

## TEST REPORT

**Applicant:** Shantou Chenghai Mengfeiyang Toy Industrial Co., LTD

**Address of Applicant:** Lingting Industrial Zone, Chenghua Street, Chenghai District, Shantou City, Guangdong Province, China

**Manufacturer/Factory:** Shantou Chenghai Mengfeiyang Toy Industrial Co., LTD

**Address of Manufacturer/Factory:** Lingting Industrial Zone, Chenghua Street, Chenghai District, Shantou City, Guangdong Province, China

**Equipment Under Test (EUT)**

**Product Name:** Four-axis remote control aircraft

**Model No.:** S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, MFY-01, MFY-02, MFY-03, MFY-04, MFY-05, MFY-06, MFY-07, MFY-08, MFY-09, MFY-10, MFY-11, MFY-12, MFY-13, MFY-14, MFY-15, MFY-16, MFY-17, MFY-18, MFY-19, MFY-20, MFY-21, MFY-22, MFY-23, MFY-24, MFY-25, MFY-26, MFY-27, MFY-28, MFY-29, MFY-30, CK-01, CK-02, CK-03, CK-04, CK-05, CK-06, CK-07, CK-08, CK-09, CK-10, CK-11, CK-12, CK-13, CK-14, CK-15, CK-16, CK-17, CK-18, CK-19, CK-20, CK-21, CK-22, CK-23, CK-24, CK-25M, CK-26, CK-27, CK-28, CK-29, CK-30, X8, P1, P2, P3, P4, P5, P6, P7, P8, P9, P10

**FCC ID:** 2A857-S1

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249

**Date of sample receipt:** October 13, 2022

**Date of Test:** October 14-25, 2022

**Date of report issued:** October 25, 2022

**Test Result :** PASS \*

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

Authorized Signature:



Robinson Luo

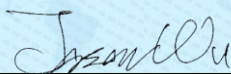
Laboratory Manager

This 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.

## 2 Version

| Version No. | Date             | Description |
|-------------|------------------|-------------|
| 00          | October 25, 2022 | Original    |
|             |                  |             |
|             |                  |             |
|             |                  |             |
|             |                  |             |

Prepared By:

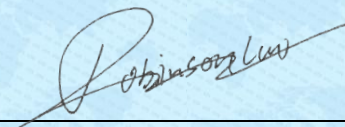


Date:

October 25, 2022

Project Engineer

Check By:



Date:

October 25, 2022

Reviewer

## 3 Contents

|                                                      | Page |
|------------------------------------------------------|------|
| 1 COVER PAGE.....                                    | 1    |
| 2 VERSION .....                                      | 2    |
| 3 CONTENTS .....                                     | 3    |
| 4 TEST SUMMARY .....                                 | 4    |
| 4.1 MEASUREMENT UNCERTAINTY .....                    | 4    |
| 5 GENERAL INFORMATION .....                          | 5    |
| 5.1 GENERAL DESCRIPTION OF EUT .....                 | 5    |
| 5.2 TEST MODE .....                                  | 7    |
| 5.3 DESCRIPTION OF SUPPORT UNITS .....               | 7    |
| 5.4 DEVIATION FROM STANDARDS .....                   | 7    |
| 5.5 ABNORMALITIES FROM STANDARD CONDITIONS .....     | 7    |
| 5.6 TEST FACILITY .....                              | 7    |
| 5.7 TEST LOCATION .....                              | 7    |
| 5.8 ADDITIONAL INSTRUCTIONS.....                     | 7    |
| 6 TEST INSTRUMENTS LIST .....                        | 8    |
| 7 TEST RESULTS AND MEASUREMENT DATA.....             | 10   |
| 7.1 ANTENNA REQUIREMENT .....                        | 10   |
| 7.2 CONDUCTED EMISSIONS .....                        | 11   |
| 7.3 RADIATED EMISSION METHOD .....                   | 14   |
| 7.3.1 Field Strength of The Fundamental Signal ..... | 16   |
| 7.3.2 Spurious emissions.....                        | 17   |
| 7.3.3 Bandedge emissions.....                        | 29   |
| 7.4 20dB OCCUPY BANDWIDTH .....                      | 33   |
| 8 TEST SETUP PHOTO .....                             | 35   |
| 9 EUT CONSTRUCTIONAL DETAILS .....                   | 35   |



## 4 Test Summary

| Test Item                                | Section in CFR 47     | Result |
|------------------------------------------|-----------------------|--------|
| Antenna requirement                      | 15.203                | Pass   |
| AC Power Line Conducted Emission         | 15.207                | Pass   |
| Field strength of the fundamental signal | 15.249 (a)            | Pass   |
| Spurious emissions                       | 15.249 (a) (d)/15.209 | Pass   |
| Band edge                                | 15.249 (d)/15.205     | Pass   |
| 20dB Occupied Bandwidth                  | 15.215 (c)            | Pass   |

Remarks:

1. Test according to ANSI C63.10:2013 .
2. Pass: The EUT complies with the essential requirements in the standard.

### 4.1 Measurement Uncertainty

| Test Item                        | Frequency Range | Measurement Uncertainty | Notes |
|----------------------------------|-----------------|-------------------------|-------|
| Radiated Emission                | 9kHz-30MHz      | 3.1dB                   | (1)   |
| Radiated Emission                | 30MHz-200MHz    | 3.8039dB                | (1)   |
| Radiated Emission                | 200MHz-1GHz     | 3.9679dB                | (1)   |
| Radiated Emission                | 1GHz-18GHz      | 4.29dB                  | (1)   |
| Radiated Emission                | 18GHz-40GHz     | 3.30dB                  | (1)   |
| AC Power Line Conducted Emission | 0.15MHz ~ 30MHz | 3.44dB                  | (1)   |

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

## 5 General Information

### 5.1 General Description of EUT

|                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:                                                                                                                                                                          | Four-axis remote control aircraft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Model No.:                                                                                                                                                                             | S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, MFY-01, MFY-02, MFY-03, MFY-04, MFY-05, MFY-06, MFY-07, MFY-08, MFY-09, MFY-10, MFY-11, MFY-12, MFY-13, MFY-14, MFY-15, MFY-16, MFY-17, MFY-18, MFY-19, MFY-20, MFY-21, MFY-22, MFY-23, MFY-24, MFY-25, MFY-26, MFY-27, MFY-28, MFY-29, MFY-30, CK-01, CK-02, CK-03, CK-04, CK-05, CK-06, CK-07, CK-08, CK-09, CK-10, CK-11, CK-12, CK-13, CK-14, CK-15, CK-16, CK-17, CK-18, CK-19, CK-20, CK-21, CK-22, CK-23, CK-24, CK-25M, CK-26, CK-27, CK-28, CK-29, CK-30, X8, P1, P2, P3, P4, P5, P6, P7, P8, P9, P10 |
| Test Model No.:                                                                                                                                                                        | S1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are appearance color and model name for commercial purpose. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Serial No.:                                                                                                                                                                            | 6974545620020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Test sample(s) ID:                                                                                                                                                                     | GTS202210000049-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Sample(s) Status                                                                                                                                                                       | Engineered sample                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Operation Frequency:                                                                                                                                                                   | 2403MHz~2431MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Channel numbers:                                                                                                                                                                       | 29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Modulation type:                                                                                                                                                                       | GFSK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Antenna Type:                                                                                                                                                                          | Integral antenna                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Antenna gain:                                                                                                                                                                          | 2dBi(Declared by applicant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Power supply:                                                                                                                                                                          | DC 3.7V, 300mAh, 1.11Wh for Li-ion battery<br>The battery is charged via USB DC5V                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Operation Frequency each of channel |                 |         |                 |         |                 |         |                 |
|-------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                             | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 1                                   | 2403            | 9       | 2411            | 17      | 2419            | 25      | 2427            |
| 2                                   | 2404            | 10      | 2412            | 18      | 2420            | 26      | 2428            |
| 3                                   | 2405            | 11      | 2413            | 19      | 2421            | 27      | 2429            |
| 4                                   | 2406            | 12      | 2414            | 20      | 2422            | 28      | 2430            |
| 5                                   | 2407            | 13      | 2415            | 21      | 2423            | 29      | 2431            |
| 6                                   | 2408            | 14      | 2416            | 22      | 2424            |         |                 |
| 7                                   | 2409            | 15      | 2417            | 23      | 2425            |         |                 |
| 8                                   | 2410            | 16      | 2418            | 24      | 2426            |         |                 |

The test frequencies are below:

| Channel             | Frequency |
|---------------------|-----------|
| The lowest channel  | 2403MHz   |
| The middle channel  | 2419MHz   |
| The Highest channel | 2431MHz   |



## 5.2 Test mode

|                   |                                                 |
|-------------------|-------------------------------------------------|
| Transmitting mode | Keep the EUT in continuously transmitting mode. |
|-------------------|-------------------------------------------------|

### Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

| Axis                   | X     | Y     | Z     |
|------------------------|-------|-------|-------|
| Field Strength(dBuV/m) | 78.32 | 79.20 | 77.41 |

## 5.3 Description of Support Units

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

## 5.4 Deviation from Standards

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

## 5.5 Abnormalities from Standard Conditions

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

## 5.6 Test Facility

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

- **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

- **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

## 5.7 Test Location

|                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All tests were performed at:                                                                                                                                                                                                                         |
| Global United Technology Services Co., Ltd.<br>Address: No. 123- 128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102<br>Tel: 0755-27798480<br>Fax: 0755-27798960 |

## 5.8 Additional Instructions

|                   |                                               |
|-------------------|-----------------------------------------------|
| Test Software     | Special test command provided by manufacturer |
| Power level setup | Default                                       |

## 6 Test Instruments list

| Radiated Emission: |                                     |                                |                             |               |                     |                         |
|--------------------|-------------------------------------|--------------------------------|-----------------------------|---------------|---------------------|-------------------------|
| Item               | Test Equipment                      | Manufacturer                   | Model No.                   | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                  | 3m Semi- Anechoic Chamber           | ZhongYu Electron               | 9.2(L)*6.2(W)* 6.4(H)       | GTS250        | July 02, 2020       | July 01, 2025           |
| 2                  | Control Room                        | ZhongYu Electron               | 6.2(L)*2.5(W)* 2.4(H)       | GTS251        | N/A                 | N/A                     |
| 3                  | EMI Test Receiver                   | Rohde & Schwarz                | ESU26                       | GTS203        | April 22, 2022      | April 21, 2023          |
| 4                  | BiConiLog Antenna                   | SCHWARZBECK<br>MESS-ELEKTRONIK | VULB9168                    | GTS640        | March 21, 2022      | March 20, 2023          |
| 5                  | Double -ridged waveguide horn       | SCHWARZBECK<br>MESS-ELEKTRONIK | BBHA 9120 D                 | GTS208        | June 12, 2022       | June 11, 2023           |
| 6                  | Horn Antenna                        | ETS-LINDGREN                   | 3160                        | GTS217        | June 23, 2022       | June 22, 2023           |
| 7                  | EMI Test Software                   | AUDIX                          | E3                          | N/A           | N/A                 | N/A                     |
| 8                  | Coaxial Cable                       | GTS                            | N/A                         | GTS213        | April 22, 2022      | April 21, 2023          |
| 9                  | Coaxial Cable                       | GTS                            | N/A                         | GTS211        | April 22, 2022      | April 21, 2023          |
| 10                 | Coaxial cable                       | GTS                            | N/A                         | GTS210        | April 22, 2022      | April 21, 2023          |
| 11                 | Coaxial Cable                       | GTS                            | N/A                         | GTS212        | April 22, 2022      | April 21, 2023          |
| 12                 | Amplifier(100kHz-3GHz)              | HP                             | 8347A                       | GTS204        | April 22, 2022      | April 21, 2023          |
| 13                 | Amplifier (18-26GHz)                | Rohde & Schwarz                | AFS33-18002<br>650-30-8P-44 | GTS218        | June 23, 2022       | June 22, 2023           |
| 14                 | Band filter                         | Amindeon                       | 82346                       | GTS219        | June 23, 2022       | June 22, 2023           |
| 15                 | Power Meter                         | Anritsu                        | ML2495A                     | GTS540        | June 23, 2022       | June 22, 2023           |
| 16                 | Power Sensor                        | Anritsu                        | MA2411B                     | GTS541        | June 23, 2022       | June 22, 2023           |
| 17                 | Wideband Radio Communication Tester | Rohde & Schwarz                | CMW500                      | GTS575        | April 22, 2022      | April 21, 2023          |
| 18                 | Splitter                            | Agilent                        | 11636B                      | GTS237        | June 23, 2022       | June 22, 2023           |
| 19                 | Loop Antenna                        | ZHINAN                         | ZN30900A                    | GTS534        | Nov. 30, 2021       | Nov. 29, 2022           |
| 20                 | Broadband Preamplifier              | SCHWARZBECK                    | BBV9718                     | GTS535        | April 22, 2022      | April 21, 2023          |
| 21                 | Breitband hornantenna               | SCHWARZBECK                    | BBHA 9170                   | GTS579        | Oct. 16, 2022       | Oct. 15, 2023           |
| 22                 | Amplifier                           | TDK                            | PA-02-02                    | GTS574        | Oct. 16, 2022       | Oct. 15, 2023           |
| 23                 | Amplifier                           | TDK                            | PA-02-03                    | GTS576        | Oct. 16, 2022       | Oct. 15, 2023           |
| 24                 | PSA Series Spectrum Analyzer        | Rohde & Schwarz                | FSP                         | GTS578        | June 23, 2022       | June 22, 2023           |
| 25                 | Amplifier(1GHz-26.5GHz)             | HP                             | 8449B                       | GTS601        | April 22, 2022      | April 21, 2023          |



| Conducted Emission |                           |                         |                      |               |                     |                         |
|--------------------|---------------------------|-------------------------|----------------------|---------------|---------------------|-------------------------|
| Item               | Test Equipment            | Manufacturer            | Model No.            | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                  | Shielding Room            | ZhongYu Electron        | 7.3(L)x3.1(W)x2.9(H) | GTS252        | May 14, 2022        | May 13, 2025            |
| 2                  | EMI Test Receiver         | R&S                     | ESCI 7               | GTS552        | April 24, 2022      | April 23, 2023          |
| 3                  | Coaxial Switch            | ANRITSU CORP            | MP59B                | GTS225        | June 23, 2022       | June 22, 2023           |
| 4                  | ENV216 2-L-V-NETZNACHB.DE | ROHDE&SCHWARZ           | ENV216               | GTS226        | April 22, 2022      | April 21, 2023          |
| 5                  | Coaxial Cable             | GTS                     | N/A                  | GTS227        | N/A                 | N/A                     |
| 6                  | EMI Test Software         | AUDIX                   | E3                   | N/A           | N/A                 | N/A                     |
| 7                  | Thermo meter              | JINCHUANG               | GSP-8A               | GTS639        | April 28, 2022      | April 27, 2023          |
| 8                  | Absorbing clamp           | Elektronik-Feinmechanik | MDS21                | GTS229        | April 15, 2022      | April 14, 2023          |
| 9                  | ISN                       | SCHWARZBECK             | NTFM 8158            | GTS565        | April 22, 2022      | April 21, 2023          |
| 10                 | High voltage probe        | SCHWARZBECK             | TK9420               | GTS537        | April 22, 2022      | April 21, 2023          |

| RF Conducted Test: |                                                |              |                  |            |                     |                         |
|--------------------|------------------------------------------------|--------------|------------------|------------|---------------------|-------------------------|
| Item               | Test Equipment                                 | Manufacturer | Model No.        | Serial No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                  | MXA Signal Analyzer                            | Agilent      | N9020A           | GTS566     | April 22, 2022      | April 21, 2023          |
| 2                  | EMI Test Receiver                              | R&S          | ESCI 7           | GTS552     | April 22, 2022      | April 21, 2023          |
| 3                  | Spectrum Analyzer                              | Agilent      | E4440A           | GTS536     | April 22, 2022      | April 21, 2023          |
| 4                  | MXG vector Signal Generator                    | Agilent      | N5182A           | GTS567     | April 22, 2022      | April 21, 2023          |
| 5                  | ESG Analog Signal Generator                    | Agilent      | E4428C           | GTS568     | April 22, 2022      | April 21, 2023          |
| 6                  | USB RF Power Sensor                            | DARE         | RPR3006W         | GTS569     | April 22, 2022      | April 21, 2023          |
| 7                  | RF Switch Box                                  | Shongyi      | RFSW3003328      | GTS571     | April 22, 2022      | April 21, 2023          |
| 8                  | Programmable Constant Temp & Humi Test Chamber | WEWON        | WHTH-150L-40-880 | GTS572     | April 22, 2022      | April 21, 2023          |

| General used equipment: |                                 |              |           |               |                     |                         |
|-------------------------|---------------------------------|--------------|-----------|---------------|---------------------|-------------------------|
| Item                    | Test Equipment                  | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                       | Humidity/ Temperature Indicator | KTJ          | TA328     | GTS243        | April 25, 2022      | April 24, 2023          |
| 2                       | Barometer                       | KUMAO        | SF132     | GTS647        | July 26, 2022       | July 25, 2023           |

## 7 Test results and Measurement Data

### 7.1 Antenna requirement

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Standard requirement:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | FCC Part15 C Section 15.203 |
| <b>15.203 requirement:</b><br>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. |                             |
| <b>EUT Antenna:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             |
| The antenna is integral antenna, reference to the appendix II for details.                                                                                                                                                                                                                                                                                                                                                                                                       |                             |

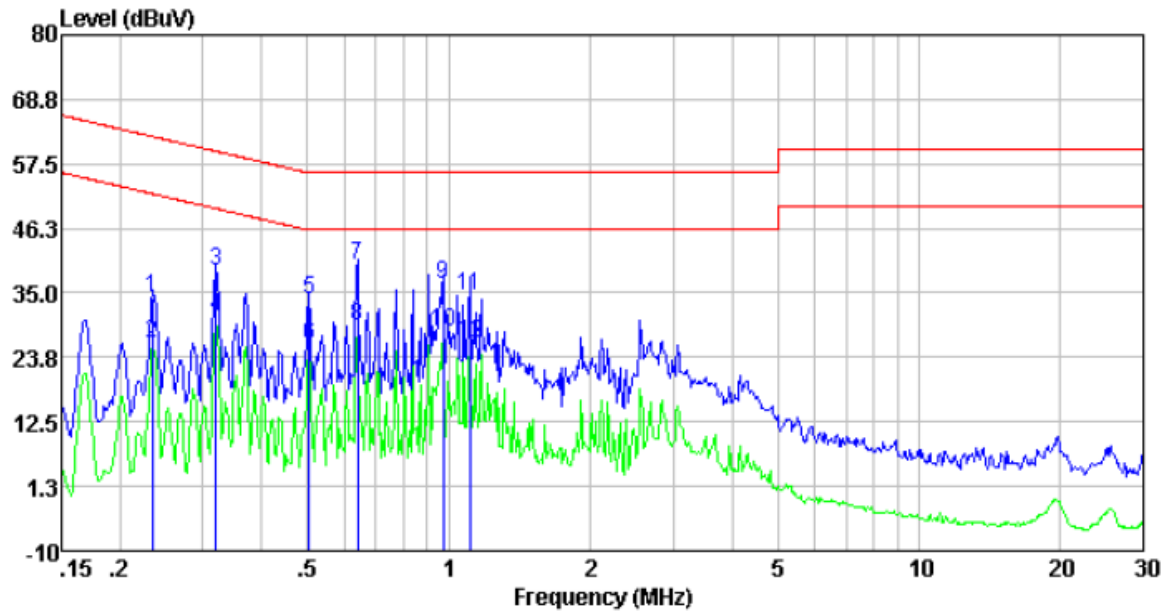
## 7.2 Conducted Emissions

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |              |     |           |          |  |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------|-----|-----------|----------|--|
| Test Requirement:     | FCC Part15 C Section 15.207                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |              |     |           |          |  |
| Test Method:          | ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |              |     |           |          |  |
| Test Frequency Range: | 150KHz to 30MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |              |     |           |          |  |
| Class / Severity:     | Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |              |     |           |          |  |
| 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>Reference Plane</div><div></div></div><div><div>LISN</div><div>AUX Equipment</div><div>E.U.T</div><div>Test table/Insulation plane</div></div><div><div>40cm</div></div><div><div>LISN</div><div>Filter</div><div>EMI Receiver</div></div><div><div>80cm</div></div><div><div>AC power</div></div></div></div><div><p>Remark:<br/>E.U.T: Equipment Under Test<br/>LISN: Line Impedance Stabilization Network<br/>Test table height=0.8m</p></div></div>                                                                                                                                                                                                                                                                |       |              |     |           |          |  |
| Test procedure:       | <div><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></div> |       |              |     |           |          |  |
| Test Instruments:     | Refer to section 6.0 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |              |     |           |          |  |
| Test mode:            | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |              |     |           |          |  |
| Test environment:     | Temp.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25 °C | Humid.:      | 52% | Press.:   | 1012mbar |  |
| Test voltage:         | AC 120V, 60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |              |     |           |          |  |
| Test results:         | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |              |     |           |          |  |



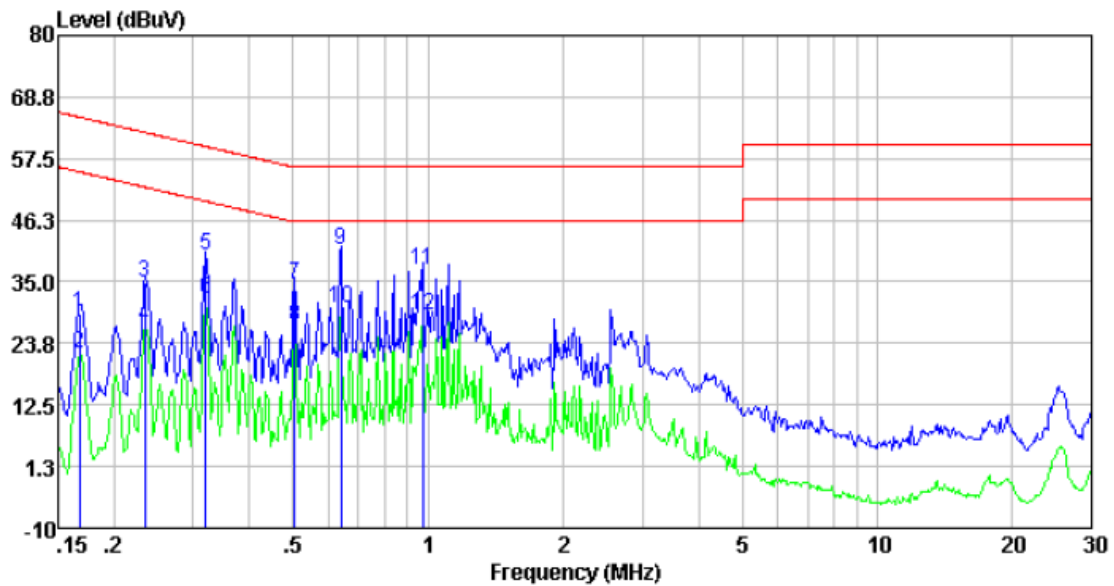
## Measurement data:

Line:



| Freq | Reading | LISN/ISN | Cable |       | Limit | Over   |         |
|------|---------|----------|-------|-------|-------|--------|---------|
|      | level   | factor   | loss  | Level | level | limit  | Remark  |
| MHz  | dBuV    | dB       | dB    | dBuV  | dBuV  | dB     |         |
| 0.23 | 23.98   | 10.02    | 0.01  | 34.01 | 62.30 | -28.29 | QP      |
| 0.23 | 16.20   | 10.02    | 0.01  | 26.23 | 52.30 | -26.07 | Average |
| 0.32 | 28.94   | 9.98     | 0.01  | 38.93 | 59.71 | -20.78 | QP      |
| 0.32 | 20.86   | 9.98     | 0.01  | 30.85 | 49.71 | -18.86 | Average |
| 0.50 | 23.73   | 9.96     | 0.01  | 33.70 | 56.00 | -22.30 | QP      |
| 0.50 | 16.00   | 9.96     | 0.01  | 25.97 | 46.00 | -20.03 | Average |
| 0.64 | 29.96   | 9.96     | 0.02  | 39.94 | 56.00 | -16.06 | QP      |
| 0.64 | 19.25   | 9.96     | 0.02  | 29.23 | 46.00 | -16.77 | Average |
| 0.97 | 26.67   | 9.96     | 0.03  | 36.66 | 56.00 | -19.34 | QP      |
| 0.97 | 18.26   | 9.96     | 0.03  | 28.25 | 46.00 | -17.75 | Average |
| 1.11 | 24.63   | 9.94     | 0.03  | 34.60 | 56.00 | -21.40 | QP      |
| 1.11 | 16.36   | 9.94     | 0.03  | 26.33 | 46.00 | -19.67 | Average |

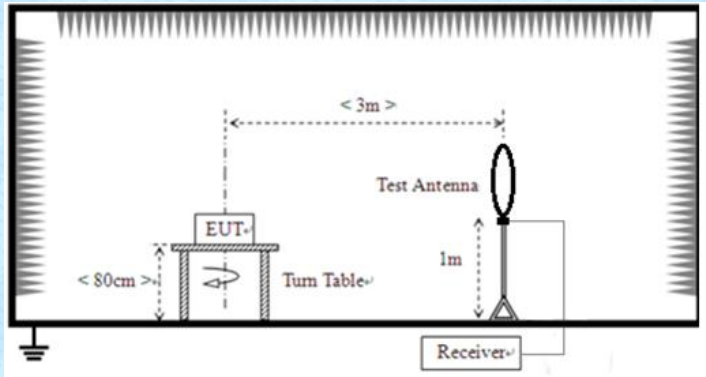
Neutral:



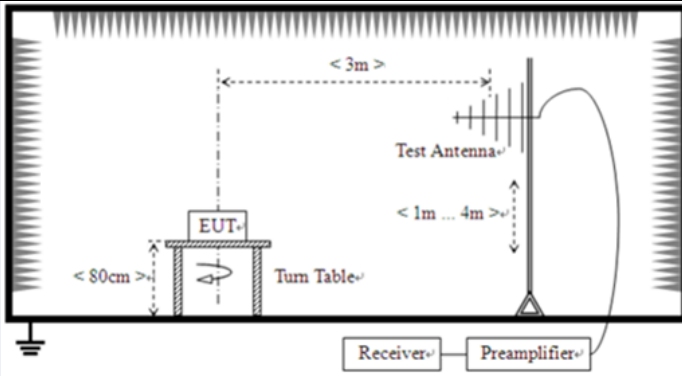
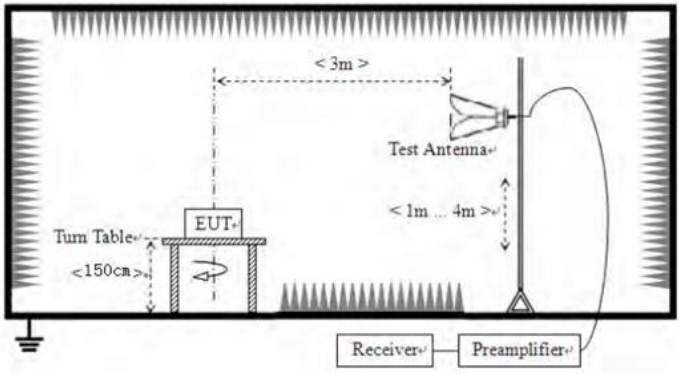
Notes:

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

## 7.3 Radiated Emission Method

|                                                      |                                                                                                                                                                                                                                                                |            |                    |        |                  |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|--------|------------------|
| Test Requirement:                                    | FCC Part15 C Section 15.209                                                                                                                                                                                                                                    |            |                    |        |                  |
| Test Method:                                         | ANSI C63.10:2013                                                                                                                                                                                                                                               |            |                    |        |                  |
| Test Frequency Range:                                | 9kHz to 25GHz                                                                                                                                                                                                                                                  |            |                    |        |                  |
| Test site:                                           | Measurement Distance: 3m                                                                                                                                                                                                                                       |            |                    |        |                  |
| Receiver setup:                                      | Frequency                                                                                                                                                                                                                                                      | Detector   | RBW                | VBW    | Remark           |
|                                                      | 9kHz-150kHz                                                                                                                                                                                                                                                    | Quasi-peak | 200Hz              | 300Hz  | Quasi-peak Value |
|                                                      | 150kHz-30MHz                                                                                                                                                                                                                                                   | Quasi-peak | 9kHz               | 10kHz  | Quasi-peak Value |
|                                                      | 30MHz-1GHz                                                                                                                                                                                                                                                     | Quasi-peak | 120KHz             | 300KHz | Quasi-peak Value |
|                                                      | Above 1GHz                                                                                                                                                                                                                                                     | Peak       | 1MHz               | 3MHz   | Peak Value       |
|                                                      |                                                                                                                                                                                                                                                                | Peak       | 1MHz               | 10Hz   | Average Value    |
| Limit:<br>(Field strength of the fundamental signal) | Frequency                                                                                                                                                                                                                                                      |            | Limit (dBuV/m @3m) |        | Remark           |
|                                                      | 2400MHz-2483.5MHz                                                                                                                                                                                                                                              |            | 94.00              |        | Average Value    |
|                                                      |                                                                                                                                                                                                                                                                |            | 114.00             |        | Peak Value       |
| Limit:<br>(Spurious Emissions)                       | Frequency                                                                                                                                                                                                                                                      |            | Limit (uV/m)       |        | Remark           |
|                                                      | 0.009MHz-0.490MHz                                                                                                                                                                                                                                              |            | 2400/F(kHz) @300m  |        | Quasi-peak Value |
|                                                      | 0.490MHz-1.705MHz                                                                                                                                                                                                                                              |            | 24000/F(kHz) @30m  |        | Quasi-peak Value |
|                                                      | 1.705MHz-30.0MHz                                                                                                                                                                                                                                               |            | 30 @30m            |        | Quasi-peak Value |
|                                                      | 30MHz-88MHz                                                                                                                                                                                                                                                    |            | 100 @3m            |        | Quasi-peak Value |
|                                                      | 88MHz-216MHz                                                                                                                                                                                                                                                   |            | 150 @3m            |        | Quasi-peak Value |
|                                                      | 216MHz-960MHz                                                                                                                                                                                                                                                  |            | 200 @3m            |        | Quasi-peak Value |
|                                                      | 960MHz-1GHz                                                                                                                                                                                                                                                    |            | 500 @3m            |        | Quasi-peak Value |
|                                                      | Above 1GHz                                                                                                                                                                                                                                                     |            | 500 @3m            |        | Average Value    |
| 5000 @3m                                             |                                                                                                                                                                                                                                                                |            | Peak Value         |        |                  |
| Limit:<br>(band edge)                                | Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. |            |                    |        |                  |
| Test setup:                                          | For radiated emissions from 9kHz to 30MHz                                                                                                                                                                                                                      |            |                    |        |                  |
|                                                      | <div></div>                                                                                                                                                                |            |                    |        |                  |
|                                                      | For radiated emissions from 30MHz to1GHz                                                                                                                                                                                                                       |            |                    |        |                  |



|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 |         |     |         |          |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------|-----|---------|----------|
|                   | <div></div> <p>For radiated emissions above 1GHz</p> <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Report No.: CTS2022100000487-01 |         |     |         |          |
| Test Procedure:   | <ol style="list-style-type: none"><li>1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) 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></ol> |                                 |         |     |         |          |
| Test Instruments: | Refer to section 6.0 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |         |     |         |          |
| Test mode:        | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |         |     |         |          |
| Test environment: | Temp.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 25 °C                           | Humid.: | 52% | Press.: | 1012mbar |
| Test voltage:     | DC 3.7V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |         |     |         |          |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |         |     |         |          |

**Measurement data:**
**7.3.1 Field Strength of The Fundamental Signal**
**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 |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 2403.00         | 85.61             | 27.43                 | 2.93            | 38.88                    | 77.09          | 114.00              | -36.91          | Vertical     |
| 2403.00         | 79.93             | 27.43                 | 2.93            | 38.88                    | 71.41          | 114.00              | -42.59          | Horizontal   |
| 2419.00         | 87.67             | 27.55                 | 2.96            | 38.98                    | 79.20          | 114.00              | -34.80          | Vertical     |
| 2419.00         | 82.19             | 27.55                 | 2.96            | 38.98                    | 73.72          | 114.00              | -40.28          | Horizontal   |
| 2431.00         | 86.47             | 27.64                 | 2.99            | 39.05                    | 78.05          | 114.00              | -35.95          | Vertical     |
| 2431.00         | 77.96             | 27.64                 | 2.99            | 39.05                    | 69.54          | 114.00              | -44.46          | 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 |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 2403.00         | 71.90             | 27.43                 | 2.93            | 38.88                    | 63.38          | 94.00               | -30.62          | Vertical     |
| 2403.00         | 69.87             | 27.43                 | 2.93            | 38.88                    | 61.35          | 94.00               | -32.65          | Horizontal   |
| 2419.00         | 77.54             | 27.55                 | 2.96            | 38.98                    | 69.07          | 94.00               | -24.93          | Vertical     |
| 2419.00         | 72.05             | 27.55                 | 2.96            | 38.98                    | 63.58          | 94.00               | -30.42          | Horizontal   |
| 2431.00         | 77.30             | 27.64                 | 2.99            | 39.05                    | 68.88          | 94.00               | -25.12          | Vertical     |
| 2431.00         | 68.64             | 27.64                 | 2.99            | 39.05                    | 60.22          | 94.00               | -33.78          | Horizontal   |

Note: RBW>20dB BW, VBW> RBW, PK detector is for PK value, AV detector is for AV value .

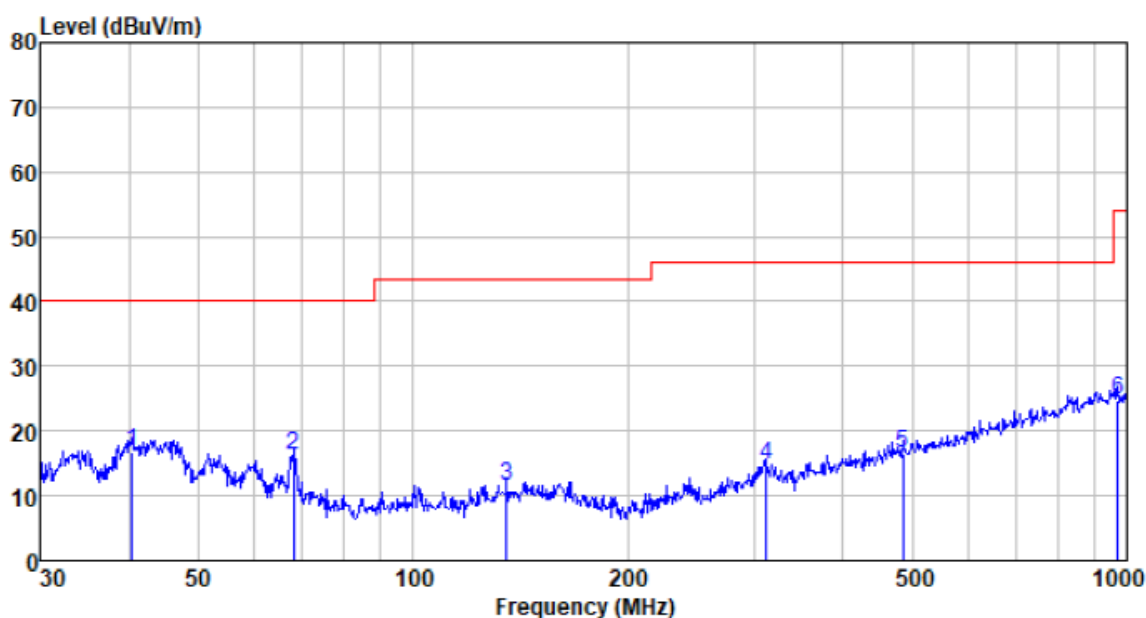
## 7.3.2 Spurious emissions

### ■ Below 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), the test result no need to reported.

### ■ Below 1GHz

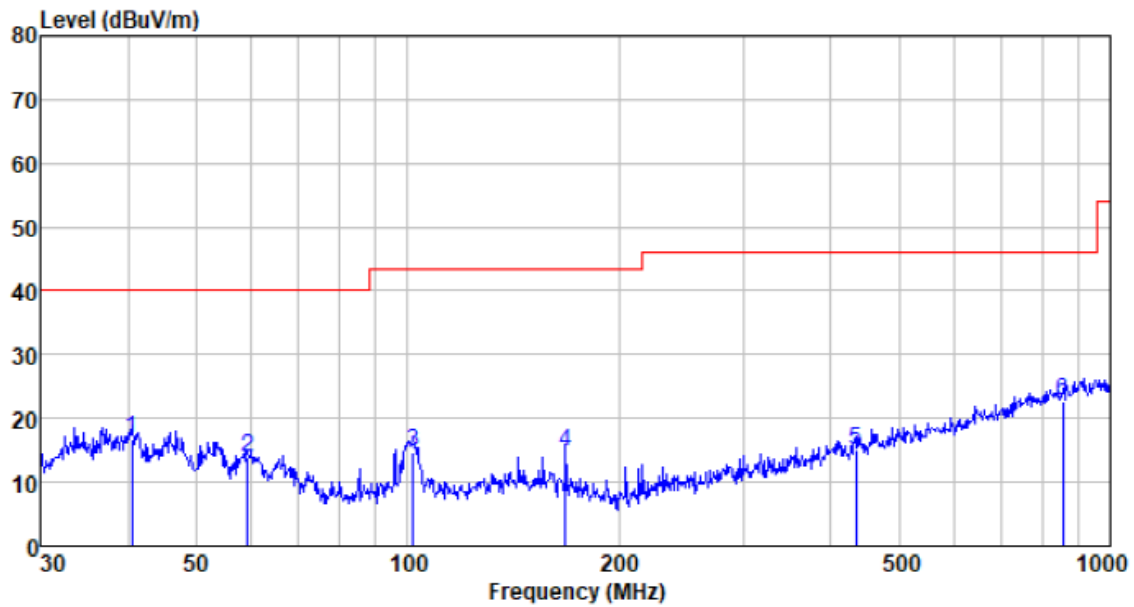
|               |        |               |            |
|---------------|--------|---------------|------------|
| Test channel: | Lowest | Polarization: | Horizontal |
|---------------|--------|---------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamplifier<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------------|-----------------|--------------------------|---------------------|--------|
| 40.417      | 37.91                    | 13.49                     | 0.66                | 35.31                        | 16.75           | 40.00                    | -23.25              | QP     |
| 67.913      | 40.09                    | 10.91                     | 0.92                | 35.82                        | 16.10           | 40.00                    | -23.90              | QP     |
| 135.032     | 34.11                    | 12.12                     | 1.47                | 36.32                        | 11.38           | 43.50                    | -32.12              | QP     |
| 312.179     | 36.33                    | 12.86                     | 2.42                | 36.92                        | 14.69           | 46.00                    | -31.31              | QP     |
| 485.609     | 33.10                    | 17.35                     | 3.24                | 37.09                        | 16.60           | 46.00                    | -29.40              | QP     |
| 972.337     | 32.62                    | 24.49                     | 5.12                | 37.39                        | 24.84           | 54.00                    | -29.16              | QP     |

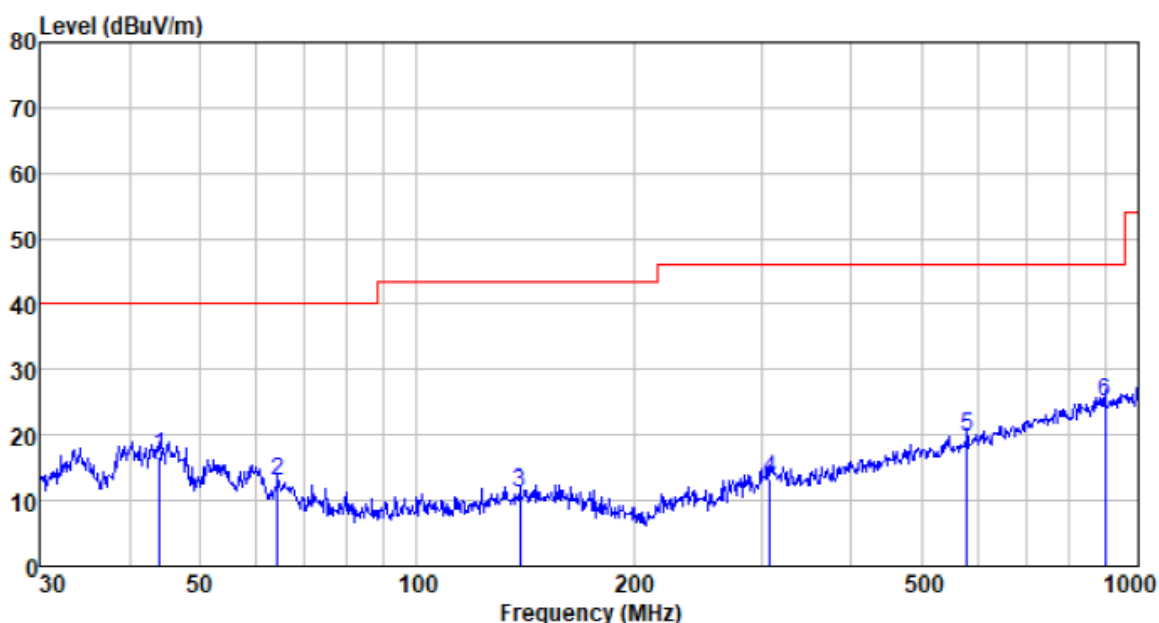


|               |        |               |          |
|---------------|--------|---------------|----------|
| Test channel: | Lowest | Polarization: | Vertical |
|---------------|--------|---------------|----------|



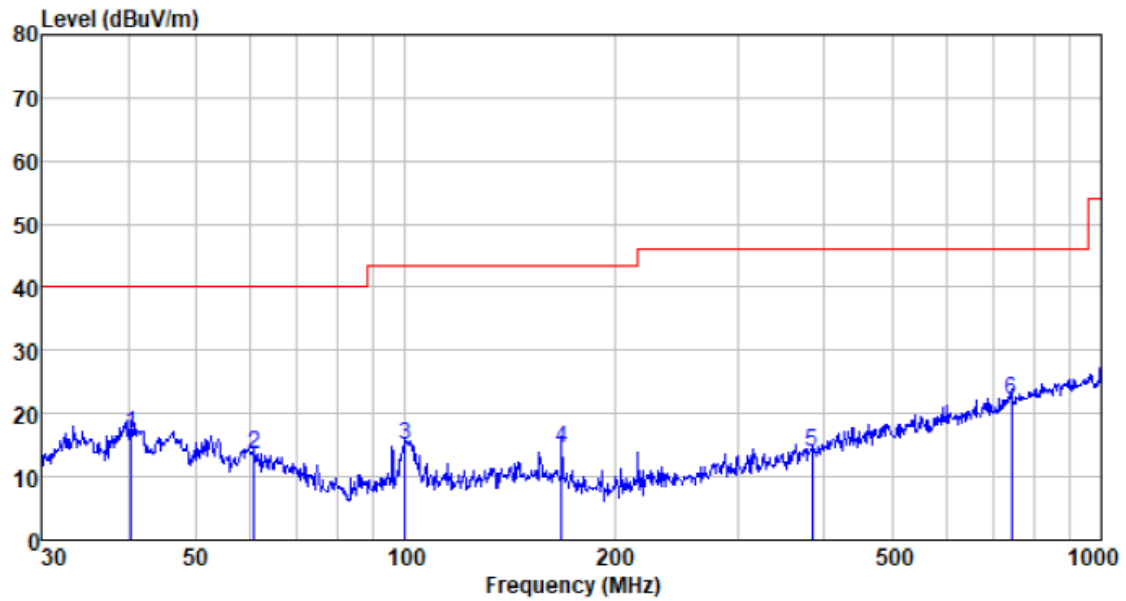
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 40.559      | 38.09                    | 13.48                     | 0.67                | 35.32                  | 16.92           | 40.00                    | -23.08              | QP     |
| 59.232      | 36.22                    | 12.64                     | 0.85                | 35.72                  | 13.99           | 40.00                    | -26.01              | QP     |
| 101.644     | 39.77                    | 9.83                      | 1.21                | 36.11                  | 14.70           | 43.50                    | -28.80              | QP     |
| 167.824     | 38.01                    | 11.67                     | 1.67                | 36.48                  | 14.87           | 43.50                    | -28.63              | QP     |
| 434.065     | 32.81                    | 16.40                     | 3.02                | 37.04                  | 15.19           | 46.00                    | -30.81              | QP     |
| 857.025     | 32.12                    | 23.40                     | 4.68                | 37.33                  | 22.87           | 46.00                    | -23.13              | QP     |

|               |        |               |            |
|---------------|--------|---------------|------------|
| Test channel: | Middle | Polarization: | Horizontal |
|---------------|--------|---------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 43.966      | 38.24                    | 13.37                     | 0.71                | 35.43                  | 16.89           | 40.00                    | -23.11              | QP     |
| 64.208      | 36.22                    | 11.68                     | 0.90                | 35.78                  | 13.02           | 40.00                    | -26.98              | QP     |
| 138.874     | 33.68                    | 12.34                     | 1.50                | 36.34                  | 11.18           | 43.50                    | -32.32              | QP     |
| 308.913     | 35.11                    | 12.74                     | 2.41                | 36.91                  | 13.35           | 46.00                    | -32.65              | QP     |
| 578.670     | 34.46                    | 18.96                     | 3.64                | 37.16                  | 19.90           | 46.00                    | -26.10              | QP     |
| 900.147     | 33.56                    | 23.90                     | 4.85                | 37.35                  | 24.96           | 46.00                    | -21.04              | QP     |

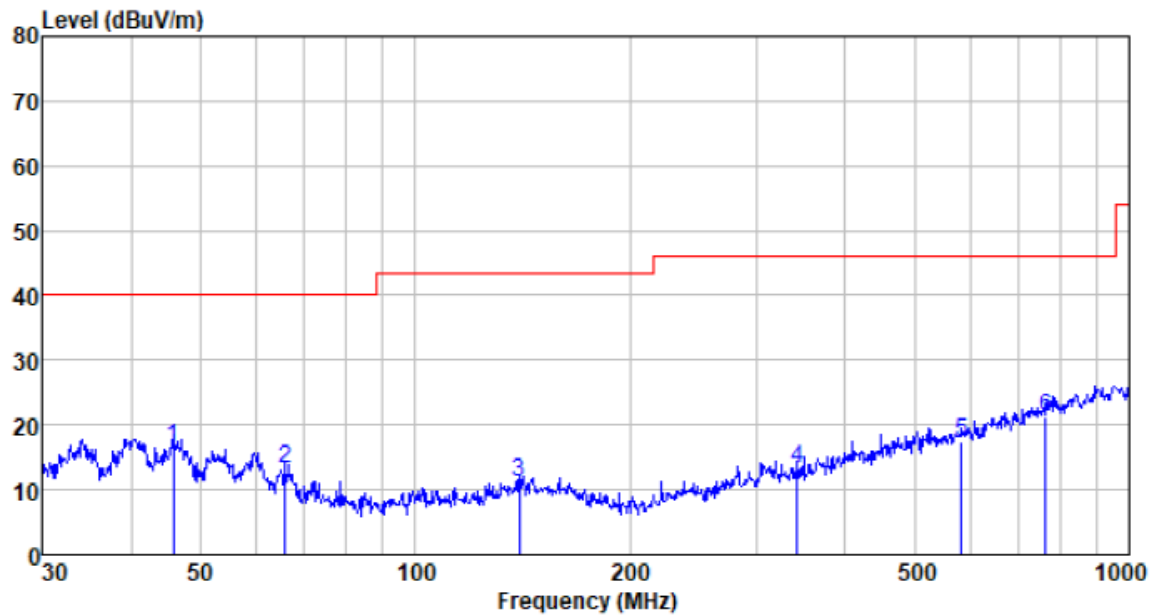
|               |        |               |          |
|---------------|--------|---------------|----------|
| Test channel: | Middle | Polarization: | Vertical |
|---------------|--------|---------------|----------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 40.417      | 38.07                    | 13.49                     | 0.66                | 35.31                  | 16.91           | 40.00                    | -23.09              | QP     |
| 60.704      | 35.99                    | 12.44                     | 0.87                | 35.74                  | 13.56           | 40.00                    | -26.44              | QP     |
| 99.878      | 40.17                    | 9.69                      | 1.19                | 36.10                  | 14.95           | 43.50                    | -28.55              | QP     |
| 167.824     | 37.59                    | 11.67                     | 1.67                | 36.48                  | 14.45           | 43.50                    | -29.05              | QP     |
| 383.932     | 32.98                    | 15.23                     | 2.78                | 37.00                  | 13.99           | 46.00                    | -32.01              | QP     |
| 742.259     | 33.45                    | 21.63                     | 4.24                | 37.27                  | 22.05           | 46.00                    | -23.95              | QP     |

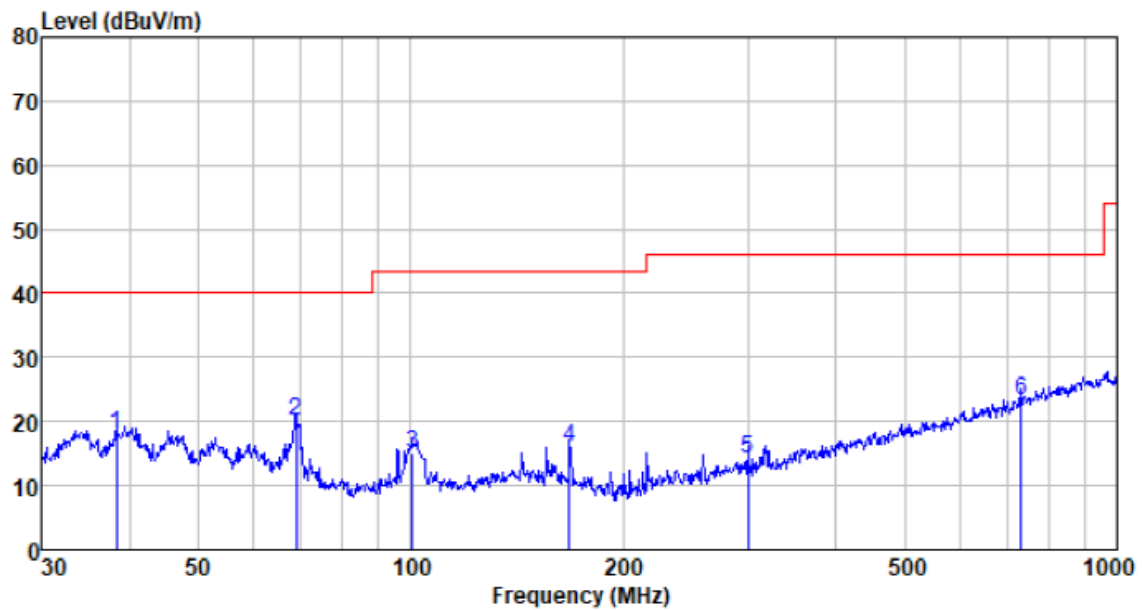


|               |         |               |            |
|---------------|---------|---------------|------------|
| Test channel: | Highest | Polarization: | Horizontal |
|---------------|---------|---------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 45.855      | 37.97                    | 13.32                     | 0.73                | 35.48                  | 16.54           | 40.00                    | -23.46              | QP     |
| 65.803      | 36.72                    | 11.34                     | 0.91                | 35.80                  | 13.17           | 40.00                    | -26.83              | QP     |
| 139.851     | 33.77                    | 12.39                     | 1.50                | 36.34                  | 11.32           | 43.50                    | -32.18              | QP     |
| 343.180     | 33.80                    | 13.94                     | 2.59                | 36.95                  | 13.38           | 46.00                    | -32.62              | QP     |
| 582.743     | 31.94                    | 19.03                     | 3.66                | 37.17                  | 17.46           | 46.00                    | -28.54              | QP     |
| 763.376     | 32.17                    | 22.03                     | 4.32                | 37.28                  | 21.24           | 46.00                    | -24.76              | QP     |

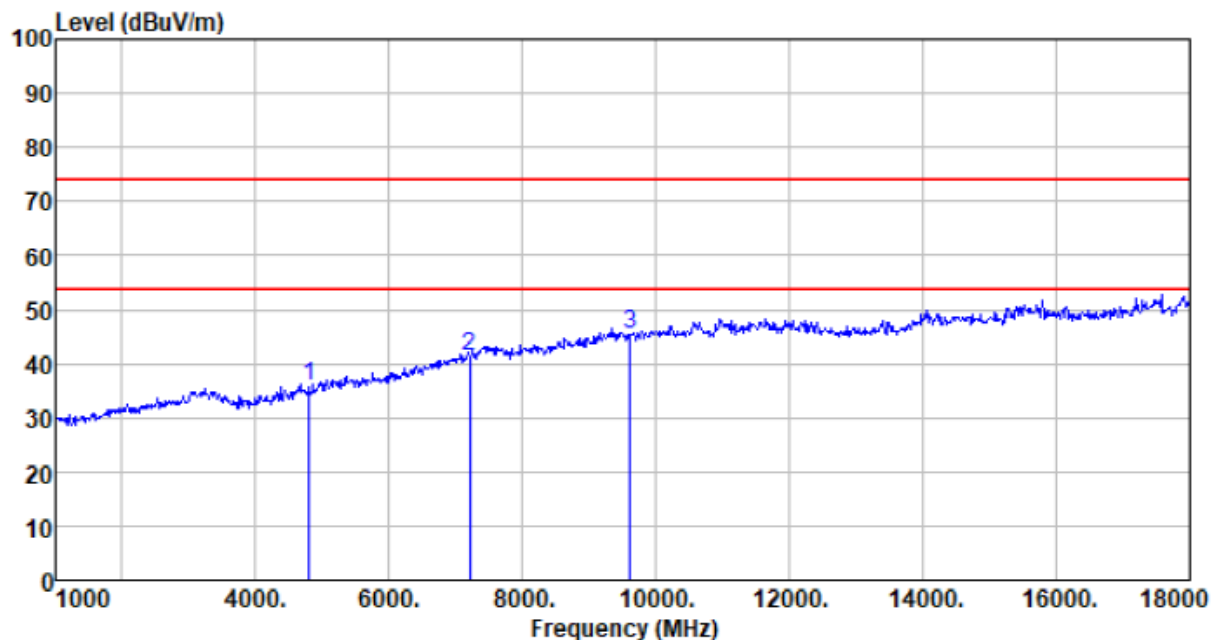
|               |         |               |          |
|---------------|---------|---------------|----------|
| Test channel: | Highest | Polarization: | Vertical |
|---------------|---------|---------------|----------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 38.346      | 39.23                    | 13.25                     | 0.64                | 35.21                  | 17.91           | 40.00                    | -22.09              | QP     |
| 68.872      | 44.40                    | 10.72                     | 0.93                | 35.83                  | 20.22           | 40.00                    | -19.78              | QP     |
| 100.581     | 40.32                    | 9.75                      | 1.19                | 36.10                  | 15.16           | 43.50                    | -28.34              | QP     |
| 167.824     | 39.16                    | 11.67                     | 1.67                | 36.48                  | 16.02           | 43.50                    | -27.48              | QP     |
| 300.367     | 36.31                    | 12.41                     | 2.36                | 36.90                  | 14.18           | 46.00                    | -31.82              | QP     |
| 731.920     | 34.80                    | 21.43                     | 4.20                | 37.26                  | 23.17           | 46.00                    | -22.83              | QP     |

■ Above 1GHz

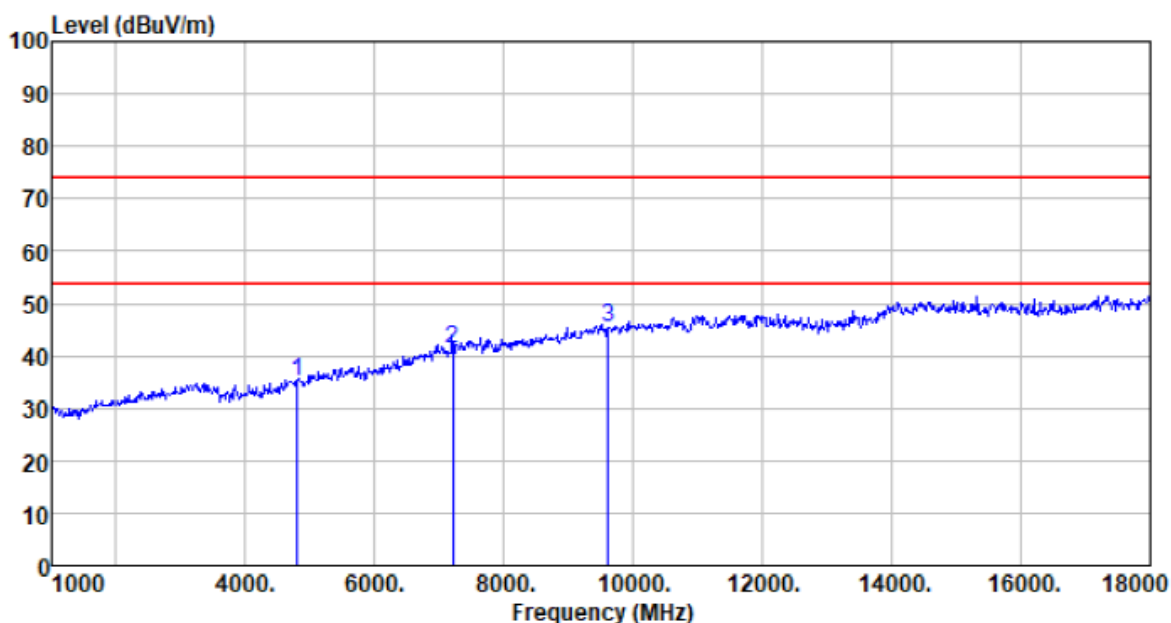
|               |        |               |            |
|---------------|--------|---------------|------------|
| Test channel: | Lowest | Polarization: | Horizontal |
|---------------|--------|---------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBUV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBUV/m | Limit<br>level<br>dBUV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4806.000    | 38.38                    | 31.06                     | 4.61                | 38.36                  | 35.69           | 74.00                    | -38.31              | Peak   |
| 7209.000    | 37.86                    | 35.92                     | 6.48                | 38.96                  | 41.30           | 74.00                    | -32.70              | Peak   |
| 9612.000    | 39.10                    | 37.91                     | 7.98                | 39.68                  | 45.31           | 74.00                    | -28.69              | Peak   |

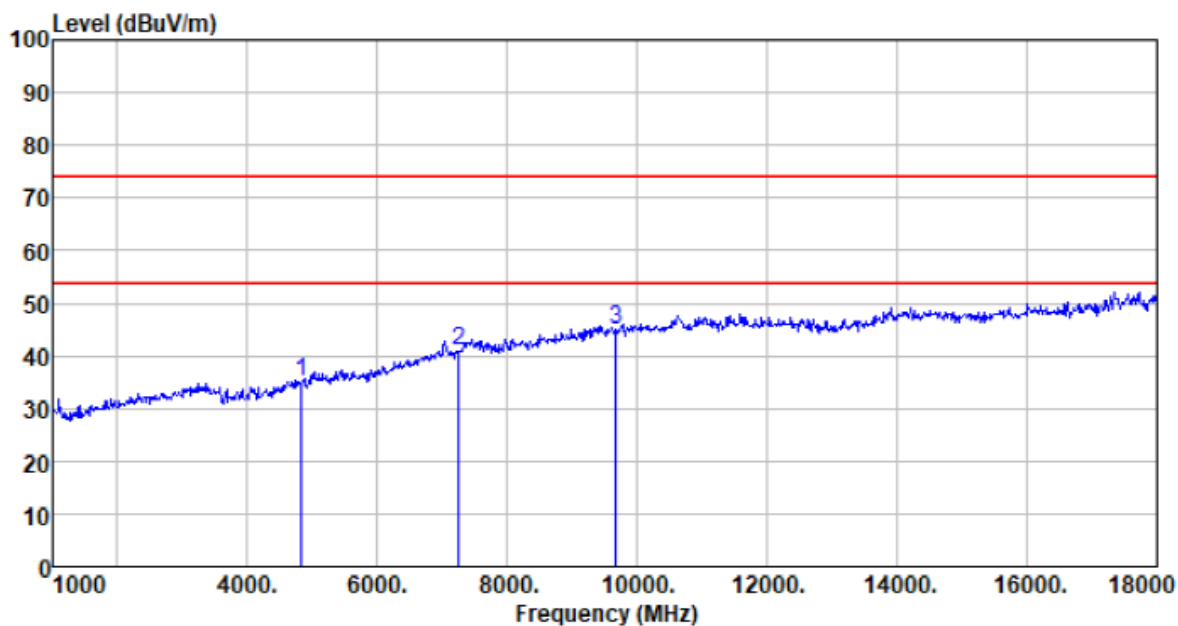


|               |        |               |          |
|---------------|--------|---------------|----------|
| Test channel: | Lowest | Polarization: | Vertical |
|---------------|--------|---------------|----------|



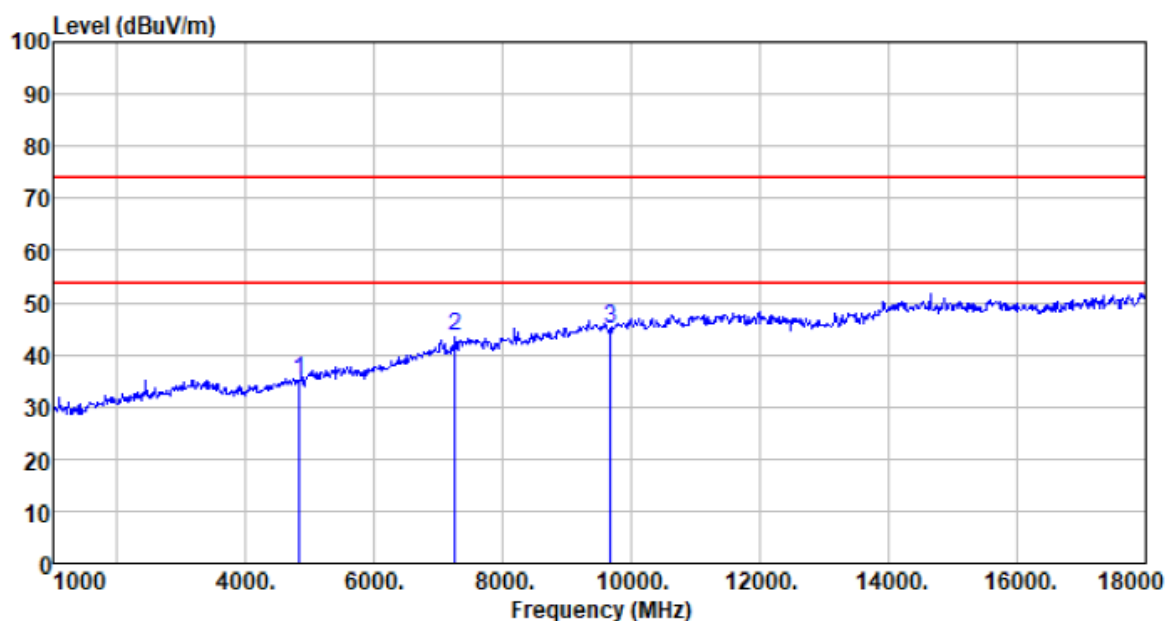
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4806.000    | 37.60                    | 31.06                     | 4.61                | 38.36                  | 34.91           | 74.00                    | -39.09              | Peak   |
| 7209.000    | 37.88                    | 35.92                     | 6.48                | 38.96                  | 41.32           | 74.00                    | -32.68              | Peak   |
| 9612.000    | 39.24                    | 37.91                     | 7.98                | 39.68                  | 45.45           | 74.00                    | -28.55              | Peak   |

|               |        |               |            |
|---------------|--------|---------------|------------|
| Test channel: | Middle | Polarization: | Horizontal |
|---------------|--------|---------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4838.000    | 37.72                    | 31.15                     | 4.65                | 38.37                  | 35.15           | 74.00                    | -38.85              | Peak   |
| 7257.000    | 37.43                    | 36.01                     | 6.55                | 38.98                  | 41.01           | 74.00                    | -32.99              | Peak   |
| 9676.000    | 38.75                    | 37.98                     | 8.00                | 39.70                  | 45.03           | 74.00                    | -28.97              | Peak   |

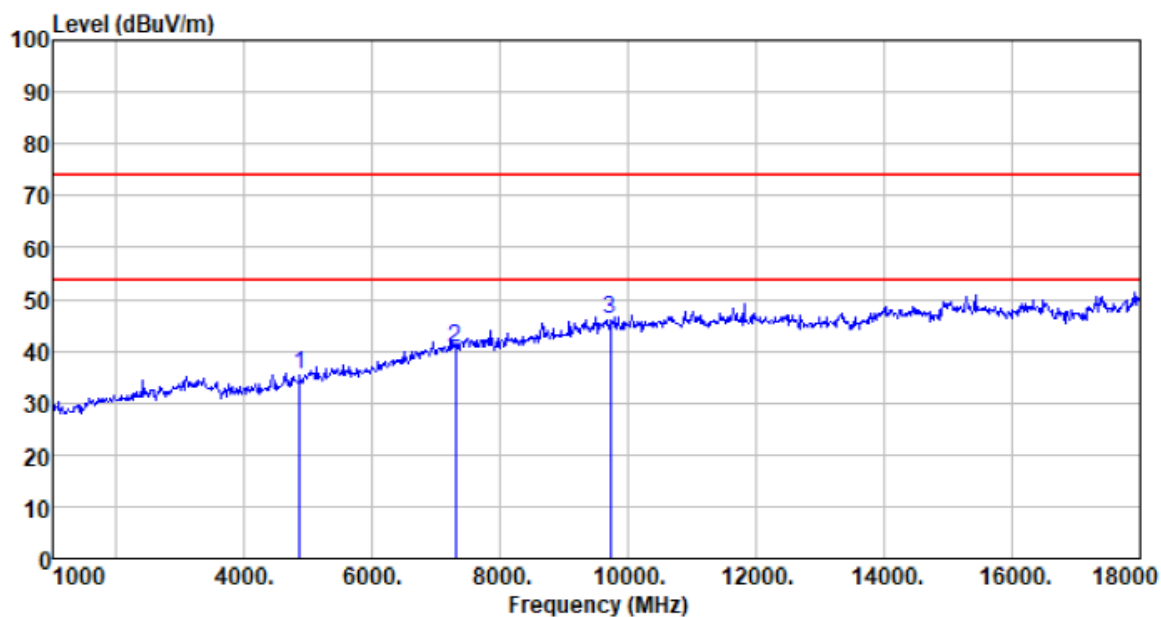
|               |        |               |          |
|---------------|--------|---------------|----------|
| Test channel: | Middle | Polarization: | Vertical |
|---------------|--------|---------------|----------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4838.000    | 37.72                    | 31.15                     | 4.65                | 38.37                  | 35.15           | 74.00                    | -38.85              | Peak   |
| 7257.000    | 39.95                    | 36.01                     | 6.55                | 38.98                  | 43.53           | 74.00                    | -30.47              | Peak   |
| 9676.000    | 38.75                    | 37.98                     | 8.00                | 39.70                  | 45.03           | 74.00                    | -28.97              | Peak   |

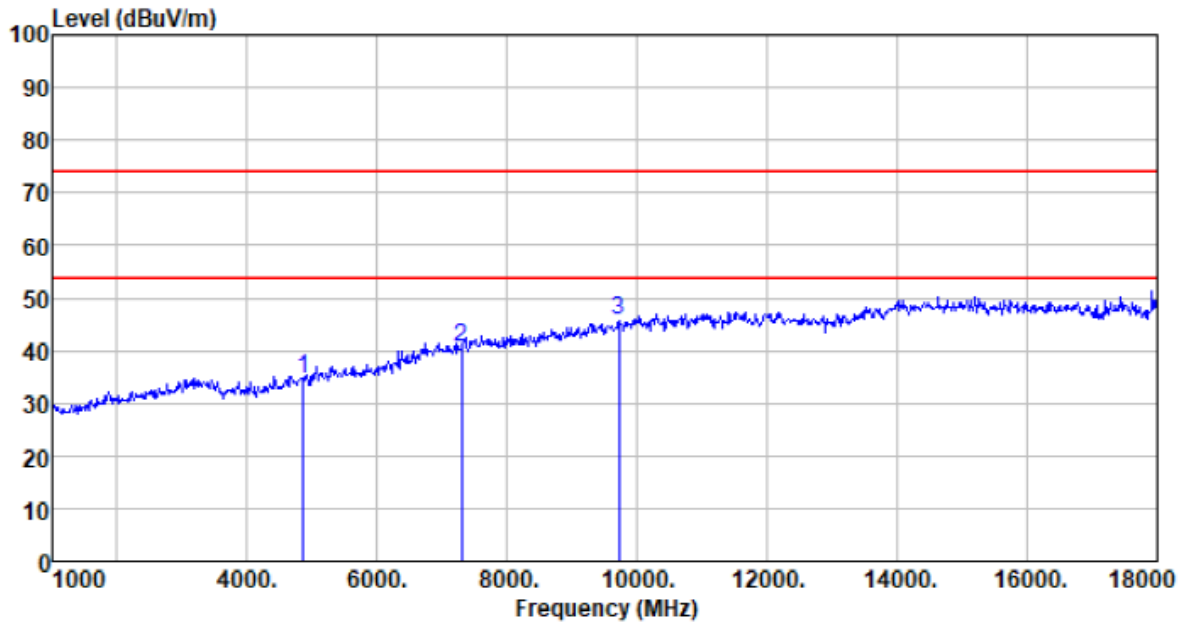


|               |         |               |            |
|---------------|---------|---------------|------------|
| Test channel: | Highest | Polarization: | Horizontal |
|---------------|---------|---------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4862.000    | 37.78                    | 31.21                     | 4.67                | 38.37                  | 35.29           | 74.00                    | -38.71              | Peak   |
| 7293.000    | 36.93                    | 36.09                     | 6.59                | 38.99                  | 40.62           | 74.00                    | -33.38              | Peak   |
| 9724.000    | 39.66                    | 38.02                     | 8.02                | 39.72                  | 45.98           | 74.00                    | -28.02              | Peak   |

|               |         |               |          |
|---------------|---------|---------------|----------|
| Test channel: | Highest | Polarization: | Vertical |
|---------------|---------|---------------|----------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4862.000    | 37.07                    | 31.21                     | 4.67                | 38.37                  | 34.58           | 74.00                    | -39.42              | Peak   |
| 7293.000    | 36.73                    | 36.09                     | 6.59                | 38.99                  | 40.42           | 74.00                    | -33.58              | Peak   |
| 9724.000    | 39.58                    | 38.02                     | 8.02                | 39.72                  | 45.90           | 74.00                    | -28.10              | Peak   |

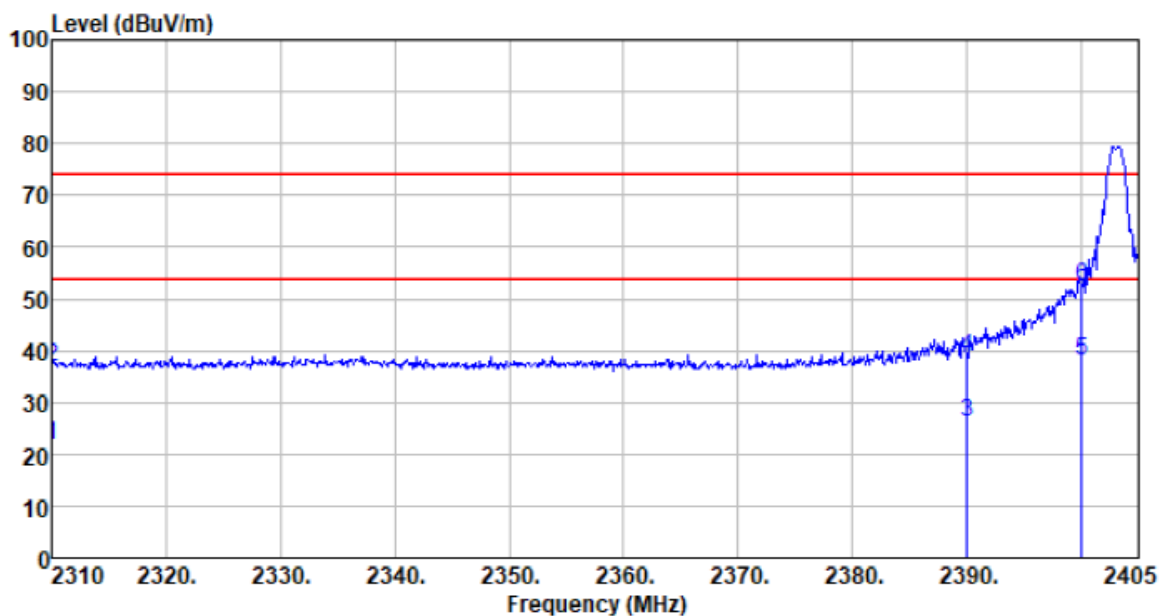
## Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. For above 18GHz, no emission found.

## 7.3.3 Bandedge emissions

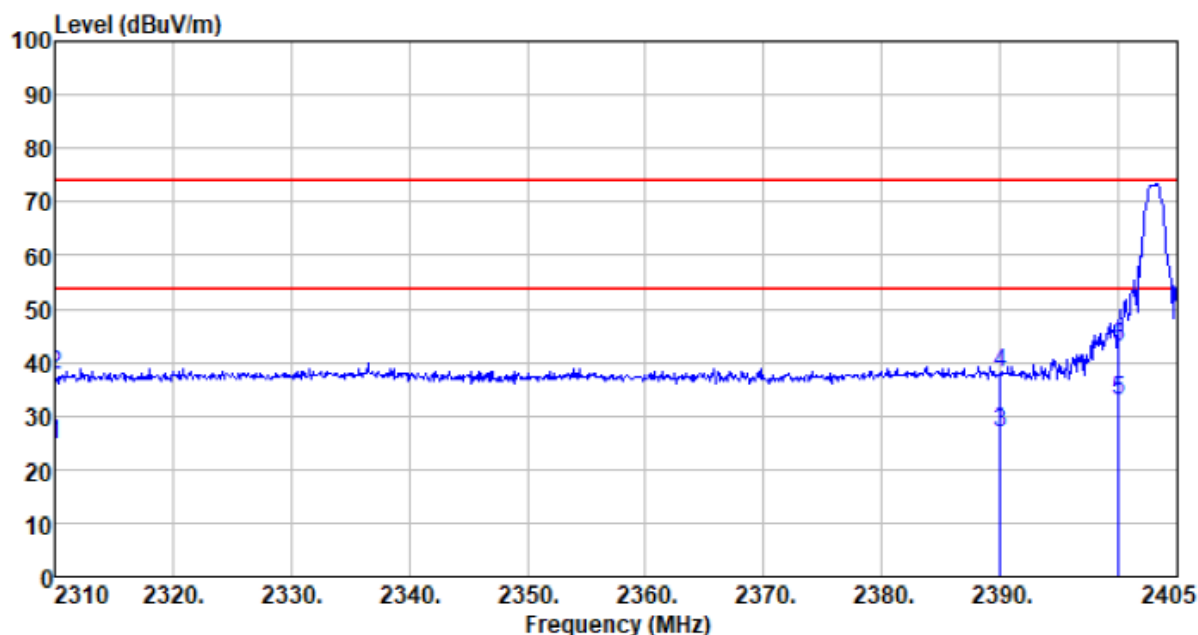
All of the restriction bands were tested, and only the data of worst case was exhibited.

|               |        |               |            |
|---------------|--------|---------------|------------|
| Test channel: | Lowest | Polarization: | Horizontal |
|---------------|--------|---------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|---------|
| 2310.000    | 30.48                    | 27.17                     | 2.81                | 38.52                  | 21.94           | 54.00                    | -32.06              | Average |
| 2310.000    | 45.62                    | 27.17                     | 2.81                | 38.52                  | 37.08           | 74.00                    | -36.92              | Peak    |
| 2390.000    | 34.58                    | 27.27                     | 2.91                | 38.56                  | 26.20           | 54.00                    | -27.80              | Average |
| 2390.000    | 47.24                    | 27.27                     | 2.91                | 38.56                  | 38.86           | 74.00                    | -35.14              | Peak    |
| 2400.000    | 46.45                    | 27.28                     | 2.91                | 38.56                  | 38.08           | 54.00                    | -15.92              | Average |
| 2400.000    | 60.68                    | 27.28                     | 2.91                | 38.56                  | 52.31           | 74.00                    | -21.69              | Peak    |

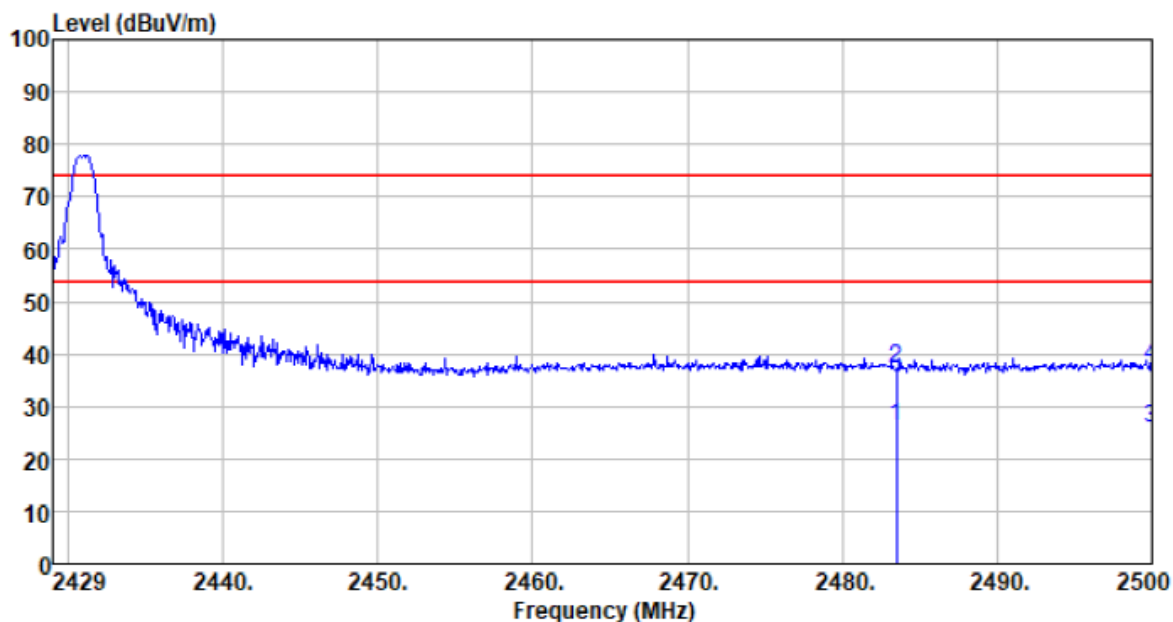
|               |        |               |          |
|---------------|--------|---------------|----------|
| Test channel: | Lowest | Polarization: | Vertical |
|---------------|--------|---------------|----------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|---------|
| 2310.000    | 33.21                    | 27.17                     | 2.81                | 38.52                  | 24.67           | 54.00                    | -29.33              | Average |
| 2310.000    | 46.06                    | 27.17                     | 2.81                | 38.52                  | 37.52           | 74.00                    | -36.48              | Peak    |
| 2390.000    | 35.37                    | 27.27                     | 2.91                | 38.56                  | 26.99           | 54.00                    | -27.01              | Average |
| 2390.000    | 46.27                    | 27.27                     | 2.91                | 38.56                  | 37.89           | 74.00                    | -36.11              | Peak    |
| 2400.000    | 41.35                    | 27.28                     | 2.91                | 38.56                  | 32.98           | 54.00                    | -21.02              | Average |
| 2400.000    | 51.21                    | 27.28                     | 2.91                | 38.56                  | 42.84           | 74.00                    | -31.16              | Peak    |

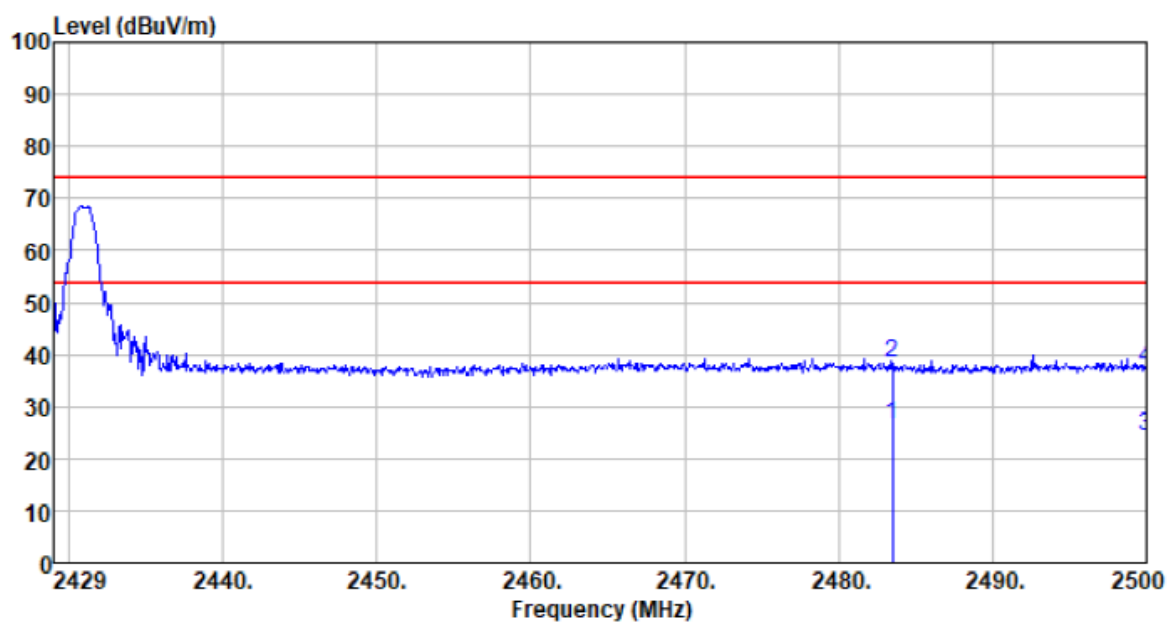


|               |         |               |            |
|---------------|---------|---------------|------------|
| Test channel: | Highest | Polarization: | Horizontal |
|---------------|---------|---------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|---------|
| 2483.500    | 34.42                    | 27.38                     | 2.99                | 38.59                  | 26.20           | 54.00                    | -27.80              | Average |
| 2483.500    | 45.33                    | 27.38                     | 2.99                | 38.59                  | 37.11           | 74.00                    | -36.89              | Peak    |
| 2500.000    | 33.97                    | 27.40                     | 3.01                | 38.60                  | 25.78           | 54.00                    | -28.22              | Average |
| 2500.000    | 45.86                    | 27.40                     | 3.01                | 38.60                  | 37.67           | 74.00                    | -36.33              | Peak    |

|               |         |               |          |
|---------------|---------|---------------|----------|
| Test channel: | Highest | Polarization: | Vertical |
|---------------|---------|---------------|----------|

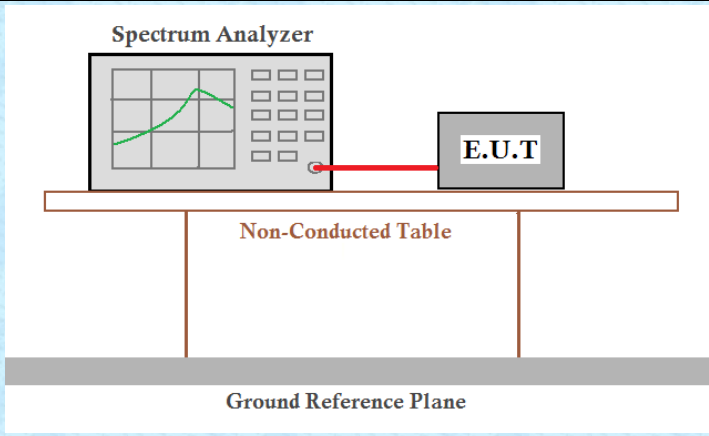


| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|---------|
| 2483.500    | 34.81                    | 27.38                     | 2.99                | 38.59                  | 26.59           | 54.00                    | -27.41              | Average |
| 2483.500    | 46.71                    | 27.38                     | 2.99                | 38.59                  | 38.49           | 74.00                    | -35.51              | Peak    |
| 2500.000    | 32.67                    | 27.40                     | 3.01                | 38.60                  | 24.48           | 54.00                    | -29.52              | Average |
| 2500.000    | 45.55                    | 27.40                     | 3.01                | 38.60                  | 37.36           | 74.00                    | -36.64              | Peak    |

**Remark:**

1.  $Final\ Level = Receiver\ Read\ level + Antenna\ Factor + Cable\ Loss - Preamplifier\ Factor$

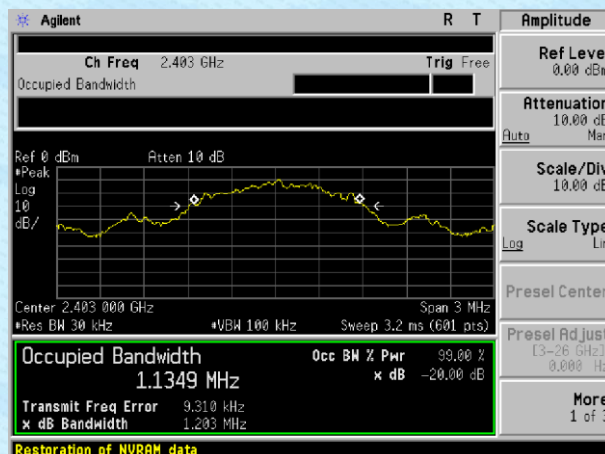
## 7.4 20dB Occupy Bandwidth

|                   |                                                                                    |
|-------------------|------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.249/15.215                                                 |
| Test Method:      | ANSI C63.10:2013                                                                   |
| Limit:            | Operation Frequency range 2400MHz~2483.5MHz                                        |
| Test setup:       |  |
| Test Instruments: | Refer to section 6.0 for details                                                   |
| Test mode:        | Refer to section 5.2 for details                                                   |
| Test results:     | Pass                                                                               |

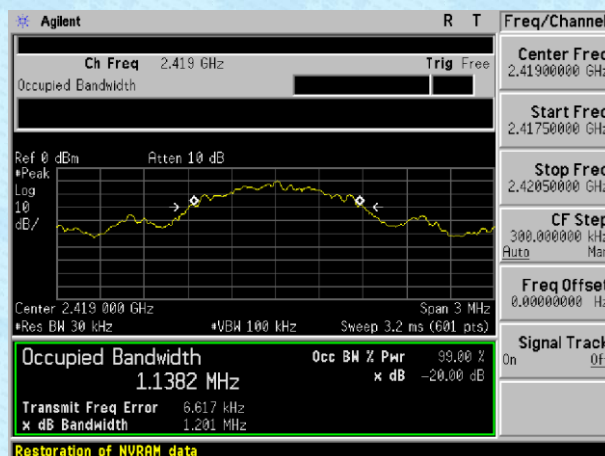
### Measurement Data

| Test channel | 20dB bandwidth(MHz) | Result |
|--------------|---------------------|--------|
| Lowest       | 1.203               | Pass   |
| Middle       | 1.201               | Pass   |
| Highest      | 1.225               | Pass   |

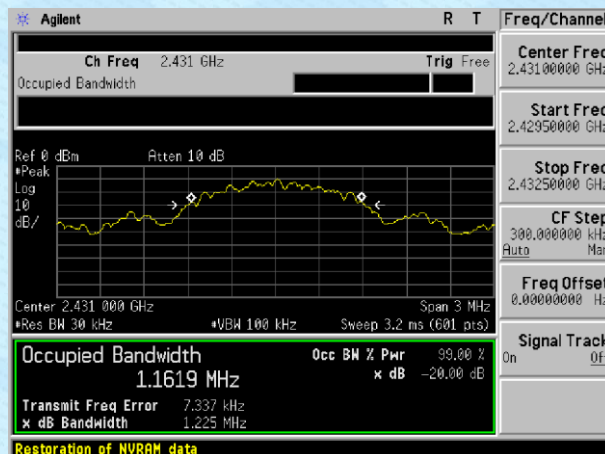
Test plot as follows:



Lowest channel



Middle channel



Highest channel



## 8 Test Setup Photo

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

## 9 EUT Constructional Details

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

-----End-----