# APPLICATION FOR CERTIFICATION On Behalf of Philips (China) Investment Co., Ltd. LED Lamp

- Model No. : 9290002619
  - Brand : Philips
  - FCC ID : 03M9290002619X

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

> Tel : +86-512-63403993 Fax :+86-512-63403339

Report Number:ACWE-F1308005ADate of Test:Jul.02~09, 2014Date of Report:Jul.17, 2014

# TABLE OF CONTENTS

De	escription	Page
TE	ST REPORT CERTIFICATION	4
1.	DESCRIPTION OF VERSION	5
2.	SUMMARY OF MEASUREMENTS AND RESULTS	6
3.	GENERAL INFORMATION	7
	3.1. Description of Device (EUT)	
	3.2. Description of Test Facility	
	3.3. Measurement Uncertainty	
4.	CONDUCTED EMISSION MEASUREMET	
	4.1. Test Equipment	
	<ul><li>4.2. Block Diagram of Test Setup</li><li>4.3. Power line Conducted Emission Limit</li></ul>	
	4.4. Test Procedure	
	4.5. Conducted Emission Measurement Results	
5.	RADIATED EMISSION MEASUREMENT	
	5.1. Test Equipment	
	5.2. Block Diagram of Test Setup	17
	5.3. Radiated Emission Limits	
	5.4. Test Procedure	
	5.5. Assessment In All Three Orthogonal Planes	
	5.7. Restricted Bands Measurement Results (For Below 1GHz)	
	5.8. Restricted Bands Measurement Results (For Above 1GHz)	
	5.9. Spurious Emission Measurement Results in Band Edge Emission (FCC Part 15, 15.205)	
6.	6 DB BANDWIDTH MEASUREMENT	
	6.1. Test Equipment	
	6.2. Block Diagram of Test Setup.	
	<ul><li>6.3. Specification Limits (§15.247(a)(2))</li><li>6.4. Test Procedure</li></ul>	
	6.5. Test Results	
7.	MAXIMUM PEAK OUTPUT POWER MEASUREMENT	
	7.1. Test Equipment	
	7.2. Block Diagram of Test Setup	
	7.3. Specification Limits (§15.247(b)(3))	41
	7.4. Test Procedure	
0	7.5. Test Results	
8.	BAND EDGES MEASUREMENT	
	<ul><li>8.1. Test Equipment</li><li>8.2. Block Diagram of Test Setup</li></ul>	
	8.3. Specification Limits (§15.247(d))	
	8.4. Test Procedure	
	8.5. Test Results	
9.	POWER SPECTRAL DENSITY MEASUREMENT	45
	9.1. Test Equipment	
	9.2. Block Diagram of Test Setup.	
	<ul><li>9.3. Specification Limits (§15.247(e))</li><li>9.4. Test Procedure</li></ul>	
	9.4. Test Procedure	
	,	····· rJ

10.	EMISSION LIMITATIONS MEASUREMENT	
	10.1. Test Equipment	
	10.2. Block Diagram of Test Setup	
	10.3. Specification Limits (§15.247(d))	
	10.4. Test Procedure	
	10.5. Test Results	
11.	DUTY CYCLE	
	11.1. Test Equipment	
	11.2. Test Results	
12.	DEVIATION TO TEST SPECIFICATIONS	60

## 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
FCCID		O3M9290002619X
(A) Model No.		9290002619
(B) Brand	-	Philips
(C) Power Supply		AC 110-130V; 50/60Hz; 6.5W
(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: Jul.02-09, 2014

Date of Report: Jul. 17, 2014

Prepared by

(Emma Hu/Assistant Administrator)

Reviewer

(Danny Sun/Deputy Section Manager)

Approved & Authorized Signer

(Ken Lu/Assistant General Manager)

Audix Technology (Wujiang )Co., Ltd. EMC Dept. Report No.: ACWE-F1308005A

Rev.01

# **1. Description of Version**

Edition No.	tion No. Date of Rev. Summary		Report No.
0	Mar.14, 2014	Original Report.	ACWE-F1308005A
Rev. A		(1)Add RC latch before driver on power board. (2)Add alternative LED chip.	ACWE-F1308005A

## 2. 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/ Section 15.207 And ANSI C63.4-2003 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 11.33 dB at 0.4MHz
RADIATED EMISSION	FCC 47 CFR Part 15 Subpart C/ Section 15.209& Section 15.205 And ANSI C63.4-2003 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 0.60 dB at 59.10MHz
6 dB BANDWIDTH	FCC 47 CFR Part 15 Subpart C/ Section 15.247(a)(2) And ANSI C63.4-2003 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 314 kHz at CH 11
MAXIMUM PEAK OUTPUT POWER	FCC 47 CFR Part 15 Subpart C/ Section 15.247(b)(3) And ANSI C63.4-2003 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 28.514dB at CH 26
BAND EDGES	FCC 47 CFR Part 15 Subpart C/ Section 15.247(d) And ANSI C63.4-2003 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 C63.4-2003 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	Minimum passing margin is 24.979dB at CH 26
EMISSION LIMITATIONS	FCC 47 CFR Part 15 Subpart C/ Section 15.247(d) And ANSI C63.4-2003 And KDB 558074 D01 DTS Meas Guidance v03r02	PASS	

# 3. GENERAL INFORMATION

3.1. Description of Device (EUT)

Description	:	LED Lamp
Model No.	:	9290002619
FCC ID	:	O3M9290002619X
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	:	-10dBi
Fundamental Range	:	2405 MHz -2480MHz
Tested Frequency	:	2405MHz (CH11) 2450MHz (CH20) 2480MHz (CH26)
Highest Working Frequency	:	2.4GHz
Modulation type	:	O-QPSK
Date of Receipt of Sample	:	Jul.01, 2014
Date of Test	:	Jul.02~09, 2014

3.2. 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		

3.3. Measurement Uncertainty

Test Item	Range Frequency	Uncertainty
Conducted Disturbance Measurement	$0.15 MHz \sim 30 MHz$	± 2.48dB
Radiated Disturbance Measurement (At 3m Chamber)	$30 MHz \sim 1000 MHz$	± 3.42dB
Radiated Disturbance Measurement (At 3m Chamber)	Above 1GHz	± 4.49dB

Remark: Uncertainty =  $ku_c(y)$ 

Test Item	Uncertainty		
6 dB Bandwidth	$\pm$ 3.1×10 <sup>-6</sup> MHz		
Maximum Peak Output Power	± 0.30dB		
Band Edges	$\pm 0.302 dB$		
Power Spectral Density	± 0.212dB		
Emission Limitations	± 0.24dB		

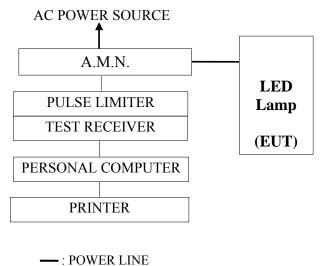
Remark: Uncertainty =  $ku_c(y)$ 

# 4. CONDUCTED EMISSION MEASUREMET

Item	Туре	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCI	100839	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	003	2014-03-24	2015-03-23

### 4.1. Test Equipment

### 4.2. Block Diagram of Test Setup



-: SIGNAL LINE

### 4.3. Power line Conducted Emission Limit

4.3.1. Power line Conducted Emission Limit (FCC Part 15, Section 15.207, Class B)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level Average Level	
$150 \mathrm{kHz} \sim 500 \mathrm{kHz}$	$66 \sim 56 \ dB\mu V$	$56 \sim 46 \ dB \mu V$
$500 \text{kHz} \sim 5 \text{MHz}$	56 dBµV	46 dBµV
$5 MHz \sim 30 MHz$	60 dBµV	50 dBµV

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.

### 4.4. Test Procedure

The measuring process is according to ANSI C63.4-2003 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)

### 4.5. Conducted Emission Measurement Results

4.5.1. Conducted Emission Measurement Results (For FCC Part15 Subpart C)

### PASSED.

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

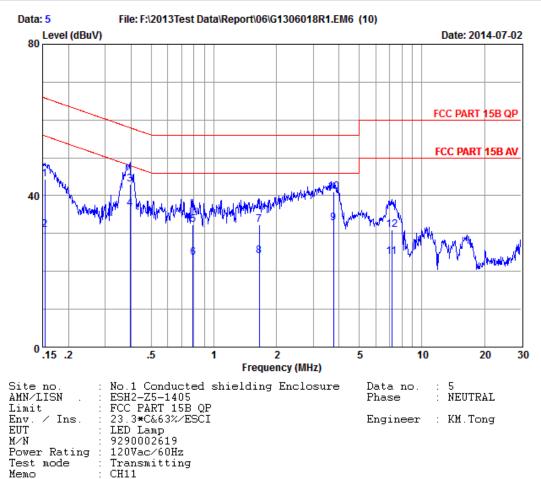
EUT was performed during this section testing and all the test results are attached in next pages.

Test Dat	e : Jul.02, 2014 Temperature	e: 23.3℃	Humidity : 63%
Mode	Test Condition	Reference	Test Data No.
widde	Test Condition	Neutral	Line
1	CH 11	<b>※</b> # 5	# 6
2	CH 20	# 7	# 8
3	CH 26	# 9	# 10

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

NOTE 2- The worst emission is detected at 0.40 MHz with emission level of 36.61 dB ( $\mu$ V) and with AV detector (Limit is 47.94 dB ( $\mu$ V)), when the Neutral of the EUT is connected to AMN.

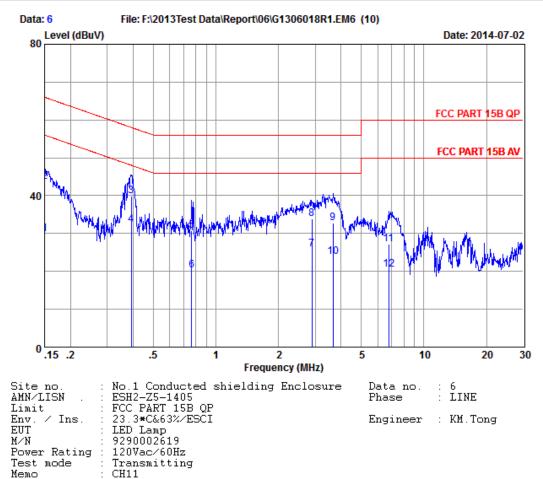




	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBu∛)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10 11 12	$\begin{array}{c} 0.15\\ 0.15\\ 0.40\\ 0.79\\ 1.65\\ 1.65\\ 3.76\\ 3.76\\ 7.18\\ 7.18\\ \end{array}$	$\begin{array}{c} 0.13\\ 0.13\\ 0.15\\ 0.15\\ 0.16\\ 0.16\\ 0.19\\ 0.25\\ 0.25\\ 0.33\\ 0.33\\ 0.33\\ \end{array}$	9.86 9.87 9.87 9.88 9.88 9.88 9.89 9.89 9.92 9.92 9.92	34.41 20.91 32.89 26.59 22.20 13.60 22.13 13.91 22.60 30.90 13.50 20.60	44.40 30.90 42.91 36.61 32.24 23.64 32.21 23.99 32.77 41.07 23.80 30.90	$\begin{array}{c} 65.78\\ 55.78\\ 57.94\\ 47.94\\ 56.00\\ 46.00\\ 56.00\\ 46.00\\ 46.00\\ 56.00\\ 50.00\\ 50.00\\ 50.00\\ 60.00\\ \end{array}$	21.38 24.88 15.03 11.33 23.76 22.36 23.79 22.01 13.23 14.93 26.20 29.10	QP Average QP Average QP Average Average QP Average QP Average QP

1.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.



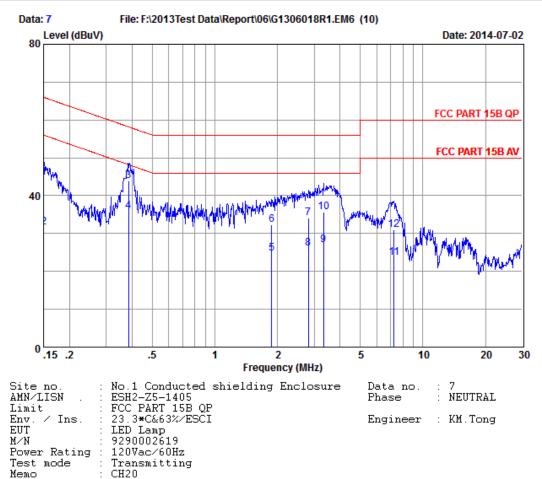


	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBu∛)	Margin (dB)	Remark
1 2 4 5 6 7 8 9 10 11 12	0.15 0.39 0.76 2.89 3.66 3.66 6.77 6.77	$\begin{array}{c} 0.19\\ 0.19\\ 0.19\\ 0.20\\ 0.20\\ 0.26\\ 0.26\\ 0.26\\ 0.27\\ 0.27\\ 0.32\\ 0.32\\ 0.32\\ \end{array}$	9.86 9.87 9.87 9.88 9.88 9.91 9.91 9.92 9.92 9.92 9.97 9.97	19.90 33.60 29.90 22.20 20.60 10.20 15.60 23.60 22.61 13.61 16.89 10.19	$\begin{array}{c} 29.95\\ 43.65\\ 39.96\\ 32.26\\ 30.68\\ 20.28\\ 25.77\\ 33.77\\ 32.80\\ 23.80\\ 27.18\\ 20.48\\ \end{array}$	56.00 66.00 58.02 48.02 56.00 46.00 56.00 56.00 56.00 56.00 56.00 56.00 56.00	26.05 22.35 18.06 15.76 25.32 25.72 20.23 22.23 22.23 23.20 22.20 32.82 29.52	Average OP Average OP Average OP OP Average OP Average

1.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.

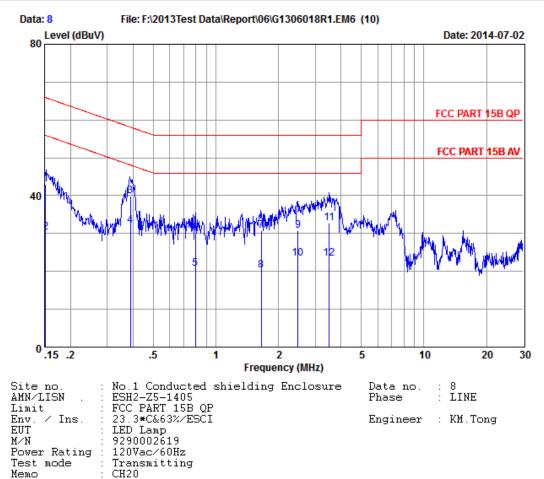




	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9	$0.15 \\ 0.38 \\ 0.38 \\ 1.87 \\ 1.87 \\ 2.81 \\ 2.81 \\ 3.33 $	$\begin{array}{c} 0.13\\ 0.13\\ 0.14\\ 0.14\\ 0.20\\ 0.20\\ 0.23\\ 0.23\\ 0.23\\ 0.24\\ \end{array}$	9.86 9.86 9.86 9.80 9.90 9.90 9.91 9.91 9.91	34.81 21.61 33.81 25.91 14.60 22.20 23.89 15.89 16.90	44.80 31.60 43.81 35.91 24.70 32.30 34.03 26.03 27.06	66.00 56.00 58.19 48.00 56.00 56.00 46.00 46.00	21.20 24.40 14.38 12.28 21.30 23.70 21.97 19.97 18.94	QP Average Average Average QP QP Average Average
10 11 12	3.33 7.26 7.26	0.24 0.33 0.33	9.92 9.97 9.97	25.60 13.31 20.61	35.76 23.61 30.91	56.00 50.00 60.00	20.24 26.39 29.09	QP Average QP

1.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.



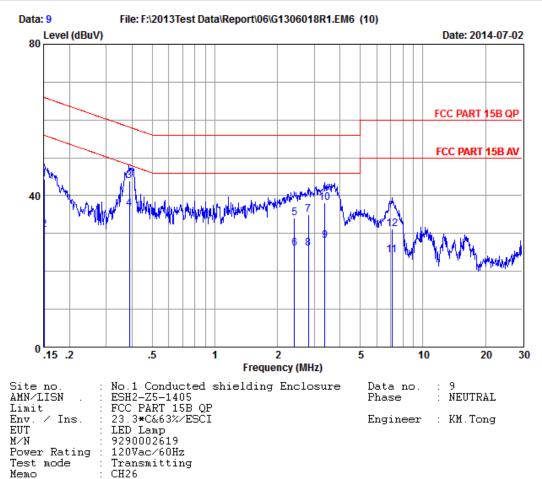


	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10 11 12	$\begin{array}{c} 0.15\\ 0.15\\ 0.39\\ 0.39\\ 0.80\\ 1.65\\ 1.65\\ 2.48\\ 2.48\\ 3.51\\ 3.51 \end{array}$	0.19 0.19 0.19 0.20 0.20 0.23 0.23 0.25 0.25 0.25 0.27 0.27	9.86 9.86 9.87 9.87 9.88 9.88 9.89 9.89 9.91 9.91 9.91 9.92 9.92	32.90 20.20 29.90 22.00 10.60 20.10 20.61 10.11 20.60 13.20 22.60 13.20	42.95 30.25 39.96 20.68 30.18 30.73 20.23 30.76 23.36 32.79 23.39	$\begin{array}{c} 65.89\\ 58.11\\ 48.11\\ 46.00\\ 56.00\\ 56.00\\ 46.00\\ 56.00\\ 46.00\\ 56.00\\ 46.00\\ 56.00\\ 46.00\\ 56.00\\ 46.00\\ \end{array}$	22.94 25.64 18.15 16.05 25.32 25.82 25.27 25.27 25.27 25.24 22.64 23.21 22.61	QP Average QP Average QP QP Average QP Average QP Average QP Average

1.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.

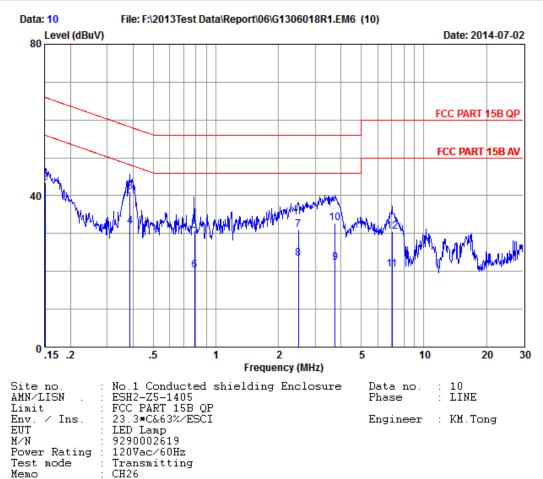




	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBu∛)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10 11 12	0.15 0.39 0.39 2.41 2.41 2.81 3.37 3.37 7.09 7.09	$\begin{array}{c} 0.13\\ 0.13\\ 0.14\\ 0.14\\ 0.21\\ 0.23\\ 0.23\\ 0.24\\ 0.24\\ 0.33\\ 0.33\\ \end{array}$	9.86 9.87 9.87 9.90 9.90 9.91 9.92 9.92 9.92 9.97 9.97	34.31 20.91 33.90 26.60 23.91 15.91 24.89 15.89 17.90 27.90 13.90 20.90	$\begin{array}{r} 44.30\\ 30.90\\ 43.91\\ 36.61\\ 34.02\\ 26.02\\ 35.03\\ 26.03\\ 28.06\\ 38.06\\ 38.06\\ 24.20\\ 31.20\\ \end{array}$	$\begin{array}{c} 65.94\\ 55.94\\ 58.11\\ 48.11\\ 56.00\\ 46.00\\ 56.00\\ 46.00\\ 46.00\\ 56.00\\ 50.00\\ 50.00\\ 50.00\\ 50.00\\ \end{array}$	21.64 25.04 14.20 11.50 21.98 19.98 20.97 19.97 17.94 17.94 25.80 28.80	QP Average QP Average QP Average Average QP Average QP Average QP

1.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.





	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBu∛)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10 11 12	$\begin{array}{c} 0.15\\ 0.15\\ 0.39\\ 0.79\\ 0.79\\ 2.49\\ 2.49\\ 3.74\\ 3.74\\ 7.02\\ 7.02 \end{array}$	$\begin{array}{c} 0.19\\ 0.19\\ 0.19\\ 0.20\\ 0.20\\ 0.25\\ 0.25\\ 0.25\\ 0.27\\ 0.27\\ 0.32\\ 0.32\\ 0.32\\ \end{array}$	9.86 9.86 9.86 9.88 9.91 9.91 9.92 9.92 9.92 9.97 9.97	19.90 33.30 30.91 21.91 20.60 10.20 20.90 13.20 12.11 22.61 10.20 20.20	$\begin{array}{c} 29.95\\ 43.35\\ 40.96\\ 31.96\\ 30.68\\ 20.28\\ 31.06\\ 23.36\\ 22.30\\ 32.80\\ 20.49\\ 30.49\end{array}$	$\begin{array}{c} 55.94\\ 65.94\\ 58.15\\ 48.15\\ 56.00\\ 46.00\\ 56.00\\ 46.00\\ 56.00\\ 56.00\\ 50.00\\ 50.00\\ 50.00\\ \end{array}$	25.99 22.59 17.19 16.19 25.32 25.72 24.94 22.64 23.70 23.20 29.51 29.51	Average QP QP Average QP Average Average QP Average QP

1.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.

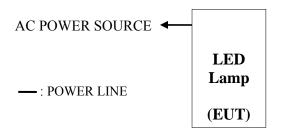
# 5. RADIATED EMISSION MEASUREMENT

## 5.1. Test Equipment

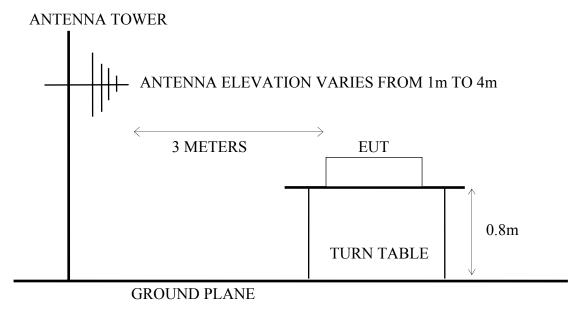
The following test equipment was used during the radiated emission measurement: At 3m Semi-Anechoic Chamber

Item	Туре	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	Agilent	8449B	2944A10921	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

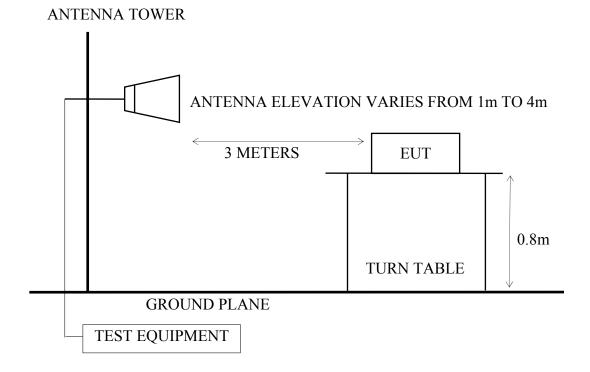
- 5.2. Block Diagram of Test Setup
- 5.2.1. Block Diagram of Test Setup between EUT and simulators



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



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



### 5.3. Radiated Emission Limits

Frequency		Field Strengths Limits
MHz	Distance Meters	dBµV/m
30~230	10	30.0
230~1000	10	37.0
Above 1000	2	74.0 dBµV/m (Peak)
A00ve 1000	5	54.0 dBµV/m (Average)

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

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.

### 5.4. 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  $30MHz\sim1000MHz$  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  $360^{\circ}$  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  $30MHz\sim1GHz$ , 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  $\sim$  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 (dBµV/m) = Meter-Reading (dBµV)+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)

### 5.5. 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.

	Frequency	Reading	Antenna	Cable	Preamp	Emission	Limits	Morgin	
Polarization	(MHz)	dB	Factor	Loss	Factor	Level dB	dB	Margin (dB)	Remark
		$(\mu V)$	(dB/m)	(dB)	(dB)	$(\mu V/m)$	$(\mu V/m)$	(uD)	
Horizontal	2404.64	90.98	28.46	6.40	34.81	91.03	74.00	-17.03	Peak
Vertical	2404.58	88.63	28.46	6.40	34.81	88.68	74.00	-14.68	Peak

Test Mode:XY Plan

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	94.31	28.46	6.40	34.81	94.36	74.00	-20.36	Peak
Vertical	2404.52	97.26	28.46	6.40	34.81	97.31	74.00	-23.31	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	2404.58	95.43	28.46	6.40	34.81	95.48	74.00	-21.48	Peak
Vertical	2404.52	93.69	28.46	6.40	34.81	93.74	74.00	-19.74	Peak

#### 5.6. Measurement Results

### PASSED

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

5.6.1. For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 5.6 & 5.7. (The restricted bands defined in part 15.205(a))

For Frequency range: below 1GHz

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

Na	Test Mode and Frequency		Reference Test Data No.		
No.	Test Mode a	ind Frequency	Horizontal	Vertical	
1.		2405MHz (Channel 11)	# 37	# 38	
2.	Transmitting	2450MHz (Channel 20)	# 39	# 40	
3.		2480MHz (Channel 26)	# 41	# 42	
4.	Receiving	# 43	# 44		

### For Frequency range: above 1GHz

## 5.6.2. For Band Edge Emission

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

No	Test Mede e	n d Engavon ov	Reference T	est Data No.
INO.	No. Test Mode and Frequency		Horizontal	Vertical
1.		2405MHz (Channel 11)	# 21# 23	# 22# 24
2.	Transmitting	2480MHz (Channel 26)	# 25 # 27	# 26 # 28

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

JD	X			Audix Technology(Wujiang)Co.,Ltd. No.1289,Jiang Xing East Road,The Eastern Part of Wu J Economic Development Zone,JiangSu,China Tel:(0512)63403993 Fax:(0512)63403993				
Dis		: 3m chamb : 3m 6112D	(22251)-					NO. :29 ol. : HORIZONTA
Env EUT M⁄N Pow	Limit : FCC PART`15 CLÁSS Env. / Ins. : 22.8*C52%/ESCI EUT : LED Lamp M/N : 9290002619 Power Rating : 120Vac/60Hz Test Mode : TX CH11 2405MHz Memo :					Engine	er : boqiang_l	
		:	2405MH:	2				
		Ant. Factor (dB/m)	Cable Loss (dB)	_	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
Mem  1	Freq. (MHz) 60.07	: Ant. Factor (dB/m) 6.10	Cable Loss (dB) 0.43	Reading (dBuV) 47.96	Level (dBuV/m) 27.17	(dBuV∕m)  40.00	(dB) 12.83	 QP
Mem  1	Freq. (MHz) 60.07 70.74	Ant. Factor (dB/m) 6.10 6.75	Cable Loss (dB) 0.43 0.49	Reading (dBuV) 47.96 38.91	Level (dBuV/m)  27.17 18.89	(dBuV∕m) 40.00 40.00	(dB) 12.83 21.11	 QP QP
Mem,  1 2 3	Freq. (MHz) 60.07 70.74 171.62	Ant. Factor (dB/m) 6.10 6.75 10.02	Cable Loss (dB)  0.43 0.49 0.86	Reading (dBuV) 47.96 38.91 51.34	Level (dBuV/m)  27.17 18.89 35.51	(dBuV∕m) 40.00 40.00 43.50	(dB) 12.83 21.11 7.99	QP QP QP QP
Mem  1	Freq. (MHz) 60.07 70.74 171.62	Ant. Factor (dB/m) 6.10 6.75	Cable Loss (dB) 0.43 0.49	Reading (dBuV) 47.96 38.91	Level (dBuV/m)  27.17 18.89 35.51	(dBuV∕m) 40.00 40.00	(dB) 12.83 21.11	 QP QP

are not reported.



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

	: 3m 6112D(22251)-1404-3M	Data NO. :30 Ant. pol. : VERTICAL
	: FCC PART 15 CLASS B : 22.8*C52%/ESCI	Engineer : bogiang_li
EUT M∕N		
	: 120Vac/60Hz	
Test Mode Memo	: TX CH11 2405MHz :	

	Freq. (MHz)	Ant. Factor (dB⁄m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV⁄m)	Margin (dB)	Remark
1	59.10	6.23	0.44	59.53	38.87	40.00	1.13	QP
2	71.71 175.50	6.94 9.92	0.52	51.66 48.53	31.87 32.59	40.00 43.50	8.13 10.91	QP
э 4	291.90	9.92 13.60	0.83 1.31	40.55 50.02	32.59 38.58	43.50 46.00	7.42	QP QP
5	335.55	14.82	1.36	49.17	38.76	46.00	7.24	0P
6	432.55	16.90	1.59	43.02	34.28	46.00	11.72	Q̈́Ρ

AU	AUDIX				No.1289, Economic	chnology(Wu Jiang Xing Developmen 2)63403993	East Road nt Zone, Ji	,The East		ı Jiang
	Dis. Limi Env. EUT M⁄N Powe	∕ Ins. r Rating Mode	: 3m chamb : 3m 6112E : FCC PART : 22.8*C52 : LED Lamp : 92900026 : 120Vac/6 : TX CH2C :	0(22251)- 15 CLASS %/ESCI 19 0Hz	S B			Data h Ant.po Engines	1. : HORIZONT	
		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	191.02	6.67 10.02 9.80 13.65 14.80 17.26	0.45 0.86 1.00 1.26 1.34 1.56	46.79 50.81 46.95 46.61 46.87 40.05	26.56 34.98 31.13 35.18 36.44 31.55	43.50 46.00	12.37 10.82	QP QP QP QP QP QP QP	

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



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

Site NO.	:	3m chamber
Dis. / Ant.	:	3m 6112D(22251)-1404-3M
Limit	:	FCC PART 15 CLASS B
Env. / Ins.	:	22.8*C52%/ESCI
EUT	:	LED Lamp
M⁄N	:	9290002619
Power Rating	:	120Vac/60Hz
Test Mode	:	TX CH20 2450MHz
Memo	:	

Data NO. :32 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 2 3 4 5 6	59.10 70.74 172.59 292.87 327.79 431.58	6.23 6.75 10.00 13.60 14.71 16.94	0.44 0.49 0.87 1.33 1.37 1.59	59.73 52.81 47.64 49.07 48.23 42.74	39.07 32.79 31.80 37.64 37.76 34.05	40.00 40.00 43.50 46.00 46.00 46.00	0.93 7.21 11.70 8.36 8.24 11.95	QP QP QP QP QP QP QP QP
Re			ion level		tor + Cable e 20dB belo			

UDIX			Economic	Jiang Xing Developme 2)63403993	nt Zone,Ji		
Site NO. Dis. / Ant. Limit Env. / Ins. EUT M/N Power Rating Test Mode Memo	: FCC PART : 22.8*C52 : LED Lamp : 92900026 g : 120Vac/6	0(22251)- 15 CLAS %/ESCI 19 0Hz	S B				NO. :33 ol. : HORIZONTAL er : boqiang_li
Freq. (MHz)	Ant. Factor (dB∕m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits	Margin (dB)	Remark
1 59.10 2 172.59 3 184.23 4 292.87 5 320.03 6 445.16	10.00 9.79 13.60 14.50	0.44 0.87 1.05 1.33 1.33 1.56		27.81 35.01 31.88 35.31 35.52 31.09	40.00 43.50 43.50 46.00 46.00 46.00	12.19 8.49 11.62 10.69 10.48 14.91	 QP QP QP QP QP QP

Audix Technology (Wujiang) Co., Ltd.

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

are not reported.



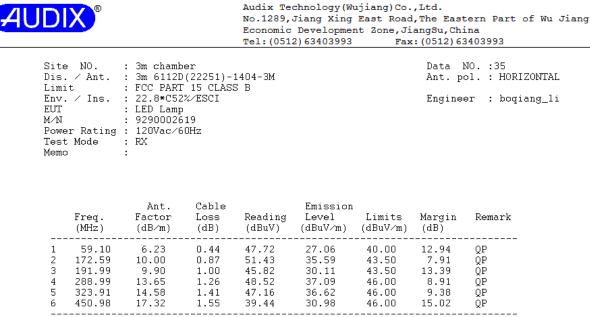
Audix Technology(Wujiang)Co.,Ltd. No.1289,Jiang Xing East Road,The Eastern Part of Wu Jiang Economic Development Zone,JiangSu,China Tel:(0512)63403993 Fax:(0512)63403993

Site NO.	:	3m chamber
Dis. / Ant.	:	3m 6112D(22251)-1404-3M
Limit	:	FCC PART 15 CLÁSS B
Env. / Ins.	:	22.8*C52%/ESCI
EUT	:	LED Lamp
M/N	:	9290002619
Power Rating	:	120Vac/60Hz
Test Mode	:	TX CH26 2480MHz
Memo	:	

Data NO. :34 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 2 3 4 5 6	59.10 70.74 172.59 288.02 334.58 432.55	6.23 6.75 10.00 13.60 14.80 16.90	0.44 0.49 0.87 1.25 1.36 1.59	60.06 51.87 47.77 49.43 48.22 42.96	39.40 31.85 31.93 37.95 37.80 34.22	$\begin{array}{c} 40.00\\ 40.00\\ 43.50\\ 46.00\\ 46.00\\ 46.00\\ 46.00\end{array}$	0.60 8.15 11.57 8.05 8.20 11.78	QP QP QP QP QP QP
Re	emarks: 1.	Emission		ntenna Fac	tor + Cabl		leading.	

2. The emission levels that are 20dB below the official limit are not reported.



Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



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

	: 3m 6112D(22251)-1404-3M : FCC PART 15 CLASS B : 22.8*C52%/ESCI
EUT M∕N	: LED Lamp : 9290002619
	: 120Vac/60Hz
Test Mode	: RX
Memo	:

Data NO. :36 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 2 3 4 5 6	59.10 70.74 175.50 288.99 327.79 436.43	6.23 6.75 9.92 13.65 14.71 16.83	0.44 0.49 0.83 1.26 1.37 1.60	57.83 52.39 47.52 48.04 48.84 42.63	37.17 32.37 31.58 36.61 38.37 33.81	40.00 40.00 43.50 46.00 46.00 46.00	2.83 7.63 11.92 9.39 7.63 12.19	QP QP QP QP QP QP QP		
Re	Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. 2. The emission levels that are 20dB below the official limit are not reported.									

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

				Tel:(0512)63403993			Fax: (0512) 63403993		
Site NO. Dis. ∕ A Limit	nt. : 3m		echoic Ch 62960-140 5 C PK				Data NO. Ant. pol	: 37 . : HORIZONTAL	
EUT M∕N	: 929 ting: 120	Lamp 0002619	z				Engineer	: boqiang_li	
Freq. (MHz)	Ant. Factor (dB)		Reading (dBuV)	Factor			Margin (dB)	Remark	
(MHz) 4810.00	Factor (dB) 33.01	Loss (dB) 9.10	Reading (dBuV)  37.81	Factor (dB) 34.34	Level (dBuV/m 45.58	Limits (dBuV/m) 	(dB) 28.42	 Peak	
(MHz)  4810.00 5858.00	Factor (dB) 33.01 34.14	Loss (dB) 9.10 10.02	Reading (dBuV)  37.81 36.44	Factor (dB) 34.34 34.63	Level (dBuV/m 45.58 45.97	Limits (dBuV/m)  74.00 74.00	(dB) 28.42 28.03	 Peak Peak	
(MHz) 4810.00	Factor (dB) 33.01 34.14 36.10	Loss (dB) 9.10	Reading (dBuV)  37.81	Factor (dB) 34.34	Level (dBuV/m 45.58	Limits (dBuV/m) 	(dB) 28.42	 Peak	
(MHz) 4810.00 5858.00 7215.00	Factor (dB) 33.01 34.14 36.10 37.75	Loss (dB) 9.10 10.02 11.36 12.46 13.53	Reading (dBuV) 37.81 36.44 35.08 36.14	Factor (dB) 34.34 34.63 33.65	Level (dBuV/m 45.58 45.97 48.89	Limits (dBuV/m) 74.00 74.00 74.00 74.00 74.00 74.00	(dB) 28.42 28.03 25.11	Peak Peak Peak Peak	
(MHz) 4810.00 5858.00 7215.00 8616.00	Factor (dB) 33.01 34.14 36.10 37.75 37.68 40.25	Loss (dB) 9.10 10.02 11.36 12.46	Reading (dBuV) 37.81 36.44 35.08 36.14	Factor (dB) 34.34 34.63 33.65 33.27	Level (dBuV/m 45.58 45.97 48.89 53.08	Limits (dBuV/m) 74.00 74.00 74.00 74.00 74.00	(dB) 28.42 28.03 25.11 20.92	 Peak Peak Peak Peak	



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

Site NO. : 3m Semi-Anechoic Chamber Dis. ∕ Ant. : 3m 3115-62960-140520	Data NO. : 38 Ant. pol. : VERTICAL
Limit : FCC PART 15 C PK Env. / Ins. : 22.8*C52%/N9030A	Frainces - brains li
EUT : LED Lamp	Engineer : boqiang_li
M/N : 9290002619	
Power Rating: 120Vac/60Hz	
Test Mode : TX CH11 2405MHz	
Memo :	

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		on Limits (dBuV∕m)	Margin (dB)	Remark
1 2 3 4 5 6 7	4808.00 6474.00 7215.00 8518.00 9620.00 12024.92 12025.00	33.00 34.39 36.10 37.71 37.68 40.25 40.25	9.10 10.63 11.36 12.29 13.53 14.83 14.83	43.30 35.74 34.49 35.47 35.11 21.89 32.79	34.34 34.25 33.65 33.25 33.82 30.94 30.94	51.06 46.51 48.30 52.22 52.50 46.03 56.93	74.00 74.00 74.00 74.00 74.00 54.00 54.00 74.00	22.94 27.49 25.70 21.78 21.50 7.97 17.07	Peak Peak Peak Peak Peak Peak Average Peak
	Remarks:	2. The e	mission		chat are		oss + Readi low the off		amp.Factor.

	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			
Site NO. : 3m Semi-Anechoic Dis. / Ant. : 3m 3115-62960-		Data NO. : 39 Ant. pol. : HORIZONTAL			
Limit : FCC PART 15 C PK Env. / Ins. : 22.8*C52%/N9030A EUT : LED Lamp		Engineer : boqiang_li			
M∕N : 9290002619 Power Rating: 120Vac∕60Hz					
Test Mode : TX CH20 2450MH: Memo :	Z				

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		on Limits (dBuV∕m)	Margin (dB)	Remark
1	4900.00	33.15	9.19	36.36	34.33	44.37	74.00	29.63	Peak
2	6460.00	34.38	10.64	37.38	34.27	48.13	74.00	25.87	Peak
3	7350.00	36.53	11.33	36.05	33.57	50.34	74.00	23.66	Peak
4	8812.00	37.83	12.71	35.83	33.30	53.07	74.00	20.93	Peak
- 5	9800.00	37.64	13.90	34.54	33.96	52.12	74.00	21.88	Peak
6	12248.60	39.80	14.80	21.61	30.38	45.83	54.00	8.17	Average
7	12250.00	39.79	14.80	33.82	30.38	58.03	74.00	15.97	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.



Site NO. :	3m Semi-Anechoic Chamber	Data NO.	: 40
Dis. / Ant. :	3m 3115-62960-140520	Ant. pol.	: VERTICAL
Limit :	FCC PART 15 C PK		
Env. / Ins. :	22.8*C52%/N9O3OA	Engineer	: boqiang_li
EUT :	LED Lamp		
M/N :	9290002619		
Power Rating:	120Vac/60Hz		
Test Mode :	TX CH20 2450MHz		
Memo :			

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		on Limits (dBuV∕m)	Margin (dB)	Remark
1 2 3 4	4906.00 6460.00 7350.00 8952.00	33.16 34.38 36.53 37.88	9.19 10.64 11.33 12.67	41.20 36.33 34.62 35.41	34.33 34.27 33.57 33.33	49.22 47.08 48.91 52.63	74.00 74.00 74.00 74.00 74.00	24.78 26.92 25.09 21.37	Peak Peak Peak Peak Peak
-	9800.00 12248.30 12250.00  Remarks:	37.64 39.80 39.79 1. Emiss	13.90 14.80 14.80 ion Lev	35.71 23.20 33.42 rel= Ant.H	33.96 30.38 30.38 	53.29 47.42 57.63 • Cable Lo	74.00 54.00 74.00 ss + Readi	20.71 6.58 16.37 	Peak Average Peak amp.Factor.

JDIX	No.1289, Jiang Xing Ea	Audix Technology(Wujiang)Co.,Ltd. No.1289,Jiang Xing East Road,The Eastern Part of Wu Jia Economic Development Zone,JiangSu,China				
	Tel:(0512)63403993	Fax: (0512)6	3403993			
Site NO. : 3m Semi-Anechoid	c Chamber	Data NO.	: 41			
Dis. / Ant. : 3m 3115-62960	-140520	Ant. pol.	: HORIZONTAL			
Limit : FCC PART 15 C P	K	-				
Env. / Ins. : 22.8*C52%/N9030	A	Engineer	: boqiang_li			
EUT : LED Lamp		-				
M/N : 9290002619						
Power Rating: 120Vac/60Hz						
Test Mode : TX CH26 2480M	Hz					
Memo :						

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	e Reading (dBuV)	Preamp Factor (dB)		on Limits (dBuV∕m)	Margin (dB)	Remark
1	4960.00	33.24	9.21	36.37	34.32	44.50	74.00	29.50	Peak
2	6292.00	34.32	10.54	36.41	34.40	46.87	74.00	27.13	Peak
3	7440.00	36.81	11.38	34.11	33.51	48.79	74.00	25.21	Peak
4	8784.00	37.81	12.86	35.39	33.30	52.76	74.00	21.24	Peak
5	9920.00	37.62	13.48	34.10	34.06	51.14	74.00	22.86	Peak
6	12397.54	39.50	14.83	21.08	30.01	45.40	54.00	8.60	Average
7	12400.00	39.50	14.83	32.96	30.01	57.28	74.00	16.72	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.



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

Site NO. :	3m Semi-Anechoic Chamber	Data NO.	: 42
Dis. / Ant. :	3m 3115-62960-140520	Ant. pol.	: VERTICAL
Limit :	FCC PART 15 C PK		
Env. / Ins. :	22.8*C52%/N9O3OA	Engineer	: boqiang_li
EUT :	LED Lamp		
M∕N :	9290002619		
Power Rating:	120Vac/60Hz		
Test Mode :	TX CH26 2480MHz		
Memo :			

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		on Limits (dBuV∕m)	Margin (dB)	Remark
1	4962.00	33.24	9.21	41.70	34.32	49.83	74.00	24.17	Peak
2	6362.00	34.35	10.56	35.75	34.36	46.30	74.00	27.70	Peak
3	7440.00	36.81	11.38	33.80	33.51	48.48	74.00	25.52	Peak
4	8812.00	37.83	12.71	36.30	33.30	53.54	74.00	20.46	Peak
- 5	9920.00	37.62	13.48	34.51	34.06	51.55	74.00	22.45	Peak
6	12398.45	39.50	14.83	21.32	30.01	45.64	54.00	8.36	Average
- 7	12400.00	39.50	14.83	33.76	30.01	58.08	74.00	15.92	Peak
	Remarks:	1. Emiss	ion Lev	vel= Ant.H	actor +	· Cable Lo	oss + Readi	ng - Prea	amp.Factor.

AUDIX	No.1289,Jiang Economic Devel	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					
Site NO. : 3m	Semi-Anechoic Chamber	Data NO.	: 43				
Dis. 🗸 Ant. : 3m	3115-62960-140520	Ant. pol. :	HORIZONTAL				
Limit : FCC	PART 15 C PK	-					
Env. / Ins. : 22.	8*C52%/N9O3OA	Engineer	boqiang_li				
EUT : LED	Lamp	0					
M⁄N : 929	0002619						
Power Rating: 120	Vac/60Hz						
Test Mode 🛛 : RX							
Memo :							

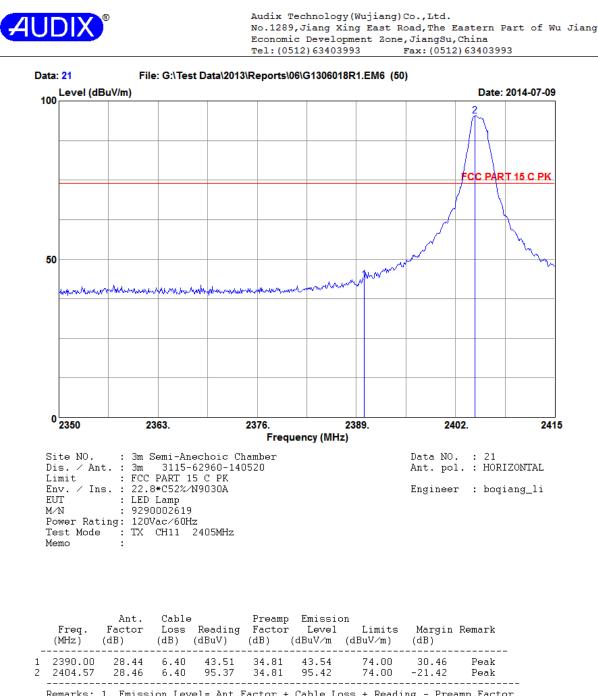
	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		⊃n Limits (dBuV∕m)	Margin (dB)	Remark
1	5886.00	34.16	10.07	35.32	34.63	44.92	74.00	29.08	Peak
2	7426.00	36.77	11.38	34.37	33.52	49.00	74.00	25.00	Peak
3	8532.00	37.71	12.29	34.44	33.25	51.19	74.00	22.81	Peak
4	9204.00	37.82	12.75	34.09	33.50	51.16	74.00	22.84	Peak
5	10282.00	37.49	13.46	33.75	33.98	50.72	74.00	23.28	Peak
6	11080.00	39.06	14.33	34.94	33.44	54.89	74.00	19.11	Peak
	Remarks:	2. The e	mission		that are		oss + Readi low the off		amp.Factor.



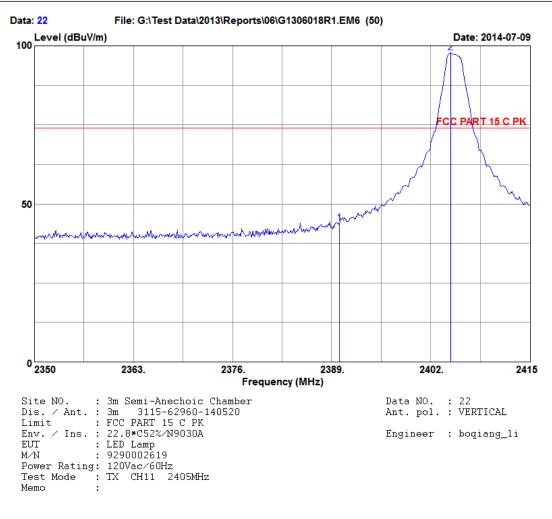
Site NO. :	3m Semi-Anechoic Chamber	Data NO.	: 44
Dis. / Ant. :	3m 3115-62960-140520	Ant. pol.	: VERTICAL
Limit :	FCC PART 15 C PK		
Env. / Ins. :	22.8*C52%/N9O3OA	Engineer	: boqiang_li
EUT :	LED Lamp		
M/N :	9290002619		
Power Rating:	120Vac/60Hz		
Test Mode :	RX		
Memo :			

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)		on Limits (dBuV∕m)	Margin (dB)	Remark
-	4346.00 6180.00 7272.00 8476.00 10016.00 10716.00	32.56 34.27 36.28 37.68 37.59 38.06	8.63 10.36 11.37 12.19 13.46 13.83	36.55 35.17 35.53 34.54 33.89 33.65	34.37 34.51 33.62 33.24 34.11 33.78	43.37 45.29 49.56 51.17 50.83 51.76	74.00 74.00 74.00 74.00 74.00 74.00 74.00	30.63 28.71 24.44 22.83 23.17 22.24	Peak Peak Peak Peak Peak Peak
	Remarks:	2. The e	mission		that are		oss + Readi low the off		amp.Factor.

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

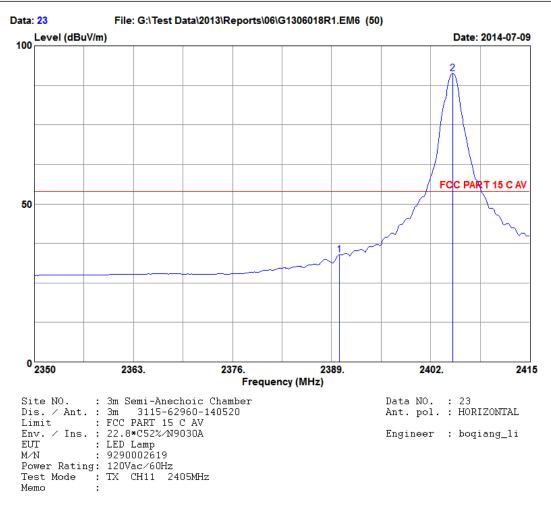






	Freq. (MHz)	Ant. Factor (dB)	Loss	Reading	Factor		Margin (dB)	Remark
-	2390.00 2404.66	28.44 28.46	6.40 6.40	43.85 97.73	34.81 34.81	43.88 97.78	 30.12 -23.78	Peak Peak Peak





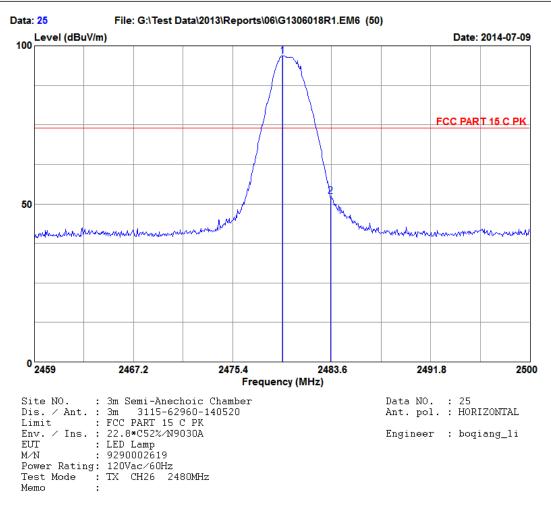
	Freq. (MHz)	Ant. Factor (dB)			Factor	Emissio Level (dBuV/m	Limits	Margin (dB)	Remark
_	2390.00	28.44	6.40	33.93	34.81	33.96	54.00	20.04	Average
	2404.91	28.46	6.40	91.23	34.81	91.28	54.00	-37.28	Average





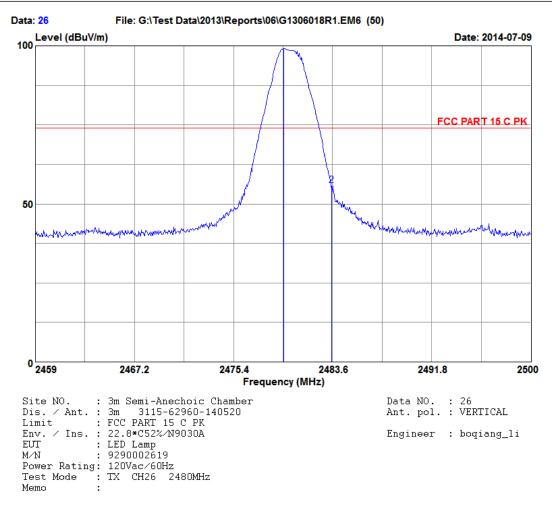
	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)		Factor		on Limits (dBuV∕m)	Margin (dB)	Remark
_	2390.00	28.44	6.40	35.69	34.81	35.72	54.00	18.28	Average
	2404.91	28.46	6.40	96.35	34.81	96.40	54.00	-42.40	Average





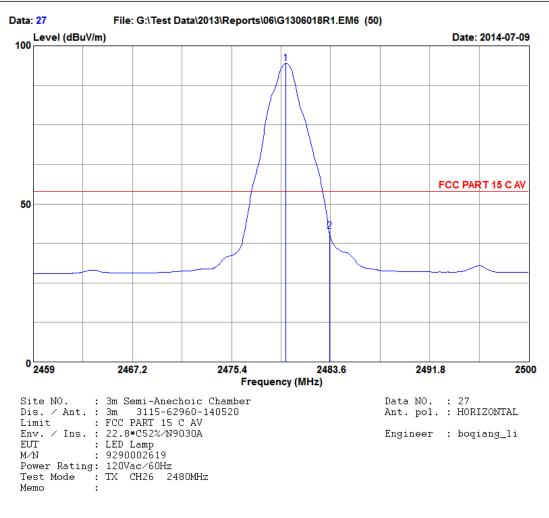
	Freq. (MHz)		Reading	Factor		on Limits (dBuV∕m)		Remark
-	2479.55 2483.50	 6.44 6.44	96.63 52.27		96.85 52.50	74.00 74.00	-22.85 21.50	Peak Peak





	Freq. (MHz)		Reading	Factor		on Limits (dBuV∕m)		Remark
-	2479.55 2483.50	 6.44 6.44	98.91 55.60		99.13 55.83		-25.13 18.17	Peak Peak Peak

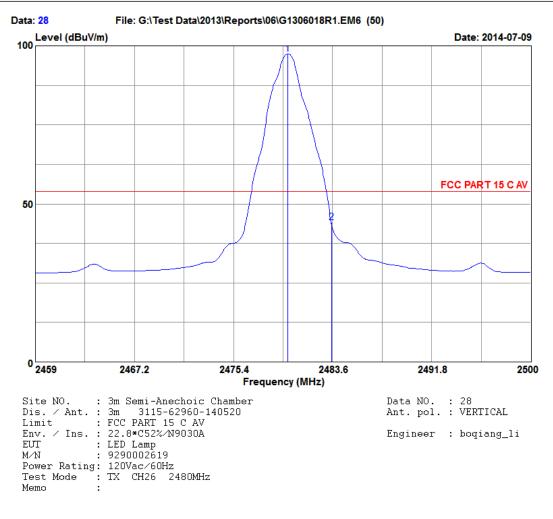




Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)		Factor	Emissio Level (dBuV∕m	on Limits (dBuV∕m)	Margin (dB)	Remark
1 2479.91	28.57	6.44	94.21	34.79	94.43	54.00	-40.43	Average
2 2483.50	28.58	6.44	41.12	34.79	41.35	54.00	12.65	Average



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



	Freq. (MHz)	Ant. Factor (dB)			Factor	Emissic Level (dBuV/m	Limits	Margin (dB)	Remark
_	2479.91	28.57	6.44	97.31	34.79	97.53	54.00	-43.53	Average
	2483.50	28.58	6.44	43.97	34.79	44.20	54.00	9.80	Average

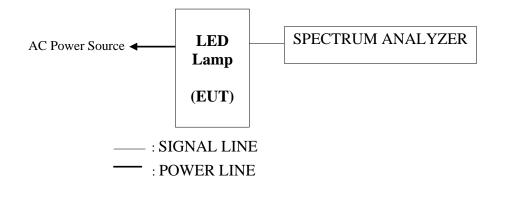
Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.
2. The emission levels that are 20dB below the official limit are not reported.

# 6. 6 dB BANDWIDTH MEASUREMENT

#### 6.1. Test Equipment

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

#### 6.2. Block Diagram of Test Setup



#### 6.3. 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.

### 6.4. 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.

### 6.5. Test Results

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

Channel	Test Frequency (MHz)	6dB Bandwidth (kHz)
11	2405	814.0
20	2450	817.5
26	2480	845.8







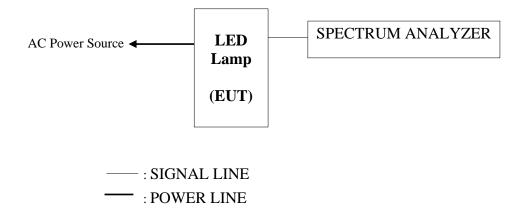


# 7. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

#### 7.1. Test Equipment

	Item	Туре	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
ſ	1.	Power Meter	Agilent	N1911A	MY45100361	2014-01-05	2015-01-04
ſ	2.	Power Sensor	Agilent	N1921A	MY45240521	2014-01-05	2015-01-04

#### 7.2. Block Diagram of Test Setup



#### 7.3. 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.

#### 7.4. Test Procedure

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

### 7.5. Test Results

Channel	Frequency	Power(dBm)	Limit(dBm)
11	2405	3.891	30
20	2450	3.602	30
26	2480	4.186	30

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

## 8. BAND EDGES MEASUREMENT

#### 8.1. Test Equipment

Item	Туре	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 7.2.

8.3. Specification Limits (§15.247(d))

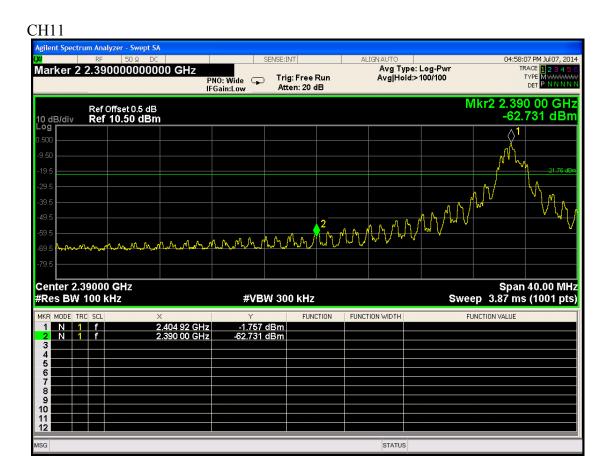
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

8.4. 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.

8.5. Test Results

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





### 9. POWER SPECTRAL DENSITY MEASUREMENT

#### 9.1. Test Equipment

Item	Туре	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 7.2.

#### 9.3. 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.

#### 9.4. Test Procedure

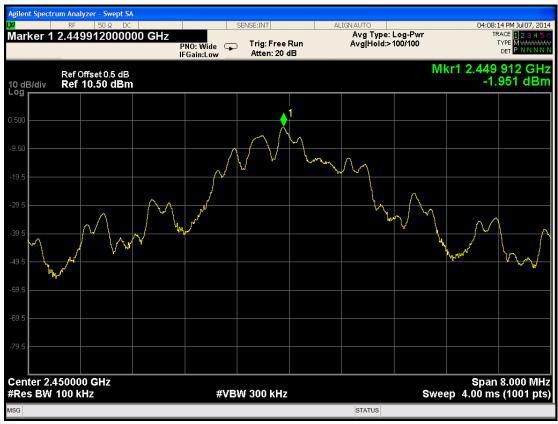
- 1.Set the RBW=100kHz, VBW=300kHz, Detector=peak
- 2.Sweep time=auto couple, Trace mode=max hold, allow trace to fully stabilize.
- 3.Use the peak marker function to determine the maximum power level in any 100kHz band segment within the fundamental EBW.

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=10log(3kHz/100kHz) Follow KDB558074 v03r02 DTS Meas Guidannee v01 of measurement procedure PKPSD.

### 9.5. Test Results

Channel	Frequency(GHz)	Value(dBm/100kHz)	Value(dBm/3kHz)
11	2.404912	-1.779	-16.979
20	2.44912	-1.951	-17.151
26	2.479904	-1.922	-17.122







### **10.EMISSION LIMITATIONS MEASUREMENT**

#### 10.1. Test Equipment

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

#### 10.2. Block Diagram of Test Setup

The same as section 7.2.

#### 10.3. 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)).

#### 10.4. Test Procedure

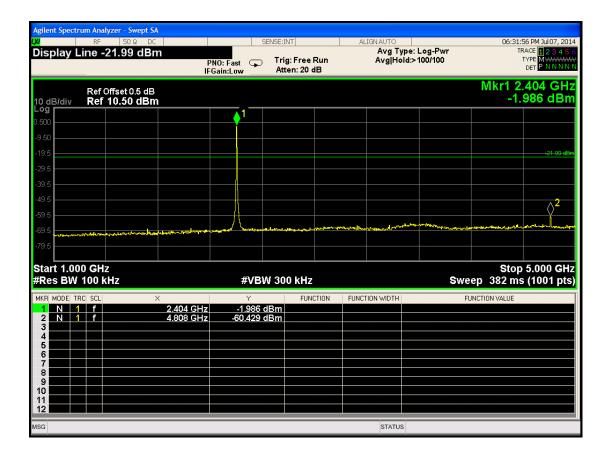
The transmitter output was connected to the spectrum analyzer. Set RBW = 100kHz, VBW  $\ge 300$  kHz, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. The measurement guideline was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

#### 10.5. Test Results

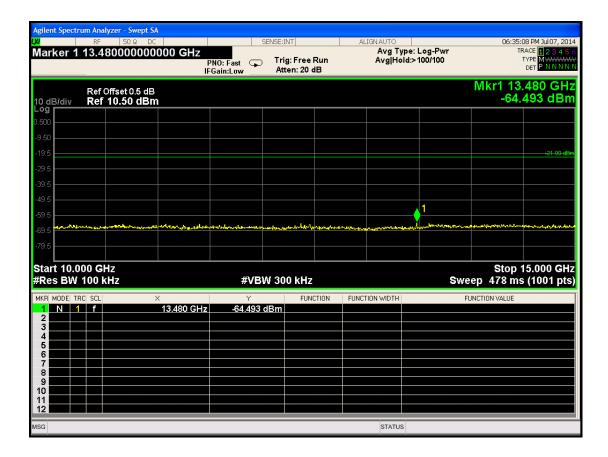
Channel	Frequency(MHz)	Amplitude(dBm)		
	800.18	-70.325		
	2404	-1.986		
	4808	-60.429		
11	6290	-65.539		
	13480	-64.493		
	19140	-62.498		
	23810	-61.801		
	432.55	-71.570		
	2448	-2.149		
	4900	-62.382		
20	9800	-64.264		
	14860	-64.417		
	18950	-62.242		
	24135	-62.199		
	882.63	-70.937		
	2480	-1.995		
	4832	-66.896		
26	9920	-63.655		
	10645	-64.819		
	19190	-62.967		
	23715	-61.737		

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

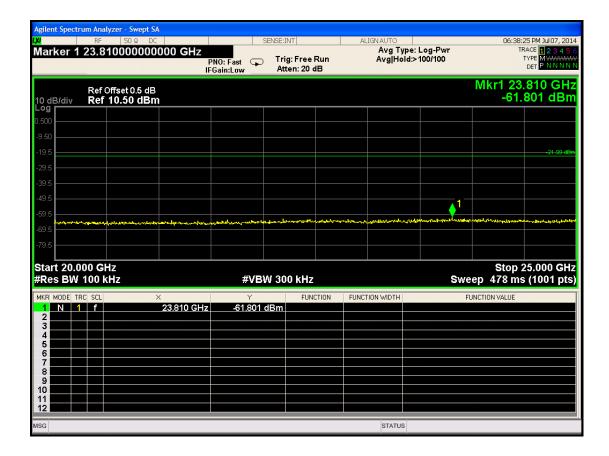
	rum Analyzer - Swe RF 50 Ω		SENSE:1	AUT.			06:32:29 PM Jul 07,
arker 1	800.18000	DOOO MHz	0:East 👝 Tri	g: Free Run ten: 20 dB		e: Log-Pwr :>100/100	TRACE 123 TYPE MWW DET P N N
dB/div	Ref Offset 0.5 <b>Ref 10.50 (</b>						Mkr1 800.18 M -70.325 dE
g 🔽							
00							
50							
9.5							-21.9
9.5							
.5							
9.5							
0.5						•	
	mannershinderparte	warden and the second of the second sec	أجماحه المحالية والمستأو مهرمين ومروا	welder vere hyperary	well-generalized and a lot of	responsely many services of the second se	waltenne war wellow material and
art 30.0 Res BW	0 MHz ' 100 kHz		#VBW 30	0 kHz		Swee	Stop 1.0000 C p 92.7 ms (1001 p
	RC SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUN	ICTION VALUE
R MODE T	4 6	800.18 MHz	-70.325 dBm				
N ′							
N /							
N 2 3							
N <sup>4</sup> 2 3 4							
N 2 3 4 5 6 7 8							



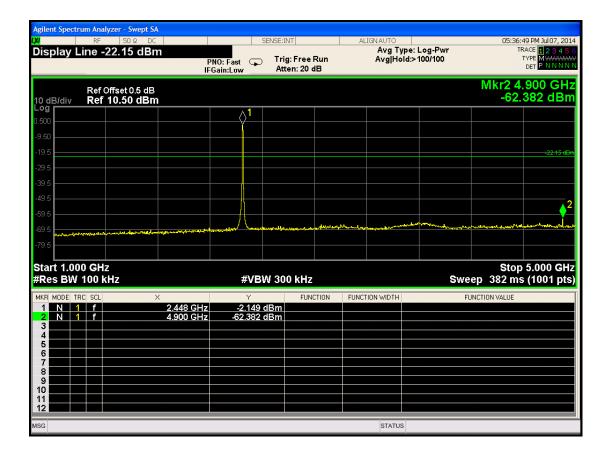
	RF 50 Ω		SENSE:	INT	ALIGN AUTO			1 PM Jul 07, 20
arker 1	6.29000000	PN		g: Free Run ten: 20 dB	Avg Typ Avg Hold	e: Log-Pwr : 85/100	TF	ACE 12345 TYPE MWWWW DET PNNN
	Ref Offset 0.5						Mkr1 6.	290 GH 539 dBi
dB/div	Ref 10.50 d	Bm					-05.	559 UB
500								
50								
.5								-21.99 (
9.5								21.331
9.5								
9.5		. 1						
9.5		'						
9.5	to and all a state of the second	and the many stated at water the	and a state of the second second	Wallader (halles) as sy larderage	and the second	we the water	the second the second	Angles to got of the state of the
9.5								
art 5.00							Stop (	0.000 GI
			#VBW 30	0 kHz		Swe	eep 478 ms	(1001 pi
tes BW								
	RC SCL	×	Y	FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE	
R MODE TR	RC SCL	× 6.290 GHz	∀ -65.539 dBm	FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE	
R MODE TR	RC SCL			FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE	
R MODE TR	RC SCL			FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE	
R MODE TR N 1 2 3 4 5 5	RC SCL			FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE	
R MODE TR N 1 3 4 5 6 7	RC SCL			FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE	
R MODE TR N 1 2 3 1 4 1 5 1 5 1 5 1 5 1 5 1 7 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RC SCL			FUNCTION	FUNCTION WIDTH	F	UNUTIUN VALUE	
R         MODE         TR           1         N         1           2	RC SCL			FUNCTION	FUNCTION WIDTH	F	UNUTIUN VALUE	
Res         BW           KR         MODE         TR           1         N         1           2         3         -           3         -         -           4         -         5           5         -         -           6         -         7           8         -         9           0         -         1           2         -         -	RC SCL			FUNCTION			UNCTION VALUE	



	RF 50 Ω		SENSE	INT	ALIGN AUTO		06:36:	39 PM Jul 07, 20
arker 1 ′	19.1400000			rig: Free Run atten: 20 dB	Avg Type Avg Hold	: Log-Pwr 100/100		ACE 12345 TYPE MWAAAA DET PNNN
dB/div	Ref Offset 0.5 Ref 10.50 d						Mkr1 19. -62.	140 GH 498 dBi
oo								
50								
.5								-21.99 (
.5								
.5								
.5							_ <b>↓</b> 1	
).5 <b>*******</b> **	mounterstan	harman dan di kanalan saalad	electron and the second	yang kanang pangananan	water and the second second second		undulations	4htelayo lagangan
9.5								
art 15.00 Res BW 1			#VBW 3	00 kHz		Swe	Stop 2 ep 478 ms	20.000 GI (1001 pt
R MODE TRC	SCL	×	Y	FUNCTION	FUNCTION WIDTH		NCTION VALUE	
1 N 1	f	19.140 GHz	-62.498 dBm	1				



ilent Spect	r <mark>um Analyzer - Sw</mark> RF 50 Ω	Pept SA	SENSE:	INIT	ALIGNAUTO		05:44:42 PM Jul 07, 2
arker 1	432.55000	0000 MHz	NO:East 🕤 Tri	g: Free Run ten: 20 dB	Avg Typ	e: Log-Pwr I:>100/100	TRACE 1 2 3 4 TYPE MWWW DET P N N
) dB/div	Ref Offset 0.9 <b>Ref 10.50</b> (						Mkr1 432.55 MI -71.570 dB
.50							
9.5							-22.15
9.5							
9.5							
9.5							
9.5							
9.5		an from the former last a from the	un angenter and and the sec	- for monthly we have the	m competition	والمراجعة والمراجعة والمراجع	unner man with more more
9.5							
art 30.0 Res BW	) MHz 100 kHz		#VBW 30	0 kHz		Swee	Stop 1.0000 G p 92.7 ms (1001 p
R MODE T		×	Y	FUNCTION	FUNCTION WIDTH	FL	INCTION VALUE
1 N ′ 2	l f	432.55 MHz	-71.570 dBm				
3							
5							
7 8							
9							



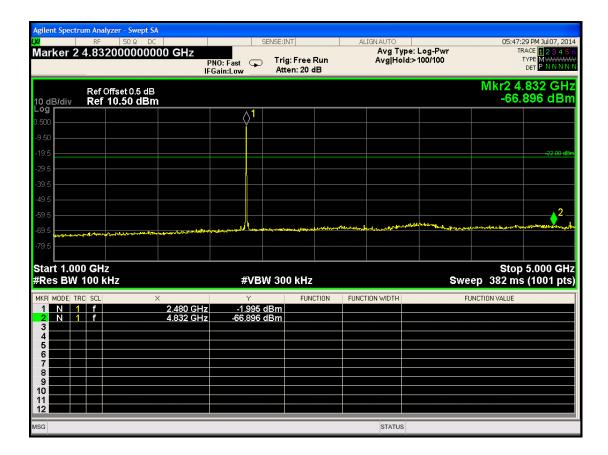
		2 DC	SEN	VSE:INT	ALIGN AUTO		05:38:40 PM Jul 07, 20
arker 1	9.800000		PNO: Fast 😱 FGain:Low	Trig: Free Run Atten: 20 dB		e: Log-Pwr I:>100/100	TRACE 1234 TYPE MWWWW DET PNNN
dB/div	Ref Offset 0. Ref 10.50						Mkr1 9.800 GF -64.264 dB
50							
.5							-22.15 (
.5							
.5							1
.5	- lougher - and the	and the second and the second s	-	weather	hand and a start of the start o	and the states when	way and a second and a second second
.5							
art 5.000 tes BW 1		I	#VBW	300 kHz	I	Swe	Stop 10.000 G ep  478 ms (1001 p
R MODE TRI		X	Y	FUNCTION	FUNCTION WIDTH	FL	INCTION VALUE
	f	9.800 GHz	-64.264 dE	3m			
N 1							
N 1							
N 1							
N 1							

		a 1787		
RF 50 Ω DC arker 1 14.86000000000000000000000000000000000000	PNO: Fast 🕟 Tri	g: Free Run ten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 84/100	05:40:01 PM Jul 07, 20 TRACE 1 2 3 4 5 TYPE M <del>WWWW</del> DET P N N N
Ref Offset 0.5 dB				Mkr1 14.860 GH -64.417 dBi
dB/div Ref 10.50 dBm				-04.417 (10)
00				
50				
.5				-22.15 (
.5				
.5				
.5				
5 manufation to a stand and a stand and the	ahlufan - mannen han alugu	unn martalant	mum many burger burger	have been and the second second and the second s
.5				
art 10.000 GHz				Stop 15.000 GI
Res BW 100 kHz	#VBW 30	0 kHz		Sweep 478 ms (1001 p
R MODE TRC SCL X	Y	FUNCTION FUN	ICTION WIDTH	FUNCTION VALUE
	50 GHz -64.417 dBm			

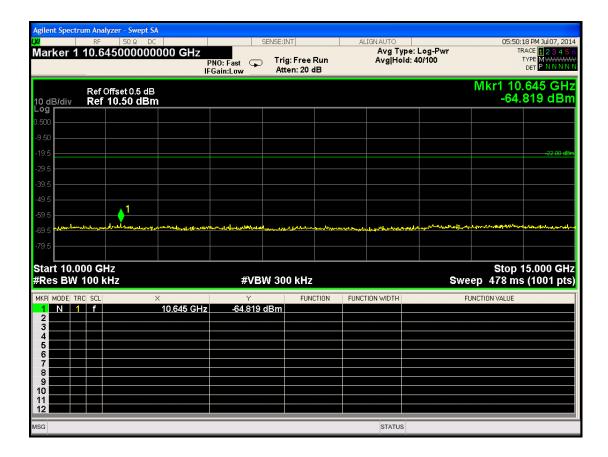
X	m Analyzer - Swept S RF 50 Ω D0 18.950000000	0000 GHz		ENSE:INT			pe: Log-Pwr Id:>100/100	TI	52 PM Jul 07, 2014 RACE 1 2 3 4 5 1 TYPE MWWWW
	Ref Offset 0.5 dB	IF	NO: Fast 😱 Gain:Low	Trig: Free l Atten: 20 d		Avgino	100/100	Mkr1 18	.950 GHz
10 dB/div Log	Ref 10.50 dBr	n						-62.	242 dBm
9.50									-22.15 dB
29.5									
49.5								1	
69.5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	staryora <sup>nin</sup> territeratistanethi	Market and a start of the start	and the second	albalve,	relander of the second	r fan en an fan fan de fan	₩ <sup>25</sup> [6][0][0][0][0][0][0][0][0][0][0][0][0][0]	unth/Inconsection
tart 15.00 Res BW 1			#VBV	V 300 kHz	,		Swe	Stop 2 ep 478 ms	20.000 GH s (1001 pts
IKR MODE TRO	SCL f	× 18.950 GHz	۲ -62.242 c		CTION	FUNCTION WIDTH		JNCTION VALUE	
3 4 4 5									
6 7 8									
9 10 11 12									
SG						STATUS	3		

Agilent Spectro	um Analyzer - Swept SA RF 50 Q DC	SENSE:	INT	ALIGN AUTO		44:15 PM Jul 07, 2014
Marker 1	24.135000000000 G	PNO: East 😱 Tri	g: Free Run ten: 20 dB	Avg Type: I Avg Hold: 7		TRACE 123456 TYPE MWWWWW DET PNNNNN
10 dB/div Log	Ref Offset 0.5 dB Ref 10.50 dBm				Mkr1 2 -6	24.135 GHz 2.199 dBm
0.500 -9.50						
-19.5						-22.15 dDm
-39.5						
-59.5	ระสงระกิจที่มี สารารระดิจาสตรรรฐการ	hand the state of	ulumntrantes	and the second s	mention marine and the demotion of the	Under the Constant of the
-79.5						
Start 20.0 #Res BW		#VBW 30	0 kHz		Sto Sweep 478	p 25.000 GHz ns (1001 pts)
MKR MODE TR		GHz -62.199 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
3 4 5						
6 7 8 9						
9 10 11 12						
MSG				STATUS		

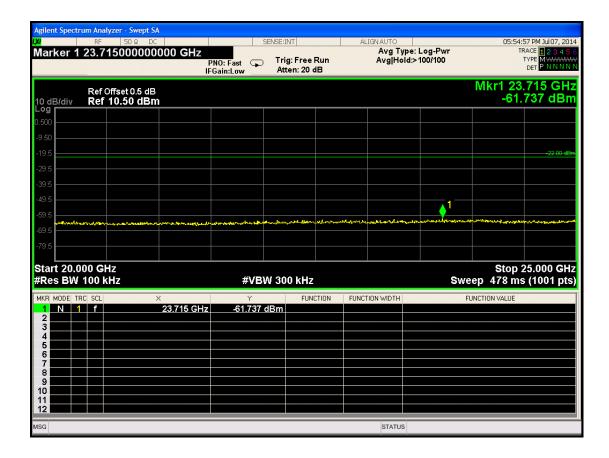
ilent Sp		<mark>Analyzer - Sw</mark> RF 50 Ω	Pept SA		OF NOT 1	78. 1997			on no pha a la
arker			00000 MHz	PNO: Fast IFGain:Low	. <b>₽</b> .	g: Free Run ten: 20 dB	ALIGNAUTO Avg Ty Avg Ho	rpe: Log-Pwr Id:>100/100	05:56:26 PM Juli TRACE 1 2 TYPE MW DET P N
dB/di	R	ef Offset 0. ef 10.50	5 dB						Mkr1 882.63 -70.937 c
	V R								
.00									
50									
9.5									-22
9.5									
9.5 —									
9.5									
9.5									<b>1</b>
9.5								a at he before other the sector in	
9.5	A CONTRACTOR	petters in the planta	-Alexiles and a second second second	North Alexandratic					
		<u> </u>							
	0.0 MI W 10			đ	# <b>VBW</b> 30	0 kHz		Swe	Stop 1.0000 ep 92.7 ms (1001
R MODE	E TRC SI	CL	X		Y	FUNCTION	FUNCTION WIDTH	F	FUNCTION VALUE
1 N 2	1 f	,	882.63 N	IHz -70	.937 dBm				
3									
4	++								
6									
8									
9									
0									



		DC	SENSE	INT	ALIGN AUTO		05:49:31 PM Jul 07
arker 1	9.92000000	PN		rig: Free Run atten: 20 dB		be: Log-Pwr d:>100/100	TRACE 123 TYPE MWM DET PNN
	Ref Offset 0.5	dB					Mkr1 9.920 C
dB/div	Ref 10.50 d	IBm					-63.655 d
50							
.5							
9.5							
.5							
.5							
.5							
.5	hard and a second	and the state of the second second	مرار مور میرو میرو او	walter warde grant war	march	and the second	- even and and an and a second second
.5							
art 5.00			#\/R\// 3	00 kHz		Swa	Stop 10.000
tes BW	100 kHz		#VBW 3				eep 478 ms (1001
	100 kHz	× 9.920 GHz	Y	FUNCTION	FUNCTION WIDTH		Stop 10.000 eep 478 ms (1001 UNCTION VALUE
Res BW	100 kHz	× 9.920 GHz		FUNCTION	FUNCTION WIDTH		eep 478 ms (1001
R MODE TR	100 kHz		Y	FUNCTION	FUNCTION WIDTH		eep 478 ms (1001
R MODE TR	100 kHz		Y	FUNCTION	FUNCTION WIDTH		eep 478 ms (1001
R MODE TR	100 kHz		Y	FUNCTION	FUNCTION WIDTH		eep 478 ms (1001
Res BW	100 kHz		Y	FUNCTION	FUNCTION WIDTH		eep 478 ms (1001
Res BW	100 kHz		Y	FUNCTION	FUNCTION WIDTH		eep 478 ms (1001



		DC	SENSI	EINT	ALIGN AUTO		05:51:	34 PM Jul 07, 20
arker 1	19.190000			rig: Free Run Atten: 20 dB	Avg Typ Avg Hold	e: Log-Pwr : 79/100		RACE 12345 TYPE MWWW DET PNNN
dB/div	Ref Offset 0.6 <b>Ref 10.50</b> (						Mkr1 19 -62	.190 GH 967 dB
<sup>g</sup>	Rei 10.30 (							
50								
9.5								-22.00 (
.5								
.5								
.5							<mark>↓</mark> 1	
.5 million		and any general state of the second	and a strange and and an arrange	man and a second states	water and a star star server	www.ww.grabylaw.cg/bl/184	and the second second second	month
.5								
	000 GHz						Otara	0.000.00
	100 GH2 100 kHz		#VBW 3	00 kHz		Sw	eep 478 m	20.000 GI s (1001 pi
R MODE TF		×	Y	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
	f	19.190 GHz	-62.967 dBn	n				
N 1								



# **11.DUTY CYCLE**

### 11.1. Test Equipment

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

### 11.2. Test Results

The measurement of duty cycle is 100%.

	450000000 GHz .0 MHz		#VB	W 1.0 MHz			Sweer	o 120.0 m	Span 0 H is (1001 pt
.5									
.5									
.5									
.5									
.5									
.5									
.5									
50									
10		<b>♦</b> <sup>1</sup>							
dB/div	Ref Offset 0.5 dB Ref 10.50 dBm								0.56 dB
	_		10: Wide ↔ Gain:Low	Atten: 20 d				Mkr1	түре WWWWWW DET P N N N П 32.52 m
arker 1	32.5200 ms					Avg Type: L	.og-Pwr		
Т	RF 50 Ω DC			SENSE:INT	A	IGNAUTO		11:56	5:14 AM Jul 17, 20

# **12.DEVIATION TO TEST SPECIFICATIONS**

# [NONE]