



# FCC TEST REPORT

## FCC ID:2BNFM-I96D7

Applicant: Shenzhen Aikerui Technology Co., Ltd.

Address: Room 302, 3rd Floor, Factory Building No. 31, Yangmei Road, Yangmei Community, Bantian Street, Longgang District, Shenzhen

Manufacturer: Shenzhen Aikerui Technology Co., Ltd.

Address: Room 302, 3rd Floor, Factory Building No. 31, Yangmei Road, Yangmei Community, Bantian Street, Longgang District, Shenzhen

EUT: TV STICK

Trade Mark: velec

Model Number: I96 D17

Date of Receipt: Jul. 04, 2025

Test Date: Jul. 04, 2025 to Aug. 20, 2025

Date of Report: Aug. 20, 2025

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

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Applicable Standards: FCC CFR Title 47 Part 15 Subpart E Section 15.407  
ANSI C63.10:2013  
KDB 789033 D02 v02r01

Test Result: Pass

Report Number: DLE-250826013R

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. VERSION

| Report No.     | Version | Description             | Approved      |
|----------------|---------|-------------------------|---------------|
| DLE-250826013R | Rev.01  | Initial issue of report | Aug. 20, 2025 |
|                |         |                         |               |



## 2. 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(a)                                                                     | AC Power Line Conducted Emission                      | PASS     |        |
| 15.205(a)/15.209(a)<br>15.407(b)(1)<br>15.407(b)(4)<br>15.407(b)(8)<br>2.1051 | Radiated Emissions and Band Edge                      | PASS     |        |
| 15.407 (e)<br>789033 D02 General<br>U-NII                                     | 26dB Emission Bandwidth and<br>6dB Occupied Bandwidth | PASS     |        |
| 15.407(a)(1)<br>15.407 (a)(3) i                                               | Power Spectral Density                                | PASS     |        |
| 15.407(a)(1)<br>15.407 (a)(3) i<br>15.407(a)(12)                              | Maximum Conducted Output Power                        | PASS     |        |
| 15.407(b)(1)<br>15.407(b)(4)<br>15.407(b)(8)<br>2.1051                        | Conducted Emissions and Band Edge                     | PASS     |        |
| 15.407(g)                                                                     | Frequency Stability                                   | PASS     |        |
| 789033 D02 General<br>U-NII                                                   | Duty Cycle                                            | PASS     |        |
| 15.203                                                                        | Antenna Requirement                                   | PASS     |        |

NOTE:

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



## 2.1 TEST FACILITY

Shenzhen DL Testing Technology Co., Ltd.

Add. : 101-201, Building C, Shuanghuan, No.8, Baoqing Roa Baolong Industrial Zone, Baolong Street, Longgang Shenzhen, Guangdong, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB identifier: CN0118

## 2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded 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   | 3m camber Radiated spurious Emission (9KHz-30MHz)  | U=4.5dB     |
| 2   | 3m camber Radiated spurious emission (30MHz-1GHz)  | U=4.8dB     |
| 3   | 3m chamber Radiated spurious emission (1GHz-6GHz)  | U=4.9dB     |
| 4   | 3m chamber Radiated spurious emission (6GHz-40GHz) | U=5.0dB     |
| 5   | Conducted Disturbance                              | U=3.2dB     |
| 6   | RF Band Edge                                       | U=1.68dB    |
| 7   | RF Power Conducted                                 | U=1.86dB    |
| 8   | RF Conducted Spurious Emission                     | U=2.2dB     |
| 9   | RF Occupied Bandwidth                              | U=1.8MHz    |
| 10  | RF Power Spectral Density                          | U=1.75dB    |
| 11  | Humidity Uncertainty                               | U=5.3%      |
| 12  | Temperature Uncertainty                            | U=0.59°C    |
| 13  | Duty Cycle                                         | U=1.3dB     |



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

|                      |                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:        | TV STICK                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Model No.:           | I96 D7                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Serial Model:        | N/A                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Model Different:     | N/A                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Sample ID            | DLE-250826013R                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Sample(s) Status:    | Engineer sample                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Product Description: | IEEE 802.11 WLAN Mode Supported                                                                    | <input checked="" type="checkbox"/> 802.11a/n                                                                                                                                                                                                                                                                                                                                                    |
|                      | Data Rate                                                                                          | 802.11a: 6/9/12/24/18/36/48/54Mbit/s<br>802.11n: MCS0-MCS7                                                                                                                                                                                                                                                                                                                                       |
|                      | Modulation                                                                                         | 802.11a/n: Orthogonal Frequency Division Multiplexing (OFDM)                                                                                                                                                                                                                                                                                                                                     |
|                      | Frequency Range                                                                                    | <input checked="" type="checkbox"/> 5180-5240MHz for 802.11 a/n (20M);<br><input checked="" type="checkbox"/> 5190-5230MHz for 802.11 n (40M);<br><input checked="" type="checkbox"/> 5745-5825 MHz for 802.11 a/n (20M);<br><input checked="" type="checkbox"/> 5755-5795 MHz for 802.11 n (40M);                                                                                               |
|                      | Number of Channels                                                                                 | <input checked="" type="checkbox"/> 4 channels for 802.11 a/n (20M) in the 5180-5240MHz band ;<br><input checked="" type="checkbox"/> 2 channels for 802.11 n (40M) in the 5190-5230 MHz band ;<br><input checked="" type="checkbox"/> 5 channels for 802.11 a (20M) in the 5745-5825MHz band ;<br><input checked="" type="checkbox"/> 2 channels for 802.11 n (40M) in the 5755-5795 MHz band ; |
| Channel List:        | Please refer to the Note 2.                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Antenna Type:        | FPC Antenna                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Antenna Gain:        | 5.2G: 2.45dBi<br>5.8G: 2.75dBi                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                  |
| Power Supply:        | Input: 5V  1.2A |                                                                                                                                                                                                                                                                                                                                                                                                  |



Note:

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

| 802.11a/n( 20MHz) Frequency Channel for 5.2G |                 |         |                 |         |                 |         |                 |
|----------------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                                      | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 36                                           | 5180            | 44      | 5200            | 40      | 5220            | 48      | 5240            |

| 802.11n(40MHz) Frequency Channel for 5.2G |                 |         |                 |         |                 |         |                 |
|-------------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                                   | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 38                                        | 5190            | 46      | 5230            | -       | -               | -       | -               |

| 802.11a/n( 20 MHz) Frequency Channel for 5.8G |                 |         |                 |         |                 |         |                 |
|-----------------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                                       | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 149                                           | 5745            | 153     | 5765            | 157     | 5785            | 161     | 5805            |
| 165                                           | 5825            | -       | -               | -       | -               | -       | -               |

| 802.11n(40MHz) Frequency Channel for 5.8G |                 |         |                 |         |                 |
|-------------------------------------------|-----------------|---------|-----------------|---------|-----------------|
| Channel                                   | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 151                                       | 5755            | 159     | 5795            | -       | -               |

### 3.2 DESCRIPTION OF TEST MODES

| Pretest Mode | Description                                                                           |
|--------------|---------------------------------------------------------------------------------------|
| Mode 1       | 802.11a/n20 CH 36/ CH 40/ CH 48 for 5.2G<br>802.11a/n20 CH149/ CH157/ CH 165 for 5.8G |
| Mode 2       | 802.11n 40 CH38/ CH 46 for 5.2G<br>802.11n 40 CH 151 / CH 159 for 5.8G                |

| For Conducted Emission |                                                                                       |
|------------------------|---------------------------------------------------------------------------------------|
| Final Test Mode        | Description                                                                           |
| Mode 1                 | 802.11a/n20 CH 36/ CH 40/ CH 48 for 5.2G<br>802.11a/n20 CH149/ CH157/ CH 165 for 5.8G |
| Mode 2                 | 802.11n 40 CH38/ CH 46 for 5.2G<br>802.11n 40 CH 151 / CH 159 for 5.8G                |

| For Radiated Emission |                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------|
| Final Test Mode       | Description                                                                           |
| Mode 1                | 802.11a/n20 CH 36/ CH 40/ CH 48 for 5.2G<br>802.11a/n20 CH149/ CH157/ CH 165 for 5.8G |
| Mode 2                | 802.11n 40 CH38/ CH 46 for 5.2G<br>802.11n 40 CH 151 / CH 159 for 5.8G                |

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

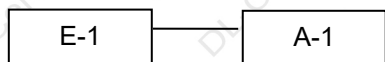


|                                                                                                                                                                                                                                       |                                                |           |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------|-----------|
| Transmitting mode                                                                                                                                                                                                                     | Keep the EUT in continuously transmitting mode |           |           |
| Remark: 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. |                                                |           |           |
| We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:                          |                                                |           |           |
| Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.                                                                                                                                  |                                                |           |           |
| Mode                                                                                                                                                                                                                                  | 802.11a                                        | 802.11n20 | 802.11n40 |
| Data rate                                                                                                                                                                                                                             | 6Mbps                                          | MCS0(HT0) | MCS0(HT0) |
| Test Software                                                                                                                                                                                                                         | REALTEK 8723FU                                 |           |           |
| Power level setup                                                                                                                                                                                                                     | Default                                        |           |           |



### 3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

#### Conducted Emission



#### Radiated Emission



### 3.4 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     | Mfr/Brand | Model/Type No. | Series No. | Note      |
|------|---------------|-----------|----------------|------------|-----------|
| E-1  | TV STICK      | velec     | I96 D7         | N/A        | EUT       |
| A-1  | Power adapter | N/A       | XH2400-24500   | N/A        | Auxiliary |
|      |               |           |                |            |           |

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

#### Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



## 3.5 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    |

## 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_EMCC | EMC-CON 3A1.1    |
| 2    | EMC radiation test system    | FALA         | EZ_EMCC | FA-03A2          |
| 3    | RF test system               | MAIWEI       | MTS8310 | 2.0.0.0          |
| 4    | RF communication test system | MAIWEI       | MTS8200 | 2.0.0.0          |



#### 4. EMC EMISSION TEST

##### 4.1 CONDUCTED EMISSION MEASUREMENT

|                       |                                      |
|-----------------------|--------------------------------------|
| Test Requirement:     | FCC Part15 C Section 15.207          |
| Test Method:          | ANSI C63.10:2013                     |
| Test Frequency Range: | 150KHz to 30MHz                      |
| Receiver setup:       | RBW=9KHz, VBW=30KHz, Sweep time=auto |

##### 4.1.1 POWER LINE CONDUCTED EMISSION LIMITS

| FREQUENCY (MHz) | Limit (dBuV) |           | Standard |
|-----------------|--------------|-----------|----------|
|                 | Quasi-peak   | Average   |          |
| 0.15 -0.5       | 66 - 56 *    | 56 - 46 * | FCC      |
| 0.50 -5.0       | 56.00        | 46.00     | FCC      |
| 5.0 -30.0       | 60.00        | 50.00     | FCC      |

Note:

(1) \*Decreases with the logarithm of the frequency.

##### 4.1.2 TEST PROCEDURE

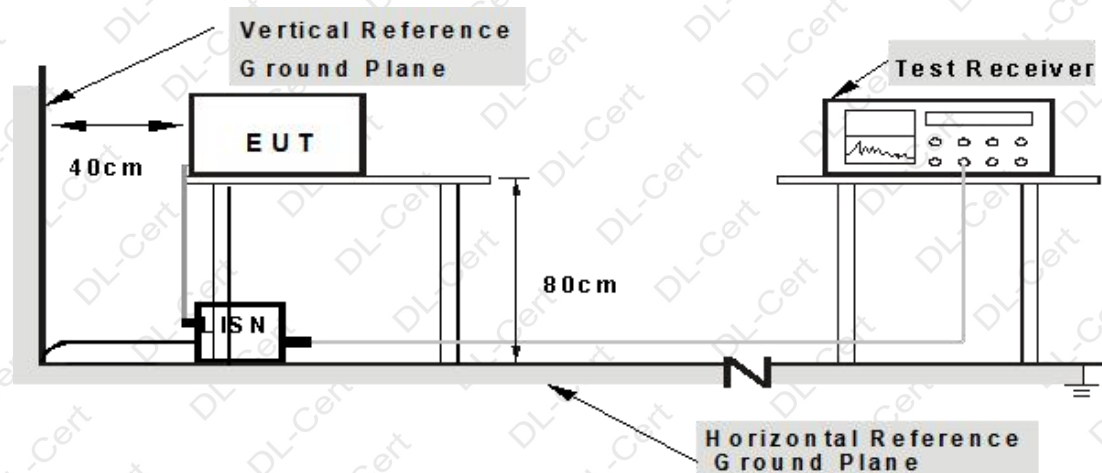
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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.
  - 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.
  - LISN at least 80 cm from nearest part of EUT chassis.
  - For the actual test configuration, please refer to the related Item –EUT Test Photos.

##### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation



#### 4.1.4 TEST SETUP



**Note: 1. Support units were connected to second LISN.**

**2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes**

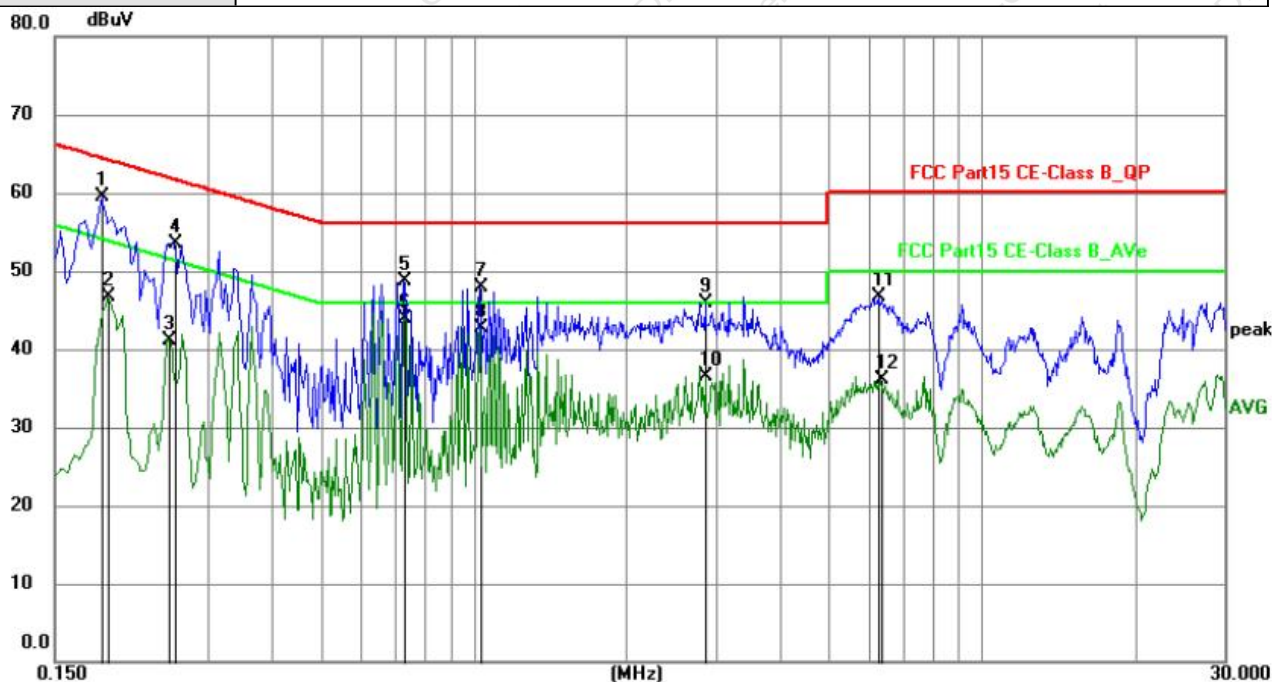
#### 4.1.5 EUT OPERATING CONDITIONS

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.



## 4.1.6 TEST RESULT

|               |              |                    |                     |
|---------------|--------------|--------------------|---------------------|
| Temperature:  | 26℃          | Relative Humidity: | 54%                 |
| Pressure:     | 101 kPa      | Polarization:      | L                   |
| Test Voltage: | AC 120V/60Hz | Test Mode:         | 802.11n20 - 5180MHz |
| Test Band:    | 5.2G         |                    |                     |



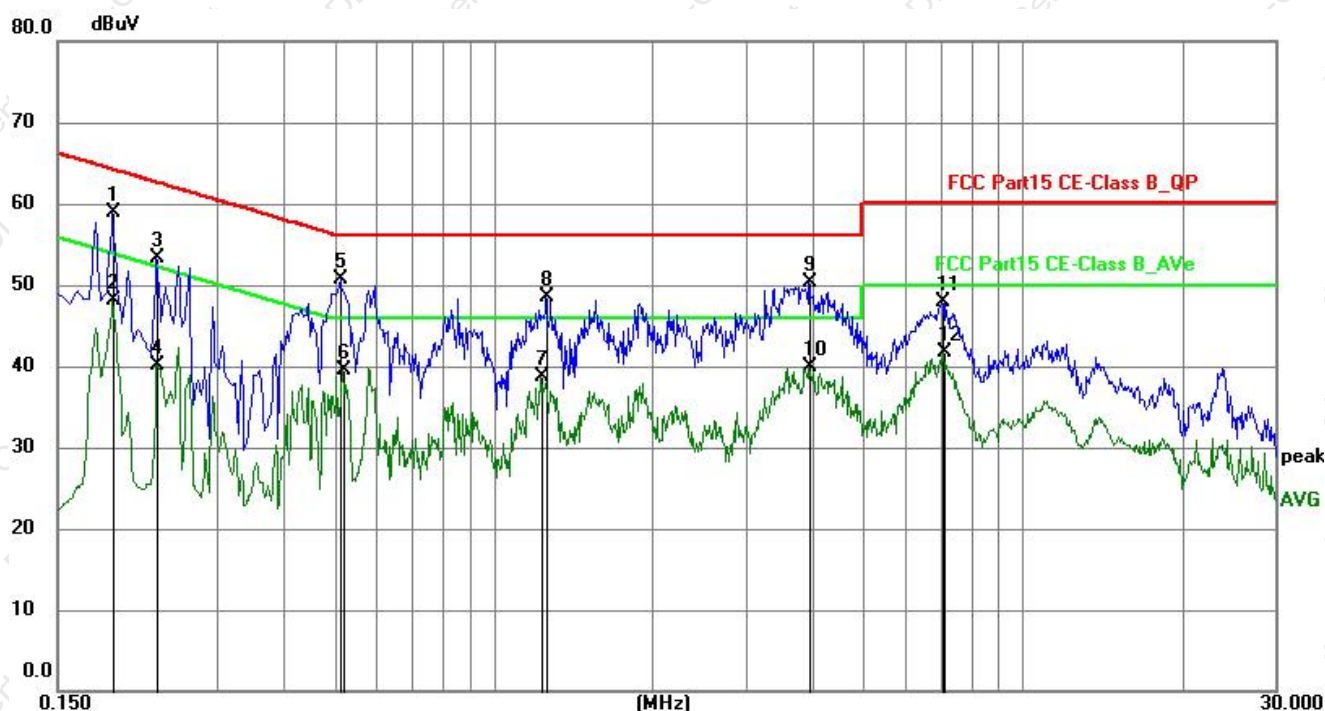
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1   | 0.1859          | 39.10          | 20.33       | 59.43        | 64.22        | -4.79       | QP       | P   |        |
| 2   | 0.1905          | 26.32          | 20.34       | 46.66        | 54.01        | -7.35       | AVG      | P   |        |
| 3   | 0.2519          | 20.71          | 20.36       | 41.07        | 51.69        | -10.62      | AVG      | P   |        |
| 4   | 0.2580          | 33.21          | 20.36       | 53.57        | 61.50        | -7.93       | QP       | P   |        |
| 5   | 0.7304          | 28.43          | 20.29       | 48.72        | 56.00        | -7.28       | QP       | P   |        |
| 6   | 0.7304          | 23.58          | 20.29       | 43.87        | 46.00        | -2.13       | AVG      | P   |        |
| 7   | 1.0274          | 27.70          | 20.30       | 48.00        | 56.00        | -8.00       | QP       | P   |        |
| 8   | 1.0274          | 22.34          | 20.30       | 42.64        | 46.00        | -3.36       | AVG      | P   |        |
| 9   | 2.8544          | 25.62          | 20.33       | 45.95        | 56.00        | -10.05      | QP       | P   |        |
| 10  | 2.8544          | 16.11          | 20.33       | 36.44        | 46.00        | -9.56       | AVG      | P   |        |
| 11  | 6.2655          | 26.28          | 20.38       | 46.66        | 60.00        | -13.34      | QP       | P   |        |
| 12  | 6.3330          | 15.67          | 20.38       | 36.05        | 50.00        | -13.95      | AVG      | P   |        |

## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Liscn factor+ Cable loss factor + limiter factor.
5. Margin = Measurement Level-Limit.
6. The test data shows only the worst case TX 802.11n20 - 5180MHz.



|               |              |                    |                     |
|---------------|--------------|--------------------|---------------------|
| Temperature:  | 26℃          | Relative Humidity: | 54%                 |
| Pressure:     | 101 kPa      | Polarization:      | N                   |
| Test Voltage: | AC 120V/60Hz | Test Mode:         | 802.11n20 - 5180MHz |
| Test Band:    | 5.2G         |                    |                     |



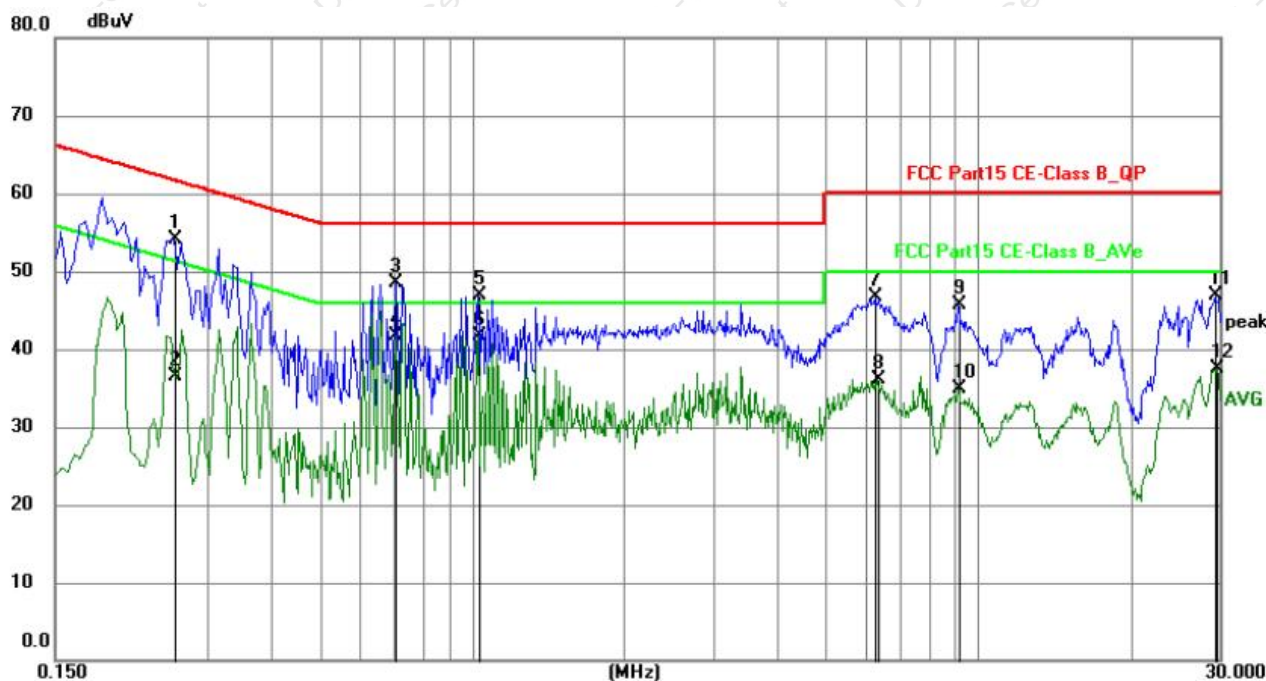
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1   | 0.1905          | 38.64          | 20.34       | 58.98        | 64.01        | -5.03       | QP       | P   |        |
| 2   | 0.1905          | 27.85          | 20.34       | 48.19        | 54.01        | -5.82       | AVG      | P   |        |
| 3   | 0.2310          | 32.90          | 20.37       | 53.27        | 62.41        | -9.14       | QP       | P   |        |
| 4   | 0.2310          | 19.78          | 20.37       | 40.15        | 52.41        | -12.26      | AVG      | P   |        |
| 5   | 0.5143          | 30.33          | 20.30       | 50.63        | 56.00        | -5.37       | QP       | P   |        |
| 6   | 0.5190          | 19.14          | 20.30       | 39.44        | 46.00        | -6.56       | AVG      | P   |        |
| 7   | 1.2342          | 18.37          | 20.30       | 38.67        | 46.00        | -7.33       | AVG      | P   |        |
| 8   | 1.2614          | 28.27          | 20.31       | 48.58        | 56.00        | -7.42       | QP       | P   |        |
| 9   | 3.9525          | 29.96          | 20.34       | 50.30        | 56.00        | -5.70       | QP       | P   |        |
| 10  | 3.9525          | 19.65          | 20.34       | 39.99        | 46.00        | -6.01       | AVG      | P   |        |
| 11  | 7.0304          | 27.44          | 20.39       | 47.83        | 60.00        | -12.17      | QP       | P   |        |
| 12  | 7.0933          | 21.36          | 20.39       | 41.75        | 50.00        | -8.25       | AVG      | P   |        |

## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Lish factor+ Cable loss factor + limiter factor.
5. Margin = Measurement Level-Limit.
6. The test data shows only the worst case TX 802.11n20 - 5180MHz.



|               |              |                    |                     |
|---------------|--------------|--------------------|---------------------|
| Temperature:  | 26℃          | Relative Humidity: | 54%                 |
| Pressure:     | 101 kPa      | Polarization:      | L                   |
| Test Voltage: | AC 120V/60Hz | Test Mode:         | 802.11n20 - 5745MHz |
| Test Band:    | 5.8G         |                    |                     |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1   | 0.2580          | 33.71          | 20.36       | 54.07        | 61.50        | -7.43       | QP       | P   |        |
| 2   | 0.2584          | 16.21          | 20.36       | 36.57        | 51.48        | -14.91      | AVG      | P   |        |
| 3   | 0.7075          | 28.13          | 20.29       | 48.42        | 56.00        | -7.58       | QP       | P   |        |
| 4   | 0.7075          | 21.36          | 20.29       | 41.65        | 46.00        | -4.35       | AVG      | P   |        |
| 5   | 1.0274          | 26.70          | 20.30       | 47.00        | 56.00        | -9.00       | QP       | P   |        |
| 6   | 1.0274          | 21.34          | 20.30       | 41.64        | 46.00        | -4.36       | AVG      | P   |        |
| 7   | 6.2655          | 26.28          | 20.38       | 46.66        | 60.00        | -13.34      | QP       | P   |        |
| 8   | 6.3330          | 15.67          | 20.38       | 36.05        | 50.00        | -13.95      | AVG      | P   |        |
| 9   | 9.1095          | 25.25          | 20.44       | 45.69        | 60.00        | -14.31      | QP       | P   |        |
| 10  | 9.1095          | 14.37          | 20.44       | 34.81        | 50.00        | -15.19      | AVG      | P   |        |
| 11  | 29.4540         | 26.11          | 20.74       | 46.85        | 60.00        | -13.15      | QP       | P   |        |
| 12  | 29.5304         | 16.82          | 20.74       | 37.56        | 50.00        | -12.44      | AVG      | P   |        |

## Notes:

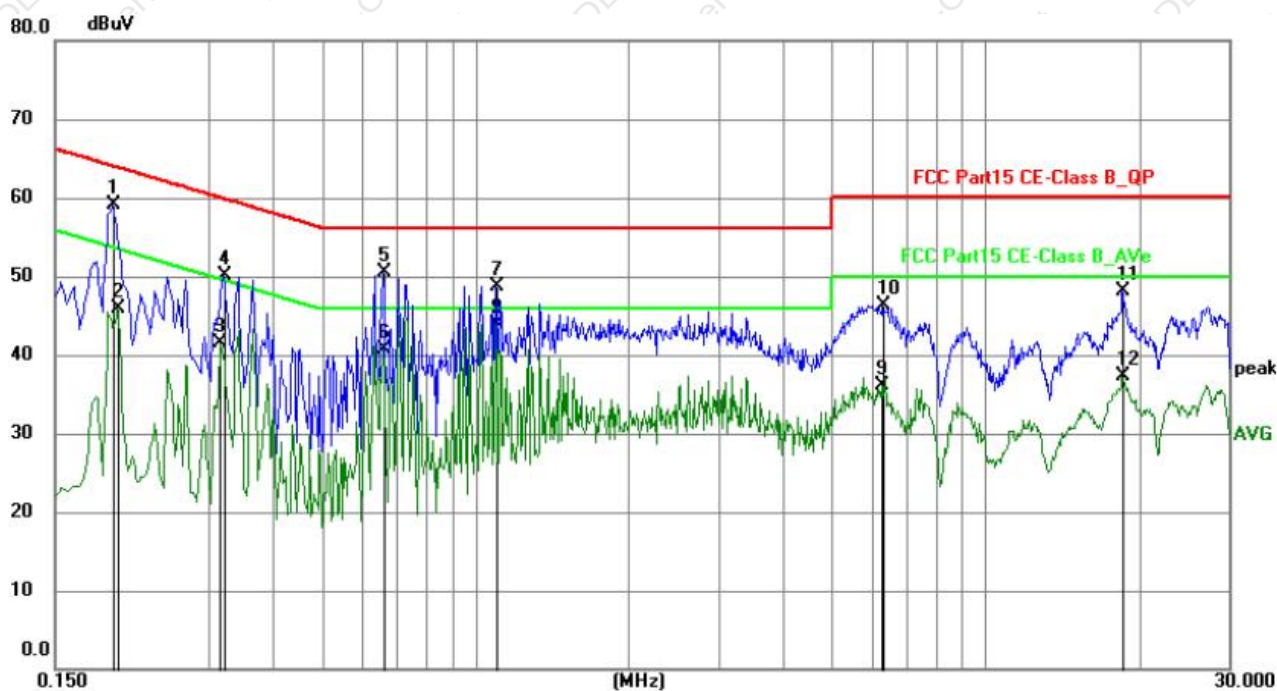
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Lism factor+ Cable loss factor + limiter factor.
5. Margin = Measurement Level-Limit.
6. The test data shows only the worst case TX 802.11n20 - 5745MHz.



Shenzhen DL Testing Technology Co., Ltd.

Report No.: DLE-250826013R

|               |              |                    |                     |
|---------------|--------------|--------------------|---------------------|
| Temperature:  | 26°C         | Relative Humidity: | 54%                 |
| Pressure:     | 101 kPa      | Polarization:      | N                   |
| Test Voltage: | AC 120V/60Hz | Test Mode:         | 802.11n20 - 5745MHz |
| Test Band:    | 5.8G         |                    |                     |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1   | 0.1949          | 38.68          | 20.35       | 59.03        | 63.83        | -4.80       | QP       | P   |        |
| 2   | 0.1995          | 25.51          | 20.37       | 45.88        | 53.63        | -7.75       | AVG      | P   |        |
| 3   | 0.3165          | 21.09          | 20.34       | 41.43        | 49.80        | -8.37       | AVG      | P   |        |
| 4   | 0.3209          | 29.82          | 20.34       | 50.16        | 59.68        | -9.52       | QP       | P   |        |
| 5   | 0.6582          | 30.25          | 20.29       | 50.54        | 56.00        | -5.46       | QP       | P   |        |
| 6   | 0.6582          | 20.47          | 20.29       | 40.76        | 46.00        | -5.24       | AVG      | P   |        |
| 7   | 1.0988          | 28.43          | 20.30       | 48.73        | 56.00        | -7.27       | QP       | P   |        |
| 8   | 1.0988          | 23.51          | 20.30       | 43.81        | 46.00        | -2.19       | AVG      | P   |        |
| 9   | 6.2519          | 15.62          | 20.39       | 36.01        | 50.00        | -13.99      | AVG      | P   |        |
| 10  | 6.2880          | 25.90          | 20.39       | 46.29        | 60.00        | -13.71      | QP       | P   |        |
| 11  | 18.5775         | 27.56          | 20.52       | 48.08        | 60.00        | -11.92      | QP       | P   |        |
| 12  | 18.5775         | 16.72          | 20.52       | 37.24        | 50.00        | -12.76      | AVG      | P   |        |

## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Lism factor+ Cable loss factor + limiter factor.
5. Margin = Measurement Level-Limit.
6. The test data shows only the worst case TX 802.11n20 - 5745MHz.



## 4.2 RADIATED EMISSION AND BAND EDGE MEASUREMENT

### 4.2.1 APPLICABLE STANDARD

According to FCC Part 15.407(b)(1) and 15.407(b)(4)(i) and 15.205(a) and 15.209(a).

### 4.2.2 CONFORMANCE LIMIT

According to FCC Part 15.407(b)(1) Undesirable emission limits. Except as shown in paragraph (b)(10) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits.

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

| Frequency Range                                                  | Peak           | Average     |
|------------------------------------------------------------------|----------------|-------------|
| All emissions outside of the 5.15-5.35 GHz band shall not exceed | 68.20 (dBuV/m) | 54 (dBuV/m) |

(4) For transmitters operating solely in the 5.725-5.850 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 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 or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

| Frequency Range                | Peak            | Average     |
|--------------------------------|-----------------|-------------|
| All emissions shall be limited | 68.20 (dBuV/m)  | 54 (dBuV/m) |
| Band edge $\pm$ 75 MHz         | 105.20 (dBuV/m) | 54 (dBuV/m) |
| Band edge $\pm$ 25 MHz         | 110.80 (dBuV/m) | 54 (dBuV/m) |
| Band edge $\pm$ 5 MHz          | 122.20 (dBuV/m) | 54 (dBuV/m) |

According to FCC Part 15.407(b)(10): 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)).

According to FCC Part 15.205, Restricted bands:

| (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       |                     |               |             |



| Restricted Frequency (MHz) | Field Strength ( $\mu\text{V/m}$ ) | Field Strength ( $\text{dB}\mu\text{V/m}$ ) | Measurement Distance |
|----------------------------|------------------------------------|---------------------------------------------|----------------------|
| 0.009~0.490                | 2400/F(KHz)                        | 20 log ( $\mu\text{V/m}$ )                  | 300                  |
| 0.490~1.705                | 2400/F(KHz)                        | 20 log ( $\mu\text{V/m}$ )                  | 30                   |
| 1.705~30.0                 | 30                                 | 29.5                                        | 30                   |
| 30~88                      | 100                                | 40                                          | 3                    |
| 88~216                     | 150                                | 43.5                                        | 3                    |
| 216~960                    | 200                                | 46                                          | 3                    |
| Above 960                  | 500                                | 54                                          | 3                    |

## Limits of Radiated Emission Measurement(Above 1000MHz)

| Frequency (MHz) | Class B ( $\text{dB}\mu\text{V/m}$ ) (at 3M) |         |
|-----------------|----------------------------------------------|---------|
|                 | Peak                                         | Average |
| Above 1000      | 74                                           | 54      |

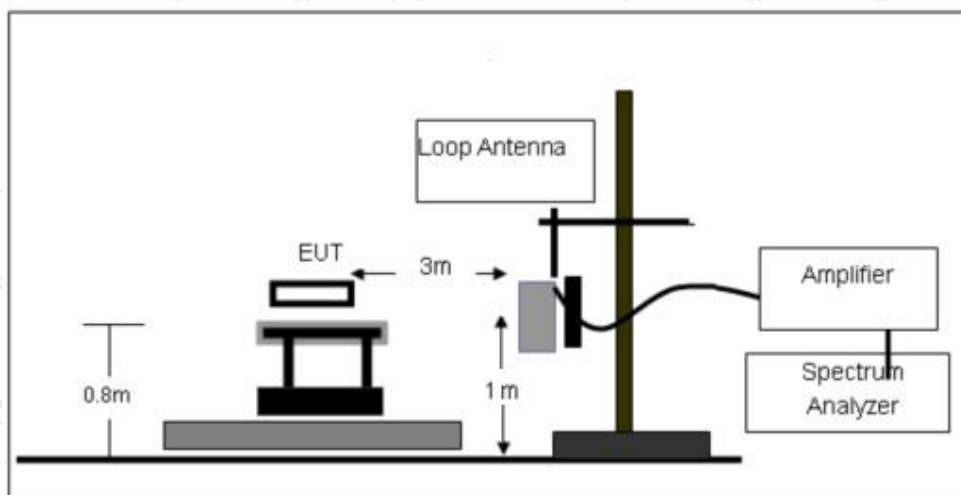
- Remark: 1. Emission level in  $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$ ;  
2. Measurement was performed at an antenna to the closed point of EUT distance of meters;  
3. Distance extrapolation factor  $= 40 \log (\text{Specific distance} / \text{test distance}) (\text{dB})$ ;  
4. Limit line = Specific limits ( $\text{dB}\mu\text{V}$ ) + distance extrapolation factor;  
5. Emission level in  $\text{dB}\mu\text{V/m} = (\text{dBm}) + 95.2$ .

## 4.2.3 MEASURING INSTRUMENTS

The Measuring equipment is listed in the section 3.5 of this test report.

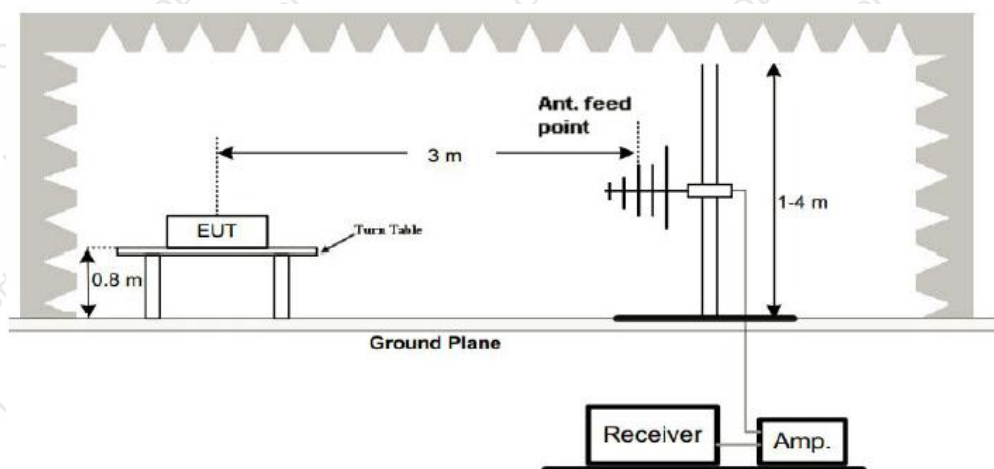
## 4.2.4 TEST CONFIGURATION

1. For radiated emissions below 30MHz

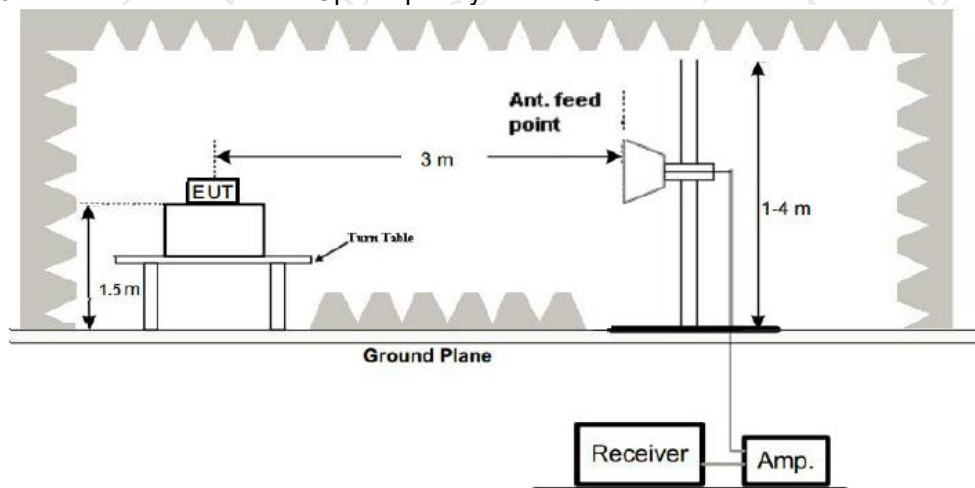




## 2. For radiated emissions from 30MHz to 1000MHz



## 3. Radiated Emission Test-Up Frequency Above 1GHz



## 4.2.5 TEST PROCEDURE

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT.

Use the following spectrum analyzer settings:

| Spectrum Parameter                    | Setting                                          |
|---------------------------------------|--------------------------------------------------|
| Attenuation                           | Auto                                             |
| Start Frequency                       | 1000 MHz                                         |
| Stop Frequency                        | 10th carrier harmonic                            |
| 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 |



- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item – EUT Test Photos.

Note:

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

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

| Frequency Band (MHz) | Function | Resolution Bandwidth | Video Bandwidth |
|----------------------|----------|----------------------|-----------------|
| 30 to 1000           | QP       | 120 kHz              | 300 kHz         |
| Above 1000           | Peak     | 1 MHz                | 1 MHz           |
|                      | Average  | 1 MHz                | 10 Hz           |

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where  $RBWCF [dB] = 10 \cdot \lg(100 [kHz]/\text{narrower RBW [kHz]})$ . , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

#### 4.2.6 RADIATED EMISSION TEST RESULT

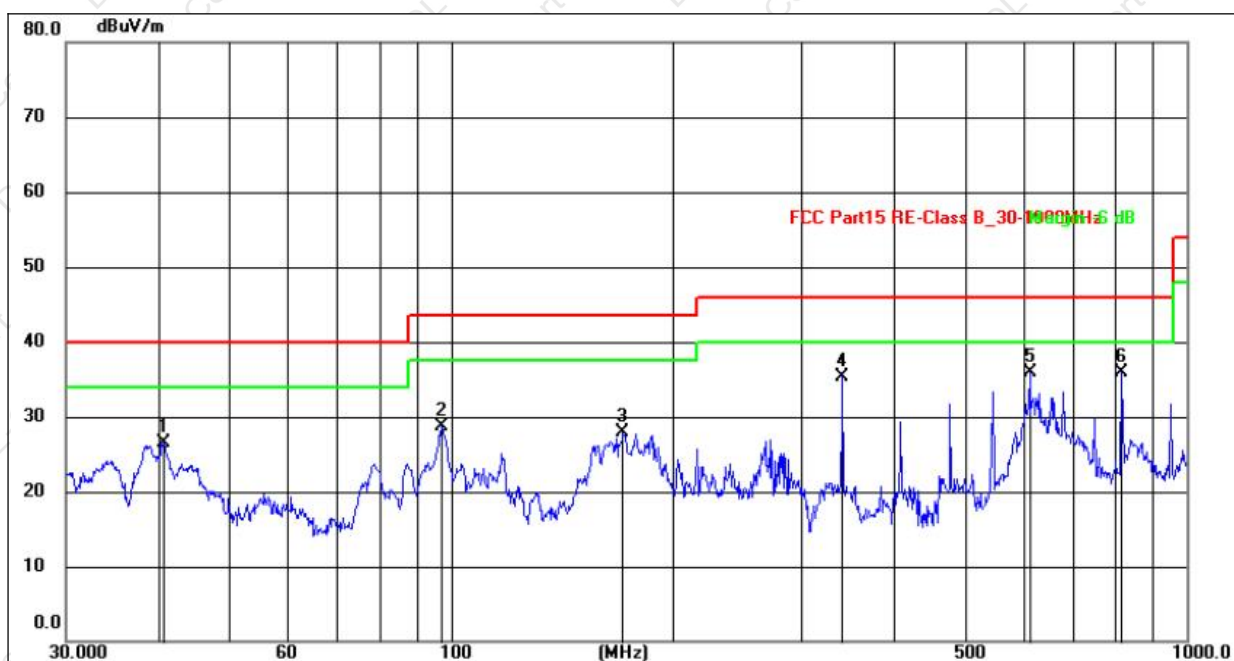
Between 9KHz – 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.



Between 30MHz – 1GHz:

|               |                                 |                    |                        |
|---------------|---------------------------------|--------------------|------------------------|
| Temperature:  | 26℃                             | Relative Humidity: | 54%                    |
| Pressure:     | 101 kPa                         | Polarization:      | Horizontal             |
| Test Voltage: | DC 5V From Adapter AC 120V/60Hz | Test Mode :        | TX 802.11n20 - 5180MHz |
| Test Band:    | 5.2G                            |                    |                        |



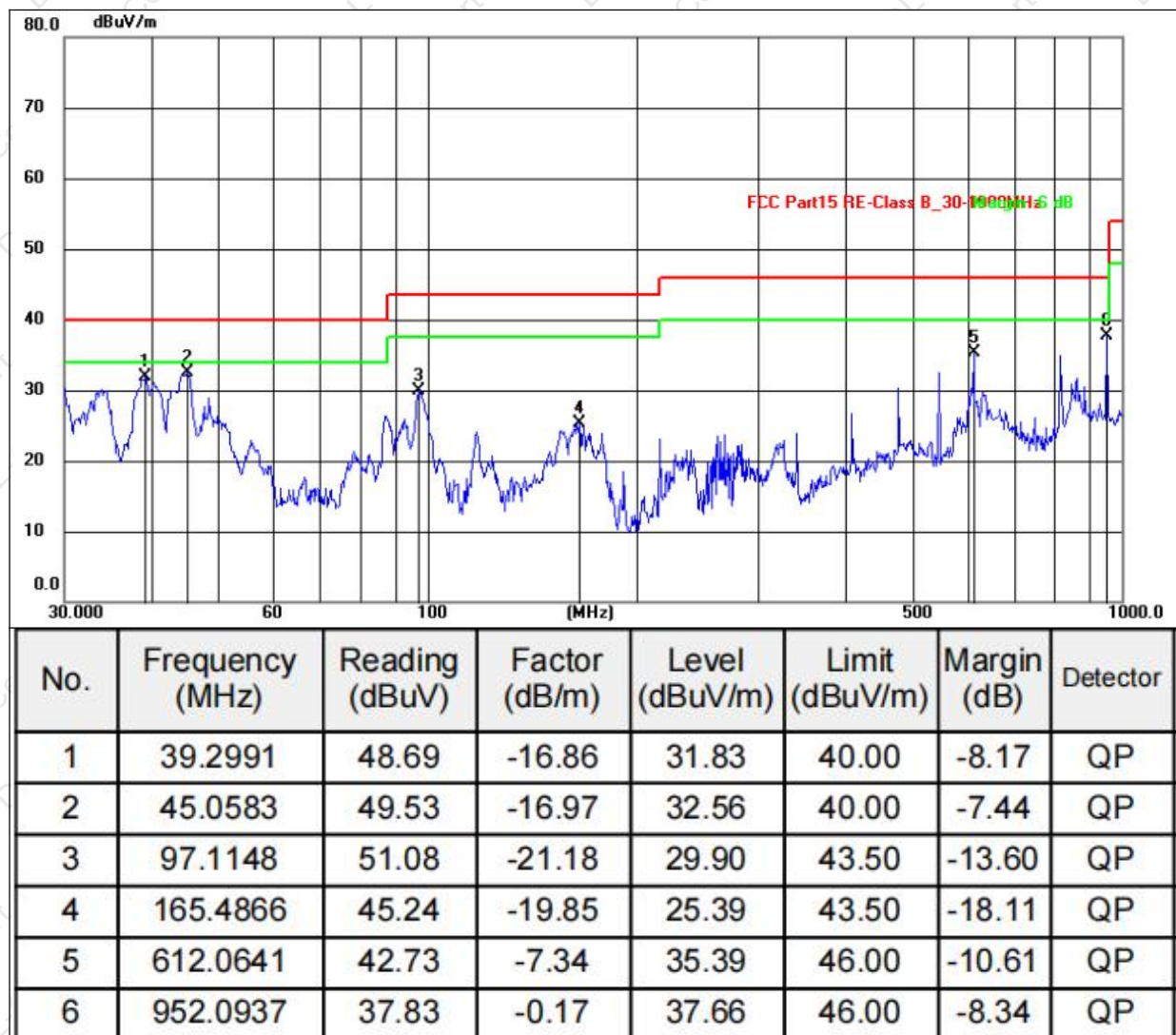
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 40.7014         | 40.50          | -14.03        | 26.47          | 40.00          | -13.53      | QP       |
| 2   | 97.1148         | 48.49          | -19.81        | 28.68          | 43.50          | -14.82      | QP       |
| 3   | 171.3925        | 44.78          | -16.89        | 27.89          | 43.50          | -15.61      | QP       |
| 4   | 340.7816        | 51.76          | -16.36        | 35.40          | 46.00          | -10.60      | QP       |
| 5   | 612.0641        | 44.11          | -8.15         | 35.96          | 46.00          | -10.04      | QP       |
| 6   | 815.9678        | 42.54          | -6.66         | 35.88          | 46.00          | -10.12      | QP       |

## Notes:

1. An initial pre-scan was performed on the peak detector.
2. Quasi - Peak measurement were performed at the frequencies with maximized peak emission.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Final Level = Reading level + Correct Factor.
5. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
6. Margin = Measurement Level-Limit.
7. The test data shows only the worst case TX 802.11n20 - 5180MHz.



|               |                                    |                    |                       |
|---------------|------------------------------------|--------------------|-----------------------|
| Temperature:  | 26°C                               | Relative Humidity: | 54%                   |
| Pressure:     | 101kPa                             | Polarization:      | Vertical              |
| Test Voltage: | DC 5V From Adapter AC<br>120V/60Hz | Test Mode :        | TX 802.11n20 -5180MHz |
| Test Band:    | 5.2G                               |                    |                       |

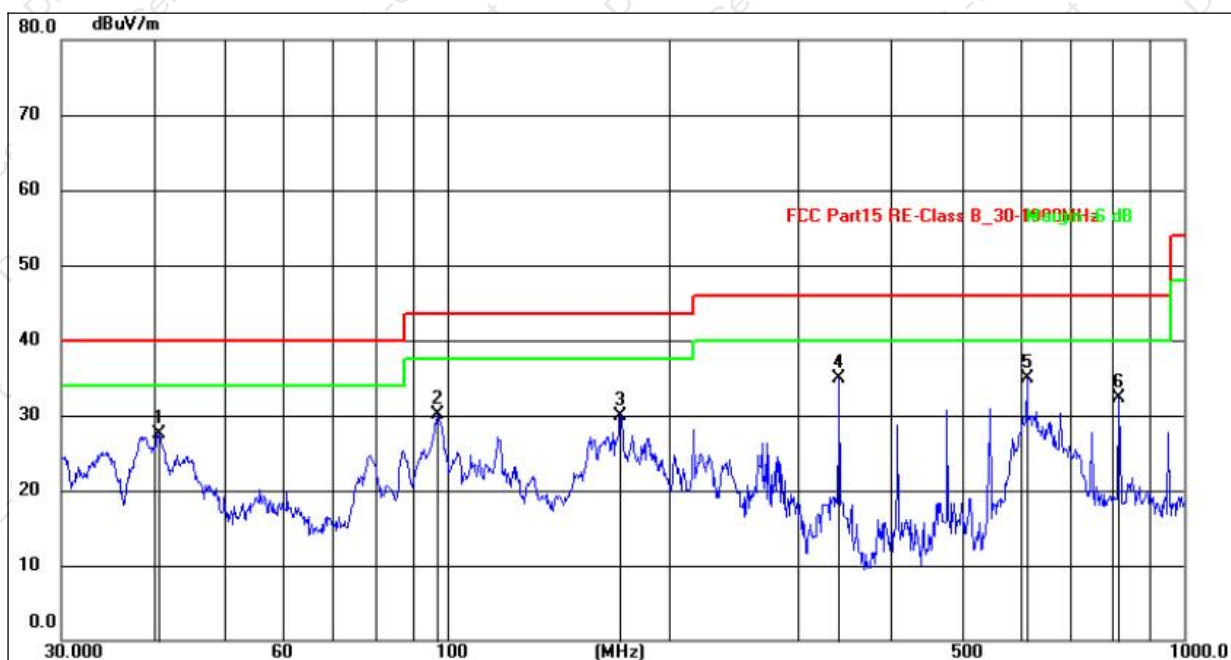


## Notes:

1. An initial pre-scan was performed on the peak detector.
2. Quasi - Peak measurement were performed at the frequencies with maximized peak emission.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Final Level = Reading level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss factor - Amplifier factor.
6. Margin = Measurement Level - Limit.
7. The test data shows only the worst case TX 802.11n20 - 5180MHz.



|               |                                    |                    |                        |
|---------------|------------------------------------|--------------------|------------------------|
| Temperature:  | 26°C                               | Relative Humidity: | 54%                    |
| Pressure:     | 101 kPa                            | Polarization:      | Horizontal             |
| Test Voltage: | DC 5V From Adapter AC<br>120V/60Hz | Test Mode :        | TX 802.11n20 - 5745MHz |
| Test Band:    | 5.8G                               |                    |                        |



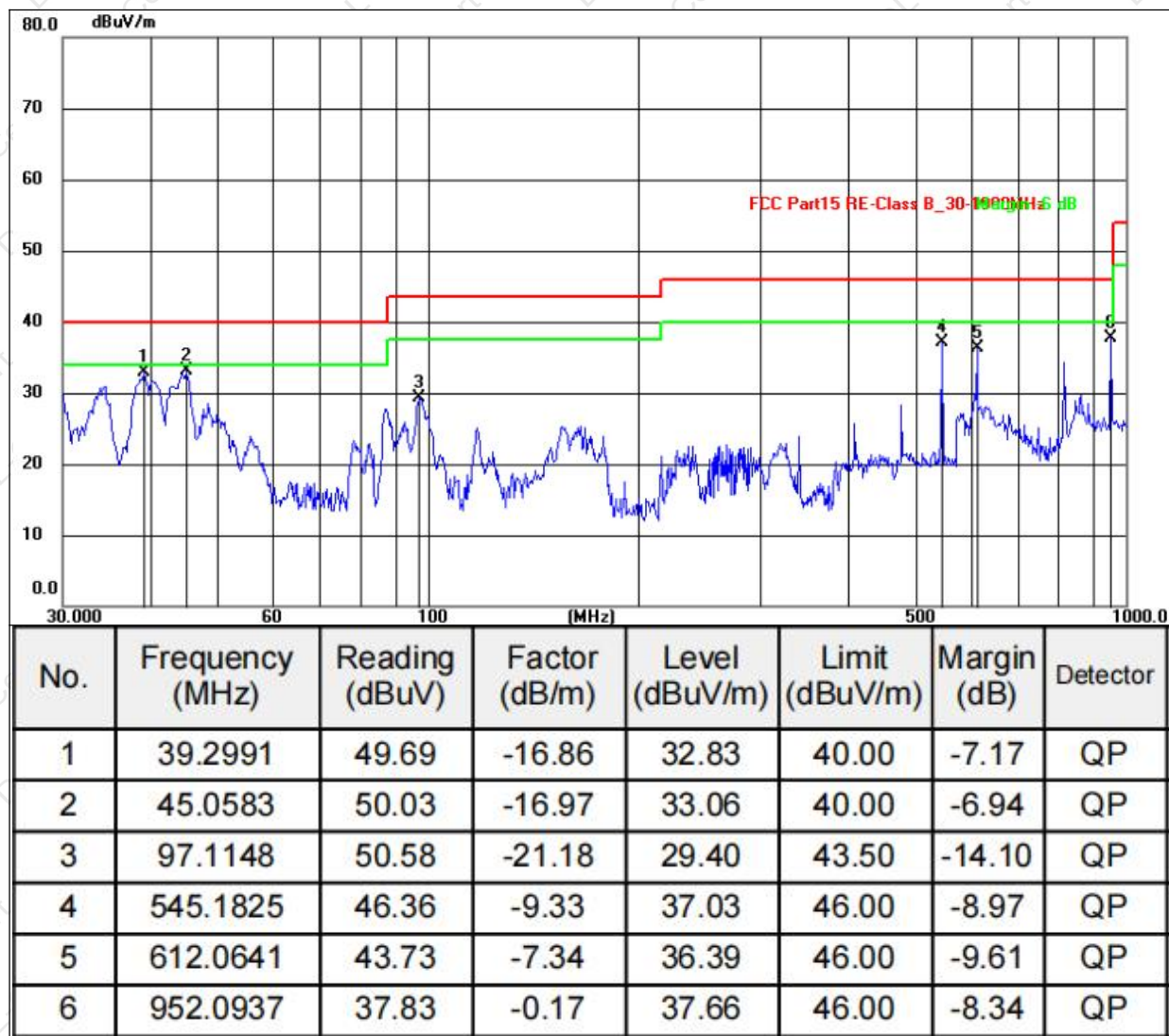
| No. | Frequency (MHz) | Reading (dBUV) | Factor (dB/m) | Level (dBUV/m) | Limit (dBUV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 40.7014         | 41.50          | -14.03        | 27.47          | 40.00          | -12.53      | QP       |
| 2   | 97.1148         | 49.99          | -19.81        | 30.18          | 43.50          | -13.32      | QP       |
| 3   | 171.9944        | 46.93          | -16.93        | 30.00          | 43.50          | -13.50      | QP       |
| 4   | 340.7816        | 51.26          | -16.36        | 34.90          | 46.00          | -11.10      | QP       |
| 5   | 612.0641        | 43.11          | -8.15         | 34.96          | 46.00          | -11.04      | QP       |
| 6   | 815.9678        | 39.04          | -6.66         | 32.38          | 46.00          | -13.62      | QP       |

## Notes:

1. An initial pre-scan was performed on the peak detector.
2. Quasi - Peak measurement were performed at the frequencies with maximized peak emission.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Final Level = Reading level + Correct Factor.
5. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
6. Margin = Measurement Level-Limit.
7. The test data shows only the worst case TX 802.11n20 - 5745MHz.



|               |                                    |                    |                        |
|---------------|------------------------------------|--------------------|------------------------|
| Temperature:  | 26℃                                | Relative Humidity: | 54%                    |
| Pressure:     | 101kPa                             | Polarization:      | Vertical               |
| Test Voltage: | DC 5V From Adapter AC<br>120V/60Hz | Test Mode :        | TX 802.11n20 - 5745MHz |
| Test Band:    | 5.8G                               |                    |                        |



## Notes:

1. An initial pre-scan was performed on the peak detector.
2. Quasi - Peak measurement were performed at the frequencies with maximized peak emission.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Final Level = Reading level + Correct Factor.
5. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
6. Margin = Measurement Level-Limit.
7. The test data shows only the worst case TX 802.11n20 - 5745MHz.



Between 1GHz – 40GHz:

|                                                                                                           |                               |                     |                                 |
|-----------------------------------------------------------------------------------------------------------|-------------------------------|---------------------|---------------------------------|
| Temperature :                                                                                             | 26°C                          | Relative Humidity : | 54%                             |
| Pressure :                                                                                                | 1010 hPa                      | Test Voltage :      | DC 5V From Adapter AC 120V/60Hz |
| Test Band :                                                                                               | 5.2G TX - 802.11a / n20 / n40 |                     |                                 |
| Note: All patterns have been tested, and only the worst test data recorded in this report is 802.11a/n20. |                               |                     |                                 |

802.11a

| Polar (H/V)         | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|---------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| Low Channel:5180MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                   | 10360.00        | 45.53                | 30.55              | 5.77            | 24.66               | 45.41                   | 68.20           | -22.79      | PK             |
| V                   | 10360.00        | 41.54                | 30.55              | 5.77            | 24.66               | 41.42                   | 54.00           | -12.58      | AV             |
| V                   | 15540.00        | 44.41                | 30.33              | 6.32            | 24.55               | 44.95                   | 74.00           | -29.05      | PK             |
| V                   | 15540.00        | 41.87                | 30.33              | 6.32            | 24.55               | 42.41                   | 54.00           | -11.59      | AV             |
| V                   | 20720.00        | 44.55                | 30.85              | 7.45            | 24.69               | 45.84                   | 74.00           | -28.16      | PK             |
| V                   | 20720.00        | 41.88                | 30.85              | 7.45            | 24.69               | 43.17                   | 54.00           | -10.83      | AV             |
| V                   | 25900.00        | 43.06                | 31.02              | 8.99            | 25.57               | 46.60                   | 68.20           | -21.60      | PK             |
| V                   | 25900.00        | 41.80                | 31.02              | 8.99            | 25.57               | 45.34                   | 54.00           | -8.66       | AV             |
| H                   | 10360.00        | 44.95                | 30.55              | 5.77            | 24.66               | 44.83                   | 68.20           | -23.37      | PK             |
| H                   | 10360.00        | 42.00                | 30.55              | 5.77            | 24.66               | 41.88                   | 54.00           | -12.12      | AV             |
| H                   | 15540.00        | 50.84                | 30.33              | 6.32            | 24.55               | 51.38                   | 74.00           | -22.62      | PK             |
| H                   | 15540.00        | 41.24                | 30.33              | 6.32            | 24.55               | 41.78                   | 54.00           | -12.22      | AV             |
| H                   | 20720.00        | 43.77                | 30.85              | 7.45            | 24.69               | 45.06                   | 74.00           | -28.94      | PK             |
| H                   | 20720.00        | 41.22                | 30.85              | 7.45            | 24.69               | 42.51                   | 54.00           | -11.49      | AV             |
| H                   | 25900.00        | 41.64                | 31.02              | 8.99            | 25.57               | 45.18                   | 68.20           | -23.02      | PK             |
| H                   | 25900.00        | 41.08                | 31.02              | 8.99            | 25.57               | 44.62                   | 54.00           | -9.38       | AV             |

| Polar (H/V)            | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|------------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| Middle Channel:5200MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                      | 10400.00        | 42.91                | 30.55              | 5.77            | 24.66               | 42.79                   | 68.20           | -25.41      | PK             |
| V                      | 10400.00        | 41.26                | 30.55              | 5.77            | 24.66               | 41.14                   | 54.00           | -12.86      | AV             |
| V                      | 15600.00        | 43.81                | 30.33              | 6.32            | 24.55               | 44.35                   | 74.00           | -29.65      | PK             |
| V                      | 15600.00        | 41.05                | 30.33              | 6.32            | 24.55               | 41.59                   | 54.00           | -12.41      | AV             |
| V                      | 20800.00        | 43.28                | 30.85              | 7.45            | 24.69               | 44.57                   | 74.00           | -29.43      | PK             |
| V                      | 20800.00        | 41.96                | 30.85              | 7.45            | 24.69               | 43.25                   | 54.00           | -10.75      | AV             |
| V                      | 26000.00        | 44.91                | 31.02              | 8.99            | 25.57               | 48.45                   | 68.20           | -19.75      | PK             |
| V                      | 26000.00        | 41.33                | 31.02              | 8.99            | 25.57               | 44.87                   | 54.00           | -9.13       | AV             |
| H                      | 10400.00        | 41.32                | 30.55              | 5.77            | 24.66               | 41.20                   | 68.20           | -27.00      | PK             |
| H                      | 10400.00        | 41.13                | 30.55              | 5.77            | 24.66               | 41.01                   | 54.00           | -12.99      | AV             |
| H                      | 15600.00        | 51.53                | 30.33              | 6.32            | 24.55               | 52.07                   | 74.00           | -21.93      | PK             |
| H                      | 15600.00        | 41.76                | 30.33              | 6.32            | 24.55               | 42.30                   | 54.00           | -11.70      | AV             |
| H                      | 20800.00        | 40.46                | 30.85              | 7.45            | 24.69               | 41.75                   | 74.00           | -32.25      | PK             |
| H                      | 20800.00        | 41.08                | 30.85              | 7.45            | 24.69               | 42.37                   | 54.00           | -11.63      | AV             |
| H                      | 26000.00        | 43.37                | 31.02              | 8.99            | 25.57               | 46.91                   | 68.20           | -21.29      | PK             |
| H                      | 26000.00        | 41.98                | 31.02              | 8.99            | 25.57               | 45.52                   | 54.00           | -8.48       | AV             |



| Polar<br>(H/V)       | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|----------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                      | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| High Channel:5240MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                    | 10480.00  | 45.99            | 30.55             | 5.77          | 24.66             | 45.87             | 68.20    | -22.33 | PK                   |
| V                    | 10480.00  | 41.77            | 30.55             | 5.77          | 24.66             | 41.65             | 54.00    | -12.35 | AV                   |
| V                    | 15720.00  | 42.31            | 30.33             | 6.32          | 24.55             | 42.85             | 74.00    | -31.15 | PK                   |
| V                    | 15720.00  | 41.87            | 30.33             | 6.32          | 24.55             | 42.41             | 54.00    | -11.59 | AV                   |
| V                    | 20960.00  | 44.07            | 30.85             | 7.45          | 24.69             | 45.36             | 74.00    | -28.64 | PK                   |
| V                    | 20960.00  | 41.72            | 30.85             | 7.45          | 24.69             | 43.01             | 54.00    | -10.99 | AV                   |
| V                    | 26200.00  | 40.28            | 31.02             | 8.99          | 25.57             | 43.82             | 68.20    | -24.38 | PK                   |
| V                    | 26200.00  | 41.34            | 31.02             | 8.99          | 25.57             | 44.88             | 54.00    | -9.12  | AV                   |
| H                    | 10480.00  | 44.82            | 30.55             | 5.77          | 24.66             | 44.70             | 68.20    | -23.50 | PK                   |
| H                    | 10480.00  | 41.61            | 30.55             | 5.77          | 24.66             | 41.49             | 54.00    | -12.51 | AV                   |
| H                    | 15720.00  | 54.51            | 30.33             | 6.32          | 24.55             | 55.05             | 74.00    | -18.95 | PK                   |
| H                    | 15720.00  | 41.20            | 30.33             | 6.32          | 24.55             | 41.74             | 54.00    | -12.26 | AV                   |
| H                    | 20960.00  | 41.24            | 30.85             | 7.45          | 24.69             | 42.53             | 74.00    | -31.47 | PK                   |
| H                    | 20960.00  | 41.45            | 30.85             | 7.45          | 24.69             | 42.74             | 54.00    | -11.26 | AV                   |
| H                    | 26200.00  | 41.75            | 31.02             | 8.99          | 25.57             | 45.29             | 68.20    | -22.91 | PK                   |
| H                    | 26200.00  | 41.25            | 31.02             | 8.99          | 25.57             | 44.79             | 54.00    | -9.21  | 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.



802.11n20

| Polar<br>(H/V)      | Frequency | Meter<br>Reading | Pre-ampl<br>ifier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|---------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                     | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| Low Channel:5180MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                   | 10360.00  | 44.33            | 30.55             | 5.77          | 24.66             | 44.21             | 68.20    | -23.99 | PK                   |
| V                   | 10360.00  | 31.03            | 30.55             | 5.77          | 24.66             | 30.91             | 54.00    | -23.09 | AV                   |
| V                   | 15540.00  | 49.28            | 30.33             | 6.32          | 24.55             | 49.82             | 74.00    | -24.18 | PK                   |
| V                   | 15540.00  | 37.25            | 30.33             | 6.32          | 24.55             | 37.79             | 54.00    | -16.21 | AV                   |
| V                   | 20720.00  | 50.99            | 30.85             | 7.45          | 24.69             | 52.28             | 74.00    | -21.72 | PK                   |
| V                   | 20720.00  | 38.73            | 30.85             | 7.45          | 24.69             | 40.02             | 54.00    | -13.98 | AV                   |
| V                   | 25900.00  | 52.13            | 31.02             | 8.99          | 25.57             | 55.67             | 68.20    | -12.53 | PK                   |
| V                   | 25900.00  | 38.16            | 31.02             | 8.99          | 25.57             | 41.70             | 54.00    | -12.30 | AV                   |
| H                   | 10360.00  | 53.11            | 30.55             | 5.77          | 24.66             | 52.99             | 68.20    | -15.21 | PK                   |
| H                   | 10360.00  | 40.50            | 30.55             | 5.77          | 24.66             | 40.38             | 54.00    | -13.62 | AV                   |
| H                   | 15540.00  | 43.88            | 30.33             | 6.32          | 24.55             | 44.42             | 74.00    | -29.58 | PK                   |
| H                   | 15540.00  | 31.60            | 30.33             | 6.32          | 24.55             | 32.14             | 54.00    | -21.86 | AV                   |
| H                   | 20720.00  | 48.87            | 30.85             | 7.45          | 24.69             | 50.16             | 74.00    | -23.84 | PK                   |
| H                   | 20720.00  | 39.16            | 30.85             | 7.45          | 24.69             | 40.45             | 54.00    | -13.55 | AV                   |
| H                   | 25900.00  | 50.98            | 31.02             | 8.99          | 25.57             | 54.52             | 68.20    | -13.68 | PK                   |
| H                   | 25900.00  | 40.65            | 31.02             | 8.99          | 25.57             | 44.19             | 54.00    | -9.81  | AV                   |

| Polar<br>(H/V)         | Frequency | Meter<br>Reading | Pre-ampl<br>ifier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|------------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                        | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| Middle Channel:5200MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                      | 10400.00  | 44.02            | 30.55             | 5.77          | 24.66             | 43.90             | 68.20    | -24.30 | PK                   |
| V                      | 10400.00  | 41.53            | 30.55             | 5.77          | 24.66             | 41.41             | 54.00    | -12.59 | AV                   |
| V                      | 15600.00  | 41.71            | 30.33             | 6.32          | 24.55             | 42.25             | 74.00    | -31.75 | PK                   |
| V                      | 15600.00  | 41.56            | 30.33             | 6.32          | 24.55             | 42.10             | 54.00    | -11.90 | AV                   |
| V                      | 20800.00  | 43.80            | 30.85             | 7.45          | 24.69             | 45.09             | 74.00    | -28.91 | PK                   |
| V                      | 20800.00  | 41.27            | 30.85             | 7.45          | 24.69             | 42.56             | 54.00    | -11.44 | AV                   |
| V                      | 26000.00  | 43.34            | 31.02             | 8.99          | 25.57             | 46.88             | 68.20    | -21.32 | PK                   |
| V                      | 26000.00  | 41.58            | 31.02             | 8.99          | 25.57             | 45.12             | 54.00    | -8.88  | AV                   |
| H                      | 10400.00  | 41.10            | 30.55             | 5.77          | 24.66             | 40.98             | 68.20    | -27.22 | PK                   |
| H                      | 10400.00  | 41.42            | 30.55             | 5.77          | 24.66             | 41.30             | 54.00    | -12.70 | AV                   |
| H                      | 15600.00  | 53.60            | 30.33             | 6.32          | 24.55             | 54.14             | 74.00    | -19.86 | PK                   |
| H                      | 15600.00  | 41.05            | 30.33             | 6.32          | 24.55             | 41.59             | 54.00    | -12.41 | AV                   |
| H                      | 20800.00  | 41.81            | 30.85             | 7.45          | 24.69             | 43.10             | 74.00    | -30.90 | PK                   |
| H                      | 20800.00  | 41.92            | 30.85             | 7.45          | 24.69             | 43.21             | 54.00    | -10.79 | AV                   |
| H                      | 26000.00  | 43.34            | 31.02             | 8.99          | 25.57             | 46.88             | 68.20    | -21.32 | PK                   |
| H                      | 26000.00  | 41.60            | 31.02             | 8.99          | 25.57             | 45.14             | 54.00    | -8.86  | AV                   |



| Polar (H/V)          | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|----------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| High Channel:5240MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                    | 10480.00        | 43.23                | 30.55              | 5.77            | 24.66               | 43.11                   | 68.20           | -25.09      | PK             |
| V                    | 10480.00        | 41.88                | 30.55              | 5.77            | 24.66               | 41.76                   | 54.00           | -12.24      | AV             |
| V                    | 15720.00        | 45.30                | 30.33              | 6.32            | 24.55               | 45.84                   | 74.00           | -28.16      | PK             |
| V                    | 15720.00        | 41.63                | 30.33              | 6.32            | 24.55               | 42.17                   | 54.00           | -11.83      | AV             |
| V                    | 20960.00        | 41.36                | 30.85              | 7.45            | 24.69               | 42.65                   | 74.00           | -31.35      | PK             |
| V                    | 20960.00        | 41.83                | 30.85              | 7.45            | 24.69               | 43.12                   | 54.00           | -10.88      | AV             |
| V                    | 26200.00        | 44.29                | 31.02              | 8.99            | 25.57               | 47.83                   | 68.20           | -20.37      | PK             |
| V                    | 26200.00        | 41.80                | 31.02              | 8.99            | 25.57               | 45.34                   | 54.00           | -8.66       | AV             |
| H                    | 10480.00        | 41.11                | 30.55              | 5.77            | 24.66               | 40.99                   | 68.20           | -27.21      | PK             |
| H                    | 10480.00        | 41.96                | 30.55              | 5.77            | 24.66               | 41.84                   | 54.00           | -12.16      | AV             |
| H                    | 15720.00        | 54.88                | 30.33              | 6.32            | 24.55               | 55.42                   | 74.00           | -18.58      | PK             |
| H                    | 15720.00        | 41.21                | 30.33              | 6.32            | 24.55               | 41.75                   | 54.00           | -12.25      | AV             |
| H                    | 20960.00        | 42.36                | 30.85              | 7.45            | 24.69               | 43.65                   | 74.00           | -30.35      | PK             |
| H                    | 20960.00        | 41.78                | 30.85              | 7.45            | 24.69               | 43.07                   | 54.00           | -10.93      | AV             |
| H                    | 26200.00        | 43.42                | 31.02              | 8.99            | 25.57               | 46.96                   | 68.20           | -21.24      | PK             |
| H                    | 26200.00        | 41.99                | 31.02              | 8.99            | 25.57               | 45.53                   | 54.00           | -8.47       | 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.



|                                                                                                           |                               |                     |                                 |
|-----------------------------------------------------------------------------------------------------------|-------------------------------|---------------------|---------------------------------|
| Temperature :                                                                                             | 26°C                          | Relative Humidity : | 54%                             |
| Pressure :                                                                                                | 1010 hPa                      | Test Voltage :      | DC 5V From Adapter AC 120V/60Hz |
| Test Band :                                                                                               | 5.8G TX - 802.11a / n20 / n40 |                     |                                 |
| Note: All patterns have been tested, and only the worst test data recorded in this report is 802.11a/n20. |                               |                     |                                 |

## 802.11a

| Polar (H/V)         | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|---------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| Low Channel:5745MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                   | 11490.00        | 46.97                | 30.55              | 5.77            | 24.66               | 46.85                   | 74.00           | -27.15      | PK             |
| V                   | 11490.00        | 41.39                | 30.55              | 5.77            | 24.66               | 41.27                   | 54.00           | -12.73      | AV             |
| V                   | 17235.00        | 43.74                | 30.33              | 6.32            | 24.55               | 44.28                   | 68.20           | -23.92      | PK             |
| V                   | 17235.00        | 41.27                | 30.33              | 6.32            | 24.55               | 41.81                   | 54.00           | -12.19      | AV             |
| V                   | 22980.00        | 45.43                | 30.85              | 7.45            | 24.69               | 46.72                   | 74.00           | -27.28      | PK             |
| V                   | 22980.00        | 41.10                | 30.85              | 7.45            | 24.69               | 42.39                   | 54.00           | -11.61      | AV             |
| V                   | 28725.00        | 51.77                | 31.02              | 8.99            | 25.57               | 55.31                   | 68.20           | -12.89      | PK             |
| V                   | 28725.00        | 41.23                | 31.02              | 8.99            | 25.57               | 44.77                   | 54.00           | -9.23       | AV             |
| H                   | 11490.00        | 46.63                | 30.55              | 5.77            | 24.66               | 46.51                   | 74.00           | -27.49      | PK             |
| H                   | 11490.00        | 41.31                | 30.55              | 5.77            | 24.66               | 41.19                   | 54.00           | -12.81      | AV             |
| H                   | 17235.00        | 45.66                | 30.33              | 6.32            | 24.55               | 46.20                   | 68.20           | -22.00      | PK             |
| H                   | 17235.00        | 41.83                | 30.33              | 6.32            | 24.55               | 42.37                   | 54.00           | -11.63      | AV             |
| H                   | 22980.00        | 43.65                | 30.85              | 7.45            | 24.69               | 44.94                   | 74.00           | -29.06      | PK             |
| H                   | 22980.00        | 41.21                | 30.85              | 7.45            | 24.69               | 42.50                   | 54.00           | -11.50      | AV             |
| H                   | 28725.00        | 41.58                | 31.02              | 8.99            | 25.57               | 45.12                   | 68.20           | -23.08      | PK             |
| H                   | 28725.00        | 41.00                | 31.02              | 8.99            | 25.57               | 44.54                   | 54.00           | -9.46       | AV             |

| Polar (H/V)            | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|------------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| Middle Channel:5785MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                      | 11570.00        | 42.45                | 30.55              | 5.77            | 24.66               | 42.33                   | 74.00           | -31.67      | PK             |
| V                      | 11570.00        | 41.94                | 30.55              | 5.77            | 24.66               | 41.82                   | 54.00           | -12.18      | AV             |
| V                      | 17355.00        | 45.06                | 30.33              | 6.32            | 24.55               | 45.60                   | 68.20           | -22.60      | PK             |
| V                      | 17355.00        | 41.77                | 30.33              | 6.32            | 24.55               | 42.31                   | 54.00           | -11.69      | AV             |
| V                      | 23140.00        | 46.92                | 30.85              | 7.45            | 24.69               | 48.21                   | 68.20           | -19.99      | PK             |
| V                      | 23140.00        | 41.21                | 30.85              | 7.45            | 24.69               | 42.50                   | 54.00           | -11.50      | AV             |
| V                      | 28925.00        | 54.42                | 31.02              | 8.99            | 25.57               | 57.96                   | 68.20           | -10.24      | PK             |
| V                      | 28925.00        | 41.35                | 31.02              | 8.99            | 25.57               | 44.89                   | 54.00           | -9.11       | AV             |
| H                      | 11570.00        | 43.66                | 30.55              | 5.77            | 24.66               | 43.54                   | 74.00           | -30.46      | PK             |
| H                      | 11570.00        | 41.89                | 30.55              | 5.77            | 24.66               | 41.77                   | 54.00           | -12.23      | AV             |
| H                      | 17355.00        | 47.80                | 30.33              | 6.32            | 24.55               | 48.34                   | 68.20           | -19.86      | PK             |
| H                      | 17355.00        | 41.02                | 30.33              | 6.32            | 24.55               | 41.56                   | 54.00           | -12.44      | AV             |
| H                      | 23140.00        | 42.55                | 30.85              | 7.45            | 24.69               | 43.84                   | 68.20           | -24.36      | PK             |
| H                      | 23140.00        | 41.05                | 30.85              | 7.45            | 24.69               | 42.34                   | 54.00           | -11.66      | AV             |
| H                      | 28925.00        | 42.02                | 31.02              | 8.99            | 25.57               | 45.56                   | 68.20           | -22.64      | PK             |
| H                      | 28925.00        | 41.22                | 31.02              | 8.99            | 25.57               | 44.76                   | 54.00           | -9.24       | AV             |



| Polar<br>(H/V)       | Frequency<br>(MHz) | Meter<br>Reading<br>(dBuV) | Pre-ampli<br>fier<br>(dB) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Detect<br>or<br>Type |
|----------------------|--------------------|----------------------------|---------------------------|-----------------------|---------------------------|-------------------------------|--------------------|----------------|----------------------|
| High Channel:5825MHz |                    |                            |                           |                       |                           |                               |                    |                |                      |
| V                    | 11650.00           | 44.03                      | 30.55                     | 5.77                  | 24.66                     | 43.91                         | 74.00              | -30.09         | PK                   |
| V                    | 11650.00           | 41.30                      | 30.55                     | 5.77                  | 24.66                     | 41.18                         | 54.00              | -12.82         | AV                   |
| V                    | 17475.00           | 44.41                      | 30.33                     | 6.32                  | 24.55                     | 44.95                         | 68.20              | -23.25         | PK                   |
| V                    | 17475.00           | 41.50                      | 30.33                     | 6.32                  | 24.55                     | 42.04                         | 54.00              | -11.96         | AV                   |
| V                    | 23300.00           | 43.14                      | 30.85                     | 7.45                  | 24.69                     | 44.43                         | 68.20              | -23.77         | PK                   |
| V                    | 23300.00           | 41.77                      | 30.85                     | 7.45                  | 24.69                     | 43.06                         | 54.00              | -10.94         | AV                   |
| V                    | 29125.00           | 52.55                      | 31.02                     | 8.99                  | 25.57                     | 56.09                         | 68.20              | -12.11         | PK                   |
| V                    | 29125.00           | 41.35                      | 31.02                     | 8.99                  | 25.57                     | 44.89                         | 54.00              | -9.11          | AV                   |
| H                    | 11650.00           | 46.88                      | 30.55                     | 5.77                  | 24.66                     | 46.76                         | 74.00              | -27.24         | PK                   |
| H                    | 11650.00           | 41.12                      | 30.55                     | 5.77                  | 24.66                     | 41.00                         | 54.00              | -13.00         | AV                   |
| H                    | 17475.00           | 48.00                      | 30.33                     | 6.32                  | 24.55                     | 48.54                         | 68.20              | -19.66         | PK                   |
| H                    | 17475.00           | 41.40                      | 30.33                     | 6.32                  | 24.55                     | 41.94                         | 54.00              | -12.06         | AV                   |
| H                    | 23300.00           | 45.92                      | 30.85                     | 7.45                  | 24.69                     | 47.21                         | 68.20              | -20.99         | PK                   |
| H                    | 23300.00           | 41.15                      | 30.85                     | 7.45                  | 24.69                     | 42.44                         | 54.00              | -11.56         | AV                   |
| H                    | 29125.00           | 40.83                      | 31.02                     | 8.99                  | 25.57                     | 44.37                         | 68.20              | -23.83         | PK                   |
| H                    | 29125.00           | 41.20                      | 31.02                     | 8.99                  | 25.57                     | 44.74                         | 54.00              | -9.26          | 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.



## 802.11n20

| Polar<br>(H/V)      | Frequency<br>(MHz) | Meter<br>Reading<br>(dBuV) | Pre-ampl<br>ifier<br>(dB) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Detect<br>or<br>Type |
|---------------------|--------------------|----------------------------|---------------------------|-----------------------|---------------------------|-------------------------------|--------------------|----------------|----------------------|
| Low Channel:5745MHz |                    |                            |                           |                       |                           |                               |                    |                |                      |
| V                   | 11490.00           | 46.47                      | 30.55                     | 5.77                  | 24.66                     | 46.35                         | 74.00              | -27.65         | PK                   |
| V                   | 11490.00           | 41.92                      | 30.55                     | 5.77                  | 24.66                     | 41.80                         | 54.00              | -12.20         | AV                   |
| V                   | 17235.00           | 42.95                      | 30.33                     | 6.32                  | 24.55                     | 43.49                         | 68.20              | -24.71         | PK                   |
| V                   | 17235.00           | 41.94                      | 30.33                     | 6.32                  | 24.55                     | 42.48                         | 54.00              | -11.52         | AV                   |
| V                   | 22980.00           | 46.16                      | 30.85                     | 7.45                  | 24.69                     | 47.45                         | 74.00              | -26.55         | PK                   |
| V                   | 22980.00           | 41.75                      | 30.85                     | 7.45                  | 24.69                     | 43.04                         | 54.00              | -10.96         | AV                   |
| V                   | 28725.00           | 53.03                      | 31.02                     | 8.99                  | 25.57                     | 56.57                         | 68.20              | -11.63         | PK                   |
| V                   | 28725.00           | 41.85                      | 31.02                     | 8.99                  | 25.57                     | 45.39                         | 54.00              | -8.61          | AV                   |
| H                   | 11490.00           | 45.79                      | 30.55                     | 5.77                  | 24.66                     | 45.67                         | 74.00              | -28.33         | PK                   |
| H                   | 11490.00           | 41.51                      | 30.55                     | 5.77                  | 24.66                     | 41.39                         | 54.00              | -12.61         | AV                   |
| H                   | 17235.00           | 47.24                      | 30.33                     | 6.32                  | 24.55                     | 47.78                         | 68.20              | -20.42         | PK                   |
| H                   | 17235.00           | 41.55                      | 30.33                     | 6.32                  | 24.55                     | 42.09                         | 54.00              | -11.91         | AV                   |
| H                   | 22980.00           | 45.34                      | 30.85                     | 7.45                  | 24.69                     | 46.63                         | 74.00              | -27.37         | PK                   |
| H                   | 22980.00           | 41.18                      | 30.85                     | 7.45                  | 24.69                     | 42.47                         | 54.00              | -11.53         | AV                   |
| H                   | 28725.00           | 42.96                      | 31.02                     | 8.99                  | 25.57                     | 46.50                         | 68.20              | -21.70         | PK                   |
| H                   | 28725.00           | 41.58                      | 31.02                     | 8.99                  | 25.57                     | 45.12                         | 54.00              | -8.88          | AV                   |

| Polar<br>(H/V)         | Frequency<br>(MHz) | Meter<br>Reading<br>(dBuV) | Pre-ampl<br>ifier<br>(dB) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Detect<br>or<br>Type |
|------------------------|--------------------|----------------------------|---------------------------|-----------------------|---------------------------|-------------------------------|--------------------|----------------|----------------------|
| Middle Channel:5785MHz |                    |                            |                           |                       |                           |                               |                    |                |                      |
| V                      | 11570.00           | 43.21                      | 30.55                     | 5.77                  | 24.66                     | 43.09                         | 74.00              | -30.91         | PK                   |
| V                      | 11570.00           | 41.14                      | 30.55                     | 5.77                  | 24.66                     | 41.02                         | 54.00              | -12.98         | AV                   |
| V                      | 17355.00           | 43.01                      | 30.33                     | 6.32                  | 24.55                     | 43.55                         | 68.20              | -24.65         | PK                   |
| V                      | 17355.00           | 41.68                      | 30.33                     | 6.32                  | 24.55                     | 42.22                         | 54.00              | -11.78         | AV                   |
| V                      | 23140.00           | 45.01                      | 30.85                     | 7.45                  | 24.69                     | 46.30                         | 68.20              | -21.90         | PK                   |
| V                      | 23140.00           | 41.70                      | 30.85                     | 7.45                  | 24.69                     | 42.99                         | 54.00              | -11.01         | AV                   |
| V                      | 28925.00           | 50.37                      | 31.02                     | 8.99                  | 25.57                     | 53.91                         | 68.20              | -14.29         | PK                   |
| V                      | 28925.00           | 41.08                      | 31.02                     | 8.99                  | 25.57                     | 44.62                         | 54.00              | -9.38          | AV                   |
| H                      | 11570.00           | 45.03                      | 30.55                     | 5.77                  | 24.66                     | 44.91                         | 74.00              | -29.09         | PK                   |
| H                      | 11570.00           | 41.85                      | 30.55                     | 5.77                  | 24.66                     | 41.73                         | 54.00              | -12.27         | AV                   |
| H                      | 17355.00           | 44.52                      | 30.33                     | 6.32                  | 24.55                     | 45.06                         | 68.20              | -23.14         | PK                   |
| H                      | 17355.00           | 41.60                      | 30.33                     | 6.32                  | 24.55                     | 42.14                         | 54.00              | -11.86         | AV                   |
| H                      | 23140.00           | 45.07                      | 30.85                     | 7.45                  | 24.69                     | 46.36                         | 68.20              | -21.84         | PK                   |
| H                      | 23140.00           | 41.59                      | 30.85                     | 7.45                  | 24.69                     | 42.88                         | 54.00              | -11.12         | AV                   |
| H                      | 28925.00           | 41.15                      | 31.02                     | 8.99                  | 25.57                     | 44.69                         | 68.20              | -23.51         | PK                   |
| H                      | 28925.00           | 41.78                      | 31.02                     | 8.99                  | 25.57                     | 45.32                         | 54.00              | -8.68          | AV                   |



| Polar<br>(H/V)       | Frequency<br>(MHz) | Meter<br>Reading<br>(dBuV) | Pre-ampli<br>fier<br>(dB) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Detect<br>or<br>Type |
|----------------------|--------------------|----------------------------|---------------------------|-----------------------|---------------------------|-------------------------------|--------------------|----------------|----------------------|
| High Channel:5825MHz |                    |                            |                           |                       |                           |                               |                    |                |                      |
| V                    | 11650.00           | 43.41                      | 30.55                     | 5.77                  | 24.66                     | 43.29                         | 74.00              | -30.71         | PK                   |
| V                    | 11650.00           | 41.51                      | 30.55                     | 5.77                  | 24.66                     | 41.39                         | 54.00              | -12.61         | AV                   |
| V                    | 17475.00           | 43.93                      | 30.33                     | 6.32                  | 24.55                     | 44.47                         | 68.20              | -23.73         | PK                   |
| V                    | 17475.00           | 41.64                      | 30.33                     | 6.32                  | 24.55                     | 42.18                         | 54.00              | -11.82         | AV                   |
| V                    | 23300.00           | 47.26                      | 30.85                     | 7.45                  | 24.69                     | 48.55                         | 68.20              | -19.65         | PK                   |
| V                    | 23300.00           | 41.01                      | 30.85                     | 7.45                  | 24.69                     | 42.30                         | 54.00              | -11.70         | AV                   |
| V                    | 29125.00           | 53.73                      | 31.02                     | 8.99                  | 25.57                     | 57.27                         | 68.20              | -10.93         | PK                   |
| V                    | 29125.00           | 41.62                      | 31.02                     | 8.99                  | 25.57                     | 45.16                         | 54.00              | -8.84          | AV                   |
| H                    | 11650.00           | 44.24                      | 30.55                     | 5.77                  | 24.66                     | 44.12                         | 74.00              | -29.88         | PK                   |
| H                    | 11650.00           | 41.01                      | 30.55                     | 5.77                  | 24.66                     | 40.89                         | 54.00              | -13.11         | AV                   |
| H                    | 17475.00           | 44.23                      | 30.33                     | 6.32                  | 24.55                     | 44.77                         | 68.20              | -23.43         | PK                   |
| H                    | 17475.00           | 41.51                      | 30.33                     | 6.32                  | 24.55                     | 42.05                         | 54.00              | -11.95         | AV                   |
| H                    | 23300.00           | 46.03                      | 30.85                     | 7.45                  | 24.69                     | 47.32                         | 68.20              | -20.88         | PK                   |
| H                    | 23300.00           | 41.20                      | 30.85                     | 7.45                  | 24.69                     | 42.49                         | 54.00              | -11.51         | AV                   |
| H                    | 29125.00           | 41.69                      | 31.02                     | 8.99                  | 25.57                     | 45.23                         | 68.20              | -22.97         | PK                   |
| H                    | 29125.00           | 41.06                      | 31.02                     | 8.99                  | 25.57                     | 44.60                         | 54.00              | -9.40          | 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.



## 4.2.7 RADIATED BAND EDGE TEST RESULT

|                                                                                                           |                               |                     |                                 |
|-----------------------------------------------------------------------------------------------------------|-------------------------------|---------------------|---------------------------------|
| Temperature :                                                                                             | 26℃                           | Relative Humidity : | 54%                             |
| Pressure :                                                                                                | 1010 hPa                      | Test Voltage :      | DC 5V From Adapter AC 120V/60Hz |
| Test Band :                                                                                               | 5.2G TX - 802.11a / n20 / n40 |                     |                                 |
| Note: All patterns have been tested, and only the worst test data recorded in this report is 802.11a/n20. |                               |                     |                                 |

## 802.11a

| Polar (H/V)         | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|---------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| Low Channel:5180MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                   | 4500.00         | 43.30                | 30.45              | 8.77            | 38.66               | 60.28                   | 74.00           | -13.72      | PK             |
| V                   | 4500.00         | 30.83                | 30.45              | 8.77            | 38.66               | 47.81                   | 54.00           | -6.19       | AV             |
| V                   | 5100.00         | 41.76                | 30.45              | 8.77            | 38.66               | 58.74                   | 74.00           | -15.26      | PK             |
| V                   | 5100.00         | 30.65                | 30.45              | 8.77            | 38.66               | 47.63                   | 54.00           | -6.37       | AV             |
| V                   | 5150.00         | 47.44                | 30.45              | 8.77            | 38.66               | 64.42                   | 74.00           | -9.58       | PK             |
| V                   | 5150.00         | 30.92                | 30.45              | 8.77            | 38.66               | 47.90                   | 54.00           | -6.10       | AV             |
| H                   | 4500.00         | 53.76                | 30.45              | 8.77            | 38.66               | 70.74                   | 74.00           | -3.26       | PK             |
| H                   | 4500.00         | 30.09                | 30.45              | 8.77            | 38.66               | 47.07                   | 54.00           | -6.93       | AV             |
| H                   | 5100.00         | 42.84                | 30.45              | 8.77            | 38.66               | 59.82                   | 74.00           | -14.18      | PK             |
| H                   | 5100.00         | 30.85                | 30.45              | 8.77            | 38.66               | 47.83                   | 54.00           | -6.17       | AV             |
| H                   | 5150.00         | 46.50                | 30.45              | 8.77            | 38.66               | 63.48                   | 74.00           | -10.52      | PK             |
| H                   | 5150.00         | 30.30                | 30.45              | 8.77            | 38.66               | 47.28                   | 54.00           | -6.72       | PK             |

| Polar (H/V)          | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|----------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| High Channel:5240MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                    | 5350.00         | 46.85                | 30.45              | 8.77            | 38.66               | 63.83                   | 74.00           | -10.17      | PK             |
| V                    | 5350.00         | 30.84                | 30.45              | 8.77            | 38.66               | 47.82                   | 54.00           | -6.18       | AV             |
| V                    | 5400.00         | 45.06                | 30.45              | 8.77            | 38.66               | 62.04                   | 74.00           | -11.96      | PK             |
| V                    | 5400.00         | 30.57                | 30.45              | 8.77            | 38.66               | 47.55                   | 54.00           | -6.45       | AV             |
| V                    | 5460.00         | 46.72                | 30.45              | 8.77            | 38.66               | 63.70                   | 74.00           | -10.30      | PK             |
| V                    | 5460.00         | 30.36                | 30.45              | 8.77            | 38.66               | 47.34                   | 54.00           | -6.66       | AV             |
| H                    | 5350.00         | 53.11                | 30.45              | 8.77            | 38.66               | 70.09                   | 74.00           | -3.91       | PK             |
| H                    | 5350.00         | 30.77                | 30.45              | 8.77            | 38.66               | 47.75                   | 54.00           | -6.25       | AV             |
| H                    | 5400.00         | 42.27                | 30.45              | 8.77            | 38.66               | 59.25                   | 74.00           | -14.75      | PK             |
| H                    | 5400.00         | 30.55                | 30.45              | 8.77            | 38.66               | 47.53                   | 54.00           | -6.47       | AV             |
| H                    | 5460.00         | 45.32                | 30.45              | 8.77            | 38.66               | 62.30                   | 74.00           | -11.70      | PK             |
| H                    | 5460.00         | 30.27                | 30.45              | 8.77            | 38.66               | 47.25                   | 54.00           | -6.75       | 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.



## 802.11n20

| Polar<br>(H/V)      | Frequency | Meter<br>Reading | Pre-ampl<br>ifier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|---------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                     | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| Low Channel:5180MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                   | 4500.00   | 42.31            | 30.45             | 8.77          | 38.66             | 59.29             | 74.00    | -14.71 | PK                   |
| V                   | 4500.00   | 30.80            | 30.45             | 8.77          | 38.66             | 47.78             | 54.00    | -6.22  | AV                   |
| V                   | 5100.00   | 45.42            | 30.45             | 8.77          | 38.66             | 62.40             | 74.00    | -11.60 | PK                   |
| V                   | 5100.00   | 30.32            | 30.45             | 8.77          | 38.66             | 47.30             | 54.00    | -6.70  | AV                   |
| V                   | 5150.00   | 45.35            | 30.45             | 8.77          | 38.66             | 62.33             | 74.00    | -11.67 | PK                   |
| V                   | 5150.00   | 30.92            | 30.45             | 8.77          | 38.66             | 47.90             | 54.00    | -6.10  | AV                   |
| H                   | 4500.00   | 52.24            | 30.45             | 8.77          | 38.66             | 69.22             | 74.00    | -4.78  | PK                   |
| H                   | 4500.00   | 30.76            | 30.45             | 8.77          | 38.66             | 47.74             | 54.00    | -6.26  | AV                   |
| H                   | 5100.00   | 44.89            | 30.45             | 8.77          | 38.66             | 61.87             | 74.00    | -12.13 | PK                   |
| H                   | 5100.00   | 30.51            | 30.45             | 8.77          | 38.66             | 47.49             | 54.00    | -6.51  | AV                   |
| H                   | 5150.00   | 48.39            | 30.45             | 8.77          | 38.66             | 65.37             | 74.00    | -8.63  | PK                   |
| H                   | 5150.00   | 30.29            | 30.45             | 8.77          | 38.66             | 47.27             | 54.00    | -6.73  | PK                   |

| Polar<br>(H/V)       | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|----------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                      | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| High Channel:5240MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                    | 5350.00   | 43.13            | 30.45             | 8.77          | 38.66             | 60.11             | 74.00    | -13.89 | PK                   |
| V                    | 5350.00   | 30.94            | 30.45             | 8.77          | 38.66             | 47.92             | 54.00    | -6.08  | AV                   |
| V                    | 5400.00   | 44.79            | 30.45             | 8.77          | 38.66             | 61.77             | 74.00    | -12.23 | PK                   |
| V                    | 5400.00   | 30.08            | 30.45             | 8.77          | 38.66             | 47.06             | 54.00    | -6.94  | AV                   |
| V                    | 5460.00   | 45.81            | 30.45             | 8.77          | 38.66             | 62.79             | 74.00    | -11.21 | PK                   |
| V                    | 5460.00   | 30.25            | 30.45             | 8.77          | 38.66             | 47.23             | 54.00    | -6.77  | AV                   |
| H                    | 5350.00   | 51.18            | 30.45             | 8.77          | 38.66             | 68.16             | 74.00    | -5.84  | PK                   |
| H                    | 5350.00   | 30.97            | 30.45             | 8.77          | 38.66             | 47.95             | 54.00    | -6.05  | AV                   |
| H                    | 5400.00   | 45.87            | 30.45             | 8.77          | 38.66             | 62.85             | 74.00    | -11.15 | PK                   |
| H                    | 5400.00   | 30.21            | 30.45             | 8.77          | 38.66             | 47.19             | 54.00    | -6.81  | AV                   |
| H                    | 5460.00   | 48.30            | 30.45             | 8.77          | 38.66             | 65.28             | 74.00    | -8.72  | PK                   |
| H                    | 5460.00   | 30.66            | 30.45             | 8.77          | 38.66             | 47.64             | 54.00    | -6.36  | 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.



|                                                                                                           |                               |                     |                                 |
|-----------------------------------------------------------------------------------------------------------|-------------------------------|---------------------|---------------------------------|
| Temperature :                                                                                             | 26℃                           | Relative Humidity : | 54%                             |
| Pressure :                                                                                                | 1010 hPa                      | Test Voltage :      | DC 5V From Adapter AC 120V/60Hz |
| Test Band :                                                                                               | 5.8G TX - 802.11a / n20 / n40 |                     |                                 |
| Note: All patterns have been tested, and only the worst test data recorded in this report is 802.11a/n20. |                               |                     |                                 |

## 802.11a

| Polar<br>(H/V)      | Frequency | Meter<br>Reading | Pre-ampl<br>ifier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|---------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                     | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| Low Channel:5745MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                   | 5700.00   | 69.61            | 30.45             | 8.77          | 38.66             | 86.59             | 110.80   | -24.21 | PK                   |
| V                   | 5700.00   | 30.86            | 30.45             | 8.77          | 38.66             | 47.84             | 54.00    | -6.16  | AV                   |
| V                   | 5725.00   | 69.53            | 30.45             | 8.77          | 38.66             | 86.51             | 122.20   | -35.69 | PK                   |
| V                   | 5725.00   | 30.87            | 30.45             | 8.77          | 38.66             | 47.85             | 54.00    | -6.15  | AV                   |
| H                   | 5700.00   | 65.97            | 30.45             | 8.77          | 38.66             | 82.95             | 110.80   | -27.85 | PK                   |
| H                   | 5700.00   | 30.02            | 30.45             | 8.77          | 38.66             | 47.00             | 54.00    | -7.00  | AV                   |
| H                   | 5725.00   | 69.05            | 30.45             | 8.77          | 38.66             | 86.03             | 122.20   | -36.17 | PK                   |
| H                   | 5725.00   | 30.78            | 30.45             | 8.77          | 38.66             | 47.76             | 54.00    | -6.24  | AV                   |

| Polar<br>(H/V)       | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|----------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                      | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| High Channel:5825MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                    | 5850.00   | 66.89            | 30.45             | 8.77          | 38.66             | 83.87             | 122.20   | -38.33 | PK                   |
| V                    | 5850.00   | 30.22            | 30.45             | 8.77          | 38.66             | 47.20             | 54.00    | -6.80  | AV                   |
| V                    | 5875.00   | 67.50            | 30.45             | 8.77          | 38.66             | 84.48             | 110.80   | -26.32 | PK                   |
| V                    | 5875.00   | 30.03            | 30.45             | 8.77          | 38.66             | 47.01             | 54.00    | -6.99  | AV                   |
| H                    | 5850.00   | 67.34            | 30.45             | 8.77          | 38.66             | 84.32             | 122.20   | -37.88 | PK                   |
| H                    | 5850.00   | 30.51            | 30.45             | 8.77          | 38.66             | 47.49             | 54.00    | -6.51  | AV                   |
| H                    | 5875.00   | 66.09            | 30.45             | 8.77          | 38.66             | 83.07             | 110.80   | -27.73 | PK                   |
| H                    | 5875.00   | 30.46            | 30.45             | 8.77          | 38.66             | 47.44             | 54.00    | -6.56  | 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.



## 802.11n20

| Polar<br>(H/V)      | Frequency | Meter<br>Reading | Pre-ampl<br>ifier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|---------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                     | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| Low Channel:5745MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                   | 5700.00   | 67.86            | 30.45             | 8.77          | 38.66             | 84.84             | 110.80   | -25.96 | PK                   |
| V                   | 5700.00   | 30.06            | 30.45             | 8.77          | 38.66             | 47.04             | 54.00    | -6.96  | AV                   |
| V                   | 5725.00   | 67.69            | 30.45             | 8.77          | 38.66             | 84.67             | 122.20   | -37.53 | PK                   |
| V                   | 5725.00   | 30.33            | 30.45             | 8.77          | 38.66             | 47.31             | 54.00    | -6.69  | AV                   |
| H                   | 5700.00   | 69.67            | 30.45             | 8.77          | 38.66             | 86.65             | 110.80   | -24.15 | PK                   |
| H                   | 5700.00   | 30.94            | 30.45             | 8.77          | 38.66             | 47.92             | 54.00    | -6.08  | AV                   |
| H                   | 5725.00   | 69.91            | 30.45             | 8.77          | 38.66             | 86.89             | 122.20   | -35.31 | PK                   |
| H                   | 5725.00   | 30.66            | 30.45             | 8.77          | 38.66             | 47.64             | 54.00    | -6.36  | AV                   |

| Polar<br>(H/V)       | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detect<br>or<br>Type |
|----------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|----------------------|
|                      | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                      |
| High Channel:5825MHz |           |                  |                   |               |                   |                   |          |        |                      |
| V                    | 5850.00   | 66.05            | 30.45             | 8.77          | 38.66             | 83.03             | 122.20   | -39.17 | PK                   |
| V                    | 5850.00   | 30.45            | 30.45             | 8.77          | 38.66             | 47.43             | 54.00    | -6.57  | AV                   |
| V                    | 5875.00   | 66.74            | 30.45             | 8.77          | 38.66             | 83.72             | 110.80   | -27.08 | PK                   |
| V                    | 5875.00   | 30.20            | 30.45             | 8.77          | 38.66             | 47.18             | 54.00    | -6.82  | AV                   |
| H                    | 5850.00   | 69.56            | 30.45             | 8.77          | 38.66             | 86.54             | 122.20   | -35.66 | PK                   |
| H                    | 5850.00   | 30.13            | 30.45             | 8.77          | 38.66             | 47.11             | 54.00    | -6.89  | AV                   |
| H                    | 5875.00   | 66.41            | 30.45             | 8.77          | 38.66             | 83.39             | 110.80   | -27.41 | PK                   |
| H                    | 5875.00   | 30.10            | 30.45             | 8.77          | 38.66             | 47.08             | 54.00    | -6.92  | 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.



## 5. POWER SPECTRAL DENSITY TEST

### 5.1 APPLIED PROCEDURES / LIMIT

According to FCC §15.407(a) (1) Power limits:

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

According to FCC §15.407(a) (3) Power limits:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.



## 5.2 TEST PROCEDURE

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth ( $< 1$  MHz, or  $< 500$  kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

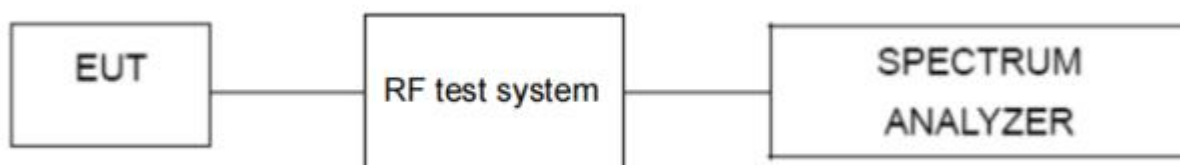
- Set  $RBW \geq 1/T$ , where T is defined in section II.B.I.a).
- Set  $VBW \geq 3$  RBW.
- If measurement bandwidth of Maximum PSD is specified in 500 kHz, add  $10\log(500\text{kHz}/RBW)$  to the measured result, whereas RBW ( $< 500$  kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- If measurement bandwidth of Maximum PSD is specified in 1 MHz, add  $10\log(1\text{MHz}/RBW)$  to the measured result, whereas RBW ( $< 1$  MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since RBW=100 kHz is available on nearly all spectrum analyzers.

## 5.3 DEVIATION FROM STANDARD

No deviation.

## 5.4 TEST SETUP



## 5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



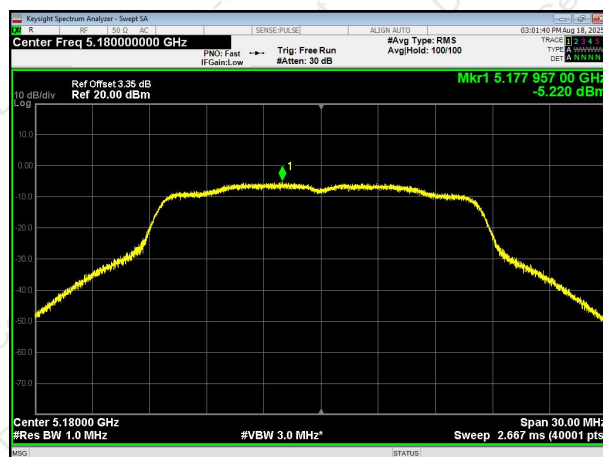
## 5.6 TEST RESULTS

|               |          |                     |       |
|---------------|----------|---------------------|-------|
| Temperature : | 26 °C    | Relative Humidity : | 54%   |
| Pressure :    | 1015 hPa | Test Voltage :      | DC 5V |
| Test Band :   | 5.2G     |                     |       |

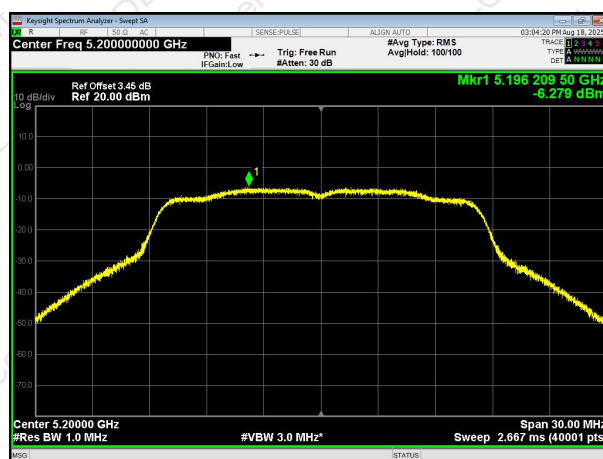
| 5.2G                                 |                    |           |                        |                 |                 |        |
|--------------------------------------|--------------------|-----------|------------------------|-----------------|-----------------|--------|
| Test mode                            | Test Channel (MHz) | PSD (dBm) | duty cycle Factor (dB) | Total PSD (dBm) | Limit (dBm/MHz) | Result |
| 802.11a                              | 5180               | -5.22     | 0                      | -5.22           | 11              | Pass   |
|                                      | 5200               | -6.279    | 0                      | -6.279          | 11              | Pass   |
|                                      | 5240               | -7.072    | 0                      | -7.072          | 11              | Pass   |
| 802.11n20                            | 5180               | -5.426    | 0                      | -5.426          | 11              | Pass   |
|                                      | 5200               | -6.474    | 0                      | -6.474          | 11              | Pass   |
|                                      | 5240               | -7.129    | 0                      | -7.129          | 11              | Pass   |
| 802.11n40                            | 5190               | -8.809    | 0                      | -8.809          | 11              | Pass   |
|                                      | 5230               | -10.261   | 0                      | -10.261         | 11              | Pass   |
| Note: duty cycle Factor see page 97. |                    |           |                        |                 |                 |        |



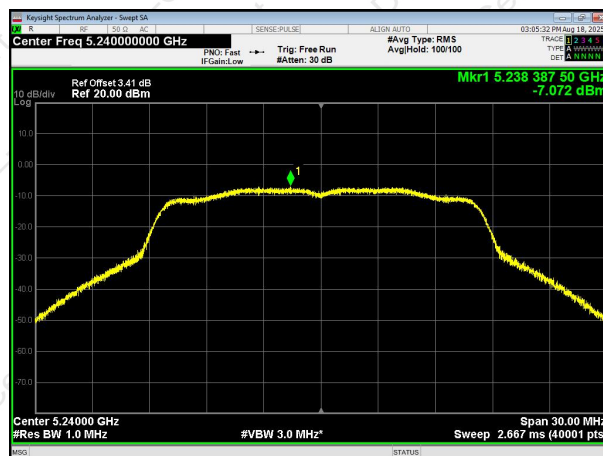
(802.11a) PSD plot on channel 36



(802.11a) PSD plot on channel 40

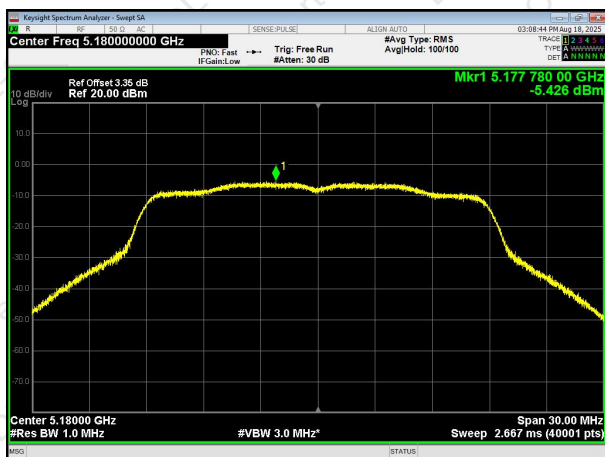


(802.11a) PSD plot on channel 48

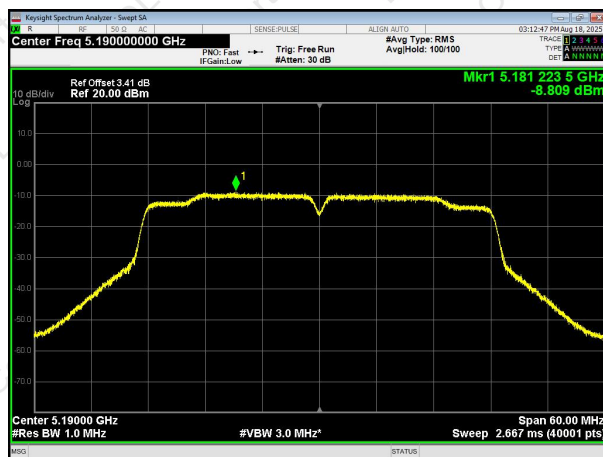




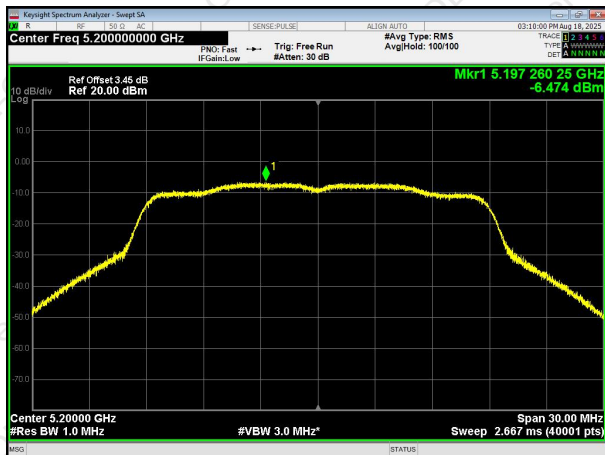
(802.11n20) PSD plot on channel 36



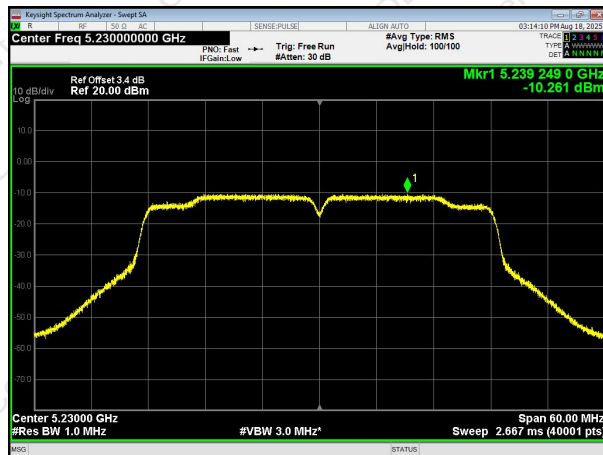
(802.11n40) PSD plot on channel 38



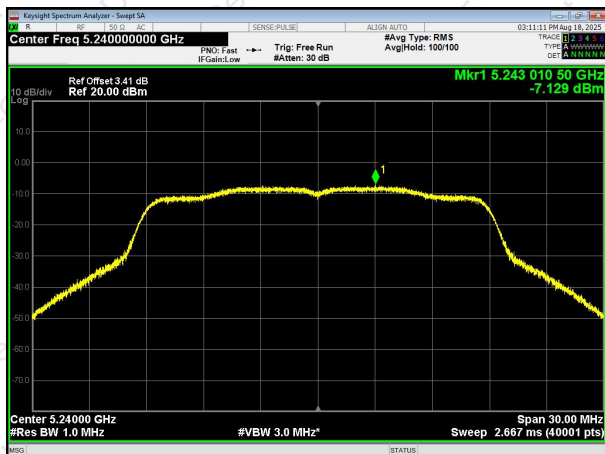
(802.11n20) PSD plot on channel 40



(802.11n40) PSD plot on channel 46



(802.11n20) PSD plot on channel 48



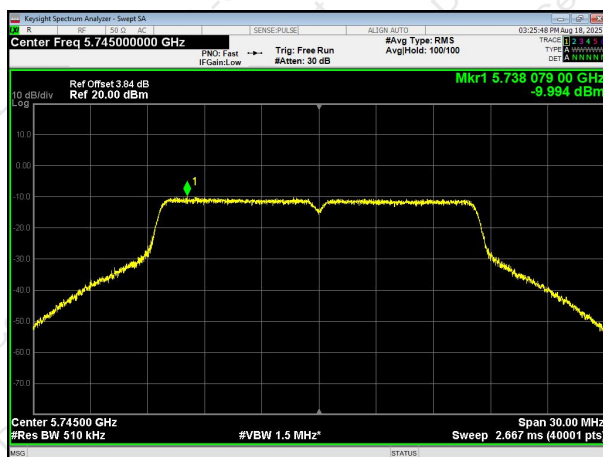


|               |          |                     |       |
|---------------|----------|---------------------|-------|
| Temperature : | 26 °C    | Relative Humidity : | 54%   |
| Pressure :    | 1015 hPa | Test Voltage :      | DC 5V |
| Test Band :   | 5.8G     |                     |       |

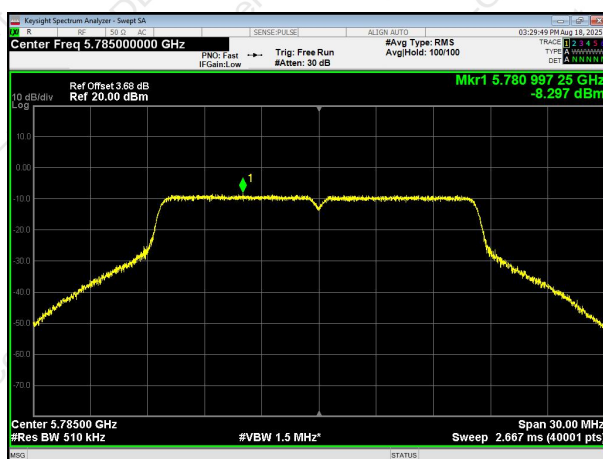
| 5.8G                                 |                    |                  |                        |                 |                    |        |
|--------------------------------------|--------------------|------------------|------------------------|-----------------|--------------------|--------|
| Test mode                            | Test Channel (MHz) | PSD (dBm/500kHz) | duty cycle Factor (dB) | Total PSD (dBm) | Limit (dBm/500kHz) | Result |
| 802.11a                              | 5745               | -9.994           | 0.1                    | -9.894          | 30                 | Pass   |
|                                      | 5785               | -8.297           | 0.1                    | -8.197          | 30                 | Pass   |
|                                      | 5825               | -7.466           | 0.1                    | -7.366          | 30                 | Pass   |
| 802.11n20                            | 5745               | -10.096          | 0                      | -10.096         | 30                 | Pass   |
|                                      | 5785               | -8.591           | 0                      | -8.591          | 30                 | Pass   |
|                                      | 5825               | -7.667           | 0                      | -7.667          | 30                 | Pass   |
| 802.11n40                            | 5755               | -11.991          | 0                      | -11.991         | 30                 | Pass   |
|                                      | 5795               | -11.144          | 0                      | -11.144         | 30                 | Pass   |
| Note: duty cycle Factor see page 73. |                    |                  |                        |                 |                    |        |



(802.11a) PSD plot on channel 149



(802.11a) PSD plot on channel 157



(802.11a) PSD plot on channel 165

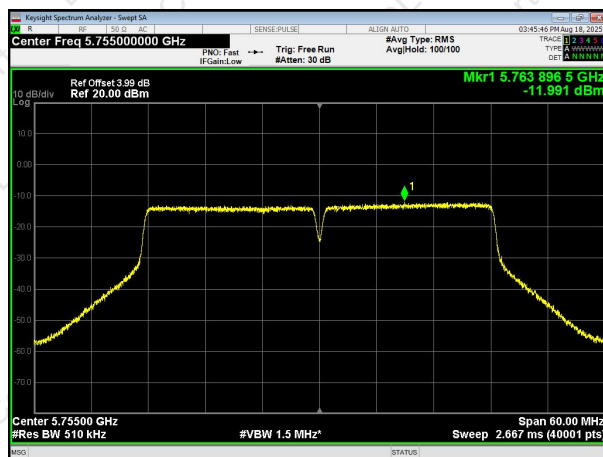




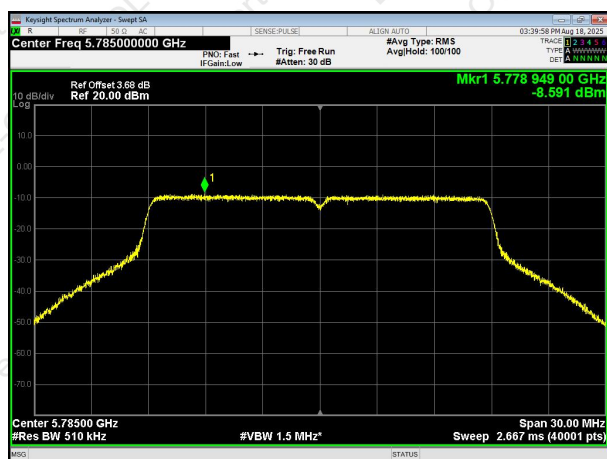
(802.11n20) PSD plot on channel 149



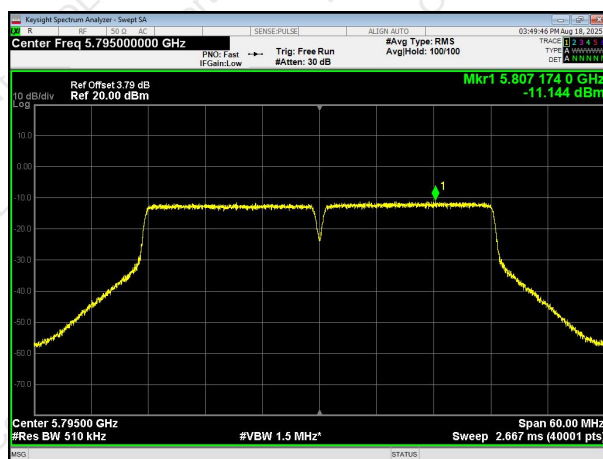
(802.11n40) PSD plot on channel 151



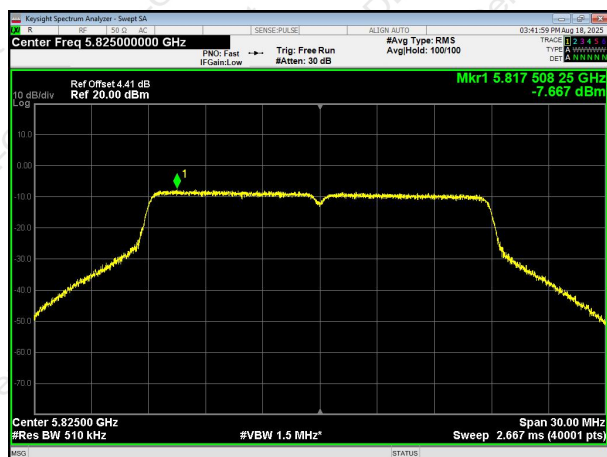
(802.11n20) PSD plot on channel 157



(802.11n40) PSD plot on channel 159



(802.11n20) PSD plot on channel 165





## 6. 26DB EMISSION BANDWIDTH & 6DB OCCUPIED BANDWIDTH

### 6.1 APPLIED PROCEDURES / LIMIT

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band, the minimum bandwidth 6 dB bandwidth of U-NII devices shall be at least 500KHz. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

### 6.2 TEST PROCEDURE

The following procedure shall be used for measuring 6dB Occupied Bandwidth:

The procedure for this method is as follows:

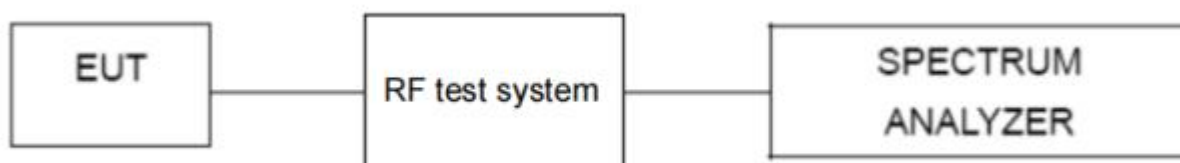
- Set RBW = 100KHz.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

The following procedure shall be used for measuring 26dB Emission bandwidth:

The procedure for this method is as follows:

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.





### 6.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.

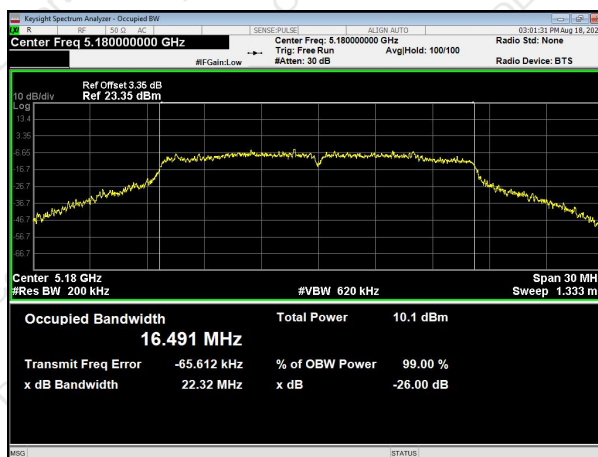
### 6.4 TEST RESULTS

|               |        |                     |       |
|---------------|--------|---------------------|-------|
| Temperature : | 26 °C  | Relative Humidity : | 54%   |
| Pressure :    | 101kPa | Test Voltage :      | DC 5V |
| Test Band :   | 5.2G   |                     |       |

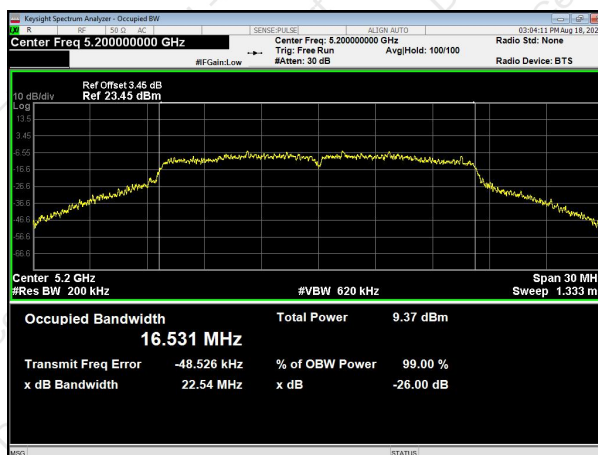
| 5.2G      |                    |                               |            |        |
|-----------|--------------------|-------------------------------|------------|--------|
| Test Mode | Test Channel (MHz) | 26dB Emission Bandwidth (MHz) | Limit(KHz) | Result |
| 802.11a   | 5180               | 22.32                         | N/A        | Pass   |
|           | 5200               | 22.54                         |            |        |
|           | 5240               | 22.08                         |            |        |
| 802.11n20 | 5180               | 22.36                         | N/A        | Pass   |
|           | 5200               | 23.22                         |            |        |
|           | 5240               | 22.45                         |            |        |
| 802.11n40 | 5190               | 42.67                         | N/A        | Pass   |
|           | 5230               | 42.48                         |            |        |

**5.2G Test plot**

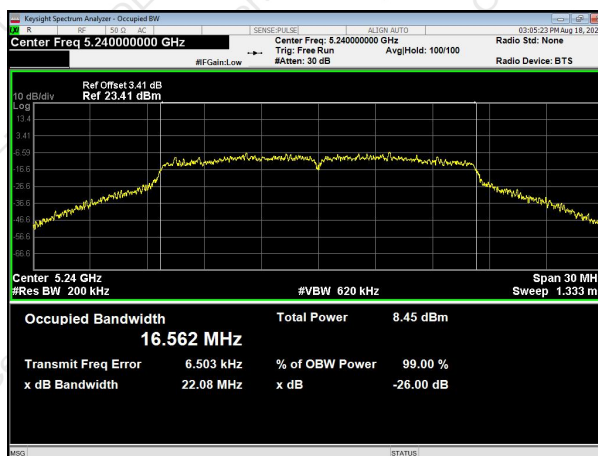
(802.11 a) 26dB Bandwidth plot on channel 36



(802.11 a) 26dB Bandwidth plot on channel 48



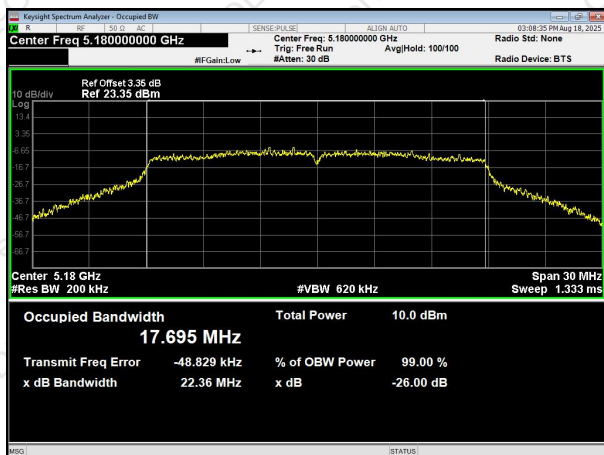
(802.11 a) 26dB Bandwidth plot on channel 48



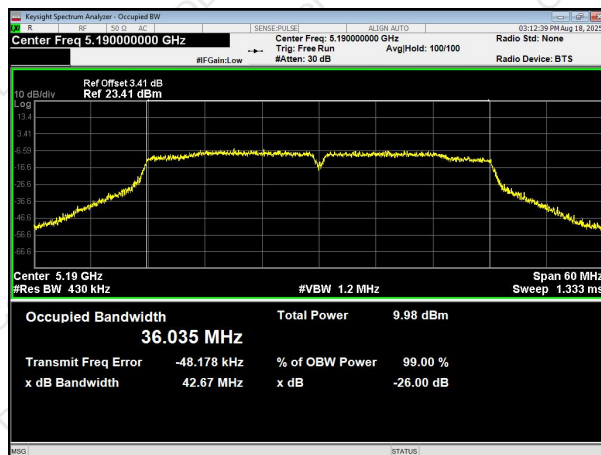


## 5.2G Test plot

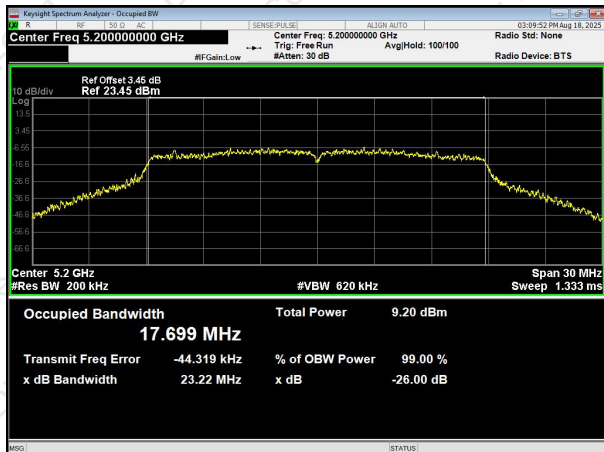
(802.11 n20) 26dB Bandwidth plot on channel 36



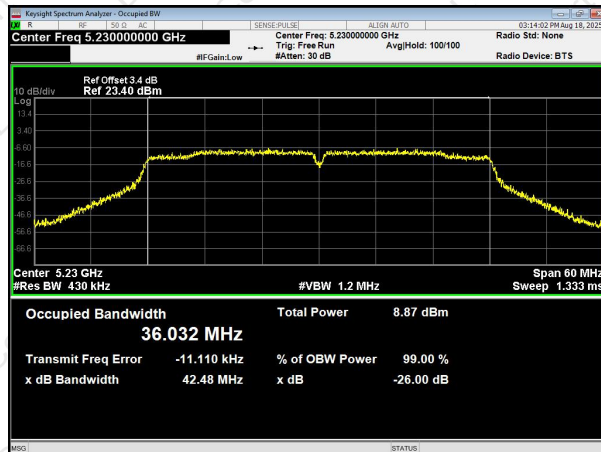
(802.11 n40) 26dB Bandwidth plot on channel 38



(802.11 n20) 26dB Bandwidth plot on channel 40



(802.11 n40) 26dB Bandwidth plot on channel 46



(802.11 n20) 26dB Bandwidth plot on channel 48

