



# RF TEST REPORT

Report No.: FCS202506372W01

**Applicant** : Fujian Iselected E-commerce Co., Ltd.

**Product Name** : 2.4G Wireless keyboard

**Brand Name** : N/A

**Model Name** : SPK6338BL

**Series model** : SPK6338BM,SPK6338BS,SPK6338WL  
SPK6338WM,SPK6338WS

**FCC ID** : 2BMNP-SPK6338BL

**Test Standard** : FCC CFR Title 47 Part 15 Subpart C Section 15.249

**Date of Receipt** : 2024.11.27

**Date of Test** : 2024.11.27~2025.06.27

**Issue Date** : 2025.06.27

**Tested by** : Scott Shen  
(Scott Shen)

**Reviewed by** : Duke Qian  
(Duke Qian)

**Approved by** : Jack Wang  
(Jack Wang)



## TABLE OF CONTENTS

|                                                  |    |
|--------------------------------------------------|----|
| REVISION HISTORY .....                           | 3  |
| DECLARATION OF REPORT .....                      | 4  |
| SUMMARY OF TEST RESULT .....                     | 5  |
| 1. GENERAL DESCRIPTION .....                     | 6  |
| 1.1. Applicant .....                             | 6  |
| 1.2. Manufacturer .....                          | 6  |
| 1.3. Factory .....                               | 6  |
| 1.4. General Information of EUT .....            | 7  |
| 1.5. Equipment Specification .....               | 8  |
| 1.6. Modification of EUT .....                   | 8  |
| 1.7. Laboratory Information .....                | 8  |
| 1.8. Applicable Standards .....                  | 8  |
| 2. TEST CONFIGURATION OF EUT .....               | 9  |
| 2.1. Carrier Frequency Channel .....             | 9  |
| 2.2. Test Modes .....                            | 10 |
| 2.3. Block Diagram of Test System .....          | 11 |
| 2.4. Description of Support Units .....          | 11 |
| 2.5. Test Software and Power Level .....         | 11 |
| 2.6. EUT Operating Conditions .....              | 11 |
| 2.7. Equipment List .....                        | 12 |
| 2.8. Measurement Uncertainty .....               | 14 |
| 3. TEST RESULT .....                             | 15 |
| 3.1. Radiated Emission .....                     | 15 |
| 3.2. Band edge Test .....                        | 28 |
| 3.3. 20dB Bandwidth .....                        | 33 |
| TEST ITEM .....                                  | 34 |
| 3.4. AC Power-Line Conducted Emission .....      | 36 |
| 3.5. Antenna Requirement .....                   | 38 |
| 4. TEST SETUP PHOTOGRAPHS .....                  | 39 |
| 5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT ..... | 39 |



## REVISION HISTORY

| Rev. | Issue Date | Revisions       | Revised by |
|------|------------|-----------------|------------|
| 00   | 2025.06.27 | Initial Release | /          |

## DECLARATION OF REPORT

1. The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of 47 CFR 15.249. And it is applicable only to the tested sample identified in the report.
2. This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.
3. The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.
4. The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.
5. In this report, '☐' indicates that EUT does not support content after '☐', and '☑' indicates that it supports content after '☑'

### SUMMARY OF TEST RESULT

| Report Section | Standard Section | Test Item           | Judgment       | Remark |
|----------------|------------------|---------------------|----------------|--------|
| 3.1            | §15.249&15.209   | Radiated Emission   | Compliant      | --     |
| 3.2            | §15.249          | Band Edges          | Compliant      | --     |
| 3.3            | §15.215          | 20dB Bandwidth      | Compliant      | --     |
| 3.4            | §15.207          | Conducted Emission  | Not applicable | --     |
| 3.5            | §15.203          | Antenna Requirement | Compliant      | --     |

Note: The EUT is battery operated without AC mains.



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## 1. GENERAL DESCRIPTION

### 1.1. Applicant

Name : Fujian Iselected E-commerce Co., Ltd.  
Address : 15th Floor, Building A, Aofeng Plaza, No. 2 Aofeng Road, Taijiang District, Fuzhou City, Fujian Province, China

### 1.2. Manufacturer

Name : MMD (Shanghai) Electronic Technology Co., Ltd.  
Address : Room107, Building 17 , No. 525 Yuanjiang Road, Minhang District, Shanghai, China

### 1.3. Factory

Name : Dongguan Lingjie Electronics Technology Co.,Ltd  
Address : No. 23, Tianyuan Revitalization North Road, Dongguan City, Guangdong Province

#### 1.4. General Information of EUT

| General Information    |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment Name         | 2.4G Wireless keyboard                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Brand Name             | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Model Name             | SPK6338BL                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Series Model           | SPK6338BM,SPK6338BS,SPK6338WL<br>SPK6338WM,SPK6338WS                                                                                                                                                                                                                                                                                                                                                                                                  |
| Model Difference       | Only different in the The size, color, and naming vary. There are three size categories: large, medium, and small. There are two colors: black and white. The model naming is based on the differences in size and color, where "B" and "W" represent black, and "L," "M," and "S" denote the size. The position of the key button is slightly different. Please refer to the image below for details. The other (hardware and software) is the same. |
| Antenna Gain           | -2.39dBi                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Antenna Type           | PCB Antenna                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sample No:             | 202410090006033                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Power Source           | DC 1.5V For Battery                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Battery                | Rated Voltage: 1.5V                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Hardware version       | VER:1.2                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Software version       | BK7.0                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Connecting I/O Port(s) | Refer to the remark below.                                                                                                                                                                                                                                                                                                                                                                                                                            |

Remark:

1.The above information of EUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

2.After an engineering assessment, the report only presents the data of the worst prototype.

### 1.5. Equipment Specification

| Equipment Specification |                                              |
|-------------------------|----------------------------------------------|
| Operation Frequency     | 2403.85 MHz to 2479.85 MHz                   |
| Maximum field strength  | For keyboard:93.04dBuV/m(PK)@3m              |
| Modulation              | GFSK                                         |
| Number of channels      | 16                                           |
| Antenna Designation     | PCB antenna (Met 15.203 Antenna requirement) |

### 1.6. Modification of EUT

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

### 1.7. Laboratory Information

|                                                                                                               |                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Company Name:                                                                                                 | Flux Compliance Service Laboratory                                                                               |
| Address:                                                                                                      | Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan |
| Telephone:                                                                                                    | +86-0769-27280901                                                                                                |
| Fax:                                                                                                          | +86-0769-27280901                                                                                                |
| FCC Test Firm Registration Number: 514908<br>Designation number: CN0127<br>A2LA accreditation number: 5545.01 |                                                                                                                  |

### 1.8. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

47 CFR Part 15 Subpart C §15.249

ANSI C63.10-2020

Remark:

All test items were verified and recorded according to the standards and without any deviation during the test.

## 2. TEST CONFIGURATION OF EUT

### 2.1. Carrier Frequency Channel

| Channel    | Frequency (MHz)   | Channel     | Frequency (MHz)   |
|------------|-------------------|-------------|-------------------|
| <b>CH1</b> | <b>2403.85MHz</b> | <b>CH9</b>  | <b>2441.85MHz</b> |
| CH2        | 2407.85MHz        | CH10        | 2445.85MHz        |
| CH3        | 2414.85MHz        | CH11        | 2453.85MHz        |
| CH4        | 2419.85MHz        | CH12        | 2459.85MHz        |
| CH5        | 2422.85MHz        | CH13        | 2463.85MHz        |
| CH6        | 2426.85MHz        | CH14        | 2466.85MHz        |
| CH7        | 2436.85MHz        | CH15        | 2473.85MHz        |
| CH8        | 2439.85MHz        | <b>CH16</b> | <b>2479.85MHz</b> |

Remark:

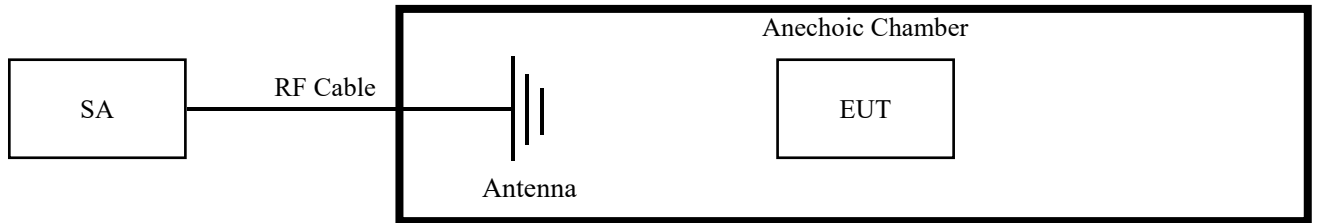
Low Channel: **CH01\_2403.85 MHz**; Middle Channel: **CH9\_2441.85 MHz**; High Channel: **CH16\_2479.85 MHz**.

## 2.2. Test Modes

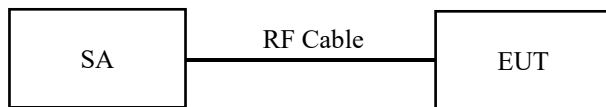
| NO.                                                                                                                                                                                                                                       | TEST MODE DESCRIPTION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1                                                                                                                                                                                                                                         | Low channel GFSK      |
| 2                                                                                                                                                                                                                                         | Middle channel GFSK   |
| 3                                                                                                                                                                                                                                         | High channel GFSK     |
| Note:<br>1. Only the result of the worst case was recorded in the report, if no other cases.<br>2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.<br>3. The EUT adjusts the frequency through the button. |                       |

## 2.3. Block Diagram of Test System

### 2.3.1. For Radiated Spurious Emission



### 2.3.2. For Conducted Test



## 2.4. Description of Support Units

| NO. | Unit | Brand | Model | Description |
|-----|------|-------|-------|-------------|
| 1   | /    | /     | /     | /           |
| 2   | /    | /     | /     | /           |

## 2.5. Test Software and Power Level

During the test, the channel and power control software provided by the customer is used to control the operation channel and output power level.

## 2.6. EUT Operating Conditions

For AC power-line conducted emission, the EUT was connected under the large package sizes transmission.

For radiated spurious emission and conducted test, the engineering test program was provided and make the EUT to continuous transmit/receive.

## 2.7. Equipment List

### 2.7.1. For AC Power-Line Conducted Emission

| Kind of Equipment      | Manufacturer              | Type No. | Company No. | Last calibration | Calibrated until |
|------------------------|---------------------------|----------|-------------|------------------|------------------|
| EMI Test Receiver      | R&S                       | ESPI     | FCS-E020    | 2024.08.28       | 2025.08.27       |
| LISN                   | R&S                       | ENV216   | FCS-E007    | 2024.08.28       | 2025.08.27       |
| LISN                   | ETS                       | 3810/2NM | FCS-E009    | 2024.08.28       | 2025.08.27       |
| Temperature & Humidity | HTC-1                     | victor   | FCS-E008    | 2024.08.28       | 2025.08.27       |
| Testing Software       | EZ-EMC(Ver.EMC-CON 3A1.1) |          |             |                  |                  |

### 2.7.2. For Radiated Spurious Emission

| Kind of Equipment                | Manufacturer               | Type No.     | Company No. | Last calibration | Calibrated until |
|----------------------------------|----------------------------|--------------|-------------|------------------|------------------|
| EMI Test Receiver                | R&S                        | ESRP 3       | FCS-E001    | 2024.08.28       | 2025.08.27       |
| Signal Analyzer                  | R&S                        | FSV40-N      | FCS-E012    | 2024.08.28       | 2025.08.27       |
| Active loop Antenna              | ZHINAN                     | ZN30900C     | FCS-E013    | 2024.08.28       | 2025.08.27       |
| Bilog Antenna                    | SCHWARZBEC<br>K            | VULB 9168    | FCS-E002    | 2024.08.28       | 2025.08.27       |
| Horn Antenna                     | SCHWARZBEC<br>K            | BBHA 9120D   | FCS-E003    | 2024.08.28       | 2025.08.27       |
| SHF-EHF Horn Antenna (18G-40GHz) | A-INFO                     | LB-180400-KF | FCS-E018    | 2024.08.28       | 2025.08.27       |
| Pre-Amplifier(0.1M-3 GHz)        | EMCI                       | EM330N       | FCS-E004    | 2024.08.28       | 2025.08.27       |
| Pre-Amplifier (1G-18GHz)         | N/A                        | TSAMP-0518SE | FCS-E014    | 2024.08.28       | 2025.08.27       |
| Pre-Amplifier (18G-40GHz)        | TERA-MW                    | TRLA-0400    | FCS-E019    | 2024.08.28       | 2025.08.27       |
| Temperature & Humidity           | HTC-1                      | victor       | FCS-E005    | 2024.08.28       | 2025.08.27       |
| Testing Software                 | EZ-EMC(Ver.STSLAB 03A1 RE) |              |             |                  |                  |

**2.7.3. RF Connected Test**

| Kind of Equipment   | Manufacturer               | Type No. | Company No. | Last calibration | Calibrated until |
|---------------------|----------------------------|----------|-------------|------------------|------------------|
| MXA SIGNAL Analyzer | Keysight                   | N9020A   | FCS-E015    | 2024.08.28       | 2025.08.27       |
| Spectrum Analyzer   | Agilent                    | E4447A   | MY50180039  | 2024.08.28       | 2025.08.27       |
| Spectrum Analyzer   | R&S                        | FSV-40   | 101499      | 2024.08.28       | 2025.08.27       |
| Power Sensor        | Agilent                    | UX2021XA | FCS-E021    | 2024.08.28       | 2025.08.27       |
| Testing Software    | EZ-EMC(Ver.STSLAB 03A1 RE) |          |             |                  |                  |

Remark: Calibration duration for above equipments is 1 year.

## 2.8. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

| No. | Item                                      | Uncertainty            |
|-----|-------------------------------------------|------------------------|
| 1   | RF output power, conducted                | $\pm 0.71 \text{ dB}$  |
| 2   | Unwanted Emissions, conducted             | $\pm 2.988 \text{ dB}$ |
| 3   | Conducted Emission (9KHz-150KHz)          | $\pm 4.13 \text{ dB}$  |
| 4   | All emissions radiated (9KHz -30MHz)      | $\pm 3.1 \text{ dB}$   |
| 5   | Conducted Emission (150KHz-30MHz)         | $\pm 4.74 \text{ dB}$  |
| 6   | All emissions,radiated(<1G) 30MHz-1000MHz | $\pm 5.2 \text{ dB}$   |
| 7   | All emissions,radiated 1GHz -18GHz        | $\pm 4.66 \text{ dB}$  |
| 8   | All emissions,radiated 18GHz -40GHz       | $\pm 4.31 \text{ dB}$  |
| 9   | Occupied bandwidth                        | $\pm 0.3 \text{ dB}$   |
| 10  | Power Spectral Density                    | $\pm 0.48 \text{ dB}$  |

### 3. TEST RESULT

#### 3.1. Radiated Emission

##### 3.1.1. Radiated Emission Limit

###### Standard FCC15.249

| Fundamental Frequency | Field Strength of Fundamental<br>(millivolts/meter) | Field Strength of Harmonics<br>(microvolts/meter) |
|-----------------------|-----------------------------------------------------|---------------------------------------------------|
| 900-928MHz            | 50                                                  | 500                                               |
| 2400-2483.5MHz        | 50                                                  | 500                                               |
| 5725-5875MHz          | 50                                                  | 500                                               |
| 24.0-24.25GHz         | 250                                                 | 2500                                              |

###### Standard FCC 15.209

| Frequency<br>(MHz) | Distance<br>Meters | Field Strengths Limit                                                                                |                                   |
|--------------------|--------------------|------------------------------------------------------------------------------------------------------|-----------------------------------|
|                    |                    | $\mu\text{V}/\text{m}$                                                                               | $\text{dB}(\mu\text{V})/\text{m}$ |
| 0.009 ~ 0.490      | 300                | $2400/F(\text{kHz})$                                                                                 | ---                               |
| 0.490 ~ 1.705      | 30                 | $24000/F(\text{kHz})$                                                                                | ---                               |
| 1.705 ~ 30         | 30                 | 30                                                                                                   | ---                               |
| 30 ~ 88            | 3                  | 100                                                                                                  | 40.0                              |
| 88 ~ 216           | 3                  | 150                                                                                                  | 43.5                              |
| 216 ~ 960          | 3                  | 200                                                                                                  | 46.0                              |
| 960 ~ 1000         | 3                  | 500                                                                                                  | 54.0                              |
| Above 1000         | 3                  | Other:74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average) |                                   |

Remark: (1) Emission level  $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V}/\text{m}$   
(2) The smaller limit shall apply at the cross point between two frequency bands.  
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

---

### 3.1.2. Test Procedure

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use minimum resolution bandwidth of 1 MHz. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

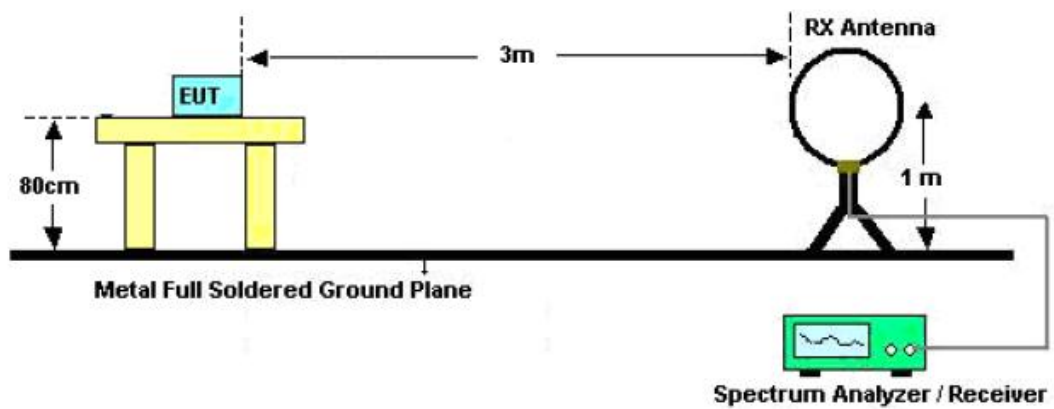
The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter    | Setting                                                                       |
|-----------------------|-------------------------------------------------------------------------------|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP                                                   |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP                                                   |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP                                                |
| Start ~Stop Frequency | 1GHz~26.5GHz<br>RBW 2.4MHz/ VBW 8MHz for Peak,<br>RBW 2.4MHz/10Hz for Average |

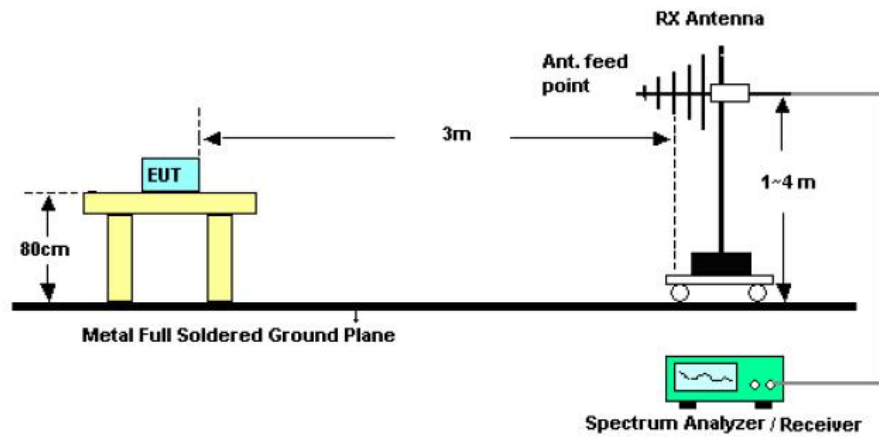
| Receiver Parameter    | Setting                        |
|-----------------------|--------------------------------|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP    |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP    |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |

### 3.1.3. Test Setup

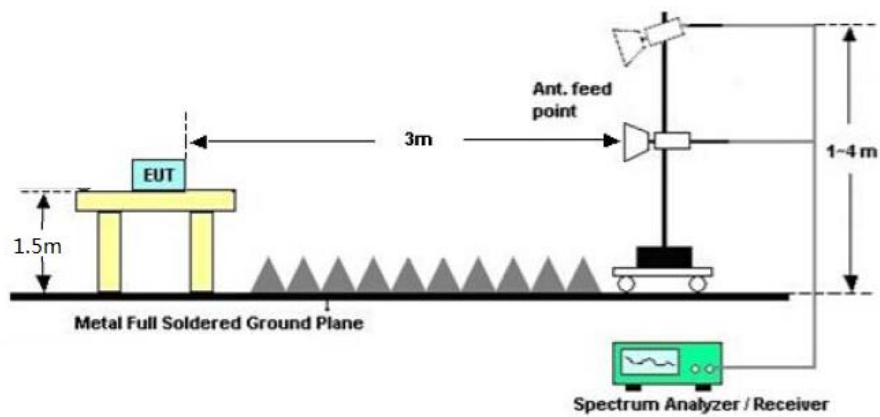
Radiated Emission Test-Setup Frequency Below 30MHz



### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



### RADIATED EMISSION TEST SETUP ABOVE 1000MHz



### 3.1.4. Test Result

For 9 kHz ~ 30 MHz

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

For 30 MHz ~ 1 GHz:

For Mouse:

Note:

1.All modes have been tested, only worst case(2403.85MHz )mode was recorded in the test report.

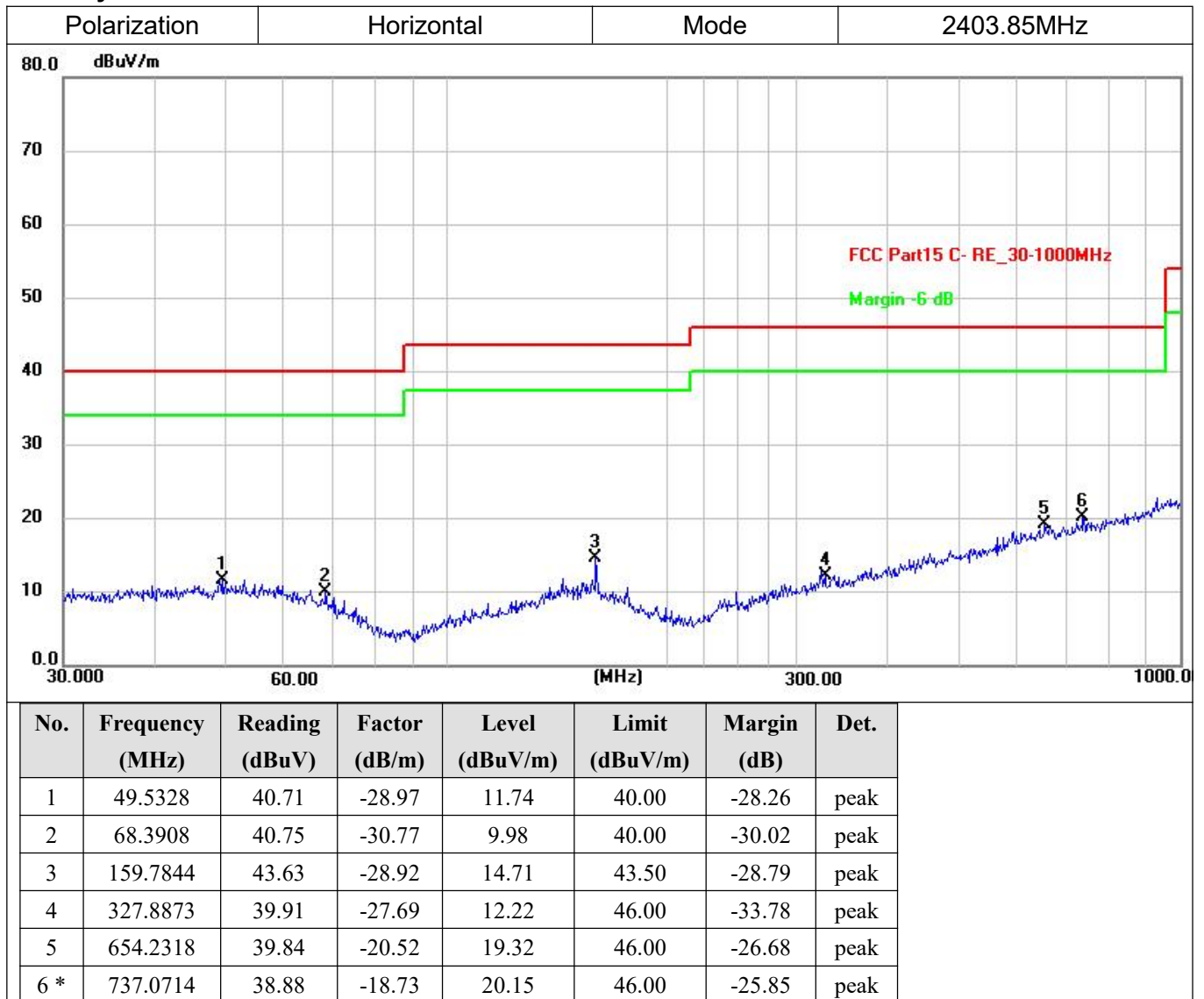
2.Emission Level (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).

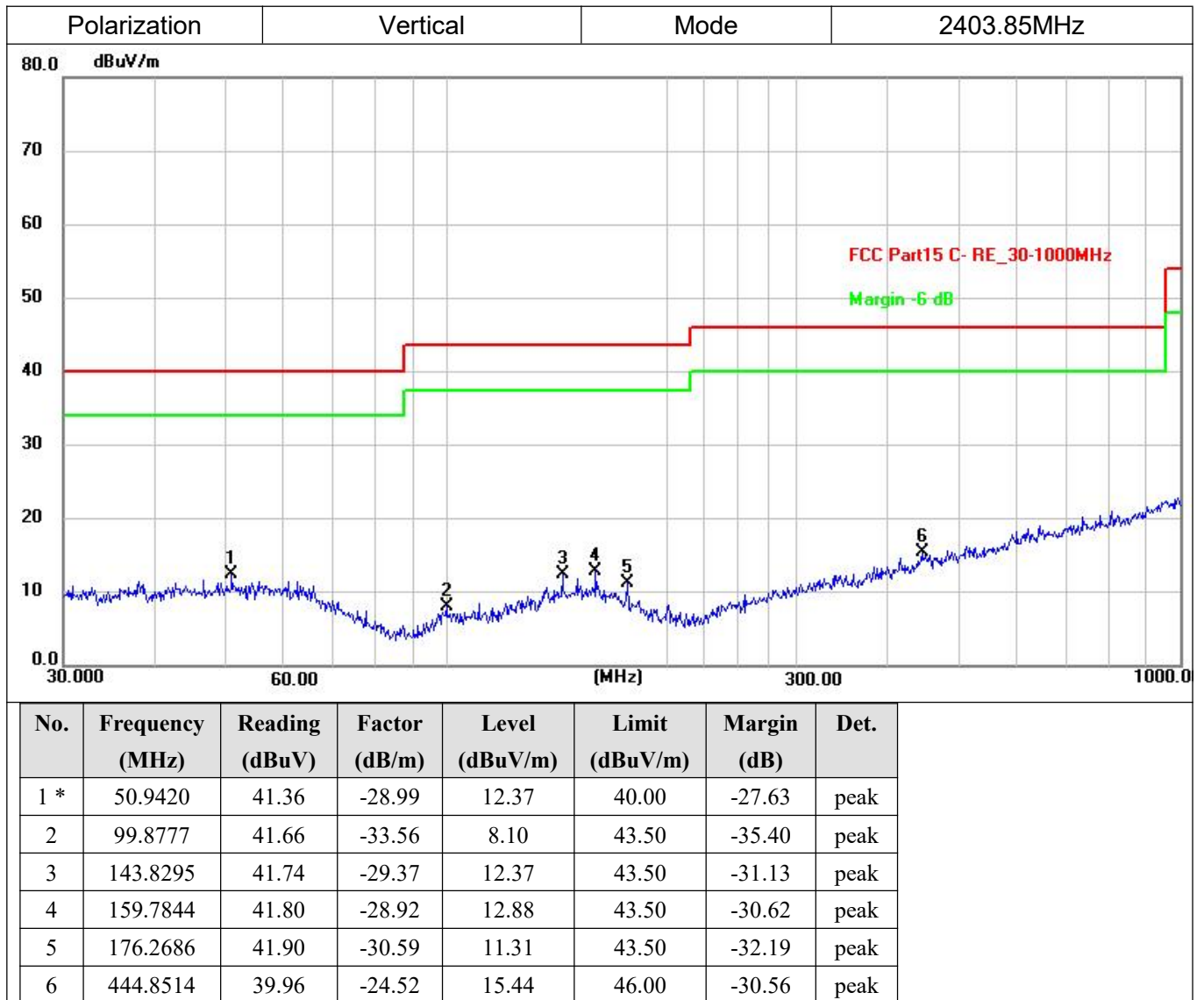
3. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)-Amplifier Gain.

4. The emission levels of other frequencies were less than 20dB margin against the limit.

5. Margin value = Emission level-Limit value.

**For keyboard:**



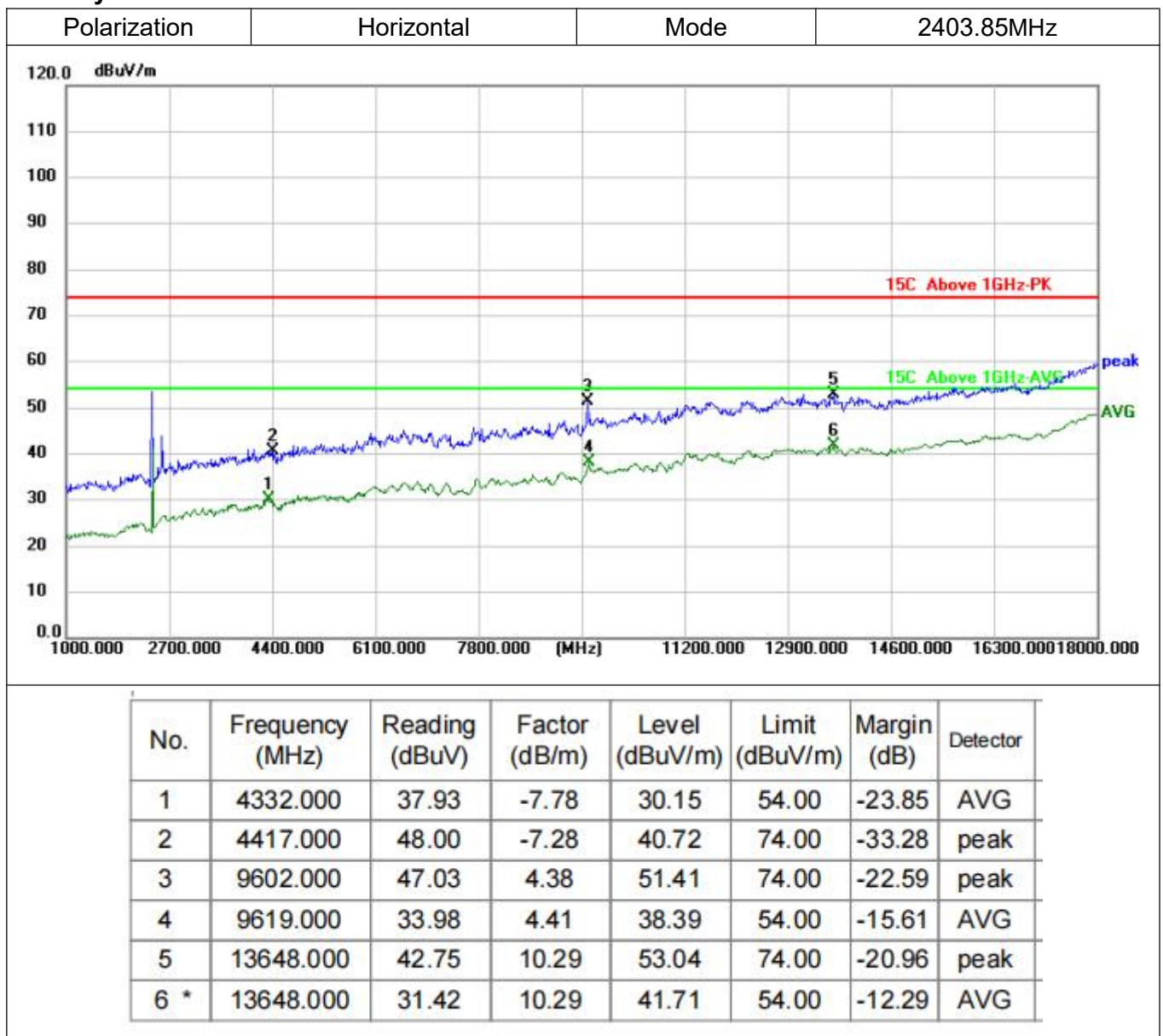


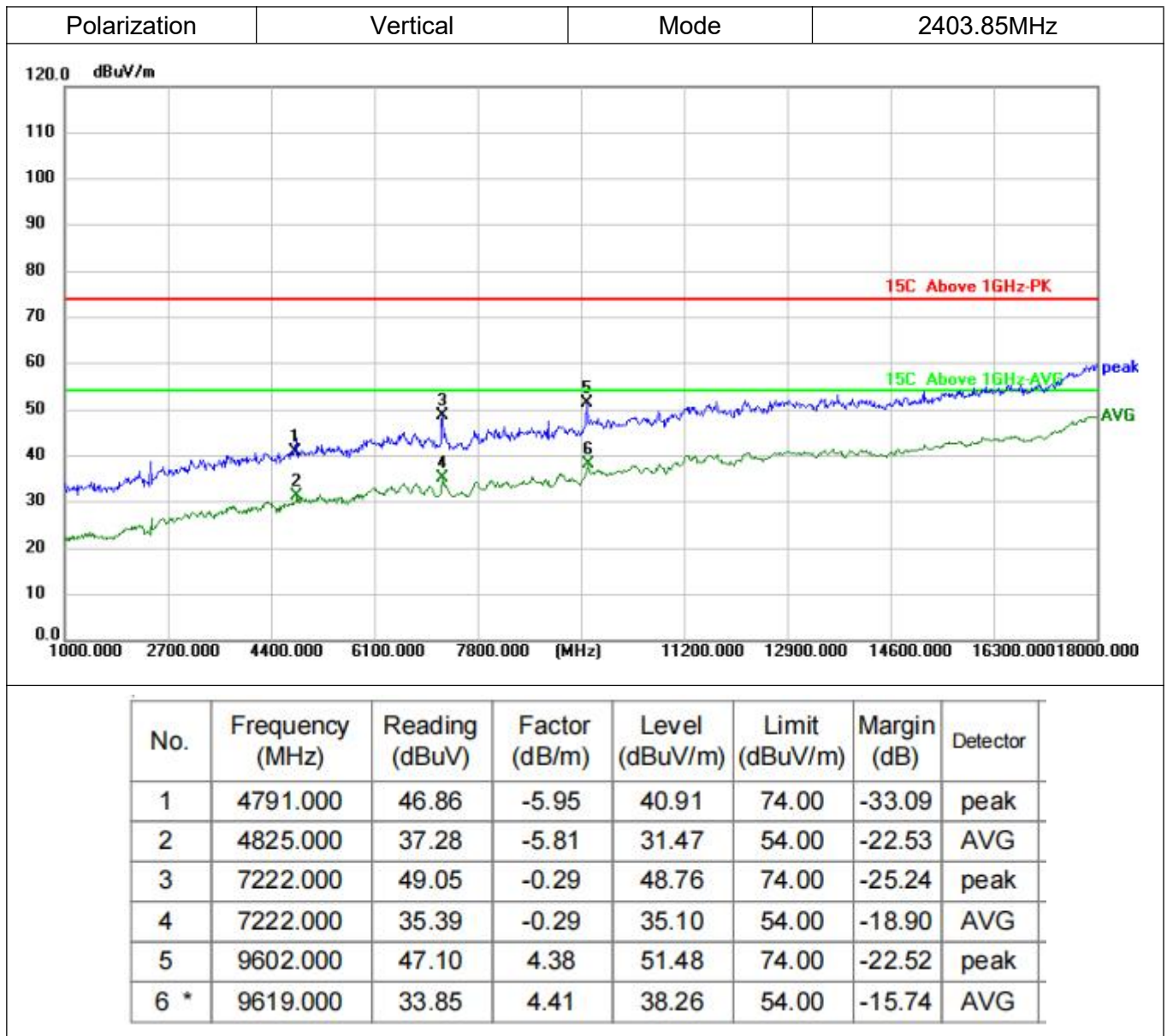
For 1 GHz ~ 18GHz:

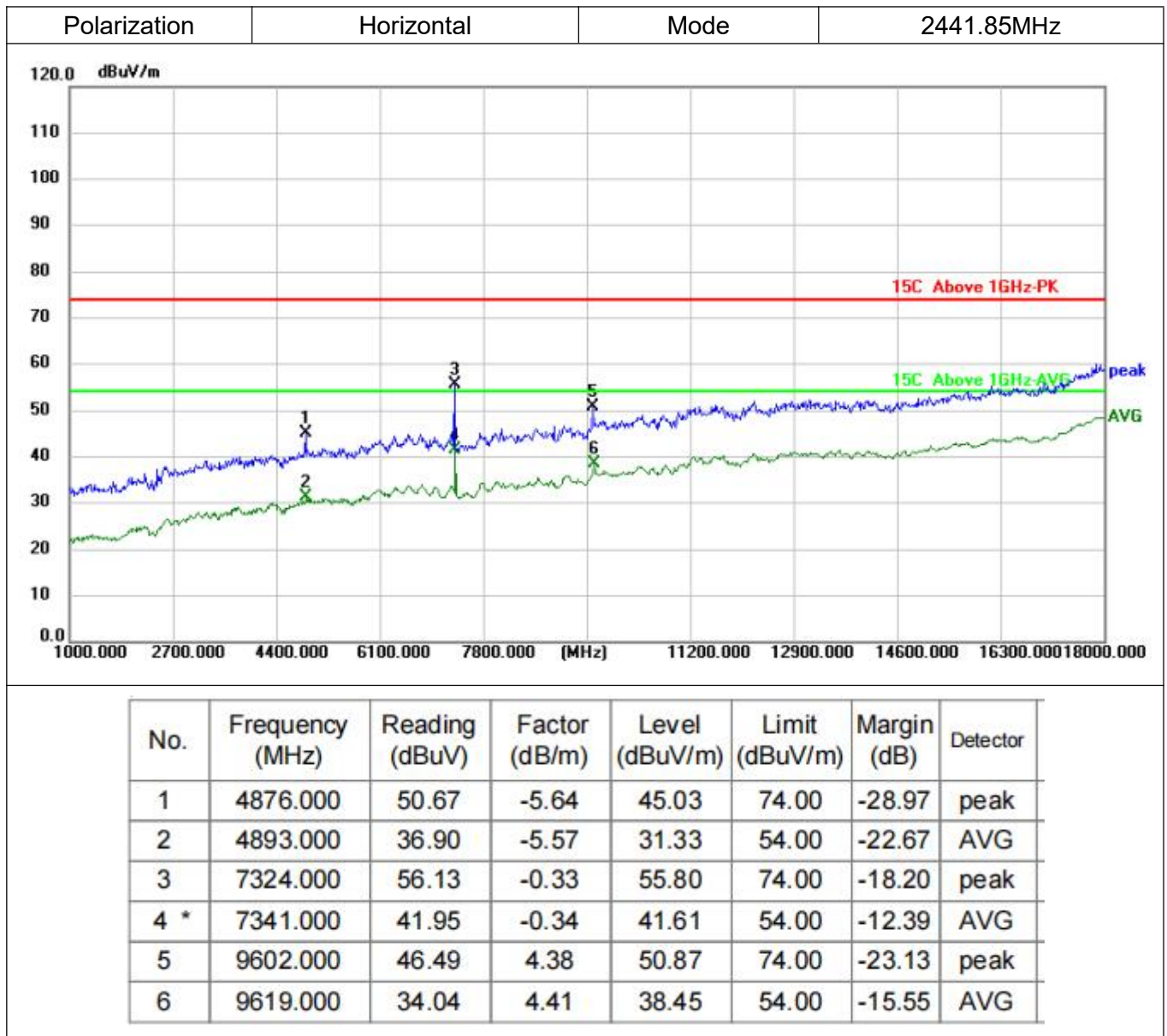
Note:

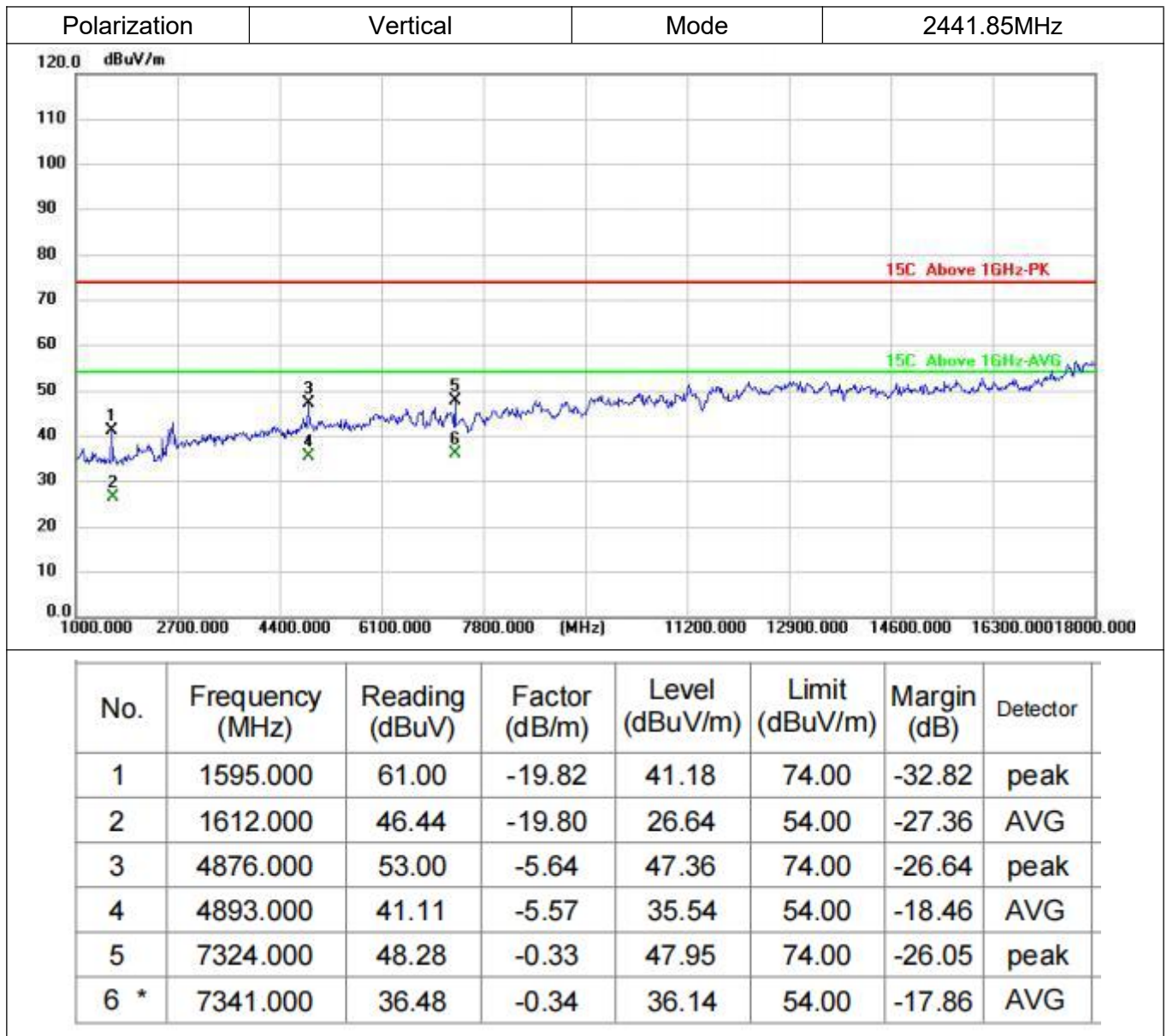
- 1.The all data rate modes had been test, but only worse test data was recorded in the test report.
- 2.In frequency ranges 18 ~25GHz no any other harmonic emissions detected which are tested to compliance with the limit. No recording in the test report. No any other emissions level which are attenuated less than 20dB below the limit. No recording in the test report.
- 3.We used the filter to test and the main frequency was filtered out.
- 4.Emission Level (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).
5. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)-Amplifier Gain.
6. The emission levels of other frequencies were less than 20dB margin against the limit.
7. Margin value = Emission level-Limit value.

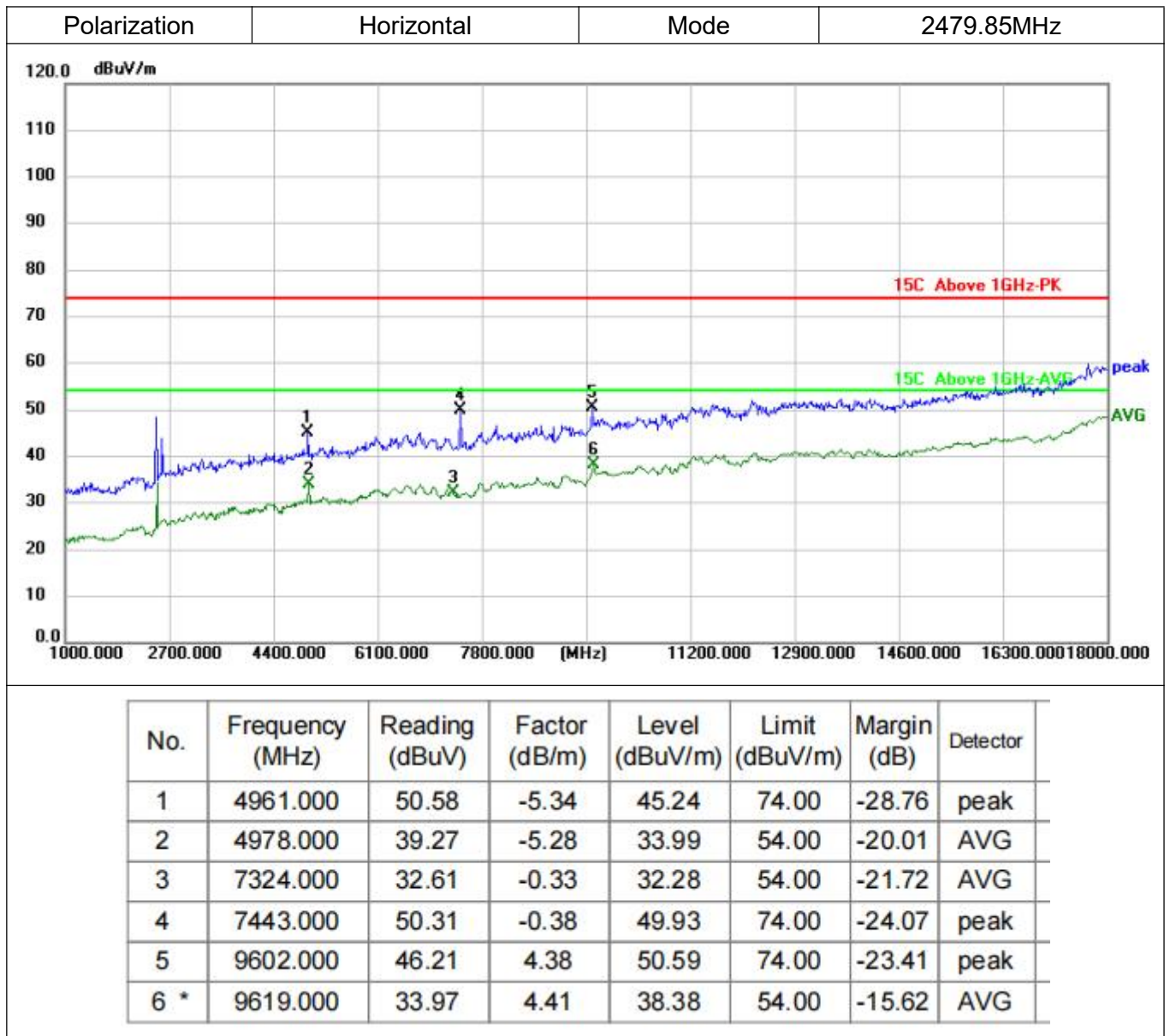
**For keyboard:**

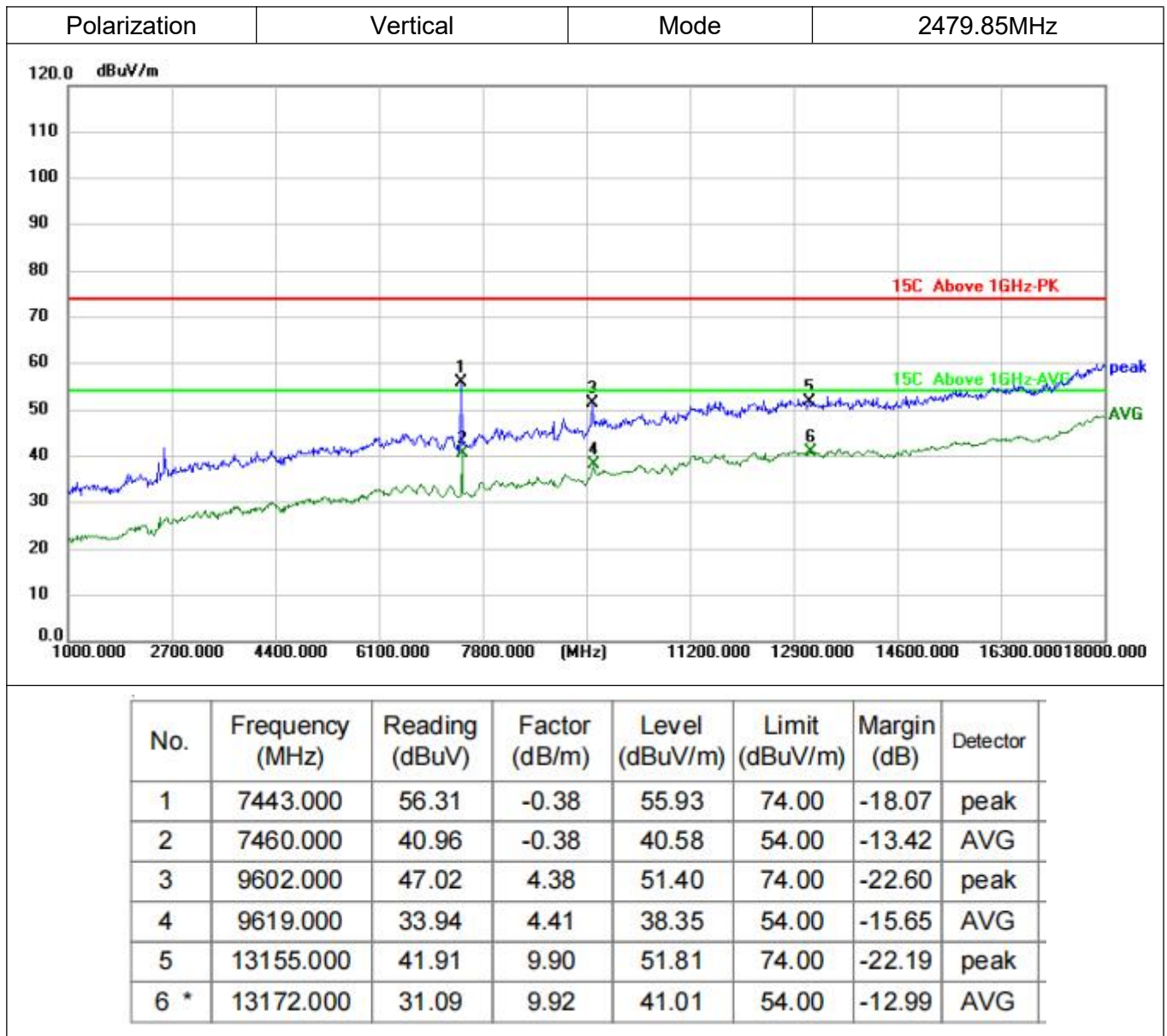












### Field Strength of Fundamental

**Note:**

1. Level (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)-Amplifier Gain.

| Freq.<br>(MHz) | Reading<br>(dBuV) | Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark  | Polarity   |
|----------------|-------------------|------------------|-------------------|-------------------|----------------|---------|------------|
| 2403.85        | 97.32             | -15.83           | 81.49             | 114               | -32.51         | Peak    | Horizontal |
| 2403.85        | 68.24             | -15.83           | 52.41             | 94                | -41.59         | Average | Horizontal |
| 2403.85        | 108.87            | -15.83           | <b>93.04</b>      | 114               | -20.96         | Peak    | Vertical   |
| 2403.85        | 73.22             | -15.83           | 57.39             | 94                | -36.61         | Average | Vertical   |
| 2441.85        | 106.54            | -15.56           | <b>90.98</b>      | 114               | -23.02         | Peak    | Horizontal |
| 2441.85        | 68.47             | -15.56           | 52.91             | 94                | -41.09         | Average | Horizontal |
| 2441.85        | 102.58            | -15.56           | 87.02             | 114               | -26.98         | Peak    | Vertical   |
| 2441.85        | 69.51             | -15.56           | 53.95             | 94                | -40.05         | Average | Vertical   |
| 2479.85        | 105.70            | -15.32           | <b>90.38</b>      | 114               | -23.62         | Peak    | Horizontal |
| 2479.85        | 70.23             | -15.32           | 54.91             | 94                | -39.09         | Average | Horizontal |
| 2479.85        | 95.69             | -15.32           | 80.37             | 114               | -33.63         | Peak    | Vertical   |
| 2479.85        | 67.49             | -15.32           | 52.17             | 94                | -41.83         | Average | Vertical   |

### 3.2. Band edge Test

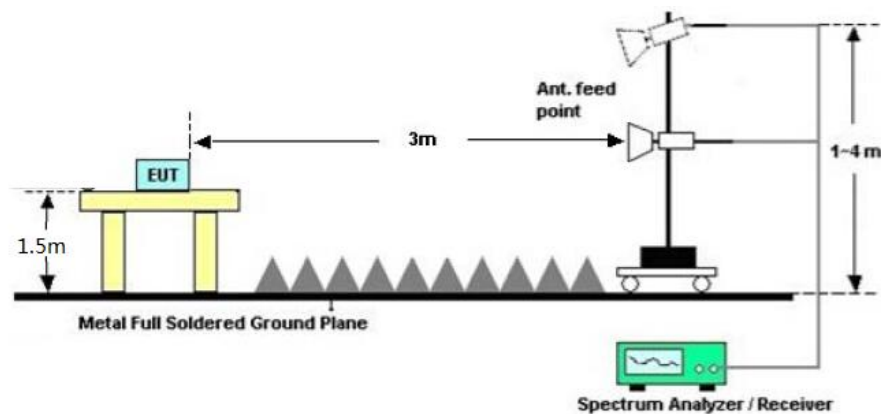
#### 3.2.1. Limit

| Frequency Band            | Limit of the Field Strength (dB $\mu$ V/m) |         |
|---------------------------|--------------------------------------------|---------|
|                           | Peak                                       | Average |
| $f \leq 2390\text{MHz}$   | 74                                         | 54      |
| $f \geq 2483.5\text{MHz}$ | 74                                         | 54      |

#### 3.2.2. Test Procedure

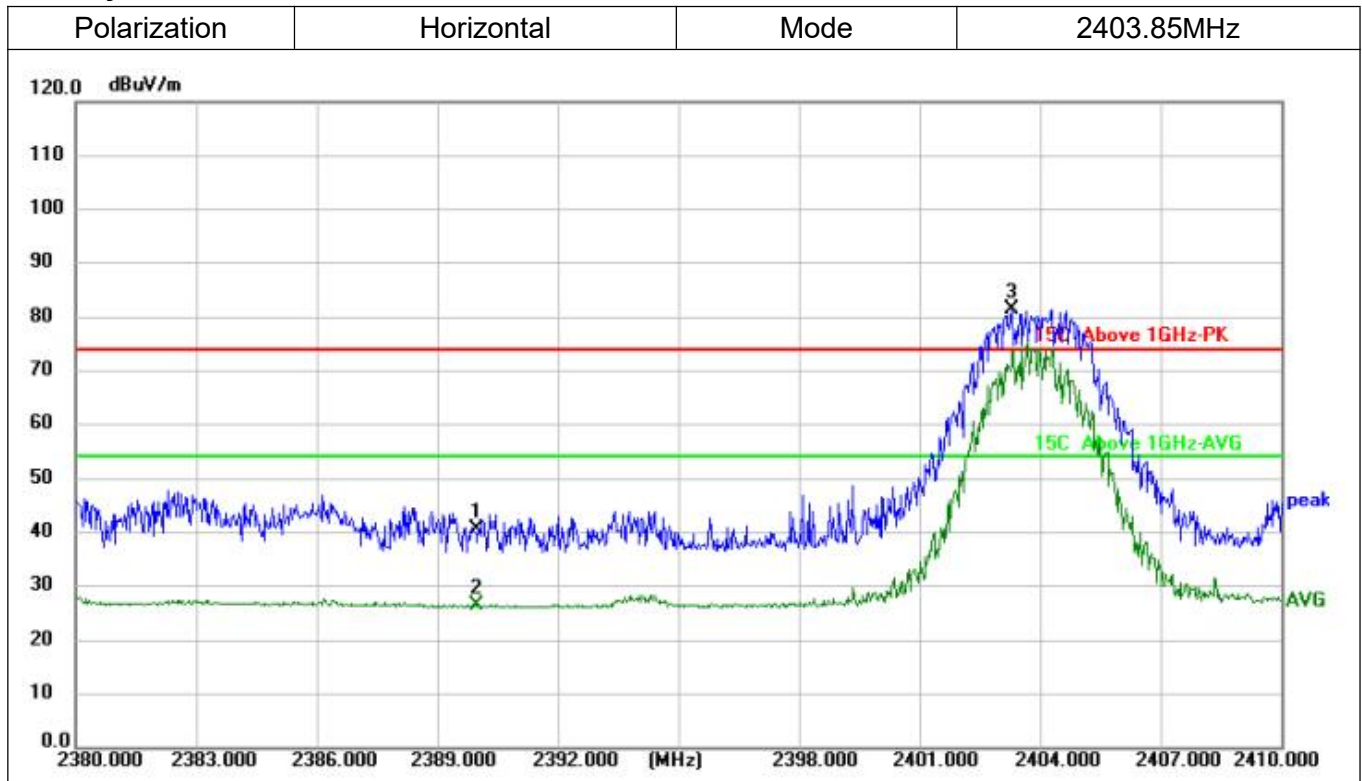
1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO  
(b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO

#### 3.2.3. Test Setup

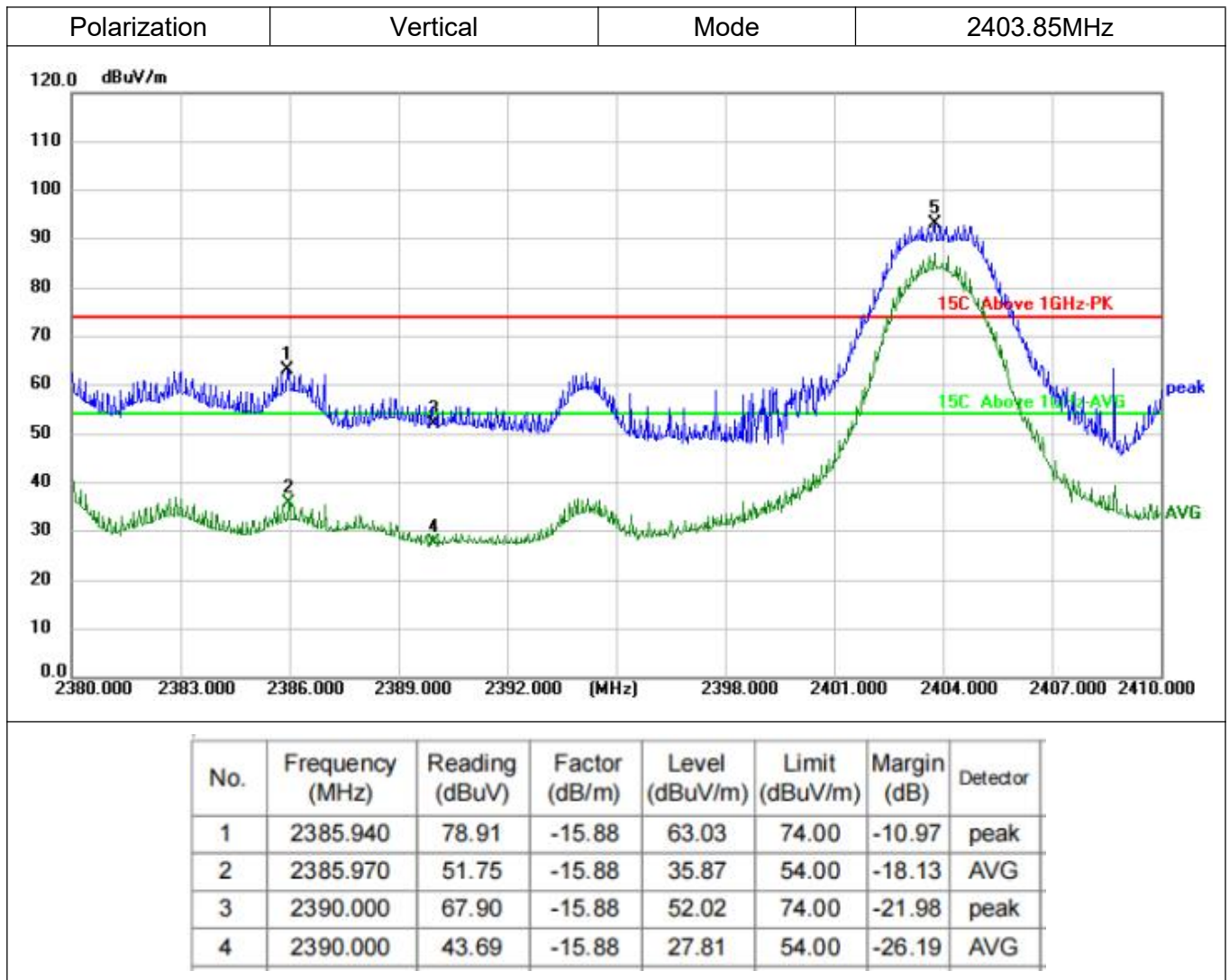


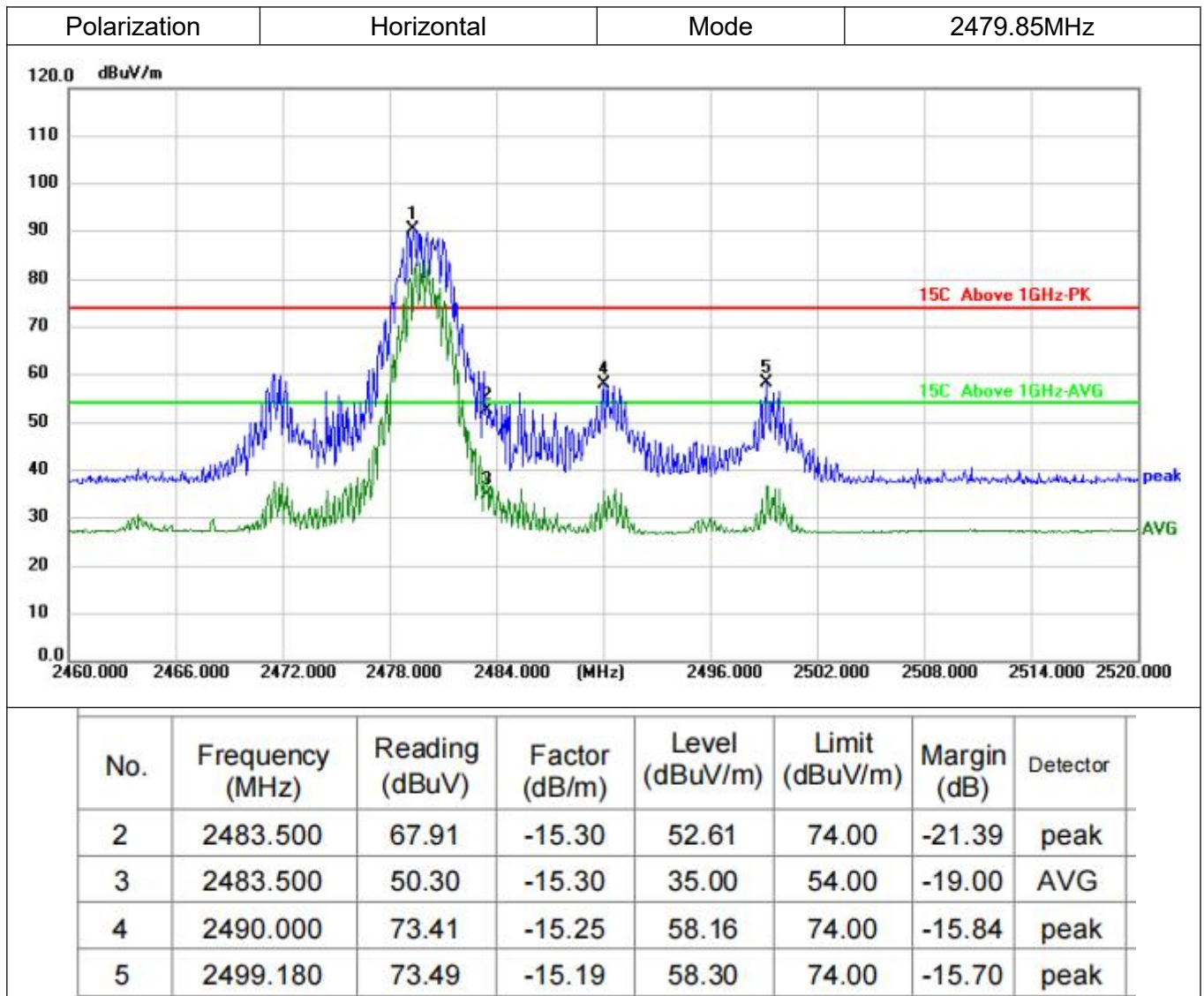
### 3.2.4. Test Result

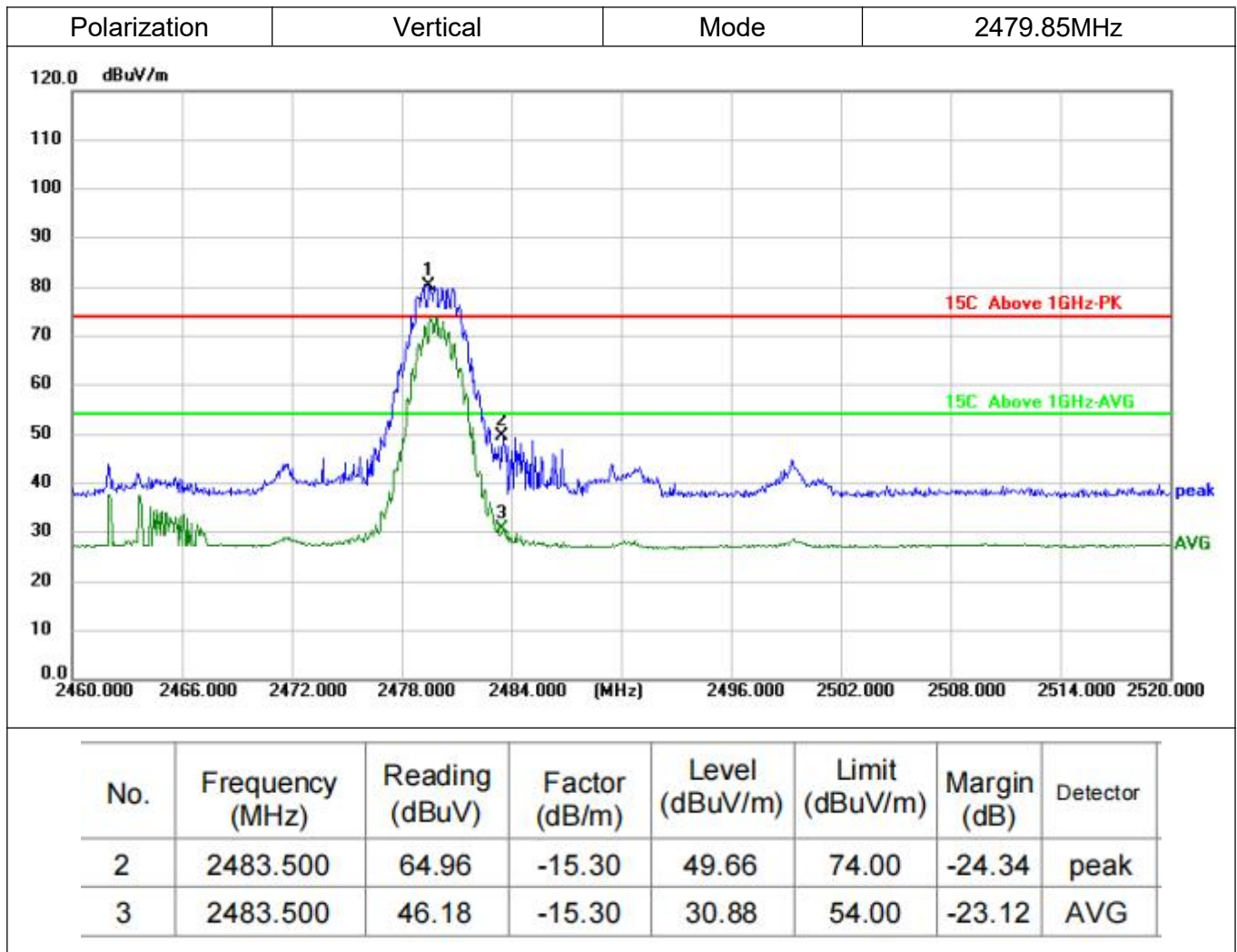
For keyboard:



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 2390.000        | 56.58          | -15.88        | 40.70          | 74.00          | -33.30      | peak     |
| 2   | 2390.000        | 42.31          | -15.88        | 26.43          | 54.00          | -27.57      | AVG      |







#### REMARKS:

1. Emission Level (dBUV/m) = Reading Value (dBUV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Amplifier Gain.
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level - Limit value.

### 3.3. 20dB Bandwidth

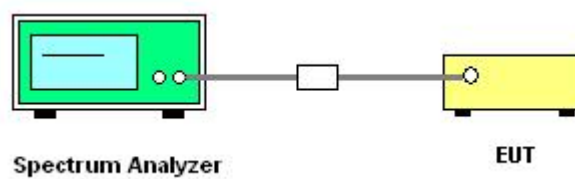
#### 3.3.1. Limit

There is no limit requirement for 20dB Bandwidth.

#### 3.3.2. Test Procedure

1. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
2. Set SPA Centre Frequency = Operation Frequency, RBW= 30 KHz, VBW $\geq 3 \times$  RBW.
3. Set SPA Trace 1 Max hold, then View.

#### 3.3.3. Test Setup



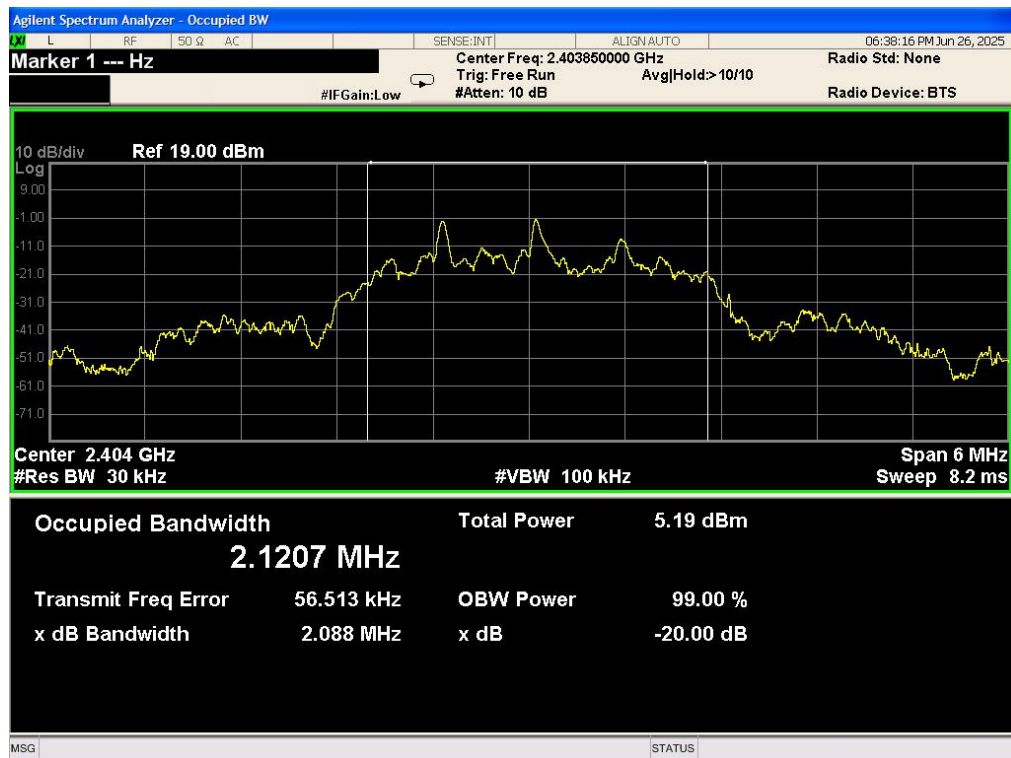
### 3.3.4. Test Result of 20dB Bandwidth

|                 |                |
|-----------------|----------------|
| TEST ITEM       | 20DB BANDWIDTH |
| TEST MODULATION | GFSK           |

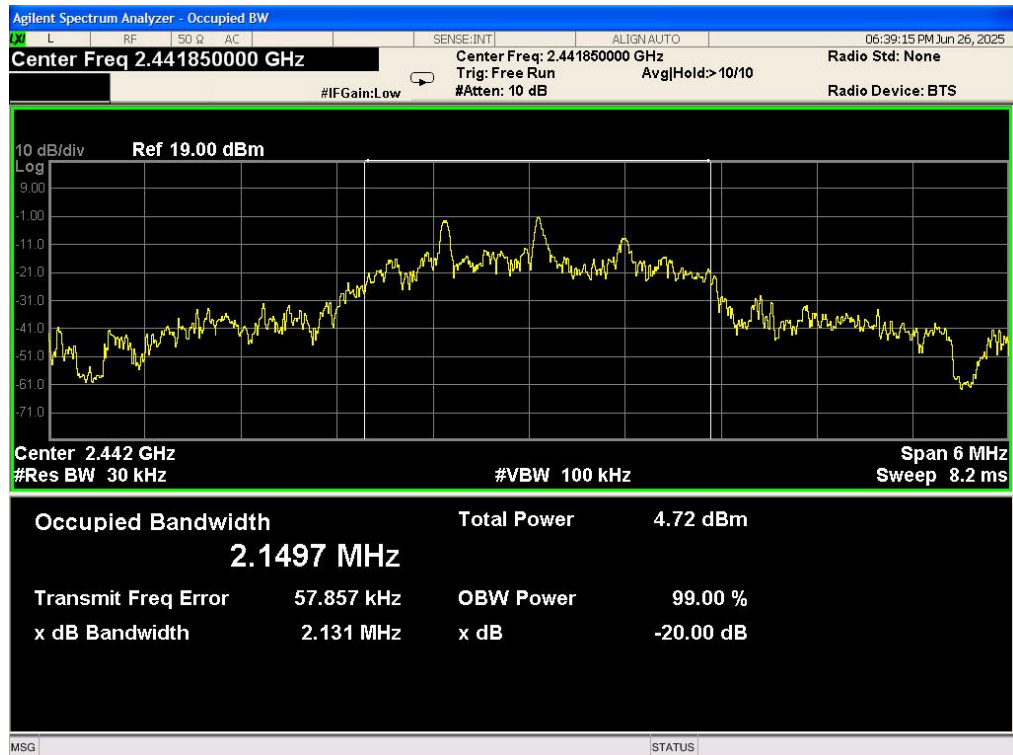
For keyboard:

| Test Data (MHz) |       | Criteria |
|-----------------|-------|----------|
| Low Channel     | 2.088 | PASS     |
| Middle Channel  | 2.131 | PASS     |
| High Channel    | 2.008 | PASS     |

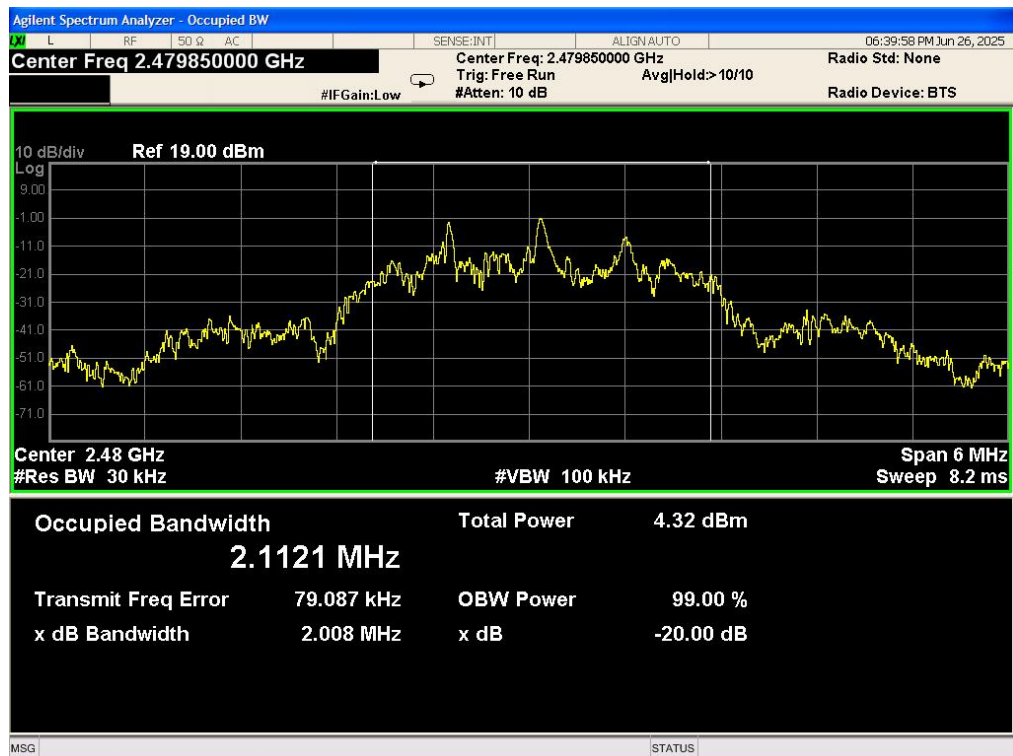
### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



### 3.4. AC Power-Line Conducted Emission

#### 3.4.1. Limit

47 CFR 15.207(a): For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table:

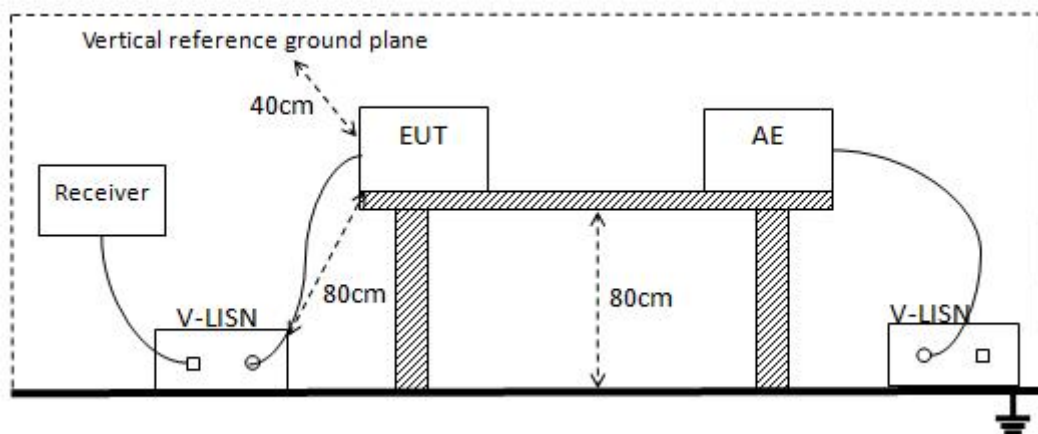
| Frequency of emission (MHz) | Conducted limit (dBμV) |           |
|-----------------------------|------------------------|-----------|
|                             | Quasi-peak             | Average   |
| 0.15-0.5                    | 66 to 56*              | 56 to 46* |
| 0.5-5                       | 56                     | 46        |
| 5-30                        | 60                     | 50        |

\*Decreases with the logarithm of the frequency.

#### 3.4.2. Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

#### 3.4.3. Test Setup



#### **3.4.4. Test Result of AC Power-Line Conducted Emission**

Note:

This product is powered by batteries and cannot be charged, This item is not applicable.

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### **3.5. Antenna Requirement**

#### **3.5.1. Standard Requirement**

According to 47 CFR 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.

#### **3.5.2. EUT Antenna**

The antenna used for the EUT is PCB antenna, which meets the antenna requirements.

#### **4. TEST SETUP PHOTOGRAPHS**

Please refer to the Appendix F.

#### **5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT**

Please refer to the Appendix G.

※※※※※END OF THE REPORT※※※※※