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Report No.: 1508RSU01102 Report Version: Issue Date: 09-24-2015

# **RF Exposure Evaluation Declaration**

FCC ID: 2ABX8SH-000000010

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

**Application Type:** Certification

**Product:** sengled element

Model No.: Z01-A19NAE26

**Trademark:** sengled

FCC Classification: Digital Transmission System (DTS)

Reviewed By : Robin Wu )

Approved By : Marlinchen

( Marlin Chen )



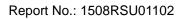


The test results relate only to the samples tested.

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.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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## **Revision History**

Report No.	Version	Description	Issue Date
1508RSU01102	Rev. 01	Initial report	09-24-2015



## 1. PRODUCT INFORMATION

## 1.1. Equipment Description

Product Name	sengled element
Model No.	Z01-A19NAE26
Frequency Range	2405 ~ 2480 MHz
Type of Modulation	O-QPSK
Max Average Output Power	5.66dBm
Antenna Type	PIFA Antenna
Antenna Gain	-6.20dBi



### 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	Electric Field	Magnetic Field	Power Density	Average Time
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm <sup>2</sup> )	(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<sup>2</sup>

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<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 -6.20dBi for Zigbee in logarithm scale.

Test Mode	Frequency Band	Maximum Average	Limit of Power	Safety
	(MHz)	Output Power	Density	Distance
		(dBm)	S(mW/cm <sup>2</sup> )	(cm)
802.15.4	2405 ~ 2480	5.66	1	0.27

#### **CONCULISON:**

The Safety Distance of the sengled element FCC ID: 2ABX8SH-00000010 was 0.27 cm.

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