RF Exposure Evaluation Declaration

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)

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ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

Revision History

Report No.	Version	Description	Issue Date
1505RSU00402	Rev. 01	Initial report	05-18-2015

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	sengled element
Model No.	Z01-CIA19NAE26
Power Type	AC 120V/60Hz
Frequency Range	2405 ~ 2475 MHz
Maximum Output Power	6.83dBm
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

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^2)	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: $Pd = (Pout*G)/(4*pi*r^2)$

Where
Pd = power density in mW/cm^2
Pout = 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

Pd is the limit of MPE, $1mW/cm^2$. 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^2)	Safety Distance (cm)
802.15.4	2405 ~ 2475	6.83	1	0.78

CONCULISON:

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

The End