FCC PART 15.249 EMI MEASUREMENT AND TEST REPORT

For

Xiamen Foowoo Mobile Telecom Technique Co., Ltd No.90, 8-3 Zhonghe Avenue High-tech Zone, Chengdu, China

FCC ID:2ABZTF3

Trade:N/A

| This Report Concerns: | | Equipment Type: | | |
|-----------------------|--|---|--|--|
| Original Report | | laser projection keyboard power bank | | |
| Test Engineer: | Silin Chen | Silim chen | | |
| Report No.: | BSL20160121-1 | | | |
| Receive EUT | January 01, 2016/ | | | |
| Date/Test Date: | January 01- | January 21,2016 | | |
| Reviewed By: | Susan Su | susom Su | | |
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1. GENERAL INFORMATION

1.1. Report information

- 1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BSL approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BSL in any way guarantees the later performance of the product/equipment.
- 1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, BSL therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 1.1.3.Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BSL, unless the applicant has authorized BSL in writing to do so.

Test Facility -

FCC – Registration No.: 934118

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

1.2. 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 %.

| No. | Item | Uncertainty |
|-----|-------------------------------|-------------|
| 1 | Conducted Emission Test | +/-2.88dB |
| 2 | RF Power, Conducted | +/-0.20dB |
| 3 | Spurious emissions, conducted | +/-0.33dB |
| 4 | All emissions, radiated (<1G) | +/-5.10dB |
| 5 | All emissions, radiated (>1G) | +/-5.10dB |
| 6 | Temperature | +/-0.5°CdB |
| 7 | Humidity | +/-2% |

2. PRODUCT DESCRIPTION

2.1. EUT Description

Description : laser projection keyboard power bank

Applicant : Xiamen Foowoo Mobile Telecom Technique Co., Ltd

No.90, 8-3 Zhonghe Avenue High-tech Zone, Chengdu, China

Manufacturer : Xiamen Foowoo Mobile Telecom Technique Co., Ltd

No.90, 8-3 Zhonghe Avenue High-tech Zone, Chengdu, China

Model Number : F3

Modulation type : GFSK Antenna gain : 0dBi

BT version : V2.1 (no Support EDR)

Antenna type : PCB Antenna
Frequency : 2402-2480MHz

Number of Channels : 79 Channels

Power Supply : DC 3.7V Battery

Hardware version : PA_laser_V1.1

Software version : V1.1
Serial Number : 20160121

| | | Chann | el List | | |
|---------|--------------------|---------|--------------------|---------|--------------------|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 00 | 2402 | 27 | 2429 | 54 | 2456 |
| 01 | 2403 | 28 | 2430 | 55 | 2457 |
| 02 | 2404 | 29 | 2431 | 56 | 2458 |
| 03 | 2405 | 30 | 2432 | 57 | 2459 |
| 04 | 2406 | 31 | 2433 | 58 | 2460 |
| 05 | 2407 | 32 | 2434 | 59 | 2461 |
| 06 | 2408 | 33 | 2435 | 60 | 2462 |
| 07 | 2409 | 34 | 2436 | 61 | 2463 |
| 08 | 2410 | 35 | 2437 | 62 | 2464 |
| 09 | 2411 | 36 | 2438 | 63 | 2465 |
| 10 | 2412 | 37 | 2439 | 64 | 2466 |
| 11 | 2413 | 38 | 2440 | 65 | 2467 |
| 12 | 2414 | 39 | 2441 | 66 | 2468 |
| 13 | 2415 | 40 | 2442 | 67 | 2469 |
| 14 | 2416 | 41 | 2443 | 68 | 2470 |
| 15 | 2417 | 42 | 2444 | 69 | 2471 |
| 16 | 2418 | 43 | 2445 | 70 | 2472 |
| 17 | 2419 | 44 | 2446 | 71 | 2473 |
| 18 | 2420 | 45 | 2447 | 72 | 2474 |
| 19 | 2421 | 46 | 2448 | 73 | 2475 |
| 20 | 2422 | 47 | 2449 | 74 | 2476 |
| 21 | 2423 | 48 | 2450 | 75 | 2477 |
| 22 | 2424 | 49 | 2451 | 76 | 2478 |
| 23 | 2425 | 50 | 2452 | 77 | 2479 |
| 24 | 2426 | 51 | 2453 | 78 | 2480 |
| 25 | 2427 | 52 | 2454 | | |

2.2. Block Diagram of EUT Configuration

Radiated test:

EUT

Conducted test:



Figure 1 EUT Setup

2.3. Support Equipment List

| Name | Model No | S/N | Manufacturer | Used (Y/N) |
|------------|-----------------|-----|--------------|---------------|
| AC adapter | GEO101U-050100W | - | I.T.E | Y |
| - | - | - | - | - |

2.4. Test Conditions

It must provide an operational voltage (3.7V DC by Battery) to turn on the laser projection keyboard power bank and on one certain channel in service mode by means of company proprietary software.

the test software name: FWGX 1314002 test Software.

After the preliminary test, we found to emit the worst emissions and therefore had been tested under operating condition.

during the test the eut use the fully-charged battery

The EUT Themselves can enter the test mode.

Power setting parameters For mode:

GFSK (PK Power:0dbm).

For the EUT was tested with Channel Frequency 2402MHz, 2440MHz and 2480MHz.

3. TEST RESULTS SUMMARY

FCC 15 Subpart C, Paragraph 15.249:2015

| FCC Rules | Description of Test | Result |
|-------------------------------------|--|-----------|
| Section 15.207 | Conducted Emission | Compliant |
| Section 15.249(a) | The fundamental field strength and the harmonics | Compliant |
| Section 15.209 Section 15.249(d) | Radiated Emission | Compliant |
| Section 15.249(d) | Band Edge | Compliant |
| Section 15.203 | Antenna Requirement | Compliant |
| Section 15.249 | 20dB Bandwidth | Compliant |

Remark: "N/A" means "Not applicable".

Statement: All testing was performed using the test procedures found in ANSI C63.4-2003.

Modifications

No modification was made.

4. TEST EQUIPMENT USED

| EQUIPMENT/FA CILITIES | MANUFACTURE R | MODEL | SERIAL NO. | DATE OF CAL. | CAL. INTERV AL |
|-----------------------------|----------------------|----------------|---------------|-----------------|----------------------|
| Spectrum Analyzer | Rohde & Schwarz | FSP | 836079/035 | 2015-06-17 | 1 Year |
| EMI Test Receiver | Rohde & Schwarz | ESCI | 101611 | 2015-05-07 | 1 Year |
| EMI Test Receiver | Rohde & Schwarz | ESPI7 | 101391 | 2015-07-30 | 1 Year |
| L.I.S.N. | SCHWARZBECK | NSLK8126 | 8126-224 | 2015-05-07 | 1 Year |
| Pulse Limiter | ROHDE&SCHWARZ | ESH3-Z2 | 100919 | 2015-05-07 | 1 Year |
| Pre-Amplifier | HP | 8447F OPT H64 | 3113A06724 | 2015-05-07 | 1 Year |
| Pre-Amplifier | Compliance Direction | PAP-1G18 | 2002 | 2015-05-07 | 1 Year |
| Trilog Broadband Antenna | SCHWARZBECK | VULB9163 | 9163-635 | 2015/08/01 | 1 Year |
| Low Loss Coaxial Cable | SCHWARZBECK | AK 9513 | 9513-13 | 2015/08/01 | 1 Year |
| Positioning Controller | YOU CHERNG CO | EM1000 | 10001MT04 | 2015/08/01 | 1 Year |
| Horn Antenna | ETS | 3117 | 00086197 | 2015-06-17 | 1 Year |
| Horn Antenna | ETS | 3116B | 00088203 | 2015-06-17 | 1 Year |
| Loop Antenna | Schwarz beck | FMZB 1516 | 9773 | 2015-06-17 | 1 Year |
| Cable | PUTIANLE | Ant Cable | Cable 1 | 2015-07-30 | 1 Year |
| Cable | PUTIANLE | Amp Cable | Cable 2 | 2015-07-30 | 1 Year |
| Cable | PUTIANLE | Receiver Cable | Cable 3 | 2015-07-30 | 1 Year |
| Cable | PUTIANLE | L.I.S.N. Cable | Cable 4 | 2015-07-30 | 1 Year |

5. ANTENNA REQUIREMENT

5.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

5.2. Antenna Connected Construction

According to § 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The antenna used for this product is a PCB ANT .The antenna is permanently attached. Refer to the product photo.

5.3. Result

Compliance

6. CONDUCTED POWER LINE TEST

6.1. Test Equipment

Please refer to section 4 this report.

6.2. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uh coupling inpedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uh coupling inpedance with 50ohm termination.

Both sides of A.C. Line are check for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ASIN C63.4:2003 on conducted measurement. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

6.3. Test Setup



For the actual test configuration, Please refer to the related items-Photos of testing

6.4. Conducted Power line Emission Limits

| FCC Part 15 Paragraph 15.207 (dBuV) | | | | | |
|-------------------------------------|------------------|------------------|--|--|--|
| Frequency Range (MHZ) | Class A OP/AV | Class B OP/AV | | | |
| 0.15-0.5 | 79/66 | 65-56/56-46 | | | |
| 0.5-5.0 | 73/60 | 56-46 | | | |
| 5.0-3.0 | 73/60 | 60-50 | | | |

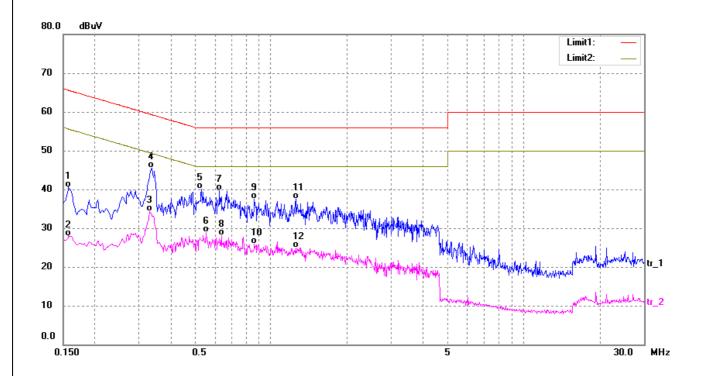
Note: In the above table, the tighter limit applies at the band edges.

6.5. Conducted Power Line Test Result

Pass

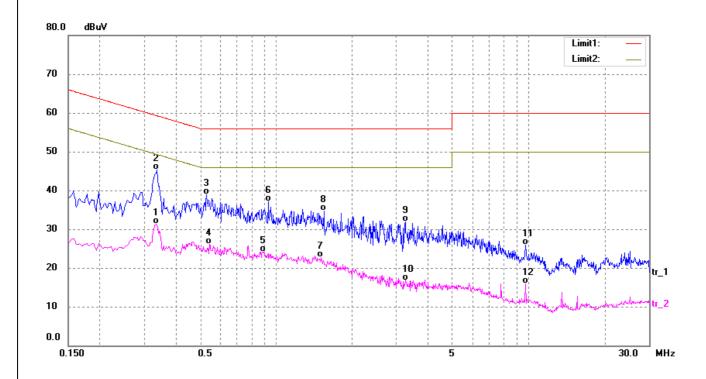
2402MHz Transmitting(Worst case mode) power test voltage:AC 120V/60Hz

Phase:L



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Detector |
|-----|-----------|---------|---------|--------|--------|--------|----------|
| | (MHz) | (dBuV) | (dB/m) | (dBuV) | (dBuV) | (dB) | |
| 1 | 0.1580 | 28.10 | 12.50 | 40.60 | 65.56 | -24.96 | QP |
| 2 | 0.1580 | 15.50 | 12.50 | 28.00 | 55.56 | -27.56 | AVG |
| 3 | 0.3300 | 21.71 | 12.50 | 34.21 | 49.45 | -15.24 | AVG |
| 4* | 0.3379 | 33.04 | 12.50 | 45.54 | 59.25 | -13.71 | QP |
| 5 | 0.5299 | 27.58 | 12.53 | 40.11 | 56.00 | -15.89 | QP |
| 6 | 0.5540 | 16.32 | 12.55 | 28.87 | 46.00 | -17.13 | AVG |
| 7 | 0.6260 | 27.14 | 12.63 | 39.77 | 56.00 | -16.23 | QP |
| 8 | 0.6340 | 15.49 | 12.63 | 28.12 | 46.00 | -17.88 | AVG |
| 9 | 0.8580 | 24.69 | 12.86 | 37.55 | 56.00 | -18.45 | QP |
| 10 | 0.8580 | 13.13 | 12.86 | 25.99 | 46.00 | -20.01 | AVG |
| 11 | 1.2540 | 24.47 | 13.00 | 37.47 | 56.00 | -18.53 | QP |
| 12 | 1.2540 | 11.83 | 13.00 | 24.83 | 46.00 | -21.17 | AVG |

Phase:N



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Detector |
|-----|-----------|---------|---------|--------|--------|--------|----------|
| | (MHz) | (dBuV) | (dB/m) | (dBuV) | (dBuV) | (dB) | |
| 1 | 0.3340 | 18.78 | 12.50 | 31.28 | 49.35 | -18.07 | AVG |
| 2* | 0.3380 | 32.71 | 12.50 | 45.21 | 59.25 | -14.04 | QP |
| 3 | 0.5300 | 26.37 | 12.53 | 38.90 | 56.00 | -17.10 | QP |
| 4 | 0.5460 | 13.47 | 12.55 | 26.02 | 46.00 | -19.98 | AVG |
| 5 | 0.8860 | 11.25 | 12.89 | 24.14 | 46.00 | -21.86 | AVG |
| 6 | 0.9300 | 24.14 | 12.93 | 37.07 | 56.00 | -18.93 | QP |
| 7 | 1.5060 | 9.64 | 13.00 | 22.64 | 46.00 | -23.36 | AVG |
| 8 | 1.5500 | 21.69 | 13.00 | 34.69 | 56.00 | -21.31 | QP |
| 9 | 3.2420 | 18.83 | 13.00 | 31.83 | 56.00 | -24.17 | QP |
| 10 | 3.2420 | 3.80 | 13.00 | 16.80 | 46.00 | -29.20 | AVG |
| 11 | 9.7220 | 14.80 | 11.11 | 25.91 | 60.00 | -34.09 | QP |
| 12 | 9.7220 | 4.88 | 11.11 | 15.99 | 50.00 | -34.01 | AVG |

7. RADIATED EMISSION TEST

7.1. Test Equipment

Please refer to section 4 this report.

7.2. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level.

Calibrated Loop antenna is used as receiving antenna for frequencies below 30MHz, Calibrated Bilog antenna is used as receiving antenna for frequencies between 30 MHz and 1 GHz, Calibrated Horn antenna is used as receiving antenna for frequencies above 1000MHz. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

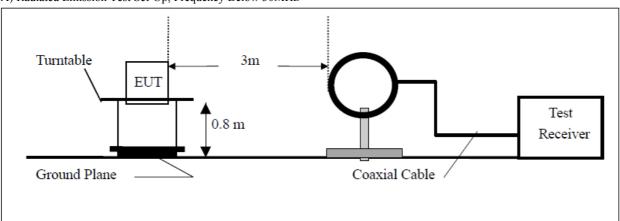
The bandwidth of test receiver is set at 9kHz in below 30MHz. and set at 120kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9kHz to 25GHz is checked.

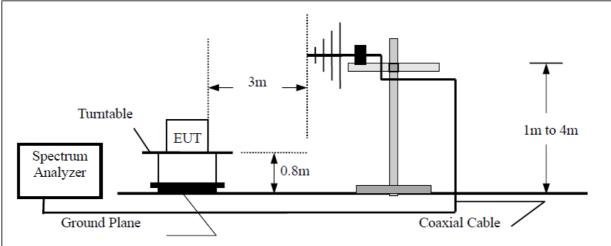
The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Peak detector and Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

7.3. Radiated Test Setup

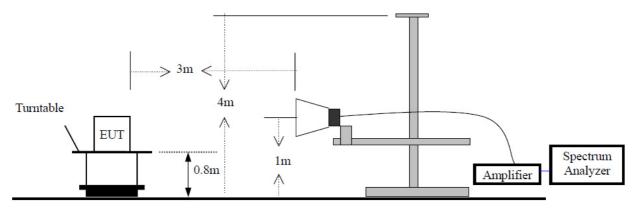
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



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



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



7.4. Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

A. Fundamental and Harmonics Radiated Emissions 15.249(a) Limit

| Fundamental Frequency | Field as treng | gth of Fundamental(3 | 3m) | Field as trength of Harmonics(3m) | | im) |
|--------------------------|----------------|----------------------|-----------|-----------------------------------|--------|----------|
| (MHZ) | mV/m | dBuV/m | | uV/m | dBuV/m | |
| 902-928 | 50 | 94(QP) | 114(Peak) | 500 | 54(AV) | 74(Peak) |
| 2400-2483.5 | 50 | 94(AV) | 114(Peak) | 500 | 54(AV) | 74(Peak) |

Note: (1) RF Voltage (dBuV)=20 log Voltage(uV)

- (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- (3) The emission limit in this paragraph os based on measurement instrumentation employing an average detector. Measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

B. Spurious Radiated Emissions.

| | Limit | | | | | | | | |
|-----------------|---|---|--------------------------|--|--|--|--|--|--|
| Frequency (MHz) | Field Strength of Quasi-peak Value (microvolts/m) | Field Strength of Quasi-peak Value (dBµV/m) | Measurement distance (m) | The final measurement in band 9-90kHz, | | | | | |
| 0.009 - 0.490 | 2400/F(kHz) | / | 300 | 110-490kHz and above 1000MHz is | | | | | |
| 0.490 - 1.705 | 24000/F(kHz) | / | 30 | performed with | | | | | |
| 1.705-30 | 30 | 29.5 | 30 | Average detector. Except those | | | | | |
| 30 - 88 | 100 | 40 | 3 | frequency bands mention above, the | | | | | |
| 88 - 216 | 150 | 43.5 | 3 | final measurement for frequencies | | | | | |
| 216 - 960 | 200 | 46 | 3 | below 1000MHz is performed with | | | | | |
| Above 960 | 500 | 54 | 3 | Quasi Peak detector. | | | | | |

Note: (1) RF Voltage (dBuV)=20 log Voltage(uV)

- (2) In the Above Table, the tighter limit applies at the band edges.
- (3) Distagnce refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

7.5. Radiated Emission Test Result

Pass

A. Fundamental Radiated Emissions Data

CH Low

| Freq. (MHz) | Read Level (dBuV) AV/PK | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Emission (dBuV/m) AV/PK | HORIZ/ VERT | Limits (dBuV/m) AV/PK | Margin (dB) |
|----------------|----------------------------------|-----------------------------|-----------------------|--------------------------|-------------------------------|----------------|-----------------------------|----------------|
| 2402 | 82.05/92.12 | 27.47 | 5.42 | 30.17 | 84.77/94.84 | VERT | 94/114 | -9.23/-19.16 |
| 2402 | 84.16/94.01 | 27.47 | 5.42 | 30.17 | 86.88/96.73 | HORIZ | 94/114 | -7.12/-17.27 |

CH Middle

| Freq. (MHz) | Read Level (dBuV) AV/PK | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Emission (dBuV/m) AV/PK | HORIZ/ VERT | Limits (dBuV/m) AV/PK | Margin (dB) |
|----------------|----------------------------------|-----------------------------|-----------------------|--------------------------|-------------------------------|----------------|-----------------------------|----------------|
| 2440 | 83.32/92.73 | 27.40 | 5.40 | 30.15 | 85.97/95.38 | VERT | 94/114 | -8.03/-18.62 |
| 2440 | 84.5/94.34 | 27.40 | 5.40 | 30.15 | 87.15/96.99 | HORIZ | 94/114 | -6.85/-17.01 |

CH High

| Freq. (MHz) | Read Level (dBuV) AV/PK | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Emission (dBuV/m) AV/PK | HORIZ/ VERT | Limits (dBuV/m) AV/PK | Margin (dB) |
|----------------|----------------------------------|-----------------------------|-----------------------|--------------------------|-------------------------------|----------------|-----------------------------|----------------|
| 2480 | 81.81/91.25 | 27.50 | 5.46 | 29.98 | 84.79/93.12 | VERT | 94/114 | -9.21/-19.77 |
| 2480 | 83.75/93.2 | 27.50 | 5.46 | 29.98 | 86.73/96.18 | HORIZ | 94/114 | -7.27/-17.82 |

Remark:

Final Emission = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor

| \mathbf{p} | General | Da | hatad | Emi | ccione | Data |
|--------------|----------|-----|-------|------|--------|---------|
| в | Creneral | кас | marea | E.mi | SSIONS | 1)2112 |

For below 9kHz-30MHz Spurious

| Freq. (MHz) | Emission(dBuV/m) PK / AV | Limits(dBuV/m) PK / AV | Margin (dB) |
|-------------|-----------------------------|---------------------------|----------------|
| - | - | - | - |
| - | - | - | - |

| N | ote | |
|---|-----|--|

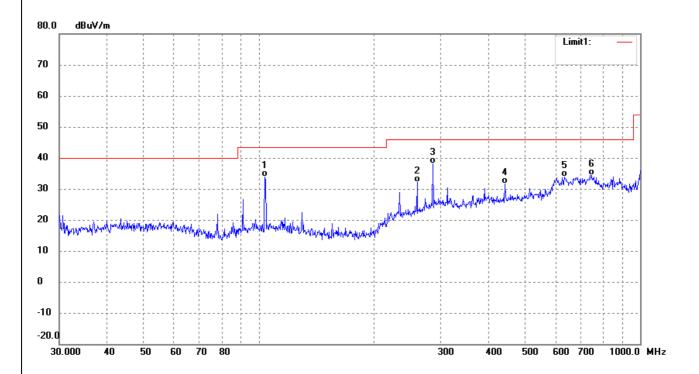
| | Emissions attenua | ted more than 20 | 0 dB be | low the p | permissible | value are not reported | l. |
|--|-------------------|------------------|---------|-----------|-------------|------------------------|----|
|--|-------------------|------------------|---------|-----------|-------------|------------------------|----|

For 30M-1000MHz Spurious

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

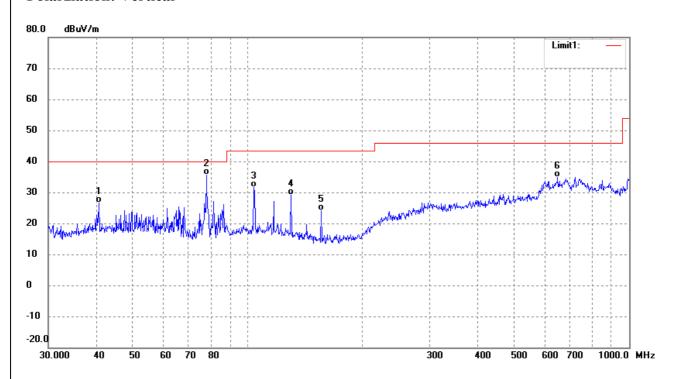
2402MHz Transmitting(Worst case mode)

Polarziation: Horizontal



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 103.8055 | 28.79 | 5.11 | 33.90 | 43.50 | -9.60 | QP |
| 2 | 260.1444 | 22.10 | 10.04 | 32.14 | 46.00 | -13.86 | QP |
| 3 | 285.9778 | 26.55 | 11.64 | 38.19 | 46.00 | -7.81 | QP |
| 4 | 441.7426 | 18.47 | 13.06 | 31.53 | 46.00 | -14.47 | QP |
| 5 | 633.9073 | 15.41 | 18.41 | 33.82 | 46.00 | -12.18 | QP |
| 6 | 747.4825 | 15.23 | 19.20 | 34.43 | 46.00 | -11.57 | QP |

Polarziation: Vertical



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 40.7016 | 21.35 | 5.25 | 26.60 | 40.00 | -13.40 | QP |
| 2 | 77.8654 | 33.48 | 2.26 | 35.74 | 40.00 | -4.26 | QP |
| 3 | 103.8055 | 26.50 | 5.11 | 31.61 | 43.50 | -11.89 | QP |
| 4 | 129.9226 | 24.88 | 4.22 | 29.10 | 43.50 | -14.40 | QP |
| 5 | 155.9101 | 21.32 | 2.77 | 24.09 | 43.50 | -19.41 | QP |
| 6 | 649.6597 | 16.48 | 18.39 | 34.87 | 46.00 | -11.13 | QP |

For 1000MHz-25000MHz Spurious

CH Low

| Freq. (MHz) | Emission(dBuV/m) AV/PK | HORIZ/ VERT | Limits(dBuV/m) AV/PK | Margin (dB) |
|----------------|---------------------------|----------------|-------------------------|----------------|
| 4804 | 40.44/50.37 | | 54.0/74.0 | -13.56/-23.63 |
| 7206 | 44.4/54.37 | VERT | 54.0/74.0 | -9.6/-19.63 |
| 9608 | 42.39/52.39 | | 54.0/74.0 | -11.61/-21.61 |
| 4804 | 39.31/50.98 | | 54.0/74.0 | -14.69/-23.02 |
| 7206 | 46.85/56.85 | HORIZ | 54.0/74.0 | -7.15/-17.15 |
| 9608 | 48.34/58.34 | | 54.0/74.0 | -5.66/-15.66 |

CH Middle

| Freq. (MHz) | Emission(dBuV/m) AV/PK | HORIZ/ VERT | Limits(dBuV/m) AV/PK | Margin (dB) |
|----------------|---------------------------|----------------|-------------------------|----------------|
| 4880 | 35.64/45.72 | | 54.0/74.0 | -18.36/-28.28 |
| 7320 | 41.53/51.48 | VERT | 54.0/74.0 | -12.47/-22.52 |
| 9760 | 40.46/50.49 | | 54.0/74.0 | -13.54/-23.51 |
| 4880 | 35.72/45.75 | | 54.0/74.0 | -18.28/-28.25 |
| 7320 | 43.79/53.79 | HORIZ | 54.0/74.0 | -10.21/-20.21 |
| 9760 | 48.53/58.52 | | 54.0/74.0 | -5.47/-15.48 |

CH High

| 11gii | ,11 | | | | | | | | |
|-------|----------------|---------------------------|----------------|-------------------------|----------------|--|--|--|--|
| | Freq. (MHz) | Emission(dBuV/m) AV/PK | HORIZ/ VERT | Limits(dBuV/m) AV/PK | Margin (dB) | | | | |
| 4 | 4960 | 38.57/48.61 | | 54.0/74.0 | -15.43/-25.39 | | | | |
| , | 7440 | 42.44/52.44 | VERT | 54.0/74.0 | -11.56/-21.56 | | | | |
| 9 | 9920 | 43.48/53.57 | | 54.0/74.0 | -10.52/-20.43 | | | | |
| 4 | 4960 | 37.84/47.84 | | 54.0/74.0 | -16.16/-26.16 | | | | |
| , | 7440 | 42.53/51.38 | HORIZ | 54.0/74.0 | -11.47/-22.62 | | | | |
| 9 | 9920 | 44.53/53.46 | | 54.0/74.0 | -9.47/-20.54 | | | | |

Note:

- 1. The average measurement was not performed when the peak measured data under the limit of average detection.
- 2. Emissions attenuated more than 20 dB below the permissible value are not reported.

8. BAND EDGE

8.1. Test Equipment

Please refer to Section 4 this report.

8.2. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement. The bandwidth of test receiver is set at 9kHz in below 30MHz. and set at 120kHz in 30-1000MHz, and non-restricted band:RBW=100kHz, restricted band:RBW=1MHz in above 1000MHz. The frequency range from 9kHz to 25GHz is checked.

8.3. Band Edge FCC 15.249(d) Limit

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

8.4. Band Edge Test Result

Pass

ALL of the restriction bands were tested, and only the data of worst case was exhibited.

CH Low

| Freq. (MHz) | Emission(dBuV/m) AV/PK | HORIZ/ VERT | Limits(dBuV/m) AV/PK | Margin (dB) |
|----------------|---------------------------|----------------|-------------------------|----------------|
| 2390 | 44.98/52.77 | | 54.0/74.0 | -9.02/-21.23 |
| 2400 | 50.25/59.67 | VERT | 54.0/74.0 | -3.75/-14.33 |
| 2390 | 45.71/54.78 | | 54.0/74.0 | -8.29/-19.22 |
| 2400 | 47.94/60.89 | HORIZ | 54.0/74.0 | -6.06/-13.11 |

CH High

| <u>5</u> | | | | |
|-------------|---------------------------|----------------|-------------------------|----------------|
| Freq. (MHz) | Emission(dBuV/m) AV/PK | HORIZ/ VERT | Limits(dBuV/m) AV/PK | Margin (dB) |
| 2483.5 | 46.34/57.67 | | 54.0/74.0 | -7.66/-16.33 |
| 2500.00 | 43.37/53.26 | VERT | 54.0/74.0 | -10.63/-20.74 |
| 2483.5 | 47.7/58.26 | | 54.0/74.0 | -6.3/-15.74 |
| 2500.00 | 44.26/52.41 | HORIZ | 54.0/74.0 | -9.74/-21.59 |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

9. 20-DB BANDWIDTH

9.1. Test Equipment

Please refer to Section 4 this report.

9.2. Test Procedure

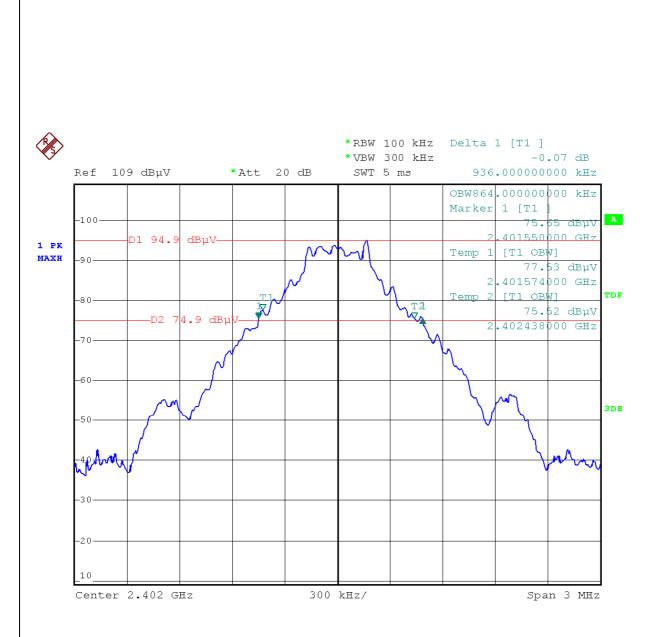
- 1. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement.
- 2. Set center frequency of spectrum analyzer = operating frequency.
- 3. The spectrum analyzer as RBW=100 KHz, VBW=300 KHz, Sweep=5ms.
- 4. Mark the peak frequency and –20dB (upper and lower) frequency.

9.3. Limit

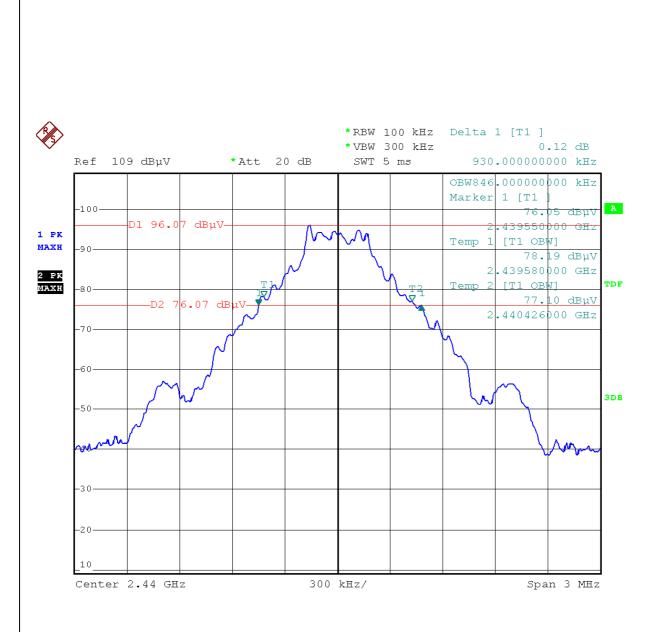
Please refer section15.249

9.4. Test Result /Plots

| Limit | Channel Frequency (MHz) | 20dB Bandwidth (MHz) |
|-------|-------------------------------|----------------------------|
| / | 2402 | 0.936 |
| / | 2440 | 0.930 |
| / | 2480 | 0.930 |



Date: 9.JAN.2016 13:23:32



Date: 9.JAN.2016 13:26:33



Date: 9.JAN.2016 13:31:17

End Of The Report