



**Neutron Engineering Inc.**

# Radio Test Report

## FCC ID: H8GG9400

This report concerns (check one) : ☒ Original Grant ☐ Class I Change

**Issued Date** : May 27, 2010  
**Project No.** : R1005003  
**Equipment** : 2.4G RF Mouse  
**Model Name** : G9-400

**Applicant** : A-FOUR TECH CO., LTD.  
**Address** : 6F, No.108, Min-Chuan Rd., Hsin-Tien,  
Taipei, Taiwan, R.O.C.

**Tested by:**  
Neutron Engineering Inc. EMC Laboratory  
**Date of Test:**  
May 10, 2010 ~ May 21, 2010

Testing Engineer : Rush Kao  
(Rush Kao)  
Technical Manager : Jeff Yang  
(Jeff Yang)  
Authorized Signatory : Andy Chiu  
(Andy Chiu)

**Neutron Engineering Inc.**  
B1, No. 37, Lane 365, YangGuang St.  
NeiHu District 114, Taipei, Taiwan.  
TEL: +886-2-2657-3299  
FAX: +886-2-2657-3331





### **Declaration**

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

**Neutron's** reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **Neutron** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **Neutron** issued reports.

**Neutron's** reports must not be used by the client to claim product endorsement by the authorities or any agency of the Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **Neutron-self**, extracts from the test report shall not be reproduced except in full with **Neutron's** authorized written approval.

**Neutron's** laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

### **Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.



| <b>Table of Contents</b>                                     | <b>Page</b> |
|--|-------------|
| <b>1 . CERTIFICATION</b>                                     | <b>5</b>    |
| <b>2 . SUMMARY OF TEST RESULTS</b>                           | <b>6</b>    |
| 2.1 TEST FACILITY  | 7           |
| 2.2 MEASUREMENT UNCERTAINTY                                  | 7           |
| <b>3 . GENERAL INFORMATION</b>                               | <b>8</b>    |
| 3.1 GENERAL DESCRIPTION OF EUT                               | 8           |
| 3.2 DESCRIPTION OF TEST MODES                                | 10          |
| 3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED | 11          |
| 3.4 DESCRIPTION OF SUPPORT UNITS                             | 12          |
| <b>4 . EMC EMISSION TEST</b>                                 | <b>13</b>   |
| 4.1 RADIATED EMISSION MEASUREMENT                            | 13          |
| 4.1.1 RADIATED EMISSION LIMITS                               | 13          |
| 4.1.2 MEASUREMENT INSTRUMENTS LIST                           | 14          |
| 4.1.3 TEST PROCEDURE   | 14          |
| 4.1.4 DEVIATION FROM TEST STANDARD                           | 14          |
| 4.1.5 TEST SETUP   | 15          |
| 4.1.6 EUT OPERATING CONDITIONS                               | 15          |
| 4.1.7 TEST RESULTS-BETWEEN 30MHz – 1000MHz                   | 16          |
| 4.1.8 TEST RESULTS-ABOVE 1000MHz                             | 18          |
| 4.1.9 TEST RESULTS-RESTRICTED BANDS REQUIREMENTS             | 30          |
| <b>5 . BANDWIDTH TEST</b>                                    | <b>34</b>   |
| 5.1 APPLIED PROCEDURES / LIMIT                               | 34          |
| 5.1.1 MEASUREMENT INSTRUMENTS LIST                           | 34          |
| 5.1.2 TEST PROCEDURE   | 34          |
| 5.1.3 DEVIATION FROM STANDARD                                | 34          |
| 5.1.4 TEST SETUP   | 34          |
| 5.1.5 EUT OPERATION CONDITIONS                               | 34          |
| 5.1.6 TEST RESULTS   | 35          |
| <b>6 . PEAK OUTPUT POWER TEST</b>                            | <b>37</b>   |
| 6.1 APPLIED PROCEDURES / LIMIT                               | 37          |
| 6.1.1 MEASUREMENT INSTRUMENTS LIST                           | 37          |
| 6.1.2 TEST PROCEDURE   | 37          |
| 6.1.3 DEVIATION FROM STANDARD                                | 37          |
| 6.1.4 TEST SETUP   | 37          |
| 6.1.5 EUT OPERATION CONDITIONS                               | 37          |
| 6.1.6 TEST RESULTS   | 38          |



| <b>Table of Contents</b>                       | <b>Page</b> |
|--|-------------|
| <b>7 . ANTENNA CONDUCTED SPURIOUS EMISSION</b> | <b>39</b>   |
| <b>7.1 APPLIED PROCEDURES / LIMIT</b>          | <b>39</b>   |
| 7.1.1 MEASUREMENT INSTRUMENTS LIST             | 39          |
| 7.1.2 TEST PROCEDURE                           | 39          |
| 7.1.3 DEVIATION FROM STANDARD                  | 39          |
| 7.1.4 TEST SETUP                               | 39          |
| 7.1.5 EUT OPERATION CONDITIONS                 | 39          |
| 7.1.6 TEST RESULTS                             | 40          |
| <b>8 . POWER SPECTRAL DENSITY TEST</b>         | <b>42</b>   |
| <b>8.1 APPLIED PROCEDURES / LIMIT</b>          | <b>42</b>   |
| 8.1.1 MEASUREMENT INSTRUMENTS LIST             | 42          |
| 8.1.2 TEST PROCEDURE                           | 42          |
| 8.1.3 DEVIATION FROM STANDARD                  | 42          |
| 8.1.4 TEST SETUP                               | 42          |
| 8.1.5 EUT OPERATION CONDITIONS                 | 42          |
| 8.1.6 TEST RESULTS                             | 43          |
| <b>9 . RF EXPOSURE TEST</b>                    | <b>45</b>   |
| <b>9.1 APPLIED PROCEDURES / LIMIT</b>          | <b>45</b>   |
| 9.1.1 MEASUREMENT INSTRUMENTS LIST             | 45          |
| 9.1.2 MPE CALCULATION METHOD & TEST RESULTS    | 45          |
| <b>10 . EUT TEST PHOTO</b>                     | <b>46</b>   |



## **1. CERTIFICATION**

Equipment : 2.4G RF Mouse  
Brand Name : A4TECH  
Model No. : G9-400  
Applicant : A-FOUR TECH CO., LTD.  
Date of Test : May 10, 2010 ~ May 21, 2010  
Test Item : ENGINEERING SAMPLE  
Standards : FCC Part15, Subpart C(15.247) / ANCI C63.4 : 2003

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-R1005003) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).



## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

| FCC Part15, Subpart C                |                                     |          |        |
|--------------------------------------|-------------------------------------|----------|--------|
| Standard Section                     | Test Item                           | Judgment | Remark |
| 15.207                               | Conducted Emission                  | N/A      |        |
| 15.247 (c)                           | Antenna conducted Spurious Emission | PASS     |        |
| 15.247 (a)(2)                        | 6dB Bandwidth                       | PASS     |        |
| 15.247 (b)                           | Peak Output Power                   | PASS     |        |
| 15.247 (c)                           | Radiated Spurious Emission          | PASS     |        |
| 15.247 (d)                           | Power Spectral Density              | PASS     |        |
| 15.203                               | Antenna Requirement                 | PASS     |        |
| 1.1307<br>1.1310<br>2.1091<br>2.1093 | RF Exposure Compliance              | PASS     |        |

**NOTE:**

(1) "N/A" denotes test is not applical in this Test Report



## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **CB08 (FCC R.N.: 95335)** at the location of 1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Neutron's test firm number is 95335

## 2.2 MEASUREMENT UNCERTAINTY

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

### A. Conducted Measurement :

| Test Site | Method | Measurement Frequency Range | U , (dB) | NOTE |
|-----------|--------|-----------------------------|----------|------|
| C01       | ANSI   | 150 KHz ~ 30MHz             | 1.94     |      |

### B. Radiated Measurement :

| Test Site | Method | Measurement Frequency Range | Ant. H / V | U , (dB) | NOTE |
|-----------|--------|-----------------------------|------------|----------|------|
| OS-01     | ANSI   | 30MHz ~ 200MHz              | V          | 2.86     |      |
|           |        | 30MHz ~ 200MHz              | H          | 2.56     |      |
|           |        | 200MHz ~ 1,000MHz           | V          | 2.88     |      |
|           |        | 200MHz ~ 1,000MHz           | H          | 2.98     |      |
| OS-02     | ANSI   | 30MHz ~ 200MHz              | V          | 2.48     |      |
|           |        | 30MHz ~ 200MHz              | H          | 2.16     |      |
|           |        | 200MHz ~ 1,000MHz           | V          | 2.50     |      |
|           |        | 200MHz ~ 1,000MHz           | H          | 2.66     |      |



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

|                        |  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
|------------------------|--|----------------------|--------------|------------------|------|-------------------|-----------------------------------|----------------------|-----------------------------|--------------------|-----------------------------|---------------|-----------------|
| Equipment              | 2.4G RF Mouse  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Brand Name             | A4TECH   |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Model No.              | G9-400   |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| OEM Brand/Model No.    | N/A  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Model Difference       | N/A  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Product Description    | <p>The EUT is a 2.4G RF Mouse.</p> <table border="1"> <tr> <td>Operation Frequency:</td><td>2407~2473MHz</td></tr> <tr> <td>Modulation Type:</td><td>GFSK</td></tr> <tr> <td>Number Of Channel</td><td>14CH, Please refer to the Note 2.</td></tr> <tr> <td>Antenna Designation:</td><td>Please refer to the Note 3.</td></tr> <tr> <td>Antenna Gain(Peak)</td><td>Please refer to the Note 3.</td></tr> <tr> <td>Output Power:</td><td>-2.01dBm (Max.)</td></tr> </table> <p>Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</p> | Operation Frequency: | 2407~2473MHz | Modulation Type: | GFSK | Number Of Channel | 14CH, Please refer to the Note 2. | Antenna Designation: | Please refer to the Note 3. | Antenna Gain(Peak) | Please refer to the Note 3. | Output Power: | -2.01dBm (Max.) |
| Operation Frequency:   | 2407~2473MHz   |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Modulation Type:       | GFSK   |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Number Of Channel      | 14CH, Please refer to the Note 2.  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Antenna Designation:   | Please refer to the Note 3.  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Antenna Gain(Peak)     | Please refer to the Note 3.  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Output Power:          | -2.01dBm (Max.)  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Channel List           | Please refer to the Note 2.  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Power Source           | Battery supplied   |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Power Rating           | DC 1.5V  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Connecting I/O Port(s) | Please refer to the User's Manual  |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |
| Products Covered       | NA   |                      |              |                  |      |                   |                                   |                      |                             |                    |                             |               |                 |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



2.

| Channel List |                 |         |                 |
|--------------|-----------------|---------|-----------------|
| Channel      | Frequency (MHz) | Channel | Frequency (MHz) |
| 01           | 2407            | 08      | 2437            |
| 02           | 2411            | 09      | 2445            |
| 03           | 2415            | 10      | 2451            |
| 04           | 2422            | 11      | 2456            |
| 05           | 2426            | 12      | 2460            |
| 06           | 2430            | 13      | 2468            |
| 07           | 2434            | 14      | 2473            |

3. Table for Filed Antenna

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) |
|------|-------|------------|--------------|-----------|------------|
| 1    | N/A   | N/A        | Ant. On PCB  | N/A       | 0.87       |



### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

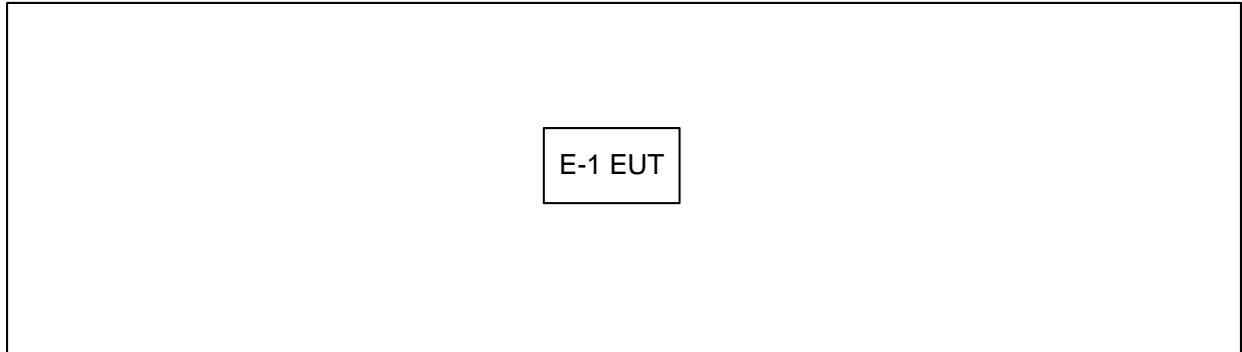
| Pretest Test Mode | Description |
|-------------------|-------------|
| Mode 1            | 2407MHz     |
| Mode 2            | 2437MHz     |
| Mode 3            | 2473MHz     |

| For Radiated Test (30 -1000MHz) |             |
|---------------------------------|-------------|
| Final Test Mode                 | Description |
| Mode 2                          | 2437MHz     |

| For Radiated Test (Above 1000MHz) |             |
|-----------------------------------|-------------|
| Final Test Mode                   | Description |
| Mode 1                            | 2407MHz     |
| Mode 2                            | 2437MHz     |
| Mode 3                            | 2473MHz     |



### **3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**





### 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment     | Mfr/Brand | Model/Type No. | FCC ID   | Series No. | Note |
|------|---------------|-----------|----------------|----------|------------|------|
| E-1  | 2.4G RF Mouse | A4TECH    | G9-400         | H8GG9400 | N/A        | EUT  |

| Item | Shielded Type | Ferrite Core | Length | Note |
|------|---------------|--------------|--------|------|
|      | N/A           | N/A          | N/A    |      |

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



#### 4. EMC EMISSION TEST

##### 4.1 RADIATED EMISSION MEASUREMENT

###### 4.1.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies<br>(MHz) | Field Strength<br>(micorvolts/meter) | Measurement Distance<br>(meters) |
|----------------------|--------------------------------------|----------------------------------|
| 0.009~0.490          | 2400/F(KHz)                          | 300                              |
| 0.490~1.705          | 24000/F(KHz)                         | 30                               |
| 1.705~30.0           | 30                                   | 30                               |
| 30~88                | 100                                  | 3                                |
| 88~216               | 150                                  | 3                                |
| 216~960              | 200                                  | 3                                |
| Above 960            | 500                                  | 3                                |

###### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

| FREQUENCY (MHz) | Class B (dBuV/m) (at 3m) |         |
|-----------------|--------------------------|---------|
|                 | PEAK                     | AVERAGE |
| Above 1000      | 74                       | 54      |

**Notes:**

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).



#### 4.1.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment       | Manufacturer | Type No.     | Serial No. | Calibrated until |
|------|-------------------------|--------------|--------------|------------|------------------|
| 1    | Spectrum Analyzer       | R&S          | FSP-40       | 100129     | Sep. 10, 2010    |
| 2    | Horn Antenna            | Schwarzbeck  | BBHA 9120 D  | 9120D-546  | Mar. 18, 2011    |
| 3    | Microwave Pre_amplifier | Agilent      | 8449B        | 3008A01714 | Apr. 20, 2010    |
| 4    | Microflex Cable         | N/A          | N/A          | 1m         | May. 19, 2011    |
| 5    | Microflex Cable         | AISI         | S104-SMAP-1  | 10m        | Aug. 23, 2010    |
| 6    | Microflex Cable         | N/A          | N/A          | 3m         | Aug. 23, 2010    |
| 7    | Test Cable              | N/A          | LMR-400      | 966_12m    | Jun. 18, 2010    |
| 8    | Test Cable              | N/A          | LMR-400      | 966_3m     | Jun. 18, 2010    |
| 9    | Pre-Amplifier           | EMC          | EMC-330      | 980001     | Jun. 03, 2010    |
| 10   | Log-Bicon Antenna       | Schwarzbeck  | VULB9168-352 | 9168-352   | Jun. 17, 2010    |

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

#### 4.1.3 TEST PROCEDURE

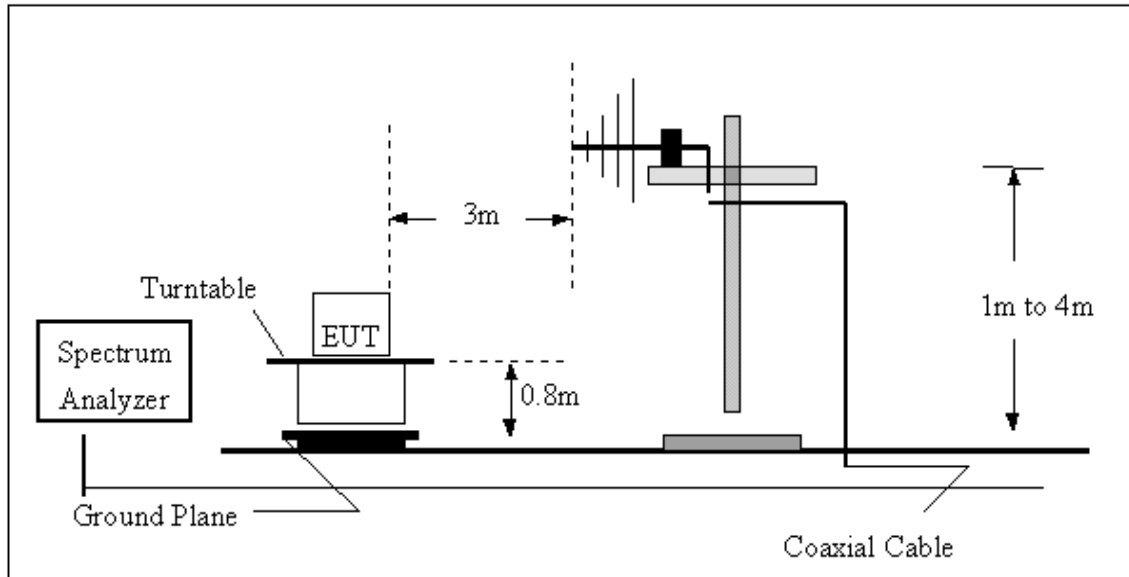
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.1.4 DEVIATION FROM TEST STANDARD

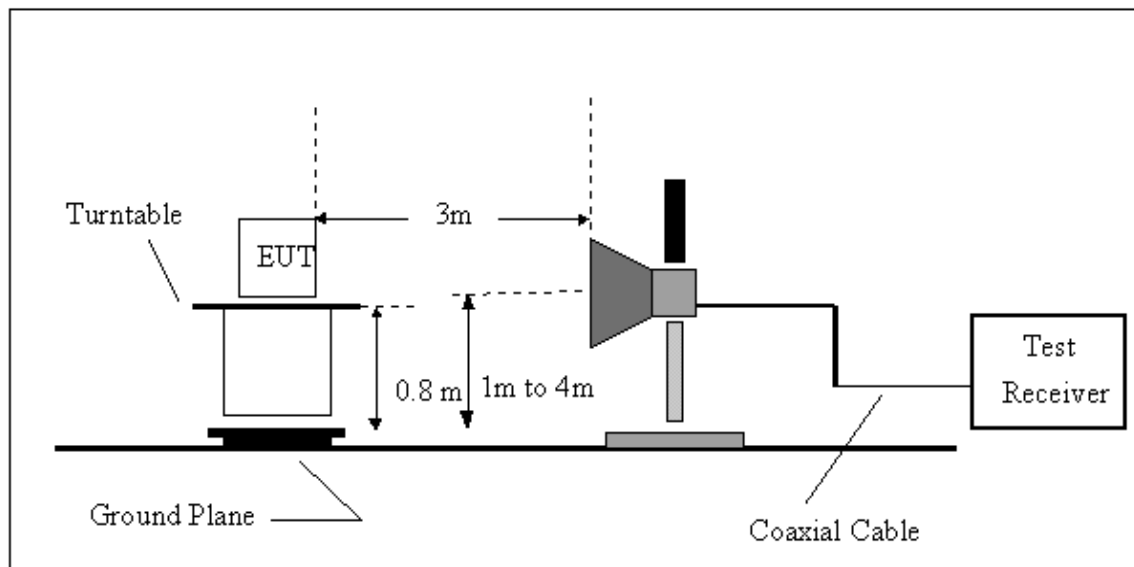
No deviation

#### 4.1.5 TEST SETUP

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



#### 4.1.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operation condition was tested and used to collect the included data.



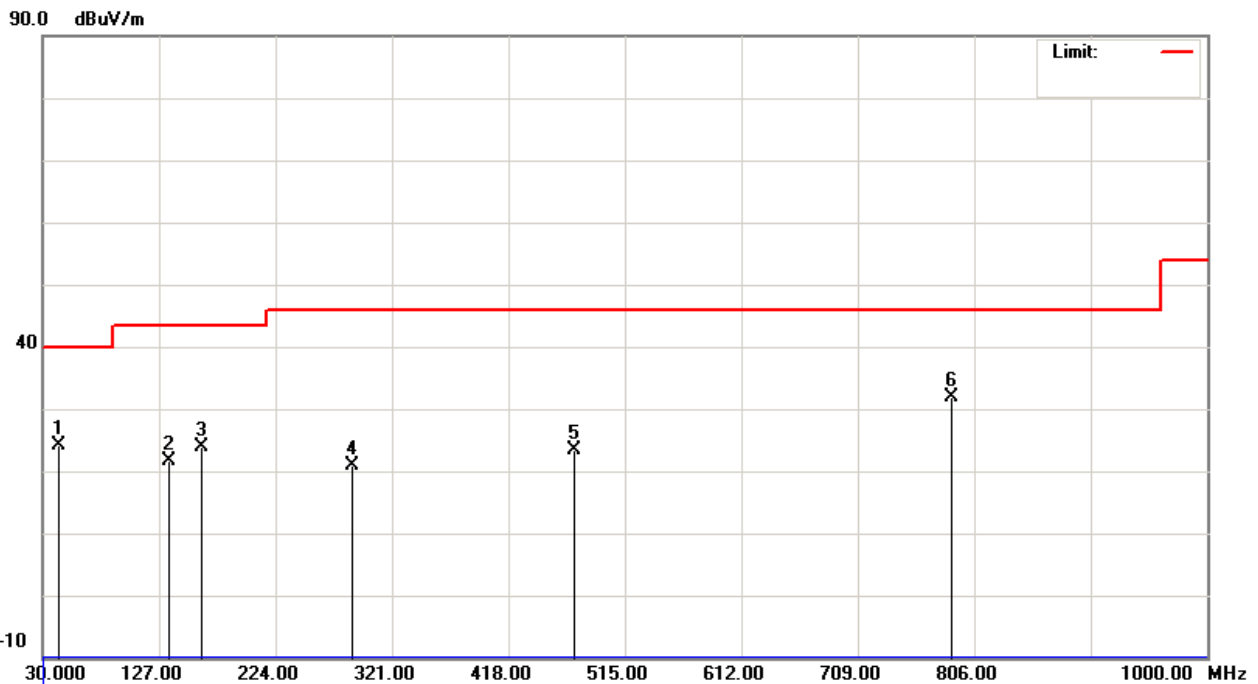
#### 4.1.7 TEST RESULTS-BETWEEN 30MHz – 1000MHz

|               |               |                     |        |
|---------------|---------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse | Model No. :         | G9-400 |
| Temperature : | 26 °C         | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V       |                     |        |
| Test Mode :   | 2437MHz       |                     |        |

| Freq.<br>(MHz) | Ant.<br>H/V | Reading(RA)<br>(dBuV) | Corr.Factor(CF)<br>(dB) | Measured(FS)<br>(dBuV/m) | Limits(QP)<br>(dBuV/m) | Margin<br>(dB) | Note |
|----------------|-------------|-----------------------|-------------------------|--------------------------|------------------------|----------------|------|
| 43.58          | V           | 32.24                 | -8.12                   | 24.12                    | 40.00                  | - 15.88        |      |
| 134.76         | V           | 30.13                 | -8.58                   | 21.55                    | 43.50                  | - 21.95        |      |
| 161.92         | V           | 31.48                 | -7.64                   | 23.84                    | 43.50                  | - 19.66        |      |
| 288.02         | V           | 29.57                 | -8.61                   | 20.96                    | 46.00                  | - 25.04        |      |
| 472.32         | V           | 27.55                 | -4.19                   | 23.36                    | 46.00                  | - 22.64        |      |
| 786.60         | V           | 30.47                 | 1.49                    | 31.96                    | 46.00                  | - 14.04        |      |

#### Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value is under the limit for more than 20dB, the signal will not show in table ◦



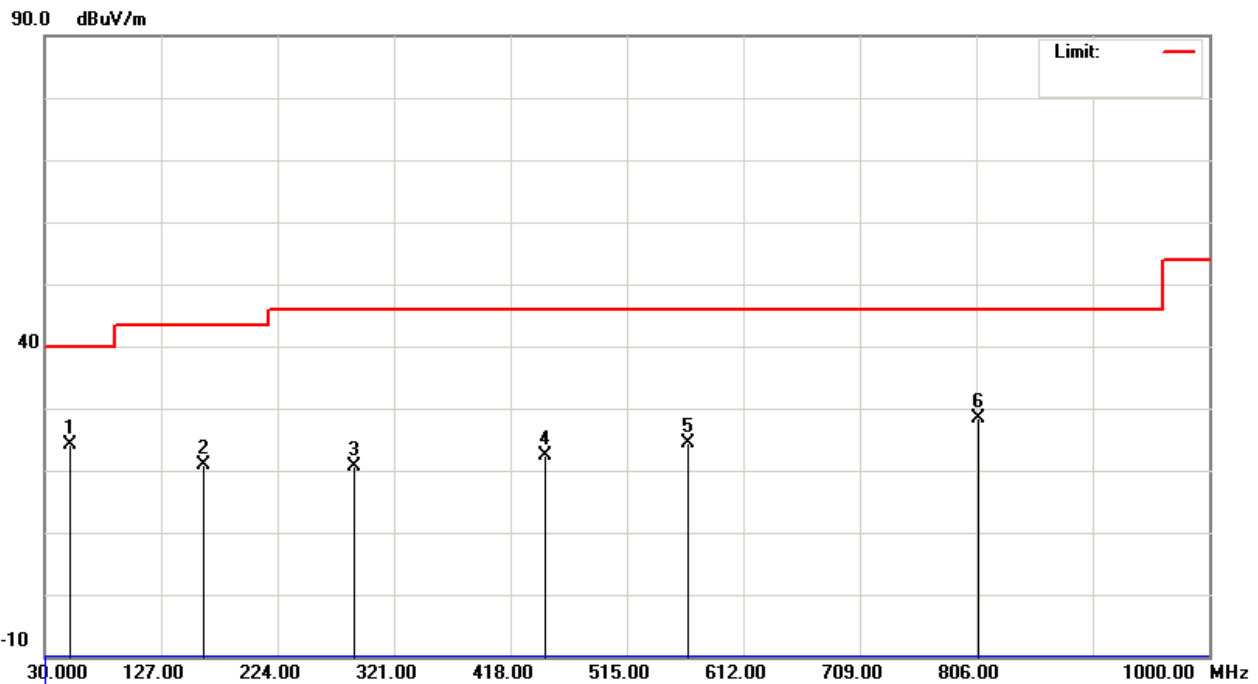


|               |               |                     |        |
|---------------|---------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse | Model No. :         | G9-400 |
| Temperature : | 26 °C         | Relative Humidity : | 42%    |
| Test Power :  | DC 1.5V       |                     |        |
| Test Mode :   | 2437MHz       |                     |        |

| Freq.<br>(MHz) | Ant.<br>H/V | Reading(RA)<br>(dBuV) | Corr.Factor(CF)<br>(dB) | Measured(FS)<br>(dBuV/m) | Limits(QP)<br>(dBuV/m) | Margin<br>(dB) | Note |
|----------------|-------------|-----------------------|-------------------------|--------------------------|------------------------|----------------|------|
| 51.34          | H           | 32.79                 | -8.58                   | 24.21                    | 40.00                  | - 15.79        |      |
| 161.92         | H           | 28.55                 | -7.64                   | 20.91                    | 43.50                  | - 22.59        |      |
| 288.02         | H           | 29.29                 | -8.61                   | 20.68                    | 46.00                  | - 25.32        |      |
| 447.10         | H           | 26.94                 | -4.57                   | 22.37                    | 46.00                  | - 23.63        |      |
| 565.44         | H           | 26.72                 | -2.36                   | 24.36                    | 46.00                  | - 21.64        |      |
| 807.94         | H           | 26.60                 | 1.72                    | 28.32                    | 46.00                  | - 17.68        |      |

**Remark :**

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value is under the limit for more than 20dB, the signal will not show in table ◦





#### 4.1.8 TEST RESULTS-ABOVE 1000MHz

|               |               |                     |        |
|---------------|---------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse | Model No. :         | G9-400 |
| Temperature : | 26°C          | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V       |                     |        |
| Test Mode :   | 2407MHz       |                     |        |

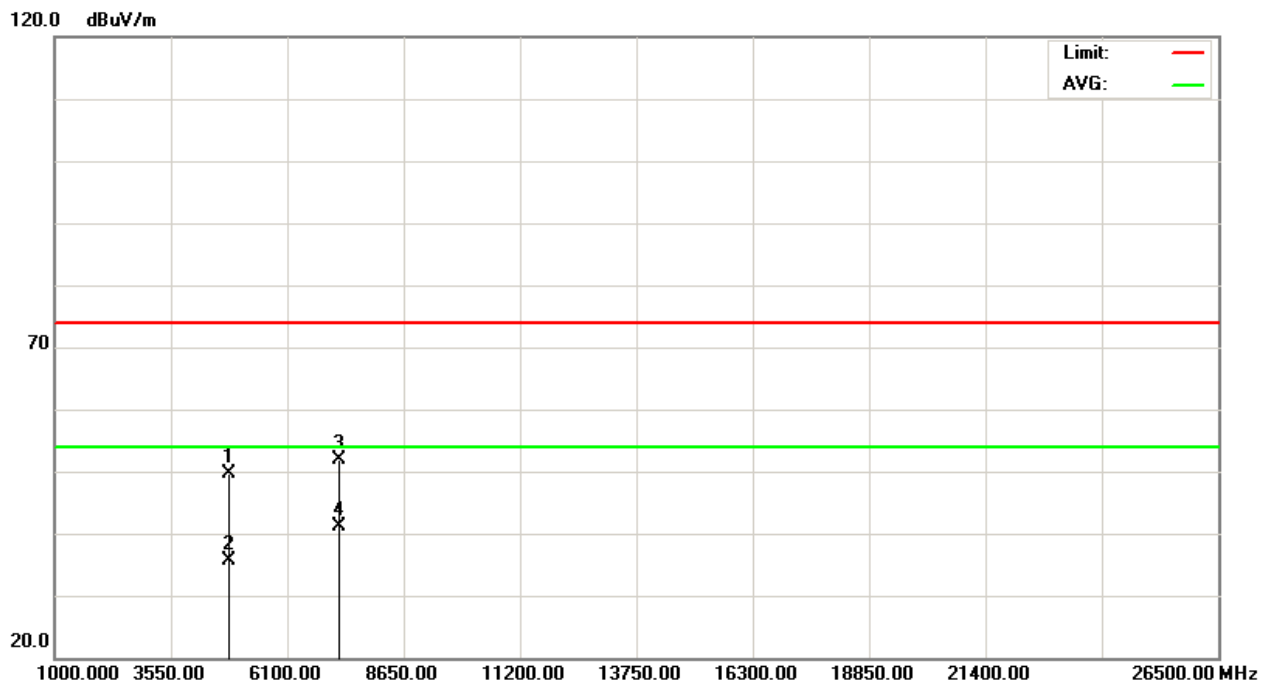
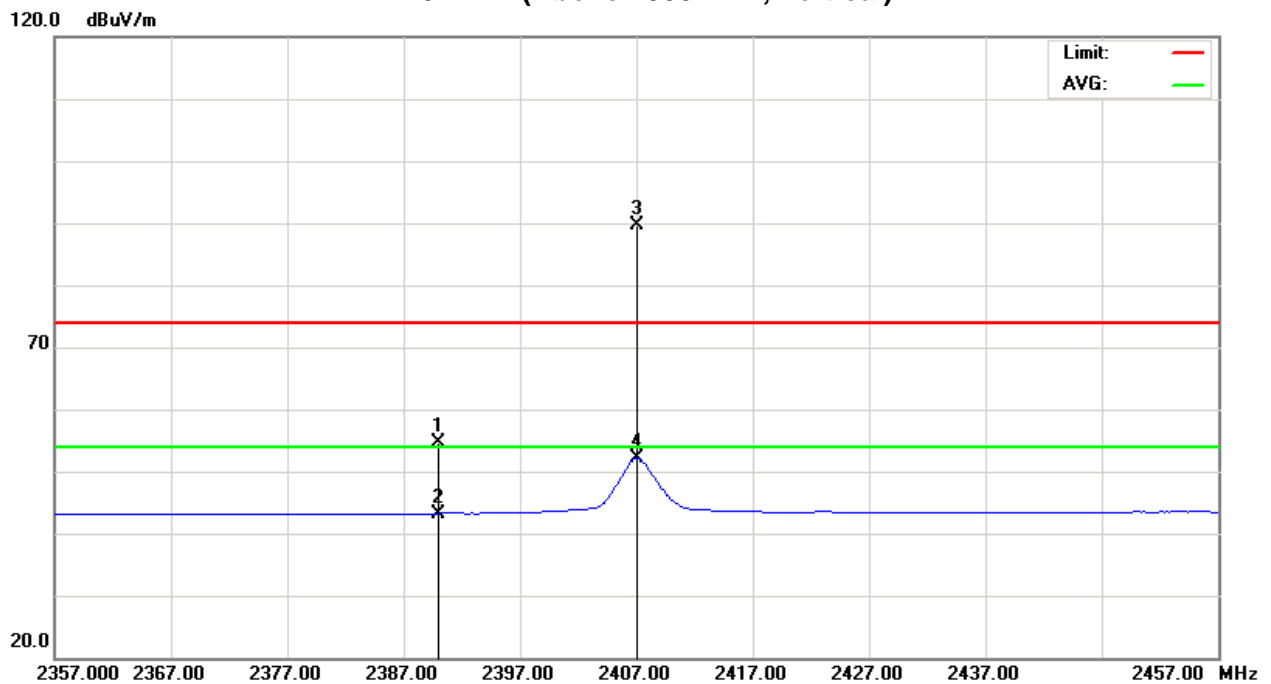
| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Reading        |              | Ant./CF<br>CF(dB) | Act.             |                | Limit            |                | Note |
|----------------|-----------------|----------------|--------------|-------------------|------------------|----------------|------------------|----------------|------|
|                |                 | Peak<br>(dBuV) | AV<br>(dBuV) |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | Peak<br>(dBuV/m) | AV<br>(dBuV/m) |      |
| 2390.00        | V               | 22.62          | 11.31        | 31.93             | 54.55            | 43.24          | 74.00            | 54.00          | X/E  |
| 2407.00        | V               | 57.56          | 20.11        | 31.99             | 89.55            | 52.10          |                  |                | X/F  |
| 4814.05        | V               | 45.92          | 31.79        | 3.81              | 49.73            | 35.60          | 74.00            | 54.00          | X/H  |
| 7221.09        | V               | 42.78          | 31.89        | 9.18              | 51.96            | 41.07          | 74.00            | 54.00          | X/H  |

#### Remark :

- (1) Spectrum Setting :  
 QP: 30MHz – 1000MHz: RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.  
 Peak: 1GHz- 25GHz: RBW= 1MHz, VBW= 1MHz, Sweep time = Auto  
 AV: 1GHz- 25GHz: RBW= 1MHz, VBW= 10Hz, Sweep time = Auto
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (8) During the measurements above 1GHz it is taken care of that the EUT is always within the 3dB cone of radiation BW of the used antenna.



Orthogonal Axes : X  
2407MHz (Above 1000 MHz, Vertical)





|               |               |                     |        |
|---------------|---------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse | Model No. :         | G9-400 |
| Temperature : | 26 °C         | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V       |                     |        |
| Test Mode :   | 2407MHz       |                     |        |

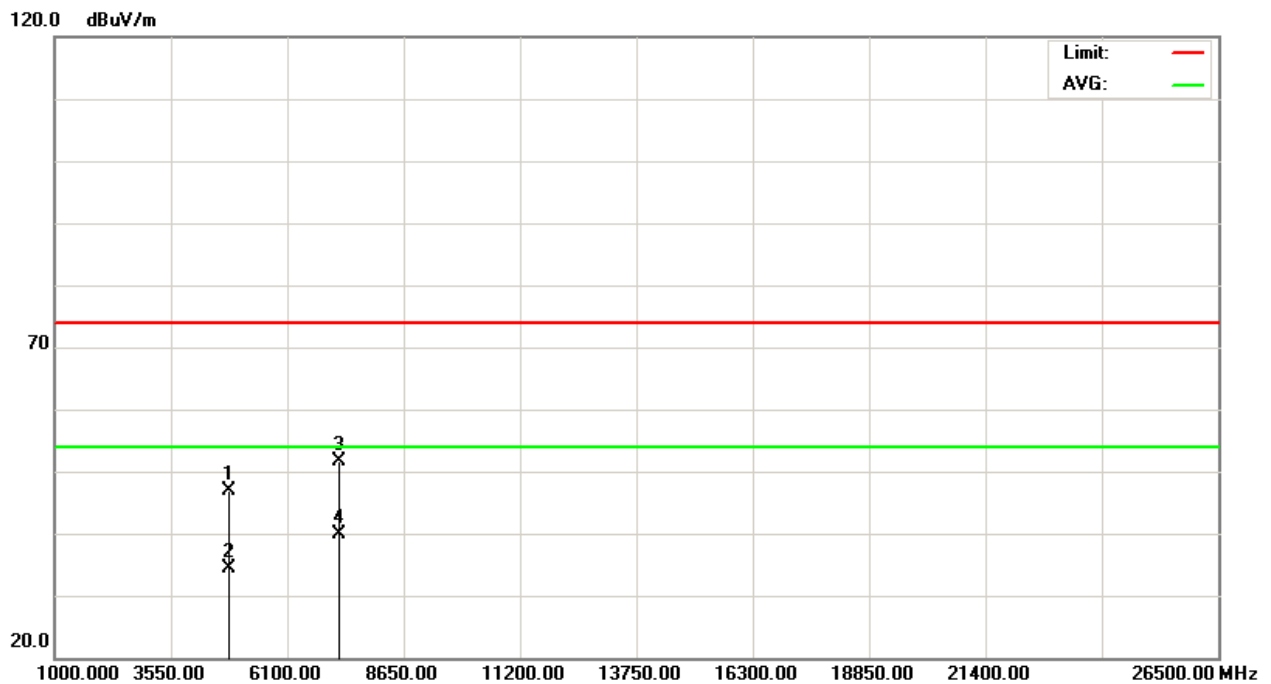
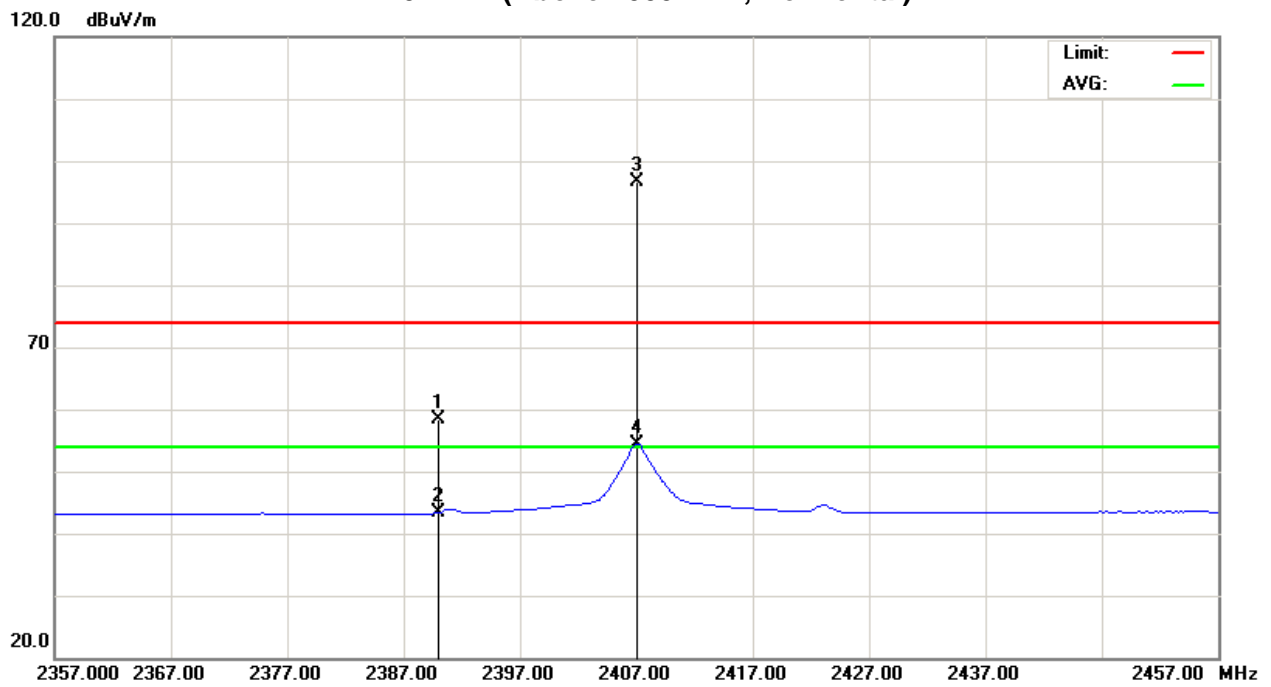
| Freq.<br>(MHz) | Ant. Pol.<br>H/V | Reading        |              | Ant./CF<br>CF(dB) | Act.             |                | Limit            |                | Note |
|----------------|------------------|----------------|--------------|-------------------|------------------|----------------|------------------|----------------|------|
|                |                  | Peak<br>(dBuV) | AV<br>(dBuV) |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | Peak<br>(dBuV/m) | AV<br>(dBuV/m) |      |
| 2390.00        | H                | 26.53          | 11.42        | 31.93             | 58.46            | 43.35          | 74.00            | 54.00          | X/E  |
| 2407.00        | H                | 64.62          | 22.41        | 31.99             | 96.61            | 54.40          |                  |                | X/F  |
| 4814.03        | H                | 42.99          | 30.60        | 3.81              | 46.80            | 34.41          | 74.00            | 54.00          | X/H  |
| 7221.07        | H                | 42.43          | 30.81        | 9.18              | 51.61            | 39.99          | 74.00            | 54.00          | X/H  |

**Remark :**

- (1) Spectrum Setting :  
 QP: 30MHz – 1000MHz: RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.  
 Peak: 1GHz- 25GHz: RBW= 1MHz, VBW= 1MHz, Sweep time = Auto  
 AV: 1GHz- 25GHz: RBW= 1MHz, VBW= 10Hz, Sweep time = Auto
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (8) During the measurements above 1GHz it is taken care of that the EUT is always within the 3dB cone of radiation BW of the used antenna.



Orthogonal Axes : X  
2407MHz (Above 1000 MHz, Horizontal)





|               |               |                     |        |
|---------------|---------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse | Model No. :         | G9-400 |
| Temperature : | 26 ° C        | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V       |                     |        |
| Test Mode :   | 2437MHz       |                     |        |

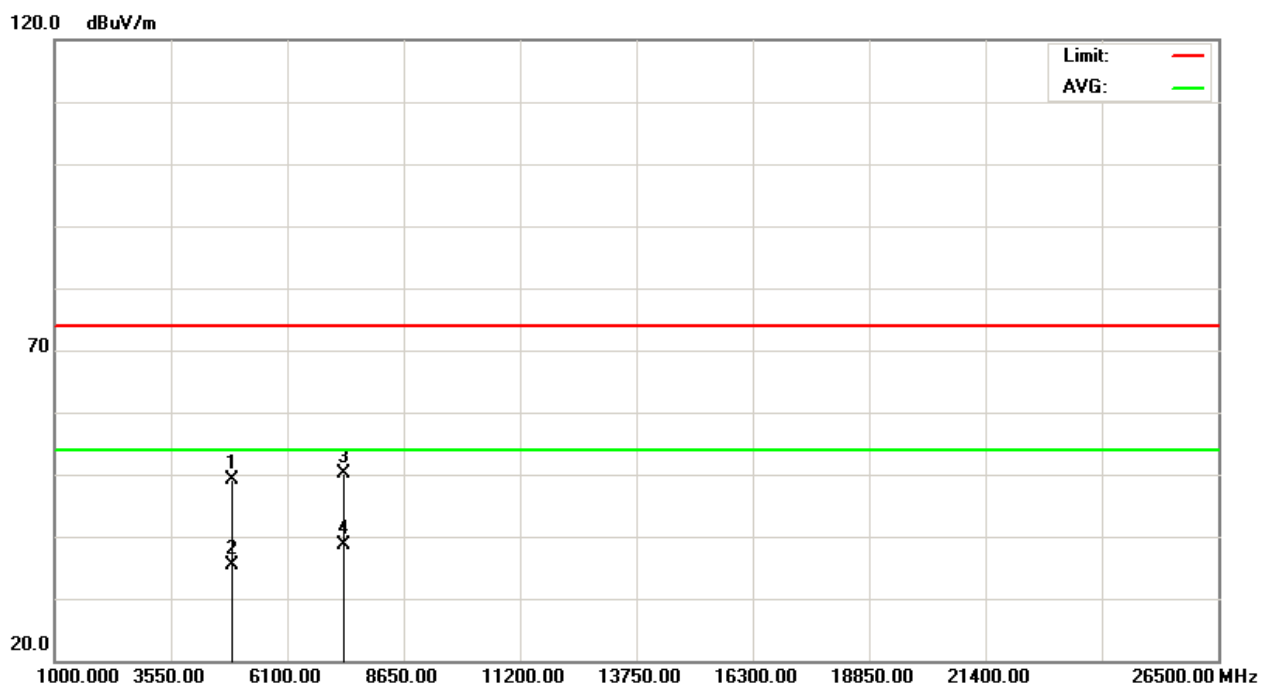
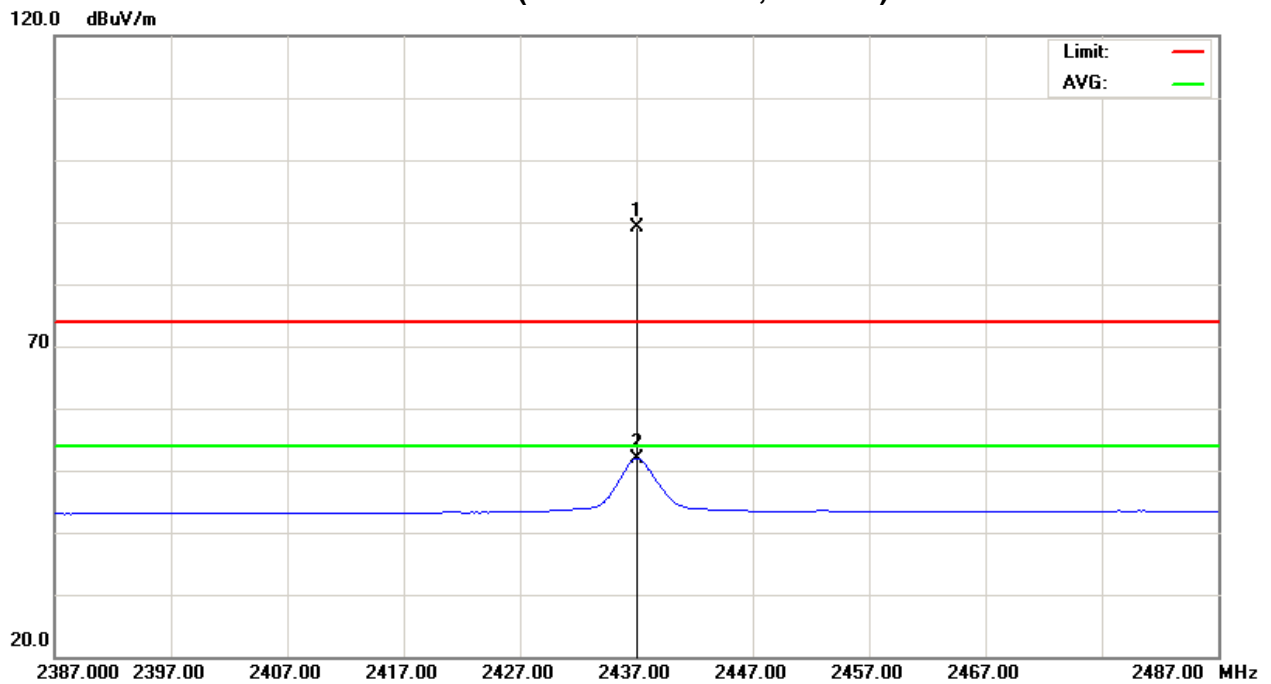
| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Reading        |              | Ant./CF<br>CF(dB) | Act.             |                | Limit            |                | Note |
|----------------|-----------------|----------------|--------------|-------------------|------------------|----------------|------------------|----------------|------|
|                |                 | Peak<br>(dBuV) | AV<br>(dBuV) |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | Peak<br>(dBuV/m) | AV<br>(dBuV/m) |      |
| 2437.00        | V               | 56.94          | 19.83        | 32.11             | 89.05            | 51.94          |                  |                | X/F  |
| 4874.15        | V               | 45.18          | 31.47        | 3.98              | 49.16            | 35.45          | 74.00            | 54.00          | X/H  |
| 7311.09        | V               | 40.67          | 29.21        | 9.36              | 50.03            | 38.57          | 74.00            | 54.00          | X/H  |

**Remark :**

- (1) Spectrum Setting :  
 QP: 30MHz – 1000MHz: RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.  
 Peak: 1GHz- 25GHz: RBW= 1MHz, VBW= 1MHz, Sweep time = Auto  
 AV: 1GHz- 25GHz: RBW= 1MHz, VBW= 10Hz, Sweep time = Auto
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (8) During the measurements above 1GHz it is taken care of that the EUT is always within the 3dB cone of radiation BW of the used antenna.



Orthogonal Axes : X  
2437MHz(Above 1000 MHz, Vertical)





|               |               |                     |        |
|---------------|---------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse | Model No. :         | G9-400 |
| Temperature : | 26 °C         | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V       |                     |        |
| Test Mode :   | 2437MHz       |                     |        |

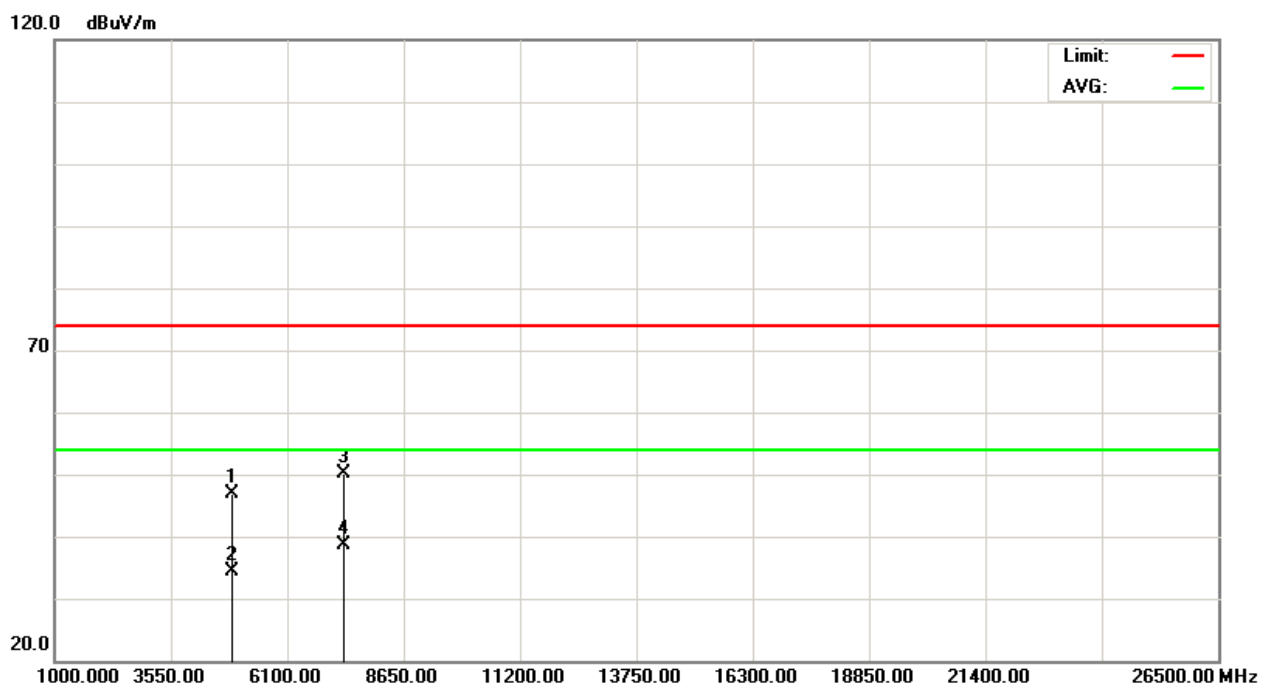
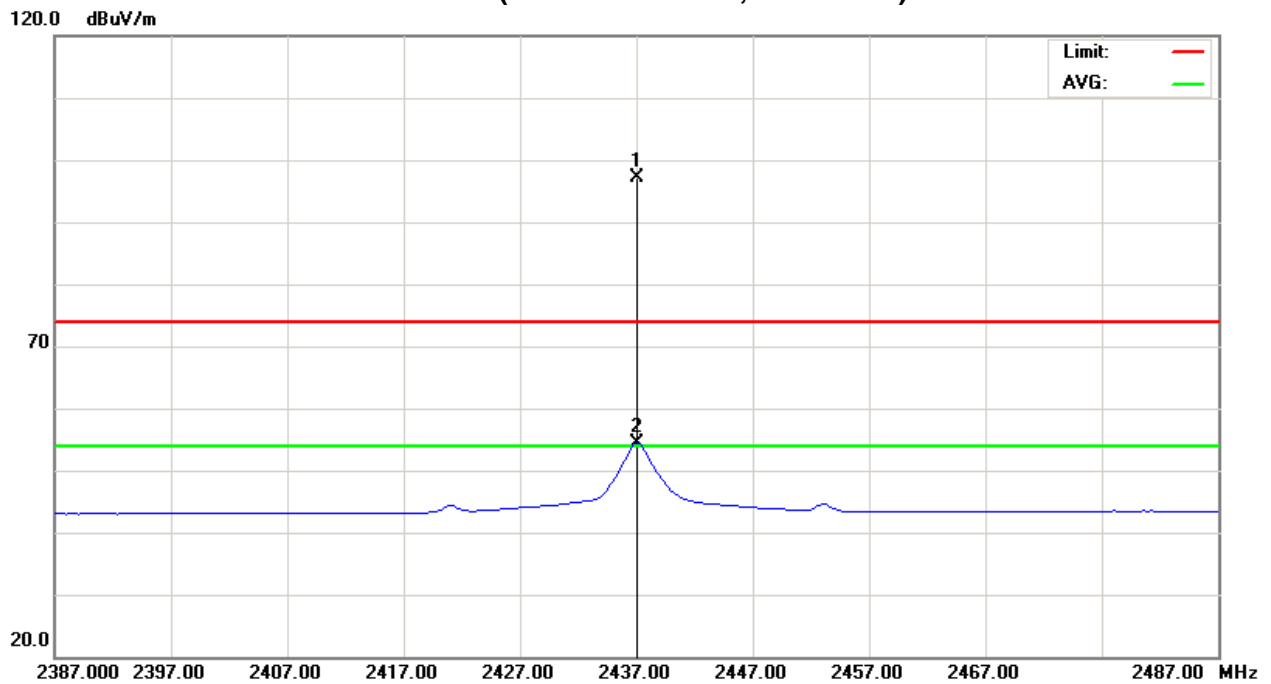
| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Reading        |              | Ant./CF<br>CF(dB) | Act.             |                | Limit            |                | Note |
|----------------|-----------------|----------------|--------------|-------------------|------------------|----------------|------------------|----------------|------|
|                |                 | Peak<br>(dBuV) | AV<br>(dBuV) |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | Peak<br>(dBuV/m) | AV<br>(dBuV/m) |      |
| 2437.00        | H               | 64.96          | 22.36        | 32.11             | 97.07            | 54.47          |                  |                | X/F  |
| 4874.07        | H               | 43.02          | 30.45        | 3.98              | 47.00            | 34.43          | 74.00            | 54.00          | X/H  |
| 7310.94        | H               | 40.82          | 29.22        | 9.36              | 50.18            | 38.58          | 74.00            | 54.00          | X/H  |

**Remark :**

- (1) Spectrum Setting :  
 QP: 30MHz – 1000MHz: RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.  
 Peak: 1GHz- 25GHz: RBW= 1MHz, VBW= 1MHz, Sweep time = Auto  
 AV: 1GHz- 25GHz: RBW= 1MHz, VBW= 10Hz, Sweep time = Auto
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (8) During the measurements above 1GHz it is taken care of that the EUT is always within the 3dB cone of radiation BW of the used antenna.



Orthogonal Axes : X  
2437MHz(Above 1000 MHz, Horizontal)





|               |               |                     |        |
|---------------|---------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse | Model No. :         | G9-400 |
| Temperature : | 26 °C         | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V       |                     |        |
| Test Mode :   | 2473MHz       |                     |        |

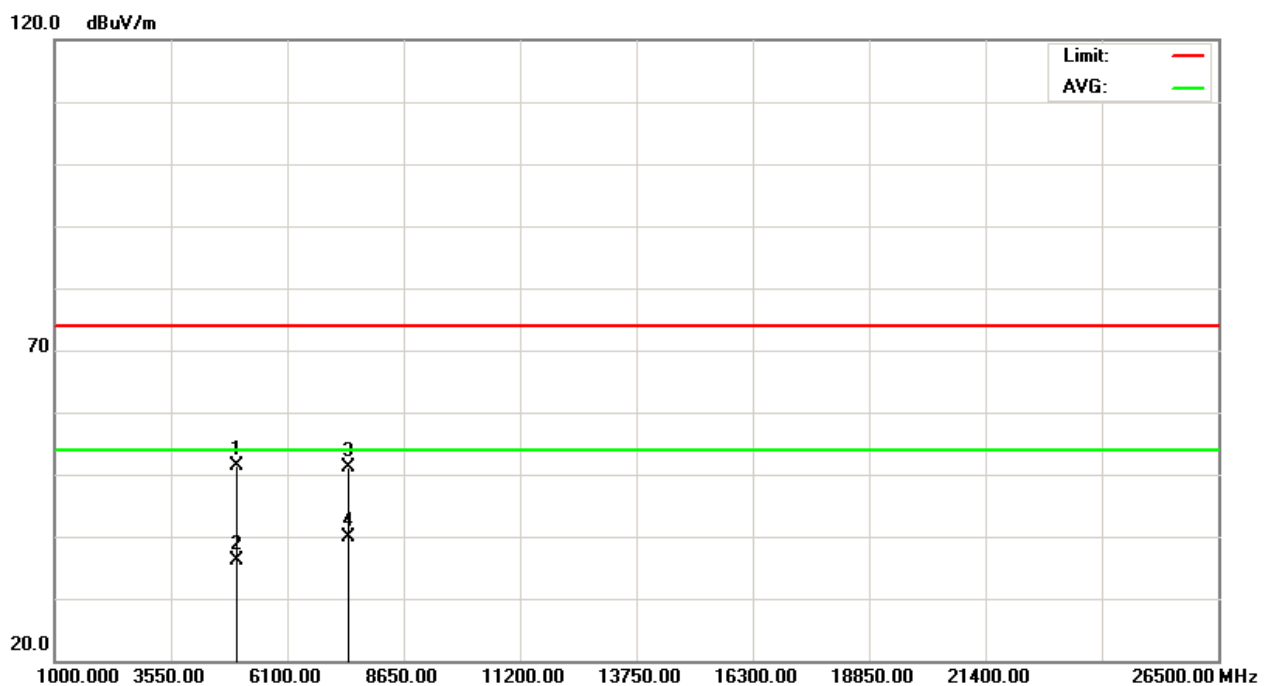
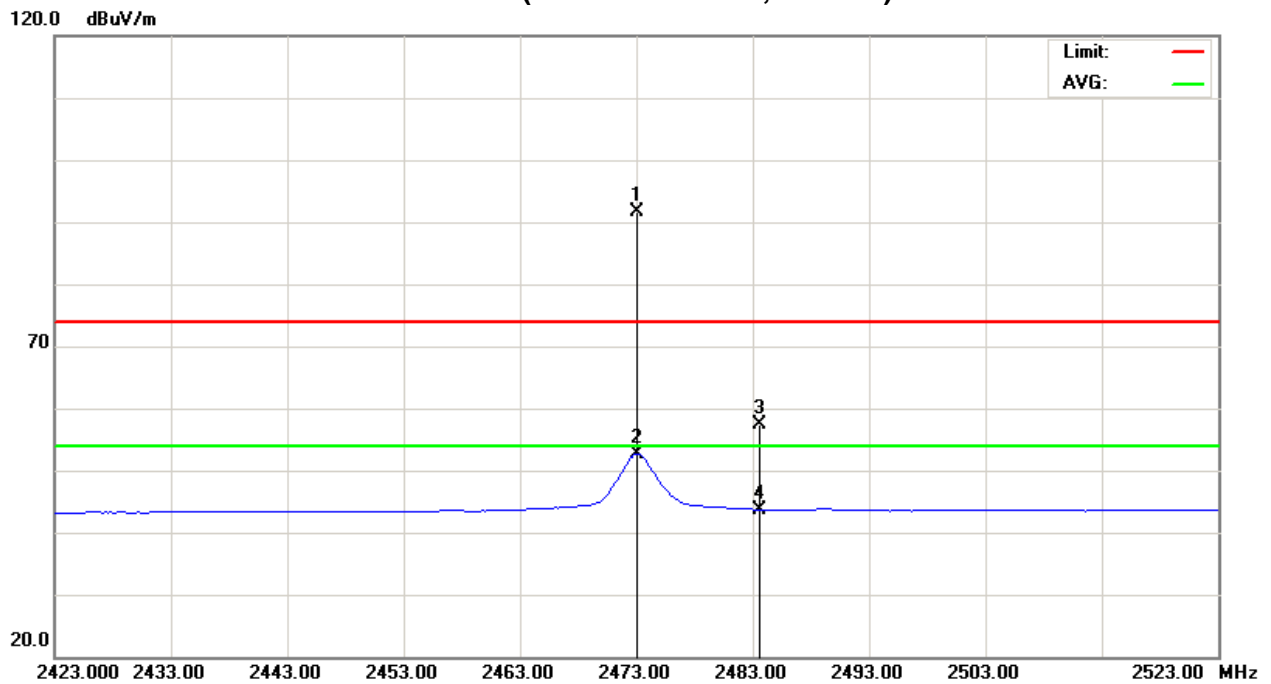
| Freq.<br>(MHz) | Ant. Pol.<br>H/V | Reading        |              | Ant./CF<br>CF(dB) | Act.             |                | Limit            |                | Note |
|----------------|------------------|----------------|--------------|-------------------|------------------|----------------|------------------|----------------|------|
|                |                  | Peak<br>(dBuV) | AV<br>(dBuV) |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | Peak<br>(dBuV/m) | AV<br>(dBuV/m) |      |
| 2473.00        | V                | 59.30          | 20.47        | 32.25             | 91.55            | 52.72          |                  |                | X/F  |
| 2483.50        | V                | 25.16          | 11.41        | 32.29             | 57.45            | 43.70          | 74.00            | 54.00          | X/E  |
| 4946.03        | V                | 47.25          | 31.91        | 4.19              | 51.44            | 36.10          | 74.00            | 54.00          | X/H  |
| 7418.97        | V                | 41.64          | 30.27        | 9.58              | 51.22            | 39.85          | 74.00            | 54.00          | X/H  |

**Remark :**

- (1) Spectrum Setting :  
 QP: 30MHz – 1000MHz: RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.  
 Peak: 1GHz- 25GHz: RBW= 1MHz, VBW= 1MHz, Sweep time = Auto  
 AV: 1GHz- 25GHz: RBW= 1MHz, VBW= 10Hz, Sweep time = Auto
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (8) During the measurements above 1GHz it is taken care of that the EUT is always within the 3dB cone of radiation BW of the used antenna.



Orthogonal Axes : X  
2473MHz (Above 1000 MHz, Vertical)





|               |               |                     |        |
|---------------|---------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse | Model No. :         | G9-400 |
| Temperature : | 26 °C         | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V       |                     |        |
| Test Mode :   | 2473MHz       |                     |        |

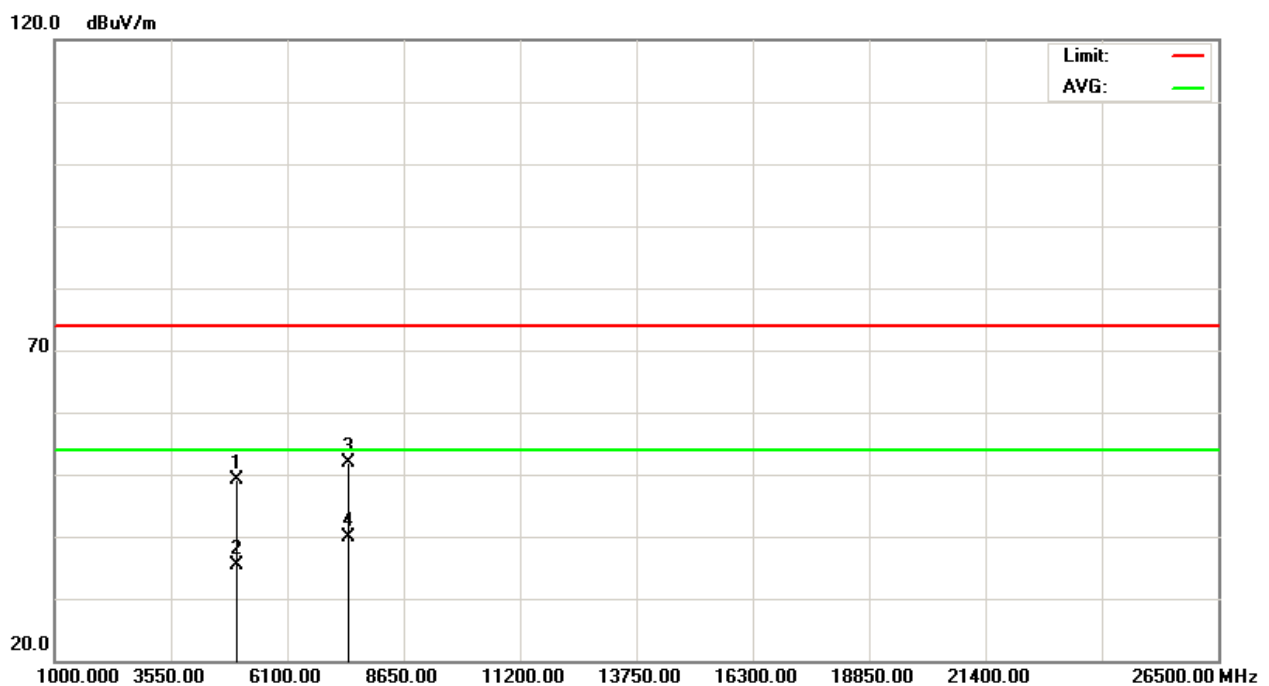
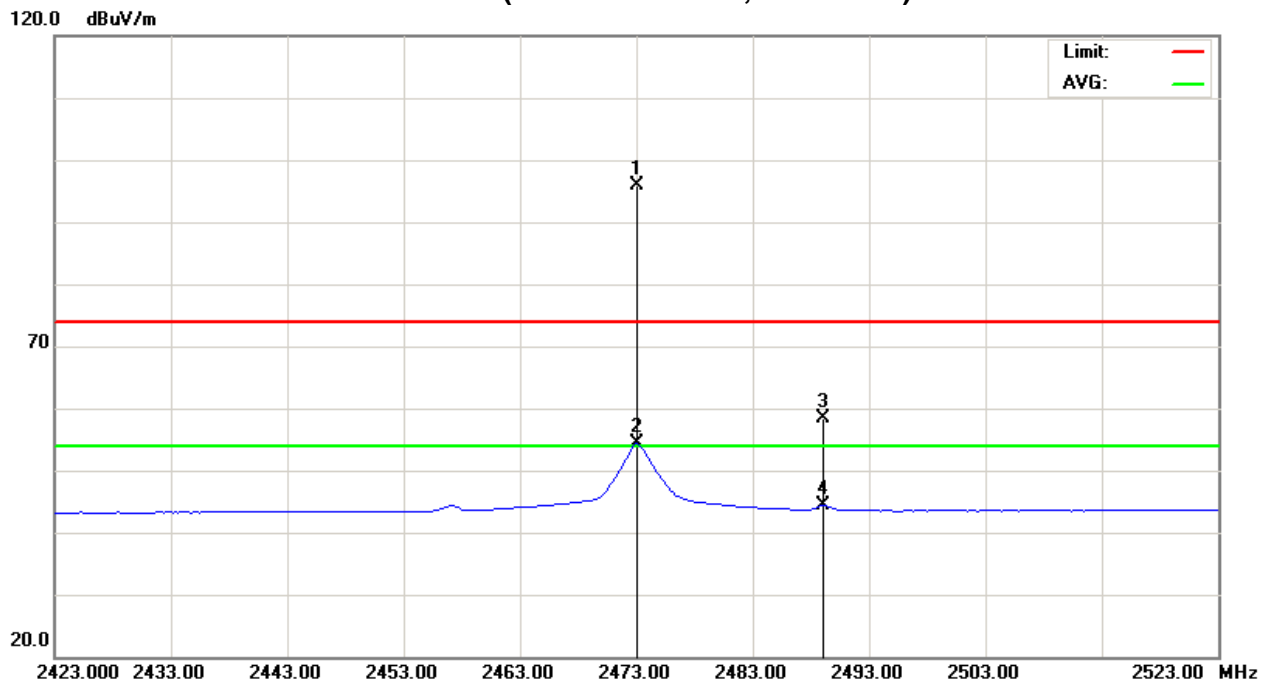
| Freq.<br>(MHz) | Ant. Pol.<br>H/V | Reading        |              | Ant./CF<br>CF(dB) | Act.             |                | Limit            |                | Note |
|----------------|------------------|----------------|--------------|-------------------|------------------|----------------|------------------|----------------|------|
|                |                  | Peak<br>(dBuV) | AV<br>(dBuV) |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | Peak<br>(dBuV/m) | AV<br>(dBuV/m) |      |
| 2473.00        | H                | 63.69          | 22.07        | 32.25             | 95.94            | 54.32          |                  |                | X/F  |
| 2488.90        | H                | 26.18          | 12.02        | 32.31             | 58.49            | 44.33          | 74.00            | 54.00          | X/E  |
| 4946.01        | H                | 45.02          | 31.17        | 4.19              | 49.21            | 35.36          | 74.00            | 54.00          | X/H  |
| 7419.07        | H                | 42.33          | 30.33        | 9.58              | 51.91            | 39.91          | 74.00            | 54.00          | X/H  |

**Remark :**

- (1) Spectrum Setting :  
 QP: 30MHz – 1000MHz: RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.  
 Peak: 1GHz- 25GHz: RBW= 1MHz, VBW= 1MHz, Sweep time = Auto  
 AV: 1GHz- 25GHz: RBW= 1MHz, VBW= 10Hz, Sweep time = Auto
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (8) During the measurements above 1GHz it is taken care of that the EUT is always within the 3dB cone of radiation BW of the used antenna.



Orthogonal Axes : X  
2473MHz (Above 1000 MHz, Horizontal)





#### 4.1.9 TEST RESULTS-RESTRICTED BANDS REQUIREMENTS

|               |   |                     |        |
|---------------|---|---------------------|--------|
| EUT :         | 2.4G RF Mouse   | Model No. :         | G9-400 |
| Temperature : | 26 °C   | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V   |                     |        |
| Test Mode :   | TX CH 2407MHz/2473MHz(Vertical)   |                     |        |
| Note :        | <p>The emission of the carrier radiated field strength is measured for (Peak and AV) as following:</p> <ol style="list-style-type: none"> <li>1. The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel (2407MHz). Then the field strength was measured at 2310-2390 MHz.</li> <li>2. The transmitter was configured with the worst case antenna and setup to transmit at the highest channel (2473MHz). Then the field strength was measured at 2483.5-2500 MHz.</li> </ol> |                     |        |

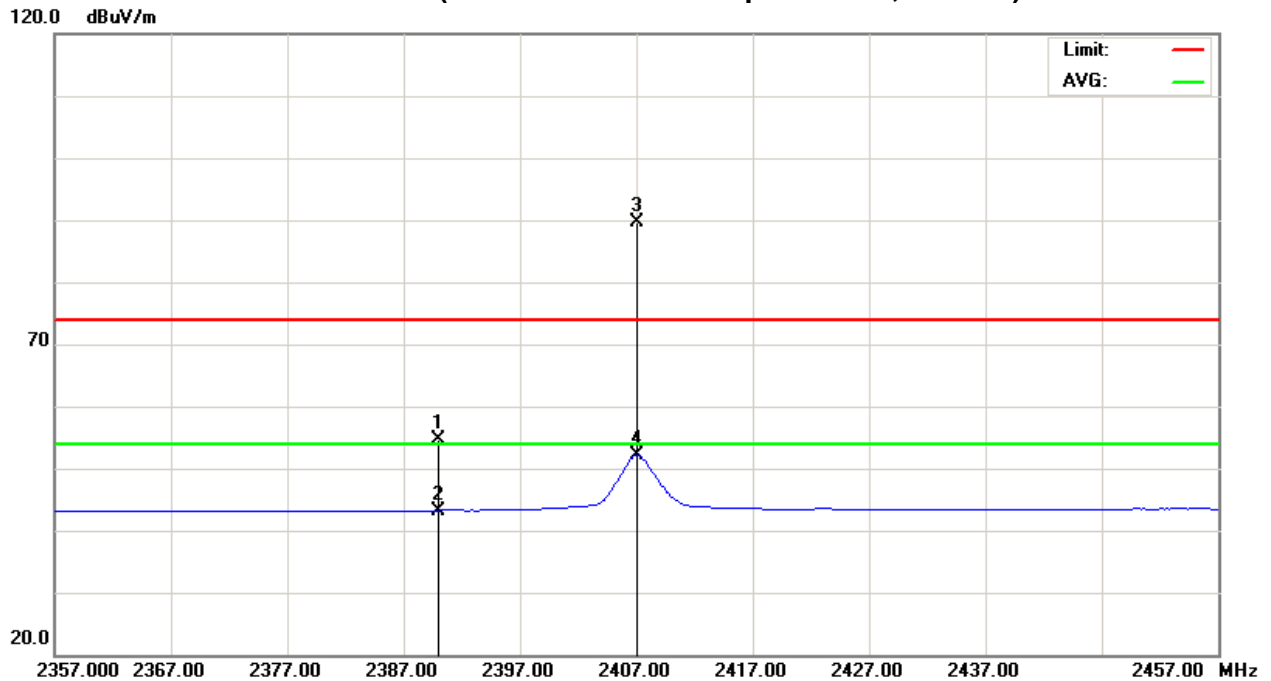
| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Reading        |              | Ant./CF<br>CF(dB) | Act.             |                | Limit            |                | Note |
|----------------|-----------------|----------------|--------------|-------------------|------------------|----------------|------------------|----------------|------|
|                |                 | Peak<br>(dBuV) | AV<br>(dBuV) |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | Peak<br>(dBuV/m) | AV<br>(dBuV/m) |      |
| 2390.00        | V               | 22.62          | 11.31        | 31.93             | 54.55            | 43.24          | 74.00            | 54.00          | CH00 |
| 2483.50        | V               | 25.16          | 11.41        | 32.29             | 57.45            | 43.70          | 74.00            | 54.00          | CH28 |

**Remark :**

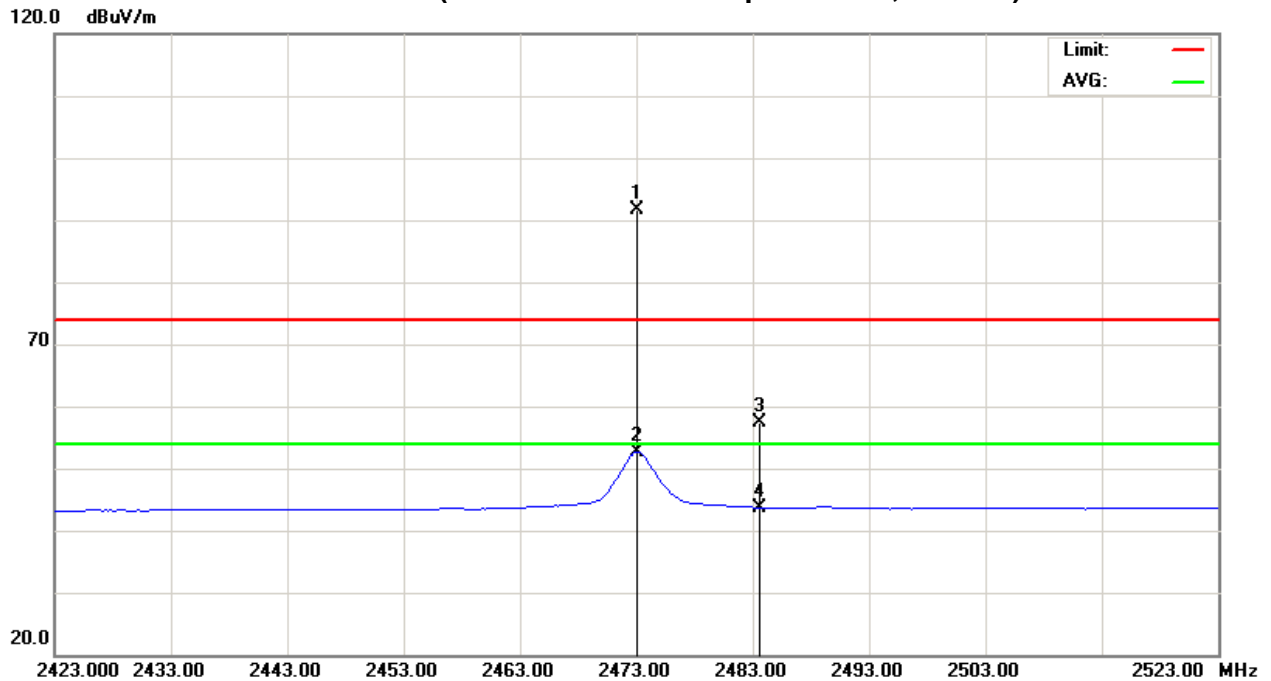
- (1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission °
- (2) EUT Orthogonal Axes :  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand



### TX 2407MHz (Restricted Bands Requirements, Vertical)



### TX 2473MHz (Restricted Bands Requirements, Vertical)





|               |   |                     |        |
|---------------|---|---------------------|--------|
| EUT :         | 2.4G RF Mouse   | Model No. :         | G9-400 |
| Temperature : | 26 °C   | Relative Humidity : | 60%    |
| Test Power :  | DC 1.5V   |                     |        |
| Test Mode :   | TX CH 2407MHz/2473MHz (Horizontal)  |                     |        |
| Note :        | <p>The emission of the carrier radiated field strength is measured for (Peak and AV) as following:</p> <ol style="list-style-type: none"> <li>1. The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel (2407MHz). Then the field strength was measured at 2310-2390 MHz.</li> <li>2. The transmitter was configured with the worst case antenna and setup to transmit at the highest channel (2473MHz). Then the field strength was measured at 2483.5-2500 MHz.</li> </ol> |                     |        |

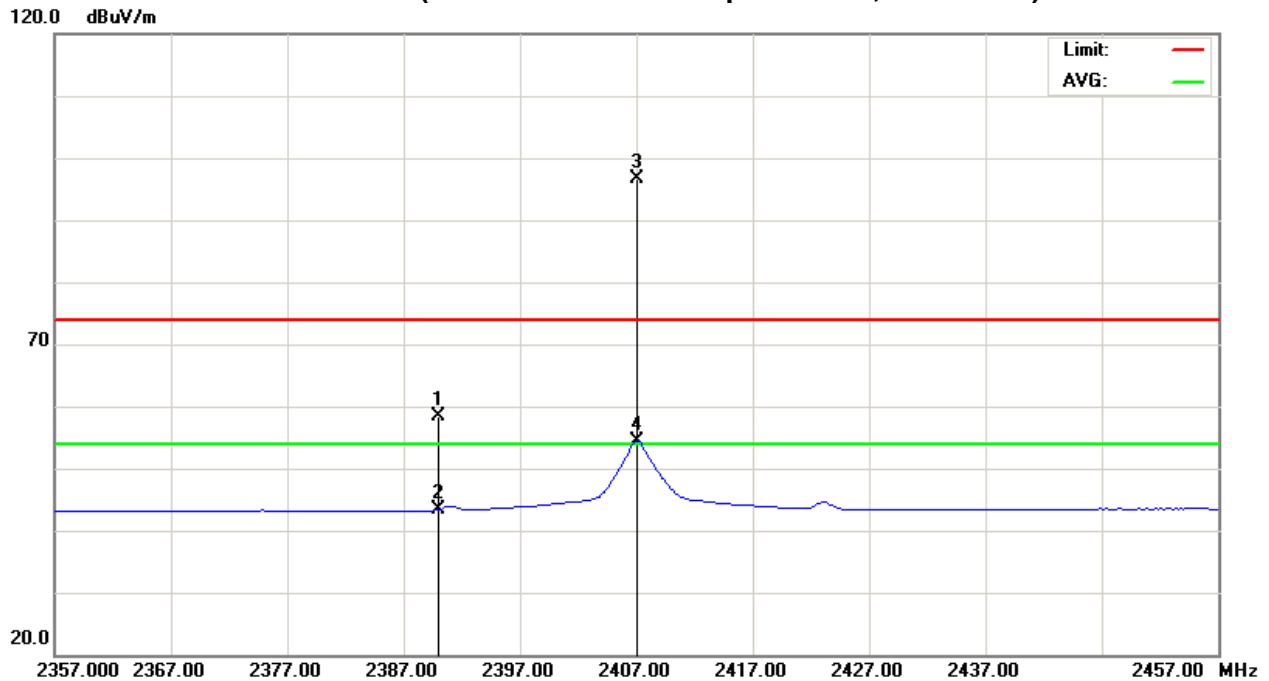
| Freq.<br>(MHz) | Ant. Pol.<br>H/V | Reading        |              | Ant./CF<br>CF(dB) | Act.             |                | Limit            |                | Note |
|----------------|------------------|----------------|--------------|-------------------|------------------|----------------|------------------|----------------|------|
|                |                  | Peak<br>(dBuV) | AV<br>(dBuV) |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | Peak<br>(dBuV/m) | AV<br>(dBuV/m) |      |
| 2390.00        | H                | 26.53          | 11.42        | 31.93             | 58.46            | 43.35          | 74.00            | 54.00          | CH00 |
| 2488.90        | H                | 26.18          | 12.02        | 32.31             | 58.49            | 44.33          | 74.00            | 54.00          | CH28 |

**Remark :**

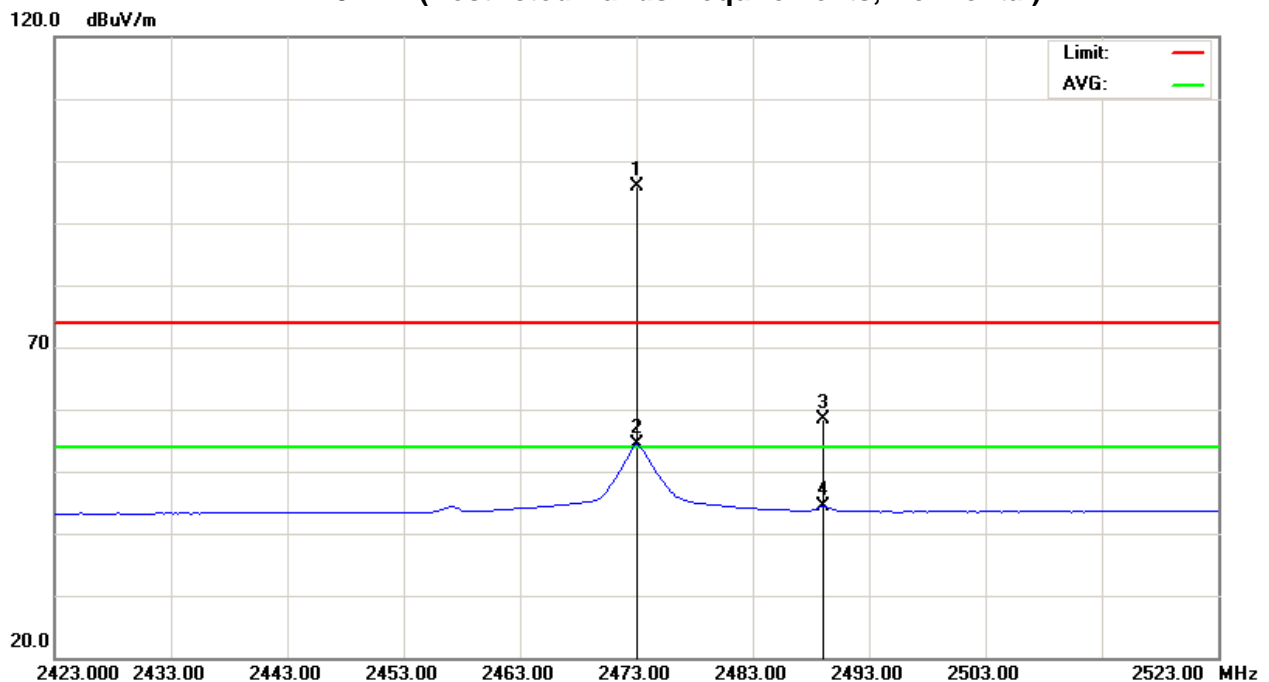
- (1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (2) EUT Orthogonal Axes :  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand



### TX 2407MHz (Restricted Bands Requirements, Horizontal)



### TX 2473MHz (Restricted Bands Requirements, Horizontal)





## 5. BANDWIDTH TEST

### 5.1 APPLIED PROCEDURES / LIMIT

| FCC Part15, Subpart C |   |                       |        |
|-----------------------|---|-----------------------|--------|
| Test Item             | Limit                                   | Frequency Range (MHz) | Result |
| Bandwidth             | $\geq 500\text{KHz}$<br>(6dB bandwidth) | 2400-2483.5           | PASS   |

#### 5.1.1 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------|--------------|----------|------------|------------------|
| 1    | Spectrum Analyzer | R&S          | FSL-6    | 100257     | Jul. 06, 2010    |

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

#### 5.1.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

#### 5.1.3 DEVIATION FROM STANDARD

No deviation.

#### 5.1.4 TEST SETUP



#### 5.1.5 EUT OPERATION CONDITIONS

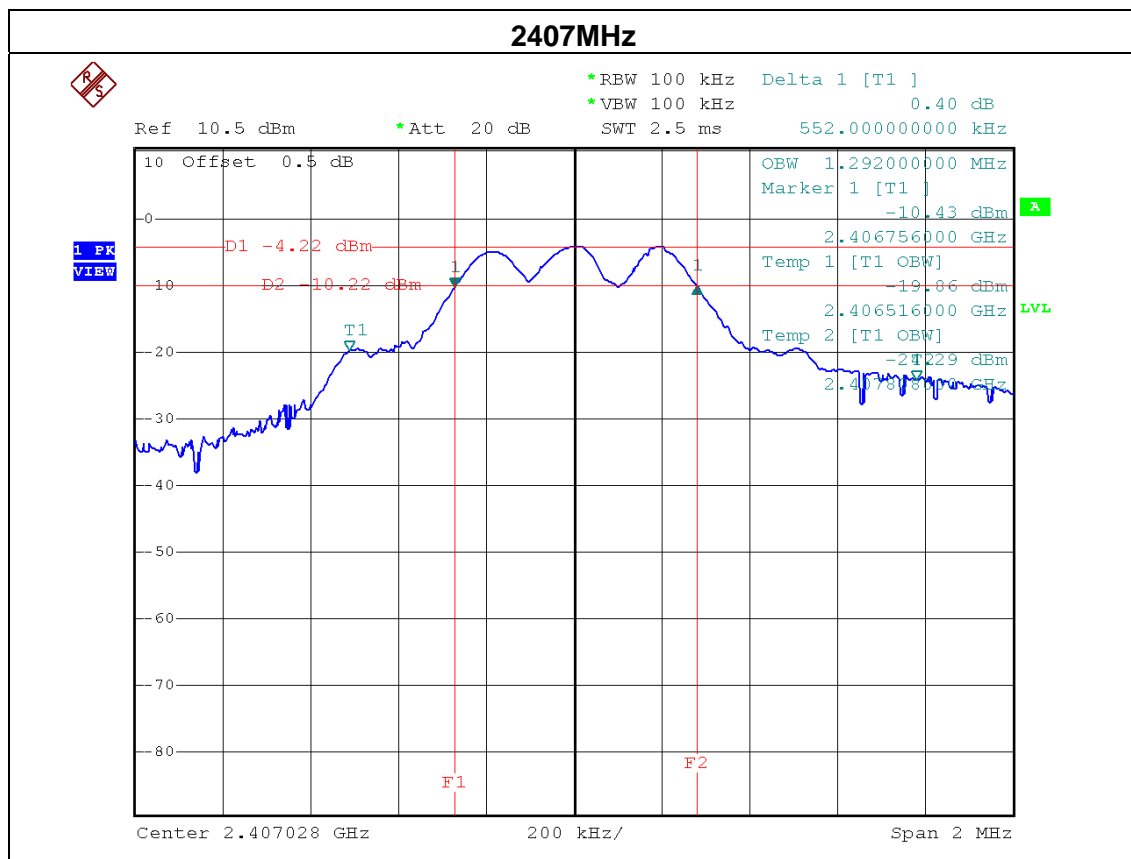
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

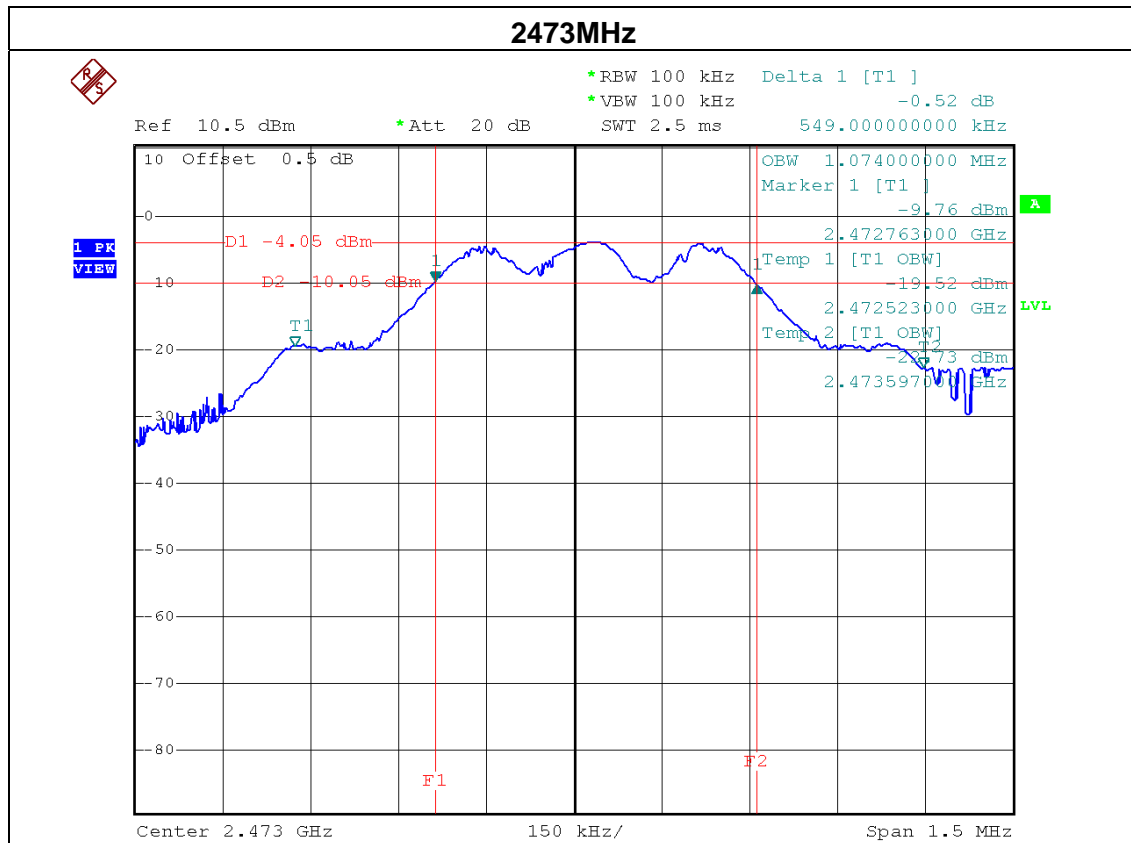
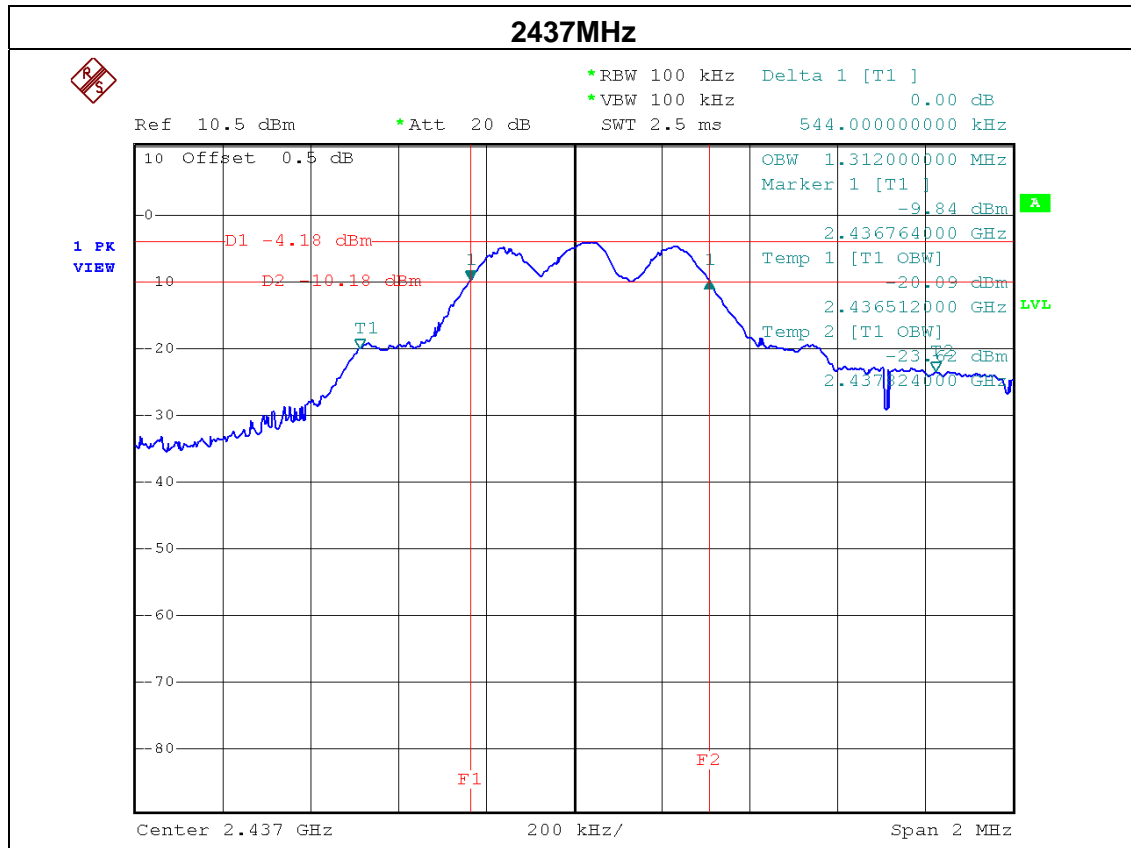


### 5.1.6 TEST RESULTS

|               |                         |                     |        |
|---------------|-------------------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse           | Model No. :         | G9-400 |
| Temperature : | 23°C                    | Relative Humidity : | 54%    |
| Test Power :  | AC 120V/60Hz            |                     |        |
| Test Mode :   | 2407MHz/2437MHz/2473MHz |                     |        |

| Test Channel | Frequency (MHz) | Bandwidth (MHz) | 99% Occupied BW (MHz) | LIMIT (MHz) |
|--------------|-----------------|-----------------|-----------------------|-------------|
| 2407MHz      | 2407            | 0.55            | 1.29                  | >=500KHz    |
| 2437MHz      | 2439            | 0.54            | 1.31                  | >=500KHz    |
| 2473MHz      | 2473            | 0.55            | 1.07                  | >=500KHz    |







## 6. PEAK OUTPUT POWER TEST

### 6.1 APPLIED PROCEDURES / LIMIT

| FCC Part15, Subpart C |                 |                       |        |
|-----------------------|-----------------|-----------------------|--------|
| Test Item             | Limit           | Frequency Range (MHz) | Result |
| Peak Output Power     | 1 watt or 30dBm | 2400-2483.5           | PASS   |

#### 6.1.1 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment  | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|--------------------|--------------|----------|------------|------------------|
| 1    | Power Meter        | Anritsu      | ML2487A  | 6K00004714 | Feb. 10, 2011    |
| 2    | Power Meter Sensor | Anritsu      | MA2491A  | 34138      | Feb. 10, 2011    |

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

#### 6.1.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,

#### 6.1.3 DEVIATION FROM STANDARD

No deviation.

#### 6.1.4 TEST SETUP



#### 6.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



#### 6.1.6 TEST RESULTS

|               |                         |                     |        |
|---------------|-------------------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse           | Model No. :         | G9-400 |
| Temperature : | 23 °C                   | Relative Humidity : | 54%    |
| Test Power :  | AC 120V/60Hz            |                     |        |
| Test Mode :   | 2407MHz/2437MHz/2473MHz |                     |        |

| Test Channel | Frequency<br>(MHz) | Peak Output Power<br>(dBm) | LIMIT<br>(dBm) | LIMIT<br>(W) |
|--------------|--------------------|----------------------------|----------------|--------------|
| 2407MHz      | 2407               | -2.42                      | 30             | 1            |
| 2437MHz      | 2437               | -2.01                      | 30             | 1            |
| 2473MHz      | 2473               | -2.42                      | 30             | 1            |



## 7. ANTENNA CONDUCTED SPURIOUS EMISSION

### 7.1 APPLIED PROCEDURES / LIMIT

| FCC Part15, Subpart C               |  |                       |        |
|-------------------------------------|--|-----------------------|--------|
| Test Item                           | Limit  | Frequency Range (MHz) | Result |
| Antenna conducted Spurious Emission | 20dB less than the peak value of fundamental frequency | 30-25000              | PASS   |

#### 7.1.1 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------|--------------|----------|------------|------------------|
| 1    | Spectrum Analyzer | R&S          | FSL-6    | 100257     | Jul. 06, 2010    |

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

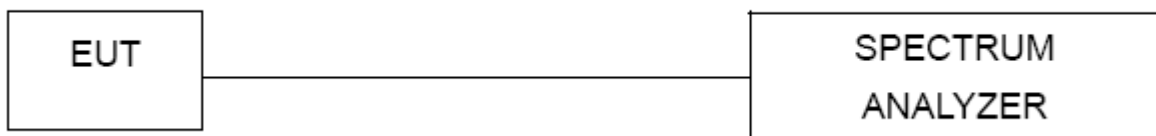
#### 7.1.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

#### 7.1.3 DEVIATION FROM STANDARD

No deviation.

#### 7.1.4 TEST SETUP



#### 7.1.5 EUT OPERATION CONDITIONS

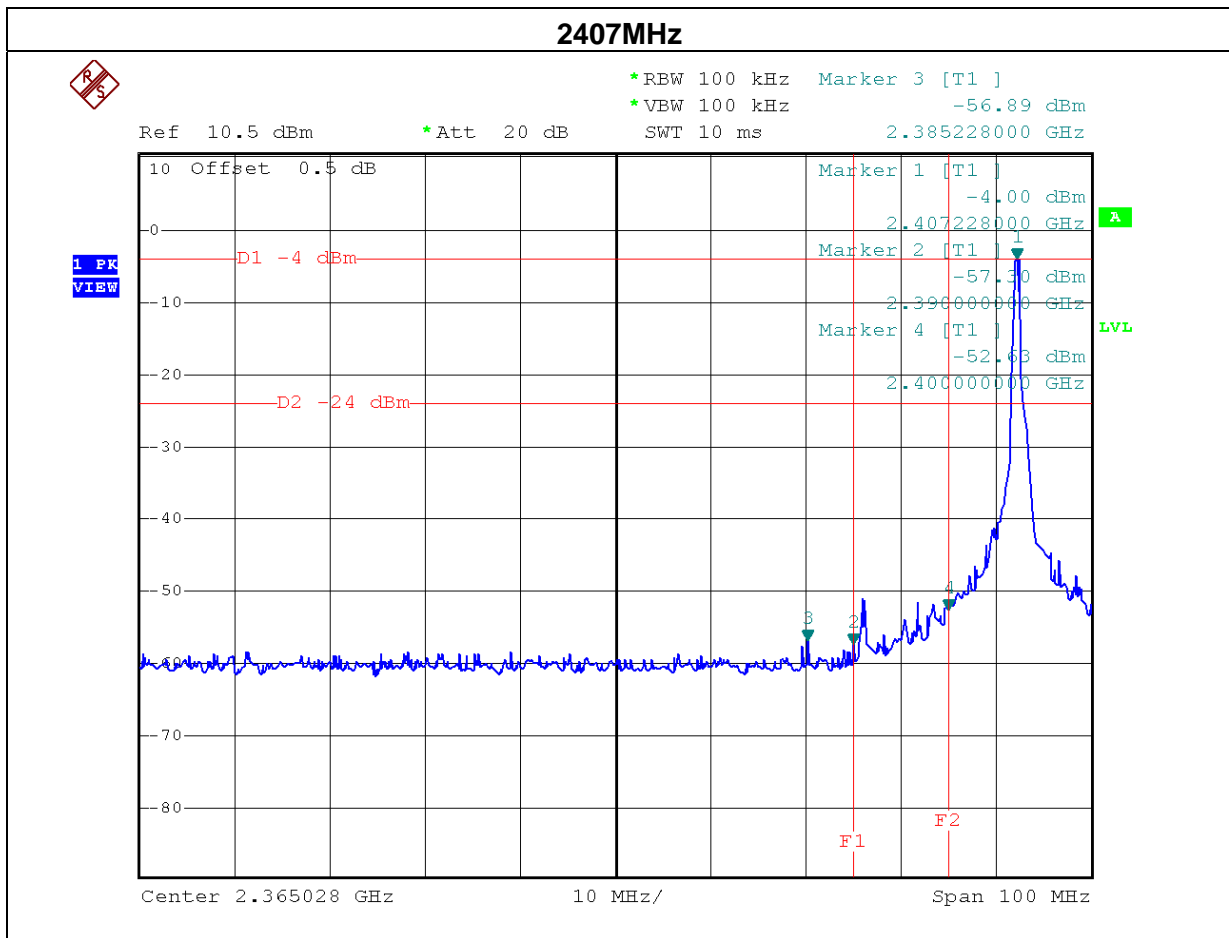
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

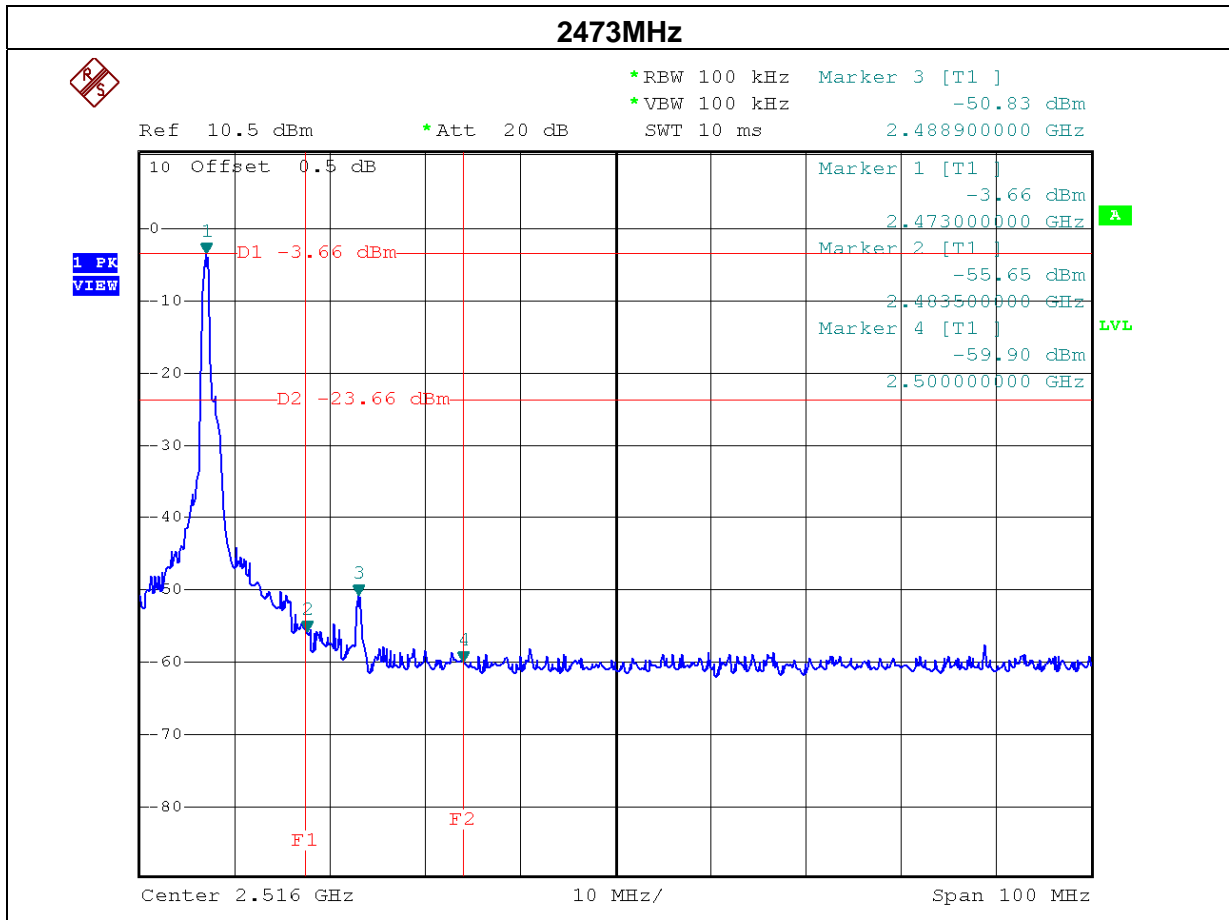


### 7.1.6 TEST RESULTS

|               |                 |                     |        |
|---------------|-----------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse   | Model No. :         | G9-400 |
| Temperature : | 23°C            | Relative Humidity : | 54%    |
| Test Power :  | AC 120V/60Hz    |                     |        |
| Test Mode :   | 2407MHz/2473MHz |                     |        |

| Channel of Worst Data: 2407MHz,2473MHz  |            |  |            |
|---|------------|--|------------|
| The max. radio frequency power in any 100kHz bandwidth outside the frequency band   |            | The max. radio frequency power in any 100 kHz bandwidth within the frequency band. |            |
| FREQUENCY(MHz)  | POWER(dBm) | FREQUENCY(MHz)   | POWER(dBm) |
| 2385.228  | -56.89     | 2488.9   | -50.83     |
| Result  |            |  |            |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. |            |  |            |







## 8. POWER SPECTRAL DENSITY TEST

### 8.1 APPLIED PROCEDURES / LIMIT

| FCC Part15, Subpart C  |                        |                       |        |
|------------------------|------------------------|-----------------------|--------|
| Test Item              | Limit                  | Frequency Range (MHz) | Result |
| Power Spectral Density | 8 dBm<br>(in any 3KHz) | 2400-2483.5           | PASS   |

#### 8.1.1 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------|--------------|----------|------------|------------------|
| 1    | Spectrum Analyzer | R&S          | FSP-40   | 100129     | Sep. 10, 2010    |

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

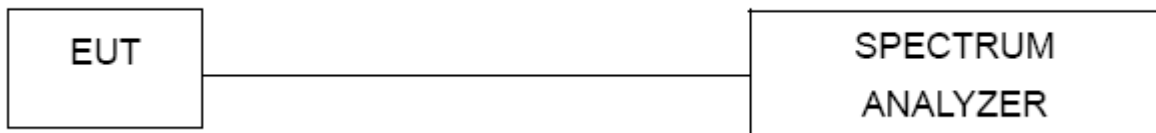
#### 8.1.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW=3KHz, VBW=30KHz, Sweep time = 500s.

#### 8.1.3 DEVIATION FROM STANDARD

No deviation.

#### 8.1.4 TEST SETUP



#### 8.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



### 8.1.6 TEST RESULTS

|               |                         |                     |        |
|---------------|-------------------------|---------------------|--------|
| EUT :         | 2.4G RF Mouse           | Model No. :         | G9-400 |
| Temperature : | 23 °C                   | Relative Humidity : | 54%    |
| Test Power :  | AC 120V/60Hz            |                     |        |
| Test Mode :   | 2407MHz/2437MHz/2473MHz |                     |        |

| Test Channel | Frequency (MHz) | Power Density (dBm) | LIMIT (dBm) |
|--------------|-----------------|---------------------|-------------|
| 2407MHz      | 2407            | -11.89              | 8           |
| 2437MHz      | 2437            | -11.82              | 8           |
| 2473MHz      | 2473            | -12.06              | 8           |

