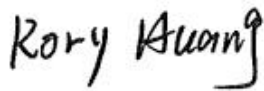


# TEST REPORT

|                      |                                                                                                            |
|----------------------|------------------------------------------------------------------------------------------------------------|
| Report No.           | CISRR24101103903                                                                                           |
| Project No.          | CISR241011039                                                                                              |
| FCC ID               | 2BFQI-V20                                                                                                  |
| Applicant            | Jiangxi Jichi Technology Co., Ltd                                                                          |
| Address              | PlantNo.3,BlockB13-1-2,B14-1,Jinggangshan Economic and Development Zone,Ji'an City,Jiangxi Province, China |
| Manufacturer         | Jiangxi Jichi Technology Co., Ltd                                                                          |
| Address              | PlantNo.3,BlockB13-1-2,B14-1,Jinggangshan Economic and Development Zone,Ji'an City,Jiangxi Province, China |
| Product Name         | keyboard                                                                                                   |
| Trade Mark           | --                                                                                                         |
| Model/Type reference | V20                                                                                                        |
| Listed Model(s)      | --                                                                                                         |
| Standard             | Part 15 Subpart C Section 15.249                                                                           |
| Test date            | October 10, 2024 ~ October 29, 2024                                                                        |
| Issue date           | November 12, 2024                                                                                          |
| Test result          | <b>Complied</b>                                                                                            |



Prepared by: Rory Huang



Approved by: Genry Long

*The test results relate only to the tested samples.*

*The test report should not be reproduced except in full without the written approval of Shenzhen Bangce Testing Technology Co., Ltd.*

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## 1. REPORT VERSION

| Version No. | Issue date        | Description |
|-------------|-------------------|-------------|
| 00          | November 12, 2024 | Original    |
|             |                   |             |
|             |                   |             |

## 2. SUMMARY OF TEST RESULT

| Report clause | Test Item                   | Standard Requirement       | Result |
|---------------|-----------------------------|----------------------------|--------|
| 5.1           | Antenna Requirement         | 15.203/15.247 (c)          | PASS   |
| 5.2           | AC Conducted Emission       | 15.207                     | PASS   |
| 5.3           | 20 dB Bandwidth             | 15.215 (c)                 | PASS   |
| 5.4           | Radiated Band Edge Emission | 15.205/15.209              | PASS   |
| 5.5           | Radiated Spurious Emission  | 15.249(a)(c)/15.205/15.209 | PASS   |

Note:

- The measurement uncertainty is not included in the test result.

### 3. SUMMARY

#### 3.1. Product Description

| Main unit information: |                                   |
|------------------------|-----------------------------------|
| Product Name:          | keyboard                          |
| Trade Mark:            | --                                |
| Model No.:             | V20                               |
| Listed Model(s):       | --                                |
| Power supply:          | Input: DC 5V<br>3.7V from Battery |
| Hardware version:      | K618 BYK901+BK3632 V1 20230803    |
| Software version:      | B96C                              |

#### 3.2. Radio Specification Description

|                      |                 |
|----------------------|-----------------|
| Technology:          | 2.4G            |
| Modulation:          | GFSK            |
| Operation frequency: | 2403MHz~2480MHz |
| Channel number:      | 16              |
| Antenna type:        | PCB Antenna     |
| Antenna gain:        | 2.34dBi         |

Channel list:

|            |                 |             |                 |
|------------|-----------------|-------------|-----------------|
| <b>CH1</b> | <b>2403 MHz</b> | CH9         | 2445 MHz        |
| CH2        | 2414 MHz        | CH10        | 2450 MHz        |
| CH3        | 2424 MHz        | CH11        | 2455 MHz        |
| --         | --              | --          | --              |
| --         | --              | --          | --              |
| <b>CH8</b> | <b>2441 MHz</b> | <b>CH16</b> | <b>2480 MHz</b> |

### 3.3. Modification of EUT

No modifications are made to the EUT during all test items.

### 3.4. Testing Site

|                         |                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Laboratory Name         | Shenzhen Bangce Testing Technology Co., Ltd.                                                                                 |
| Laboratory Location     | 101, building 10, Yunli Intelligent Park, Shutianpu community, Matian Street, Guangming District, Shenzhen, Guangdong, China |
| FCC registration number | 736346                                                                                                                       |

### 3.5. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS \text{ (dBuV/m)} = RA \text{ (dBuV)} + AF \text{ (dB/m)} + CL \text{ (dB)} - AG \text{ (dB)}$$

|                           |                                            |
|---------------------------|--------------------------------------------|
| Where FS = Field Strength | CL = Cable Attenuation Factor (Cable Loss) |
| RA = Reading Amplitude    | AG = Amplifier Gain                        |
| AF = Antenna Factor       |                                            |

### 3.6. DISTURBANCE Calculation

The AC mains conducted disturbance is calculated by adding the 10dB Pulse Limiter and Cable Factor and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$CD \text{ (dBuV)} = RA \text{ (dBuV)} + PL \text{ (dB)} + CL \text{ (dB)}$$

|                                  |                                            |
|----------------------------------|--------------------------------------------|
| Where CD = Conducted Disturbance | CL = Cable Attenuation Factor (Cable Loss) |
| RA = Reading Amplitude           | PL = 10 dB Pulse Limiter Factor            |

## 4. TEST CONFIGURATION

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

### 4.1. Test frequency list

| Channel | Frequency (MHz) |
|---------|-----------------|
| CH-L    | 2403            |
| CH-M    | 2441            |
| CH-H    | 2480            |

### 4.2. Test mode

For RF test items:

The engineering prototype is provided with key switching channel to realize EUT continuous transmission..Power setting Default.

| Test Item           | Test Mode   | Modulation |
|---------------------|-------------|------------|
| Conducted test item | TX CH-L     | GFSK       |
|                     | TX CH-M     | GFSK       |
|                     | TX CH-H     | GFSK       |
|                     | Normal link | --         |
|                     | Charging    | --         |
| Radiated test item  | TX CH-L     | GFSK       |
|                     | TX CH-M     | GFSK       |
|                     | TX CH-H     | GFSK       |
|                     | Normal link | --         |
|                     | Charging    | --         |

Remark:

- The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.All patterns have predictions, and the report only shows the worst pattern data.

### 4.3. Support unit used in test configuration and system

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The following peripheral devices and interface cables were connected during the measurement:

| Item | Equipment name | Trade Name                         | Model No.    |
|------|----------------|------------------------------------|--------------|
| 1    | Adapter        | Guangdong Sangu Technology Co. Ltd | SG-0501000AU |

### 4.4. Test sample information

| Type            | sample no.         |
|-----------------|--------------------|
| Engineer sample | CISR241011039--S01 |
| Normal sample   | CISR241011039--S01 |

#### 4.5. Testing environmental condition

| Type               | Requirement  | Actual   |
|--------------------|--------------|----------|
| Temperature:       | 15~35°C      | 25°C     |
| Relative Humidity: | 25~75%       | 50%      |
| Air Pressure:      | 860~1060mbar | 1000mbar |

#### 4.6. Statement of the measurement uncertainty

| No. | Test Items                                | Measurement Uncertainty                        |
|-----|-------------------------------------------|------------------------------------------------|
| 1   | AC Conducted Emission                     | 1.63dB                                         |
| 2   | Peak Output Power                         | 1.34dB                                         |
| 3   | Power Spectral Density                    | 1.34dB                                         |
| 4   | 6dB Bandwidth                             | 0.002%                                         |
| 5   | 99% Occupied Bandwidth                    | 0.002%                                         |
| 6   | Duty cycle                                | -                                              |
| 7   | Conducted Band Edge and Spurious Emission | 1.93dB                                         |
| 8   | Radiated Band Edge Emission               | 3.76dB for 30MHz-1GHz<br>3.80dB for above 1GHz |
| 9   | Radiated Spurious Emission                | 3.76dB for 30MHz-1GHz<br>3.80dB for above 1GHz |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=1.96$ .

#### 4.7. Equipment Used during the Test

| Equipment                              | Manufacture   | Model No.   | Serial No.      | Last cal.  | Cal Interval |
|----------------------------------------|---------------|-------------|-----------------|------------|--------------|
| 9*6*6 anechoic chamber                 | SKET          | 9.3*6.3*6   | N/A             | 2024.09.01 | 3Year        |
| Spectrum analyzer                      | Agilent       | N9020A      | MY50530263      | 2024.01.08 | 1Year        |
| Receiver                               | ROHDE&SCHWARZ | ESCI        | 100853          | 2024.01.08 | 1Year        |
| Spectrum analyzer                      | R&S           | FSV-40N     | /               | 2024.01.08 | 1Year        |
| Bilog Antenna                          | Schwarzbeck   | VULB 9163   | 1463            | 2023.01.09 | 2Year        |
| Horn Antenna                           | SCHWARZBECK   | BBHA 9120 D | 2487            | 2023.01.09 | 2Year        |
| Active Loop Antenna                    | SCHWARZBECK   | FMZB 1519B  | /               | 2023.01.09 | 2Year        |
| RF Cable                               | Tonscend      | Cable 1     | /               | 2024.01.08 | 1Year        |
| RF Cable                               | Tonscend      | Cable 2     | /               | 2024.01.08 | 1Year        |
| RF Cable                               | SKET          | Cable 3     | /               | 2024.01.08 | 1Year        |
| Pre-amplifier                          | Tonscend      | TAP9K3G32   | AP21G806153     | 2024.01.08 | 1Year        |
| Pre-amplifier                          | Tonscend      | TAP01018050 | AP22E806229     | 2024.01.08 | 1Year        |
| L.I.S.N.#1                             | Schwarzbeck   | NSLK8127    | /               | 2024.01.08 | 1Year        |
| L.I.S.N.#2                             | ROHDE&SCHWARZ | ENV216      | /               | 2024.01.08 | 1Year        |
| Horn Antenna                           | SCHWARZBECK   | BBHA9170    | 1130            | 2023.01.09 | 2 Year       |
| Preamplifier                           | Tonscend      | TAP18040048 | AP21C806126     | 2024.01.08 | 1Year        |
| variable-frequency power source        | Pinhong       | PH1110      | /               | 2024.01.08 | 1Year        |
| 6dB Attenuator                         | SKET          | DC-6G       | /               | N/A        | N/A          |
| Artificial power network               | Schwarzbeck   | NSLK8127    | 8127-01096      | 2024.01.08 | 1Year        |
| EMI Test Receiver                      | Rohde&schwarz | ESCI7       | 100853          | 2024.01.08 | 1Year        |
| 8-wire Impedance Stabilization Network | Schwarzbeck   | NTFM 8158   | 8158-00337      | 2024.01.08 | 1Year        |
| Artificial power network               | Schwarzbeck   | ENV216      | /               | 2024.01.08 | 1Year        |
| Antenna tower                          | SKET          | Bk-4AT-BS   | AT2021040101-V1 | N/A        | N/A          |

## 5. TEST CONDITIONS AND RESULTS

### 5.1. Antenna Requirement

#### Standard Applicable

#### **FCC CFR Title 47 Part 15 Subpart C Section 15.203:**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1) (I):**

(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.

#### Description

The EUT antenna is PCB antenna (2.34dBi), the directional gain of the antenna less than 6dBi. It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used. Antenna structure please refer to the EUT internal photographs antenna photo.

Remark: The antenna gain is provided by the customer, if the data provided by the customer is not accurate, Shenzhen Bangce Testing Technology Co., Ltd. does not assume any responsibility.

## 5.2. AC Conducted Emission

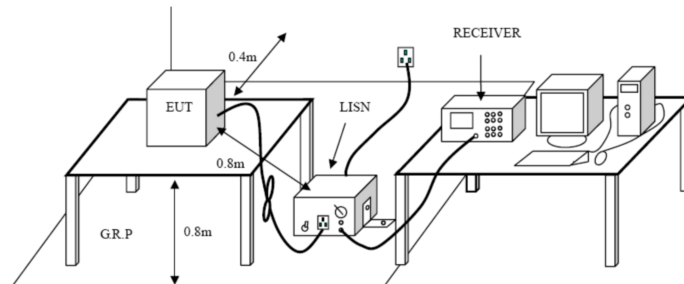
### Limit:

### FCC CFR Title 47 Part 15 Subpart C Section 15.207

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

\* Decreases with the logarithm of the frequency.

### Test configuration:



### Test procedure:

1. The EUT was setup according to ANSI C63.10 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

### Test mode:

Refer to the clause 4.2

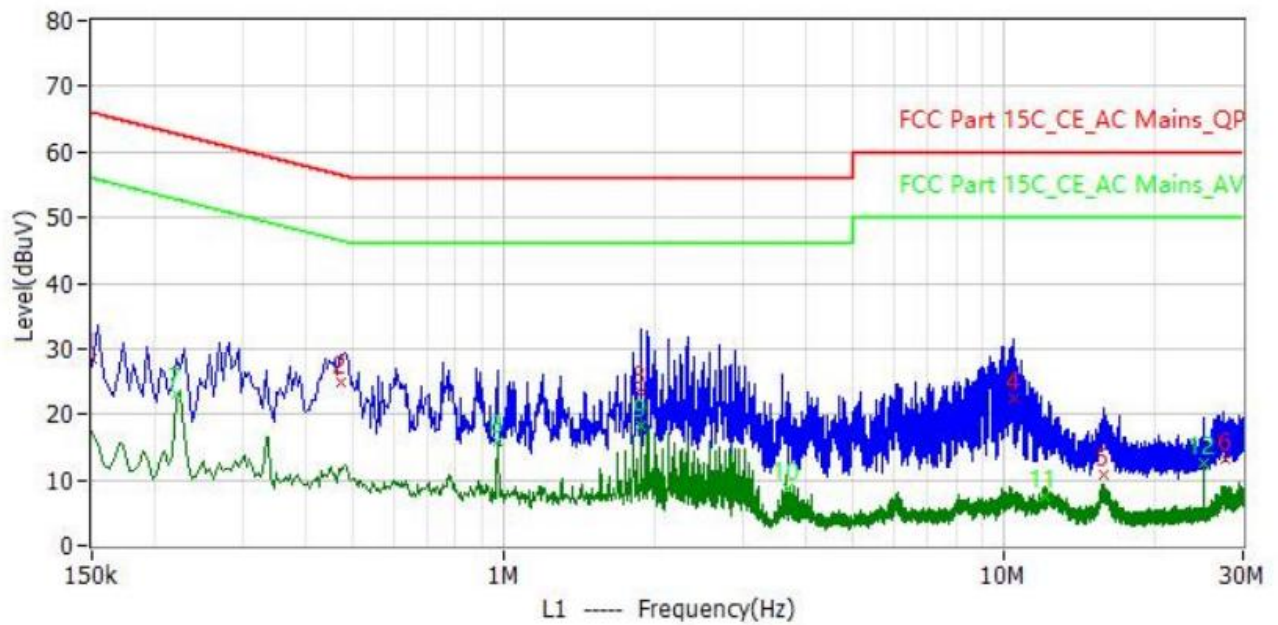
### Result:

**Passed**

**Test mode:Charging**

Test Line:

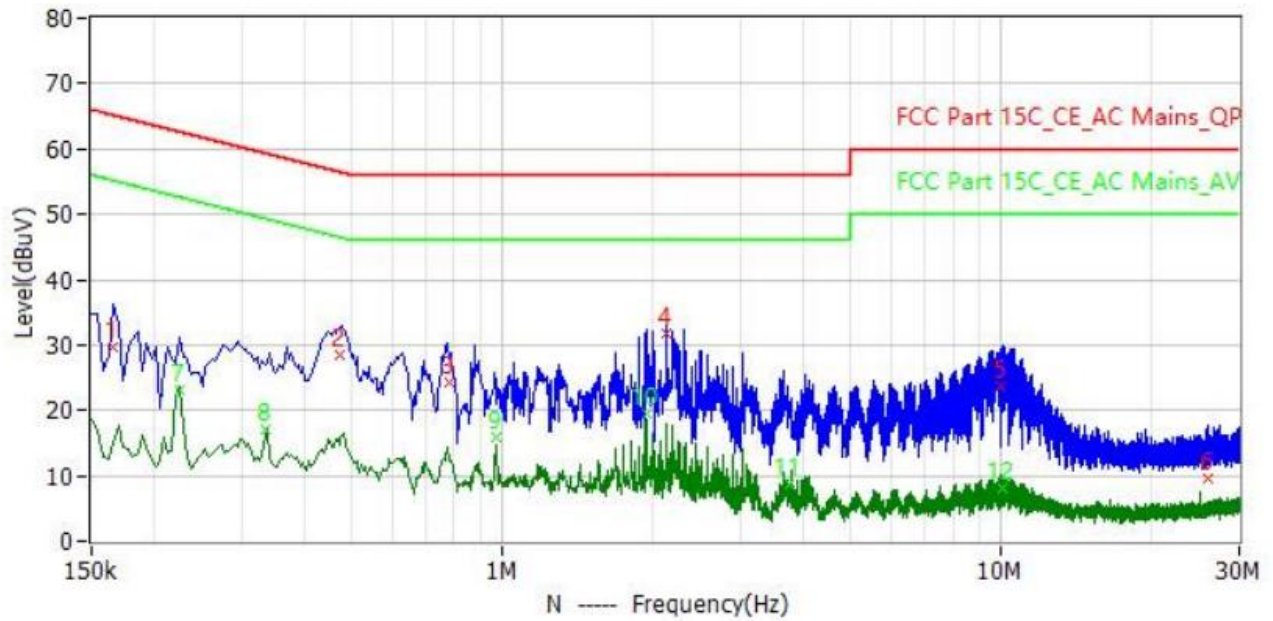
L



| No. | Frequency  | Limit dBuV | Level dBuV | Margin dB | Reading dBuV | Factor dB | Detector | Phase |
|-----|------------|------------|------------|-----------|--------------|-----------|----------|-------|
| 1   | 150.000kHz | 66.0       | 28.5       | -37.5     | 28.5         | 0.0       | QP       | L1    |
| 2   | 474.000kHz | 56.4       | 25.0       | -31.4     | 24.9         | 0.1       | QP       | L1    |
| 3   | 1.882MHz   | 56.0       | 23.3       | -32.7     | 23.2         | 0.1       | QP       | L1    |
| 4   | 10.398MHz  | 60.0       | 22.5       | -37.5     | 22.2         | 0.3       | QP       | L1    |
| 5   | 15.794MHz  | 60.0       | 10.7       | -49.3     | 10.3         | 0.4       | QP       | L1    |
| 6   | 27.682MHz  | 60.0       | 13.3       | -46.7     | 12.7         | 0.6       | QP       | L1    |
| 7   | 222.000kHz | 52.7       | 23.2       | -29.5     | 23.2         | 0.0       | CAV      | L1    |
| 8   | 970.000kHz | 46.0       | 15.8       | -30.2     | 15.7         | 0.1       | CAV      | L1    |
| 9   | 1.878MHz   | 46.0       | 18.3       | -27.7     | 18.2         | 0.1       | CAV      | L1    |
| 10  | 3.690MHz   | 46.0       | 8.6        | -37.4     | 8.5          | 0.1       | CAV      | L1    |
| 11  | 12.002MHz  | 50.0       | 7.4        | -42.6     | 7.1          | 0.3       | CAV      | L1    |
| 12  | 25.154MHz  | 50.0       | 12.5       | -37.5     | 11.9         | 0.6       | CAV      | L1    |

Test Line:

N



| No. | Frequency  | Limit dBuV | Level dBuV | Margin dB | Reading dBuV | Factor dB | Detector | Phase |
|-----|------------|------------|------------|-----------|--------------|-----------|----------|-------|
| 1   | 166.000kHz | 65.2       | 29.8       | -35.4     | 29.8         | 0.0       | QP       | N     |
| 2   | 474.000kHz | 56.4       | 28.5       | -27.9     | 28.4         | 0.1       | QP       | N     |
| 3   | 782.000kHz | 56.0       | 24.2       | -31.8     | 24.1         | 0.1       | QP       | N     |
| 4   | 2.130MHz   | 56.0       | 31.8       | -24.2     | 31.7         | 0.1       | QP       | N     |
| 5   | 10.018MHz  | 60.0       | 23.8       | -36.2     | 23.5         | 0.3       | QP       | N     |
| 6   | 25.942MHz  | 60.0       | 9.6        | -50.4     | 9.0          | 0.6       | QP       | N     |
| 7   | 226.000kHz | 52.6       | 23.2       | -29.4     | 23.1         | 0.1       | CAV      | N     |
| 8   | 334.000kHz | 49.4       | 17.2       | -32.2     | 17.2         | 0.0       | CAV      | N     |
| 9   | 970.000kHz | 46.0       | 16.0       | -30.0     | 15.9         | 0.1       | CAV      | N     |
| 10  | 1.942MHz   | 46.0       | 19.5       | -26.5     | 19.4         | 0.1       | CAV      | N     |
| 11  | 3.754MHz   | 46.0       | 8.8        | -37.2     | 8.6          | 0.2       | CAV      | N     |
| 12  | 10.066MHz  | 50.0       | 8.2        | -41.8     | 7.9          | 0.3       | CAV      | N     |

Note:

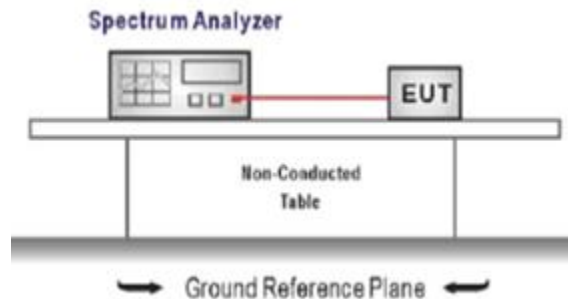
1. Factor = LISN Factor + Cable Factor
2. Level= Reading + Factor
3. Margin= Level – Limit

### 5.3. 20 dB Bandwidth

Limit:

--

Test configuration:



Test procedure:

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:  
Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel  
RBW  $\geq$  1% of the 20 dB bandwidth, VBW  $\geq$  RBW  
Sweep = auto, Detector function = peak, Trace = max hold
4. Measure and record the results in the test report.

Test mode:

Refer to the clause 4.2

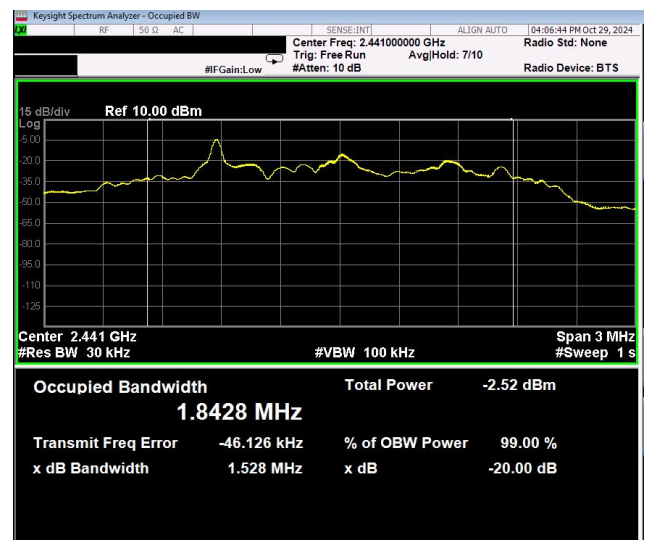
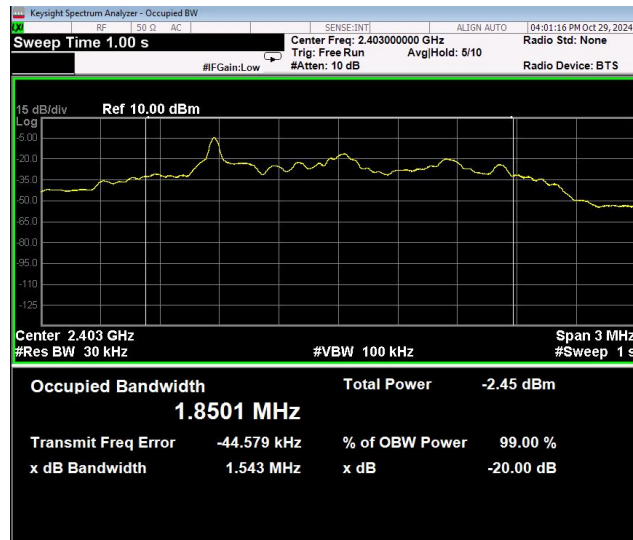
Result:

**Passed**

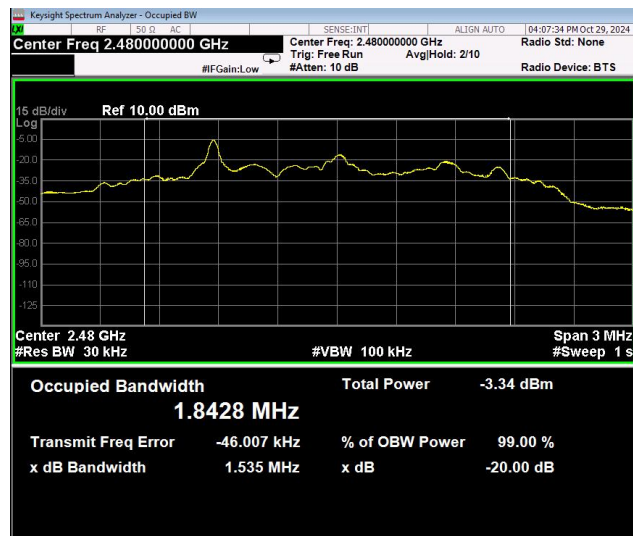
Test Result of 20dB Bandwidth Measurement

| Test Frequency(MHz) | 20dB Bandwidth(MHz) | Limit(MHz)    |
|---------------------|---------------------|---------------|
| 2403                | 1.543               | Non-Specified |
| 2441                | 1.528               | Non-Specified |
| 2480                | 1.535               | Non-Specified |

20dB Bandwidth



2403MHz



2441MHz

2480MHz

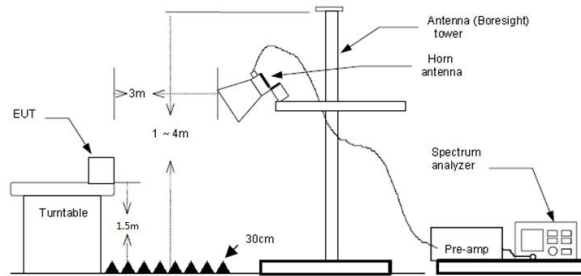
## 5.4. Radiated Band edge Emission

### Limit:

#### **FCC CFR Title 47 Part 15 Subpart C Section 15.249 (d):**

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

### Test configuration:



### Test procedure:

1. The EUT was setup and tested according to ANSI C63.10 .
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10 on radiated measurement.
5. Use the following spectrum analyzer settings:
  - a) Span shall wide enough to fully capture the emission being measured
  - b) Set RBW=100kHz for <1GHz, VBW=3\*RBW, Sweep time=auto, Detector=peak, Trace=max hold
  - c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement
  - d) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=Average, Trace=RMS for Average measurement

### Test mode:

Refer to the clause 4.2

### Result:

**Passed**

### Note:

- 1) Level= Reading + Factor; Factor =Antenna Factor+ Cable Loss- Preamp Factor
- 2) Margin = Limit - Level
- 3) Average measurement was not performed if peak level is lower than average limit
- 4) The other emission levels were very low against the limit.

| Test channel:CH01 |                |                    |                   |                    |                          |              |                 |             |         |            |
|-------------------|----------------|--------------------|-------------------|--------------------|--------------------------|--------------|-----------------|-------------|---------|------------|
| Freq. (MHz)       | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correction Factor (dB/m) | Level (dBuv) | Limit (dBu V/m) | Margin (dB) | Remark  | Polarity   |
| 2390.00           | 69.99          | 28.62              | 4.08              | 38.62              | -5.92                    | 64.07        | 74              | 9.93        | Peak    | Horizontal |
| 2390.00           | 51.47          | 28.62              | 4.08              | 38.62              | -5.92                    | 45.55        | 54              | 8.45        | Average | Horizontal |
| 2390.00           | 69.27          | 28.62              | 4.08              | 38.62              | -5.92                    | 63.35        | 74              | 10.65       | Peak    | Vertical   |
| 2390.00           | 49.93          | 28.62              | 4.08              | 38.62              | -5.92                    | 44.01        | 54              | 9.99        | Average | Vertical   |

| Test channel:CH16 |                |                    |                   |                    |                          |              |                 |             |         |            |
|-------------------|----------------|--------------------|-------------------|--------------------|--------------------------|--------------|-----------------|-------------|---------|------------|
| Freq. (MHz)       | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correction Factor (dB/m) | Level (dBuv) | Limit (dBu V/m) | Margin (dB) | Remark  | Polarity   |
| 2483.50           | 70.10          | 29.45              | 3.91              | 40.17              | -6.81                    | 63.29        | 74              | 10.71       | Peak    | Horizontal |
| 2483.50           | 50.23          | 29.45              | 3.91              | 40.17              | -6.81                    | 43.42        | 54              | 10.58       | Average | Horizontal |
| 2483.50           | 67.79          | 29.45              | 3.91              | 40.17              | -6.81                    | 60.98        | 74              | 13.02       | Peak    | Vertical   |
| 2483.50           | 50.85          | 29.45              | 3.91              | 40.17              | -6.81                    | 44.04        | 54              | 9.96        | Average | Vertical   |

## 5.5. Radiated Spurious Emission

### Limit:

#### FCC CFR Title 47 Part 15 Subpart C Section 15.209

| Frequency            | Limit (dBuV/m)    | Value      |
|----------------------|-------------------|------------|
| 0.009 MHz ~0.49 MHz  | 2400/F(kHz) @300m | Quasi-peak |
| 0.49 MHz ~ 1.705 MHz | 24000/F(kHz) @30m | Quasi-peak |
| 1.705 MHz ~30 MHz    | 30 @30m           | Quasi-peak |

Limit dBuV/m @3m = Limit dBuV/m @300m + 40\*log(300/3)

Limit dBuV/m @3m = Limit dBuV/m @30m + 40\*log(30/3)

#### FCC CFR Title 47 Part 15 Subpart C Section 15.249

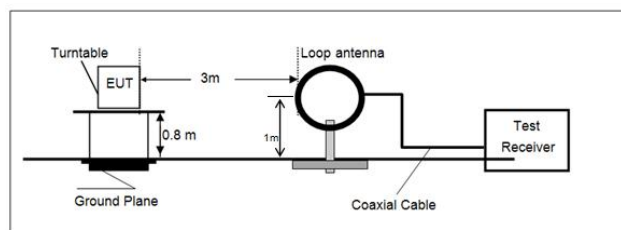
As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the Antenna azimuth.

| Fundamental frequency | Field strength of fundamental (millivolts/meter) | Field strength of harmonics (microvolts/meter) |
|-----------------------|--------------------------------------------------|------------------------------------------------|
| 902-928 MHz           | 50                                               | 500                                            |
| 2400-2483.5 MHz       | 50                                               | 500                                            |
| 5725-5875 MHz         | 50                                               | 500                                            |
| 24.0-24.25 GHz        | 250                                              | 2500                                           |

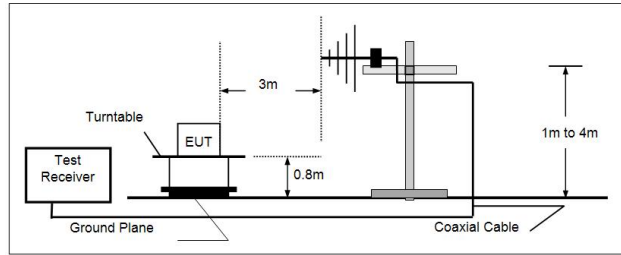
| Frequency                                 | Limit (dBuV/m @3m) | Value      |
|-------------------------------------------|--------------------|------------|
| 30MHz~88MHz                               | 40.00              | Quasi-peak |
| 88MHz~216MHz                              | 43.50              | Quasi-peak |
| 216MHz~960MHz                             | 46.00              | Quasi-peak |
| 960MHz~1GHz                               | 54.00              | Quasi-peak |
| Above 1GHz(Field strength of fundamental) | 94.00              | Average    |
|                                           | 114.00             | Peak       |
| Above 1GHz(Field strength of harmonics)   | 54.00              | Average    |
|                                           | 74.00              | Peak       |

### Test configuration:

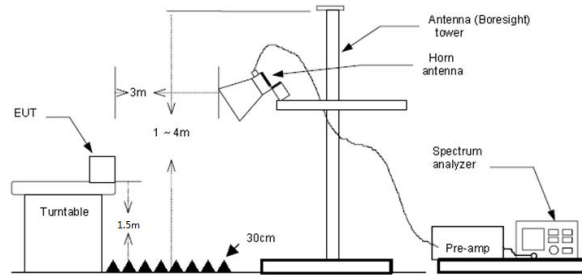
9kHz~30MHz



30 MHz ~ 1 GHz



Above 1 GHz



Test procedure:

1. The EUT was setup and tested according to ANSI C63.10.
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
  - a) Span shall wide enough to fully capture the emission being measured;
  - b) Below 1 GHz:  
RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;  
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
  - c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement
  - d) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=Average, Trace=RMS for Average measurement

Test mode:

Refer to the clause 4.2

Result:

**Passed**

**Note:**

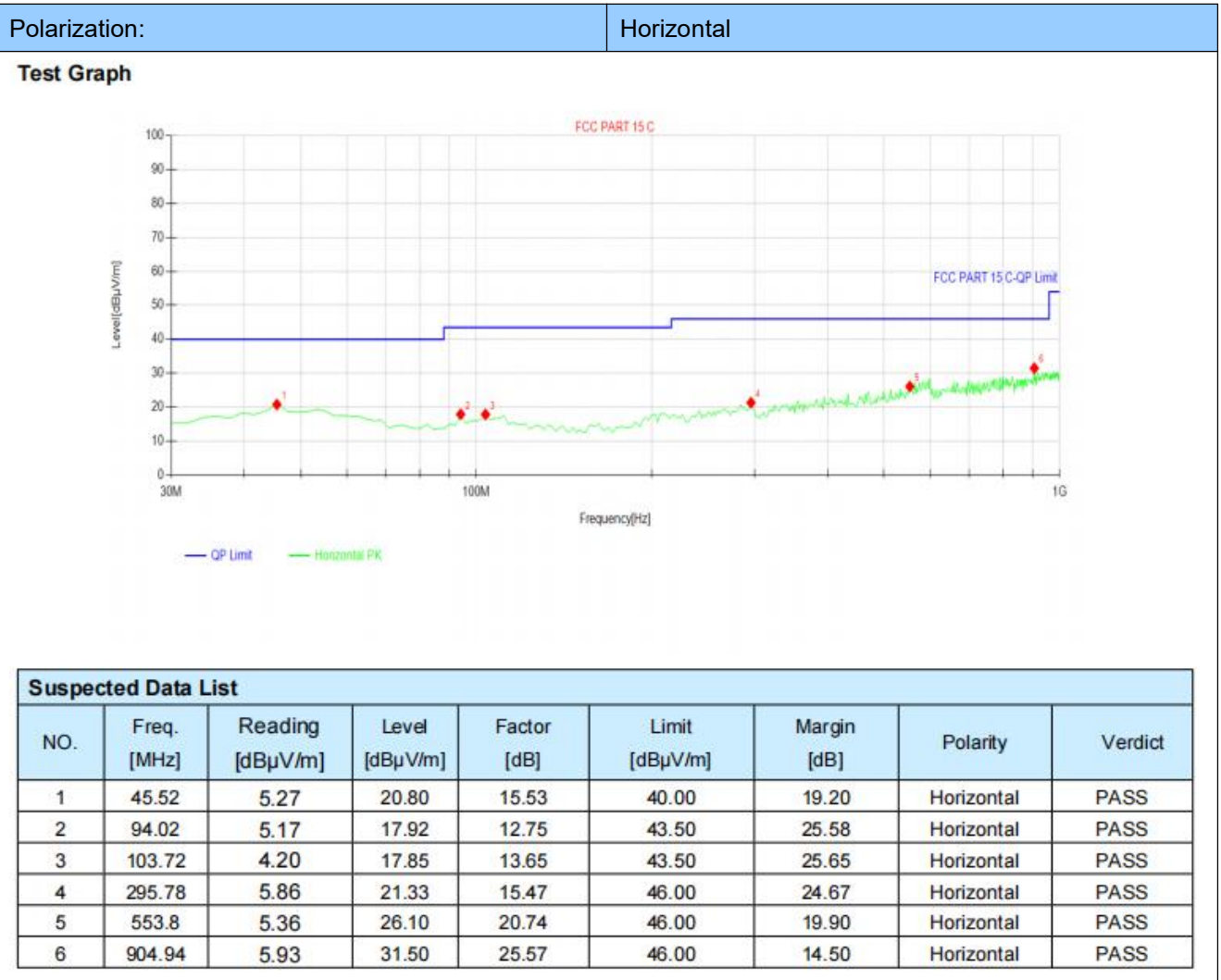
- 1) Level= Reading + Factor/Transd; Factor/Transd =Antenna Factor+ Cable Loss- Preamp Factor
- 2) Margin = Limit – Level
- 3) Average measurement was not performed if peak level is lower than average limit(54 dBuV/m) for above 1GHz.
- 4) The other emission levels were very low against the limit.
- 5) This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.

**For 9 kHz ~ 30 MHz**

The EUT was pre-scanned this frequency band, found the radiated level 20dB lower than the limit, so don't show data on this report.

**For 30 MHz ~ 1000 MHz**

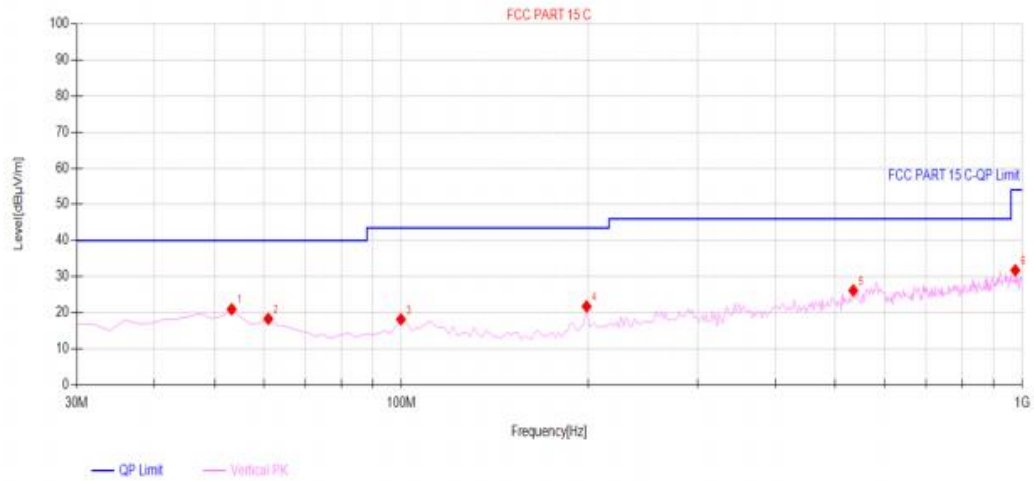
Have pre-scan all test channel, found CH1 which it was worst case, so only show the worst case's data on this report.



Polarization:

Vertical

**Test Graph**



**Suspected Data List**

| NO. | Freq. [MHz] | Reading [dBμV/m] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Polarity | Verdict |
|-----|-------------|------------------|----------------|-------------|----------------|-------------|----------|---------|
| 1   | 53.28       | 5.94             | 20.97          | 15.03       | 40.00          | 19.03       | Vertical | PASS    |
| 2   | 61.04       | 4.51             | 18.30          | 13.79       | 40.00          | 21.70       | Vertical | PASS    |
| 3   | 99.84       | 4.52             | 18.18          | 13.66       | 43.50          | 25.32       | Vertical | PASS    |
| 4   | 198.78      | 8.40             | 21.75          | 13.35       | 43.50          | 21.75       | Vertical | PASS    |
| 5   | 534.4       | 5.81             | 26.15          | 20.34       | 46.00          | 19.85       | Vertical | PASS    |
| 6   | 974.78      | 5.66             | 31.76          | 26.10       | 54.00          | 22.24       | Vertical | PASS    |

### For 1 GHz ~ 25 GHz

#### Test channel:2403MHz

| Freq. (MHz) | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correc tion Factor (dB/m) | Level (dBuv) | Limit (dBu V/m) | Margin (dB) | Remark  | Polarity   |
|-------------|----------------|--------------------|-------------------|--------------------|---------------------------|--------------|-----------------|-------------|---------|------------|
| 2403.00     | 91.96          | 29.18              | 4.02              | 38.35              | -5.15                     | 86.81        | 114             | 27.19       | Peak    | Horizontal |
| 2403.00     | 80.06          | 29.18              | 4.02              | 38.35              | -5.15                     | 74.91        | 94              | 19.09       | Average | Horizontal |
| 2403.00     | 81.71          | 29.18              | 4.02              | 38.35              | -5.15                     | 76.56        | 114             | 37.44       | Peak    | Vertical   |
| 2403.00     | 67.45          | 29.18              | 4.02              | 38.35              | -5.15                     | 62.30        | 94              | 31.70       | Average | Vertical   |
| 4806.00     | 68.97          | 31.33              | 4.23              | 38.62              | -3.06                     | 65.91        | 74              | 8.09        | Peak    | Horizontal |
| 4806.00     | 50.48          | 31.33              | 4.23              | 38.62              | -3.06                     | 47.42        | 54              | 6.58        | Average | Horizontal |
| 4806.00     | 66.10          | 31.33              | 4.23              | 38.62              | -3.06                     | 63.04        | 74              | 10.96       | Peak    | Vertical   |
| 4806.00     | 50.62          | 31.33              | 4.23              | 38.62              | -3.06                     | 47.56        | 54              | 6.44        | Average | Vertical   |

#### Test channel:2441MHz

| Freq. (MHz) | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correc tion Factor (dB/m) | Level (dBuv) | Limit (dBu V/m) | Margin (dB) | Remark  | Polarity   |
|-------------|----------------|--------------------|-------------------|--------------------|---------------------------|--------------|-----------------|-------------|---------|------------|
| 2441.00     | 93.22          | 29.23              | 4.02              | 38.2               | -4.95                     | 88.27        | 114             | 25.73       | Peak    | Horizontal |
| 2441.00     | 80.56          | 29.23              | 4.02              | 38.2               | -4.95                     | 75.61        | 94              | 18.39       | Average | Horizontal |
| 2441.00     | 82.26          | 29.23              | 4.02              | 38.2               | -4.95                     | 77.31        | 114             | 36.69       | Peak    | Vertical   |
| 2441.00     | 68.74          | 29.23              | 4.02              | 38.2               | -4.95                     | 63.79        | 94              | 30.21       | Average | Vertical   |
| 4882.00     | 70.67          | 30.26              | 4.09              | 38.29              | -3.94                     | 66.73        | 74              | 7.27        | Peak    | Horizontal |
| 4882.00     | 51.28          | 30.26              | 4.09              | 38.29              | -3.94                     | 47.34        | 54              | 6.66        | Average | Horizontal |
| 4882.00     | 66.81          | 30.26              | 4.09              | 38.29              | -3.94                     | 62.87        | 74              | 11.13       | Peak    | Vertical   |
| 4882.00     | 52.65          | 30.26              | 4.09              | 38.29              | -3.94                     | 48.71        | 54              | 5.29        | Average | Vertical   |

#### Test channel:2480MHz

| Freq. (MHz) | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correc tion Factor (dB/m) | Level (dBuv) | Limit (dBu V/m) | Margin (dB) | Remark  | Polarity   |
|-------------|----------------|--------------------|-------------------|--------------------|---------------------------|--------------|-----------------|-------------|---------|------------|
| 2480.00     | 93.88          | 29.2               | 4.02              | 38.3               | -5.08                     | 88.80        | 114             | 25.20       | Peak    | Horizontal |
| 2480.00     | 81.06          | 29.2               | 4.02              | 38.3               | -5.08                     | 75.98        | 94              | 18.02       | Average | Horizontal |
| 2480.00     | 83.31          | 29.2               | 4.02              | 38.3               | -5.08                     | 78.23        | 114             | 35.77       | Peak    | Vertical   |
| 2480.00     | 68.09          | 29.2               | 4.02              | 38.3               | -5.08                     | 63.01        | 94              | 30.99       | Average | Vertical   |
| 4960.00     | 64.04          | 31.97              | 4.11              | 38.47              | -2.39                     | 61.65        | 74              | 12.35       | Peak    | Horizontal |
| 4960.00     | 51.48          | 31.97              | 4.11              | 38.47              | -2.39                     | 49.09        | 54              | 4.91        | Average | Horizontal |
| 4960.00     | 66.39          | 31.97              | 4.11              | 38.47              | -2.39                     | 64.00        | 74              | 10.00       | Peak    | Vertical   |
| 4960.00     | 49.48          | 31.97              | 4.11              | 38.47              | -2.39                     | 47.09        | 54              | 6.91        | Average | Vertical   |

## **6. TEST SETUP PHOTOS**

Please refer to report for CISRR24101103901 of the EUT.

## **7. EXTERNAL AND INTERNAL PHOTOS**

### **7.1 External photos**

Please refer to report for CISRR24101103901 of the EUT.

### **7.2 Internal photos**

Please refer to report for CISRR24101103901 of the EUT.

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