

APPLICATION FOR CERTIFICATION

On Behalf of

Philips (China) Investment Co., Ltd.

LED Lamp

Model No. : 9290002265A

Brand : Philips

FCC ID : O3M9290002265AX

Prepared for

**Philips (China) Investment Co., Ltd.**

No. 9, Lane 888, Tian Lin Road, 200233, Shanghai, China

Prepared by

**Audix Technology (Wujiang) Co., Ltd. EMC Dept.**

No. 1289 Jiangxing East Road, the Part of Wujiang Economic Development Zone  
Jiangsu China 215200

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Report Number : ACWE-F1407002

Date of Test : Jun.05~30, 2014

Date of Report : Jul.10, 2014

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**TEST REPORT CERTIFICATION**

Applicant : Philips (China) Investment Co., Ltd.  
 Manufacturer #1 : Changan Win Channel Electronics Company Limited  
 Manufacturer #2 : Arts Electronics Co., Ltd.  
 EUT Description : LED Lamp  
 FCC ID : 03M9290002265AX  
 (A) Model No. : 9290002265A  
 (B) Brand : Philips  
 (C) Power Supply : AC 110-130V, 50/60Hz  
 (D) Test Voltage : AC 120V, 60Hz

Applicable Standards:

**FCC RULES AND REGULATIONS PART 15 SUBPART C, Oct. 2012**

**ANSI C63.4-2003**

**KDB 558074 D01 DTS Meas Guidance v03r02**

The device described above was tested by Audix Technology (Wujiang) Co., Ltd. EMC Dept. to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C section 15.207, 15.205, 15.209&15.247 limits.

The measurement results are contained in this test report and Audix Technology (Wujiang) Co., Ltd. EMC Dept. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Wujiang) Co., Ltd. EMC Dept.

Date of Test: Jun.05~30, 2014

Date of Report: Jul.10, 2014

Prepared by

:

Tina Zhang  
(Tina Zhang/Assistant Administrator)

Reviewer

:

Danny Sun  
(Danny Sun/Deputy Section Manager)

Approved & Authorized Signer

:

Ken Lu 7/6/14  
(Ken Lu/Assistant General Manager)

## 1. SUMMARY OF MEASUREMENTS AND RESULTS

The EUT has been tested according to the applicable standards and test results are referred as below.

| Description of Test Item     | Standard                                                                                                                                 | Results | Remark                                              |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------|
| CONDUCTED EMISSION           | FCC 47 CFR Part 15 Subpart C/<br>Section 15.207<br>And ANSI C63.4-2003<br>And KDB 558074 D01 DTS Meas<br>Guidance v03r02                 | PASS    | Minimum passing<br>margin is 13.28 dB<br>at 0.5MHz  |
| RADIATED EMISSION            | FCC 47 CFR Part 15 Subpart C/<br>Section 15.209& Section 15.205<br>And ANSI C63.4-2003<br>And KDB 558074 D01 DTS Meas<br>Guidance v03r02 | PASS    | Minimum passing<br>margin is 8.16 dB at<br>41.64MHz |
| 6 dB BANDWIDTH               | FCC 47 CFR Part 15 Subpart C/<br>Section 15.247(a)(2)<br>And ANSI C63.4-2003<br>And KDB 558074 D01 DTS Meas<br>Guidance v03r02           | PASS    | Minimum passing<br>margin is 167.3 kHz<br>at CH 11  |
| MAXIMUM PEAK<br>OUTPUT POWER | FCC 47 CFR Part 15 Subpart C/<br>Section 15.247(b)(3)<br>And ANSI C63.4-2003<br>And KDB 558074 D01 DTS Meas<br>Guidance v03r02           | PASS    | Minimum passing<br>margin is 22.731dB<br>at CH 26   |
| BAND EDGES                   | FCC 47 CFR Part 15 Subpart C/<br>Section 15.247(d)<br>And ANSI C63.4-2003<br>And KDB 558074 D01 DTS Meas<br>Guidance v03r02              | PASS    | ---                                                 |
| POWER SPECTRAL<br>DENSITY    | FCC 47 CFR Part 15 Subpart C/<br>Section 15.247(e)<br>And ANSI C63.4-2003<br>And KDB 558074 D01 DTS Meas<br>Guidance v03r02              | PASS    | Minimum passing<br>margin is 21.939dB<br>at CH 26   |
| EMISSION<br>LIMITATIONS      | FCC 47 CFR Part 15 Subpart C/<br>Section 15.247(d)<br>And ANSI C63.4-2003<br>And KDB 558074 D01 DTS Meas<br>Guidance v03r02              | PASS    | ---                                                 |

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

|                              |   |                                                                                                                                                          |
|------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description                  | : | LED Lamp                                                                                                                                                 |
| Model No.                    | : | 9290002265A                                                                                                                                              |
| FCC ID                       | : | O3M9290002265AX                                                                                                                                          |
| Brand                        | : | Philips                                                                                                                                                  |
| Applicant                    | : | Philips (China) Investment Co., Ltd.<br>No. 9, Lane 888, Tian Lin Road, 200233, Shanghai, China                                                          |
| Manufacturer #1              | : | Changan Win Channel Electronics Company Limited<br>No.85, Tong Gu Xia Lu, Shangjiao Community, Changan<br>Town, Dongguan City, Guangdong Province, China |
| Manufacturer #2              | : | Arts Electronics Co., Ltd.<br>Shangxing Lu, Shangjiao Community, Changan Town,<br>Dongguan Guangdong523000 China                                         |
| Radio Technology             | : | IEEE 802.15.4 (ZigBee®)                                                                                                                                  |
| Antenna Gain                 | : | -3dBi                                                                                                                                                    |
| Fundamental Range            | : | 2405 MHz -2480MHz                                                                                                                                        |
| Tested Frequency             | : | 2405MHz (CH11)<br>2450MHz (CH20)<br>2480MHz (CH26)                                                                                                       |
| Highest Working<br>Frequency | : | 2.4GHz                                                                                                                                                   |
| Power Rating                 | : | 8.5W, 160mA                                                                                                                                              |
| Modulation type              | : | O-QPSK                                                                                                                                                   |
| Date of Receipt of Sample    | : | Jun.04, 2013                                                                                                                                             |
| Date of Test                 | : | Jun.05~30, 2014                                                                                                                                          |

## 2.2. Description of Test Facility

Name of Firm : **Audix Technology (Wujiang) Co., Ltd. EMC Dept.**

Site Location : No. 1289 Jiangxing East Road, the Eastern Part of  
Wujiang Economic Development Zone  
Jiangsu China 215200

Test Facilities : **No.1 Conducted Shielding Enclosure**  
  
**No.1 3m Semi-anechoic Chamber**  
Date of Validity: May. 23, 2015  
FCC Registration No.: 897661  
IC Registration No.:5183D-2  
  
**RF Fully Chamber**

NVLAP Lab Code : 200786-0  
(NVLAP is a NATA accredited body under Mutual  
Recognition Agreement)  
Valid until on Sep.30, 2014

## 2.3. Measurement Uncertainty

| Test Item                                           | Range Frequency | Uncertainty         |
|-----------------------------------------------------|-----------------|---------------------|
| Conducted Disturbance Measurement                   | 0.15MHz ~ 30MHz | $\pm 2.48\text{dB}$ |
| Radiated Disturbance Measurement<br>(At 3m Chamber) | Below 1GHz      | $\pm 3.42\text{dB}$ |
| Radiated Disturbance Measurement<br>(At 3m Chamber) | Above 1GHz      | $\pm 4.49\text{dB}$ |

Remark: Uncertainty =  $k_{uc}(y)$

| Test Item                 | Uncertainty                          |
|---------------------------|--------------------------------------|
| 6 dB Bandwidth            | $\pm 3.1 \times 10^{-6} \text{ MHz}$ |
| Maximum Peak Output Power | $\pm 0.30\text{dB}$                  |
| Band Edges                | $\pm 0.302\text{dB}$                 |
| Power Spectral Density    | $\pm 0.212\text{dB}$                 |
| Emission Limitations      | $\pm 0.24\text{dB}$                  |

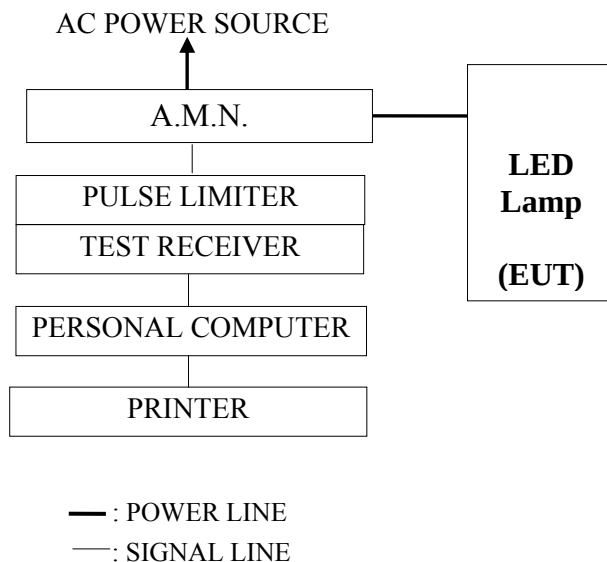
Remark: Uncertainty =  $k_{uc}(y)$

### 3. CONDUCTED EMISSION MEASUREMENT

#### 3.1. Test Equipment

| Item | Type          | Manufacturer       | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|---------------|--------------------|-----------|------------|------------|------------|
| 1.   | Test Receiver | R & S              | ESCI      | 100352     | 2014-01-05 | 2015-01-04 |
| 2.   | A.M.N         | R&S                | ESH2-Z5   | 100153     | 2014-05-15 | 2015-05-14 |
| 3.   | Pulse Limiter | R&S                | ESH3-Z2   | 100605     | 2013-08-06 | 2014-08-05 |
| 4.   | RF Cable      | Harbour Industries | RG400     | 002        | 2014-03-24 | 2015-03-23 |

#### 3.2. Block Diagram of Test Setup



#### 3.3. Power line Conducted Emission Limit

(FCC Part 15, Section 15.207, Class B)

| Frequency       | Maximum RF Line Voltage |                    |
|-----------------|-------------------------|--------------------|
|                 | Quasi-Peak Level        | Average Level      |
| 150kHz ~ 500kHz | 66 ~ 56 dB $\mu$ V      | 56 ~ 46 dB $\mu$ V |
| 500kHz ~ 5MHz   | 56 dB $\mu$ V           | 46 dB $\mu$ V      |
| 5MHz ~ 30MHz    | 60 dB $\mu$ V           | 50 dB $\mu$ V      |

Remark1: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2: The lower limit applies at the band edges.



### 3.4. Test Procedure

The measuring process is according to ANSI C63.4-2003 and laboratory internal procedure TKG-301-004. (For FCC Part15 Subpart C)

In the conducted emission measurement, the EUT and all peripheral devices were set up on a non-metallic table which was 0.8 meters height above the ground plane, and 0.4 meters far away from the vertical plane. The EUT (installed in PC system) was powered by AC mains through Artificial Mains Network (A.M.N), other peripheral devices were powered by AC mains through the second Line Impedance Stabilization Network (L.I.S.N). For the measurement, the A.M.N measuring port was terminated by a 50Ω measuring equipment and the second L.I.S.N measuring port was terminated by a 50Ω resistive load. All measurements were done on the phase and neutral line of the EUT's power cord. All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver was set at 9 kHz.

The required frequency band (0.15 MHz ~ 30 MHz) was pre-scanned with peak detector, the final measurement was measured with quasi-peak detector and average detector. (If the average limit is met when using a quasi-peak detector, the average detector is necessary).

The emission level is calculated automatically by the test system which uses the following equation:

Emission level (dBμV) = Meter-Reading (dBμV) + A.M.N factor (dB) + Cable loss (dB).

(Cable loss include pulse limiter loss)

### 3.5. Conducted Emission Measurement Results

For FCC Part15 Subpart C

**PASSED.**

(All the emissions not reported below are too low against the prescribed limits.)

EUT was performed during this section testing and all the test results are attached in next pages.

Test Date : Jun.26, 2014

Temperature : 23.9°C

Humidity : 59%

| Mode | Test Condition | Reference Test Data No. |            |
|------|----------------|-------------------------|------------|
|      |                | Neutral                 | Line       |
| 1    | CH 11          | # 5                     | # 6        |
| 2    | <b>CH 20</b>   | <b>※# 7</b>             | <b># 8</b> |
| 3    | CH 26          | # 9                     | # 10       |

NOTE 1- '※' means the worst test mode.

NOTE 2- The worst emission is detected at 0.50 MHz with emission level of 32.72 dB (μV) and with AV detector (Limit is 46.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

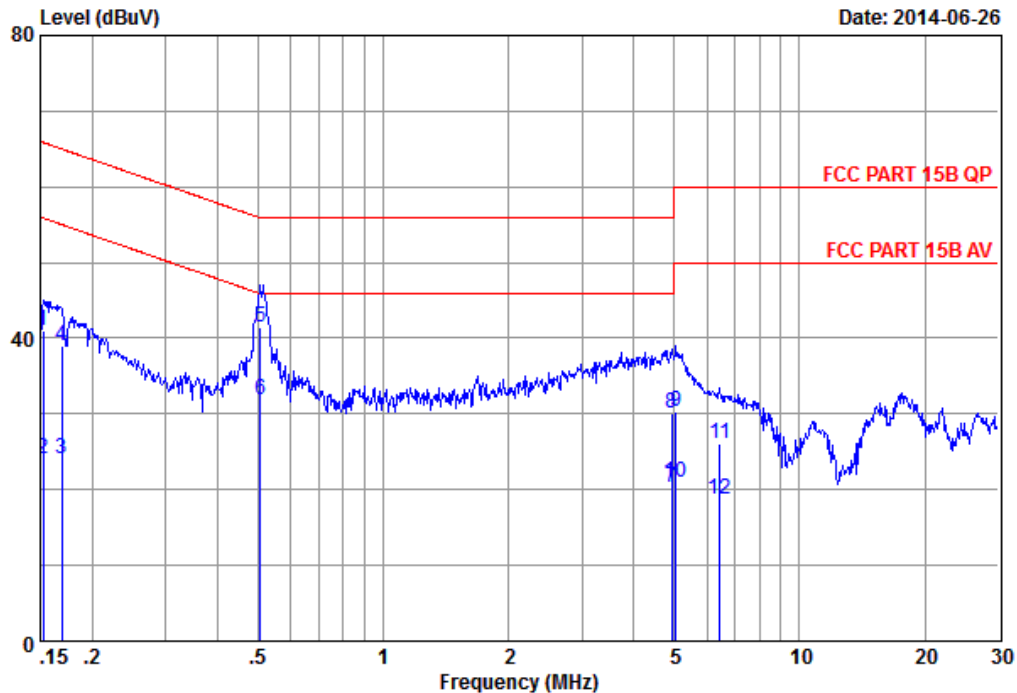


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Data: 5

File: F:\2014Test Data\Report\05\G1405023.EM6 (18)

Date: 2014-06-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 5  
AMN/LISN : ESH2-Z5-1405 Phase : NEUTRAL  
Limit : FCC PART 15B QP  
Env. / Ins. : 23.9°C&59%/ESCI Engineer : KM.Tong  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test mode : Transmitting  
Memo : CH11 2405MHz

|    | Freq.<br>(MHz) | AMN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|-----------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.15           | 0.13                  | 9.86                  | 30.91             | 40.90                       | 65.86            | 24.96          | QP      |
| 2  | 0.15           | 0.13                  | 9.86                  | 14.01             | 24.00                       | 55.86            | 31.86          | Average |
| 3  | 0.17           | 0.13                  | 9.87                  | 14.10             | 24.10                       | 55.02            | 30.92          | Average |
| 4  | 0.17           | 0.13                  | 9.87                  | 28.90             | 38.90                       | 65.02            | 26.12          | QP      |
| 5  | 0.51           | 0.15                  | 9.87                  | 31.40             | 41.42                       | 56.00            | 14.58          | QP      |
| 6  | 0.51           | 0.15                  | 9.87                  | 21.90             | 31.92                       | 46.00            | 14.08          | Average |
| 7  | 4.93           | 0.27                  | 9.94                  | 10.10             | 20.31                       | 46.00            | 25.69          | Average |
| 8  | 4.93           | 0.27                  | 9.94                  | 19.80             | 30.01                       | 56.00            | 25.99          | QP      |
| 9  | 5.05           | 0.27                  | 9.94                  | 20.20             | 30.41                       | 60.00            | 29.59          | QP      |
| 10 | 5.05           | 0.27                  | 9.94                  | 10.80             | 21.01                       | 50.00            | 28.99          | Average |
| 11 | 6.42           | 0.31                  | 9.96                  | 15.81             | 26.08                       | 60.00            | 33.92          | QP      |
| 12 | 6.42           | 0.31                  | 9.96                  | 8.51              | 18.78                       | 50.00            | 31.22          | Average |

1. Emission Level = AMN Factor + Cable Loss + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

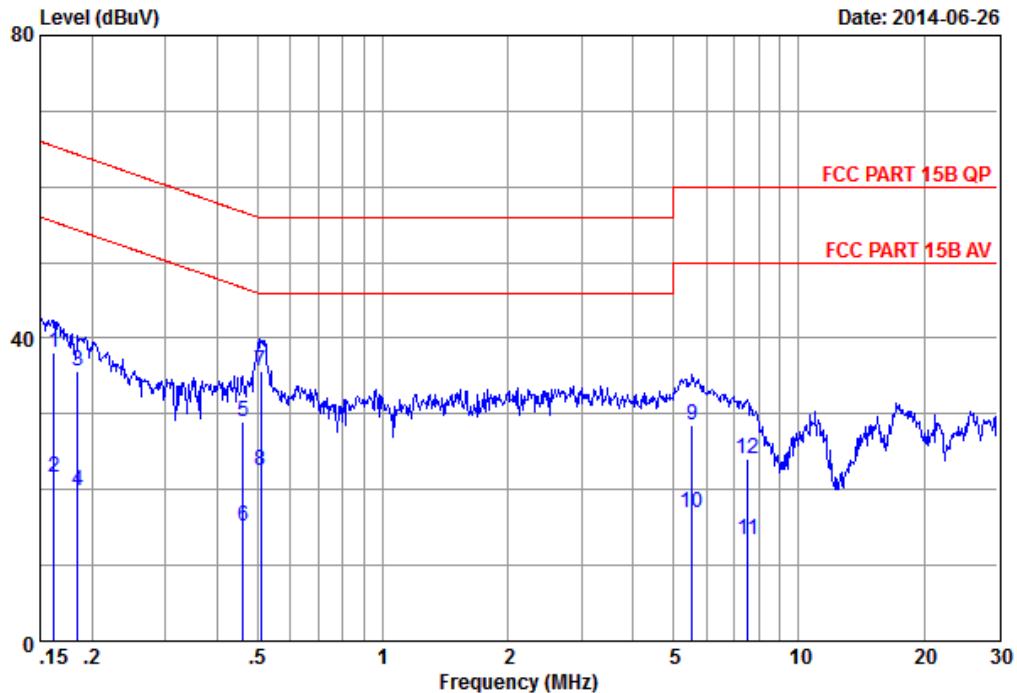


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Data: 6

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Date: 2014-06-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 6  
 AMN/LISN : ESH2-Z5-1405 Phase : LINE  
 Limit : FCC PART 15B QP  
 Env. / Ins. : 23.9°C&59%/ESCI Engineer : KM.Tong  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating : 120Vac/60Hz  
 Test mode : Transmitting  
 Memo : CH11 2405MHz

|    | Freq.<br>(MHz) | AMN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|-----------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.16           | 0.19                  | 9.86                  | 28.00             | 38.05                       | 65.38            | 27.33          | QP      |
| 2  | 0.16           | 0.19                  | 9.86                  | 11.60             | 21.65                       | 55.38            | 33.73          | Average |
| 3  | 0.18           | 0.18                  | 9.87                  | 25.70             | 35.75                       | 64.28            | 28.53          | QP      |
| 4  | 0.18           | 0.18                  | 9.87                  | 9.70              | 19.75                       | 54.28            | 34.53          | Average |
| 5  | 0.46           | 0.20                  | 9.87                  | 18.90             | 28.97                       | 56.66            | 27.69          | QP      |
| 6  | 0.46           | 0.20                  | 9.87                  | 5.10              | 15.17                       | 46.66            | 31.49          | Average |
| 7  | 0.51           | 0.20                  | 9.87                  | 25.50             | 35.57                       | 56.00            | 20.43          | QP      |
| 8  | 0.51           | 0.20                  | 9.87                  | 12.50             | 22.57                       | 46.00            | 23.43          | Average |
| 9  | 5.54           | 0.30                  | 9.95                  | 18.30             | 28.55                       | 60.00            | 31.45          | QP      |
| 10 | 5.54           | 0.30                  | 9.95                  | 6.60              | 16.85                       | 50.00            | 33.15          | Average |
| 11 | 7.53           | 0.32                  | 9.98                  | 3.00              | 13.30                       | 50.00            | 36.70          | Average |
| 12 | 7.53           | 0.32                  | 9.98                  | 13.80             | 24.10                       | 60.00            | 35.90          | QP      |

1. Emission Level = AMN Factor + Cable Loss + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

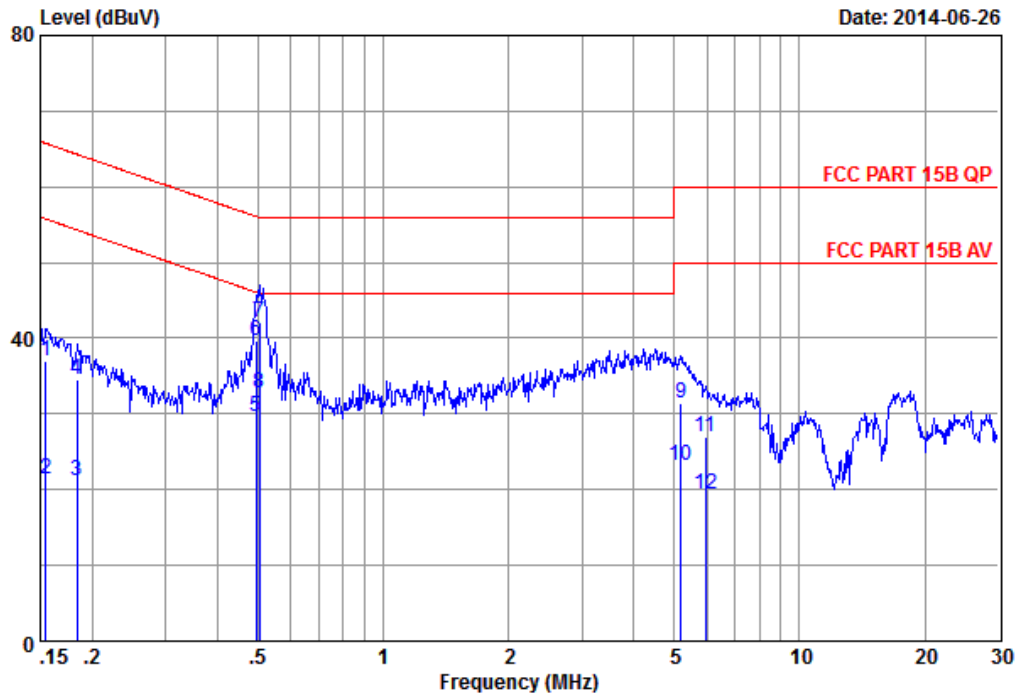


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Data: 7

File: F:\2014Test Data\Report\05\G1405023.EM6 (18)

Date: 2014-06-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 7  
AMN/LISN : ESH2-Z5-1405 Phase : NEUTRAL  
Limit : FCC PART 15B QP  
Env. / Ins. : 23.9°C&59%/ESCI Engineer : KM.Tong  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test mode : Transmitting  
Memo : CH20 2450MHz

|    | Freq.<br>(MHz) | AMN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|-----------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.15           | 0.13                  | 9.86                  | 26.91             | 36.90                       | 65.74            | 28.84          | QP      |
| 2  | 0.15           | 0.13                  | 9.86                  | 11.51             | 21.50                       | 55.74            | 34.24          | Average |
| 3  | 0.18           | 0.13                  | 9.87                  | 11.10             | 21.10                       | 54.31            | 33.21          | Average |
| 4  | 0.18           | 0.13                  | 9.87                  | 24.60             | 34.60                       | 64.31            | 29.71          | QP      |
| 5  | 0.49           | 0.15                  | 9.87                  | 19.60             | 29.62                       | 46.09            | 16.47          | Average |
| 6  | 0.49           | 0.15                  | 9.87                  | 29.70             | 39.72                       | 56.09            | 16.37          | QP      |
| 7  | 0.50           | 0.15                  | 9.87                  | 32.10             | 42.12                       | 56.00            | 13.88          | QP      |
| 8  | 0.50           | 0.15                  | 9.87                  | 22.70             | 32.72                       | 46.00            | 13.28          | Average |
| 9  | 5.19           | 0.28                  | 9.94                  | 21.30             | 31.52                       | 60.00            | 28.48          | QP      |
| 10 | 5.19           | 0.28                  | 9.94                  | 12.90             | 23.12                       | 50.00            | 26.88          | Average |
| 11 | 5.95           | 0.30                  | 9.96                  | 16.60             | 26.86                       | 60.00            | 33.14          | QP      |
| 12 | 5.95           | 0.30                  | 9.96                  | 9.10              | 19.36                       | 50.00            | 30.64          | Average |

1. Emission Level = AMN Factor + Cable Loss + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

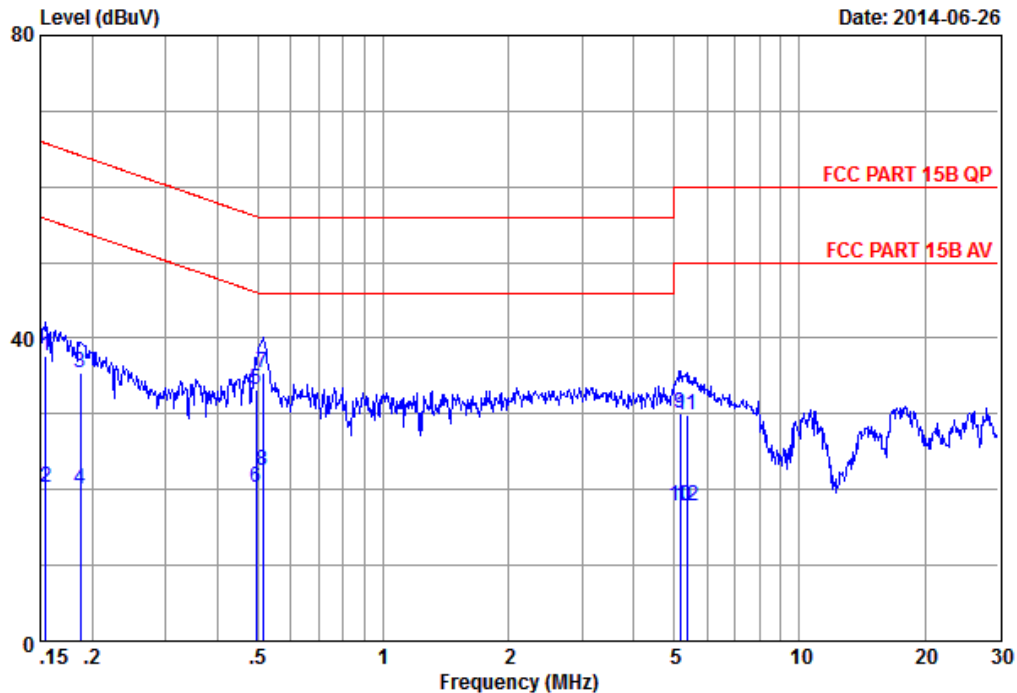


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Data: 8

File: F:\2014Test Data\Report\05\G1405023.EM6 (18)

Date: 2014-06-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 8  
AMN/LISN : ESH2-Z5-1405 Phase : LINE  
Limit : FCC PART 15B QP  
Env. / Ins. : 23.9\*C&59%/ESCI Engineer : KM.Tong  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test mode : Transmitting  
Memo : CH20 2450MHz

|    | Freq.<br>(MHz) | AMN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|-----------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.15           | 0.19                  | 9.86                  | 27.50             | 37.55                       | 65.73            | 28.18          | QP      |
| 2  | 0.15           | 0.19                  | 9.86                  | 10.20             | 20.25                       | 55.73            | 35.48          | Average |
| 3  | 0.19           | 0.18                  | 9.87                  | 25.30             | 35.35                       | 64.14            | 28.79          | QP      |
| 4  | 0.19           | 0.18                  | 9.87                  | 9.90              | 19.95                       | 54.14            | 34.19          | Average |
| 5  | 0.50           | 0.20                  | 9.87                  | 23.20             | 33.27                       | 56.08            | 22.81          | QP      |
| 6  | 0.50           | 0.20                  | 9.87                  | 10.10             | 20.17                       | 46.08            | 25.91          | Average |
| 7  | 0.51           | 0.20                  | 9.87                  | 25.30             | 35.37                       | 56.00            | 20.63          | QP      |
| 8  | 0.51           | 0.20                  | 9.87                  | 12.40             | 22.47                       | 46.00            | 23.53          | Average |
| 9  | 5.17           | 0.29                  | 9.94                  | 19.81             | 30.04                       | 60.00            | 29.96          | QP      |
| 10 | 5.17           | 0.29                  | 9.94                  | 7.61              | 17.84                       | 50.00            | 32.16          | Average |
| 11 | 5.36           | 0.30                  | 9.95                  | 19.59             | 29.84                       | 60.00            | 30.16          | QP      |
| 12 | 5.36           | 0.30                  | 9.95                  | 7.59              | 17.84                       | 50.00            | 32.16          | Average |

1. Emission Level = AMN Factor + Cable Loss + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

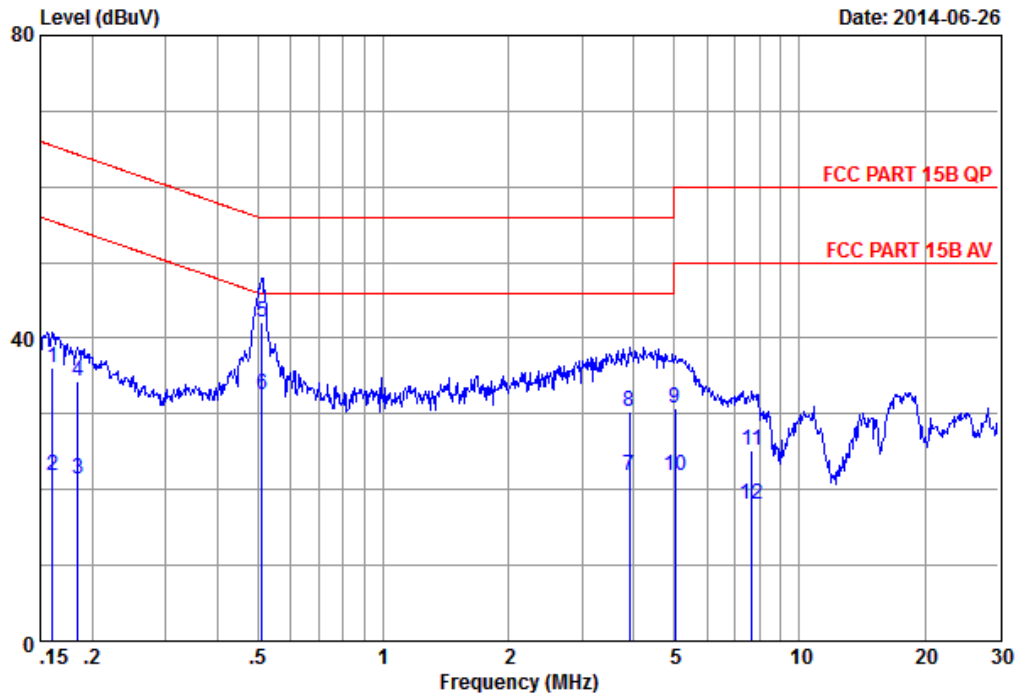


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Data: 9

File: F:\2014Test Data\Report\05\G1405023.EM6 (18)

Date: 2014-06-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 9  
AMN/LISN : ESH2-Z5-1405 Phase : NEUTRAL  
Limit : FCC PART 15B QP  
Env. / Ins. : 23.9°C&59%/ESCI Engineer : KM.Tong  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test mode : Transmitting  
Memo : CH26 2480MHz

|    | Freq.<br>(MHz) | AMN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|-----------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.16           | 0.13                  | 9.86                  | 26.21             | 36.20                       | 65.42            | 29.22          | QP      |
| 2  | 0.16           | 0.13                  | 9.86                  | 11.81             | 21.80                       | 55.42            | 33.62          | Average |
| 3  | 0.18           | 0.13                  | 9.87                  | 11.40             | 21.40                       | 54.26            | 32.86          | Average |
| 4  | 0.18           | 0.13                  | 9.87                  | 24.30             | 34.30                       | 64.26            | 29.96          | QP      |
| 5  | 0.51           | 0.15                  | 9.87                  | 32.20             | 42.22                       | 56.00            | 13.78          | QP      |
| 6  | 0.51           | 0.15                  | 9.87                  | 22.60             | 32.62                       | 46.00            | 13.38          | Average |
| 7  | 3.91           | 0.25                  | 9.93                  | 11.60             | 21.78                       | 46.00            | 24.22          | Average |
| 8  | 3.91           | 0.25                  | 9.93                  | 20.20             | 30.38                       | 56.00            | 25.62          | QP      |
| 9  | 5.03           | 0.27                  | 9.94                  | 20.60             | 30.81                       | 60.00            | 29.19          | QP      |
| 10 | 5.03           | 0.27                  | 9.94                  | 11.70             | 21.91                       | 50.00            | 28.09          | Average |
| 11 | 7.68           | 0.34                  | 9.98                  | 14.90             | 25.22                       | 60.00            | 34.78          | QP      |
| 12 | 7.68           | 0.34                  | 9.98                  | 7.70              | 18.02                       | 50.00            | 31.98          | Average |

1. Emission Level = AMN Factor + Cable Loss + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

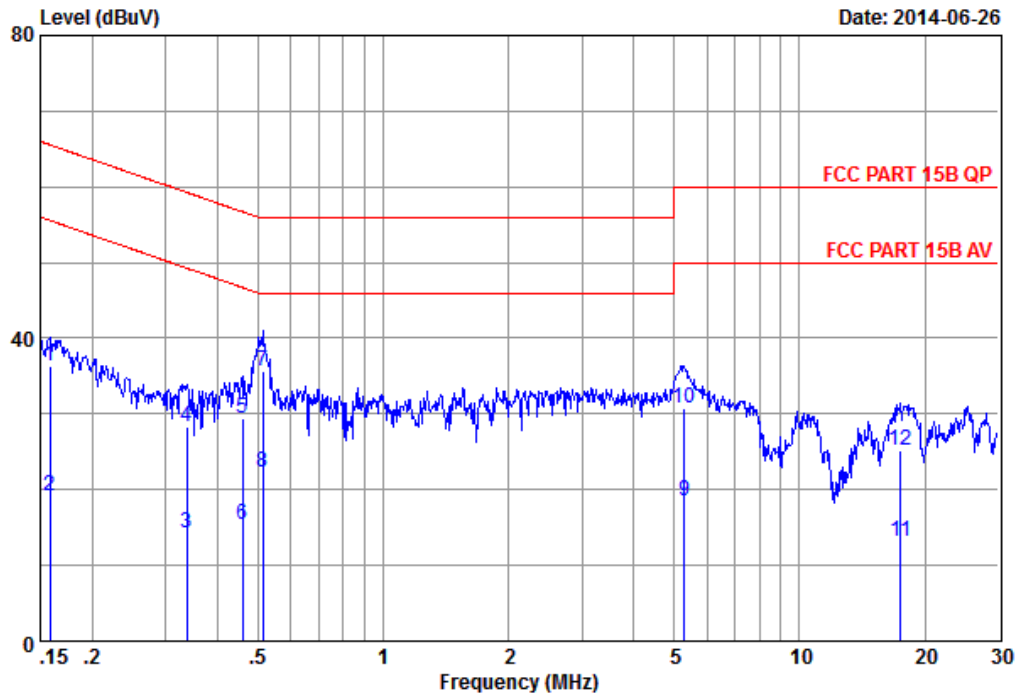


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Data: 10

File: F:\2014Test Data\Report\05\G1405023.EM6 (18)

Date: 2014-06-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 10  
 AMN/LISN : ESH2-Z5-1405 Phase : LINE  
 Limit : FCC PART 15B QP  
 Env. / Ins. : 23.9°C&59%/ESCI Engineer : KM.Tong  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating : 120Vac/60Hz  
 Test mode : Transmitting  
 Memo : CH26 2480MHz

|    | Freq.<br>(MHz) | AMN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|-----------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.16           | 0.19                  | 9.86                  | 26.20             | 36.25                       | 65.56            | 29.31          | QP      |
| 2  | 0.16           | 0.19                  | 9.86                  | 9.10              | 19.15                       | 55.56            | 36.41          | Average |
| 3  | 0.34           | 0.19                  | 9.86                  | 4.10              | 14.15                       | 49.27            | 35.12          | Average |
| 4  | 0.34           | 0.19                  | 9.86                  | 18.30             | 28.35                       | 59.27            | 30.92          | QP      |
| 5  | 0.46           | 0.20                  | 9.87                  | 19.30             | 29.37                       | 56.71            | 27.34          | QP      |
| 6  | 0.46           | 0.20                  | 9.87                  | 5.20              | 15.27                       | 46.71            | 31.44          | Average |
| 7  | 0.51           | 0.20                  | 9.87                  | 25.50             | 35.57                       | 56.00            | 20.43          | QP      |
| 8  | 0.51           | 0.20                  | 9.87                  | 12.30             | 22.37                       | 46.00            | 23.63          | Average |
| 9  | 5.28           | 0.29                  | 9.94                  | 8.31              | 18.54                       | 50.00            | 31.46          | Average |
| 10 | 5.28           | 0.29                  | 9.94                  | 20.61             | 30.84                       | 60.00            | 29.16          | QP      |
| 11 | 17.49          | 0.50                  | 10.08                 | 2.50              | 13.08                       | 50.00            | 36.92          | Average |
| 12 | 17.49          | 0.50                  | 10.08                 | 14.60             | 25.18                       | 60.00            | 34.82          | QP      |

1. Emission Level = AMN Factor + Cable Loss + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

## 4. RADIATED EMISSION MEASUREMENT

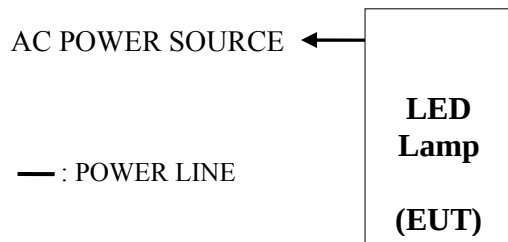
### 4.1. Test Equipment

The following test equipment was used during the radiated emission measurement:  
At 3m Semi-Anechoic Chamber

| Item | Type                | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|---------------------|--------------|-----------|------------|------------|------------|
| 1.   | Preamplifier        | Agilent      | 8449B     | 2944A10921 | 2013-08-14 | 2014-08-13 |
| 2.   | Preamplifier        | Agilent      | 8447D     | 2944A10921 | 2013-08-14 | 2014-08-13 |
| 3.   | PXA Signal Analyzer | Agilent      | N9030A    | MY53120367 | 2014-06-23 | 2015-06-22 |
| 4.   | Test Receiver       | R&S          | ESCI      | 100361     | 2014-01-05 | 2015-01-04 |
| 5.   | Bi-log Antenna      | Schaffner    | CBL6112D  | 22251      | 2014-04-09 | 2015-04-08 |
| 6.   | Horn Antenna        | EMCO         | 3115      | 00062960   | 2014-05-20 | 2015-05-19 |
| 7.   | Horn Antenna        | EMCO         | 3116      | 00062641   | 2013-06-08 | 2015-06-07 |
| 8.   | Test Receiver       | R&S          | ESCI      | 100361     | 2014-01-05 | 2015-01-04 |
| 9.   | RF Cable #1         | Yuhang CSYH  | cable-3m  | 001(0.5m)  | 2013-08-13 | 2014-08-12 |
| 10.  | RF Cable #2         | Yuhang CSYH  | cable-3m  | 002(0.5m)  | 2013-08-13 | 2014-08-12 |
| 11.  | RF Cable #3         | Yuhang CSYH  | cable-3m  | 003(3.0m)  | 2013-08-13 | 2014-08-12 |

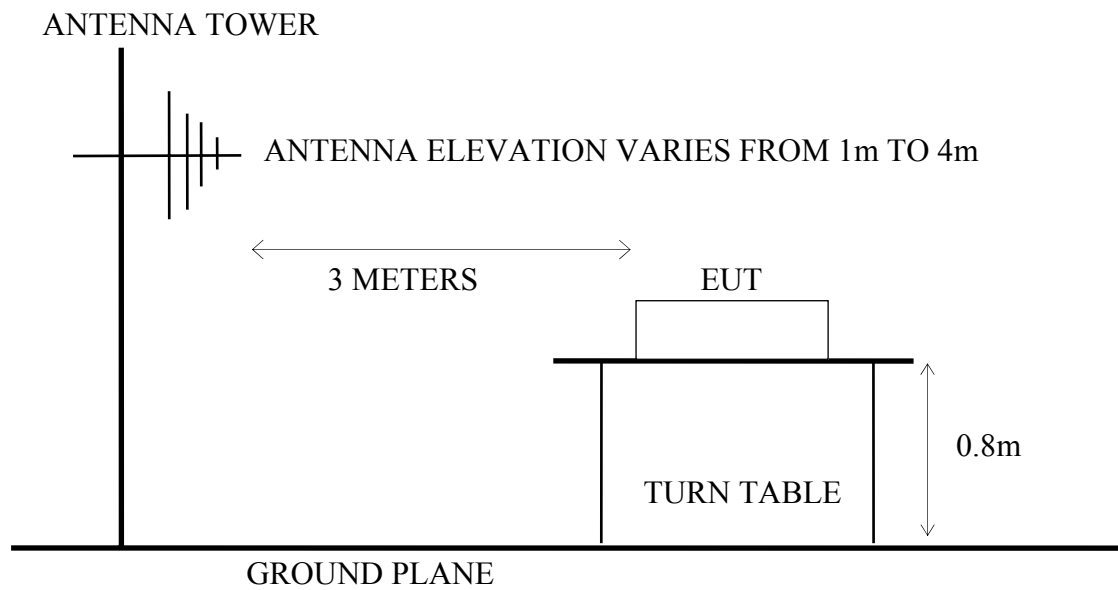
### 4.2. Block Diagram of Test Setup

#### 4.2.1. Block Diagram of Test Setup between EUT and simulators

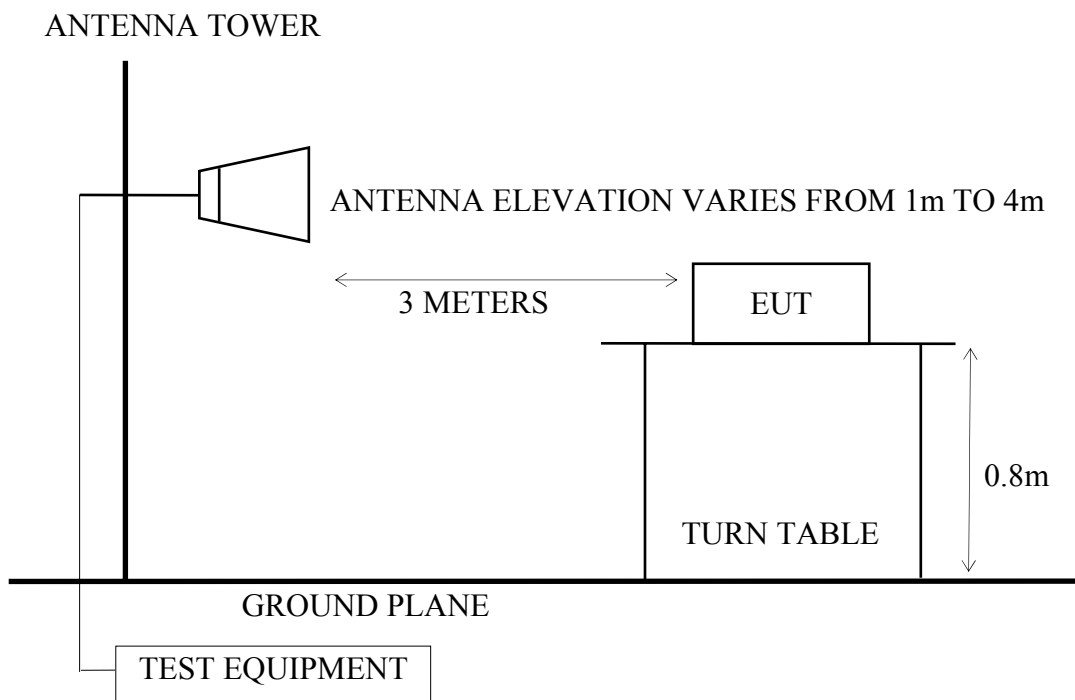




## 4.2.2. No. 1 3m Semi-Anechoic Chamber Setup Diagram (Test distance:3m) for 30-1000MHz



## 4.2.3. No. 1 3m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m) for above 1GHz



#### 4.3. Radiated Emission Limits

Radiated Emission Limits (FCC Part15 C, section 15.209, CISPR22)

| Frequency<br>MHz | Distance Meters | Field Strengths Limits                                  |
|------------------|-----------------|---------------------------------------------------------|
|                  |                 | dB $\mu$ V/m                                            |
| 30 ~ 230         | 10              | 30.0                                                    |
| 230 ~ 1000       | 10              | 37.0                                                    |
| Above 1000       | 3               | 74.0 dB $\mu$ V/m (Peak)<br>54.0 dB $\mu$ V/m (Average) |

Remark : (1) Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)  
(2)The tighter limit applies at the edge between two frequency bands.

#### 4.4. Test Procedure

The measuring process is according to ANSI C63.4-2003 and laboratory internal procedure TKC-301-001. (For FCC Part15 Subpart C)

In the radiated disturbance measurement, the EUT and all simulators were set up on a non-metallic turn table which was 0.8 meters above the ground plane. Measurement distance between EUT and receiving antennas was set at 10 meters at 30MHz~1000MHz and 3 meters at above 1GHz. The specified distance is the distance between the antennas and the closest periphery of EUT. During the radiated measurement, the EUT was rotated 360° and receiving antennas were moved from 1 ~ 4 meters for finding maximum emission. Two receiving antennas were used for both horizontal and vertical polarization detection for 30MHz~1GHz, One receiving antennas was used for both horizontal and vertical polarization detection for above 1GHz (the absorbing material was added when testing of above 1GHz was done). All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver (or spectrum analyzer) was set to:

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz  
RBW (1 MHz), VBW (1MHz) for Peak detector above 1GHz  
RBW (1 MHz), VBW (1MHz) for AV detector above 1GHz

The required frequency band (30 MHz ~ 12000 MHz) was pre-scanned with peak detector; all final measurements were measured with quasi-peak detector below 1GHz, measured with average detector and peak detector above 1GHz.

The emission level is calculated automatically by the test system which uses the following equation :

- For 30-1000MHz measurement:  
Emission Level (dB $\mu$ V/m) = Meter-Reading (dB $\mu$ V)+Antenna Factor (dB/m)+Cable Loss (dB)
- For Above 1GHz measurement:  
Emission Level (dB $\mu$ V/m) = Meter-Reading (dB $\mu$ V)+Antenna Factor (dB/m)+Cable Loss(dB)  
-Pre-amplifier factor (dB)

#### 4.5. Assessment In All Three Orthogonal Planes

After assessment in all three orthogonal planes, when choosing Channel11 test in the radiation, found that XZ plan is the worst mode in Horizontal and YZ plan is the worst mode in Vertical, so in the test of radiation, all with XZ plan(in Horizontal) & YZ plan(in Vertical) model test, refer to the following specific data.

##### Test Mode:XY Plan

| Polarization | Frequency (MHz) | Reading dB (μV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Emission Level dB (μV/m) | Limits dB (μV/m) | Margin (dB) | Remark |
|--------------|-----------------|-----------------|-----------------------|-----------------|--------------------|--------------------------|------------------|-------------|--------|
| Horizontal   | 2405.65         | 93.17           | 28.46                 | 6.40            | 34.81              | 93.22                    | 74.00            | -19.22      | Peak   |
| Vertical     | 2404.60         | 97.88           | 28.46                 | 6.40            | 34.81              | 97.93                    | 74.00            | -23.93      | Peak   |

##### Test Mode:XZ Plan

| Polarization | Frequency (MHz) | Reading dB (μV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Emission Level dB (μV/m) | Limits dB (μV/m) | Margin (dB) | Remark |
|--------------|-----------------|-----------------|-----------------------|-----------------|--------------------|--------------------------|------------------|-------------|--------|
| Horizontal   | 2404.55         | 99.48           | 28.46                 | 6.40            | 34.81              | 99.53                    | 74.00            | -25.53      | Peak   |
| Vertical     | 2404.55         | 95.11           | 28.46                 | 6.40            | 34.81              | 95.16                    | 74.00            | -21.16      | Peak   |

##### Test Mode:YZ Plan

| Polarization | Frequency (MHz) | Reading dB (μV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Emission Level dB (μV/m) | Limits dB (μV/m) | Margin (dB) | Remark |
|--------------|-----------------|-----------------|-----------------------|-----------------|--------------------|--------------------------|------------------|-------------|--------|
| Horizontal   | 2404.60         | 98.25           | 28.46                 | 6.40            | 34.81              | 98.30                    | 74.00            | -24.30      | Peak   |
| Vertical     | 2404.50         | 99.88           | 28.46                 | 6.40            | 34.81              | 99.93                    | 74.00            | -25.93      | Peak   |

#### 4.6. Measurement Results

##### **PASSED**

(All the emissions not reported below are too low against the prescribed limits.)

##### 4.6.1. For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 4.7 & 4.8.  
(The restricted bands defined in part 15.205(a))

For Frequency range : below 1GHz

| No. | Test Mode and Frequency |                      | Reference Test Data No. |          |
|-----|-------------------------|----------------------|-------------------------|----------|
|     |                         |                      | Horizontal              | Vertical |
| 1.  | Transmitting            | 2405MHz (Channel 11) | # 21                    | # 22     |
| 2.  |                         | 2450MHz (Channel 20) | # 23                    | # 24     |
| 3.  |                         | 2480MHz (Channel 26) | # 25                    | # 26     |
| 4.  | Receiving               |                      | # 27                    | # 28     |

For Frequency range : above 1GHz

| No. | Test Mode and Frequency |                      | Reference Test Data No. |          |
|-----|-------------------------|----------------------|-------------------------|----------|
|     |                         |                      | Horizontal              | Vertical |
| 1.  | Transmitting            | 2405MHz (Channel 11) | # 29                    | # 30     |
| 2.  |                         | 2450MHz (Channel 20) | # 31                    | # 32     |
| 3.  |                         | 2480MHz (Channel 26) | # 33                    | # 34     |
| 4.  | Receiving               |                      | # 35                    | # 36     |

#### 4.6.2. For Band Edge Emission

The EUT was tested in restricted bands and all the test results are listed in section 4.9. The restricted bands defined in part 15.205(a))

| No. | Test Mode and Frequency |                      | Reference Test Data No. |            |
|-----|-------------------------|----------------------|-------------------------|------------|
|     |                         |                      | Horizontal              | Vertical   |
| 1.  | Transmitting            | 2405MHz (Channel 11) | # 37, # 39              | # 38, # 40 |
| 2.  |                         | 2480MHz (Channel 26) | # 41, # 43              | # 42, # 44 |

## 4.7. Restricted Bands Measurement Results (For Below 1GHz)



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Site NO. : 3m chamber Data NO. :21  
Dis. / Ant. : 3m 6112D(22251)-1404-3M Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 CLASS B  
Env. / Ins. : 23.3°C50%/ESCI Engineer : boqiang\_li  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test Mode : TX CH11 2405MHz  
Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 47.46          | 9.79                     | 0.44                  | 41.61             | 24.43                         | 40.00              | 15.57          | QP     |
| 2 | 59.10          | 6.23                     | 0.44                  | 41.36             | 20.70                         | 40.00              | 19.30          | QP     |
| 3 | 129.91         | 12.53                    | 0.75                  | 47.44             | 33.80                         | 43.50              | 9.70           | QP     |
| 4 | 199.75         | 11.05                    | 1.00                  | 45.38             | 30.85                         | 43.50              | 12.65          | QP     |
| 5 | 250.19         | 12.92                    | 1.24                  | 42.32             | 30.05                         | 46.00              | 15.95          | QP     |
| 6 | 322.94         | 14.56                    | 1.40                  | 39.71             | 29.15                         | 46.00              | 16.85          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. :22  
Dis. / Ant. : 3m 6112D(22251)-1404-3M Ant. pol. : VERTICAL  
Limit : FCC PART 15 CLASS B  
Env. / Ins. : 23.3°C50%/ESCI Engineer : boqiang\_li  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test Mode : TX CH11 2405MHz  
Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 36.79          | 16.58                    | 0.30                  | 39.68             | 29.09                         | 40.00              | 10.91          | QP     |
| 2 | 47.46          | 9.79                     | 0.44                  | 49.04             | 31.86                         | 40.00              | 8.14           | QP     |
| 3 | 114.39         | 12.62                    | 0.75                  | 43.33             | 29.70                         | 43.50              | 13.80          | QP     |
| 4 | 129.91         | 12.53                    | 0.75                  | 45.17             | 31.53                         | 43.50              | 11.97          | QP     |
| 5 | 202.66         | 10.97                    | 1.01                  | 46.29             | 31.71                         | 43.50              | 11.79          | QP     |
| 6 | 273.47         | 13.40                    | 1.21                  | 37.11             | 25.35                         | 46.00              | 20.65          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. :23  
Dis. / Ant. : 3m 6112D(22251)-1404-3M Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 CLASS B  
Env. / Ins. : 23.3°C50%/ESCI Engineer : boqiang\_li  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test Mode : TX CH20 2450MHz  
Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 44.55          | 11.61                    | 0.42                  | 40.54             | 25.15                         | 40.00              | 14.85          | QP     |
| 2 | 60.07          | 6.10                     | 0.43                  | 40.63             | 19.84                         | 40.00              | 20.16          | QP     |
| 3 | 136.70         | 11.89                    | 0.78                  | 47.82             | 33.60                         | 43.50              | 9.90           | QP     |
| 4 | 202.66         | 10.97                    | 1.01                  | 44.95             | 30.37                         | 43.50              | 13.13          | QP     |
| 5 | 241.46         | 12.27                    | 1.05                  | 42.53             | 29.39                         | 46.00              | 16.61          | QP     |
| 6 | 307.42         | 14.05                    | 1.21                  | 40.40             | 29.23                         | 46.00              | 16.77          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. :24  
Dis. / Ant. : 3m 6112D(22251)-1404-3M Ant. pol. : VERTICAL  
Limit : FCC PART 15 CLASS B  
Env. / Ins. : 23.3°C50%/ESCI Engineer : boqiang\_li  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test Mode : TX CH20 2450MHz  
Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 36.79          | 16.58                    | 0.30                  | 38.61             | 28.02                         | 40.00              | 11.98          | QP     |
| 2 | 47.46          | 9.79                     | 0.44                  | 48.71             | 31.53                         | 40.00              | 8.47           | QP     |
| 3 | 113.42         | 12.57                    | 0.74                  | 42.41             | 28.71                         | 43.50              | 14.79          | QP     |
| 4 | 129.91         | 12.53                    | 0.75                  | 43.74             | 30.10                         | 43.50              | 13.40          | QP     |
| 5 | 195.87         | 10.37                    | 0.98                  | 46.57             | 31.33                         | 43.50              | 12.17          | QP     |
| 6 | 291.90         | 13.60                    | 1.31                  | 35.79             | 24.35                         | 46.00              | 21.65          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. :25  
Dis. / Ant. : 3m 6112D(22251)-1404-3M Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 CLASS B  
Env. / Ins. : 23.3°C50%/ESCI Engineer : boqiang\_li  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test Mode : TX CH26 2480MHz  
Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 44.55          | 11.61                    | 0.42                  | 41.14             | 25.75                         | 40.00              | 14.25          | QP     |
| 2 | 59.10          | 6.23                     | 0.44                  | 41.72             | 21.06                         | 40.00              | 18.94          | QP     |
| 3 | 118.27         | 13.21                    | 0.87                  | 44.31             | 31.41                         | 43.50              | 12.09          | QP     |
| 4 | 132.82         | 12.19                    | 0.74                  | 47.28             | 33.30                         | 43.50              | 10.20          | QP     |
| 5 | 198.78         | 10.86                    | 0.99                  | 45.01             | 30.28                         | 43.50              | 13.22          | QP     |
| 6 | 299.66         | 13.88                    | 1.31                  | 40.35             | 29.15                         | 46.00              | 16.85          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. :26  
Dis. / Ant. : 3m 6112D(22251)-1404-3M Ant. pol. : VERTICAL  
Limit : FCC PART 15 CLASS B  
Env. / Ins. : 23.3°C50%/ESCI Engineer : boqiang\_li  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test Mode : TX CH26 2480MHz  
Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 38.73          | 15.17                    | 0.30                  | 39.26             | 27.28                         | 40.00              | 12.72          | QP     |
| 2 | 47.46          | 9.79                     | 0.44                  | 48.01             | 30.83                         | 40.00              | 9.17           | QP     |
| 3 | 97.90          | 11.29                    | 0.60                  | 41.58             | 26.38                         | 43.50              | 17.12          | QP     |
| 4 | 110.51         | 12.50                    | 0.68                  | 42.49             | 28.65                         | 43.50              | 14.85          | QP     |
| 5 | 122.15         | 13.75                    | 0.80                  | 42.00             | 29.59                         | 43.50              | 13.91          | QP     |
| 6 | 198.78         | 10.86                    | 0.99                  | 46.38             | 31.65                         | 43.50              | 11.85          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. :27  
Dis. / Ant. : 3m 6112D(22251)-1404-3M Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 CLASS B  
Env. / Ins. : 23.3°C50%/ESCI Engineer : boqiang\_li  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test Mode : RX  
Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 47.46          | 9.79                     | 0.44                  | 41.61             | 24.43                         | 40.00              | 15.57          | QP     |
| 2 | 119.24         | 13.60                    | 0.86                  | 43.54             | 31.03                         | 43.50              | 12.47          | QP     |
| 3 | 132.82         | 12.19                    | 0.74                  | 43.20             | 29.22                         | 43.50              | 14.28          | QP     |
| 4 | 199.75         | 11.05                    | 1.00                  | 43.38             | 28.85                         | 43.50              | 14.65          | QP     |
| 5 | 251.16         | 13.02                    | 1.27                  | 39.66             | 27.52                         | 46.00              | 18.48          | QP     |
| 6 | 342.34         | 15.14                    | 1.37                  | 34.16             | 24.05                         | 46.00              | 21.95          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. :28  
Dis. / Ant. : 3m 6112D(22251)-1404-3M Ant. pol. : VERTICAL  
Limit : FCC PART 15 CLASS B  
Env. / Ins. : 23.3°C50%/ESCI Engineer : boqiang\_li  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating : 120Vac/60Hz  
Test Mode : RX  
Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 41.64          | 13.12                    | 0.33                  | 45.83             | 31.84                         | 40.00              | 8.16           | QP     |
| 2 | 46.49          | 10.33                    | 0.45                  | 46.69             | 30.06                         | 40.00              | 9.94           | QP     |
| 3 | 113.42         | 12.57                    | 0.74                  | 41.41             | 27.71                         | 43.50              | 15.79          | QP     |
| 4 | 129.91         | 12.53                    | 0.75                  | 42.74             | 29.10                         | 43.50              | 14.40          | QP     |
| 5 | 195.87         | 10.37                    | 0.98                  | 44.57             | 29.33                         | 43.50              | 14.17          | QP     |
| 6 | 350.10         | 15.41                    | 1.31                  | 31.09             | 21.14                         | 46.00              | 24.86          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



## 4.8. Restricted Bands Measurement Results (For Above 1GHz)



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Site NO. : 3m Semi-Anechoic Chamber  
Dis. / Ant. : 3m 3115-62960-140520  
Limit : FCC PART 15 C PK  
Env. / Ins. : 23.3\*C&50%/N9030A  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating: 120Vac/60Hz  
Test Mode : TX CH11 2405MHz  
Memo :

Data NO. : 29  
Ant. pol. : HORIZONTAL  
Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 4810.00        | 33.01                  | 9.10                  | 36.70             | 34.34                    | 44.47                         | 74.00              | 29.53          | Peak    |
| 2 | 7215.00        | 36.10                  | 11.36                 | 34.69             | 33.65                    | 48.50                         | 74.00              | 25.50          | Peak    |
| 3 | 8322.00        | 37.56                  | 12.13                 | 35.49             | 33.21                    | 51.97                         | 74.00              | 22.03          | Peak    |
| 4 | 9620.00        | 37.68                  | 13.53                 | 34.68             | 33.82                    | 52.07                         | 74.00              | 21.93          | Peak    |
| 5 | 12024.86       | 40.25                  | 14.83                 | 20.12             | 30.94                    | 44.26                         | 54.00              | 9.74           | Average |
| 6 | 12025.00       | 40.25                  | 14.83                 | 33.36             | 30.94                    | 57.50                         | 74.00              | 16.50          | Peak    |
| 7 | 12815.89       | 40.06                  | 15.37                 | 19.15             | 29.02                    | 45.56                         | 54.00              | 8.44           | Average |
| 8 | 12816.00       | 40.06                  | 15.37                 | 32.72             | 29.02                    | 59.13                         | 74.00              | 14.87          | Peak    |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m Semi-Anechoic Chamber  
Dis. / Ant. : 3m 3115-62960-140520  
Limit : FCC PART 15 C PK  
Env. / Ins. : 23.3\*C&50%/N9030A  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating: 120Vac/60Hz  
Test Mode : TX CH11 2405MHz  
Memo :

Data NO. : 30  
Ant. pol. : VERTICAL  
Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 4810.00        | 33.01                  | 9.10                  | 37.30             | 34.34                    | 45.07                         | 74.00              | 28.93          | Peak    |
| 2 | 7215.00        | 36.10                  | 11.36                 | 34.40             | 33.65                    | 48.21                         | 74.00              | 25.79          | Peak    |
| 3 | 8028.00        | 37.32                  | 11.98                 | 36.42             | 33.15                    | 52.57                         | 74.00              | 21.43          | Peak    |
| 4 | 9620.00        | 37.68                  | 13.53                 | 35.64             | 33.82                    | 53.03                         | 74.00              | 20.97          | Peak    |
| 5 | 12024.89       | 40.25                  | 14.83                 | 20.63             | 30.94                    | 44.77                         | 54.00              | 9.23           | Average |
| 6 | 12025.00       | 40.25                  | 14.83                 | 32.75             | 30.94                    | 56.89                         | 74.00              | 17.11          | Peak    |
| 7 | 12871.62       | 40.20                  | 15.43                 | 17.26             | 28.83                    | 44.06                         | 54.00              | 9.94           | Average |
| 8 | 12872.00       | 40.20                  | 15.43                 | 31.91             | 28.83                    | 58.71                         | 74.00              | 15.29          | Peak    |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m Semi-Anechoic Chamber  
Dis. / Ant. : 3m 3115-62960-140520  
Limit : FCC PART 15 C PK  
Env. / Ins. : 23.3°C&50%/N9030A  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating: 120Vac/60Hz  
Test Mode : TX CH20 2450MHz  
Memo :  
Data NO. : 31  
Ant. pol. : HORIZONTAL  
Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 4900.00        | 33.15                  | 9.19                  | 36.29             | 34.33                    | 44.30                         | 74.00              | 29.70          | Peak    |
| 2 | 7350.00        | 36.53                  | 11.33                 | 35.00             | 33.57                    | 49.29                         | 74.00              | 24.71          | Peak    |
| 3 | 8420.00        | 37.64                  | 12.26                 | 35.98             | 33.23                    | 52.65                         | 74.00              | 21.35          | Peak    |
| 4 | 9800.00        | 37.64                  | 13.90                 | 34.29             | 33.96                    | 51.87                         | 74.00              | 22.13          | Peak    |
| 5 | 11443.85       | 39.79                  | 14.31                 | 20.67             | 32.42                    | 42.35                         | 54.00              | 11.65          | Average |
| 6 | 11444.00       | 39.79                  | 14.31                 | 35.16             | 32.42                    | 56.84                         | 74.00              | 17.16          | Peak    |
| 7 | 12249.32       | 39.80                  | 14.80                 | 20.19             | 30.38                    | 44.41                         | 54.00              | 9.59           | Average |
| 8 | 12250.00       | 39.79                  | 14.80                 | 32.33             | 30.38                    | 56.54                         | 74.00              | 17.46          | Peak    |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m Semi-Anechoic Chamber  
Dis. / Ant. : 3m 3115-62960-140520  
Limit : FCC PART 15 C PK  
Env. / Ins. : 23.3°C&50%/N9030A  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating: 120Vac/60Hz  
Test Mode : TX CH20 2450MHz  
Memo :  
Data NO. : 32  
Ant. pol. : VERTICAL  
Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 4906.00        | 33.16                  | 9.19                  | 40.45             | 34.33                    | 48.47                         | 74.00              | 25.53          | Peak    |
| 2 | 7350.00        | 36.53                  | 11.33                 | 34.18             | 33.57                    | 48.47                         | 74.00              | 25.53          | Peak    |
| 3 | 8434.00        | 37.65                  | 12.23                 | 36.26             | 33.23                    | 52.91                         | 74.00              | 21.09          | Peak    |
| 4 | 9800.00        | 37.64                  | 13.90                 | 34.17             | 33.96                    | 51.75                         | 74.00              | 22.25          | Peak    |
| 5 | 12249.65       | 39.80                  | 14.80                 | 20.55             | 30.38                    | 44.77                         | 54.00              | 9.23           | Average |
| 6 | 12250.00       | 39.79                  | 14.80                 | 33.13             | 30.38                    | 57.34                         | 74.00              | 16.66          | Peak    |
| 7 | 12883.88       | 40.23                  | 15.43                 | 18.99             | 28.83                    | 45.82                         | 54.00              | 8.18           | Average |
| 8 | 12886.00       | 40.23                  | 15.43                 | 32.12             | 28.83                    | 58.95                         | 74.00              | 15.05          | Peak    |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m Semi-Anechoic Chamber  
Dis. / Ant. : 3m 3115-62960-140520  
Limit : FCC PART 15 C PK  
Env. / Ins. : 23.3°C&50%/N9030A  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating: 120Vac/60Hz  
Test Mode : TX CH26 2480MHz  
Memo :  
Data NO. : 33  
Ant. pol. : HORIZONTAL  
Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 4960.00        | 33.24                  | 9.21                  | 36.12             | 34.32                    | 44.25                         | 74.00              | 29.75          | Peak    |
| 2 | 7440.00        | 36.81                  | 11.38                 | 34.83             | 33.51                    | 49.51                         | 74.00              | 24.49          | Peak    |
| 3 | 8224.00        | 37.48                  | 12.06                 | 35.54             | 33.19                    | 51.89                         | 74.00              | 22.11          | Peak    |
| 4 | 9078.00        | 37.87                  | 12.68                 | 35.82             | 33.40                    | 52.97                         | 74.00              | 21.03          | Peak    |
| 5 | 11780.00       | 40.13                  | 14.63                 | 34.05             | 31.54                    | 57.27                         | 74.00              | 16.73          | Peak    |
| 6 | 11780.13       | 40.13                  | 14.63                 | 20.84             | 31.54                    | 44.06                         | 54.00              | 9.94           | Average |
| 7 | 12399.63       | 39.50                  | 14.83                 | 20.65             | 30.01                    | 44.97                         | 54.00              | 9.03           | Average |
| 8 | 12400.00       | 39.50                  | 14.83                 | 33.27             | 30.01                    | 57.59                         | 74.00              | 16.41          | Peak    |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m Semi-Anechoic Chamber  
Dis. / Ant. : 3m 3115-62960-140520  
Limit : FCC PART 15 C PK  
Env. / Ins. : 23.3°C&50%/N9030A  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating: 120Vac/60Hz  
Test Mode : TX CH26 2480MHz  
Memo :  
Data NO. : 34  
Ant. pol. : VERTICAL  
Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 4962.00        | 33.24                  | 9.21                  | 39.53             | 34.32                    | 47.66                         | 74.00              | 26.34          | Peak    |
| 2 | 7440.00        | 36.81                  | 11.38                 | 34.92             | 33.51                    | 49.60                         | 74.00              | 24.40          | Peak    |
| 3 | 8812.00        | 37.83                  | 12.71                 | 35.62             | 33.30                    | 52.86                         | 74.00              | 21.14          | Peak    |
| 4 | 9988.00        | 37.60                  | 13.45                 | 35.56             | 34.10                    | 52.51                         | 74.00              | 21.49          | Peak    |
| 5 | 11878.00       | 40.20                  | 14.73                 | 34.18             | 31.27                    | 57.84                         | 74.00              | 16.16          | Peak    |
| 6 | 11878.84       | 40.20                  | 14.73                 | 20.79             | 31.27                    | 44.45                         | 54.00              | 9.55           | Average |
| 7 | 12398.78       | 39.50                  | 14.83                 | 20.74             | 30.01                    | 45.06                         | 54.00              | 8.94           | Average |
| 8 | 12400.00       | 39.50                  | 14.83                 | 32.79             | 30.01                    | 57.11                         | 74.00              | 16.89          | Peak    |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m Semi-Anechoic Chamber  
Dis. / Ant. : 3m 3115-62960-140520  
Limit : FCC PART 15 C PK  
Env. / Ins. : 23.3°C&50%/N9030A  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating: 120Vac/60Hz  
Test Mode : RX  
Memo :

Data NO. : 35  
Ant. pol. : HORIZONTAL  
Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 6054.00        | 34.22                  | 10.16                 | 36.84             | 34.63                    | 46.59                         | 74.00              | 27.41          | Peak   |
| 2 | 7160.00        | 35.92                  | 11.26                 | 35.09             | 33.69                    | 48.58                         | 74.00              | 25.42          | Peak   |
| 3 | 8350.00        | 37.58                  | 12.26                 | 36.77             | 33.21                    | 53.40                         | 74.00              | 20.60          | Peak   |
| 4 | 9064.00        | 37.87                  | 12.59                 | 35.51             | 33.38                    | 52.59                         | 74.00              | 21.41          | Peak   |
| 5 | 9848.00        | 37.63                  | 14.01                 | 35.73             | 34.00                    | 53.37                         | 74.00              | 20.63          | Peak   |
| 6 | 10954.00       | 38.76                  | 13.90                 | 34.11             | 33.66                    | 53.11                         | 74.00              | 20.89          | Peak   |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m Semi-Anechoic Chamber  
Dis. / Ant. : 3m 3115-62960-140520  
Limit : FCC PART 15 C PK  
Env. / Ins. : 23.3°C&50%/N9030A  
EUT : LED Lamp  
M/N : 9290002265A  
Power Rating: 120Vac/60Hz  
Test Mode : RX  
Memo :

Data NO. : 36  
Ant. pol. : VERTICAL  
Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 6068.00        | 34.23                  | 10.22                 | 36.23             | 34.60                    | 46.08                         | 74.00              | 27.92          | Peak   |
| 2 | 7202.00        | 36.06                  | 11.27                 | 36.53             | 33.67                    | 50.19                         | 74.00              | 23.81          | Peak   |
| 3 | 8462.00        | 37.67                  | 12.19                 | 36.03             | 33.24                    | 52.65                         | 74.00              | 21.35          | Peak   |
| 4 | 9442.00        | 37.72                  | 13.31                 | 35.81             | 33.68                    | 53.16                         | 74.00              | 20.84          | Peak   |
| 5 | 10226.00       | 37.51                  | 13.49                 | 34.45             | 34.01                    | 51.44                         | 74.00              | 22.56          | Peak   |
| 6 | 11290.00       | 39.49                  | 14.38                 | 33.73             | 32.83                    | 54.77                         | 74.00              | 19.23          | Peak   |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
2. The emission levels that are 20dB below the official limit are not reported.

## 4.9. Spurious Emission Measurement Results in Band Edge Emission (FCC Part 15, 15.205)

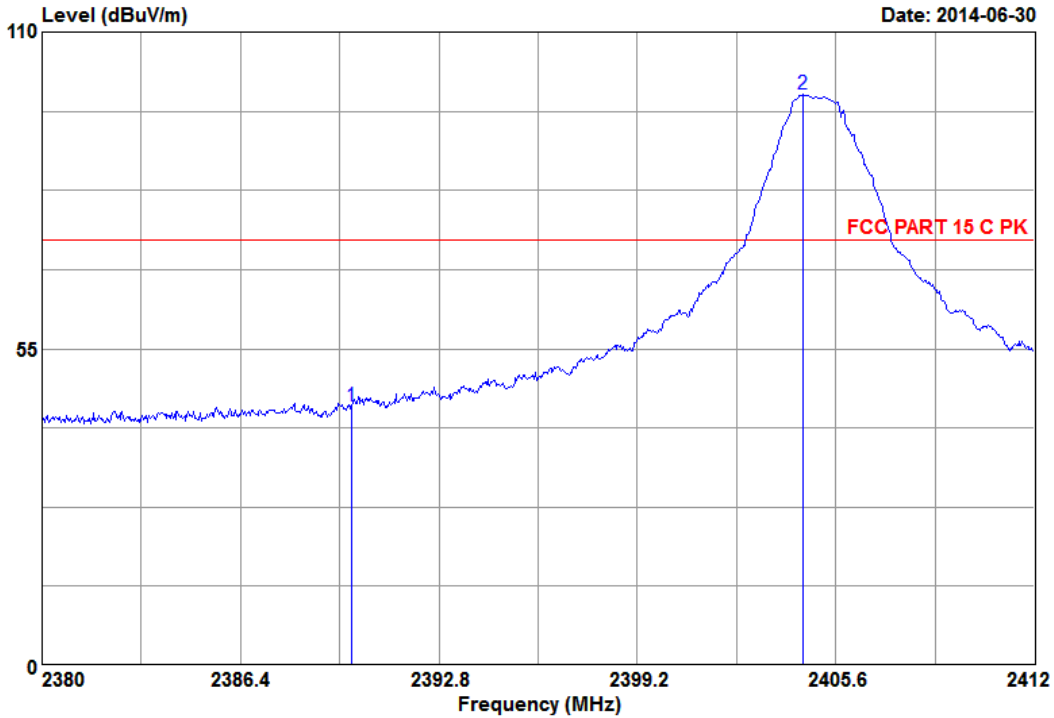


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Data: 37

File: G:\Test Data\2014\Reports\05\G1405023.EM6 (50)

Date: 2014-06-30



Site NO. : 3m Semi-Anechoic Chamber  
 Dis. / Ant. : 3m 3115-62960-140520  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 23.3°C&50%/N9030A  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating: 120Vac/60Hz  
 Test Mode : TX CH11 2405MHz  
 Memo :

Data NO. : 37  
 Ant. pol. : HORIZONTAL  
 Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2390.00        | 28.44                  | 6.40                  | 45.12             | 34.81                    | 45.15                         | 74.00              | 28.85          | Peak   |
| 2 | 2404.55        | 28.46                  | 6.40                  | 99.09             | 34.81                    | 99.14                         | 74.00              | -25.14         | Peak   |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
 2. The emission levels that are 20dB below the official limit are not reported.

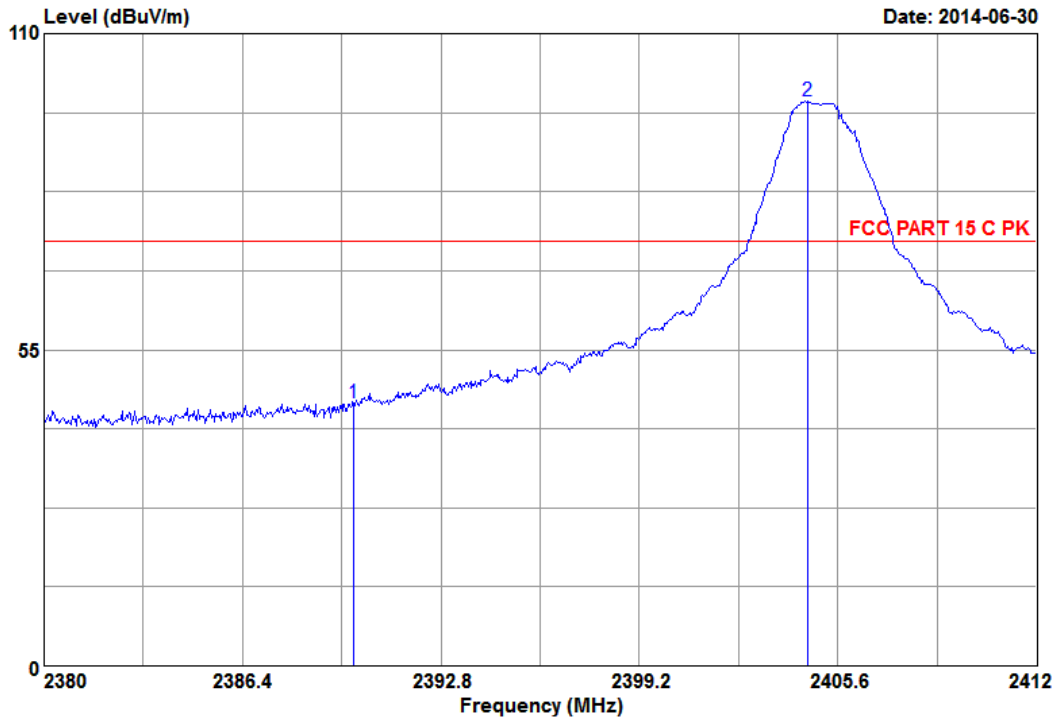


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Data: 38

File: G:\Test Data\2014\Reports\05\G1405023.EM6 (50)

Date: 2014-06-30



Site NO. : 3m Semi-Anechoic Chamber  
 Dis. / Ant. : 3m 3115-62960-140520  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 23.3°C&50%/N9030A  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating: 120Vac/60Hz  
 Test Mode : TX CH11 2405MHz  
 Memo :

Data NO. : 38  
 Ant. pol. : VERTICAL  
 Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2390.00        | 28.44                  | 6.40                  | 45.61             | 34.81                    | 45.64                         | 74.00              | 28.36          | Peak   |
| 2 | 2404.62        | 28.46                  | 6.40                  | 98.16             | 34.81                    | 98.21                         | 74.00              | -24.21         | Peak   |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
 2. The emission levels that are 20dB below the official limit are not reported.

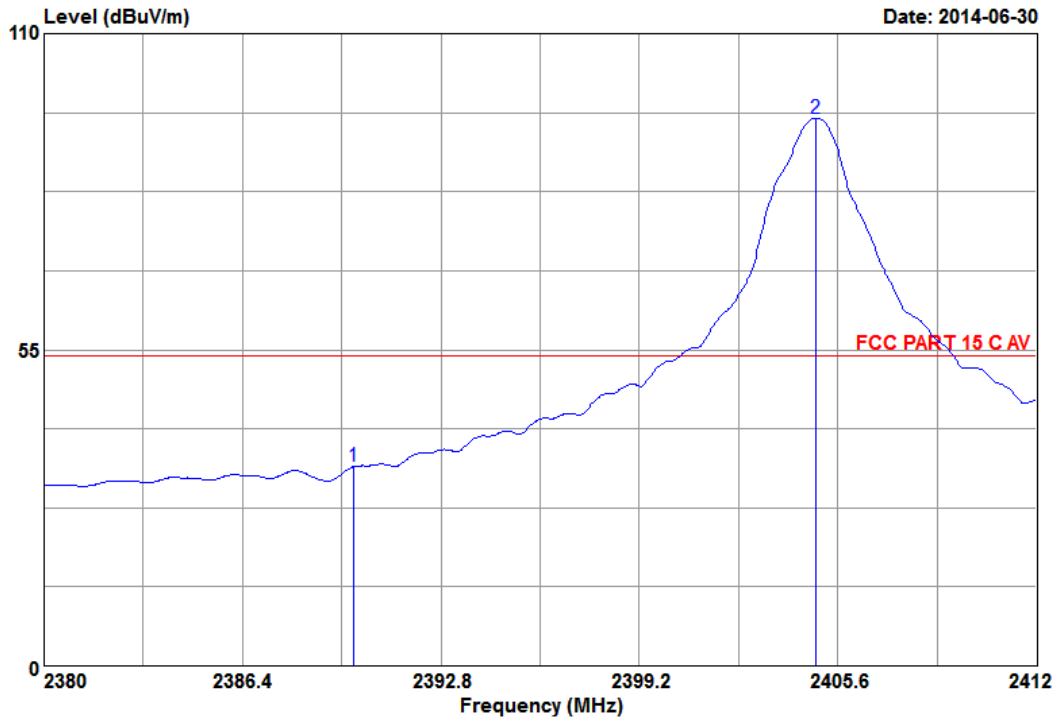


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Data: 39

File: G:\Test Data\2014\Reports\05\G1405023.EM6 (50)

Date: 2014-06-30



Site NO. : 3m Semi-Anechoic Chamber  
 Dis. / Ant. : 3m 3115-62960-140520  
 Limit : FCC PART 15 C AV  
 Env. / Ins. : 23.3\*C&50%/N9030A  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating: 120Vac/60Hz  
 Test Mode : TX CH11 2405MHz  
 Memo :

Data NO. : 39  
 Ant. pol. : HORIZONTAL  
 Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamplifier<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2390.00        | 28.44                  | 6.40                  | 34.67             | 34.81                          | 34.70                         | 54.00              | 19.30          | Average |
| 2 | 2404.89        | 28.46                  | 6.40                  | 95.28             | 34.81                          | 95.33                         | 54.00              | -41.33         | Average |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamplifier.Factor.  
 2. The emission levels that are 20dB below the official limit are not reported.

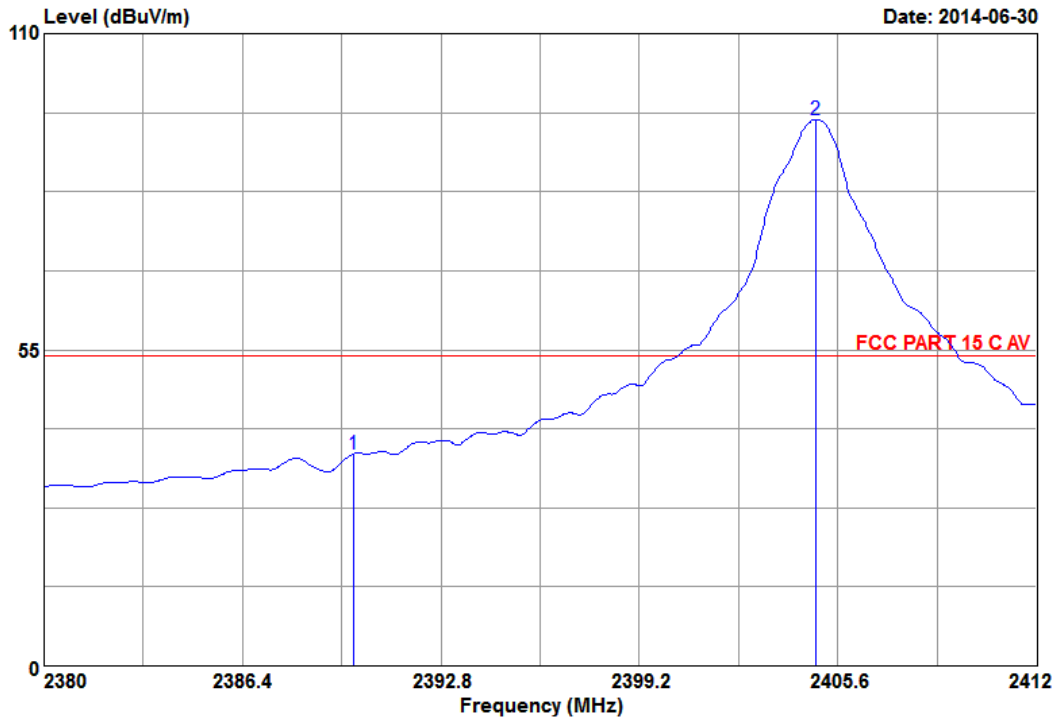


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Data: 40

File: G:\Test Data\2014\Reports\05\G1405023.EM6 (50)

Date: 2014-06-30



Site NO. : 3m Semi-Anechoic Chamber  
 Dis. / Ant. : 3m 3115-62960-140520  
 Limit : FCC PART 15 C AV  
 Env. / Ins. : 23.3\*C&50%/N9030A  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating: 120Vac/60Hz  
 Test Mode : TX CH11 2405MHz  
 Memo :

Data NO. : 40  
 Ant. pol. : VERTICAL  
 Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamplifier<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2390.00        | 28.44                  | 6.40                  | 36.88             | 34.81                          | 36.91                         | 54.00              | 17.09          | Average |
| 2 | 2404.89        | 28.46                  | 6.40                  | 95.04             | 34.81                          | 95.09                         | 54.00              | -41.09         | Average |

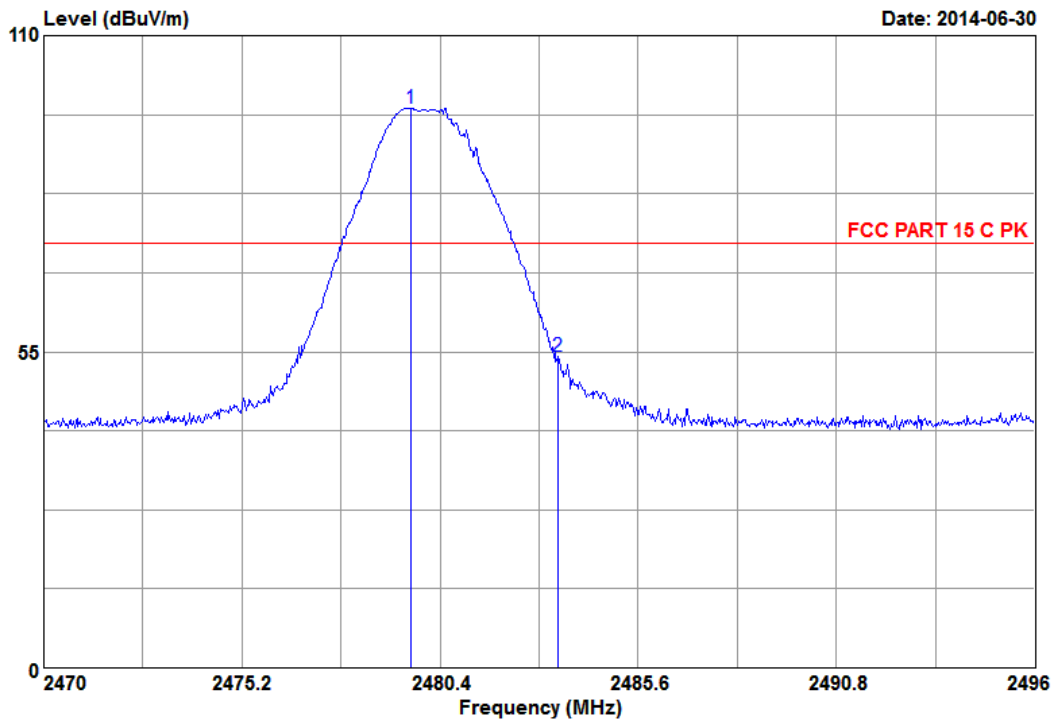
Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamplifier.Factor.  
 2. The emission levels that are 20dB below the official limit are not reported.





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Data: 41 File: G:\Test Data\2014\Reports\05\G1405023.EM6 (50)



Site NO. : 3m Semi-Anechoic Chamber  
 Dis. / Ant. : 3m 3115-62960-140520  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 23.3°C&50%/N9030A  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating: 120Vac/60Hz  
 Test Mode : TX CH26 2480MHz  
 Memo :

Data NO. : 41  
 Ant. pol. : HORIZONTAL  
 Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2479.63        | 28.57                  | 6.44                  | 97.20             | 34.79                    | 97.42                         | 74.00              | -23.42         | Peak   |
| 2 | 2483.50        | 28.58                  | 6.44                  | 54.01             | 34.79                    | 54.24                         | 74.00              | 19.76          | Peak   |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
 2. The emission levels that are 20dB below the official limit are not reported.

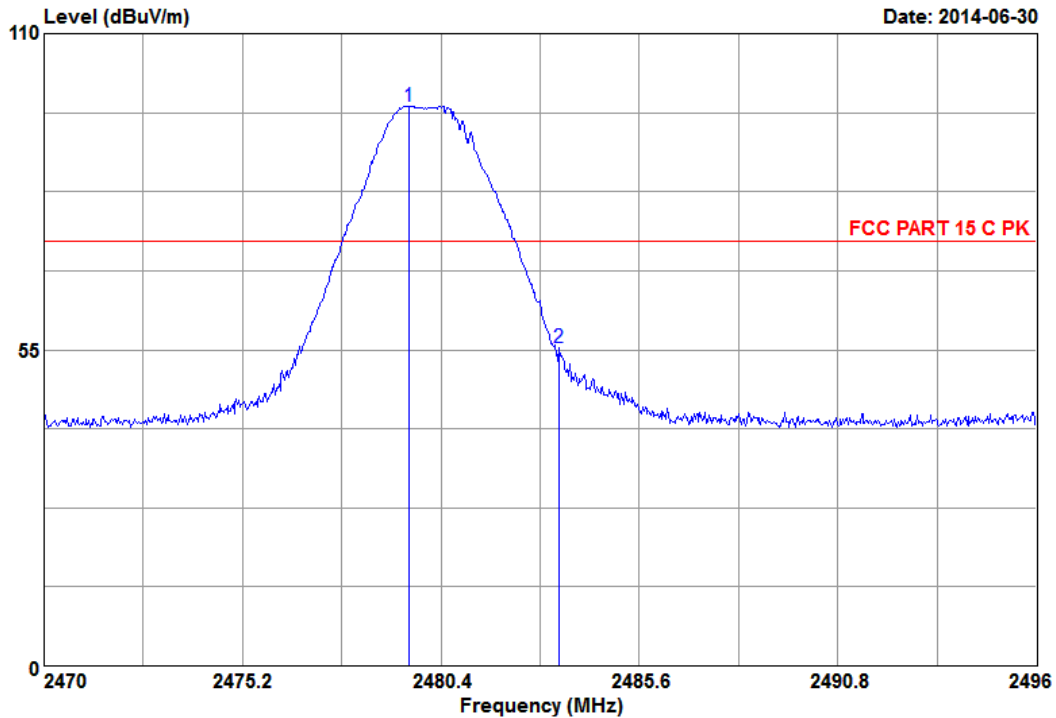


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Data: 42

File: G:\Test Data\2014\Reports\05\G1405023.EM6 (50)

Date: 2014-06-30



Site NO. : 3m Semi-Anechoic Chamber  
 Dis. / Ant. : 3m 3115-62960-140520  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 23.3°C&50%/N9030A  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating: 120Vac/60Hz  
 Test Mode : TX CH26 2480MHz  
 Memo :

Data NO. : 42  
 Ant. pol. : VERTICAL  
 Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2479.57        | 28.57                  | 6.44                  | 97.22             | 34.79                    | 97.44                         | 74.00              | -23.44         | Peak   |
| 2 | 2483.50        | 28.58                  | 6.44                  | 55.19             | 34.79                    | 55.42                         | 74.00              | 18.58          | Peak   |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
 2. The emission levels that are 20dB below the official limit are not reported.

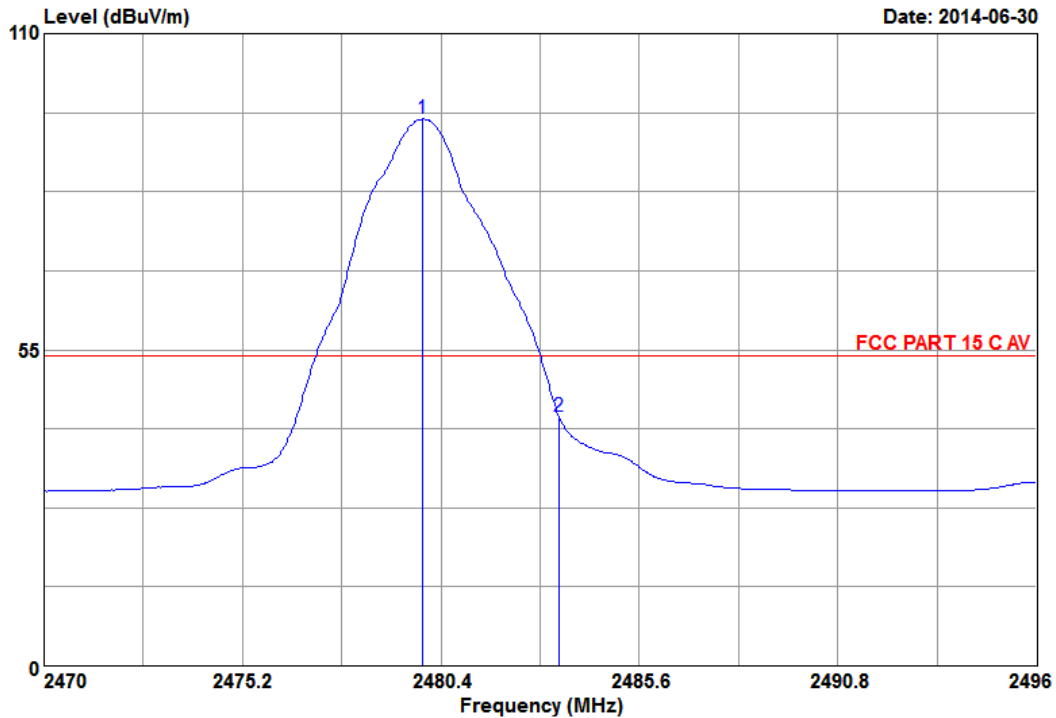


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Data: 43

File: G:\Test Data\2014\Reports\05\G1405023.EM6 (50)

Date: 2014-06-30



Site NO. : 3m Semi-Anechoic Chamber  
 Dis. / Ant. : 3m 3115-62960-140520  
 Limit : FCC PART 15 C AV  
 Env. / Ins. : 23.3°C&50%/N9030A  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating: 120Vac/60Hz  
 Test Mode : TX CH26 2480MHz  
 Memo :

Data NO. : 43  
 Ant. pol. : HORIZONTAL  
 Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2479.93        | 28.57                  | 6.44                  | 94.91             | 34.79                    | 95.13                         | 54.00              | -41.13         | Average |
| 2 | 2483.50        | 28.58                  | 6.44                  | 43.11             | 34.79                    | 43.34                         | 54.00              | 10.66          | Average |

Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
 2. The emission levels that are 20dB below the official limit are not reported.

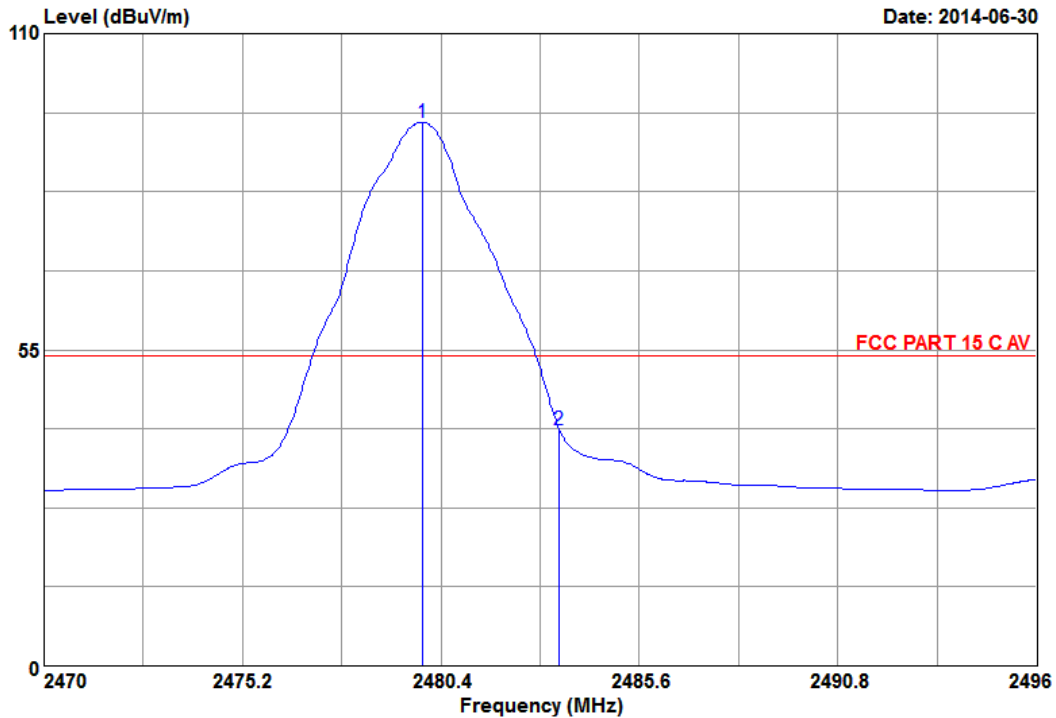


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Data: 44

File: G:\Test Data\2014\Reports\05\G1405023.EM6 (50)

Date: 2014-06-30



Site NO. : 3m Semi-Anechoic Chamber  
 Dis. / Ant. : 3m 3115-62960-140520  
 Limit : FCC PART 15 C AV  
 Env. / Ins. : 23.3\*CE50%/N9030A  
 EUT : LED Lamp  
 M/N : 9290002265A  
 Power Rating: 120Vac/60Hz  
 Test Mode : TX CH26 2480MHz  
 Memo :

Data NO. : 44  
 Ant. pol. : VERTICAL  
 Engineer : boqiang\_li

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Preamp<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|------------------------|-----------------------|-------------------|--------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2479.90        | 28.57                  | 6.44                  | 94.34             | 34.79                    | 94.56                         | 54.00              | -40.56         | Average |
| 2 | 2483.50        | 28.58                  | 6.44                  | 40.94             | 34.79                    | 41.17                         | 54.00              | 12.83          | Average |

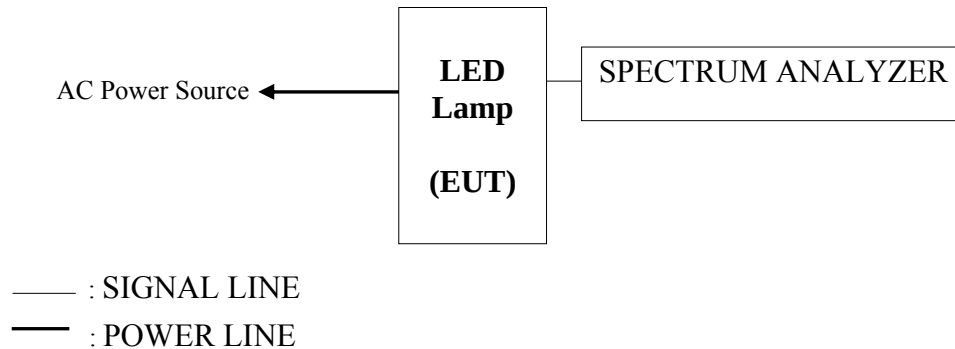
Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.  
 2. The emission levels that are 20dB below the official limit are not reported.

## 5. 6 dB BANDWIDTH MEASUREMENT

### 5.1. Test Equipment

| Item | Type                | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|---------------------|--------------|-----------|------------|------------|------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A    | MY53120367 | 2013-06-24 | 2014-06-23 |

### 5.2. Block Diagram of Test Setup



### 5.3. Specification Limits (§15.247(a)(2))

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500kHz.

### 5.4. Test Procedure

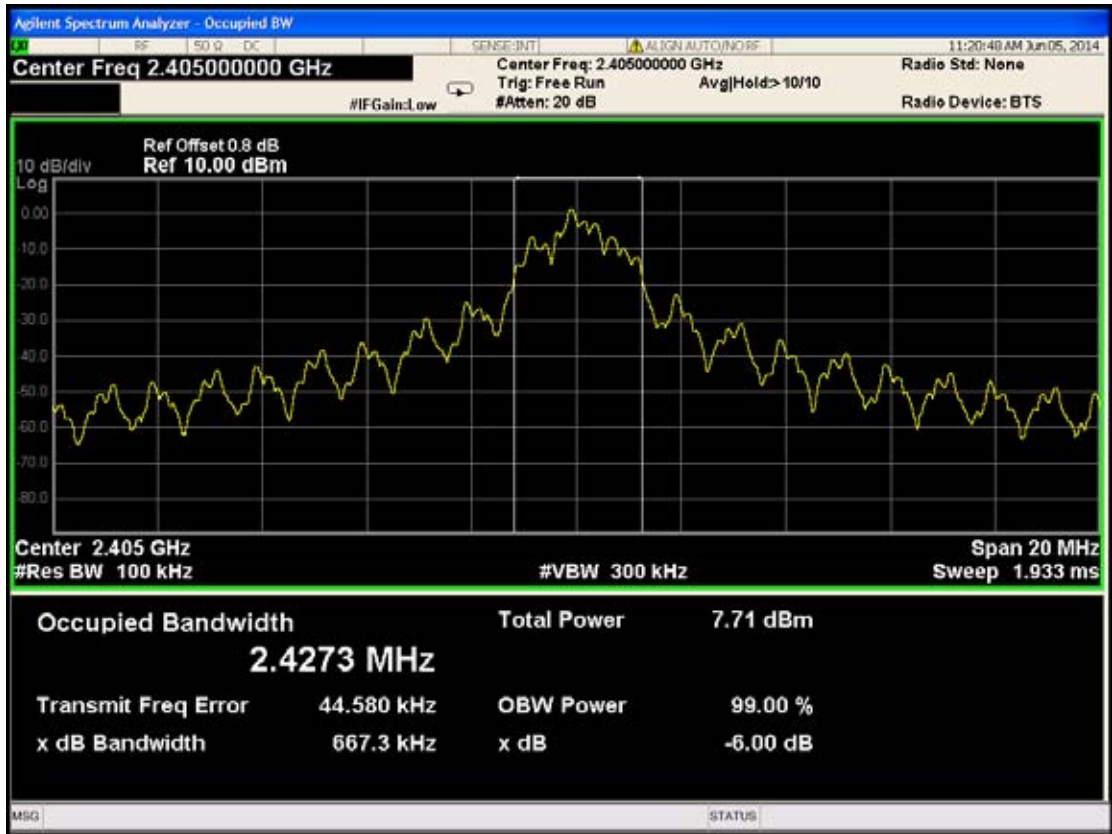
The transmitter output was connected to the test receiver / spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB. The measurement guideline was according to KDB558074 v03r02.

### 5.5. Test Results

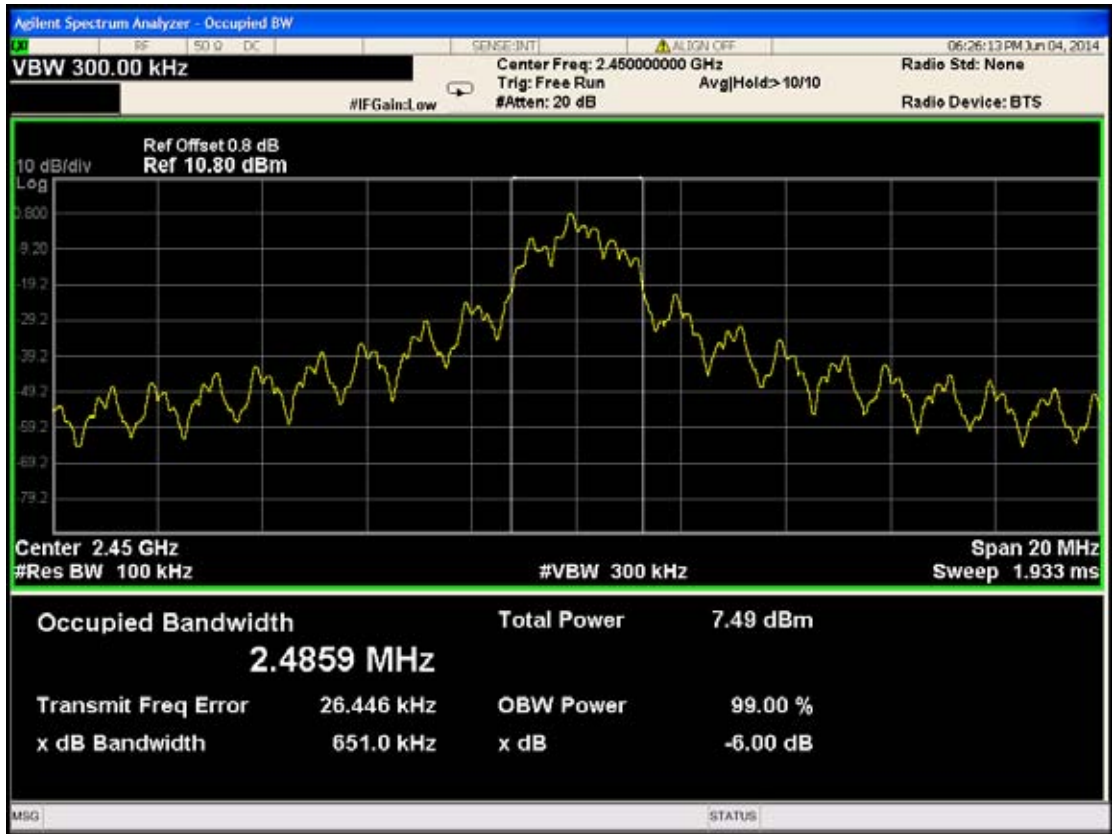
**PASSED.** All the test results are attached in next pages.

| Channel | Center Frequency(MHz) | 6 dB Bandwidth(kHz) |
|---------|-----------------------|---------------------|
| 11      | 2405                  | <b>667.3</b>        |
| 20      | 2450                  | <b>651.0</b>        |
| 26      | 2480                  | <b>639.9</b>        |

CH 11



CH 20



CH 26

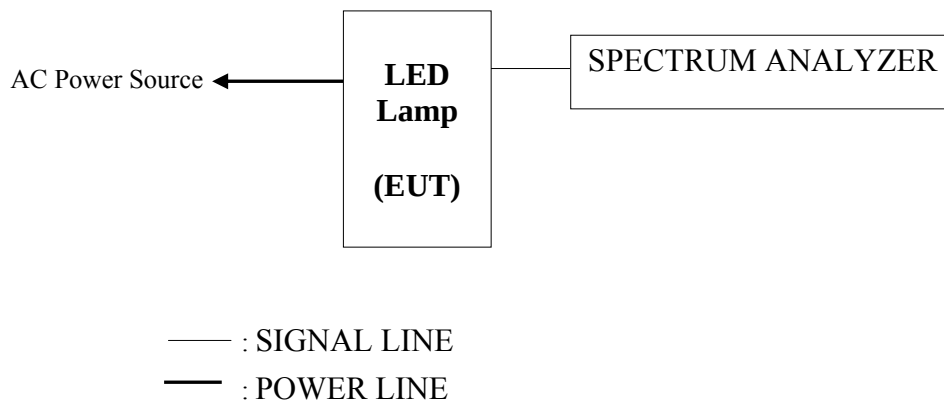


## 6. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

### 6.1. Test Equipment

| Item | Type                | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|---------------------|--------------|-----------|------------|------------|------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A    | MY53120367 | 2013-06-24 | 2014-06-23 |

### 6.2. Block Diagram of Test Setup



### 6.3. Specification Limits (§15.247(b)(3))

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

### 6.4. Test Procedure

- Set the RBW  $\geq$  DTS bandwidth.
- Set VBW  $\geq 3 \times$  RBW.
- Set span  $\geq 3 \times$  RBW
- Sweep time = auto couple.
- Detector = peak.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use peak marker function to determine the peak amplitude level



## 6.5. Test Results

**PASSED.** All the test results are attached in next pages.

| Channel | Frequency | Power(dBm) | Limit(dBm ) |
|---------|-----------|------------|-------------|
| 11      | 2405      | 3.752      | 30          |
| 20      | 2450      | 3.827      | 30          |
| 26      | 2480      | 3.851      | 30          |

## 7. BAND EDGES MEASUREMENT

### 7.1. Test Equipment

| Item | Type                | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|---------------------|--------------|-----------|------------|------------|------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A    | MY53120367 | 2013-06-24 | 2014-06-23 |

### 7.2. Block Diagram of Test Setup

The same as section 5.2.

### 7.3. Specification Limits (§15.247(d))

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

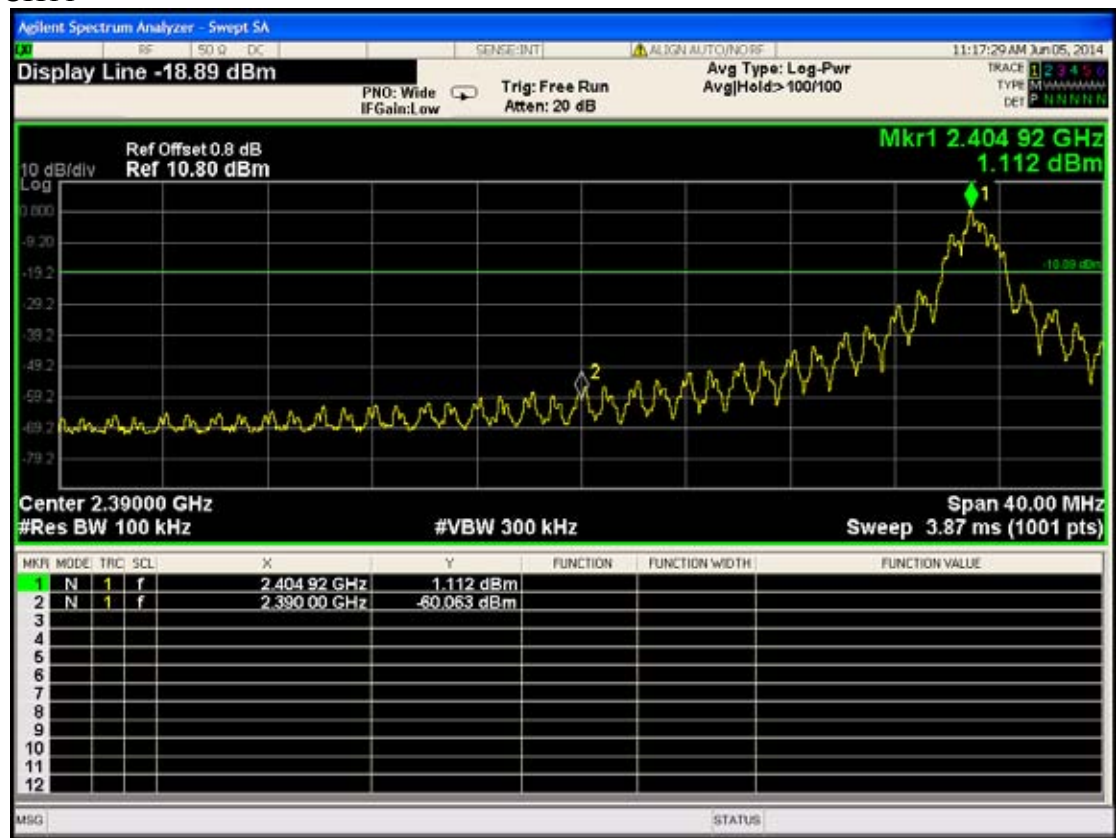
### 7.4. Test Procedure

The transmitter output was connected to the test receiver / spectrum analyzer. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz with suitable frequency span including 100kHz bandwidth from band edge.

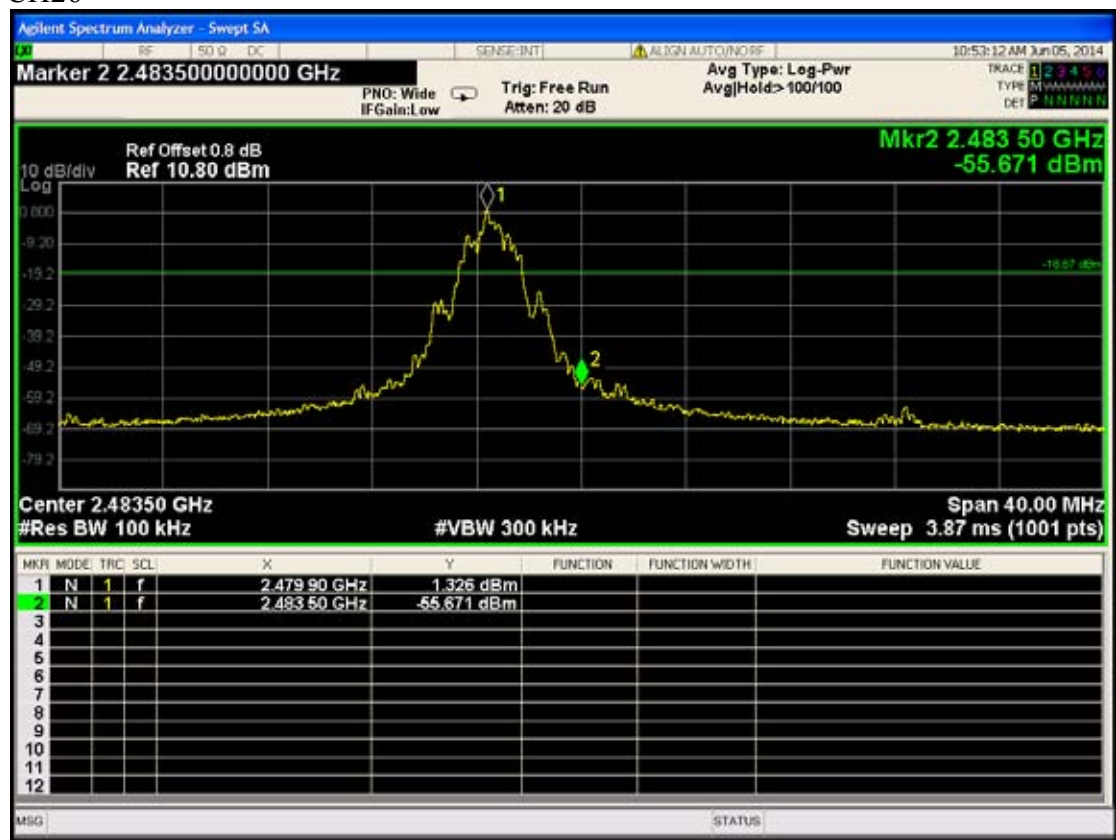
### 7.5. Test Results

**PASSED.** The testing data was attached in the next pages.

CH11



CH26



## 8. POWER SPECTRAL DENSITY MEASUREMENT

### 8.1. Test Equipment

| Item | Type                | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|---------------------|--------------|-----------|------------|------------|------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A    | MY53120367 | 2013-06-24 | 2014-06-23 |

### 8.2. Block Diagram of Test Setup

The same as section 5.2.

### 8.3. Specification Limits (§15.247(e))

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### 8.4. Test Procedure

- 1.Set the RBW=100kHz, VBW=300kHz, Detector=peak
  - 2.Sweep time=auto couple, Trace mode=max hold, allow trace to fully stabilize.
  - 3.Use the peak marker function to determine the maximum power level in any 100kHz band segment within the fundamental EBW.
  - 4.Scale the observed power level to an equivalent value in 3kHz by adjusting(reducing) the measured power by a bandwidth correction factor(BWCF) where  $BWCF=10\log(3\text{kHz}/100\text{kHz})$
- Follow KDB558074 v03r02 DTS Meas Guidannce v01 of measurement procedure PKPSD.

### 8.5. Test Results

**PASSED.** All the test results are attached in next page.

| Channel | Frequency(GHz) | Value(dBm/100kHz) | Value(dBm/3kHz) |
|---------|----------------|-------------------|-----------------|
| 11      | 2.404896       | 1.129             | -14.071         |
| 20      | 2.449888       | 0.784             | -14.416         |
| 26      | 2.479888       | 1.261             | -13.939         |

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CH 20



CH 26



## 9. EMISSION LIMITATIONS MEASUREMENT

### 9.1. Test Equipment

| Item | Type                | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|---------------------|--------------|-----------|------------|------------|------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A    | MY53120367 | 2013-06-24 | 2014-06-23 |

### 9.2. Block Diagram of Test Setup

The same as section 5.2.

### 9.3. Specification Limits (§15.247(d))

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

### 9.4. Test Procedure

The transmitter output was connected to the spectrum analyzer. Set RBW = 100kHz, VBW  $\geq$  300 kHz, scan up through 10<sup>th</sup> harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. The measurement guideline was according to KDB558074 v03r02.

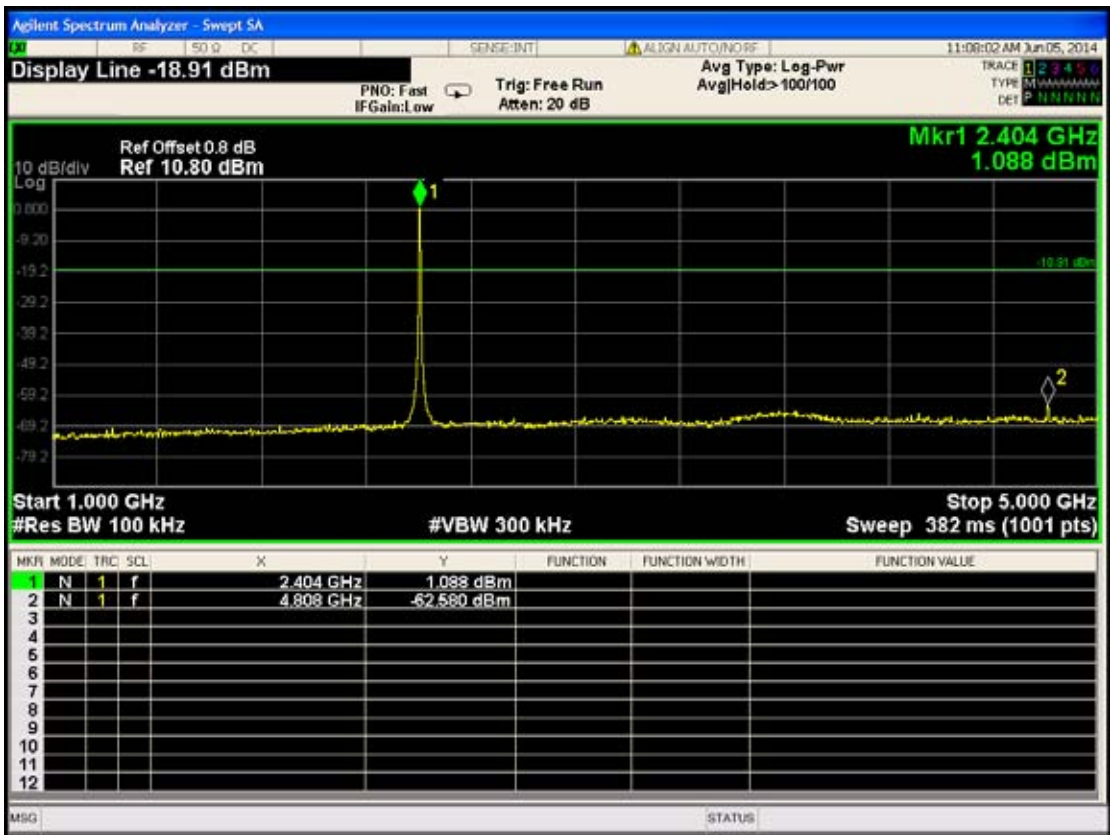
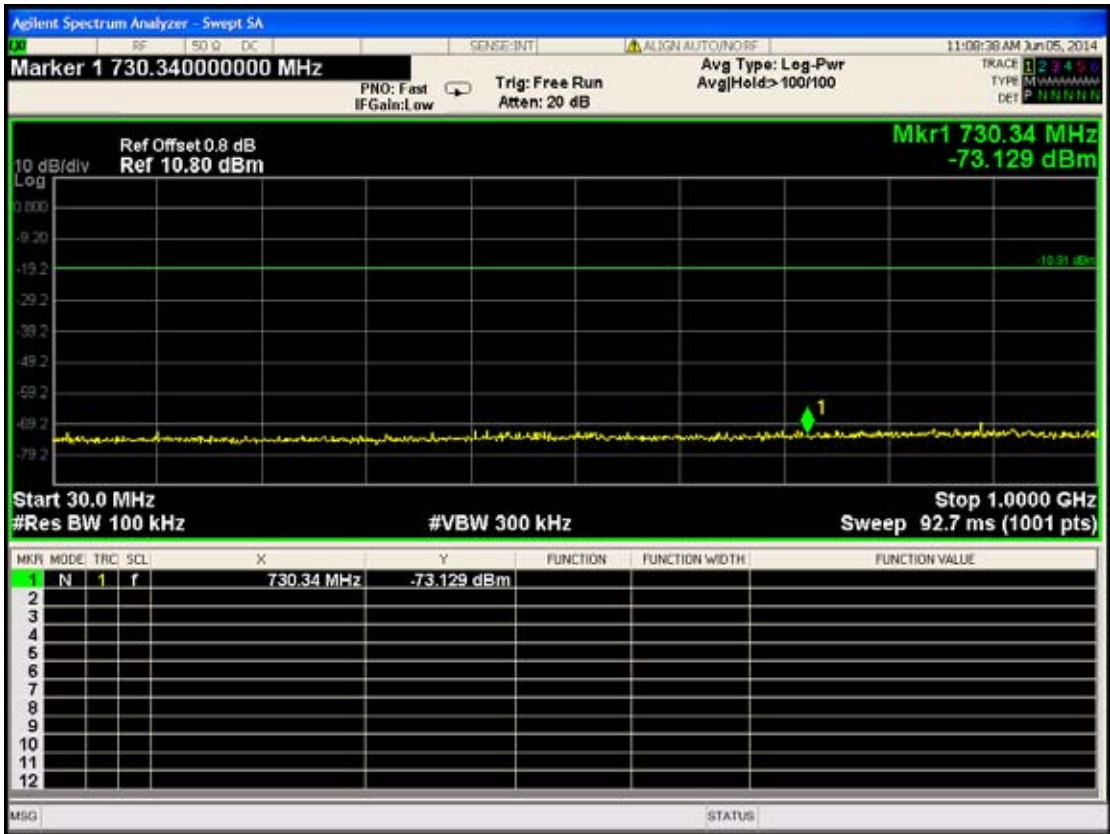
## 9.5. Test Results

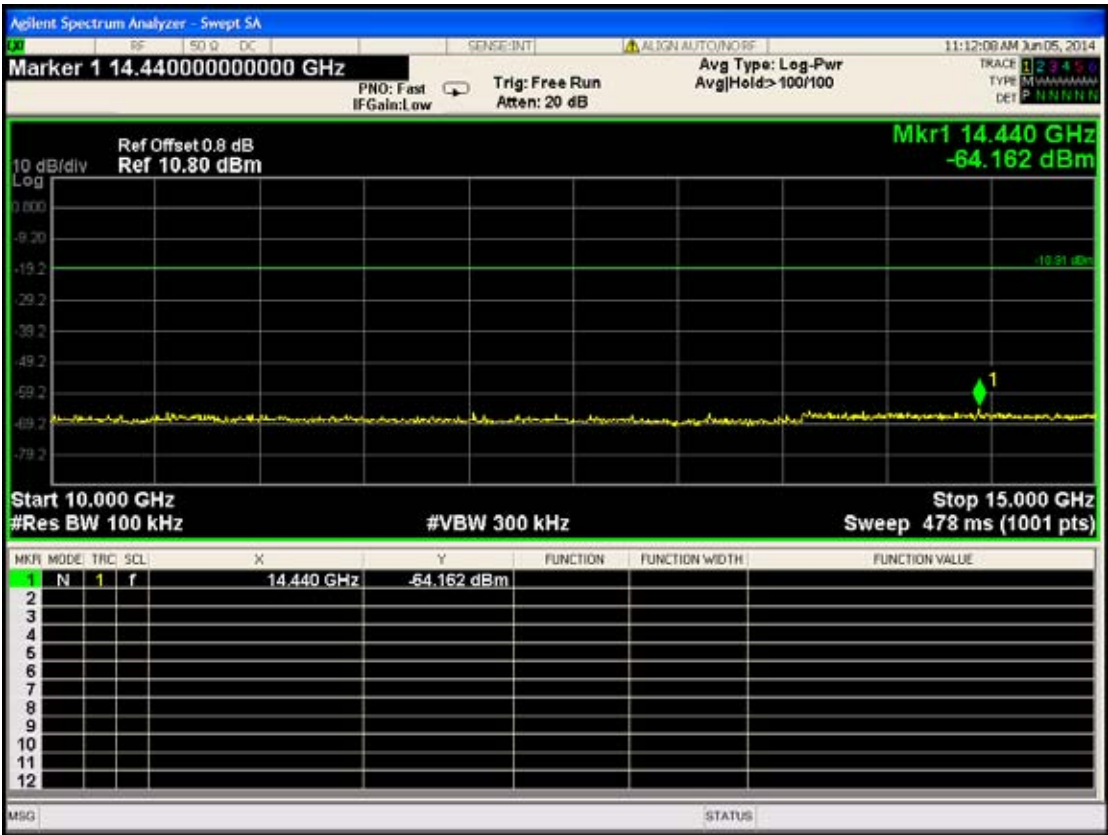
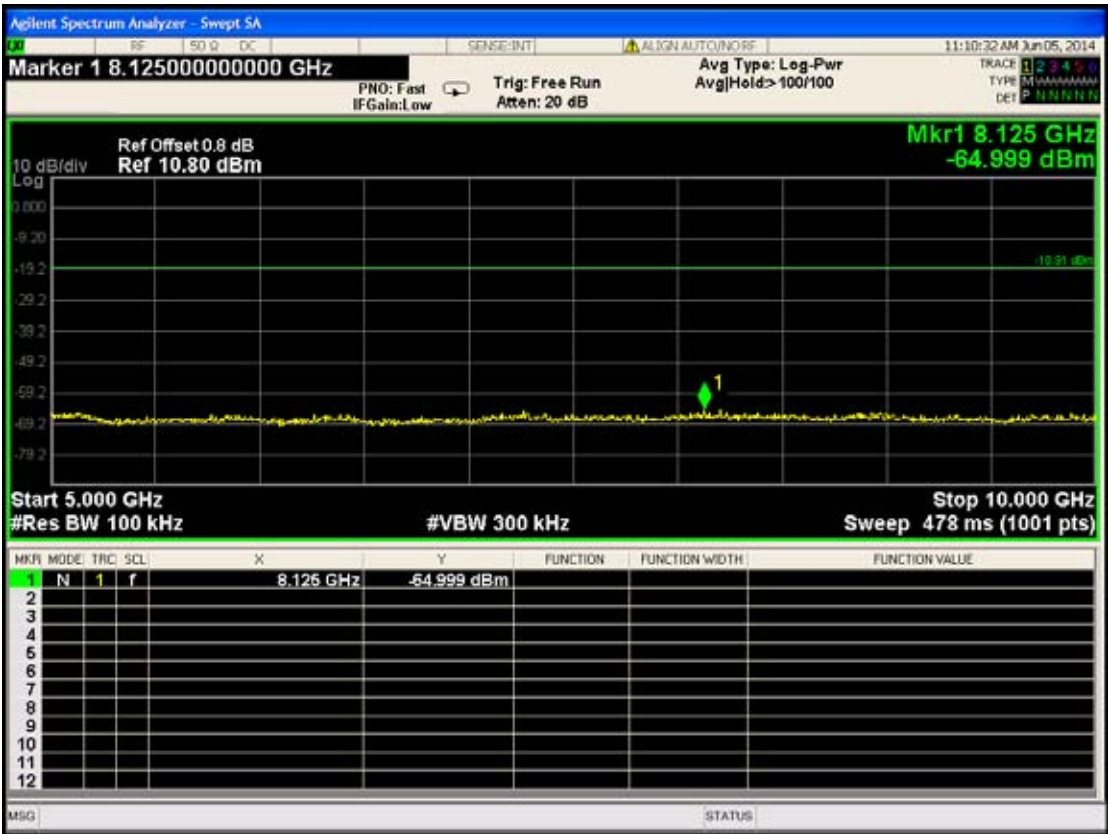
**PASSED.** All the test results are attached in next pages.

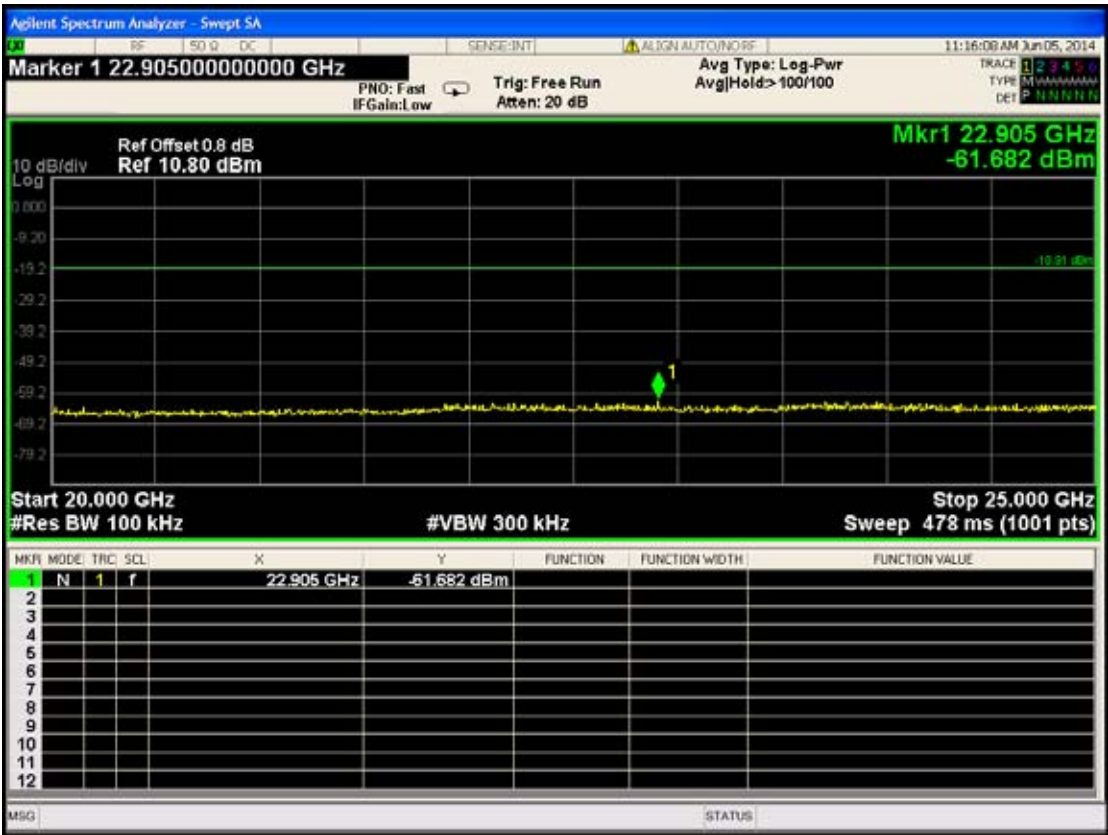
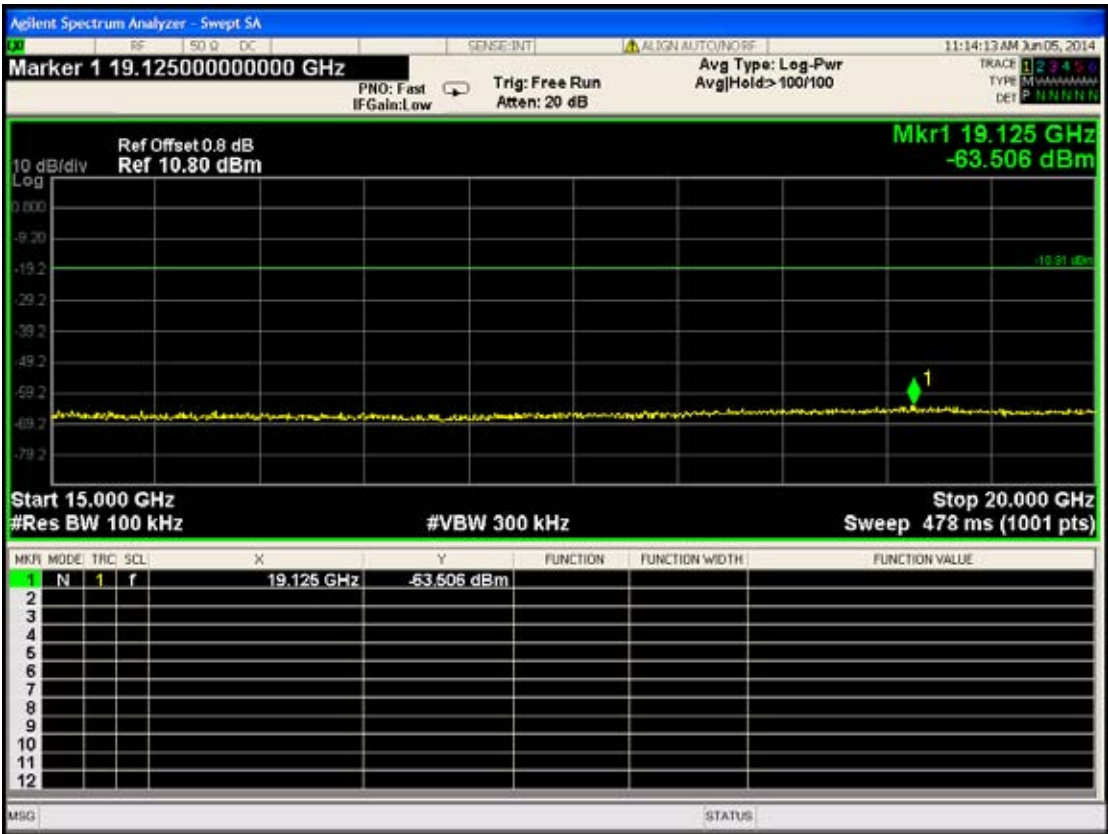
| Channel | Frequency(MHz) | Amplitude(dBm) |
|---------|----------------|----------------|
| 11      | 730.34         | -73.129        |
|         | 2404           | 1.088          |
|         | 4808           | -62.580        |
|         | 8125           | -64.999        |
|         | 14440          | -64.162        |
|         | 19125          | -63.506        |
|         | 22905          | -61.682        |
| 20      | 600.36         | -71.564        |
|         | 2448           | 0.637          |
|         | 4900           | -63.129        |
|         | 7250           | -66.917        |
|         | 12245          | -64.613        |
|         | 19275          | -63.175        |
|         | 24035          | -62.079        |
| 26      | 825.40         | -72.538        |
|         | 2480           | 1.235          |
|         | 4960           | -64.038        |
|         | 7230           | -66.006        |
|         | 12400          | -63.991        |
|         | 19180          | -63.637        |
|         | 22430          | -61.536        |



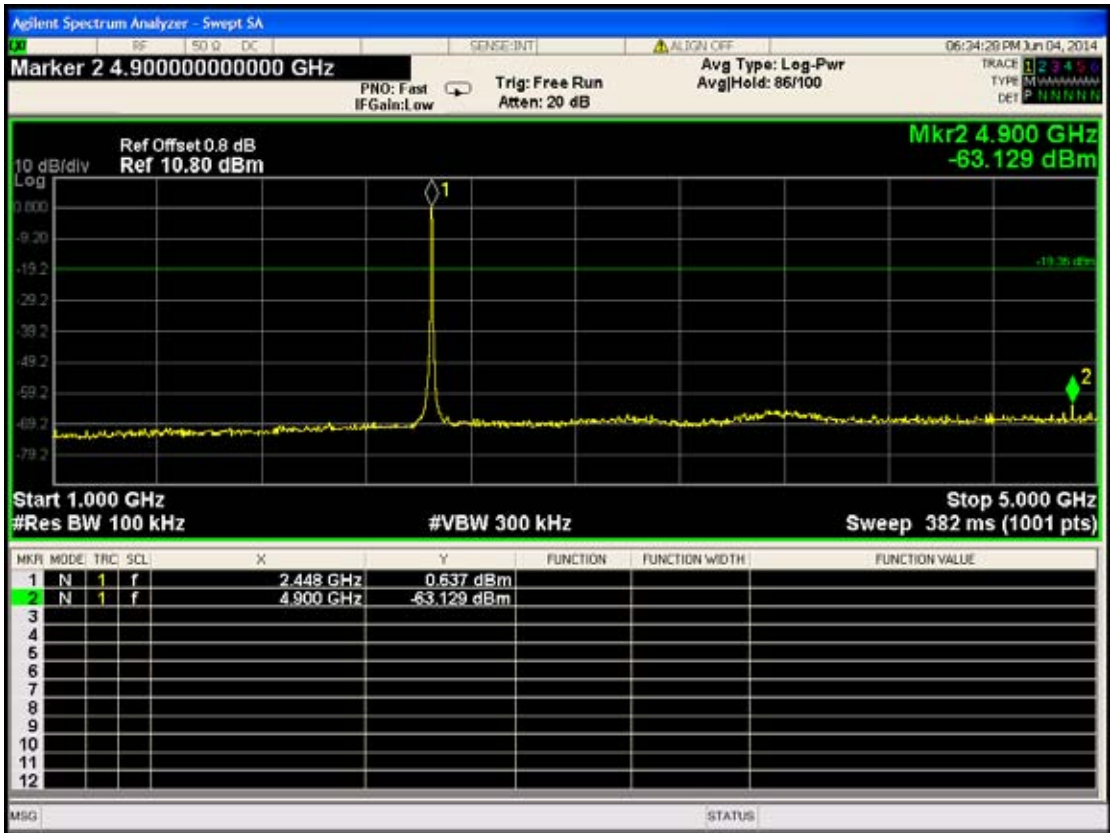
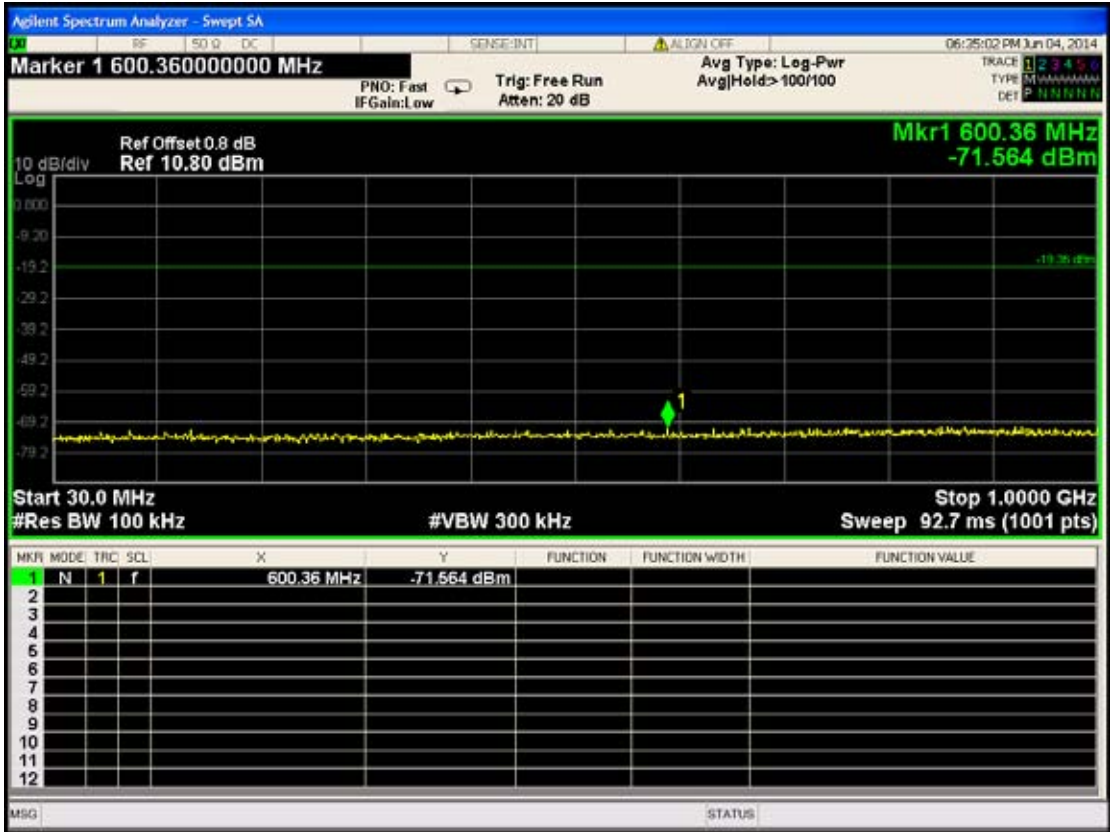
CH 11



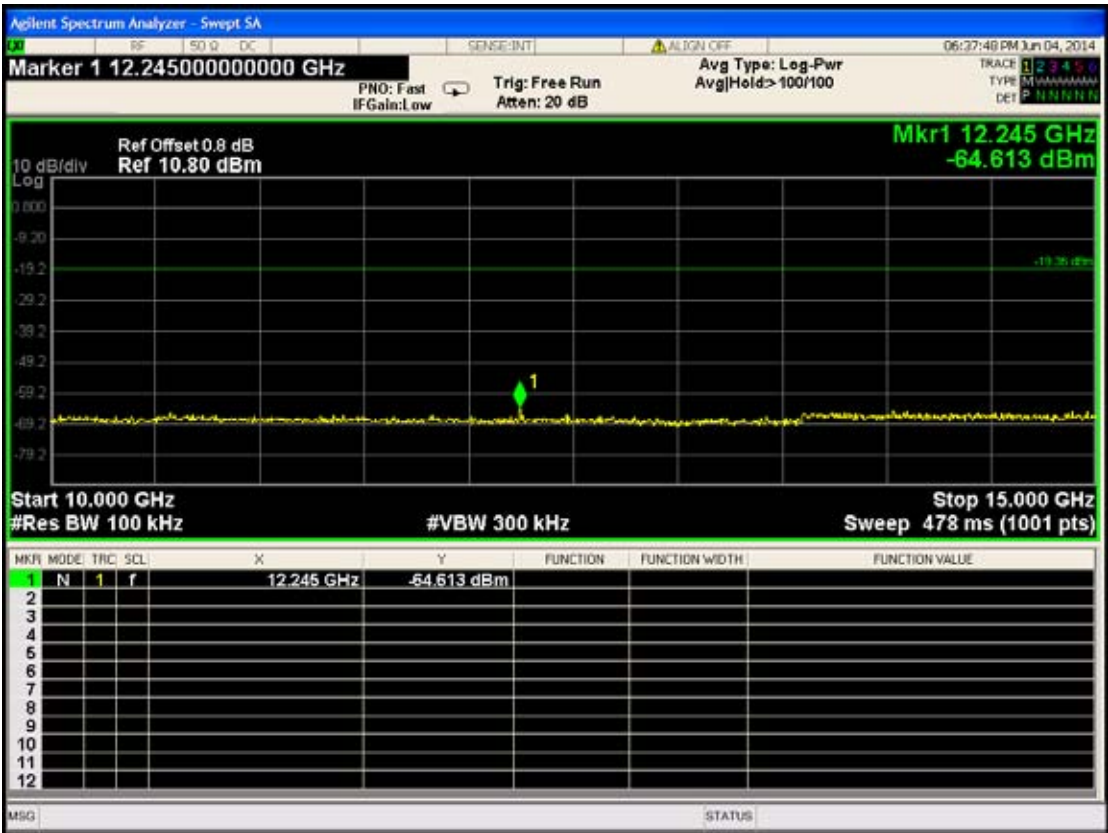
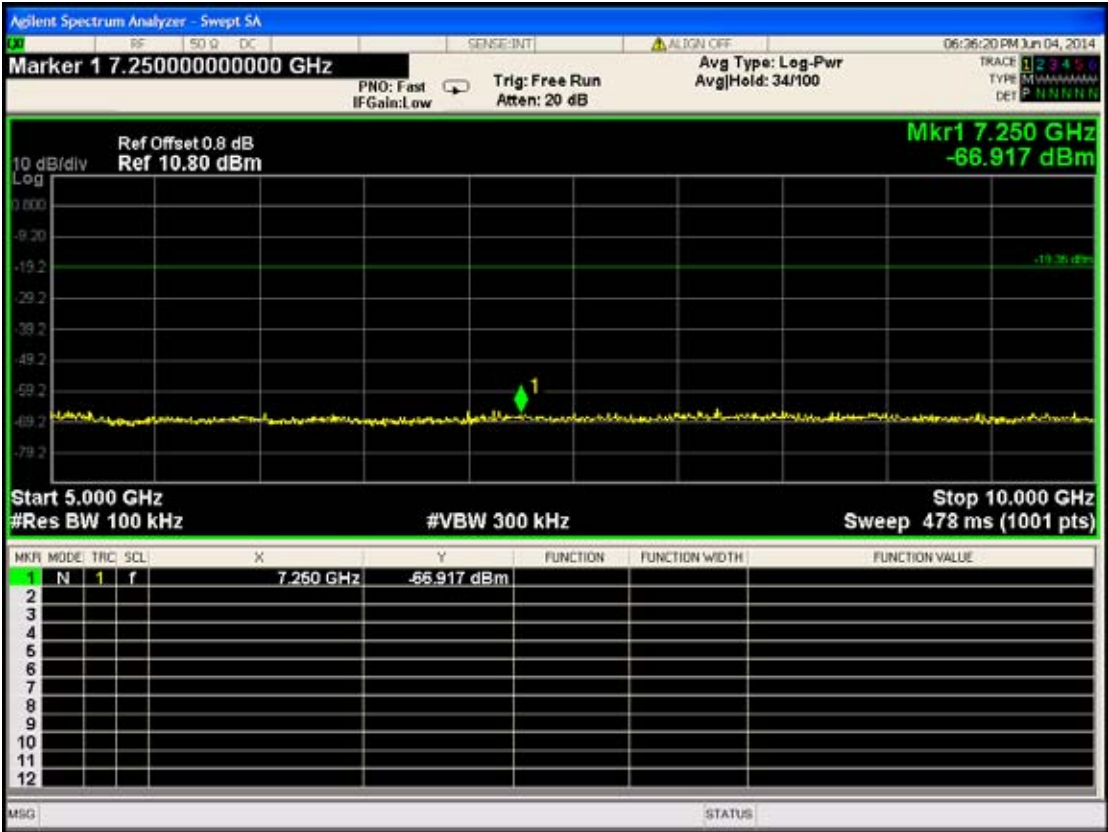


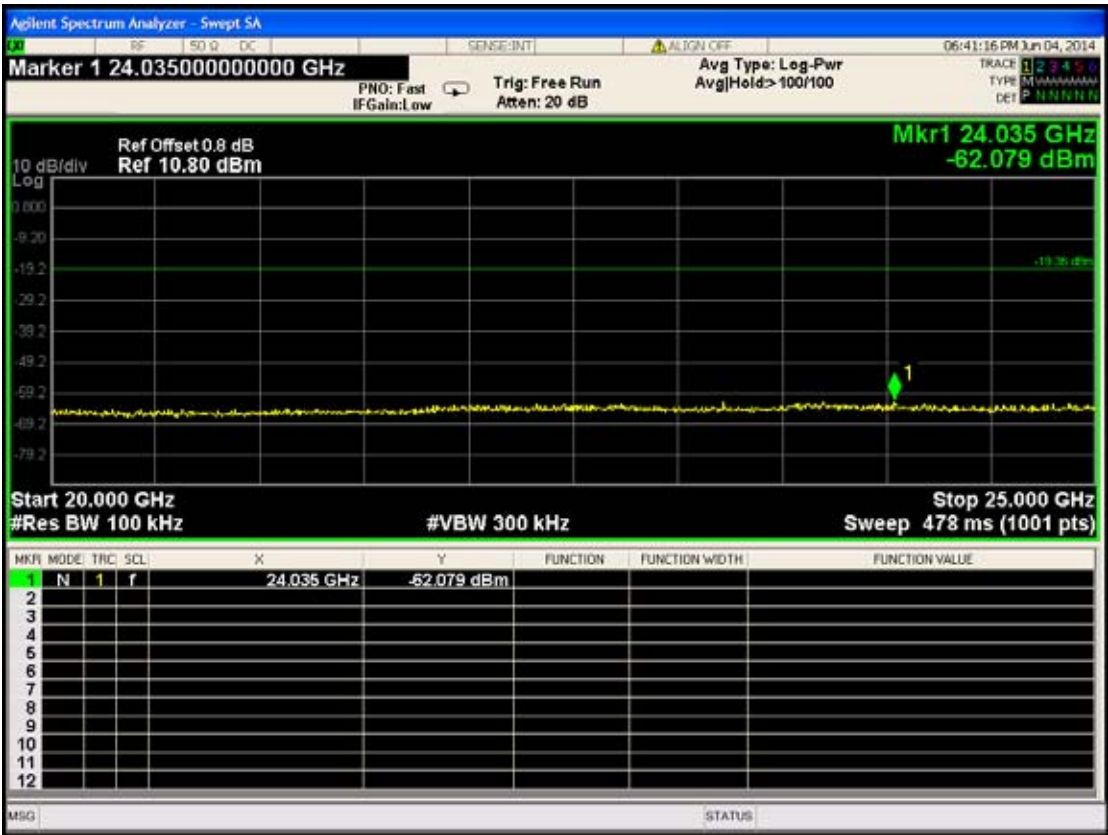
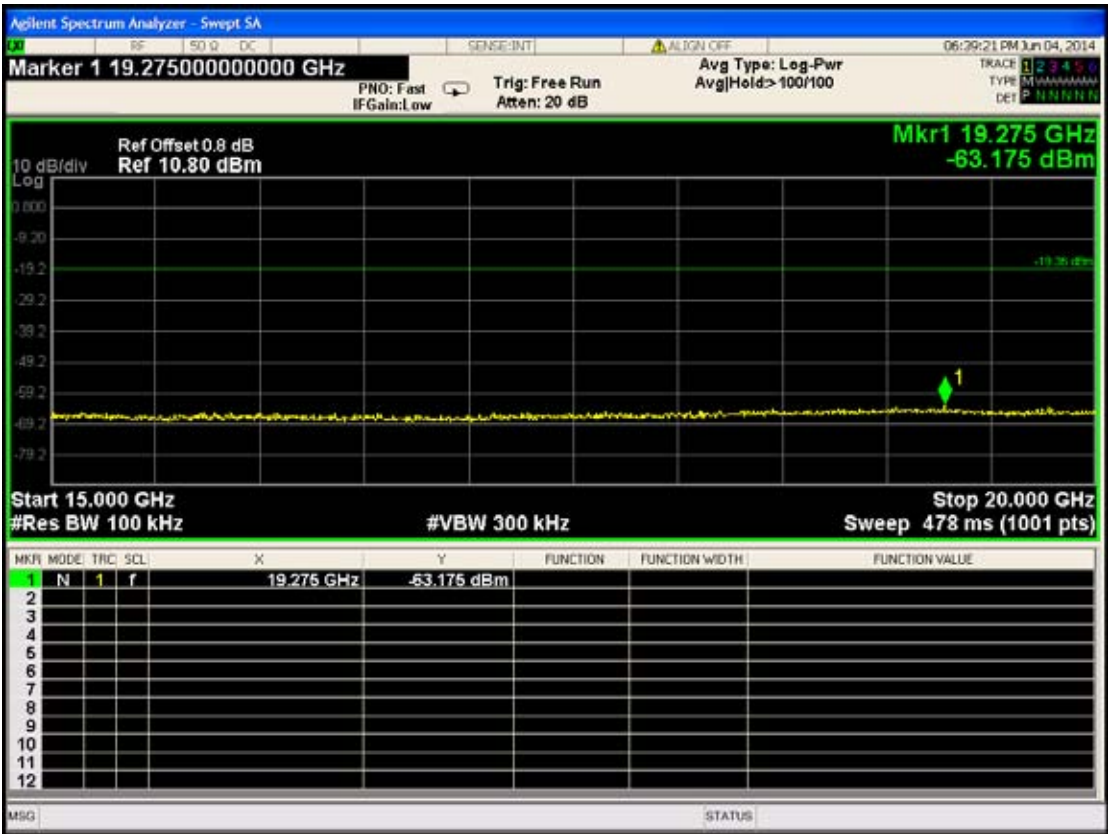


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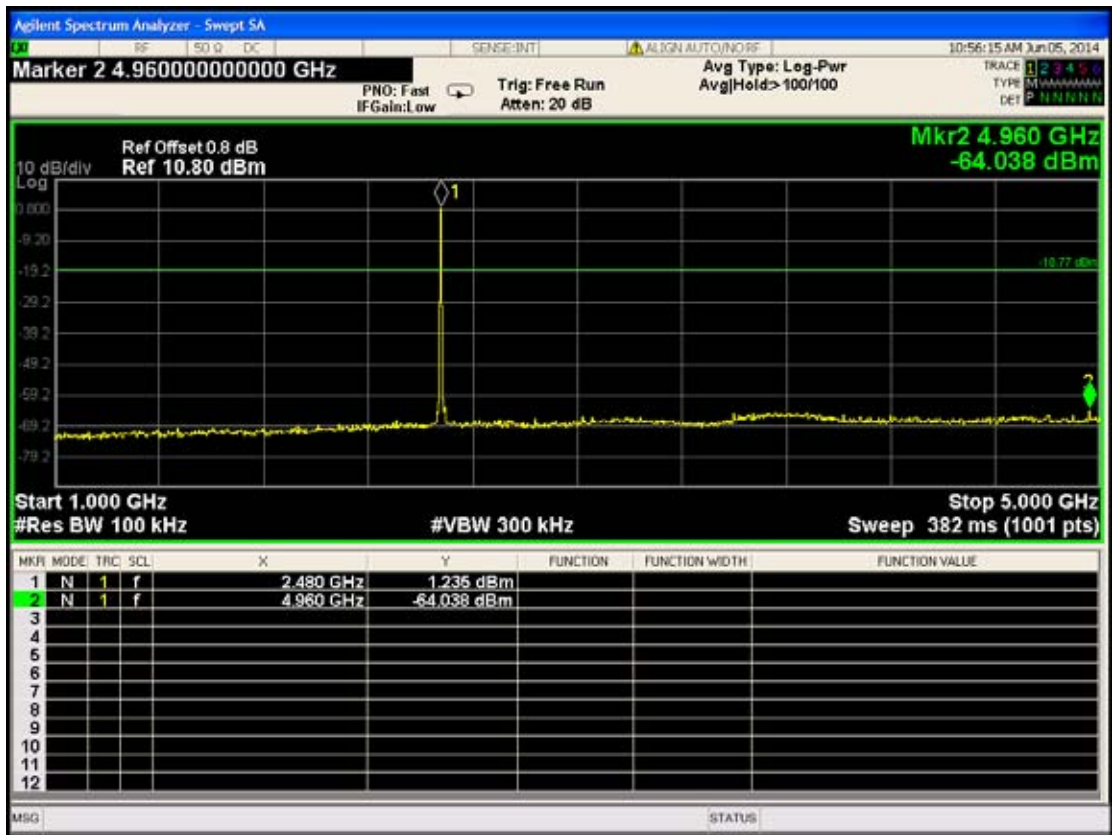
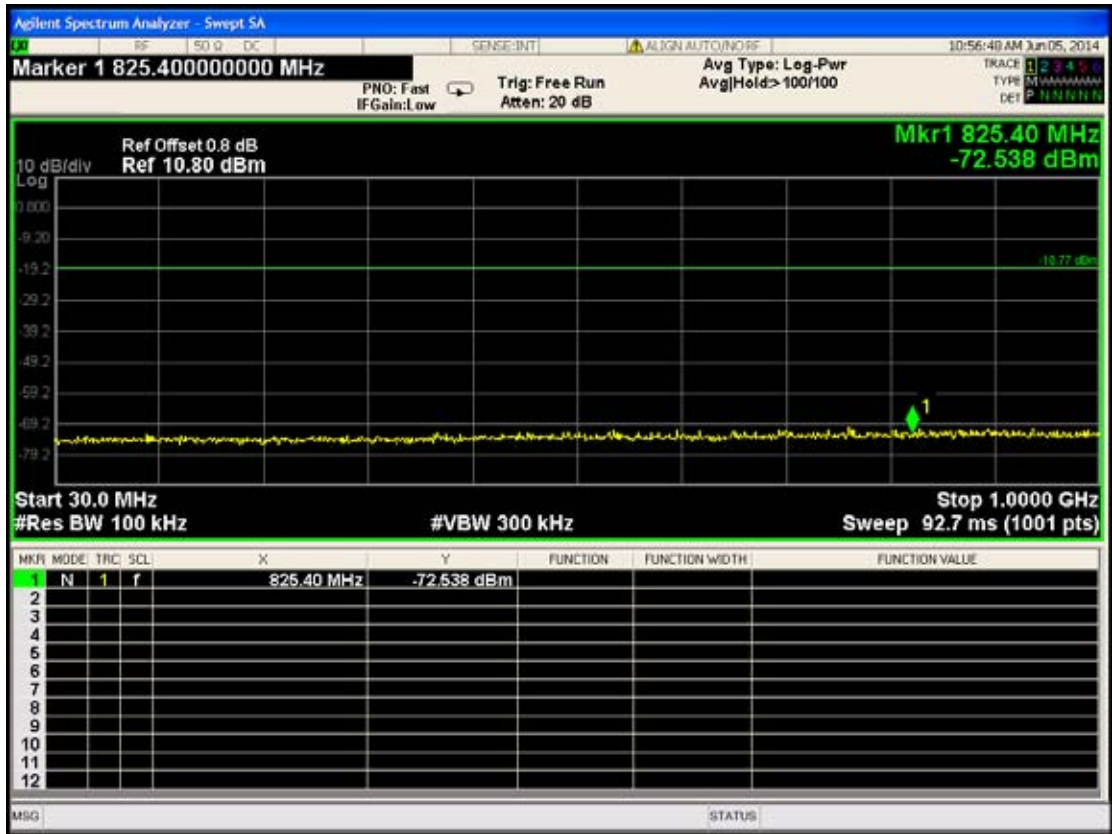


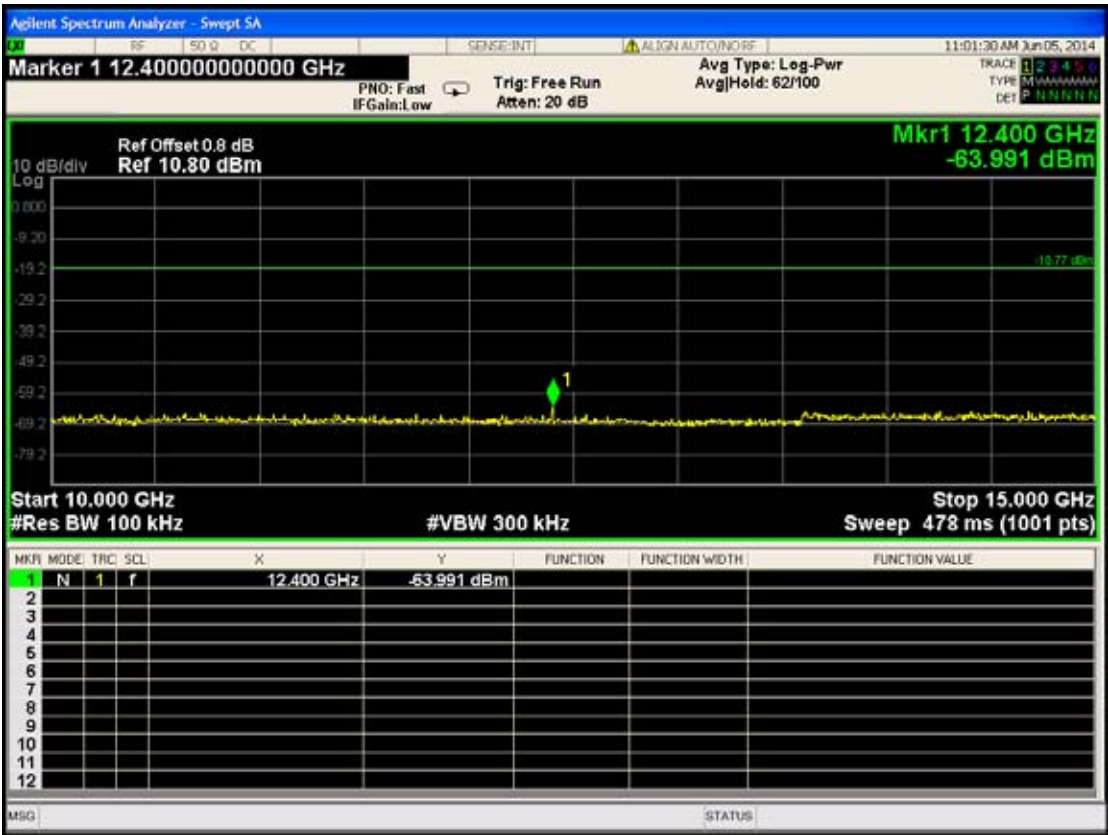
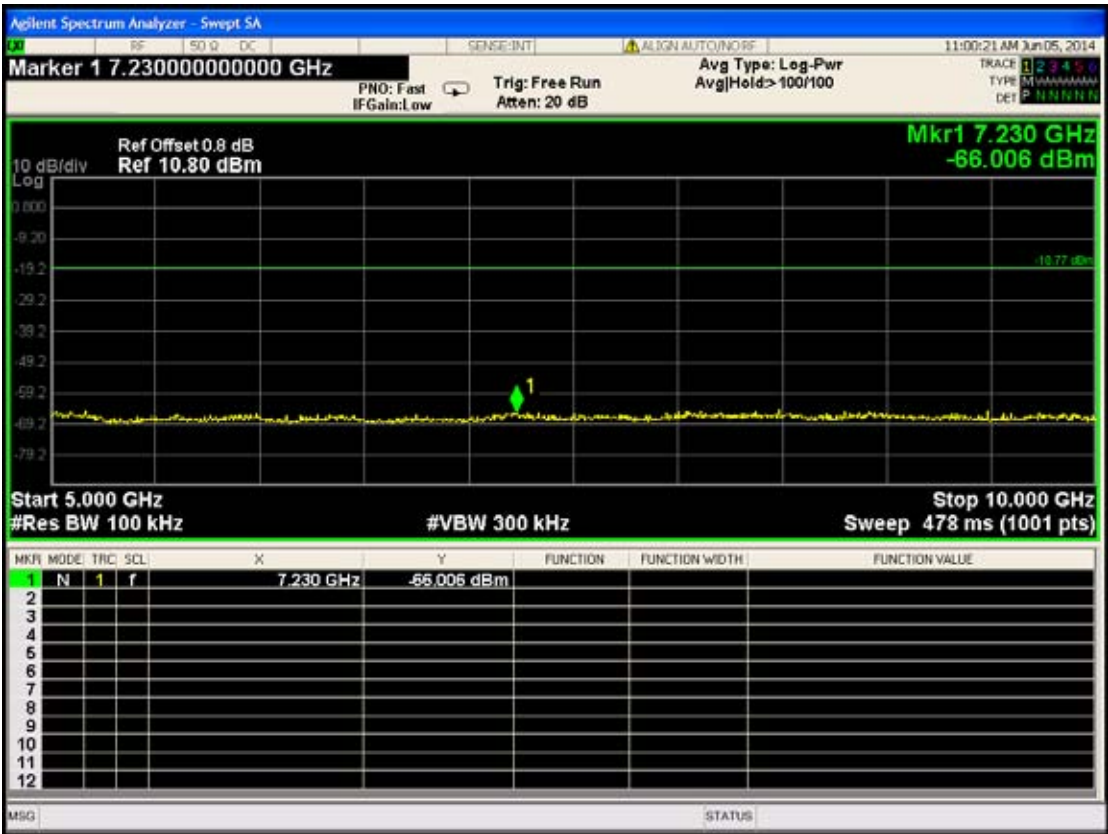




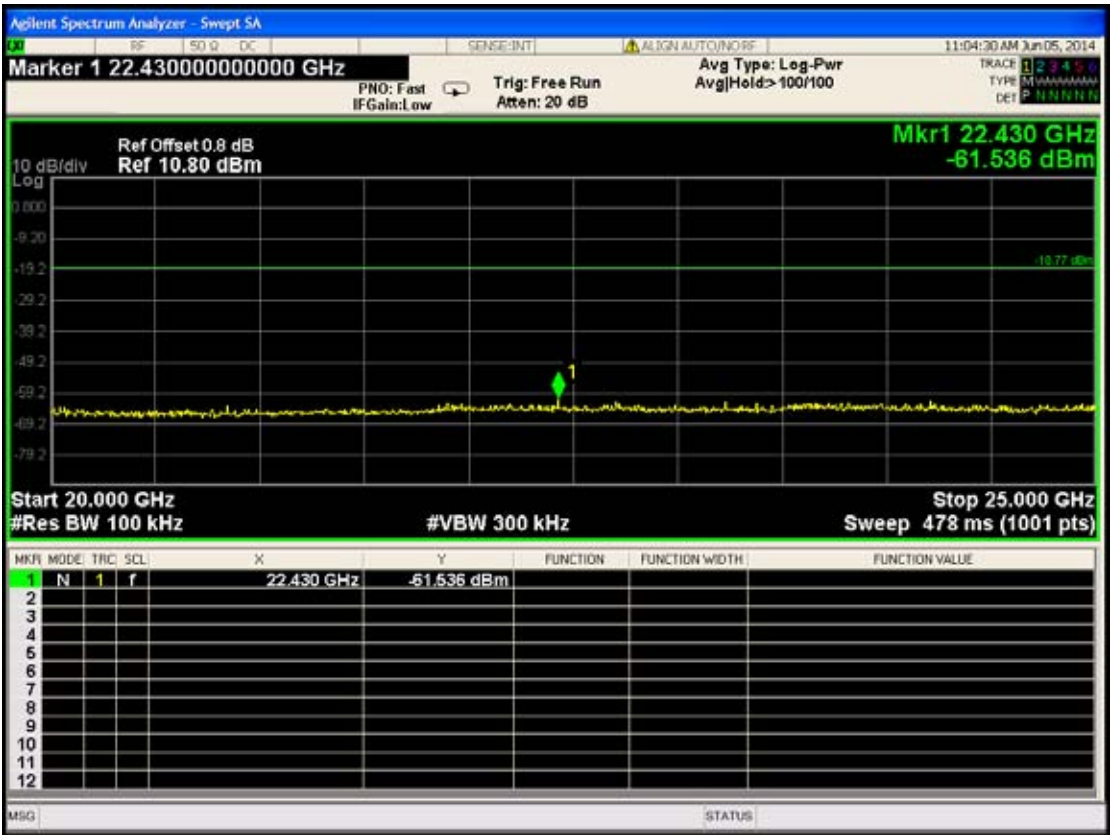
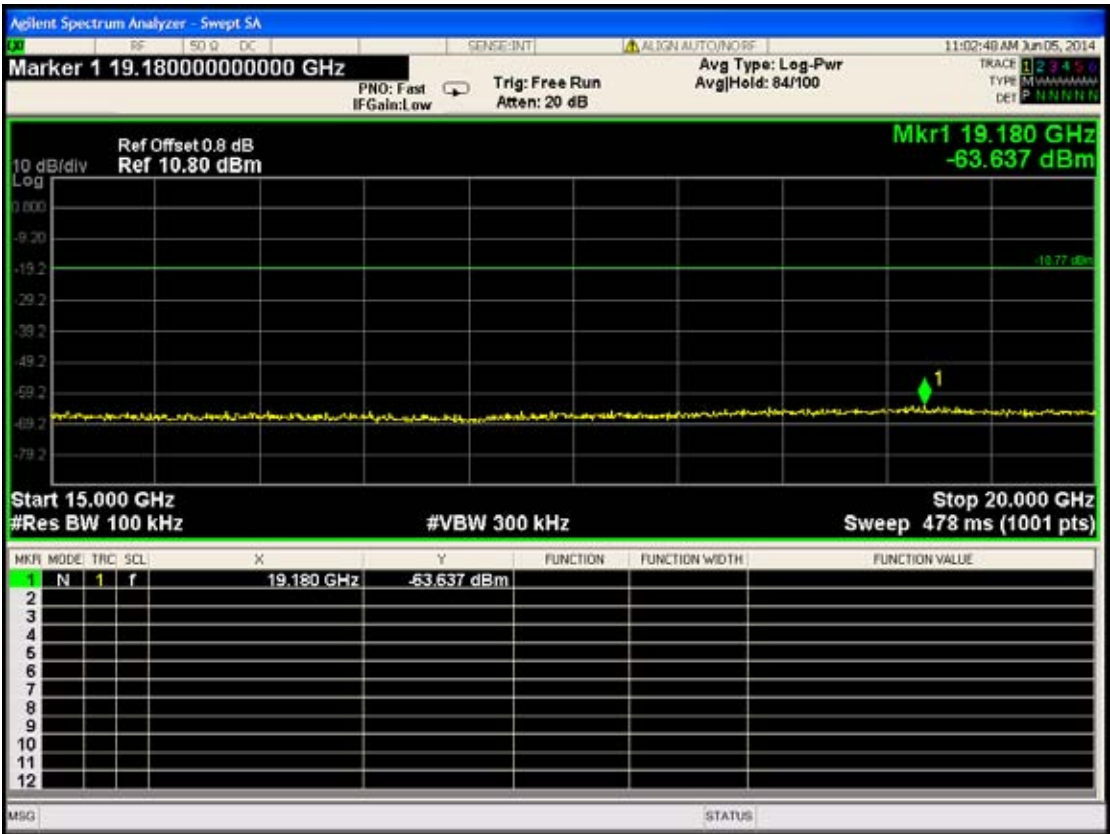


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## 10.DUTY CYCLE

### 10.1. Test Equipment

| Item | Type                | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|---------------------|--------------|-----------|------------|------------|------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A    | MY53120367 | 2013-06-24 | 2014-06-23 |

### 10.2. Test Results

The measurement of duty cycle is 100%.

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## **11.DEVIATION TO TEST SPECIFICATIONS**

**【NONE】**