

RF Exposure Evaluation Report

Product : Lightify Switch
Trade mark : 
Model/Type reference : JZSW-LSA-PL50
Serial Number : N/A
Report Number : EED32I00158502
FCC ID : 2AJRH-LDV74099
Date of Issue : Sep. 21, 2016
Test Standards : 47 CFR Part 1.1307 (2015)
47 CFR Part 2.1093 (2015)
KDB447498D01 v06
Test result : PASS

Prepared for:

OSRAM SYLVANIA
200 Ballardvale Street, Wilmington, MA 01887

Prepared by:

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2 Version

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00	Sep. 21, 2016	Original

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4 General Information

4.1 Client Information

Applicant:	OSRAM SYLVANIA
Address of Applicant:	200 Ballardvale Street, Wilmington, MA 01887
Manufacturer:	JIUZHOU GREEBLE
Address of Manufacturer:	Floor 1-4 of Building 1#, Jiuzhou Industrial Park, East of Songbai Road, Gongming Office, Guangming New District, Shenzhen China
Factory:	JIUZHOU GREEBLE
Address of Factory:	Floor 1-4 of Building 1#, Jiuzhou Industrial Park, East of Songbai Road, Gongming Office, Guangming New District, Shenzhen China

4.2 General Description of EUT

Product Name:	Lightify Switch
Mode No.(EUT):	JZSW-LSA-PL50
Trade Mark:	
Power Supply:	DC 3V, 35mA

4.3 Product Specification subjective to this standard

Operation Frequency:	2405-2480MHz
EUT Function::	ZigBee
Modulation Type:	O-QPSK
Number of Channel:	16
Sample Type:	Portable production
Test Power Grade:	N/A
Test Software of EUT:	N/A
Antenna Type:	Integral
Antenna Gain:	0dBi
Test Voltage:	DC 3V
Max Conducted Output Power	2.533dBm
	The power data refer to the report EED32I00158502
Sample Received Date:	Jun. 13, 2016
Sample tested Date:	Jun. 13, 2016 to Jun. 16, 2016
The tested samples and the sample information are provided by the client.	

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101

Telephone: +86 (0) 755 3368 3668 Fax: +86 (0) 755 3368 3385

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 886427

Centre Testing International (Shenzhen) Corporation. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 886427.

IC-Registration No.: 7408A-2

The 3m Alternate Test Site of Centre Testing International (Shenzhen) Corporation. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A-2 .

IC-Registration No.: 7408B-1

The 10m Alternate Test Site of Centre Testing International (Shenzhen) Corporation., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B-1.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 & 10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Other Information Requested by the Customer

None.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06
Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

5.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
$$f(\text{GHz}) \text{ is the RF channel transmit frequency in GHz}$$

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

5.1.3 EUT RF Exposure

The Max Conducted Output Power is 2.533dBm in lowest channel(2.440GHz);

The best case gain of the antenna is 0dBi.

EIRP= 2.533dBm + 0dBi = 2.533dBm

-1.173dBm logarithmic terms convert to numeric result is nearly 1.79mW

According to the formula. calculate the EIRP test result:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})}$$

General RF Exposure = $(1.79\text{mW} / 5 \text{ mm}) \times \sqrt{2.402\text{GHz}} = 0.55$ ①

SAR requirement:

S= 3.0

② ;

① < ②.

So the SAR report is not required.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32I00158501 for EUT external and internal photos.

*** End of Report ***

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