



# FCC REPORT

**Applicant:** Xiamen Paperang Technology Co.,Ltd.

**Address of Applicant:** Room 3124,Xuanye Building, Pioneer Park, Xiamen Torch High-tech Zone, Fujian, China

**Equipment Under Test (EUT)**

**Product Name:** Thermal Printer

**Model No.:** P3,P3L,P3S,PAPERANG P3,PAPERANG-P3,P3B2,P3Y2,P3A2,P3Z2,P3N2,P3S2,P3C2,P3W2,P3X2

**Trade mark:** PAPERANG

**FCC ID:** 2APWO-PAPERANG-P3

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.247

**Date of sample receipt:** 23 Feb., 2022

**Date of Test:** 24 Feb., 2022~ 14 Mar., 2022

**Date of report issued:** 15 Mar., 2022

**Test Result:** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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**1 Modified Information**

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | 15 Mar., 2022 | Original    |
|             |               |             |
|             |               |             |
|             |               |             |
|             |               |             |

**Tested by:****Date:**

15 Mar., 2022

Raymon Zheng/ Project Engineer

**Reviewed by:****Date:**

15 Mar., 2022

Louis Ye/Manager

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### 3 Test Summary

| Test Items                                                                                                                                                                                                                                                 | Section in CFR 47                                              | Result |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------|
| Antenna requirement                                                                                                                                                                                                                                        | 15.203&15.247 (b)                                              | Pass   |
| AC Power Line Conducted Emission                                                                                                                                                                                                                           | 15.207                                                         | Pass   |
| Conducted Peak Output Power                                                                                                                                                                                                                                | 15.247 (b)(3)                                                  | Pass   |
| 6dB Emission Bandwidth<br>99% Occupied Bandwidth                                                                                                                                                                                                           | 15.247 (a)(2)                                                  | Pass   |
| Power Spectral Density                                                                                                                                                                                                                                     | 15.247 (e)                                                     | Pass   |
| Band Edge                                                                                                                                                                                                                                                  | 15.247(d)                                                      | Pass   |
| Spurious Emission                                                                                                                                                                                                                                          | 15.205&15.209                                                  | Pass   |
| <b>Remark:</b><br>1. Pass: The EUT complies with the essential requirements in the standard.<br>2. N/A: Not Applicable.<br>3. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 1dB (provided by the customer). |                                                                |        |
| <b>Test Method:</b>                                                                                                                                                                                                                                        | ANSI C63.10-2013<br>KDB 558074 D01 15.247 Meas Guidance v05r02 |        |

## 4 General Information

### 4.1 Client Information

|               |                                                                                 |
|---------------|---------------------------------------------------------------------------------|
| Applicant:    | Xiamen Paperang Technology Co.,Ltd.                                             |
| Address:      | Room 3124,Xuanye Building,Pioneer Park,Xiamen Torch High-tech Zone,Fujian,China |
| Manufacturer: | Xiamen Paperang Technology Co.,Ltd.                                             |
| Address:      | Room 3124,Xuanye Building,Pioneer Park,Xiamen Torch High-tech Zone,Fujian,China |

### 4.2 General Description of E.U.T.

|                              |                                                                                                                                                                                                                                                                 |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:                | Thermal Printer                                                                                                                                                                                                                                                 |
| Model No.:                   | P3,P3L,P3S,PAPERANG P3,PAPERANG-P3,P3B2,P3Y2,P3A2,P3Z2,P3N2,P3S2,P3C2,P3W2,P3X2                                                                                                                                                                                 |
| Operation Frequency:         | 2402-2480 MHz                                                                                                                                                                                                                                                   |
| Channel numbers:             | 40                                                                                                                                                                                                                                                              |
| Channel separation:          | 2 MHz                                                                                                                                                                                                                                                           |
| Modulation technology:       | GFSK                                                                                                                                                                                                                                                            |
| Data speed :                 | 1Mbps                                                                                                                                                                                                                                                           |
| Antenna Type:                | PCB Antenna                                                                                                                                                                                                                                                     |
| Antenna gain:                | 0dBi                                                                                                                                                                                                                                                            |
| Power supply:                | Battery                                                                                                                                                                                                                                                         |
| AC adapter:                  | N/A                                                                                                                                                                                                                                                             |
| Differences of series model: | Only the model name and appearance color are different between each model, others are the same, the difference does not affect the safety and electromagnetic compatibility performance of the product., so full tests were performed on the model PAPERANG-P3. |

| Operation Frequency each of channel                                                                                                                                                                                                                                                               |           |         |           |         |           |         |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                                                                                                                                                                                                                                                                                           | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 0                                                                                                                                                                                                                                                                                                 | 2402MHz   | 10      | 2422MHz   | 20      | 2442MHz   | 30      | 2462MHz   |
| 1                                                                                                                                                                                                                                                                                                 | 2404MHz   | 11      | 2424MHz   | 21      | 2444MHz   | 31      | 2464MHz   |
| 2                                                                                                                                                                                                                                                                                                 | 2406MHz   | 12      | 2426MHz   | 22      | 2446MHz   | 32      | 2466MHz   |
| 3                                                                                                                                                                                                                                                                                                 | 2408MHz   | 13      | 2428MHz   | 23      | 2448MHz   | 33      | 2468MHz   |
| 4                                                                                                                                                                                                                                                                                                 | 2410MHz   | 14      | 2430MHz   | 24      | 2450MHz   | 34      | 2470MHz   |
| 5                                                                                                                                                                                                                                                                                                 | 2412MHz   | 15      | 2432MHz   | 25      | 2452MHz   | 35      | 2472MHz   |
| 6                                                                                                                                                                                                                                                                                                 | 2414MHz   | 16      | 2434MHz   | 26      | 2454MHz   | 36      | 2474MHz   |
| 7                                                                                                                                                                                                                                                                                                 | 2416MHz   | 17      | 2436MHz   | 27      | 2456MHz   | 37      | 2476MHz   |
| 8                                                                                                                                                                                                                                                                                                 | 2418MHz   | 18      | 2438MHz   | 28      | 2458MHz   | 38      | 2478MHz   |
| 9                                                                                                                                                                                                                                                                                                 | 2420MHz   | 19      | 2440MHz   | 29      | 2460MHz   | 39      | 2480MHz   |
| <p>Note:</p> <p>In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test. Channel No. 0, 19&amp; 39 were selected as Lowest, Middle and Highest channel.</p> |           |         |           |         |           |         |           |

### 4.3 Test environment and test mode

| Operating Environment:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Temp.erature:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 24.0 °C                                                 |
| Humi.dity:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 54 % RH                                                 |
| Atmospheric Pressure:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1010 mbar                                               |
| Test mode:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                         |
| Transmitting mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Keep the EUT in continuous transmitting with modulation |
| The sample was placed 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. Duty cycle setting during the transmission is 100% with maximum power setting for all modulations. |                                                         |

### 4.4 Description of Support Units

|                                                 |
|-------------------------------------------------|
| The EUT has been tested as an independent unit. |
|-------------------------------------------------|

### 4.5 Measurement Uncertainty

| Parameters                          | Expanded Uncertainty |
|-------------------------------------|----------------------|
| Conducted Emission (150kHz ~ 30MHz) | ±2.8 dB (k=2)        |
| Radiated Emission (9kHz ~ 30MHz)    | ±2.5 dB (k=2)        |
| Radiated Emission (30MHz ~ 1000MHz) | ±4.1 dB (k=2)        |
| Radiated Emission (1GHz ~ 18GHz)    | ±5.2 dB (k=2)        |
| Radiated Emission (18GHz ~ 40GHz)   | ±4.8 dB (k=2)        |

### 4.6 Additions to, deviations, or exclusions from the method

|    |
|----|
| No |
|----|

### 4.7 Laboratory Facility

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC - Designation No.: CN1279</b><br/>Jianyan Testing Group Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 892155.</li> <li>● <b>ISED – CAB identifier.: CN0102</b><br/>Jianyan Testing Group Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with ISED#:26114.</li> <li>● <b>A2LA - Registration No.: 5568.01</b><br/>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/5568-01.pdf">https://portal.a2la.org/scopepdf/5568-01.pdf</a></li> </ul> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 4.8 Laboratory Location

|                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>JianYan Testing Group Co., Ltd.<br/>Address: No.760, Fengling Road, Tong'an District, Xiamen, Fujian, China<br/>Tel: +86-592-2273071, Fax: +86-592-2273700<br/>Email: info-JYTee@lets.com, Website: <a href="http://www.lets.com/">http://www.lets.com/</a></p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 4.9 Test Instruments list

| Radiated Disturbances: |                 |             |                     |                      |                          |
|------------------------|-----------------|-------------|---------------------|----------------------|--------------------------|
| Test Equipment         | Manufacturer    | Model No.   | Serial No.          | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| 3m SAC                 | BOST            | CHC-966     | 966-1#              | 2019-12-27           | 2022-12-26               |
| EMI Test Receiver      | Rohde & Schwarz | ESR 3       | 102329              | 2021-07-29           | 2022-07-28               |
| SpectrumAnalyzer       | Rohde & Schwarz | FSV40-N     | 102175              | 2021-04-12           | 2022-04-11               |
| BiConiLog Antenna      | SCHWARZBECK     | VULB 9163   | 1105                | 2021-12-05           | 2022-12-04               |
| Horn Antenna           | SCHWARZBECK     | BBHA 9120 D | 911                 | 2021-03-17           | 2022-03-16               |
| Pre-amplifier          | SCHWARZBECK     | BBV9743     | 00009               | 2021-07-29           | 2022-07-28               |
| Pre-amplifier          | SCHWARZBECK     | BBV9718C    | 00014               | 2021-04-01           | 2022-03-31               |
| EMI Test Software      | Farad           | EZ-EMC      | Version: V.EMCE-3A1 |                      |                          |

| Conducted Emission: |                 |           |                     |                      |                          |
|---------------------|-----------------|-----------|---------------------|----------------------|--------------------------|
| Test Equipment      | Manufacturer    | Model No. | Serial No.          | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| EMI Test Receiver   | Rohde & Schwarz | ESR 3     | 102330              | 2021-07-29           | 2022-07-28               |
| LISN                | Rohde & Schwarz | ENV 216   | 102240              | 2021-07-29           | 2022-07-28               |
| LISN                | AFJ/Italy       | LS16C\10  | 16012020470         | 2021-06-22           | 2022-06-21               |
| EMI Test Software   | Farad           | EZ-EMC    | Version: V.EMCE-3A1 |                      |                          |

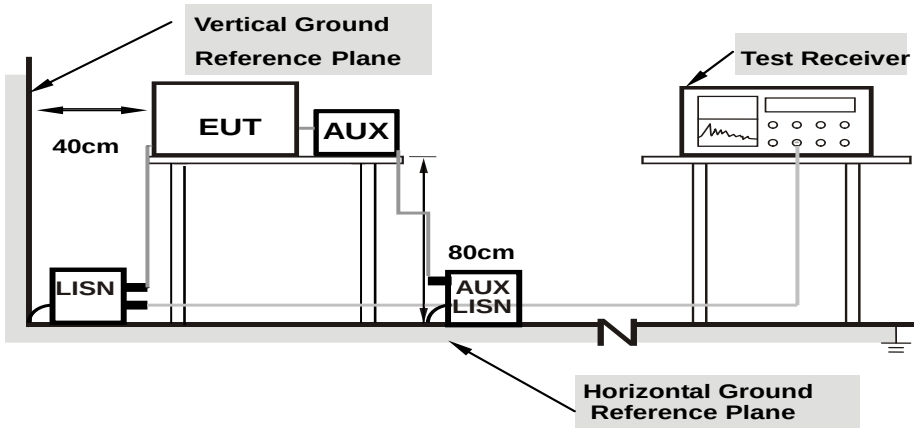
| Conducted method:                   |              |           |                  |                      |                          |
|-------------------------------------|--------------|-----------|------------------|----------------------|--------------------------|
| Test Equipment                      | Manufacturer | Model No. | Serial No.       | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| Signal Generator                    | Agilent      | N5181     | MY49060122       | 2021-04-12           | 2022-04-11               |
| Spectre Analyzer                    | R&S          | FSV40-N   | 102175           | 2021-04-12           | 2022-04-11               |
| Wideband Radio Communication Tester | R&S          | CMW500    | 145852           | 2021-04-12           | 2022-04-11               |
| Signal Generator                    | Agilent      | N5182A    | MY51004823       | 2021-04-12           | 2022-04-11               |
| Power Sensor                        | Keysight     | U2021XA   | MY54320004       | 2021-04-01           | 2022-03-31               |
| Test Software                       | MWRFTTEST    | MTS 8310  | Version: 2.0.0.0 |                      |                          |

## 5 Test results and Measurement Data

### 5.1 Antenna requirement:

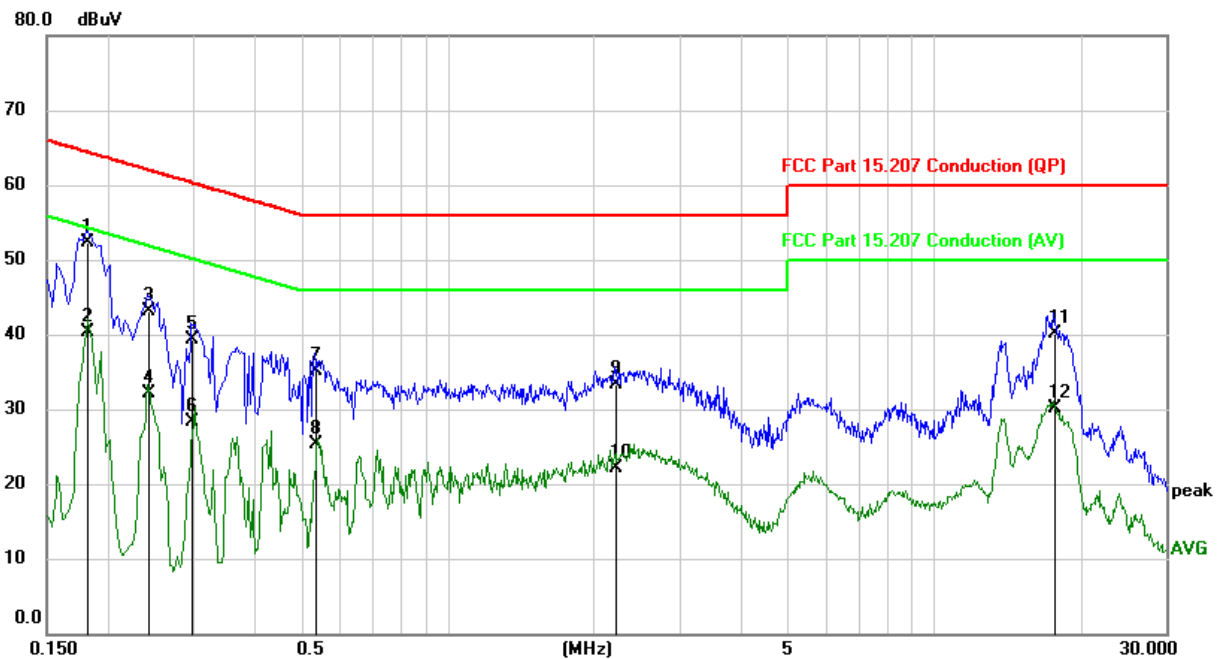
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>Standard requirement:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | FCC Part15 C Section 15.203 /247(b) |
| <p>15.203 requirement:<br/>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.</p> <p>15.247(b) (4) requirement:<br/>(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.</p> |                                     |
| <b>E.U.T Antenna:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |
| <p>The Bluetooth antenna is an Internal antenna which permanently attached, and the best case gain of the antenna is 0 dBi.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |

## 5.2 Conducted Emission

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |           |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| Test Requirement:                                | FCC Part15 C Section 15.207                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |           |
| Test Frequency Range:                            | 150 kHz to 30MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |           |
| Class / Severity:                                | Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |           |
| Receiver setup:                                  | RBW=9kHz, VBW=30kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |           |
| 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 procedure:                                  | <ol style="list-style-type: none"> <li>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10(latest version) on conducted measurement.</li> </ol> |              |           |
| Test setup:                                      |  <p><b>Note: 1.Support units were connected to second LISN.</b><br/> <b>2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |           |
| Test Instruments:                                | Refer to section 4.9 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |           |
| Test mode:                                       | Charging + BLE Link.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |           |
| Test results:                                    | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |           |

## Measurement Data:

|                |                         |              |          |
|----------------|-------------------------|--------------|----------|
| Product model: | PAPERANG-P3             | Test result: | pass     |
| Test by:       | Raymon Zheng            | Test mode:   | Mode 1   |
| Test voltage:  | 120Vac, 60 Hz           | Phase:       | Line (N) |
| Environment:   | Temp.: 22.3℃ Humi.: 46% |              |          |

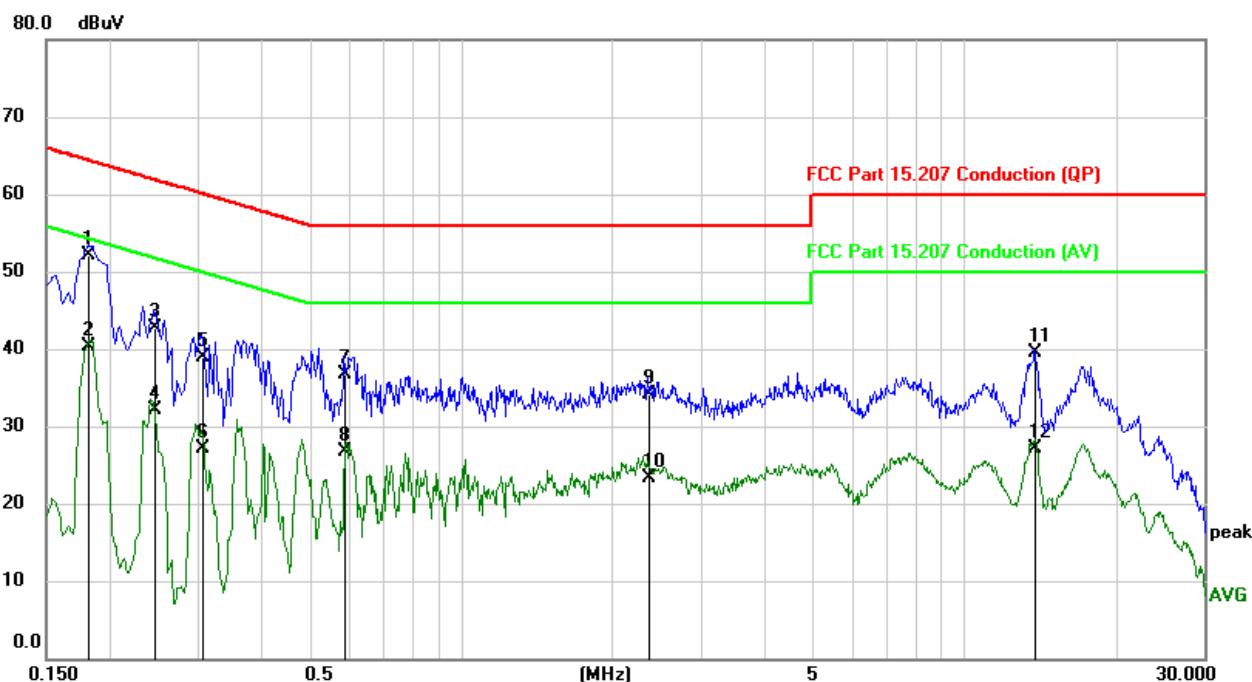


| No. | Mk. | Freq.   | Reading Level | Correct Factor | Measurement | Limit | Over   |          |
|-----|-----|---------|---------------|----------------|-------------|-------|--------|----------|
|     |     | MHz     | dBuV          | dB             | dBuV        | dBuV  | dB     | Detector |
| 1   | *   | 0.1808  | 42.68         | 9.66           | 52.34       | 64.45 | -12.11 | QP       |
| 2   |     | 0.1808  | 30.67         | 9.66           | 40.33       | 54.45 | -14.12 | AVG      |
| 3   |     | 0.2420  | 33.41         | 9.71           | 43.12       | 62.03 | -18.91 | QP       |
| 4   |     | 0.2420  | 22.39         | 9.71           | 32.10       | 52.03 | -19.93 | AVG      |
| 5   |     | 0.2980  | 29.67         | 9.73           | 39.40       | 60.30 | -20.90 | QP       |
| 6   |     | 0.2980  | 18.67         | 9.73           | 28.40       | 50.30 | -21.90 | AVG      |
| 7   |     | 0.5340  | 25.35         | 9.77           | 35.12       | 56.00 | -20.88 | QP       |
| 8   |     | 0.5340  | 15.53         | 9.77           | 25.30       | 46.00 | -20.70 | AVG      |
| 9   |     | 2.2060  | 23.62         | 9.78           | 33.40       | 56.00 | -22.60 | QP       |
| 10  |     | 2.2060  | 12.42         | 9.78           | 22.20       | 46.00 | -23.80 | AVG      |
| 11  |     | 17.5739 | 30.29         | 9.91           | 40.20       | 60.00 | -19.80 | QP       |
| 12  |     | 17.5739 | 20.29         | 9.91           | 30.20       | 50.00 | -19.80 | AVG      |

## Notes:

- An initial pre-scan was performed on the line and neutral lines with peak detector.
- Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- Final Level = Receiver Read level + LISN Factor + Cable Loss.

|                |                         |              |          |
|----------------|-------------------------|--------------|----------|
| Product model: | PAPERANG-P3             | Test result: | pass     |
| Test by:       | Raymon Zheng            | Test mode:   | Mode 1   |
| Test voltage:  | 120Vac, 60 Hz           | Phase:       | Line (L) |
| Environment:   | Temp.: 22.3℃ Humi.: 46% |              |          |



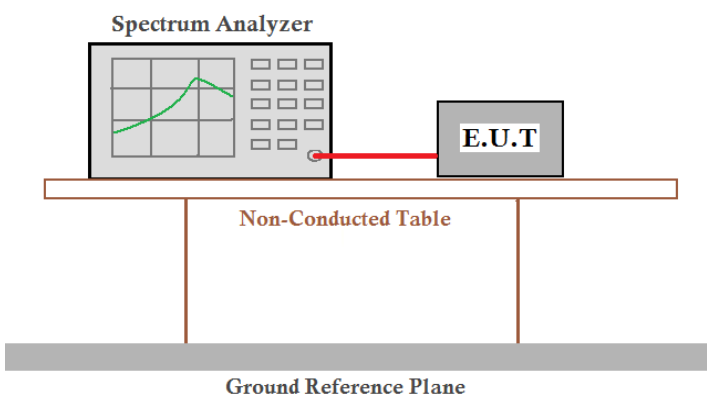
(Plot B:L Phase)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1   | *   | 0.1821       | 42.31                    | 9.80                    | 52.11                    | 64.39         | -12.28     | QP       |
| 2   |     | 0.1821       | 30.59                    | 9.80                    | 40.39                    | 54.39         | -14.00     | AVG      |
| 3   |     | 0.2460       | 33.09                    | 9.71                    | 42.80                    | 61.89         | -19.09     | QP       |
| 4   |     | 0.2460       | 22.39                    | 9.71                    | 32.10                    | 51.89         | -19.79     | AVG      |
| 5   |     | 0.3060       | 29.35                    | 9.61                    | 38.96                    | 60.08         | -21.12     | QP       |
| 6   |     | 0.3060       | 17.59                    | 9.61                    | 27.20                    | 50.08         | -22.88     | AVG      |
| 7   |     | 0.5860       | 26.91                    | 9.89                    | 36.80                    | 56.00         | -19.20     | QP       |
| 8   |     | 0.5860       | 16.91                    | 9.89                    | 26.80                    | 46.00         | -19.20     | AVG      |
| 9   |     | 2.3460       | 24.23                    | 9.87                    | 34.10                    | 56.00         | -21.90     | QP       |
| 10  |     | 2.3460       | 13.53                    | 9.87                    | 23.40                    | 46.00         | -22.60     | AVG      |
| 11  |     | 13.8139      | 29.40                    | 10.05                   | 39.45                    | 60.00         | -20.55     | QP       |
| 12  |     | 13.8139      | 17.15                    | 10.05                   | 27.20                    | 50.00         | -22.80     | AVG      |

## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss.

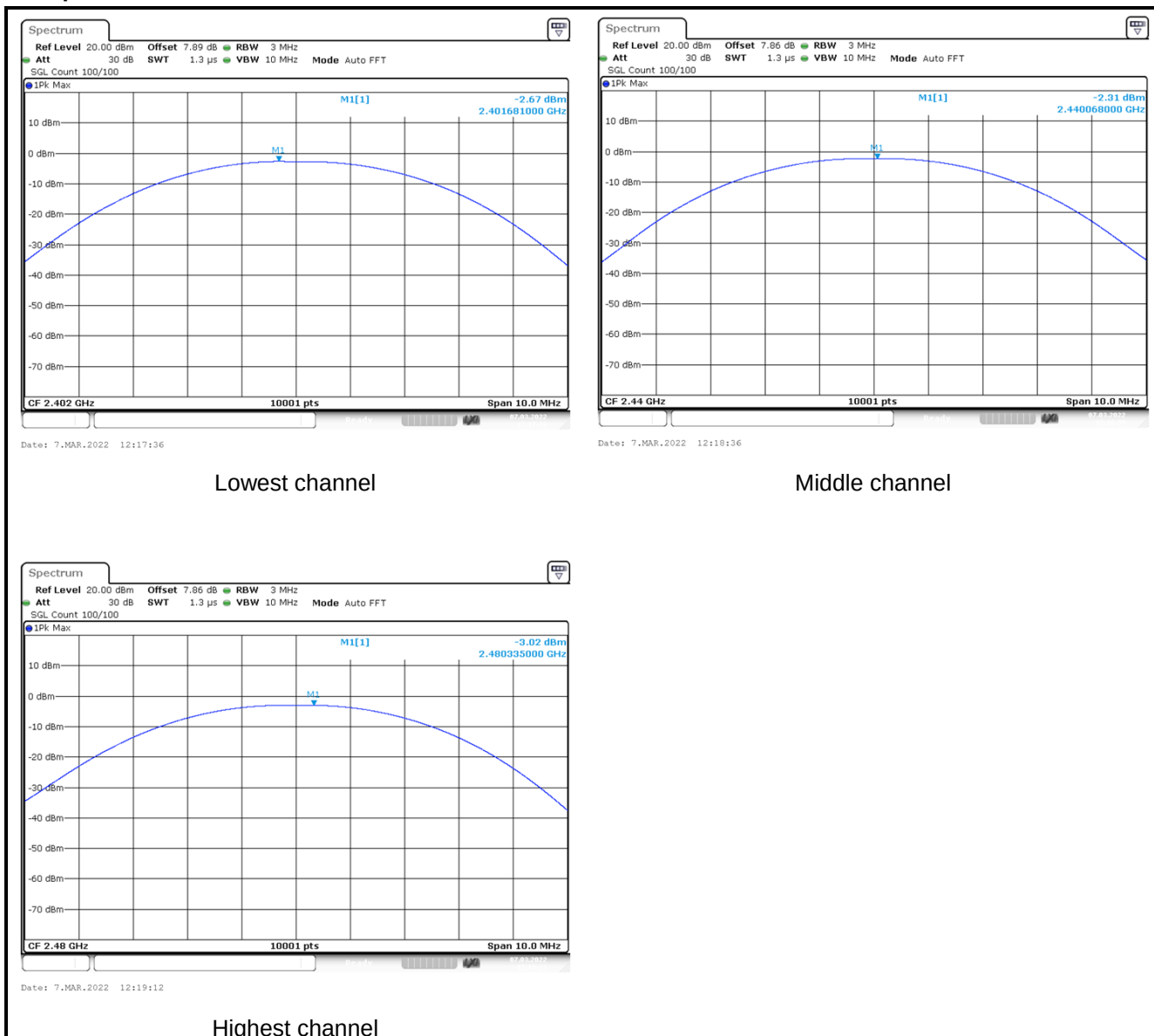
### 5.3 Conducted Output Power

|                   |                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (b)(3)                                                                                                                                                                                                                                                                                                                       |
| Limit:            | 30dBm                                                                                                                                                                                                                                                                                                                                                    |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 4.9 for details                                                                                                                                                                                                                                                                                                                         |
| Test mode:        | Refer to section 4.3 for details                                                                                                                                                                                                                                                                                                                         |
| Test results:     | Passed                                                                                                                                                                                                                                                                                                                                                   |

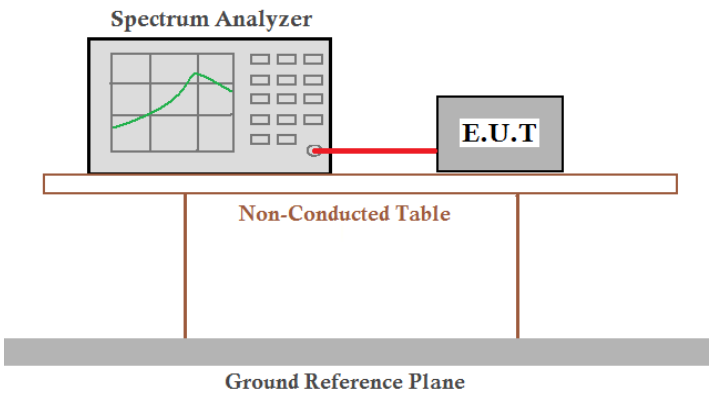
#### Measurement Data:

| Test CH | Maximum Conducted Output Power (dBm) | Limit(dBm) | Result |
|---------|--------------------------------------|------------|--------|
| Lowest  | -2.668                               | 30.00      | Pass   |
| Middle  | -2.306                               |            |        |
| Highest | -3.017                               |            |        |

Test plot as follows:



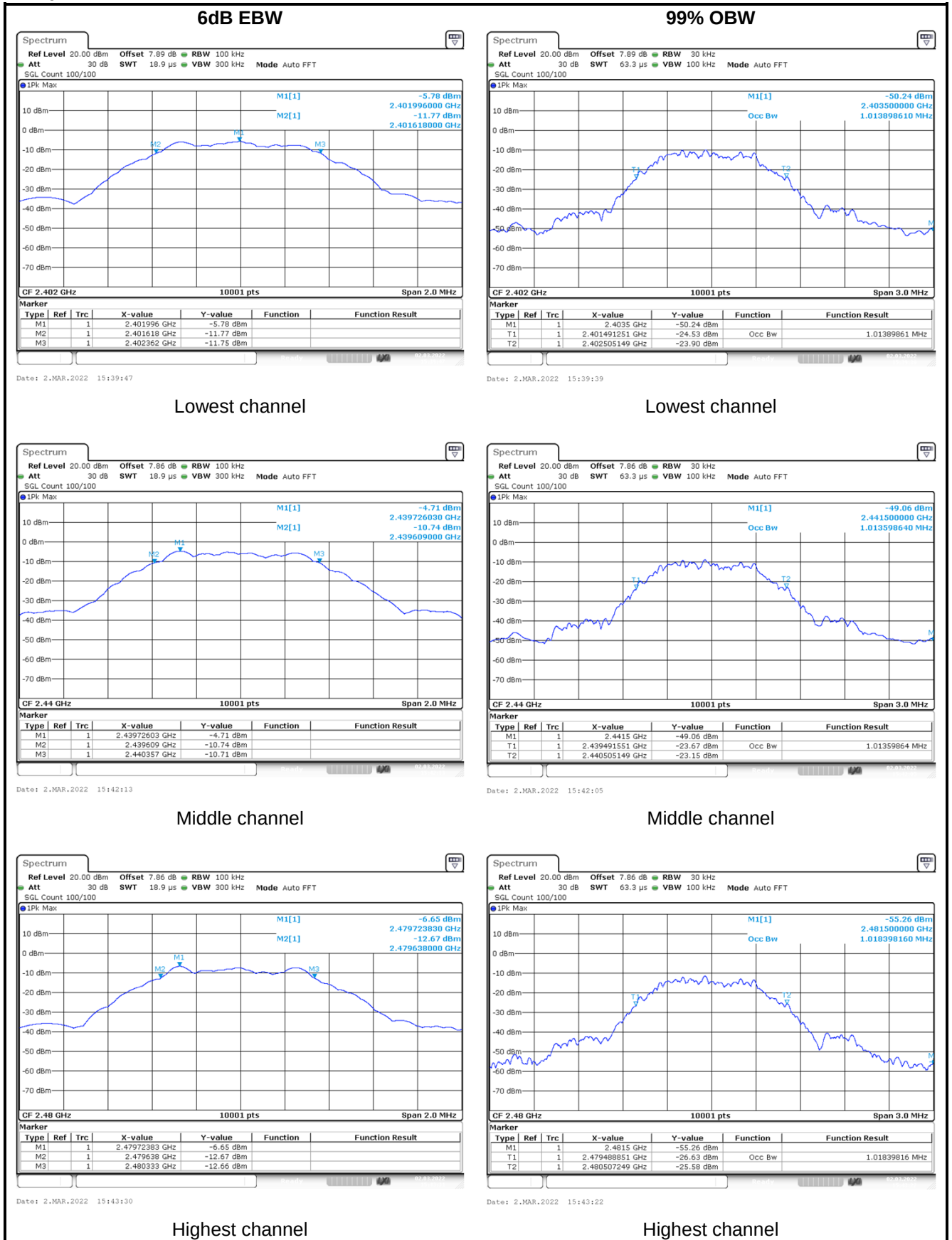
## 5.4 Occupy Bandwidth

|                   |                                                                                    |
|-------------------|------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (a)(2)                                                 |
| Limit:            | >500kHz                                                                            |
| Test setup:       |  |
| Test Instruments: | Refer to section 4.9 for details                                                   |
| Test mode:        | Refer to section 4.3 for details                                                   |
| Test results:     | Passed                                                                             |

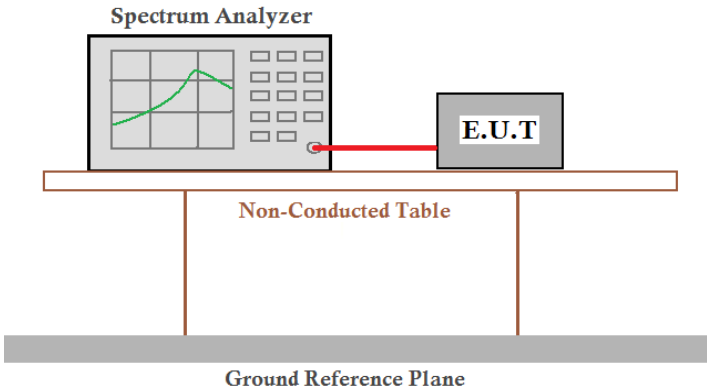
### Measurement Data:

| Test CH | 6dB Emission Bandwidth (MHz) | Limit(kHz) | Result |
|---------|------------------------------|------------|--------|
| Lowest  | 0.745                        | >500       | Pass   |
| Middle  | 0.748                        |            |        |
| Highest | 0.694                        |            |        |
| Test CH | 99% Occupy Bandwidth (MHz)   | Limit(kHz) | Result |
| Lowest  | 1.014                        | N/A        | N/A    |
| Middle  | 1.014                        |            |        |
| Highest | 1.018                        |            |        |

Test plot as follows:



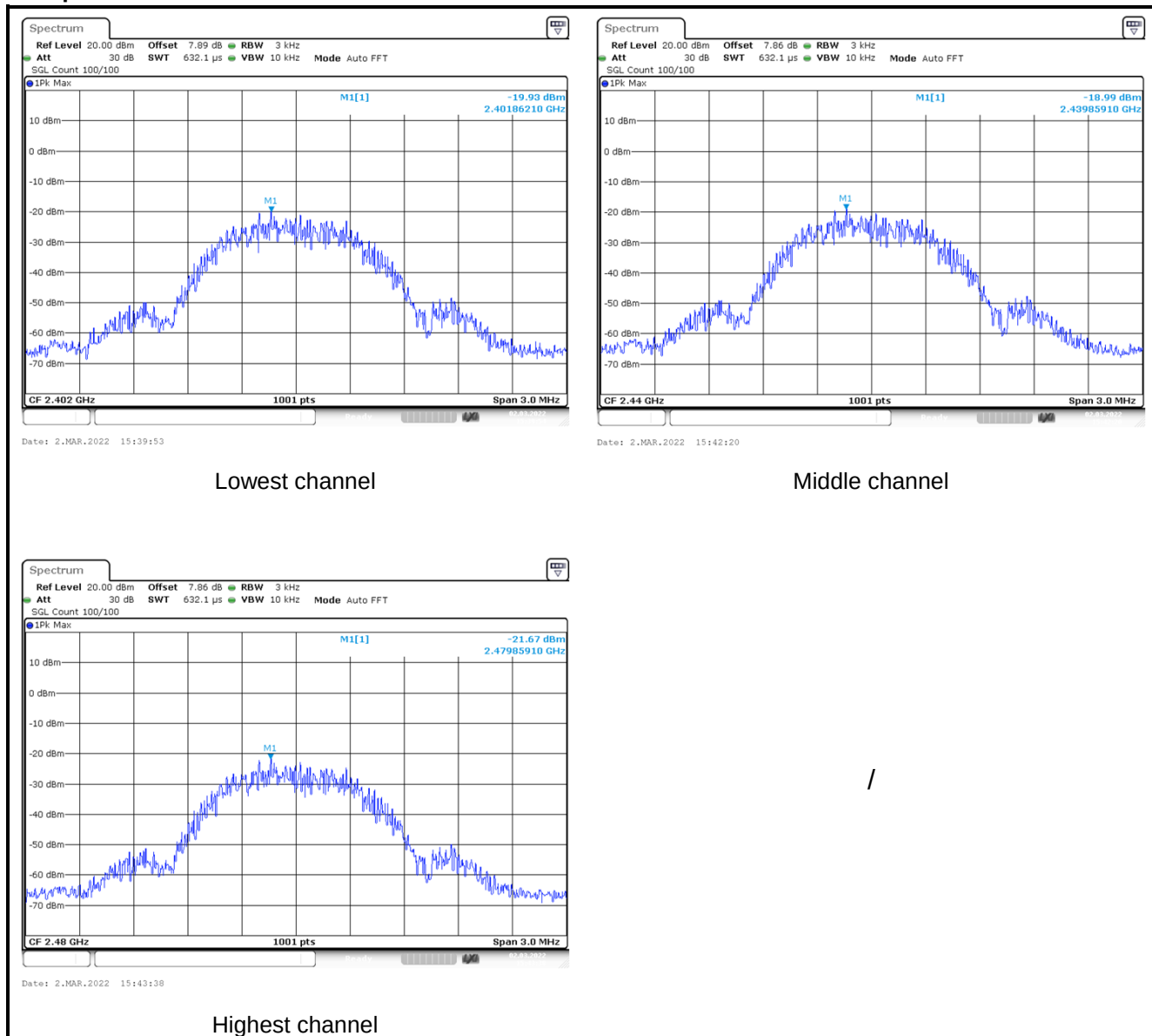
## 5.5 Power Spectral Density

|                   |                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (e)                                                                                                                                                                                                                                                                                                                          |
| Limit:            | 8dBm/3kHz                                                                                                                                                                                                                                                                                                                                                |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 4.9 for details                                                                                                                                                                                                                                                                                                                         |
| Test mode:        | Refer to section 4.3 for details                                                                                                                                                                                                                                                                                                                         |
| Test results:     | Passed                                                                                                                                                                                                                                                                                                                                                   |

### Measurement Data:

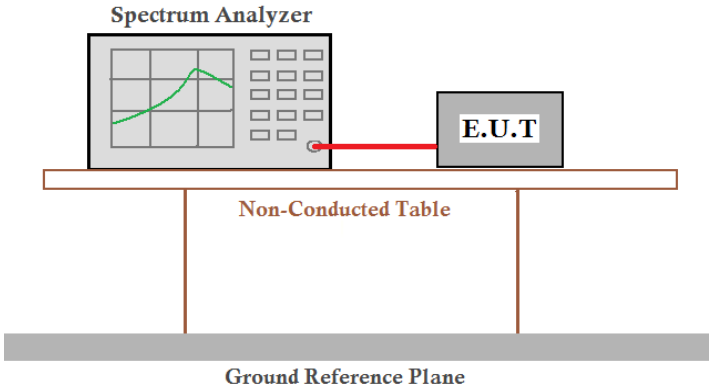
| Test CH | Power Spectral Density (dBm/3kHz) | Limit (dBm/3kHz) | Result |
|---------|-----------------------------------|------------------|--------|
| Lowest  | -19.928                           | 8.00             | Pass   |
| Middle  | -18.994                           |                  |        |
| Highest | -21.670                           |                  |        |

Test plots as follow:

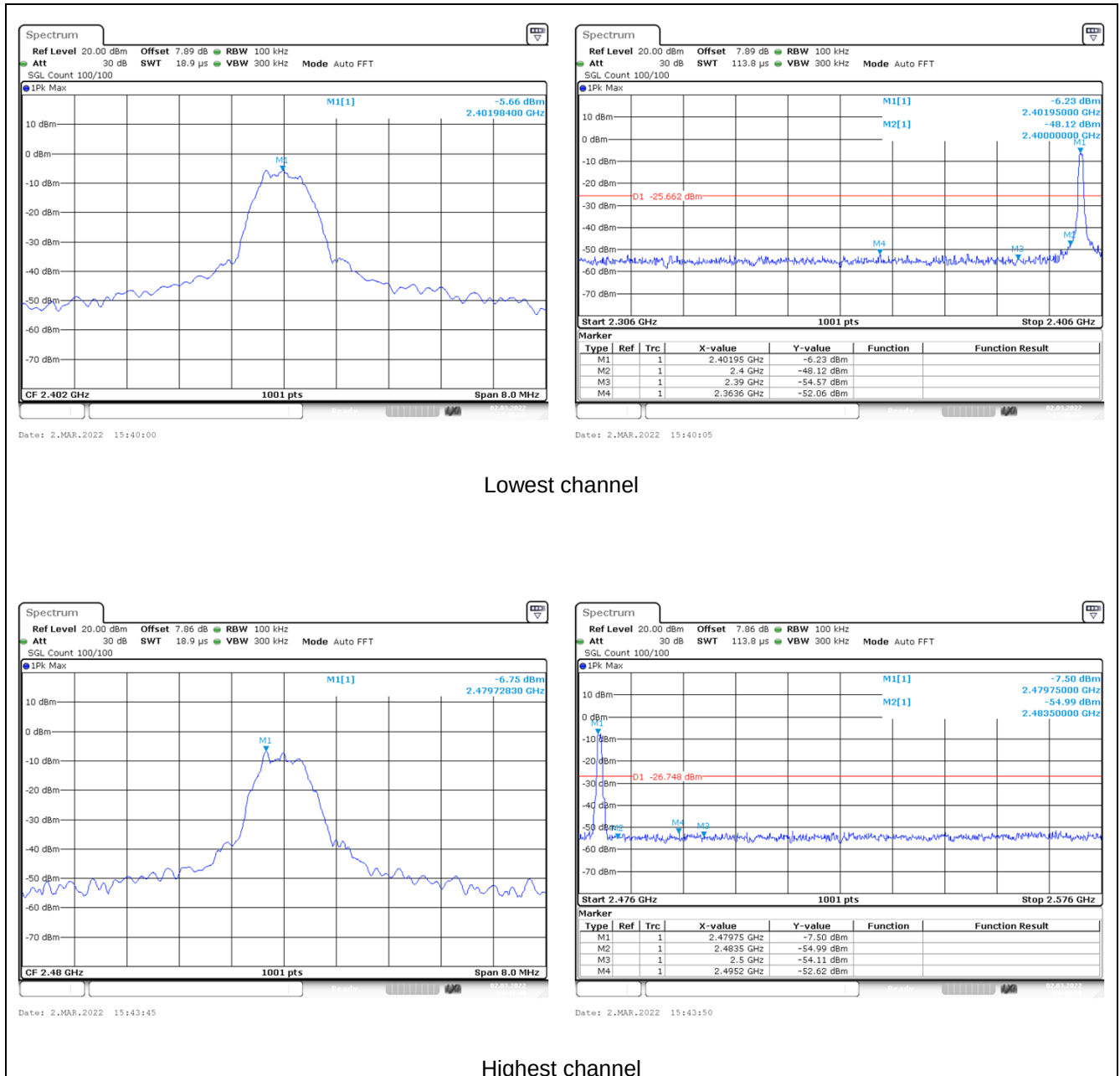


## 5.6 Band Edge

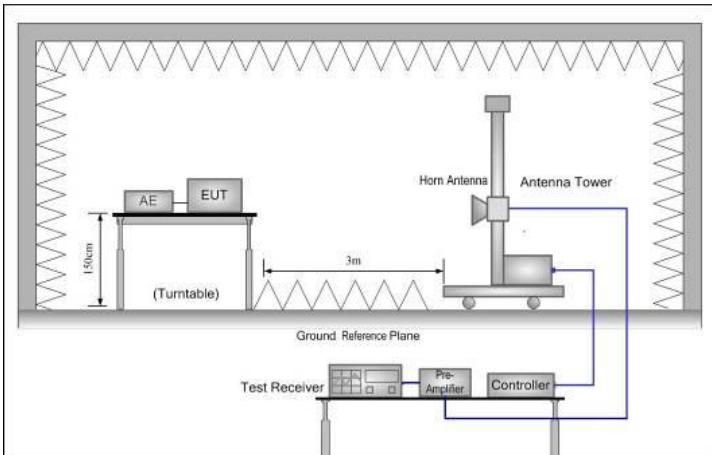
### 5.6.1 Conducted Emission Method

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Limit:            | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.                                                                                                                                    |
| Test setup:       |  <p>The diagram illustrates the test setup for conducted emission measurements. A Spectrum Analyzer, shown with a grid and a green trace, is connected to an Equipment Under Test (E.U.T.) by a red cable. Both the Spectrum Analyzer and the E.U.T. are positioned on a table labeled 'Non-Conducted Table'. This table is supported by two vertical legs and sits on a thick grey horizontal bar labeled 'Ground Reference Plane'.</p> |
| Test Instruments: | Refer to section 4.9 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Test mode:        | Refer to section 4.3 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Test results:     | Passed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

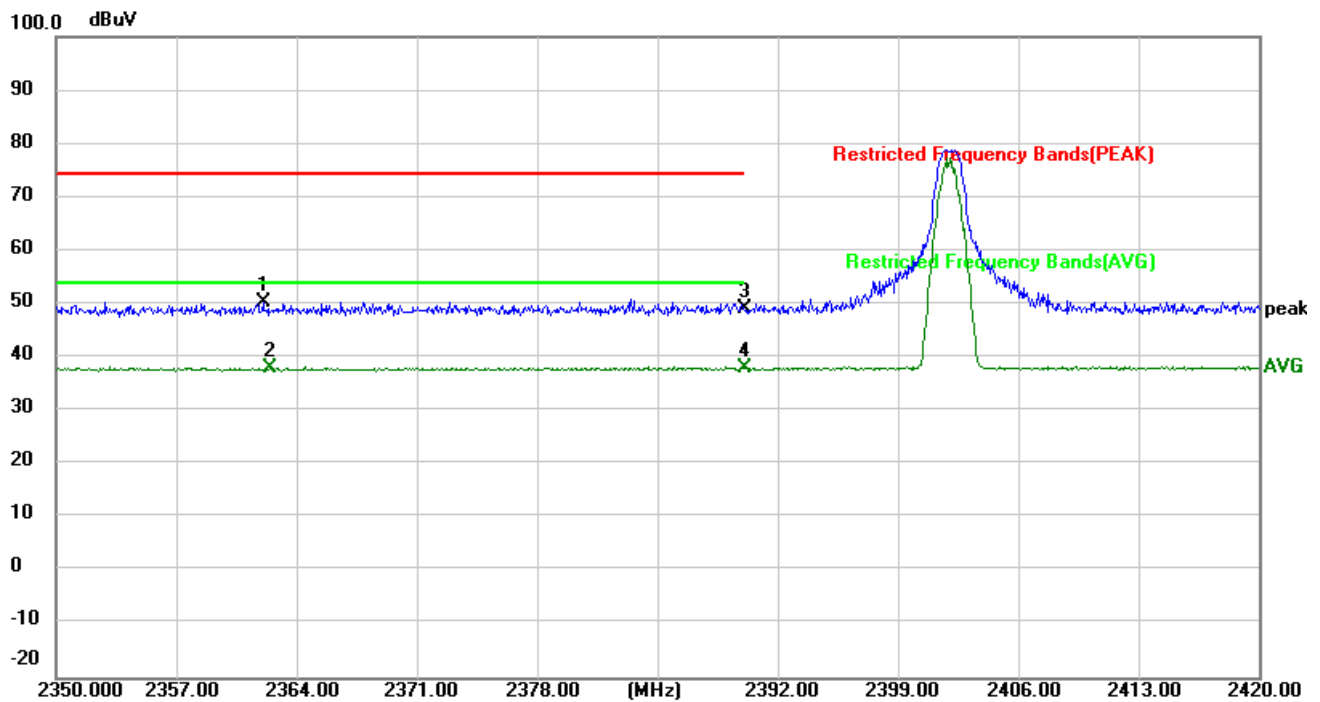
### Test plots as follow:



### 5.6.2 Radiated Emission Method

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                    |      |               |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|------|---------------|
| Test Requirement:     | FCC Part15 C Section 15.205 and 15.209                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                    |      |               |
| Test Frequency Range: | 2380 MHz to 2410 MHz and 2465MHz to 2520 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                    |      |               |
| TestDistance:         | 3m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                    |      |               |
| Receiver setup:       | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Detector | RBW                | VBW  | Remark        |
|                       | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Peak     | 1MHz               | 3MHz | Peak Value    |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | RMS      | 1MHz               | 3MHz | Average Value |
| Limit:                | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          | Limit (dBuV/m @3m) |      | Remark        |
|                       | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          | 54.00              |      | Average Value |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          | 74.00              |      | Peak Value    |
| Test Procedure:       | <div>1. The EUT was placed on the top of a rotating table 1.5 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.</div> <div>2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.</div> <div>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</div> <div>4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.</div> <div>5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.</div> <div>6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</div> |          |                    |      |               |
| Test setup:           | <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                    |      |               |
| Test Instruments:     | Refer to section 4.9 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |                    |      |               |
| Test mode:            | Refer to section 4.3 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |                    |      |               |
| Test results:         | Passed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                    |      |               |

|               |                 |                |                        |
|---------------|-----------------|----------------|------------------------|
| Product Name: | Thermal Printer | Product Model: | PAPERANG-P3            |
| Test By:      | Raymon Zheng    | Test mode:     | BLE Tx mode            |
| Test Channel: | Lowest channel  | Polarization:  | Vertical               |
| Test Voltage: | DC5V            | Environment:   | Temp.:23.6℃ Humi.: 48% |

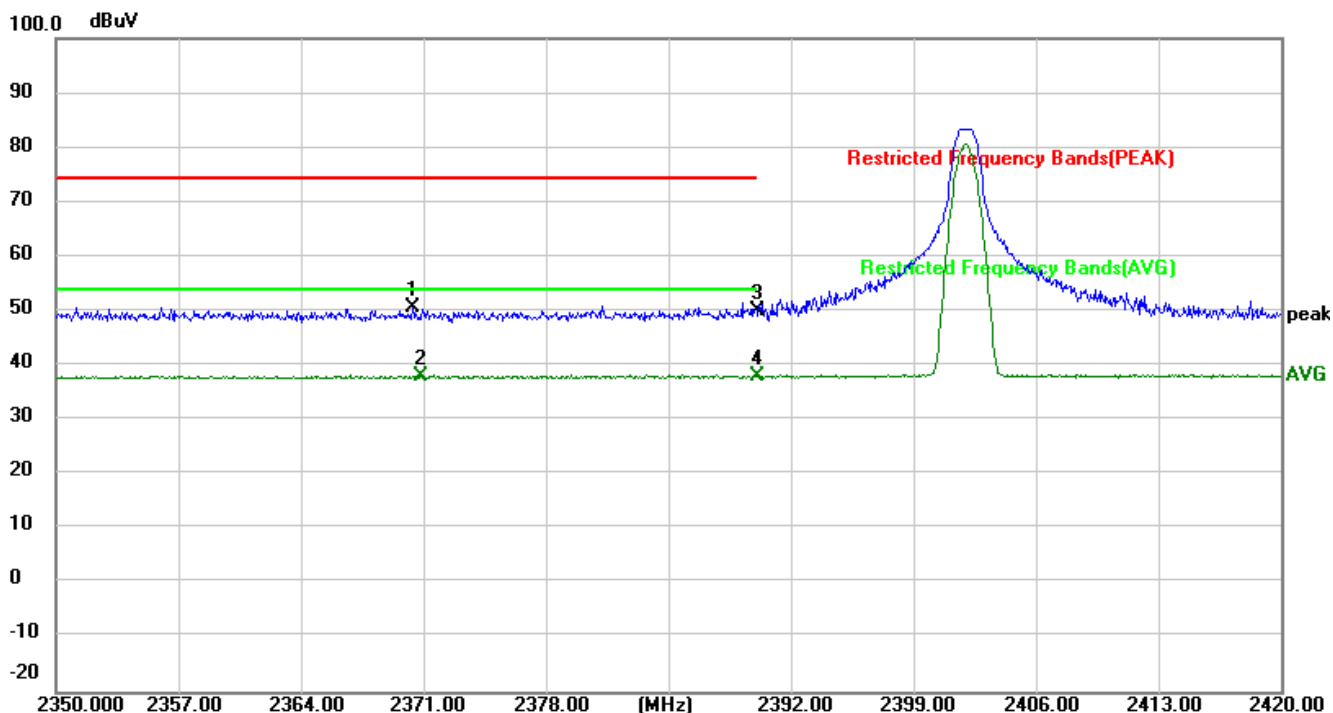


| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1   |     | 2362.040     | 57.01                    | -6.68                   | 50.33                    | 74.00         | 23.67      | peak     |
| 2   |     | 2362.460     | 44.67                    | -6.68                   | 37.99                    | 54.00         | 16.01      | AVG      |
| 3   |     | 2390.000     | 55.92                    | -6.67                   | 49.25                    | 74.00         | 24.75      | peak     |
| 4   | *   | 2390.000     | 44.86                    | -6.67                   | 38.19                    | 54.00         | 15.81      | AVG      |

Remark:

- Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

|               |                 |                |                         |
|---------------|-----------------|----------------|-------------------------|
| Product Name: | Thermal Printer | Product Model: | PAPERANG-P3             |
| Test By:      | Raymon Zheng    | Test mode:     | BLE Tx mode             |
| Test Channel: | Lowest channel  | Polarization:  | Horizontal              |
| Test Voltage: | DC5V            | Environment:   | Temp.: 23.6℃ Humi.: 48% |

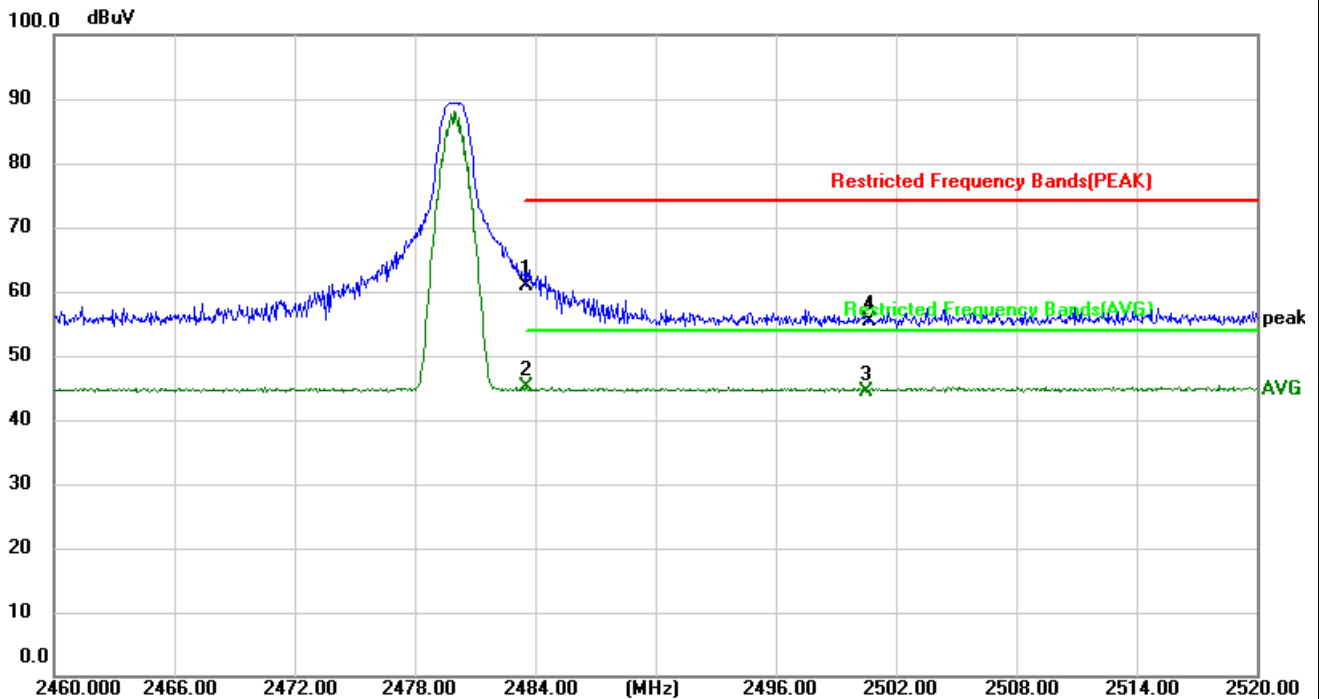


| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1   |     | 2370.370     | 57.22                    | -6.67                   | 50.55                    | 74.00         | 23.45      | peak     |
| 2   |     | 2370.860     | 44.71                    | -6.67                   | 38.04                    | 54.00         | 15.96      | AVG      |
| 3   |     | 2390.000     | 56.74                    | -6.67                   | 50.07                    | 74.00         | 23.93      | peak     |
| 4   | *   | 2390.000     | 44.75                    | -6.67                   | 38.08                    | 54.00         | 15.92      | AVG      |

## Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

|               |                 |                |                         |
|---------------|-----------------|----------------|-------------------------|
| Product Name: | Thermal Printer | Product Model: | PAPERANG-P3             |
| Test By:      | Raymon Zheng    | Test mode:     | BLE Tx mode             |
| Test Channel: | Highest channel | Polarization:  | Vertical                |
| Test Voltage: | DC5V            | Environment:   | Temp.: 22.6℃ Humi.: 49% |

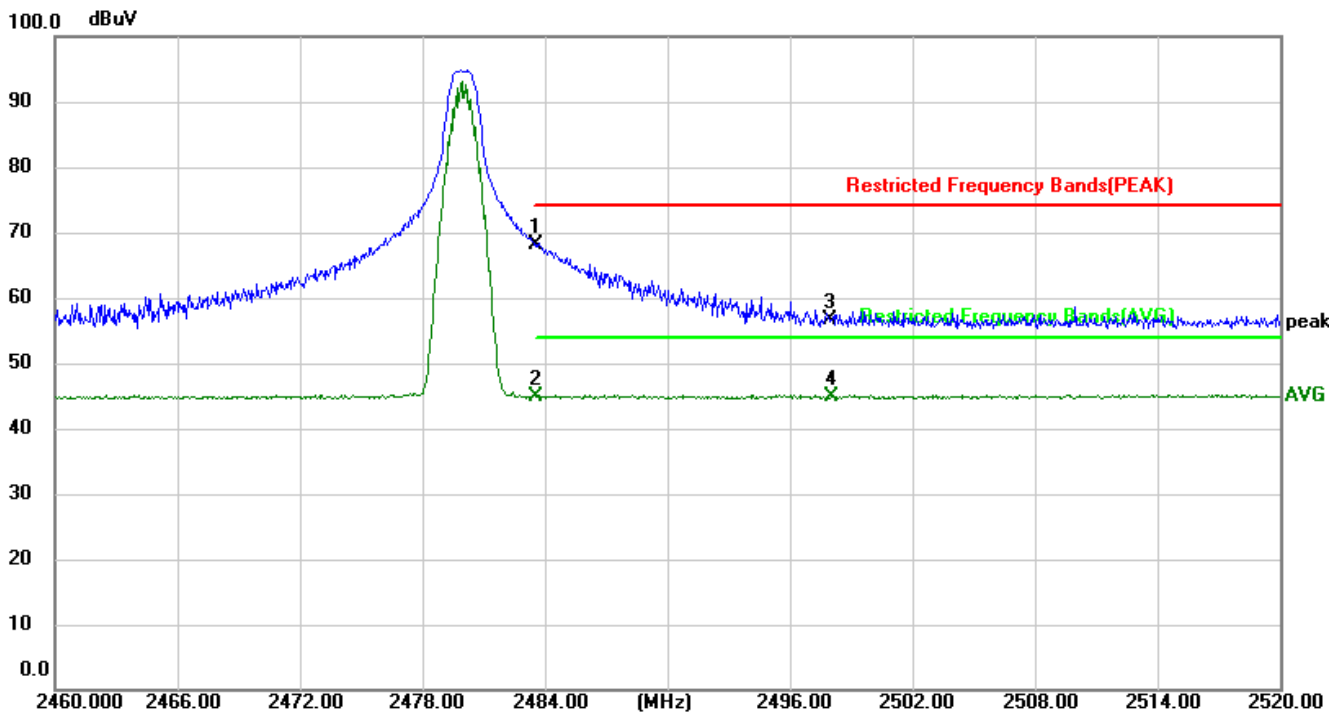


| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1   |     | 2483.500     | 61.15                    | -0.36                   | 60.79                    | 74.00         | 13.21      | peak     |
| 2   | *   | 2483.500     | 45.38                    | -0.36                   | 45.02                    | 54.00         | 8.98       | AVG      |
| 3   |     | 2500.500     | 44.86                    | -0.37                   | 44.49                    | 54.00         | 9.51       | AVG      |
| 4   |     | 2500.680     | 55.65                    | -0.37                   | 55.28                    | 74.00         | 18.72      | peak     |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

|               |                 |                |                         |
|---------------|-----------------|----------------|-------------------------|
| Product Name: | Thermal Printer | Product Model: | PAPERANG-P3             |
| Test By:      | Raymon Zheng    | Test mode:     | BLE Tx mode             |
| Test Channel: | Highest channel | Polarization:  | Horizontal              |
| Test Voltage: | DC5V            | Environment:   | Temp.: 22.6℃ Humi.: 49% |



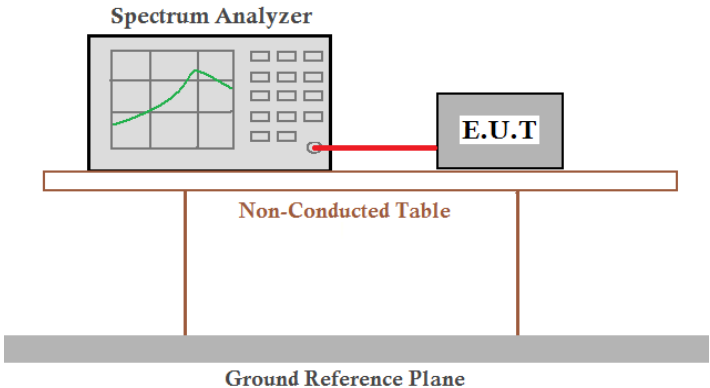
| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|
|     |     | MHz      | dBuV          | dB             | dBuV        | dBuV  | dB    | Detector |
| 1   | *   | 2483.500 | 68.41         | -0.36          | 68.05       | 74.00 | 5.95  | peak     |
| 2   |     | 2483.500 | 45.23         | -0.36          | 44.87       | 54.00 | 9.13  | AVG      |
| 3   |     | 2497.920 | 56.97         | -0.37          | 56.60       | 74.00 | 17.40 | peak     |
| 4   |     | 2498.040 | 45.27         | -0.37          | 44.90       | 54.00 | 9.10  | AVG      |

Remark:

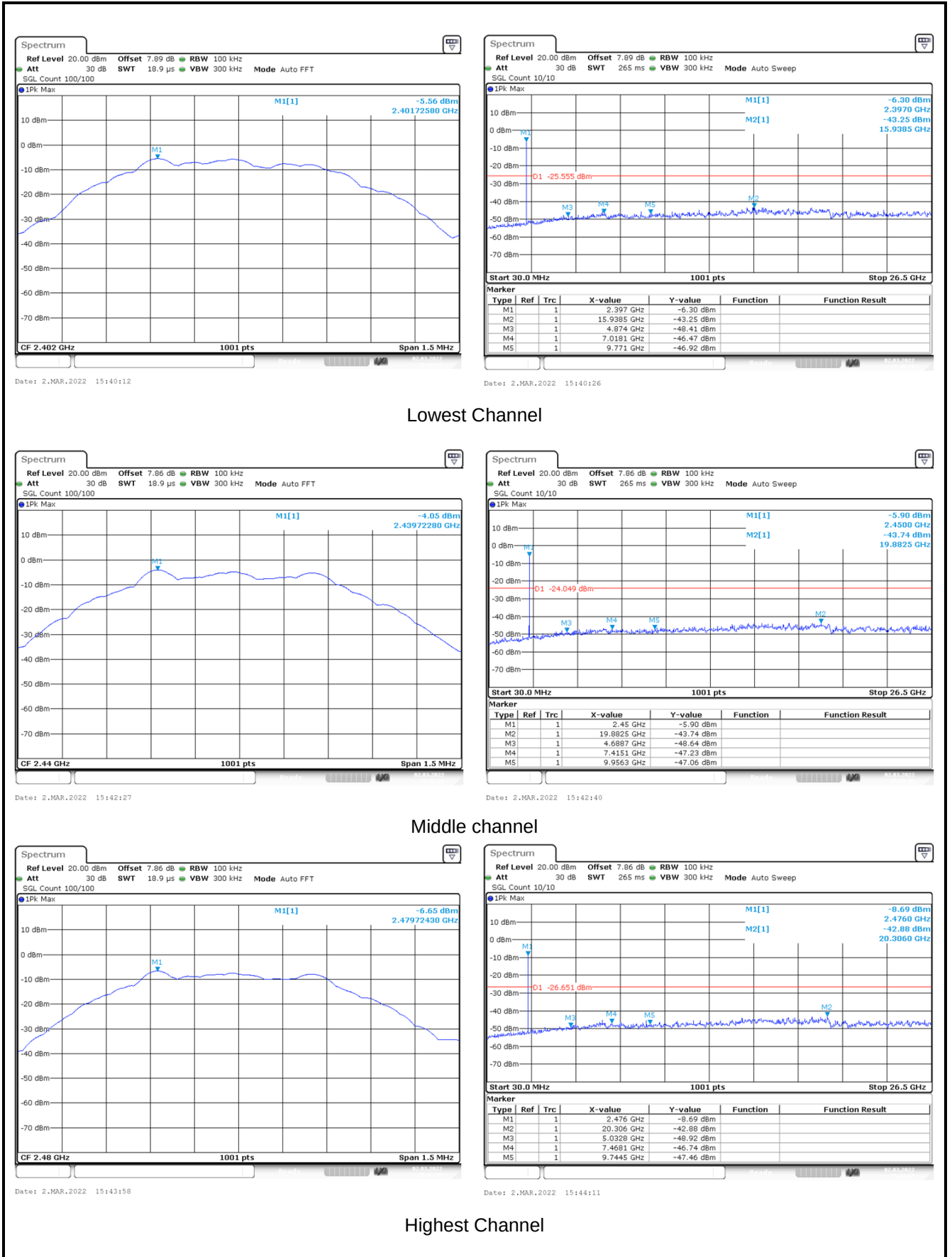
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 5.7 Spurious Emission

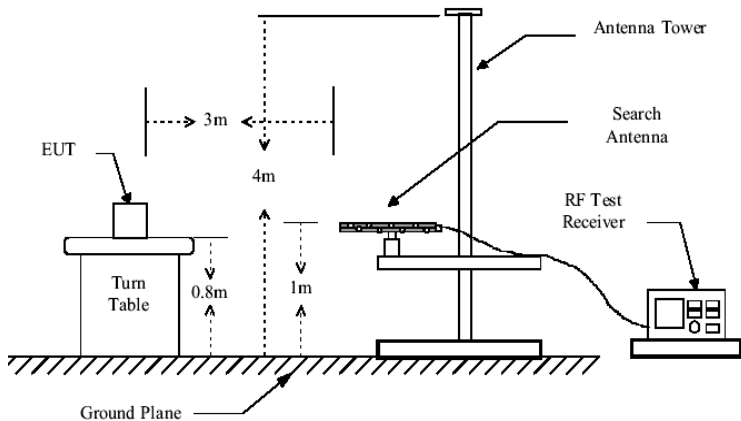
### 5.7.1 Conducted Emission Method

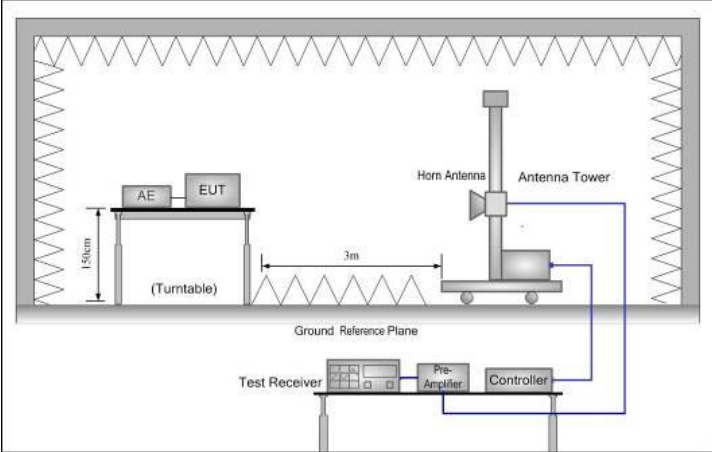
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Limit:            | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.                                                                                                            |
| Test setup:       |  <p>The diagram illustrates the test setup for conducted emissions. A Spectrum Analyzer, shown with a grid and a green trace, is connected to an Equipment Under Test (E.U.T) by a red cable. Both the Spectrum Analyzer and the E.U.T are positioned on a table labeled 'Non-Conducted Table'. This table is supported by two vertical legs and rests on a thick grey bar labeled 'Ground Reference Plane'.</p> |
| Test Instruments: | Refer to section 4.9 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Test mode:        | Refer to section 4.3 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Test results:     | Passed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

Test plot as follows:



### 5.7.2 Radiated Emission Method

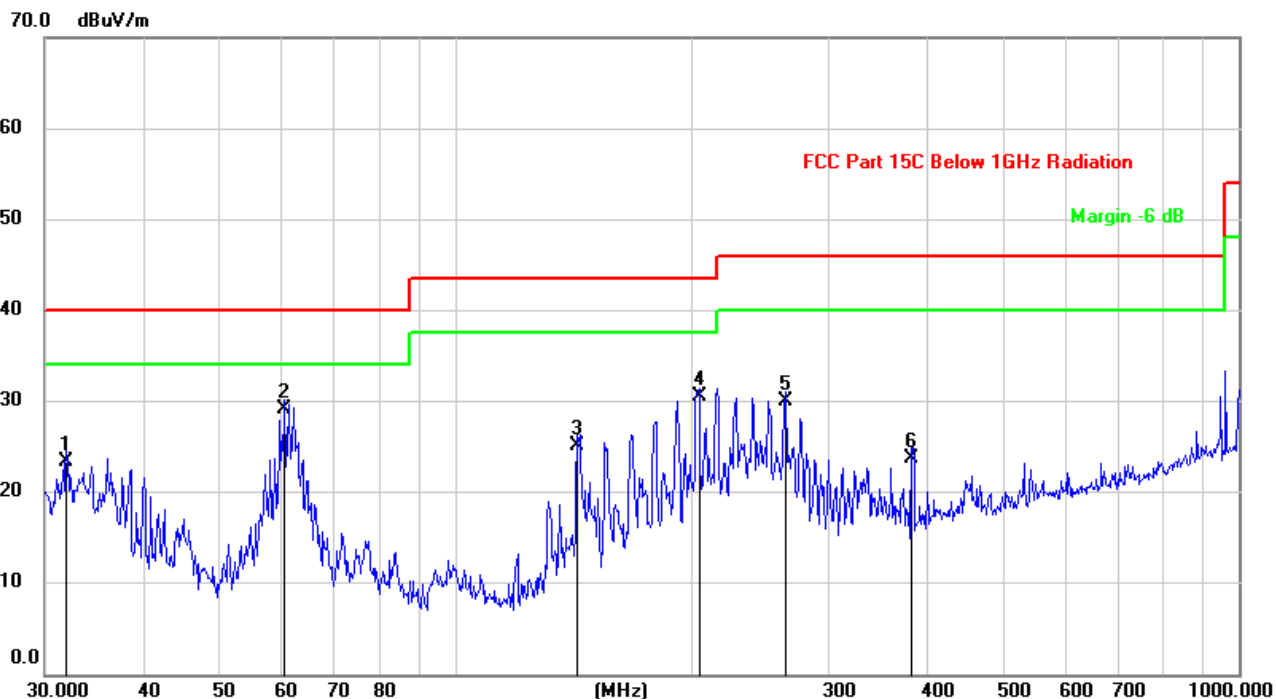
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                    |            |                  |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|------------------|
| Test Requirement:     | FCC Part15 C Section 15.205 and15.209                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                    |            |                  |
| Test Frequency Range: | 9kHz to 25GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                  |
| TestDistance:         | 3m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                    |            |                  |
| Receiver setup:       | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Detector   | RBW                | VBW        | Remark           |
|                       | 30MHz-1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Quasi-peak | 120KHz             | 300KHz     | Quasi-peak Value |
|                       | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Peak       | 1MHz               | 3MHz       | Peak Value       |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RMS        | 1MHz               | 3MHz       | Average Value    |
| Limit:                | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | Limit (dBuV/m @3m) |            | Remark           |
|                       | 30MHz-88MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | 40.0               |            | Quasi-peak Value |
|                       | 88MHz-216MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | 43.5               |            | Quasi-peak Value |
|                       | 216MHz-960MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | 46.0               |            | Quasi-peak Value |
|                       | 960MHz-1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | 54.0               |            | Quasi-peak Value |
|                       | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | 54.0               |            | Average Value    |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | 74.0               | Peak Value |                  |
| Test Procedure:       | <div>1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.</div> <div>2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.</div> <div>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</div> <div>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.</div> <div>5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.</div> <div>6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</div> |            |                    |            |                  |
| Test setup:           | <div>Below 1GHz</div> <div></div> <div>Above 1GHz</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                    |            |                  |

|                   |                                                                                                                                                                                                                                                         |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                                                                                                                                                                       |
| Test Instruments: | Refer to section 5.9 for details                                                                                                                                                                                                                        |
| Test mode:        | Refer to section 4.3 for details                                                                                                                                                                                                                        |
| Test results:     | Passed                                                                                                                                                                                                                                                  |
| Remark:           | <ol style="list-style-type: none"> <li>1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.</li> <li>2. 9 kHz to 30MHz is too low, so only shows the data of above 30MHz in this report.</li> </ol> |

## Measurement Data(worst case):

## Below 1GHz:

|                 |                 |                |                          |
|-----------------|-----------------|----------------|--------------------------|
| Product Name:   | Thermal Printer | Product Model: | PAPERANG-P3              |
| Test By:        | Raymon Zheng    | Test mode:     | BLE Tx mode              |
| Test Frequency: | 30 MHz ~ 1 GHz  | Polarization:  | Vertical                 |
| Test Voltage:   | DC5V            | Environment:   | Temp.: 23.6°C Humi.: 48% |

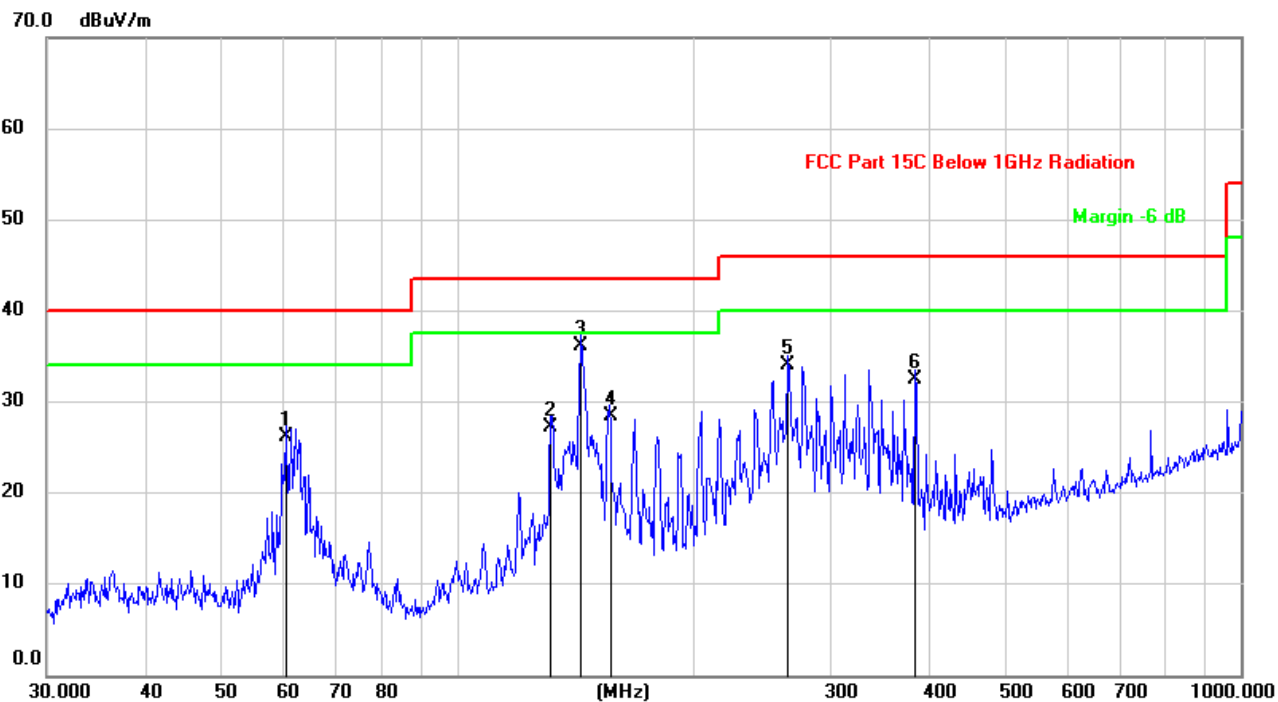


| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|------------|----------|
| 1   |     | 31.9545      | 39.69                    | -16.29                  | 23.40                      | 40.00           | -16.60     | QP       |
| 2   | *   | 60.7043      | 45.34                    | -16.24                  | 29.10                      | 40.00           | -10.90     | QP       |
| 3   |     | 143.3260     | 43.05                    | -17.85                  | 25.20                      | 43.50           | -18.30     | QP       |
| 4   |     | 204.9550     | 44.76                    | -14.16                  | 30.60                      | 43.50           | -12.90     | QP       |
| 5   |     | 264.7456     | 42.32                    | -12.22                  | 30.10                      | 46.00           | -15.90     | QP       |
| 6   |     | 382.5878     | 32.77                    | -8.97                   | 23.80                      | 46.00           | -22.20     | QP       |

## Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

|                 |                 |                |                         |
|-----------------|-----------------|----------------|-------------------------|
| Product Name:   | Thermal Printer | Product Model: | PAPERANG-P3             |
| Test By:        | Raymon Zheng    | Test mode:     | BLETx mode              |
| Test Frequency: | 30 MHz ~ 1 GHz  | Polarization:  | Horizontal              |
| Test Voltage:   | DC5V            | Environment:   | Temp.: 23.6℃ Humi.: 48% |



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|------------|----------|
| 1   |     | 60.4919      | 42.31                    | -16.21                  | 26.10                      | 40.00           | -13.90     | QP       |
| 2   |     | 131.7577     | 44.94                    | -17.74                  | 27.20                      | 43.50           | -16.30     | QP       |
| 3   | *   | 143.8295     | 53.94                    | -17.84                  | 36.10                      | 43.50           | -7.40      | QP       |
| 4   |     | 156.4578     | 45.79                    | -17.39                  | 28.40                      | 43.50           | -15.10     | QP       |
| 5   |     | 263.8190     | 46.28                    | -12.25                  | 34.03                      | 46.00           | -11.97     | QP       |
| 6   |     | 383.9318     | 41.34                    | -8.94                   | 32.40                      | 46.00           | -13.60     | QP       |

## Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

**Above 1GHz:**

| Test channel: Lowest channel                                                                                                                                                                                         |                   |                     |                |                     |                 |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|----------------|---------------------|-----------------|--------------|
| Detector: PeakValue                                                                                                                                                                                                  |                   |                     |                |                     |                 |              |
| Frequency (MHz)                                                                                                                                                                                                      | Read Level (dBuV) | Correct Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4804.00                                                                                                                                                                                                              | 46.00             | 7.54                | 53.54          | 74.00               | -20.46          | Vertical     |
| 4804.00                                                                                                                                                                                                              | 44.86             | 7.54                | 52.40          | 74.00               | -21.60          | Horizontal   |
| Detector: AverageValue                                                                                                                                                                                               |                   |                     |                |                     |                 |              |
| Frequency (MHz)                                                                                                                                                                                                      | Read Level (dBuV) | Correct Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4804.00                                                                                                                                                                                                              | 28.74             | 7.54                | 36.28          | 54.00               | -17.72          | Vertical     |
| 4804.00                                                                                                                                                                                                              | 28.44             | 7.54                | 35.98          | 54.00               | -18.02          | Horizontal   |
| Test channel: Middle channel                                                                                                                                                                                         |                   |                     |                |                     |                 |              |
| Detector: PeakValue                                                                                                                                                                                                  |                   |                     |                |                     |                 |              |
| Frequency (MHz)                                                                                                                                                                                                      | Read Level (dBuV) | Correct Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4882.00                                                                                                                                                                                                              | 39.76             | 7.79                | 47.55          | 74.00               | -26.45          | Vertical     |
| 4882.00                                                                                                                                                                                                              | 42.88             | 7.79                | 50.67          | 74.00               | -23.33          | Horizontal   |
| Detector: AverageValue                                                                                                                                                                                               |                   |                     |                |                     |                 |              |
| Frequency (MHz)                                                                                                                                                                                                      | Read Level (dBuV) | Correct Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4884.00                                                                                                                                                                                                              | 25.45             | 7.79                | 33.24          | 54.00               | -20.76          | Vertical     |
| 4884.00                                                                                                                                                                                                              | 26.48             | 7.79                | 34.27          | 54.00               | -19.73          | Horizontal   |
| Test channel: Highest channel                                                                                                                                                                                        |                   |                     |                |                     |                 |              |
| Detector: PeakValue                                                                                                                                                                                                  |                   |                     |                |                     |                 |              |
| Frequency (MHz)                                                                                                                                                                                                      | Read Level (dBuV) | Correct Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4960.00                                                                                                                                                                                                              | 39.84             | 8.06                | 47.90          | 74.00               | -26.10          | Vertical     |
| 4960.00                                                                                                                                                                                                              | 46.37             | 8.06                | 54.43          | 74.00               | -19.57          | Horizontal   |
| Detector: AverageValue                                                                                                                                                                                               |                   |                     |                |                     |                 |              |
| Frequency (MHz)                                                                                                                                                                                                      | Read Level (dBuV) | Correct Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4960.00                                                                                                                                                                                                              | 25.07             | 8.06                | 33.13          | 54.00               | -20.87          | Vertical     |
| 4960.00                                                                                                                                                                                                              | 29.11             | 8.06                | 37.17          | 54.00               | -16.83          | Horizontal   |
| <b>Remark:</b><br>1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.<br>2. The emission levels of other frequencies are very lower than the limit and not show in test report. |                   |                     |                |                     |                 |              |

-----End of report-----