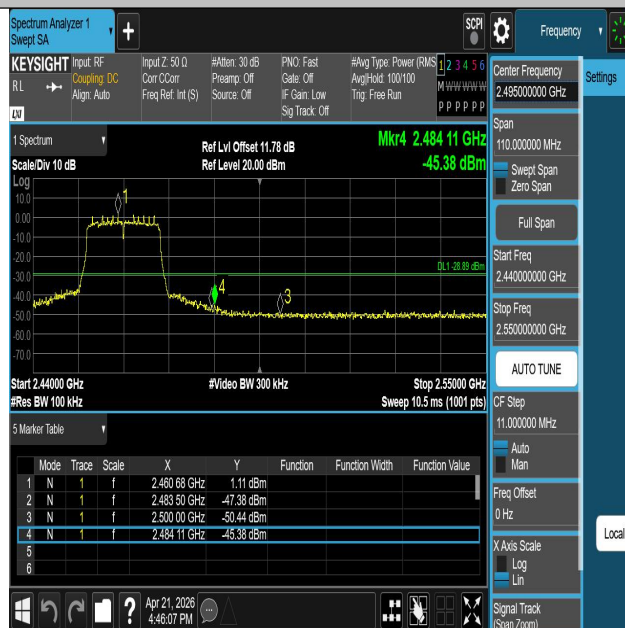
11G-Ant1-2412-PASS



11G-Ant1-2462-PASS



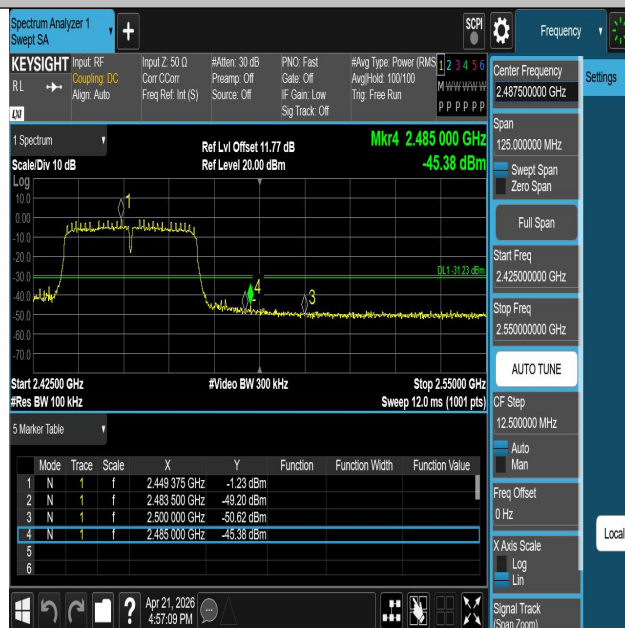
11N20SISO-Ant1-2412-PASS



11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2452-PASS



## 9 6dB Bandwidth Measurement

Test Requirement : FCC CFR47 Part 15 Section 15.247

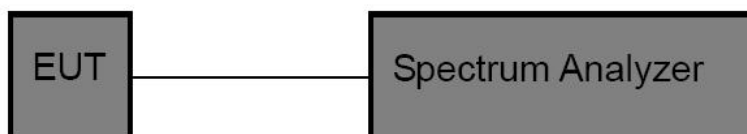
Test Method : ANSI C63.10-2020

Test Limit : Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

### 9.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: et RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz; Set the VBW  $\geq [3 \times \text{RBW}]$ ; Detector = peak; Trace mode = max-hold; Sweep = No faster than coupled (auto) time.

### 9.2 Test Setup



### 9.3 Test Result

| TestMode  | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-----------|---------|----------------|--------------|----------|----------|------------|---------|
| 11B       | Ant1    | 2412           | 9.160        | 2407.400 | 2416.560 | 0.5        | PASS    |
| 11B       | Ant1    | 2437           | 9.160        | 2432.400 | 2441.560 | 0.5        | PASS    |
| 11B       | Ant1    | 2462           | 9.160        | 2457.400 | 2466.560 | 0.5        | PASS    |
| 11G       | Ant1    | 2412           | 16.360       | 2403.800 | 2420.160 | 0.5        | PASS    |
| 11G       | Ant1    | 2437           | 16.360       | 2428.800 | 2445.160 | 0.5        | PASS    |
| 11G       | Ant1    | 2462           | 16.360       | 2453.800 | 2470.160 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2412           | 17.320       | 2403.360 | 2420.680 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2437           | 17.400       | 2428.240 | 2445.640 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2462           | 17.320       | 2453.360 | 2470.680 | 0.5        | PASS    |
| 11N40SISO | Ant1    | 2422           | 35.440       | 2404.320 | 2439.760 | 0.5        | PASS    |
| 11N40SISO | Ant1    | 2437           | 35.360       | 2419.320 | 2454.680 | 0.5        | PASS    |
| 11N40SISO | Ant1    | 2452           | 35.440       | 2434.160 | 2469.600 | 0.5        | PASS    |



## Test Graphs:



11B-Ant1-2412-PASS



11B-Ant1-2437-PASS



11B-Ant1-2462-PASS



11G-Ant1-2412-PASS



11G-Ant1-2437-PASS



11G-Ant1-2462-PASS



11N20SISO-Ant1-2412-PASS



11N20SISO-Ant1-2437-PASS



11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS



## 10 Maximum conducted output power

Test Requirement : FCC CFR47 Part 15 Section 15.247

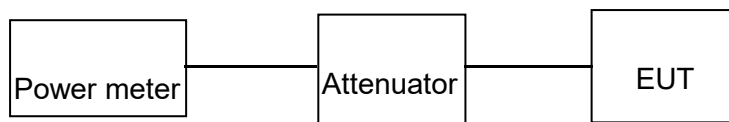
Test Method : ANSI C63.10-2020

Test Limit : Regulation 15.247 (b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.

### 10.1 Test Procedure

1. According to ANSI C63.10-2020 clause 11.9.2.3 average power meter method. The maximum conducted output power may be measured using a broadband average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

### 10.2 Test Setup



### 10.3 Test Result

| TestMode  | Antenna | Frequency[MHz] | Set Power | AV Power[dBm] | Conducted Limit[dBm] | Verdict |
|-----------|---------|----------------|-----------|---------------|----------------------|---------|
| 11B       | Ant1    | 2412           | NA        | 14.14         | ≤30.00               | PASS    |
| 11B       | Ant1    | 2437           | NA        | 14.06         | ≤30.00               | PASS    |
| 11B       | Ant1    | 2462           | NA        | 13.42         | ≤30.00               | PASS    |
| 11G       | Ant1    | 2412           | NA        | 14.06         | ≤30.00               | PASS    |
| 11G       | Ant1    | 2437           | NA        | 13.86         | ≤30.00               | PASS    |
| 11G       | Ant1    | 2462           | NA        | 13.27         | ≤30.00               | PASS    |
| 11N20SISO | Ant1    | 2412           | NA        | 13.93         | ≤30.00               | PASS    |
| 11N20SISO | Ant1    | 2437           | NA        | 13.76         | ≤30.00               | PASS    |
| 11N20SISO | Ant1    | 2462           | NA        | 13.14         | ≤30.00               | PASS    |
| 11N40SISO | Ant1    | 2422           | NA        | 13.84         | ≤30.00               | PASS    |
| 11N40SISO | Ant1    | 2437           | NA        | 13.66         | ≤30.00               | PASS    |
| 11N40SISO | Ant1    | 2452           | NA        | 13.42         | ≤30.00               | PASS    |



## 11 Power Spectral density

Test Requirement : FCC CFR47 Part 15 Section 15.247

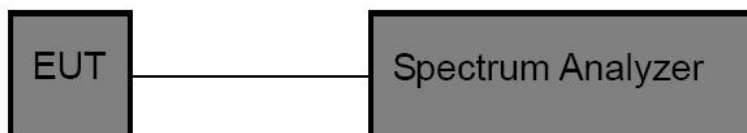
Test Method : ANSI C63.10-2020

Test Limit : Regulation 15.247(e) The power spectral density conducted from the intentional radiator to the antenna due to the digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### 11.1 Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below:  
Center frequency=DTS channel center frequency  
Span = 1.5 times the DTS bandwidth  
RBW = 3KHz, VBW = 10KHz  
Sweep time = auto couple  
Detector = peak  
Trace mode =max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
4. Use the peak marker function to determine the maximum amplitude level within the RBW.
5. If measured value exceeds limit, reduce RBW(no less than 3KHz) and repeat.

### 11.2 Test Setup



### 11.3 Test Result

| TestMode  | Antenna | Frequency[MHz] | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|-----------|---------|----------------|----------------------|-----------------|---------|
| 11B       | Ant1    | 2412           | -17.47               | ≤8.00           | PASS    |
| 11B       | Ant1    | 2437           | -16.54               | ≤8.00           | PASS    |
| 11B       | Ant1    | 2462           | -17.68               | ≤8.00           | PASS    |
| 11G       | Ant1    | 2412           | -19.50               | ≤8.00           | PASS    |
| 11G       | Ant1    | 2437           | -19.75               | ≤8.00           | PASS    |
| 11G       | Ant1    | 2462           | -21.15               | ≤8.00           | PASS    |
| 11N20SISO | Ant1    | 2412           | -19.14               | ≤8.00           | PASS    |
| 11N20SISO | Ant1    | 2437           | -20.95               | ≤8.00           | PASS    |
| 11N20SISO | Ant1    | 2462           | -21.27               | ≤8.00           | PASS    |
| 11N40SISO | Ant1    | 2422           | -22.62               | ≤8.00           | PASS    |
| 11N40SISO | Ant1    | 2437           | -22.92               | ≤8.00           | PASS    |
| 11N40SISO | Ant1    | 2452           | -23.43               | ≤8.00           | PASS    |



## Test Graphs:



11B-Ant1-2412-PASS



11B-Ant1-2437-PASS



11B-Ant1-2462-PASS



11G-Ant1-2412-PASS