### APPLICATION FOR CERTIFICATION

On Behalf of Philips (China) Investment Co., Ltd. LED Lamp

Model No. : 9290011369

Brand : Philips

FCC ID : O3M9290011369X

### 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-F1503002

Date of Test : Mar.04~05, 2015

Date of Report : Mar.18, 2015

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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 : 03M9290011369X

(A) Model No. : 9290011369

(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 C63.10-2013 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: Mar.04~05, 2015 Date of Report: Mar.18, 2015

Prepared by : mma U

(Emma Hu/Assistant Administrator)

Reviewer : (Danny Sun/ Section Manager)

(Daini) Suit Section Manager)

Approved & Authorized Signer : (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.

<b>Description of Test Item</b>	Standard	Results	Remark
CONDUCTED EMISSION	FCC 47 CFR Part 15 Subpart C/ Section 15.207 And ANSI C63.10-2013 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 12.95 dB at 0.37MHz
RADIATED EMISSION	FCC 47 CFR Part 15 Subpart C/ Section 15.209& Section 15.205 And ANSI C63.10-2013 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 15.55 dB at 47.16MHz
6 dB BANDWIDTH	FCC 47 CFR Part 15 Subpart C/ Section 15.247(a)(2) And ANSI C63.10-2013 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 49.7 kHz at CH 11
OUTPUT POWER	FCC 47 CFR Part 15 Subpart C/ Section 15.247(b)(3) And ANSI C63.10-2013 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 26.04dB at CH 11
BAND EDGES	FCC 47 CFR Part 15 Subpart C/ Section 15.247(d) And ANSI C63.10-2013 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	
POWER SPECTRAL DENSITY	FCC 47 CFR Part 15 Subpart C/ Section 15.247(e) And ANSI C63.10-2013 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 6.37dB at CH 26
EMISSION LIMITATIONS	FCC 47 CFR Part 15 Subpart C/ Section 15.247(d) And ANSI C63.10-2013 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	

# 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Description : LED Lamp

Model No. : 9290011369

FCC ID : 03M9290011369X

Brand : Philips

Applicant : Philips (China) Investment Co., Ltd.

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

Manufacturer #1 : Changan Win Channel Electronics Company Limited

No.85, Tong Gu Xia Lu, Shangjiao Community, Changan Town, Dongguan City, Guangdong Province, China

Manufacturer #2 : Arts Electronics Co., Ltd.

Shangxing Lu, Shangjiao Community, Changan Town,

Dongguan Guangdong523000 China

Radio Technology : IEEE 802.15.4 (ZigBee®)

Antenna Gain : -7dBi

Fundamental Range : 2405 MHz -2480MHz

Tested Frequency : 2405MHz (CH11)

2450MHz (CH20) 2480MHz (CH26)

Highest Working

Frequency

**:** 2.4GHz

Power Rating : 9.5W, 90mA

Modulation type : O-QPSK

Date of Receipt of Sample : Jan.05, 2015

Date of Test : Mar.04~05, 2015

### 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, 2015

# 2.3. Measurement Uncertainty

Test Item	Range Frequency	Uncertainty
Conducted Disturbance Measurement	0.15MHz ~ 30MHz	± 3.30dB
Radiated Disturbance Measurement (At 3m Chamber)	Below 1GHz	± 4.50dB
Radiated Disturbance Measurement (At 3m Chamber)	Above 1GHz	± 5.15dB

Remark: Uncertainty =  $ku_c(y)$ 

Test Item	Uncertainty
6 dB Bandwidth	± 0.16 MHz
Maximum Peak Output Power	± 0.12dB
Band Edges	± 0.38dB
Power Spectral Density	± 0.38dB
Emission Limitations	± 0.38dB

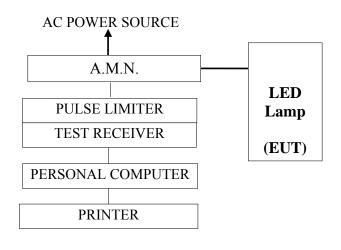
Remark: Uncertainty =  $ku_c(y)$ 

# 3. CONDUCTED EMISSION MEASUREMET

# 3.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCI	100352	2015-01-05	2016-01-04
2.	A.M.N	R&S	ESH2-Z5	100153	2014-05-15	2015-05-14
3.	Pulse Limiter	R&S	ESH3-Z2	100605	2014-07-05	2015-07-04
4.	RF Cable	Harbour Industries	RG400	002	2014-03-24	2015-03-23

# 3.2. Block Diagram of Test Setup



—: POWER LINE

-: SIGNAL LINE

### 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	$66 \sim 56 \text{ dB}\mu\text{V}$	$56 \sim 46 \; dB \mu V$	
500kHz ~ 5MHz	56 dBμV	$46~dB\mu V$	
5MHz ~ 30MHz	60 dBμV	$50~dB\mu V$	

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 C63.10-2013 and laboratory internal procedure TKC-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  $50\Omega$  measuring equipment and the second L.I.S.N measuring port was terminated by a  $50\Omega$  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  $\sim$  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 ( $dB\mu V$ ) = Meter-Reading ( $dB\mu V$ ) + 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 : Mar.05, 2015 Temperature : 18.1℃ Humidity : 47%

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

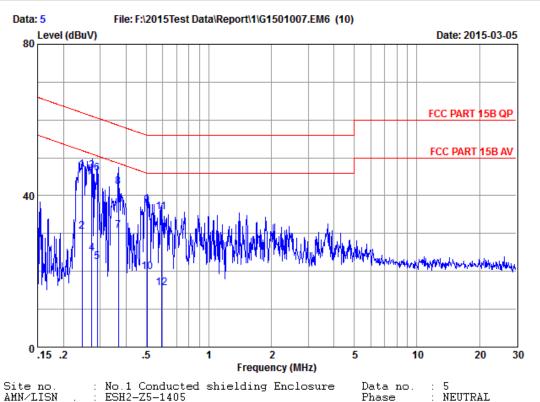
NOTE 1- 'X' means the worst test mode.

NOTE 2- The worst emission is detected at 0.37 MHz with emission level of 45.62 dB ( $\mu$ V) and with QP detector (Limit is 58.57 dB ( $\mu$ V)), when the Line of the EUT is connected to AMN.



Phase

Engineer : KM.Tong



: No.1 Conducted shielding Enclosure : ESH2-Z5-1405 : FCC PART 15B QP : 18.1\*C&47%/ESCI Site no. AMN/LISN . Limit Env. / Ins. LED Lamp 9290011369 EUT

M/N Power Rating : 120Vac/60Hz

Test mode CH11 Memo

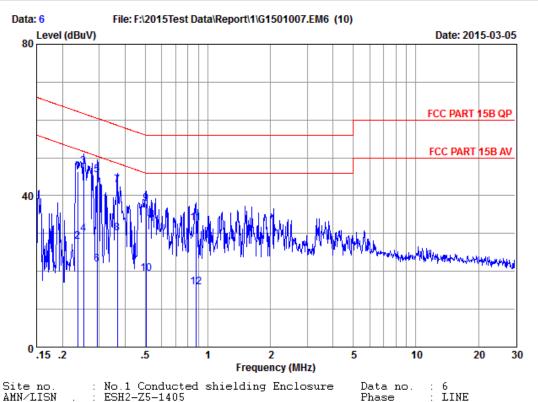
	Freq.	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10 11	0.25 0.27 0.27 0.29 0.37 0.37 0.50 0.50	0.13 0.13 0.14 0.14 0.14 0.14 0.14 0.15 0.15	9.88 9.88 9.88 9.88 9.88 9.88 9.88 9.88	36.80 20.50 36.59 14.79 12.49 35.79 20.80 32.30 27.40 9.80 25.60 5.50	46.81 30.51 46.61 24.81 22.51 45.81 30.82 42.32 37.43 19.83 35.64 15.54	61.89 51.89 61.00 51.00 50.52 60.52 48.57 56.00 46.00 46.00	15.08 21.38 14.39 26.19 28.01 14.71 17.75 16.25 18.57 26.17 20.36 30.46	QP Average QP Average Average QP Average QP QP Average QP Average QP Average
	0.07	0.10	2.00	0.00	10.04	40.00	00.40	*********

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



Phase

Engineer : KM.Tong



: No.1 Conducted shielding Enclosure : ESH2-Z5-1405 : FCC PART 15B QP : 18.1\*C&47%/ESCI : LED Lamp : 9290011369 Site no. AMN/LISN Limit Env. / Ins. EUT M/N

	Power Rating Test mode Memo		120Vac/60Hz CH11
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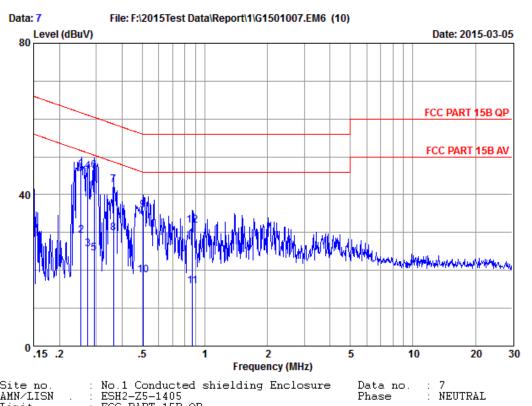
	Freq.	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.24	0.13	9.88	36.40	46.41	62.20	15.79	QP
2	0.24	0.13	9.88	17.90	27.91	52.20	24.29	Average
3	0.25	0.14	9.88	37.59	47.61	61.66	14.05	QP
4	0.25	0.14	9.88	19.89	29.91	51.66	21.75	Average
5	0.29	0.14	9.88	35.49	45.51	60.44	14.93	QP
6	0.29	0.14	9.88	11.89	21.91	50.44	28.53	Average
7	0.37	0.14	9.88	32.70	42.72	58.57	15.85	QP
8	0.37	0.14	9.88	20.10	30.12	48.57	18.45	Average
9	0.50	0.15	9.88	27.90	37.93	56.00	18.07	QP _
10	0.50	0.15	9.88	9.30	19.33	46.00	26.67	Äverage
11	0.88	0.17	9.90	22.69	32.76	56.00	23.24	QP
12	0.88	0.17	9.90	5.69	15.76	46.00	30.24	Äverage

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



> Data no. Phase

Engineer : KM.Tong



: No.1 Conducted shielding Enclosure : ESH2-Z5-1405 : FCC PART 15B QP : 18.1\*C&47%/ESCI Site no. AMN/LISN . Limit Env. / Ins. LED Lamp 9290011369 EUT

M/N Power Rating : 120Vac/60Hz

Test mode CH20 Memo

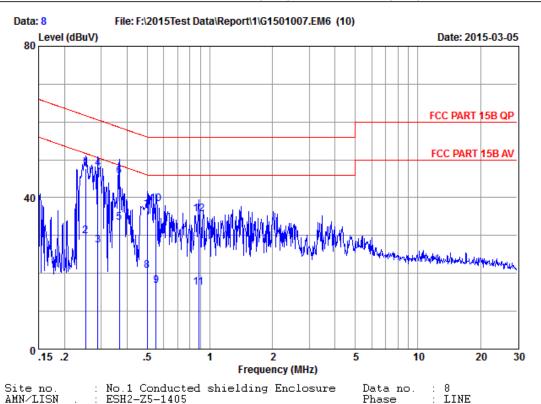
	Freq.	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10 11	0.25 0.25 0.27 0.27 0.29 0.29 0.36 0.36 0.50 0.50	0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.15 0.15	9.88 9.88 9.88 9.88 9.88 9.88 9.88 9.88	36.79 19.19 15.59 36.19 14.59 36.29 32.60 19.80 25.90 8.70 5.79 21.79	46.81 29.21 25.61 46.21 24.61 46.31 42.62 29.82 35.93 18.73 15.86 31.86	61.63 51.63 51.00 61.00 50.44 60.44 58.66 48.66 56.00 46.00 56.00	14.82 22.42 25.39 14.79 25.83 14.13 16.04 18.84 20.07 27.27 30.14 24.14	QP Average Average QP Average QP QP Average QP Average QP Average Average

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



Phase

Engineer : KM.Tong



No.1 Conducted shielding Enclosure ESH2-Z5-1405 FCC PART 15B QP 18.1\*C&47%/ESCI Site no. AMN/LISN Limit Env. / Ins. LED Lamp 9290011369 EUT

M/N Power Rating : 120Vac/60Hz

Test mode CH20 Memo

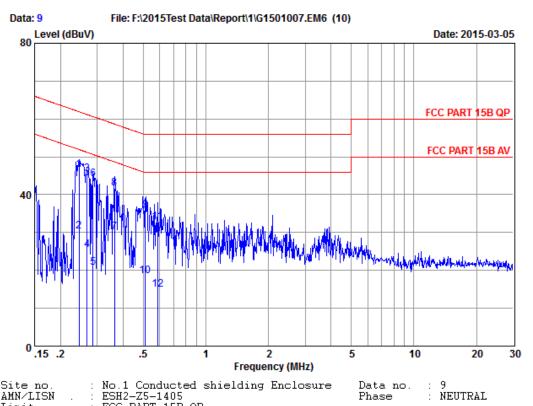
	Freq.	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.25	0.14	9.88	37.59	47.61	61.66	14.05	QP
2	0.25	0.14	9.88	19.89	29.91	51.66	21.75	Average
3	0.29	0.14	9.88	17.49	27.51	50.55	23.04	Average
4	0.29	0.14	9.88	37.59	47.61	60.55	12.94	QP -
5	0.37	0.14	9.88	23.30	33.32	48.57	15.25	Average
6	0.37	0.14	9.88	35.60	45.62	58.57	12.95	QP
7	0.50	0.15	9.88	26.60	36.63	56.02	19.39	QP
8	0.50	0.15	9.88	10.70	20.73	46.02	25.29	Average
9	0.55	0.15	9.88	6.61	16.64	46.00	29.36	Average
10	0.55	0.15	9.88	28.31	38.34	56.00	17.66	QP
11	0.88	0.17	9.90	6.29	16.36	46.00	29.64	Äverage
12	0.88	0.17	9.90	25.69	35.76	56.00	20.24	QP

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



Phase

Engineer : KM.Tong



: No.1 Conducted shielding Enclosure : ESH2-Z5-1405 : FCC PART 15B QP : 18.1\*C&47%/ESCI Site no. AMN/LISN . Limit Env. / Ins. LED Lamp 9290011369 EUT

M/N Power Rating : 120Vac/60Hz

Memo

Test mode CH26

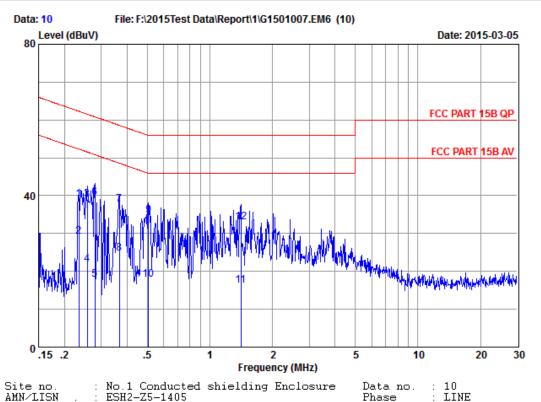
	Freq.	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10 11	0.25 0.27 0.27 0.29 0.36 0.36 0.51 0.51 0.59	0.13 0.13 0.14 0.14 0.14 0.14 0.15 0.15 0.15	9.88 9.88 9.88 9.88 9.88 9.88 9.88 9.88	36.50 20.40 35.39 15.39 10.79 34.19 20.10 31.70 25.80 8.50 22.71 4.81	46.51 30.41 45.41 25.41 20.81 44.21 30.12 41.72 35.83 18.53 32.74 14.84	61.89 51.89 61.18 51.18 50.64 60.64 48.66 58.66 58.60 46.00 56.00	15.38 21.48 15.77 25.77 29.83 16.43 18.54 16.94 20.17 27.47 23.26 31.16	QP Average QP Average QP Average QP Average QP QP QP Average QP Average

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



Phase

Engineer : KM.Tong



: No.1 Conducted shielding Enclosure : ESH2-Z5-1405 : FCC PART 15B QP : 18.1\*C&47%/ESCI Site no. AMN/LISN Limit Env. / Ins. EUT LED Lamp

M/N	:	9290011369
Power Rating	:	120Vac/60Hz
Test mode	:	CH26
Memo	:	

	Freq.	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10	0.23 0.23 0.26 0.26 0.28 0.28 0.37 0.37 0.51 0.51	0.13 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.15	9.88 9.88 9.88 9.88 9.88 9.88 9.88 9.88	28.90 19.10 28.89 11.89 7.89 29.49 27.60 14.80 24.80 7.70 6.21	38.91 29.11 38.91 21.91 17.91 39.51 37.62 24.82 34.83 17.73 16.30	62.31 52.31 61.53 51.53 50.82 60.82 58.57 48.57 56.00 46.00	23.40 23.20 22.62 29.62 32.91 21.31 20.95 23.75 23.75 21.17 28.27 29.70	QP Average QP Average Average QP QP QP Average QP Average Average Average
12	1.41	0.18	9.91	22.81	32.90	56.00	23.10	QP

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

# 4. RADIATED EMISSION MEASUREMENT

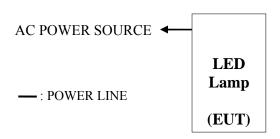
# 4.1. Test Equipment

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

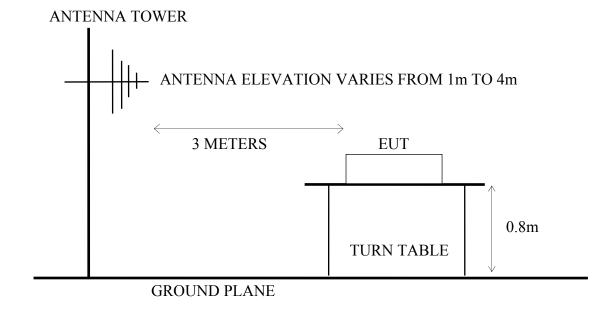
Item	Туре	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	Agilent	8449B	2944A10921	2014-07-05	2015-07-04
2.	Preamplifier	Agilent	8447D	2944A10921	2014-07-05	2015-07-04
3.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2014-06-23	2015-06-22
4.	Test Receiver	R&S	ESCI	100361	2015-01-05	2016-01-04
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	2015-01-05	2016-01-04
9.	RF Cable #1	Yuhang CSYH	cable-3m	001(0.5m)	2014-03-24	2015-03-23
10.	RF Cable #2	Yuhang CSYH	cable-3m	002(0.5m)	2014-03-24	2015-03-23
11.	RF Cable #3	Yuhang CSYH	cable-3m	003(3.0m)	2014-03-24	2015-03-23

# 4.2. Block Diagram of Test Setup

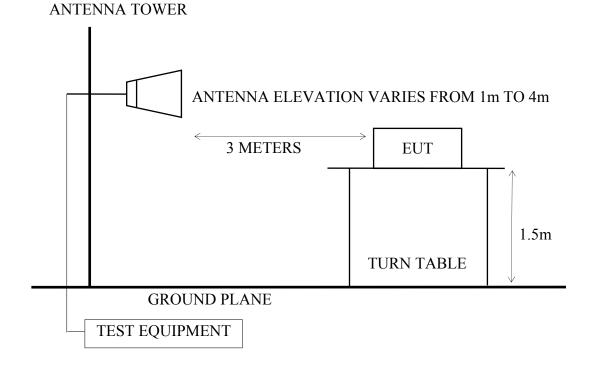
# 4.2.1. Block Diagram of Test Setup between EUT and simulators



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 1	5.209, CISPR22)
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Frequency	Distance Meters	Field Strengths Limits		
MHz	Distance wieters	dBμV/m		
30 ~ 230	10	30.0		
230 ~ 1000	10	37.0		
Above 1000	2	74.0 dBμV/m (Peak)		
Above 1000	3	54.0 dBμV/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 C63.10 -2013 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(1.5) 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  $1 \sim 4$  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 1 GHz

RBW (1 MHz), VBW (1MHz) for Peak detector above 1GHz

RBW (1 MHz), VBW (10Hz) for AV detector above 1GHz

The frequency range from 30MHz to 10<sup>th</sup> harmonic(25GHz) are checked, and no any emissions were found from 18GHz to 25GHz.

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

- 1. For 30-1000MHz measurement: Emission Level (dB $\mu$ V/m) = Meter-Reading (dB $\mu$ V)+Antenna Factor (dB/m)+Cable Loss (dB)
- 2. 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 YZ plan is the worst mode in Horizontal and XZ plan is the worst mode in Vertical, so in the test of radiation, all with YZ plan(in Horizontal) & XZ 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	2404.61	93.86	28.31	4.38	34.94	91.61	74.00	-17.61	Peak
Vertical	2404.58	98.15	28.31	4.38	34.94	95.90	74.00	-21.90	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	90.73	28.31	4.38	34.94	88.48	74.00	-14.48	Peak
Vertical	2404.64	103.60	28.31	4.38	34.94	101.35	74.00	-27.35	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	2404.70	100.25	28.31	4.38	34.94	98.00	74.00	-24.00	Peak
Vertical	2404.58	93.53	28.31	4.38	34.94	91.28	74.00	-17.28	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

Ma	Toot Mode a	nd Engavonos	Reference Test Data No.		
No.	Test Mode a	Horizontal	Vertical		
1.		2405MHz (Channel 11)	# 1	# 2	
2.	Transmitting	2450MHz (Channel 20)	# 3	# 4	
3.		2480MHz (Channel 26)	# 5	# 6	
4.	Receiving		# 7	# 8	

For Frequency range: above 1GHz

Ma	Test Mode and Frequency		Reference Test Data No.	
No.	Test Mode a	nd Frequency	Horizontal	Vertical
1.		2405MHz (Channel 11)	# 9	# 10
2.	Transmitting	2450MHz (Channel 20)	# 11	# 12
3.		2480MHz (Channel 26)	# 13	# 14
4.	Receiving		# 15	# 16

# 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 Mede e	Reference Test Data No.		
	Test Mode a	Horizontal	Vertical	
1.	Transmitting	2405MHz (Channel 11)	# 17, # 19	# 18, # 20
2.	Transmitting	2480MHz (Channel 26)	# 21, # 23	# 22, # 24

Data NO. :1 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li

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



Audix Technology (Wujiang) Co., Ltd. No.1289, Jiang King East Road, The Eastern Part of Wu Jiang Economic Development Zone, JiangSu, China Tel: (0512) 63403993 Fax: (0512) 63403993

# File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30) Data: 1 Level (dBuV/m) Date: 2015-05-26 FCC PART 15 CLASS B 40 50 100 500 1000

Frequency (MHz)

Site NO. : 3m chamber
Dis. / Ant. : 3m 6112D(22253)-140618
Limit : FCC PART 15 CLASS B
Env. / Ins. : 20.6\*C&42%/ESCI

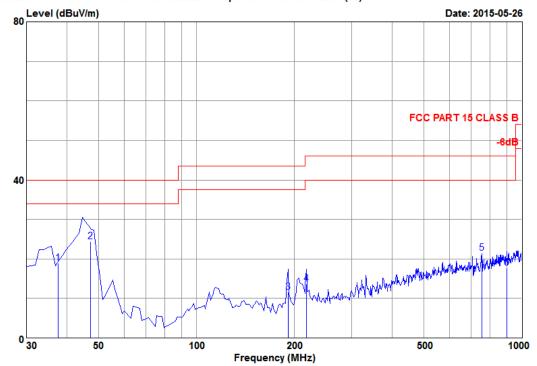
M/N : 9290011369 Power Rating : 120Vac/60Hz Test Mode : TX CH11 2405MHz Memo

: LED lamp

Fre (MH		or Loss	Readin		Limits		ı Remark
2 46 3 206 4 560	.59 18.9 .23 19.7	5 0.28 2 1.22 0 2.12 0 2.29	25.00 26.61 23.74 25.13	11.54 8.63 11.67 17.31 19.60 18.92	40.00 40.00 43.50 46.00 46.00	28.46 31.37 31.83 28.69 26.40 27.08	QP QP QP QP QP QP



File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30)



Site NO. : 3m chamber
Dis. / Ant. : 3m 6112D(22253)-140618
Limit : FCC PART 15 CLASS B
Env. / Ins. : 20.6\*C&42%/ESCI

EUT : LED lamp
M/N : 9290011369
Power Rating : 120Vac/60Hz
Test Mode : TX CH11 2405MHz

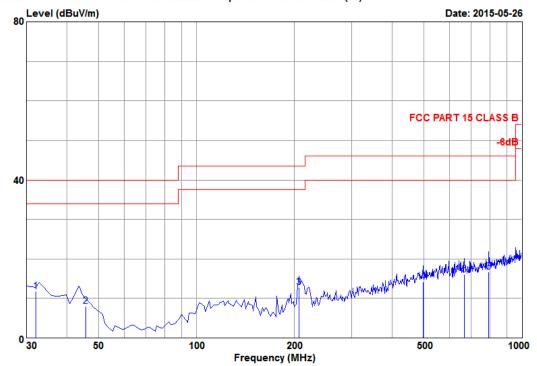
Memo :

0618	Data NO. Ant. pol.	:2 : VERTICAL
В	Engineer	: boqiang_l

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2 3 4 5	37.56 47.16 191.04 218.08 756.02 901.32	15.04 10.47 9.75 10.60 20.42 21.63	0.26 0.28 1.17 1.25 2.48 2.80	31.00 41.10 27.50 28.61 26.11 20.70	18.88 24.45 11.59 13.70 21.43 17.83	40.00 40.00 43.50 46.00 46.00 46.00	21.12 15.55 31.91 32.30 24.57 28.17	QP QP QP QP QP QP



File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30)



Site NO. Dis. / Ant. : 3m chamber

: 3m 6112D(22253)-140618 : FCC PART 15 CLASS B : 20.6\*C&42%/ESCI Limit Env. / Ins.

: LED lamp : 9290011369 EUT M/N Power Rating : 120Vac/60Hz Test Mode : TX CH20 2450MHz

Memo

Data NO. :3 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2 3 4 5 6	32.10 45.58 206.54 497.54 665.35 792.42	18.32 11.23 10.62 18.05 19.70 20.65	0.24 0.28 1.22 2.07 2.29 2.57	20.59 24.00 27.68 21.47 21.60 21.14	11.72 8.10 12.74 14.20 16.07 16.76	40.00 40.00 43.50 46.00 46.00	28.28 31.90 30.76 31.80 29.93 29.24	QP QP QP QP QP QP

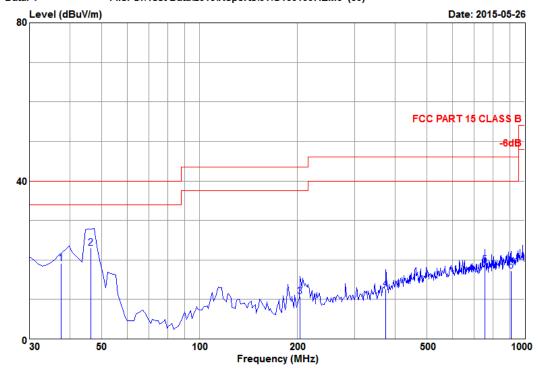
Data NO.:4 Ant. pol.: VERTICAL

Engineer : boqiang\_li



Audix Technology(Wujiang)Co.,Ltd.
No.1289,Jiang Xing East Road,The Eastern Part of Wu Jiang Economic Development Zone,JiangSu,China
Tel:(0512)63403993 Fax:(0512)63403993

### File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30)



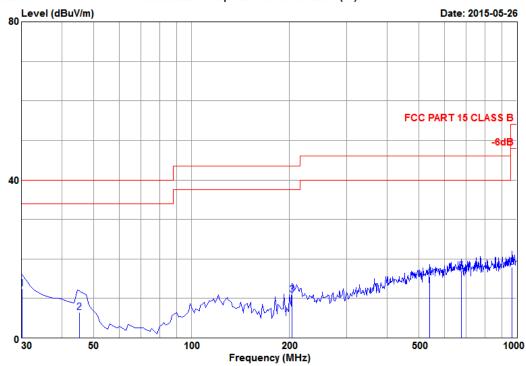
Site NO. : 3m chamber
Dis. / Ant. : 3m 6112D(22253)-140618
Limit : FCC PART 15 CLASS B
Env. / Ins. : 20.6\*C&42%/ESCI

EUT : LED lamp
M/N : 9290011369
Power Rating : 120Vac/60Hz
Test Mode : TX CH20 2450MHz
Memo :

Ant. Cable Emission Freq. Factor Loss Reading Level Limits Margin Remark (MHz) (dB/m)(dB) (dBuV) (dBuV/m) (dBuV/m) (dB) 20.95 17.01 32.71 33.38 37.54 15.05 0.26 31.16 19.05 40.00 1 OP 22.99 10.79 40.00 43.50 46.29 10.87 0.28 39.24 25.78 QΡ 2 10.58 QP QP 3 203.63 1.63 2.48 374.35 15.79 22.34 12.62 46.00 5 754.59 20.40 23.44 18.75 46.00 27.25 QΡ 908.82 21.78 2.82 19.94 17.27 46.00 28.73 QР



File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30)



: 3m chamber

Site NO. Dis. / Ant. : 3m 6112D(22253)-140618 : FCC PART 15 CLASS B : 20.6\*C&42%/ESCI Limit Env. / Ins.

: LED lamp : 9290011369 EUT M/N Power Rating : 120Vac/60Hz Test Mode : TX CH26 2480MHz

Memo

Data NO. :5 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2 3 4 5	30.08 45.26 203.63 540.22 676.99 967.99	19.65 11.40 10.58 18.71 19.80 22.16	0.23 0.28 1.22 2.11 2.31 2.93	20.05 22.14 25.87 22.19 22.38 19.96	12.50 6.41 10.88 15.58 16.96 17.96	40.00 40.00 43.50 46.00 46.00 54.00	27.50 33.59 32.62 30.42 29.04 36.04	QP QP QP QP QP QP



500

Data NO.:6 Ant.pol.:VERTICAL

Engineer : boqiang\_li

1000

File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30) 80 Level (dBuV/m) Date: 2015-05-26 FCC PART 15 CLASS B 40

> 200 Frequency (MHz)

: 3m chamber

50

Site NO. Dis. / Ant. : 3m 6112D(22253)-140618 : FCC PART 15 CLASS B : 20.6\*C&42%/ESCI Limit

100

Env. / Ins. : LED lamp : 9290011369 EUT M/N Power Rating : 120Vac/60Hz

Test Mode : TX CH26 2480MHz

Memo

0 30

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2 3 4 5	37.26 47.28 188.11 214.30 754.59 963.14	15.20 10.42 9.70 10.32 20.40 22.10	0.26 0.28 1.16 1.24 2.48 2.92	29.17 40.98 27.50 28.84 24.93 19.19	17.21 24.28 11.52 13.63 20.24 17.10	40.00 40.00 43.50 43.50 46.00 54.00	22.79 15.72 31.98 29.87 25.76 36.90	QP QP QP QP QP QP

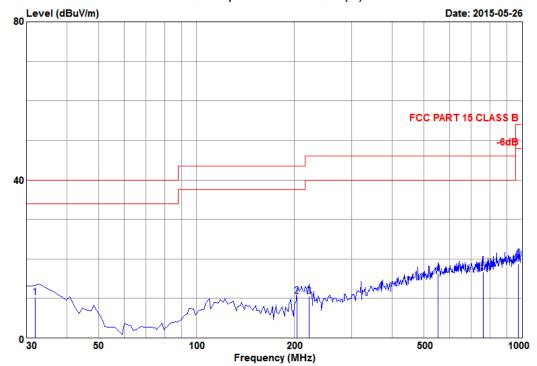
Data NO.:7 Ant.pol.:HORIZONTAL

Engineer : boqiang\_li



Audix Technology(Wujiang)Co.,Ltd. No.1289, Jiang King East Road, The Eastern Part of Wu Jiang Economic Development Zone, JiangSu, China Fax: (0512) 63403993 Tel: (0512) 63403993

File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30)



: 3m chamber

Site NO. Dis. / Ant. : 3m 6112D(22253)-140618 : FCC PART 15 CLASS B : 20.6\*C&42%/ESCI Limit

Env. / Ins. EUT

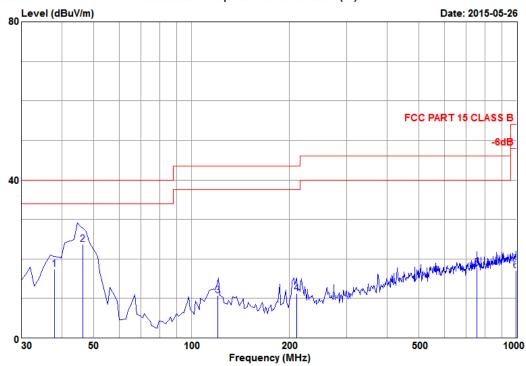
: LED lamp : 9290011369 M/N Power Rating : 120Vac/60Hz

Test Mode : RX Memo

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.94	18.44	0.24	19.05	10.30	40.00	29.70	QP
2	203.63	10.58	1.22	25.60	10.61	43.50	32.89	ÕΡ
3	222.06	10.80	1.26	25.29	10.60	46.00	35.40	Q̈Ρ
4	552.83	18.90	2.12	22.58	16.16	46.00	29.84	QΡ
5	761.38	20.50	2.50	21.24	16.66	46.00	29.34	QP
6	974.78	22.20	2.95	20.67	18.75	54.00	35.25	QP



File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30)



Site NO. : 3m chamber
Dis. / Ant. : 3m 6112D(22253)-140618
Limit : FCC PART 15 CLASS B
Env. / Ins. : 20.6\*C&42%/ESCI

EUT : LED lamp
M/N : 9290011369

Power Rating: 120Vac/60Hz

Test Mode : RX Memo :

ναια	NO.	:0
Ant.	pol.	: VERTICAL

Engineer : boqiang\_li

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	37.86	14.88	0.26	29.74	17.46	40.00	22.54	QP
2	46.29	10.87	0.28	39.99	23.74	40.00	16.26	QP
3	120.28	13.01	0.77	24.17	10.78	43.50	32.72	QP
4	210.42	10.56	1.23	26.20	11.22	43.50	32.28	QP
5	754.59	20.40	2.48	22.46	17.77	46.00	28.23	QP
6	994.18	22.22	2.98	18.87	17.05	54.00	36.95	QP

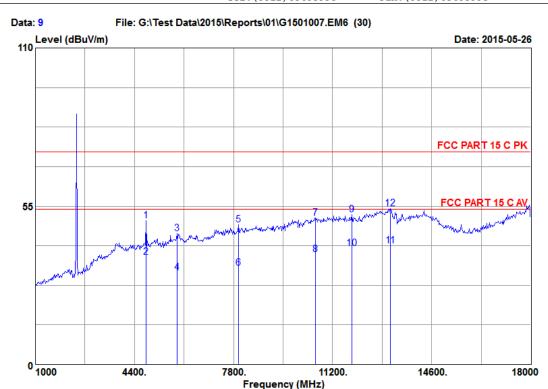
### 4.8. Restricted Bands Measurement Results (For Above 1GHz)



Audix Technology (Wujiang) Co., Ltd. No.1289, Jiang King East Road, The Eastern Part of Wu Jiang Economic Development Zone, JiangSu, China Tel: (0512) 63403993 Fax: (0512) 63403993

Data NO. : 9 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li



Site NO. : 3m Semi-Anechoic Chamber Dis. / Ant. : 3m 3115-62593-140618 Limit : FCC PART 15 C PK Env. / Ins. : 20.6\*C&42%/N9030A

EUT : LED lamp M/N : 9290011369 Power Rating: 120Vac/60Hz Test Mode : TX CH11 2405MHz Memo

		Ant.	Cable	!	Preamp	· Emissio	on		
	Freq.	Factor	Loss	Reading	Factor	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dB)	(dBuV∕m	(dBuV/m)	(dB)	
-									
1	4806.00	32.86	6.36	45.08	34.37	49.93	74.00	24.07	Peak
2	4807.25	32.86	6.36	32.51	34.37	37.36	54.00	16.64	Average
3	5862.00	34.05	7.55	37.98	34.05	45.53	74.00	28.47	Peak
4	5863.21	34.05	7.55	24.40	34.05	31.95	54.00	22.05	Average
5	7974.00	36.89	8.78	37.48	34.69	48.46	74.00	25.54	Peak
6	7975.25	36.89	8.80	22.50	34.72	33.47	54.00	20.53	Average
- 7	10614.00	38.25	10.45	36.31	34.02	50.99	74.00	23.01	Peak
8	10615.60	38.25	10.45	23.60	34.02	38.28	54.00	15.72	Average
9	11868.00	39.05	10.58	36.69	34.17	52.15	74.00	21.85	Peak
10	11869.58	39.05	10.58	24.80	34.17	40.26	54.00	13.74	Average
11	13187.58	40.06	11.60	21.80	32.14	41.32	54.00	12.68	Average
12	13188.00	40.06	11.60	34.62	32.14	54.14	74.00	19.86	Peak

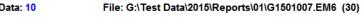
Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor. 2. The emission levels that are 20dB below the official

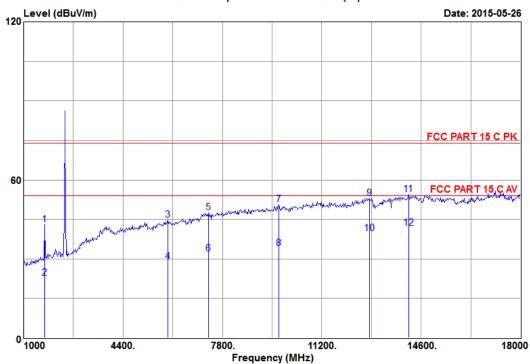
limit are not reported.



Data NO. : 10 Ant. pol. : VERTICAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

: LED lamp EUT M/N : 9290011369 Power Rating: 120Vac/60Hz Test Mode : TX CH11 2405MHz

Memo

		Ant.	Cable		Preamp	- Emissio	n		
	Freq.	Factor	Loss	Reading	Factor	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dB)	(dBuV∕m	(dBuV/m)	(dB)	
-									
1	1714.00	26.38	3.63	47.95	35.09	42.87	74.00	31.13	Peak
2	1715.26	26.39	3.63	27.89	35.09	22.82	54.00	31.18	Average
3	5935.00	34.07	7.64	37.07	34.02	44.76	74.00	29.24	Peak
4	5936.87	34.08	7.64	21.10	34.02	28.80	54.00	25.20	Average
5	7321.00	36.17	8.22	37.31	33.97	47.73	74.00	26.27	Peak
6	7321.60	36.18	8.22	21.49	33.97	31.92	54.00	22.08	Average
7	9736.00	37.99	9.83	37.48	34.72	50.58	74.00	23.42	Peak
8	9737.25	37.99	9.83	20.98	34.72	34.08	54.00	19.92	Average
9	12823.00	39.39	11.34	34.99	32.63	53.09	74.00	20.91	Peak
10	12824.14	39.39	11.34	21.70	32.63	39.80	54.00	14.20	Average
11	14167.00	42.10	12.10	32.10	31.72	54.58	74.00	19.42	Peak
12	14168.21	42.10	12.10	19.31	31.72	41.79	54.00	12.21	Average

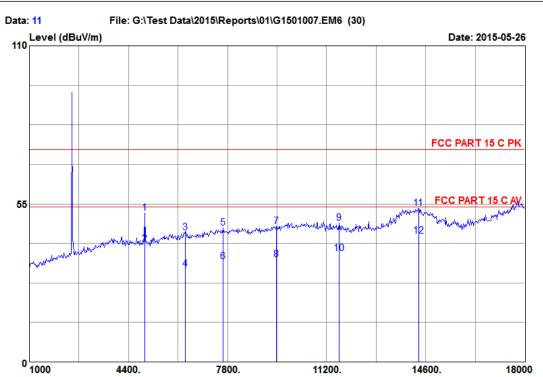
Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor. 2. The emission levels that are 20dB below the official

limit are not reported.



Data NO. : 11 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li



Frequency (MHz)

Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

: LED lamp : 9290011369 EUT M/N Power Rating: 120Vac/60Hz Test Mode : TX CH20 2450MHz

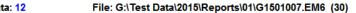
Memo

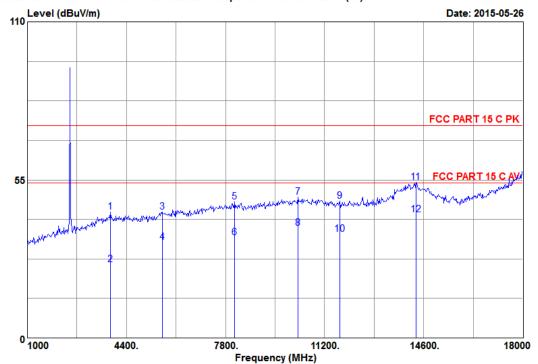
	Freq.	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		on Limits (dBuV/m)	Margin (dB)	Remark
10 11	4960.00 4961.25 6346.00 6347.25 7644.00 9470.00 9471.01 11626.00 11627.14 14354.00	33.13 33.13 34.31 34.31 36.76 36.76 37.80 37.80 38.95 38.95 42.33	6.42 6.42 7.79 7.79 8.51 8.51 9.52 9.52 10.61 10.61 12.14	46.60 35.90 36.78 24.20 35.85 24.10 34.75 23.21 32.69 22.25 31.18 21.50	34.36 34.36 33.86 34.35 34.35 34.82 34.82 34.03 34.03 32.10	51.79 41.09 45.02 32.44 46.77 35.02 47.25 35.71 48.22 37.78 53.55	74.00 54.00 74.00 54.00 74.00 54.00 74.00 54.00 74.00 54.00 54.00	22.21 12.91 28.98 21.56 27.23 18.98 26.75 18.29 25.78 16.22 20.45 10.13	Peak Average Peak Average Peak Average Peak Average Peak Average Peak Average Average



Data NO. : 12 Ant. pol. : VERTICAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

ENV. / Ins. : 20.6\*C&42%/N9030A EUT : LED lamp M/N : 9290011369

Power Rating: 120Vac/60Hz Test Mode : TX CH20 2450MHz

Memo :

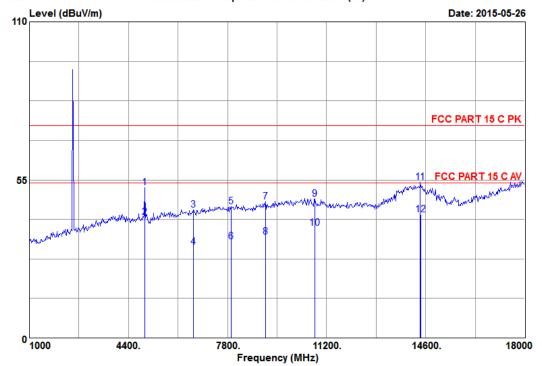
	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		n Limits (dBuV/m)	Margin (dB)	Remark
1	3838.00	32.16	5.86	40.42	34.52	43.92	74.00	30.08	Peak
2	3839.25 5620.00	32.16 33.95	5.86 7.22	22.09 36.92	34.52 34.14	25.59 43.95	54.00 74.00	28.41 30.05	Average Peak
4 5	5621.36 8106.00	33.95 37.03	7.22 8.84	26.20 36.28	34.14 34.77	33.23 47.38	54.00 74.00	20.77 26.62	Average Peak
6	8107.25	37.03	8.84	23.80	34.77	34.90	54.00	19.10	reak Average
7	10284.00	38.20	10.27	35.02	34.36	49.13	74.00	24.87	Peak
	10285.20 11714.00	38.20 38.99	10.27 10.60	24.20 32.10	34.36 34.08	38.31 47.61	54.00 74.00	15.69 26.39	Average Peak
	11715.21	38.99	10.60	20.60	34.08	36.11	54.00	17.89	Average
	14332.00 14333.14	42.30 42.30	12.14 12.14	31.71 20.60	32.05 32.05	54.10 42.99	74.00 54.00	19.90 11.01	Peak Average



Data NO. : 13 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

: LED lamp : 9290011369 EUT M/N Power Rating: 120Vac/60Hz Test Mode : TX CH26 2480MHz

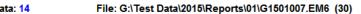
Memo

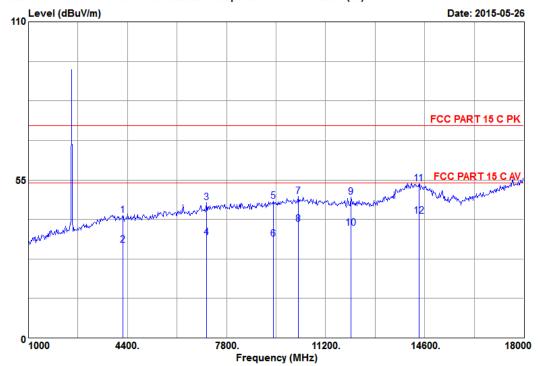
		Ant.	Cable		Preamp	• Emissio	on		
	Freq.	Factor	Loss	Reading	Factor	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dB)	(dBuV∕m	(dBuV/m)	(dB)	
						·			
1	4960.00	33.13	6.42	47.11	34.36	52.30	74.00	21.70	Peak
2	4961.25	33.13	6.42	36.90	34.36	42.09	54.00	11.91	Average
3	6632.00	34.62	7.85	35.84	33.74	44.57	74.00	29.43	Peak
4	6633.25	34.62	7.85	22.90	33.74	31.63	54.00	22.37	Average
5	7930.00	36.87	8.75	34.84	34.66	45.80	74.00	28.20	Peak
6	7931.25	36.87	8.75	22.50	34.66	33.46	54.00	20.54	Average
-7	9096.00	37.80	9.10	35.51	34.94	47.47	74.00	26.53	Peak
8	9097.25	37.80	9.13	23.21	34.94	35.20	54.00	18.80	Average
9	10790.00	38.32	10.56	33.31	33.84	48.35	74.00	25.65	Peak
10	10791.25	38.32	10.56	23.30	33.84	38.34	54.00	15.66	Average
11	14420.00	42.41	12.15	31.80	32.20	54.16	74.00	19.84	Peak
12	14421.01	42.41	12.15	20.50	32.20	42.86	54.00	11.14	Average



Data NO. : 14 Ant. pol. : VERTICAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

EUT

: LED lamp : 9290011369 M/N Power Rating: 120Vac/60Hz Test Mode : TX CH26 2480MHz

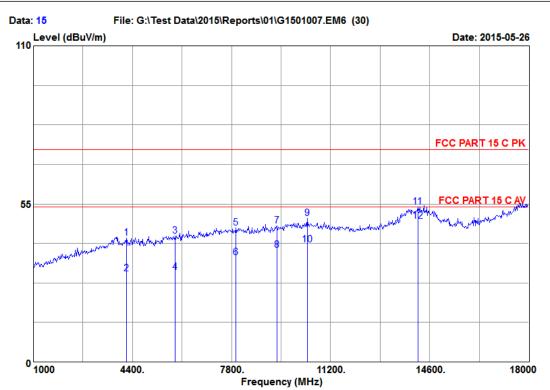
Memo

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		n Limits (dBuV/m)	Margin (dB)	Remark
1	4234.00	32.40	6.15	38.51	34.39	42.67	74.00	31.33	Peak
2	4235.14 7116.00	32.40 35.56	6.15 8.04	28.20 37.37	34.39 33.74	32.36 47.23	54.00 74.00	21.64 26.77	Average Peak
4	7117.25	35.56	8.04	25.10	33.74	34.96	54.00	19.04	reak Average
5	9404.00	37.80	9.47	35.14	34.83	47.58	74.00	26.42	Peak
6	9405.21	37.80	9.47	22.09	34.83	34.53	54.00	19.47	Average
7	10262.00	38.20	10.25	35.26	34.38	49.33	74.00	24.67	Peak
8	10263.20	38.20	10.25	25.50	34.38	39.57	54.00	14.43	Average
9	12066.00	39.09	10.64	33.39	34.10	49.02	74.00	24.98	Peak
10	12067.25	39.09	10.64	22.49	34.10	38.12	54.00	15.88	Average
11	14398.00	42.38	12.15	31.27	32.15	53.65	74.00	20.35	Peak
12	14399.25	42.38	12.15	20.20	32.15	42.58	54.00	11.42	Average



Data NO. : 15 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

: LED lamp : 9290011369 EUT M/N Power Rating: 120Vac/60Hz Test Mode : RX

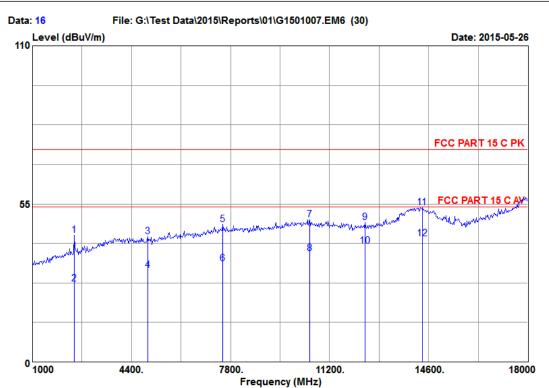
Memo

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		Limits (dBuV/m)	Margin (dB)	Remark
2 3 4 5 6 7 8 9 1 10 1 11 1	4190.00 4191.25 5862.00 5863.25 7952.00 7953.25 9360.00 9361.25 4200.00 4201.21	32.42 32.42 34.05 34.05 36.88 36.88 37.80 37.80 38.20 42.14 42.14	6.13 6.13 7.55 7.55 8.78 8.78 9.41 9.41 10.33 10.33 12.11 12.11	38.98 26.50 36.31 23.60 35.60 25.49 35.03 26.60 35.67 26.49 31.57 26.70	34.39 34.39 34.05 34.05 34.69 34.85 34.85 34.25 34.25 31.81 31.81	43.14 30.66 43.86 31.15 46.57 36.46 47.39 38.96 49.95 40.77 54.01 49.14	74.00 54.00 74.00 54.00 74.00 54.00 74.00 54.00 74.00 54.00 74.00 54.00	30.86 23.34 30.14 22.85 27.43 17.54 26.61 15.04 24.05 13.23 19.99 4.86	Peak Average



Data NO. : 16 Ant. pol. : VERTICAL

Engineer : boqiang\_li



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

EUT

: LED lamp : 9290011369 M/N Power Rating: 120Vac/60Hz Test Mode : RX

Memo

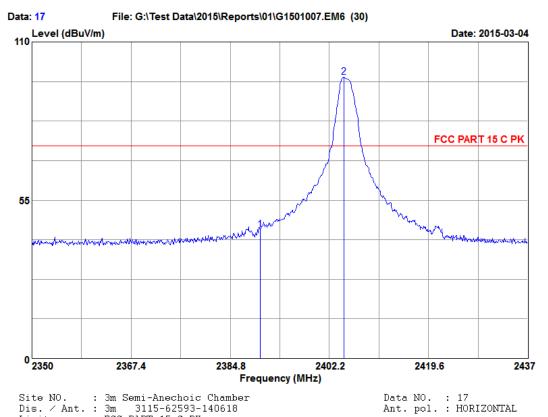
		Ant.	Cable	!	Preamp	- Emissio	on		
	Freq.	Factor	Loss	Reading	Factor	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dB)	(dBuV∕m	(dBuV/m)	(dB)	
-									
1	2430.00	28.36	4.40	46.25	34.95	44.06	74.00	29.94	Peak
2	2431.14	28.36	4.40	29.50	34.95	27.31	54.00	26.69	Average
3	4960.00	33.13	6.42	38.42	34.36	43.61	74.00	30.39	Peak
4	4961.25	33.13	6.42	26.60	34.36	31.79	54.00	22.21	Average
5	7534.00	36.71	8.40	37.06	34.20	47.97	74.00	26.03	Peak
6	7534.25	36.71	8.40	23.25	34.20	34.16	54.00	19.84	Average
7	10526.00	38.21	10.41	34.90	34.10	49.42	74.00	24.58	Peak
8	10527.25	38.21	10.41	23.21	34.10	37.73	54.00	16.27	Average
9	12418.00	39.02	10.97	32.05	33.42	48.62	74.00	25.38	Peak
10	12419.20	39.02	10.97	23.89	33.42	40.46	54.00	13.54	Average
11	14376.00	42.35	12.15	31.47	32.15	53.82	74.00	20.18	Peak
12	14377.25	42.35	12.15	20.50	32.15	42.85	54.00	11.15	Average

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



Audix Technology (Wujiang) Co., Ltd. No.1289, Jiang King East Road, The Eastern Part of Wu Jiang Economic Development Zone, JiangSu, China Tel: (0512) 63403993 Fax: (0512) 63403993

Engineer : boqiang\_li



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

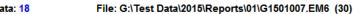
EUT : LED lamp M/N: 9290011369 Power Rating: 120Vac/60Hz Test Mode : TX CH11 2405MHz Memo

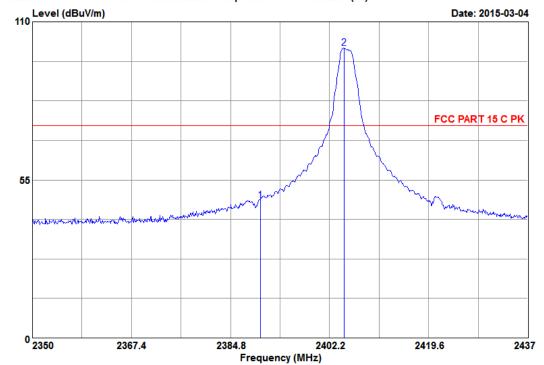
		Ant.	Capie	!	Preamp	Lm18810	on			
	Freq.	Factor	Loss	Reading	Factor	Level	Limits	Margin	Remark	
	(MHz)	(dB)	(dB)	(dBuV)	(dB)	(dBuV∕m	(dBuV/m)	(dB)		
-										
1	2390.00	28.28	4.38	47.10	34.94	44.82	74.00	29.18	Peak	
2	2404.70	28.31	4.38	100.03	34.94	97.78	74.00	-23.78	Peak	
										-



Data NO. : 18 Ant. pol. : VERTICAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

EUT : LED lamp M/N : 9290011369 Power Rating: 120Vac/60Hz

Test Mode : TX CH11 2405MHz

Memo :

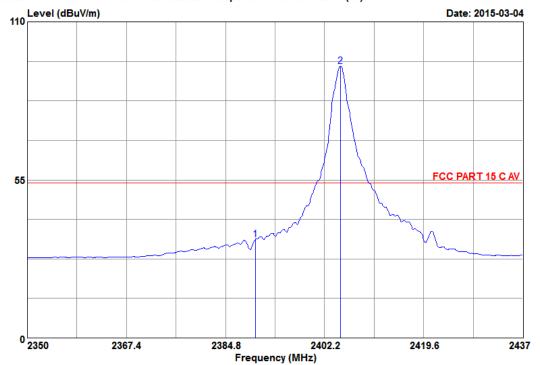
	Freq. (MHz)	Loss	Reading	Factor			Margin (dB)	Remark
_	2390.00 2404.70	 	50.19 103.12		47.91 100.87	74.00 74.00	26.09 -26.87	Peak Peak



Data NO. : 19 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C AV
Env. / Ins. : 20.6\*C&42%/N9030A

EUT : LED lamp M/N : 9290011369 Power Rating: 120Vac/60Hz

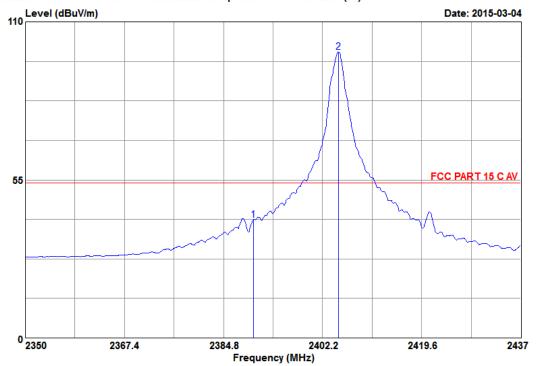
Test Mode: TX CH11 2405MHz

Memo :

	Freq.	Ant. Factor (dB)				Emissio Level (dBuV/m	on Limits (dBuV∕m)	Margin (dB)	Remark
1	2390.00	28.28	4.38	36.55	34.94	34.27	54.00	19.73	Average
2	2405.00	28.31	4.38	96.86	34.94	94.61	54.00	-40.61	Average



#### Data: 20 File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30)



Site NO. : 3m Semi-Anechoic Chamber Dis. / Ant. : 3m 3115-62593-140618 Limit : FCC PART 15 C AV Env. / Ins. : 20.6\*C&42%/N9030A

EUT : LED lamp
M/N : 9290011369
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz

Memo :

-62593-140618	Ant. pol.	: VERTICAL
.5 C AV ≤∕N9030A	Engineer	: boqiang_li

Data NO. : 20

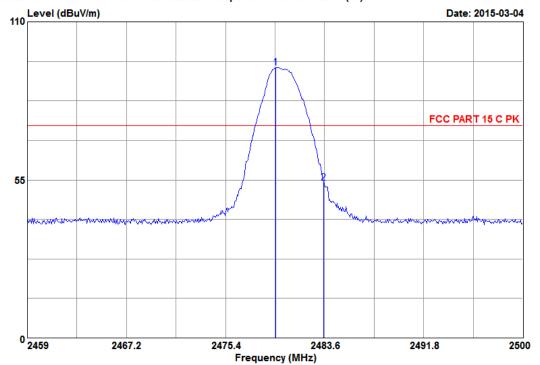
	Freq. (MHz)	Ant. Factor (dB)		Reading (dBuV)	Factor	Emissic Level (dBuV/m	Limits	Margin (dB)	Remark
_	2390.00	28.28	4.38	43.30	34.94	41.02	54.00	12.98	Average
	2405.00	28.31	4.38	101.71	34.94	99.46	54.00	-45.46	Average



Data NO. : 21 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

EUT : LED lamp M/N : 9290011369 Power Rating: 120Vac/60Hz

Test Mode : TX CH26 2480MHz

Memo :

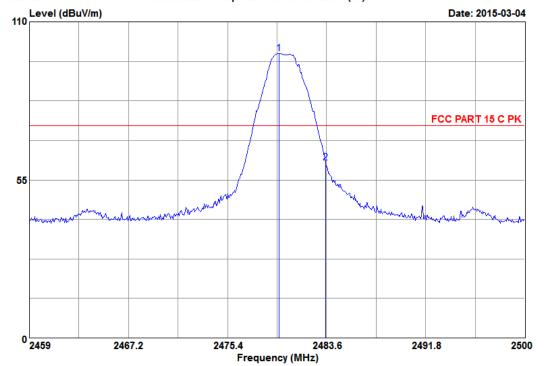
		Ant.	Cable		Preamp	Emissic	on		
	Freq.						Limits (dBuV/m)	Margin	Remark
_	2479.56	28.46		96.13	34.96	94.07	74.00	-20.07	Peak
2	2483.50	28.47	4.44	56.00	34.96	53.95	74.00	20.05	Peak



Data NO. : 22 Ant. pol. : VERTICAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62593-140618
Limit : FCC PART 15 C PK
Env. / Ins. : 20.6\*C&42%/N9030A

EUT : LED lamp
M/N : 9290011369
Power Rating: 120Vac/60Hz

Test Mode : TX CH26 2480MHz

Memo :

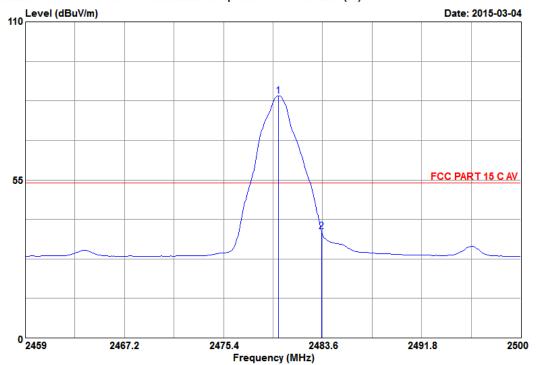
	Freq. (MHz)		Reading	Factor			Margin (dB)	Remark
_	2479.68 2483.50	28.46 28.47	 101.04 63.03	34.96 34.96	98.98 60.98	74.00 74.00	-24.98 13.02	Peak Peak



Data NO. : 23 Ant. pol. : HORIZONTAL

Engineer : boqiang\_li

#### File: G:\Test Data\2015\Reports\01\G1501007.EM6 (30)



Site NO. : 3m Semi-Anechoic Chamber Dis. / Ant. : 3m 3115-62593-140618 Limit : FCC PART 15 C AV Env. / Ins. : 20.6\*C&42%/N9030A

: LED lamp : 9290011369 EUT M/N

Power Rating: 120Vac/60Hz Test Mode : TX CH26 2480MHz

Memo

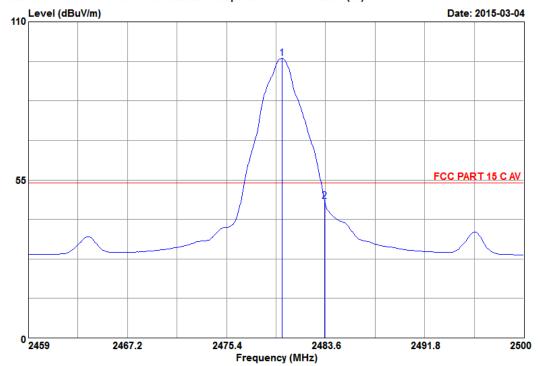
	Freq. (MHz)	Ant. Factor (dB)			Factor		on Limits (dBuV∕m)	Margin (dB)	Remark
_	2479.92	28.46	4.44	86.28	34.96	84.22	54.00	-30.22	Average
	2483.50	28.47	4.44	39.01	34.96	36.96	54.00	17.04	Average



Data NO. : 24 Ant. pol. : VERTICAL

Engineer : boqiang\_li





Site NO. : 3m Semi-Anechoic Chamber Dis. / Ant. : 3m 3115-62593-140618 Limit : FCC PART 15 C AV Env. / Ins. : 20.6\*C&42%/N9030A

EUT : LED lamp
M/N : 9290011369
Power Rating: 120Vac/60Hz

Power Rating: 120Vac/60Hz Test Mode : TX CH26 2480MHz

Memo :

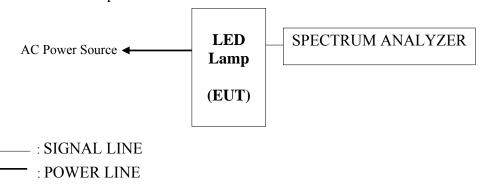
	Freq. (MHz)	Ant. Factor (dB)			Factor		on Limits (dBuV∕m)	Margin (dB)	Remark
_	2479.98	28.46	4.44	99.33	34.96	97.27	54.00	-43.27	Average
	2483.50	28.47	4.44	49.67	34.96	47.62	54.00	6.38	Average

## 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	2014-06-23	2015-06-22

## 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	755.0
20	2450	745.5
26	2480	549.7





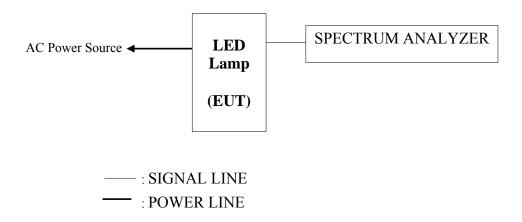


## 6. OUTPUT POWER MEASUREMENT

## 6.1. Test Equipment

Item	Туре	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	PXA Signal	Agilent	N9030A	MY53120367	2014-06-23	2015-06-22
	Analyzer					

## 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

- a) Set span to at least 1.5 times the OBW.
- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
- c) Set VBW  $\geq$  3 x RBW.
- d) Number of points in sweep  $\geq 2 \times \text{span} / \text{RBW}$ . (This gives bin-to-bin spacing  $\leq \text{RBW}/2$ , so that narrowband signals are not lost between frequency bins.)
- e) Sweep time = auto.
- f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- g) If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (*i.e.*, with no off intervals) or at duty cycle  $\ge 98$  %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".
- h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

### 6.5. Test Results

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

Channel	Frequency	Power(dBm)	Limit(dBm)
11	2405	3.96	30
20	2450	3.92	30
26	2480	3.90	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	2014-06-23	2015-06-22

### 7.2. Block Diagram of Test Setup

The same as section 5.2.

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

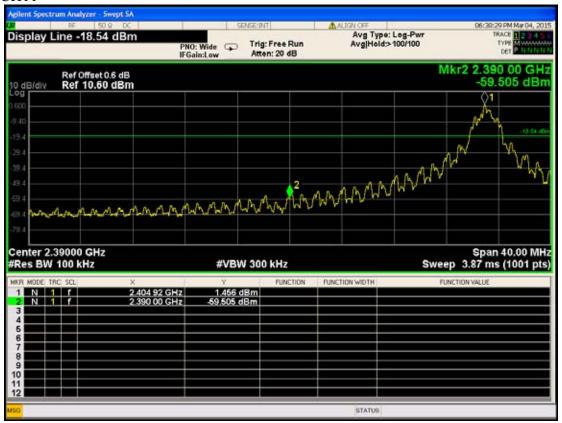
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.





## 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	2014-06-23	2015-06-22

## 8.2. Block Diagram of Test Setup

The same as section 5.2.

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

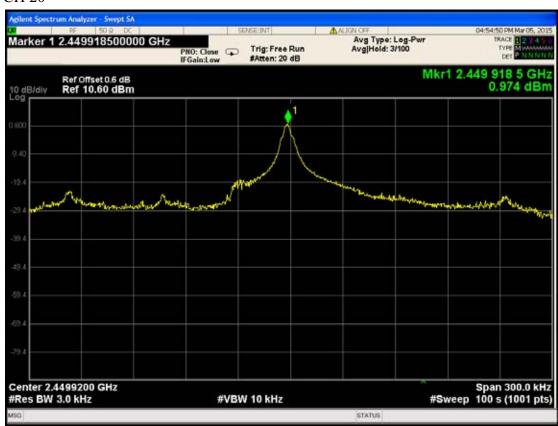
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

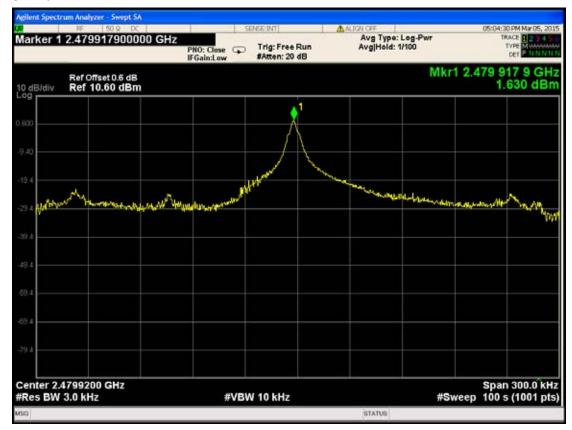
## 8.4. Test Results

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

Channel	Frequency(MHz)	Value(dBm/3kHz)
11	2405	0.89
20	2450	0.974
26	2480	1.630







## 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	2014-06-23	2015-06-22

### 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)).

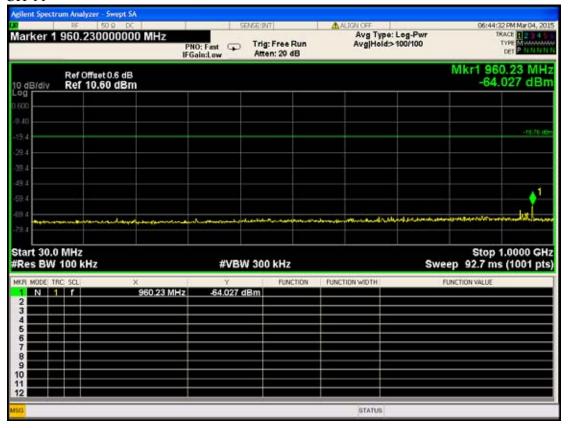
### 9.4. Test Procedure

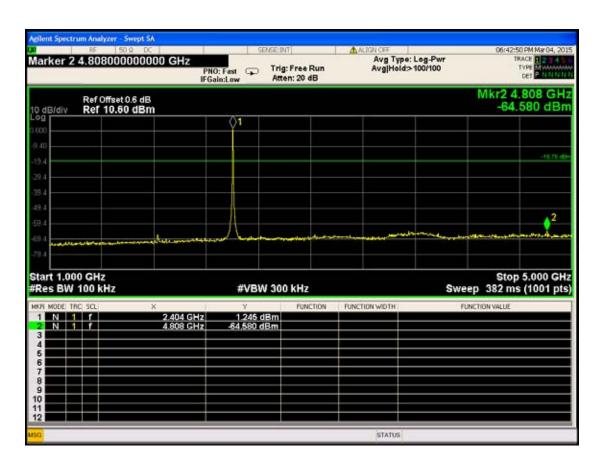
The transmitter output was connected to the spectrum analyzer. Set RBW = 100 kHz, VBW  $\geq 300 \text{kHz}$ , scan up through 10 th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. The measurement guideline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

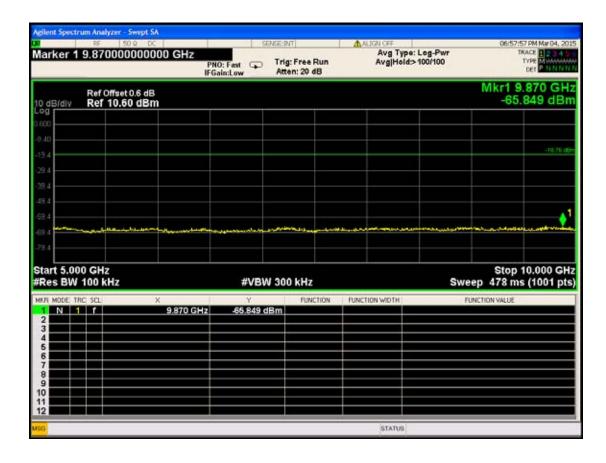
## 9.5. Test Results

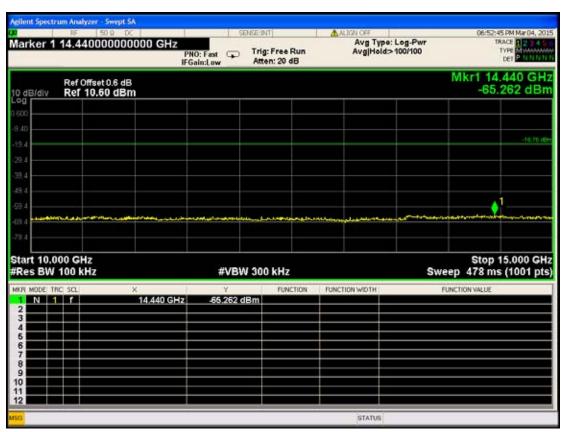
**PASSED.** All the test results are attached in next pages.

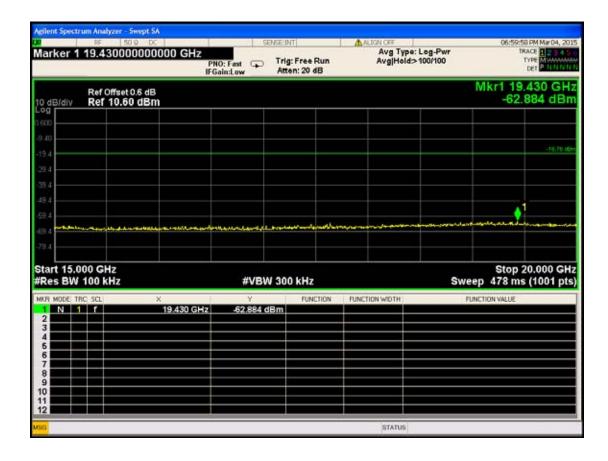
Channel	Frequency(MHz)	Amplitude(dBm)		
	960.23	-64.027		
	2404	1.245		
	4808	-64.580		
11	9870	-65.849		
	14440	-65.262		
	19430	-62.884		
	24095	-62.332		
	960.23	-67.967		
	2448	1.310		
	4900	-64.623		
20	9880	-65.356		
	14385	-65.091		
	19020	-62.688		
	24025	-63.042		
	960.23	-60.674		
	2480	2.097		
	4960	-63.959		
26	8915	-65.883		
	14430	-65.577		
	19080	-62.864		
	23750	-62.421		

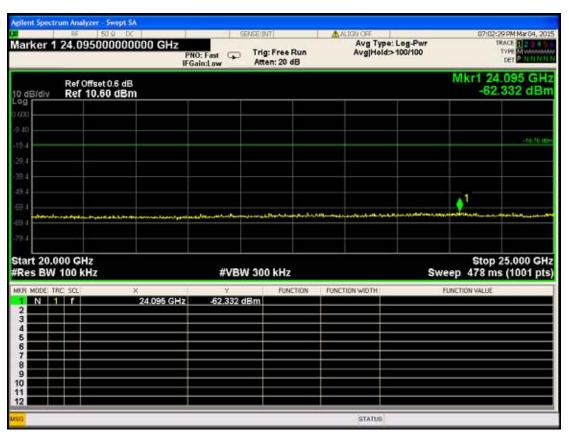


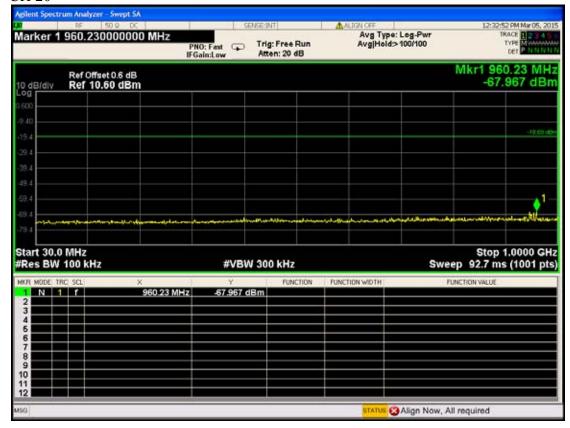


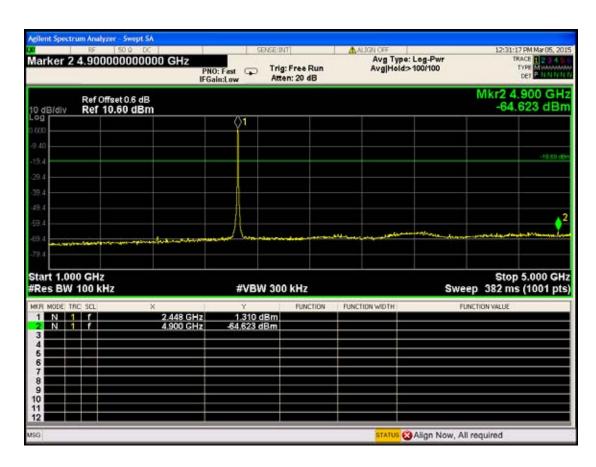


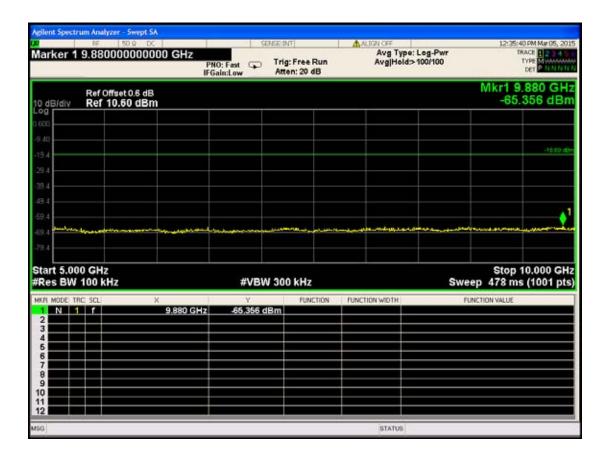


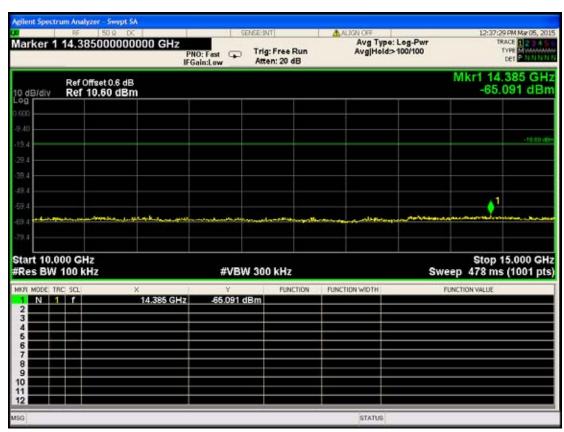


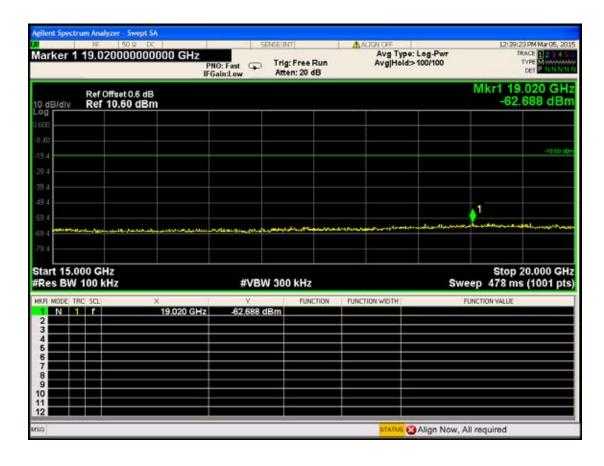


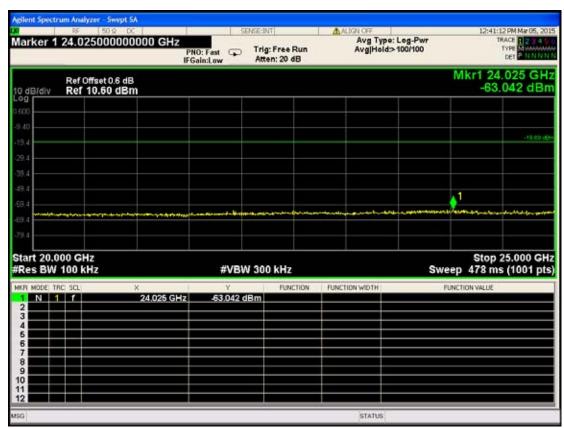


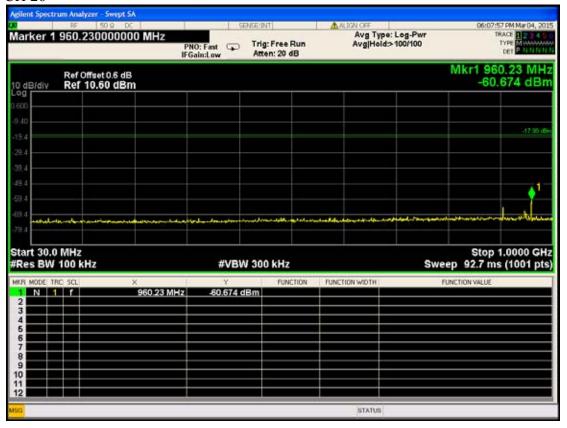


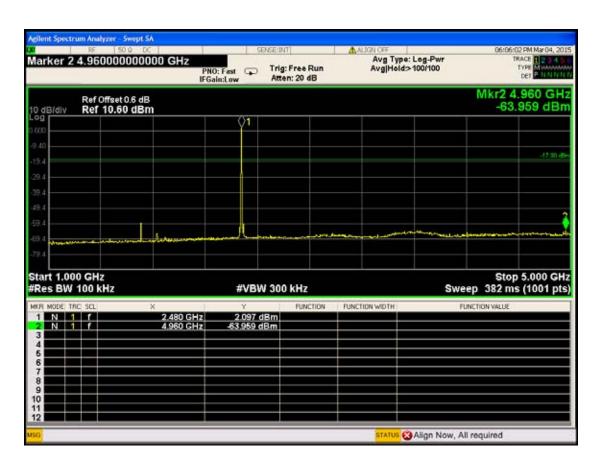


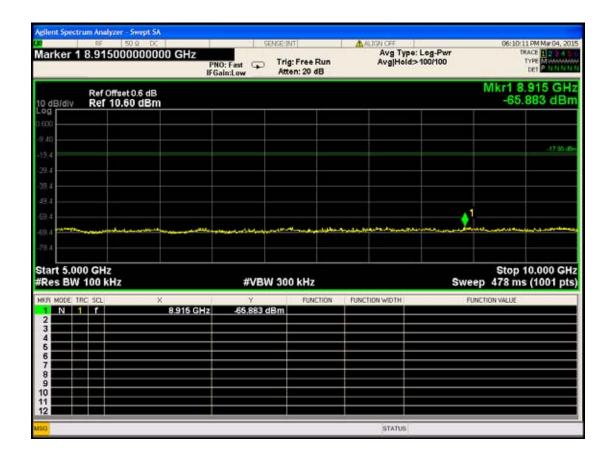


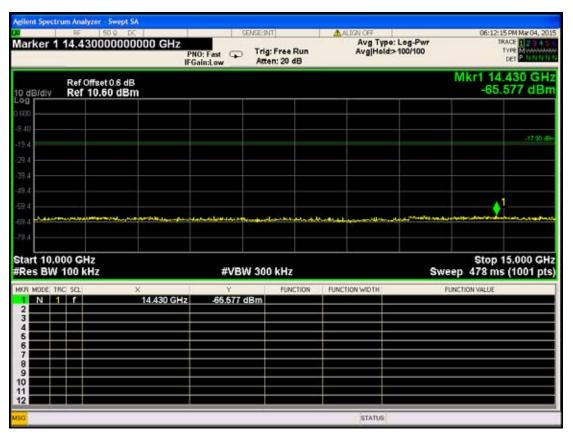


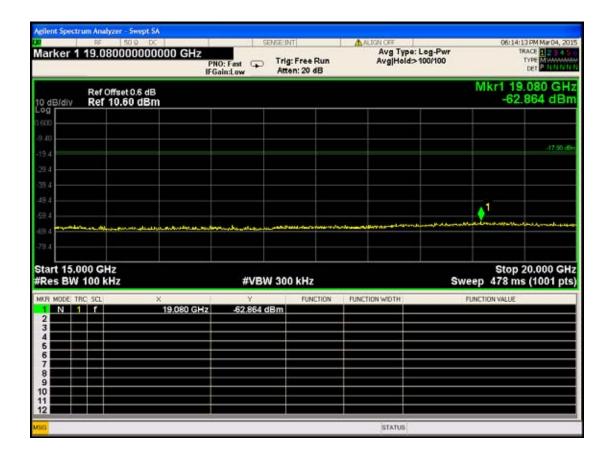


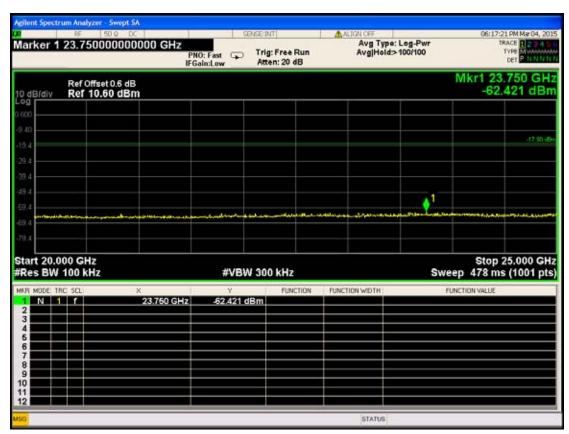












# 10.DUTY CYCLE

## 10.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2014-06-23	2015-06-22

### 10.2. Test Results

The measurement of duty cycle is 100%.



# 11.DEVIATION TO TEST SPECIFICATIONS

[NONE]