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Report No.: 1506RSU00102  
Report Version: V01  
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## RF Exposure Evaluation Declaration

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**FCC ID:** 2ABX8SH-000000007

**APPLICANT:** Zhejiang shenghui lighting Co., Ltd. Shanghai Branch

**Application Type:** Certification

**Product:** sengled element

**Model No.:** Z01-CIA19NAE26

**Brand Name:** sengled

**FCC Classification:** Digital Transmission System (DTS)

Reviewed By :

*Robin Wu*

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Approved By :

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( Marlin Chen )



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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## Revision History

Report No.	Version	Description	Issue Date
1506RSU00102	Rev. 01	Initial report	06-04-2015

Note: This report was based on original report no. 1505RSU00402, and added the test data of channel 2480MHz.

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name	sengled element
Model No.	Z01-CIA19NAE26
Power Type	AC 120V/60Hz
Frequency Range	2405 ~ 2480 MHz
Maximum Output Power	6.96dBm
Type of Modulation	O-QPSK
Antenna Type	Internal
Antenna Gain	2dBi

### 1.2. Operation Frequency / Channel List

Channel	Frequency	Channel	Frequency	Channel	Frequency
11	2405 MHz	12	2410 MHz	13	2415 MHz
14	2420 MHz	15	2425 MHz	16	2430 MHz
17	2435 MHz	18	2440 MHz	19	2445 MHz
20	2450 MHz	21	2455 MHz	22	2460 MHz
23	2465 MHz	24	2470 MHz	25	2475 MHz
26	2480 MHz	-	-	-	-

## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

r = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

## 2.2. Test Result of RF Exposure Evaluation

Product	sengled element
Test Item	RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0dBi for 2.4GHz in logarithm scale.

Test Mode	Frequency Band (MHz)	Maximum Output Power (dBm)	Limit of Power Density S(mW/cm <sup>2</sup> )	Safety Distance (cm)
802.15.4	2405 ~ 2480	6.83	1	0.78

### CONCULISON:

The Safety Distance of the **sengled element FCC ID: 2ABX8SH-000000007** was 0.78cm.

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