# FCC Part 15E Test Report
# FCC ID: 2BOAH-32FBA60HZ

| | |
|---|---|
| Applicant: | Shenzhen Soling Technology Co., LTD |
| Address: | 1408, Baoyunda R&D Complex, Fuhua Community, Xixiang Street, Bao'an District, Shenzhen, China |
| Manufacturer: | SHENZHEN KTC COMMERCIAL DISPLAY TECHNOLOGY CO., LTD |
| Address: | KTC Park NO.4023 Wuhe Road, Bantian, LongGang District, ShenZhen |
| EUT: | Mobile Smart Screen |
| Trade Mark: | N/A |
| Model Number: | 32FBA60HZ |
| Date of Receipt: | Sep. 20, 2024 |
| Test Date: | Sep. 20, 2024 - Feb. 17, 2025 |
| Date of Report: | Feb. 17, 2025 |
| Prepared By: | Shenzhen DL Testing Technology Co., Ltd. |
| Address: | 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China |
| Applicable Standards: | FCC PART 15 E 15.407<br>ANSI C63.10:2013 |
| Test Result: | Pass |
| Report Number: | DL-240920014-5ER |

| | |
|---|---|
| Prepared (Test Engineer): | Dimon Tan |
| Reviewer (Supervisor): | Jack Bu |
| Approved (Manager): | Jade Yang |

*This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.*

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## 1.. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

| FCC Part15 (15.407) , Subpart E | | | |
|---|---|---|---|
| Standard Section | Test Item | Judgment | Remark |
| 15.207 | Conducted Emission | PASS | |
| 15.407(b), 15.209 | Radiated Spurious Emission | PASS | |
| 15.407 (b) | Band Edge Emission | PASS | |
| 15.407 (a) | Average Output Power | PASS | |
| 15.407 (a) | Power Spectral Density | PASS | |
| 15.407(e) | 6dB bandwidth | PASS | |
| 15.407(g) | Frequency Stability | PASS | |
| 15.407(c) | Transmission in case of Absence of Information | PASS | |
| 15.203 | Antenna Requirement | PASS | |

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

Test lab: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China

FCC Test Firm Registration Number: 854456
Designation Number: CN1307
IC Registered No.: 27485
CAB ID.: CN0118

### 1.1. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

| No. | Item | Uncertainty |
|---|---|---|
| 1 | Conducted Emission Test | ±2.56dB |
| 2 | RF power,conducted | ±0.42dB |
| 3 | Spurious emissions,conducted | ±2.76dB |
| 4 | All emissions,radiated(<1G) | ±3.65dB |
| 5 | All emissions,radiated(>1G) | ±4.89dB |
| 6 | Temperature | ±0.5°C |
| 7 | Humidity | ±2% |
| 8 | Occupied Bandwidth | ±0.2% |
| 9 | PSD | +1.85dBm |

## 2.. GENERAL INFORMATION

### 2.1. GENERAL DESCRIPTION OF EUT

| | |
|---|---|
| Product Name: | Mobile Smart Screen |
| Trademark | N/A |
| Model No.: | 32FBA60HZ |
| Model Difference | N/A |
| Operation Frequency: | 5745-5825MHz(802.11a/n/ac(HT20))<br>5755-5795MHz(802.11n/ac(HT40))<br>5775MHz (802.11ac(HT80)) |
| Channel numbers: | See channel list |
| Channel separation: | 20MHz/40MHz/80MHz |
| Modulation technology: | 802.11a/n: 64QAM, 16QAM, QPSK, BPSK for OFDM<br>802.11ac: 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM |
| Rate of Transmitter | 802.11a: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps<br>802.11n: Up to 300Mbps<br>802.11ac: up to 867Mbps |
| Antenna Type: | Internal antenna |
| Antenna gain: | 0.84dBi |
| Power supply: | DC 14.4V from battery<br>DC 19V from adapter |
| Adapter: | MODEL: SOY-1900474<br>INPUT: 100-240V~50/60Hz 1.8A Max<br>OUTPUT: 19.0V⎓4.74A 90.06W<br>Shenzhen SOY Technology Co., Ltd<br>4F, 5F 501, A building, No.11, Dakan Industrial2nd Road, xili Town, Nanshan District,ShenzhenClty, China |

Note:

1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.The EUT's all information provided by client.

2. Channel List

| Channel List for 802.11a/n(HT20)/ac(HT20) | | | |
|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 149 | 5745 | 161 | 5805 |
| 153 | 5765 | 165 | 5825 |
| 157 | 5785 | | |

| Channel List for 802.11n(HT40)/ac(HT40) | | | |
|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 151 | 5755 | 159 | 5795 |

| Channel List for 802.11ac(HT80) | | | |
|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 155 | 5775 | / | / |

2.1.1. DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

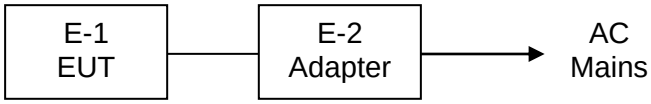
| For Conducted Emission | | |
|---|---|---|
| Pretest Mode | Channel | Band 4 |
| Mode 1 | 802.11a/n/acHT20 | CH149, CH157, CH165 |
| Mode 2 | 802.11n/acHT40 | CH151, CH159 |
| Mode 3 | 802.11acHT80 | CH155 |
| Mode 4 | Link Mode | |

| For Radiated Emission | | |
|---|---|---|
| Pretest Mode | Channel | Band 4 |
| Mode 1 | 802.11a/n/acHT20 | CH149, CH157, CH165 |
| Mode 2 | 802.11n/acHT40 | CH151, CH159 |
| Mode 3 | 802.11acHT80 | CH155 |
| Mode 4 | Link Mode | |

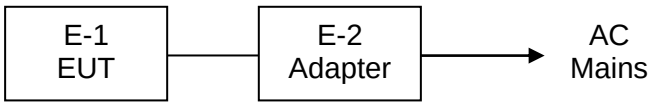
Note: 1. The measurements are performed at the highest, middle, lowest available channels.
2. During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

## 2.2. BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test




Conducted Emission Test.




## 2.3. DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment | Model/Type No. | Series No. | Note |
|---|---|---|---|---|
| E-1 | Mobile Smart Screen | 32FBA60HZ | N/A | EUT |
| E-2 | Adapter | SOY-1900474 | N/A | EUT |

| Item | Shielded Type | Ferrite Core | Length | Note |
|---|---|---|---|---|
| | | | | |

Note:

(1) For detachable type I/O cable should be specified the length in cm in『Length』column.

## 2.4. TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the end product.

| Max output power Setting | | | | |
|---|---|---|---|---|
| Test software Version | Test program: FCC_assist_1.0.2.3 | | | |
| Mode | 802.11a | 802.11n HT20 | 802.11n HT40 | 802.11ac HT20/HT40/HT80 |
| Data Rate | 6Mbps | MSC0 | MSC0 | MSC0 |
| Power Setting of Softwave | 60 | 60 | 66 | 66 |

## 2.5. EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation test, Band-edge test and 6db bandwidth test equipment

| Item | Equipment | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until |
|---|---|---|---|---|---|---|
| 1 | Spectrum Analyzer (9kHz-26.5GHz) | Agilent | E4408B | MY50140780 | Nov. 01, 2024 | Oct. 31, 2025 |
| 2 | Test Receiver (9kHz-7GHz) | R&S | ESRP7 | 101393 | Nov. 01, 2024 | Oct. 31, 2025 |
| 3 | Bilog Antenna (30MHz-1GHz) | R&S | VULB9162 | 00306 | Nov. 01, 2024 | Oct. 31, 2025 |
| 4 | Horn Antenna (1GHz-18GHz) | Schwarzbeck | BBHA9120D | 02139 | Nov. 01, 2024 | Oct. 31, 2025 |
| 5 | Horn Antenna (18GHz-40GHz) | A.H. Systems | SAS-574 | 588 | Nov. 01, 2024 | Oct. 31, 2025 |
| 6 | Amplifier (9KHz-6GHz) | Schwarzbeck | BBV9743B | 00153 | Nov. 01, 2024 | Oct. 31, 2025 |
| 7 | Amplifier (1GHz-18GHz) | EMEC | EM01G8GA | 00270 | Nov. 01, 2024 | Oct. 31, 2025 |
| 8 | Amplifier (18GHz-40GHz) | Quanjuda | DLE-161 | 97 | Nov. 01, 2024 | Oct. 31, 2025 |
| 9 | Loop Antenna (9KHz-30MHz) | Schwarzbeck | FMZB1519B | 00014 | Nov. 01, 2024 | Oct. 31, 2025 |
| 10 | RF cables1 (9kHz-1GHz) | ChengYu | 966 | 004 | Nov. 01, 2024 | Oct. 31, 2025 |
| 11 | RF cables2 (1GHz-40GHz) | ChengYu | 966 | 003 | Nov. 01, 2024 | Oct. 31, 2025 |
| 12 | Antenna connector | Florida RF Labs | N/A | RF 01# | Nov. 01, 2024 | Oct. 31, 2025 |
| 13 | Power probe | KEYSIGHT | U2021XA | MY55210018 | Nov. 01, 2024 | Oct. 31, 2025 |
| 14 | Signal Analyzer 9kHz-26.5GHz | Agilent | N9020A | MY55370280 | Nov. 01, 2024 | Oct. 31, 2025 |
| 15 | Test Receiver 20kHz-40GHz | R&S | ESU 40 | 100376 | Nov. 01, 2024 | Oct. 31, 2025 |
| 16 | D.C. Power Supply | LongWei | PS-305D | 010964729 | Nov. 01, 2024 | Oct. 31, 2025 |
| 17 | Temperature & humidity chamber | Changfeng | CF-150-40-P | CF170802-01 | Nov. 01, 2024 | Oct. 31, 2025 |

Conduction Test equipment

| Item | Equipment | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until |
|---|---|---|---|---|---|---|
| 1 | 843 Shielded Room | YIHENG | 843 Room | 843 | Nov. 05, 2023 | Nov. 04, 2026 |
| 2 | EMI Receiver | R&S | ESR | 101421 | Nov. 01, 2024 | Oct. 31, 2025 |
| 3 | LISN | R&S | ENV216 | 102417 | Nov. 01, 2024 | Oct. 31, 2025 |
| 4 | 843 Cable 1# | ChengYu | CE Cable | 001 | Nov. 01, 2024 | Oct. 31, 2025 |

Other

| Item | Name | Manufacturer | Model | Software version |
|---|---|---|---|---|
| 1 | EMC Conduction Test System | FALA | EZ_EMC | EMC-CON 3A1.1 |
| 2 | EMC radiation test system | FALA | EZ_EMC | FA-03A2 |
| 3 | RF test system | MAIWEI | MTS8310 | 2.0.0.0 |
| 4 | RF communication test system | MAIWEI | MTS8200 | 2.0.0.0 |

## 3.. EMC EMISSION TEST

### 3.1. CONDUCTED EMISSION MEASUREMENT

#### 3.1.1. POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

| FREQUENCY (MHz) | Limit (dBuV) | | Standard |
|---|---|---|---|
| | Quasi-peak | Average | |
| 0.15 -0.5 | 66 - 56 * | 56 - 46 * | FCC |
| 0.5 -5.0 | 56.00 | 46.00 | FCC |
| 5.0 -30.0 | 60.00 | 50.00 | FCC |

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

| Receiver Parameters | Setting |
|---|---|
| Attenuation | 10 dB |
| Start Frequency | 0.15 MHz |
| Stop Frequency | 30 MHz |
| IF Bandwidth | 9 kHz |

#### 3.1.2. TEST PROCEDURE

a. The EUT was placed 0.1 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

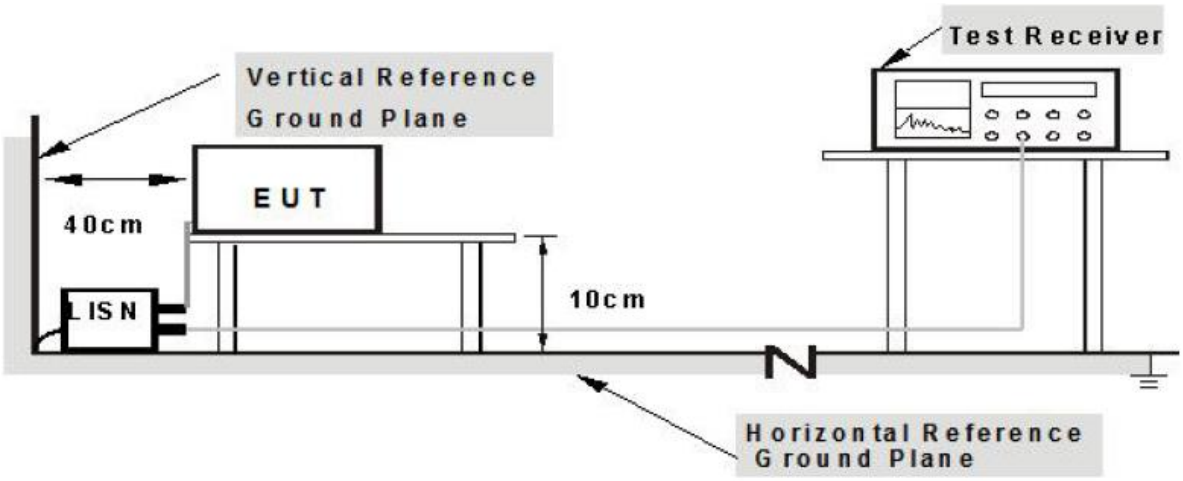
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 3.1.3. DEVIATION FROM TEST STANDARD

No deviation

### 3.1.4. TEST SETUP



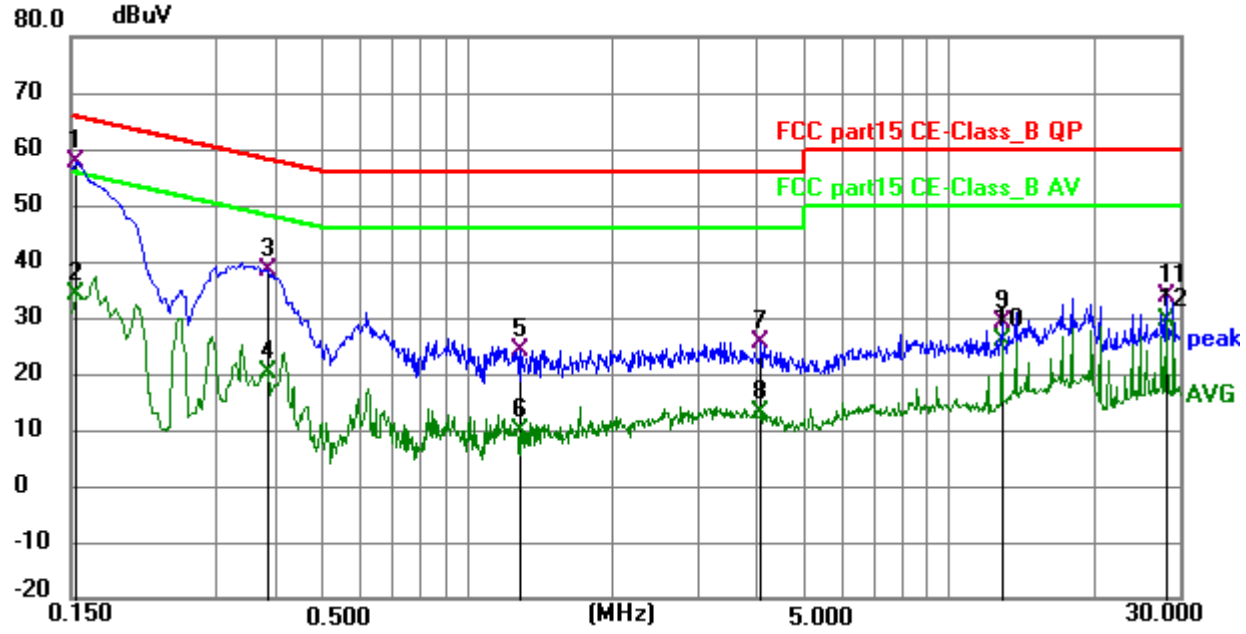

Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 10 cm from EUT and at least 10
from other units and other metal planes

### 3.1.5. EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.
We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

### 3.1.6. TEST RESULTS

| | | | |
|---|---|---|---|
| Temperature: | 25 ℃ | Relative Humidity: | 54% |
| Pressure: | 1010hPa | Phase : | L |
| Test Voltage : | AC 120V/60Hz | Test Mode: | Mode 4 |

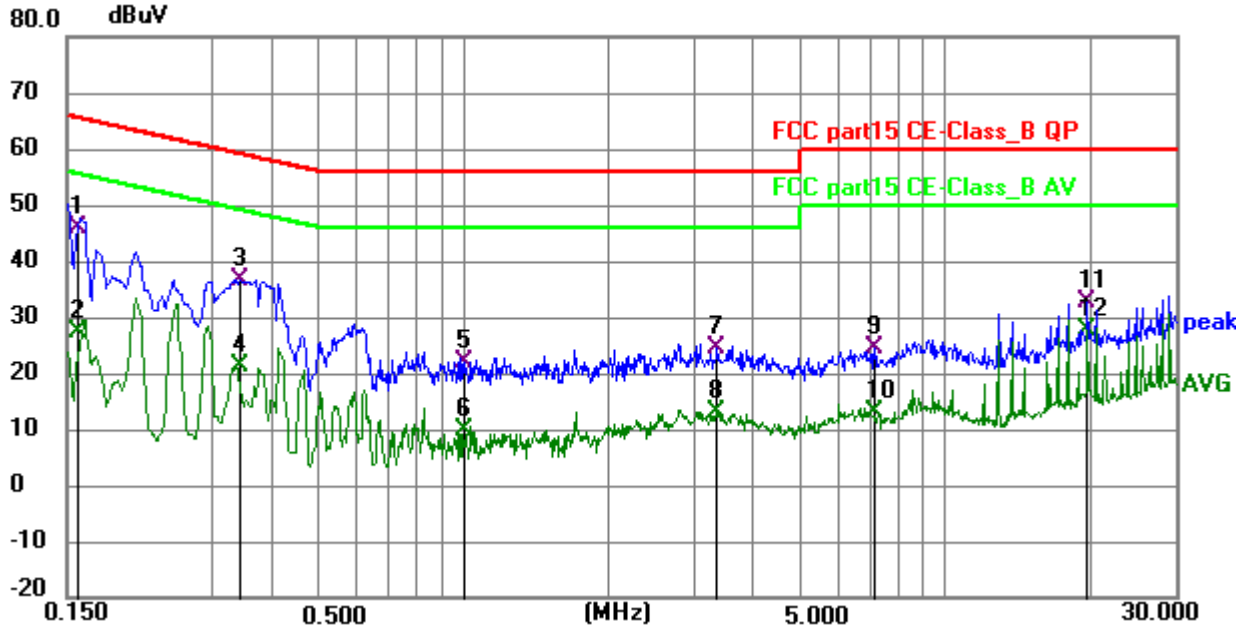



Remark:

Margin = Limit – Level, Correct Factor = Cable lose + LISN insertion loss, Level= Reading + Correct factor

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 0.1545 | 47.71 | 9.89 | 57.60 | 65.75 | -8.15 | QP | P | |
| 2 | 0.1545 | 24.04 | 9.89 | 33.93 | 55.75 | -21.82 | AVG | P | |
| 3 | 0.3840 | 28.64 | 9.90 | 38.54 | 58.19 | -19.65 | QP | P | |
| 4 | 0.3840 | 10.18 | 9.90 | 20.08 | 48.19 | -28.11 | AVG | P | |
| 5 | 1.2885 | 14.01 | 9.98 | 23.99 | 56.00 | -32.01 | QP | P | |
| 6 | 1.2885 | -0.30 | 9.98 | 9.68 | 46.00 | -36.32 | AVG | P | |
| 7 | 4.0650 | 15.71 | 9.90 | 25.61 | 56.00 | -30.39 | QP | P | |
| 8 | 4.0650 | 3.09 | 9.90 | 12.99 | 46.00 | -33.01 | AVG | P | |
| 9 | 12.8625 | 19.36 | 9.92 | 29.28 | 60.00 | -30.72 | QP | P | |
| 10 | 12.8625 | 15.83 | 9.92 | 25.75 | 50.00 | -24.25 | AVG | P | |
| 11 | 28.2975 | 23.57 | 10.33 | 33.90 | 60.00 | -26.10 | QP | P | |
| 12 | 28.2975 | 19.30 | 10.33 | 29.63 | 50.00 | -20.37 | AVG | P | |

| Temperature: | 25 ℃ | Relative Humidity: | 54% |
|---|---|---|---|
| Pressure: | 1010hPa | Phase : | N |
| Test Voltage : | AC 120V/60Hz | Test Mode: | Mode 4 |




Remark:

Margin = Limit – Level, Correct Factor = Cable lose + LISN insertion loss, Level= Reading + Correct factor

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 0.1590 | 36.12 | 9.78 | 45.90 | 65.52 | -19.62 | QP | P | |
| 2 | 0.1590 | 17.58 | 9.78 | 27.36 | 55.52 | -28.16 | AVG | P | |
| 3 | 0.3435 | 26.51 | 9.95 | 36.46 | 59.12 | -22.66 | QP | P | |
| 4 | 0.3435 | 11.29 | 9.95 | 21.24 | 49.12 | -27.88 | AVG | P | |
| 5 | 1.0005 | 11.99 | 9.97 | 21.96 | 56.00 | -34.04 | QP | P | |
| 6 | 1.0005 | -0.14 | 9.97 | 9.83 | 46.00 | -36.17 | AVG | P | |
| 7 | 3.3630 | 14.50 | 9.93 | 24.43 | 56.00 | -31.57 | QP | P | |
| 8 | 3.3630 | 3.17 | 9.93 | 13.10 | 46.00 | -32.90 | AVG | P | |
| 9 | 7.1250 | 14.36 | 10.01 | 24.37 | 60.00 | -35.63 | QP | P | |
| 10 | 7.1250 | 2.88 | 10.01 | 12.89 | 50.00 | -37.11 | AVG | P | |
| 11 | 19.7250 | 22.76 | 10.03 | 32.79 | 60.00 | -27.21 | QP | P | |
| 12 | 19.7250 | 17.63 | 10.03 | 27.66 | 50.00 | -22.34 | AVG | P | |

## 3.2. RADIATED EMISSION MEASUREMENT

### 3.2.1. RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

15.407(b)Undesirable emission limits. Except as shown in paragraph (b) (10) of this section, the maximum i emissions outside of the frequency bands of operation shall be attenuated in accordance with*
the following limits.←
(1)For transmitters operating in the 5.15-5.25GHz band: All emissions outside of the 5.15-5.35*
GHz band shall not exceed an e.irp.of -27 dBm/MHZ.*
(2)For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35.
GHz band shall not exceed an e.irp.of -27 dBm/MHZ.*
(3)For transmitters operatina in the 5,47-5,725GHz band: All emissions outside of the 5 47--
5.725 GHz band shall not exceed an e.ir.p. of -27 dBm/MHz.*
(4)For transmitters operating solely in the 5.725-5.850GHz band:v
All emissions shall be limited to a level of -27 dBm/Hz at 75 MHz or more above or.
below the band edge increasing linearly to10dBm/MHzat25 MHz above or below the.
band edge. and from 25 MHz above or below the band edge increasing linearly to a level*
of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above orr
below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

| FREQUENCY (MHz) | Limit (dBuV/m) (at 3M) | |
|---|---|---|
| | PEAK | AVERAGE |
| Above 1000 | 74 | 54 |

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 40GHz |
| RB / VB (emission in restricted band) | 1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average |

| Receiver Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

### 3.2.2. TEST PROCEDURE

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.1 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber.
h. Test the EUT in the lowest channel, the middle channel, the Highest channel

Note:

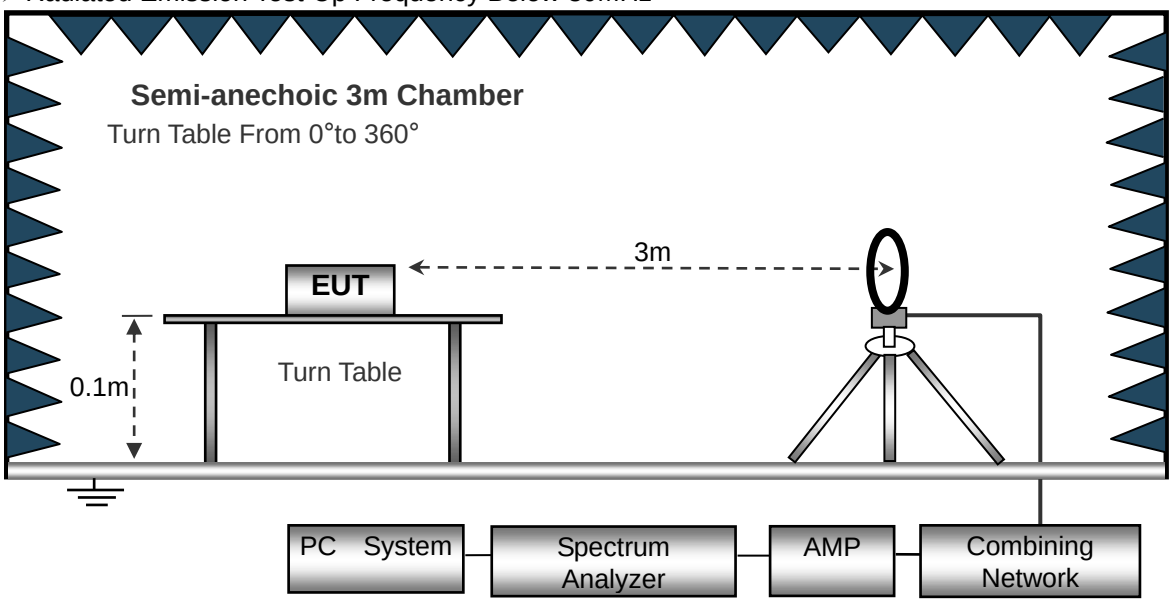
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

### 3.2.3. DEVIATION FROM TEST STANDARD

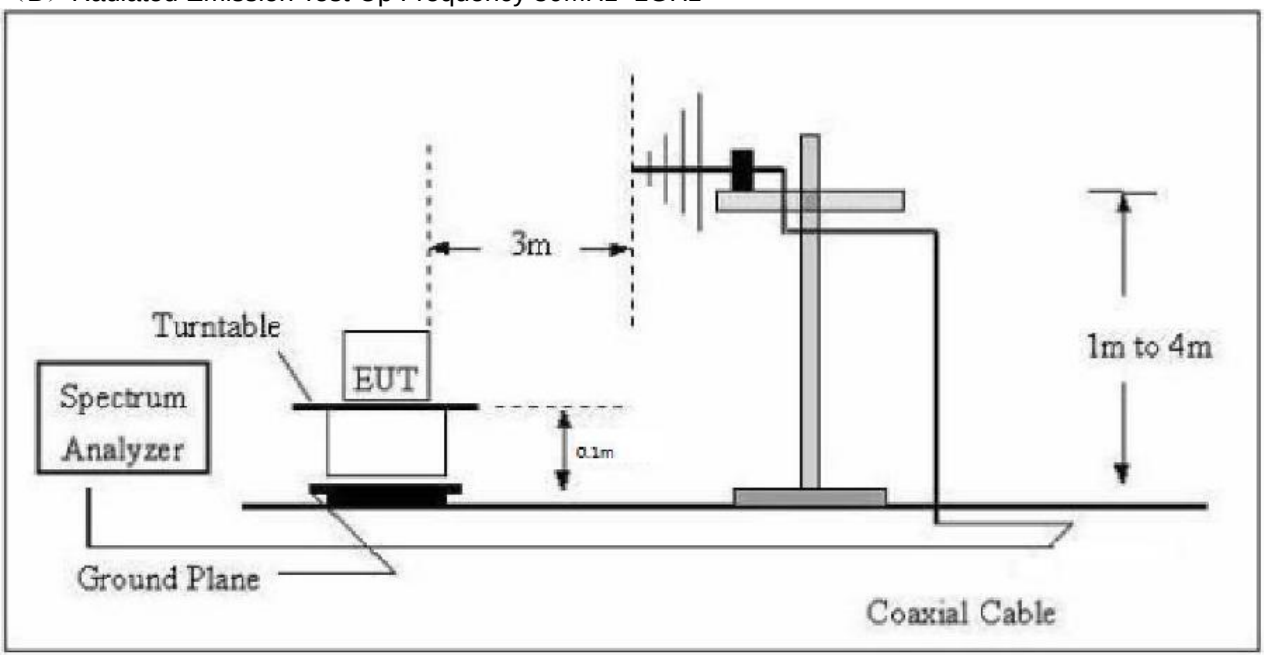
No deviation

### 3.2.4. TEST SETUP

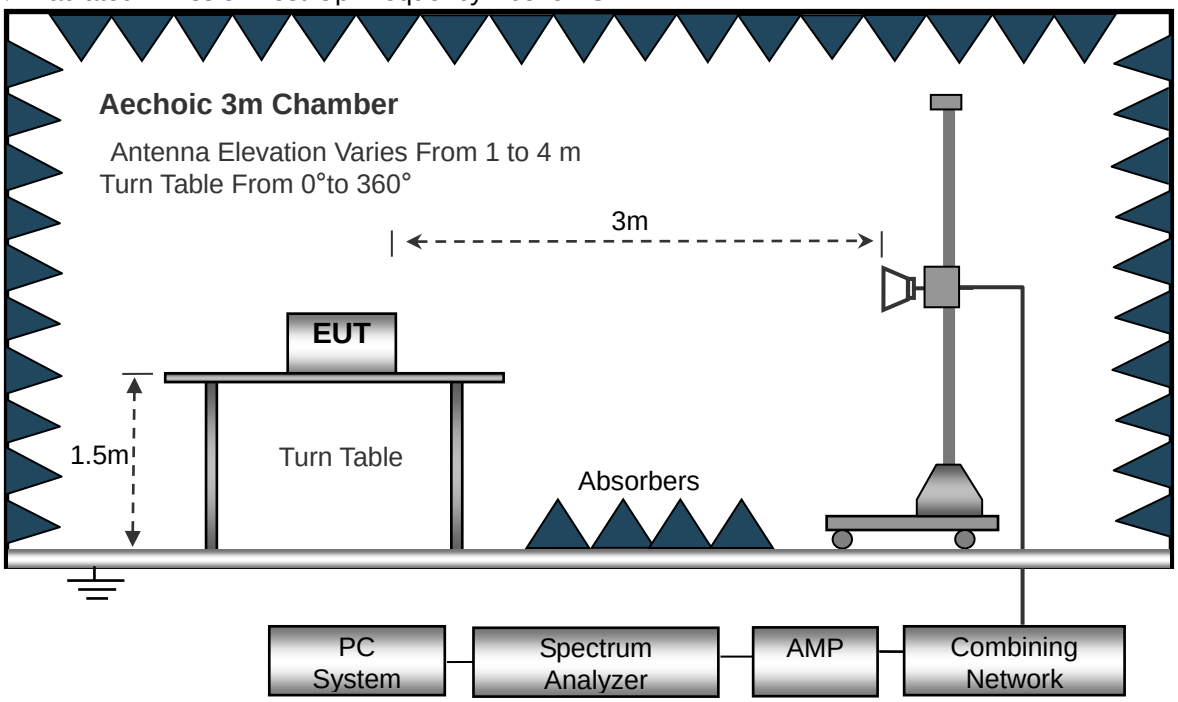
（A）Radiated Emission Test-Up Frequency Below 30MHz




（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz




### 3.2.5. EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

### 3.2.6. TEST RESULTS (Between 9KHz – 30 MHz)

| | | | |
|---|---|---|---|
| Temperature: | 20℃ | Relative Humidtity: | 48% |
| Pressure: | 1010 hPa | Test Voltage : | DC 14.4V |
| Test Mode : | Mode 4 | Polarization : | -- |

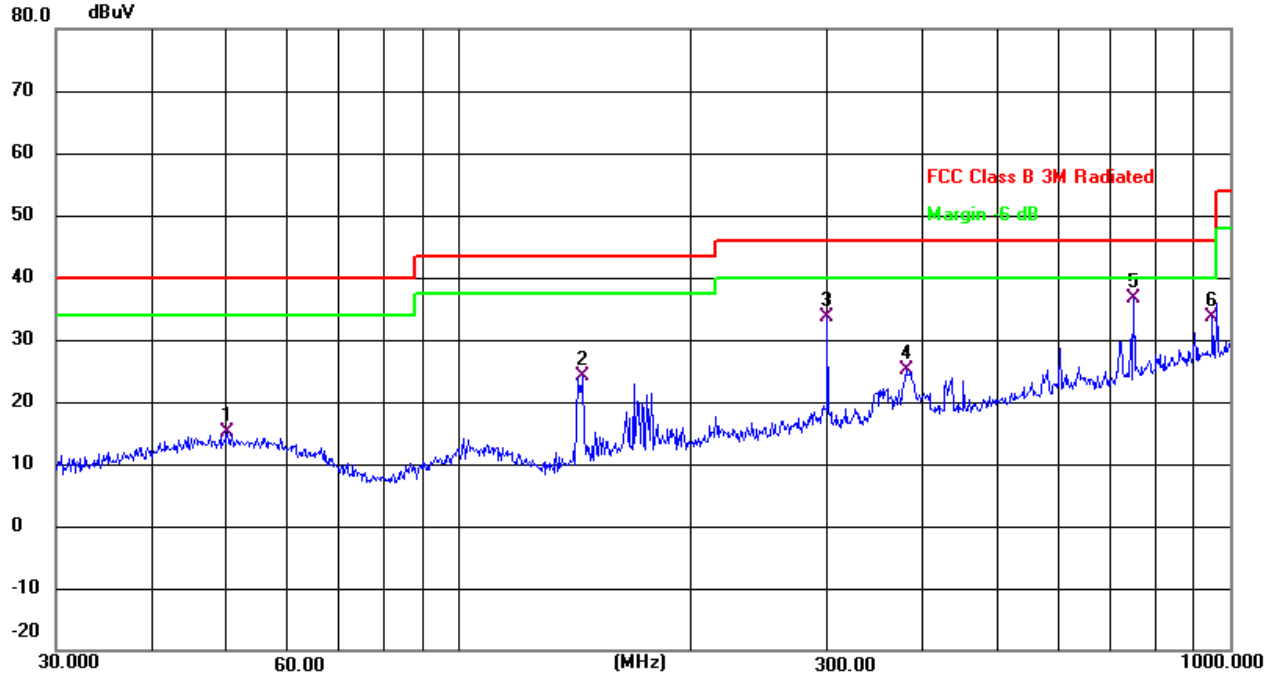
| Freq. | Reading | Limit | Margin | State |
|---|---|---|---|---|
| (MHz) | (dBuV/m) | (dBuV/m) | (dB) | P/F |
| -- | -- | -- | -- | PASS |
| -- | -- | -- | -- | PASS |

**NOTE:**

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

### 3.2.7. TEST RESULTS (Between 30MHz – 1GHz)

| Temperature: | 26℃ | Relative Humidity: | 54% |
|---|---|---|---|
| Pressure: | 1010 hPa | Polarization : | Horizontal |
| Test Voltage : | DC 14.4V | | |
| Test Mode : | Mode 4 | | |



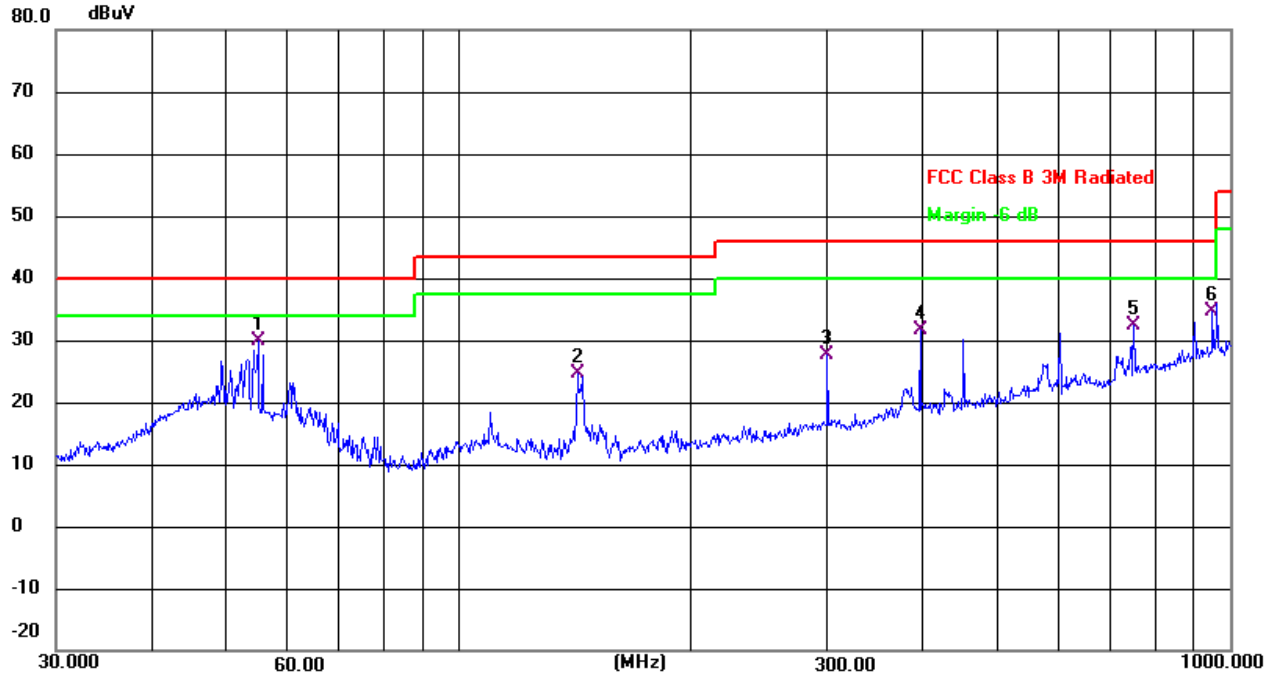

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dB | dB | Detector |
| 1 | | 50.0566 | 28.09 | -12.84 | 15.25 | 40.00 | -24.75 | QP |
| 2 | | 144.8418 | 42.57 | -18.39 | 24.18 | 43.50 | -19.32 | QP |
| 3 | | 300.3672 | 45.16 | -11.64 | 33.52 | 46.00 | -12.48 | QP |
| 4 | | 379.9141 | 34.72 | -9.64 | 25.08 | 46.00 | -20.92 | QP |
| 5 | * | 750.1083 | 39.66 | -3.13 | 36.53 | 46.00 | -9.47 | QP |
| 6 | | 948.7610 | 33.96 | -0.27 | 33.69 | 46.00 | -12.31 | QP |

Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;

| | | | |
|---|---|---|---|
| Temperature: | 26℃ | Relative Humidity: | 54% |
| Pressure: | 1010 hPa | Polarization : | Vertical |
| test voltage : | DC 14.4V | | |
| Test Mode : | Mode 4 | | |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dB | dB | Detector |
| 1 | * | 54.8348 | 43.22 | -13.25 | 29.97 | 40.00 | -10.03 | QP |
| 2 | | 142.3243 | 43.01 | -18.49 | 24.52 | 43.50 | -18.98 | QP |
| 3 | | 300.3672 | 39.26 | -11.64 | 27.62 | 46.00 | -18.38 | QP |
| 4 | | 396.2415 | 41.27 | -9.72 | 31.55 | 46.00 | -14.45 | QP |
| 5 | | 750.1083 | 35.39 | -3.13 | 32.26 | 46.00 | -13.74 | QP |
| 6 | | 948.7610 | 35.02 | -0.27 | 34.75 | 46.00 | -11.25 | QP |

Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;

### 3.2.8. TEST RESULTS (1ghz~40ghZ)

802.11a band 4

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5745** | | | | | | | | | |
| V | 11490 | 54.23 | 49.05 | 15.3 | 37.39 | 57.87 | 74 | -16.13 | PK |
| V | 11490 | 41.84 | 49.05 | 15.3 | 37.39 | 45.48 | 54 | -8.52 | AV |
| V | 17235 | 55.54 | 49.16 | 15.27 | 40.45 | 62.1 | 68.2 | -6.10 | PK |
| V | 17235 | 40.94 | 49.16 | 15.27 | 40.45 | 47.5 | 54 | -6.50 | AV |
| H | 11490 | 52.2 | 49.05 | 15.3 | 37.39 | 55.84 | 74 | -18.16 | PK |
| H | 11490 | 42.86 | 49.05 | 15.3 | 37.39 | 46.5 | 54 | -7.50 | AV |
| H | 17235 | 51.15 | 49.16 | 15.27 | 40.45 | 57.71 | 68.2 | -10.49 | PK |
| H | 17235 | 40.86 | 49.16 | 15.27 | 40.45 | 47.42 | 54 | -6.58 | AV |
| **operation frequency:5785** | | | | | | | | | |
| V | 11570 | 51.38 | 49.09 | 15.34 | 37.42 | 55.05 | 74 | -18.95 | PK |
| V | 11570 | 41.85 | 49.09 | 15.34 | 37.42 | 45.52 | 54 | -8.48 | AV |
| V | 17355 | 50.2 | 49.18 | 15.29 | 40.47 | 56.78 | 68.2 | -11.42 | PK |
| V | 17355 | 40.97 | 49.18 | 15.29 | 40.47 | 47.55 | 54 | -6.45 | AV |
| H | 11570 | 50.76 | 49.09 | 15.34 | 37.42 | 54.43 | 74 | -19.57 | PK |
| H | 11570 | 42.04 | 49.09 | 15.34 | 37.42 | 45.71 | 54 | -8.29 | AV |
| H | 17355 | 48.38 | 49.18 | 15.29 | 40.47 | 54.96 | 68.2 | -13.24 | PK |
| H | 17355 | 40.86 | 49.18 | 15.29 | 40.47 | 47.44 | 54 | -6.56 | AV |
| **operation frequency:5825** | | | | | | | | | |
| V | 11650 | 52.25 | 49.11 | 15.37 | 37.46 | 55.97 | 74 | -18.03 | PK |
| V | 11650 | 41.86 | 49.11 | 15.37 | 37.46 | 45.58 | 54 | -8.42 | AV |
| V | 17475 | 49.58 | 49.21 | 15.34 | 40.51 | 56.22 | 68.2 | -11.98 | PK |
| V | 17475 | 40.38 | 49.21 | 15.34 | 40.51 | 47.02 | 54 | -6.98 | AV |
| H | 11650 | 57.66 | 49.11 | 15.37 | 31.31 | 55.23 | 74 | -18.77 | PK |
| H | 11650 | 48.98 | 49.11 | 15.37 | 31.31 | 46.55 | 54 | -7.45 | AV |
| H | 17475 | 49.29 | 49.21 | 15.34 | 40.51 | 55.93 | 68.2 | -12.27 | PK |
| H | 17475 | 40.34 | 49.21 | 15.34 | 40.51 | 46.98 | 54 | -7.02 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n HT20

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5745** | | | | | | | | | |
| V | 11490 | 49.46 | 49.05 | 15.3 | 37.39 | 53.1 | 74 | -20.90 | PK |
| V | 11490 | 42.18 | 49.05 | 15.3 | 37.39 | 45.82 | 54 | -8.18 | AV |
| V | 17235 | 48.69 | 49.16 | 15.27 | 40.45 | 55.25 | 68.2 | -12.95 | PK |
| V | 17235 | 40.64 | 49.16 | 15.27 | 40.45 | 47.2 | 54 | -6.80 | AV |
| H | 11490 | 49.23 | 49.05 | 15.3 | 37.39 | 52.87 | 74 | -21.13 | PK |
| H | 11490 | 41.53 | 49.05 | 15.3 | 37.39 | 45.17 | 54 | -8.83 | AV |
| H | 17235 | 48.15 | 49.16 | 15.27 | 40.45 | 54.71 | 68.2 | -13.49 | PK |
| H | 17235 | 40.75 | 49.16 | 15.27 | 40.45 | 47.31 | 54 | -6.69 | AV |
| **operation frequency:5785** | | | | | | | | | |
| V | 11570 | 52.48 | 49.09 | 15.34 | 37.42 | 56.15 | 74 | -17.85 | PK |
| V | 11570 | 42.43 | 49.09 | 15.34 | 37.42 | 46.1 | 54 | -7.90 | AV |
| V | 17355 | 49.45 | 49.18 | 15.29 | 40.47 | 56.03 | 68.2 | -12.17 | PK |
| V | 17355 | 40.86 | 49.18 | 15.29 | 40.47 | 47.44 | 54 | -6.56 | AV |
| H | 11570 | 49.98 | 49.09 | 15.34 | 37.42 | 53.65 | 74 | -20.35 | PK |
| H | 11570 | 43.96 | 49.09 | 15.34 | 37.42 | 47.63 | 54 | -6.37 | AV |
| H | 17355 | 49.16 | 49.18 | 15.29 | 40.47 | 55.74 | 68.2 | -12.46 | PK |
| H | 17355 | 40.97 | 49.18 | 15.29 | 40.47 | 47.55 | 54 | -6.45 | AV |
| **operation frequency:5825** | | | | | | | | | |
| V | 11650 | 51.34 | 49.11 | 15.37 | 37.46 | 55.06 | 74 | -18.94 | PK |
| V | 11650 | 41.64 | 49.11 | 15.37 | 37.46 | 45.36 | 54 | -8.64 | AV |
| V | 17475 | 48.36 | 49.21 | 15.34 | 40.51 | 55 | 68.2 | -13.20 | PK |
| V | 17475 | 40.86 | 49.21 | 15.34 | 40.51 | 47.5 | 54 | -6.50 | AV |
| H | 11650 | 57.85 | 49.11 | 15.37 | 31.31 | 55.42 | 74 | -18.58 | PK |
| H | 11650 | 44.65 | 49.11 | 15.37 | 31.31 | 42.22 | 54 | -11.78 | AV |
| H | 17475 | 49.39 | 49.21 | 15.34 | 40.51 | 56.03 | 68.2 | -12.17 | PK |
| H | 17475 | 40.64 | 49.21 | 15.34 | 40.51 | 47.28 | 54 | -6.72 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n HT40

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5755** | | | | | | | | | |
| V | 11510 | 49.37 | 49.07 | 15.33 | 37.41 | 53.04 | 74 | -20.96 | PK |
| V | 11510 | 41.25 | 49.07 | 15.33 | 37.41 | 44.92 | 54 | -9.08 | AV |
| V | 17265 | 49.65 | 49.17 | 15.28 | 40.46 | 56.22 | 68.2 | -11.98 | PK |
| V | 17265 | 40.8 | 49.17 | 15.28 | 40.46 | 47.37 | 54 | -6.63 | AV |
| H | 11510 | 48.66 | 49.07 | 15.33 | 37.41 | 52.33 | 74 | -21.67 | PK |
| H | 11510 | 41.64 | 49.07 | 15.33 | 37.41 | 45.31 | 54 | -8.69 | AV |
| H | 17265 | 49.64 | 49.17 | 15.28 | 40.46 | 56.21 | 68.2 | -11.99 | PK |
| H | 17265 | 40.45 | 49.17 | 15.28 | 40.46 | 47.02 | 54 | -6.98 | AV |
| **operation frequency:5795** | | | | | | | | | |
| V | 11590 | 49.28 | 49.11 | 15.37 | 37.46 | 53 | 74 | -21.00 | PK |
| V | 11590 | 41.29 | 49.11 | 15.37 | 37.46 | 45.01 | 54 | -8.99 | AV |
| V | 17385 | 48.43 | 49.21 | 15.34 | 40.51 | 55.07 | 68.2 | -13.13 | PK |
| V | 17385 | 40.47 | 49.21 | 15.34 | 40.51 | 47.11 | 54 | -6.89 | AV |
| H | 11590 | 57.59 | 49.11 | 15.37 | 31.31 | 55.16 | 74 | -18.84 | PK |
| H | 11590 | 44.55 | 49.11 | 15.37 | 31.31 | 42.12 | 54 | -11.88 | AV |
| H | 17385 | 48.97 | 49.21 | 15.34 | 40.51 | 55.61 | 68.2 | -12.59 | PK |
| H | 17385 | 40.84 | 49.21 | 15.34 | 40.51 | 47.48 | 54 | -6.52 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT20

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5745** | | | | | | | | | |
| V | 11490 | 49.4 | 49.05 | 15.3 | 37.39 | 53.04 | 74 | -20.96 | PK |
| V | 11490 | 42.23 | 49.05 | 15.3 | 37.39 | 45.87 | 54 | -8.13 | AV |
| V | 17235 | 48.71 | 49.16 | 15.27 | 40.45 | 55.27 | 68.2 | -12.93 | PK |
| V | 17235 | 40.36 | 49.16 | 15.27 | 40.45 | 46.92 | 54 | -7.08 | AV |
| H | 11490 | 48.28 | 49.05 | 15.3 | 37.39 | 51.92 | 74 | -22.08 | PK |
| H | 11490 | 41.75 | 49.05 | 15.3 | 37.39 | 45.39 | 54 | -8.61 | AV |
| H | 17235 | 48.65 | 49.16 | 15.27 | 40.45 | 55.21 | 68.2 | -12.99 | PK |
| H | 17235 | 40.15 | 49.16 | 15.27 | 40.45 | 46.71 | 54 | -7.29 | AV |
| **operation frequency:5785** | | | | | | | | | |
| V | 11570 | 48.64 | 49.09 | 15.34 | 37.42 | 52.31 | 74 | -21.69 | PK |
| V | 11570 | 41.6 | 49.09 | 15.34 | 37.42 | 45.27 | 54 | -8.73 | AV |
| V | 17355 | 49.16 | 49.18 | 15.29 | 40.47 | 55.74 | 68.2 | -12.46 | PK |
| V | 17355 | 40.57 | 49.18 | 15.29 | 40.47 | 47.15 | 54 | -6.85 | AV |
| H | 11570 | 49.99 | 49.09 | 15.34 | 37.42 | 53.66 | 74 | -20.34 | PK |
| H | 11570 | 43.15 | 49.09 | 15.34 | 37.42 | 46.82 | 54 | -7.18 | AV |
| H | 17355 | 49.16 | 49.18 | 15.29 | 40.47 | 55.74 | 68.2 | -12.46 | PK |
| H | 17355 | 40.3 | 49.18 | 15.29 | 40.47 | 46.88 | 54 | -7.12 | AV |
| **operation frequency:5825** | | | | | | | | | |
| V | 11650 | 49.16 | 49.11 | 15.37 | 37.46 | 52.88 | 74 | -21.12 | PK |
| V | 11650 | 41.37 | 49.11 | 15.37 | 37.46 | 45.09 | 54 | -8.91 | AV |
| V | 17475 | 48.54 | 49.21 | 15.34 | 40.51 | 55.18 | 68.2 | -13.02 | PK |
| V | 17475 | 40.34 | 49.21 | 15.34 | 40.51 | 46.98 | 54 | -7.02 | AV |
| H | 11650 | 57.29 | 49.11 | 15.37 | 31.31 | 54.86 | 74 | -19.14 | PK |
| H | 11650 | 44.27 | 49.11 | 15.37 | 31.31 | 41.84 | 54 | -12.16 | AV |
| H | 17475 | 48.16 | 49.21 | 15.34 | 40.51 | 54.8 | 68.2 | -13.40 | PK |
| H | 17475 | 40.97 | 49.21 | 15.34 | 40.51 | 47.61 | 54 | -6.39 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT40

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5755** | | | | | | | | | |
| V | 11510 | 49.16 | 49.07 | 15.33 | 37.41 | 52.83 | 74 | -21.17 | PK |
| V | 11510 | 42.55 | 49.07 | 15.33 | 37.41 | 46.22 | 54 | -7.78 | AV |
| V | 17265 | 48.39 | 49.17 | 15.28 | 40.46 | 54.96 | 68.2 | -13.24 | PK |
| V | 17265 | 41.64 | 49.17 | 15.28 | 40.46 | 48.21 | 54 | -5.79 | AV |
| H | 11510 | 48.77 | 49.07 | 15.33 | 37.41 | 52.44 | 74 | -21.56 | PK |
| H | 11510 | 42.43 | 49.07 | 15.33 | 37.41 | 46.1 | 54 | -7.90 | AV |
| H | 17265 | 48.65 | 49.17 | 15.28 | 40.46 | 55.22 | 68.2 | -12.98 | PK |
| H | 17265 | 40.88 | 49.17 | 15.28 | 40.46 | 47.45 | 54 | -6.55 | AV |
| **operation frequency:5795** | | | | | | | | | |
| V | 11590 | 49.48 | 49.11 | 15.37 | 37.46 | 53.2 | 74 | -20.80 | PK |
| V | 11590 | 41.36 | 49.11 | 15.37 | 37.46 | 45.08 | 54 | -8.92 | AV |
| V | 17385 | 48.35 | 49.21 | 15.34 | 40.51 | 54.99 | 68.2 | -13.21 | PK |
| V | 17385 | 40.85 | 49.21 | 15.34 | 40.51 | 47.49 | 54 | -6.51 | AV |
| H | 11590 | 57.38 | 49.11 | 15.37 | 31.31 | 54.95 | 74 | -19.05 | PK |
| H | 11590 | 44.77 | 49.11 | 15.37 | 31.31 | 42.34 | 54 | -11.66 | AV |
| H | 17385 | 48.47 | 49.21 | 15.34 | 40.51 | 55.11 | 68.2 | -13.09 | PK |
| H | 17385 | 40.24 | 49.21 | 15.34 | 40.51 | 46.88 | 54 | -7.12 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT80

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5775** | | | | | | | | | |
| V | 11550 | 48.16 | 49.07 | 15.33 | 37.41 | 51.83 | 74 | -22.17 | PK |
| V | 11550 | 42.81 | 49.07 | 15.33 | 37.41 | 46.48 | 54 | -7.52 | AV |
| V | 17325 | 49.56 | 49.17 | 15.28 | 40.46 | 56.13 | 68.2 | -12.07 | PK |
| V | 17325 | 40.33 | 49.17 | 15.28 | 40.46 | 46.9 | 54 | -7.10 | AV |
| H | 11550 | 48.55 | 49.07 | 15.33 | 37.41 | 52.22 | 74 | -21.78 | PK |
| H | 11550 | 41.89 | 49.07 | 15.33 | 37.41 | 45.56 | 54 | -8.44 | AV |
| H | 17325 | 48.43 | 49.17 | 15.28 | 40.46 | 55 | 68.2 | -13.20 | PK |
| H | 17325 | 40.8 | 49.17 | 15.28 | 40.46 | 47.37 | 54 | -6.63 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

### 3.3 RADIATED BAND EMISSION MEASUREMENT

#### 3.3.1 TEST REQUIREMENT:

RSS-247 Section 6.2.1.2&6.2.4.2

(1) For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.
(4) Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:
a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| 10.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | (2) |
| 13.36-13.41 | | | |

| Spectrum Parameter | Setting | |
|---|---|---|
| Attenuation | Auto | |
| Start Frequency | 5150MHz | 5725MHz |
| Stop Frequency | 5250MHz | 5850MHz |
| RB / VB (emission in restricted band) | 1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average | |

**3.3.2 TEST PROCEDURE**

**ABOVE 1GHZ TEST PROCEDURE AS BELOW:**

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel,the Highest channel

Note:

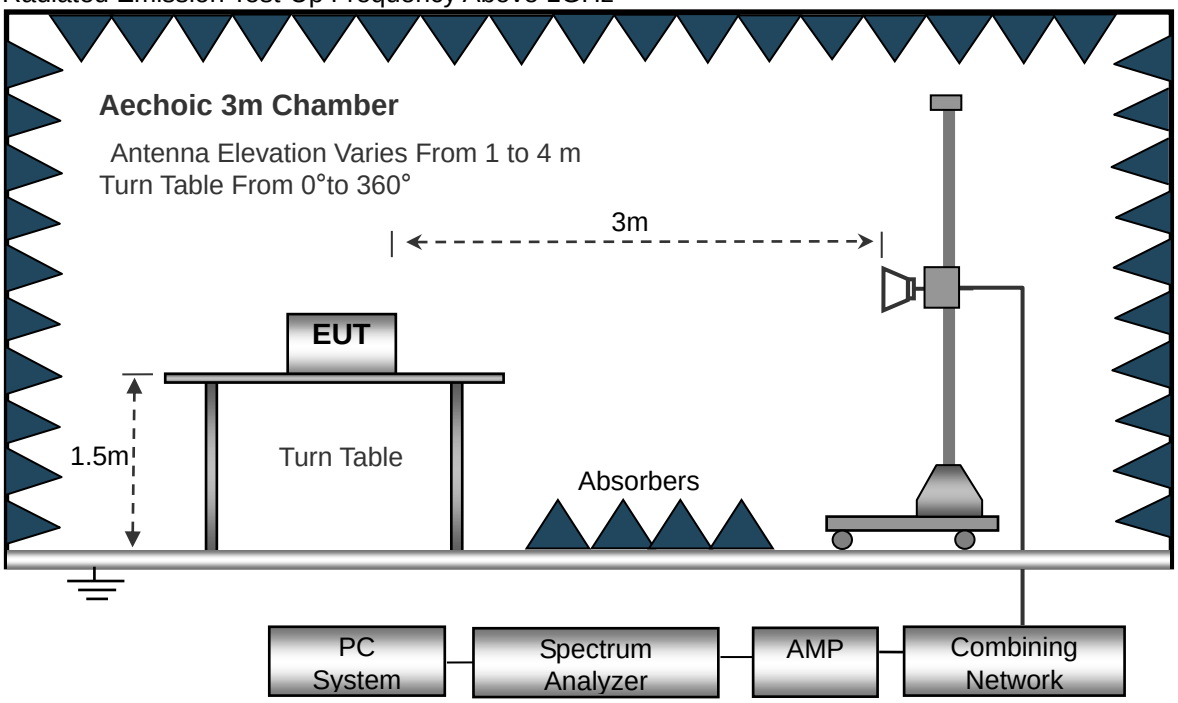
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

**3.3.3 DEVIATION FROM TEST STANDARD**

No deviation

**3.3.4 TEST SETUP**

Radiated Emission Test-Up Frequency Above 1GHz




**3.3.5 EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

### 3.3.6 TEST RESULT

802.11a

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5745** | | | | | | | | | |
| V | 5725 | 53.25 | 49.12 | 15.6 | 37.34 | 57.07 | 68.2 | -11.13 | PK |
| V | 5725 | 39.85 | 49.12 | 15.6 | 37.34 | 43.67 | 54 | -10.33 | AV |
| H | 5725 | 52.24 | 49.12 | 15.6 | 37.34 | 56.06 | 68.2 | -12.14 | PK |
| H | 5725 | 37.63 | 49.12 | 15.6 | 37.34 | 41.45 | 54 | -12.55 | AV |
| **operation frequency:5825** | | | | | | | | | |
| V | 5850 | 53.22 | 49.13 | 15.32 | 37.46 | 56.87 | 68.2 | -11.33 | PK |
| V | 5850 | 35.74 | 49.13 | 15.32 | 37.46 | 39.39 | 54 | -14.61 | AV |
| H | 5850 | 52.63 | 49.24 | 15.36 | 40.51 | 59.26 | 68.2 | -8.94 | PK |
| H | 5850 | 32.52 | 49.24 | 15.36 | 40.51 | 39.15 | 54 | -14.85 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n HT20

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5745** | | | | | | | | | |
| V | 5725 | 51.21 | 49.12 | 15.6 | 37.34 | 55.03 | 68.2 | -13.17 | PK |
| V | 5725 | 33.85 | 49.12 | 15.6 | 37.34 | 37.67 | 54 | -16.33 | AV |
| H | 5725 | 50.26 | 49.19 | 15.24 | 40.43 | 56.74 | 68.2 | -11.46 | PK |
| H | 5725 | 32.52 | 49.19 | 15.24 | 40.43 | 39 | 54 | -15.00 | AV |
| **operation frequency:5825** | | | | | | | | | |
| V | 5850 | 53.41 | 49.13 | 15.32 | 37.46 | 57.06 | 68.2 | -11.14 | PK |
| V | 5850 | 34.26 | 49.13 | 15.32 | 37.46 | 37.91 | 54 | -16.09 | AV |
| H | 5850 | 51.85 | 49.24 | 15.36 | 40.51 | 58.48 | 68.2 | -9.72 | PK |
| H | 5850 | 33.84 | 49.24 | 15.36 | 40.51 | 40.47 | 54 | -13.53 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT20

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5180** | | | | | | | | | |
| V | 5725 | 52.21 | 49.12 | 15.33 | 37.41 | 55.83 | 68.2 | -12.37 | PK |
| V | 5725 | 34.33 | 49.12 | 15.33 | 37.41 | 37.95 | 54 | -16.05 | AV |
| H | 5725 | 50.85 | 49.19 | 15.28 | 40.46 | 57.4 | 68.2 | -10.80 | PK |
| H | 5725 | 33.64 | 49.19 | 15.28 | 40.46 | 40.19 | 54 | -13.81 | AV |
| **operation frequency:5240** | | | | | | | | | |
| V | 5850 | 53.21 | 49.13 | 15.32 | 37.46 | 56.86 | 68.2 | -11.34 | PK |
| V | 5850 | 36.63 | 49.13 | 15.32 | 37.46 | 40.28 | 54 | -13.72 | AV |
| H | 5850 | 51.38 | 49.24 | 15.36 | 40.51 | 58.01 | 68.2 | -10.19 | PK |
| H | 5850 | 35.55 | 49.24 | 15.36 | 40.51 | 42.18 | 54 | -11.82 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n HT40

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5755** | | | | | | | | | |
| V | 5725 | 52.64 | 49.12 | 15.6 | 37.39 | 56.51 | 68.2 | -11.69 | PK |
| V | 5725 | 35.88 | 49.12 | 15.6 | 37.39 | 39.75 | 54 | -14.25 | AV |
| H | 5725 | 50.63 | 49.19 | 15.24 | 40.45 | 57.13 | 68.2 | -11.07 | PK |
| H | 5725 | 35.24 | 49.19 | 15.24 | 40.45 | 41.74 | 54 | -12.26 | AV |
| **operation frequency:5795** | | | | | | | | | |
| V | 5850 | 53.58 | 49.13 | 15.34 | 37.46 | 57.25 | 68.2 | -10.95 | PK |
| V | 5850 | 37.36 | 49.13 | 15.34 | 37.46 | 41.03 | 54 | -12.97 | AV |
| H | 5850 | 52.74 | 49.24 | 15.35 | 40.51 | 59.36 | 68.2 | -8.84 | PK |
| H | 5850 | 36.21 | 49.24 | 15.35 | 40.51 | 42.83 | 54 | -11.17 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT40

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5190** | | | | | | | | | |
| V | 5725 | 52.63 | 49.12 | 15.32 | 37.41 | 56.24 | 68.2 | -11.96 | PK |
| V | 5725 | 37.41 | 49.12 | 15.32 | 37.41 | 41.02 | 54 | -12.98 | AV |
| H | 5725 | 51.85 | 49.19 | 15.36 | 40.46 | 58.48 | 68.2 | -9.72 | PK |
| H | 5725 | 36.63 | 49.19 | 15.36 | 40.46 | 43.26 | 54 | -10.74 | AV |
| **operation frequency:5230** | | | | | | | | | |
| V | 5850 | 54.21 | 49.13 | 15.34 | 37.34 | 57.76 | 68.2 | -10.44 | PK |
| V | 5850 | 36.37 | 49.13 | 15.34 | 37.34 | 39.92 | 54 | -14.08 | AV |
| H | 5850 | 50.16 | 49.24 | 15.35 | 40.43 | 56.7 | 68.2 | -11.50 | PK |
| H | 5850 | 35.35 | 49.24 | 15.35 | 40.43 | 41.89 | 54 | -12.11 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT80

| Polar (H/V) | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---|---|---|---|---|---|---|---|---|---|
| **operation frequency:5775** | | | | | | | | | |
| V | 5725 | 52.21 | 49.13 | 15.32 | 37.48 | 55.88 | 68.2 | -12.32 | PK |
| V | 5725 | 35.66 | 49.13 | 15.32 | 37.48 | 39.33 | 54 | -14.67 | AV |
| H | 5725 | 50.85 | 49.24 | 15.36 | 40.42 | 57.39 | 68.2 | -10.81 | PK |
| H | 5725 | 35.84 | 49.24 | 15.36 | 40.42 | 42.38 | 54 | -11.62 | AV |
| | | | | | | | | | |
| V | 5850 | 53.85 | 49.13 | 15.32 | 37.46 | 57.5 | 68.2 | -10.70 | PK |
| V | 5850 | 35.63 | 49.13 | 15.32 | 37.46 | 39.28 | 54 | -14.72 | AV |
| H | 5850 | 52.35 | 49.24 | 15.36 | 40.51 | 58.98 | 68.2 | -9.22 | PK |
| H | 5850 | 32.87 | 49.24 | 15.36 | 40.51 | 39.5 | 54 | -14.50 | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Note:1. The antenna gain is compensated in the test data.
2. 26.5GHz-40GHz the Spurious leve margin is the largest, so the test data only reflects 30MHz-26.5GHz

## 4.. AVERAGE OUTPUT POWER

### 4.1. APPLIED PROCEDURES / LIMIT

| |
|---|
| For other devices, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band. |
| For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. |

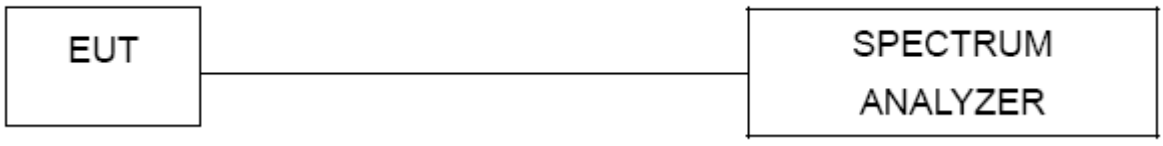
#### 4.1.1. TEST PROCEDURE

Method SA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:
a)Measure the duty cycle D of the transmitter output signal as described in 12.2.
b)Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.
c)Set RBW=1 MHz.
d)Set VBW≥3 MHz.
e)Number of points in sweep ≥ [2 x span / RBW]. (This gives bin-to-bin spacing ≤RBW / 2, so that narrowband signals are not lost between frequency bins.)
f) Sweep time = auto.
g) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
h) Do not use sweep triggering. Allow the sweep to “free run."
i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and oFF periods of the transmitter.
j) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.
k) Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and oFF times of the transmission). For example, add [10 log (1 / 0.25)] = 6 dB if the duty cycle is 25%.

#### 4.1.2. DEVIATION FROM STANDARD

No deviation.

#### 4.1.3. TEST SETUP



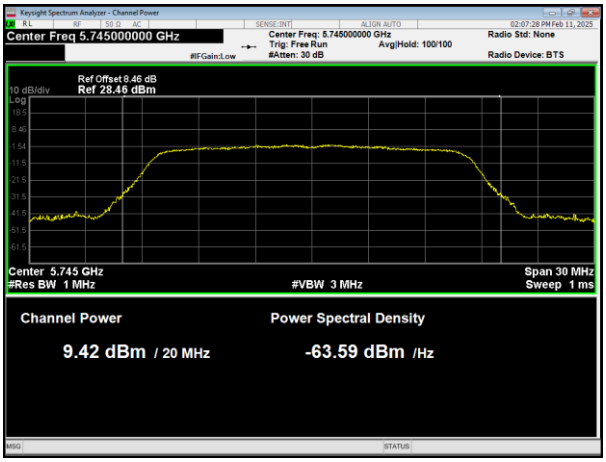
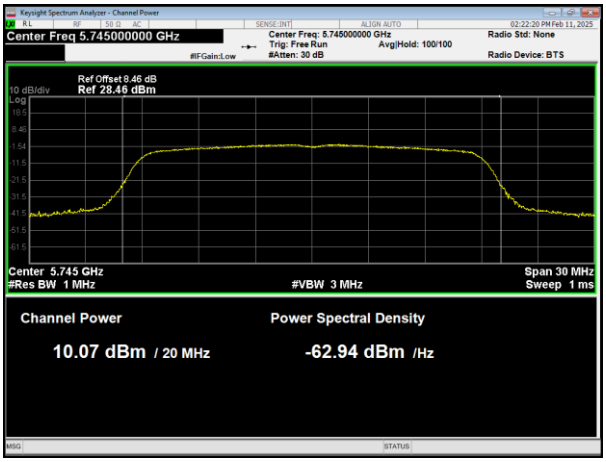
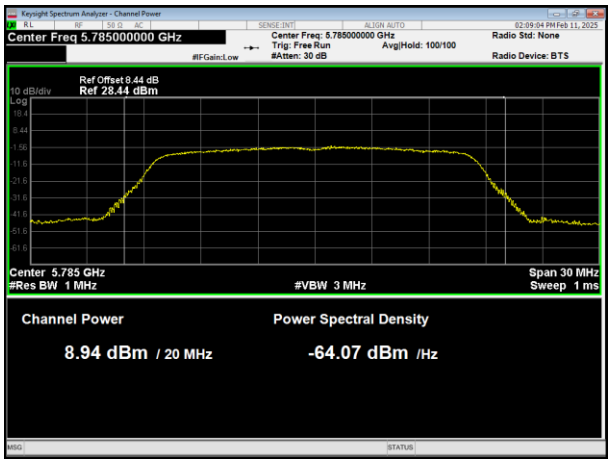
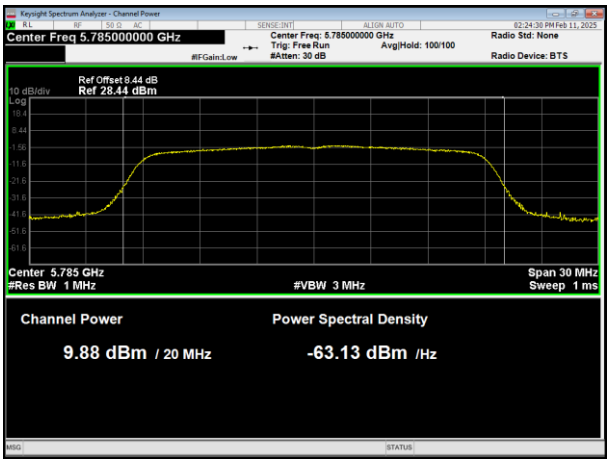
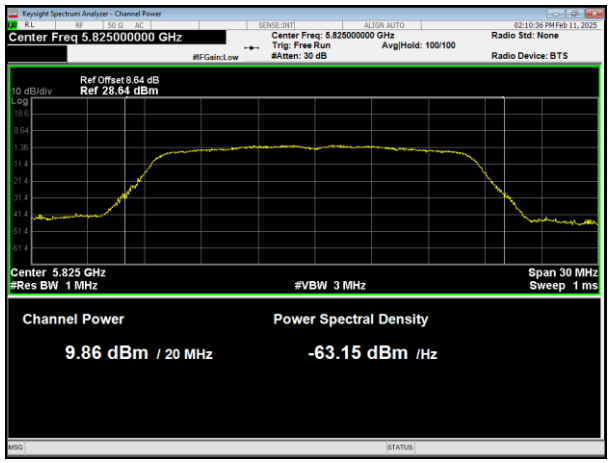
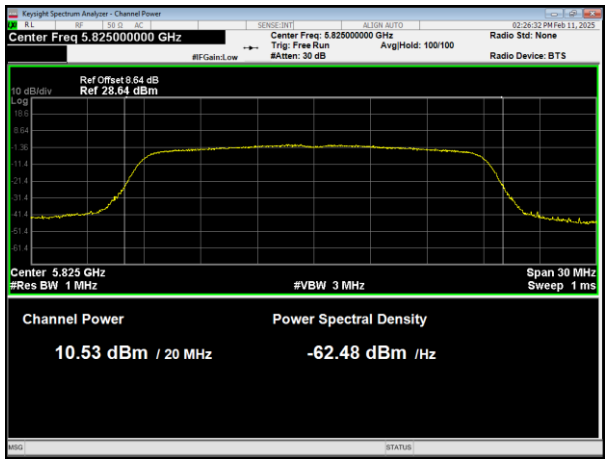

#### 4.1.4. EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

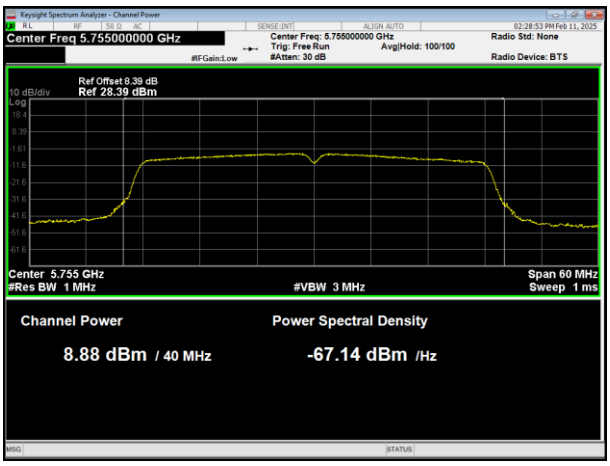
### 4.1.5. TEST RESULTS

| Temperature: | 25 ℃ | Relative Humidity: | 60% |
|---|---|---|---|
| Pressure: | 1012 hPa | Test Voltage : | DC 14.4V |

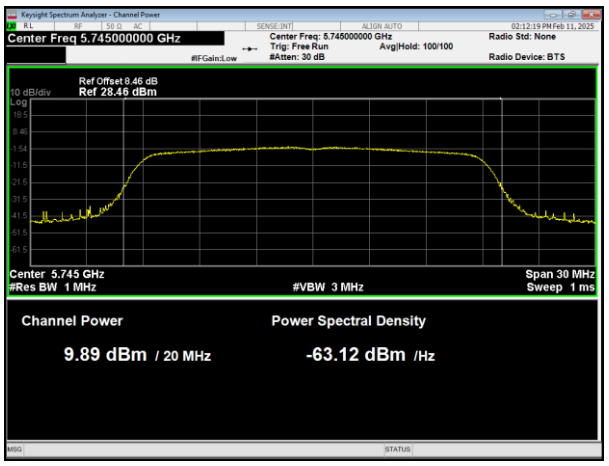
| Mode | Test Channel | Average Output Power (dBm) | Duty factor (dB) | Total Output Power(dB) | LIMIT (dBm) |
|---|---|---|---|---|---|
| 802.11a | Low | 9.418 | 1.12 | 10.538 | 30 |
| | Middle | 8.943 | 1.12 | 10.063 | 30 |
| | High | 9.856 | 1.12 | 10.976 | 30 |
| 802.11ac HT20 | Low | 10.073 | 0.13 | 10.203 | 30 |
| | Middle | 9.876 | 0.13 | 10.006 | 30 |
| | High | 10.529 | 0.13 | 10.659 | 30 |
| 802.11ac HT40 | Low | 8.884 | 0.26 | 9.144 | 30 |
| | High | 9.36 | 0.26 | 9.62 | 30 |
| 802.11ac HT80 | / | 9.392 | 0.63 | 10.022 | 30 |
| 802.11n HT20 | Low | 9.887 | 0.16 | 10.047 | 30 |
| | Middle | 9.743 | 0.16 | 9.903 | 30 |
| | High | 10.471 | 0.16 | 10.631 | 30 |
| 802.11n HT40 | Low | 9.509 | 0.26 | 9.769 | 30 |
| | High | 9.775 | 0.26 | 10.035 | 30 |

| 802.11a | 802.11ac HT20 |
|---|---|
|  |  |
| 5745MHz | 5745MHz |
|  |  |
| 5785MHz | 5785MHz |
|  |  |
| 5825MHz | 5825MHz |

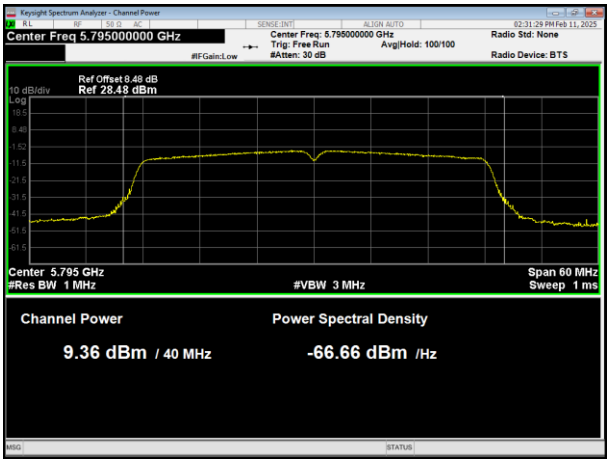
| 802.11ac HT40 | 802.11n HT20 |
|---|---|



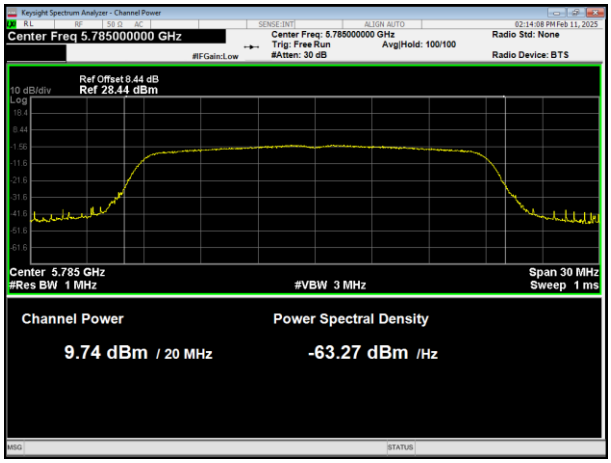

5755MHz



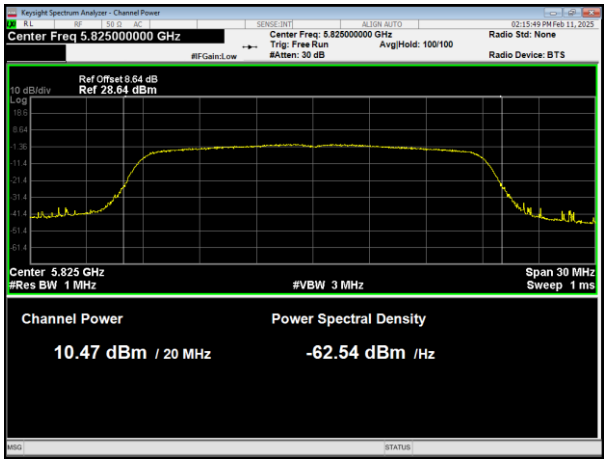

5745MHz



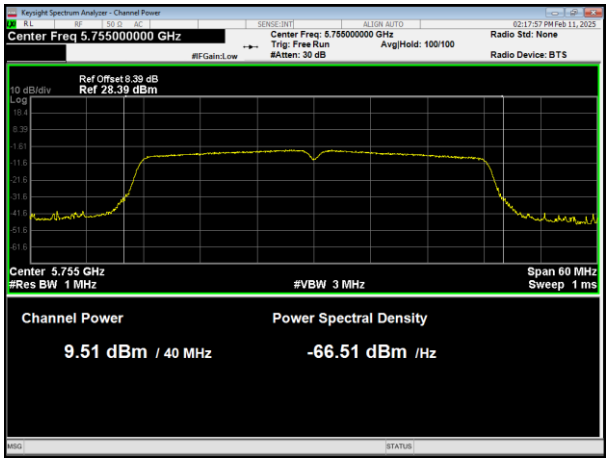
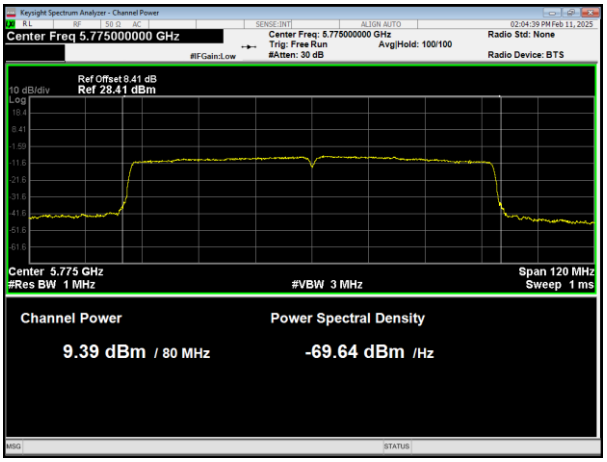
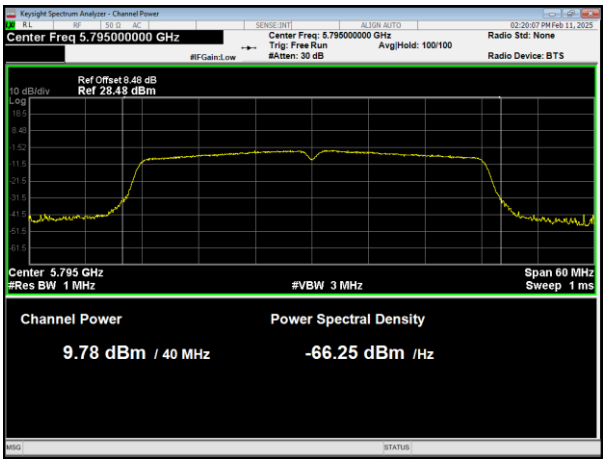

5795MHz




5785MHz




5825MHz

| 802.11n HT40 | 802.11ac HT80 |
|---|---|
|  |  |
| 5755MHz | 5775MHz |
|  | |
| 5795MHz | |

## 5.. POWER SPECTRAL DENSITY TEST

### 5.1. APPLIED PROCEDURES / LIMIT

| |
|---|
| In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. For other devices, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band. |
| In addition, the maximum power spectral density shall not exceed 30 dBm in any 500 kHz band. |

| Spectrum Parameters | Setting |
|---|---|
| Attenuation | Auto |
| Span Frequency | = the frequency band of operation |
| RB | RBW ≥ 1MHz for band 1<br>RBW ≥ 510KHz for band 4 |
| VB | VBW ≥ 3RBW |
| Detector | RMS (i.e., power averaging). |
| Trace | Max Hold |
| Sweep Time | Auto |

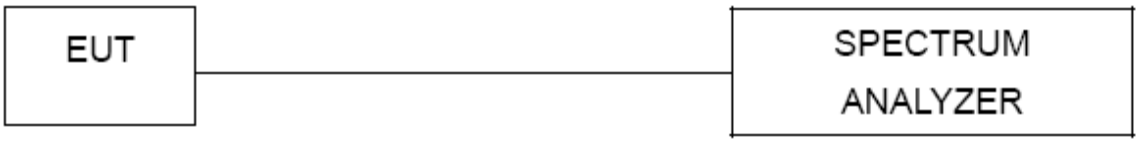
#### 5.1.1. TEST PROCEDURE

Method SA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:
a)Measure the duty cycle D of the transmitter output signal as described in 12.2.
b)Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.
c)Set RBW=1 MHz.
d)Set VBW≥3 MHz.
e)Number of points in sweep ≥ [2 x span / RBW]. (This gives bin-to-bin spacing ≤RBW / 2, so that narrowband signals are not lost between frequency bins.)
f) Sweep time = auto.
g) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
h) Do not use sweep triggering. Allow the sweep to “free run."
i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and oFF periods of the transmitter.
j. Use the peak search function on the instrument to find the peak of the spectrum.
k. Make the following adjustments to the peak value of the spectrum, if applicable:
1) If method SA-2 or SA-2A was used, then add [10 log (1 / D)], where D is the duty cycle, to the peak of the spectrum.
2) If method SA-3A was used and the linear mode was used in step h) of 12.3.2.7, add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
l. The result is the PPSD.

#### 5.1.2. DEVIATION FROM STANDARD

No deviation.

### 5.1.3. TEST SETUP

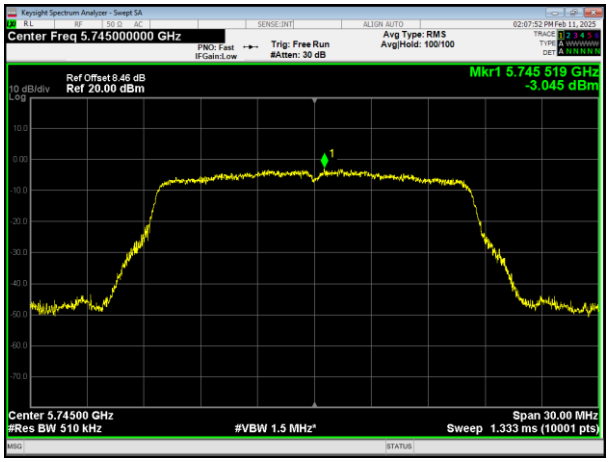
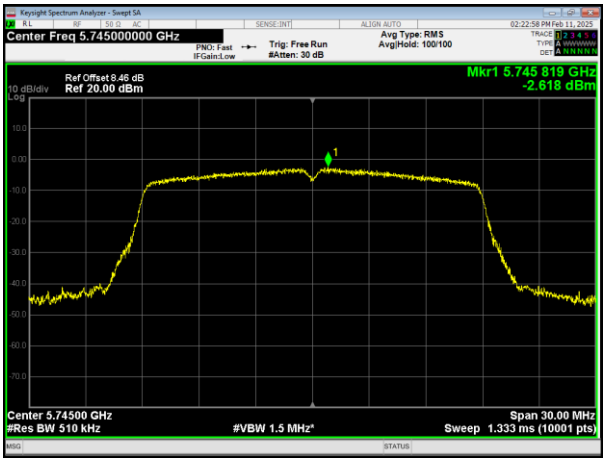
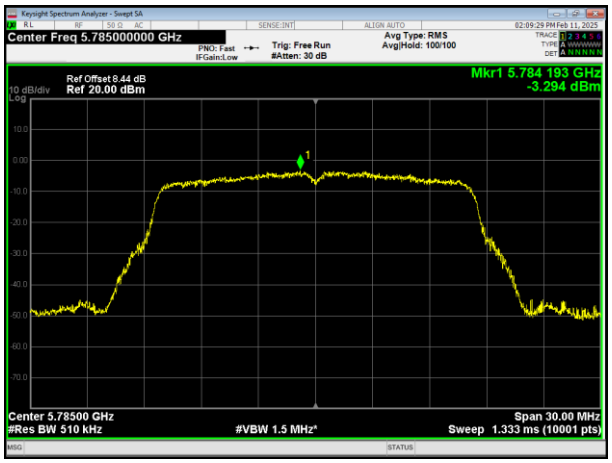
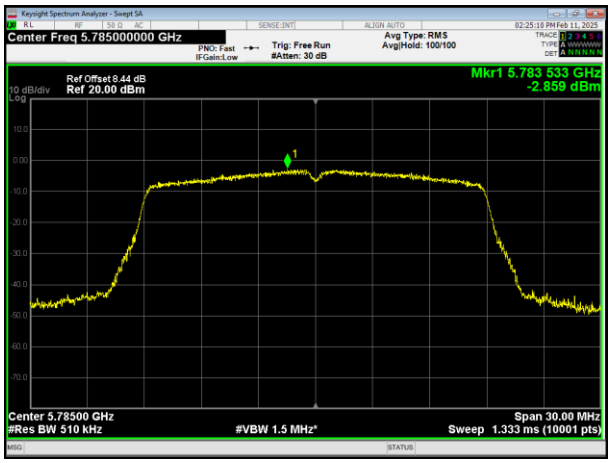
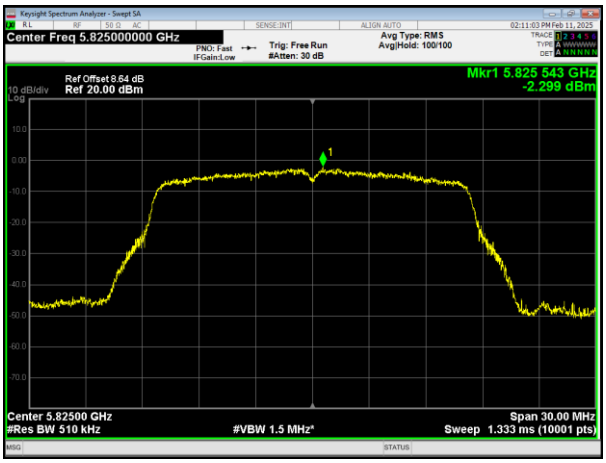
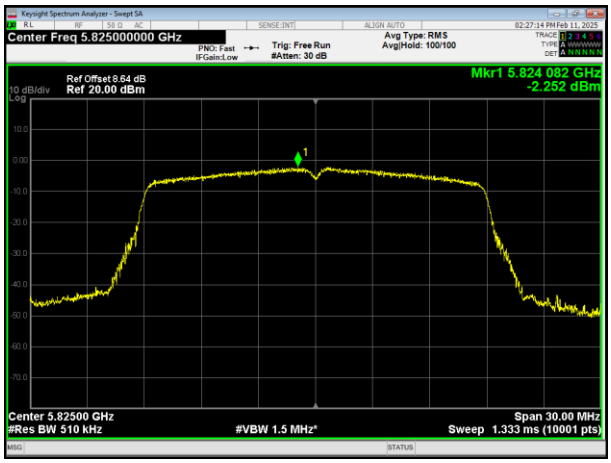


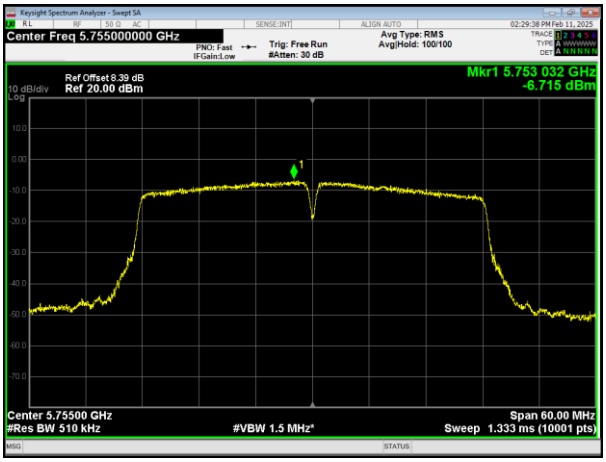
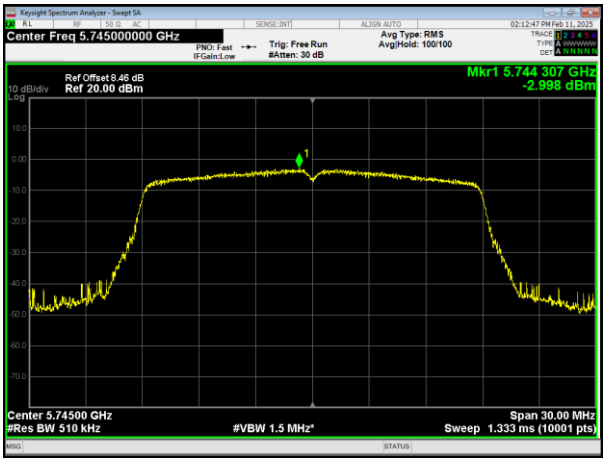
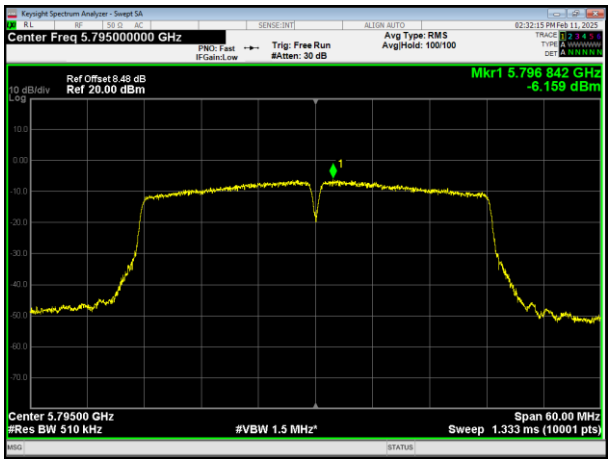
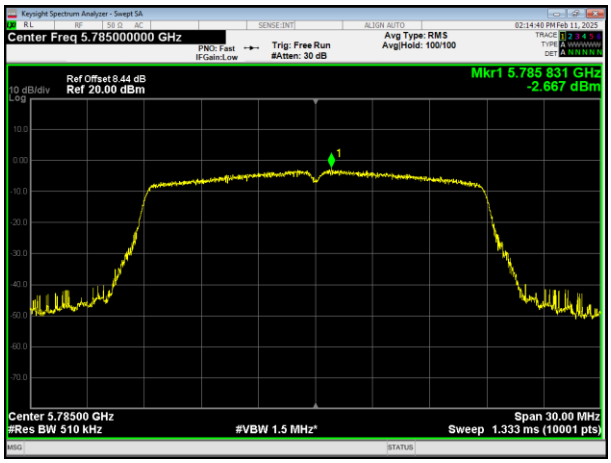
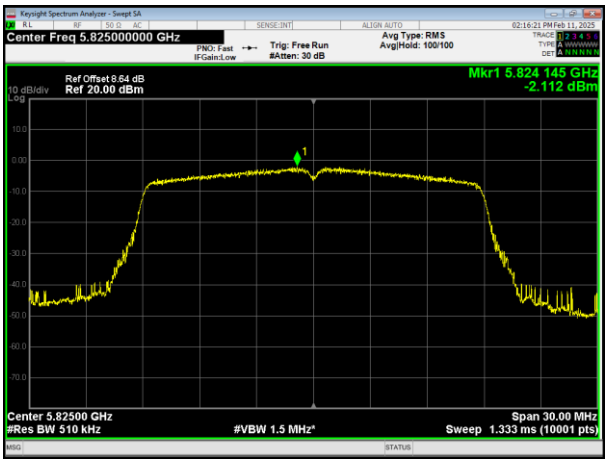

### 5.1.4. EUT OPERATION CONDITIONS

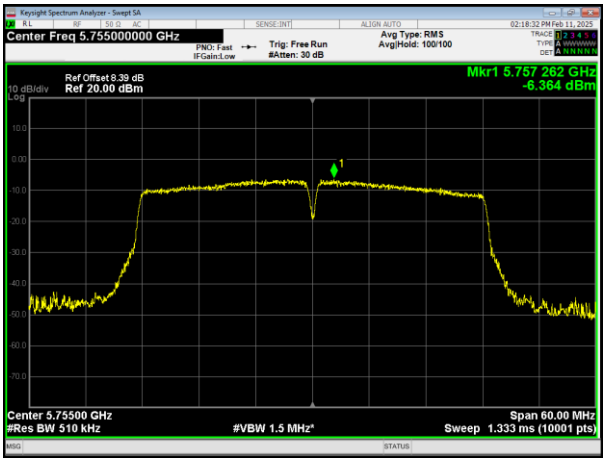
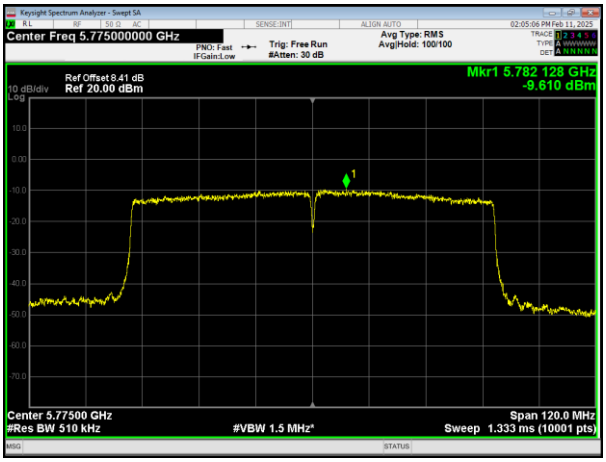
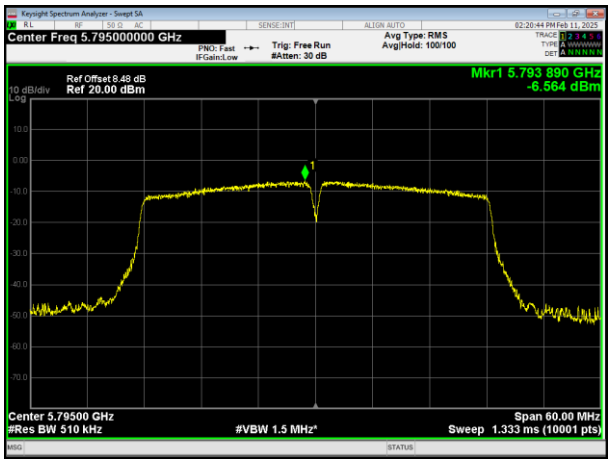
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

### 5.1.5. TEST RESULTS

| | Mode | Test Channel | Reading Level (dBm) | Duty factor (dB) | PSD (dBm/ 500kHz) | Limit (dBm/ 500kHz) | Result |
|---|---|---|---|---|---|---|---|
| Band4 | 802.11a | Low | -3.045 | 1.12 | -1.925 | 30 | PASS |
| | | Middle | -3.294 | 1.12 | -2.174 | 30 | PASS |
| | | High | -2.299 | 1.12 | -1.179 | 30 | PASS |
| | 802.11ac HT20 | Low | -2.618 | 0.13 | -2.488 | 30 | PASS |
| | | Middle | -2.859 | 0.13 | -2.729 | 30 | PASS |
| | | High | -2.252 | 0.13 | -2.122 | 30 | PASS |
| | 802.11ac HT40 | Low | -6.715 | 0.26 | -6.455 | 30 | PASS |
| | | High | -6.159 | 0.26 | -5.899 | 30 | PASS |
| | 802.11ac HT80 | / | -9.61 | 0.63 | -8.98 | 30 | PASS |
| | 802.11n HT20 | Low | -2.998 | 0.16 | -2.838 | 30 | PASS |
| | | Middle | -2.667 | 0.16 | -2.507 | 30 | PASS |
| | | High | -2.112 | 0.16 | -1.952 | 30 | PASS |
| | 802.11n HT40 | Low | -6.364 | 0.26 | -6.104 | 30 | PASS |
| | | High | -6.564 | 0.26 | -6.304 | 30 | PASS |

| 802.11a | 802.11ac HT20 |
|---|---|
|  |  |
| 5745MHz | 5745MHz |
|  |  |
| 5785MHz | 5785MHz |
|  |  |
| 5825MHz | 5825MHz |

| 802.11ac HT40 | 802.11n HT20 |
|---|---|
|  |  |
| 5755MHz | 5745MHz |
|  |  |
| 5795MHz | 5785MHz |
| |  |
| | 5825MHz |

| 802.11n HT40 | 802.11ac HT80 |
|---|---|
|  |  |
| 5755MHz | 5775MHz |
|  | |
| 5795MHz | |

## 6.. 6DB BANDWIDTH TEST

### 6.1. APPLIED PROCEDURES / LIMIT

| |
|---|
| There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.<br>The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3 |

#### 6.1.1. TEST PROCEDURE

| 6dB Bandwidth | |
|---|---|
| Spectrum Parameters | Setting |
| RBW | 100KHz |
| VBW | 300KHz |
| Span | 30MHz(20MHz Bandwidth mode)<br>60MHz(40MHz Bandwidth mode)<br>120MHz(80MHz Bandwidth mode) |
| Sweep Time | Auto |
| Detector | Peak |
| Trace Mode | Max Hold |

#### 6.1.2. DEVIATION FROM STANDARD

No deviation.

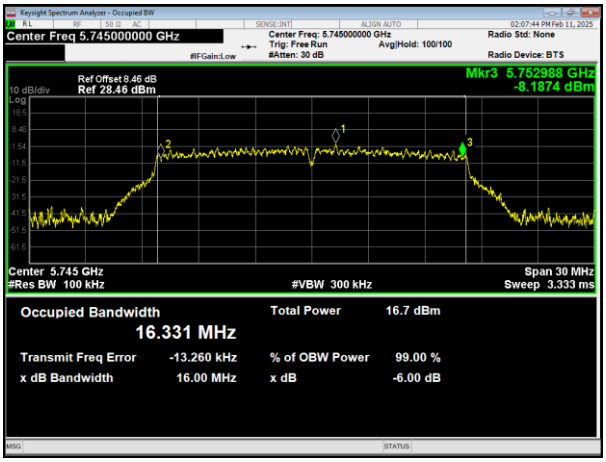
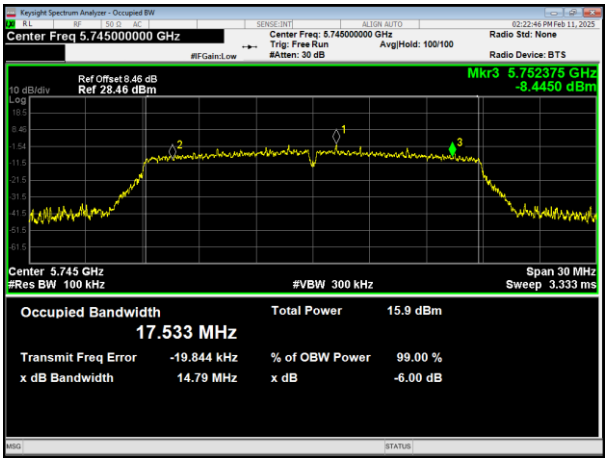
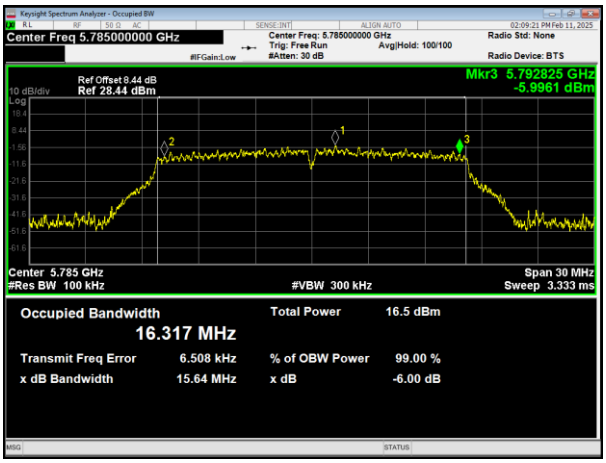
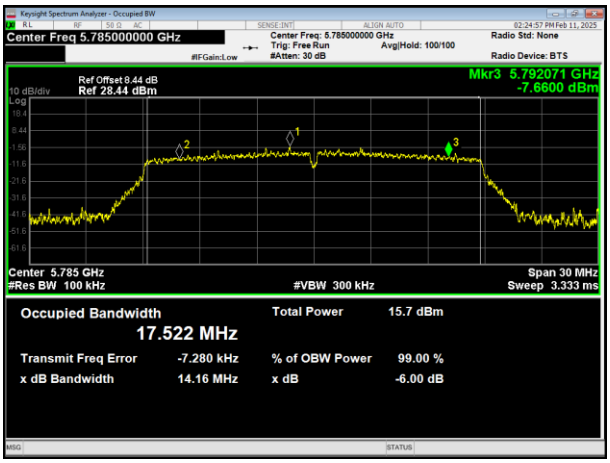
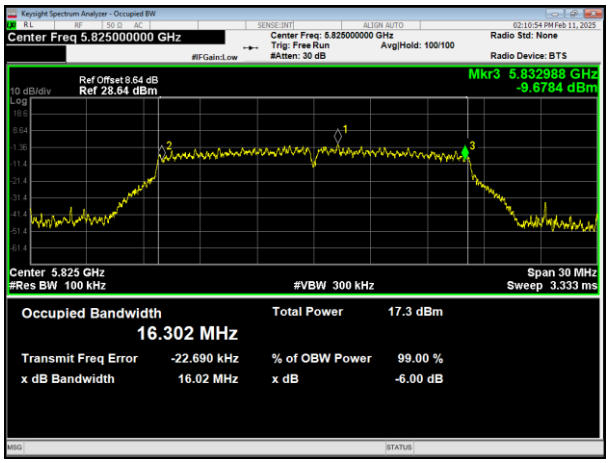
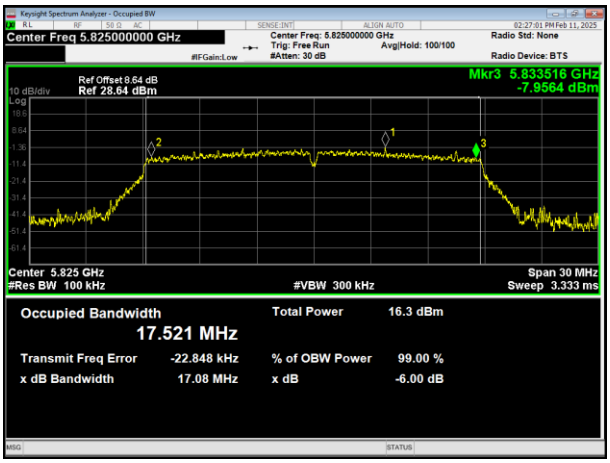
#### 6.1.3. TEST SETUP

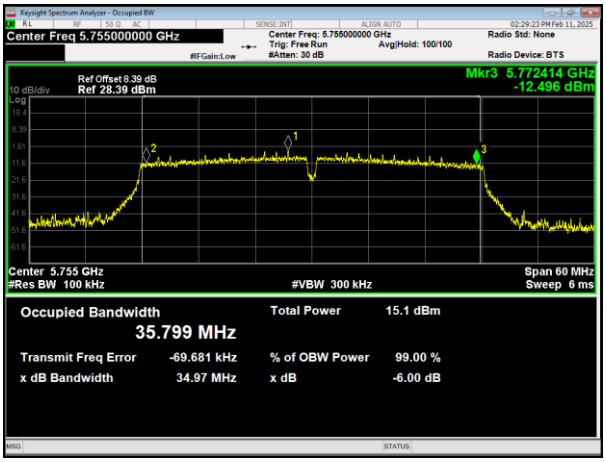
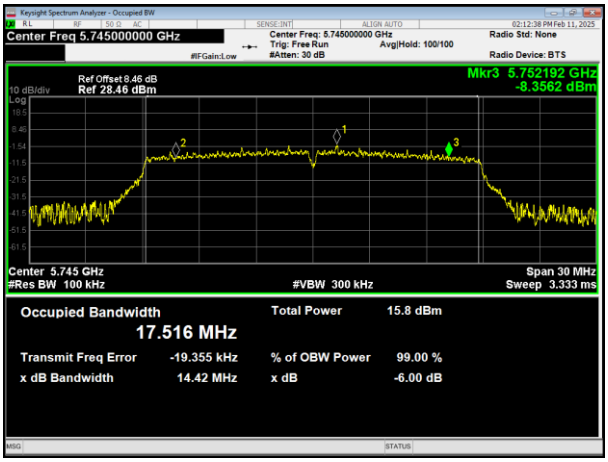
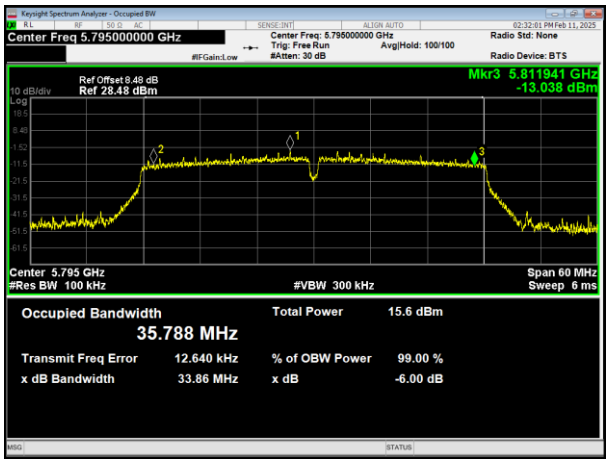
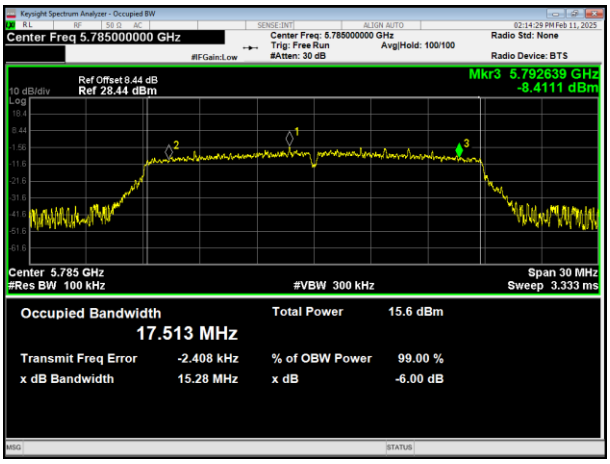
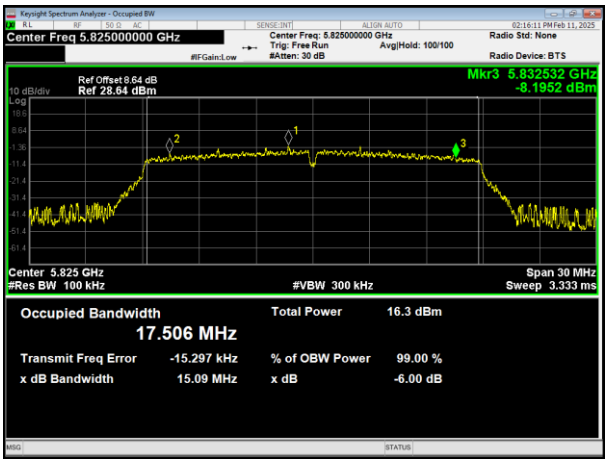

#### 6.1.4. EUT OPERATION CONDITIONS

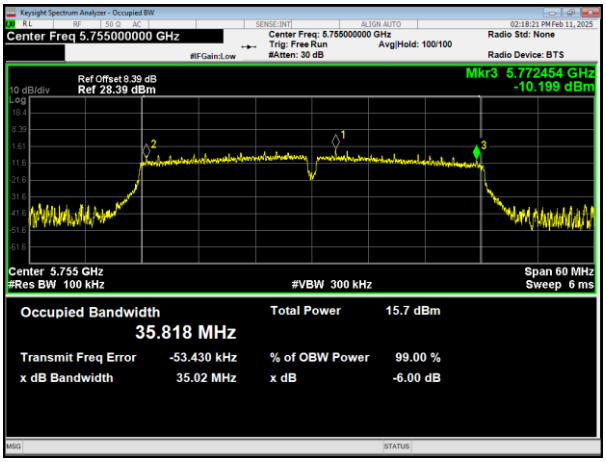
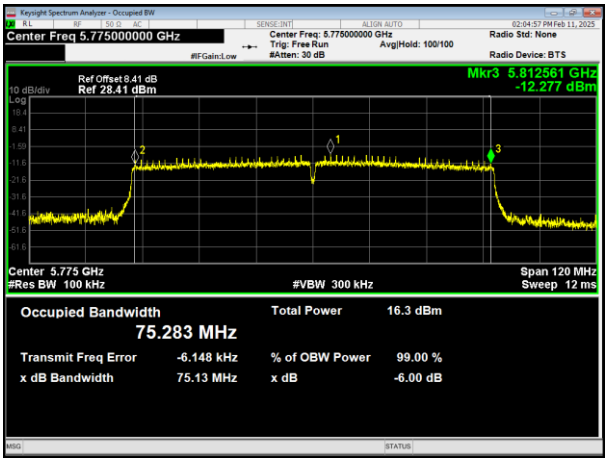
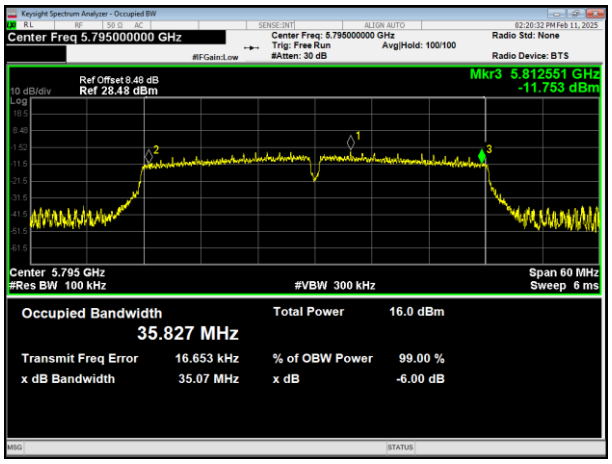
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

### 6.1.5. TEST RESULTS

| | | Test Channel | 6dB Bandwidth (MHz) | 6dB Bandwidth Limit (MHz) | Result |
|---|---|---|---|---|---|
| Band 4 | 802.11a | Low | 16.002 | >0.5 | Pass |
| | | Middle | 15.638 | >0.5 | Pass |
| | | High | 16.021 | >0.5 | Pass |
| | 802.11ac HT20 | Low | 14.791 | >0.5 | Pass |
| | | Middle | 14.157 | >0.5 | Pass |
| | | High | 17.077 | >0.5 | Pass |
| | 802.11ac HT40 | Low | 34.968 | >0.5 | Pass |
| | | High | 33.857 | >0.5 | Pass |
| | 802.11ac HT80 | / | 75.134 | >0.5 | Pass |
| | 802.11n HT20 | Low | 14.423 | >0.5 | Pass |
| | | Middle | 15.282 | >0.5 | Pass |
| | | High | 15.094 | >0.5 | Pass |
| | 802.11n HT40 | Low | 35.016 | >0.5 | Pass |
| | | High | 35.069 | >0.5 | Pass |

| 802.11a | 802.11ac HT20 |
|---|---|
|  |  |
| 5745MHz | 5745MHz |
|  |  |
| 5785MHz | 5785MHz |
|  |  |
| 5825MHz | 5825MHz |

| 802.11ac HT40 | 802.11n HT20 |
|---|---|
|  |  |
| 5755MHz | 5745MHz |
|  |  |
| 5795MHz | 5785MHz |
| |  |
| | 5825MHz |

| 802.11n HT40 | 802.11ac HT80 |
|---|---|
|  |  |
| 5755MHz | 5775MHz |
|  | |
| 5795MHz | |

## 7.. DUTY CYCLE TEST SIGNAL

### 7.1. APPLIED PROCEDURES / LIMIT

| |
|---|
| Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage. |

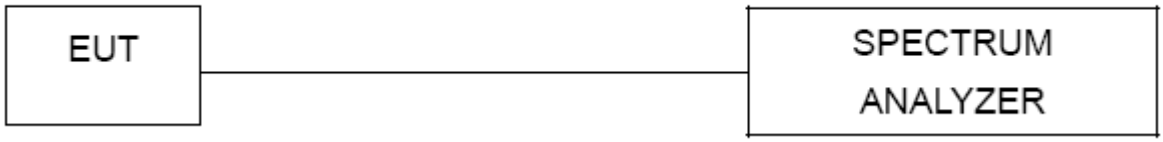
#### 7.1.1. TEST PROCEDURE

1. Set RBW = 1 MHz.
2. Set the video bandwidth (VBW) ≥RBW.
3. Detector = Peak.
4. Sweep = auto couple.
5. Allow the trace to stabilize.
6. Span=0

#### 7.1.2. DEVIATION FROM STANDARD

No deviation.

#### 7.1.3. TEST SETUP

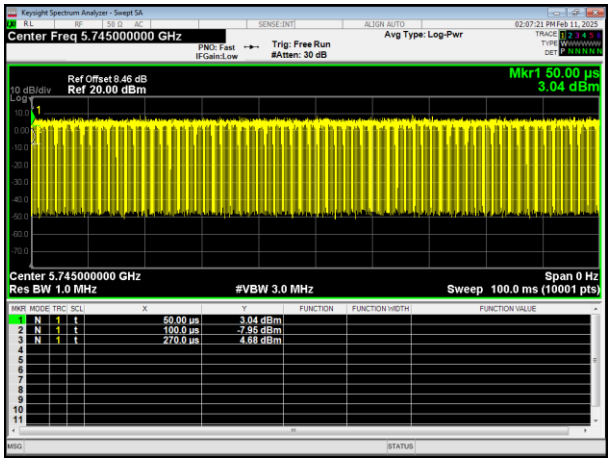
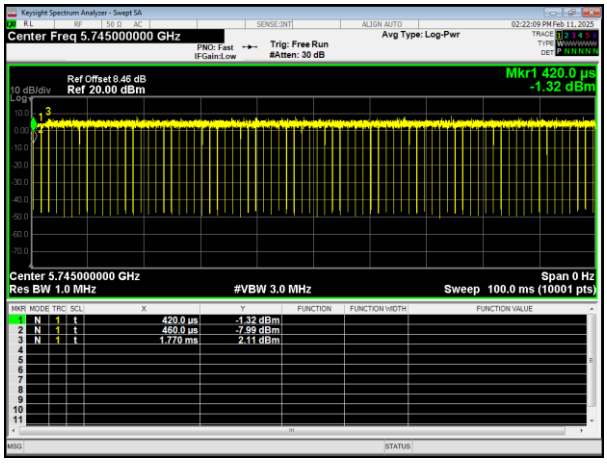
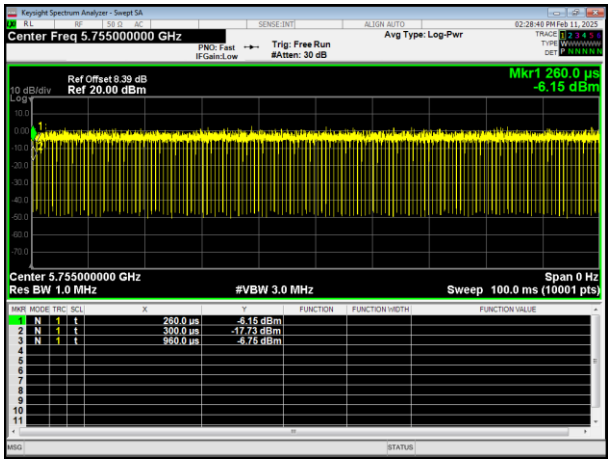
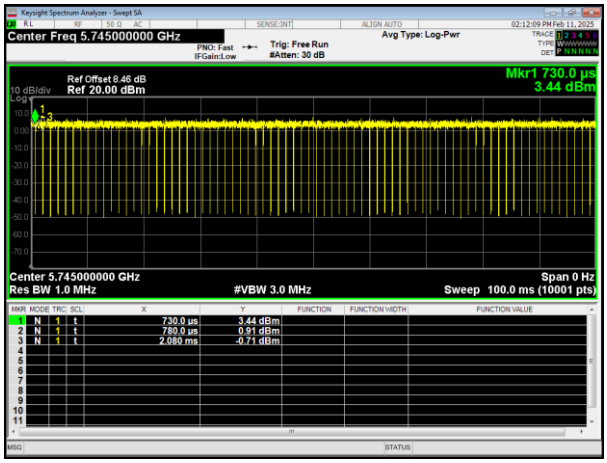
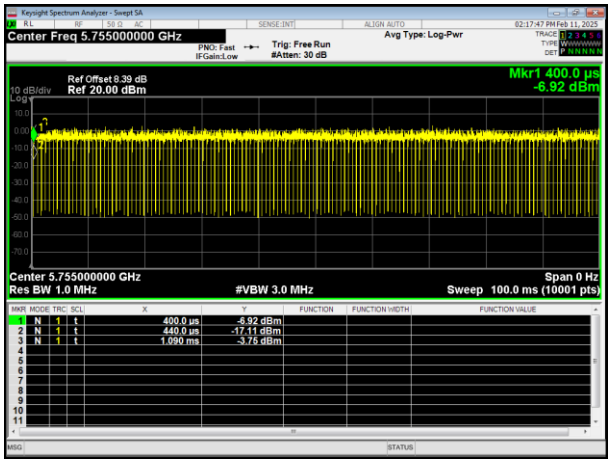
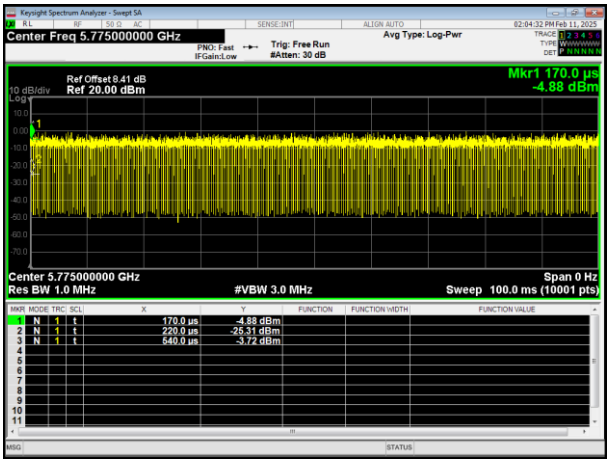



#### 7.1.4. EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

### 7.1.5. TEST RESULTS

| Operation Mode | | Duty Cycle(%) | Duty Fator (dB)<br>10 * log (1/ Duty cycle) |
|---|---|---|---|
| Band 4 | 802.11a | 77.27 | 1.12 |
| | 802.11ac(HT20) | 97.04 | 0.13 |
| | 802.11ac(HT40) | 94.29 | 0.26 |
| | 802.11ac(HT80) | 86.49 | 0.63 |
| | 802.11n(HT20) | 96.3 | 0.16 |
| | 802.11n(HT40) | 94.2 | 0.26 |

| 802.11a | 802.11ac HT20 |
| --- | --- |
|  |  |
| 802.11ac HT40 | 802.11n HT20 |
|  |  |
| 802.11n HT40 | 802.11ac HT80 |
|  |  |

## 8.. FREQUENCY STABILITY

### 8.1. APPLIED PROCEDURES / LIMIT

| |
|---|
| Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual. |

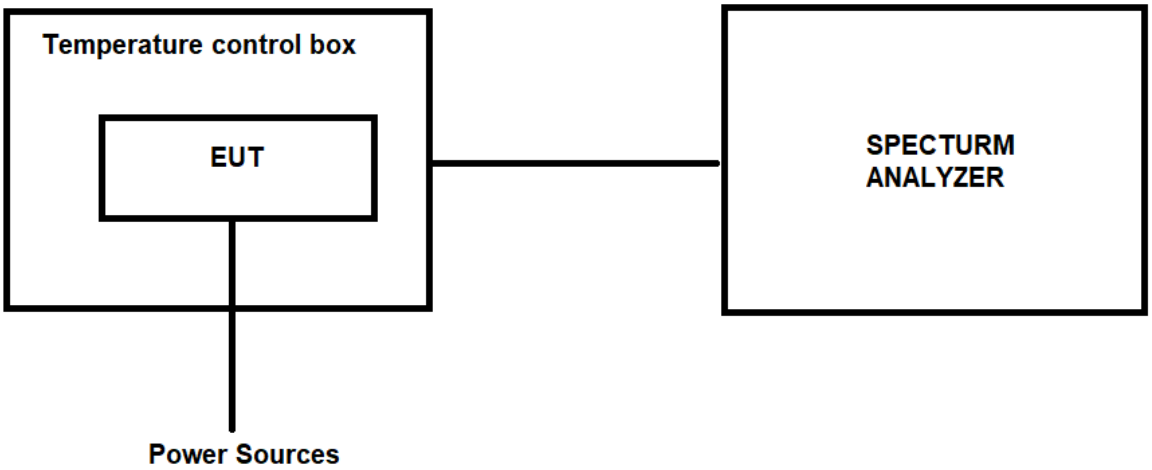
#### 8.1.1. TEST PROCEDURE

1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
2. Set EUT as normal operation.
3. Turn the EUT on and couple its output to spectrum.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
6. Repeat step with the temperature chamber set to the lowest temperature.

#### 8.1.2. DEVIATION FROM STANDARD

No deviation.

#### 8.1.3. TEST SETUP




#### 8.1.4. EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

### 8.1.5. TEST RESULTS

| Test Voltage | Test Temp. | Measured Frequency (MHz) | Spectrum Frequency (MHz) | | | Δ Frequency (MHz) | | |
|---|---|---|---|---|---|---|---|---|
| | | | 802.11a | 802.11n HT20 | 802.11ac HT20 | 802.11a | 802.11n HT20 | 802.11ac HT20 |
| 15.84V | -20℃ | 5745 | 5180.0325 | 5180.0362 | 5180.0365 | 6.2741 | 6.9884 | 7.0463 |
| | | 5785 | 5220.0356 | 5220.0347 | 5220.0377 | 6.8199 | 6.6475 | 7.2222 |
| | | 5825 | 5240.0262 | 5240.0262 | 5240.0235 | 5.0000 | 5.0000 | 4.4847 |
| 12.96V | | 5745 | 5745.0398 | 5745.0332 | 5745.0366 | 6.9278 | 5.7789 | 6.3708 |
| | | 5785 | 5785.0326 | 5785.0368 | 5785.0315 | 5.6353 | 6.3613 | 5.4451 |
| | | 5825 | 5825.0341 | 5825.0361 | 5825.0395 | 5.8541 | 6.1974 | 6.7811 |
| 14.4V | 25℃ | 5745 | 5180.0296 | 5180.0202 | 5180.0266 | 5.7143 | 3.8996 | 5.1351 |
| | | 5785 | 5220.0351 | 5220.0396 | 5220.0378 | 6.7241 | 7.5862 | 7.2414 |
| | | 5825 | 5240.0253 | 5240.0241 | 5240.0261 | 4.8282 | 4.5992 | 4.9809 |
| 15.84V | 50℃ | 5745 | 5745.0298 | 5745.0232 | 5745.0225 | 5.1871 | 4.0383 | 3.9164 |
| | | 5785 | 5785.0334 | 5785.0378 | 5785.0302 | 5.7736 | 6.5341 | 5.2204 |
| | | 5825 | 5825.0484 | 5825.0494 | 5825.0489 | 8.3090 | 8.4807 | 8.3948 |
| 12.96V | 50℃ | 5745 | 5180.0599 | 5180.0585 | 5180.0546 | 11.5637 | 11.2934 | 10.5405 |
| | | 5785 | 5220.0251 | 5220.0264 | 5220.0269 | 4.8084 | 5.0575 | 5.1533 |
| | | 5825 | 5240.0339 | 5240.0332 | 5240.0355 | 6.4695 | 6.3359 | 6.7748 |

| Test Voltage | Test Temp. | Measured Frequency (MHz) | Spectrum Frequency (MHz) | | Δ Frequency (MHz) | |
|---|---|---|---|---|---|---|
| | | | 802.11n HT40 | 802.11ac HT40 | 802.11n HT40 | 802.11ac HT40 |
| 15.84V | -20℃ | 5755 | 5190.0229 | 5190.0263 | 4.4123 | 5.0674 |
| | | 5795 | 5230.0348 | 5230.0384 | 6.6539 | 7.3423 |
| 12.96V | | 5755 | 5755.0568 | 5755.0559 | 9.8697 | 9.7133 |
| | | 5795 | 5795.0695 | 5795.0631 | 11.9931 | 10.8887 |
| 14.4V | 25℃ | 5755 | 5190.0238 | 5190.0255 | 4.5857 | 4.9133 |
| | | 5795 | 5230.0341 | 5230.0351 | 6.5201 | 6.7113 |
| 15.84V | 50℃ | 5755 | 5755.0268 | 5755.0609 | 4.6568 | 10.5821 |
| | | 5795 | 5795.0402 | 5795.0484 | 6.9370 | 8.3520 |
| 12.96V | 50℃ | 5755 | 5190.0299 | 5190.0225 | 5.7611 | 4.3353 |
| | | 5795 | 5230.0641 | 5230.0698 | 12.2562 | 13.3461 |

| Test Voltage | Test Temp. | Measured Frequency (MHz) | Spectrum Frequency (MHz) | Δ Frequency (MHz) |
|---|---|---|---|---|
| | | | 802.11ac HT80 | 802.11ac HT80 |
| 15.84V | -20℃ | 5775 | 5210.0188 | 3.6084 |
| 12.96V | | 5775 | 5775.0129 | 2.2338 |
| 14.4V | 25℃ | 5775 | 5210.0266 | 5.1056 |
| 15.84V | 50℃ | 5775 | 5775.0351 | 6.0779 |
| 12.96V | 50℃ | 5775 | 5210.0405 | 7.7735 |

## 9.. TRANSMISSION IN THE ABSENCE OF DATA

### 9.1. STANDARD REQUIREMENT

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

### 9.2. TEST RESULT

No non-compliance noted:
Refer to the theory of operation.

## 10.. ANTENNA REQUIREMENT

### 10.1. STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 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.

### 10.2. EUT ANTENNA

The EUT antenna is Internal Antenna, It comply with the standard requirement.

## 11.. TEST SEUUP PHOTO

Reference to the appendix I for details.

## 12.. EUT PHOTO

Reference to the appendix II for details.

**※※※※※ END OF REPORT ※※※※※**