



# FCC RF Test Report

**APPLICANT** : Bullitt Group  
**EQUIPMENT** : Rugged Smart Phone  
**BRAND NAME** : CAT  
**MODEL NAME** : S42  
**FCC ID** : ZL5S42E  
**STANDARD** : FCC Part 15 Subpart E §15.407  
**CLASSIFICATION** : (NII) Unlicensed National Information Infrastructure

The product was received on Dec. 23, 2019 and testing was completed on Mar. 04, 2020. We, Sporton International (ShenZhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (ShenZhen) Inc., the test report shall not be reproduced except in full.

---

Reviewed by: Derreck Chen / Supervisor

---

Approved by: Eric Shih / Manager



***Sporton International (ShenZhen) Inc.***

***1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055  
People's Republic of China***



## TABLE OF CONTENTS

|                                                              |           |
|--------------------------------------------------------------|-----------|
| <b>REVISION HISTORY.....</b>                                 | <b>3</b>  |
| <b>SUMMARY OF TEST RESULT .....</b>                          | <b>4</b>  |
| <b>1 GENERAL DESCRIPTION .....</b>                           | <b>5</b>  |
| 1.1 Applicant .....                                          | 5         |
| 1.2 Manufacturer.....                                        | 5         |
| 1.3 Product Feature of Equipment Under Test.....             | 5         |
| 1.4 Product Specification of Equipment Under Test.....       | 6         |
| 1.5 Modification of EUT .....                                | 7         |
| 1.6 Testing Location .....                                   | 7         |
| 1.7 Test Software.....                                       | 7         |
| 1.8 Applicable Standards.....                                | 8         |
| <b>2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST .....</b>    | <b>9</b>  |
| 2.1 Carrier Frequency and Channel .....                      | 9         |
| 2.2 Test Mode.....                                           | 11        |
| 2.3 Connection Diagram of Test System.....                   | 13        |
| 2.4 Support Unit used in test configuration and system ..... | 14        |
| 2.5 EUT Operation Test Setup .....                           | 14        |
| 2.6 Measurement Results Explanation Example.....             | 14        |
| <b>3 TEST RESULT .....</b>                                   | <b>15</b> |
| 3.1 26dB & 99% Occupied Bandwidth Measurement .....          | 15        |
| 3.2 Maximum Conducted Output Power Measurement .....         | 17        |
| 3.3 Power Spectral Density Measurement .....                 | 19        |
| 3.4 Unwanted Emissions Measurement.....                      | 22        |
| 3.5 AC Conducted Emission Measurement.....                   | 27        |
| 3.6 Automatically Discontinue Transmission .....             | 29        |
| 3.7 Antenna Requirements .....                               | 30        |
| <b>4 LIST OF MEASURING EQUIPMENT .....</b>                   | <b>31</b> |
| <b>5 UNCERTAINTY OF EVALUATION .....</b>                     | <b>32</b> |
| <b>APPENDIX A. CONDUCTED TEST RESULTS</b>                    |           |
| <b>APPENDIX B. AC CONDUCTED EMISSION TEST RESULT</b>         |           |
| <b>APPENDIX C. RADIATED SPURIOUS EMISSION</b>                |           |
| <b>APPENDIX D. DUTY CYCLE PLOTS</b>                          |           |
| <b>APPENDIX E. SETUP PHOTOGRAPHS</b>                         |           |



## REVISION HISTORY

| REPORT NO.   | VERSION | DESCRIPTION             | ISSUED DATE   |
|--------------|---------|-------------------------|---------------|
| FR9D2309-01E | Rev. 01 | Initial issue of report | Apr. 30, 2020 |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |

## SUMMARY OF TEST RESULT

| Report Section | FCC Rule           | Description                            | Limit                    | Result | Remark                              |
|----------------|--------------------|----------------------------------------|--------------------------|--------|-------------------------------------|
| 3.1            | 2.1049 & 15.403(i) | 26dB & 99% Bandwidth                   | -                        | Pass   | -                                   |
| 3.2            | 15.407(a)          | Maximum Conducted Output Power         | $\leq 24$ dBm            | Pass   | -                                   |
| 3.3            | 15.407(a)          | Power Spectral Density                 | $\leq 11$ dBm            | Pass   | -                                   |
| 3.4            | 15.407(b)          | Unwanted Emissions                     | 15.407(b) & 15.209(a)    | Pass   | Under limit 3.23 dB at 5150.000 MHz |
| 3.5            | 15.207             | AC Conducted Emission                  | 15.207(a)                | Pass   | Under limit 4.02 dB at 0.290 MHz    |
| 3.6            | 15.407(c)          | Automatically Discontinue Transmission | Discontinue Transmission | Pass   | -                                   |
| 3.7            | 15.203 & 15.407(a) | Antenna Requirement                    | N/A                      | Pass   | -                                   |

### Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

### Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



# 1 General Description

## 1.1 Applicant

**Bullitt Group**

One Valpy, Valpy Street, Reading, Berkshire, England RG1 1AR

## 1.2 Manufacturer

**Bullitt Group**

One Valpy, Valpy Street, Reading, Berkshire, England RG1 1AR

## 1.3 Product Feature of Equipment Under Test

| Product Feature                 |                                                                                                                                                                        |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment                       | Rugged Smart Phone                                                                                                                                                     |
| Brand Name                      | CAT                                                                                                                                                                    |
| Model Name                      | S42                                                                                                                                                                    |
| FCC ID                          | ZL5S42E                                                                                                                                                                |
| EUT supports Radios application | GSM/WCDMA/LTE/NFC<br>WLAN 2.4GHz 802.11b/g/n HT20<br>WLAN 5GHz 802.11a/n HT20/HT40<br>WLAN 5GHz 802.11ac VHT20/VHT40/VHT80<br>Bluetooth BR/EDR/LE<br>GNSS/ FM Receiver |
| IMEI Code                       | Conducted : 354401110003581/354401110010586<br>Conduction : 354401110003003/354401110010008<br>Radiation : 354401110003490                                             |
| EUT Stage                       | Production Unit                                                                                                                                                        |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tx/Rx Frequency Range</b>            | 5180 MHz ~ 5240 MHz<br>5260 MHz ~ 5320 MHz<br>5500 MHz ~ 5720 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Maximum Output Power to Antenna</b>  | <b>&lt;5180 MHz ~ 5240 MHz&gt;</b><br>802.11a : 18.41 dBm / 0.0693 W<br>802.11n HT20 : 18.25 dBm / 0.0668 W<br>802.11n HT40 : 16.33 dBm / 0.0430 W<br>802.11ac VHT20 : 18.18 dBm / 0.0658 W<br>802.11ac VHT40 : 16.25 dBm / 0.0422 W<br>802.11ac VHT80 : 13.33 dBm / 0.0215 W<br><b>&lt;5260 MHz ~ 5320 MHz&gt;</b><br>802.11a : 18.57 dBm / 0.0719 W<br>802.11n HT20 : 18.26 dBm / 0.0670 W<br>802.11n HT40 : 16.23 dBm / 0.0420 W<br>802.11ac VHT20 : 18.18 dBm / 0.0658 W<br>802.11ac VHT40 : 16.16 dBm / 0.0413 W<br>802.11ac VHT80 : 13.36 dBm / 0.0217 W<br><b>&lt;5500 MHz ~ 5720 MHz &gt;</b><br>802.11a : 18.45 dBm / 0.0700 W<br>802.11n HT20 : 18.34 dBm / 0.0682 W<br>802.11n HT40 : 16.24 dBm / 0.0421 W<br>802.11ac VHT20 : 18.27 dBm / 0.0671 W<br>802.11ac VHT40 : 16.17 dBm / 0.0414 W<br>802.11ac VHT80 : 13.16 dBm / 0.0207 W |
| <b>99% Occupied Bandwidth</b>           | <b>&lt;5180 MHz ~ 5240 MHz&gt;</b><br>802.11a : 16.88 MHz<br>802.11n HT20 : 17.88 MHz<br>802.11n HT40 : 36.36 MHz<br>802.11ac VHT80 : 75.16 MHz<br><b>&lt;5260 MHz ~ 5320 MHz&gt;</b><br>802.11a : 16.78 MHz<br>802.11n HT20 : 17.88 MHz<br>802.11n HT40 : 36.26 MHz<br>802.11ac VHT80 : 75.40 MHz<br><b>&lt;5500 MHz ~ 5720 MHz &gt;</b><br>802.11a : 16.88 MHz<br>802.11n HT20 : 17.93 MHz<br>802.11n HT40 : 36.36 MHz<br>802.11ac VHT80 : 75.28 MHz                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Antenna Type / Gain</b>              | <b>&lt;5150 MHz ~ 5250 MHz&gt;</b><br>IFA Antenna with gain -1.00 dBi<br><b>&lt;5250 MHz ~ 5350 MHz&gt;</b><br>IFA Antenna with gain -1.00 dBi<br><b>&lt;5470 MHz ~ 5725 MHz&gt;</b><br>IFA Antenna with gain -1.00 dBi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Type of Modulation</b>               | 802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Note:**



1. WLAN operation in 5600 MHz ~ 5650 MHz is notched.
2. For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing have assessed only 802.11n HT20/ HT40 by referring to their maximum conducted power.

## 1.5 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.6 Testing Location

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

|                           |                                                                                                                                                                         |                            |                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------|
| <b>Test Firm</b>          | Sporton International (Shenzhen) Inc.                                                                                                                                   |                            |                                       |
| <b>Test Site Location</b> | 1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China<br>TEL: +86-755-86379589<br>FAX: +86-755-86379595 |                            |                                       |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>                                                                                                                                                 | <b>FCC Designation No.</b> | <b>FCC Test Firm Registration No.</b> |
|                           | CO01-SZ<br>TH01-SZ                                                                                                                                                      | CN1256                     | 421272                                |

|                           |                                                                                                                                                           |                            |                                       |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------|
| <b>Test Firm</b>          | Sporton International (Shenzhen) Inc.                                                                                                                     |                            |                                       |
| <b>Test Site Location</b> | No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan Shenzhen, 518055 People's Republic of China<br>TEL: +86-755-33202398 |                            |                                       |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>                                                                                                                                   | <b>FCC Designation No.</b> | <b>FCC Test Firm Registration No.</b> |
|                           | 03CH01-SZ                                                                                                                                                 | CN1256                     | 421272                                |

## 1.7 Test Software

| Item | Site      | Manufacture | Name | Version     |
|------|-----------|-------------|------|-------------|
| 1.   | 03CH01-SZ | AUDIX       | E3   | 6.2009-8-24 |
| 2.   | CO01-SZ   | AUDIX       | E3   | 6.120613b   |



## **1.8 Applicable Standards**

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ ANSI C63.10-2013

### **Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



## 2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

### 2.1 Carrier Frequency and Channel

| Frequency Band                        | Channel          | Freq. (MHz) | Channel | Freq. (MHz) |
|---------------------------------------|------------------|-------------|---------|-------------|
| 5150-5250 MHz<br>Band 1<br>(U-NII-1)  | 36               | 5180        | 44      | 5220        |
|                                       | 38*              | 5190        | 46*     | 5230        |
|                                       | 40               | 5200        | 48      | 5240        |
|                                       | 42 <sup>#</sup>  | 5210        |         |             |
| Frequency Band                        | Channel          | Freq. (MHz) | Channel | Freq. (MHz) |
| 5250-5350 MHz<br>Band 2<br>(U-NII-2A) | 52               | 5260        | 60      | 5300        |
|                                       | 54*              | 5270        | 62*     | 5310        |
|                                       | 56               | 5280        | 64      | 5320        |
|                                       | 58 <sup>#</sup>  | 5290        |         |             |
| Frequency Band                        | Channel          | Freq. (MHz) | Channel | Freq. (MHz) |
| 5470-5725 MHz<br>Band 3<br>(U-NII-2C) | 100              | 5500        | 112     | 5560        |
|                                       | 102*             | 5510        | 116     | 5580        |
|                                       | 104              | 5520        | 132     | 5660        |
|                                       | 106 <sup>#</sup> | 5530        | 134*    | 5670        |
|                                       | 108              | 5540        | 136     | 5680        |
|                                       | 110*             | 5550        | 140     | 5700        |



| Frequency Band   | Channel          | Freq.<br>(MHz) | Channel | Freq.<br>(MHz) |
|------------------|------------------|----------------|---------|----------------|
| Straddle Channel | 138 <sup>#</sup> | 5690           | 144     | 5720           |
|                  | 142 <sup>*</sup> | 5710           |         |                |

**Note:**

1. The above Frequency and Channel in "\*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "<sup>#</sup>" were 802.11ac VHT80.

## 2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

| Modulation     | Data Rate |
|----------------|-----------|
| 802.11a        | 6 Mbps    |
| 802.11n HT20   | MCS0      |
| 802.11n HT40   | MCS0      |
| 802.11ac VHT80 | MCS0      |

| Test Cases                  |                                                                                                                       |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------|
| AC<br>Conducted<br>Emission | Mode 1 : GSM850 Idle + Bluetooth Link + WLAN (5G) Link + Earphone 1 + USB<br>Cable 1(Charging from Adapter 3) + SIM 1 |



| Ch. #    |        | Band I : 5150-5250 MHz | Band II : 5250-5350 MHz | Band III : 5470-5725MHz |
|----------|--------|------------------------|-------------------------|-------------------------|
|          |        | 802.11a                | 802.11a                 | 802.11a                 |
| L        | Low    | 36                     | 52                      | 100                     |
| M        | Middle | 44                     | 60                      | 116                     |
| H        | High   | 48                     | 64                      | 140                     |
| Straddle |        | -                      | -                       | 144                     |

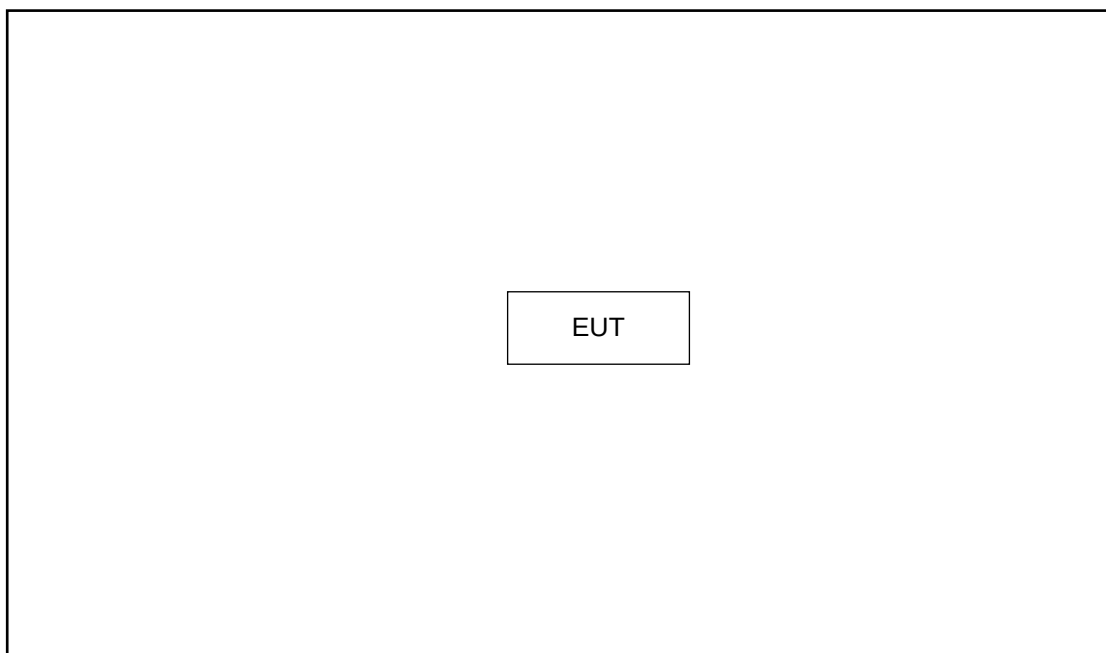
| Ch. #    |        | Band I : 5150-5250 MHz | Band II : 5250-5350 MHz | Band III : 5470-5725MHz |
|----------|--------|------------------------|-------------------------|-------------------------|
|          |        | 802.11n HT20           | 802.11n HT20            | 802.11n HT20            |
| L        | Low    | 36                     | 52                      | 100                     |
| M        | Middle | 44                     | 60                      | 116                     |
| H        | High   | 48                     | 64                      | 140                     |
| Straddle |        | -                      | -                       | 144                     |

| Ch. #    |        | Band I : 5150-5250 MHz | Band II : 5250-5350 MHz | Band III : 5470-5725MHz |
|----------|--------|------------------------|-------------------------|-------------------------|
|          |        | 802.11n HT40           | 802.11n HT40            | 802.11n HT40            |
| L        | Low    | 38                     | 54                      | 102                     |
| M        | Middle | -                      | -                       | 110                     |
| H        | High   | 46                     | 62                      | 134                     |
| Straddle |        | -                      | -                       | 142                     |

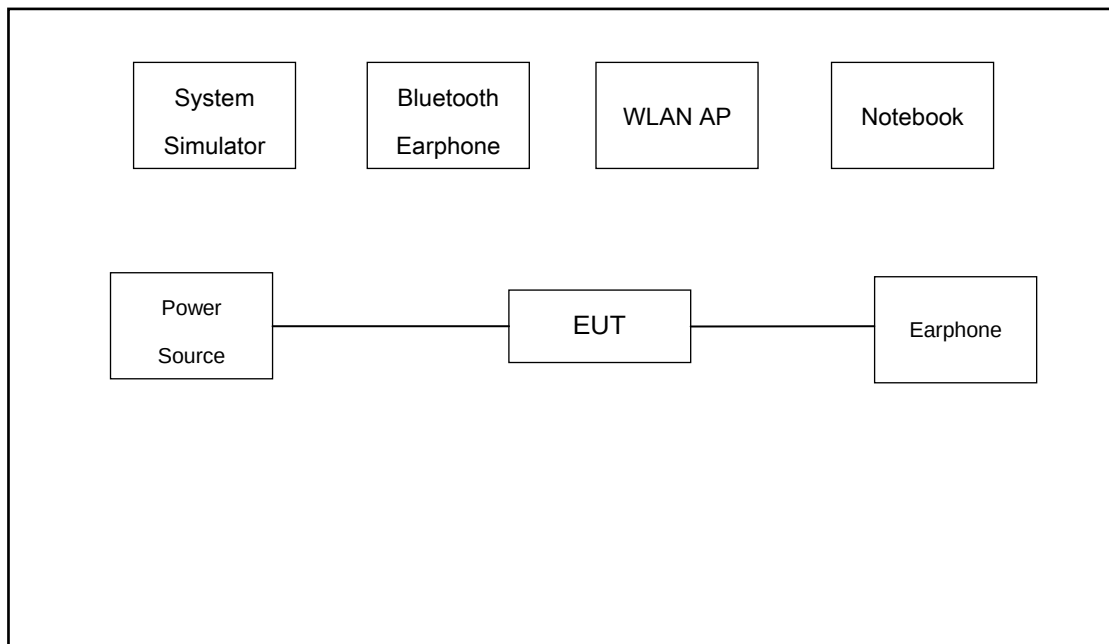
| Ch. #    |        | Band I : 5150-5250 MHz | Band II : 5250-5350 MHz | Band III : 5470-5725MHz |
|----------|--------|------------------------|-------------------------|-------------------------|
|          |        | 802.11ac VHT80         | 802.11ac VHT80          | 802.11ac VHT80          |
| L        | Low    | -                      | -                       | 106                     |
| M        | Middle | 42                     | 58                      | -                       |
| H        | High   | -                      | -                       | -                       |
| Straddle |        | -                      | -                       | 138                     |

## 2.3 Connection Diagram of Test System

For Radiation Spurious Emission



For AC Conducted Emission



## 2.4 Support Unit used in test configuration and system

| Item | Equipment          | Trade Name | Model Name | FCC ID      | Data Cable | Power Cord                                                 |
|------|--------------------|------------|------------|-------------|------------|------------------------------------------------------------|
| 1.   | Base Station       | Anritsu    | MT8820C    | N/A         | N/A        | Unshielded,1.8m                                            |
| 2.   | WLAN AP            | Dlink      | DIR-820L   | KA2IR820LA1 | N/A        | Unshielded,1.8m                                            |
| 3.   | Notebook           | Lenovo     | E540       | FCC DoC     | N/A        | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 4.   | Bluetooth Earphone | Samsung    | EO-MG900   | PYAHS-107W  | N/A        | N/A                                                        |
| 5.   | SD Card            | N/A        | MicroSD HC | FCC DoC     | N/A        | N/A                                                        |

## 2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuously transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the Notebook under large package sizes transmission.

## 2.6 Measurement Results Explanation Example

**For all conducted test items:**

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

*Offset = RF cable loss + attenuator factor.*

Following shows an offset computation example with cable loss 6.6 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 6.6 + 10 = 16.6 \text{ (dB)}\end{aligned}$$

### 3 Test Result

#### 3.1 26dB & 99% Occupied Bandwidth Measurement

##### 3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

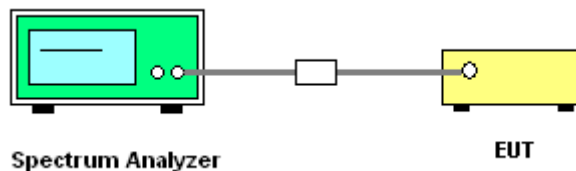
##### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

##### 3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. 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 analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW)  $\geq 3 * \text{RBW}$ .
8. Measure and record the results in the test report.

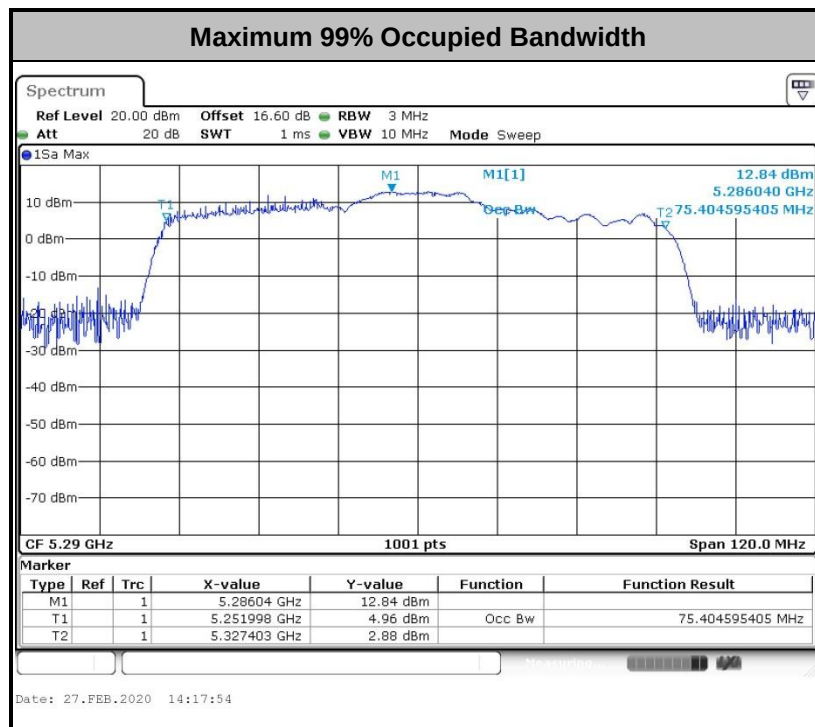
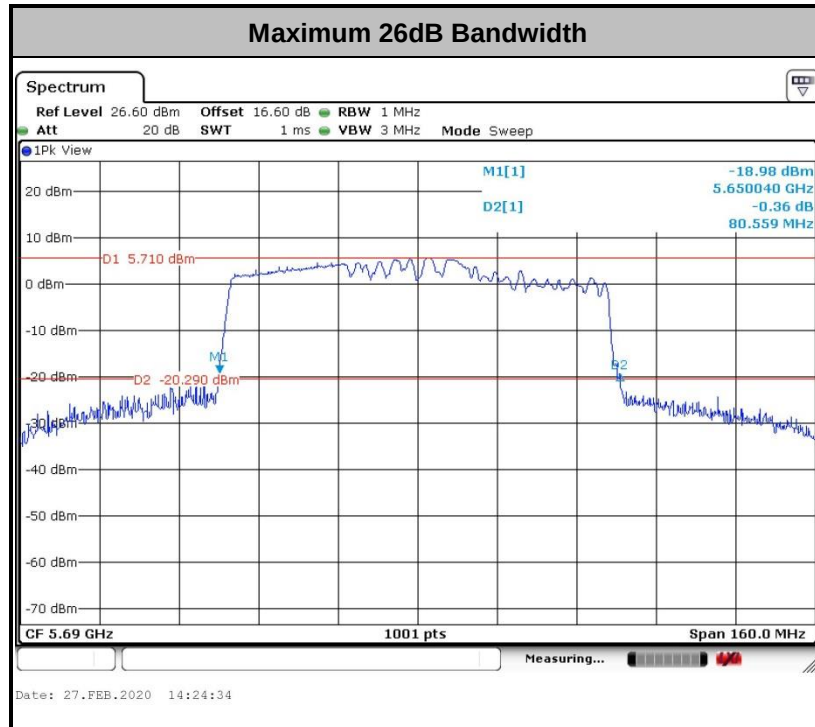
##### 3.1.4 Test Setup





### 3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

Please refer to Appendix A.



**Note:** The occupied channel bandwidth is maintained within the band of operation for all of the modulations.





## **3.2 Maximum Conducted Output Power Measurement**

### **3.2.1 Limit of Maximum Conducted Output Power**

#### **<FCC 14-30 CFR 15.407>**

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW.

For the 5.25–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm  $10 \log B$ , where B is the 26 dB emission bandwidth in megahertz.

For the 5.47–5.6 GHz and 5.65–5.725 GHz band, the maximum conducted output power shall not exceed 250 mW or  $11 + 10 \log_{10} B$ , dBm, whichever power is less. The maximum e.i.r.p. shall not exceed 1.0 W or  $17 + 10 \log_{10} B$ , dBm, whichever is less. B is the 99% emission bandwidth in megahertz.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

### **3.2.2 Measuring Instruments**

The measuring equipment is listed in the section 4 of this test report.

### 3.2.3 Test Procedures

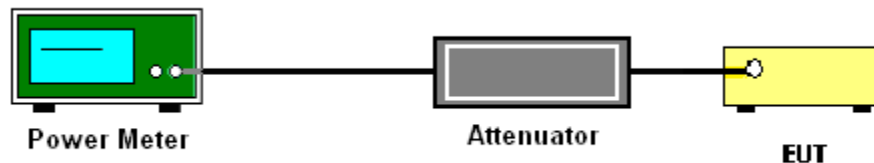
The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor,  $10 \log(1/x)$ , where  $x$  is the duty cycle.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

### 3.2.4 Test Setup



### 3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



### **3.3 Power Spectral Density Measurement**

#### **3.3.1 Limit of Power Spectral Density**

**<FCC 14-30 CFR 15.407>**

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

For the 5.25–5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **3.3.2 Measuring Instruments**

The measuring equipment is listed in the section 4 of this test report.

### 3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

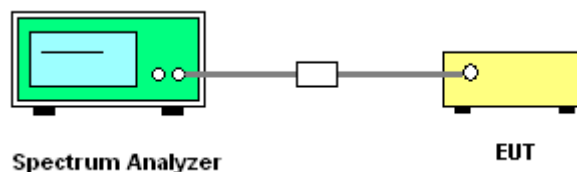
Section F) Maximum power spectral density.

#### # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
  - Set span to encompass the entire emission bandwidth (EBW) of the signal.
  - Set RBW = 1 MHz.
  - Set VBW  $\geq$  3 MHz.
  - Number of points in sweep  $\geq$  2 Span / RBW.
  - Sweep time = auto.
  - Detector = RMS
  - Trace average at least 100 traces in power averaging mode.
  - Add  $10 \log(1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add  $10 \log(1/0.25) = 6$  dB if the duty cycle is 25 percent.
- 
1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
  2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

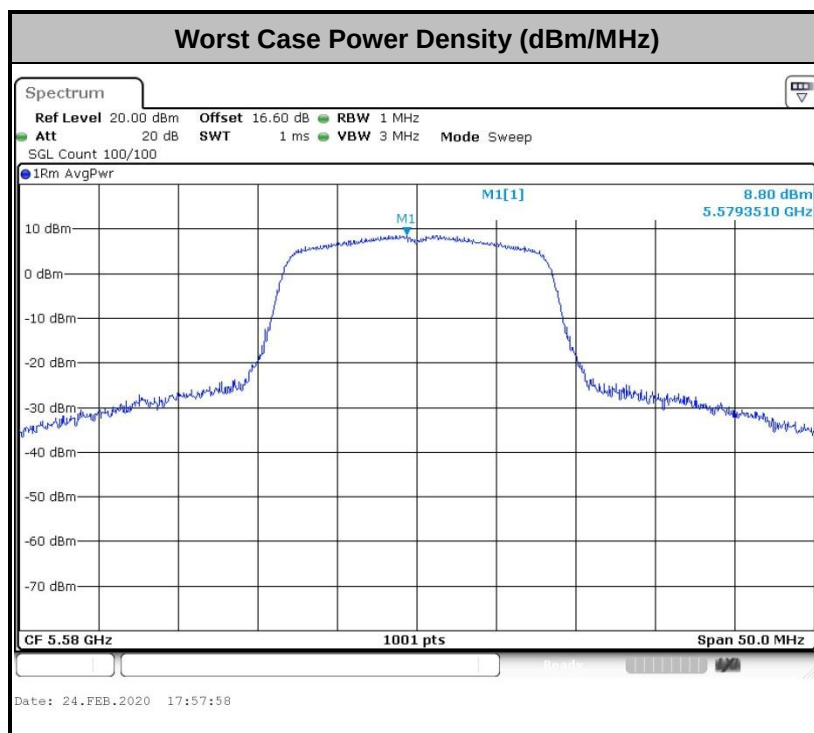
### 3.3.4 Test Setup





### 3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



**Note:** Average Power Density (dB) = Measured value+ Duty Factor

### 3.4 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

#### 3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

| Frequency<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meters) |
|--------------------|--------------------------------------|----------------------------------|
| 0.009 – 0.490      | 2400/F(kHz)                          | 300                              |
| 0.490 – 1.705      | 24000/F(kHz)                         | 30                               |
| 1.705 – 30.0       | 30                                   | 30                               |
| 30 – 88            | 100                                  | 3                                |
| 88 – 216           | 150                                  | 3                                |
| 216 - 960          | 200                                  | 3                                |
| Above 960          | 500                                  | 3                                |



| EIRP (dBm) | Field Strength at 3m (dBμV/m) |
|------------|-------------------------------|
| - 27       | 68.2                          |

**Note:** The following formula is used to convert the EIRP to field strength.

$$\text{EIRP} = E_{\text{Meas}} + 20\log(d_{\text{Meas}}) - 104.7$$

where

EIRP is the equivalent isotropically radiated power, in dBm

$E_{\text{Meas}}$  is the field strength of the emission at the measurement distance, in dBμV/m

$d_{\text{Meas}}$  is the measurement distance, in m

### 3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.



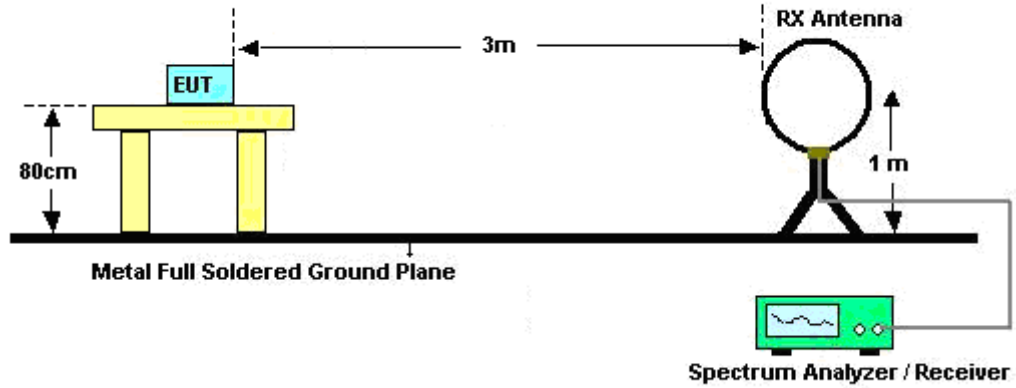
### 3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.  
Section G) Unwanted emissions measurement.  
  - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
    - RBW = 120 kHz
    - VBW = 300 kHz
    - Detector = Peak
    - Trace mode = max hold
  - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
    - RBW = 1 MHz
    - VBW  $\geq$  3 MHz
    - Detector = Peak
    - Sweep time = auto
    - Trace mode = max hold
  - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
    - RBW = 1 MHz
    - VBW = 10 Hz, when duty cycle is no less than 98 percent.
    - VBW  $\geq$  1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

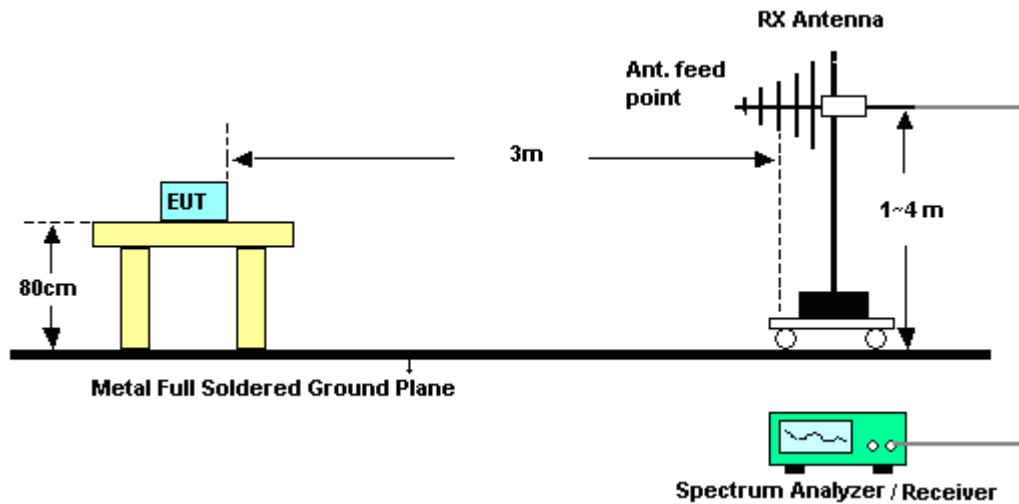


### 3.4.4 Test Setup

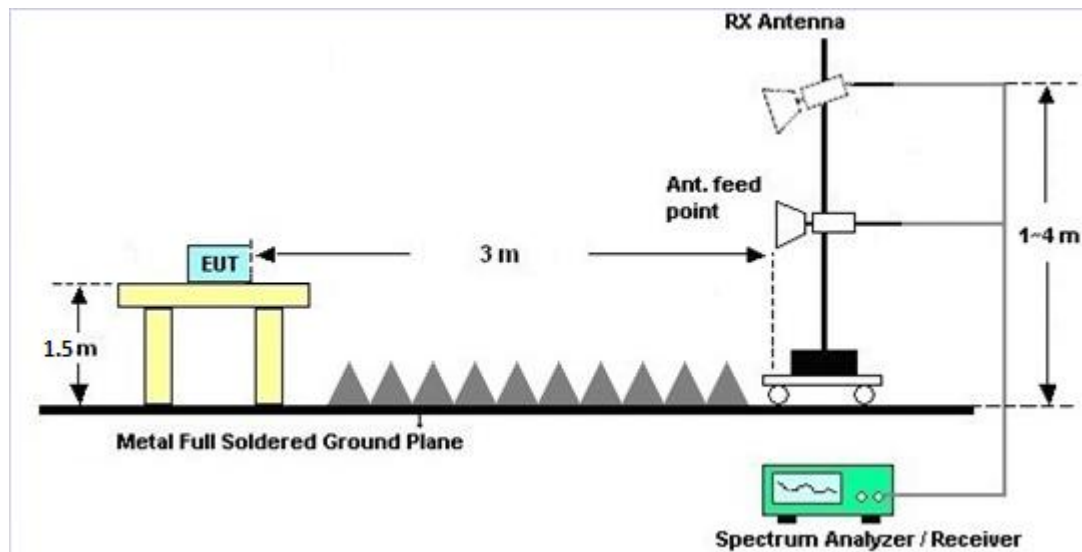
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



### 3.4.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

### 3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

### 3.4.7 Duty Cycle

Please refer to Appendix D.

### 3.4.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C.

### 3.5 AC Conducted Emission Measurement

#### 3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

| Frequency of emission (MHz) | Conducted limit (dB $\mu$ V) |           |
|-----------------------------|------------------------------|-----------|
|                             | Quasi-peak                   | Average   |
| 0.15-0.5                    | 66 to 56*                    | 56 to 46* |
| 0.5-5                       | 56                           | 46        |
| 5-30                        | 60                           | 50        |

\*Decreases with the logarithm of the frequency.

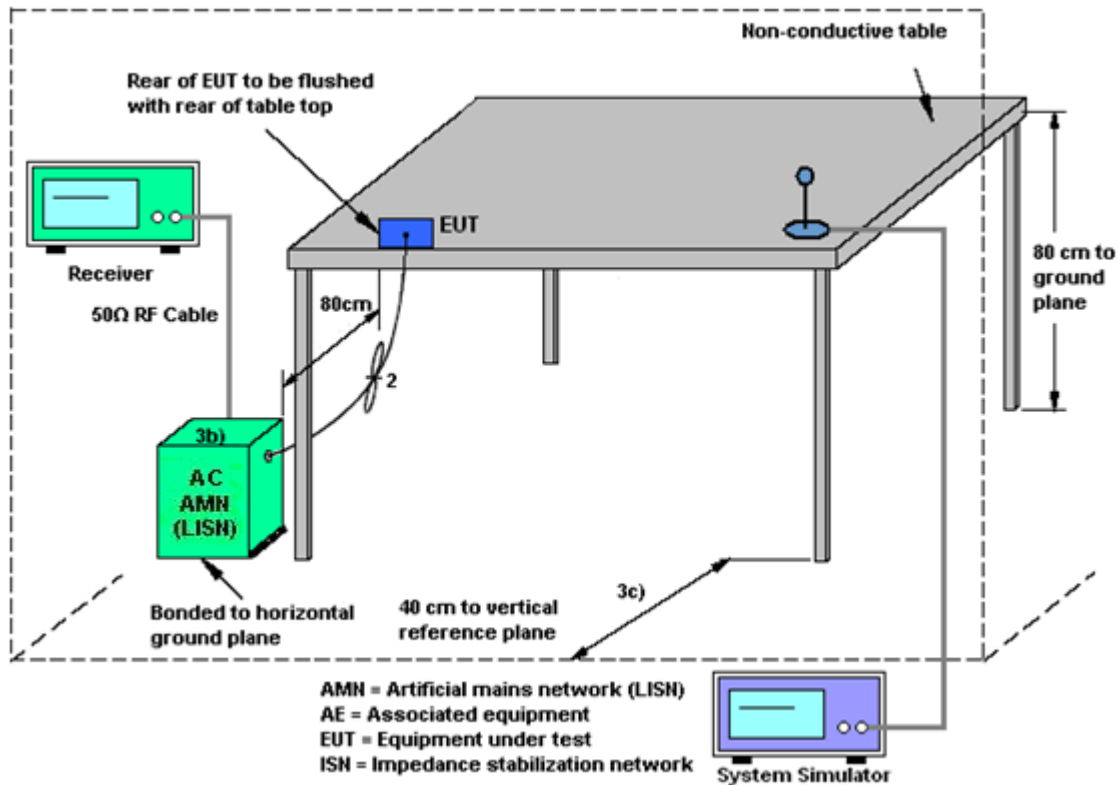
#### 3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

#### 3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

### 3.5.4 Test Setup



### 3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



## **3.6 Automatically Discontinue Transmission**

### **3.6.1 Limit of Automatically Discontinue Transmission**

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

### **3.6.2 Measuring Instruments**

The measuring equipment is listed in the section 4 of this test report.

### **3.6.3 Test Result of Automatically Discontinue Transmission**

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



## **3.7 Antenna Requirements**

### **3.7.1 Standard Applicable**

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### **3.7.2 Antenna Anti-Replacement Construction**

An embedded-in antenna design is used.

### **3.7.3 Antenna Gain**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



## 4 List of Measuring Equipment

| Instrument                        | Manufacturer | Model No.                    | Serial No.   | Characteristics | Calibration Date | Test Date                       | Due Date      | Remark                |
|-----------------------------------|--------------|------------------------------|--------------|-----------------|------------------|---------------------------------|---------------|-----------------------|
| Spectrum Analyzer                 | R&S          | FSV40                        | 101078       | 10Hz~40GHz      | Apr. 18, 2019    | Feb. 24, 2020~<br>Feb. 27, 2020 | Apr. 17, 2020 | Conducted (TH01-SZ)   |
| Pulse Power Sensor                | Anritsu      | MA2411B                      | 1207253      | 30MHz~40GHz     | Dec. 26, 2019    | Feb. 24, 2020~<br>Feb. 27, 2020 | Dec. 25, 2020 | Conducted (TH01-SZ)   |
| Power Meter                       | Anritsu      | ML2495A                      | 1218010      | 50MHz Bandwidth | Dec. 26, 2019    | Feb. 24, 2020~<br>Feb. 27, 2020 | Dec. 25, 2020 | Conducted (TH01-SZ)   |
| EMI Test Receiver&SA              | Agilent      | N9038A                       | MY52260185   | 20Hz~26.5GHz    | Jul. 22, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Jul. 21, 2020 | Radiation (03CH01-SZ) |
| EXA Spectrum Analyzer             | KEYSIGHT     | N9010A                       | MY55150213   | 10Hz~44GHz      | Apr. 18, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Apr. 17, 2020 | Radiation (03CH01-SZ) |
| Loop Antenna                      | R&S          | HFH2-Z2                      | 100354       | 9kHz~30MHz      | May 29, 2018     | Feb. 29, 2020~<br>Mar. 04, 2020 | May 28, 2020  | Radiation (03CH01-SZ) |
| Bilog Antenna                     | TeseQ        | CBL6112D                     | 35407        | 30MHz~2GHz      | Jul. 19, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Jul. 18, 2020 | Radiation (03CH01-SZ) |
| Double Ridge Horn Antenna         | ETS-Lindgren | 3117                         | 00119436     | 1GHz~18GHz      | Aug. 27, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Aug. 26, 2020 | Radiation (03CH01-SZ) |
| SHF-EHF Horn                      | com-power    | AH-840                       | 101071       | 18GHz~40GHz     | Apr. 18, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Apr. 17, 2020 | Radiation (03CH01-SZ) |
| LF Amplifier                      | Burgeon      | BPA-530                      | 102209       | 0.01~3000Mhz    | Apr. 19, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Apr. 18, 2020 | Radiation (03CH01-SZ) |
| HF Amplifier                      | MITEQ        | AMF-7D-0010<br>1800-30-10P-R | 1943528      | 1GHz~18GHz      | Oct. 18, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Oct. 17, 2020 | Radiation (03CH01-SZ) |
| HF Amplifier                      | KEYSIGHT     | 83017A                       | MY53270104   | 0.5GHz~26.5GHz  | Dec. 27, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Dec. 26, 2020 | Radiation (03CH01-SZ) |
| HF Amplifier                      | MITEQ        | TTA1840-35-HG                | 1871923      | 18GHz~40GHz     | Jul. 22, 2019    | Feb. 29, 2020~<br>Mar. 04, 2020 | Jul. 21, 2020 | Radiation (03CH01-SZ) |
| AC Power Source                   | Chroma       | 61601                        | 616010001985 | N/A             | NCR              | Feb. 29, 2020~<br>Mar. 04, 2020 | NCR           | Radiation (03CH01-SZ) |
| Turn Table                        | EM           | EM1000                       | N/A          | 0~360 degree    | NCR              | Feb. 29, 2020~<br>Mar. 04, 2020 | NCR           | Radiation (03CH01-SZ) |
| Antenna Mast                      | EM           | EM1000                       | N/A          | 1 m~4 m         | NCR              | Feb. 29, 2020~<br>Mar. 04, 2020 | NCR           | Radiation (03CH01-SZ) |
| EMI Receiver                      | R&S          | ESR7                         | 101630       | 9kHz~7GHz;      | Dec. 26, 2019    | Jan. 16, 2020                   | Dec. 25, 2020 | Conduction (CO01-SZ)  |
| AC LISN                           | EMCO         | 3816/2SH                     | 00103912     | 9kHz~30MHz      | Oct. 17, 2019    | Jan. 16, 2020                   | Oct. 16, 2020 | Conduction (CO01-SZ)  |
| AC LISN (for auxiliary equipment) | EMCO         | 3816/2SH                     | 00103892     | 9kHz~30MHz      | Dec. 26, 2019    | Jan. 16, 2020                   | Dec. 25, 2020 | Conduction (CO01-SZ)  |
| AC Power Source                   | Chroma       | 61602                        | 616020000891 | 100Vac~250Vac   | Jul. 23, 2019    | Jan. 16, 2020                   | Jul. 22, 2020 | Conduction (CO01-SZ)  |

NCR: No Calibration Required

## 5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage  $K=2$  to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

### Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 2.6dB |
|-------------------------------------------------------------------------|-------|

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.8dB |
|-------------------------------------------------------------------------|-------|

### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.0dB |
|-------------------------------------------------------------------------|-------|

### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.3dB |
|-------------------------------------------------------------------------|-------|





## **Appendix A. Conducted Test Results**

Report Number : FR9D2309-01E

|                |                     |                    |       |    |
|----------------|---------------------|--------------------|-------|----|
| Test Engineer: | Hayden Chen         | Temperature:       | 21~25 | °C |
| Test Date:     | 2020/2/24~2020/2/27 | Relative Humidity: | 51~54 | %  |

**TEST RESULTS DATA**  
**26dB and 99% OBW**

| Band I |           |                 |     |             |                     |                       |                                    |                                   |  |  |
|--------|-----------|-----------------|-----|-------------|---------------------|-----------------------|------------------------------------|-----------------------------------|--|--|
| Mod.   | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | 99% Bandwidth (MHz) | 26 dB Bandwidth (MHz) | IC 99% Bandwidth Power Limit (dBm) | IC 99% Bandwidth EIRP Limit (dBm) |  |  |
| 11a    | 6Mbps     | 1               | 36  | 5180        | 16.78               | 32.77                 | -                                  | 22.25                             |  |  |
| 11a    | 6Mbps     | 1               | 44  | 5220        | 16.83               | 36.11                 | -                                  | 22.26                             |  |  |
| 11a    | 6Mbps     | 1               | 48  | 5240        | 16.88               | 37.96                 | -                                  | 22.27                             |  |  |
| HT20   | MCS0      | 1               | 36  | 5180        | 17.83               | 29.22                 | -                                  | 22.51                             |  |  |
| HT20   | MCS0      | 1               | 44  | 5220        | 17.88               | 34.07                 | -                                  | 22.52                             |  |  |
| HT20   | MCS0      | 1               | 48  | 5240        | 17.88               | 30.32                 | -                                  | 22.52                             |  |  |
| HT40   | MCS0      | 1               | 38  | 5190        | 36.26               | 44.24                 | -                                  | 23.01                             |  |  |
| HT40   | MCS0      | 1               | 46  | 5230        | 36.36               | 44.60                 | -                                  | 23.01                             |  |  |
| VHT80  | MCS0      | 1               | 42  | 5210        | 75.16               | 80.40                 | -                                  | 23.01                             |  |  |

**TEST RESULTS DATA**  
**Average Power Table**

| FCC Band I |           |                 |     |             |                  |                               |                                 |          |  |           |
|------------|-----------|-----------------|-----|-------------|------------------|-------------------------------|---------------------------------|----------|--|-----------|
| Mod.       | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | Duty Factor (dB) | Average Conducted Power (dBm) | FCC Conducted Power Limit (dBm) | DG (dBi) |  | Pass/Fail |
| 11a        | 6Mbps     | 1               | 36  | 5180        | 0.00             | 17.05                         | 24.00                           | -1.00    |  | Pass      |
| 11a        | 6Mbps     | 1               | 44  | 5220        | 0.00             | 18.33                         | 24.00                           | -1.00    |  | Pass      |
| 11a        | 6Mbps     | 1               | 48  | 5240        | 0.00             | 18.41                         | 24.00                           | -1.00    |  | Pass      |
| HT20       | MCS0      | 1               | 36  | 5180        | 0.00             | 16.91                         | 24.00                           | -1.00    |  | Pass      |
| HT20       | MCS0      | 1               | 44  | 5220        | 0.00             | 18.06                         | 24.00                           | -1.00    |  | Pass      |
| HT20       | MCS0      | 1               | 48  | 5240        | 0.00             | 18.25                         | 24.00                           | -1.00    |  | Pass      |
| HT40       | MCS0      | 1               | 38  | 5190        | 0.00             | 15.89                         | 24.00                           | -1.00    |  | Pass      |
| HT40       | MCS0      | 1               | 46  | 5230        | 0.00             | 16.33                         | 24.00                           | -1.00    |  | Pass      |
| VHT20      | MCS0      | 1               | 36  | 5180        | 0.00             | 16.82                         | 24.00                           | -1.00    |  | Pass      |
| VHT20      | MCS0      | 1               | 44  | 5220        | 0.00             | 17.98                         | 24.00                           | -1.00    |  | Pass      |
| VHT20      | MCS0      | 1               | 48  | 5240        | 0.00             | 18.18                         | 24.00                           | -1.00    |  | Pass      |
| VHT40      | MCS0      | 1               | 38  | 5190        | 0.00             | 15.80                         | 24.00                           | -1.00    |  | Pass      |
| VHT40      | MCS0      | 1               | 46  | 5230        | 0.00             | 16.25                         | 24.00                           | -1.00    |  | Pass      |
| VHT80      | MCS0      | 1               | 42  | 5210        | 0.00             | 13.33                         | 24.00                           | -1.00    |  | Pass      |

***TEST RESULTS DATA***  
***Power Spectral Density***

| FCC Band I |           |                 |     |             |                  |                                 |                             |          |   |           |
|------------|-----------|-----------------|-----|-------------|------------------|---------------------------------|-----------------------------|----------|---|-----------|
| Mod.       | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | Duty Factor (dB) | Average Power Density (dBm/MHz) | Average PSD Limit (dBm/MHz) | DG (dBi) | - | Pass/Fail |
| 11a        | 6Mbps     | 1               | 36  | 5180        | 0.00             | 7.78                            | 11.00                       | -1.00    |   | Pass      |
| 11a        | 6Mbps     | 1               | 44  | 5220        | 0.00             | 8.35                            | 11.00                       | -1.00    |   | Pass      |
| 11a        | 6Mbps     | 1               | 48  | 5240        | 0.00             | 8.66                            | 11.00                       | -1.00    |   | Pass      |
| HT20       | MCS0      | 1               | 36  | 5180        | 0.00             | 7.65                            | 11.00                       | -1.00    |   | Pass      |
| HT20       | MCS0      | 1               | 44  | 5220        | 0.00             | 7.64                            | 11.00                       | -1.00    |   | Pass      |
| HT20       | MCS0      | 1               | 48  | 5240        | 0.00             | 7.35                            | 11.00                       | -1.00    |   | Pass      |
| HT40       | MCS0      | 1               | 38  | 5190        | 0.00             | 3.29                            | 11.00                       | -1.00    |   | Pass      |
| HT40       | MCS0      | 1               | 46  | 5230        | 0.00             | 3.30                            | 11.00                       | -1.00    |   | Pass      |
| VHT80      | MCS0      | 1               | 42  | 5210        | 0.00             | -1.83                           | 11.00                       | -1.00    |   | Pass      |

**TEST RESULTS DATA**  
**Average Power Table**

| FCC Band II |           |                 |     |             |                  |                               |                                 |          |                        |           |
|-------------|-----------|-----------------|-----|-------------|------------------|-------------------------------|---------------------------------|----------|------------------------|-----------|
| Mod.        | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | Duty Factor (dB) | Average Conducted Power (dBm) | FCC Conducted Power Limit (dBm) | DG (dBi) | EIRP Power Limit (dBm) | Pass/Fail |
| 11a         | 6M bps    | 1               | 52  | 5260        | 0.00             | 18.57                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| 11a         | 6M bps    | 1               | 60  | 5300        | 0.00             | 18.51                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| 11a         | 6M bps    | 1               | 64  | 5320        | 0.00             | 18.01                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT20        | MCS 0     | 1               | 52  | 5260        | 0.00             | 18.26                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT20        | MCS 0     | 1               | 60  | 5300        | 0.00             | 18.21                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT20        | MCS 0     | 1               | 64  | 5320        | 0.00             | 17.76                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT40        | MCS 0     | 1               | 54  | 5270        | 0.00             | 16.23                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT40        | MCS 0     | 1               | 62  | 5310        | 0.00             | 15.94                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT20       | MCS 0     | 1               | 52  | 5260        | 0.00             | 18.18                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT20       | MCS 0     | 1               | 60  | 5300        | 0.00             | 18.13                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT20       | MCS 0     | 1               | 64  | 5320        | 0.00             | 17.71                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT40       | MCS 0     | 1               | 54  | 5270        | 0.00             | 16.16                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT40       | MCS 0     | 1               | 62  | 5310        | 0.00             | 15.81                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT80       | MCS 0     | 1               | 58  | 5290        | 0.00             | 13.36                         | 23.98                           | -1.00    | 26.99                  | Pass      |

**TEST RESULTS DATA**  
**26dB and 99% OBW**

| Band II |           |                 |     |             |                     |                       |                                    |                                   |                                      |      |
|---------|-----------|-----------------|-----|-------------|---------------------|-----------------------|------------------------------------|-----------------------------------|--------------------------------------|------|
| Mod.    | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | 99% Bandwidth (MHz) | 26 dB Bandwidth (MHz) | IC 99% Bandwidth Power Limit (dBm) | IC 99% Bandwidth EIRP Limit (dBm) | FCC 26dB Bandwidth Power Limit (dBm) | Note |
| 11a     | 6M bps    | 1               | 52  | 5260        | 16.78               | 31.72                 | 23.25                              | 29.25                             | 23.98                                |      |
| 11a     | 6M bps    | 1               | 60  | 5300        | 16.78               | 34.77                 | 23.25                              | 29.25                             | 23.98                                |      |
| 11a     | 6M bps    | 1               | 64  | 5320        | 16.78               | 36.51                 | 23.25                              | 29.25                             | 23.98                                |      |
| HT20    | MCS 0     | 1               | 52  | 5260        | 17.78               | 35.41                 | 23.50                              | 29.50                             | 23.98                                |      |
| HT20    | MCS 0     | 1               | 60  | 5300        | 17.78               | 28.82                 | 23.50                              | 29.50                             | 23.98                                |      |
| HT20    | MCS 0     | 1               | 64  | 5320        | 17.88               | 35.91                 | 23.52                              | 29.52                             | 23.98                                |      |
| HT40    | MCS 0     | 1               | 54  | 5270        | 36.26               | 41.36                 | 23.98                              | 30.00                             | 23.98                                |      |
| HT40    | MCS 0     | 1               | 62  | 5310        | 36.26               | 45.67                 | 23.98                              | 30.00                             | 23.98                                |      |
| VHT80   | MCS 0     | 1               | 58  | 5290        | 75.40               | 80.24                 | 23.98                              | 30.00                             | 23.98                                |      |

***TEST RESULTS DATA***  
***Power Spectral Density***

| Band II |           |                 |     |             |                  |                                 |                             |          |  |           |
|---------|-----------|-----------------|-----|-------------|------------------|---------------------------------|-----------------------------|----------|--|-----------|
| Mod.    | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | Duty Factor (dB) | Average Power Density (dBm/MHz) | Average PSD Limit (dBm/MHz) | DG (dBi) |  | Pass/Fail |
| 11a     | 6M bps    | 1               | 52  | 5260        | 0.00             | 8.07                            | 11.00                       | -1.00    |  | Pass      |
| 11a     | 6M bps    | 1               | 60  | 5300        | 0.00             | 8.49                            | 11.00                       | -1.00    |  | Pass      |
| 11a     | 6M bps    | 1               | 64  | 5320        | 0.00             | 8.39                            | 11.00                       | -1.00    |  | Pass      |
| HT20    | MCS 0     | 1               | 52  | 5260        | 0.00             | 7.71                            | 11.00                       | -1.00    |  | Pass      |
| HT20    | MCS 0     | 1               | 60  | 5300        | 0.00             | 7.52                            | 11.00                       | -1.00    |  | Pass      |
| HT20    | MCS 0     | 1               | 64  | 5320        | 0.00             | 8.07                            | 11.00                       | -1.00    |  | Pass      |
| HT40    | MCS 0     | 1               | 54  | 5270        | 0.00             | 3.30                            | 11.00                       | -1.00    |  | Pass      |
| HT40    | MCS 0     | 1               | 62  | 5310        | 0.00             | 3.53                            | 11.00                       | -1.00    |  | Pass      |
| VHT80   | MCS 0     | 1               | 58  | 5290        | 0.00             | -1.44                           | 11.00                       | -1.00    |  | Pass      |



**TEST RESULTS DATA**  
**26dB and 99% OBW**

| Band III |           |                 |     |             |                     |                       |                                    |                                   |                                      |      |
|----------|-----------|-----------------|-----|-------------|---------------------|-----------------------|------------------------------------|-----------------------------------|--------------------------------------|------|
| Mod.     | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | 99% Bandwidth (MHz) | 26 dB Bandwidth (MHz) | IC 99% Bandwidth Power Limit (dBm) | IC 99% Bandwidth EIRP Limit (dBm) | FCC 26dB Bandwidth Power Limit (dBm) | Note |
| 11a      | 6M bps    | 1               | 100 | 5500        | 16.88               | 35.96                 | 23.27                              | 29.27                             | 23.98                                |      |
| 11a      | 6M bps    | 1               | 116 | 5580        | 16.78               | 33.27                 | 23.25                              | 29.25                             | 23.98                                |      |
| 11a      | 6M bps    | 1               | 140 | 5700        | 16.88               | 35.46                 | 23.27                              | 29.27                             | 23.98                                |      |
| 11a      | 6Mbps     | 1               | 144 | 5720        | 16.78               | 36.76                 | 23.25                              | 29.25                             | 23.98                                |      |
| HT20     | MCS 0     | 1               | 100 | 5500        | 17.73               | 34.72                 | 23.49                              | 29.49                             | 23.98                                |      |
| HT20     | MCS 0     | 1               | 116 | 5580        | 17.93               | 31.57                 | 23.54                              | 29.54                             | 23.98                                |      |
| HT20     | MCS 0     | 1               | 140 | 5700        | 17.78               | 32.22                 | 23.50                              | 29.50                             | 23.98                                |      |
| HT20     | MCS0      | 1               | 144 | 5720        | 17.78               | 35.66                 | 23.50                              | 29.50                             | 23.98                                |      |
| HT40     | MCS 0     | 1               | 102 | 5510        | 36.16               | 41.63                 | 23.98                              | 30.00                             | 23.98                                |      |
| HT40     | MCS 0     | 1               | 110 | 5550        | 36.36               | 47.02                 | 23.98                              | 30.00                             | 23.98                                |      |
| HT40     | MCS 0     | 1               | 134 | 5670        | 36.36               | 52.51                 | 23.98                              | 30.00                             | 23.98                                |      |
| HT40     | MCS0      | 1               | 142 | 5710        | 36.16               | 42.89                 | 23.98                              | 30.00                             | 23.98                                |      |
| VHT80    | MCS 0     | 1               | 106 | 5530        | 75.28               | 79.60                 | 23.98                              | 30.00                             | 23.98                                |      |
| VHT80    | MCS0      | 1               | 138 | 5690        | 75.28               | 80.56                 | 23.98                              | 30.00                             | 23.98                                |      |

**TEST RESULTS DATA**  
**Average Power Table**

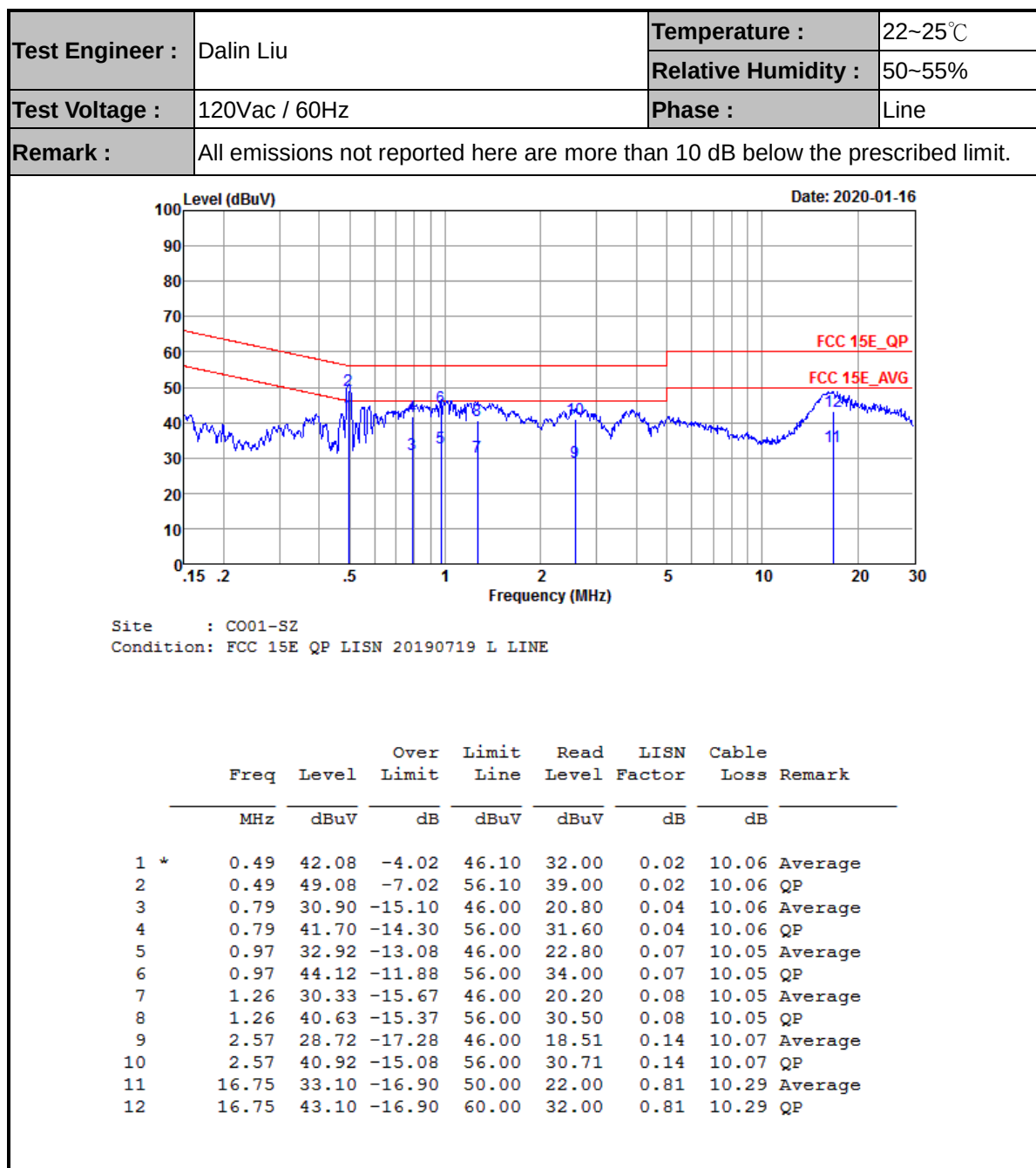
| FCC Band III |           |                 |     |             |                  |                               |                                 |          |                        |           |
|--------------|-----------|-----------------|-----|-------------|------------------|-------------------------------|---------------------------------|----------|------------------------|-----------|
| Mod.         | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | Duty Factor (dB) | Average Conducted Power (dBm) | FCC Conducted Power Limit (dBm) | DG (dBi) | EIRP Power Limit (dBm) | Pass/Fail |
| 11a          | 6M bps    | 1               | 100 | 5500        | 0.00             | 18.30                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| 11a          | 6M bps    | 1               | 116 | 5580        | 0.00             | 18.45                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| 11a          | 6M bps    | 1               | 140 | 5700        | 0.00             | 18.39                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| 11a          | 6M bps    | 1               | 144 | 5720        | 0.00             | 18.32                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT20         | MCS 0     | 1               | 100 | 5500        | 0.00             | 18.26                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT20         | MCS 0     | 1               | 116 | 5580        | 0.00             | 18.34                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT20         | MCS 0     | 1               | 140 | 5700        | 0.00             | 18.21                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT20         | MCS 0     | 1               | 144 | 5720        | 0.00             | 18.25                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT40         | MCS 0     | 1               | 102 | 5510        | 0.00             | 16.11                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT40         | MCS 0     | 1               | 110 | 5550        | 0.00             | 16.24                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT40         | MCS 0     | 1               | 134 | 5670        | 0.00             | 16.15                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| HT40         | MCS 0     | 1               | 142 | 5710        | 0.00             | 16.16                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT20        | MCS 0     | 1               | 100 | 5500        | 0.00             | 18.18                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT20        | MCS 0     | 1               | 116 | 5580        | 0.00             | 18.27                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT20        | MCS 0     | 1               | 140 | 5700        | 0.00             | 18.13                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT20        | MCS 0     | 1               | 144 | 5720        | 0.00             | 18.18                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT40        | MCS 0     | 1               | 102 | 5510        | 0.00             | 16.03                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT40        | MCS 0     | 1               | 110 | 5550        | 0.00             | 16.17                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT40        | MCS 0     | 1               | 134 | 5670        | 0.00             | 16.07                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT40        | MCS 0     | 1               | 142 | 5710        | 0.00             | 16.09                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT80        | MCS 0     | 1               | 106 | 5530        | 0.00             | 13.16                         | 23.98                           | -1.00    | 26.99                  | Pass      |
| VHT80        | MCS 0     | 1               | 138 | 5690        | 0.00             | 13.11                         | 23.98                           | -1.00    | 26.99                  | Pass      |

**TEST RESULTS DATA**  
**Power Spectral Density**

| Band III |           |                 |     |             |                  |                                 |                             |          |  |           |
|----------|-----------|-----------------|-----|-------------|------------------|---------------------------------|-----------------------------|----------|--|-----------|
| Mod.     | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | Duty Factor (dB) | Average Power Density (dBm/MHz) | Average PSD Limit (dBm/MHz) | DG (dBi) |  | Pass/Fail |
| 11a      | 6M bps    | 1               | 100 | 5500        | 0.00             | 8.67                            | 11.00                       | -1.00    |  | Pass      |
| 11a      | 6M bps    | 1               | 116 | 5580        | 0.00             | 8.80                            | 11.00                       | -1.00    |  | Pass      |
| 11a      | 6M bps    | 1               | 140 | 5700        | 0.00             | 8.55                            | 11.00                       | -1.00    |  | Pass      |
| 11a      | 6Mbps     | 1               | 144 | 5720        | 0.00             | 8.69                            | 11.00                       | -1.00    |  | Pass      |
| HT20     | MCS 0     | 1               | 100 | 5500        | 0.00             | 7.72                            | 11.00                       | -1.00    |  | Pass      |
| HT20     | MCS 0     | 1               | 116 | 5580        | 0.00             | 7.88                            | 11.00                       | -1.00    |  | Pass      |
| HT20     | MCS 0     | 1               | 140 | 5700        | 0.00             | 8.05                            | 11.00                       | -1.00    |  | Pass      |
| HT20     | MCS0      | 1               | 144 | 5720        | 0.00             | 7.90                            | 11.00                       | -1.00    |  | Pass      |
| HT40     | MCS 0     | 1               | 102 | 5510        | 0.00             | 3.32                            | 11.00                       | -1.00    |  | Pass      |
| HT40     | MCS 0     | 1               | 110 | 5550        | 0.00             | 3.29                            | 11.00                       | -1.00    |  | Pass      |
| HT40     | MCS 0     | 1               | 134 | 5670        | 0.00             | 3.70                            | 11.00                       | -1.00    |  | Pass      |
| HT40     | MCS0      | 1               | 142 | 5710        | 0.00             | 3.39                            | 11.00                       | -1.00    |  | Pass      |
| VHT80    | MCS 0     | 1               | 106 | 5530        | 0.00             | -1.19                           | 11.00                       | -1.00    |  | Pass      |
| VHT80    | MCS0      | 1               | 138 | 5690        | 0.00             | -1.29                           | 11.00                       | -1.00    |  | Pass      |

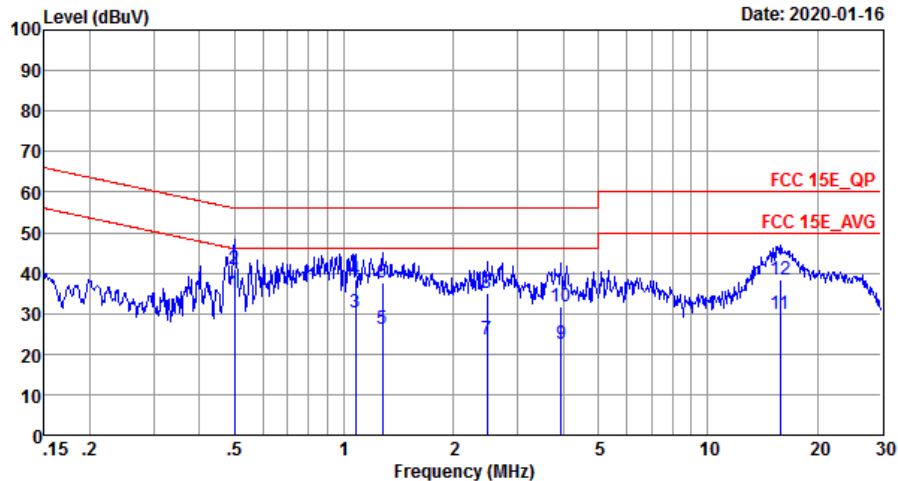


## Appendix B. AC Conducted Emission Test Results





|                 |                                                                                 |                     |         |
|-----------------|---------------------------------------------------------------------------------|---------------------|---------|
| Test Engineer : | Dalin Liu                                                                       | Temperature :       | 22~25°C |
|                 |                                                                                 | Relative Humidity : | 50~55%  |
| Test Voltage :  | 120Vac / 60Hz                                                                   | Phase :             | Neutral |
| Remark :        | All emissions not reported here are more than 10 dB below the prescribed limit. |                     |         |



Site : C001-SZ  
Condition: FCC 15E QP LISN 20190719 N NEUTRAL

|     | Freq  | Level | Over   | Limit | Read  | LISN   | Cable |         |
|-----|-------|-------|--------|-------|-------|--------|-------|---------|
|     | MHz   | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|     |       |       | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1 * | 0.50  | 35.08 | -10.93 | 46.01 | 25.00 | 0.02   | 10.06 | Average |
| 2   | 0.50  | 41.08 | -14.93 | 56.01 | 31.00 | 0.02   | 10.06 | QP      |
| 3   | 1.08  | 30.10 | -15.90 | 46.00 | 20.00 | 0.05   | 10.05 | Average |
| 4   | 1.08  | 38.40 | -17.60 | 56.00 | 28.30 | 0.05   | 10.05 | QP      |
| 5   | 1.28  | 26.30 | -19.70 | 46.00 | 16.20 | 0.05   | 10.05 | Average |
| 6   | 1.28  | 37.60 | -18.40 | 56.00 | 27.50 | 0.05   | 10.05 | QP      |
| 7   | 2.47  | 23.51 | -22.49 | 46.00 | 13.40 | 0.04   | 10.07 | Average |
| 8   | 2.47  | 35.11 | -20.89 | 56.00 | 25.00 | 0.04   | 10.07 | QP      |
| 9   | 3.94  | 22.48 | -23.52 | 46.00 | 12.30 | 0.05   | 10.13 | Average |
| 10  | 3.94  | 31.78 | -24.22 | 56.00 | 21.60 | 0.05   | 10.13 | QP      |
| 11  | 15.80 | 29.96 | -20.04 | 50.00 | 19.30 | 0.37   | 10.29 | Average |
| 12  | 15.80 | 38.36 | -21.64 | 60.00 | 27.70 | 0.37   | 10.29 | QP      |

Note:

1. Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
2. Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



## Appendix C. Radiated Spurious Emission

### Band 1 - 5150~5250MHz

#### WIFI 802.11a (Band Edge @ 3m)

| WIFI Ant.                   | Note | Frequency | Level      | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamplifier Factor | Ant Pos | Table Pos | Peak Avg. | Pol.    |
|-----------------------------|------|-----------|------------|------------|------------|------------|----------------|------------|---------------------|---------|-----------|-----------|---------|
| 1                           |      | ( MHz )   | ( dBμV/m ) | ( dB )     | ( dBμV/m ) | ( dBμV )   | ( dB/m )       | ( dB )     | ( dB )              | ( cm )  | ( deg )   | ( P/A )   | ( H/V ) |
| 802.11a<br>CH 36<br>5180MHz |      | 5145.6    | 62.02      | -11.98     | 74         | 45.94      | 34.9           | 14.28      | 33.1                | 242     | 78        | P         | H       |
|                             |      | 5150      | 50.77      | -3.23      | 54         | 34.69      | 34.9           | 14.28      | 33.1                | 242     | 78        | A         | H       |
|                             | *    | 5180      | 103.83     | -          | -          | 87.87      | 34.9           | 14.16      | 33.1                | 242     | 78        | P         | H       |
|                             |      | 5180      | 97.85      | -          | -          | 81.89      | 34.9           | 14.16      | 33.1                | 242     | 78        | A         | H       |
|                             |      | 5145.6    | 53.98      | -20.02     | 74         | 37.9       | 34.9           | 14.28      | 33.1                | 371     | 345       | P         | V       |
|                             |      | 5150      | 44.15      | -9.85      | 54         | 28.07      | 34.9           | 14.28      | 33.1                | 371     | 345       | A         | V       |
|                             | *    | 5180      | 96.01      | -          | -          | 80.05      | 34.9           | 14.16      | 33.1                | 371     | 345       | P         | V       |
|                             |      | 5180      | 90.52      | -          | -          | 74.56      | 34.9           | 14.16      | 33.1                | 371     | 345       | A         | V       |
| 802.11a<br>CH 44<br>5220MHz |      | 5089.44   | 54.95      | -19.05     | 74         | 38.74      | 34.9           | 14.41      | 33.1                | 226     | 79        | P         | H       |
|                             |      | 5149.5    | 43.85      | -10.15     | 54         | 27.77      | 34.9           | 14.28      | 33.1                | 226     | 79        | A         | H       |
|                             | *    | 5220      | 104.48     | -          | -          | 88.65      | 34.9           | 14.03      | 33.1                | 226     | 79        | P         | H       |
|                             |      | 5220      | 97.68      | -          | -          | 81.85      | 34.9           | 14.03      | 33.1                | 226     | 79        | A         | H       |
|                             |      | 5374.08   | 53.29      | -20.71     | 74         | 36.88      | 34.9           | 14.61      | 33.1                | 226     | 79        | P         | H       |
|                             |      | 5386.08   | 43.35      | -10.65     | 54         | 26.94      | 34.9           | 14.61      | 33.1                | 226     | 79        | A         | H       |
|                             |      | 5028.34   | 53.28      | -20.72     | 74         | 36.82      | 34.9           | 14.66      | 33.1                | 328     | 338       | P         | V       |
|                             |      | 5042.9    | 43.26      | -10.74     | 54         | 26.93      | 34.9           | 14.53      | 33.1                | 328     | 338       | A         | V       |
|                             | *    | 5220      | 96.34      | -          | -          | 80.51      | 34.9           | 14.03      | 33.1                | 328     | 338       | P         | V       |
|                             |      | 5220      | 90.92      | -          | -          | 75.09      | 34.9           | 14.03      | 33.1                | 328     | 338       | A         | V       |
|                             |      | 5449.92   | 53.87      | -20.13     | 74         | 37.52      | 34.9           | 14.55      | 33.1                | 328     | 338       | P         | V       |
|                             |      | 5434.8    | 43.16      | -10.84     | 54         | 26.81      | 34.9           | 14.55      | 33.1                | 328     | 338       | A         | V       |



|                             |                                                                                             |         |        |        |    |       |      |       |      |     |     |   |   |
|-----------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|------|-------|------|-----|-----|---|---|
| 802.11a<br>CH 48<br>5240MHz |                                                                                             | 5078.26 | 54.32  | -19.68 | 74 | 38.11 | 34.9 | 14.41 | 33.1 | 241 | 76  | P | H |
|                             |                                                                                             | 5074.1  | 43.53  | -10.47 | 54 | 27.2  | 34.9 | 14.53 | 33.1 | 241 | 76  | A | H |
|                             | *                                                                                           | 5240    | 104.89 | -      | -  | 88.91 | 34.9 | 14.18 | 33.1 | 241 | 76  | P | H |
|                             |                                                                                             | 5240    | 98.97  | -      | -  | 82.99 | 34.9 | 14.18 | 33.1 | 241 | 76  | A | H |
|                             |                                                                                             | 5382.48 | 53.61  | -20.39 | 74 | 37.2  | 34.9 | 14.61 | 33.1 | 241 | 76  | P | H |
|                             |                                                                                             | 5406.96 | 43.47  | -10.53 | 54 | 26.91 | 34.9 | 14.76 | 33.1 | 241 | 76  | A | H |
|                             |                                                                                             | 5081.12 | 53.77  | -20.23 | 74 | 37.56 | 34.9 | 14.41 | 33.1 | 344 | 326 | P | V |
|                             |                                                                                             | 5042.64 | 43.27  | -10.73 | 54 | 26.94 | 34.9 | 14.53 | 33.1 | 344 | 326 | A | V |
|                             | *                                                                                           | 5240    | 97.14  | -      | -  | 81.16 | 34.9 | 14.18 | 33.1 | 344 | 326 | P | V |
|                             |                                                                                             | 5240    | 91.34  | -      | -  | 75.36 | 34.9 | 14.18 | 33.1 | 344 | 326 | A | V |
|                             |                                                                                             | 5385.36 | 53.21  | -20.79 | 74 | 36.8  | 34.9 | 14.61 | 33.1 | 344 | 326 | P | V |
|                             |                                                                                             | 5459.76 | 43.17  | -10.83 | 54 | 26.82 | 34.9 | 14.55 | 33.1 | 344 | 326 | A | V |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |      |       |      |     |     |   |   |



## Band 1 5150~5250MHz

## WIFI 802.11a (Harmonic @ 3m)

| WIFI<br>Ant.<br>1           | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|-----------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11a<br>CH 36<br>5180MHz |                                                                                             | 10360                | 50.9                | -17.3                   | 68.2                        | 49.83                   | 39.61                         | 20.45                   | 58.99                      | 152                  | 260                     | P                     | H             |
|                             |                                                                                             | 15540                | 48.24               | -25.76                  | 74                          | 46.2                    | 37.81                         | 23.16                   | 58.93                      | 189                  | 238                     | P                     | H             |
|                             |                                                                                             | 10360                | 48.18               | -20.02                  | 68.2                        | 47.11                   | 39.61                         | 20.45                   | 58.99                      | 152                  | 260                     | P                     | V             |
|                             |                                                                                             | 15540                | 49.77               | -24.23                  | 74                          | 47.73                   | 37.81                         | 23.16                   | 58.93                      | 189                  | 238                     | P                     | V             |
| 802.11a<br>CH 44<br>5220MHz |                                                                                             | 10440                | 49.32               | -18.88                  | 68.2                        | 48.02                   | 39.75                         | 20.47                   | 58.92                      | 150                  | 230                     | P                     | H             |
|                             |                                                                                             | 15660                | 50.45               | -23.55                  | 74                          | 48.75                   | 37.5                          | 23.26                   | 59.06                      | 160                  | 225                     | P                     | H             |
|                             |                                                                                             | 10440                | 50.31               | -17.89                  | 68.2                        | 49.01                   | 39.75                         | 20.47                   | 58.92                      | 150                  | 230                     | P                     | V             |
|                             |                                                                                             | 15660                | 49.85               | -24.15                  | 74                          | 48.15                   | 37.5                          | 23.26                   | 59.06                      | 160                  | 225                     | P                     | V             |
| 802.11a<br>CH 48<br>5240MHz |                                                                                             | 10480                | 50.34               | -17.86                  | 68.2                        | 48.86                   | 39.86                         | 20.48                   | 58.86                      | 150                  | 290                     | P                     | H             |
|                             |                                                                                             | 15720                | 50.2                | -23.8                   | 74                          | 48.7                    | 37.32                         | 23.3                    | 59.12                      | 150                  | 291                     | P                     | H             |
|                             |                                                                                             | 10480                | 51.8                | -16.4                   | 68.2                        | 50.32                   | 39.86                         | 20.48                   | 58.86                      | 150                  | 289                     | P                     | V             |
|                             |                                                                                             | 15720                | 50.95               | -23.05                  | 74                          | 49.45                   | 37.32                         | 23.3                    | 59.12                      | 150                  | 291                     | P                     | V             |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |





## Band 1 5150~5250MHz

## WIFI 802.11n HT20 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1                   | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT20<br>CH 36<br>5180MHz |      | 5149.76              | 63.01               | -10.99                  | 74                          | 46.93                     | 34.9                          | 14.28                   | 33.1                       | 244                  | 82                      | P                       | H               |
|                                     |      | 5150                 | 50.49               | -3.51                   | 54                          | 34.41                     | 34.9                          | 14.28                   | 33.1                       | 244                  | 82                      | A                       | H               |
|                                     | *    | 5180                 | 103.55              | -                       | -                           | 87.59                     | 34.9                          | 14.16                   | 33.1                       | 244                  | 82                      | P                       | H               |
|                                     |      | 5180                 | 97.38               | -                       | -                           | 81.42                     | 34.9                          | 14.16                   | 33.1                       | 244                  | 82                      | A                       | H               |
|                                     |      | 5149.99              | 56.58               | -17.42                  | 74                          | 40.5                      | 34.9                          | 14.28                   | 33.1                       | 360                  | 49                      | P                       | V               |
|                                     |      | 5150                 | 44.28               | -9.72                   | 54                          | 28.2                      | 34.9                          | 14.28                   | 33.1                       | 360                  | 49                      | A                       | V               |
|                                     | *    | 5180                 | 95.35               | -                       | -                           | 79.39                     | 34.9                          | 14.16                   | 33.1                       | 360                  | 49                      | P                       | V               |
|                                     |      | 5180                 | 89.81               | -                       | -                           | 73.85                     | 34.9                          | 14.16                   | 33.1                       | 360                  | 49                      | A                       | V               |
| 802.11n<br>HT20<br>CH 44<br>5220MHz |      | 5027.56              | 55.34               | -18.66                  | 74                          | 38.88                     | 34.9                          | 14.66                   | 33.1                       | 255                  | 73                      | P                       | H               |
|                                     |      | 5149.5               | 44.03               | -9.97                   | 54                          | 27.95                     | 34.9                          | 14.28                   | 33.1                       | 255                  | 73                      | A                       | H               |
|                                     | *    | 5220                 | 104.16              | -                       | -                           | 88.33                     | 34.9                          | 14.03                   | 33.1                       | 255                  | 73                      | P                       | H               |
|                                     |      | 5220                 | 97.69               | -                       | -                           | 81.86                     | 34.9                          | 14.03                   | 33.1                       | 255                  | 73                      | A                       | H               |
|                                     |      | 5404.8               | 53.36               | -20.64                  | 74                          | 36.8                      | 34.9                          | 14.76                   | 33.1                       | 255                  | 73                      | P                       | H               |
|                                     |      | 5385.6               | 43.67               | -10.33                  | 54                          | 27.26                     | 34.9                          | 14.61                   | 33.1                       | 255                  | 73                      | A                       | H               |
|                                     |      | 5042.12              | 54.54               | -19.46                  | 74                          | 38.21                     | 34.9                          | 14.53                   | 33.1                       | 363                  | 17                      | P                       | V               |
|                                     |      | 5045.24              | 43.56               | -10.44                  | 54                          | 27.23                     | 34.9                          | 14.53                   | 33.1                       | 363                  | 17                      | A                       | V               |
|                                     | *    | 5220                 | 97.02               | -                       | -                           | 81.19                     | 34.9                          | 14.03                   | 33.1                       | 363                  | 17                      | P                       | V               |
|                                     |      | 5220                 | 90.36               | -                       | -                           | 74.53                     | 34.9                          | 14.03                   | 33.1                       | 363                  | 17                      | A                       | V               |
|                                     |      | 5364.48              | 54.13               | -19.87                  | 74                          | 37.72                     | 34.9                          | 14.61                   | 33.1                       | 363                  | 17                      | P                       | V               |
|                                     |      | 5438.88              | 43.43               | -10.57                  | 54                          | 27.08                     | 34.9                          | 14.55                   | 33.1                       | 363                  | 17                      | A                       | V               |



|                                     |                                                                                             |         |        |        |    |       |      |       |      |     |    |   |   |
|-------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|------|-------|------|-----|----|---|---|
| 802.11n<br>HT20<br>CH 48<br>5240MHz |                                                                                             | 5046.28 | 53.83  | -20.17 | 74 | 37.5  | 34.9 | 14.53 | 33.1 | 255 | 83 | P | H |
|                                     |                                                                                             | 5070.98 | 43.9   | -10.1  | 54 | 27.57 | 34.9 | 14.53 | 33.1 | 255 | 83 | A | H |
|                                     | *                                                                                           | 5240    | 104.38 | -      | -  | 88.4  | 34.9 | 14.18 | 33.1 | 255 | 83 | P | H |
|                                     |                                                                                             | 5240    | 97.6   | -      | -  | 81.62 | 34.9 | 14.18 | 33.1 | 255 | 83 | A | H |
|                                     |                                                                                             | 5387.76 | 53.97  | -20.03 | 74 | 37.41 | 34.9 | 14.76 | 33.1 | 255 | 83 | P | H |
|                                     |                                                                                             | 5402.4  | 43.65  | -10.35 | 54 | 27.09 | 34.9 | 14.76 | 33.1 | 255 | 83 | A | H |
|                                     |                                                                                             | 5075.92 | 53.49  | -20.51 | 74 | 37.28 | 34.9 | 14.41 | 33.1 | 360 | 14 | P | V |
|                                     |                                                                                             | 5043.94 | 43.53  | -10.47 | 54 | 27.2  | 34.9 | 14.53 | 33.1 | 360 | 14 | A | V |
|                                     | *                                                                                           | 5240    | 96.44  | -      | -  | 80.46 | 34.9 | 14.18 | 33.1 | 360 | 14 | P | V |
|                                     |                                                                                             | 5240    | 90.07  | -      | -  | 74.09 | 34.9 | 14.18 | 33.1 | 360 | 14 | A | V |
|                                     |                                                                                             | 5399.04 | 53.34  | -20.66 | 74 | 36.78 | 34.9 | 14.76 | 33.1 | 360 | 14 | P | V |
|                                     |                                                                                             | 5400.48 | 43.48  | -10.52 | 54 | 26.92 | 34.9 | 14.76 | 33.1 | 360 | 14 | A | V |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |      |       |      |     |    |   |   |



## Band 1 5150~5250MHz

## WIFI 802.11n HT20 (Harmonic @ 3m)

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11n           |                                                                                             | 10360                | 53.58               | -14.62                  | 68.2                        | 52.51                   | 39.61                         | 20.45                   | 58.99                      | 152                  | 260                     | P                     | H             |
| HT20              |                                                                                             | 15540                | 50.82               | -23.18                  | 74                          | 48.78                   | 37.81                         | 23.16                   | 58.93                      | 189                  | 238                     | P                     | H             |
| CH 36             |                                                                                             | 10360                | 51.94               | -16.26                  | 68.2                        | 50.87                   | 39.61                         | 20.45                   | 58.99                      | 152                  | 260                     | P                     | V             |
| 5180MHz           |                                                                                             | 15540                | 50.19               | -23.81                  | 74                          | 48.15                   | 37.81                         | 23.16                   | 58.93                      | 189                  | 238                     | P                     | V             |
| 802.11n           |                                                                                             | 10440                | 50.22               | -17.98                  | 68.2                        | 48.92                   | 39.75                         | 20.47                   | 58.92                      | 150                  | 230                     | P                     | H             |
| HT20              |                                                                                             | 15660                | 50.77               | -23.23                  | 74                          | 49.07                   | 37.5                          | 23.26                   | 59.06                      | 160                  | 225                     | P                     | H             |
| CH 44             |                                                                                             | 10440                | 53.53               | -14.67                  | 68.2                        | 52.23                   | 39.75                         | 20.47                   | 58.92                      | 150                  | 230                     | P                     | V             |
| 5220MHz           |                                                                                             | 15660                | 50.61               | -23.39                  | 74                          | 48.91                   | 37.5                          | 23.26                   | 59.06                      | 160                  | 225                     | P                     | V             |
| 802.11n           |                                                                                             | 10480                | 49.08               | -19.12                  | 68.2                        | 47.6                    | 39.86                         | 20.48                   | 58.86                      | 150                  | 289                     | P                     | H             |
| HT20              |                                                                                             | 15720                | 47.43               | -26.57                  | 74                          | 45.93                   | 37.32                         | 23.3                    | 59.12                      | 150                  | 291                     | P                     | H             |
| CH 48             |                                                                                             | 10480                | 48.93               | -19.27                  | 68.2                        | 47.45                   | 39.86                         | 20.48                   | 58.86                      | 150                  | 289                     | P                     | V             |
| 5240MHz           |                                                                                             | 15720                | 48.35               | -25.65                  | 74                          | 46.85                   | 37.32                         | 23.3                    | 59.12                      | 150                  | 291                     | P                     | V             |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |



## Band 1 5150~5250MHz

## WIFI 802.11n HT40 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1                   | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT40<br>CH 38<br>5190MHz |                                                                                             | 5134.16              | 52.45               | -21.55                  | 74                          | 38.02                     | 33.85                         | 13.68                   | 33.1                       | 122                  | 131                     | P                       | H               |
|                                     |                                                                                             | 5141.18              | 44.05               | -9.95                   | 54                          | 29.6                      | 33.87                         | 13.68                   | 33.1                       | 122                  | 131                     | A                       | H               |
|                                     | *                                                                                           | 5190                 | 86.04               | -                       | -                           | 71.45                     | 33.92                         | 13.77                   | 33.1                       | 122                  | 131                     | P                       | H               |
|                                     |                                                                                             | 5190                 | 80.94               | -                       | -                           | 66.35                     | 33.92                         | 13.77                   | 33.1                       | 122                  | 131                     | A                       | H               |
|                                     |                                                                                             | 5358.08              | 53.89               | -20.11                  | 74                          | 38.76                     | 34.13                         | 14.1                    | 33.1                       | 122                  | 131                     | P                       | H               |
|                                     |                                                                                             | 5402.88              | 44.35               | -9.65                   | 54                          | 29.09                     | 34.2                          | 14.16                   | 33.1                       | 122                  | 131                     | A                       | H               |
|                                     |                                                                                             | 5041.34              | 52.21               | -21.79                  | 74                          | 38.06                     | 33.74                         | 13.51                   | 33.1                       | 130                  | 181                     | P                       | V               |
|                                     |                                                                                             | 5047.06              | 44.64               | -9.36                   | 54                          | 30.49                     | 33.74                         | 13.51                   | 33.1                       | 130                  | 181                     | A                       | V               |
|                                     | *                                                                                           | 5190                 | 91.29               | -                       | -                           | 76.7                      | 33.92                         | 13.77                   | 33.1                       | 130                  | 181                     | P                       | V               |
|                                     |                                                                                             | 5190                 | 85.07               | -                       | -                           | 70.48                     | 33.92                         | 13.77                   | 33.1                       | 130                  | 181                     | A                       | V               |
|                                     |                                                                                             | 5441.8               | 51.71               | -22.29                  | 74                          | 36.3                      | 34.24                         | 14.27                   | 33.1                       | 130                  | 181                     | P                       | V               |
|                                     |                                                                                             | 5366.48              | 44.26               | -9.74                   | 54                          | 29.11                     | 34.15                         | 14.1                    | 33.1                       | 130                  | 181                     | A                       | V               |
| 802.11n<br>HT40<br>CH 46<br>5230MHz |                                                                                             | 5140.14              | 56.33               | -17.67                  | 74                          | 40.25                     | 34.9                          | 14.28                   | 33.1                       | 240                  | 81                      | P                       | H               |
|                                     |                                                                                             | 5150                 | 44.55               | -9.45                   | 54                          | 28.47                     | 34.9                          | 14.28                   | 33.1                       | 240                  | 81                      | A                       | H               |
|                                     | *                                                                                           | 5230                 | 99.03               | -                       | -                           | 83.2                      | 34.9                          | 14.03                   | 33.1                       | 240                  | 81                      | P                       | H               |
|                                     |                                                                                             | 5230                 | 93.18               | -                       | -                           | 77.35                     | 34.9                          | 14.03                   | 33.1                       | 240                  | 81                      | A                       | H               |
|                                     |                                                                                             | 5426.16              | 54.06               | -19.94                  | 74                          | 37.5                      | 34.9                          | 14.76                   | 33.1                       | 240                  | 81                      | P                       | H               |
|                                     |                                                                                             | 5361.12              | 43.63               | -10.37                  | 54                          | 27.22                     | 34.9                          | 14.61                   | 33.1                       | 240                  | 81                      | A                       | H               |
|                                     |                                                                                             | 5088.4               | 53.74               | -20.26                  | 74                          | 37.53                     | 34.9                          | 14.41                   | 33.1                       | 291                  | 10                      | P                       | V               |
|                                     |                                                                                             | 5042.64              | 43.52               | -10.48                  | 54                          | 27.19                     | 34.9                          | 14.53                   | 33.1                       | 291                  | 10                      | A                       | V               |
|                                     | *                                                                                           | 5230                 | 91.25               | -                       | -                           | 75.42                     | 34.9                          | 14.03                   | 33.1                       | 291                  | 10                      | P                       | V               |
|                                     |                                                                                             | 5230                 | 86.19               | -                       | -                           | 70.36                     | 34.9                          | 14.03                   | 33.1                       | 291                  | 10                      | A                       | V               |
|                                     |                                                                                             | 5372.16              | 53.33               | -20.67                  | 74                          | 36.92                     | 34.9                          | 14.61                   | 33.1                       | 291                  | 10                      | P                       | V               |
|                                     |                                                                                             | 5433.12              | 43.47               | -10.53                  | 54                          | 27.12                     | 34.9                          | 14.55                   | 33.1                       | 291                  | 10                      | A                       | V               |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |



**Band 1 5150~5250MHz**  
**WIFI 802.11n HT40 (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1                   | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT40<br>CH 38<br>5190MHz |                                                                                             | 10380                | 48.07               | -20.13                  | 68.2                        | 46.94                     | 39.64                         | 20.46                   | 58.97                      | 150                  | 360                     | P                       | H               |
|                                     |                                                                                             | 15570                | 46.65               | -27.35                  | 74                          | 44.7                      | 37.72                         | 23.2                    | 58.97                      | 155                  | 360                     | P                       | H               |
|                                     |                                                                                             | 10380                | 49.52               | -18.68                  | 68.2                        | 48.39                     | 39.64                         | 20.46                   | 58.97                      | 150                  | 360                     | P                       | V               |
|                                     |                                                                                             | 15570                | 47.72               | -26.28                  | 74                          | 45.77                     | 37.72                         | 23.2                    | 58.97                      | 155                  | 360                     | P                       | V               |
| 802.11n<br>HT40<br>CH 46<br>5230MHz |                                                                                             | 10460                | 47.97               | -20.23                  | 68.2                        | 46.6                      | 39.79                         | 20.48                   | 58.9                       | 150                  | 360                     | P                       | H               |
|                                     |                                                                                             | 15690                | 47.2                | -26.8                   | 74                          | 45.58                     | 37.41                         | 23.3                    | 59.09                      | 150                  | 225                     | P                       | H               |
|                                     |                                                                                             | 10460                | 50.18               | -18.02                  | 68.2                        | 48.81                     | 39.79                         | 20.48                   | 58.9                       | 150                  | 360                     | P                       | V               |
|                                     |                                                                                             | 15690                | 49.61               | -24.39                  | 74                          | 47.99                     | 37.41                         | 23.3                    | 59.09                      | 150                  | 225                     | P                       | V               |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |



## Band 1 5150~5250MHz

## WIFI 802.11ac VHT80 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1                     | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|---------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11ac<br>VHT80<br>CH 42<br>5210MHz |                                                                                             | 5130.52              | 55.42               | -18.58                  | 74                          | 39.34                   | 34.9                          | 14.28                   | 33.1                       | 233                  | 73                      | P                     | H             |
|                                       |                                                                                             | 5149.76              | 46.81               | -7.19                   | 54                          | 30.73                   | 34.9                          | 14.28                   | 33.1                       | 233                  | 73                      | A                     | H             |
|                                       | *                                                                                           | 5210                 | 92.21               | -                       | -                           | 76.38                   | 34.9                          | 14.03                   | 33.1                       | 233                  | 73                      | P                     | H             |
|                                       |                                                                                             | 5210                 | 86.19               | -                       | -                           | 70.36                   | 34.9                          | 14.03                   | 33.1                       | 233                  | 73                      | A                     | H             |
|                                       |                                                                                             | 5363.76              | 53.63               | -20.37                  | 74                          | 37.22                   | 34.9                          | 14.61                   | 33.1                       | 233                  | 73                      | P                     | H             |
|                                       |                                                                                             | 5398.56              | 43.49               | -10.51                  | 54                          | 26.93                   | 34.9                          | 14.76                   | 33.1                       | 233                  | 73                      | A                     | H             |
|                                       |                                                                                             | 5089.7               | 53.72               | -20.28                  | 74                          | 37.51                   | 34.9                          | 14.41                   | 33.1                       | 379                  | 49                      | P                     | V             |
|                                       |                                                                                             | 5044.72              | 43.54               | -10.46                  | 54                          | 27.21                   | 34.9                          | 14.53                   | 33.1                       | 379                  | 49                      | A                     | V             |
|                                       | *                                                                                           | 5210                 | 85.16               | -                       | -                           | 69.33                   | 34.9                          | 14.03                   | 33.1                       | 379                  | 49                      | P                     | V             |
|                                       |                                                                                             | 5210                 | 79.25               | -                       | -                           | 63.42                   | 34.9                          | 14.03                   | 33.1                       | 379                  | 49                      | A                     | V             |
|                                       |                                                                                             | 5432.4               | 53.36               | -20.64                  | 74                          | 37.01                   | 34.9                          | 14.55                   | 33.1                       | 379                  | 49                      | P                     | V             |
|                                       |                                                                                             | 5459.76              | 43.44               | -10.56                  | 54                          | 27.09                   | 34.9                          | 14.55                   | 33.1                       | 379                  | 49                      | A                     | V             |
| Remark                                | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |



## Band 1 5150~5250MHz

## WIFI 802.11ac VHT80 (Harmonic @ 3m)

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11ac          |                                                                                             | 10420                | 48.39               | -19.81                  | 68.2                        | 47.13                   | 39.72                         | 20.47                   | 58.93                      | 150                  | 220                     | P                     | H             |
| VHT80             |                                                                                             | 15630                | 48.59               | -25.41                  | 74                          | 46.86                   | 37.54                         | 23.23                   | 59.04                      | 213                  | 256                     | P                     | H             |
| CH 42             |                                                                                             | 10420                | 51.22               | -16.98                  | 68.2                        | 49.96                   | 39.72                         | 20.47                   | 58.93                      | 100                  | 220                     | P                     | V             |
| 5210MHz           |                                                                                             | 15630                | 50.09               | -23.91                  | 74                          | 48.36                   | 37.54                         | 23.23                   | 59.04                      | 125                  | 130                     | P                     | V             |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |



## Band 2 - 5250~5350MHz

## WIFI 802.11a (Band Edge @ 3m)

| WIFI                        | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|-----------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                        |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1                           |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11a<br>CH 52<br>5260MHz |      | 5103.48   | 53.55      | -20.45 | 74         | 37.34    | 34.9     | 14.41  | 33.1   | 253    | 65      | P       | H       |
|                             |      | 5092.82   | 43.54      | -10.46 | 54         | 27.33    | 34.9     | 14.41  | 33.1   | 253    | 65      | P       | H       |
|                             |      | 5260      | 104.09     | -      | -          | 88.11    | 34.9     | 14.18  | 33.1   | 253    | 65      | A       | H       |
|                             | *    | 5260      | 97.57      | -      | -          | 81.59    | 34.9     | 14.18  | 33.1   | 253    | 65      | P       | H       |
|                             |      | 5378.88   | 53.73      | -20.27 | 74         | 37.32    | 34.9     | 14.61  | 33.1   | 253    | 65      | A       | H       |
|                             |      | 5428.8    | 43.5       | -10.5  | 54         | 27.15    | 34.9     | 14.55  | 33.1   | 253    | 65      | P       | H       |
|                             |      | 5103.48   | 53.16      | -20.84 | 74         | 36.95    | 34.9     | 14.41  | 33.1   | 114    | 219     | P       | V       |
|                             |      | 5046.02   | 43.25      | -10.75 | 54         | 26.92    | 34.9     | 14.53  | 33.1   | 114    | 219     | P       | V       |
|                             |      | 5260      | 95.14      | -      | -          | 79.16    | 34.9     | 14.18  | 33.1   | 114    | 219     | A       | V       |
|                             | *    | 5260      | 90.3       | -      | -          | 74.32    | 34.9     | 14.18  | 33.1   | 114    | 219     | P       | V       |
|                             |      | 5413.44   | 53.49      | -20.51 | 74         | 36.93    | 34.9     | 14.76  | 33.1   | 114    | 219     | A       | V       |
|                             |      | 5434.56   | 43.17      | -10.83 | 54         | 26.82    | 34.9     | 14.55  | 33.1   | 114    | 219     | P       | V       |
| 802.11a<br>CH 60<br>5300MHz | *    | 5049      | 52.55      | -21.45 | 74         | 36.22    | 34.9     | 14.53  | 33.1   | 248    | 64      | P       | H       |
|                             |      | 5044.8    | 43.39      | -10.61 | 54         | 27.06    | 34.9     | 14.53  | 33.1   | 248    | 64      | P       | H       |
|                             |      | 5300      | 104.6      | -      | -          | 88.48    | 34.9     | 14.32  | 33.1   | 248    | 64      | A       | H       |
|                             |      | 5300      | 97.21      | -      | -          | 81.09    | 34.9     | 14.32  | 33.1   | 248    | 64      | P       | H       |
|                             |      | 5351.76   | 56.85      | -17.15 | 74         | 40.44    | 34.9     | 14.61  | 33.1   | 248    | 64      | A       | H       |
|                             |      | 5350.08   | 45.04      | -8.96  | 54         | 28.63    | 34.9     | 14.61  | 33.1   | 248    | 64      | P       | H       |
|                             | *    | 5053.2    | 53.03      | -20.97 | 74         | 36.7     | 34.9     | 14.53  | 33.1   | 117    | 218     | P       | V       |
|                             |      | 5042.7    | 43.23      | -10.77 | 54         | 26.9     | 34.9     | 14.53  | 33.1   | 117    | 218     | P       | V       |
|                             |      | 5300      | 95.47      | -      | -          | 79.35    | 34.9     | 14.32  | 33.1   | 117    | 218     | A       | V       |
|                             |      | 5300      | 90.27      | -      | -          | 74.15    | 34.9     | 14.32  | 33.1   | 117    | 218     | P       | V       |
|                             |      | 5384.16   | 54.06      | -19.94 | 74         | 37.65    | 34.9     | 14.61  | 33.1   | 117    | 218     | A       | V       |
|                             |      | 5350.08   | 43.2       | -10.8  | 54         | 26.79    | 34.9     | 14.61  | 33.1   | 117    | 218     | P       | V       |





## Band 2 5250~5350MHz

## WIFI 802.11a (Harmonic @ 3m)

| WIFI<br>Ant.<br>1           | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11a<br>CH 52<br>5260MHz |                                                                                             | 10520                | 50.82               | -17.38                  | 68.2                        | 49.25                     | 39.9                          | 20.49                   | 58.82                      | 150                  | 220                     | P                       | H               |
|                             |                                                                                             | 15780                | 50.52               | -23.48                  | 74                          | 49.15                     | 37.18                         | 23.37                   | 59.18                      | 159                  | 345                     | P                       | H               |
|                             |                                                                                             | 10520                | 51.18               | -17.02                  | 68.2                        | 49.61                     | 39.9                          | 20.49                   | 58.82                      | 150                  | 220                     | P                       | V               |
|                             |                                                                                             | 15780                | 50.55               | -23.45                  | 74                          | 49.18                     | 37.18                         | 23.37                   | 59.18                      | 159                  | 345                     | P                       | V               |
| 802.11a<br>CH 60<br>5300MHz |                                                                                             | 10600                | 50.3                | -23.7                   | 74                          | 48.6                      | 39.92                         | 20.51                   | 58.73                      | 185                  | 215                     | P                       | H               |
|                             |                                                                                             | 15900                | 50.1                | -23.9                   | 74                          | 49.06                     | 36.87                         | 23.47                   | 59.3                       | 196                  | 190                     | P                       | H               |
|                             |                                                                                             | 10600                | 50.6                | -23.4                   | 74                          | 48.9                      | 39.92                         | 20.51                   | 58.73                      | 185                  | 215                     | P                       | V               |
|                             |                                                                                             | 15900                | 50.04               | -23.96                  | 74                          | 49                        | 36.87                         | 23.47                   | 59.3                       | 196                  | 190                     | P                       | V               |
| 802.11a<br>CH 64<br>5320MHz |                                                                                             | 10640                | 50.31               | -23.69                  | 74                          | 48.54                     | 39.93                         | 20.53                   | 58.69                      | 152                  | 135                     | P                       | H               |
|                             |                                                                                             | 15960                | 50.54               | -23.46                  | 74                          | 49.68                     | 36.69                         | 23.54                   | 59.37                      | 173                  | 245                     | P                       | H               |
|                             |                                                                                             | 10640                | 50.06               | -23.94                  | 74                          | 48.29                     | 39.93                         | 20.53                   | 58.69                      | 152                  | 135                     | P                       | V               |
|                             |                                                                                             | 15960                | 50.32               | -23.68                  | 74                          | 49.46                     | 36.69                         | 23.54                   | 59.37                      | 173                  | 245                     | P                       | V               |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |



## Band 2 5250~5350MHz

## WIFI 802.11n HT20 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1                   | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT20<br>CH 52<br>5260MHz |      | 5075.14              | 55.14               | -18.86                  | 74                          | 38.81                     | 34.9                          | 14.53                   | 33.1                       | 250                  | 78                      | P                       | H               |
|                                     |      | 5091                 | 43.86               | -10.14                  | 54                          | 27.65                     | 34.9                          | 14.41                   | 33.1                       | 250                  | 78                      | A                       | H               |
|                                     | *    | 5260                 | 104.08              | -                       | -                           | 88.1                      | 34.9                          | 14.18                   | 33.1                       | 250                  | 78                      | P                       | H               |
|                                     |      | 5260                 | 97.54               | -                       | -                           | 81.56                     | 34.9                          | 14.18                   | 33.1                       | 250                  | 78                      | A                       | H               |
|                                     |      | 5425.2               | 54.45               | -19.55                  | 74                          | 37.89                     | 34.9                          | 14.76                   | 33.1                       | 250                  | 78                      | P                       | H               |
|                                     |      | 5350.08              | 43.74               | -10.26                  | 54                          | 27.33                     | 34.9                          | 14.61                   | 33.1                       | 250                  | 78                      | A                       | H               |
|                                     |      | 5039.78              | 53.77               | -20.23                  | 74                          | 37.44                     | 34.9                          | 14.53                   | 33.1                       | 361                  | 15                      | P                       | V               |
|                                     |      | 5045.24              | 43.54               | -10.46                  | 54                          | 27.21                     | 34.9                          | 14.53                   | 33.1                       | 361                  | 15                      | A                       | V               |
|                                     | *    | 5260                 | 97.42               | -                       | -                           | 81.44                     | 34.9                          | 14.18                   | 33.1                       | 361                  | 15                      | P                       | V               |
|                                     |      | 5260                 | 91.6                | -                       | -                           | 75.62                     | 34.9                          | 14.18                   | 33.1                       | 361                  | 15                      | A                       | V               |
|                                     |      | 5362.08              | 53.31               | -20.69                  | 74                          | 36.9                      | 34.9                          | 14.61                   | 33.1                       | 361                  | 15                      | P                       | V               |
|                                     |      | 5432.88              | 43.48               | -10.52                  | 54                          | 27.13                     | 34.9                          | 14.55                   | 33.1                       | 361                  | 15                      | A                       | V               |
| 802.11n<br>HT20<br>CH 60<br>5300MHz |      | 5031.85              | 52.89               | -21.11                  | 74                          | 36.43                     | 34.9                          | 14.66                   | 33.1                       | 251                  | 68                      | P                       | H               |
|                                     |      | 5045.15              | 43.68               | -10.32                  | 54                          | 27.35                     | 34.9                          | 14.53                   | 33.1                       | 251                  | 68                      | A                       | H               |
|                                     | *    | 5300                 | 104.13              | -                       | -                           | 88.01                     | 34.9                          | 14.32                   | 33.1                       | 251                  | 68                      | P                       | H               |
|                                     |      | 5300                 | 97.98               | -                       | -                           | 81.86                     | 34.9                          | 14.32                   | 33.1                       | 251                  | 68                      | A                       | H               |
|                                     |      | 5353.44              | 59.11               | -14.89                  | 74                          | 42.7                      | 34.9                          | 14.61                   | 33.1                       | 251                  | 68                      | P                       | H               |
|                                     |      | 5350.08              | 47.28               | -6.72                   | 54                          | 30.87                     | 34.9                          | 14.61                   | 33.1                       | 251                  | 68                      | A                       | H               |
|                                     |      | 5060.9               | 54.29               | -19.71                  | 74                          | 37.96                     | 34.9                          | 14.53                   | 33.1                       | 354                  | 15                      | P                       | V               |
|                                     |      | 5044.1               | 43.56               | -10.44                  | 54                          | 27.23                     | 34.9                          | 14.53                   | 33.1                       | 354                  | 15                      | A                       | V               |
|                                     | *    | 5300                 | 97.29               | -                       | -                           | 81.17                     | 34.9                          | 14.32                   | 33.1                       | 354                  | 15                      | P                       | V               |
|                                     |      | 5300                 | 91.07               | -                       | -                           | 74.95                     | 34.9                          | 14.32                   | 33.1                       | 354                  | 15                      | A                       | V               |
|                                     |      | 5428.56              | 54.91               | -19.09                  | 74                          | 38.56                     | 34.9                          | 14.55                   | 33.1                       | 354                  | 15                      | P                       | V               |
|                                     |      | 5350.32              | 43.64               | -10.36                  | 54                          | 27.23                     | 34.9                          | 14.61                   | 33.1                       | 354                  | 15                      | A                       | V               |



|                                                                             |                                                                                             |         |        |        |    |       |      |       |      |     |    |   |   |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|------|-------|------|-----|----|---|---|
| <b>802.11n</b><br><br><b>HT20</b><br><br><b>CH 64</b><br><br><b>5320MHz</b> | *                                                                                           | 5320    | 103.69 | -      | -  | 87.42 | 34.9 | 14.47 | 33.1 | 231 | 70 | P | H |
|                                                                             |                                                                                             | 5320    | 97.32  | -      | -  | 81.05 | 34.9 | 14.47 | 33.1 | 231 | 70 | A | H |
|                                                                             |                                                                                             | 5355.2  | 63.26  | -10.74 | 74 | 46.85 | 34.9 | 14.61 | 33.1 | 231 | 70 | P | H |
|                                                                             |                                                                                             | 5350.08 | 50.54  | -3.46  | 54 | 34.13 | 34.9 | 14.61 | 33.1 | 231 | 70 | A | H |
|                                                                             | *                                                                                           | 5320    | 97.14  | -      | -  | 80.87 | 34.9 | 14.47 | 33.1 | 352 | 13 | P | V |
|                                                                             |                                                                                             | 5320    | 90.95  | -      | -  | 74.68 | 34.9 | 14.47 | 33.1 | 352 | 13 | A | V |
|                                                                             |                                                                                             | 5350.4  | 56.95  | -17.05 | 74 | 40.54 | 34.9 | 14.61 | 33.1 | 352 | 13 | P | V |
|                                                                             |                                                                                             | 5350.08 | 45.87  | -8.13  | 54 | 29.46 | 34.9 | 14.61 | 33.1 | 352 | 13 | A | V |
| <b>Remark</b>                                                               | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |      |       |      |     |    |   |   |



## Band 2 5250~5350MHz

## WIFI 802.11n HT20 (Harmonic @ 3m)

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n           |                                                                                             | 10520                | 49.51               | -18.69                  | 68.2                        | 47.94                     | 39.9                          | 20.49                   | 58.82                      | 150                  | 220                     | P                       | H               |
| HT20              |                                                                                             | 15780                | 49.42               | -24.58                  | 74                          | 48.05                     | 37.18                         | 23.37                   | 59.18                      | 159                  | 345                     | P                       | H               |
| CH 52             |                                                                                             | 10520                | 50.17               | -18.03                  | 68.2                        | 48.6                      | 39.9                          | 20.49                   | 58.82                      | 150                  | 220                     | P                       | V               |
| 5260MHz           |                                                                                             | 15780                | 50.01               | -23.99                  | 74                          | 48.64                     | 37.18                         | 23.37                   | 59.18                      | 159                  | 345                     | P                       | V               |
| 802.11n           |                                                                                             | 10600                | 48.75               | -25.25                  | 74                          | 47.05                     | 39.92                         | 20.51                   | 58.73                      | 185                  | 215                     | P                       | H               |
| HT20              |                                                                                             | 15900                | 47.49               | -26.51                  | 74                          | 46.45                     | 36.87                         | 23.47                   | 59.3                       | 196                  | 190                     | P                       | H               |
| CH 60             |                                                                                             | 10600                | 47.64               | -26.36                  | 74                          | 45.94                     | 39.92                         | 20.51                   | 58.73                      | 185                  | 215                     | P                       | V               |
| 5300MHz           |                                                                                             | 15900                | 47.96               | -26.04                  | 74                          | 46.92                     | 36.87                         | 23.47                   | 59.3                       | 196                  | 190                     | P                       | V               |
| 802.11n           |                                                                                             | 10640                | 50.29               | -23.71                  | 74                          | 48.52                     | 39.93                         | 20.53                   | 58.69                      | 152                  | 135                     | P                       | H               |
| HT20              |                                                                                             | 15960                | 50.8                | -23.2                   | 74                          | 49.94                     | 36.69                         | 23.54                   | 59.37                      | 173                  | 245                     | P                       | H               |
| CH 64             |                                                                                             | 10640                | 50.77               | -23.23                  | 74                          | 49                        | 39.93                         | 20.53                   | 58.69                      | 152                  | 135                     | P                       | V               |
| 5320MHz           |                                                                                             | 15960                | 50.15               | -23.85                  | 74                          | 49.29                     | 36.69                         | 23.54                   | 59.37                      | 173                  | 245                     | P                       | V               |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |



## Band 2 5250~5350MHz

## WIFI 802.11n HT40 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1                   | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT40<br>CH 54<br>5270MHz |                                                                                             | 5106.34              | 54.88               | -19.12                  | 74                          | 38.67                     | 34.9                          | 14.41                   | 33.1                       | 239                  | 80                      | P                       | H               |
|                                     |                                                                                             | 5095.16              | 43.64               | -10.36                  | 54                          | 27.43                     | 34.9                          | 14.41                   | 33.1                       | 239                  | 80                      | A                       | H               |
|                                     | *                                                                                           | 5270                 | 99.98               | -                       | -                           | 84                        | 34.9                          | 14.18                   | 33.1                       | 239                  | 80                      | P                       | H               |
|                                     |                                                                                             | 5270                 | 93.61               | -                       | -                           | 77.63                     | 34.9                          | 14.18                   | 33.1                       | 239                  | 80                      | A                       | H               |
|                                     |                                                                                             | 5362.32              | 54.06               | -19.94                  | 74                          | 37.65                     | 34.9                          | 14.61                   | 33.1                       | 239                  | 80                      | P                       | H               |
|                                     |                                                                                             | 5350.8               | 44.34               | -9.66                   | 54                          | 27.93                     | 34.9                          | 14.61                   | 33.1                       | 239                  | 80                      | A                       | H               |
|                                     |                                                                                             | 5056.42              | 54.32               | -19.68                  | 74                          | 37.99                     | 34.9                          | 14.53                   | 33.1                       | 357                  | 14                      | P                       | V               |
|                                     |                                                                                             | 5042.9               | 43.5                | -10.5                   | 54                          | 27.17                     | 34.9                          | 14.53                   | 33.1                       | 357                  | 14                      | A                       | V               |
|                                     | *                                                                                           | 5270                 | 92.34               | -                       | -                           | 76.36                     | 34.9                          | 14.18                   | 33.1                       | 357                  | 14                      | P                       | V               |
|                                     |                                                                                             | 5270                 | 87.63               | -                       | -                           | 71.65                     | 34.9                          | 14.18                   | 33.1                       | 357                  | 14                      | A                       | V               |
|                                     |                                                                                             | 5353.2               | 53.71               | -20.29                  | 74                          | 37.3                      | 34.9                          | 14.61                   | 33.1                       | 357                  | 14                      | P                       | V               |
|                                     |                                                                                             | 5429.76              | 43.51               | -10.49                  | 54                          | 27.16                     | 34.9                          | 14.55                   | 33.1                       | 357                  | 14                      | A                       | V               |
| 802.11n<br>HT40<br>CH 62<br>5310MHz |                                                                                             | 5010.15              | 53.57               | -20.43                  | 74                          | 37.11                     | 34.9                          | 14.66                   | 33.1                       | 234                  | 71                      | P                       | H               |
|                                     |                                                                                             | 5042                 | 43.56               | -10.44                  | 54                          | 27.23                     | 34.9                          | 14.53                   | 33.1                       | 234                  | 71                      | A                       | H               |
|                                     | *                                                                                           | 5310                 | 98.51               | -                       | -                           | 82.24                     | 34.9                          | 14.47                   | 33.1                       | 234                  | 71                      | P                       | H               |
|                                     |                                                                                             | 5310                 | 91.63               | -                       | -                           | 75.36                     | 34.9                          | 14.47                   | 33.1                       | 234                  | 71                      | A                       | H               |
|                                     |                                                                                             | 5351.52              | 62.66               | -11.34                  | 74                          | 46.25                     | 34.9                          | 14.61                   | 33.1                       | 234                  | 71                      | P                       | H               |
|                                     |                                                                                             | 5351.04              | 50.02               | -3.98                   | 54                          | 33.61                     | 34.9                          | 14.61                   | 33.1                       | 234                  | 71                      | A                       | H               |
|                                     |                                                                                             | 5026.25              | 53.37               | -20.63                  | 74                          | 36.91                     | 34.9                          | 14.66                   | 33.1                       | 355                  | 13                      | P                       | V               |
|                                     |                                                                                             | 5043.75              | 43.5                | -10.5                   | 54                          | 27.17                     | 34.9                          | 14.53                   | 33.1                       | 355                  | 13                      | A                       | V               |
|                                     | *                                                                                           | 5310                 | 92.2                | -                       | -                           | 75.93                     | 34.9                          | 14.47                   | 33.1                       | 355                  | 13                      | P                       | V               |
|                                     |                                                                                             | 5310                 | 86.39               | -                       | -                           | 70.12                     | 34.9                          | 14.47                   | 33.1                       | 355                  | 13                      | A                       | V               |
|                                     |                                                                                             | 5350.8               | 59.83               | -14.17                  | 74                          | 43.42                     | 34.9                          | 14.61                   | 33.1                       | 355                  | 13                      | P                       | V               |
|                                     |                                                                                             | 5350.08              | 45.93               | -8.07                   | 54                          | 29.52                     | 34.9                          | 14.61                   | 33.1                       | 355                  | 13                      | A                       | V               |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |



**Band 2 5250~5350MHz**  
**WIFI 802.11n HT40 (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11n           |                                                                                             | 10540                | 48.62               | -19.58                  | 68.2                        | 47.01                   | 39.91                         | 20.5                    | 58.8                       | 150                  | 220                     | P                     | H             |
| HT40              |                                                                                             | 15810                | 48.2                | -25.8                   | 74                          | 46.92                   | 37.09                         | 23.4                    | 59.21                      | 168                  | 345                     | P                     | H             |
| CH 54             |                                                                                             | 10540                | 48.89               | -19.31                  | 68.2                        | 47.28                   | 39.91                         | 20.5                    | 58.8                       | 150                  | 220                     | P                     | V             |
| 5270MHz           |                                                                                             | 15810                | 47.84               | -26.16                  | 74                          | 46.56                   | 37.09                         | 23.4                    | 59.21                      | 168                  | 345                     | P                     | V             |
| 802.11n           |                                                                                             | 10620                | 46.62               | -27.38                  | 74                          | 44.88                   | 39.92                         | 20.53                   | 58.71                      | 150                  | 220                     | P                     | H             |
| HT40              |                                                                                             | 15930                | 47.9                | -26.1                   | 74                          | 46.95                   | 36.78                         | 23.5                    | 59.33                      | 160                  | 100                     | P                     | H             |
| CH 62             |                                                                                             | 10620                | 48.35               | -25.65                  | 74                          | 46.61                   | 39.92                         | 20.53                   | 58.71                      | 150                  | 220                     | P                     | V             |
| 5310MHz           |                                                                                             | 15930                | 48.93               | -25.07                  | 74                          | 47.98                   | 36.78                         | 23.5                    | 59.33                      | 160                  | 100                     | P                     | V             |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |



## Band 2 5250~5350MHz

## WIFI 802.11ac VHT80 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1                     | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|---------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11ac<br>VHT80<br>CH 58<br>5290MHz |                                                                                             | 5073.32              | 55.25               | -18.75                  | 74                          | 38.92                   | 34.9                          | 14.53                   | 33.1                       | 232                  | 65                      | P                     | H             |
|                                       |                                                                                             | 5043.68              | 43.55               | -10.45                  | 54                          | 27.22                   | 34.9                          | 14.53                   | 33.1                       | 232                  | 65                      | A                     | H             |
|                                       | *                                                                                           | 5290                 | 92.69               | -                       | -                           | 76.57                   | 34.9                          | 14.32                   | 33.1                       | 232                  | 65                      | P                     | H             |
|                                       |                                                                                             | 5290                 | 87.35               | -                       | -                           | 71.23                   | 34.9                          | 14.32                   | 33.1                       | 232                  | 65                      | A                     | H             |
|                                       |                                                                                             | 5358.96              | 56.76               | -17.24                  | 74                          | 40.35                   | 34.9                          | 14.61                   | 33.1                       | 232                  | 65                      | P                     | H             |
|                                       |                                                                                             | 5350.32              | 45.87               | -8.13                   | 54                          | 29.46                   | 34.9                          | 14.61                   | 33.1                       | 232                  | 65                      | A                     | H             |
|                                       |                                                                                             | 5032.24              | 55.88               | -18.12                  | 74                          | 39.42                   | 34.9                          | 14.66                   | 33.1                       | 376                  | 14                      | P                     | V             |
|                                       |                                                                                             | 5041.86              | 43.6                | -10.4                   | 54                          | 27.27                   | 34.9                          | 14.53                   | 33.1                       | 376                  | 14                      | A                     | V             |
|                                       | *                                                                                           | 5290                 | 87.2                | -                       | -                           | 71.08                   | 34.9                          | 14.32                   | 33.1                       | 376                  | 14                      | P                     | V             |
|                                       |                                                                                             | 5290                 | 81.97               | -                       | -                           | 65.85                   | 34.9                          | 14.32                   | 33.1                       | 376                  | 14                      | A                     | V             |
|                                       |                                                                                             | 5455.68              | 53.83               | -20.17                  | 74                          | 37.48                   | 34.9                          | 14.55                   | 33.1                       | 376                  | 14                      | P                     | V             |
|                                       |                                                                                             | 5401.44              | 43.62               | -10.38                  | 54                          | 27.06                   | 34.9                          | 14.76                   | 33.1                       | 376                  | 14                      | A                     | V             |
| Remark                                | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |



## Band 2 5250~5350MHz

## WIFI 802.11ac VHT80 (Harmonic @ 3m)

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11ac          |                                                                                             | 10580                | 49.18               | -19.02                  | 68.2                        | 47.5                    | 39.92                         | 20.51                   | 58.75                      | 159                  | 360                     | P                     | H             |
| VHT80             |                                                                                             | 15870                | 49.79               | -24.21                  | 74                          | 48.73                   | 36.91                         | 23.43                   | 59.28                      | 159                  | 0                       | P                     | H             |
| CH 58             |                                                                                             | 10580                | 45.83               | -22.37                  | 68.2                        | 44.15                   | 39.92                         | 20.51                   | 58.75                      | 159                  | 360                     | P                     | V             |
| 5290MHz           |                                                                                             | 15870                | 46.33               | -27.67                  | 74                          | 45.27                   | 36.91                         | 23.43                   | 59.28                      | 159                  | 0                       | P                     | V             |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |





## Band 3 - 5470~5725MHz

## WIFI 802.11a (Band Edge @ 3m)

| WIFI                         | Note | Frequency | Level      | Over   | Limit      | Read   | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|------------------------------|------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                         |      |           |            | Limit  | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                            |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11a<br>CH 100<br>5500MHz |      | 5457.84   | 56.08      | -17.92 | 74         | 39.73  | 34.9     | 14.55  | 33.1   | 104    | 270     | P     | H     |
|                              |      | 5469.84   | 59.27      | -8.93  | 68.2       | 43.13  | 34.9     | 14.34  | 33.1   | 104    | 270     | P     | H     |
|                              |      | 5459.92   | 45.01      | -8.99  | 54         | 28.66  | 34.9     | 14.55  | 33.1   | 104    | 270     | A     | H     |
|                              |      | 5500      | 104.37     | -      | -          | 88.23  | 34.9     | 14.34  | 33.1   | 104    | 270     | P     | H     |
|                              |      | 5500      | 97.65      | -      | -          | 81.51  | 34.9     | 14.34  | 33.1   | 104    | 270     | A     | H     |
|                              |      | 5433.52   | 53.45      | -20.55 | 74         | 37.1   | 34.9     | 14.55  | 33.1   | 364    | 342     | P     | V     |
|                              |      | 5468.88   | 56.55      | -11.65 | 68.2       | 40.41  | 34.9     | 14.34  | 33.1   | 364    | 342     | P     | V     |
|                              |      | 5459.92   | 44.13      | -9.87  | 54         | 27.78  | 34.9     | 14.55  | 33.1   | 364    | 342     | A     | V     |
|                              |      | 5500      | 96.3       | -      | -          | 80.16  | 34.9     | 14.34  | 33.1   | 364    | 342     | P     | V     |
|                              |      | 5500      | 91.26      | -      | -          | 75.12  | 34.9     | 14.34  | 33.1   | 364    | 342     | A     | V     |
| 802.11a<br>CH 116<br>5580MHz |      | 5399.2    | 53.14      | -20.86 | 74         | 36.58  | 34.9     | 14.76  | 33.1   | 242    | 59      | P     | H     |
|                              |      | 5466.64   | 53.72      | -14.48 | 68.2       | 37.58  | 34.9     | 14.34  | 33.1   | 242    | 59      | P     | H     |
|                              |      | 5418.4    | 43.39      | -10.61 | 54         | 26.83  | 34.9     | 14.76  | 33.1   | 242    | 59      | A     | H     |
|                              |      | 5580      | 104.11     | -      | -          | 88.25  | 35.04    | 13.92  | 33.1   | 242    | 59      | P     | H     |
|                              |      | 5580      | 97.07      | -      | -          | 81.21  | 35.04    | 13.92  | 33.1   | 242    | 59      | A     | H     |
|                              |      | 5763.74   | 53.9       | -14.3  | 68.2       | 37.6   | 35.42    | 13.98  | 33.1   | 242    | 59      | P     | H     |
|                              |      | 5389.84   | 54.56      | -19.44 | 74         | 38     | 34.9     | 14.76  | 33.1   | 372    | 337     | P     | V     |
|                              |      | 5470      | 52.18      | -16.02 | 68.2       | 36.04  | 34.9     | 14.34  | 33.1   | 372    | 337     | P     | V     |
|                              |      | 5419.36   | 43.17      | -10.83 | 54         | 26.61  | 34.9     | 14.76  | 33.1   | 372    | 337     | A     | V     |
|                              |      | 5580      | 97.16      | -      | -          | 81.3   | 35.04    | 13.92  | 33.1   | 372    | 337     | P     | V     |
|                              |      | 5580      | 91.22      | -      | -          | 75.36  | 35.04    | 13.92  | 33.1   | 372    | 337     | A     | V     |
|                              |      | 5756.81   | 51.41      | -16.79 | 68.2       | 35.11  | 35.42    | 13.98  | 33.1   | 372    | 337     | P     | V     |



|                                                   |                                                                                             |         |        |        |      |       |       |       |      |     |     |   |   |
|---------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|------|-------|-------|-------|------|-----|-----|---|---|
| <b>802.11a</b><br><b>CH 140</b><br><b>5700MHz</b> |                                                                                             | 5700    | 104.56 | -      | -    | 88.47 | 35.28 | 13.91 | 33.1 | 241 | 58  | P | H |
|                                                   |                                                                                             | 5700    | 97.35  | -      | -    | 81.26 | 35.28 | 13.91 | 33.1 | 241 | 58  | A | H |
|                                                   |                                                                                             | 5725.4  | 64.83  | -3.37  | 68.2 | 48.67 | 35.35 | 13.91 | 33.1 | 241 | 58  | P | H |
|                                                   |                                                                                             | 5700    | 96.74  | -      | -    | 80.65 | 35.28 | 13.91 | 33.1 | 373 | 325 | P | V |
|                                                   |                                                                                             | 5700    | 91.05  | -      | -    | 74.96 | 35.28 | 13.91 | 33.1 | 373 | 325 | A | V |
|                                                   |                                                                                             | 5726.92 | 57.15  | -11.05 | 68.2 | 40.99 | 35.35 | 13.91 | 33.1 | 373 | 325 | P | V |
| <b>Remark</b>                                     | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |      |       |       |       |      |     |     |   |   |



## Band 3 - 5470~5725MHz

## WIFI 802.11a (Harmonic @ 3m)

| WIFI<br>Ant.<br>1            | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11a<br>CH 100<br>5500MHz |                                                                                             | 11000                | 50.94               | -23.06                  | 74                          | 48.62                   | 40                            | 20.62                   | 58.3                       | 163                  | 230                     | P                     | H             |
|                              |                                                                                             | 16500                | 57.21               | -10.99                  | 68.2                        | 54.56                   | 37.5                          | 23.99                   | 58.84                      | 178                  | 296                     | P                     | H             |
|                              |                                                                                             | 11000                | 50.03               | -23.97                  | 74                          | 47.71                   | 40                            | 20.62                   | 58.3                       | 163                  | 230                     | P                     | V             |
|                              |                                                                                             | 16500                | 56.93               | -11.27                  | 68.2                        | 54.28                   | 37.5                          | 23.99                   | 58.84                      | 178                  | 296                     | P                     | V             |
| 802.11a<br>CH 116<br>5580MHz |                                                                                             | 11160                | 50.25               | -23.75                  | 74                          | 47.58                   | 40.1                          | 20.68                   | 58.11                      | 170                  | 200                     | P                     | H             |
|                              |                                                                                             | 16740                | 58.46               | -9.74                   | 68.2                        | 53.96                   | 38.85                         | 24.23                   | 58.58                      | 156                  | 350                     | P                     | H             |
|                              |                                                                                             | 11160                | 50.58               | -23.42                  | 74                          | 47.91                   | 40.1                          | 20.68                   | 58.11                      | 170                  | 200                     | P                     | V             |
|                              |                                                                                             | 16740                | 57.42               | -10.78                  | 68.2                        | 52.92                   | 38.85                         | 24.23                   | 58.58                      | 156                  | 350                     | P                     | V             |
| 802.11a<br>CH 140<br>5700MHz |                                                                                             | 11400                | 50.1                | -23.9                   | 74                          | 46.96                   | 40.24                         | 20.75                   | 57.85                      | 157                  | 285                     | P                     | H             |
|                              |                                                                                             | 17100                | 49.52               | -18.68                  | 68.2                        | 42.5                    | 40.64                         | 24.54                   | 58.16                      | 165                  | 246                     | P                     | H             |
|                              |                                                                                             | 11400                | 50.31               | -23.69                  | 74                          | 47.17                   | 40.24                         | 20.75                   | 57.85                      | 157                  | 285                     | P                     | V             |
|                              |                                                                                             | 17100                | 49.99               | -18.21                  | 68.2                        | 42.97                   | 40.64                         | 24.54                   | 58.16                      | 165                  | 246                     | P                     | V             |
| Remark                       | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |



**Band 3 - 5470~5725MHz**  
**WIFI 802.11n HT20 (Band Edge @ 3m)**

| WIFI<br>Ant.<br>1                    | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|--------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT20<br>CH 100<br>5500MHz |      | 5459.12              | 58.75               | -15.25                  | 74                          | 42.4                      | 34.9                          | 14.55                   | 33.1                       | 263                  | 64                      | P                       | H               |
|                                      |      | 5468.72              | 64.57               | -3.63                   | 68.2                        | 48.43                     | 34.9                          | 14.34                   | 33.1                       | 263                  | 64                      | P                       | H               |
|                                      |      | 5460                 | 47.6                | -6.4                    | 54                          | 31.25                     | 34.9                          | 14.55                   | 33.1                       | 263                  | 64                      | A                       | H               |
|                                      | *    | 5500                 | 104.34              | -                       | -                           | 88.2                      | 34.9                          | 14.34                   | 33.1                       | 263                  | 64                      | P                       | H               |
|                                      |      | 5500                 | 97.83               | -                       | -                           | 81.69                     | 34.9                          | 14.34                   | 33.1                       | 263                  | 64                      | A                       | H               |
|                                      |      | 5429.04              | 53.76               | -20.24                  | 74                          | 37.41                     | 34.9                          | 14.55                   | 33.1                       | 390                  | 68                      | P                       | V               |
|                                      |      | 5465.52              | 56.03               | -12.17                  | 68.2                        | 39.89                     | 34.9                          | 14.34                   | 33.1                       | 390                  | 68                      | P                       | V               |
|                                      |      | 5459.92              | 44.12               | -9.88                   | 54                          | 27.77                     | 34.9                          | 14.55                   | 33.1                       | 390                  | 68                      | A                       | V               |
|                                      | *    | 5500                 | 96.56               | -                       | -                           | 80.42                     | 34.9                          | 14.34                   | 33.1                       | 390                  | 68                      | P                       | V               |
|                                      |      | 5500                 | 90.35               | -                       | -                           | 74.21                     | 34.9                          | 14.34                   | 33.1                       | 390                  | 68                      | A                       | V               |
| 802.11n<br>HT20<br>CH 116<br>5580MHz |      | 5149.24              | 62.37               | -11.63                  | 74                          | 46.29                     | 34.9                          | 14.28                   | 33.1                       | 241                  | 77                      | P                       | H               |
|                                      |      | 5149.76              | 49.73               | -4.27                   | 54                          | 33.65                     | 34.9                          | 14.28                   | 33.1                       | 241                  | 77                      | A                       | H               |
|                                      | *    | 5190                 | 98.61               | -                       | -                           | 82.65                     | 34.9                          | 14.16                   | 33.1                       | 241                  | 77                      | P                       | H               |
|                                      |      | 5190                 | 92.81               | -                       | -                           | 76.85                     | 34.9                          | 14.16                   | 33.1                       | 241                  | 77                      | A                       | H               |
|                                      |      | 5376.28              | 54.48               | -19.52                  | 74                          | 38.07                     | 34.9                          | 14.61                   | 33.1                       | 241                  | 77                      | P                       | H               |
|                                      |      | 5437.6               | 43.53               | -10.47                  | 54                          | 27.18                     | 34.9                          | 14.55                   | 33.1                       | 241                  | 77                      | A                       | H               |
|                                      |      | 5149.99              | 57.23               | -16.77                  | 74                          | 41.15                     | 34.9                          | 14.28                   | 33.1                       | 396                  | 115                     | P                       | V               |
|                                      |      | 5150                 | 46.01               | -7.99                   | 54                          | 29.93                     | 34.9                          | 14.28                   | 33.1                       | 396                  | 115                     | A                       | V               |
|                                      | *    | 5190                 | 91.18               | -                       | -                           | 75.22                     | 34.9                          | 14.16                   | 33.1                       | 396                  | 115                     | P                       | V               |
|                                      |      | 5190                 | 86.21               | -                       | -                           | 70.25                     | 34.9                          | 14.16                   | 33.1                       | 396                  | 115                     | A                       | V               |
|                                      |      | 5449.36              | 52.64               | -21.36                  | 74                          | 36.29                     | 34.9                          | 14.55                   | 33.1                       | 396                  | 115                     | P                       | V               |
|                                      |      | 5459.16              | 43.37               | -10.63                  | 54                          | 27.02                     | 34.9                          | 14.55                   | 33.1                       | 396                  | 115                     | A                       | V               |



|                                                                  |                                                                                             |         |        |       |      |       |       |       |      |     |    |   |   |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|-------|------|-------|-------|-------|------|-----|----|---|---|
| <b>802.11n</b><br><b>HT20</b><br><b>CH 140</b><br><b>5700MHz</b> | *                                                                                           | 5700    | 103.91 | -     | -    | 87.82 | 35.28 | 13.91 | 33.1 | 257 | 64 | P | H |
|                                                                  |                                                                                             | 5700    | 97.84  | -     | -    | 81.75 | 35.28 | 13.91 | 33.1 | 257 | 64 | A | H |
|                                                                  |                                                                                             | 5725.72 | 64.86  | -3.34 | 68.2 | 48.7  | 35.35 | 13.91 | 33.1 | 257 | 64 | P | H |
|                                                                  | *                                                                                           | 5700    | 97.3   | -     | -    | 81.21 | 35.28 | 13.91 | 33.1 | 389 | 21 | P | V |
|                                                                  |                                                                                             | 5700    | 91.05  | -     | -    | 74.96 | 35.28 | 13.91 | 33.1 | 389 | 21 | A | V |
|                                                                  |                                                                                             | 5726.04 | 61.76  | -6.44 | 68.2 | 45.6  | 35.35 | 13.91 | 33.1 | 389 | 21 | P | V |
| <b>Remark</b>                                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |       |      |       |       |       |      |     |    |   |   |



**Band 3 - 5470~5725MHz**  
**WIFI 802.11n HT20 (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11n           |                                                                                             | 11000                | 48.52               | -25.48                  | 74                          | 46.2                    | 40                            | 20.62                   | 58.3                       | 163                  | 230                     | P                     | H             |
| HT20              |                                                                                             | 16500                | 50.07               | -18.13                  | 68.2                        | 47.42                   | 37.5                          | 23.99                   | 58.84                      | 178                  | 296                     | P                     | H             |
| CH 100            |                                                                                             | 11000                | 48.49               | -25.51                  | 74                          | 46.17                   | 40                            | 20.62                   | 58.3                       | 163                  | 230                     | P                     | V             |
| 5500MHz           |                                                                                             | 16500                | 48.69               | -19.51                  | 68.2                        | 46.04                   | 37.5                          | 23.99                   | 58.84                      | 178                  | 296                     | P                     | V             |
| 802.11n           |                                                                                             | 11160                | 47.31               | -26.69                  | 74                          | 44.64                   | 40.1                          | 20.68                   | 58.11                      | 170                  | 200                     | P                     | H             |
| HT20              |                                                                                             | 16740                | 46.86               | -21.34                  | 68.2                        | 42.36                   | 38.85                         | 24.23                   | 58.58                      | 156                  | 350                     | P                     | H             |
| CH 116            |                                                                                             | 11160                | 49.03               | -24.97                  | 74                          | 46.36                   | 40.1                          | 20.68                   | 58.11                      | 170                  | 200                     | P                     | V             |
| 5580MHz           |                                                                                             | 16740                | 48.15               | -20.05                  | 68.2                        | 43.65                   | 38.85                         | 24.23                   | 58.58                      | 156                  | 350                     | P                     | V             |
| 802.11n           |                                                                                             | 11400                | 47.41               | -26.59                  | 74                          | 44.27                   | 40.24                         | 20.75                   | 57.85                      | 157                  | 285                     | P                     | H             |
| HT20              |                                                                                             | 17100                | 46.92               | -21.28                  | 68.2                        | 39.9                    | 40.64                         | 24.54                   | 58.16                      | 165                  | 246                     | P                     | H             |
| CH 140            |                                                                                             | 11400                | 46.34               | -27.66                  | 74                          | 43.2                    | 40.24                         | 20.75                   | 57.85                      | 157                  | 285                     | P                     | V             |
| 5700MHz           |                                                                                             | 17100                | 46.71               | -21.49                  | 68.2                        | 39.69                   | 40.64                         | 24.54                   | 58.16                      | 165                  | 246                     | P                     | V             |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |



**Band 3 - 5470~5725MHz**  
**WIFI 802.11n HT40 (Band Edge @ 3m)**

| WIFI<br>Ant.<br>1                    | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|--------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT40<br>CH 102<br>5510MHz |      | 5459.68              | 58.55               | -15.45                  | 74                          | 42.2                      | 34.9                          | 14.55                   | 33.1                       | 264                  | 61                      | P                       | H               |
|                                      |      | 5469.28              | 61.68               | -6.52                   | 68.2                        | 45.54                     | 34.9                          | 14.34                   | 33.1                       | 264                  | 61                      | P                       | H               |
|                                      |      | 5459.92              | 47.31               | -6.69                   | 54                          | 30.96                     | 34.9                          | 14.55                   | 33.1                       | 264                  | 61                      | A                       | H               |
|                                      | *    | 5510                 | 99.7                | -                       | -                           | 83.77                     | 34.9                          | 14.13                   | 33.1                       | 264                  | 61                      | P                       | H               |
|                                      |      | 5510                 | 92.79               | -                       | -                           | 76.86                     | 34.9                          | 14.13                   | 33.1                       | 264                  | 61                      | A                       | H               |
|                                      |      | 5745.155             | 51.95               | -16.25                  | 68.2                        | 35.69                     | 35.38                         | 13.98                   | 33.1                       | 264                  | 61                      | P                       | H               |
|                                      |      | 5449.84              | 55.77               | -18.23                  | 74                          | 39.42                     | 34.9                          | 14.55                   | 33.1                       | 277                  | 10                      | P                       | V               |
|                                      |      | 5468.8               | 60.77               | -7.43                   | 68.2                        | 44.63                     | 34.9                          | 14.34                   | 33.1                       | 277                  | 10                      | P                       | V               |
|                                      |      | 5459.92              | 45.51               | -8.49                   | 54                          | 29.16                     | 34.9                          | 14.55                   | 33.1                       | 277                  | 10                      | A                       | V               |
|                                      | *    | 5510                 | 91.79               | -                       | -                           | 75.86                     | 34.9                          | 14.13                   | 33.1                       | 277                  | 10                      | P                       | V               |
|                                      |      | 5510                 | 86.29               | -                       | -                           | 70.36                     | 34.9                          | 14.13                   | 33.1                       | 277                  | 10                      | A                       | V               |
|                                      |      | 5727.2               | 51.82               | -16.38                  | 68.2                        | 35.66                     | 35.35                         | 13.91                   | 33.1                       | 277                  | 10                      | P                       | V               |
| 802.11n<br>HT40<br>CH 110<br>5550MHz |      | 5420.08              | 54.15               | -19.85                  | 74                          | 37.59                     | 34.9                          | 14.76                   | 33.1                       | 243                  | 66                      | P                       | H               |
|                                      |      | 5470                 | 54.1                | -14.1                   | 68.2                        | 37.96                     | 34.9                          | 14.34                   | 33.1                       | 243                  | 66                      | P                       | H               |
|                                      |      | 5459.92              | 44.23               | -9.77                   | 54                          | 27.88                     | 34.9                          | 14.55                   | 33.1                       | 243                  | 66                      | A                       | H               |
|                                      | *    | 5550                 | 99.18               | -                       | -                           | 83.36                     | 35                            | 13.92                   | 33.1                       | 243                  | 66                      | P                       | H               |
|                                      |      | 5550                 | 92.24               | -                       | -                           | 76.42                     | 35                            | 13.92                   | 33.1                       | 243                  | 66                      | A                       | H               |
|                                      |      | 5727.2               | 52.52               | -15.68                  | 68.2                        | 36.36                     | 35.35                         | 13.91                   | 33.1                       | 243                  | 66                      | P                       | H               |
|                                      |      | 5378.56              | 54.5                | -19.5                   | 74                          | 38.09                     | 34.9                          | 14.61                   | 33.1                       | 277                  | 4                       | P                       | V               |
|                                      |      | 5462.08              | 52.87               | -15.33                  | 68.2                        | 36.52                     | 34.9                          | 14.55                   | 33.1                       | 277                  | 4                       | P                       | V               |
|                                      |      | 5459.2               | 43.49               | -10.51                  | 54                          | 27.14                     | 34.9                          | 14.55                   | 33.1                       | 277                  | 4                       | A                       | V               |
|                                      | *    | 5550                 | 92.03               | -                       | -                           | 76.21                     | 35                            | 13.92                   | 33.1                       | 277                  | 4                       | P                       | V               |
|                                      |      | 5550                 | 86.14               | -                       | -                           | 70.32                     | 35                            | 13.92                   | 33.1                       | 277                  | 4                       | A                       | V               |
|                                      |      | 5760.275             | 53.07               | -15.13                  | 68.2                        | 36.77                     | 35.42                         | 13.98                   | 33.1                       | 277                  | 4                       | P                       | V               |



|                                                                  |                                                                                             |          |       |        |      |       |       |       |      |     |    |   |   |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------|-------|--------|------|-------|-------|-------|------|-----|----|---|---|
| <b>802.11n</b><br><b>HT40</b><br><b>CH 134</b><br><b>5670MHz</b> |                                                                                             | 5439.6   | 52.96 | -21.04 | 74   | 36.61 | 34.9  | 14.55 | 33.1 | 277 | 60 | P | H |
|                                                                  |                                                                                             | 5461.65  | 52.42 | -15.78 | 68.2 | 36.07 | 34.9  | 14.55 | 33.1 | 277 | 60 | P | H |
|                                                                  |                                                                                             | 5429.45  | 43.49 | -10.51 | 54   | 27.14 | 34.9  | 14.55 | 33.1 | 277 | 60 | A | H |
|                                                                  | *                                                                                           | 5670     | 99    | -      | -    | 83.01 | 35.24 | 13.85 | 33.1 | 277 | 60 | P | H |
|                                                                  |                                                                                             | 5670     | 92.18 | -      | -    | 76.19 | 35.24 | 13.85 | 33.1 | 277 | 60 | A | H |
|                                                                  |                                                                                             | 5726.5   | 54.95 | -13.25 | 68.2 | 38.79 | 35.35 | 13.91 | 33.1 | 277 | 60 | P | H |
|                                                                  |                                                                                             | 5451.85  | 52.63 | -21.37 | 74   | 36.28 | 34.9  | 14.55 | 33.1 | 276 | 50 | P | V |
|                                                                  |                                                                                             | 5464.8   | 53.09 | -15.11 | 68.2 | 36.74 | 34.9  | 14.55 | 33.1 | 276 | 50 | P | V |
|                                                                  |                                                                                             | 5426.65  | 43.4  | -10.6  | 54   | 27.05 | 34.9  | 14.55 | 33.1 | 276 | 50 | A | V |
|                                                                  | *                                                                                           | 5670     | 92.73 | -      | -    | 76.74 | 35.24 | 13.85 | 33.1 | 276 | 50 | P | V |
|                                                                  |                                                                                             | 5670     | 87.35 | -      | -    | 71.36 | 35.24 | 13.85 | 33.1 | 276 | 50 | A | V |
|                                                                  |                                                                                             | 5728.775 | 53.96 | -14.24 | 68.2 | 37.8  | 35.35 | 13.91 | 33.1 | 276 | 50 | P | V |
| <b>Remark</b>                                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |          |       |        |      |       |       |       |      |     |    |   |   |





**Band 3 - 5470~5725MHz**  
**WIFI 802.11n HT40 (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n           |                                                                                             | 11020                | 46.92               | -27.08                  | 74                          | 44.55                     | 40.01                         | 20.64                   | 58.28                      | 170                  | 230                     | P                       | H               |
| HT40              |                                                                                             | 16530                | 47.62               | -20.58                  | 68.2                        | 44.71                     | 37.69                         | 24.02                   | 58.8                       | 160                  | 300                     | P                       | H               |
| CH 102            |                                                                                             | 11020                | 46.84               | -27.16                  | 74                          | 44.47                     | 40.01                         | 20.64                   | 58.28                      | 170                  | 230                     | P                       | V               |
| 5510MHz           |                                                                                             | 16530                | 48.01               | -20.19                  | 68.2                        | 45.1                      | 37.69                         | 24.02                   | 58.8                       | 160                  | 300                     | P                       | V               |
| 802.11n           |                                                                                             | 11100                | 49.17               | -24.83                  | 74                          | 46.64                     | 40.06                         | 20.66                   | 58.19                      | 150                  | 200                     | P                       | H               |
| HT40              |                                                                                             | 16650                | 48.11               | -20.09                  | 68.2                        | 44.28                     | 38.37                         | 24.13                   | 58.67                      | 180                  | 350                     | P                       | H               |
| CH 110            |                                                                                             | 11100                | 48.66               | -25.34                  | 74                          | 46.13                     | 40.06                         | 20.66                   | 58.19                      | 150                  | 200                     | P                       | V               |
| 5550MHz           |                                                                                             | 16650                | 48.28               | -19.92                  | 68.2                        | 44.45                     | 38.37                         | 24.13                   | 58.67                      | 180                  | 350                     | P                       | V               |
| 802.11n           |                                                                                             | 11340                | 49                  | -25                     | 74                          | 46.01                     | 40.2                          | 20.72                   | 57.93                      | 200                  | 360                     | P                       | H               |
| HT40              |                                                                                             | 17010                | 49.01               | -19.19                  | 68.2                        | 42.46                     | 40.36                         | 24.47                   | 58.28                      | 200                  | 360                     | P                       | H               |
| CH 134            |                                                                                             | 11340                | 47.58               | -26.42                  | 74                          | 44.59                     | 40.2                          | 20.72                   | 57.93                      | 200                  | 360                     | P                       | V               |
| 5670MHz           |                                                                                             | 17010                | 48.29               | -19.91                  | 68.2                        | 41.74                     | 40.36                         | 24.47                   | 58.28                      | 200                  | 360                     | P                       | V               |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |



**Band 3 - 5470~5725MHz**  
**WIFI 802.11ac VHT80 (Band Edge @ 3m)**

| WIFI<br>Ant.<br>1                                | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| <b>802.11ac<br/>VHT80<br/>CH 106<br/>5530MHz</b> |                                                                                             | 5455.84              | 55.59               | -18.41                  | 74                          | 39.24                   | 34.9                          | 14.55                   | 33.1                       | 257                  | 66                      | P                     | H             |
|                                                  |                                                                                             | 5469.04              | 58.94               | -9.26                   | 68.2                        | 42.8                    | 34.9                          | 14.34                   | 33.1                       | 257                  | 66                      | P                     | H             |
|                                                  |                                                                                             | 5458.24              | 45.73               | -8.27                   | 54                          | 29.38                   | 34.9                          | 14.55                   | 33.1                       | 257                  | 66                      | A                     | H             |
|                                                  | *                                                                                           | 5530                 | 92.68               | -                       | -                           | 76.72                   | 34.93                         | 14.13                   | 33.1                       | 257                  | 66                      | P                     | H             |
|                                                  |                                                                                             | 5530                 | 87.19               | -                       | -                           | 71.23                   | 34.93                         | 14.13                   | 33.1                       | 257                  | 66                      | A                     | H             |
|                                                  |                                                                                             | 5732.87              | 53.72               | -14.48                  | 68.2                        | 37.56                   | 35.35                         | 13.91                   | 33.1                       | 257                  | 66                      | P                     | H             |
|                                                  |                                                                                             | 5399.2               | 54.61               | -19.39                  | 74                          | 38.05                   | 34.9                          | 14.76                   | 33.1                       | 361                  | 3                       | P                     | V             |
|                                                  |                                                                                             | 5462.08              | 53.39               | -14.81                  | 68.2                        | 37.04                   | 34.9                          | 14.55                   | 33.1                       | 361                  | 3                       | P                     | V             |
|                                                  |                                                                                             | 5430.16              | 43.68               | -10.32                  | 54                          | 27.33                   | 34.9                          | 14.55                   | 33.1                       | 361                  | 3                       | A                     | V             |
|                                                  | *                                                                                           | 5530                 | 86.47               | -                       | -                           | 70.51                   | 34.93                         | 14.13                   | 33.1                       | 361                  | 3                       | P                     | V             |
|                                                  |                                                                                             | 5530                 | 80.81               | -                       | -                           | 64.85                   | 34.93                         | 14.13                   | 33.1                       | 361                  | 3                       | A                     | V             |
|                                                  |                                                                                             | 5754.92              | 52.36               | -15.84                  | 68.2                        | 36.06                   | 35.42                         | 13.98                   | 33.1                       | 361                  | 3                       | P                     | V             |
| <b>Remark</b>                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |

**Band 3 5470~5725MHz****WIFI 802.11ac VHT80 (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11ac          |                                                                                             | 11060                | 47.23               | -26.77                  | 74                          | 44.77                   | 40.04                         | 20.65                   | 58.23                      | -                    | -                       | P                     | H             |
| VHT80             |                                                                                             | 16590                | 47.42               | -20.78                  | 68.2                        | 44.1                    | 37.98                         | 24.09                   | 58.75                      | -                    | -                       | P                     | H             |
| CH 106            |                                                                                             | 11060                | 47.09               | -26.91                  | 74                          | 44.63                   | 40.04                         | 20.65                   | 58.23                      | -                    | -                       | P                     | V             |
| 5530MHz           |                                                                                             | 16590                | 47.93               | -20.27                  | 68.2                        | 44.61                   | 37.98                         | 24.09                   | 58.75                      | -                    | -                       | P                     | V             |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                         |                               |                         |                            |                      |                         |                       |               |



## Band 3 - Straddle Channel

## WIFI 802.11a (Harmonic @ 3m)

| WIFI                         | Note | Frequency                                                                                   | Level      | Over   | Limit      | Read   | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|------------------------------|------|---------------------------------------------------------------------------------------------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                         |      |                                                                                             |            | Limit  | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                            |      | ( MHz )                                                                                     | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11a<br>CH 144<br>5720MHz |      | 11440                                                                                       | 50.24      | -23.76 | 74         | 47.04  | 40.26    | 20.76  | 57.82  | 157    | 285     | P     | H     |
|                              |      | 17160                                                                                       | 52.47      | -15.73 | 68.2       | 45.08  | 40.87    | 24.58  | 58.06  | 142    | 263     | P     | H     |
|                              |      | 11440                                                                                       | 50.24      | -23.76 | 74         | 47.04  | 40.26    | 20.76  | 57.82  | 157    | 285     | P     | V     |
|                              |      | 17160                                                                                       | 51.3       | -16.9  | 68.2       | 43.91  | 40.87    | 24.58  | 58.06  | 142    | 263     | P     | V     |
| Remark                       |      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |            |        |            |        |          |        |        |        |         |       |       |

## Band 3 - Straddle Channel

## WIFI 802.11n HT20 (Harmonic @ 3m)

| WIFI                                 | Note | Frequency                                                                                   | Level      | Over   | Limit      | Read   | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|--------------------------------------|------|---------------------------------------------------------------------------------------------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                 |      |                                                                                             |            | Limit  | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                                    |      | ( MHz )                                                                                     | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11n<br>HT20<br>CH 144<br>5720MHz |      | 11440                                                                                       | 50.56      | -23.44 | 74         | 47.36  | 40.26    | 20.76  | 57.82  | 157    | 285     | P     | H     |
|                                      |      | 17160                                                                                       | 49.46      | -18.74 | 68.2       | 42.07  | 40.87    | 24.58  | 58.06  | 142    | 263     | P     | H     |
|                                      |      | 11440                                                                                       | 50.11      | -23.89 | 74         | 46.91  | 40.26    | 20.76  | 57.82  | 157    | 285     | P     | V     |
|                                      |      | 17160                                                                                       | 49.26      | -18.94 | 68.2       | 41.87  | 40.87    | 24.58  | 58.06  | 142    | 263     | P     | V     |
| Remark                               |      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |            |        |            |        |          |        |        |        |         |       |       |



**Band 3 - Straddle Channel**  
**WIFI 802.11n HT40 (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n           |                                                                                             | 11420                | 50.03               | -23.97                  | 74                          | 46.86                     | 40.25                         | 20.75                   | 57.83                      | 157                  | 285                     | P                       | H               |
| HT40              |                                                                                             | 17130                | 49.53               | -18.67                  | 68.2                        | 42.31                     | 40.75                         | 24.58                   | 58.11                      | 165                  | 246                     | P                       | H               |
| CH 142            |                                                                                             | 11420                | 50.97               | -23.03                  | 74                          | 47.8                      | 40.25                         | 20.75                   | 57.83                      | 157                  | 285                     | P                       | V               |
| 5710MHz           |                                                                                             | 17130                | 49.11               | -19.09                  | 68.2                        | 41.89                     | 40.75                         | 24.58                   | 58.11                      | 165                  | 246                     | P                       | V               |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |

**Band 3 - Straddle Channel**  
**WIFI 802.11ac VHT80 (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11ac          |                                                                                             | 11380                | 50.92               | -23.08                  | 74                          | 47.83                     | 40.23                         | 20.73                   | 57.87                      | 129                  | 236                     | P                       | H               |
| VHT80             |                                                                                             | 17070                | 50.68               | -17.52                  | 68.2                        | 43.85                     | 40.53                         | 24.51                   | 58.21                      | 184                  | 227                     | P                       | H               |
| CH 138            |                                                                                             | 11380                | 50.41               | -23.59                  | 74                          | 47.32                     | 40.23                         | 20.73                   | 57.87                      | 129                  | 236                     | P                       | V               |
| 5690MHz           |                                                                                             | 17070                | 50.73               | -17.47                  | 68.2                        | 43.9                      | 40.53                         | 24.51                   | 58.21                      | 184                  | 227                     | P                       | V               |
| Remark            | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |



## Emission below 1GHz

## WIFI 802.11a (LF @ 3m)

| WIFI          | Note                                                                       | Frequency | Level      | Over   | Limit      | Read   | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|---------------|----------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant.          |                                                                            |           |            | Limit  | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1             |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11a<br>LF |                                                                            | 30        | 24.55      | -15.45 | 40         | 29.94  | 24.9     | 1.01   | 31.3   | 150    | 300     | P     | H     |
|               |                                                                            | 93.05     | 18.67      | -24.83 | 43.5       | 32.66  | 15.8     | 1.76   | 31.55  | -      | -       | P     | H     |
|               |                                                                            | 157.07    | 19.52      | -23.98 | 43.5       | 32.24  | 16.38    | 2.28   | 31.38  | -      | -       | P     | H     |
|               |                                                                            | 428.67    | 25.06      | -20.94 | 46         | 30.1   | 22.69    | 3.73   | 31.46  | -      | -       | P     | H     |
|               |                                                                            | 740.04    | 30.02      | -15.98 | 46         | 30.14  | 26.2     | 4.89   | 31.21  | -      | -       | P     | H     |
|               |                                                                            | 980.6     | 30.59      | -23.41 | 54         | 28.89  | 27.31    | 5.63   | 31.24  | -      | -       | P     | H     |
|               |                                                                            | 33.88     | 27.48      | -12.52 | 40         | 35.11  | 22.9     | 1.07   | 31.6   | 268    | 135     | P     | V     |
|               |                                                                            | 51.34     | 26.62      | -13.38 | 40         | 43.03  | 13.85    | 1.31   | 31.57  | -      | -       | P     | V     |
|               |                                                                            | 92.08     | 24.25      | -19.25 | 43.5       | 38.45  | 15.6     | 1.75   | 31.55  | -      | -       | P     | V     |
|               |                                                                            | 209.45    | 21.85      | -21.65 | 43.5       | 35.06  | 15.53    | 2.63   | 31.37  | -      | -       | P     | V     |
|               |                                                                            | 638.19    | 29.98      | -16.02 | 46         | 31.58  | 25.3     | 4.55   | 31.45  | -      | -       | P     | V     |
|               |                                                                            | 969.93    | 31.8       | -22.2  | 54         | 30.25  | 27.2     | 5.61   | 31.26  | -      | -       | P     | V     |
| Remark        | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |        |            |        |          |        |        |        |         |       |       |



**Note symbol**

|     |                                                                                                                                                          |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| *   | <b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency. |
| !   | Test result is <b>over limit</b> line.                                                                                                                   |
| P/A | <b>P</b> eak or <b>A</b> verage                                                                                                                          |
| H/V | <b>H</b> orizontal or <b>V</b> ertical                                                                                                                   |



A calculation example for radiated spurious emission is shown as below:

| WIFI    | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|---------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.    |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1       |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b |      | 2390      | 55.45      | -18.55 | 74         | 54.51    | 32.22    | 4.58   | 35.86  | 103    | 308     | P       | H       |
| CH 01   |      |           |            |        |            |          |          |        |        |        |         |         |         |
| 2412MHz |      | 2390      | 43.54      | -10.46 | 54         | 42.6     | 32.22    | 4.58   | 35.86  | 103    | 308     | A       | H       |

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 2390MHz:**

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

**For Average Limit @ 2390MHz:**

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

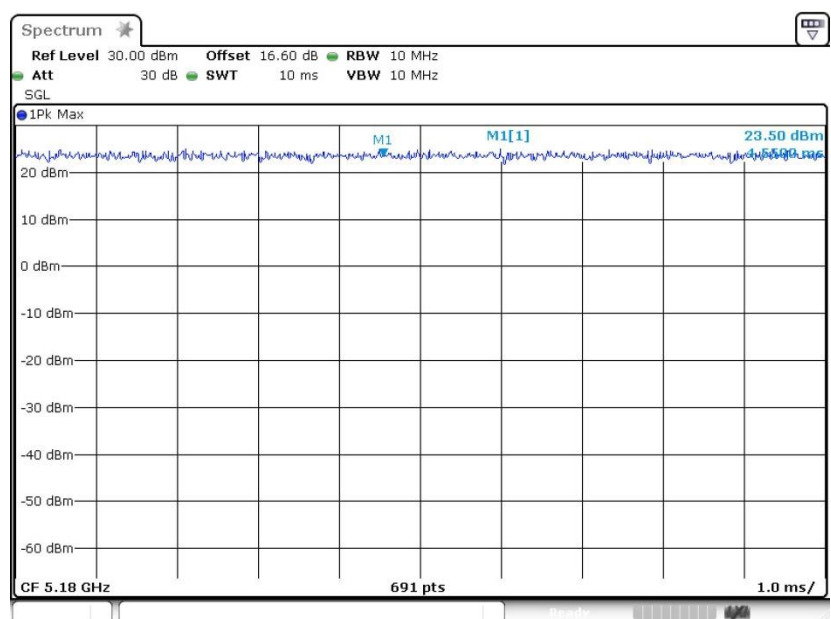
**Both peak and average measured complies with the limit line, so test result is “PASS”.**



## Appendix D. Duty Cycle Plots

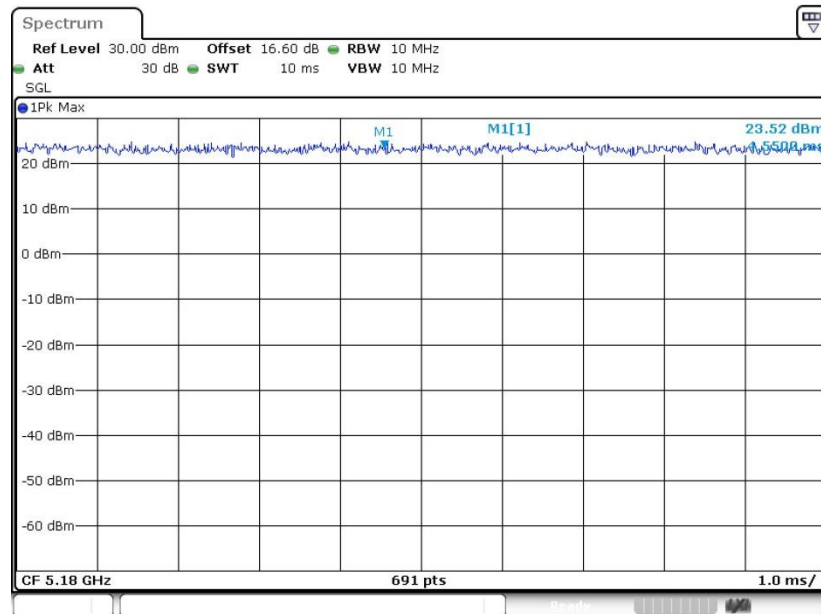
| Band           | Duty Cycle(%) | T(ms) | 1/T(kHz) | VBW Setting |
|----------------|---------------|-------|----------|-------------|
| 802.11a        | 100           | -     | -        | 10Hz        |
| 802.11n HT20   | 100           | -     | -        | 10Hz        |
| 802.11n HT40   | 100           | -     | -        | 10Hz        |
| 802.11ac VHT80 | 100           | -     | -        | 10Hz        |

### 802.11a

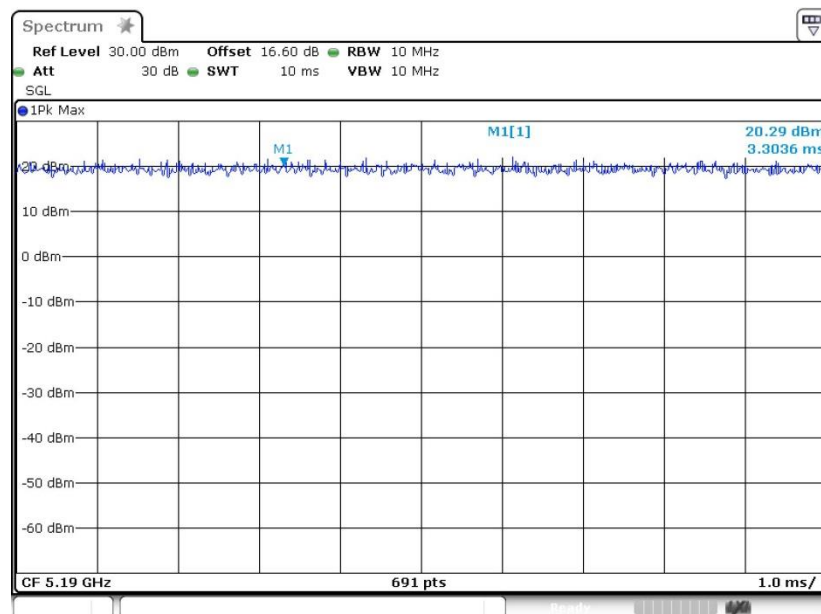




### 802.11n HT20



### 802.11n HT40





802.11ac VHT80

