

# TEST REPORT

**Applicant:** ShenZhen FLYSKY Technology Co.,Ltd

**Address of Applicant:** 16F, Huafeng Building, No. 6006 Shennan Road, Futian District, Shenzhen, Guangdong, China

**Manufacturer:** ShenZhen FLYSKY Technology Co.,Ltd

**Address of Manufacturer:** 16F, Huafeng Building, No. 6006 Shennan Road, Futian District, Shenzhen, Guangdong, China

**Factory:** Dongguan Flysky RC Model technology Co.,Ltd

**Address of Factory:** West building 3, HuangjinyuanInd Park, Qiaoli North Gate, Changping Town, Dongguan, China

**Equipment Under Test (EUT)**

Product Name: 12-channel receiver

Model No.: FBr12

Trade Mark: FLYSKY

**FCC ID:** 2A2UNFBR1200

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

**Date of sample receipt:** January 05, 2023

**Date of Test:** January 06, 2023-February 17, 2023

**Date of report issued:** February 17, 2023

**Test Result :** PASS \*

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

Authorized Signature:



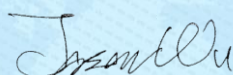
Robinson Luo  
Laboratory Manager

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          | February 17, 2023 | Original    |
|             |                   |             |
|             |                   |             |
|             |                   |             |
|             |                   |             |

Prepared By:

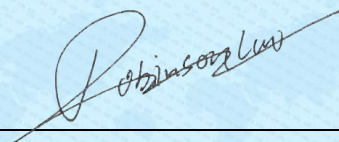


Date:

February 17, 2023

Project Engineer

Check By:



Date:

February 17, 2023

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 .....                                              | 8    |
| 5.3 TEST FACILITY.....                                           | 8    |
| 5.4 TEST LOCATION .....                                          | 8    |
| 5.5 DESCRIPTION OF SUPPORT UNITS .....                           | 8    |
| 5.6 DEVIATION FROM STANDARDS.....                                | 8    |
| 5.7 ABNORMALITIES FROM STANDARD CONDITIONS.....                  | 8    |
| 5.8 ADDITIONAL INSTRUCTIONS.....                                 | 8    |
| 6 TEST INSTRUMENTS LIST .....                                    | 9    |
| 7 TEST RESULTS AND MEASUREMENT DATA.....                         | 11   |
| 7.1 ANTENNA REQUIREMENT .....                                    | 11   |
| 7.2 CONDUCTED EMISSIONS .....                                    | 12   |
| 7.3 CONDUCTED PEAK OUTPUT POWER.....                             | 15   |
| 7.4 20dB EMISSION BANDWIDTH .....                                | 16   |
| 7.5 CARRIER FREQUENCIES SEPARATION.....                          | 17   |
| 7.6 HOPPING CHANNEL NUMBER .....                                 | 18   |
| 7.7 DWELL TIME.....                                              | 19   |
| 7.8 SPURIOUS EMISSION IN NON-RESTRICTED & RESTRICTED BANDS ..... | 20   |
| 7.8.1 Conducted Emission Method.....                             | 20   |
| 7.8.2 Radiated Emission Method.....                              | 21   |
| 8 TEST SETUP PHOTO .....                                         | 44   |
| 9 EUT CONSTRUCTIONAL DETAILS .....                               | 44   |

## 4 Test Summary

| Test Item                        | Section            | Result |
|----------------------------------|--------------------|--------|
| Antenna Requirement              | 15.203/15.247 (c)  | Pass   |
| AC Power Line Conducted Emission | 15.207             | Pass   |
| Conducted Peak Output Power      | 15.247 (b)(1)      | Pass   |
| 20dB Occupied Bandwidth          | 15.247 (a)(1)      | Pass   |
| Carrier Frequencies Separation   | 15.247 (a)(1)      | Pass   |
| Hopping Channel Number           | 15.247 (a)(1)(iii) | Pass   |
| Dwell Time                       | 15.247 (a)(1)(iii) | Pass   |
| Radiated Emission                | 15.205/15.209      | Pass   |
| Band Edge                        | 15.247(d)          | Pass   |

Pass: The EUT complies with the essential requirements in the standard.

Remark : Test according to ANSI C63.10:2013 .

### 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:          | 12-channel receiver            |
| Model No.:             | FBr12                          |
| Serial No.:            | RD1001433                      |
| Hardware version:      | FBr12-V112                     |
| Software version:      | FBr12 V1.0.5                   |
| Test sample(s) ID:     | GTS202301050006-1              |
| Sample(s) Status       | Engineer sample                |
| Operation Frequency:   | 2402.15MHz~2479.85MHz          |
| Channel numbers:       | 171                            |
| Modulation method:     | FHSS                           |
| Modulation technology: | GMSK                           |
| Antenna Type:          | ANT 1&2: Integral wire Antenna |
| Antenna gain:          | ANT 1&2: 3.16dBi               |
| Power supply:          | DC 3.5-9V                      |

Remark: All two antennas transmitters were work in asynchronous status, MIMO mode is not supported . The system works in the frequency range of 2402.15MHz to 2479.85MHz. This band has been divided to 171 independent channels. Each radio system uses 32 different channels; the minimum channel separation is  $\geq 1.24\text{MHz}$ . By using various switch-on times, hopping scheme and channel frequencies, the system can guarantee a jamming free radio transmission. Pre-testing all radio systems, this radio system recorded in the report is the worst mode.The channel list is below.

The test frequencies are below:

| Channel             | Frequency  |
|---------------------|------------|
| The lowest channel  | 2402.15MHz |
| The middle channel  | 2440.40MHz |
| The Highest channel | 2479.85MHz |

| Operation Frequency each of channel |                 |         |                 |         |                 |         |                 |
|-------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                             | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 1                                   | 2402.15         | 45      | 2421.95         | 89      | 2441.75         | 133     | 2462.75         |
| 2                                   | 2402.60         | 46      | 2422.40         | 90      | 2442.20         | 134     | 2463.20         |
| 3                                   | 2403.05         | 47      | 2422.85         | 91      | 2442.65         | 135     | 2463.65         |
| 4                                   | 2403.50         | 48      | 2423.30         | 92      | 2443.10         | 136     | 2464.10         |
| 5                                   | 2403.95         | 49      | 2423.75         | 93      | 2444.75         | 137     | 2464.55         |
| 6                                   | 2404.40         | 50      | 2424.20         | 94      | 2445.20         | 138     | 2465.00         |
| 7                                   | 2404.85         | 51      | 2424.65         | 95      | 2445.65         | 139     | 2465.45         |
| 8                                   | 2405.30         | 52      | 2425.10         | 96      | 2446.10         | 140     | 2465.90         |
| 9                                   | 2405.75         | 53      | 2425.55         | 97      | 2446.55         | 141     | 2466.35         |
| 10                                  | 2406.20         | 54      | 2426.00         | 98      | 2447.00         | 142     | 2466.80         |
| 11                                  | 2406.65         | 55      | 2426.45         | 99      | 2447.45         | 143     | 2467.25         |
| 12                                  | 2407.10         | 56      | 2426.90         | 100     | 2447.90         | 144     | 2467.70         |
| 13                                  | 2407.55         | 57      | 2427.35         | 101     | 2448.35         | 145     | 2468.15         |
| 14                                  | 2408.00         | 58      | 2427.80         | 102     | 2448.80         | 146     | 2468.60         |
| 15                                  | 2408.45         | 59      | 2428.25         | 103     | 2449.25         | 147     | 2469.05         |
| 16                                  | 2408.90         | 60      | 2428.70         | 104     | 2449.70         | 148     | 2469.50         |
| 17                                  | 2409.35         | 61      | 2429.15         | 105     | 2450.15         | 149     | 2469.95         |
| 18                                  | 2409.80         | 62      | 2429.60         | 106     | 2450.60         | 150     | 2470.40         |
| 19                                  | 2410.25         | 63      | 2430.05         | 107     | 2451.05         | 151     | 2470.85         |
| 20                                  | 2410.70         | 64      | 2430.50         | 108     | 2451.50         | 152     | 2471.30         |
| 21                                  | 2411.15         | 65      | 2430.95         | 109     | 2451.95         | 153     | 2471.75         |
| 22                                  | 2411.60         | 66      | 2431.40         | 110     | 2452.40         | 154     | 2472.20         |
| 23                                  | 2412.05         | 67      | 2431.85         | 111     | 2452.85         | 155     | 2472.65         |
| 24                                  | 2412.50         | 68      | 2432.30         | 112     | 2453.30         | 156     | 2473.10         |
| 25                                  | 2412.95         | 69      | 2432.75         | 113     | 2453.75         | 157     | 2473.55         |
| 26                                  | 2413.40         | 70      | 2433.20         | 114     | 2454.20         | 158     | 2474.00         |
| 27                                  | 2413.85         | 71      | 2433.65         | 115     | 2454.65         | 159     | 2474.45         |
| 28                                  | 2414.30         | 72      | 2434.10         | 116     | 2455.10         | 160     | 2474.90         |
| 29                                  | 2414.75         | 73      | 2434.55         | 117     | 2455.55         | 161     | 2475.35         |
| 30                                  | 2415.20         | 74      | 2435.00         | 118     | 2456.00         | 162     | 2475.80         |
| 31                                  | 2415.65         | 75      | 2435.45         | 119     | 2456.45         | 163     | 2476.25         |
| 32                                  | 2416.10         | 76      | 2435.90         | 120     | 2456.90         | 164     | 2476.70         |
| 33                                  | 2416.55         | 77      | 2436.35         | 121     | 2457.35         | 165     | 2477.15         |
| 34                                  | 2417.00         | 78      | 2436.80         | 122     | 2457.80         | 166     | 2477.60         |
| 35                                  | 2417.45         | 79      | 2437.25         | 123     | 2458.25         | 167     | 2478.05         |
| 36                                  | 2417.90         | 80      | 2437.70         | 124     | 2458.70         | 168     | 2478.50         |
| 37                                  | 2418.35         | 81      | 2438.15         | 125     | 2459.15         | 169     | 2478.95         |
| 38                                  | 2418.80         | 82      | 2438.60         | 126     | 2459.60         | 170     | 2479.40         |

|    |         |    |         |     |         |     |         |
|----|---------|----|---------|-----|---------|-----|---------|
| 39 | 2419.25 | 83 | 2439.05 | 127 | 2460.05 | 171 | 2479.85 |
| 40 | 2419.70 | 84 | 2439.50 | 128 | 2460.50 |     |         |
| 41 | 2420.15 | 85 | 2439.95 | 129 | 2460.95 |     |         |
| 42 | 2420.60 | 86 | 2440.40 | 130 | 2461.40 |     |         |
| 43 | 2421.05 | 87 | 2440.85 | 131 | 2461.85 |     |         |
| 44 | 2421.50 | 88 | 2441.30 | 132 | 2462.30 |     |         |

## 5.2 Test mode

|                                                                                                                                                                                             |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Transmitting mode                                                                                                                                                                           | Keep the EUT in transmitting mode. |
| Remark: During the test, the duty cycle >98%, the test voltage is adjusted from DC3.5V to DC9.0V, and found that the worst case was DC9.0V. So the report just shows that condition's data. |                                    |

## 5.3 Test Facility

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The test facility is recognized, certified, or accredited by the following organizations: <ul style="list-style-type: none"><li>● <b>FCC —Registration No.: 381383</b><br/>Designation Number: CN5029<br/>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.</li><li>● <b>IC —Registration No.: 9079A</b><br/>CAB identifier: CN0091<br/>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.</li><li>● <b>NVLAP (LAB CODE:600179-0)</b><br/>Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).</li></ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5.4 Test Location

|                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All other 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 |

## 5.5 Description of Support Units

| Manufacturer                       | Description     | Model     | Serial Number |
|------------------------------------|-----------------|-----------|---------------|
| ShenZhen FLYSKY Technology Co.,Ltd | Remote control  | FT18      | N/A           |
| GW                                 | DC POWER SUPPLY | GPR-6030D | EF924756      |

## 5.6 Deviation from Standards

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

## 5.7 Abnormalities from Standard Conditions

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

## 5.8 Additional Instructions

|                                              |
|----------------------------------------------|
| Software (Used for test) from client         |
| Built-in by manufacturer, power set 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. 29, 2022       | Nov. 28, 2023           |
| 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          |

| RF Conducted Test: |                                                |              |                  |            |                        |                            |
|--------------------|------------------------------------------------|--------------|------------------|------------|------------------------|----------------------------|
| Item               | Test Equipment                                 | Manufacturer | Model No.        | Serial No. | Cal.Date<br>(mm-dd-yy) | Cal.Due date<br>(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<br>(mm-dd-yy) | Cal.Due date<br>(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 /247(c) |
| <p><b>15.203 requirement:</b></p> <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p> <p><b>15.247(c) (1)(i) requirement:</b></p> <p>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</p> |                                     |
| <b>EUT Antenna:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |
| The antenna is integral wire antenna, reference to the appendix II for details.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |

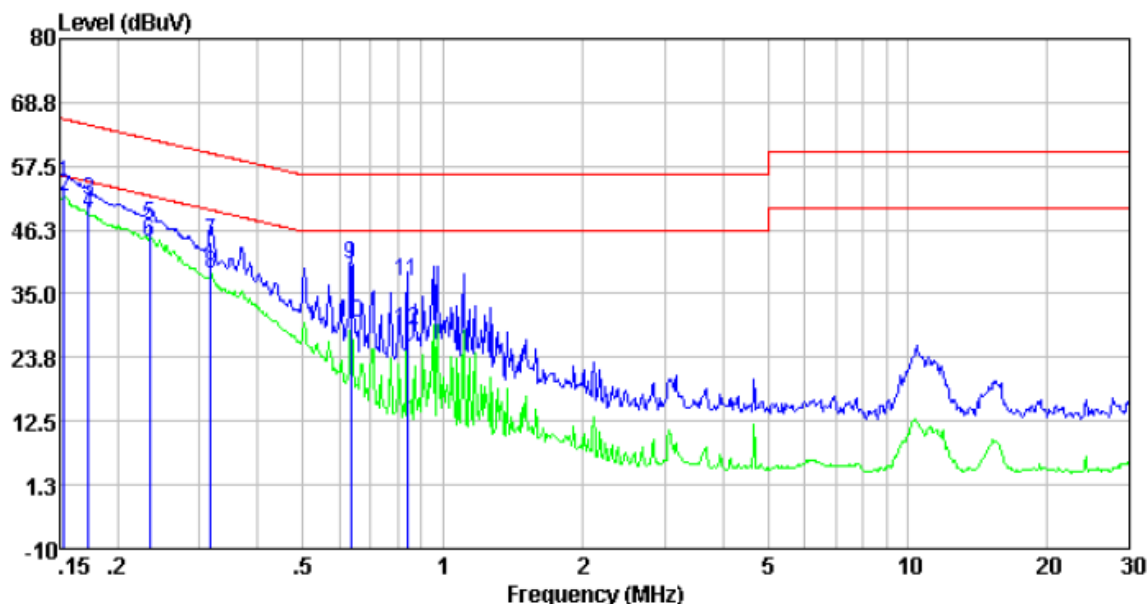
## 7.2 Conducted Emissions

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |              |     |           |          |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------|-----|-----------|----------|
| 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><div>40cm</div><div>80cm</div><div><div>LISN</div><div>Filter</div><div>EMI Receiver</div></div><div>AC power</div><div>Test table/Insulation plane</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 :2009 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 results:                                    | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |              |     |           |          |

## Measurement data

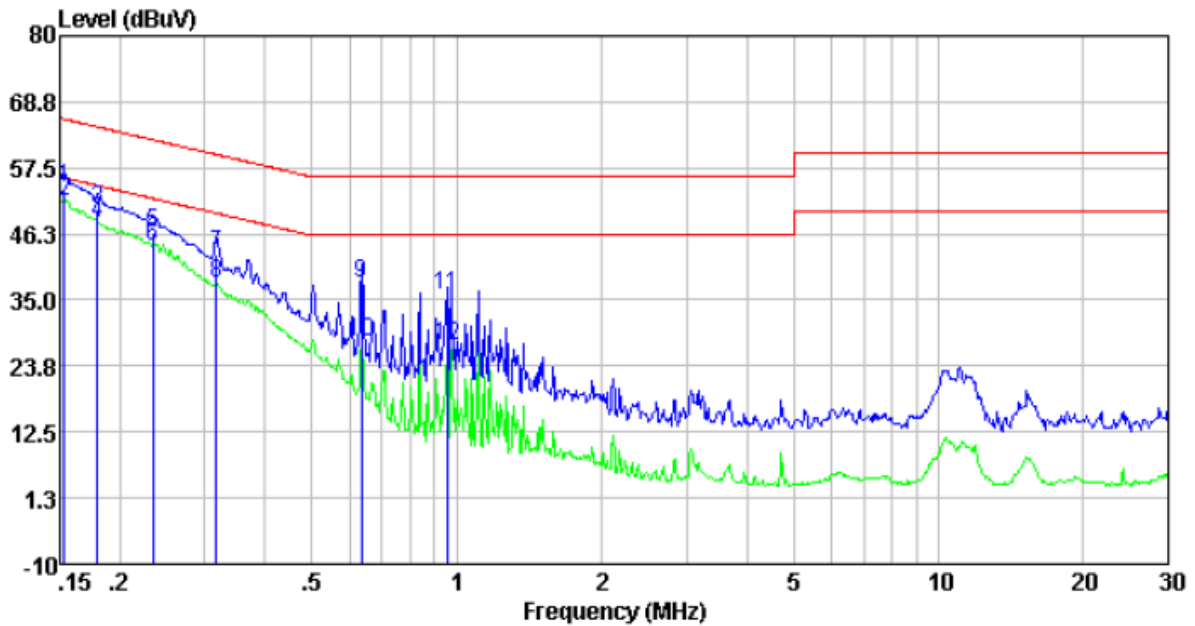
Pre-scan all test modes, found worst case at 2402.15MHz@ Ant 1, and so only show the test result of it.

Line:



| Freq | Reading level | LISN/ISN factor | Cable loss | Level | Limit level | Over limit | Remark  |
|------|---------------|-----------------|------------|-------|-------------|------------|---------|
| MHz  | dBuV          | dB              | dB         | dBuV  | dBuV        | dB         |         |
| 0.15 | 44.27         | 10.12           | 0.01       | 54.40 | 65.82       | -11.42     | QP      |
| 0.15 | 41.85         | 10.12           | 0.01       | 51.98 | 55.82       | -3.84      | Average |
| 0.17 | 41.18         | 10.09           | 0.01       | 51.28 | 64.81       | -13.53     | QP      |
| 0.17 | 38.96         | 10.09           | 0.01       | 49.06 | 54.81       | -5.75      | Average |
| 0.23 | 37.19         | 10.02           | 0.01       | 47.22 | 62.30       | -15.08     | QP      |
| 0.23 | 34.22         | 10.02           | 0.01       | 44.25 | 52.30       | -8.05      | Average |
| 0.32 | 34.15         | 9.98            | 0.01       | 44.14 | 59.80       | -15.66     | QP      |
| 0.32 | 28.50         | 9.98            | 0.01       | 38.49 | 49.80       | -11.31     | Average |
| 0.63 | 30.08         | 9.96            | 0.02       | 40.06 | 56.00       | -15.94     | QP      |
| 0.63 | 19.97         | 9.96            | 0.02       | 29.95 | 46.00       | -16.05     | Average |
| 0.84 | 27.06         | 9.96            | 0.03       | 37.05 | 56.00       | -18.95     | QP      |
| 0.84 | 18.60         | 9.96            | 0.03       | 28.59 | 46.00       | -17.41     | Average |

Neutral:

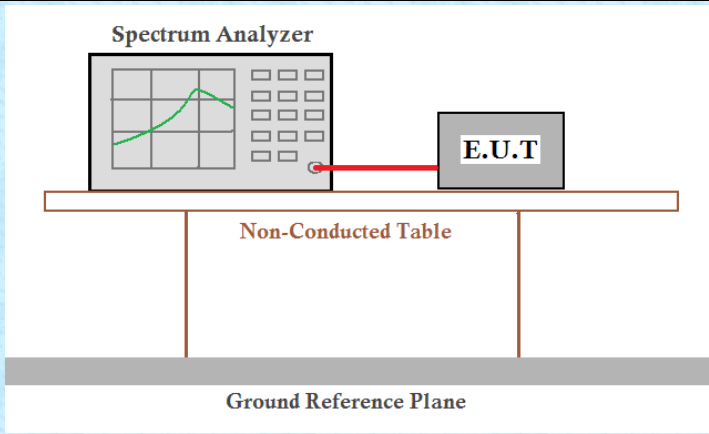


| Freq | Reading | LISN/ISN | Cable |       | Limit | Over   |         |
|------|---------|----------|-------|-------|-------|--------|---------|
|      | level   | factor   | loss  | Level | level | limit  | Remark  |
| MHz  | dBuV    | dB       | dB    | dBuV  | dBuV  | dB     |         |
| 0.15 | 44.02   | 10.15    | 0.01  | 54.18 | 65.82 | -11.64 | QP      |
| 0.15 | 41.75   | 10.15    | 0.01  | 51.91 | 55.82 | -3.91  | Average |
| 0.18 | 40.32   | 10.10    | 0.01  | 50.43 | 64.50 | -14.07 | QP      |
| 0.18 | 38.16   | 10.10    | 0.01  | 48.27 | 54.50 | -6.23  | Average |
| 0.23 | 36.35   | 10.03    | 0.01  | 46.39 | 62.30 | -15.91 | QP      |
| 0.23 | 34.00   | 10.03    | 0.01  | 44.04 | 52.30 | -8.26  | Average |
| 0.32 | 32.73   | 9.97     | 0.01  | 42.71 | 59.80 | -17.09 | QP      |
| 0.32 | 27.88   | 9.97     | 0.01  | 37.86 | 49.80 | -11.94 | Average |
| 0.63 | 27.78   | 9.96     | 0.02  | 37.76 | 56.00 | -18.24 | QP      |
| 0.63 | 17.92   | 9.96     | 0.02  | 27.90 | 46.00 | -18.10 | Average |
| 0.95 | 25.94   | 9.96     | 0.03  | 35.93 | 56.00 | -20.07 | QP      |
| 0.95 | 17.10   | 9.96     | 0.03  | 27.09 | 46.00 | -18.91 | Average |

Notes:

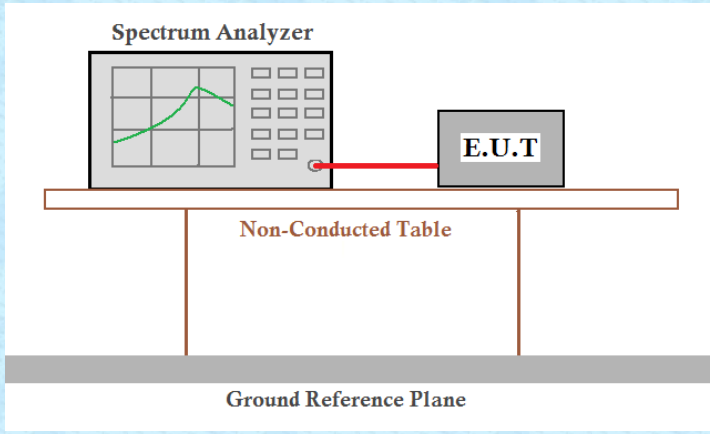
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

## 7.3 Conducted Peak Output Power

|                   |                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247(b)(1)                                                                                                                                                                                                                                                                                                                          |
| Test Method:      | ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                           |
| Limit:            | 20.97dBm                                                                                                                                                                                                                                                                                                                                                   |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 6.0 for details                                                                                                                                                                                                                                                                                                                           |
| Test mode:        | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                           |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                       |

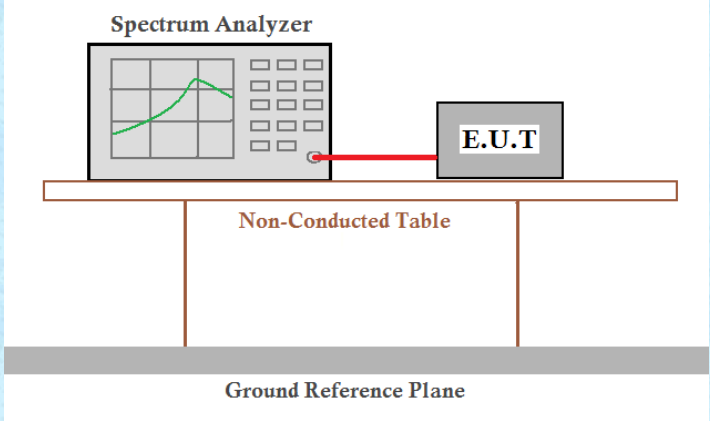
**Measurement Data:** The detailed test data see Appendix for 2.4G.

## 7.4 20dB Emission Bandwidth

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (a)(1)                                                                                                                                                                                                                                                                                                                                                                                        |
| Test Method:      | ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                                                                                          |
| Limit:            | N/A                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer, shown with a green trace on its screen, is connected to an E.U.T. (Equipment Under Test) by a red cable. Both the Spectrum Analyzer and the E.U.T. are positioned on a table labeled 'Non-Conducted Table'. This table is supported by a 'Ground Reference Plane'.</p> |
| Test Instruments: | Refer to section 6.0 for details                                                                                                                                                                                                                                                                                                                                                                                          |
| Test mode:        | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                                                                                          |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                                                                                      |

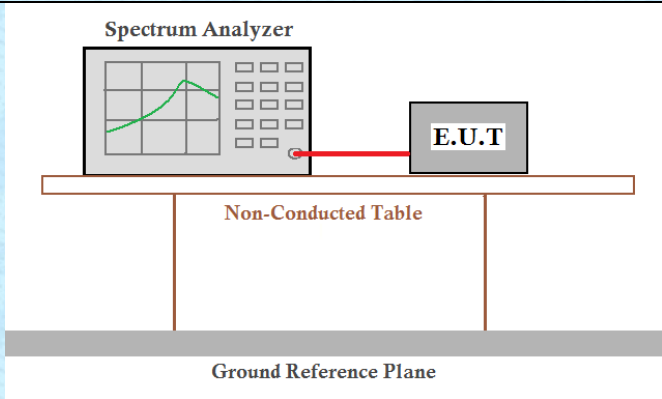
**Measurement Data:** The detailed test data see Appendix for 2.4G.

## 7.5 Carrier Frequencies Separation

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (a)(1)                                                                                                                                                                                                                                                                                                                                                                                 |
| Test Method:      | ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                                                                                   |
| Receiver setup:   | RBW=100KHz, VBW=300KHz, detector=Peak                                                                                                                                                                                                                                                                                                                                                                              |
| Limit:            | 0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)                                                                                                                                                                                                                                                                                                                                                       |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer, showing a frequency spectrum on its screen, is connected to an Equipment Under Test (E.U.T.) by a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a table labeled 'Non-Conducted Table'. Below this table is a 'Ground Reference Plane'.</p> |
| Test Instruments: | Refer to section 6.0 for details                                                                                                                                                                                                                                                                                                                                                                                   |
| Test mode:        | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                                                                                   |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                                                                               |

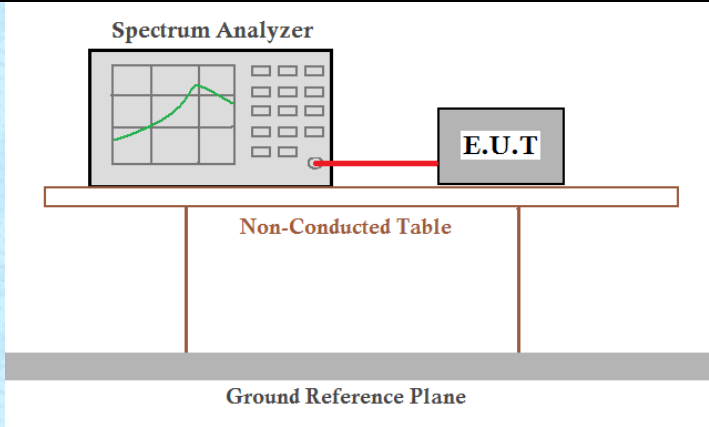
**Measurement Data:** The detailed test data see Appendix for 2.4G.

## 7.6 Hopping Channel Number

|                   |                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (a)(1)(iii)                                                                                                                                                                                                                                                                                                                    |
| Test Method:      | ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                           |
| Receiver setup:   | RBW=100kHz, VBW=300kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak                                                                                                                                                                                                                                                                                   |
| Limit:            | 15 channels                                                                                                                                                                                                                                                                                                                                                |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 6.0 for details                                                                                                                                                                                                                                                                                                                           |
| Test mode:        | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                           |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                       |

**Measurement Data:** The detailed test data see Appendix for 2.4G.

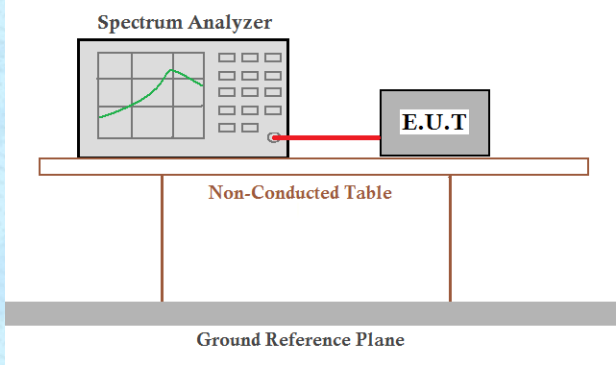
## 7.7 Dwell Time

|                   |                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (a)(1)(iii)                                                                                                                                                                                                                                                                                                                    |
| Test Method:      | ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                           |
| Receiver setup:   | RBW=1MHz, VBW=1MHz, Span=0Hz, Detector=Peak                                                                                                                                                                                                                                                                                                                |
| Limit:            | 0.4 Second                                                                                                                                                                                                                                                                                                                                                 |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 6.0 for details                                                                                                                                                                                                                                                                                                                           |
| Test mode:        | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                           |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                       |

**Measurement Data:** The detailed test data see Appendix for 2.4G.

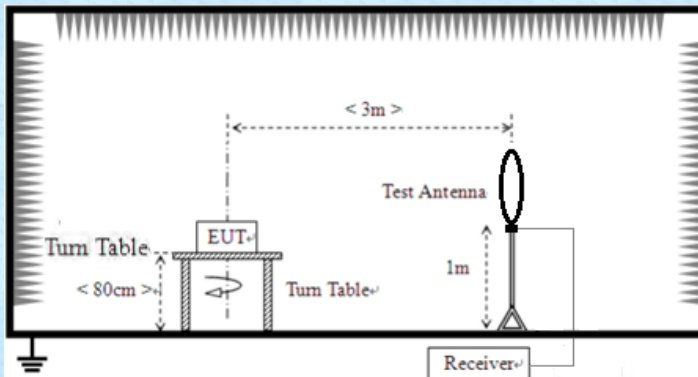
## 7.8 Spurious Emission in Non-restricted & restricted Bands

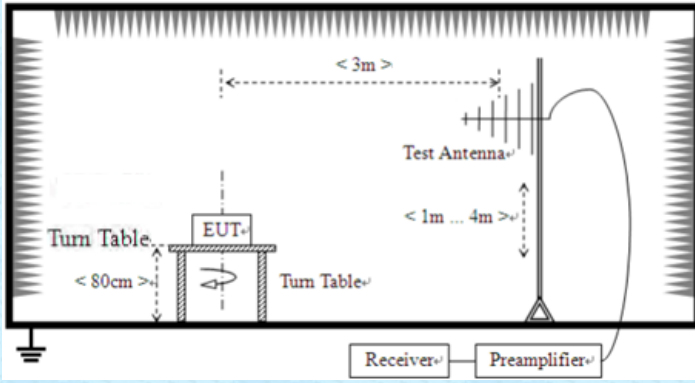
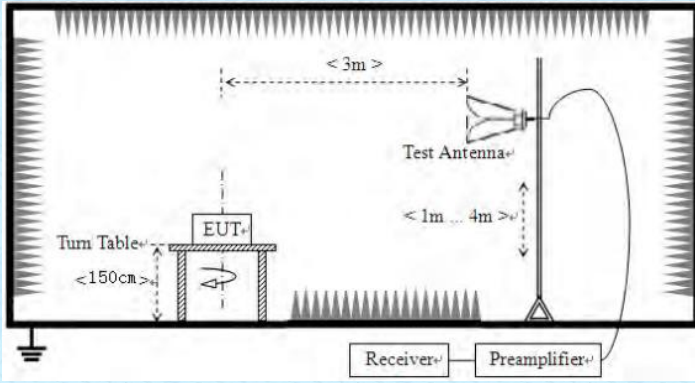
### 7.8.1 Conducted Emission Method

|                   |                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (d)                                                                                                                                                                                                                                                                                                                                                         |
| Test Method:      | ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                                                        |
| Receiver setup:   | RBW=100kHz, VBW=300kHz, Detector=Peak                                                                                                                                                                                                                                                                                                                                                   |
| Limit:            | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a table labeled 'Non-Conducted Table'. This table is supported by a 'Ground Reference Plane'.</p>          |
| Test Instruments: | Refer to section6.0 for details                                                                                                                                                                                                                                                                                                                                                         |
| Test mode:        | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                                                        |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                                                    |

**Measurement Data:** The detailed test data see Appendix for 2.4G.

## 7.8.2 Radiated Emission Method

|                                |                                                                                                 |            |              |          |                      |
|--------------------------------|-------------------------------------------------------------------------------------------------|------------|--------------|----------|----------------------|
| Test Requirement:              | FCC Part15 C Section 15.209 and 15.205                                                          |            |              |          |                      |
| Test Method:                   | ANSI C63.10:2013                                                                                |            |              |          |                      |
| Test Frequency Range:          | 9kHz to 25GHz                                                                                   |            |              |          |                      |
| Test site:                     | Measurement Distance: 3m                                                                        |            |              |          |                      |
| Receiver setup:                | Frequency                                                                                       | Detector   | RBW          | VBW      | Value                |
|                                | 9KHz-150KHz                                                                                     | Quasi-peak | 200Hz        | 600Hz    | Quasi-peak           |
|                                | 150KHz-30MHz                                                                                    | Quasi-peak | 9KHz         | 30KHz    | Quasi-peak           |
|                                | 30MHz-1GHz                                                                                      | Quasi-peak | 120KHz       | 300KHz   | Quasi-peak           |
|                                | Above 1GHz                                                                                      | Peak       | 1MHz         | 3MHz     | Peak                 |
|                                |                                                                                                 | Peak       | 1MHz         | 10Hz     | Average              |
| Limit:<br>(Spurious Emissions) | Frequency                                                                                       |            | Limit (uV/m) | Value    | Measurement Distance |
|                                | 0.009MHz-0.490MHz                                                                               |            | 2400/F(KHz)  | PK/AV/QP | 300m                 |
|                                | 0.490MHz-1.705MHz                                                                               |            | 24000/F(KHz) | QP       | 30m                  |
|                                | 1.705MHz-30MHz                                                                                  |            | 30           | QP       | 30m                  |
|                                | 30MHz-88MHz                                                                                     |            | 100          | QP       | 3m                   |
|                                | 88MHz-216MHz                                                                                    |            | 150          | QP       |                      |
|                                | 216MHz-960MHz                                                                                   |            | 200          | QP       |                      |
|                                | 960MHz-1GHz                                                                                     |            | 500          | QP       |                      |
|                                | Above 1GHz                                                                                      |            | 500          | Average  |                      |
|                                |                                                                                                 |            | 5000         | Peak     |                      |
| Test setup:                    | Below 30MHz                                                                                     |            |              |          |                      |
|                                | <div></div> |            |              |          |                      |
|                                | Below 1GHz                                                                                      |            |              |          |                      |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |         |     |         |           |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|-----|---------|-----------|
|                   | <div>Report No.: CTS2020010000001</div>  <p>Above 1GHz</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |         |     |         |           |
| Test Procedure:   | <div><div>1. The EUT was placed on the top of a rotating table (0.8 meters for below 1GHz and 1.5meters 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.</div><div>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</div><div>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</div><div>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</div><div>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</div><div>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</div></div> |       |         |     |         |           |
| Test Instruments: | Refer to section 5.8 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |         |     |         |           |
| Test mode:        | Refer to section 5.2 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |         |     |         |           |
| Temp. / Hum.      | Temp.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25 °C | Humid.: | 52% | Press.: | 1 012mbar |

|               |      |
|---------------|------|
| Test results: | Pass |
|---------------|------|

*Remark:*

1. *Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.*

**Measurement data:**

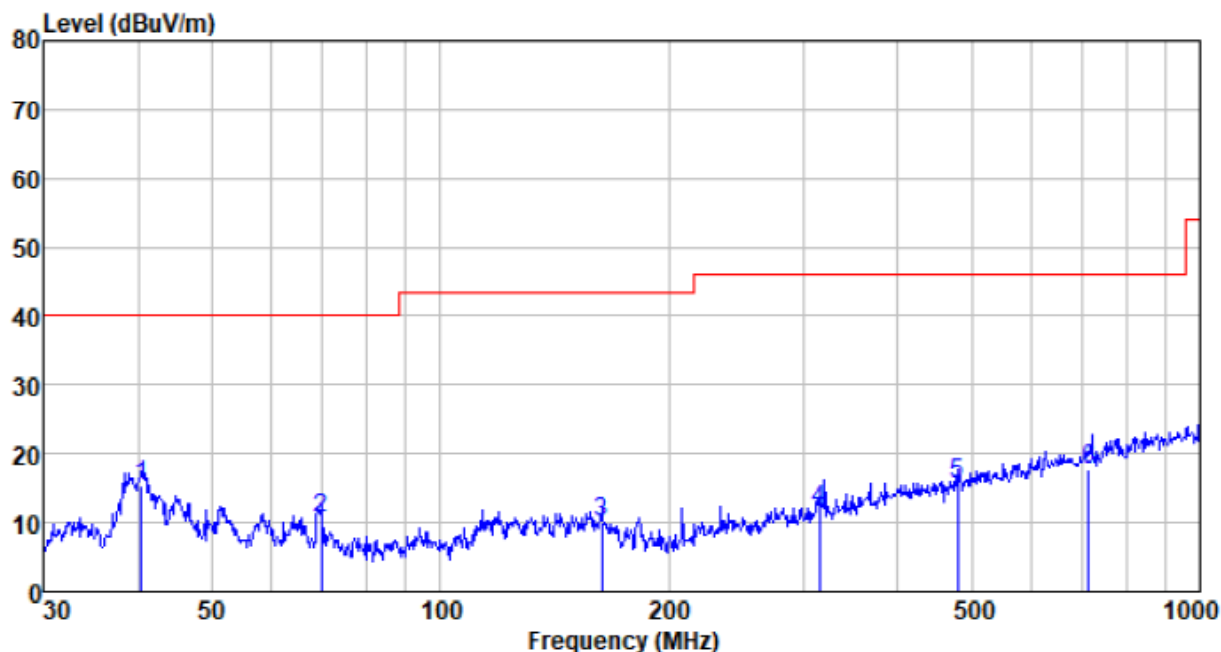
■ **Below 30MHz**

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

All antennas have test, only the worst case ANT 1 report.

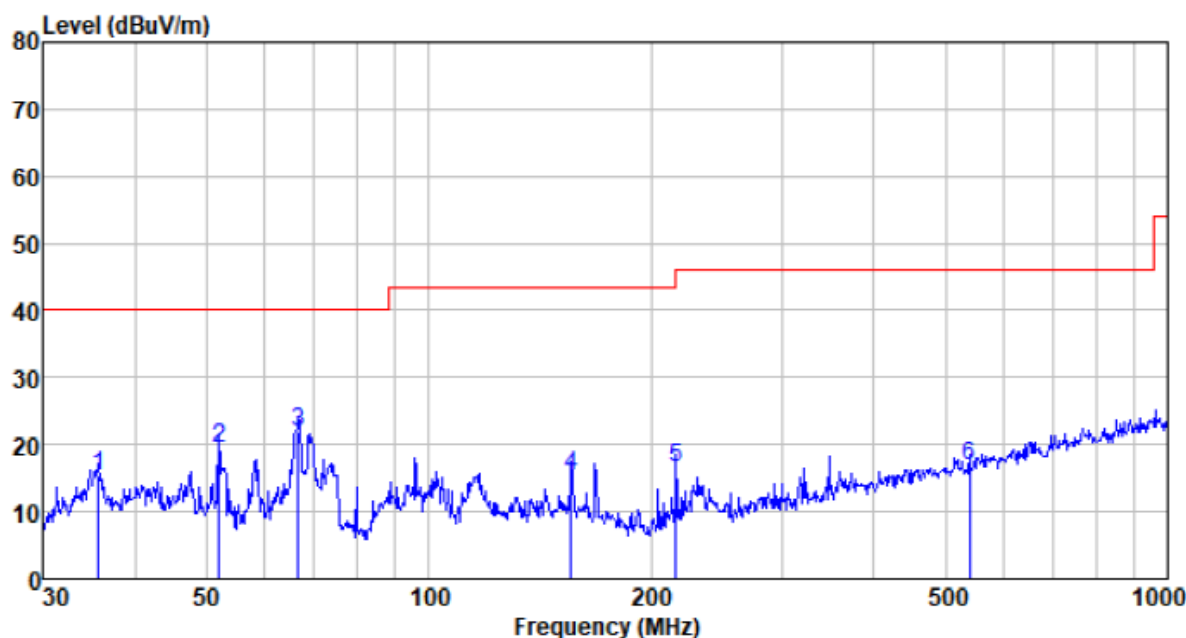
■ 30MHz ~ 1GHz

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



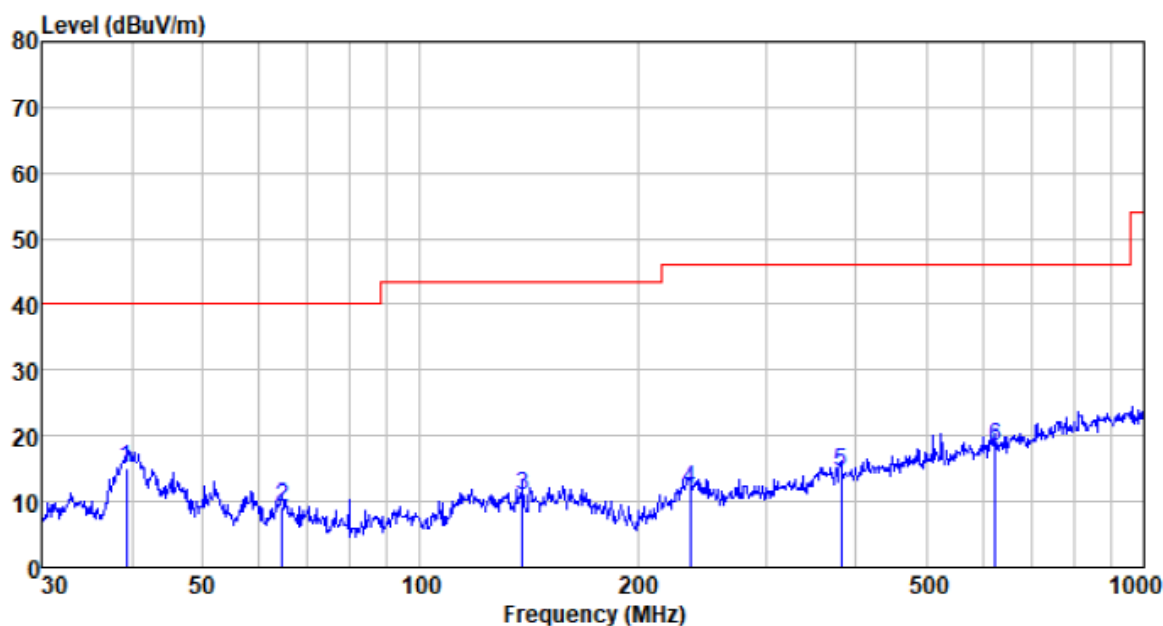
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 40.417      | 31.29                    | 13.49                     | 0.66                | 30.00                  | 15.44           | 40.00                    | -24.56              | QP     |
| 69.600      | 29.25                    | 10.58                     | 0.94                | 30.00                  | 10.77           | 40.00                    | -29.23              | QP     |
| 163.182     | 26.24                    | 12.22                     | 1.65                | 30.00                  | 10.11           | 43.50                    | -33.39              | QP     |
| 315.481     | 26.33                    | 12.98                     | 2.44                | 30.00                  | 11.75           | 46.00                    | -34.25              | QP     |
| 478.846     | 25.22                    | 17.23                     | 3.22                | 30.00                  | 15.67           | 46.00                    | -30.33              | QP     |
| 714.173     | 22.55                    | 21.09                     | 4.14                | 30.00                  | 17.78           | 46.00                    | -28.22              | QP     |

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



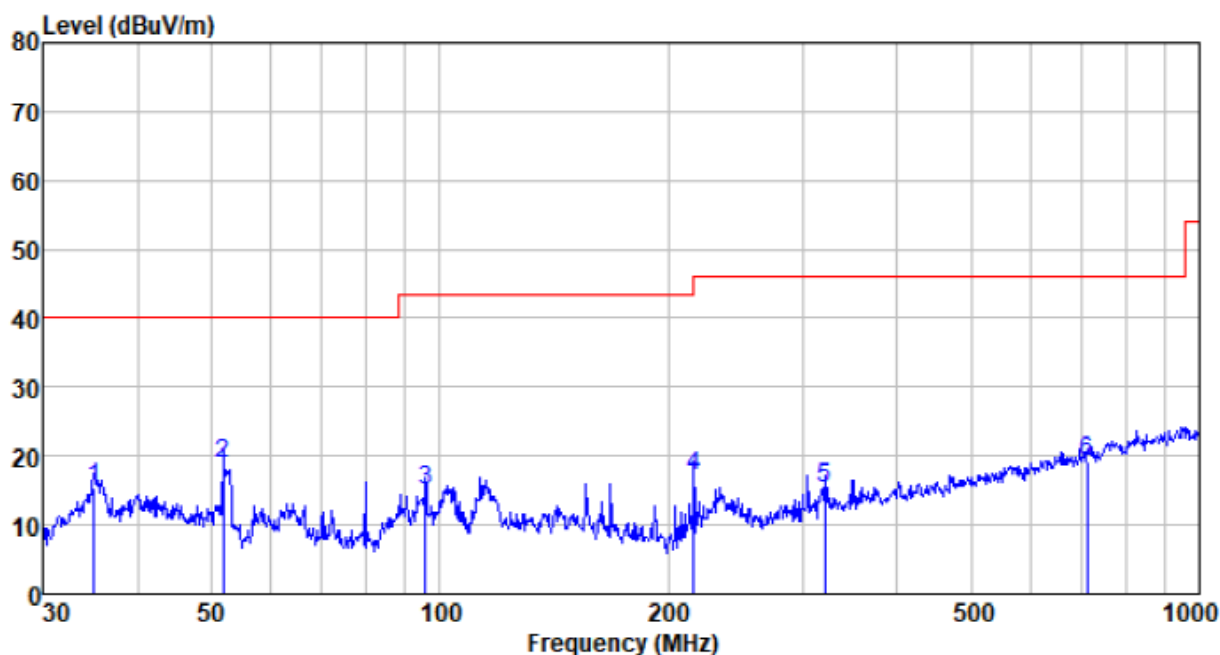
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 35.749      | 31.81                    | 12.83                     | 0.62                | 30.00                  | 15.26           | 40.00                    | -24.74              | QP     |
| 52.025      | 35.58                    | 13.07                     | 0.79                | 30.00                  | 19.44           | 40.00                    | -20.56              | QP     |
| 66.499      | 39.71                    | 11.20                     | 0.91                | 30.00                  | 21.82           | 40.00                    | -18.18              | QP     |
| 155.910     | 31.13                    | 12.56                     | 1.60                | 30.00                  | 15.29           | 43.50                    | -28.21              | QP     |
| 216.024     | 34.54                    | 10.09                     | 1.93                | 30.00                  | 16.56           | 46.00                    | -29.44              | QP     |
| 539.478     | 24.95                    | 18.31                     | 3.48                | 30.00                  | 16.74           | 46.00                    | -29.26              | QP     |

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



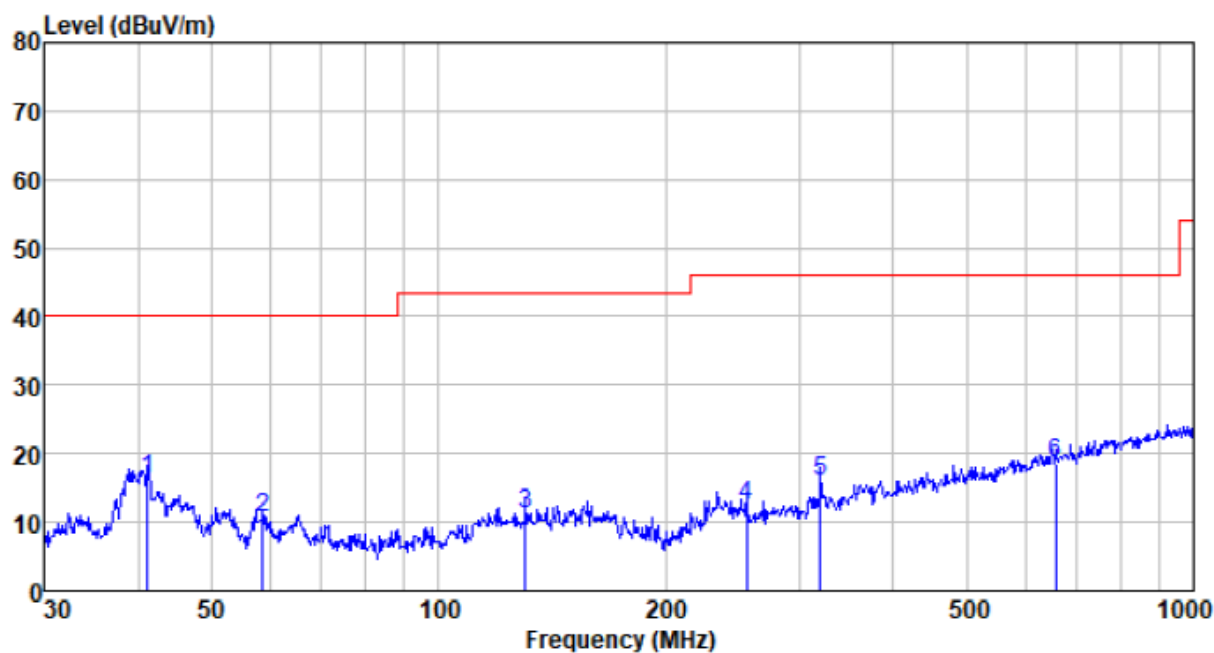
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 39.299      | 31.08                    | 13.39                     | 0.65                | 30.00                  | 15.12           | 40.00                    | -24.88              | QP     |
| 64.433      | 26.54                    | 11.63                     | 0.90                | 30.00                  | 9.07            | 40.00                    | -30.93              | QP     |
| 138.387     | 27.04                    | 12.31                     | 1.50                | 30.00                  | 10.85           | 43.50                    | -32.65              | QP     |
| 235.816     | 28.27                    | 11.34                     | 2.05                | 30.00                  | 11.66           | 46.00                    | -34.34              | QP     |
| 381.249     | 26.42                    | 15.15                     | 2.77                | 30.00                  | 14.34           | 46.00                    | -31.66              | QP     |
| 622.890     | 24.95                    | 19.66                     | 3.81                | 30.00                  | 18.42           | 46.00                    | -27.58              | QP     |

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



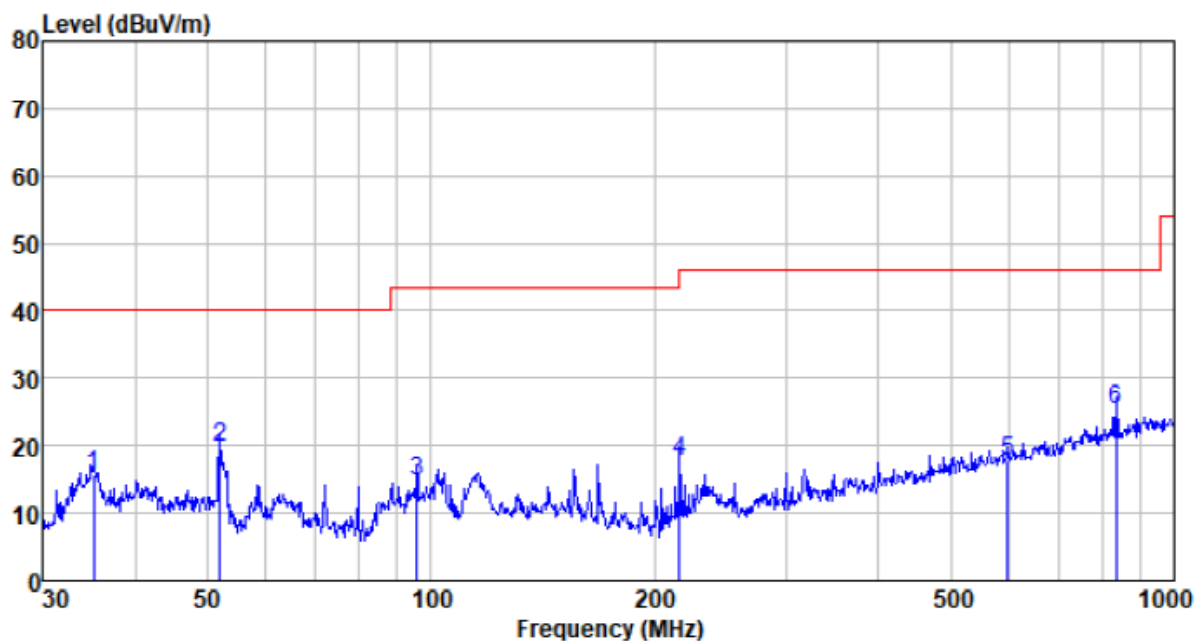
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 35.005      | 32.00                    | 12.70                     | 0.61                | 30.00                  | 15.31           | 40.00                    | -24.69              | QP     |
| 51.843      | 35.04                    | 13.08                     | 0.79                | 30.00                  | 18.91           | 40.00                    | -21.09              | QP     |
| 95.762      | 34.51                    | 9.25                      | 1.16                | 30.00                  | 14.92           | 43.50                    | -28.58              | QP     |
| 216.024     | 35.17                    | 10.09                     | 1.93                | 30.00                  | 17.19           | 46.00                    | -28.81              | QP     |
| 321.061     | 29.59                    | 13.18                     | 2.47                | 30.00                  | 15.24           | 46.00                    | -30.76              | QP     |
| 711.674     | 23.90                    | 21.04                     | 4.13                | 30.00                  | 19.07           | 46.00                    | -26.93              | 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 |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 41.132      | 32.16                    | 13.46                     | 0.67                | 30.00                  | 16.29           | 40.00                    | -23.71              | QP     |
| 58.407      | 27.09                    | 12.69                     | 0.85                | 30.00                  | 10.63           | 40.00                    | -29.37              | QP     |
| 130.379     | 27.87                    | 11.85                     | 1.44                | 30.00                  | 11.16           | 43.50                    | -32.34              | QP     |
| 255.623     | 29.02                    | 11.36                     | 2.15                | 30.00                  | 12.53           | 46.00                    | -33.47              | QP     |
| 319.937     | 30.31                    | 13.14                     | 2.47                | 30.00                  | 15.92           | 46.00                    | -30.08              | QP     |
| 656.530     | 24.42                    | 20.18                     | 3.94                | 30.00                  | 18.54           | 46.00                    | -27.46              | QP     |

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

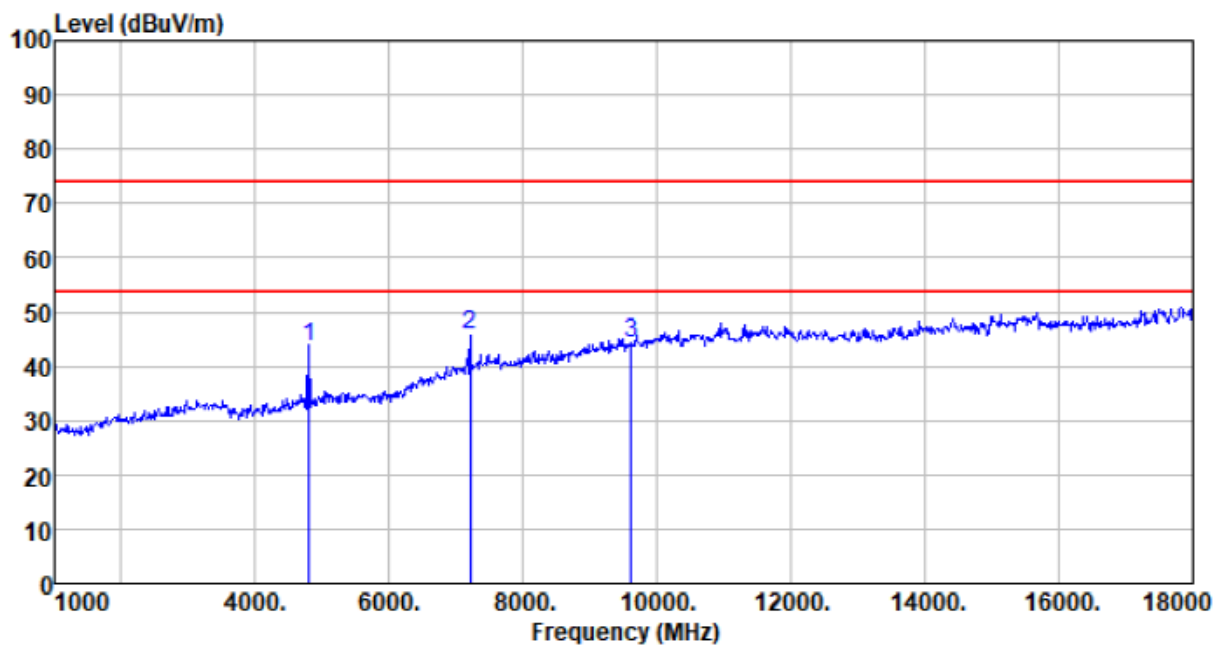


| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 35.128      | 32.28                    | 12.72                     | 0.61                | 30.00                  | 15.61           | 40.00                    | -24.39              | QP     |
| 52.025      | 35.80                    | 13.07                     | 0.79                | 30.00                  | 19.66           | 40.00                    | -20.34              | QP     |
| 95.762      | 34.41                    | 9.25                      | 1.16                | 30.00                  | 14.82           | 43.50                    | -28.68              | QP     |
| 216.024     | 35.65                    | 10.09                     | 1.93                | 30.00                  | 17.67           | 46.00                    | -28.33              | QP     |
| 597.223     | 24.74                    | 19.26                     | 3.71                | 30.00                  | 17.71           | 46.00                    | -28.29              | QP     |
| 836.244     | 27.50                    | 23.15                     | 4.60                | 30.00                  | 25.25           | 46.00                    | -20.75              | QP     |

■ Unwanted Emissions in Restricted Frequency Bands

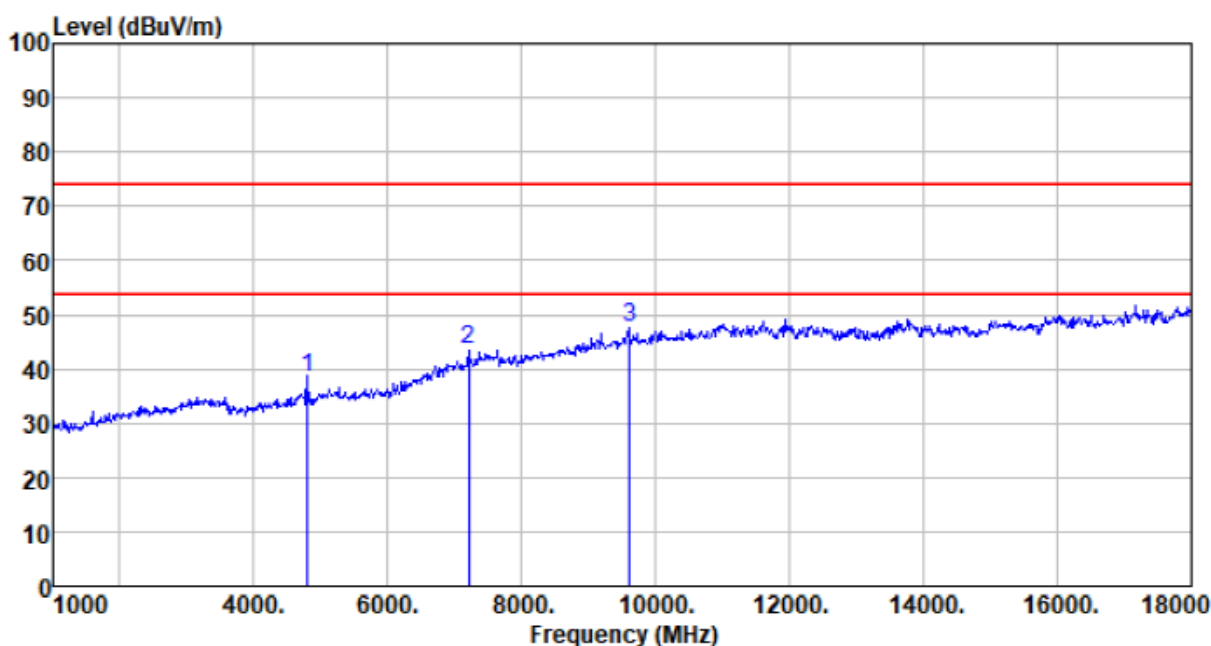
■ Above 1GHz

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



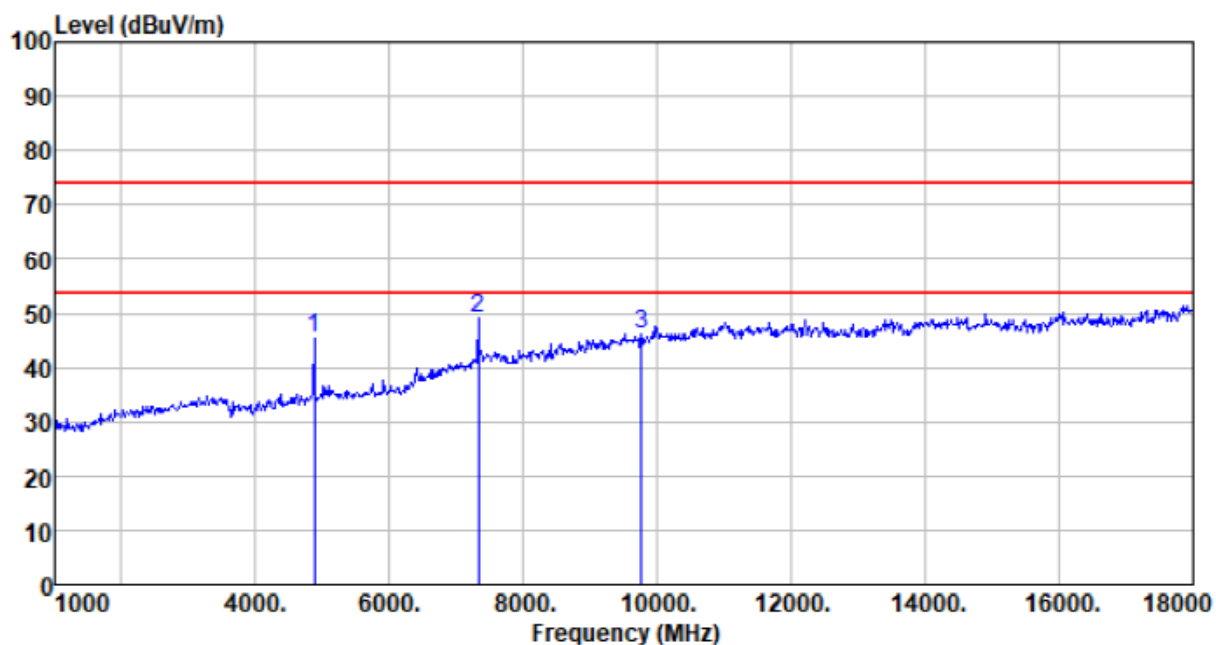
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4804.300    | 46.41                    | 31.05                     | 4.61                | 38.36                  | 43.71           | 74.00                    | -30.29              | Peak   |
| 7206.450    | 42.31                    | 35.91                     | 6.48                | 38.96                  | 45.74           | 74.00                    | -28.26              | Peak   |
| 9608.600    | 38.05                    | 37.91                     | 7.97                | 39.68                  | 44.25           | 74.00                    | -29.75              | Peak   |

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



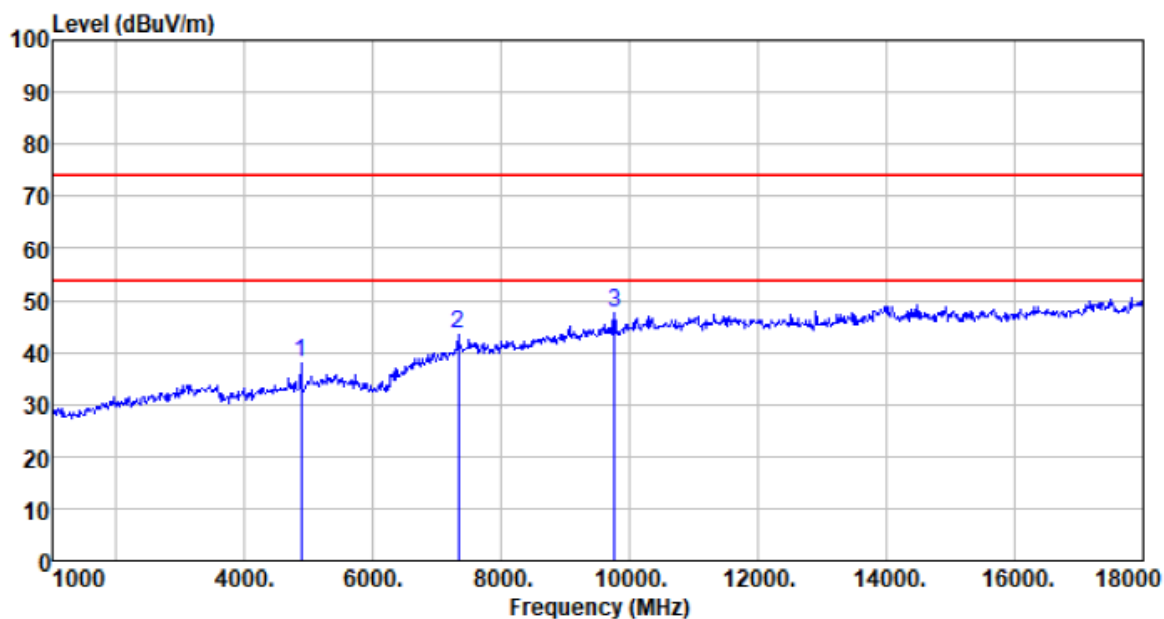
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4804.300    | 41.00                    | 31.05                     | 4.61                | 38.36                  | 38.30           | 74.00                    | -35.70              | Peak   |
| 7206.450    | 39.97                    | 35.91                     | 6.48                | 38.96                  | 43.40           | 74.00                    | -30.60              | Peak   |
| 9608.600    | 41.29                    | 37.91                     | 7.97                | 39.68                  | 47.49           | 74.00                    | -26.51              | Peak   |

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



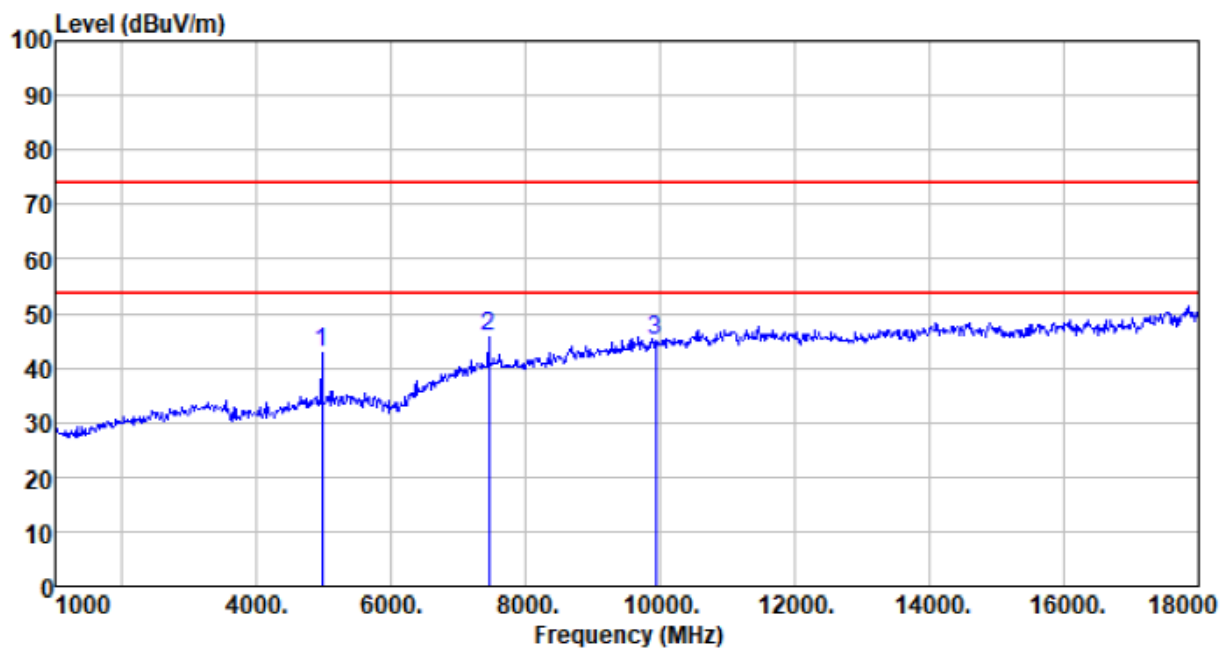
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4880.800    | 47.82                    | 31.27                     | 4.69                | 38.38                  | 45.40           | 74.00                    | -28.60              | Peak   |
| 7321.200    | 45.20                    | 36.14                     | 6.63                | 39.00                  | 48.97           | 74.00                    | -25.03              | Peak   |
| 9761.600    | 39.83                    | 38.06                     | 8.03                | 39.73                  | 46.19           | 74.00                    | -27.81              | Peak   |

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



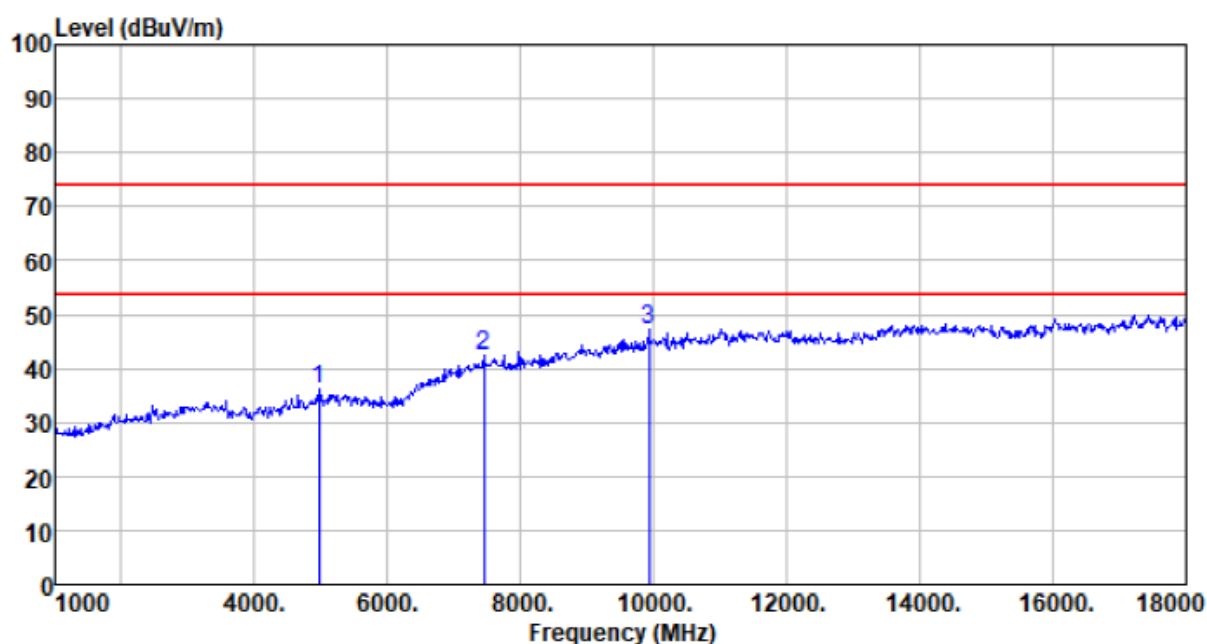
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4880.800    | 40.40                    | 31.27                     | 4.69                | 38.38                  | 37.98           | 74.00                    | -36.02              | Peak   |
| 7321.200    | 39.86                    | 36.14                     | 6.63                | 39.00                  | 43.63           | 74.00                    | -30.37              | Peak   |
| 9761.600    | 41.27                    | 38.06                     | 8.03                | 39.73                  | 47.63           | 74.00                    | -26.37              | 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 |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4959.700    | 45.06                    | 31.49                     | 4.79                | 38.39                  | 42.95           | 74.00                    | -31.05              | Peak   |
| 7439.550    | 41.78                    | 36.38                     | 6.77                | 39.03                  | 45.90           | 74.00                    | -28.10              | Peak   |
| 9919.400    | 38.67                    | 38.22                     | 8.09                | 39.78                  | 45.20           | 74.00                    | -28.80              | 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 |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|--------|
| 4959.700    | 38.13                    | 31.49                     | 4.79                | 38.39                  | 36.02           | 74.00                    | -37.98              | Peak   |
| 7439.550    | 38.24                    | 36.38                     | 6.77                | 39.03                  | 42.36           | 74.00                    | -31.64              | Peak   |
| 9925.000    | 40.64                    | 38.22                     | 8.09                | 39.78                  | 47.17           | 74.00                    | -26.83              | Peak   |

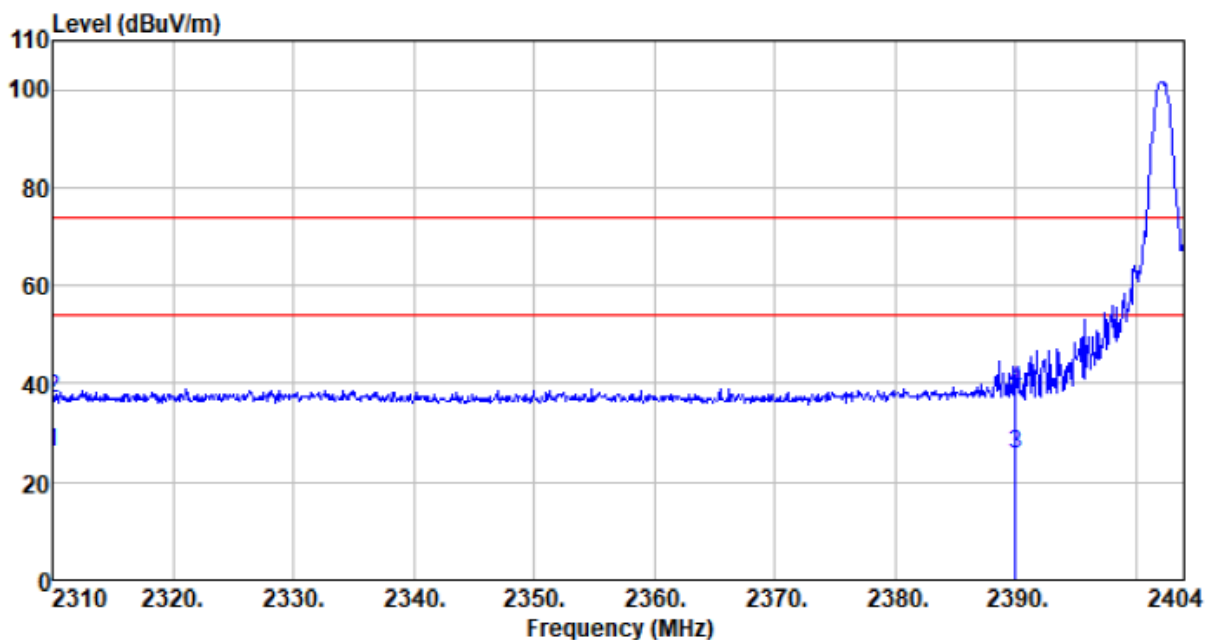
**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. “\*”, means this data is too weak; instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not shown in test report.
4. For above 18GHz, no emission found.

## Unwanted Emissions in Non-restricted Frequency Bands

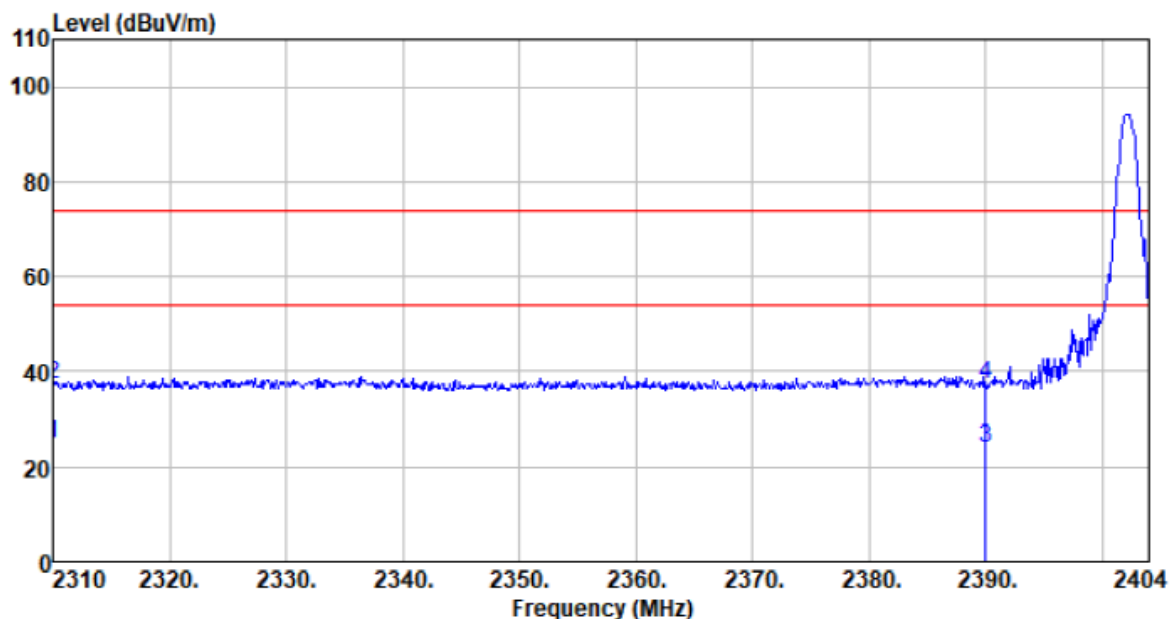
ANT 1:

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



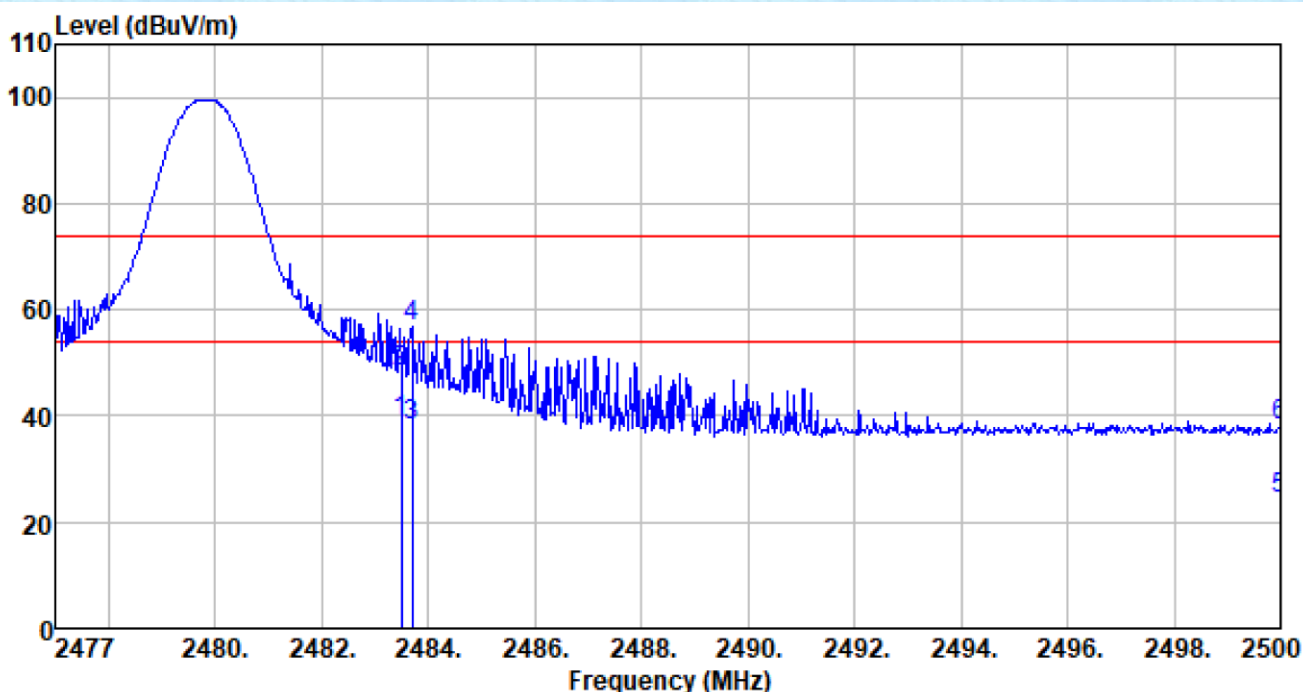
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|---------|
| 2310.000    | 34.37                    | 27.17                     | 2.81                | 38.52                  | 25.83           | 54.00                    | -28.17              | Average |
| 2310.000    | 45.53                    | 27.17                     | 2.81                | 38.52                  | 36.99           | 74.00                    | -37.01              | Peak    |
| 2390.000    | 34.15                    | 27.27                     | 2.91                | 38.56                  | 25.77           | 54.00                    | -28.23              | Average |
| 2390.000    | 47.07                    | 27.27                     | 2.91                | 38.56                  | 38.69           | 74.00                    | -35.31              | Peak    |

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



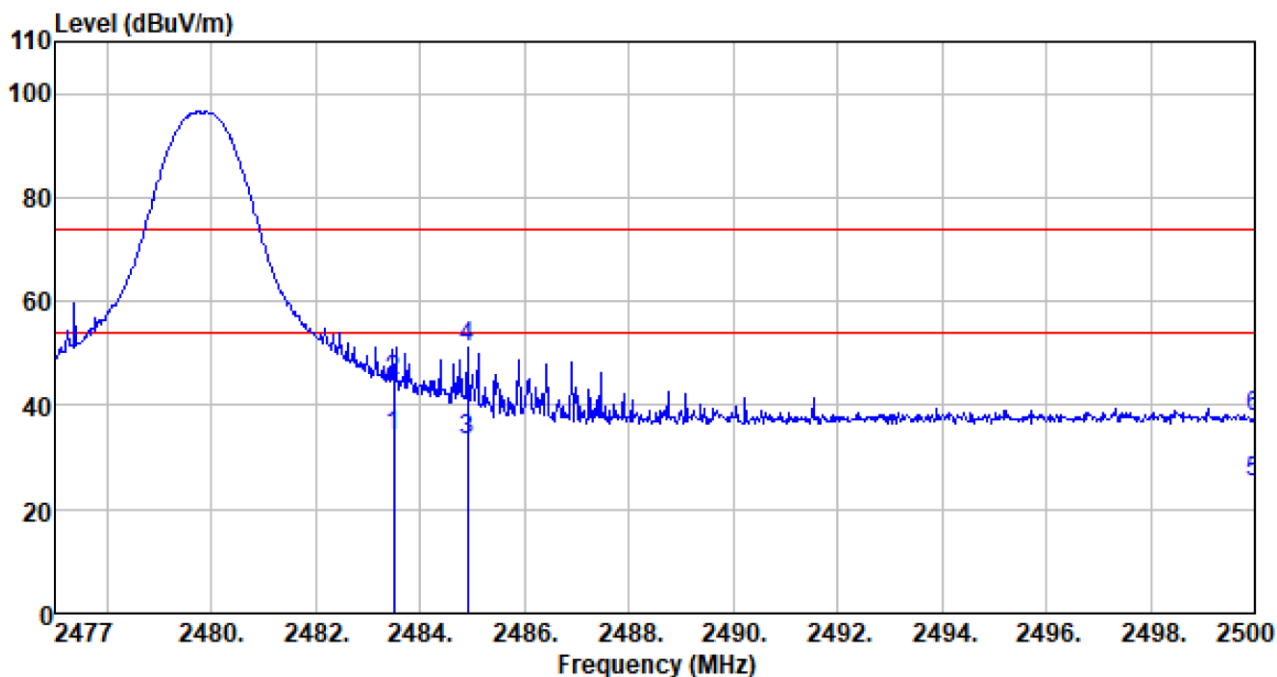
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|---------|
| 2310.000    | 33.13                    | 27.17                     | 2.81                | 38.52                  | 24.59           | 54.00                    | -29.41              | Average |
| 2310.000    | 46.07                    | 27.17                     | 2.81                | 38.52                  | 37.53           | 74.00                    | -36.47              | Peak    |
| 2390.000    | 32.49                    | 27.27                     | 2.91                | 38.56                  | 24.11           | 54.00                    | -29.89              | Average |
| 2390.000    | 45.74                    | 27.27                     | 2.91                | 38.56                  | 37.36           | 74.00                    | -36.64              | 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    | 47.36                    | 27.38                     | 2.99                | 38.59                  | 39.14           | 54.00                    | -14.86              | Average |
| 2483.500    | 56.40                    | 27.38                     | 2.99                | 38.59                  | 48.18           | 74.00                    | -25.82              | Peak    |
| 2483.693    | 46.28                    | 27.38                     | 2.99                | 38.59                  | 38.06           | 54.00                    | -15.94              | Average |
| 2483.693    | 65.19                    | 27.38                     | 2.99                | 38.59                  | 56.97           | 74.00                    | -17.03              | Peak    |
| 2500.000    | 32.60                    | 27.40                     | 3.01                | 38.60                  | 24.41           | 54.00                    | -29.59              | Average |
| 2500.000    | 46.48                    | 27.40                     | 3.01                | 38.60                  | 38.29           | 74.00                    | -35.71              | Peak    |

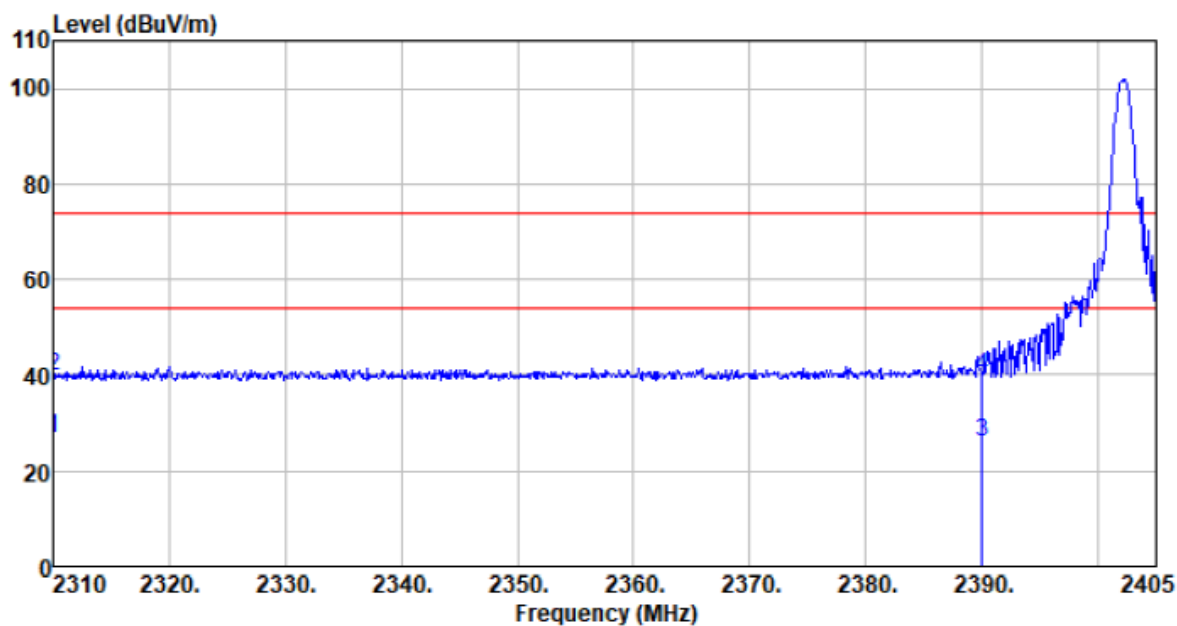
|               |         |               |          |
|---------------|---------|---------------|----------|
| Test channel: | Highest | Polarization: | Vertical |
|---------------|---------|---------------|----------|



| 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    | 42.23                    | 27.38                     | 2.99                | 38.59                  | 34.01           | 54.00                    | -19.99              | Average |
| 2483.500    | 53.06                    | 27.38                     | 2.99                | 38.59                  | 44.84           | 74.00                    | -29.16              | Peak    |
| 2484.912    | 41.50                    | 27.38                     | 2.99                | 38.59                  | 33.28           | 54.00                    | -20.72              | Average |
| 2484.912    | 59.29                    | 27.38                     | 2.99                | 38.59                  | 51.07           | 74.00                    | -22.93              | Peak    |
| 2500.000    | 33.21                    | 27.40                     | 3.01                | 38.60                  | 25.02           | 54.00                    | -28.98              | Average |
| 2500.000    | 46.11                    | 27.40                     | 3.01                | 38.60                  | 37.92           | 74.00                    | -36.08              | Peak    |

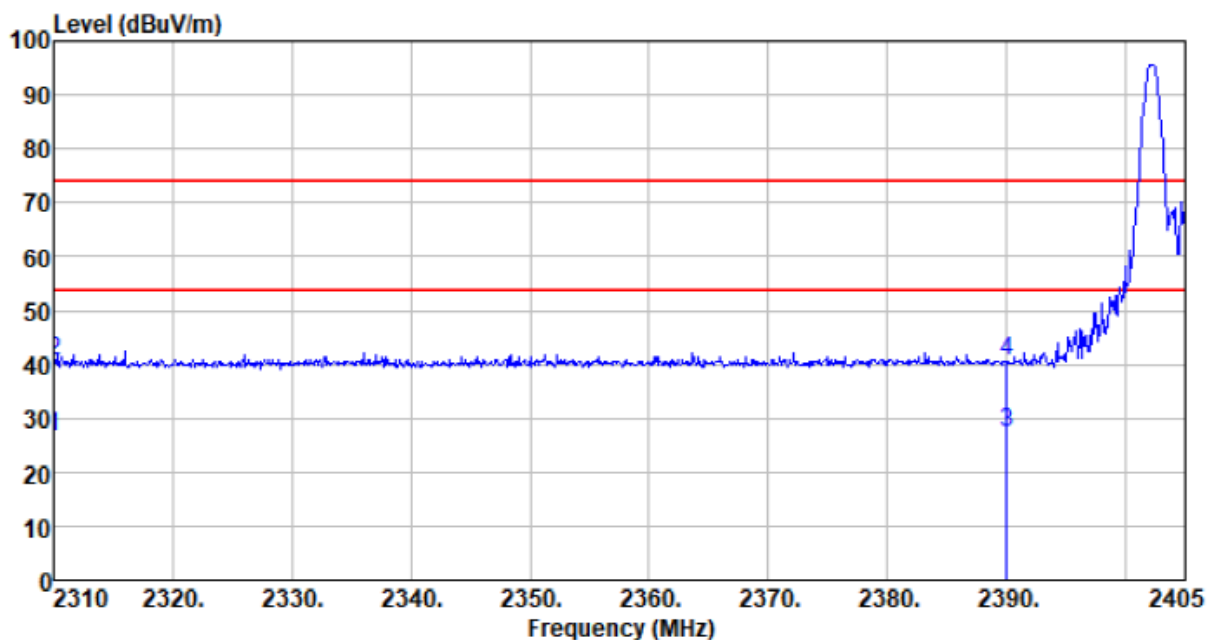
**ANT 2:**

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



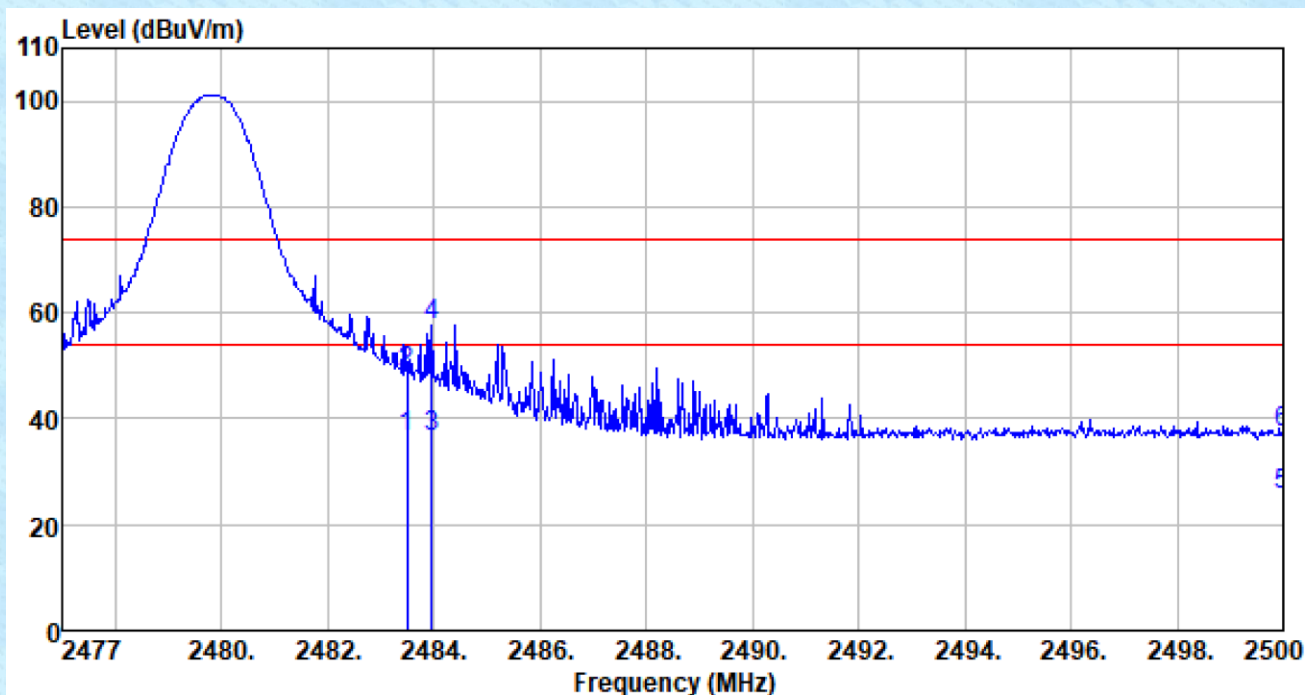
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|---------|
| 2310.000    | 35.29                    | 27.17                     | 2.81                | 38.52                  | 26.75           | 54.00                    | -27.25              | Average |
| 2310.000    | 48.17                    | 27.17                     | 2.81                | 38.52                  | 39.63           | 74.00                    | -34.37              | Peak    |
| 2390.000    | 34.19                    | 27.27                     | 2.91                | 38.56                  | 25.81           | 54.00                    | -28.19              | Average |
| 2390.000    | 48.04                    | 27.27                     | 2.91                | 38.56                  | 39.66           | 74.00                    | -34.34              | Peak    |

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



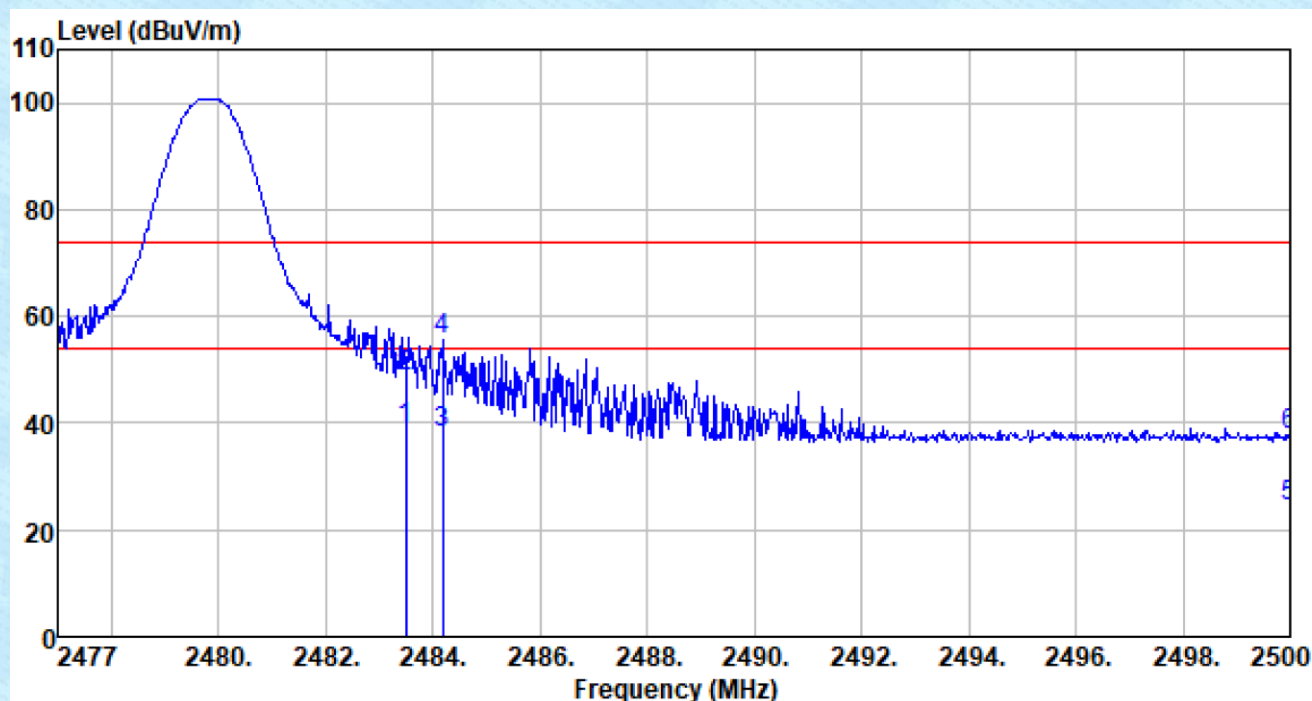
| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV/m | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|---------------------------|---------------------|------------------------|-----------------|--------------------------|---------------------|---------|
| 2310.000    | 35.14                    | 27.17                     | 2.81                | 38.52                  | 26.60           | 54.00                    | -27.40              | Average |
| 2310.000    | 49.20                    | 27.17                     | 2.81                | 38.52                  | 40.66           | 74.00                    | -33.34              | Peak    |
| 2390.000    | 35.80                    | 27.27                     | 2.91                | 38.56                  | 27.42           | 54.00                    | -26.58              | Average |
| 2390.000    | 48.90                    | 27.27                     | 2.91                | 38.56                  | 40.52           | 74.00                    | -33.48              | 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    | 44.90                    | 27.38                     | 2.99                | 38.59                  | 36.68           | 54.00                    | -17.32              | Average |
| 2483.500    | 56.78                    | 27.38                     | 2.99                | 38.59                  | 48.56           | 74.00                    | -25.44              | Peak    |
| 2483.969    | 44.70                    | 27.38                     | 2.99                | 38.59                  | 36.48           | 54.00                    | -17.52              | Average |
| 2483.969    | 65.93                    | 27.38                     | 2.99                | 38.59                  | 57.71           | 74.00                    | -16.29              | Peak    |
| 2500.000    | 33.63                    | 27.40                     | 3.01                | 38.60                  | 25.44           | 54.00                    | -28.56              | Average |
| 2500.000    | 45.46                    | 27.40                     | 3.01                | 38.60                  | 37.27           | 74.00                    | -36.73              | 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    | 47.28                    | 27.38                     | 2.99                | 38.59                  | 39.06           | 54.00                    | -14.94              | Average |
| 2483.500    | 57.04                    | 27.38                     | 2.99                | 38.59                  | 48.82           | 74.00                    | -25.18              | Peak    |
| 2484.176    | 46.54                    | 27.38                     | 2.99                | 38.59                  | 38.32           | 54.00                    | -15.68              | Average |
| 2484.176    | 63.72                    | 27.38                     | 2.99                | 38.59                  | 55.50           | 74.00                    | -18.50              | Peak    |
| 2500.000    | 32.59                    | 27.40                     | 3.01                | 38.60                  | 24.40           | 54.00                    | -29.60              | Average |
| 2500.000    | 45.75                    | 27.40                     | 3.01                | 38.60                  | 37.56           | 74.00                    | -36.44              | 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.

## 8 Test Setup Photo

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

## 9 EUT Constructional Details

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

---End---