

# FCC TEST REPORT

Report No.: AB26050240FW01

FCC ID: **2ACYR-6080-ANC-AH1**

Applicant: Dongguan Yongfang Electronics Technology Co., Ltd.

Address: No.12, Long an Rd, The 2nd Industrial Zone Shigu Tangxia, Dongguan, Guangdong, China

Manufacturer: Dongguan Yongfang Electronics Technology Co., Ltd.

Address: No.12, Long an Rd, The 2nd Industrial Zone Shigu Tangxia, Dongguan, Guangdong, China

Product Name: Hybrid Active Noise Canceling Wireless Headphones

Trade Mark: UUD

Test Model: ANC AH1

Additional Model(s): ANC-6080

Standard: FCC 47 CFR Part 15 Subpart C (Part 15.247)  
ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

Date of Receipt: 2026.05.15

Date of Test Date: 2026.05.15-2026.05.29

Date of Issue: 2026.05.29

Test Result: Pass

Compiled by:  
(Printed Name + Signature)      Huaijie Li

Supervised by:  
(Printed Name + Signature)      David Huang

Approved by:  
(Printed Name + Signature)      Jay Liu



Testing Laboratory Name: Aibo Standard Technology (Shenzhen) Co., Ltd.

Address: 101, Building B, Tuori New Energy Industrial Park, High-tech Park, Tianliao Community, Yutang Street, Guangming District, Shenzhen City, Guangdong Province, China

This test report may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by Aibo. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to Aibo within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit. The test report merely correspond to the test sample.

**Aibo Standard Technology (Shenzhen) Co., Ltd.**

101, Building B, Tuori New Energy Industrial Park, High-tech Park, Tianliao Community, Yutang Street, Guangming District, Shenzhen City, Guangdong Province, China

Tel.: +86 755 85250797

E-mail: [aibo@aibonorm.com](mailto:aibo@aibonorm.com)

Website: [www.aibonorm.com](http://www.aibonorm.com)

## FCC TEST REPORT

|                          |                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------|
| EUT.....                 | : Hybrid Active Noise Canceling Wireless Headphones                                       |
| Test Model.....          | : ANC AH1                                                                                 |
| <b>Applicant.....</b>    | <b>: Dongguan Yongfang Electronics Technology Co., Ltd.</b>                               |
| Address.....             | : No.12, Long an Rd, The 2nd Industrial Zone Shigu Tangxia,<br>Dongguan, Guangdong, China |
| <b>Manufacturer.....</b> | <b>: Dongguan Yongfang Electronics Technology Co., Ltd.</b>                               |
| Address.....             | : No.12, Long an Rd, The 2nd Industrial Zone Shigu Tangxia,<br>Dongguan, Guangdong, China |

|                    |                 |
|--------------------|-----------------|
| <b>Test Result</b> | <b>Positive</b> |
|--------------------|-----------------|

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

**REPORT VERSION**

| Version No. | Issue Date | Description   |
|-------------|------------|---------------|
| 01          | 2026.05.29 | Initial Issue |

## TABLE OF CONTENTS

|                                                                         |           |
|-------------------------------------------------------------------------|-----------|
| <b>1. GENERAL INFORMATION .....</b>                                     | <b>6</b>  |
| 1.1. GENERAL DESCRIPTION OF EUT .....                                   | 6         |
| 1.2. DESCRIPTION OF SUPPORT EQUIPMENT .....                             | 6         |
| 1.3. DESCRIPTION OF EXTERNAL I/O .....                                  | 6         |
| 1.4. GENERAL DESCRIPTION OF APPLIED STANDARDS .....                     | 7         |
| 1.5. DESCRIPTION OF TEST FACILITY .....                                 | 7         |
| 1.6. MEASUREMENT UNCERTAINTY .....                                      | 8         |
| 1.7. ENVIRONMENTAL CONDITIONS .....                                     | 8         |
| 1.8. DESCRIPTION OF TEST MODES .....                                    | 9         |
| <b>2. SUMMARY OF TEST RESULT .....</b>                                  | <b>10</b> |
| <b>3. MEASUREMENT INSTRUMENTS LIST .....</b>                            | <b>11</b> |
| <b>4. ANTENNA REQUIREMENT .....</b>                                     | <b>12</b> |
| <b>5. PSEUDORANDOM FREQUENCY HOPPING SEQUENCE .....</b>                 | <b>13</b> |
| <b>6. CONDUCTED OUTPUT POWER .....</b>                                  | <b>14</b> |
| 6.1. LIMIT .....                                                        | 14        |
| 6.2. TEST SETUP .....                                                   | 14        |
| 6.3. TEST PROCEDURE .....                                               | 14        |
| 6.4. TEST RESULT .....                                                  | 15        |
| <b>7. 20DB BANDWIDTH AND OCCUPIED BANDWIDTH .....</b>                   | <b>16</b> |
| 7.1. LIMIT .....                                                        | 16        |
| 7.2. TEST SETUP .....                                                   | 16        |
| 7.3. TEST PROCEDURE .....                                               | 16        |
| 7.4. TEST RESULT .....                                                  | 16        |
| <b>8. CARRIER FREQUENCIES SEPARATION .....</b>                          | <b>17</b> |
| 8.1. LIMIT .....                                                        | 17        |
| 8.2. TEST SETUP .....                                                   | 17        |
| 8.3. TEST PROCEDURE .....                                               | 17        |
| 8.4. TEST RESULT .....                                                  | 17        |
| <b>9. NUMBER OF HOPPING CHANNEL .....</b>                               | <b>18</b> |
| 9.1. LIMIT .....                                                        | 18        |
| 9.2. TEST SETUP .....                                                   | 18        |
| 9.3. TEST PROCEDURE .....                                               | 18        |
| 9.4. TEST RESULT .....                                                  | 18        |
| <b>10. TIME OF OCCUPANCY (DWELL TIME) .....</b>                         | <b>19</b> |
| 10.1. LIMIT .....                                                       | 19        |
| 10.2. TEST SETUP .....                                                  | 19        |
| 10.3. TEST PROCEDURE .....                                              | 19        |
| 10.4. TEST RESULT .....                                                 | 19        |
| <b>11. CONDUCTED BAND EDGES MEASUREMENT .....</b>                       | <b>20</b> |
| 11.1. LIMIT .....                                                       | 20        |
| 11.2. TEST SETUP .....                                                  | 20        |
| 11.3. TEST PROCEDURE .....                                              | 20        |
| 11.4. TEST RESULT .....                                                 | 20        |
| <b>12. RADIATED EMISSIONS AND RADIATED BAND EDGES MEASUREMENT .....</b> | <b>21</b> |

|                                                  |           |
|--------------------------------------------------|-----------|
| 12.1. LIMIT .....                                | 21        |
| 12.2. TEST SETUP .....                           | 21        |
| 12.3. TEST PROCEDURE .....                       | 22        |
| 12.4. TEST RESULT .....                          | 23        |
| <b>13. POWER LINE CONDUCTED EMISSIONS .....</b>  | <b>29</b> |
| 13.1. LIMIT .....                                | 29        |
| 13.2. TEST SETUP .....                           | 29        |
| 13.3. TEST PROCEDURE .....                       | 29        |
| 13.4. TEST RESULT .....                          | 30        |
| <b>14. PHOTOGRAPHS OF TEST SETUP .....</b>       | <b>31</b> |
| <b>15. EXTERNAL PHOTOGRAPHS OF THE EUT .....</b> | <b>31</b> |
| <b>16. INTERNAL PHOTOGRAPHS OF THE EUT .....</b> | <b>31</b> |

## 1. GENERAL INFORMATION

### 1.1. GENERAL DESCRIPTION OF EUT

|                                                      |                                                                                  |
|------------------------------------------------------|----------------------------------------------------------------------------------|
| Product Name:                                        | Hybrid Active Noise Canceling Wireless Headphones                                |
| Trade Mark:                                          | UUD                                                                              |
| Test Model:                                          | ANC AH1                                                                          |
| Additional Model(s):                                 | ANC-6080                                                                         |
| Model Difference                                     | All models are the same circuit and RF module, except the model name and colors. |
| Hardware Version:                                    | /                                                                                |
| Software Version:                                    | /                                                                                |
| Power Supply                                         | DC 5V/1A                                                                         |
| Battery                                              | DC3.7V/400mAh                                                                    |
| EUT Supports Function:<br>(Provided by the customer) | 2.4GHz ISM Bands                                                                 |
| Test Sample(s) Number:                               | AB26050240-01 (Engineer Sample)<br>AB26050240-02 (Normal Sample)                 |
| <b>Radio Specification Subject to this Report</b>    |                                                                                  |
| Bluetooth Version:                                   | Bluetooth BDR + EDR                                                              |
| Frequency Range:                                     | 2402MHz~2480MHz                                                                  |
| Modulation Type:                                     | GFSK, $\pi/4$ DQPSK, 8DPSK                                                       |
| Channel Spacing:                                     | 1MHz                                                                             |
| Channel Number(s):                                   | 79                                                                               |
| Antenna Type:                                        | Internal Antenna                                                                 |
| Antenna Gain:                                        | 2.71 dBi                                                                         |

### 1.2. DESCRIPTION OF SUPPORT EQUIPMENT

| Description | Manufacturer | Model | Serial Number              | Supplied by |
|-------------|--------------|-------|----------------------------|-------------|
| Computer    | ACER         | N22C5 | NXEGXCN0022400<br>3D943400 | Applicant   |

### 1.3. DESCRIPTION OF EXTERNAL I/O

| I/O Port Description | Quantity | Cable            |
|----------------------|----------|------------------|
| USB Type-C Interface | 1        | 0.8m, unshielded |

#### 1.4. GENERAL DESCRIPTION OF APPLIED STANDARDS

The tests were performed according to following standards:

[FCC Rules Part 15.247](#) - Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

[ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024](#) - American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

[KDB 558074 D01 15.247 Meas Guidance v05r02](#) - Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices operating under Section 15.247 Of the FCC Rules.

#### 1.5. DESCRIPTION OF TEST FACILITY

**Test Lab:** Aibo Standard Technology (Shenzhen) Co., Ltd.

**Address:** 101, Building B, Tuori New Energy Industrial Park, High-tech Park, Tianliao Community, Yutang Street, Guangming District, Shenzhen City, Guangdong Province, China

Tel.: +86 755 85250797

E-mail: aibo@aibonorm.com

Website: www.aibonorm.com

The test facility is recognized, certified, or accredited by the following organizations:

**A2LA-Lab Certificate No.: 7514.01**

Aibo Standard Technology (Shenzhen) Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

**FCC Accredited Lab.**

Designation Number: CN1411

Test Firm Registration Number: 567066

**ISED Wireless Device Testing Laboratories**

Company Number: 33924

CAB identifier: CN0185

## 1.6. MEASUREMENT UNCERTAINTY

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.

| Items                                        | Measurement Uncertainty |
|----------------------------------------------|-------------------------|
| Power Line Conducted Emission (9kHz~150kHz)  | ±3.62dB                 |
| Power Line Conducted Emission (150kHz~30MHz) | ±3.38dB                 |
| Radiated Emission (9kHz~30MHz)               | ±3.10dB                 |
| Radiated Emission (30MHz~1GHz)               | ±4.90dB                 |
| Radiated Emission (1GHz~18GHz)               | ±3.88dB                 |
| Radiated Emission (18GHz~40GHz)              | ±5.32dB                 |
| RF Conducted Power                           | ±0.57dB                 |
| Conducted Spurious Emissions                 | ±1.60dB                 |
| RF Frequency                                 | ±6.0 x 10 <sup>-7</sup> |
| Occupied Channel Bandwidth                   | ±28.87KHz               |
| Maximum Power Spectral Density Level         | ±0.59dB                 |

Note: All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence.

## 1.7. ENVIRONMENTAL CONDITIONS

During the measurement the environmental conditions were within the listed ranges:

|                     |                |
|---------------------|----------------|
| Normal Temperature: | +15°C ~ +35°C  |
| Lative Humidity     | 20 % ~ 75 %    |
| Air Pressure        | 98KPa ~ 101KPa |

## 1.8. DESCRIPTION OF TEST MODES

| Operation Frequency List |                 |
|--------------------------|-----------------|
| Channel Number           | Frequency (MHz) |
| <b>00</b>                | <b>2402</b>     |
| 01                       | 2403            |
| ⋮                        | ⋮               |
| 37                       | 2439            |
| <b>38</b>                | <b>2440</b>     |
| 39                       | 2441            |
| ⋮                        | ⋮               |
| 77                       | 2479            |
| <b>78</b>                | <b>2480</b>     |

For portable device, radiated emission was verified over X, Y, Z Axis, and shown the worst case in this report. The following operating modes were applied for the related test items. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data packets and antenna ports (if EUT with antenna diversity architecture), only the result of the worst case was recorded in the report.

| List of Test Modes |                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------|
| Test Mode(s)       | Description                                                                                      |
| TM1                | Keep the EUT works in continuously transmitting mode (non-hopping) with GFSK Modulation          |
| TM2                | Keep the EUT works in continuously transmitting mode (non-hopping) with $\pi/4$ DQPSK Modulation |
| TM3                | Keep the EUT works in continuously transmitting mode (non-hopping) with 8DPSK Modulation         |
| TM4                | Keep the EUT works in continuously transmitting mode (hopping) with GFSK Modulation              |
| TM5                | Keep the EUT works in continuously transmitting mode (hopping) with $\pi/4$ DQPSK Modulation     |
| TM6                | Keep the EUT works in continuously transmitting mode (hopping) with 8DPSK Modulation             |

### Power setting during the test:

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

| Frequency             | 2402MHz | 2440MHz | 2480MHz |
|-----------------------|---------|---------|---------|
| RF Power Parameter(s) | Default | Default | Default |

## 2. SUMMARY OF TEST RESULT

| FCC 47 CFR Part 15 Subpart C Test Cases |                                                        |        |               |
|-----------------------------------------|--------------------------------------------------------|--------|---------------|
| FCC Rule                                | Description of Test Item(s)                            | Result | Test Engineer |
| Part 15.203                             | Antenna Requirement                                    | Pass   | Jacey Fu      |
| Part 15.247(b)(1)                       | Maximum Peak Conducted Output Power                    | Pass   | Jacey Fu      |
| Part 15.247(a)(1)                       | 20dB Bandwidth                                         | Pass   | Jacey Fu      |
| Part 15.247(a)(1)                       | Carrier Frequencies Separation                         | Pass   | Jacey Fu      |
| Part 15.247(a)(1)(iii)                  | Number of Hopping Channel                              | Pass   | Jacey Fu      |
| Part 15.247(a)(1)(iii)                  | Time Of Occupancy (Dwell Time)                         | Pass   | Jacey Fu      |
| Part 15.247(d)                          | Conducted Band Edges Measurement                       | Pass   | Jacey Fu      |
| Part 15.205, 15.209,<br>15.247(d)       | Radiated Emissions and Radiated Band Edges Measurement | Pass   | He Chen       |
| Part 15.207                             | Power Line Conducted Emissions                         | Note   | /             |
| Part 15.247(i)                          | RF Exposure (see the RF Exposure Report)               | Pass   | Jacey Fu      |

Note: The Bluetooth function is inoperable during charging; therefore, this test item is not applicable.

### 3. MEASUREMENT INSTRUMENTS LIST

| Item | Test Equipment                      | Manufacturer    | Model No.      | Serial No.   | Cal. Date  | Cal. Until |
|------|-------------------------------------|-----------------|----------------|--------------|------------|------------|
| 1    | Loop Antenna                        | Schwarzbeck     | FMZB 1519      | 1519-025     | 01/18/2026 | 01/17/2028 |
| 2    | ESCI EMI TEST RECEIVER              | ROHDE & SCHWARZ | ESPI 7         | /            | 01/20/2026 | 01/19/2027 |
| 3    | Power Amplifier                     | HZEMC           | HPA-9K0133     | HYP A23029   | 01/20/2026 | 01/19/2027 |
| 4    | Broadband Antenna                   | Schwarzbeck     | VULB 9168      | 01763        | 01/29/2026 | 01/28/2028 |
| 5    | Attenuator                          | PRM             | ATT50-6-3      | ATT50-6-3    | 01/20/2026 | 01/19/2027 |
| 6    | Spectrum Analyzer                   | R&S             | FSV40-N        | 101365       | 01/20/2026 | 01/19/2027 |
| 7    | Horn Antenna                        | Schwarzbeck     | BBHA 9120 D    | 02786        | 02/19/2026 | 02/18/2028 |
| 8    | Horn Antenna                        | Schwarzbeck     | ZLB7-18-40G-77 | 072410839    | 02/19/2026 | 02/18/2028 |
| 9    | Power Amplifier                     | HZEMC           | PA0118-43      | HYP A23030   | 01/20/2026 | 01/19/2027 |
| 10   | Power Amplifier                     | HZEMC           | PA01840-45     | HYP A23031   | 01/20/2026 | 01/19/2027 |
| 11   | EMI Test Receiver                   | R&S             | ESCI           | 101196       | 01/20/2026 | 01/19/2027 |
| 12   | LISN                                | R&S             | ENV216         | 102374       | 01/20/2026 | 01/19/2027 |
| 13   | Pulse Limiter                       | Schwarzbeck     | ESH3-Z2        | 0357.8810.54 | 01/20/2026 | 01/19/2027 |
| 14   | MXA Signal Analyzer                 | Keysight        | N9020A         | MY52091389   | 01/20/2026 | 01/19/2027 |
| 15   | Power Sensor                        | Agilent         | U2021XA        | MY54110007   | 01/20/2026 | 01/19/2027 |
| 16   | Power Sensor                        | Agilent         | U2021XA        | MY54110009   | 01/20/2026 | 01/19/2027 |
| 17   | MXG Vector Signal Generator         | Agilent         | N5182A         | MY47070153   | 01/20/2026 | 01/19/2027 |
| 18   | Analog Signal Source                | Keysight        | N5173B         | MY60403029   | 01/20/2026 | 01/19/2027 |
| 19   | Vector Signal Generator             | R&S             | SMCV100B       | 106103       | 01/20/2026 | 01/19/2027 |
| 20   | WIDEBAND RADIO COMMUNICATION TESTER | R&S             | CMW500         | 118780       | 01/20/2026 | 01/19/2027 |
| 21   | DC POWER SUPPLY                     | MAISHENG        | MT-305DS       | 2021040016   | 02/28/2026 | 02/27/2027 |
| 22   | Const Temp. & Humidity Chamber      | GRT             | GR-HWX-150L    | GR25010601   | 01/20/2026 | 01/19/2027 |

| Test Software                           |          |          |
|-----------------------------------------|----------|----------|
| Software name                           | Model    | Version  |
| Conducted Emission Measurement Software | FASLAB   | V4.1     |
| Radiated Emission Measurement Software  | FASLAB   | V4.1     |
| Bluetooth and WIFI Test System          | MTS 8310 | V3.0.0.0 |

## 4. ANTENNA REQUIREMENT

### 1) Standard Requirement

#### 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.

#### 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 2) Conclusion

Antenna in the interior of the equipment and no consideration of replacement. The gain of the antenna is See section 1.1. It complies with the standard requirement.

## 5. PSEUDORANDOM FREQUENCY HOPPING SEQUENCE

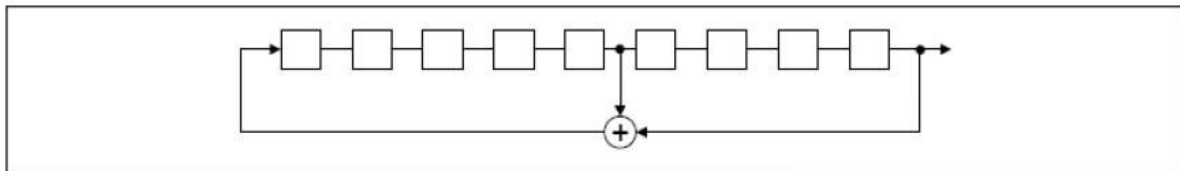
### For 47 CFR Part 15C section 15.247(a)(1),(g),(h) requirement:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth of the hop-ping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hop-ping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

### EUT Pseudorandom Frequency Hopping Sequence Requirement

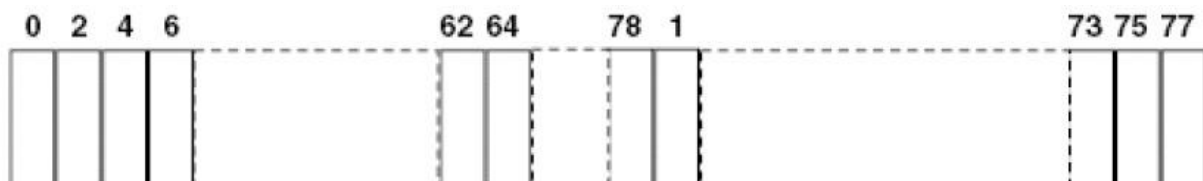
The pseudorandom frequency hopping sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first one of 9 consecutive ones, for example: the shift register is initialized with nine ones.

- a) Number of shift register stages: 9
- b) Length of pseudo-random sequence:  $2^9 - 1 = 511$  bits
- c) Longest sequence of zeros: 8(non-inverted signal)



*Linear Feedback Shift Register for Generation of the PRBS sequence*

An example of pseudorandom frequency hopping sequence as follows:



Each frequency used equally one the average by each transmitter.

The system receiver has input bandwidths that match the hopping channel bandwidths of their corresponding transmitter and shift frequencies in synchronization with the transmitted signals.

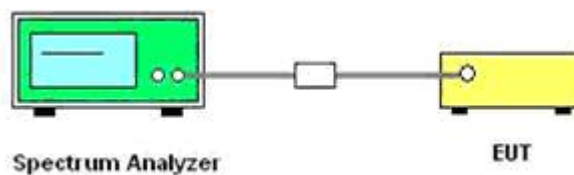
## 6. CONDUCTED OUTPUT POWER

### 6.1. LIMIT

According to 15.247(b)(1). For frequency hopping systems operating in the 2400–2483.5MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5MHz band: 0.125watts.

### 6.2. TEST SETUP

#### ☒ Using a Spectrum Analyzer for Testing:



#### ☐ Using a Broadband Power Meter for Testing:



### 6.3. TEST PROCEDURE

#### ☒ Using a Spectrum Analyzer for Testing:

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

a) Use the following spectrum analyzer settings:

- 1) Span: Approximately five times the 20dB bandwidth, centered on a hopping channel.
- 2) RBW > 20dB bandwidth of the emission being measured.
- 3) VBW  $\geq$  RBW.
- 4) Sweep: Auto.
- 5) Detector function: Peak.
- 6) Trace: Max hold.

b) Allow trace to stabilize.

c) Use the marker-to-peak function to set the marker to the peak of the emission.

d) The indicated level is the peak output power, after any corrections for external attenuators and cables.

e) A plot of the test results and setup description shall be included in the test report.

☐ **Using a Broadband Power Meter for Testing:**

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the broadband power meter.

#### **6.4. TEST RESULT**

**Pass.**

Please refer to the Appendix D BR EDR RF Conducted Test Data.

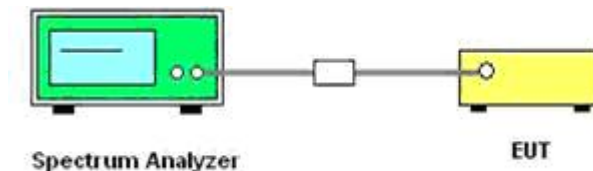
Note: The test results including the cable lose.

## 7. 20DB BANDWIDTH AND OCCUPIED BANDWIDTH

### 7.1. LIMIT

None; for reporting purposes only.

### 7.2. TEST SETUP



### 7.3. TEST PROCEDURE

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

Use the following spectrum analyzer settings:

#### **For 20dB Bandwidth Measurement:**

- a) Span = approximately 2 to 5 times the OBW, centered on a hopping channel.
- b) RBW = 1% to 5% of the OBW.
- c) VBW  $\geq 3 \times$  RBW
- d) Sweep = auto;
- e) Detector function = peak
- f) Trace = max hold
- g) All the trace to stabilize, use the marker-to-peak function to set the marker to the peak of the emission, use the marker-delta function to measure and record the 20dB down bandwidth of the emission.

#### **For 99% Occupied Bandwidth Measurement:**

- a) Span = approximately 1.5 to 5 times the OBW, centered on a hopping channel.
- b) RBW = 1% to 5% of the OBW.
- c) VBW  $\geq 3 \times$  RBW
- d) Sweep = auto;
- e) Detector function = peak
- f) Trace = max hold
- g) Use the 99% power bandwidth function of the instrument to measure the Occupied Bandwidth and recorded.

### 7.4. TEST RESULT

Please refer to the Appendix D BR EDR RF Conducted Test Data.

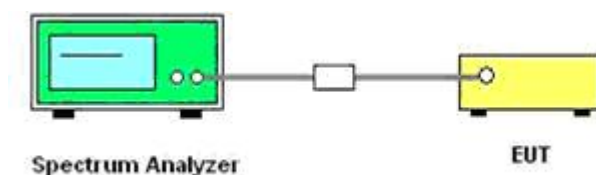
## 8. CARRIER FREQUENCIES SEPARATION

### 8.1. LIMIT

According to 15.247(a)(1), Frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125mW.

### 8.2. TEST SETUP



### 8.3. TEST PROCEDURE

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

Use the following spectrum analyzer settings:

- a) Span: Wide enough to capture the peaks of two adjacent channels.
- b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
- c) Video (or average) bandwidth (VBW)  $\geq$  RBW.
- d) Sweep: Auto.
- e) Detector function: Peak.
- f) Trace: Max hold.
- g) Allow the trace to stabilize.
- h) Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

### 8.4. TEST RESULT

**Pass.**

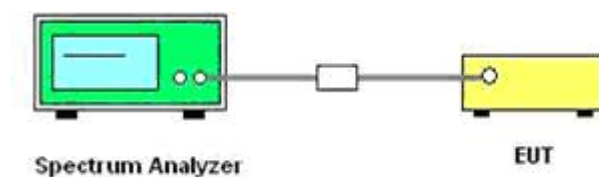
Please refer to the Appendix D BR EDR RF Conducted Test Data.

## 9. NUMBER OF HOPPING CHANNEL

### 9.1. LIMIT

According to 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5MHz band shall use at least 15 non-overlapping channels.

### 9.2. TEST SETUP



### 9.3. TEST PROCEDURE

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

Use the following spectrum analyzer settings:

- a) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
- b) RBW < 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
- c) VBW  $\geq$  RBW.
- d) Sweep: Auto.
- e) Detector function: Peak.
- f) Trace: Max hold.
- g) Allow the trace to stabilize.

### 9.4. TEST RESULT

**Pass.**

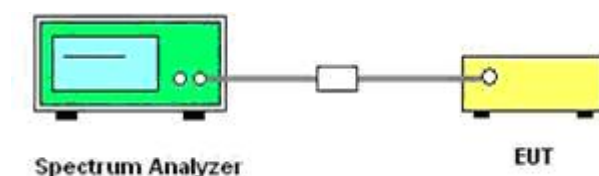
Please refer to the Appendix D BR EDR RF Conducted Test Data.

## 10. TIME OF OCCUPANCY (DWELL TIME)

### 10.1. LIMIT

According to 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

### 10.2. TEST SETUP



### 10.3. TEST PROCEDURE

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

Use the following spectrum analyzer settings:

- Set center frequency of Spectrum Analyzer = operating frequency. Spectrum Setting: RBW=1MHz, VBW=3MHz, Span=0Hz, Detector=Peak.
- Use video trigger with the trigger level set to enable triggering only on full pulses.
- Sweep Time is more than once pulse time.
- Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- Measure the maximum time duration of one single pulse.
- Set the EUT for packet transmitting.
- Measure the maximum time duration of one single pulse.
- The EUT was set to the Hopping Mode for Dwell Time Test.

### 10.4. TEST RESULT

**Pass.**

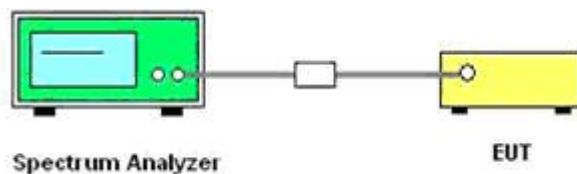
Please refer to the Appendix D BR EDR RF Conducted Test Data.

## 11. CONDUCTED BAND EDGES MEASUREMENT

### 11.1. LIMIT

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

### 11.2. TEST SETUP



### 11.3. TEST PROCEDURE

- Remove the antenna from the EUT and connect to the spectrum analyzer via a low loss RF cable.
- Set the spectrum analyzer to any one measured frequency within its operating range.
- Set RBW = 100kHz, VBW = 300kHz, Sweep = Auto, Detector = Peak.
- Measure the highest amplitude appearing on spectral display and set it as a reference level.
- Set a convenient frequency span including 100 kHz bandwidth from band edge. Measure the emission and marking the edge frequency.
- Measure the spurious emissions with frequency range from 9kHz to 26.5GHz.

### 11.4. TEST RESULT

**Pass.**

Please refer to the Appendix D BR EDR RF Conducted Test Data.

## 12. RADIATED EMISSIONS AND RADIATED BAND EDGES MEASUREMENT

### 12.1. LIMIT

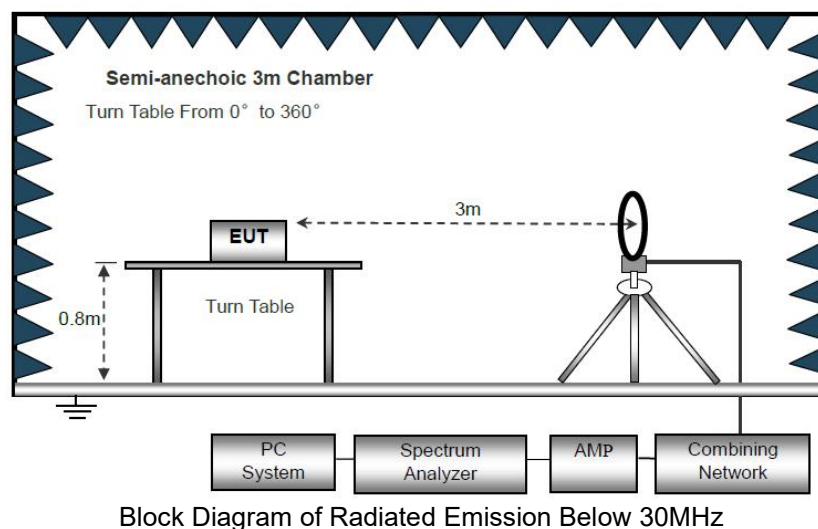
According to §15.247(d), radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

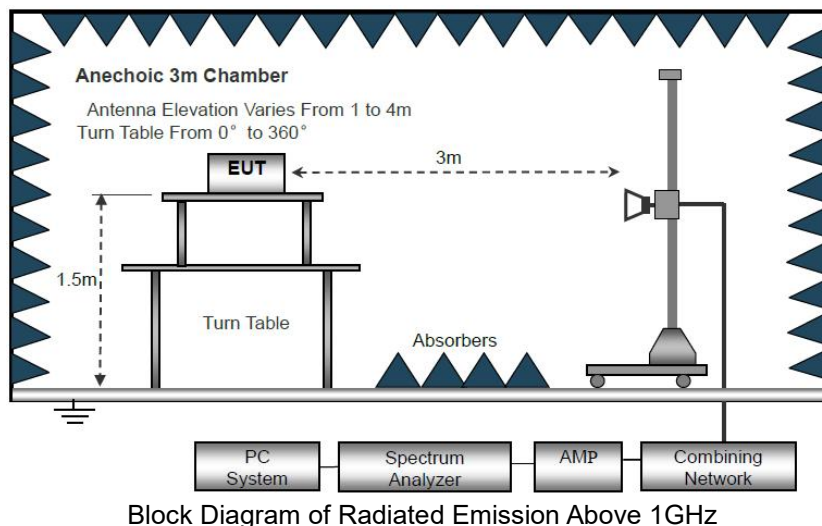
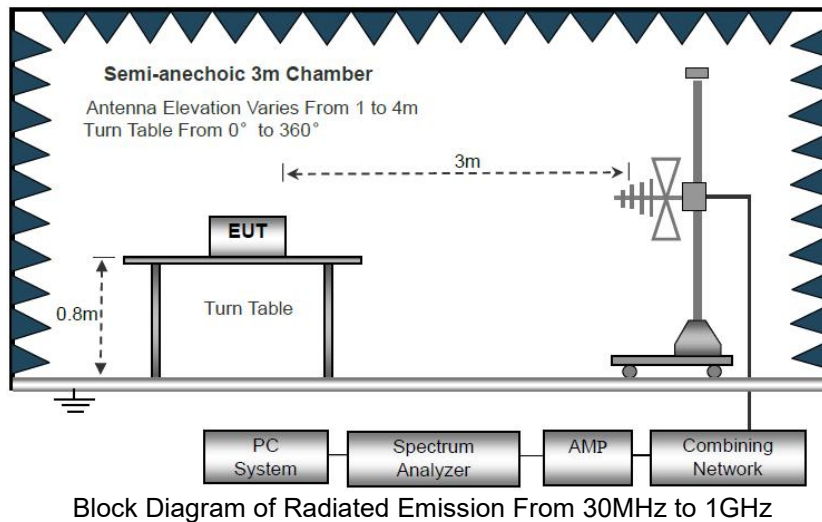
| Limits of Spurious Emissions |                                  |                      |            |                          |
|------------------------------|----------------------------------|----------------------|------------|--------------------------|
| Frequency                    | Field strength (microvolt/meter) | Limit (dB $\mu$ V/m) | Remark     | Measurement 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                              | 54.0                 | Average    | 3                        |

#### Remark:

- The lower limit shall apply at the transition frequencies.
- Emission level (dB $\mu$ V/m) = 20\*log Emission level (uV/m).
- For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
- Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

### 12.2. TEST SETUP





### 12.3. TEST PROCEDURE

- Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
- Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0 degree to 360 degree to acquire the highest emissions from EUT.
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Repeat above procedures until all frequency measurements have been completed.
- Radiated emission test frequency band from 9KHz to 25GHz.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and record the worst case in this report.

g) The distance between test antenna and EUT as following table states:

| Test Frequency range | Test Antenna Type   | Test Distance |
|----------------------|---------------------|---------------|
| 9KHz~30MHz           | Active Loop Antenna | 3             |
| 30MHz~1GHz           | Bilog Antenna       | 3             |
| 1GHz~18GHz           | Horn Antenna        | 3             |
| 18GHz~25GHz          | Horn Antenna        | 1             |

h) Setting test receiver/spectrum as following table states:

| Test Frequency range | Test Receiver/Spectrum Setting                                                                                  | Detector |
|----------------------|-----------------------------------------------------------------------------------------------------------------|----------|
| 9KHz~150KHz          | RBW=200Hz/VBW=3KHz,<br>Sweep time=Auto                                                                          | QP       |
| 150KHz~30MHz         | RBW=9KHz/VBW=100KHz,<br>Sweep time=Auto                                                                         | QP       |
| 30MHz~1GHz           | RBW=120KHz/VBW=1000KHz,<br>Sweep time=Auto                                                                      | QP       |
| 1GHz~40GHz           | Peak Value:<br>RBW=1MHz/VBW=3MHz,<br>Sweep time=Auto<br>Average Value:<br>RBW=1MHz/VBW=10Hz,<br>Sweep time=Auto | Peak     |

## 12.4. TEST RESULT

**Pass.**

Remark:

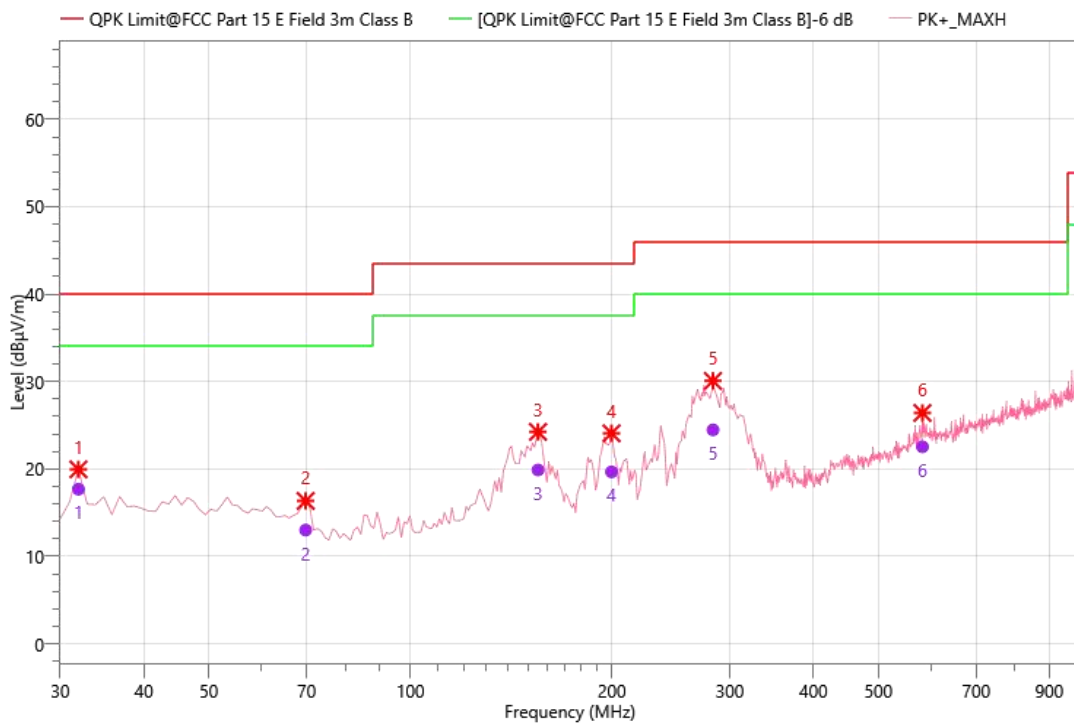
a) Pre-scan all modes and recorded the worst case in this report.

b) Radiated emission test from 9KHz to 10th harmonic of fundamental was verified, and the emission levels from 9kHz to 30MHz are attenuated 20dB below the limit and not recorded in report.

For Radiated Spurious Emissions 9kHz~1GHz, the worst case DH5 mode and Highest channel in the Radiated Spurious Emissions above 1GHz was tested.

Radiated Emission Test Data (30MHz to 1GHz) Highest Channel

|                          |                  |               |            |
|--------------------------|------------------|---------------|------------|
| Environmental Conditions | 24.6°C, 53.4% RH | Test Engineer | He Chen    |
| Worst Test Mode:         | DH5              | Polarity:     | Horizontal |



| No. | Freq. (MHz) | Reading (dBμV) | Corr. (dB) | Meas. (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Det. | Height (cm) | Pol. | Azimuth (deg) | Verdict |
|-----|-------------|----------------|------------|----------------|----------------|-------------|------|-------------|------|---------------|---------|
| 1   | 31.940      | 31.28          | -13.59     | 17.69          | 40.00          | 22.31       | QPK  | 100         | H    | 170.9         | PASS    |
| 2   | 69.770      | 28.60          | -15.59     | 13.01          | 40.00          | 26.99       | QPK  | 100         | H    | 75.0          | PASS    |
| 3   | 155.130     | 31.60          | -11.71     | 19.89          | 43.50          | 23.61       | QPK  | 100         | H    | 256.1         | PASS    |
| 4   | 199.750     | 35.27          | -15.6      | 19.67          | 43.50          | 23.83       | QPK  | 100         | H    | 45.4          | PASS    |
| 5   | 283.170     | 37.06          | -12.58     | 24.48          | 46.00          | 21.52       | QPK  | 100         | H    | 82.8          | PASS    |
| 6   | 581.930     | 28.27          | -5.73      | 22.54          | 46.00          | 23.46       | QPK  | 100         | H    | 5.4           | PASS    |

Remark:

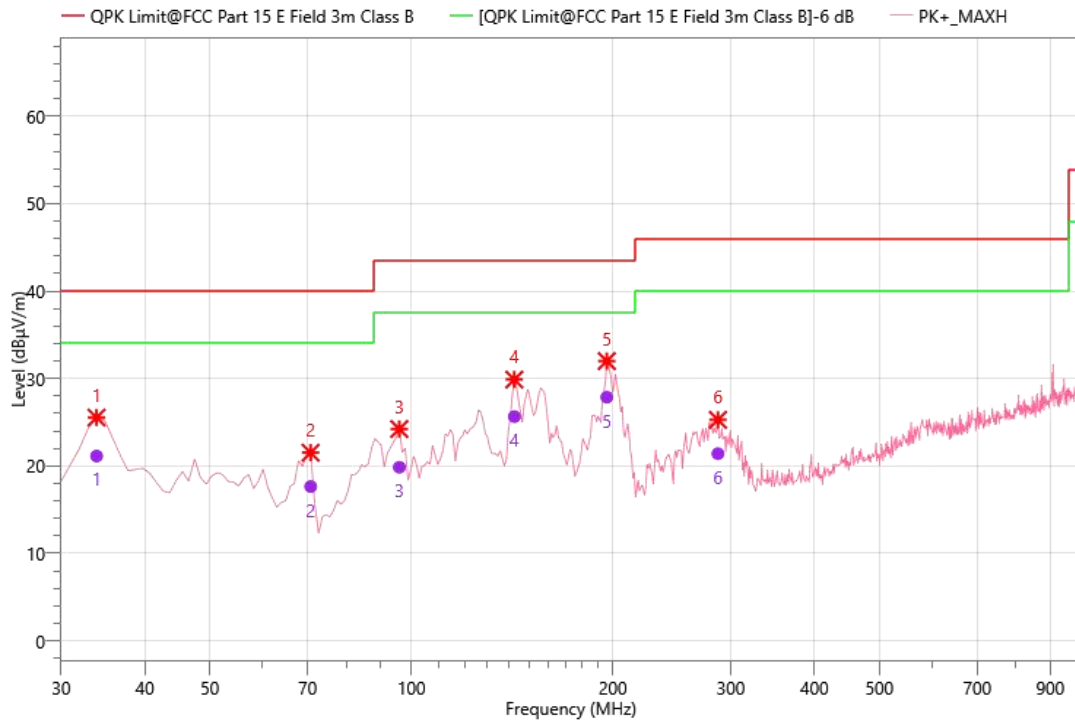
Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin=Limit - Emission Level.

## Radiated Emission Test Data (30MHz to 1GHz)Highest Channel

|                          |                  |               |          |
|--------------------------|------------------|---------------|----------|
| Environmental Conditions | 24.6°C, 53.4% RH | Test Engineer | He Chen  |
| Worst Test Mode:         | DH5              | Polarity:     | Vertical |



| No. | Freq. (MHz) | Reading (dBμV) | Corr. (dB) | Meas. (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Det. | Height (cm) | Pol. | Azimuth (deg) | Verdict |
|-----|-------------|----------------|------------|----------------|----------------|-------------|------|-------------|------|---------------|---------|
| 1   | 33.880      | 34.61          | -13.47     | 21.14          | 40.00          | 18.86       | QPK  | 100         | V    | 359.9         | PASS    |
| 2   | 70.740      | 33.47          | -15.82     | 17.65          | 40.00          | 22.35       | QPK  | 100         | V    | 67.0          | PASS    |
| 3   | 95.960      | 36.34          | -16.48     | 19.86          | 43.50          | 23.64       | QPK  | 100         | V    | 218.7         | PASS    |
| 4   | 142.520     | 37.94          | -12.29     | 25.65          | 43.50          | 17.85       | QPK  | 100         | V    | 181.4         | PASS    |
| 5   | 195.870     | 43.36          | -15.49     | 27.87          | 43.50          | 15.63       | QPK  | 100         | V    | 321.6         | PASS    |
| 6   | 287.050     | 33.86          | -12.45     | 21.41          | 46.00          | 24.59       | QPK  | 100         | V    | 96.8          | PASS    |

Remark:

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin=Limit - Emission Level.

| Radiated Emission Test Data (Above 1GHz) |                |                 |                 |                |             |                     |             |
|------------------------------------------|----------------|-----------------|-----------------|----------------|-------------|---------------------|-------------|
| Environmental Conditions                 |                | 24.6℃, 53.4% RH |                 | Test Engineer  |             | He Chen             |             |
| Lowest Channel (Worst Case: DH5)         |                |                 |                 |                |             |                     |             |
| Frequency (MHz)                          | Reading (dBuV) | Correct (dB/m)  | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector (PEAK/AVG) | Polar (H/V) |
| 1252.000                                 | 49.98          | -11.37          | 38.61           | 74.00          | -35.39      | PK+                 | H           |
| 1268.000                                 | 45.31          | -11.29          | 34.02           | 54.00          | -19.98      | AVG                 | H           |
| 2210.000                                 | 49.57          | -8.9            | 40.67           | 74.00          | -33.33      | PK+                 | H           |
| 2216.000                                 | 45.21          | -8.9            | 36.31           | 54.00          | -17.69      | AVG                 | H           |
| 4260.000                                 | 52.60          | -15.38          | 37.22           | 74.00          | -36.78      | PK+                 | H           |
| 4455.000                                 | 40.13          | -14.54          | 25.59           | 54.00          | -28.41      | AVG                 | H           |
| 6660.000                                 | 49.99          | -8.3            | 41.69           | 74.00          | -32.31      | PK+                 | H           |
| 6840.000                                 | 39.34          | -8.22           | 31.12           | 54.00          | -22.88      | AVG                 | H           |
| 9600.000                                 | 56.13          | -3.48           | 52.65           | 74.00          | -21.35      | PK+                 | H           |
| 9600.000                                 | 40.10          | -3.48           | 36.62           | 54.00          | -17.38      | AVG                 | H           |
| 18000.000                                | 42.75          | 7.7             | 50.45           | 74.00          | -23.55      | PK+                 | H           |
| 18000.000                                | 31.86          | 7.7             | 39.56           | 54.00          | -14.44      | AVG                 | H           |
| 1254.000                                 | 52.38          | -11.36          | 41.02           | 74.00          | -32.98      | PK+                 | V           |
| 1288.000                                 | 48.31          | -11.18          | 37.13           | 54.00          | -16.87      | AVG                 | V           |
| 1778.000                                 | 51.56          | -10.99          | 40.57           | 74.00          | -33.43      | PK+                 | V           |
| 1826.000                                 | 47.48          | -10.75          | 36.73           | 54.00          | -17.27      | AVG                 | V           |
| 4545.000                                 | 51.62          | -14.24          | 37.38           | 74.00          | -36.62      | PK+                 | V           |
| 4545.000                                 | 40.92          | -14.24          | 26.68           | 54.00          | -27.32      | AVG                 | V           |
| 8370.000                                 | 47.55          | -5.82           | 41.73           | 74.00          | -32.27      | PK+                 | V           |
| 8400.000                                 | 37.25          | -5.8            | 31.45           | 54.00          | -22.55      | AVG                 | V           |
| 13755.000                                | 44.76          | 0.55            | 45.31           | 74.00          | -28.69      | PK+                 | V           |
| 13845.000                                | 33.75          | 1.11            | 34.86           | 54.00          | -19.14      | AVG                 | V           |
| 17925.000                                | 42.97          | 7.04            | 50.01           | 74.00          | -23.99      | PK+                 | V           |
| 18000.000                                | 32.12          | 7.7             | 39.82           | 54.00          | -14.18      | AVG                 | V           |
| Middle Channel (Worst Case: DH5)         |                |                 |                 |                |             |                     |             |
| Frequency (MHz)                          | Reading (dBuV) | Correct (dB/m)  | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector (PEAK/AVG) | Polar (H/V) |
| 1308.000                                 | 50.02          | -11.1           | 38.92           | 54.00          | -15.08      | AVG                 | H           |
| 1326.000                                 | 52.38          | -11.07          | 41.31           | 74.00          | -32.69      | PK+                 | H           |
| 2250.000                                 | 51.82          | -8.9            | 42.92           | 74.00          | -31.08      | PK+                 | H           |
| 2250.000                                 | 46.95          | -8.9            | 38.05           | 54.00          | -15.95      | AVG                 | H           |
| 4875.000                                 | 53.18          | -12.93          | 40.25           | 74.00          | -33.75      | PK+                 | H           |
| 4875.000                                 | 40.80          | -12.93          | 27.87           | 54.00          | -26.13      | AVG                 | H           |
| 7320.000                                 | 49.31          | -6.5            | 42.81           | 74.00          | -31.19      | PK+                 | H           |
| 7320.000                                 | 37.87          | -6.5            | 31.37           | 54.00          | -22.63      | AVG                 | H           |
| 9750.000                                 | 38.58          | -3.11           | 35.47           | 54.00          | -18.53      | AVG                 | H           |
| 9765.000                                 | 58.09          | -3.14           | 54.95           | 74.00          | -19.05      | PK+                 | H           |
| 18000.000                                | 43.22          | 7.7             | 50.92           | 74.00          | -23.08      | PK+                 | H           |
| 18000.000                                | 32.01          | 7.7             | 39.71           | 54.00          | -14.29      | AVG                 | H           |
| 1262.000                                 | 49.10          | -11.32          | 37.78           | 54.00          | -16.22      | AVG                 | V           |
| 1272.000                                 | 54.43          | -11.27          | 43.16           | 74.00          | -30.84      | PK+                 | V           |
| 2220.000                                 | 49.65          | -8.9            | 40.75           | 74.00          | -33.25      | PK+                 | V           |
| 2220.000                                 | 45.22          | -8.9            | 36.32           | 54.00          | -17.68      | AVG                 | V           |
| 5160.000                                 | 40.02          | -11.97          | 28.05           | 54.00          | -25.95      | AVG                 | V           |
| 5235.000                                 | 50.32          | -12.17          | 38.15           | 74.00          | -35.85      | PK+                 | V           |
| 9750.000                                 | 36.15          | -3.11           | 33.04           | 54.00          | -20.96      | AVG                 | V           |
| 9765.000                                 | 49.51          | -3.14           | 46.37           | 74.00          | -27.63      | PK+                 | V           |
| 14850.000                                | 33.51          | 1.39            | 34.90           | 54.00          | -19.1       | AVG                 | V           |
| 14910.000                                | 44.22          | 1.56            | 45.78           | 74.00          | -28.22      | PK+                 | V           |
| 17985.000                                | 42.45          | 7.57            | 50.02           | 74.00          | -23.98      | PK+                 | V           |
| 18000.000                                | 32.00          | 7.7             | 39.70           | 54.00          | -14.3       | AVG                 | V           |

| Highest Channel (Worst Case: DH5) |                |                |                 |                |             |                     |             |
|-----------------------------------|----------------|----------------|-----------------|----------------|-------------|---------------------|-------------|
| Frequency (MHz)                   | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector (PEAK/AVG) | Polar (H/V) |
| 1278.000                          | 46.43          | -11.24         | 35.19           | 54.00          | -18.81      | AVG                 | H           |
| 1284.000                          | 50.88          | -11.2          | 39.68           | 74.00          | -34.32      | PK+                 | H           |
| 2210.000                          | 45.64          | -8.9           | 36.74           | 54.00          | -17.26      | AVG                 | H           |
| 2290.000                          | 50.69          | -8.9           | 41.79           | 74.00          | -32.21      | PK+                 | H           |
| 6450.000                          | 50.88          | -8.77          | 42.11           | 74.00          | -31.89      | PK+                 | H           |
| 6450.000                          | 40.54          | -8.77          | 31.77           | 54.00          | -22.23      | AVG                 | H           |
| 9915.000                          | 60.85          | -3.18          | 57.67           | 74.00          | -16.33      | PK+                 | H           |
| 9915.000                          | 43.43          | -3.18          | 40.25           | 54.00          | -13.75      | AVG                 | H           |
| 14805.000                         | 34.03          | 1.24           | 35.27           | 54.00          | -18.73      | AVG                 | H           |
| 14820.000                         | 45.55          | 1.29           | 46.84           | 74.00          | -27.16      | PK+                 | H           |
| 18000.000                         | 43.35          | 7.7            | 51.05           | 74.00          | -22.95      | PK+                 | H           |
| 18000.000                         | 32.28          | 7.7            | 39.98           | 54.00          | -14.02      | AVG                 | H           |
| 1272.000                          | 51.86          | -11.27         | 40.59           | 74.00          | -33.41      | PK+                 | V           |
| 1272.000                          | 47.63          | -11.27         | 36.36           | 54.00          | -17.64      | AVG                 | V           |
| 2160.000                          | 50.15          | -8.97          | 41.18           | 74.00          | -32.82      | PK+                 | V           |
| 2160.000                          | 45.74          | -8.97          | 36.77           | 54.00          | -17.23      | AVG                 | V           |
| 5685.000                          | 50.28          | -11.01         | 39.27           | 74.00          | -34.73      | PK+                 | V           |
| 5805.000                          | 39.86          | -11.37         | 28.49           | 54.00          | -25.51      | AVG                 | V           |
| 9915.000                          | 52.37          | -3.18          | 49.19           | 74.00          | -24.81      | PK+                 | V           |
| 9915.000                          | 37.25          | -3.18          | 34.07           | 54.00          | -19.93      | AVG                 | V           |
| 14475.000                         | 45.10          | 1.26           | 46.36           | 74.00          | -27.64      | PK+                 | V           |
| 14520.000                         | 33.76          | 1.37           | 35.13           | 54.00          | -18.87      | AVG                 | V           |
| 17985.000                         | 32.46          | 7.57           | 40.03           | 54.00          | -13.97      | AVG                 | V           |
| 18000.000                         | 43.00          | 7.7            | 50.70           | 74.00          | -23.3       | PK+                 | V           |

Remark:

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

Testing is carried out with frequency rang 9kHz to the tenth harmonics. The emission levels of other frequencies are attenuated 20dB below the limit and not recorded in report.

| Radiated Band Edges Test Data                         |                |                 |                 |                |             |                     |             |
|-------------------------------------------------------|----------------|-----------------|-----------------|----------------|-------------|---------------------|-------------|
| Environmental Conditions                              |                | 24.6℃, 53.4% RH |                 | Test Engineer  |             | He Chen             |             |
| Lowest Channel (Worst Case: DH5_2402MHz)              |                |                 |                 |                |             |                     |             |
| Frequency (MHz)                                       | Reading (dBuV) | Correct (dB/m)  | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector (PEAK/AVG) | Polar (H/V) |
| 2310.000                                              | 46.89          | -3.62           | 43.27           | 74.00          | 30.73       | PK+                 | H           |
| 2310.000                                              | 42.17          | -3.62           | 38.55           | 54.00          | 15.45       | AVG                 | H           |
| 2390.080                                              | 45.79          | -3.67           | 42.12           | 74.00          | 31.88       | PK+                 | H           |
| 2390.080                                              | 41.69          | -3.67           | 38.02           | 54.00          | 15.98       | AVG                 | H           |
| 2400.090                                              | 50.16          | -3.68           | 46.48           | 74.00          | 27.52       | PK+                 | H           |
| 2400.090                                              | 45.04          | -3.68           | 41.36           | 54.00          | 12.64       | AVG                 | H           |
| 2401.910                                              | 81.32          | -3.68           | 77.64           | -              | -           | PK+                 | H           |
| 2401.910                                              | 80.89          | -3.68           | 77.21           | -              | -           | AVG                 | H           |
| 2310.000                                              | 46.02          | -3.62           | 42.40           | 74.00          | 31.60       | PK+                 | V           |
| 2310.000                                              | 41.73          | -3.62           | 38.11           | 54.00          | 15.89       | AVG                 | V           |
| 2389.950                                              | 45.73          | -3.67           | 42.06           | 74.00          | 31.94       | PK+                 | V           |
| 2389.950                                              | 41.67          | -3.67           | 38.00           | 54.00          | 16.00       | AVG                 | V           |
| 2400.090                                              | 48.88          | -3.68           | 45.20           | 74.00          | 28.80       | PK+                 | V           |
| 2400.090                                              | 43.81          | -3.68           | 40.13           | 54.00          | 13.87       | AVG                 | V           |
| 2401.910                                              | 80.98          | -3.68           | 77.30           | -              | -           | PK+                 | V           |
| 2401.910                                              | 80.43          | -3.68           | 76.75           | -              | -           | AVG                 | V           |
| Highest Channel (Worst Case: DH5_2480MHz)             |                |                 |                 |                |             |                     |             |
| Frequency (MHz)                                       | Reading (dBuV) | Correct (dB/m)  | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector (PEAK/AVG) | Polar (H/V) |
| 2480.000                                              | 87.46          | -3.55           | 83.91           | -              | -           | PK+                 | H           |
| 2480.000                                              | 87.11          | -3.55           | 83.56           | -              | -           | AVG                 | H           |
| 2483.500                                              | 49.66          | -3.54           | 46.12           | 74.00          | 27.88       | PK+                 | H           |
| 2483.500                                              | 45.54          | -3.54           | 42.00           | 54.00          | 12.00       | AVG                 | H           |
| 2500.000                                              | 49.22          | -3.5            | 45.72           | 74.00          | 28.28       | PK+                 | H           |
| 2500.000                                              | 45.09          | -3.5            | 41.59           | 54.00          | 12.41       | AVG                 | H           |
| 2480.000                                              | 86.37          | -3.55           | 82.82           | -              | -           | PK+                 | V           |
| 2480.000                                              | 85.51          | -3.55           | 81.96           | -              | -           | AVG                 | V           |
| 2483.500                                              | 47.48          | -3.54           | 43.94           | 74.00          | 30.06       | PK+                 | V           |
| 2483.500                                              | 42.20          | -3.54           | 38.66           | 54.00          | 15.34       | AVG                 | V           |
| 2500.000                                              | 46.55          | -3.5            | 43.05           | 74.00          | 30.95       | PK+                 | V           |
| 2500.000                                              | 42.06          | -3.5            | 38.56           | 54.00          | 15.44       | AVG                 | V           |
| Remark:                                               |                |                 |                 |                |             |                     |             |
| Emission Level = Reading + Factor;                    |                |                 |                 |                |             |                     |             |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier; |                |                 |                 |                |             |                     |             |
| Margin=Limit - Emission Level .                       |                |                 |                 |                |             |                     |             |

## 13. POWER LINE CONDUCTED EMISSIONS

### 13.1. LIMIT

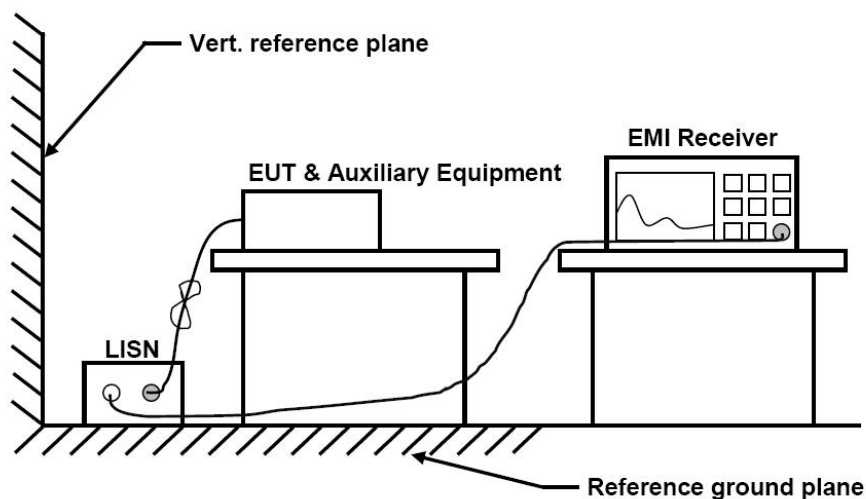
According to the rule FCC Part 15.207, Conducted emissions limit, the limit for a wireless device as below:

| Frequency Range<br>(MHz) | Conducted emissions (dBuV) |          |
|--------------------------|----------------------------|----------|
|                          | Quasi-peak                 | Average  |
| 0.15~0.5                 | 66 to 56                   | 56 to 46 |
| 0.5~5                    | 56                         | 46       |
| 5~30                     | 60                         | 50       |

Remark:

- The lower limit shall apply at the transition frequencies.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50MHz.

### 13.2. TEST SETUP



### 13.3. TEST PROCEDURE

Test frequency range :150KHz-30MHz

- The mains terminal disturbance voltage test was conducted in a shielded room.
- 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.
- 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,
- 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.

e) 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.

#### **13.4. TEST RESULT**

**N/A**

## 14. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files for Test Setup Photos of the EUT.

## 15. EXTERNAL PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

## 16. INTERNAL PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

\*\*\*\*\*THE END\*\*\*\*\*