

# TEST REPORT

**Product Name** : WIRELESS SYSTEM FOR WIND INSTRUMENT  
**Brand Name** : NUX  
**Model** : B-6 PRO  
**Series Model** : N/A  
**FCC ID** : 2BCVT-B-6PROTX  
**Applicant** : **Cherub Technology Co., Ltd.**  
**Address** : No.10, Keji 9th Road, Tangjiawan Town, Zhuhai High-tech Zone,  
Zhuhai, Guangdong, China, 519080  
**Manufacturer** : **Cherub Technology Co., Ltd.**  
**Address** : No.10, Keji 9th Road, Tangjiawan Town, Zhuhai High-tech Zone,  
Zhuhai, Guangdong, China, 519080  
**Standard(s)** : FCC CFR Title 47 Part 15 Subpart C Section 15.249  
**Date of Receipt** : May 12, 2025  
**Date of Test** : May 13, 2025~ May 20, 2025  
**Issued Date** : May 21, 2025

**Issued By:** **Guangdong Asia Hongke Test Technology Limited**  
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Note: This device has been tested and found to comply with the standard(s) listed, this 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. This report shall not be reproduced except in full, without the written approval of Guangdong Asia Hongke Test Technology Limited. If there is a need to alter or revise this document, the right belongs to Guangdong Asia Hongke Test Technology Limited, and it should give a prior written notice of the revision document. This test report must not be used by the client to claim product endorsement.



**Report Revise Record**

| Report Version | Issued Date  | Notes           |
|----------------|--------------|-----------------|
| M1             | May 21, 2025 | Initial Release |

# Contents

|          |                                                    |           |
|----------|----------------------------------------------------|-----------|
| <b>1</b> | <b>TEST SUMMARY.....</b>                           | <b>4</b>  |
| 1.1      | TEST STANDARDS .....                               | 4         |
| 1.2      | TEST SUMMARY .....                                 | 4         |
| 1.3      | TEST FACILITY .....                                | 5         |
| 1.4      | MEASUREMENT UNCERTAINTY .....                      | 5         |
| <b>2</b> | <b>GENERAL INFORMATION .....</b>                   | <b>6</b>  |
| 2.1      | ENVIRONMENTAL CONDITIONS.....                      | 6         |
| 2.2      | GENERAL DESCRIPTION OF EUT .....                   | 6         |
| 2.3      | DESCRIPTION OF TEST MODES AND TEST FREQUENCY ..... | 7         |
| 2.4      | SPECIAL ACCESSORIES .....                          | 7         |
| 2.5      | EQUIPMENT LIST FOR THE TEST.....                   | 8         |
| <b>3</b> | <b>TEST CONDITIONS AND RESULTS.....</b>            | <b>9</b>  |
| 3.1      | CONDUCTED EMISSIONS TEST .....                     | 9         |
| 3.2      | RADIATED EMISSIONS AND BAND EDGE .....             | 12        |
| 3.3      | 20dB BANDWIDTH .....                               | 19        |
| 3.4      | ANTENNA REQUIREMENT.....                           | 21        |
| <b>4</b> | <b>TEST SETUP PHOTOGRAPHS OF EUT .....</b>         | <b>22</b> |
| <b>5</b> | <b>PHOTOS OF EUT .....</b>                         | <b>23</b> |

# 1 TEST SUMMARY

## 1.1 Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.249](#): Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 -24.25 GHz.

[ANSI C63.10:2013](#): American National Standard for Testing Unlicensed Wireless Devices

## 1.2 Test Summary

| FCC PART 15.249    |                               |      |
|--------------------|-------------------------------|------|
| FCC Part 15.249(a) | Field Strength of Fundamental | PASS |
| FCC Part 15.209    | Spurious Emission             | PASS |
| FCC Part 15.215(c) | 20dB bandwidth                | PASS |
| FCC Part 15.207    | Conducted Emission            | PASS |
| FCC Part 15.203    | Antenna Requirement           | PASS |

### 1.3 Test Facility

#### Test Laboratory:

##### Guangdong Asia Hongke Test Technology Limited

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

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

#### FCC-Registration No.: 251906 Designation Number: CN1376

Guangdong Asia Hongke Test 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.: 31737 CAB identifier: CN0165

The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

#### A2LA-Lab Cert. No.: 7133.01

Guangdong Asia Hongke Test 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.

### 1.4 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Guangdong Asia Hongke Test Technology Limited's quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Asia Hongke laboratory is reported:

| Test                          | Measurement Uncertainty   | Notes |
|-------------------------------|---------------------------|-------|
| Power Line Conducted Emission | 9KHz~30MHz $\pm 1.20$ dB  | (1)   |
| Radiated Emission             | 9KHz~30MHz $\pm 3.10$ dB  | (1)   |
| Radiated Emission             | 30MHz~1GHz $\pm 3.75$ dB  | (1)   |
| Radiated Emission             | 1GHz~18GHz $\pm 3.88$ dB  | (1)   |
| Radiated Emission             | 18GHz~40GHz $\pm 3.88$ dB | (1)   |
| RF power, conducted           | 30MHz~6GHz $\pm 0.16$ dB  | (1)   |
| RF power density, conducted   | $\pm 0.24$ dB             | (1)   |
| Spurious emissions, conducted | $\pm 0.21$ dB             | (1)   |
| Temperature                   | $\pm 1^{\circ}\text{C}$   | (1)   |
| Humidity                      | $\pm 3\%$                 | (1)   |
| DC and low frequency voltages | $\pm 1.5\%$               | (1)   |
| Time                          | $\pm 2\%$                 | (1)   |
| Duty cycle                    | $\pm 2\%$                 | (1)   |

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

## 2 GENERAL INFORMATION

### 2.1 Environmental conditions

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

|                     |         |
|---------------------|---------|
| Normal Temperature: | 25°C    |
| Relative Humidity:  | 55 %    |
| Air Pressure:       | 101 kPa |

### 2.2 General Description of EUT

|                                                                                                                                                                                                                                                               |                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Product Name:                                                                                                                                                                                                                                                 | WIRELESS SYSTEM FOR WIND INSTRUMENT                                              |
| Model/Type reference:                                                                                                                                                                                                                                         | B-6 PRO                                                                          |
| Serial Model:                                                                                                                                                                                                                                                 | N/A                                                                              |
| Power Supply:                                                                                                                                                                                                                                                 | RX: DC9V from adapter<br>TX: DC 3.7V from battery or DC 5V from external circuit |
| Hardware Version:                                                                                                                                                                                                                                             | V1.0                                                                             |
| Software Version:                                                                                                                                                                                                                                             | N/A                                                                              |
| Sample(s) Status:                                                                                                                                                                                                                                             | AiTSZ-250512045-1(Normal sample)<br>AiTSZ-250512045-2(Engineer sample)           |
| <b>SRD:</b>                                                                                                                                                                                                                                                   |                                                                                  |
| Supported type:                                                                                                                                                                                                                                               | 2.4G wireless protocol                                                           |
| Modulation:                                                                                                                                                                                                                                                   | GFSK                                                                             |
| Operation frequency:                                                                                                                                                                                                                                          | 2402MHz~2480MHz                                                                  |
| Channel separation:                                                                                                                                                                                                                                           | 1 MHz                                                                            |
| Channel number:                                                                                                                                                                                                                                               | 79                                                                               |
| Antenna type:                                                                                                                                                                                                                                                 | PCB antenna                                                                      |
| Antenna gain:                                                                                                                                                                                                                                                 | 2.16dBi                                                                          |
| <b>Remark:</b>                                                                                                                                                                                                                                                |                                                                                  |
| 1.The above DUT's information was declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.                                                                                   |                                                                                  |
| 2. The EUT has two RF paths. Since the power settings, antennas, and matching circuits of the two paths are the same, and the two paths cannot transmit at the same time, in the test, we configure path 1 (ANT1) to work during the test to show compliance. |                                                                                  |

## 2.3 Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) and receiving mode for testing.

### Operation Frequency List:

| Channel   | Frequency (MHz) |
|-----------|-----------------|
| 01        | <b>2402</b>     |
| 02        | 2403            |
| 03        | 2404            |
| :         | :               |
| <b>40</b> | <b>2441</b>     |
| :         | :               |
| 77        | 2478            |
| 78        | 2479            |
| <b>79</b> | <b>2480</b>     |

Note: The line display in grey were the channel selected for testing

### 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.

Power Parameters:

| Test Software Version | CMD command |         |         |
|-----------------------|-------------|---------|---------|
| Frequency             | 2402MHz     | 2441MHz | 2480MHz |
| Power setting         | Default     | Default | Default |

## 2.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

| Description | Manufacturer | Model | Serial No. | Provided by | Other |
|-------------|--------------|-------|------------|-------------|-------|
| /           | /            | /     | /          | /           | /     |

## 2.5 Equipment List for the Test

| No | Test Equipment                      | Manufacturer | Model No        | Serial No         | Cal. Date  | Cal. Due Date |
|----|-------------------------------------|--------------|-----------------|-------------------|------------|---------------|
| 1  | EMI Measuring Receiver              | R&S          | ESR             | 101160            | 2024.09.25 | 2025.09.24    |
| 2  | Spectrum Analyzer                   | R&S          | FSV40           | 101470            | 2024.09.23 | 2025.09.22    |
| 3  | Low Noise Pre Amplifier             | SCHWARZBECK  | BBV 9745        | 00282             | 2024.09.25 | 2025.09.24    |
| 4  | Low Noise Pre Amplifier             | CESHENG      | CSKJLNA23101 6A | CSKJLNA231016 A   | 2024.09.25 | 2025.09.24    |
| 5  | Passive Loop                        | ETS          | 6512            | 00165355          | 2024.08.29 | 2027.08.28    |
| 6  | TRILOG Super Broadband test Antenna | SCHWARZBECK  | VULB9168        | 01434             | 2024.08.29 | 2027.08.28    |
| 7  | Broadband Horn Antenna              | Schwarzbeck  | BBHA 9120D      | 452               | 2024.08.29 | 2027.08.28    |
| 8  | Horn Antenna 15-40GHz               | SCHWARZBECK  | BBHA9170        | BBHA9170367       | 2024.08.28 | 2027.08.27    |
| 9  | 6dB Attenuator                      | JFW          | 50FPE-006       | 4360846-949-1     | 2024.09.24 | 2025.09.23    |
| 10 | EMI Test Receiver                   | R&S          | ESPI            | 100771            | 2024.09.25 | 2025.09.24    |
| 11 | LISN                                | R&S          | NNLK 8129       | 8130179           | 2024.09.24 | 2025.09.23    |
| 12 | LISN                                | R&S          | ESH3-Z5         | 892785/016        | 2024.09.23 | 2025.09.22    |
| 13 | Pulse Limiter                       | R&S          | ESH3-Z2         | 102789            | 2024.09.24 | 2025.09.23    |
| 14 | RF Automatic Test system            | TST          | TSTPASS         | 21033016          | 2024.09.25 | 2025.09.24    |
| 15 | Vector Signal Generator             | Agilent      | N5182A          | MY50143009        | 2024.09.25 | 2025.09.24    |
| 16 | Analog signal generator             | Agilent      | E8257           | MY51554256        | 2024.09.25 | 2025.09.24    |
| 17 | Spectrum Analyzer                   | Agilent      | N9020A          | MY51289843        | 2024.09.25 | 2025.09.24    |
| 18 | Spectrum Analyzer                   | Agilent      | N9020A          | MY53421570        | 2024.09.25 | 2025.09.24    |
| 19 | Power Sensor                        | Agilent      | 8481A           | MY41097697        | 2024.09.25 | 2025.09.24    |
| 20 | Wideband Radio communication tester | R&S          | CMW500          | 1201.0002K50      | 2024.09.24 | 2025.09.23    |
| 21 | DC power supply                     | ZHAOXIN      | RXN-305D-2      | 28070002559       | 2024.09.24 | 2025.09.23    |
| 22 | RE Software                         | EZ           | EZ-EMC_RE       | Ver.AIT-03A       | N/A        | N/A           |
| 23 | CE Software                         | EZ           | EZ-EMC_CE       | Ver.AIT-03A       | N/A        | N/A           |
| 24 | RF Software                         | TST          | TSTPASS         | Version 2.0       | N/A        | N/A           |
| 25 | RF Software                         | cesheng      | WCS-WCN         | Version 2024.6.20 | N/A        | N/A           |
| 26 | temporary antenna connector(Note)   | NTS          | R001            | N/A               | N/A        | N/A           |

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

### 3 TEST CONDITIONS AND RESULTS

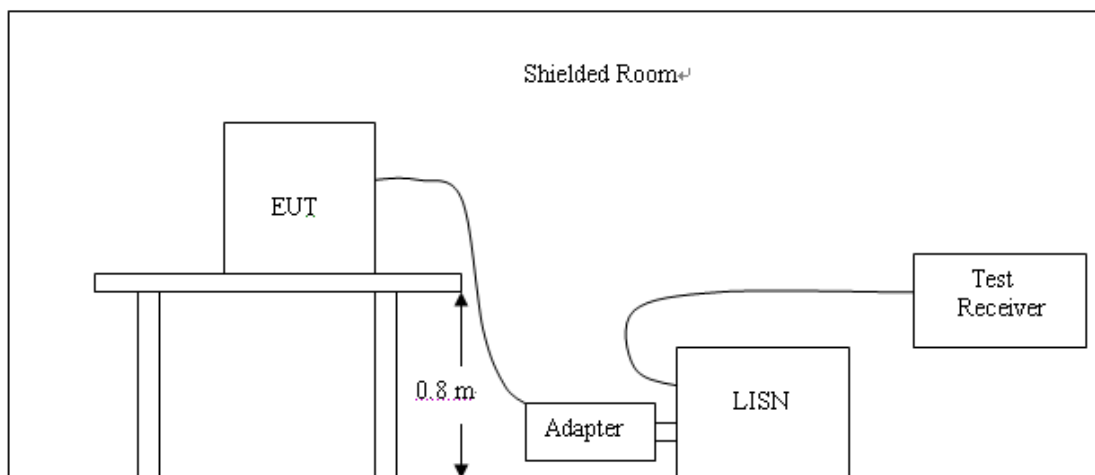
#### 3.1 Conducted Emissions Test

##### LIMIT

| Frequency range (MHz) | Limit (dBuV) |           |
|-----------------------|--------------|-----------|
|                       | Quasi-peak   | Average   |
| 0.15-0.5              | 66 to 56*    | 56 to 46* |
| 0.5-5                 | 56           | 46        |
| 5-30                  | 60           | 50        |

\* Decreases with the logarithm of the frequency.

##### TEST CONFIGURATION

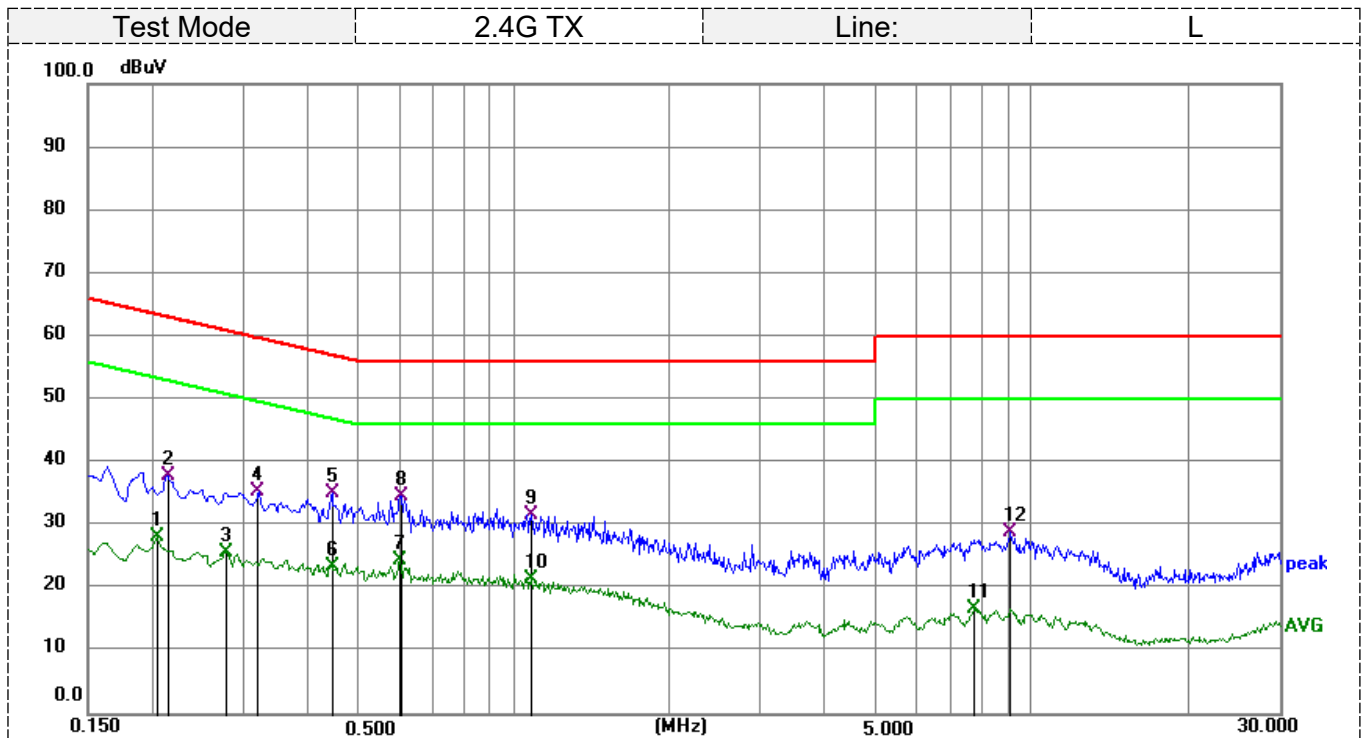


##### TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

## TEST RESULTS

Remark: Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:

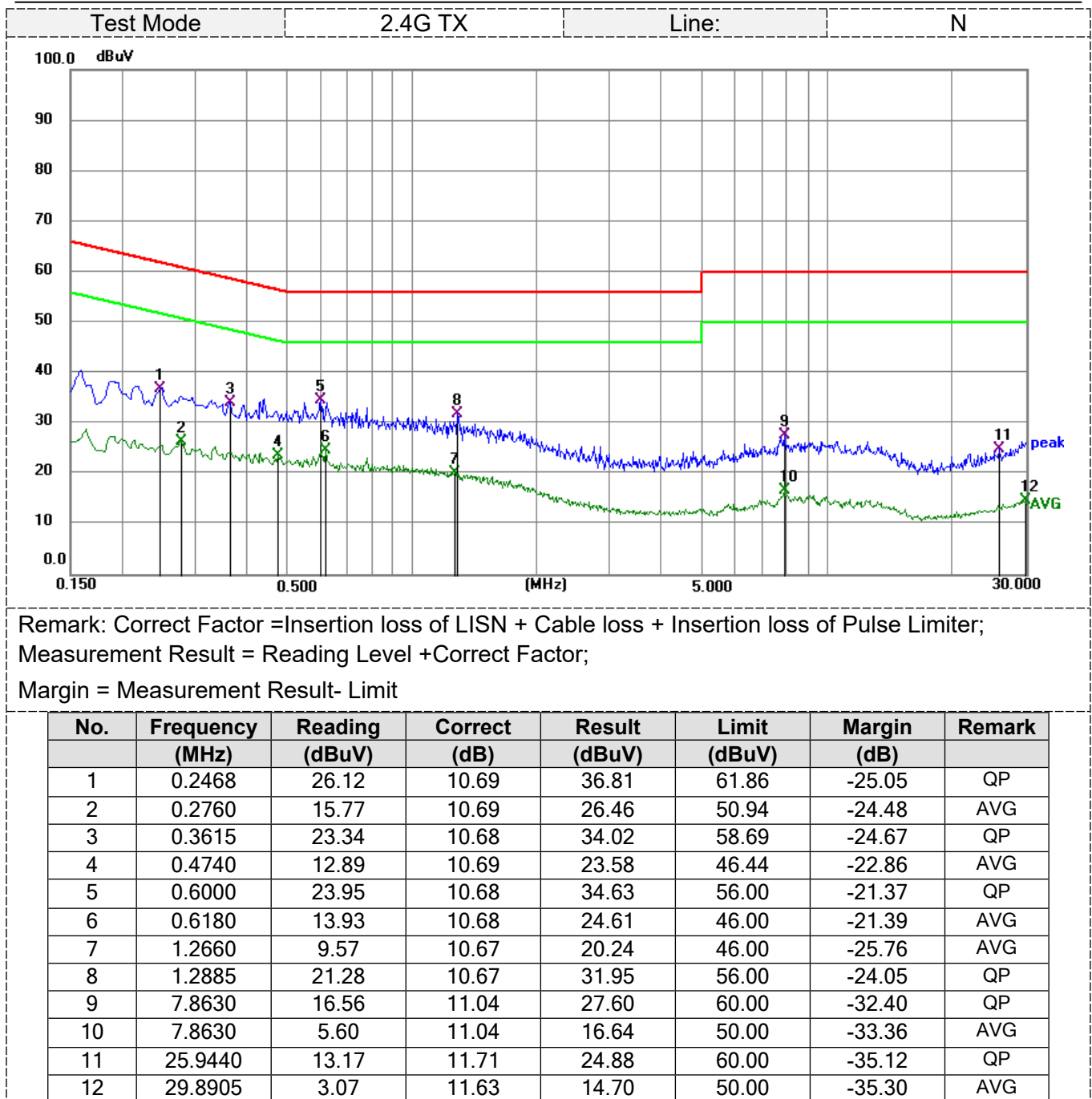


Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;

Measurement Result = Reading Level + Correct Factor;

Margin = Measurement Result - Limit

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------|------------------|-----------------|----------------|--------|
| 1   | 0.2040             | 17.39             | 10.70           | 28.09            | 53.45           | -25.36         | AVG    |
| 2   | 0.2130             | 27.26             | 10.70           | 37.96            | 63.09           | -25.13         | QP     |
| 3   | 0.2760             | 15.04             | 10.70           | 25.74            | 50.94           | -25.20         | AVG    |
| 4   | 0.3209             | 24.60             | 10.70           | 35.30            | 59.68           | -24.38         | QP     |
| 5   | 0.4425             | 24.49             | 10.69           | 35.18            | 57.01           | -21.83         | QP     |
| 6   | 0.4425             | 12.71             | 10.69           | 23.40            | 47.01           | -23.61         | AVG    |
| 7   | 0.6000             | 13.85             | 10.69           | 24.54            | 46.00           | -21.46         | AVG    |
| 8   | 0.6045             | 23.93             | 10.69           | 34.62            | 56.00           | -21.38         | QP     |
| 9   | 1.0770             | 21.03             | 10.66           | 31.69            | 56.00           | -24.31         | QP     |
| 10  | 1.0770             | 10.71             | 10.66           | 21.37            | 46.00           | -24.63         | AVG    |
| 11  | 7.6965             | 5.63              | 11.05           | 16.68            | 50.00           | -33.32         | AVG    |
| 12  | 9.1005             | 17.85             | 11.06           | 28.91            | 60.00           | -31.09         | QP     |



## 3.2 Radiated Emissions and Band Edge

### Limit

According 15.249, the field strength of emissions from intentional radiators operated within 2400-2483.5 MHz shall not exceed 94 dB $\mu$ V/m (50 mV/m).

FCC PART 15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

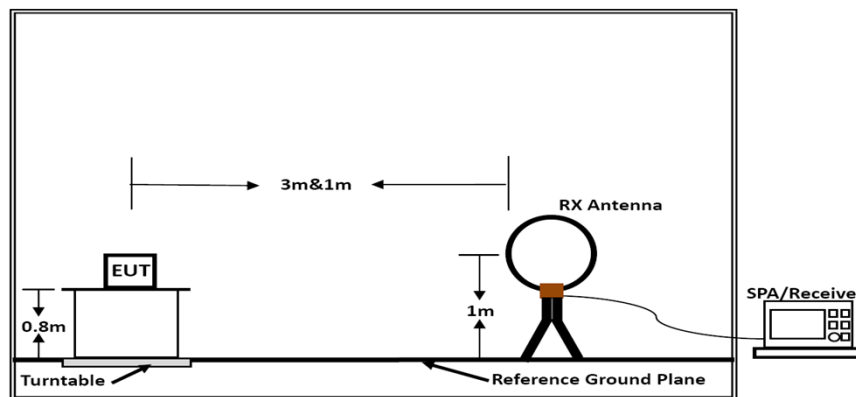
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

| Frequency(MHz) | Distance(Meters) | Radiated(dB $\mu$ V/m)                     | Radiated( $\mu$ V/m)  |
|----------------|------------------|--------------------------------------------|-----------------------|
| 0.009-0.49     | 3                | $20\log(2400/F(\text{KHz}))+40\log(300/3)$ | $2400/F(\text{KHz})$  |
| 0.49-1.705     | 3                | $20\log(24000/F(\text{KHz}))+40\log(30/3)$ | $24000/F(\text{KHz})$ |
| 1.705-30       | 3                | $20\log(30)+40\log(30/3)$                  | 30                    |
| 30-88          | 3                | 40.0                                       | 100                   |
| 88-216         | 3                | 43.5                                       | 150                   |
| 216-960        | 3                | 46.0                                       | 200                   |
| Above 960      | 3                | 54.0                                       | 500                   |

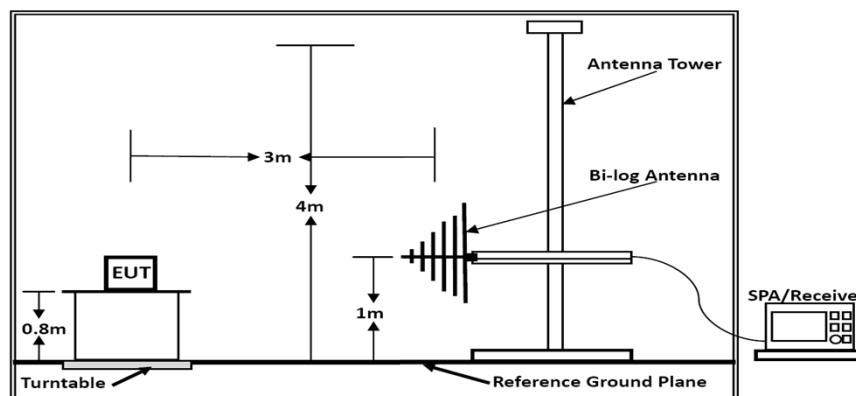
### TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



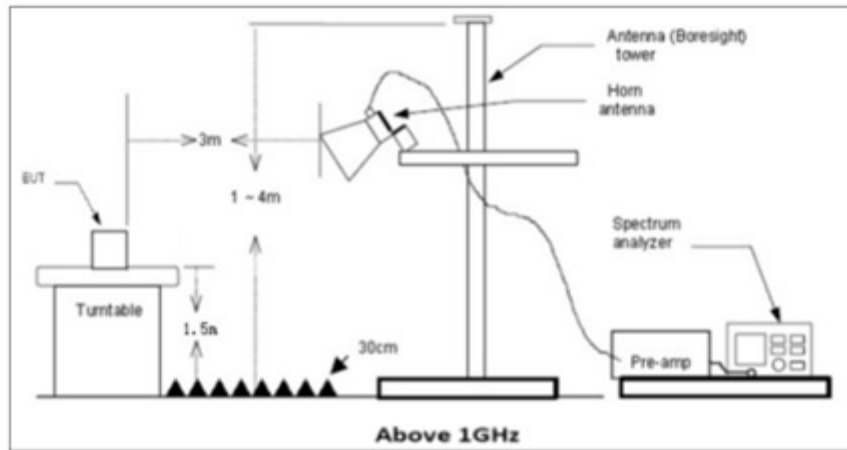
Below 30MHz

(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



Below 1GHz

(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



### 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 turntable which is 1.5m above ground plane.
- Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turntable from 0° to 360° 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 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           | BilogAntenna        | 3             |
| 1GHz-18GHz           | Horn Antenna        | 3             |
| 18GHz-25GHz          | Horn Antenna        | 1             |

- Setting test receiver/spectrum as following table states:

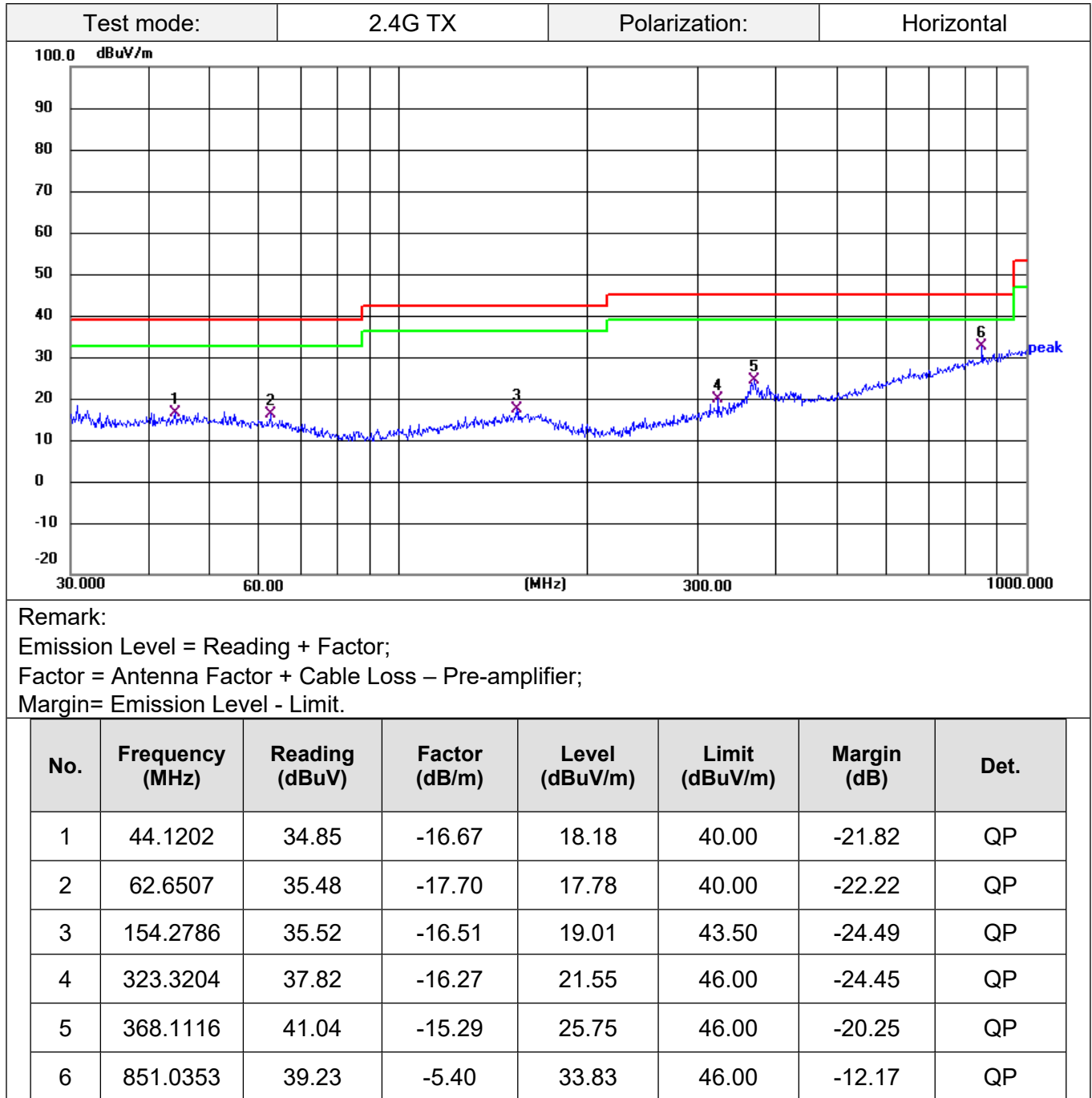
| Test Frequency range | Test Receiver/Spectrum Setting                                                                      | Detector |
|----------------------|-----------------------------------------------------------------------------------------------------|----------|
| 9KHz-150KHz          |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

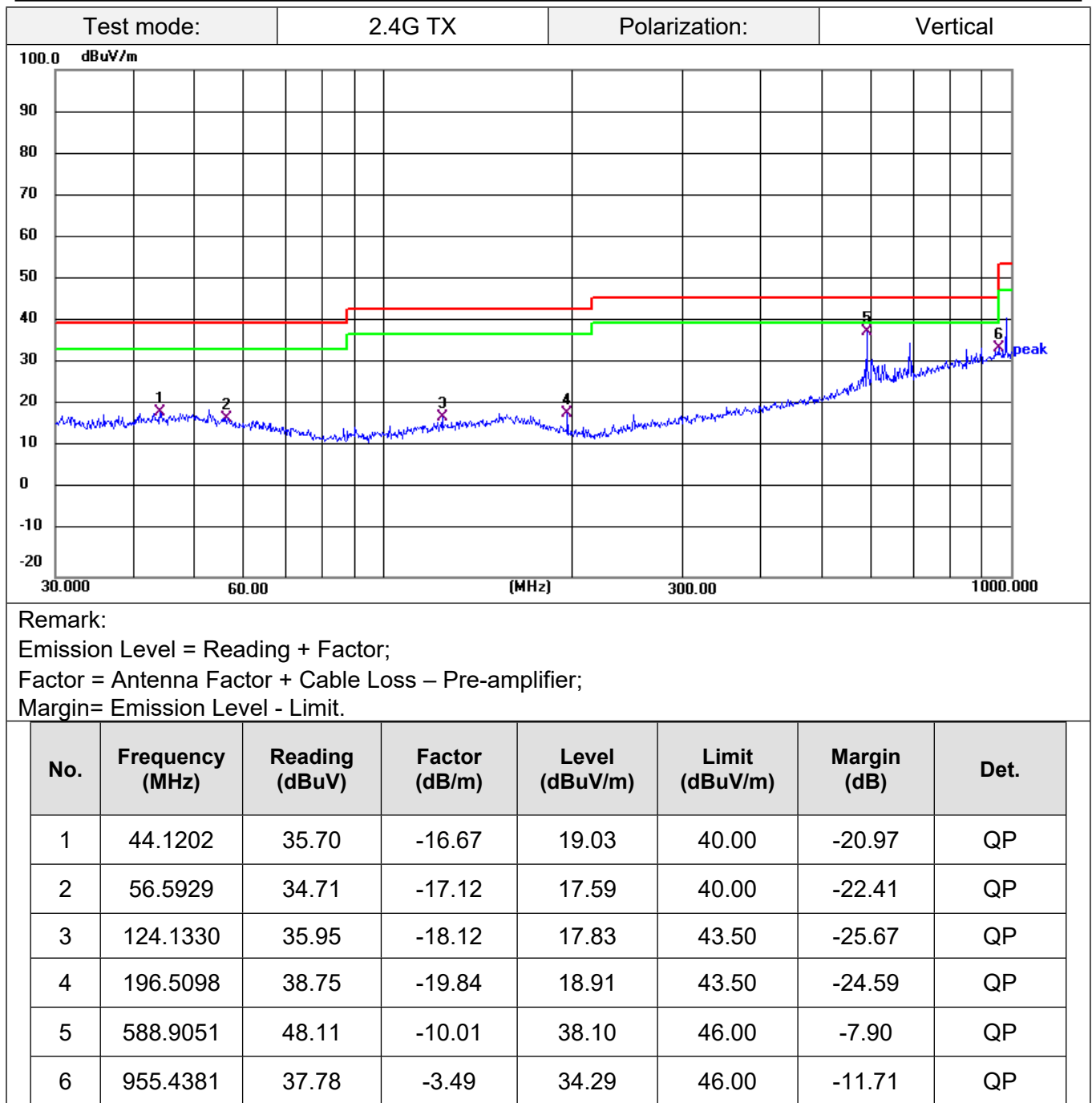
### TEST RESULTS

Remark:

- For below 1GHz testing recorded worst at low channel.
- Radiated emission test from 9 KHz 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 30MHz-1GHz





**Above 1GHz:**
**GFSK (above 1GHz)**

| Frequency(MHz): |               | 2402   |                | Polarity: | Horizontal |               |
|-----------------|---------------|--------|----------------|-----------|------------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin     | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)       |               |
| 2402.00         | 110.86        | -14.21 | 96.65          | 114       | -17.35     | PEAK          |
| 2402.00         | 95.47         | -14.21 | 81.26          | 94        | -12.74     | AVG           |
| 4804.40         | 62.41         | -7.55  | 54.86          | 74        | -19.14     | PEAK          |
| 4804.40         | 54.61         | -7.55  | 47.06          | 54        | -6.94      | AVG           |
| 7206.35         | 52.63         | -1.63  | 51.00          | 74        | -23.00     | PEAK          |
| --              | --            | --     | --             | --        | --         | AVG           |

| Frequency(MHz): |               | 2402   |                | Polarity: | VERTICAL |               |
|-----------------|---------------|--------|----------------|-----------|----------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin   | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)     |               |
| 2402.00         | 111.14        | -14.21 | 96.93          | 114       | -17.07   | PEAK          |
| 2402.00         | 95.73         | -14.21 | 81.52          | 94        | -12.48   | AVG           |
| 4804.40         | 62.78         | -7.55  | 55.23          | 74        | -18.77   | PEAK          |
| 4804.40         | 55.45         | -7.55  | 47.90          | 54        | -6.10    | AVG           |
| 7206.35         | 52.80         | -1.63  | 51.17          | 74        | -22.83   | PEAK          |
| --              | --            | --     | --             | --        | --       | AVG           |

| Frequency(MHz): |               | 2441   |                | Polarity: | Horizontal |               |
|-----------------|---------------|--------|----------------|-----------|------------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin     | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)       |               |
| 2441.00         | 109.22        | -13.68 | 95.54          | 114       | -18.46     | PEAK          |
| 2441.00         | 97.78         | -13.68 | 84.10          | 94        | -9.90      | AVG           |
| 4882.30         | 63.63         | -6.73  | 56.90          | 74        | -17.10     | PEAK          |
| 4882.30         | 53.47         | -6.73  | 46.74          | 54        | -7.26      | AVG           |
| 7323.00         | 50.32         | -0.5   | 49.82          | 74        | -24.18     | PEAK          |
| --              | --            | --     | --             | --        | --         | AVG           |

| Frequency(MHz): |               | 2441   |                | Polarity: | VERTICAL |               |
|-----------------|---------------|--------|----------------|-----------|----------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin   | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)     |               |
| 2441.00         | 109.29        | -13.68 | 95.61          | 114       | -18.39   | PEAK          |
| 2441.00         | 98.38         | -13.68 | 84.70          | 94        | -9.30    | AVG           |
| 4882.30         | 63.67         | -6.73  | 56.94          | 74        | -17.06   | PEAK          |
| 4882.30         | 55.32         | -6.73  | 48.59          | 54        | -5.41    | AVG           |
| 7323.00         | 50.68         | -0.5   | 50.18          | 74        | -23.82   | PEAK          |
| --              | --            | --     | --             | --        | --       | AVG           |

| Frequency(MHz): |               | 2480   |                | Polarity: | Horizontal |               |
|-----------------|---------------|--------|----------------|-----------|------------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin     | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)       |               |
| 2480.00         | 47.02         | -13.15 | 95.43          | 114       | -18.57     | PEAK          |
| 2480.00         | 47.02         | -13.15 | 82.56          | 94        | -11.44     | AVG           |
| 4960.70         | 47.02         | -5.76  | 57.76          | 74        | -16.24     | PEAK          |
| 4960.70         | 52.44         | -5.76  | 46.68          | 54        | -7.32      | AVG           |
| 7440.00         | 46.47         | -0.51  | 49.69          | 74        | -24.31     | PEAK          |
| --              | --            | --     | --             | --        | --         | AVG           |

| Frequency(MHz): |               | 2480   |                | Polarity: | VERTICAL |               |
|-----------------|---------------|--------|----------------|-----------|----------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin   | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)     |               |
| 2480.00         | 45.63         | -13.15 | 95.72          | 114       | -18.28   | PEAK          |
| 2480.00         | 45.63         | -13.15 | 83.00          | 94        | -11.00   | AVG           |
| 4960.70         | 45.63         | -5.76  | 58.42          | 74        | -15.58   | PEAK          |
| 4960.70         | 53.45         | -5.76  | 47.69          | 54        | -6.31    | AVG           |
| 7440.00         | 45.02         | -0.51  | 50.02          | 74        | -23.98   | PEAK          |
| --              | --            | --     | --             | --        | --       | AVG           |

**REMARKS:**

1. Emission level (dBuV/m) = Reading (dBuV)+ Factor (dB/m)
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Emission level-Limit value.
4. -- Mean the PK detector measured value is below average limit.
5. Other emission levels are attenuated 20dB below the limit and not recorded in report.
6. RBW1MHz VBW3MHz Peak detector is for PK value;RBW 1MHz VBW10Hz Peakdetector is for AV value.

**Radiation Restricted band**

| Frequency(MHz): |               | 2402   |                | Polarity: | Horizontal |               |
|-----------------|---------------|--------|----------------|-----------|------------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin     | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)       |               |
| 2389.65         | 54.93         | -4.09  | 50.84          | 74        | -23.16     | PEAK          |
| --              | --            | --     | --             | --        | --         | AVG           |
| 2390.00         | 40.62         | -4.10  | 47.31          | 74        | -26.69     | PEAK          |
| --              | --            | --     | --             | --        | --         | AVG           |
| 2400.00         | 40.62         | -4.24  | 57.05          | 74        | -16.95     | PEAK          |
| 2400.00         | 52.25         | -4.24  | 48.01          | 54        | -5.99      | AVG           |

| Frequency(MHz): |               | 2402   |                | Polarity: | Vertical |               |
|-----------------|---------------|--------|----------------|-----------|----------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin   | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)     |               |
| 2385.03         | 55.20         | -4.03  | 51.17          | 74        | -22.83   | PEAK          |
| --              | --            | --     | --             | --        | --       | AVG           |
| 2390.00         | 51.42         | -4.10  | 47.32          | 74        | -26.68   | PEAK          |
| --              | --            | --     | --             | --        | --       | AVG           |
| 2400.00         | 62.34         | -4.24  | 58.10          | 74        | -15.90   | PEAK          |
| 2400.00         | 56.05         | -4.24  | 51.81          | 54        | -2.19    | AVG           |

| Frequency(MHz): |               | 2480   |                | Polarity: | Horizontal |               |
|-----------------|---------------|--------|----------------|-----------|------------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin     | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)       |               |
| 2483.50         | 52.44         | -3.09  | 49.35          | 74        | -24.65     | PEAK          |
| --              | --            | --     | --             | --        | --         | AVG           |
| 2484.17         | 50.46         | -3.08  | 47.38          | 74        | -26.62     | PEAK          |
| --              | --            | --     | --             | --        | --         | AVG           |

| Frequency(MHz): |               | 2480   |                | Polarity: | Vertical |               |
|-----------------|---------------|--------|----------------|-----------|----------|---------------|
| Frequency       | Meter Reading | Factor | Emission Level | Limits    | Margin   | Detector Type |
| (MHz)           | (dBμV)        | (dB/m) | (dBμV/m)       | (dBμV/m)  | (dB)     |               |
| 2483.50         | 53.59         | -3.09  | 50.50          | 74        | -23.50   | PEAK          |
| --              | --            | --     | --             | --        | --       | AVG           |
| 2486.60         | 51.38         | -3.05  | 48.33          | 74        | -25.67   | PEAK          |
| --              | --            | --     | --             | --        | --       | AVG           |

**REMARKS:**

1. Emission level (dBuV/m) = Reading (dBuV)+ Factor (dB/m)
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Emission level-Limit value.
4. -- Mean the PK detector measured value is below average limit.
5. Other emission levels are attenuated 20dB below the limit and not recorded in report.

- 
6. RBW1MHz VBW3MHz Peak detector is for PK value;RBW 1MHz VBW10Hz Peakdetector is for AV value.

### 3.3 20dB Bandwidth

#### Limit

N/A

#### Test Procedure

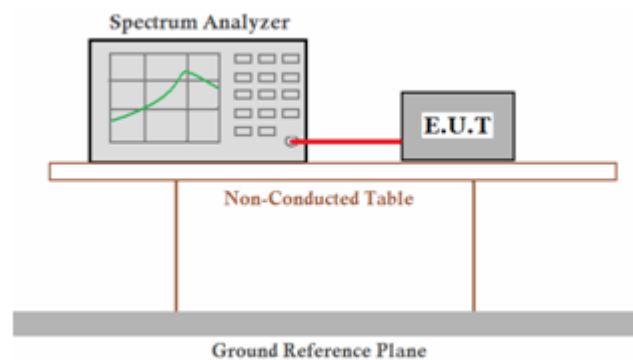
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer. Place the EUT on the table and set it in transmitting mode.

Use the following spectrum analyzer settings:

- 1) Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel.
- 2) RBW  $\geq 1\%$  of the 20 dB bandwidth, VBW  $\geq$  RBW.
- 3) Detector function = peak.
- 4) Trace = max hold.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

#### Test Configuration

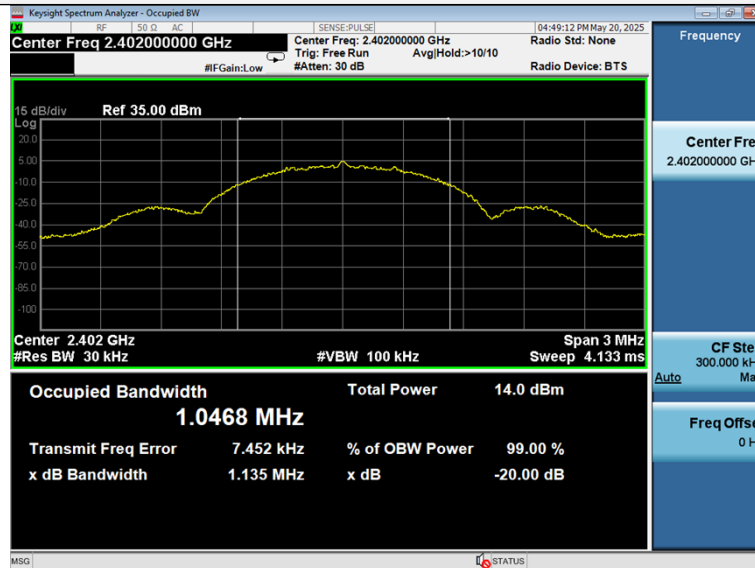


#### Test Results

| Modulation | Test Frequency (MHz) | 20dB bandwidth (MHz) | 99% bandwidth (MHz) | Result |
|------------|----------------------|----------------------|---------------------|--------|
| GFSK       | 2402                 | 1.135                | 1.0468              | Pass   |
|            | 2441                 | 1.155                | 1.0481              |        |
|            | 2480                 | 1.141                | 1.0505              |        |

Test plot as follows:

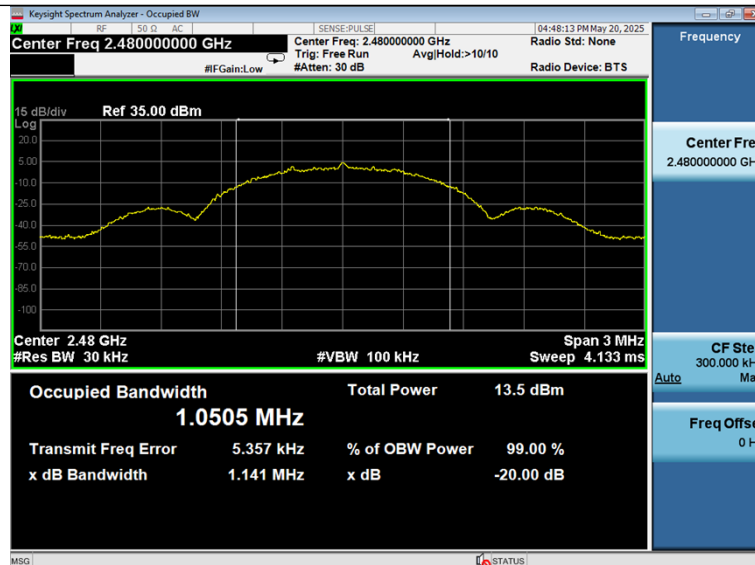
## GFSK 2.4G TX



## 2402 MHz



## 2441 MHz



## 2480 MHz

### 3.4 Antenna Requirement

#### Standard Applicable

**For intentional device, according to FCC 47 CFR Section 15.203:**

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

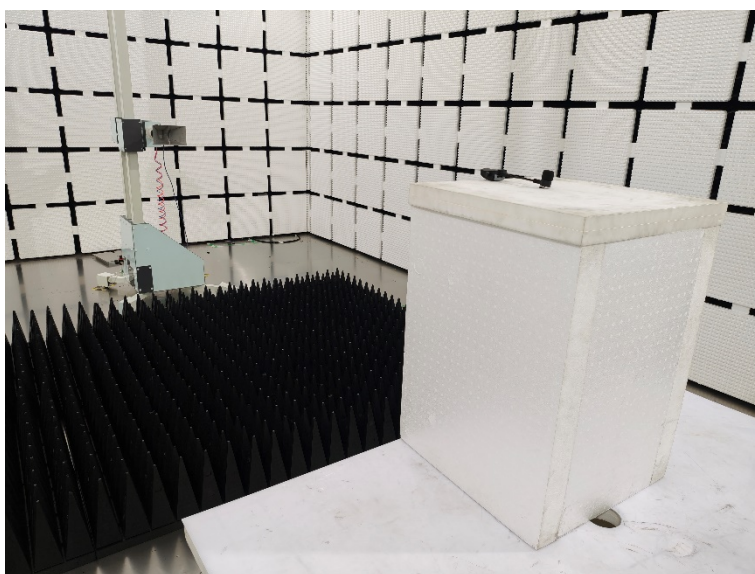
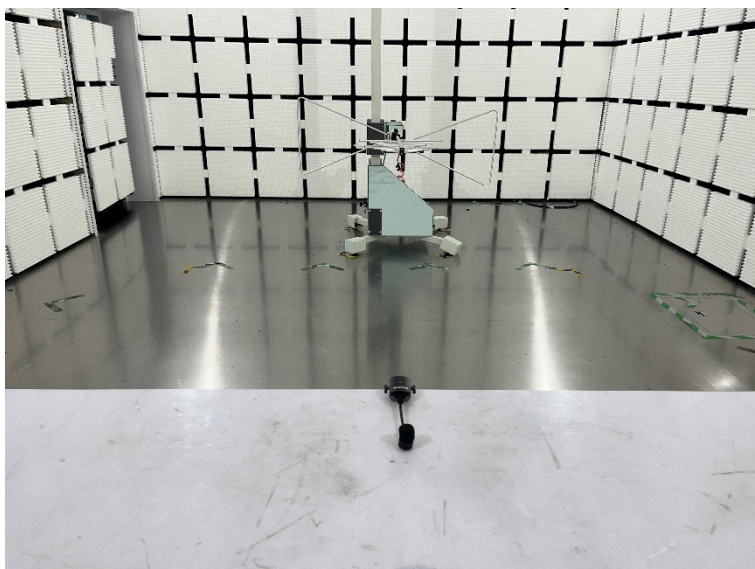
**FCC CFR Title 47 Part 15 Subpart C Section 15.247(b) (4):**

(4) 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 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi 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 6 dBi.

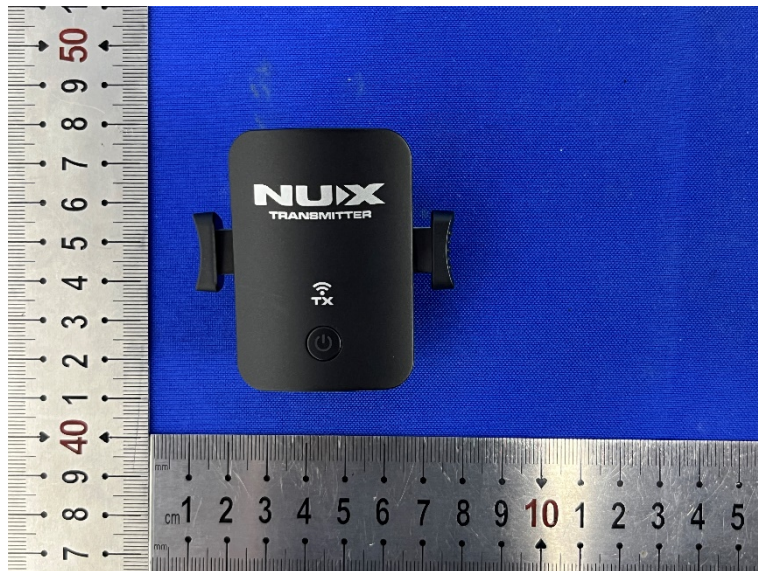
#### Test Result

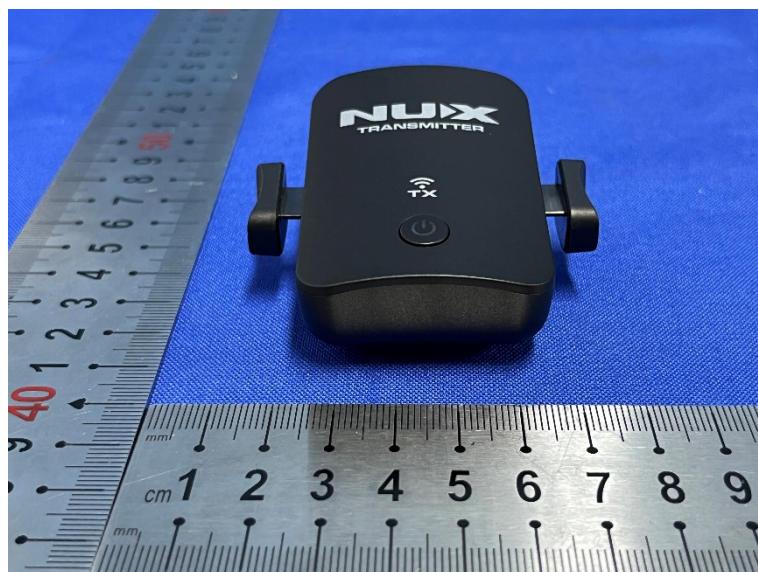
The maximum gain of antenna was 2.16dBi with impedance 50Ω.

## 4 Test Setup Photographs of EUT



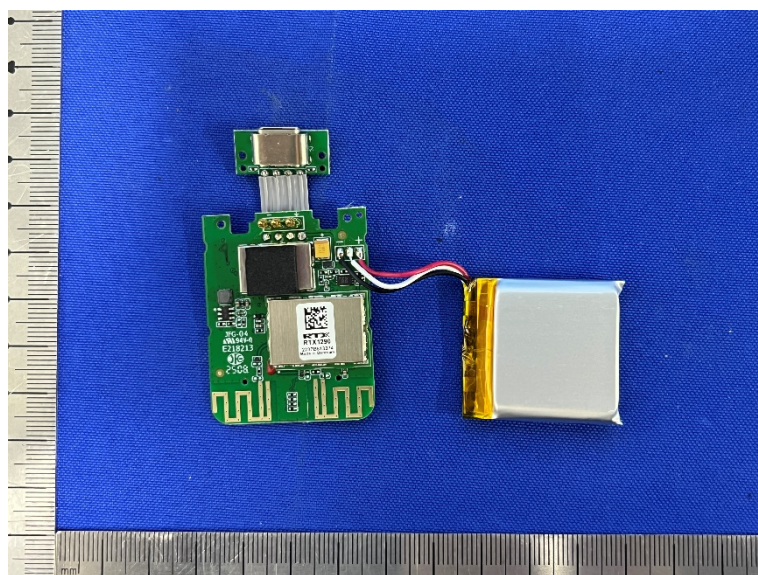
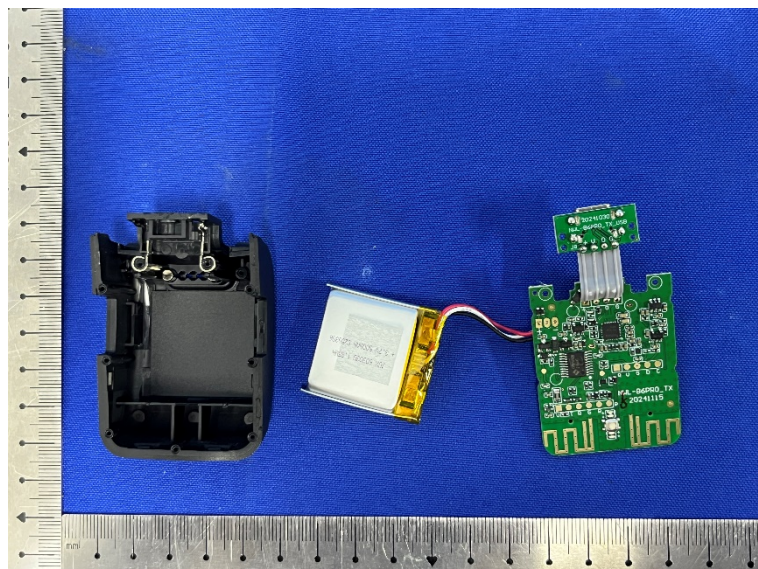
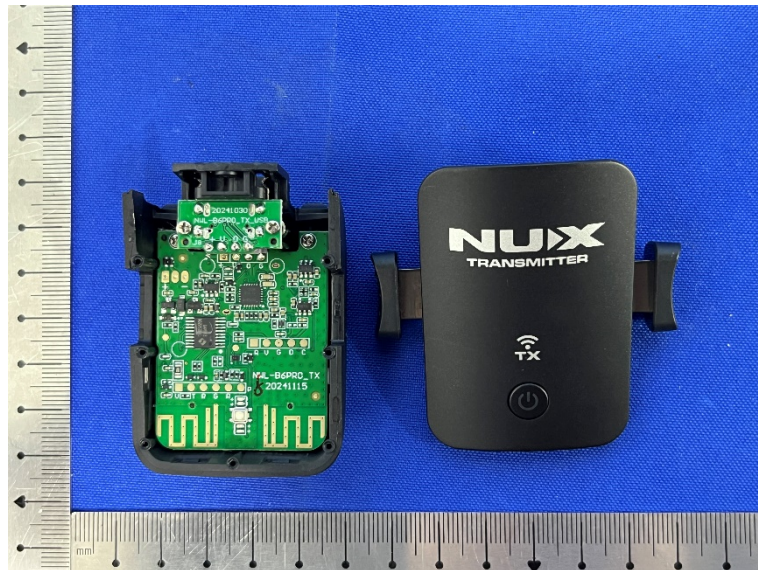
## 5 Photos of EUT

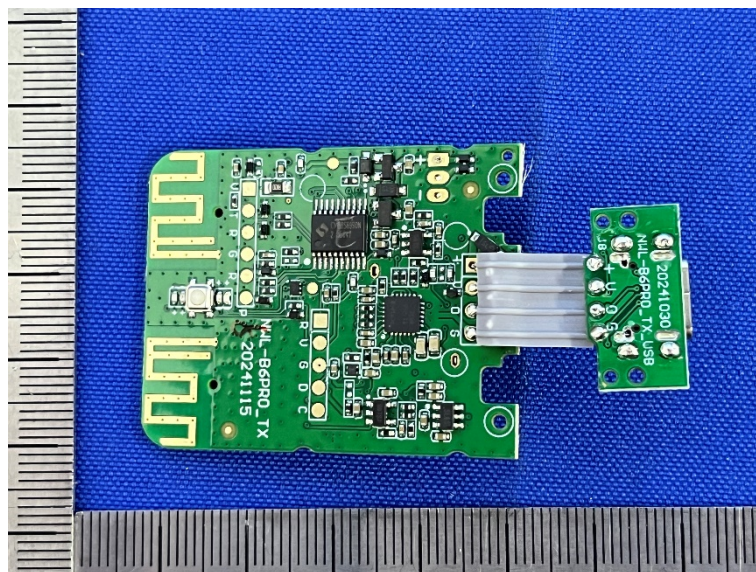
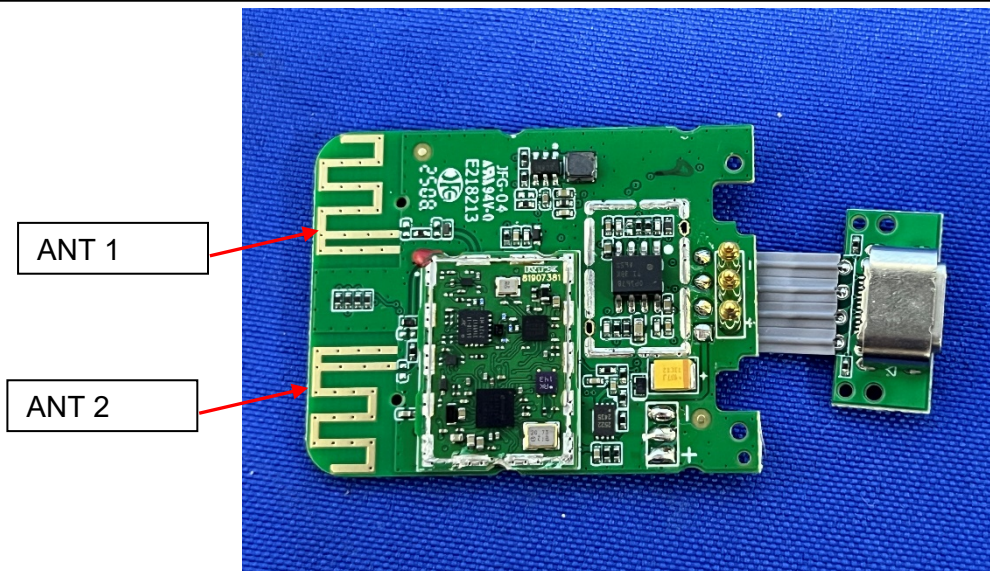






### Internal Photos





\*\*\*\*\*End of Report\*\*\*\*\*