



# TEST REPORT

Applicant: Jiumao (Shenzhen) Industrial Co., LTD

Address of Applicant: 2nd Floor, Building 9, Jingxuan Industrial Park, Donghuan Road, Longhua District, Shenzhen

Manufacturer/Factory: Jiumao (Shenzhen) Industrial Co., LTD

Address of Manufacturer: 2nd Floor, Building 9, Jingxuan Industrial Park, Donghuan Road, Longhua District, Shenzhen

Product Name: Projector

Model No.: A10,M10PLUS,M10,M8,M7,M9,M6,M5,M3,M2,M1,M98,Q96,M11,M96,M95,X18,X10,H10,M10,H10PLUS,X10PLUS,X18PRO,X10PRO,E350,E450,A10PRO,A10PLUS,M10PRO,E450PLUS,E350PLUS

Trade Mark: JIUMAO

FCC ID: 2BB8K-A10

IC: 32496-A10

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247  
RSS-247 Issue 3

Date of Test: Apr.24, 2024-May.08, 2024

Date of report issued: May.28, 2024

**Remark:**

*The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full without prior written permission of the company.*

*The report would be invalid without specific stamp of test institute and the signatures of compiler and approver*

## Prepared By

Shenzhen ETR Standard Technology Co., Ltd.

Address: No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Compiled by:

Reviewed by:

Approved by:

Project Engineer

Project Manager

Authorized Signature



### Report Revision History

| Report No.     | Description | Issue Date   |
|----------------|-------------|--------------|
| ET-24040349E01 | Original    | May.28, 2024 |
|                |             |              |

## Contents

|                                                  | Page |
|--------------------------------------------------|------|
| 1. TEST SUMMARY .....                            | 4    |
| 2. GENERAL INFORMATION .....                     | 5    |
| 2.1 GENERAL DESCRIPTION OF EUT .....             | 5    |
| 2.2 TEST MODE .....                              | 7    |
| 2.3 DESCRIPTION OF SUPPORT UNITS .....           | 7    |
| 2.4 DEVIATION FROM STANDARDS .....               | 7    |
| 2.5 ABNORMALITIES FROM STANDARD CONDITIONS ..... | 7    |
| 2.6 TEST FACILITY .....                          | 7    |
| 2.7 TEST LOCATION .....                          | 7    |
| 2.8 ADDITIONAL INSTRUCTIONS .....                | 7    |
| 3. TEST INSTRUMENTS LIST .....                   | 8    |
| 4. TEST RESULTS AND MEASUREMENT DATA .....       | 9    |
| 4.1 ANTENNA REQUIREMENT .....                    | 9    |
| 4.2 CONDUCTED EMISSIONS .....                    | 10   |
| 4.3 DUTY CYCLE .....                             | 13   |
| 4.4 CONDUCTED PEAK OUTPUT POWER .....            | 15   |
| 4.5 6dB BANDWIDTH&99%BANDWIDTH .....             | 16   |
| 4.6 POWER SPECTRAL DENSITY .....                 | 19   |
| 4.7 BAND EDGES .....                             | 21   |
| Conducted Emission Method .....                  | 21   |
| Radiated Emission Method .....                   | 22   |
| 4.8 SPURIOUS EMISSION .....                      | 24   |
| Conducted Emission Method .....                  | 24   |
| Radiated Emission Method .....                   | 26   |
| 5. TEST SETUP PHOTO .....                        | 34   |
| 6. EUT CONSTRUCTIONAL DETAILS .....              | 34   |

## 1. Test Summary

| Test Item                        | Section                                                   | Result | Test by  |
|----------------------------------|-----------------------------------------------------------|--------|----------|
| Antenna requirement              | FCC part 15.203/15.247 (c)<br>RSS-Gen §6.8                | Pass   | /        |
| AC Power Line Conducted Emission | FCC part 15.207<br>RSS-Gen §8.8                           | Pass   | Yao zhou |
| Conducted Peak Output Power      | FCC part 15.247 (b)(3)<br>RSS-247 §5.4.d                  | Pass   | Yvan Fan |
| 6dB Bandwidth &99% Bandwidth     | FCC part 15.247 (a)(2)<br>RSS-247 §5.2.a<br>RSS-Gen § 6.7 | Pass   | Yvan Fan |
| Power Spectral Density           | FCC part 15.247 (e)<br>RSS-247 §5.2.b                     | Pass   | Yvan Fan |
| Band Edge                        | FCC part 15.247(d)<br>RSS-247 §5.5                        | Pass   | Yvan Fan |
| Spurious Emission                | FCC part 15.205/15.209<br>RSS-Gen §8.9 §8.10              | Pass   | Yao zhou |

Remarks:

1. Pass: The EUT complies with the essential requirements in the standard.
2. Test according to ANSI C63.10:2013 and RSS-Gen.
3. Note: Compliance determination rules
  - 1).The Compliance determination of test results does not take into account measurement uncertainty. Measurement results are determined based on regulatory limitations or requirements specified by the applicant/manufacturer. If measurement uncertainty is taken into account, the applicant/manufacturer will bear all possible risks of non-compliance.
  - 2).The measurement uncertainty please refer to each test result in the "Measurement Uncertainty"

### Measurement Uncertainty

| Test Item                         | Uncertainty Criterion | Measurement Uncertainty | Notes |
|-----------------------------------|-----------------------|-------------------------|-------|
| Occupied Channel Bandwidth        | ±5%                   | ±0.55%                  | (1)   |
| RF output power, conducted        | ±1.5dB                | ±0.99dB                 | (1)   |
| Power Spectral Density, conducted | ±3dB                  | ±0.61dB                 | (1)   |
| Unwanted Emissions, conducted     | ±3dB                  | ±0.64dB                 | (1)   |
| AC Power Line Conducted Emission  | ±6dB                  | ± 2.64 dB               | (1)   |
| Radiated emissions Below 1GHz     | ±6dB                  | ±4.32 dB                | (1)   |
| Radiated emissions Above 1GHz     | ±6dB                  | ±4.56dB                 | (1)   |

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

## 2. General Information

### 2.1 General Description of EUT

|                        |                                                                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:          | Projector                                                                                                                                                   |
| Model No.:             | A10,M10PLUS,M10,M8,M7,M9,M6,M5,M3,M2,M1,M98,Q96,M11,M96,M95,X18,X10,H10,M10,H10PLUS,X10PLUS,X18PRO,X10PRO,E350,E450,A10PRO,A10PLUS,M10PRO,E450PLUS,E350PLUS |
| Difference of model(s) | All the model are the same circuit and RF module, except the model names.                                                                                   |
| Test Model:            | N/A                                                                                                                                                         |
| Hardware version:      | N/A                                                                                                                                                         |
| Software version:      | N/A                                                                                                                                                         |
| Sample(s) Status       | Engineer sample                                                                                                                                             |
| Operation Frequency:   | 2402MHz~2480MHz                                                                                                                                             |
| Channel Numbers:       | 40                                                                                                                                                          |
| Channel separation:    | 2MHz                                                                                                                                                        |
| Modulation technology: | GFSK                                                                                                                                                        |
| Battery:               | N/A                                                                                                                                                         |
| Antenna Type:          | Integrated antenna                                                                                                                                          |
| Antenna gain:          | 3.13dBi(Note: Antenna information is provided by applicant, Testing lab is not responsible for the accuracy of the information.)                            |
| Power supply:          | AC 100-240V 50/60Hz                                                                                                                                         |

For more details, refer to the user's manual of the EUT.

| Operation Frequency each of channel |           |         |           |         |           |         |           |
|-------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                             | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1                                   | 2402 MHz  | 11      | 2422 MHz  | 21      | 2442 MHz  | 31      | 2462 MHz  |
| 2                                   | 2404 MHz  | 12      | 2424 MHz  | 22      | 2444 MHz  | 32      | 2464 MHz  |
| 3                                   | 2406 MHz  | 13      | 2426 MHz  | 23      | 2446 MHz  | 33      | 2466 MHz  |
| 4                                   | 2408 MHz  | 14      | 2428 MHz  | 24      | 2448 MHz  | 34      | 2468 MHz  |
| 5                                   | 2410 MHz  | 15      | 2430 MHz  | 25      | 2450 MHz  | 35      | 2470 MHz  |
| 6                                   | 2412 MHz  | 16      | 2432 MHz  | 26      | 2452 MHz  | 36      | 2472 MHz  |
| 7                                   | 2414 MHz  | 17      | 2434 MHz  | 27      | 2454 MHz  | 37      | 2474 MHz  |
| 8                                   | 2416 MHz  | 18      | 2436 MHz  | 28      | 2456 MHz  | 38      | 2476 MHz  |
| 9                                   | 2418 MHz  | 19      | 2438 MHz  | 29      | 2458 MHz  | 39      | 2478 MHz  |
| 10                                  | 2420 MHz  | 20      | 2440 MHz  | 30      | 2460 MHz  | 40      | 2480 MHz  |

Note:

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

| Test channel    | Frequency (MHz) |
|-----------------|-----------------|
| Lowest channel  | 2402MHz         |
| Middle channel  | 2440MHz         |
| Highest channel | 2480MHz         |

## 2.2 Test mode

|                                                                                                                                                                                                                                              |                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Transmitting mode                                                                                                                                                                                                                            | Keep the EUT in continuously transmitting mode |
| <i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i> |                                                |

## 2.3 Description of Support Units

| No. | Description | Manufacturer | Model       | Serial Number |
|-----|-------------|--------------|-------------|---------------|
| 1   | Notebook    | Dell         | Vostro 3520 | /             |

## 2.4 Deviation from Standards

|       |
|-------|
| None. |
|-------|

## 2.5 Abnormalities from Standard Conditions

|       |
|-------|
| None. |
|-------|

## 2.6 Test Facility

|                             |                                            |
|-----------------------------|--------------------------------------------|
| Test laboratory:            | Shenzhen ETR Standard Technology Co., Ltd. |
| CNAS Registration Number:   | L11864                                     |
| A2LA Certificate Number:    | 6640.01                                    |
| FCC Designation Number:     | CN1326                                     |
| FCC Test Firm Registration: | 183064                                     |
| IC Company Number:          | 28440                                      |

## 2.7 Test Location

|                              |                                                                                                                           |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| All tests were performed at: |                                                                                                                           |
| Laboratory location:         | No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |
| Telephone:                   | +86 755 85259392                                                                                                          |
| Fax:                         | +86 755 27219460                                                                                                          |

## 2.8 Additional Instructions

|                   |                  |
|-------------------|------------------|
| Test Software     | COM Port Command |
| Power level setup | Default          |

### 3. Test Instruments list

| Item | Equipment name           | Manufacturer   | Model           | Serial No.             | Calibration date | Due date  |
|------|--------------------------|----------------|-----------------|------------------------|------------------|-----------|
| 1    | EMI Test Receiver        | Rohde&schwarz  | ESCI7           | 100605                 | 2024.3.012       | 2025.3.11 |
| 2    | EMI Test Receiver        | Rohde&schwarz  | ESCI3           | 102696                 | 2024.3.012       | 2025.3.11 |
| 3    | Loop Antenna             | schwarabeck    | FMZB 1519 B     | FMZB 1519 B            | 2024.3.19        | 2026.3.18 |
| 4    | Broadband antenna        | schwarabeck    | VULB9168        | 1064                   | 2024.3.19        | 2026.3.18 |
| 5    | Horn antenna             | schwarabeck    | BBHA9120D       | 9120D-1145             | 2024.3.19        | 2026.3.18 |
| 6    | amplifier                | EMtrace        | RP01A           | 50117                  | 2024.3.012       | 2025.3.11 |
| 7    | Artificial power network | schwarabeck    | NSLK8127        | 8127483                | 2024.3.012       | 2025.3.11 |
| 8    | Artificial power network | ETS            | 3186/2NM        | 1132                   | 2024.3.012       | 2025.3.11 |
| 9    | 10dB attenuator          | HUBER+SUHNER   | 10dB            | /                      | 2024.3.012       | 2025.3.11 |
| 10   | amplifier                | Space-Dtronics | EWLAN0118 G-P40 | 19113001               | 2024.3.012       | 2025.3.11 |
| 11   | Filter                   | Xingbo         | XBLBQ-GTA19     | 210410-3-1             | 2024.3.012       | 2025.3.11 |
| 12   | Spectrum analyzer        | KEYSIGHT       | N9020A          | MY55370280             | 2024.3.012       | 2025.3.11 |
| 13   | Power detector box       | MWRFTest       | MW100-PSB       | MW201020JYT            | 2024.3.012       | 2025.3.11 |
| 14   | Power meter              | Rohde&Schwarz  | NRP-Z11         | 1138.3004.02-117725-vh | 2024.3.012       | 2025.3.11 |
| 15   | Amplifier                | SKET           | LNPA_1840-50    | SK2019040302           | 2024.3.12        | 2025.3.11 |
| 16   | Horn antenna             | schwarabeck    | BBHA 9170       | 946                    | 2024.3.19        | 2026.3.18 |

Note: the calibration interval of the above test instruments is 12 or 24 months and the calibrations are traceable to international system unit (SI).

| Software Name           | Manufacturer | Model    | Version           |
|-------------------------|--------------|----------|-------------------|
| RF test software        | MWRFTest     | MTS 8310 | V2.0.0.0          |
| Conducted test software | EZ-EMC       | Farad    | Ver.EMC-CON 3A1.1 |
| Radiated test software  | EZ-EMC       | Farad    | Ver.FA-03A2 RE    |

## 4. Test results and Measurement Data

### 4.1 Antenna requirement

| Standard requirement:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | FCC Part15 C Section 15.203 /247(c) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <p><b>15.203 requirement:</b></p> <p>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><b>15.247(c) (1)(i) requirement:</b></p> <p>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</p> <p><b>RSS-Gen 6.8:</b></p> <p>The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.</p> <p>For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).</p> |                                     |
| EUT Antenna:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |
| <p><i>The antenna is Integrated antenna, the best case gain of the antenna is 3.13 dBi, reference to the appendix II for details.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |

## 4.2 Conducted Emissions

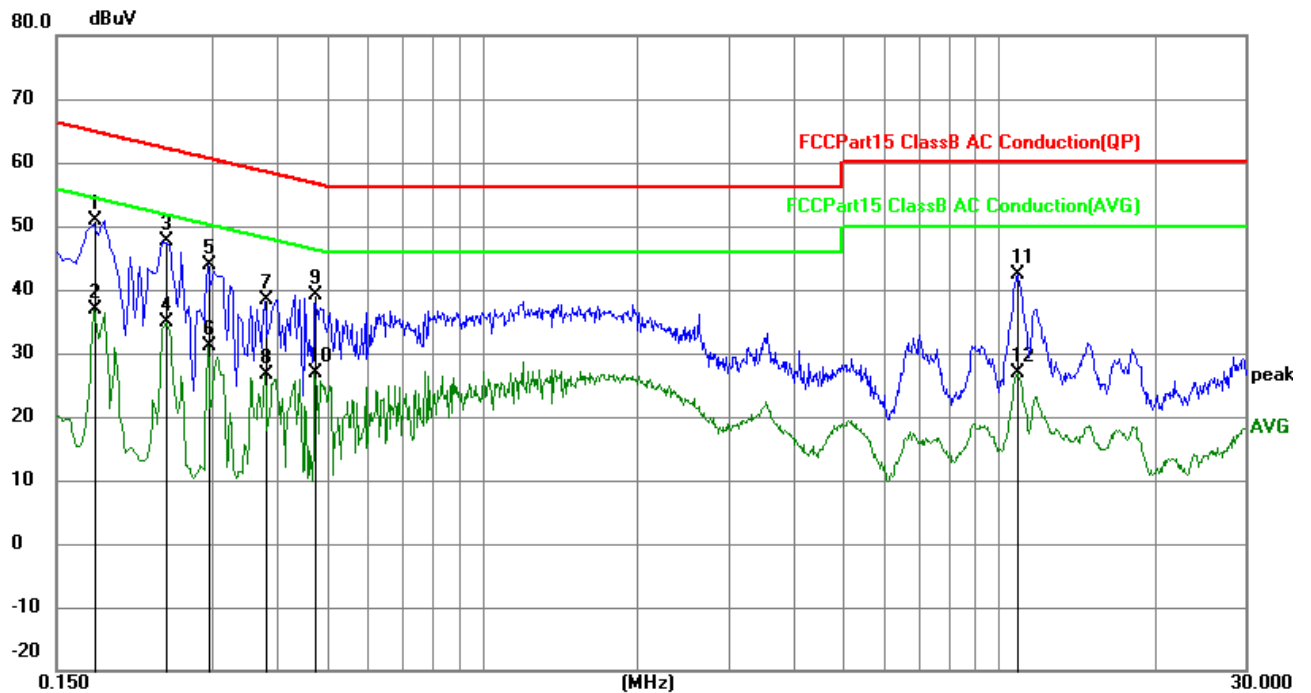
|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |              |     |           |          |  |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------|-----|-----------|----------|--|
| Test Requirement:                                | FCC Part15 C Section 15.207, RSS-Gen §8.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |              |     |           |          |  |
| Test Method:                                     | ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |              |     |           |          |  |
| Test Frequency Range:                            | 150KHz to 30MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |              |     |           |          |  |
| Receiver setup:                                  | RBW=9KHz, VBW=30KHz, Sweep time=auto                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |              |     |           |          |  |
| 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 setup:                                      | <div><div><div><div></div><div>Reference Plane</div></div><div><div></div><div>40cm</div></div></div><div><div><div>LISN</div><div>AUX Equipment</div><div>E.U.T</div></div><div>Test table/Insulation plane</div><div>80cm</div><div><div>LISN</div><div>Filter</div><div>AC power</div></div><div><div>EMI Receiver</div></div></div><div><div>Remark:</div><div>E.U.T: Equipment Under Test</div><div>LISN: Line Impedance Stabilization Network</div><div>Test table height=0.8m</div></div></div>                                                                                                                                                                                                                               |        |              |     |           |          |  |
| Test procedure:                                  | <div><div>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</div><div>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).</div><div>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 C63.10:2013 on conducted measurement.</div></div> |        |              |     |           |          |  |
| Test Instruments:                                | Refer to section 3.0 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |              |     |           |          |  |
| Test mode:                                       | Refer to section 2.2 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |              |     |           |          |  |
| Test environment:                                | Temp.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25.2°C | Humid.:      | 58% | Press.:   | 1012mbar |  |
| Test voltage:                                    | AC 120V, 60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |              |     |           |          |  |
| Test results:                                    | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |              |     |           |          |  |

Remark:

1. Both high voltage and low voltage have been tested, and the report only shows the worst case data with AC 120V/60Hz.
2. All mode have been tested, the report only shows the worst mode (2440MHz) data.

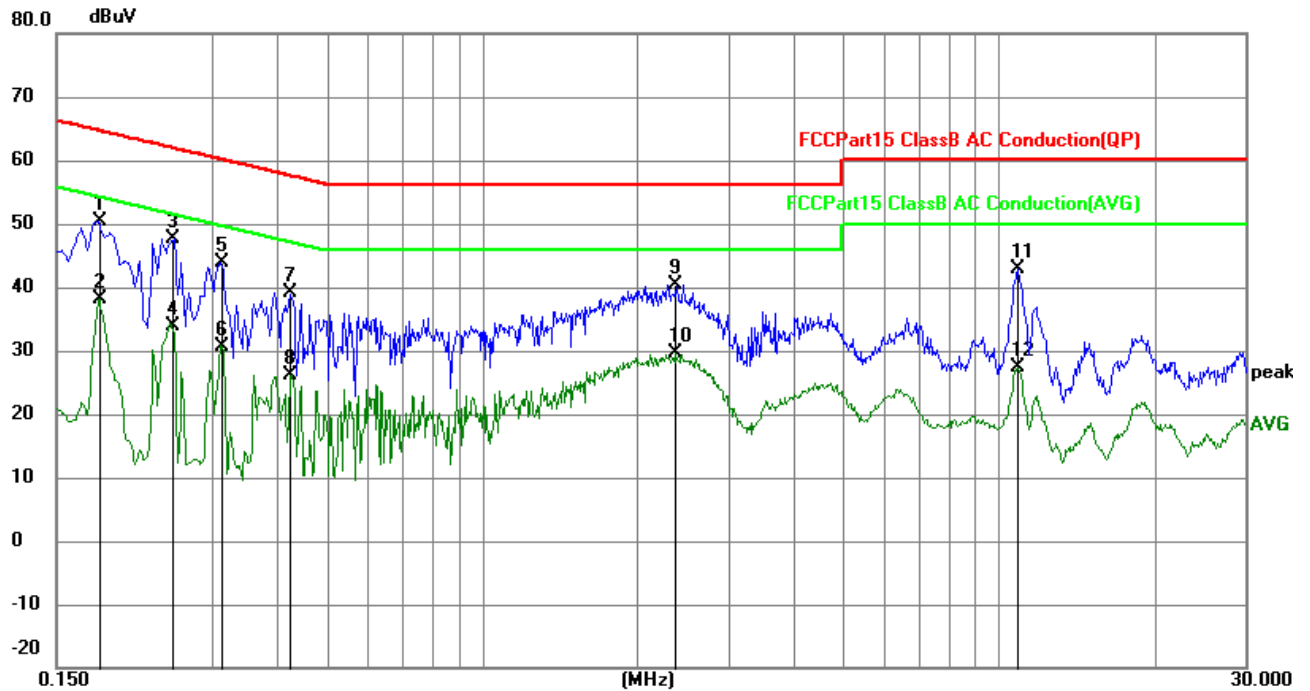
## Measurement data

Line:



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|
| 1   | 0.1770          | 41.09          | 9.81        | 50.90        | 64.63        | -13.73      | QP       |
| 2   | 0.1770          | 27.04          | 9.81        | 36.85        | 54.63        | -17.78      | AVG      |
| 3   | 0.2445          | 37.76          | 9.82        | 47.58        | 61.94        | -14.36      | QP       |
| 4   | 0.2445          | 24.96          | 9.82        | 34.78        | 51.94        | -17.16      | AVG      |
| 5   | 0.2940          | 34.02          | 9.84        | 43.86        | 60.41        | -16.55      | QP       |
| 6   | 0.2940          | 21.38          | 9.84        | 31.22        | 50.41        | -19.19      | AVG      |
| 7   | 0.3795          | 28.56          | 9.89        | 38.45        | 58.29        | -19.84      | QP       |
| 8   | 0.3795          | 16.78          | 9.89        | 26.67        | 48.29        | -21.62      | AVG      |
| 9   | 0.4740          | 29.19          | 9.93        | 39.12        | 56.44        | -17.32      | QP       |
| 10  | 0.4740          | 17.04          | 9.93        | 26.97        | 46.44        | -19.47      | AVG      |
| 11  | 10.9005         | 32.54          | 9.82        | 42.36        | 60.00        | -17.64      | QP       |
| 12  | 10.9005         | 17.11          | 9.82        | 26.93        | 50.00        | -23.07      | AVG      |

### Neutral:



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|
| 1   | 0.1815          | 40.64          | 9.81        | 50.45        | 64.42        | -13.97      | QP       |
| 2   | 0.1815          | 28.26          | 9.81        | 38.07        | 54.42        | -16.35      | AVG      |
| 3   | 0.2508          | 37.86          | 9.83        | 47.69        | 61.73        | -14.04      | QP       |
| 4   | 0.2508          | 23.97          | 9.83        | 33.80        | 51.73        | -17.93      | AVG      |
| 5   | 0.3120          | 34.06          | 9.87        | 43.93        | 59.92        | -15.99      | QP       |
| 6   | 0.3120          | 20.88          | 9.87        | 30.75        | 49.92        | -19.17      | AVG      |
| 7   | 0.4245          | 29.22          | 9.90        | 39.12        | 57.36        | -18.24      | QP       |
| 8   | 0.4245          | 16.29          | 9.90        | 26.19        | 47.36        | -21.17      | AVG      |
| 9   | 2.3685          | 30.57          | 9.85        | 40.42        | 56.00        | -15.58      | QP       |
| 10  | 2.3685          | 19.74          | 9.85        | 29.59        | 46.00        | -16.41      | AVG      |
| 11  | 10.8959         | 32.96          | 9.82        | 42.78        | 60.00        | -17.22      | QP       |
| 12  | 10.8959         | 17.48          | 9.82        | 27.30        | 50.00        | -22.70      | 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. Level = Receiver Read level + Factor (Factor = LISN Factor + Cable Loss + Attenuator Factor)
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

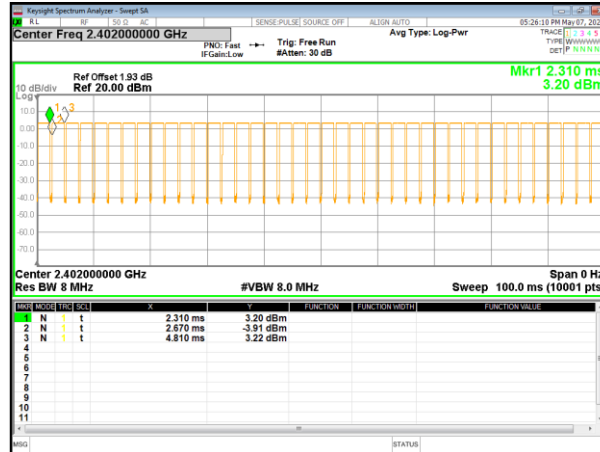
### 4.3 Duty cycle

|                   |                                                                                    |               |
|-------------------|------------------------------------------------------------------------------------|---------------|
| Test Method :     | ANSI C63.10:2013                                                                   |               |
| Limit:            | /                                                                                  |               |
| Test setup:       |  |               |
| Test Instruments: | Refer to section 3.0 for details                                                   |               |
| Test mode:        | Refer to section 2.2 for details                                                   |               |
| Test environment: | Temp.: 24.9°C                                                                      | Humid.: 53%RH |
| Test voltage:     | AC 120V, 60Hz                                                                      |               |
| Test results:     | Pass                                                                               |               |

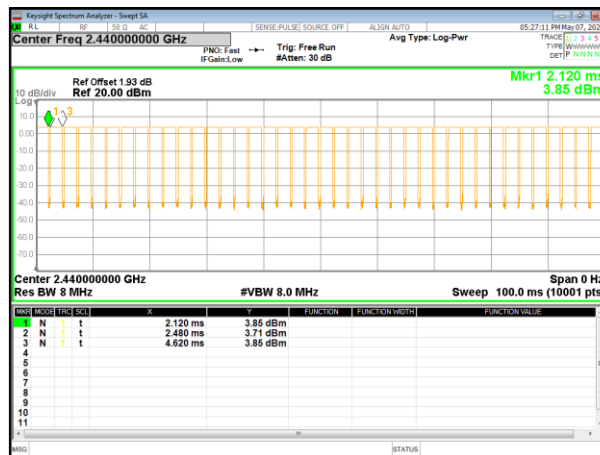
### Measurement Result

| Test channel | Duty Cycle (%) |
|--------------|----------------|
| Lowest       | 85.6           |
| Middle       | 85.6           |
| Highest      | 85.2           |

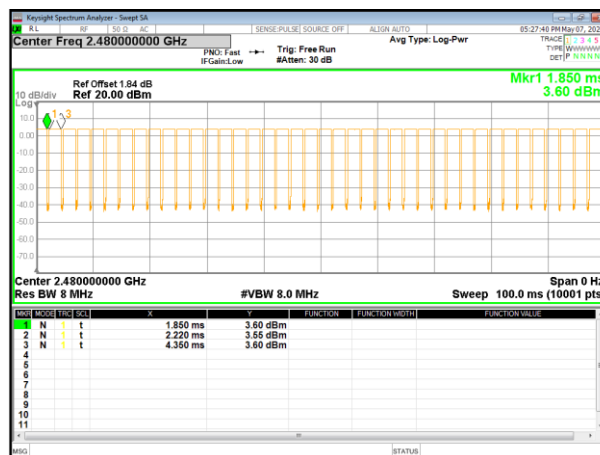
Test plot as follows:



Lowest channel

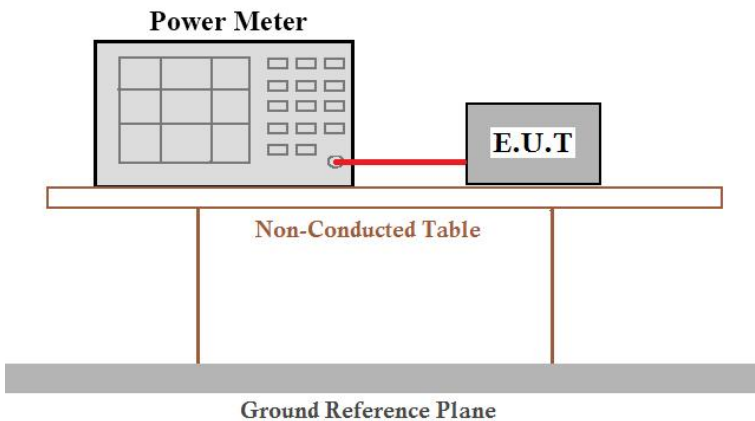


Middle channel



Highest channel

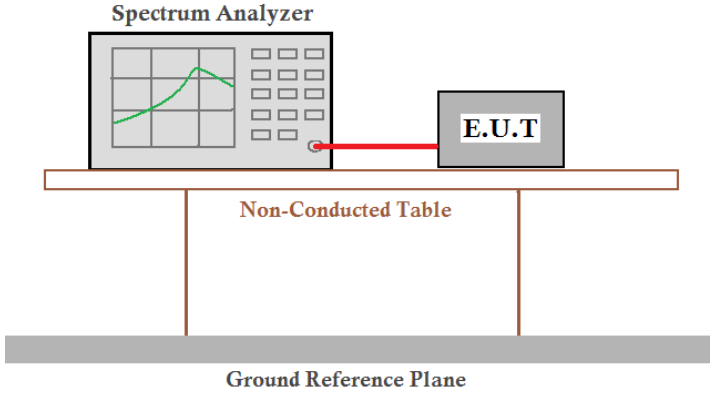
#### 4.4 Conducted Peak Output Power

|                    |                                                                                    |               |
|--------------------|------------------------------------------------------------------------------------|---------------|
| Test Requirement : | FCC Part15 C Section 15.247 (b)(3) , RSS-247 §5.4.d                                |               |
| Test Method :      | ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen         |               |
| Limit:             | 30dBm                                                                              |               |
| Test setup:        |  |               |
| Test Instruments:  | Refer to section 3.0 for details                                                   |               |
| Test mode:         | Refer to section 2.2 for details                                                   |               |
| Test environment:  | Temp.: 24.9°C                                                                      | Humid.: 53%RH |
| Test voltage:      | AC 120V, 60Hz                                                                      |               |
| Test results:      | Pass                                                                               |               |

#### Measurement Result

| Test channel | Peak Output Power (dBm) | Limit(dBm) | Result |
|--------------|-------------------------|------------|--------|
| Lowest       | -6.03                   | 30.00      | Pass   |
| Middle       | -4.86                   |            |        |
| Highest      | -6.05                   |            |        |

#### 4.5 6dB Bandwidth&99%Bandwidth

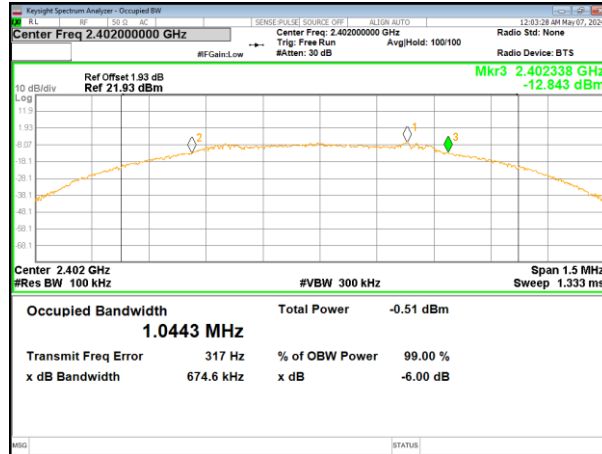
|                    |                                                                                    |               |
|--------------------|------------------------------------------------------------------------------------|---------------|
| Test Requirement : | FCC Part15 C Section 15.247 (a)(2), RSS-247 §5.2.a                                 |               |
| Test Method :      | ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen         |               |
| Limit:             | >500KHz                                                                            |               |
| Test setup:        |  |               |
| Test Instruments:  | Refer to section 3.0 for details                                                   |               |
| Test mode:         | Refer to section 2.2 for details                                                   |               |
| Test environment:  | Temp.: 24.9°C                                                                      | Humid.: 53%RH |
| Test voltage:      | AC 120V, 60Hz                                                                      |               |
| Test results:      | Pass                                                                               |               |

#### Measurement Result

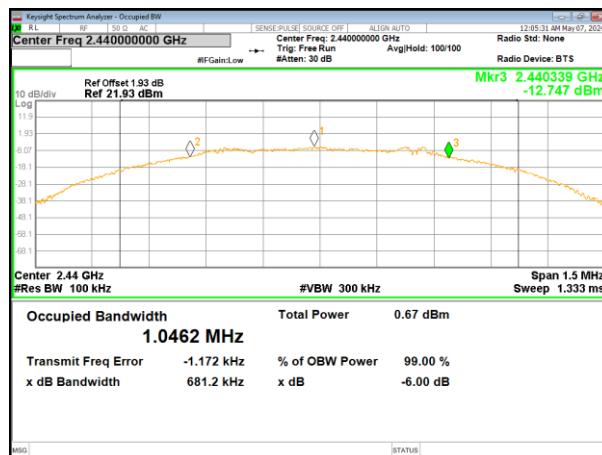
| Test channel | 6dB Bandwidth (MHz) | Limit(KHz) | Result |
|--------------|---------------------|------------|--------|
| Lowest       | 0.6746              | >500       | Pass   |
| Middle       | 0.6812              |            |        |
| Highest      | 0.6643              |            |        |

| Test channel | 99% Bandwidth (MHz) | Limit(KHz) | Result |
|--------------|---------------------|------------|--------|
| Lowest       | 1.0331              | /          | Pass   |
| Middle       | 1.0346              |            |        |
| Highest      | 1.0336              |            |        |

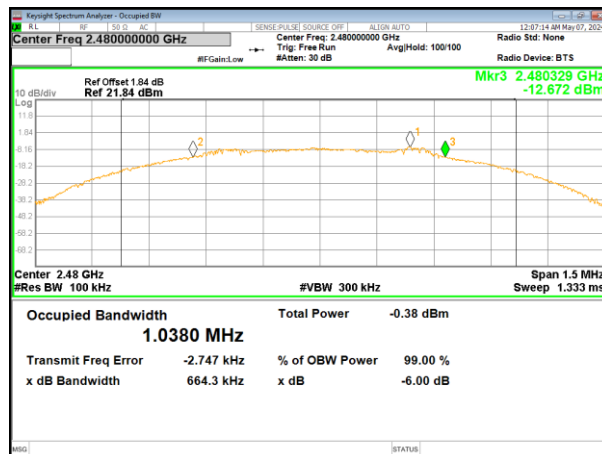
Test plot as follows:



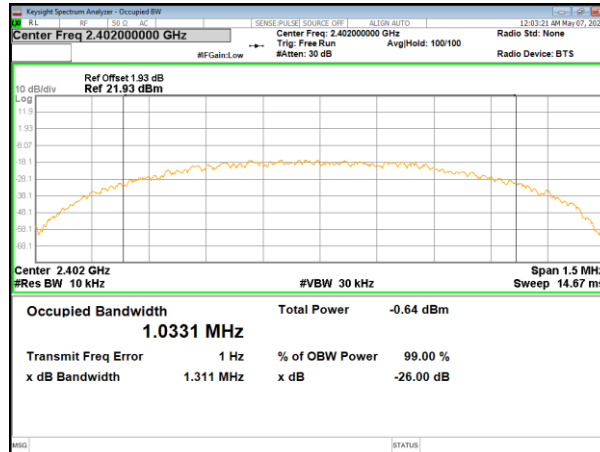
Lowest channel



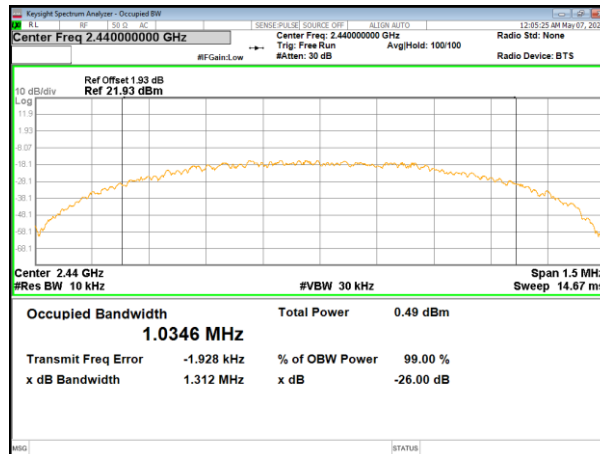
Middle channel



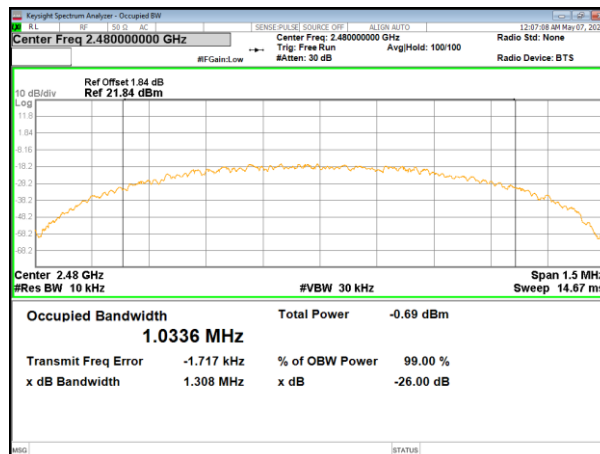
Highest channel



Lowest channel

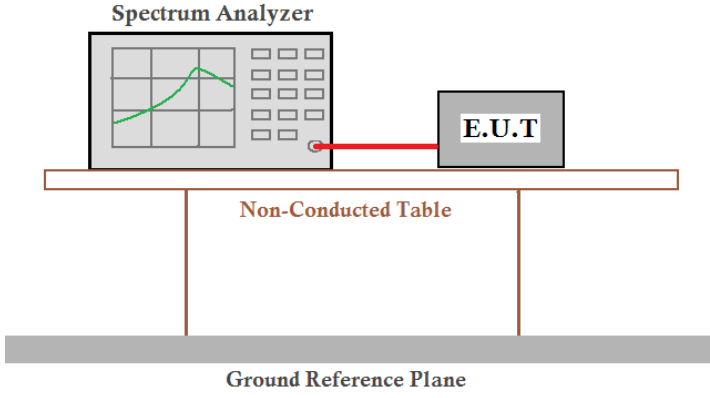


Middle channel



Highest channel

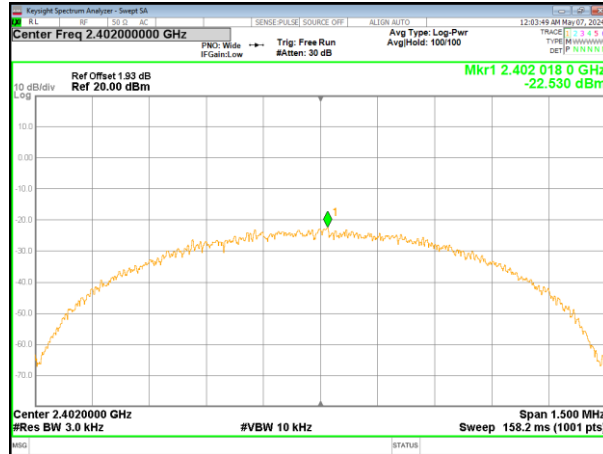
#### 4.6 Power Spectral Density

|                   |                                                                                    |               |
|-------------------|------------------------------------------------------------------------------------|---------------|
| Test Requirement: | FCC Part15 C Section 15.247 (e), RSS-247 §5.2.b                                    |               |
| Test Method:      | ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen         |               |
| Limit:            | 8dBm/3kHz                                                                          |               |
| Test setup:       |  |               |
| Test Instruments: | Refer to section 3.0 for details                                                   |               |
| Test mode:        | Refer to section 2.2 for details                                                   |               |
| Test environment: | Temp.: 24.9°C                                                                      | Humid.: 53%RH |
| Test voltage:     | AC 120V, 60Hz                                                                      |               |
| Test results:     | Pass                                                                               |               |

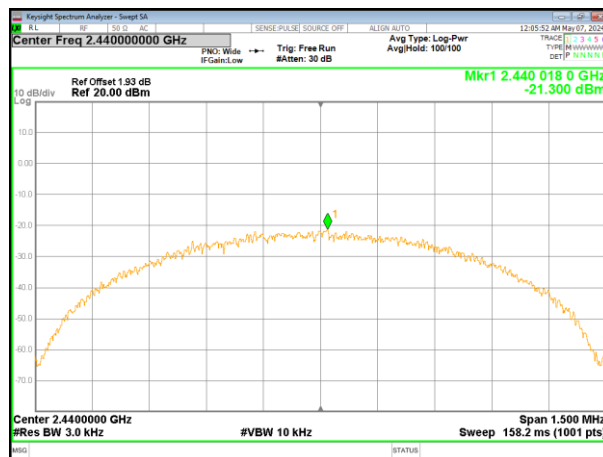
#### Measurement Result

| Test channel | Power Spectral Density (dBm/3kHz) | Limit(dBm/3kHz) | Result |
|--------------|-----------------------------------|-----------------|--------|
| Lowest       | -22.530                           | 8.00            | Pass   |
| Middle       | -21.300                           |                 |        |
| Highest      | -22.481                           |                 |        |

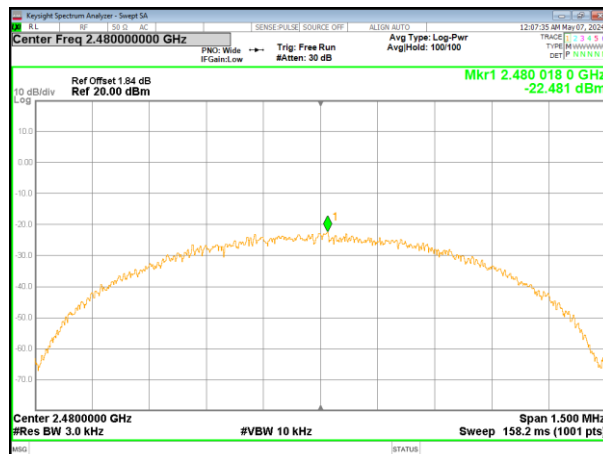
Test plot as follows:



Lowest channel



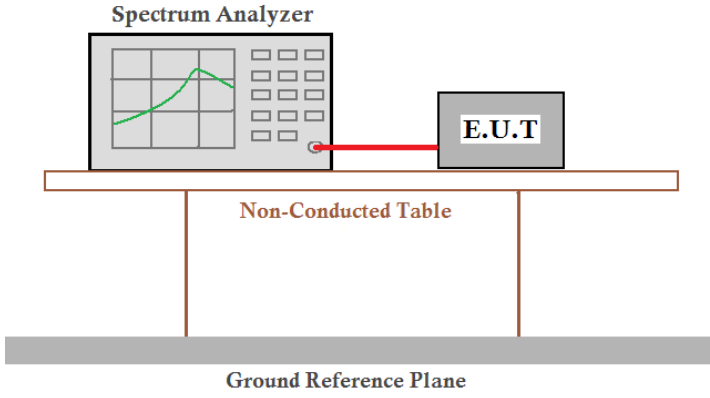
Middle channel



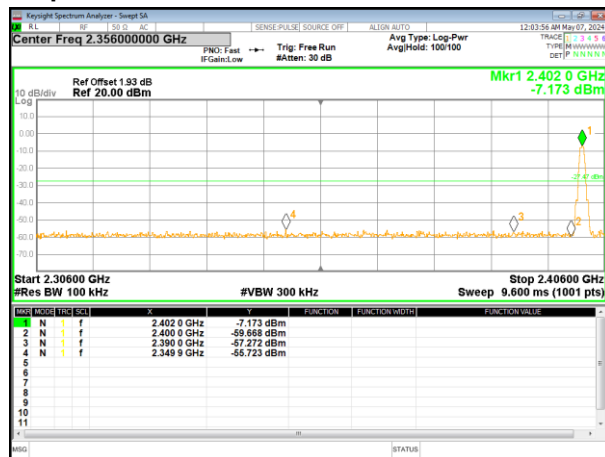
Highest channel

## 4.7 Band edges

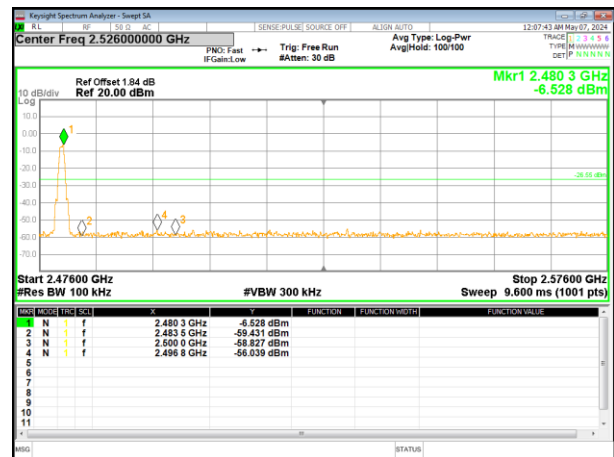
### Conducted Emission Method

|                   |                                                                                                                                                                                                                                                                                                                                                                                         |               |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Test Requirement: | FCC Part15 C Section 15.247 (d), RSS-247 §5.5                                                                                                                                                                                                                                                                                                                                           |               |
| Test Method:      | KDB558074 D01 DTS Meas Guidance v05or02 and RSS-Gen                                                                                                                                                                                                                                                                                                                                     |               |
| 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:       |                                                                                                                                                                                                                                                                                                      |               |
| Test Instruments: | Refer to section 3.0 for details                                                                                                                                                                                                                                                                                                                                                        |               |
| Test mode:        | Refer to section 2.2 for details                                                                                                                                                                                                                                                                                                                                                        |               |
| Test environment: | Temp.: 24.9°C                                                                                                                                                                                                                                                                                                                                                                           | Humid.: 53%RH |
| Test voltage:     | AC 120V, 60Hz                                                                                                                                                                                                                                                                                                                                                                           |               |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                                                    |               |

Test plot as follows:

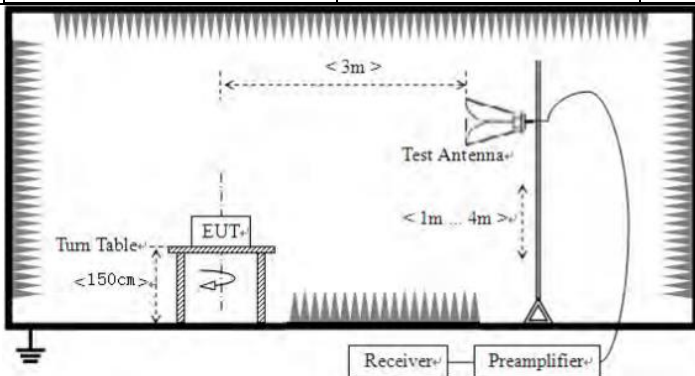


Lowest channel



Highest channel

## Radiated Emission Method

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |                    |      |         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|------|---------|
| Test Requirement:     | FCC Part15 C Section 15.209 and 15.205, RSS-Gen §8.9 §8.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                    |      |         |
| Test Method:          | ANSI C63.10: 2013 and RSS-Gen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                    |      |         |
| Test Frequency Range: | All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                    |      |         |
| Test site:            | Measurement Distance: 3m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                    |      |         |
| Receiver setup:       | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Detector | RBW                | VBW  | Value   |
|                       | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Peak     | 1MHz               | 3MHz | Peak    |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Average  | 1MHz               | 3MHz | Average |
| Limit:                | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          | Limit (dBuV/m @3m) |      | Value   |
|                       | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          | 54.00              |      | Average |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          | 74.00              |      | Peak    |
| Test setup:           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                    |      |         |
| Test Procedure:       | <ol style="list-style-type: none"><li>1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li><li>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li><li>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.</li><li>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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li><li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li><li>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li><li>7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.</li></ol> |          |                    |      |         |
| Test Instruments:     | Refer to section 3.0 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                    |      |         |
| Test mode:            | Refer to section 2.2 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                    |      |         |
| Test environment:     | Temp.: 24.9°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          | Humid.: 53%RH      |      |         |
| Test voltage:         | AC 120V, 60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                    |      |         |
| Test results:         | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |                    |      |         |

**Measurement Result:**

|               |        |
|---------------|--------|
| Test channel: | Lowest |
|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 57.71             | 27.40                 | 4.61            | 44.50              | 45.22          | 74.00               | -28.78          | Horizontal   |
| 2390.00         | 62.76             | 27.50                 | 4.61            | 44.50              | 50.37          | 74.00               | -23.63          | Horizontal   |
| 2310.00         | 57.47             | 27.40                 | 4.61            | 44.50              | 44.98          | 74.00               | -29.02          | Vertical     |
| 2390.00         | 62.27             | 27.50                 | 4.61            | 44.50              | 49.88          | 74.00               | -24.12          | Vertical     |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 45.84             | 27.40                 | 4.61            | 44.50              | 33.35          | 54.00               | -20.65          | Horizontal   |
| 2390.00         | 49.63             | 27.50                 | 4.61            | 44.50              | 37.24          | 54.00               | -16.76          | Horizontal   |
| 2310.00         | 45.27             | 27.40                 | 4.61            | 44.50              | 32.78          | 54.00               | -21.22          | Vertical     |
| 2390.00         | 50.55             | 27.50                 | 4.61            | 44.50              | 38.16          | 54.00               | -15.84          | Vertical     |

|               |         |
|---------------|---------|
| Test channel: | Highest |
|---------------|---------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 65.91             | 27.90                 | 4.84            | 44.90              | 53.75          | 74.00               | -20.25          | Horizontal   |
| 2500.00         | 59.85             | 27.90                 | 4.84            | 44.90              | 47.69          | 74.00               | -26.31          | Horizontal   |
| 2483.50         | 65.03             | 27.90                 | 4.84            | 44.90              | 52.87          | 74.00               | -21.13          | Vertical     |
| 2500.00         | 59.44             | 27.90                 | 4.84            | 44.90              | 47.28          | 74.00               | -26.72          | Vertical     |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 51.83             | 27.80                 | 4.84            | 44.90              | 39.67          | 54.00               | -14.33          | Horizontal   |
| 2500.00         | 48.48             | 27.80                 | 4.84            | 44.90              | 36.32          | 54.00               | -17.68          | Horizontal   |
| 2483.50         | 51.04             | 27.80                 | 4.84            | 44.90              | 38.88          | 54.00               | -15.12          | Vertical     |
| 2500.00         | 48.07             | 27.80                 | 4.84            | 44.90              | 35.91          | 54.00               | -18.09          | Vertical     |

**Remarks:**

1. Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. Emissions more than 20 dB below the limit do not need to be reported.
3. The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.

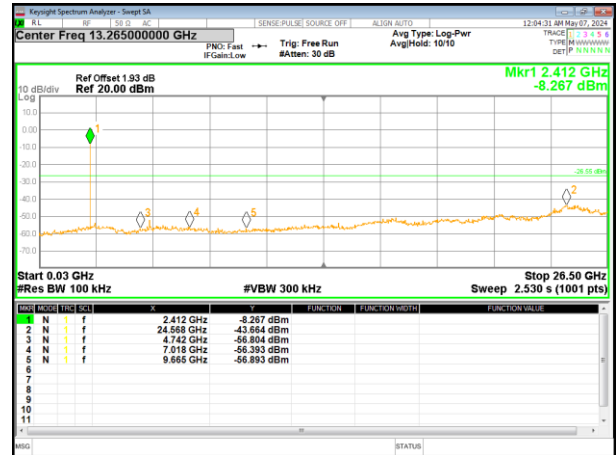
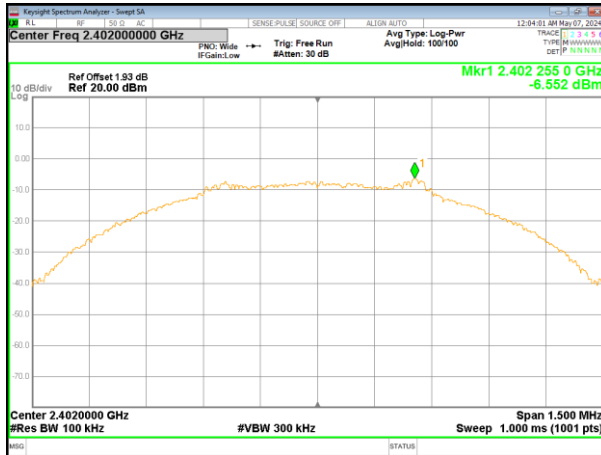
## 4.8 Spurious Emission

### Conducted Emission Method

|                   |                                                                                                                                                                                                                                                                                                                                                                                         |               |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Test Requirement: | FCC Part15 C Section 15.247 (d), RSS-Gen §8.9 §8.10                                                                                                                                                                                                                                                                                                                                     |               |
| Test Method:      | KDB558074 D01 DTS Meas Guidance v05or02 and RSS-Gen                                                                                                                                                                                                                                                                                                                                     |               |
| 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 measurement. A Spectrum Analyzer is connected via a red cable to an E.U.T (Equipment Under Test). Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>                                    |               |
| Test Instruments: | Refer to section 3.0 for details                                                                                                                                                                                                                                                                                                                                                        |               |
| Test mode:        | Refer to section 2.2 for details                                                                                                                                                                                                                                                                                                                                                        |               |
| Test environment: | Temp.: 24.9°C                                                                                                                                                                                                                                                                                                                                                                           | Humid.: 53%RH |
| Test voltage:     | AC 120V, 60Hz                                                                                                                                                                                                                                                                                                                                                                           |               |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                                                    |               |

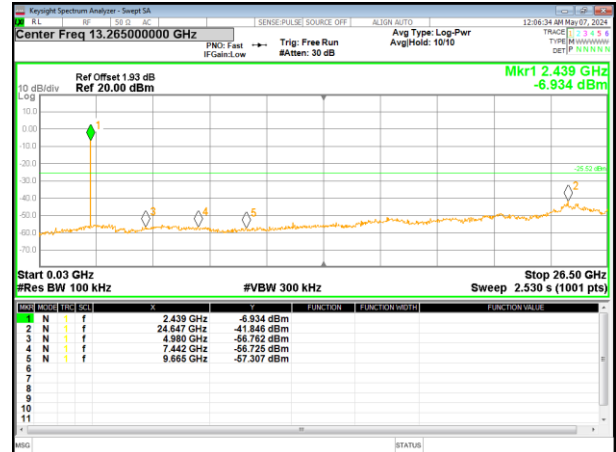
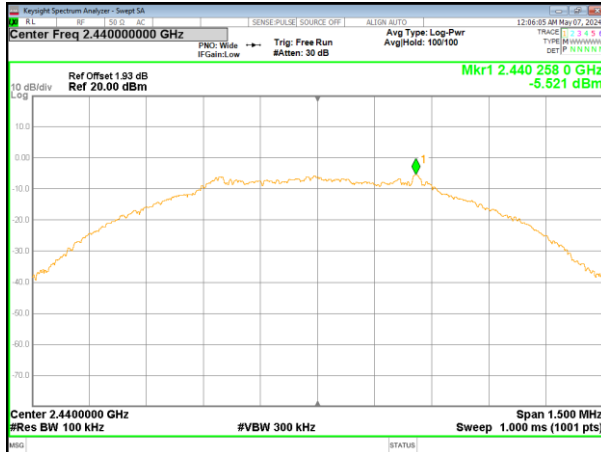
Test plot as follows:

Lowest channel



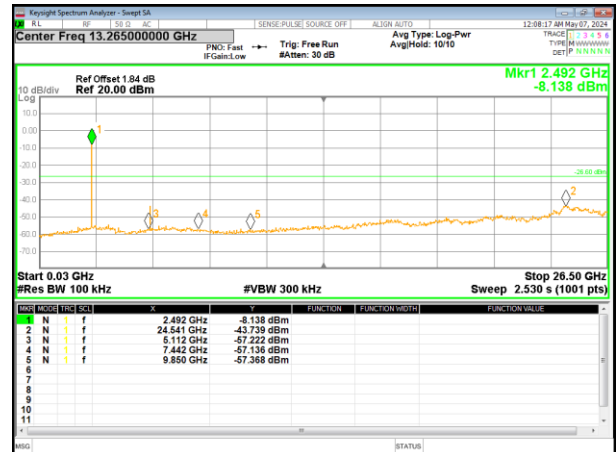
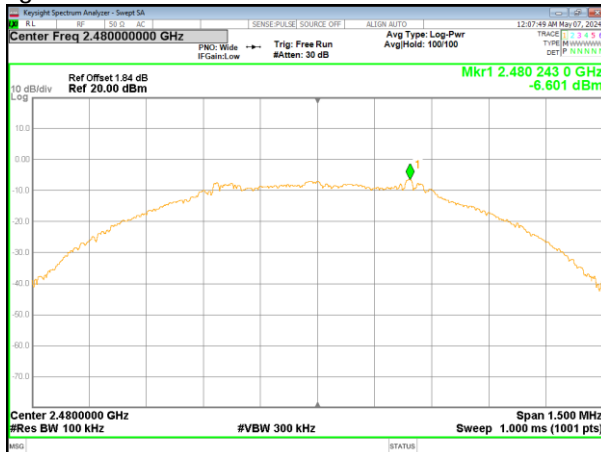
30MHz~26.5GHz

Middle channel



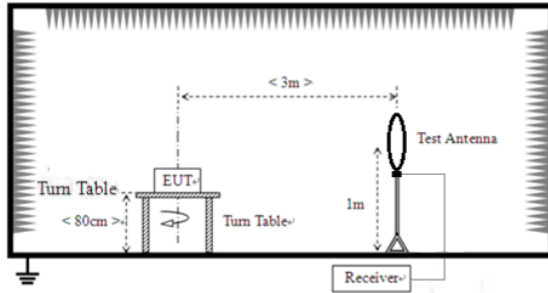
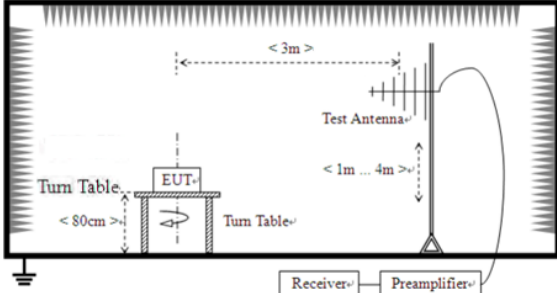
30MHz~26.5GHz

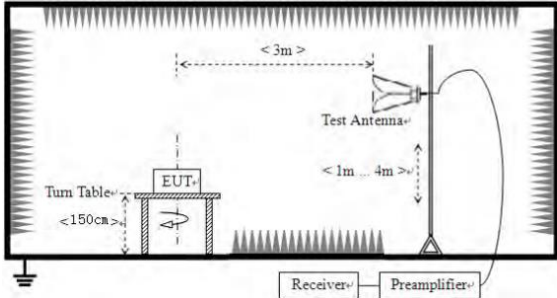
Highest channel



30MHz~26.5GHz

## Radiated Emission Method

|                       |                                                                                      |              |         |                      |            |
|-----------------------|--------------------------------------------------------------------------------------|--------------|---------|----------------------|------------|
| Test Requirement:     | FCC Part15 C Section 15.209 , RSS-Gen §8.9 §8.10                                     |              |         |                      |            |
| Test Method:          | ANSI C63.10: 2013 and RSS-Gen                                                        |              |         |                      |            |
| Test Frequency Range: | 9kHz to 25GHz                                                                        |              |         |                      |            |
| Test site:            | Measurement Distance: 3m                                                             |              |         |                      |            |
| Receiver setup:       | Frequency                                                                            | Detector     | RBW     | VBW                  | Value      |
|                       | 9KHz-150KHz                                                                          | Quasi-peak   | 200Hz   | 600Hz                | Quasi-peak |
|                       | 150KHz-30MHz                                                                         | Quasi-peak   | 9KHz    | 30KHz                | Quasi-peak |
|                       | 30MHz-1GHz                                                                           | Quasi-peak   | 120KHz  | 300KHz               | Quasi-peak |
|                       | Above 1GHz                                                                           | Peak         | 1MHz    | 3MHz                 | Peak       |
|                       |                                                                                      | Peak         | 1MHz    | 10Hz                 | Average    |
| Limit:                | Frequency                                                                            | Limit (uV/m) | Value   | Measurement Distance |            |
|                       | 0.009MHz-0.490MHz                                                                    | 2400/F(KHz)  | QP      | 300m                 |            |
|                       | 0.490MHz-1.705MHz                                                                    | 24000/F(KHz) | QP      | 300m                 |            |
|                       | 1.705MHz-30MHz                                                                       | 30           | QP      | 30m                  |            |
|                       | 30MHz-88MHz                                                                          | 100          | QP      | 3m                   |            |
|                       | 88MHz-216MHz                                                                         | 150          | QP      |                      |            |
|                       | 216MHz-960MHz                                                                        | 200          | QP      |                      |            |
|                       | 960MHz-1GHz                                                                          | 500          | QP      |                      |            |
|                       | Above 1GHz                                                                           | 500          | Average |                      |            |
|                       |                                                                                      | 5000         | Peak    |                      |            |
| Test setup:           | For radiated emissions from 9kHz to 30MHz                                            |              |         |                      |            |
|                       |  |              |         |                      |            |
|                       | For radiated emissions from 30MHz to1GHz                                             |              |         |                      |            |
|                       |  |              |         |                      |            |
|                       | For radiated emissions above 1GHz                                                    |              |         |                      |            |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |         |     |         |          |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------|-----|---------|----------|
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |         |     |         |          |
| Test Procedure:   | <div><div>1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</div><div>2. The EUT was set 3 meters away from the interference-receiving antenna, which was 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 rota table was 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 Specified Bandwidth with Maximum Hold Mode.</div><div>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</div></div> |        |         |     |         |          |
| Test Instruments: | Refer to section 3.0 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |         |     |         |          |
| Test mode:        | Refer to section 2.2 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |         |     |         |          |
| Test voltage:     | AC120V 60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |         |     |         |          |
| Test environment: | Temp.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 24.9°C | Humid.: | 53% | Press.: | 1012mbar |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |         |     |         |          |

## Remarks:

1. The report only shows the worst mode.
2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

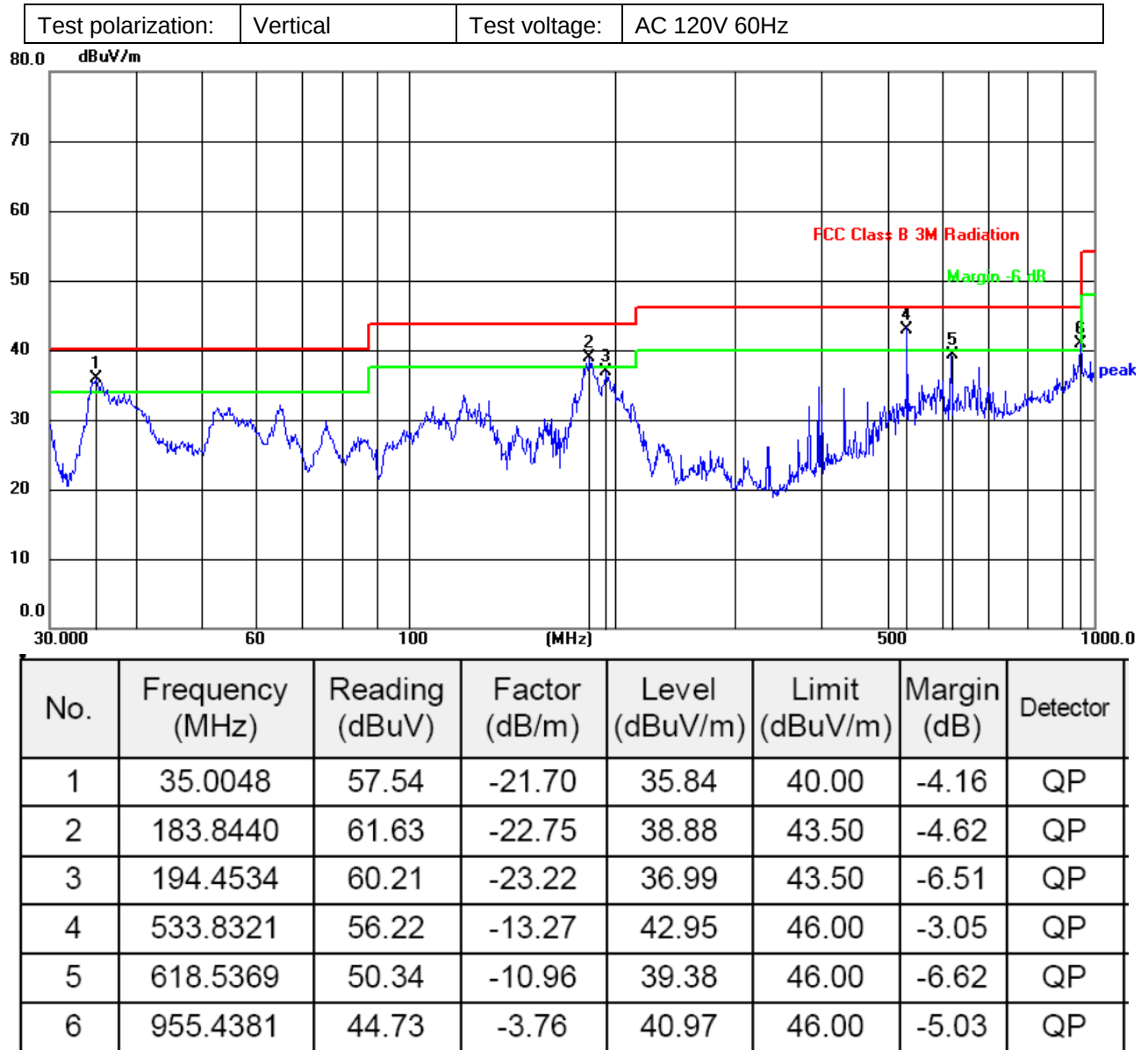
**Measurement Result:**

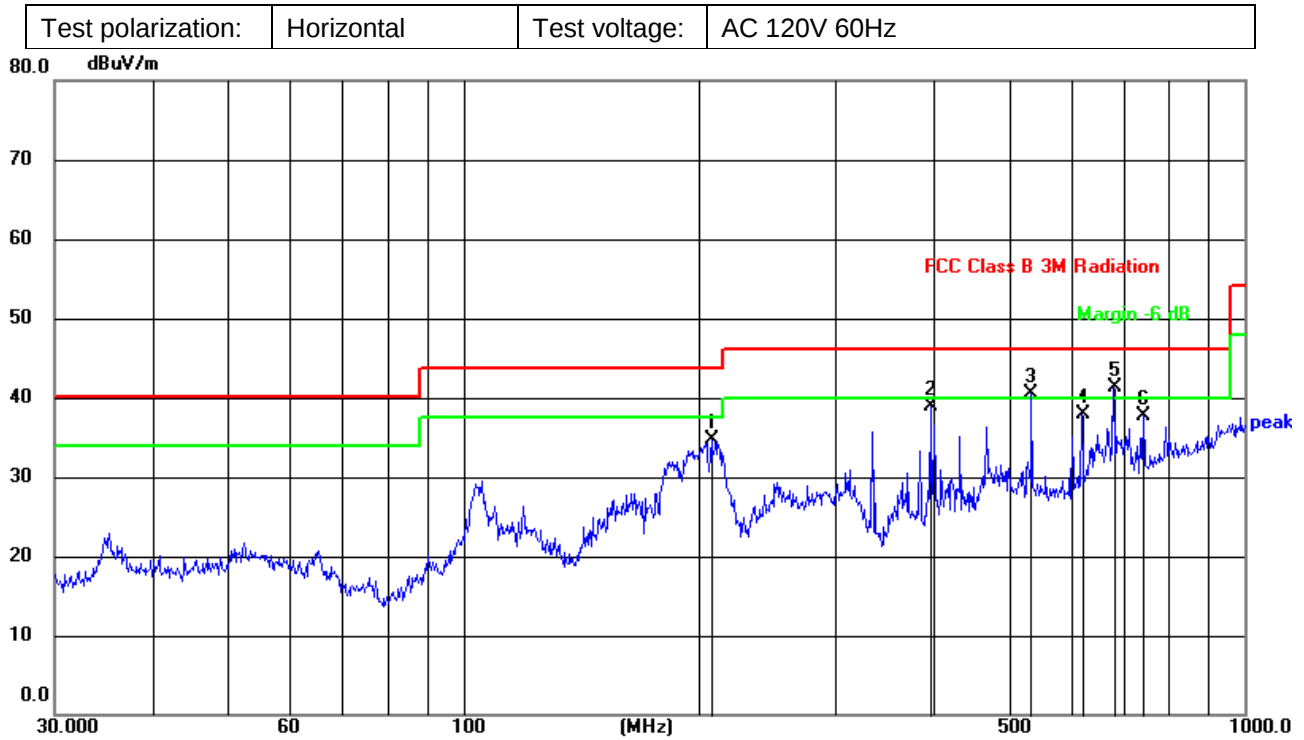
■ **9kHz~30MHz**

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

# Below 1GHz

All mode has been tested, the report only shows the worst mode (2440MHz) data.





| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 207.8501        | 58.23          | -23.46        | 34.77          | 43.50          | -8.73       | QP       |
| 2   | 396.2415        | 56.41          | -17.42        | 38.99          | 46.00          | -7.01       | QP       |
| 3   | 533.8321        | 53.83          | -13.27        | 40.56          | 46.00          | -5.44       | QP       |
| 4   | 618.5369        | 48.88          | -10.96        | 37.92          | 46.00          | -8.08       | QP       |
| 5   | 679.9600        | 51.19          | -9.83         | 41.36          | 46.00          | -4.64       | QP       |
| 6   | 742.2587        | 45.97          | -8.27         | 37.70          | 46.00          | -8.30       | QP       |

Remarks:

Level = Receiver Reading + Factor

Factor = Antenna Factor + Cable Factor – Preamplifier Factor

# ■ Above 1GHz

|               |        |
|---------------|--------|
| Test channel: | Lowest |
|---------------|--------|

## Peak value:

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4804.00         | 57.66             | 32.40                 | 6.99            | 44.40                    | 52.65          | 74.00               | -21.35          | Vertical     |
| 7206.00         | 47.88             | 36.60                 | 8.15            | 42.30                    | 50.33          | 74.00               | -23.67          | Vertical     |
| 9608.00         | 45.17             | 38.50                 | 9.44            | 42.40                    | 50.71          | 74.00               | -23.29          | Vertical     |
| 12010.00        | *                 | --                    | --              | --                       | --             | 74.00               | --              | Vertical     |
| 14412.00        | *                 | --                    | --              | --                       | --             | 74.00               | --              | Vertical     |
| 4804.00         | 56.92             | 32.40                 | 6.99            | 44.40                    | 51.91          | 74.00               | -22.09          | Horizontal   |
| 7206.00         | 47.23             | 36.60                 | 8.15            | 42.30                    | 49.68          | 74.00               | -24.32          | Horizontal   |
| 9608.00         | 43.95             | 38.50                 | 9.44            | 42.40                    | 49.49          | 74.00               | -24.51          | Horizontal   |
| 12010.00        | *                 | --                    | --              | --                       | --             | 74.00               | --              | Horizontal   |
| 14412.00        | *                 | --                    | --              | --                       | --             | 74.00               | --              | Horizontal   |

## Average value:

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4804.00         | 44.90             | 32.10                 | 6.99            | 45.70                    | 39.89          | 54.00               | -14.11          | Vertical     |
| 7206.00         | 34.79             | 36.10                 | 8.15            | 45.50                    | 37.24          | 54.00               | -16.76          | Vertical     |
| 9608.00         | 32.17             | 38.30                 | 9.44            | 46.20                    | 37.71          | 54.00               | -16.29          | Vertical     |
| 12010.00        | *                 | --                    | --              | --                       | --             | 54.00               | --              | Vertical     |
| 14412.00        | *                 | --                    | --              | --                       | --             | 54.00               | --              | Vertical     |
| 4804.00         | 45.03             | 32.10                 | 6.99            | 45.70                    | 40.02          | 54.00               | -13.98          | Horizontal   |
| 7206.00         | 35.76             | 36.10                 | 8.15            | 45.50                    | 38.21          | 54.00               | -15.79          | Horizontal   |
| 9608.00         | 32.25             | 38.30                 | 9.44            | 46.20                    | 37.79          | 54.00               | -16.21          | Horizontal   |
| 12010.00        | *                 | --                    | --              | --                       | --             | 54.00               | --              | Horizontal   |
| 14412.00        | *                 | --                    | --              | --                       | --             | 54.00               | --              | Horizontal   |

## Remarks:

1. Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “\*”, means this data is the too weak instrument of signal is unable to test.
3. Emissions more than 20 dB below the limit do not need to be reported.

|               |        |
|---------------|--------|
| Test channel: | Middle |
|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4880.00         | 58.52             | 32.10                 | 6.99            | 45.70              | 51.91          | 74.00               | -22.09          | Vertical     |
| 7320.00         | 50.21             | 36.80                 | 8.15            | 45.50              | 49.66          | 74.00               | -24.34          | Vertical     |
| 9760.00         | 48.15             | 38.40                 | 9.44            | 46.20              | 49.79          | 74.00               | -24.21          | Vertical     |
| 12200.00        | *                 | --                    | --              | --                 | --             | 74.00               | --              | Vertical     |
| 14640.00        | *                 | --                    | --              | --                 | --             | 74.00               | --              | Vertical     |
| 4880.00         | 58.93             | 32.10                 | 6.99            | 45.70              | 52.32          | 74.00               | -21.68          | Horizontal   |
| 7320.00         | 49.43             | 36.80                 | 8.15            | 45.50              | 48.88          | 74.00               | -25.12          | Horizontal   |
| 9760.00         | 47.72             | 38.40                 | 9.44            | 46.20              | 49.36          | 74.00               | -24.64          | Horizontal   |
| 12200.00        | *                 | --                    | --              | --                 | --             | 74.00               | --              | Horizontal   |
| 14640.00        | *                 | --                    | --              | --                 | --             | 74.00               | --              | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4880.00         | 46.99             | 32.10                 | 6.99            | 45.70              | 40.38          | 54.00               | -13.62          | Vertical     |
| 7320.00         | 39.29             | 36.80                 | 8.15            | 45.50              | 38.74          | 54.00               | -15.26          | Vertical     |
| 9760.00         | 37.15             | 38.40                 | 9.44            | 46.20              | 38.79          | 54.00               | -15.21          | Vertical     |
| 12200.00        | *                 | --                    | --              | --                 | --             | 54.00               | --              | Vertical     |
| 14640.00        | *                 | --                    | --              | --                 | --             | 54.00               | --              | Vertical     |
| 4880.00         | 47.49             | 32.10                 | 6.99            | 45.70              | 40.88          | 54.00               | -13.12          | Horizontal   |
| 7320.00         | 38.96             | 36.80                 | 8.15            | 45.50              | 38.41          | 54.00               | -15.59          | Horizontal   |
| 9760.00         | 37.88             | 38.40                 | 9.44            | 46.20              | 39.52          | 54.00               | -14.48          | Horizontal   |
| 12200.00        | *                 | --                    | --              | --                 | --             | 54.00               | --              | Horizontal   |
| 14640.00        | *                 | --                    | --              | --                 | --             | 54.00               | --              | Horizontal   |

**Remarks:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “\*”, means this data is too weak, instrument of signal is unable to test.
3. Emissions more than 20 dB below the limit do not need to be reported.

|               |         |
|---------------|---------|
| Test channel: | Highest |
|---------------|---------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4960.00         | 55.9              | 32.70                 | 6.99            | 45.70              | 49.89          | 74.00               | -24.11          | Vertical     |
| 7440.00         | 49.88             | 36.40                 | 8.15            | 45.50              | 48.93          | 74.00               | -25.07          | Vertical     |
| 9920.00         | 49.42             | 38.00                 | 9.44            | 46.20              | 50.66          | 74.00               | -23.34          | Vertical     |
| 12400.00        | *                 | --                    | --              | --                 | --             | 74.00               | --              | Vertical     |
| 14880.00        | *                 | --                    | --              | --                 | --             | 74.00               | --              | Vertical     |
| 4960.00         | 56.23             | 32.70                 | 6.99            | 45.70              | 50.22          | 74.00               | -23.78          | Horizontal   |
| 7440.00         | 50.22             | 36.40                 | 8.15            | 45.50              | 49.27          | 74.00               | -24.73          | Horizontal   |
| 9920.00         | 48.40             | 38.00                 | 9.44            | 46.20              | 49.64          | 74.00               | -24.36          | Horizontal   |
| 12400.00        | *                 | --                    | --              | --                 | --             | 74.00               | --              | Horizontal   |
| 14880.00        | *                 | --                    | --              | --                 | --             | 74.00               | --              | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4960.00         | 43.56             | 32.70                 | 6.99            | 45.70              | 37.55          | 54.00               | -16.45          | Vertical     |
| 7440.00         | 37.84             | 36.40                 | 8.15            | 45.50              | 36.89          | 54.00               | -17.11          | Vertical     |
| 9920.00         | 36.11             | 38.00                 | 9.44            | 46.20              | 37.35          | 54.00               | -16.65          | Vertical     |
| 12400.00        | *                 | --                    | --              | --                 | --             | 54.00               | --              | Vertical     |
| 14880.00        | *                 | --                    | --              | --                 | --             | 54.00               | --              | Vertical     |
| 4960.00         | 44.64             | 32.70                 | 6.99            | 45.70              | 38.63          | 54.00               | -15.37          | Horizontal   |
| 7440.00         | 38.59             | 36.40                 | 8.15            | 45.50              | 37.64          | 54.00               | -16.36          | Horizontal   |
| 9920.00         | 36.59             | 38.00                 | 9.44            | 46.20              | 37.83          | 54.00               | -16.17          | Horizontal   |
| 12400.00        | *                 | --                    | --              | --                 | --             | 54.00               | --              | Horizontal   |
| 14880.00        | *                 | --                    | --              | --                 | --             | 54.00               | --              | Horizontal   |

**Remarks:**

1. Level = Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. “\*”, means this data is too weak; instrument or signal is unable to test.
3. Emissions more than 20 dB below the limit do not need to be reported.

## 5. Test Setup Photo

Reference to the **appendix I** for details.

## 6. EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----