

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT**

OF

Wireless Mouse

Model No.: GD7820, LD-900, LD-901, LD-902, LD-903, LD-905, LD-906, LD-907, LD-908, LD-909, LD-910, LD-911, LD-912, LD-913, LD-914, LD-915, LD-916, LD-918, LD-920, LD-925, LD-930, LD-933, LD-934, LD-935, LD-936, LD-938, LD-940, LD-944, LD-950, LD-955, LD-956, LD-958, LD-960, LD-961, LD-963, LD-965, LD-966, LD-968, LD-969, LD-970, LD-971, LD-972, LD-977, LD-978, LD-979, LD-982, LD-984, LD-985, LD-986, LD-988, LD-990, LD-995, LD-996, LD-998, M300

Trade Mark: N/A

FCC ID: 2ACKHGD7820

Report No.: EA1908196F 02001

Issue Date: August 24, 2019

Prepared for

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Prepared by

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Dongguan City, Guangdong Pr., China.**

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Dong Guan Anci Electronic Technology Co., Ltd.**

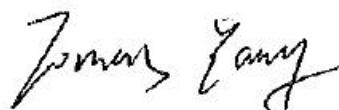
VERIFICATION OF COMPLIANCE

| | |
|----------------------|--|
| Applicant: | Shenzhen Lord Way Technology Co., Ltd Building 5, Jinhengli Industrial Park, Jiangbian Village, Chuangye 3rd Road, Songgang Town, Baoan District, Shenzhen |
| Manufacturer: | Shenzhen Lord Way Technology Co., Ltd Building 5, Jinhengli Industrial Park, Jiangbian Village, Chuangye 3rd Road, Songgang Town, Baoan District, Shenzhen |
| Product Description: | Wireless Mouse |
| Trade Mark: | N/A |
| Model Number: | GD7820, LD-900, LD-901, LD-902, LD-903, LD-905, LD-906, LD-907, LD-908, LD-909, LD-910, LD-911, LD-912, LD-913, LD-914, LD-915, LD-916, LD-918, LD-920, LD-925, LD-930, LD-933, LD-934, LD-935, LD-936, LD-938, LD-940, LD-944, LD-950, LD-955, LD-956, LD-958, LD-960, LD-961, LD-963, LD-965, LD-966, LD-968, LD-969, LD-970, LD-971, LD-972, LD-977, LD-978, LD-979, LD-982, LD-984, LD-985, LD-986, LD-988, LD-990, LD-995, LD-996, LD-998, M300 (Note:All models are identical except for the model and Brand. So we choose GD7820 to do all the tests.) |

We hereby certify that:

The above equipment was tested by Dong Guan Anci Electronic Technology Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.249(2018).

Date of Test :

August 21, 2019 to August 26, 2019


Prepared by :

Tomas Yang/Supervisor


Reviewer & Approved :

Alan He/Manager

Modified Information

| Version | Summary | Revision Date | Report No. |
|---------|-----------------|---------------|------------------|
| Ver.1.0 | Original Report | / | EA1908196F 02001 |
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Appendix I (Photos of EUT) (4 pages)

1. General Information

1.1 Product Description

| Characteristics | Description |
|---------------------------|----------------------|
| Product Name | Wireless Mouse |
| Model number | GD7820 |
| Input rating | Battery 1.5V |
| Test Power Supply | Battery 1.5V |
| Modulation | FSK |
| Operating Frequency Range | 2408-2474MHz |
| Number of Channels | 34 |
| Antenna Type | Internal PCB antenna |
| Antenna Gain | -0.61dBi |

1.2 Test Facility

Site Description

- EMC Lab. : Accredited by CNAS, 2017.06.26
The certificate is valid until 2022.10.28
The Laboratory has been assessed and proved to be in
compliance with CNAS-CL01:2006 (identical to ISO/IEC
17025:2005)
The Certificate Registration Number is L0468.
- Name of Firm : Dong Guan Anci Electronic Technology Co., Ltd.
- Site Location : 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan,
Lake Hi-tech Industrial Development Zone, Dongguan City,
Development Zone, Dongguan City, Guangdong Pr., China.

2. Test Configuration

EUT

Table 2-1 Equipment Used in Tested System

| Item | Equipment | Trade Mark | Model No. | FCC ID | Note |
|------|----------------|------------|-----------|-------------|------------|
| 1. | Wireless Mouse | N/A | GD7820 | 2ACKHGD7820 | EUT |

Note:

- (1) Unless otherwise denoted as EUT in 『Remark』 column , device(s) used in tested system is a support equipment.

3. Summary of Test Results

| FCC Rules | Description Of Test | Result |
|-----------------|---|----------|
| §15.207 | AC Power Conducted Emission | N/A |
| §2.1049/15.215c | 20dB Bandwidth | Complies |
| §15.249/15.205 | Band Edge | Complies |
| §15.249(a) | Field Strength of Fundamental Emissions | Complies |
| §15.249(a)(d) | Radiated Spurious Emissions | Complies |
| §15.203 | Antenna Requirements | Complies |

Remark: The product was tested under the battery fully charged.

4. Description of test modes

The EUT has been tested under its typical operating condition and fully-charged battery for EUT tested alone. Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting. Only the worst case data were reported.

The EUT has been associated with peripherals pursuant to ANSI C63.10-2013 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation (9 KHz to the 10th harmonics of the highest fundamental frequency or to 40 GHz, whichever is lower).

For Radiated: The EUT's antenna was pre-tested under the following modes:

| Test Mode | Description |
|---------------|-----------------|
| Mode A | X-Y axis |
| Mode B | Y-Z axis |
| Mode C | X-Z axis |

From the above modes, the worst case was found in Mode A. Therefore only the test data of the mode was recorded in this report.

The test mode is programmed on the EUT. The measurements are performed at Channel 1 (2408MHz), Channel 17 (2440MHz) and Channel 34 (2474MHz) are chosen for the final testing.

Channel List:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|-----------|-----------------|-----------|-----------------|---------|-----------------|
| 1 | 2408 | 2 | 2410 | 3 | 2412 |
| 4 | 2414 | 5 | 2416 | 6 | 2418 |
| 7 | 2420 | 8 | 2422 | 9 | 2424 |
| 10 | 2426 | 11 | 2428 | 12 | 2430 |
| 13 | 2432 | 14 | 2434 | 15 | 2436 |
| 16 | 2438 | 17 | 2440 | 18 | 2442 |
| 19 | 2444 | 20 | 2446 | 21 | 2448 |
| 22 | 2450 | 23 | 2452 | 24 | 2454 |
| 25 | 2456 | 26 | 2458 | 27 | 2460 |
| 28 | 2462 | 29 | 2464 | 30 | 2466 |
| 31 | 2468 | 32 | 2470 | 33 | 2472 |
| 34 | 2474 | | | | |

5. TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Parameter | Uncertainty |
|--------------------------------|------------------------------------|
| Radio Frequency | $\pm 1 \times 10^{-5}$ |
| Maximum Peak Output Power Test | $\pm 1.0 \text{ dB}$ |
| Conducted Emissions Test | $\pm 2.0 \text{ dB}$ |
| Radiated Emission Test | $\pm 2.0 \text{ dB}$ |
| Power Density | $\pm 2.0 \text{ dB}$ |
| Occupied Bandwidth Test | $\pm 1.0 \text{ dB}$ |
| Band Edge Test | $\pm 3 \text{ dB}$ |
| All emission, radiated | $\pm 3 \text{ dB}$ |
| Antenna Port Emission | $\pm 3 \text{ dB}$ |
| Temperature | $\pm 0.5 \text{ }^{\circ}\text{C}$ |
| Humidity | $\pm 3\%$ |

Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%.

6. 20dB Bandwidth test

6.1 Measurement Procedure

The EUT was operating in hopping mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

6.2 Test SET-UP (Block Diagram of Configuration)



6.3 Measurement Equipment Used:

| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | Calibrated until |
|-------------------|-----------------------|---------------------------|---------------|------------------|
| Spectrum Analyzer | Rohde & Schwarz | FSV40 | 102257 | 2019-11-28 |
| RF Cable | Gigalink Microwave | ZT40-2.92J-2.92J-0 .3m | RF Cable | 2020-03-06 |
| Antenna Connector | ARTHUR-YANG | 2244-N1TG1 | N/A | N/A |

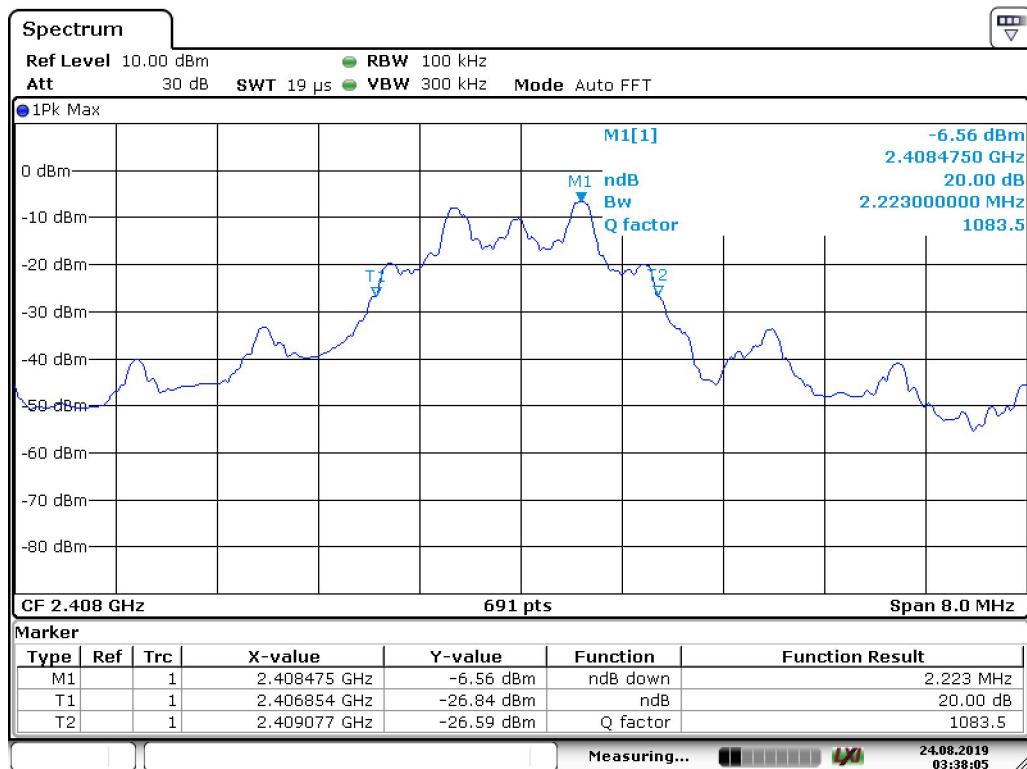
Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list. The cable loss is 0.4dBm, and impedance is $50\ \Omega$ for the antenna connector.

6.4 Measurement Results:

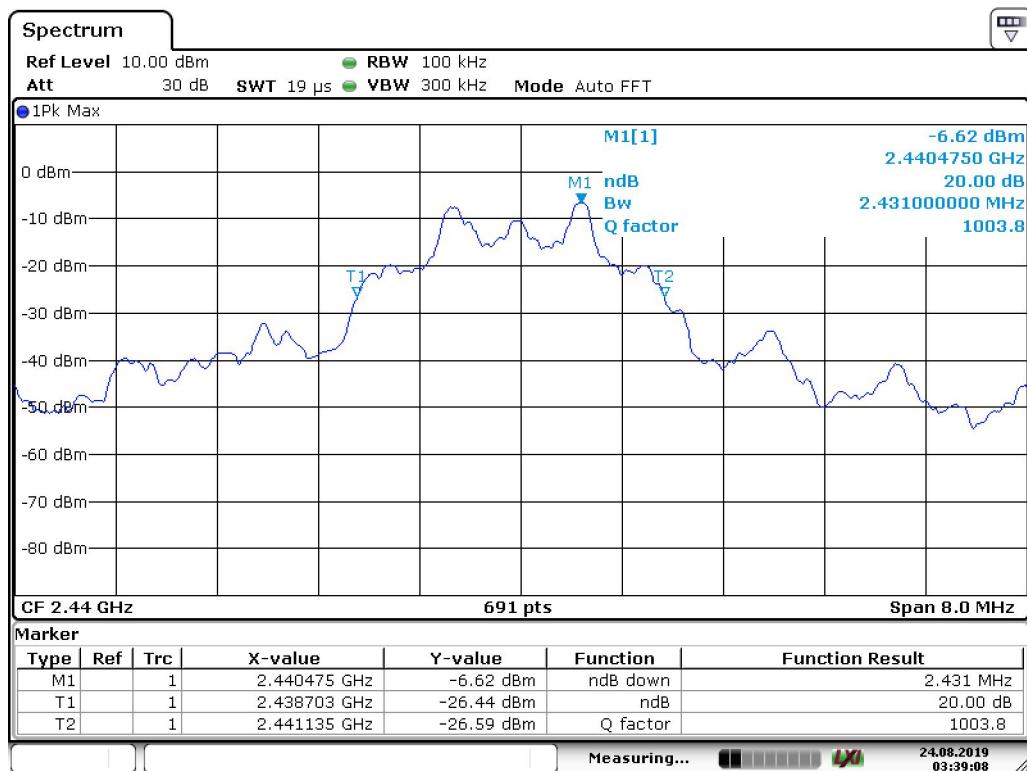
Refer to attached data chart.

| | | | |
|--------------------|------|---------------|-----------------|
| Spectrum Detector: | PK | Test Date : | August 24, 2019 |
| Test By: | Best | Temperature : | 24°C |
| Test Result: | PASS | Humidity : | 53 % |
| Modulation: | FSK | | |

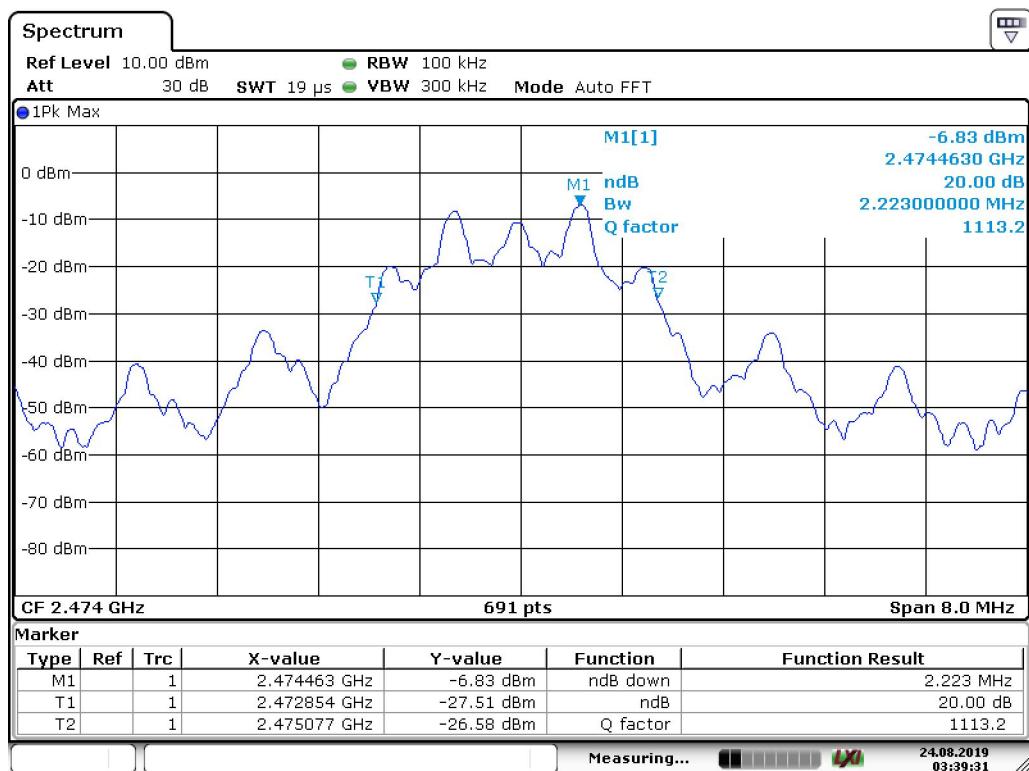
| Channel frequency (MHz) | 20dB Down BW(kHz) |
|-------------------------|-------------------|
| 2408 | 2223 |
| 2440 | 2431 |
| 2474 | 2223 |



Date: 24.AUG.2019 03:38:05



Date: 24.AUG.2019 03:39:08



Date: 24.AUG.2019 03:39:31

7. Band EDGE test

7.1 Measurement Procedure

The EUT was placed on a styrofoam table which is 1.5m above ground plane.

The measurement procedure at the ban edges was simplified by performing the measurement in just one plot. Both, the in-band-emission and the unwanted emission were be encompassed by the span. After trace stabilization, the maximum peak was be determined by a peak detector and the value was marked by an appropriate limit line. The second limit line, which is 20dB below the first, marks the limit for the emissions in the unrestricted band. A maximum-peak-detector marks the highest emission in the unrestricted band next to the band edge.

The measurements were performed at the lower end of the 2.4GHz band.
Use the following spectrum analyzer settings:

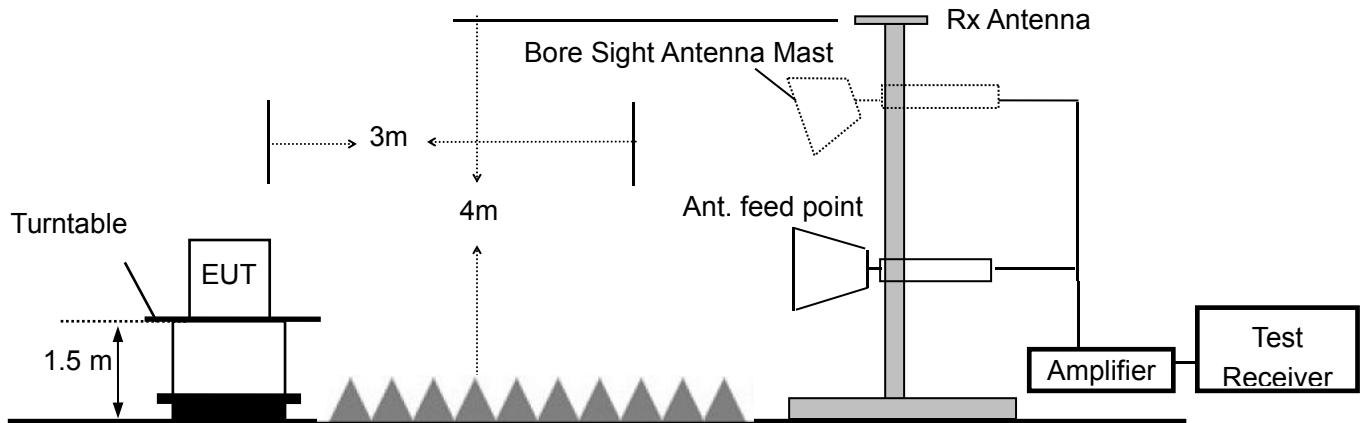
When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 3MHz:

| EMI Test Receiver | Setting |
|-------------------|----------|
| Attenuation | Auto |
| RB | 1MHz |
| VB | 3MHz |
| Detector | Peak |
| Trace | Max hold |

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 10Hz:

| EMI Test Receiver | Setting |
|-------------------|----------|
| Attenuation | Auto |
| RB | 1MHz |
| VB | 10Hz |
| Detector | Peak |
| Trace | Max hold |

7.2 Test SET-UP (Block Diagram of Configuration)



7.3 Measurement Equipment Used:

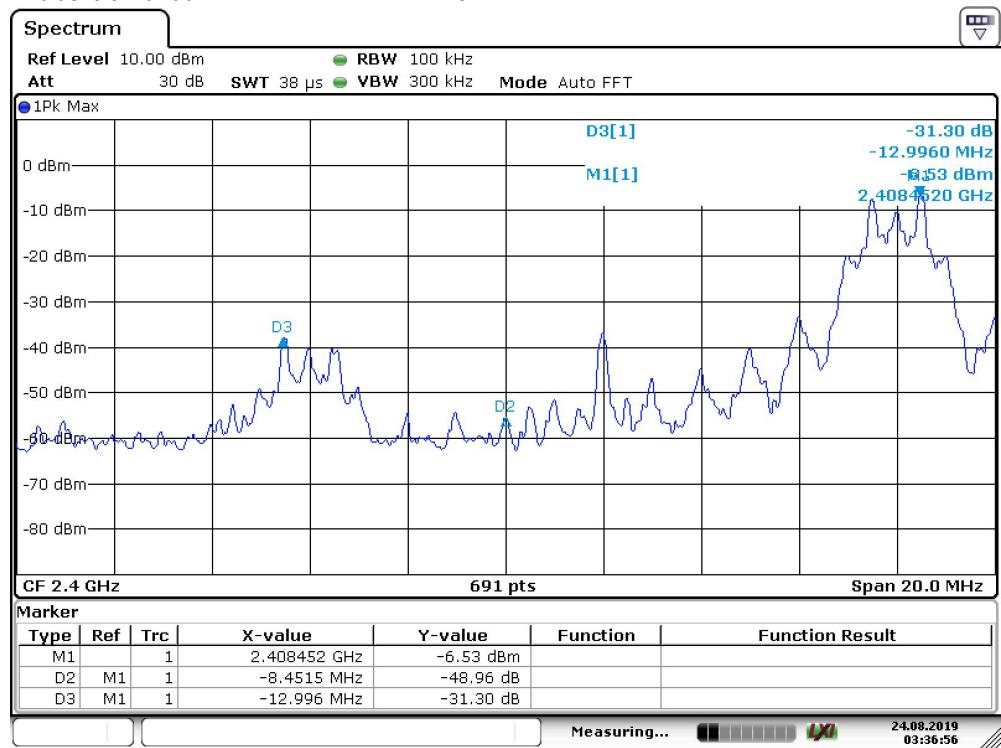
| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|------|----------------------|--------------------|------------------------|----------------|------------------|
| 1 | Spectrum Analyzer | Rohde & Schwarz | FSV40 | US40240623 | 2019-11-28 |
| 2 | Low noise Amplifiers | A-INFO | LA1018N4009 | J1013130524001 | 2020-05-19 |
| 3 | Horn antenna | A-INFO | LB-10180-SF | J2031090612123 | 2020-05-19 |
| 4 | RF Cable | Gigalink Microwave | ZT40-2.92J-2.92 J-2m | N/A | 2020-03-07 |
| 5 | RF Cable | Gigalink Microwave | ZT40-2.92J-2.92 J-0.3m | N/A | 2020-03-07 |

7.4 Measurement Results:

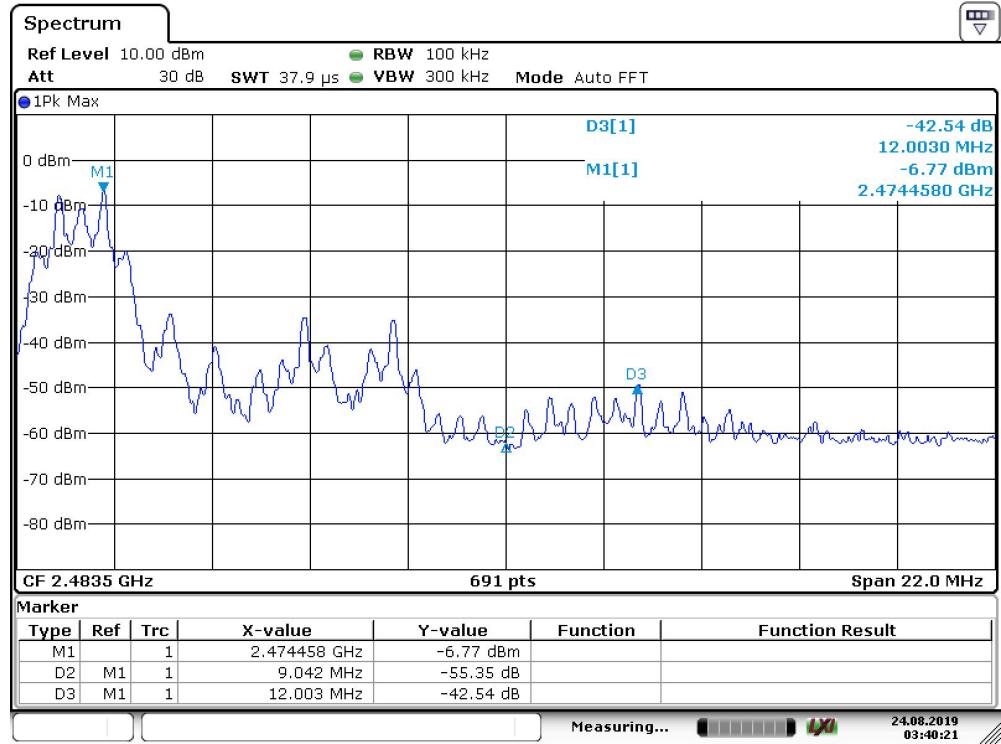
Spectrum Detector: PK Test Date : August 24, 2019
Test By: Best Temperature : 25 °C
Test Result: PASS Humidity : 50 %

1. Conducted Test

| Frequency (MHz) | Modulation | Peak Power Output(dBm) | Result of Band edge(dBc) | Band edge Limit(dBc) |
|-----------------|------------|------------------------|--------------------------|----------------------|
| 2395.46 | GFSK | -6.53 | 31.3 | >20dBc |
| 2486.46 | GFSK | -6.77 | 42.54 | >20dBc |

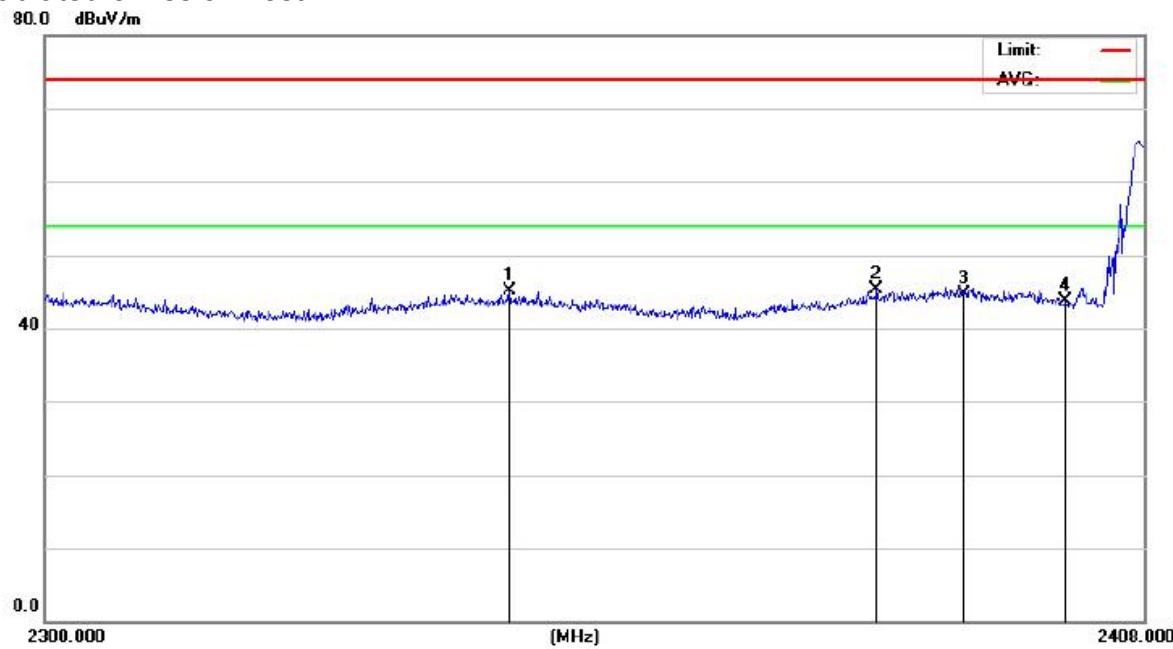


Date: 24.AUG.2019 03:36:56



Date: 24.AUG.2019 03:40:21

2. Radiated emission Test



Site 843

Polarization: **Horizontal**

Temperature: 24.5(C)

Limit: FCC Part 15 C 3m Above1G(Peak)

Power: Battery 1.5V

Humidity: 54.6 %

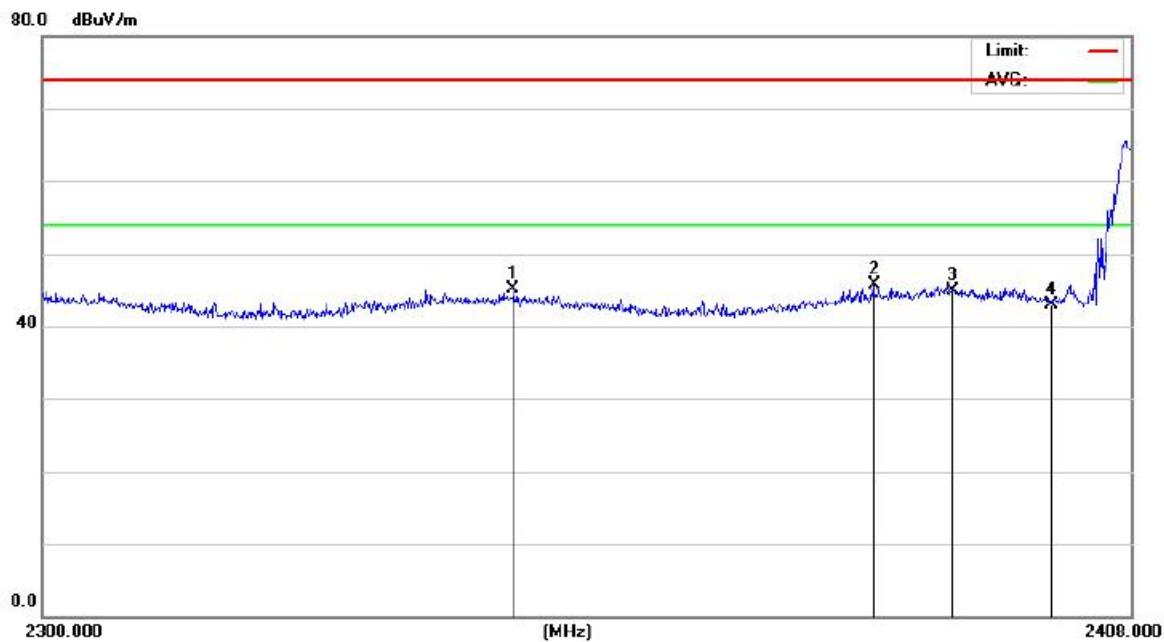
Mode: TX2408

Note:

| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Antenna | Table | | |
|-----|-----|----------|---------|---------|----------|-------|--------|----------|-------|--------|---------|
| | | | Level | Factor | ment | | | | | Degree | Comment |
| | | MHz | dBuV | dB | dBuV/m | dB/m | dB | Detector | cm | degree | |
| 1 | | 2345.080 | 50.12 | -5.04 | 45.08 | 74.00 | -28.92 | peak | | | |
| 2 | * | 2381.298 | 50.11 | -4.77 | 45.34 | 74.00 | -28.66 | peak | | | |
| 3 | | 2390.000 | 49.43 | -4.71 | 44.72 | 74.00 | -29.28 | peak | | | |
| 4 | | 2400.000 | 48.43 | -4.63 | 43.80 | 74.00 | -30.20 | peak | | | |

*:Maximum data x:Over limit !:over margin

⟨Reference Only



Site 843

Polarization: **Vertical**

Temperature: 24.5(C)

Limit: FCC Part 15 C 3m Above1G(Peak)

Power: Battery 1.5V

Humidity: 54.6 %

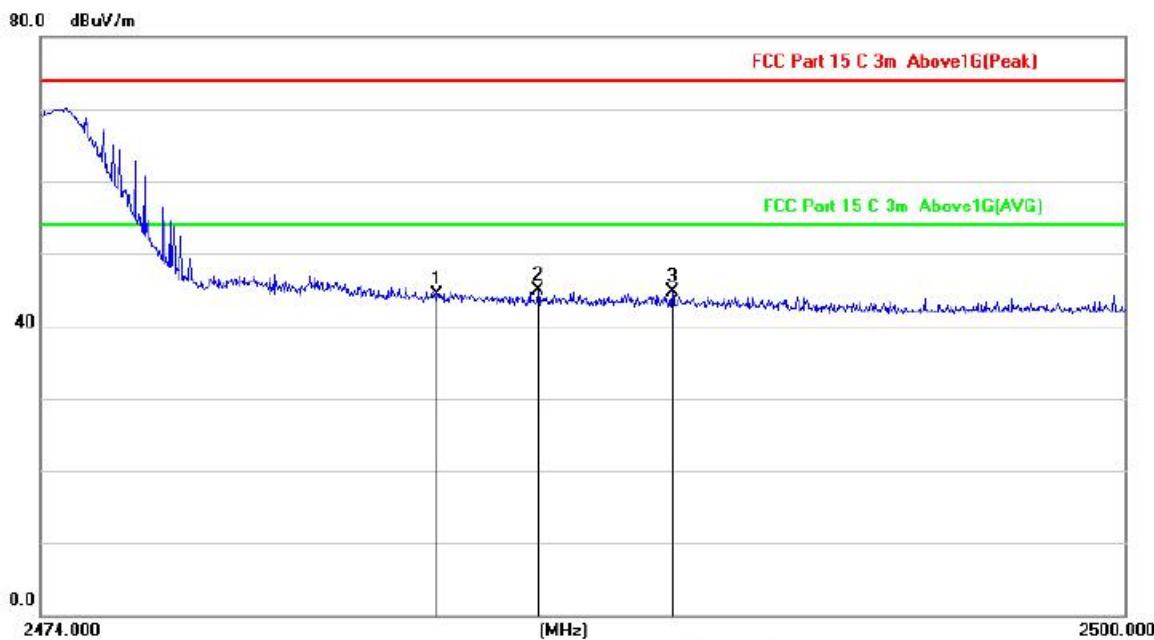
Mode: TX2408

Note:

| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Antenna | Table | | | |
|-----|-----|----------|---------|---------|----------|--------|--------|---------|----------|----|--------|---------|
| | | | Level | Factor | ment | | | | | | | |
| | | | MHz | dBuV | dB | dBuV/m | dB/m | dB | Detector | cm | degree | Comment |
| 1 | | 2346.156 | 50.07 | -5.04 | 45.03 | 74.00 | -28.97 | peak | | | | |
| 2 | * | 2382.063 | 50.51 | -4.77 | 45.74 | 74.00 | -28.26 | peak | | | | |
| 3 | | 2390.000 | 49.63 | -4.71 | 44.92 | 74.00 | -29.08 | peak | | | | |
| 4 | | 2400.000 | 47.48 | -4.63 | 42.85 | 74.00 | -31.15 | peak | | | | |

*:Maximum data x:Over limit !:over margin

⟨Reference Only

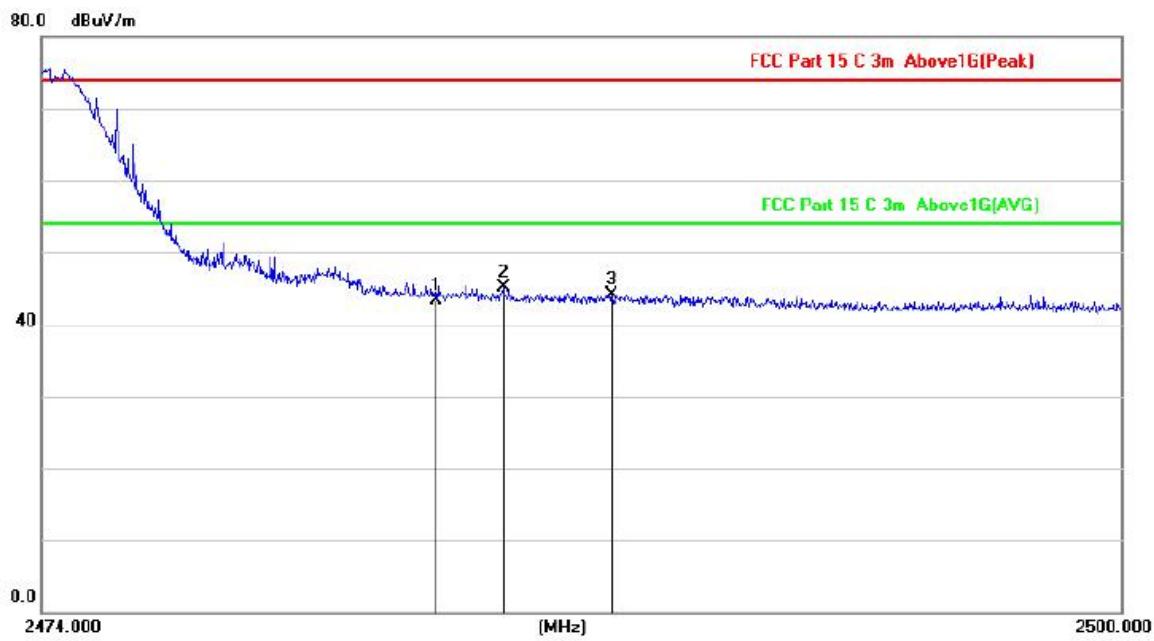


Site: LAB Polarization: **Vertical** Temperature: 24.5
 Limit: FCC Part 15 C 3m Above1G(Peak) Power: Battery 1.5V Humidity: 54.6 %
 Mode: TX2474
 Note:

| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Antenna | Table | | |
|-----|-----|----------|---------|---------|----------|-------|--------|----------|-------|--------|---------|
| | | | Level | Factor | ment | | | | | Degree | |
| | | MHz | dBuV | dB | dBuV/m | dB/m | dB | Detector | cm | degree | Comment |
| 1 | | 2483.500 | 48.37 | -4.00 | 44.37 | 74.00 | -29.63 | peak | | | |
| 2 | * | 2485.900 | 48.95 | -3.99 | 44.96 | 74.00 | -29.04 | peak | | | |
| 3 | | 2489.125 | 48.59 | -3.96 | 44.63 | 74.00 | -29.37 | peak | | | |

*:Maximum data x:Over limit !:over margin

(Reference Only)



Site: LAB Polarization: **Horizontal** Temperature: 24.5
 Limit: FCC Part 15 C 3m Above1G(Peak) Power: Battery 1.5V Humidity: 54.6 %
 Mode: TX2474
 Note:

| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Antenna | Table | | |
|-----|-----|----------|---------|---------|----------|-------|--------|----------|-------|--------|---------|
| | | | Level | Factor | ment | | | | | | |
| | | MHz | dBuV | dB | dBuV/m | dB/m | dB | Detector | cm | degree | Comment |
| 1 | | 2483.500 | 47.34 | -4.00 | 43.34 | 74.00 | -30.66 | peak | | | |
| 2 | * | 2485.095 | 49.02 | -3.99 | 45.03 | 74.00 | -28.97 | peak | | | |
| 3 | | 2487.694 | 48.04 | -3.97 | 44.07 | 74.00 | -29.93 | peak | | | |

*:Maximum data x:Over limit !:over margin

⟨Reference Only

8. Radiated Emission Test

8.1 Measurement Procedure

1. Below 1000MHz, The EUT was placed on a turn table which is 0.8m above ground plane. And above 1000MHz, The EUT was placed on a styrofoam table which is 1.5m above ground plane.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (From 1m to 4m) and turntable (from 0 degree to 360 degree) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
4. Set to the maximum power setting and enable the EUT transmit continuously.
5. Final measurement (Above 1GHz): The frequency range will be divided into different sub ranges depending of the frequency range of the used horn antenna. The EMI Receiver set to peak and average mode and a resolution bandwidth of 1MHz. The measurement will be performed in horizontal and vertical polarization of the measuring antenna and while rotating the EUT in its vertical axis in the range of 0 degree to 360 degree in order to have the antenna inside the cone of radiation.
6. Test Procedure of measurement (For Above 1GHz):
 - 1) Monitor the frequency range at horizontal polarization and move the antenna over all sides of the EUT(if necessary move the EUT to another orthogonal axis).
 - 2) Change the antenna polarization and repeat 1) with vertical polarization.
 - 3) Make a hardcopy of the spectrum.
 - 4) Measure the frequency of the detected emissions with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.
 - 5) Change the analyser mode to Clear/ Write and found the cone of emission.
 - 6) Rotate and move the EUT, so that the measuring distance can be enlarged to 3m and the antenna will be still inside the cone of emission.
 - 7) Measure the level of the detected frequency with the correct resolution bandwidth, with the antenna polarization and azimuth and the peak and average detector, which causes the maximum emission.
 - 8) Repeat steps 1) to 7) for the next antenna spot if the EUT is larger than the antenna beamwidth.

The following table is the setting of spectrum analyzer:

When spectrum scanned from 30MHz to 1GHz setting resolution bandwidth 120KHz and video bandwidth 300KHz:

| EMI Test Receiver | Setting |
|-------------------|----------|
| Attenuation | Auto |
| RB | 120KHz |
| VB | 300KHz |
| Detector | QP |
| Trace | Max hold |

For harmonics emission .When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 3MHz:

| EMI Test Receiver | Setting |
|-------------------|----------|
| Attenuation | Auto |
| RB | 1MHz |
| VB | 3MHz |
| Detector | Peak |
| Trace | Max hold |

For fundamental emission .When spectrum scanned above 1GHz setting resolution bandwidth 3MHz, video bandwidth 10MHz:

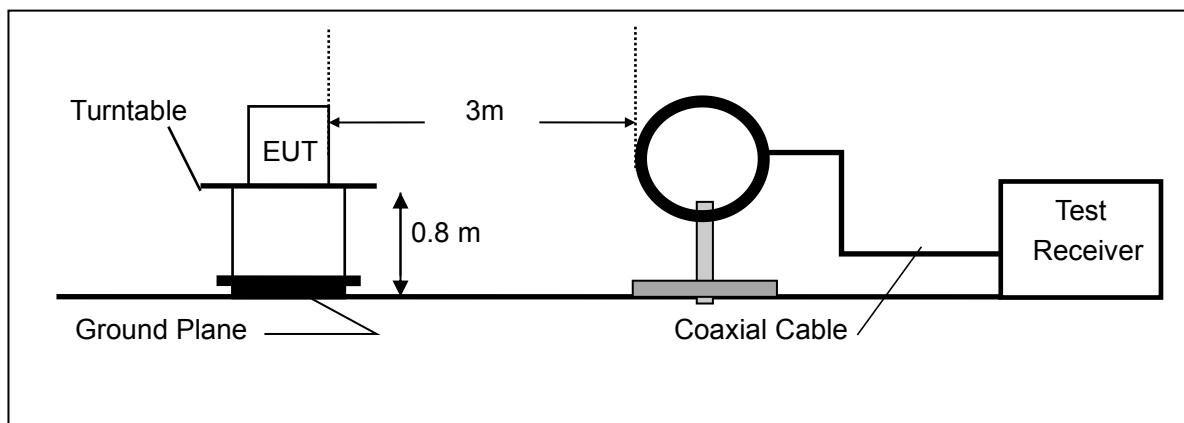
| EMI Test Receiver | Setting |
|-------------------|----------|
| Attenuation | Auto |
| RB | 3MHz |
| VB | 10MHz |
| Detector | Peak |
| Trace | Max hold |

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 10Hz:

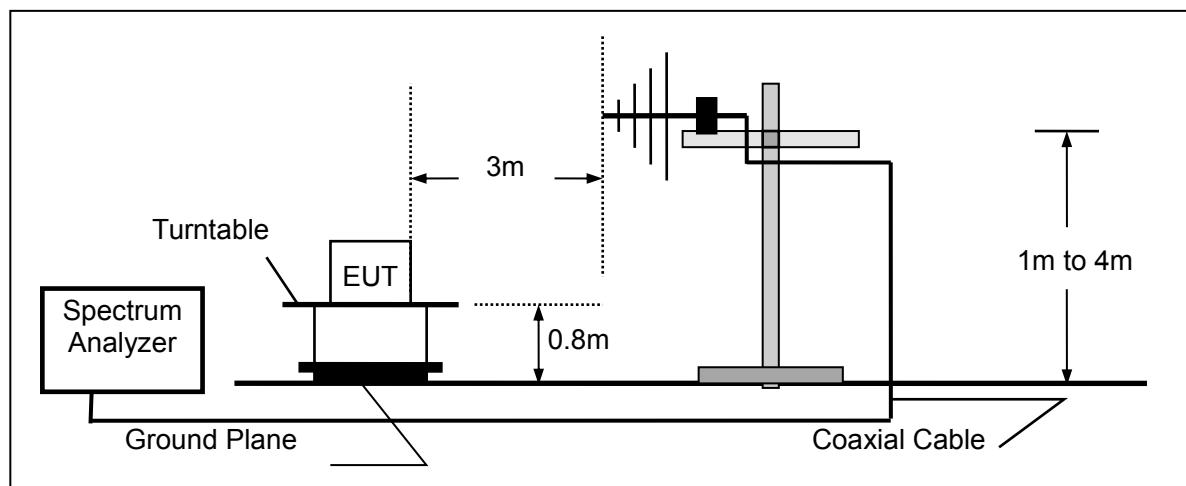
| EMI Test Receiver | Setting |
|-------------------|----------|
| Attenuation | Auto |
| RB | 1MHz |
| VB | 10Hz |
| Detector | Peak |
| Trace | Max hold |

8.2 Test SET-UP (Block Diagram of Configuration)

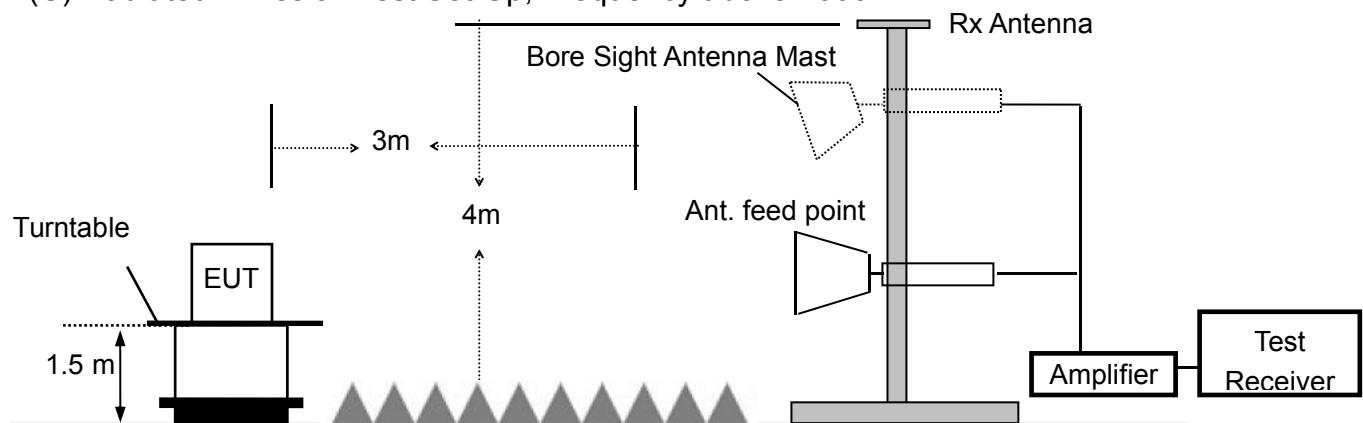
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



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



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



8.3 Measurement Equipment Used:

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|------|------------------------------|--------------------|------------------------|-----------------|------------------|
| 1. | EMI Test Receiver | Rohde & Schwarz | ESPI | 100502 | 2019-11-29 |
| 2. | Pre-Amplifier | HP | 8447D | 2727A06172 | 2020-05-19 |
| 3. | Bilog Antenna | Schwarzbeck | VULB9163 | VULB9163-588 | 2020-05-19 |
| 4. | Loop Antenna | Schwarzbeck | FMZB 1516 | 1516-141 | 2020-01-04 |
| 5. | Spectrum Analyzer | Rohde & Schwarz | FSV40 | US40240623 | 2019-11-28 |
| 6. | Low noise Amplifiers | A-INFO | LA1018N40 09 | J101313052400 1 | 2020-05-19 |
| 7. | Horn antenna | A-INFO | LB-10180-S F | J203109061212 3 | 2020-05-19 |
| 8. | Broadband RF Power Amplifier | AEROFLEX | AEROFLEX 100KHz-40 GHz | J101313052400 1 | 2020-03-12 |
| 9. | DRG Horm Antenna | A.H.SYSTEMS | SAS-574 | J203109061212 3 | 2020-03-12 |
| 10. | RF Cable | Gigalink Microwave | ZT40-2.92J-2.92J-2m | N/A | 2020-03-12 |
| 11. | RF Cable | Gigalink Microwave | ZT40-2.92J-2.92J-0.3m | N/A | 2020-03-12 |
| 12. | RF Cable | N/A | N/A | 6# | 2020-05-19 |
| 13. | RF Cable | N/A | N/A | 1-1# | 2020-05-19 |
| 14. | RF Cable | N/A | N/A | 1-2# | 2020-05-19 |
| 15. | RF Cable | N/A | N/A | 7# | 2020-05-19 |
| 16. | 3m Semi-anechoic Chamber | chengyu | 9m*6m*6m | N/A | 2020-05-19 |
| 17. | Test Software | Farad | EZ-EMC Ver:ANCI-3 A1 | N/A | N/A |

8.4 Limit:

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (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 |

Remark: 1. Emission level in dB_BV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Frequency(MHz) | Filed Strength of Fundamental(at 3m) | | Filed Strength of Harmonics(at 3m) | |
|----------------|---|---------|---------------------------------------|---------|
| | PEAK | AVERAGE | PEAK | AVERAGE |
| 902-928 | 114 | 94 | 74.0 | 54.0 |
| 2400-2483.5 | 114 | 94 | 74.0 | 54.0 |
| 5725-5875 | 114 | 94 | 74.0 | 54.0 |
| 24000-24250 | 128 | 108 | 88.0 | 68.0 |

8.5 Measurement Result

Below 30MHz:

| | | | |
|--------------------|------------|---------------|-----------------|
| Operation Mode: | TX | Test Date : | August 22, 2019 |
| Frequency Range: | 9KHz~30MHz | Temperature : | 28°C |
| Test Result: | PASS | Humidity : | 65 % |
| Measured Distance: | 3m | Test By: | Best |

| Freq. (MHz) | Ant.Pol. H/V | Emission Level (dBuV/m) | Limit 3m (dBuV/m) | Over (dB) |
|----------------|-----------------|-------------------------------|----------------------|--------------|
| -- | -- | -- | -- | -- |

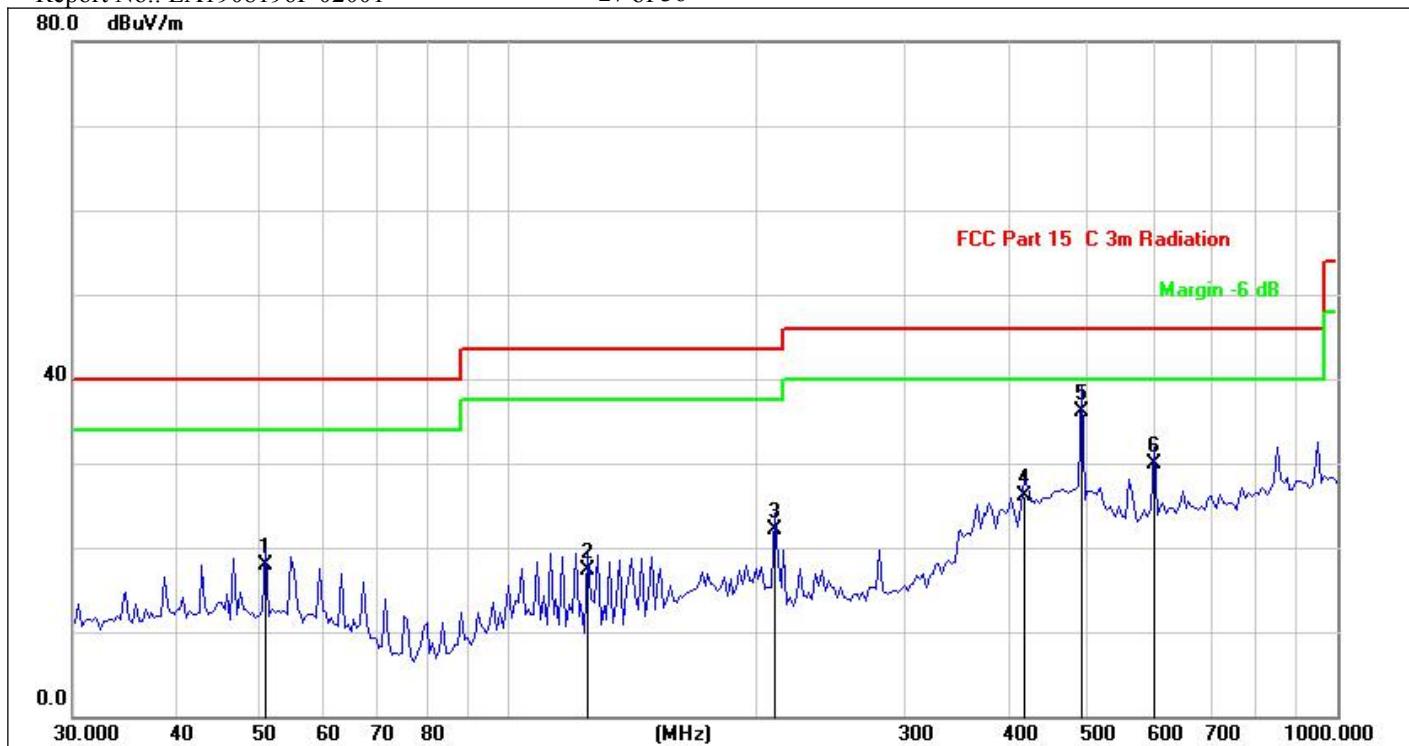
Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Below 1000MHz:

Pass.

All the modulation modes were tested the worst data of the mode (TX 2408MHz) are recorded in the following pages and the others modulation methods do not exceed the limits.

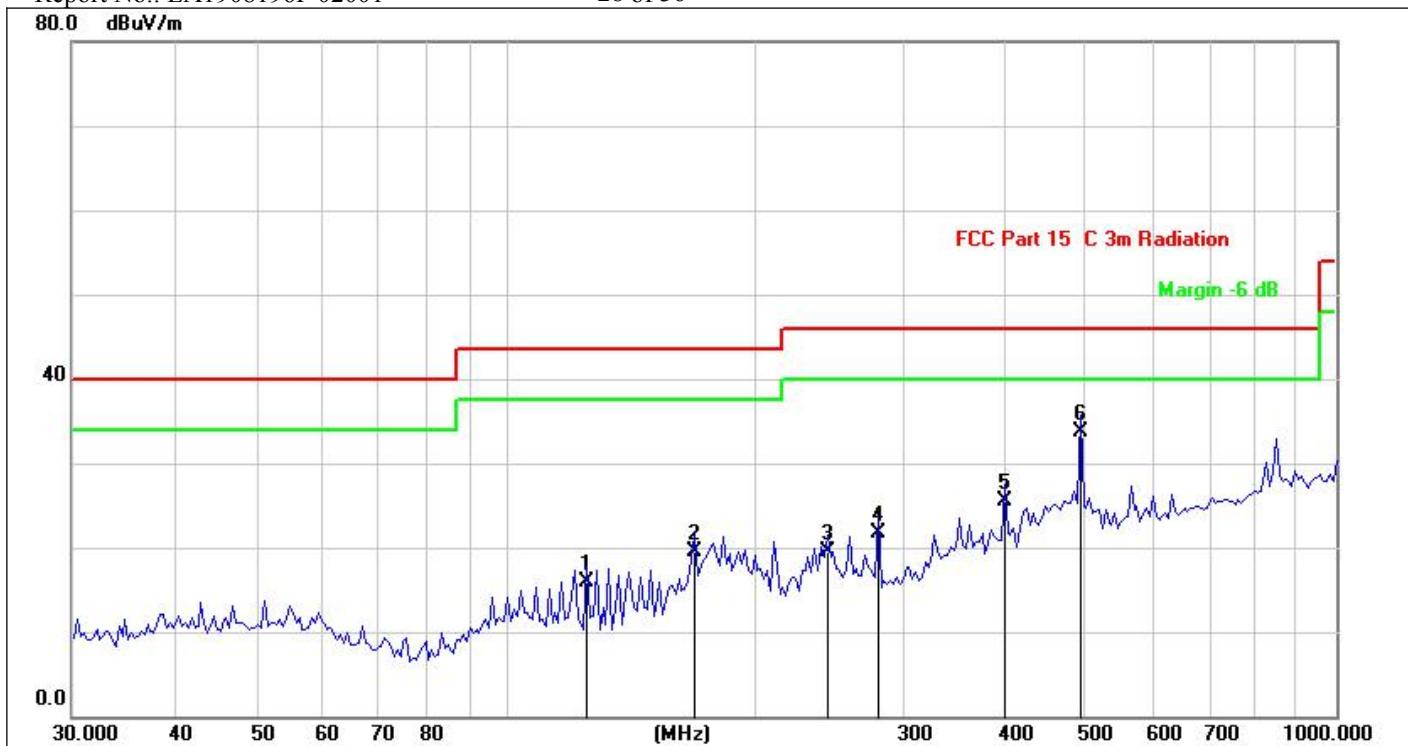
Please refer to the following data.



| | | | | | |
|--------|----------------------------|----------------|----------|-----------------|------------|
| Site: | LAB | Antenna: | Vertical | Temperature(C): | 26(C) |
| Limit: | FCC Part 15 C 3m Radiation | | | Humidity(%): | 60% |
| EUT: | Wireless Mouse | Test Time: | | | 2019/08/22 |
| M/N.: | GD7820 | Power Rating: | | | DC 5V |
| Mode: | TX2408 | Test Engineer: | | | Bast |
| Note: | | | | | |

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1 | 51.2106 | 34.07 | -16.21 | 17.86 | 40.00 | -22.14 | QP | | | |
| 2 | 125.2260 | 34.88 | -17.54 | 17.34 | 43.50 | -26.16 | QP | | | |
| 3 | 210.0482 | 38.63 | -16.50 | 22.13 | 43.50 | -21.37 | QP | | | |
| 4 | 419.8436 | 35.40 | -9.38 | 26.02 | 46.00 | -19.98 | QP | | | |
| 5 * | 491.6059 | 42.46 | -6.37 | 36.09 | 46.00 | -9.91 | QP | | | |
| 6 | 601.4265 | 34.54 | -4.65 | 29.89 | 46.00 | -16.11 | QP | | | |

*:Maximum data x:Over limit !:over margin



| | | | |
|--------|----------------------------|---------------------|----------------------|
| Site: | LAB | Antenna::Horizontal | Temperature(C):26(C) |
| Limit: | FCC Part 15 C 3m Radiation | | Humidity(%):60% |
| EUT: | Wireless Mouse | Test Time: | 2019/08/02 14:56:32 |
| M/N.: | GD7820 | Power Rating: | AC 120V/60Hz |
| Mode: | TX2408 | Test Engineer: | Bast |
| Note: | | | |

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1 | 125.2260 | 33.44 | -17.59 | 15.85 | 43.50 | -27.65 | QP | | | |
| 2 | 168.7093 | 37.82 | -18.38 | 19.44 | 43.50 | -24.06 | QP | | | |
| 3 | 243.8043 | 34.22 | -14.73 | 19.49 | 46.00 | -26.51 | QP | | | |
| 4 | 280.5152 | 35.35 | -13.60 | 21.75 | 46.00 | -24.25 | QP | | | |
| 5 | 398.3312 | 35.76 | -10.24 | 25.52 | 46.00 | -20.48 | QP | | | |
| 6 * | 491.6059 | 40.16 | -6.37 | 33.79 | 46.00 | -12.21 | QP | | | |

*:Maximum data x:Over limit !:over margin

Above 1000MHz~10th Harmonics:

Operation Mode: GFSK(CH1: 2408MHz) Test Date : August 22, 2019

| Freq. (MHz) | Ant. Pol. H/V | Emission Level(dBuV/m) | | Limit 3m(dBuV/m) | | Margin(dB) | |
|----------------|------------------|------------------------|-------|------------------|----|------------|--------|
| | | PK | AV | PK | AV | PK | AV |
| 2408(F) | V | 75.32 | 61.02 | 114 | 94 | -38.68 | -32.98 |
| 4816 | V | 61.25 | 42.25 | 74 | 54 | -12.75 | -11.75 |
| 7224 | V | 58.32 | 40.66 | 74 | 54 | -15.68 | -13.34 |
| 9632 | V | 56.12 | 37.19 | 74 | 54 | -17.88 | -16.81 |
| 12040 | V | 56.03 | 37.15 | 74 | 54 | -17.97 | -16.85 |
| 14448 | V | 56.11 | 37.16 | 74 | 54 | -17.89 | -16.84 |
| 16856 | V | 56.71 | 37.58 | 74 | 54 | -17.29 | -16.42 |
| 2408(F) | H | 76.13 | 62.47 | 114 | 94 | -37.87 | -31.53 |
| 4816 | H | 61.24 | 42.75 | 74 | 54 | -12.76 | -11.25 |
| 7224 | H | 59.32 | 40.58 | 74 | 54 | -14.68 | -13.42 |
| 9632 | H | 58.14 | 39.02 | 74 | 54 | -15.86 | -14.98 |
| 12040 | H | 56.33 | 37.86 | 74 | 54 | -17.67 | -16.14 |
| 14448 | H | 56.2 | 37.85 | 74 | 54 | -17.8 | -16.15 |
| 16856 | H | 55.47 | 36.65 | 74 | 54 | -18.53 | -17.35 |

Operation Mode: GFSK(CH17: 2440MHz) Test Date : August 22, 2019

| Freq. (MHz) | Ant. Pol. H/V | Emission Level(dBuV/m) | | Limit 3m(dBuV/m) | | Margin(dB) | |
|----------------|------------------|------------------------|-------|------------------|----|------------|--------|
| | | PK | AV | PK | AV | PK | AV |
| 2440(F) | V | 75.32 | 61.58 | 114 | 94 | -38.68 | -32.42 |
| 4880 | V | 62.14 | 43.26 | 74 | 54 | -11.86 | -10.74 |
| 7320 | V | 58.62 | 39.58 | 74 | 54 | -15.38 | -14.42 |
| 9760 | V | 56.25 | 37.36 | 74 | 54 | -17.75 | -16.64 |
| 12200 | V | 56.12 | 37.58 | 74 | 54 | -17.88 | -16.42 |
| 14640 | V | 56.47 | 37.09 | 74 | 54 | -17.53 | -16.91 |
| 17080 | V | 56.85 | 37.55 | 74 | 54 | -17.15 | -16.45 |
| 2440(F) | H | 76.66 | 62.48 | 114 | 94 | -37.34 | -31.52 |
| 4880 | H | 62.61 | 43.25 | 74 | 54 | -11.39 | -10.75 |
| 7320 | H | 59.02 | 41.69 | 74 | 54 | -14.98 | -12.31 |
| 9760 | H | 56.17 | 37.16 | 74 | 54 | -17.83 | -16.84 |
| 12200 | H | 56.32 | 37.22 | 74 | 54 | -17.68 | -16.78 |
| 14640 | H | 56.12 | 37.15 | 74 | 54 | -17.88 | -16.85 |
| 17080 | H | 55.71 | 36.92 | 74 | 54 | -18.29 | -17.08 |

Operation Mode: GFSK(CH34: 2474MHz) Test Date : August 22, 2019

| Freq. (MHz) | Ant. Pol. | Emission Level(dBuV/m) | | Limit 3m(dBuV/m) | | Margin(dB) | |
|----------------|-----------|------------------------|-------|------------------|----|------------|--------|
| | | PK | AV | PK | AV | PK | AV |
| 2474(F) | V | 76.98 | 63.25 | 114 | 94 | -37.02 | -30.75 |
| 4948 | V | 63.58 | 44.16 | 74 | 54 | -10.42 | -9.84 |
| 7422 | V | 61.32 | 42.09 | 74 | 54 | -12.68 | -11.91 |
| 9896 | V | 59.02 | 40.52 | 74 | 54 | -14.98 | -13.48 |
| 12370 | V | 57.15 | 38.16 | 74 | 54 | -16.85 | -15.84 |
| 14844 | V | 56.25 | 37.23 | 74 | 54 | -17.75 | -16.77 |
| 17318 | V | 56.11 | 37.58 | 74 | 54 | -17.89 | -16.42 |
| 2474(F) | H | 78.55 | 65.58 | 114 | 94 | -35.45 | -28.42 |
| 4948 | H | 64.32 | 45.36 | 74 | 54 | -9.68 | -8.64 |
| 7422 | H | 61.69 | 42.58 | 74 | 54 | -12.31 | -11.42 |
| 9896 | H | 59.13 | 40.69 | 74 | 54 | -14.87 | -13.31 |
| 12370 | H | 57.44 | 38.02 | 74 | 54 | -16.56 | -15.98 |
| 14844 | H | 56.32 | 37.15 | 74 | 54 | -17.68 | -16.85 |
| 17318 | H | 55.02 | 36.58 | 74 | 54 | -18.98 | -17.42 |

Other harmonics emissions are lower than 20dB below the allowable limit.

- Note:**
- (1) All Readings are Peak Value and AV.
 - (2) Emission Level= Reading Level+ Probe Factor +Cable Loss.
 - (3) The average measurement was not performed when the peak measured data under the limit of average detection.
 - (4) Measuring frequencies from 1GHz to 25GHz.

8.6 Radiated Measurement Photos:

9. Antenna requirement

9.1 Limit

Except for special regulations, the Low-power Radio-Frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacture may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

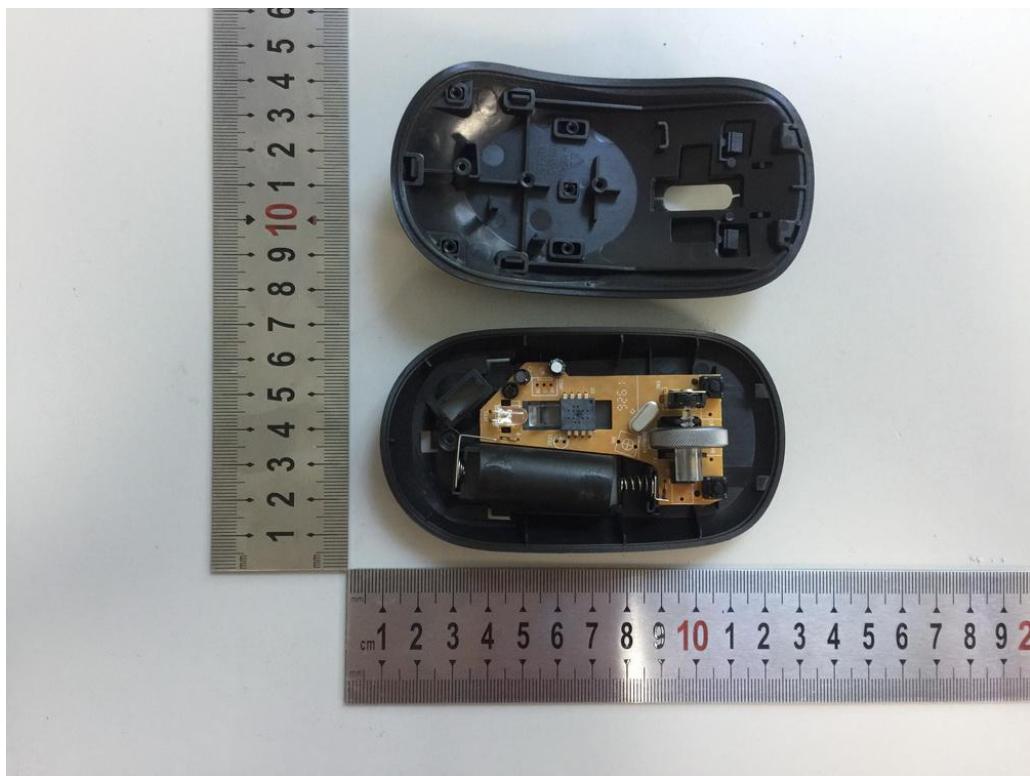
9.2 Result

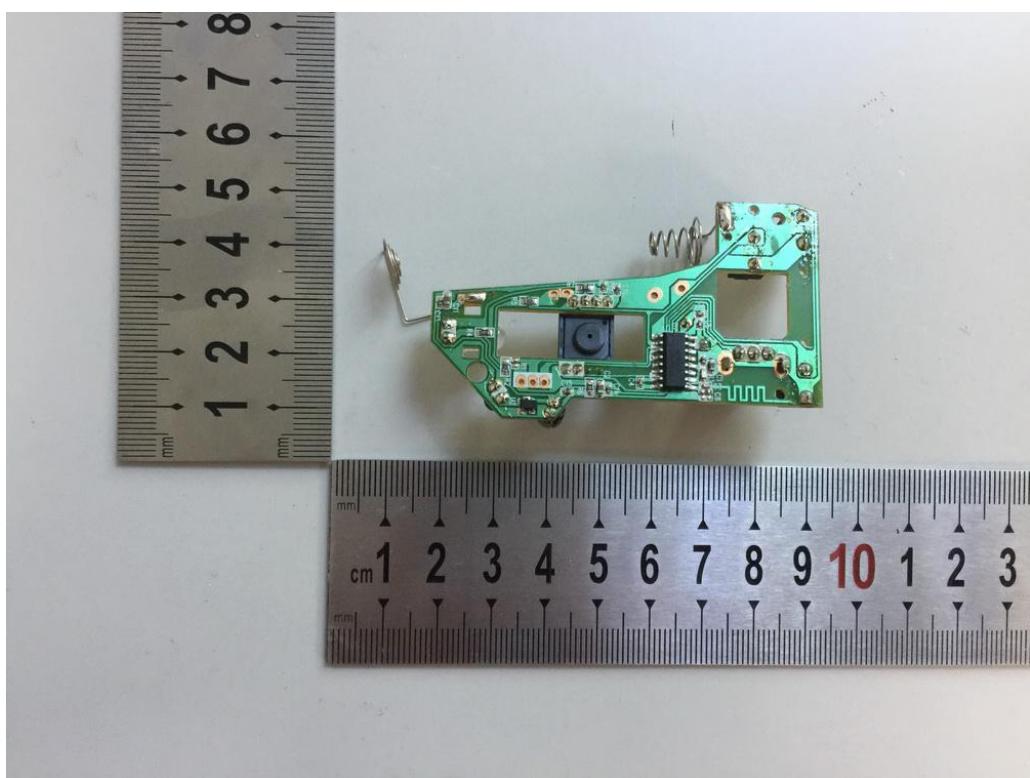
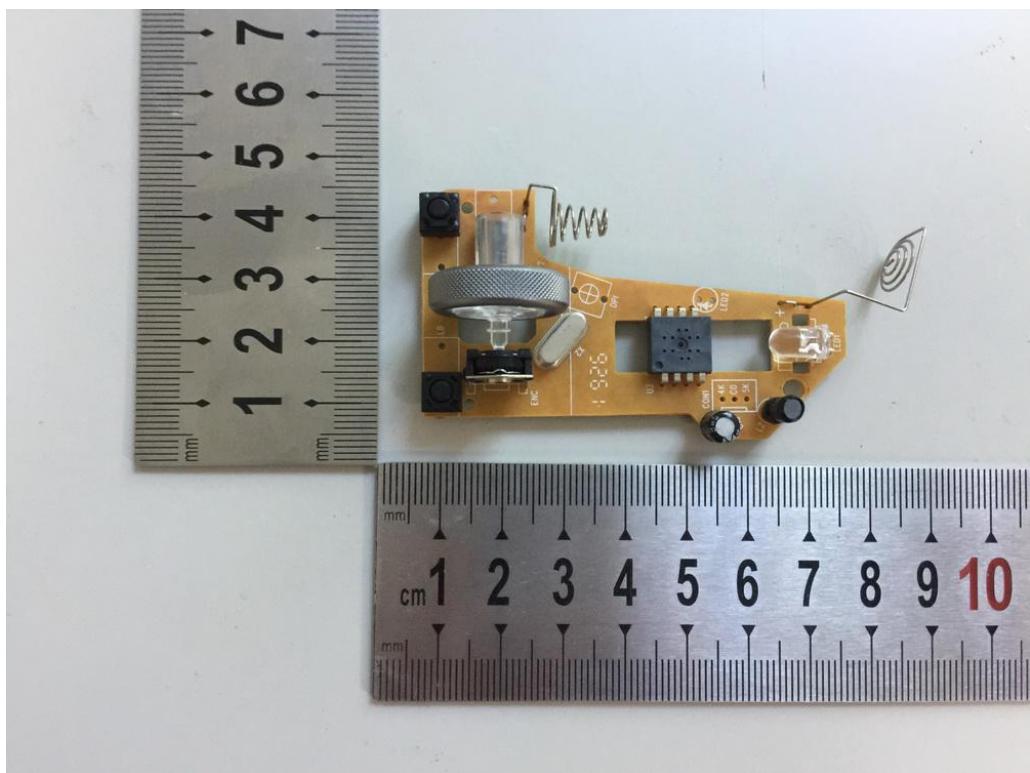
The EUT's antenna, permanent attached antenna, used a PCB antenna and integrated on PCB, The antenna's gain is -0.61dBi and meets the requirement.

APPENDIX I

(Photos of EUT)







-----The end of report-----