# JAPAN RADIO TEST REPORT

## Client Information:

| | |
|---|---|
| Applicant: | Shenzhen Sounder Digital Technology Co., Ltd. |
| Applicant add.: | Room 601-3, Jiangnan Building, Yongxiang East Road, Maantang Community, Bantian Street, Longgang District, Shenzhen, Guangdong, China |

## Product Information:

| | |
|---|---|
| Product Name: | Bone Conduction Wireless Headphones |
| Model No.: | X6 |
| Derivative model No.: | N/A |
| Brand Name: | N/A |

## Standards: Item 19 of Article 2 Paragraph 1,MIC Notice No.88 Appendix No. 43

## Prepared By:

**Dongguan Yaxu (AiT) Technology Limited**

Add. : No.22, Jinqianling Third Street, Jitigang, Huangjiang, Dongguan, Guangdong, China

| | | | |
|---|---|---|---|
| Date of Receipt: | Mar. 03, 2026 | Date of Test: | Mar. 03, 2026~ Mar. 16, 2026 |
| Date of Issue: | Mar. 16, 2026 | Test Result: | Pass |

This device described above has been tested by Dongguan Yaxu (AiT) Technology Limited and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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**Reviewed by:** Emiya Lin
Emiya Lin

**Approved by:** Simba Huang
Simba Huang

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**Report Revise Record**

| Report Version | Revise Time | Issued Date | Valid Version | Notes |
|---|---|---|---|---|
| V1.0 | / | Mar. 16, 2026 | Valid | Initial release |

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# 2 TEST SUMMARY

| TEST | TEST REQUIREMENT | LIMIT/SEVERITY | RESULT |
|---|---|---|---|
| Antenna Requirement | MIC Notice No.88 Appendix No.43 | Notice 88 Appendix 43,B-1 (1)&(2) | PASS |
| Test frequency | MIC Notice No.88 Appendix No. 43 | Notice 88 Appendix 43, A-3 | PASS |
| Frequency Error | MIC Notice No.88 Appendix No. 43 | ±50 PPM or less | PASS |
| Occupied Bandwidth | MIC Notice No.88 Appendix No. 43 | 83.5MHz or less | PASS |
| Spread-spectrum Bandwidth | MIC Notice No.88 Appendix No. 43 | 500 kHz or more | PASS |
| Antenna Power | MIC Notice No.88 Appendix No. 43 | 3 mW /MHz or less Error＋20%; 10mW Error＋20% | PASS |
| Spurious Emission of Tx | MIC Notice No.88 Appendix No. 43 | (1) Below 2387 MHz : -26dBm (2) 2387 to 2400 MHz : -16dBm (3) 2483.5 through 2496.5 MHz : -16dBm (4) Over 2496.5 MHz : -26dBm | PASS |
| Dwell Time | MIC Notice No.88 Appendix No. 43 | less than 0.4sec | PASS |
| Interference prevention capability | MIC Notice No.88 Appendix No. 43 | Notice 88 Appendix 43, 44, 45 | PASS |
| RF accessibility | MIC Notice No.88 Appendix No. 43 | Notice 88 Appendix 43, 44, 45 | PASS |
| Spurious Emission of Rx | MIC Notice No.88 Appendix No. 43 | (1) Below 1 GHz: -54dBm (2) 1GHz or higher: -47dBm | PASS |

**Remark:**

EUT: In this whole report EUT means Equipment Under Test.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radio Frequency.

## 2.1 Measurement Uncertainty

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

| No. | Item | Uncertainty |
|---|---|---|
| 1 | Frequency Error / 99% & 90% Bandwidth | ± 0.85 x $10^{-7}$ |
| 2 | Antenna Power | ± 0.70 dB |
| 3 | Spurious Emissions | ± 0.80 dB |
| 4 | DC / AC Power Source | ±1.4% |

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# 3 TEST FACILITY

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

**CNAS-Registration No: L6177**

Dongguan Yaxu (AiT) technology Limited is accredited to ISO/IEC 17025:2017 general Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the competence of testing and calibration laboratories) on April 18, 2022

**FCC-Registration No.: 703111 Designation Number: CN1313**

Dongguan Yaxu (AiT) technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

**IC-Registration No.: 6819A CAB identifier: CN0122**

The 3m Semi-anechoic chamber of Dongguan Yaxu (AiT) technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 6819A

**A2LA-Lab Cert. No.: 6317.01**

Dongguan Yaxu (AiT) technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

## 3.1 Deviation from standard

None

## 3.2 Abnormalities from standard conditions

None

## 3.3 Test Location

Dongguan Yaxu (AiT) Technology Limited
Address: No.22, Jinqianling 3rd Street, Jitigang, Huangjiang,Dongguan, Guangdong, China
Tel.: +86-769-8202 0499
Fax.: +86-769-8202 0495

# 4 GENERAL INFORMATION

| | |
|---|---|
| Manufacturer: | Shenzhen Sounder Digital Technology Co., Ltd. Dongguan Branch |
| Manufacturer Address: | Building 18, No. 99, Hongye North Road, Tangxia Town, Dongguan City, Guangdong Province, China |
| Product Name: | Bone Conduction Wireless Headphones |
| Model No.: | X6 |
| Brand Name: | N/A |
| Derivative model No.: | N/A |
| Technical specification: | BT EDR |
| Operating Frequency | 2402 MHz to 2480 MHz |
| Type of Modulation: | GFSK, (π/4)DQPSK, 8DPSK |
| Number of Channels | 79 Channels(for FHSS) |
| Channel Separation: | 1 MHz (for FHSS) |
| Dwell time | Per channel is less than 0.4s. |
| Antenna Type | Chip Antenna |
| Antenna gain: | 2.7 dBi |
| Power supply: | DC 5V 140mA |
| Battery: | DC 3.8V 220mAh Rechargeable Li-ion battery |
| Normal Test Voltage: | The same as above |
| Hard Ware Version: | V1.0 |
| Soft Ware Version: | V1.0 |
| Model difference: | N/A |

## 4.1 Test Location

All tests were performed at:

Dongguan Yaxu (AiT) Technology Limited
No.22, Jinqianling Third Street, Jitigang, Huangjiang, Dongguan, Guangdong, China.

Tel.: +86.769.82020499 Fax.: +86.769.82020495

## 4.2 EUT Peripheral List

| No. | Equipment | Manufacturer | Model No. | Serial No. | Power cord | Signal cord |
|---|---|---|---|---|---|---|
| 1 | N/A | N/A | N/A | N/A | N/A | N/A |

## 4.3 Test Peripheral List

| No. | Equipment | Manufacturer | Model No. | Serial No. | Power cord | Signal cord |
|---|---|---|---|---|---|---|
| 1 | Notebook | UNOWHY | DESKTOP-BA0H4EM | N/A | N/A | N/A |

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# 5 EQUIPMENT USED DURING TEST

| No | Test Equipment | Manufacturer | Model No | Serial No | Cal. Date | Cal. Due Date | Cal. Institution |
|---|---|---|---|---|---|---|---|
| 1 | SIGNAL Analyzer | R&S | FSV40 | 101470 | 2025.09.26 | 2026.09.25 | LISAI |
| 2 | EMI Measuring Receiver | R&S | ESPI | 100773 | 2025.09.25 | 2026.09.24 | LISAI |
| 3 | Mobile phone | Samsung | GALAXY S4 | R33D20 SQYNW | N/A | N/A | LISAI |
| 4 | DC Power supply | Manson | HCS-3604 | G521100 129 | 2025.09.25 | 2026.09.24 | LISAI |
| 5 | Digital Phosphor Oscilloscope | Tektronix | TDS3012 | B021220 | 2025.09.25 | 2026.09.24 | LISAI |
| 6 | Signal Generator | Agilent | N5182A | MY50143 009 | 2025.09.26 | 2026.09.25 | LISAI |
| 7 | RF Automatic Test system(Power meter) | MW | MW100-PSB | 21033016 | 2025.09.25 | 2026.09.24 | LISAI |
| Note:Calibration by the calibration agencies listed in the table correspond to paragraph 4 (ii) (c) of Article 24-2 in the Radio Law. | | | | | | | |

☐(a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18-1 of the Radio Act.

☐(b) Calibration conducted based on the regulations of Article 135 or 144 of the Measurement Act.

☒(c) Calibration conducted in foreign countries, which is equivalent to calibration conducted by the NICT or a designated calibration agency under Article 102-18-1 of the Radio Act.

☐(d) Calibration, etc. conducted by using measuring instruments and other facilities listed at the bottom of appended table 3 of the Radio Act, which is to have been calibrated as described in (a) through (c) above.

# 6 TEST RESULTS

## 6.1 Radio Technical Requirements Specification

**Tabel 1: Radio Technical Requirements Specification for 2.4 GHz band wide-band low-power data communication system (MIC Notice No.88 Appendix No. 43)**

| Items | Technical standard |
|---|---|
| Assigned frequency or designated frequency | 2,400-2,483.5MHz |
| Communication method | One-way communication, simplex, semi-duplex, or duplex operation of digital signal transmission including spread spectrum |
| Tolerance of frequency ($\times 10^{-6}$) | ±50 ppm |
| Tolerance of occupied bandwidth | FH : 83.5MHz or less<br>FH + DS : 83.5MHz or less<br>FH + OFDM : 83.5MHz or less<br>OFDM(802.11n(HT40)) : 26-40MHz<br>Others OFDM: 26MHz or less<br>DSSS: 26MHz or less |
| Antenna power | Designated value<br>(1) FH, FH+DS , FH+OFDM: 3mW/MHz<br>(used in the range of 2427 - 2470.75 MHz)<br>(2) OFDM , DS other than (1) 10mW/MHz<br>(3) Other than (1) & (2) 10mW<br>(4) OFDM OBW 26 - 40MHz: 5mW/MHz<br>Tolerance:+20% |
| Antenna gain | 1) 12.14 dBi or less in principle<br>2) In case of directional antenna<br>(1) FH, FH+DS or FH+OFDM using 2427-2470.75 MHz<br>EIRP≤ 16.91 dBm/MHz<br>(2) OFDM or DS other than (1) EIRP≤ 22.14 dBm/MHz<br>(3) Other than (1) and (2): 22.14 dBm or less<br>(4) OFDM OBW 26 - 40MHz: 19.14dBm/MHz<br>(5) Half-power angle of directional antenna (e) in case of the item 2):e ≤ 360/A (The A is 10 in maximum.) |
| Tolerance of spurious emission intensity | (1) Below 2387 MHz : 2.5μW<br>(2) 2387 to 2400 MHz : 25μW<br>(3) 2483.5 through 2496.5 MHz : 25μW<br>(4) Over 2496.5 MHz : 2.5μW |
| Spreading bandwidth | DS,FH,FH+DS,FH+OFDM : 500kHz or more |
| Spreading rate of spectrum | For DS system;(Spreading bandwidth) / (Frequency corresponding to transmission rate) ≥ 5 |
| Limit of secondary radiated emissions | (1) Below 1 GHz : 4 nW<br>(2) 1 GHz or higher : 20 nW |
| Interference prevention function | Shall have the function of automatic transmission and reception of identification sign. |
| Structure | Shall be of the structure that the RF and modulator sections excluding antenna cannot easily be opened. |
| Note | DS: Direct spread<br>FH: Frequency hopping<br>OFDM: Orthogonal frequency division multiplexing |

## 6.2 E.U.T. Test Conditions

**Power supply:** The input voltage of the EUT RF unit circuit does not meet the output voltage limit (±1%) and is limited by the input voltage fluctuation (±10%).

Pre-test the EUT in all voltage mode at the DC 3.8V, DC 4.18V and DC 3.42V and conducted to determine the worst-case mode, All results are recorded in this report.

POWER SUPPLY VOLTAGE FLUCTUATION TEST

| Voltage Fluctuation Test | Normal Voltage(V) | High Voltage +10% of Normal Voltage(V) | Low Voltage -10% of Normal Voltage(V) |
|---|---|---|---|
| Input To EUT(DC) | 3.8 | 4.18 | 3.42 |

During the input supply voltage to the EUT from the external power source is varied by ±10%, the fluctuation of input voltage to the circuit of RF unit of test equipment is exceed ±1%. So, all measurement has been conducted by normal and limit voltage.

**Temperature:** 5.0 -35.0 °C

**Humidity:** 45-85 % RH

**Atmospheric Pressure:** 1000 -1010 mbar

**Test frequencies:** If the EUT can be set to 3 of more different (carrier) frequencies in 1 allocated band, testing shall be performed using the Lowest, Middle and the Highest frequency (L, M and H). If there are 2 or fewer frequencies, testing shall be performed with the available frequencies.

**Parameters of test software setting** During testing channel & power controlling software provided by the manufacturer was used to control the operating channel as well as the output power level.

| Test software Version | Test program: FCC_assist_1.0.2.2 | | |
|---|---|---|---|
| Frequency | 2402 MHz | 2440 MHz | 2480 MHz |
| BT Parameters(1Mbps) | Default | Default | Default |
| BT Parameters(2Mbps) | Default | Default | Default |
| BT Parameters(3Mbps) | Default | Default | Default |

**EUT channels and frequencies list:**

**For FHSS:**

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---|---|---|---|---|---|
| 0 | 2402 | 27 | 2429 | 54 | 2456 |
| 1 | 2403 | 28 | 2430 | 55 | 2457 |
| 2 | 2404 | 29 | 2431 | 56 | 2458 |
| 3 | 2405 | 30 | 2432 | 57 | 2459 |
| 4 | 2406 | 31 | 2433 | 58 | 2460 |
| 5 | 2407 | 32 | 2434 | 59 | 2461 |
| 6 | 2408 | 33 | 2435 | 60 | 2462 |
| 7 | 2409 | 34 | 2436 | 61 | 2463 |
| 8 | 2410 | 35 | 2437 | 62 | 2464 |
| 9 | 2411 | 36 | 2438 | 63 | 2465 |
| 10 | 2412 | 37 | 2439 | 64 | 2466 |
| 11 | 2413 | 38 | 2440 | 65 | 2467 |
| 12 | 2414 | 39 | 2441 | 66 | 2468 |
| 13 | 2415 | 40 | 2442 | 67 | 2469 |
| 14 | 2416 | 41 | 2443 | 68 | 2470 |
| 15 | 2417 | 42 | 2444 | 69 | 2471 |
| 16 | 2418 | 43 | 2445 | 70 | 2472 |
| 17 | 2419 | 44 | 2446 | 71 | 2473 |
| 18 | 2420 | 45 | 2447 | 72 | 2474 |
| 19 | 2421 | 46 | 2448 | 73 | 2475 |
| 20 | 2422 | 47 | 2449 | 74 | 2476 |
| 21 | 2423 | 48 | 2450 | 75 | 2477 |
| 22 | 2424 | 49 | 2451 | 76 | 2478 |
| 23 | 2425 | 50 | 2452 | 77 | 2479 |
| 24 | 2426 | 51 | 2453 | 78 | 2480 |
| 25 | 2427 | 52 | 2454 | / | / |
| 26 | 2428 | 53 | 2455 | / | / |

Test frequencies are the lowest channel: 0 channel(2402 MHz), middle channel: 39 channel(2441 MHz) and highest channel: 78 channel(2480 MHz)

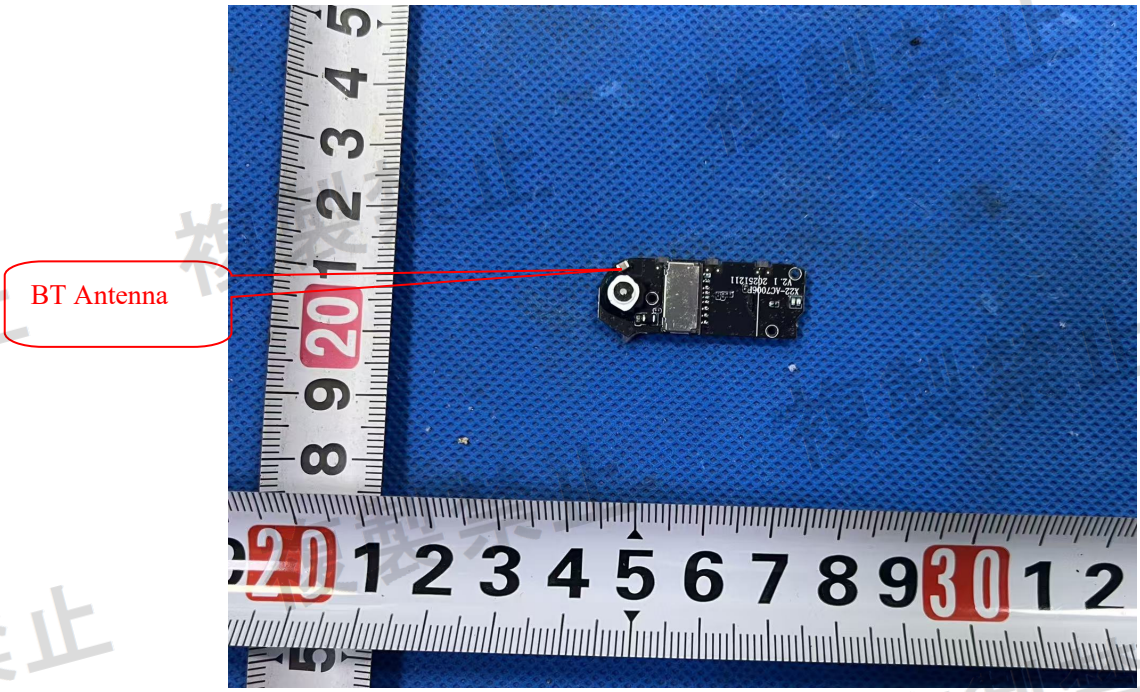
## 6.3 Antenna Requirement

**Standard requirement**

Applicable for equipment with an antenna terminal, including testing terminals) If an antenna connector is available, all relevant tests will be carried out conducted. If not, tests will be carried out in an anechoic room or with a suitable test-fixture.

**EUT Antenna**

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.7dBi.

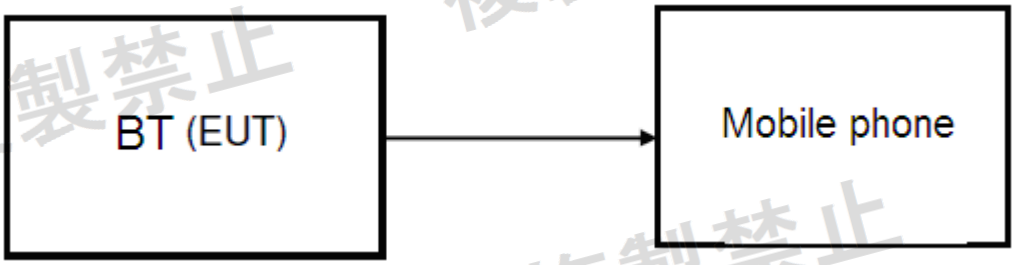



**Result:** All relevant tests will be carried out conducted.

## 6.4 Interference Prevention Function

The device consists of the Chip Antenna and 2.4 GHz BT module; Component BT module also can use the protocol function to protect interference come from outside.

We can use a mobile phone installed Bluetooth Terminal software to detect Bluetooth ID information, Test configuration:




Test Procedure:

The measuring method was according to MIC Notice No.88 Appendix No.43. Run Bluetooth Terminal and keep BT connecting at both mobile phone and EUT. The MIC address will be found in the mobile phone.

Test Results:

**MAC: 47:15:36:81:B1:D1**

**Test result: The unit does meet the requirements.**

## 6.5 Frequency Error

Test Requirement: MIC Notice No.88 Appendix No. 43

Tolerance of frequency: $\pm 50\times 10^{-6}$

Temperature: 23.0 °C

Humidity: 55 % RH

Test Status: Test the EUT in transmitting mode without modulation.

Test Configuration:

Test Procedure:

1. Test Conditions:

   Frequency Counter or Spectrum Analyzer is used for measurement.

2. EUT conditions:

   Modulation/Spread/Hopping OFF, CW Tx

3. Spectrum Analyzer conditions:

   Frequency: Test Frequency
   Span 2MHz
   RBW 10 kHz (Modulation OFF for FHSS; Modulation ON for DSSS ),
   VBW 10 kHz (Modulation OFF for FHSS; Modulation ON for DSSS),
   Sweep Time Auto
   Detector mode Positive peak
   Indication mode Max hold

**Test result:**

***Please refer to Appendix A***

Note: The nominal frequency shall be confirmed by the applicant and test lab.

**Test result: The unit does meet the requirements.**

## 6.6 Occupied Bandwidth (99%)

Test Requirement: MIC Notice No.88 Appendix No. 43

83.5MHz or less(FHSS)

26 MHz or less(others)

Temperature: 23.0 °C

Humidity: 55 % RH

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:

Test Procedure:

1. Test Conditions:
   Spectrum Analyzer is used for measurement.
2. EUT conditions:
   Modulation/Spread/Hopping ON, PN9 Modulation Tx
   For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
3. Spectrum Analyzer conditions:
   Frequency: Test Frequency
   Span: 120MHz(FHSS), 3MHz(DSSS)
   RBW: 300KHz(FHSS), 30kHz(DSSS)
   VBW: 300KHz(FHSS), 30kHz(DSSS)
   Sweep Time Auto
   detector mode Positive peak
   Indication mode Max hold
   OBW 99%
   Test result:
   ***Please refer to Appendix A***

Test result: The unit does meet the requirements.

## 6.7 Spread Spectrum Bandwidth (90%)

Test Requirement: MIC Notice No.88 Appendix No. 43

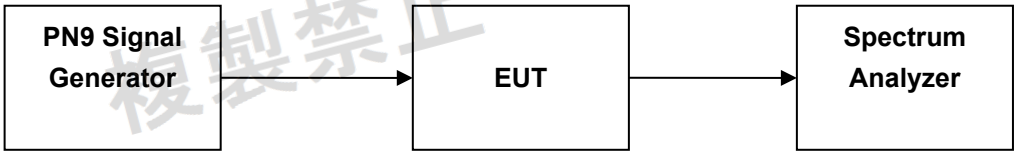
500 kHz or more

Temperature: 23.0 °C

Humidity: 55 % RH

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:




Test Procedure:

1. Test Conditions:

   Spectrum Analyzer is used for measurement.

2. EUT conditions:

   Modulation/Spread/Hopping ON, PN9 Modulation Tx

   For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Spectrum Analyzer conditions:

   Frequency: Test Frequency
   Span: 120 MHz(FHSS), 3MHz(DSSS)
   RBW: 300 kHz(FHSS), 300 kHz(DSSS)
   VBW: 300 kHz(FHSS), 300 kHz(DSSS)
   Sweep Time Auto
   detector mode Positive peak
   Indication mode Max hold

   OBW 90%

***Test result:***

***Please refer to Appendix A***

***Test result: The unit does meet the requirements.***

## 6.8 Antenna Power

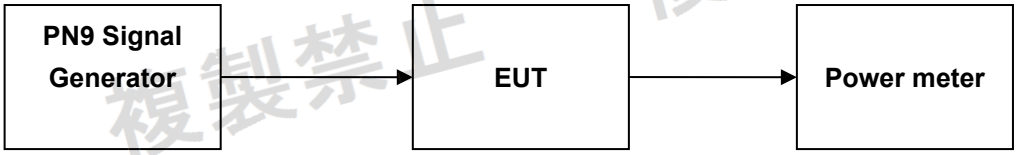
Test Requirement: MIC Notice No.88 Appendix No. 43
3mW/MHz or less(FHSS)
10mW and less(DSSS)

Temperature: 23.0 °C

Humidity: 55 % RH

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:




Test Procedure:

1. Test Conditions:

   Power meter is used for measurement.

2. EUT conditions:

   Modulation/Spread/Hopping ON，PN9 Modulation Tx

   For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Power meter conditions:

   1.Remove the antenna from the EUT and then connect a low attenuation RF cable from the antenna port to the Power meter.
   2.Use a fast power sensor suitable for 2, 4 GHz and capable of 1 MS/s.
   3.Sample speed 1 MS/s or faster, and must represent the power of the signal.
   4.Find the start and stop times of each burst in the stored measurement samples.
   5.Between the start and stop times of each individual burst calculate the RMS power over the burst. Save these Pburst values, as well as the start and stop times for each burst.
   6.The highest of all Pburst values (value "A" in dBm) will be used for maximum e.i.r.p. calculations.
   7.Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

***Test result:***

***Please refer to Appendix A***

***Test result: The unit does meet the requirements.***

## 6.9 Spurious Emissions of Tx

Test Requirement: MIC Notice No.88 Appendix No. 43

(1) Below 2387 MHz : 2.5μW/MHz

(2) 2387 to 2400 MHz : 25μW/MHz

(3) 2483.5 through 2496.5 MHz : 25μW/MHz

(4) Over 2496.5 MHz : 2.5μW/MHz

Temperature: 23.0 °C

Humidity: 55 % RH

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:

Test Procedure:

1. Test Conditions:

   Spectrum Analyzer is used for measurement.

2. EUT conditions:

   Modulation/Spread/Hopping ON, , PN9 Modulation Tx

   For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Spectrum Analyzer conditions:

   Step 1

   All spurious are measured from 30 MHz to 13 GHz by peak mode.

   Step 2

   IF the value measured by Step1 is 2 dB or less, measure in average mode.

   Test setup for Step 1:

   Frequency: 30 MHz – 1000 MHz,

   RBW 100 kHz (Below 1000 MHz), VBW 100 kHz (Below 1000 MHz)

   1000 MHz – 2400 MHz, 2483.5 MHz –13 GHz

   RBW 1 MHz (above 1000 MHz), VBW 1 MHz (above 1000 MHz)

   Sweep Time Auto

   detector mode Positive peak, Indication mode Max hold

   Test setup for Step 2:

   Frequency: Spurious Frequency

   RBW 100 kHz (Below 1000 MHz), VBW 100 kHz (Below 1000 MHz)

   RBW 1 MHz (above 1000 MHz), VBW 1 MHz (above 1000 MHz)

   Sweep Time Auto,

   Detector mode Sample, Indication mode Max hold

***Test result:***

***Please refer to Appendix A***

Note: The limit for the frequency range of 30MHz - 1GHz is 2.5uW/1MHz,but test result is dBm/100kHz.

Value(dBm/1MHz) = Measurement(dBm/100kHz) + 10*log(1MHz/100KHz)

Value(uW) = 10^(Value(dBm) / 10)*1000

***Test result: The unit does meet the requirements.***

## 6.10 Dwell Time

Test Requirement: MIC Notice No.88 Appendix No. 43

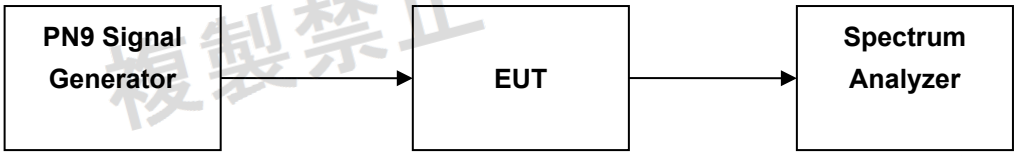
less than 0.4sec

Temperature: 23.0 °C

Humidity: 55 % RH

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below. Modulation/Spread/Hopping ON, Hopping frequency is fixed, Bluetooth equipment is setting DH5 mode

Test Configuration:




Test Procedure:

1. Test Conditions:

   Spectrum Analyzer is used for measurement.

2. EUT conditions:

   Modulation/Spread/Hopping ON, , Hopping frequency is fixed, Bluetooth equipment is setting DH5 mode

   For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Spectrum Analyzer conditions:

   Frequency: Test Frequency (fixed hopping frequency)
   Span 0 Hz
   RBW 1 MHz
   VBW 1 MHz
   Sweep Time EUT condition
   Trigger Video Trigger
   Measures the Transmission time of 1 burst (sec)
   Measures the Burst number

4. Calculation procedure :

   Dwell time=[Burst number in a Transmission period] x [Transmission time of 1 burst(s)]

***Test result:***

***Please refer to Appendix A***

***Test result: The unit does meet the requirements.***

## 6.11 Pseudorandom Frequency Hopping Sequence

Standard requirement

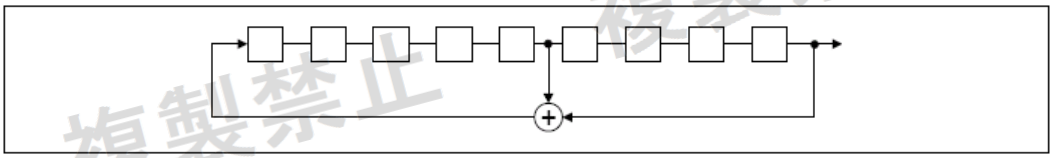
Article 2, Item (19) Notice 88 Appendix 43, 44, 45 requirement:

The EUT shall have the capability to transmit or to receive the MAC identification automatically, so that sender and receiver shall exclude other equipment.

EUT Pseudorandom Frequency Hopping Sequence

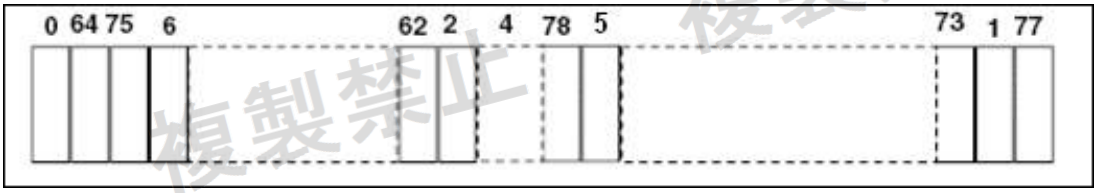
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. and the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence: $2^9$-1 = 511 bits
- 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 follow:




Each frequency used equally on the average by each transmitter.

The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

## 6.12 RF Accessibility

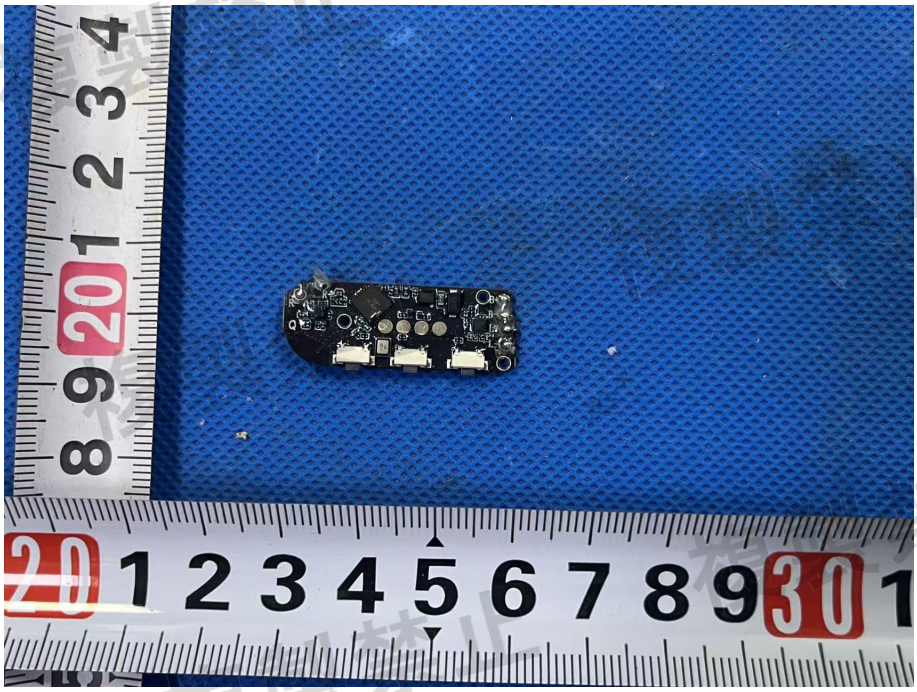
**Standard requirement**

Article 2, Item (19) Notice 88 Appendix 43, 44, 45

The EUT shall be constructed in such a way that sensitive RF parts, (like modulation and oscillator parts) cannot be reached easily by the user. These parts shall be covered by soldered metal caps or glue or by other mechanical covers. If the covers are fixed with screws, these shall be not the common type(s) like a Phillips, but special versions like Torx, so that the user cannot open the device with common tools.

Our products apply for Japanese radio frequency (rf) certification. We use the following methods to prevent unauthorized access and modification of RF and modulation parts.

The high-frequency section and modulation section use SMT technology, not easy to change.( The chip have more than 10 chip pins, less than 1.5mm pin dastance.)For more information, see the following photo.



## 6.13 Spurious Emissions of Rx

Test Requirement: MIC Notice No.88 Appendix No. 43
(1) Below 1 GHz : 4 nW or less
(2) 1 GHz and over : 20 nW or less

Temperature: 23.0 °C

Humidity: 55 % RH

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:

Test Procedure:

1. Test Conditions: Spectrum Analyzer is used for measurement.
2. EUT conditions:
   Modulation/Spread/Hopping ON
   For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
3. Spectrum Analyzer conditions:
   Step 1
   All spurious are measured from 30 MHz to 13 GHz by peak mode.
   Step 2
   IF the value measured by Step1 is 2 dB or less, measure in average mode.
   Test setup for Step 1:
   Frequency: 30 MHz – 1000 MHz , 1GHz –13 GHz
   RBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz)
   VBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz)
   Sweep Time Auto
   detector mode Positive peak
   Indication mode Max hold
   Test setup for Step 2:
   Frequency: Spurious Frequency
   Span 0 Hz
   RBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz)
   VBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz)
   Sweep Time Auto
   detector mode Sample
   Indication mode Max hold

***Test result:***

***Please refer to Appendix A***

*Note: Pre-scan all test modes, found worst case at GFSK, recorded the worst case results in this report GFSK.*

***Test result: The unit does meet the requirements.***

# 7 PHOTOGRAPHS

## 7.1 EUT Constructional Details

**Refer to AiTDG-260303006 EUT.**

****End of report****