

# **TEST REPORT**

**Applicant:** Sichuan AI-Link Technology Co.,Ltd.  
**EUT Description:** WiFi Module  
**Model Tested:** AL-7663B-WG-XM  
**Brand:** AI-LINK  
**FCC ID:** 2AOKI-AL7663BXM  
**Standards:** FCC 47 CFR Part 15 Subpart E  
**Date of Receipt:** 2026/01/09  
**Date of Test:** 2026/01/09 to 2026/03/17  
**Date of Issue:** 2026/03/17

TOWE. Tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. Without written approval of TOWE, the test report shall not be reproduced except in full.



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**Jim Huang**  
**Approved By:**



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**Carey Chen**  
**Reviewed By:**

## Revision History

| Rev. | Issue Date | Description | Revised by |
|------|------------|-------------|------------|
| 01   | 2026/03/17 | Original    | Carey Chen |

## Summary of Test Results

| Clause                                                                                                                                                                                               | FCC Part                                               | Test Items                       | Test Bands                                 | Result                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------|--------------------------------------------|-------------------------|
| 4.1                                                                                                                                                                                                  | §15.203                                                | Antenna Requirement              | ---                                        | PASS                    |
| 4.2                                                                                                                                                                                                  | §15.407(g)                                             | Frequency Stability              | ---                                        | ---                     |
| 4.3                                                                                                                                                                                                  | §15.207                                                | AC Power Line Conducted Emission | Section 2.2                                | PASS                    |
| 4.4                                                                                                                                                                                                  | §15.407(a)(1)(iv)<br>§15.407(a)(2)<br>§15.407(a)(3)(i) | Maximum Conducted Output Power   | U-NII-1<br>U-NII-2A<br>U-NII-2C<br>U-NII-3 | PASS                    |
| 4.5                                                                                                                                                                                                  | §KDB 789033 II.C.1                                     | Emission Bandwidth               | U-NII-1<br>U-NII-2A<br>U-NII-2C            | Reporting purposes only |
| 4.6                                                                                                                                                                                                  | §15.407(e)                                             | Minimum Emission Bandwidth       | U-NII-3                                    | PASS                    |
| 4.7                                                                                                                                                                                                  | §KDB 789033 II.D                                       | Occupied Bandwidth               | U-NII-1<br>U-NII-2A<br>U-NII-2C<br>U-NII-3 | Reporting purposes only |
| 4.8                                                                                                                                                                                                  | §15.407(a)(1)(iv)<br>§15.407(a)(2)<br>§15.407(a)(3)(i) | Maximum Power Spectral Density   | U-NII-1<br>U-NII-2A<br>U-NII-2C<br>U-NII-3 | PASS                    |
| 4.9                                                                                                                                                                                                  | §15.407(b)<br>§15.209(d)                               | Unwanted Emissions               | U-NII-1<br>U-NII-2A<br>U-NII-2C<br>U-NII-3 | PASS                    |
| Test Method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024,<br>KDB 789033 D02 General UNII Test Procedures New Rules v02r01<br>Remark: Pass is EUT meets standard requirements. |                                                        |                                  |                                            |                         |

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# 1 General Description

## 1.1 Lab Information

### 1.1.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. Facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3<sup>rd</sup> Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014

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### 1.1.2 Test Facility / Accreditations

#### A2LA (Certificate Number: 7088.01)

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

#### FCC Designation No.: CN1353

Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. Has been recognized as an accredited testing laboratory. Designation Number: CN1353.

#### ISED CAB identifier: CN0152

Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. Has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0152

Company Number: 31000

## 1.2 Client Information

### 1.2.1 Applicant

|            |                                                  |
|------------|--------------------------------------------------|
| Applicant: | Sichuan AI-Link Technology Co.,Ltd.              |
| Address:   | Anzhou Industrial Park, Mianyang, Sichuan, P.R.C |

### 1.2.2 Manufacturer

|               |                                                  |
|---------------|--------------------------------------------------|
| Manufacturer: | Sichuan AI-Link Technology Co.,Ltd.              |
| Address:      | Anzhou Industrial Park, Mianyang, Sichuan, P.R.C |

### 1.3 Product Information

|                    |                                                                                                                                                                                                                                                                                                                                                                                 |                                       |                                                                          |             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------|-------------|
| EUT Description:   | WiFi Module                                                                                                                                                                                                                                                                                                                                                                     |                                       |                                                                          |             |
| Model Tested:      | AL-7663B-WG-XM                                                                                                                                                                                                                                                                                                                                                                  |                                       |                                                                          |             |
| Model Covered:     | AL-7663B-WG-XM-1; AL-7663B-WG-XM-2; AL-7663B-WG-XM-3;<br>AL-7663B-WG-XM-4; AL-7663B-WG-XM-5; AL-7663B-WG-XM-6;<br>AL-7663B-WG-XM-7; AL-7663B-WG-XM-8; AL-7663B-WG-XM-9;<br>AL-7663B-WG-XM1; AL-7663B-WG-XM1-1; AL-7663B-WG-XM1-2;<br>AL-7663B-WG-XM1-3; AL-7663B-WG-XM1-4; AL-7663B-WG-XM1-5;<br>AL-7663B-WG-XM1-6; AL-7663B-WG-XM1-7; AL-7663B-WG-XM1-8;<br>AL-7663B-WG-XM1-9; |                                       |                                                                          |             |
| Brand:             | AI-LINK                                                                                                                                                                                                                                                                                                                                                                         |                                       |                                                                          |             |
| Hardware Version:  | V1.0                                                                                                                                                                                                                                                                                                                                                                            |                                       |                                                                          |             |
| Software Version:  | V.0.0.2.5                                                                                                                                                                                                                                                                                                                                                                       |                                       |                                                                          |             |
| Modulation Type:   | 802.11a/n:                                                                                                                                                                                                                                                                                                                                                                      | OFDM-BPSK, QPSK, 16QAM, 64QAM         |                                                                          |             |
|                    | 802.11ac:                                                                                                                                                                                                                                                                                                                                                                       | OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM |                                                                          |             |
| Smart System:      | <input type="checkbox"/> SISO                                                                                                                                                                                                                                                                                                                                                   | 802.11a/n/ac                          | /                                                                        |             |
|                    | <input checked="" type="checkbox"/> MIMO                                                                                                                                                                                                                                                                                                                                        | 802.11n/ac                            | ( 2 )TX( 2 )RX                                                           |             |
|                    | <input checked="" type="checkbox"/> CDD                                                                                                                                                                                                                                                                                                                                         | 802.11a                               | ( 2 )TX( 2 )RX                                                           |             |
| EUT Function       | <input checked="" type="checkbox"/> Client                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Outdoor AP   | <input type="checkbox"/> Indoor AP <input type="checkbox"/> Fixed P2P AP |             |
| DFS Function:      | <input type="checkbox"/> Master<br><input type="checkbox"/> Slave with radar detection<br><input checked="" type="checkbox"/> Slave without radar detection                                                                                                                                                                                                                     |                                       |                                                                          |             |
| Frequency Range:   | U-NII-1:                                                                                                                                                                                                                                                                                                                                                                        | 5150 ~ 5250MHz                        |                                                                          |             |
|                    | U-NII-2A:                                                                                                                                                                                                                                                                                                                                                                       | 5250 ~ 5350MHz                        |                                                                          |             |
|                    | U-NII-2C:                                                                                                                                                                                                                                                                                                                                                                       | 5470 ~ 5725MHz                        |                                                                          |             |
|                    | U-NII-3:                                                                                                                                                                                                                                                                                                                                                                        | 5725 ~ 5850MHz                        |                                                                          |             |
| Channel Frequency: | 20M BWch.:                                                                                                                                                                                                                                                                                                                                                                      | U-NII-1:                              | 5180 ~ 5240MHz                                                           | 4 Channels  |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-2A:                             | 5260 ~ 5320MHz                                                           | 4 Channels  |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-2C:                             | 5500 ~ 5700MHz                                                           | 11 Channels |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-3:                              | 5745 ~ 5825MHz                                                           | 5 Channels  |
|                    | 40M BWch.:                                                                                                                                                                                                                                                                                                                                                                      | U-NII-1:                              | 5190 ~ 5230MHz                                                           | 2 Channels  |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-2A:                             | 5270 ~ 5310MHz                                                           | 2 Channels  |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-2C:                             | 5510 ~ 5670MHz                                                           | 5 Channels  |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-3:                              | 5755 ~ 5795MHz                                                           | 2 Channels  |
|                    | 80M BWch.:                                                                                                                                                                                                                                                                                                                                                                      | U-NII-1:                              | 5210MHz                                                                  | 1 Channel   |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-2A:                             | 5290MHz                                                                  | 1 Channel   |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-2C:                             | 5530 ~ 5610MHz                                                           | 2 Channels  |
|                    |                                                                                                                                                                                                                                                                                                                                                                                 | U-NII-3:                              | 5775MHz                                                                  | 1 Channel   |
| Antenna Type:      | <input checked="" type="checkbox"/> External (Ant1), <input checked="" type="checkbox"/> Metal (Ant2)                                                                                                                                                                                                                                                                           |                                       |                                                                          |             |
| Antenna Gain:      | Frequency Range                                                                                                                                                                                                                                                                                                                                                                 | Ant1 (dBi)                            | Ant2 (dBi)                                                               |             |
|                    | U-NII-1                                                                                                                                                                                                                                                                                                                                                                         | 1.82                                  | 3.41                                                                     |             |
|                    | U-NII-2A                                                                                                                                                                                                                                                                                                                                                                        | 2.36                                  | 3.41                                                                     |             |
|                    | U-NII-2C                                                                                                                                                                                                                                                                                                                                                                        | 5.03                                  | 3.37                                                                     |             |

|                                                                                                                                                                                                                                                                     |         |      |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|------|
|                                                                                                                                                                                                                                                                     | U-NII-3 | 5.19 | 3.54 |
| Remark:<br>1. The above EUT's information was declared by applicant, please refer to the specifications or user's manual for more detailed description.<br>2. Please refer to the "Model Declaration Letter" provided by the client for specific model differences. |         |      |      |

## 2 Test Configuration

### 2.1 Test Channel

| Frequency Channels for U-NII-1                                                                                                                                                                                                                |           |                            |           |                |           |         |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|-----------|----------------|-----------|---------|-----------|
| Channel                                                                                                                                                                                                                                       | Frequency | Channel                    | Frequency | Channel        | Frequency | Channel | Frequency |
| 36                                                                                                                                                                                                                                            | 5180MHz   | 40                         | 5200MHz   | 44             | 5220MHz   | 48      | 5240MHz   |
| 38                                                                                                                                                                                                                                            | 5190MHz   | 42                         | 5210MHz   | 46             | 5230MHz   | /       |           |
| Remark:<br>In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below: |           |                            |           |                |           |         |           |
| Modulation Type                                                                                                                                                                                                                               |           | Test Channel               |           | Test Frequency |           |         |           |
| 802.11a/n20<br>/ac20                                                                                                                                                                                                                          |           | The Lowest channel (CH36)  |           | 5180MHz        |           |         |           |
|                                                                                                                                                                                                                                               |           | The Middle channel (CH40)  |           | 5200MHz        |           |         |           |
|                                                                                                                                                                                                                                               |           | The Highest channel (CH48) |           | 5240MHz        |           |         |           |
| Modulation Type                                                                                                                                                                                                                               |           | Test Channel               |           | Test Frequency |           |         |           |
| 802.11n40/ac40                                                                                                                                                                                                                                |           | The Lowest channel (CH38)  |           | 5190MHz        |           |         |           |
|                                                                                                                                                                                                                                               |           | The Highest channel (CH46) |           | 5230MHz        |           |         |           |
| Modulation Type                                                                                                                                                                                                                               |           | Test Channel               |           | Test Frequency |           |         |           |
| 802.11ac80                                                                                                                                                                                                                                    |           | The Middle channel (CH42)  |           | 5210MHz        |           |         |           |

| Frequency Channels for U-NII-2A                                                                                                                                                                                                               |           |                            |           |                |           |         |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|-----------|----------------|-----------|---------|-----------|
| Channel                                                                                                                                                                                                                                       | Frequency | Channel                    | Frequency | Channel        | Frequency | Channel | Frequency |
| 52                                                                                                                                                                                                                                            | 5260MHz   | 56                         | 5280MHz   | 60             | 5300MHz   | 64      | 5320MHz   |
| 54                                                                                                                                                                                                                                            | 5270MHz   | 58                         | 5290MHz   | 62             | 5310MHz   | /       |           |
| Remark:<br>In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below: |           |                            |           |                |           |         |           |
| Modulation Type                                                                                                                                                                                                                               |           | Test Channel               |           | Test Frequency |           |         |           |
| 802.11a/n20<br>/ac20                                                                                                                                                                                                                          |           | The Lowest channel (CH52)  |           | 5260MHz        |           |         |           |
|                                                                                                                                                                                                                                               |           | The Middle channel (CH60)  |           | 5300MHz        |           |         |           |
|                                                                                                                                                                                                                                               |           | The Highest channel (CH64) |           | 5320MHz        |           |         |           |
| Modulation Type                                                                                                                                                                                                                               |           | Test Channel               |           | Test Frequency |           |         |           |
| 802.11n40/ac40                                                                                                                                                                                                                                |           | The Lowest channel (CH54)  |           | 5270MHz        |           |         |           |
|                                                                                                                                                                                                                                               |           | The Highest channel (CH62) |           | 5310MHz        |           |         |           |
| Modulation Type                                                                                                                                                                                                                               |           | Test Channel               |           | Test Frequency |           |         |           |
| 802.11ac80                                                                                                                                                                                                                                    |           | The Middle channel (CH58)  |           | 5290MHz        |           |         |           |

| Frequency Channels for U-NII-2C |           |         |           |         |           |         |           |
|---------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                         | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 100                             | 5500MHz   | 110     | 5550MHz   | 122     | 5610MHz   | 134     | 5670MHz   |
| 102                             | 5510MHz   | 112     | 5560MHz   | 124     | 5620MHz   | 136     | 5680MHz   |
| 104                             | 5520MHz   | 116     | 5580MHz   | 126     | 5630MHz   | 140     | 5700MHz   |
| 106                             | 5530MHz   | 118     | 5590MHz   | 128     | 5640MHz   | /       |           |
| 108                             | 5540MHz   | 120     | 5600MHz   | 132     | 5660MHz   |         |           |

Remark:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Modulation Type      | Test Channel                | Test Frequency |
|----------------------|-----------------------------|----------------|
| 802.11a/n20<br>/ac20 | The Lowest channel (CH100)  | 5500MHz        |
|                      | The Middle channel (CH120)  | 5600MHz        |
|                      | The Highest channel (CH140) | 5700MHz        |
| Modulation Type      | Test Channel                | Test Frequency |
| 802.11n40/ac40       | The Lowest channel (CH102)  | 5510MHz        |
|                      | The Middle channel (CH118)  | 5590MHz        |
|                      | The Highest channel (CH134) | 5670MHz        |
| Modulation Type      | Test Channel                | Test Frequency |
| 802.11ac80           | The Lowest channel (CH106)  | 5530MHz        |
|                      | The Highest channel (CH122) | 5610MHz        |

| Frequency Channels for U-NII-3 |           |         |           |         |           |         |           |
|--------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                        | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 149                            | 5745MHz   | 153     | 5765MHz   | 157     | 5785MHz   | 161     | 5805MHz   |
| 151                            | 5755MHz   | 155     | 5775MHz   | 159     | 5795MHz   | 165     | 5825MHz   |

Remark:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Modulation Type      | Test Channel                | Test Frequency |
|----------------------|-----------------------------|----------------|
| 802.11a/n20<br>/ac20 | The Lowest channel (CH149)  | 5745MHz        |
|                      | The Middle channel (CH157)  | 5785MHz        |
|                      | The Highest channel (CH165) | 5825MHz        |
| Modulation Type      | Test Channel                | Test Frequency |
| 802.11n40/ac40       | The Lowest channel (CH151)  | 5755MHz        |
|                      | The Highest channel (CH159) | 5795MHz        |
| Modulation Type      | Test Channel                | Test Frequency |
| 802.11ac80           | The Middle channel (CH155)  | 5775MHz        |

## 2.2 Worst-case configuration and Mode

| Modulation Type    | SISO - Data Rate                                                     | CDD/MIMO( 2 )TX( 2 )RX<br>Data Rate |
|--------------------|----------------------------------------------------------------------|-------------------------------------|
| 802.11a            | N/A                                                                  | 12 Mbps                             |
| 802.11n20          | N/A                                                                  | MCS0 (13 Mbps)                      |
| 802.11n40          | N/A                                                                  | MCS0 (27 Mbps)                      |
| 802.11ac20         | N/A                                                                  | MCS0 (13 Mbps)                      |
| 802.11ac40         | N/A                                                                  | MCS0 (27 Mbps)                      |
| 802.11ac80         | N/A                                                                  | MCS0 (58.5 Mbps)                    |
| Transmitting mode: | Keep the EUT was programmed to be in continuously transmitting mode. |                                     |
| Normal Link:       | Keep the EUT operation to normal function.                           |                                     |

Remark: For 802.11n20/40 and 802.11ac20/40 mode, the whole testing have assessed only, 802.11ac20/40 by referring to their higher output power.

## 2.3 Support Unit used in test

| Description | Manufacturer | Model               | Serial Number |
|-------------|--------------|---------------------|---------------|
| Laptop      | Lenovo       | Thinkbook 14 G4+IAP | YX05AZ13      |

## 2.4 Test Environment

|                                                                                                                                            |                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Temperature:                                                                                                                               | Normal: 15°C ~ 35°C                  |
| Humidity:                                                                                                                                  | 45 ~ 56 % RH Ambient                 |
| Voltage:                                                                                                                                   | DC 3.3V                              |
| AC Voltage:                                                                                                                                | AC 120V/60Hz for Conducted Emissions |
| Remark: The testing environment is within the scope of the EUT user manual and meets the requirements of the standard testing environment. |                                      |

## 2.5 Test RF Cable

**For all conducted test items:** The offset level is set spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

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

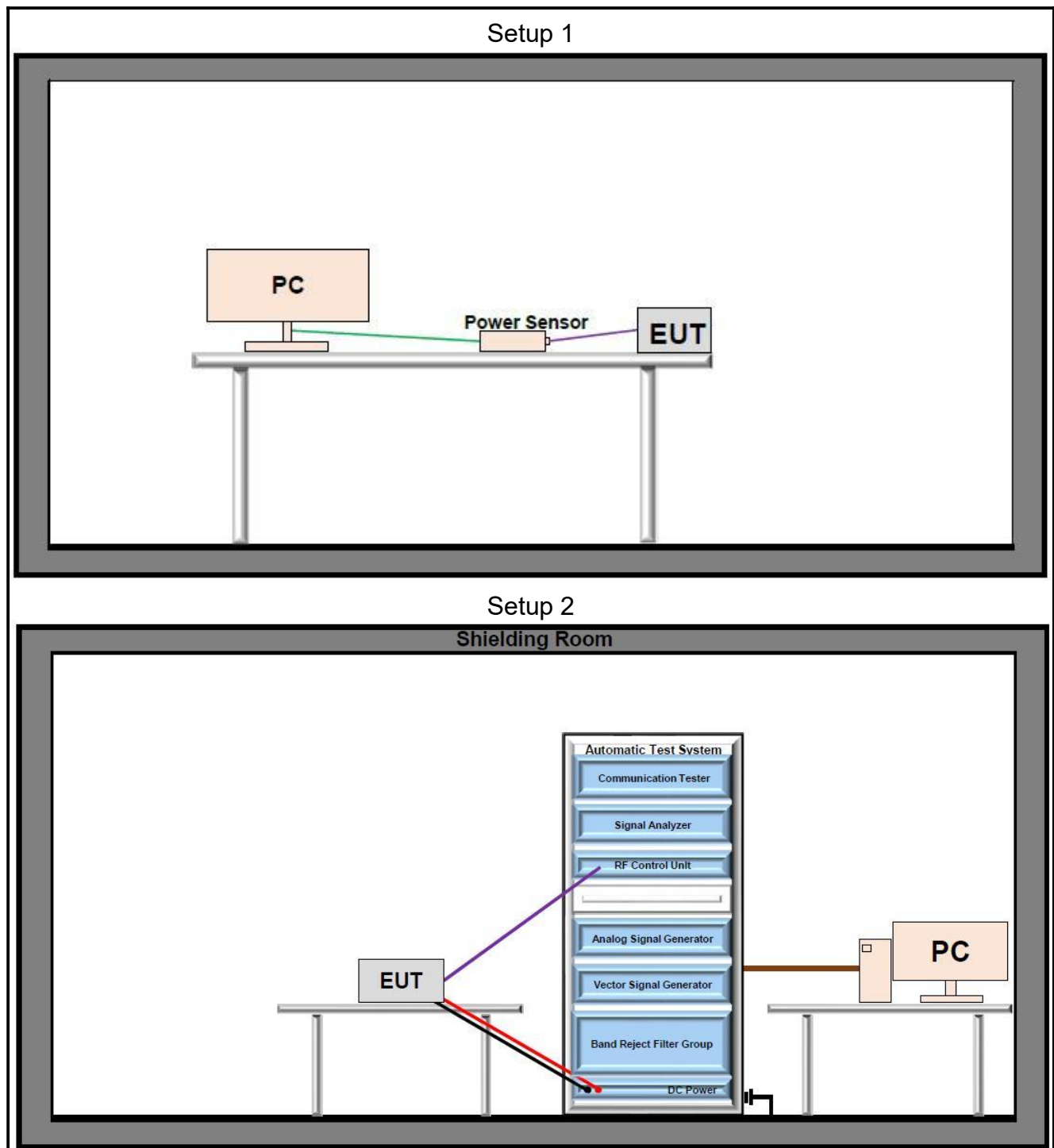
Offset = RF cable loss + attenuator factor.

## 2.6 Modifications

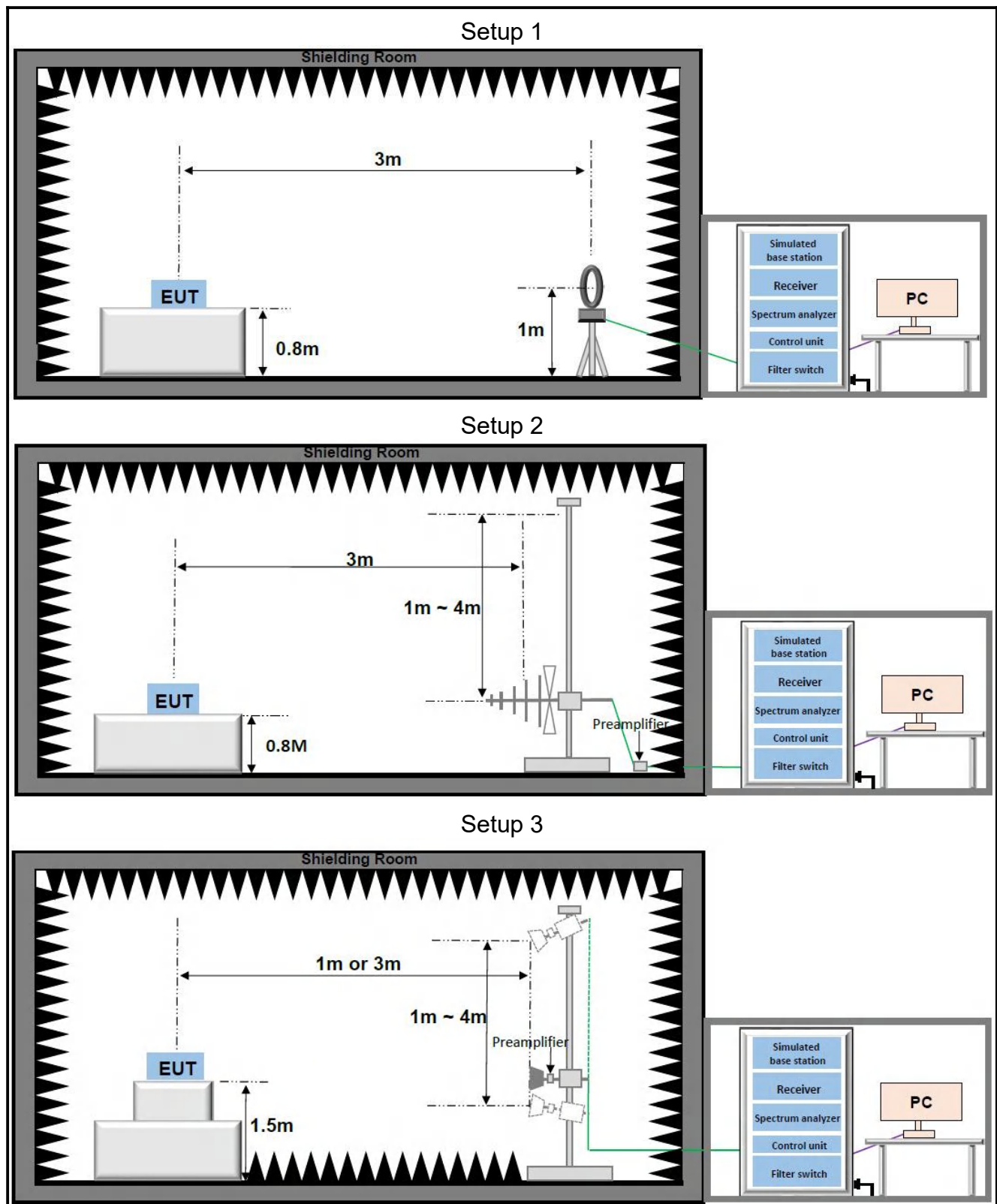
No modifications were made during testing.

## 2.7 Test Setup Diagram

### 2.7.1 Conducted Configuration



## 2.7.2 Radiated Configuration



## Directional gain calculations:

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

If all antennas have the same gain,  $G_{ANT}$ , Directional gain =  $G_{ANT}$  + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices

$$\text{Array Gain} = 10 \log(N_{ANT}/N_{SS}=1) \text{ dB}$$

- For power measurements on IEEE 802.11 devices:

$$\text{Array Gain} = 0 \text{ dB (i.e., no array gain) for } N_{ANT} \leq 4;$$

$$\text{Array Gain} = 0 \text{ dB (i.e., no array gain) for channel widths } \geq 40 \text{ MHz for any } N_{ANT};$$

$$\text{Array Gain} = 5 \log(N_{ANT}/N_{SS}=1) \text{ dB or } 3 \text{ dB, whichever is less, for 20-MHz channel widths with } N_{ANT} \geq 5.$$

Directional gain may be calculated by using the formulas applicable to equal gain antennas with  $G_{ANT}$  set equal to the gain of the antenna having the highest gain.

Unequal antenna gains, with equal transmit powers. For antenna gains given by  $G_1, G_2, \dots, G_N$  dBi

- If transmit signals are correlated, then

$$\text{Directional gain} = 10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}] \text{ dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]}$$

- If all transmit signals are completely uncorrelated, then

$$\text{Directional gain} = 10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10}) / N_{ANT}] \text{ dBi}$$

**The Power and PSD limit should be modified if the directional gain of EUT is over 6dBi.**

The EUT supports CDD System.

| Transmit signals are completely correlated |                 |                 |                                  |                                |                             |                           |
|--------------------------------------------|-----------------|-----------------|----------------------------------|--------------------------------|-----------------------------|---------------------------|
| Operation Band                             | ANT Gain1 (dBi) | ANT Gain2 (dBi) | Directional gain For Power (dBi) | Directional gain For PSD (dBi) | Power Limit Reduction (dBm) | PSD Limit Reduction (dBm) |
| U-NII-1                                    | 1.82            | 3.41            | 3.41                             | 5.66                           | 0                           | 0                         |
| U-NII-2A                                   | 2.36            | 3.41            | 3.41                             | 5.91                           | 0                           | 0                         |
| U-NII-2C                                   | 5.03            | 3.37            | 5.03                             | 7.25                           | 0                           | 1.25                      |
| U-NII-3                                    | 5.19            | 3.54            | 5.19                             | 7.41                           | 0                           | 1.41                      |

U-NII-1:

Power Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

PSD Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

U-NII-2A:

Power Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

PSD Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

U-NII-2C:

Power Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

PSD Limit Reduction = Directional gain – 6dBi, (Directional gain > 6dBi) =7.25 – 6 = 1.25

U-NII-3:

Power Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

PSD Limit Reduction = Directional gain – 6dBi, (Directional gain > 6dBi) =7.41 – 6 = 1.41

### 3 Equipment and Measurement Uncertainty

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, whichever is less, and where applicable is traceable to recognized national standards.

#### 3.1 Test Equipment List

| RF Conducted                     |              |           |             |            |            |
|----------------------------------|--------------|-----------|-------------|------------|------------|
| Description                      | Manufacturer | Model     | S.N.        | Last Due   | Cal Due    |
| Signal Analyzer                  | Keysight     | N9020A    | US46470429  | 2025/03/14 | 2026/03/13 |
|                                  |              |           |             | 2026/03/05 | 2027/03/04 |
| Signal Generator                 | R&S          | SMR20     | 101027      | 2025/03/11 | 2026/03/10 |
|                                  |              |           |             | 2026/03/05 | 2027/03/04 |
| Vector Signal Generator          | R&S          | SMM100A   | 549353      | 2025/05/29 | 2026/05/28 |
| Power Sensor                     | Anritsu      | MA24408A  | 12520       | 2025/05/29 | 2026/05/28 |
| RF Control Unit                  | Tonscend     | JS0806-2  | 23C80620671 | 2025/05/29 | 2026/05/28 |
| EXA Signal Analyzer, Multi-touch | Keysight     | N9010B    | MY63440541  | 2025/05/29 | 2026/05/28 |
| Attenuator                       | Yin Saige    | SMA-10dBm | N/A         | N/A        | N/A        |
| Measurement Software             | Tonscend     | TS1120-3  | 10659       | N/A        | N/A        |

| Radiated Emission                                           |                 |             |                     |            |            |
|-------------------------------------------------------------|-----------------|-------------|---------------------|------------|------------|
| Description                                                 | Manufacturer    | Model       | S.N.                | Last Due   | Cal Due    |
| Double-Ridged Horn Antennas                                 | Tonscend        | HA32-18     | 806HA003608251015   | 2025/12/13 | 2028/12/12 |
| Biconic Logarithmic Periodic Antennas                       | Tonscend        | BLA32-30    | 80SBLA001011251010  | 2025/12/13 | 2028/12/12 |
| Broad-Band Horn Antenna                                     | Schwarzbeck     | BBHA 9170   | 1290                | 2023/06/25 | 2026/06/24 |
| Loop Antenna                                                | Schwarzbeck     | FMZB 1519C  | 1519C-028           | 2023/06/29 | 2026/06/28 |
| Signal Analyzer*                                            | Keysight        | N9020A      | MY57120015          | 2026/01/19 | 2028/01/18 |
| EXA Signal Analyzer, Multi-touch                            | Keysight        | N9010B      | MY63440541          | 2025/05/29 | 2026/05/28 |
| EMI Tester Receiver                                         | Rohde & Schwarz | ESR7        | 102719              | 2025/05/29 | 2026/05/28 |
| Low Noise Amplifier*                                        | Tonscend        | TAP9K3G40   | 806JSAP044710251054 | 2026/01/19 | 2028/01/18 |
| Low Noise Amplifier*                                        | Tonscend        | TAP01018050 | 806JSAF044509251052 | 2026/01/19 | 2028/01/18 |
| Low Noise Amplifier                                         | Tonscend        | TAP18040048 | AP22G806247         | 2025/03/11 | 2027/03/10 |
| Hygrometer                                                  | BINGYU          | HTC-1       | N/A                 | 2025/07/25 | 2026/07/24 |
| Radio Frequency Switch                                      | Townshend       | JS0806s     | 806JSSX019811251028 | N/A        | N/A        |
| Test Software                                               | Tonscend        | TS+         | Version: 5.0.0      | N/A        | N/A        |
| N/A: Not applicable, confirmed internally by the laboratory |                 |             |                     |            |            |
| *There were no testing before 2026/01/19.                   |                 |             |                     |            |            |

| Conducted Emission                                          |                 |                  |        |            |            |
|-------------------------------------------------------------|-----------------|------------------|--------|------------|------------|
| Description                                                 | Manufacturer    | Model            | S.N.   | Last Due   | Cal Due    |
| EMI Tester Receiver                                         | Rohde & Schwarz | ESR3             | 103108 | 2025/05/29 | 2026/05/28 |
| LISN*                                                       | Rohde & Schwarz | ENV 216          | 102836 | 2026/01/19 | 2027/01/18 |
| Test software                                               | Rohde & Schwarz | ELEKTRA<br>V4.61 | N/A    | N/A        | N/A        |
| N/A: Not applicable, confirmed internally by the laboratory |                 |                  |        |            |            |
| *There were no testing before 2026/01/19.                   |                 |                  |        |            |            |

### 3.2 Measurement Uncertainty

| Parameter                         | U <sub>lab</sub> |
|-----------------------------------|------------------|
| Frequency Error                   | 679.98Hz         |
| Output Power                      | 0.76dB           |
| Conducted Spurious Emissions      | 2.22dB           |
| Conducted Emissions(150kHz~30MHz) | 2.43dB           |
| Radiated Emissions(9kHz~30MHz)    | 2.40dB           |
| Radiated Emissions(30MHz~1000MHz) | 4.66dB           |
| Radiated Emissions(1GHz~18GHz)    | 5.42dB           |
| Radiated Emissions(18GHz~40GHz)   | 5.46dB           |

Uncertainty figures are valid to a confidence level of 95%

## 4 Test Results

### 4.1 Antenna Requirement

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>Standard Applicable:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                            | 47 CFR Part 15E Section 15.203 |
| 15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. |                                |
| The antenna gain and type as provided by the manufacturer are as follows:<br>The antenna Type is External. With Antenna gain is<br>U-NII-1: 1.82dBi(Ant1); 3.41dBi(Ant2);<br>U-NII-2A: 2.36dBi(Ant1); 3.41dBi(Ant2);<br>U-NII-2C: 5.03dBi(Ant1); 3.37dBi(Ant2);<br>U-NII-3: 5.19dBi(Ant1); 3.54dBi(Ant2);<br>Antenna Anti-Replacement Construction: An embedded-in antenna design is used.                                                                             |                                |

### 4.2 Frequency Stability

|                                                                                                                                                                                                                              |                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>Standard Applicable:</b>                                                                                                                                                                                                  | 47 CFR Part 15E Section 15.407(g) |
| Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual. |                                   |

### 4.3 AC Power Line Conducted Emissions

#### Limits

| Frequency range (MHz) | 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.

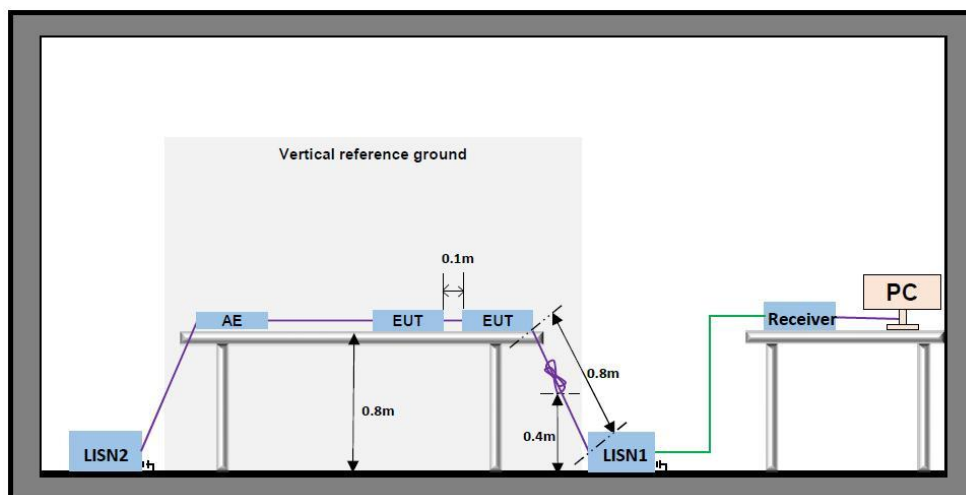
#### Test Procedure

ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, Section 6.2.

#### Test Settings

1. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a  $50\Omega/50\mu\text{H} + 5\Omega$  linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
3. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
4. Set the test-receiver system to Peak detect function and specified bandwidth (if bandwidth =9kHz) with maximum hold mode. Then measurement is also conducted by average detector and Quasi-Peak detector function respectively
5. Both sides of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

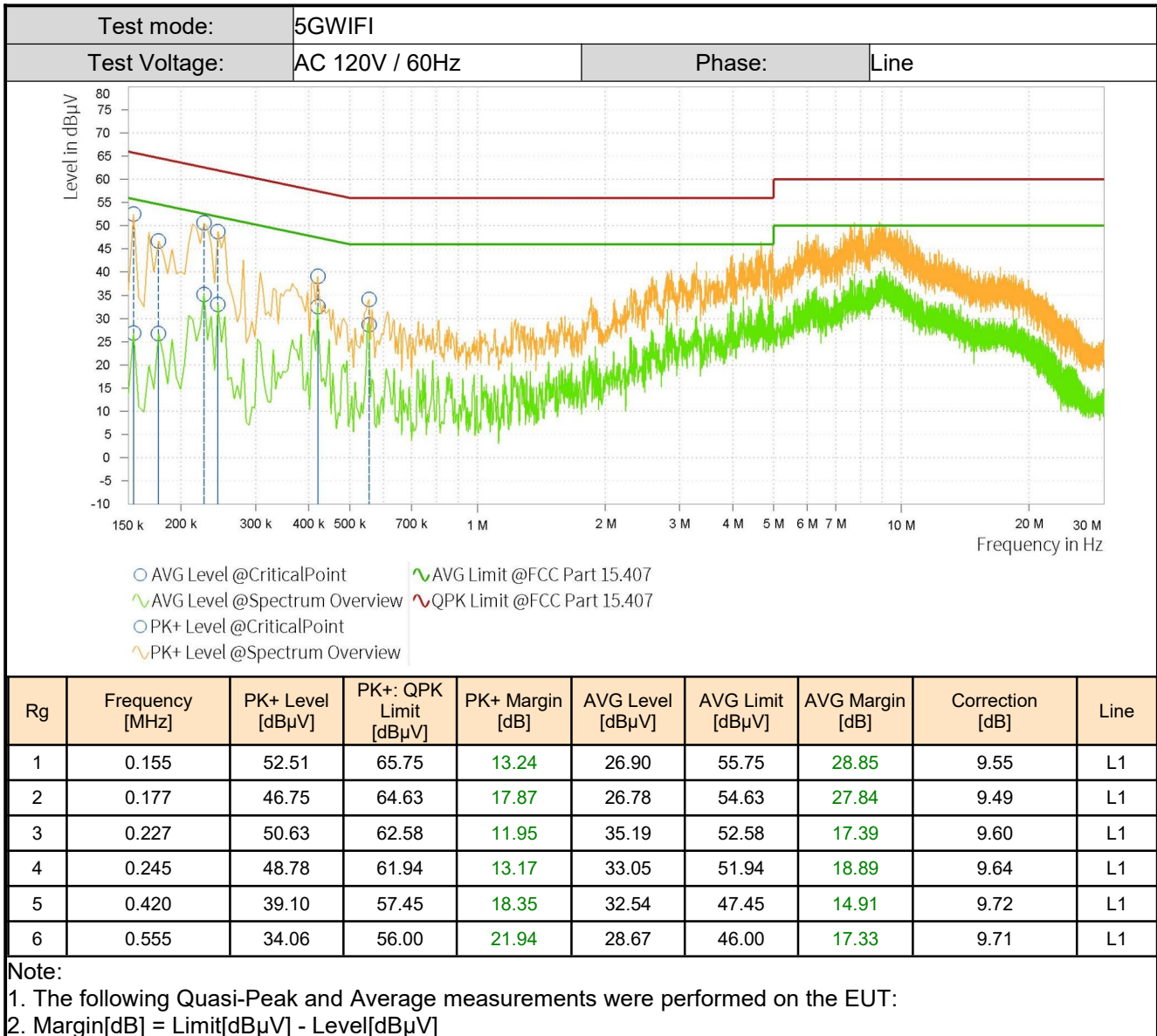
#### Test Setup

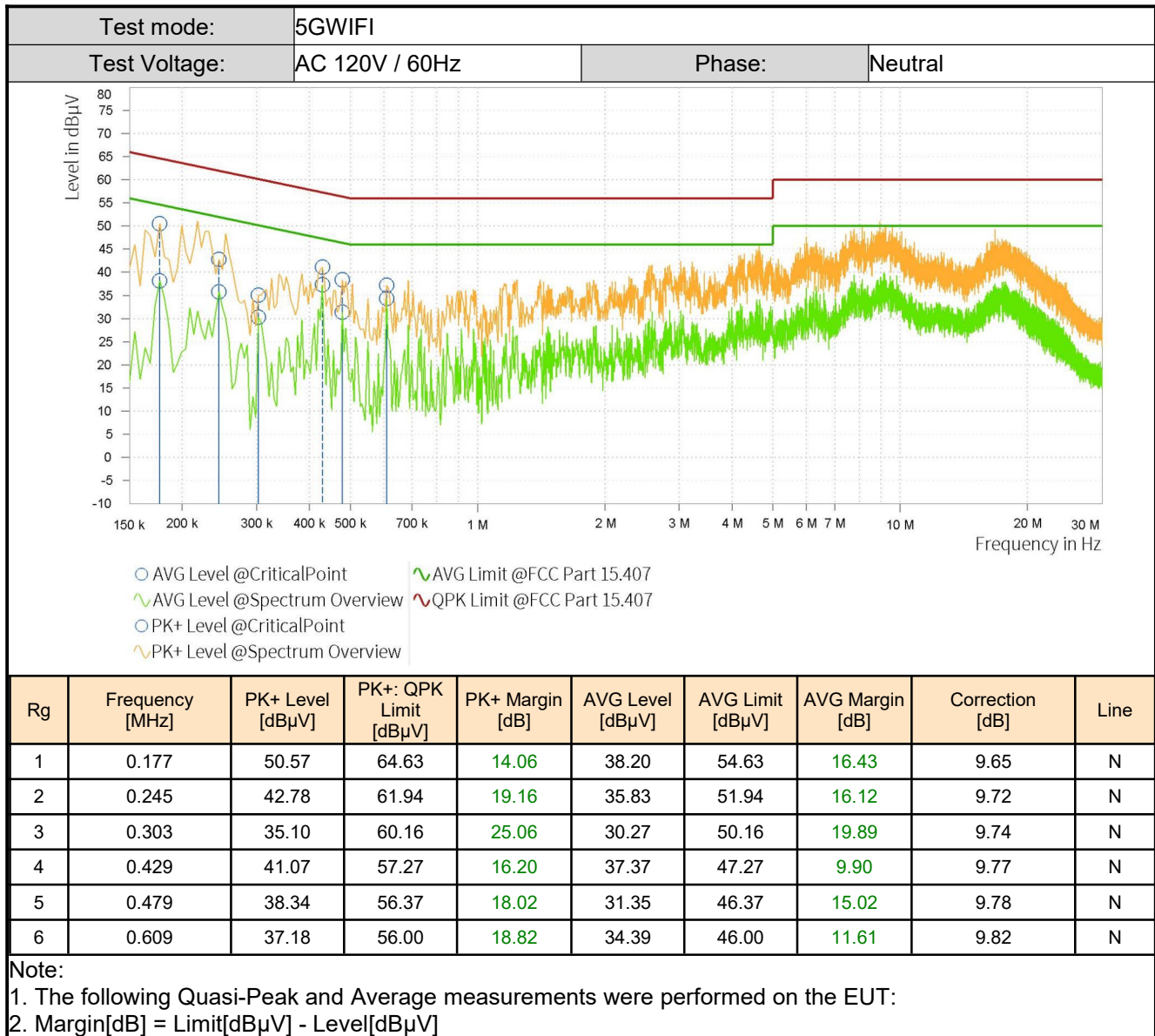


#### Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

## Test Result:





## 4.4 Maximum Conducted Output Power

### Limits

For 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 provided the maximum antenna gain does not exceed 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

### Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.E.3.b (Other Channel)

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.E.2.b(Straddle Channel)

### Test Settings

1. PM-G:  
Set to the maximum power setting and enable the EUT transmit continuously.  
The power output was measured on the EUT antenna port using RF Cable with an attenuator connected to a power sensor. Output power was read directly from the power sensor.  
Measure and record the results in the test report.
2. SA:  
RBW = 1MHz  
VBW  $\geq$  3MHz  
Span = Encompass the EBW (or, alternatively, the entire 99% occupied bandwidth)  
Sweep = Auto  
Detector = power averaging (rms)

### Test Setup

Refer to section 2.7.1 Setup 1 for details.

### Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

### Test Result

The detailed test data see: **Appendix**.

## 4.5 Emission Bandwidth

### Limits

None, for reporting purposes only.

### Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.C.1.

### Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The transmitter output is connected to a spectrum analyzer:
3. RBW = 1% - 5%(99%BW)
4. VBW = 3 times the RBW
5. Sweep = Auto
6. Detector = Peak
7. Trace = Max hold
8. The trace was allowed to stabilize
9. Measure and record the results in the test report.

### Test Notes

The signal analyzers' automatic bandwidth measurement capability of the spectrum analyzer was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X= 26. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

### Test Setup

Refer to section 2.7.1 Setup 2 for details.

### Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

### Test Result

The detailed test data see: **Appendix**.

## 4.6 Minimum Emission Bandwidth

### Limits

Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

### Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.C.2.

### Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The transmitter output is connected to a spectrum analyzer:
3. RBW = 100kHz(DTS)
4. VBW = 3 times the RBW
5. Sweep = Auto
6. Detector = Peak
7. Trace = Max hold
8. The trace was allowed to stabilize
9. Measure and record the results in the test report.

### Test Notes

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### Test Setup

Refer to section 2.7.1- Setup 2 for details.

### Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

### Test Result

The detailed test data see: **Appendix**.

## 4.7 Occupied Bandwidth

### Limits

None, for reporting purposes only.

### Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.D.

### Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The transmitter output is connected to a spectrum analyzer:
3. RBW = 1% - 5%(99%BW)
4. VBW = 3 times the RBW
5. Sweep = Auto
6. Detector = Peak
7. Trace = Max hold
8. The trace was allowed to stabilize
9. Measure and record the results in the test report.

### Test Setup

Refer to section 2.7.1- Setup 2 for details.

### Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

### Test Result

The detailed test data see: **Appendix**.

## 4.8 Maximum Power Spectral Density

### Limits

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

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1-megahertz band.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

### Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.F

### Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously
2. The transmitter output is connected to a spectrum analyzer
3. RBW = 1MHz (for 5.15–5.25 GHz, 5.25–5.35 GHz, and 5.47–5.725 GHz)
4. RBW = 500kHz (for 5.725–5.85 GHz)
5. VBW  $\geq$  3 times RBW
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize
10. Measure and record the results in the test report.

### Test Setup

Refer to section 2.7.1- Setup 2 for details.

### Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

### Test Result

The detailed test data see: **Appendix**.

## 4.9 Unwanted Emissions

### Limits

Spurious emissions are permitted in an of the frequency bands:

| MHz               | MHz                 | MHz                   | MHz             | GHz          | GHz           |
|-------------------|---------------------|-----------------------|-----------------|--------------|---------------|
| 0.090 - 0.110     | 12.29 - 12.293      | 149.9 - 150.05        | 1660 - 1710     | 4.5 - 5.15   | 14.47 - 14.5  |
| 0.495 - 0.505     | 12.51975 - 12.52025 | 156.52475 - 156.52525 | 1718.8 - 1722.2 | 5.35 - 5.46  | 15.35 - 16.2  |
| 2.1735 - 2.1905   | 12.5767 - 12.57725  | 156.7 - 156.9         | 2200 - 2300     | 7.25 - 7.75  | 17.7 - 21.4   |
| 4.125 - 128       | 13.36 - 13.41       | 162.0125 - 167.17     | 2310 - 2390     | 8.025 - 8.5  | 22.01 - 23.12 |
| 4.17725 - 4.17775 | 16.42 - 16.423      | 167.72 - 173.2        | 2483.5 - 2500   | 9.0 - 9.2    | 23.6 - 24.0   |
| 4.20725 - 4.20775 | 16.69475 - 16.69525 | 240 - 285             | 2655 - 2900     | 9.3 - 9.5    | 31.2 - 31.8   |
| 6.215 - 6.218     | 1680425 - 1680475   | 322 - 335.4           | 3260 - 3267     | 10.6 - 12.7  | 36.43 - 36.5  |
| 6.26775 - 6.26825 | 25.5 - 25.67        | 399.9 - 410           | 3332 - 3339     | 13.25 - 13.4 |               |
| 6.31175 - 6.31225 | 37.5 - 38.25        | 608 - 614             | 3345.8 - 3358   |              |               |
| 8.291 - 8.294     | 73 - 74.6           | 960 - 1240            | 3600 - 4400     |              |               |
| 8.362 - 8.366     | 74.8 - 75.2         | 1300 - 1427           |                 |              |               |
| 8.37625 - 8.38675 | 108 - 121.94        | 1435 - 1626.5         |                 |              |               |
| 8.41425 - 8.41475 | 123 - 138           | 1645.5 - 1646.5       |                 |              |               |

Radiated disturbance of an intentional radiator:

| Frequency         | Field strength<br>( $\mu\text{V/m}$ ) | Limit<br>( $\text{dB}\mu\text{V/m}$ ) | Remark     | Measurement<br>distance (m) |
|-------------------|---------------------------------------|---------------------------------------|------------|-----------------------------|
| 0.009MHz-0.490MHz | 2400/F(kHz)                           | -                                     | -          | 300                         |
| 0.490MHz-1.705MHz | 24000/F(kHz)                          | -                                     | -          | 30                          |
| 1.705MHz-30MHz    | 30                                    | -                                     | -          | 30                          |
| 30MHz-88MHz       | 100                                   | 40.0                                  | Quasi-peak | 3                           |
| 88MHz-216MHz      | 150                                   | 43.5                                  | Quasi-peak | 3                           |
| 216MHz-960MHz     | 200                                   | 46.0                                  | Quasi-peak | 3                           |
| 960MHz-1GHz       | 500                                   | 54.0                                  | Quasi-peak | 3                           |
| Above 1GHz        | 500                                   | 74.0                                  | Peak       | 3                           |
|                   |                                       | 54.0                                  | Average    |                             |

Un-restricted band emissions above 1GHz limit:

For transmitters operating in the 5.15-5.25 GHz band:

All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of  $-27$  dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band:

All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of  $-27$  dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band:

All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of  $-27$  dBm/MHz.

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

All emissions shall be limited to a level of  $-27$  dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

### Test Procedure

ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.4 & 6.5 & 6.6.

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.G.3 ~ 6.

### **Test Settings**

1. For radiated emissions measurements performed at frequencies less than or equal to 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the reference ground plane.
2. For radiated emissions measurements performed at frequencies above 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the ground plane.
3. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1m to 4m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e, field strength or received power), when orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25cm.
4. For each suspected emission, the EUT was ranged its worst case and then tune the antenna tower(from 1~4m) and turntable(from 0~360°) find the maximum reading. Preamplifier and a high pass filter are used for the test in order get better signal level comply with the guidelines.
5. The simulated base station was set to force the EUT to its maximum transmitting power.
6. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
7. spectrum analyzer setting:  
Measurements Below 1000MHz: RBW = 120 kHz; VBW ≥ 300 kHz; Detector = Peak  
Measurements Above 1000MHz: RBW = 1 MHz; VBW ≥ 3 MHz; Detector = Peak  
Average Measurements Above 1000MHz:  
RBW = 1 MHz, VBW ≥ 1/T, with peak detector for average measurements.
8. The field strength is calculated by adding the Antenna Factor, Cable Factor. The basic equation with a sample calculation is as follows:  
Level = Reading(dBμV) + Factor(dB):  
Factor = Cable Factor(dB) + AF(dB/m) - Preamplifier gain(dB)  
AF = Antenna Factor(dB/m)  
Margin = Limit(dBμV/m) – Level(dBμV/m)
9. Repeat above procedures until all frequencies measured was complete.
10. Measure and record the results in the test report.

### **Test Notes**

1. Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1-meter test distance with the application of a distance correction factor.
2. Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. the disturbance between 9kHz to 30MHz and 18GHz to 40GHz was very low. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be recorded, so only the harmonics had been displayed.
3. These frequencies which near "-" should be ignored because they are Fundamental frequency.

### **Test Setup**

Refer to section 2.7.2 for details.

### **Measuring Instruments**

The measuring equipment is listed in the section 3.1 of this test report.

### **Test Result**

The detailed test data see: **Appendix.**

## 5 Test Setup Photos

The detailed test data see: **Appendix A - BTWIFI Setup Photos**

# Appendix

## Emission Bandwidth Test Result

| TestMode   | Antenna | Frequency[MHz] | 26dB EBW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|------------|---------|----------------|----------------|----------|----------|------------|---------|
| 11a-CDD    | Ant1    | 5180           | 19.760         | 5170.120 | 5189.880 | ---        | ---     |
| 11a-CDD    | Ant2    | 5180           | 19.880         | 5170.040 | 5189.920 | ---        | ---     |
| 11a-CDD    | Ant1    | 5200           | 19.920         | 5190.120 | 5210.040 | ---        | ---     |
| 11a-CDD    | Ant2    | 5200           | 19.760         | 5190.120 | 5209.880 | ---        | ---     |
| 11a-CDD    | Ant1    | 5240           | 19.720         | 5230.280 | 5250.000 | ---        | ---     |
| 11a-CDD    | Ant2    | 5240           | 19.760         | 5230.080 | 5249.840 | ---        | ---     |
| 11a-CDD    | Ant1    | 5260           | 20.160         | 5250.040 | 5270.200 | ---        | ---     |
| 11a-CDD    | Ant2    | 5260           | 20.200         | 5250.040 | 5270.240 | ---        | ---     |
| 11a-CDD    | Ant1    | 5300           | 20.080         | 5289.960 | 5310.040 | ---        | ---     |
| 11a-CDD    | Ant2    | 5300           | 20.000         | 5290.160 | 5310.160 | ---        | ---     |
| 11a-CDD    | Ant1    | 5320           | 19.800         | 5310.160 | 5329.960 | ---        | ---     |
| 11a-CDD    | Ant2    | 5320           | 19.880         | 5310.080 | 5329.960 | ---        | ---     |
| 11a-CDD    | Ant1    | 5500           | 19.880         | 5490.080 | 5509.960 | ---        | ---     |
| 11a-CDD    | Ant2    | 5500           | 19.840         | 5490.280 | 5510.120 | ---        | ---     |
| 11a-CDD    | Ant1    | 5600           | 19.960         | 5590.080 | 5610.040 | ---        | ---     |
| 11a-CDD    | Ant2    | 5600           | 20.200         | 5589.920 | 5610.120 | ---        | ---     |
| 11a-CDD    | Ant1    | 5700           | 20.200         | 5690.120 | 5710.320 | ---        | ---     |
| 11a-CDD    | Ant2    | 5700           | 20.080         | 5690.240 | 5710.320 | ---        | ---     |
| 11a-CDD    | Ant1    | 5745           | 19.960         | 5735.040 | 5755.000 | ---        | ---     |
| 11a-CDD    | Ant2    | 5745           | 20.120         | 5735.000 | 5755.120 | ---        | ---     |
| 11a-CDD    | Ant1    | 5785           | 20.120         | 5774.960 | 5795.080 | ---        | ---     |
| 11a-CDD    | Ant2    | 5785           | 20.040         | 5775.000 | 5795.040 | ---        | ---     |
| 11a-CDD    | Ant1    | 5825           | 20.120         | 5815.000 | 5835.120 | ---        | ---     |
| 11a-CDD    | Ant2    | 5825           | 20.080         | 5815.040 | 5835.120 | ---        | ---     |
| 11n20MIMO  | Ant1    | 5180           | 20.120         | 5170.200 | 5190.320 | ---        | ---     |
| 11n20MIMO  | Ant2    | 5180           | 20.200         | 5169.920 | 5190.120 | ---        | ---     |
| 11n20MIMO  | Ant1    | 5200           | 19.960         | 5190.120 | 5210.080 | ---        | ---     |
| 11n20MIMO  | Ant2    | 5200           | 20.120         | 5190.040 | 5210.160 | ---        | ---     |
| 11n20MIMO  | Ant1    | 5240           | 20.120         | 5230.040 | 5250.160 | ---        | ---     |
| 11n20MIMO  | Ant2    | 5240           | 20.160         | 5230.040 | 5250.200 | ---        | ---     |
| 11n20MIMO  | Ant1    | 5260           | 20.320         | 5250.000 | 5270.320 | ---        | ---     |
| 11n20MIMO  | Ant2    | 5260           | 20.200         | 5250.040 | 5270.240 | ---        | ---     |
| 11n20MIMO  | Ant1    | 5300           | 20.200         | 5290.000 | 5310.200 | ---        | ---     |
| 11n20MIMO  | Ant2    | 5300           | 20.080         | 5290.160 | 5310.240 | ---        | ---     |
| 11n20MIMO  | Ant1    | 5320           | 20.160         | 5310.040 | 5330.200 | ---        | ---     |
| 11n20MIMO  | Ant2    | 5320           | 20.160         | 5309.960 | 5330.120 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5180           | 20.240         | 5170.080 | 5190.320 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5180           | 20.160         | 5169.920 | 5190.080 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5200           | 20.120         | 5190.000 | 5210.120 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5200           | 19.960         | 5190.000 | 5209.960 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5240           | 20.120         | 5229.960 | 5250.080 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5240           | 20.000         | 5230.040 | 5250.040 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5260           | 20.080         | 5250.040 | 5270.120 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5260           | 20.320         | 5250.000 | 5270.320 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5300           | 20.040         | 5290.040 | 5310.080 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5300           | 20.120         | 5290.120 | 5310.240 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5320           | 20.120         | 5309.960 | 5330.080 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5320           | 20.040         | 5310.080 | 5330.120 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5500           | 20.240         | 5489.960 | 5510.200 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5500           | 20.200         | 5490.040 | 5510.240 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5600           | 20.120         | 5589.960 | 5610.080 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5600           | 20.000         | 5590.040 | 5610.040 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5700           | 20.120         | 5690.000 | 5710.120 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5700           | 20.000         | 5690.080 | 5710.080 | ---        | ---     |
| 11ac20MIMO | Ant1    | 5745           | 19.960         | 5735.080 | 5755.040 | ---        | ---     |
| 11ac20MIMO | Ant2    | 5745           | 19.960         | 5735.040 | 5755.000 | ---        | ---     |

|            |      |      |        |          |          |     |     |
|------------|------|------|--------|----------|----------|-----|-----|
| 11ac20MIMO | Ant1 | 5785 | 20.080 | 5775.000 | 5795.080 | --- | --- |
| 11ac20MIMO | Ant2 | 5785 | 20.120 | 5775.040 | 5795.160 | --- | --- |
| 11ac20MIMO | Ant1 | 5825 | 20.160 | 5815.120 | 5835.280 | --- | --- |
| 11ac20MIMO | Ant2 | 5825 | 20.040 | 5815.120 | 5835.160 | --- | --- |
| 11ac40MIMO | Ant1 | 5190 | 40.480 | 5170.000 | 5210.480 | --- | --- |
| 11ac40MIMO | Ant2 | 5190 | 39.840 | 5170.000 | 5209.840 | --- | --- |
| 11ac40MIMO | Ant1 | 5230 | 40.560 | 5210.000 | 5250.560 | --- | --- |
| 11ac40MIMO | Ant2 | 5230 | 40.000 | 5210.080 | 5250.080 | --- | --- |
| 11ac40MIMO | Ant1 | 5270 | 40.160 | 5250.080 | 5290.240 | --- | --- |
| 11ac40MIMO | Ant2 | 5270 | 40.080 | 5250.400 | 5290.480 | --- | --- |
| 11ac40MIMO | Ant1 | 5310 | 40.160 | 5290.160 | 5330.320 | --- | --- |
| 11ac40MIMO | Ant2 | 5310 | 39.840 | 5290.400 | 5330.240 | --- | --- |
| 11ac40MIMO | Ant1 | 5510 | 41.040 | 5489.440 | 5530.480 | --- | --- |
| 11ac40MIMO | Ant2 | 5510 | 40.080 | 5490.480 | 5530.560 | --- | --- |
| 11ac40MIMO | Ant1 | 5590 | 40.560 | 5569.760 | 5610.320 | --- | --- |
| 11ac40MIMO | Ant2 | 5590 | 40.160 | 5570.000 | 5610.160 | --- | --- |
| 11ac40MIMO | Ant1 | 5670 | 40.720 | 5649.680 | 5690.400 | --- | --- |
| 11ac40MIMO | Ant2 | 5670 | 40.240 | 5650.160 | 5690.400 | --- | --- |
| 11ac40MIMO | Ant1 | 5755 | 40.480 | 5734.840 | 5775.320 | --- | --- |
| 11ac40MIMO | Ant2 | 5755 | 40.160 | 5735.160 | 5775.320 | --- | --- |
| 11ac40MIMO | Ant1 | 5795 | 40.880 | 5774.600 | 5815.480 | --- | --- |
| 11ac40MIMO | Ant2 | 5795 | 39.440 | 5775.160 | 5814.600 | --- | --- |
| 11ac80MIMO | Ant1 | 5210 | 80.960 | 5169.680 | 5250.640 | --- | --- |
| 11ac80MIMO | Ant2 | 5210 | 80.960 | 5169.360 | 5250.320 | --- | --- |
| 11ac80MIMO | Ant1 | 5290 | 80.480 | 5250.000 | 5330.480 | --- | --- |
| 11ac80MIMO | Ant2 | 5290 | 80.000 | 5250.480 | 5330.480 | --- | --- |
| 11ac80MIMO | Ant1 | 5530 | 80.800 | 5489.840 | 5570.640 | --- | --- |
| 11ac80MIMO | Ant2 | 5530 | 80.000 | 5490.480 | 5570.480 | --- | --- |
| 11ac80MIMO | Ant1 | 5610 | 80.480 | 5570.160 | 5650.640 | --- | --- |
| 11ac80MIMO | Ant2 | 5610 | 80.000 | 5570.000 | 5650.000 | --- | --- |
| 11ac80MIMO | Ant1 | 5775 | 80.480 | 5734.680 | 5815.160 | --- | --- |
| 11ac80MIMO | Ant2 | 5775 | 79.840 | 5735.320 | 5815.160 | --- | --- |

## Test Graphs





11a-CDD-Ant1-5260



11a-CDD-Ant2-5260



11a-CDD-Ant1-5300



11a-CDD-Ant2-5300



11a-CDD-Ant1-5320



11a-CDD-Ant2-5320



11a-CDD-Ant1-5500



11a-CDD-Ant2-5500



11a-CDD-Ant1-5600



11a-CDD-Ant2-5600



11a-CDD-Ant1-5700



11a-CDD-Ant2-5700



11a-CDD-Ant1-5745



11a-CDD-Ant2-5745



11a-CDD-Ant1-5785



11a-CDD-Ant2-5785



11a-CDD-Ant1-5825



11a-CDD-Ant2-5825



11n20MIMO-Ant1-5180



11n20MIMO-Ant2-5180



11n20MIMO-Ant1-5200



11n20MIMO-Ant2-5200



11n20MIMO-Ant1-5240



11n20MIMO-Ant2-5240



11n20MIMO-Ant1-5260



11n20MIMO-Ant2-5260



11n20MIMO-Ant1-5300



11n20MIMO-Ant2-5300



11n20MIMO-Ant1-5320



11n20MIMO-Ant2-5320



11ac20MIMO-Ant1-5180



11ac20MIMO-Ant2-5180



11ac20MIMO-Ant1-5200



11ac20MIMO-Ant2-5200



11ac20MIMO-Ant1-5240



11ac20MIMO-Ant2-5240



11ac20MIMO-Ant1-5260



11ac20MIMO-Ant2-5260



11ac20MIMO-Ant1-5300



11ac20MIMO-Ant2-5300



11ac20MIMO-Ant1-5320



11ac20MIMO-Ant2-5320



11ac20MIMO-Ant1-5500



11ac20MIMO-Ant2-5500



11ac20MIMO-Ant1-5600



11ac20MIMO-Ant2-5600



11ac20MIMO-Ant1-5700



11ac20MIMO-Ant2-5700



11ac20MIMO-Ant1-5745



11ac20MIMO-Ant2-5745



11ac20MIMO-Ant1-5785



11ac20MIMO-Ant2-5785



11ac20MIMO-Ant1-5825



11ac20MIMO-Ant2-5825



11ac40MIMO-Ant1-5190



11ac40MIMO-Ant2-5190



11ac40MIMO-Ant1-5230



11ac40MIMO-Ant2-5230



11ac40MIMO-Ant1-5270



11ac40MIMO-Ant2-5270