RF Exposure Evaluation Declaration

FCC ID:	2AGN8-E11G13
APPLICANT:	Sengled Co., Ltd.

Application Type:	Certification
Product:	element classic
Model No.:	E11-G13
Trademark:	sengled
FCC Classification:	Digital Transmission System (DTS)

Reviewed By Manager : Robin Wu
(Robin Wu)

Approved By CEO : Marlin Chen
(Marlin Chen)

Revision History

Report No.	Version	Description	Issue Date	Note
1609RSU00602	Rev. 01	Initial report	09-22-2016	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	element classic
Model No.	E11-G13
Zig-Bee Specification	
Frequency Range	2405 ~ 2480 MHz
Type of Modulation	O-QPSK
Max Average Output Power	5.19dBm
Antenna Type	PCB Antenna
Antenna Gain	-0.4dBi

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	element classic
Test Item	RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is -0.40dBi for Zig-Bee in logarithm scale.

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
802.15.4	2405 ~ 2480	5.19	0.0006	1

CONCULISON:

The Max Power Density at R (20 cm) = 0.0006mW/cm^2 < 1mW/cm^2. So the EUT complies with the requirement.

The End