

APPLICATION FOR CERTIFICATION

On Behalf of

Philips (China) Investment Co., Ltd.

LED Module

Model No. : 440400942161

Brand : Philips

FCC ID : 03M440400942161X1

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.**

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Report Number : ACWE-F1403011

Date of Test : Dec.30, 2013

Date of Report : Mar.24, 2014

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**TEST REPORT CERTIFICATION**

Applicant : Philips (China) Investment Co., Ltd.  
 Manufacturer #1 : Changan Win Channel Electronics Company Limited  
 Manufacturer #2 : Arts Electronics Co., Ltd.  
 EUT Description : LED Module  
 FCC ID : O3M440400942161X1  
 (A) Model No. : 440400942161  
 (B) Brand : Philips  
 (C) Power Supply : DC 4.3V and DC 22V  
 (D) Test Voltage : AC 120V, 60Hz

Applicable Standards:

**FCC OET Bulletin 65 August 1997**

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 OET Bulletin 65.

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: Dec.30, 2013

Date of Report: Mar.24, 2014

Prepared by

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(Tina Zhang/Assistant Administrator)

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Approved & Authorized Signer

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# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

Description	:	LED Module
Model No.	:	440400942161
FCC ID	:	03M440400942161X1
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	:	-1.8dBi
Fundamental Range	:	2405 MHz -2480MHz
Tested Frequency	:	2405MHz (CH11) 2450MHz (CH20) 2480MHz (CH26)
Highest Working Frequency	:	2.4GHz
Power Rating	:	5.375W, 244.32mA
Modulation type	:	O-QPSK
Date of Receipt of Sample	:	Dec.30, 2013
Date of Test	:	Dec.30, 2013

## 1.2. Tested Supporting System Details

### 1.2.1. Power Supply

Manufacturer	:	PHIHONG
Model Number	:	PDM021A-21VC
Input Power	:	100~130Vac, 50/60Hz, 0.4A
Output	:	22Vdc, 0.95A; 4.3Vdc, 0.06A

## 1.3. 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 : **RF Fully Chamber**

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

## 1.4. Measurement Uncertainty

Test Item	Uncertainty
Maximum Peak Output Power	$\pm 0.30\text{dB}$

Remark: Uncertainty =  $k u_c(y)$

## 2. SUMMARY OF STADARDS AND RESULTS

### 2.1. Applicable Standard

FCC OET Bulletin 65:1997

### 2.2. Specification Limits

#### Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/150	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

\*Plane-wave equivalent power density

NOTE: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The limit value 1.0mW/cm<sup>2</sup> is available for this EUT.

### 2.3. MPE Calculator Method

$$S = PG/(4 R^2)$$

$$R = [PG/(4 S)]^{0.5}$$

where: S = power density (in appropriate units, e.g. mW/ cm<sup>2</sup>)

P = power input to the antenna (in appropriate units, e.g., mW) (the measured power value see Report: F12124 Section 6.6)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

## 2.4. Calculated Result

## Radio Frequency Radiation Exposure Evaluation

Frequency	Output Power to Antenna	Antenna Gain		Power Density	Limit
(MHz)	(mW)	(dBi)	(Numeric)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )
2405	4.42	-1.8	0.66	0.000581	1.
2450	4.61	-1.8	0.66	0.000606	1.
2480	4.83	-1.8	0.66	0.000635	1.

Frequency	Output Power to Antenna	Antenna Gain		Limit	Distance
(MHz)	(mW)	(dBi)	(Numeric)	(mW/cm <sup>2</sup> )	(cm)
2405	4.42	-1.8	0.66	1.0	0.482
2450	4.61	-1.8	0.66	1.0	0.492
2480	4.83	-1.8	0.66	1.0	0.504

The antenna used for this transmitter must be installed to provide a separation distance of at least 0.504cm from all persons