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Report No.: 1601RSU00304 Report Version: Issue Date: 01-14-2016

RF Exposure Evaluation Declaration

FCC ID: 2ABX8SH-000000013

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

Application Type: Certification

Product: Pulse Link

Model No.: C01-BR30NA LINK

Brand Name: sengled

FCC Classification: FCC Part 15 Spread Spectrum Transmitter(DSS)

Unlicensed National Information Infrastructure (UNII)

Reviewed By : Robin Wu)

Approved By : Marlinchen

(Marlin Chen)



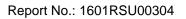


The test results relate only to the samples tested.

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.

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Revision History

Report No.	Version	Description	Issue Date
1601RSU00304	Rev. 01	Initial report	01-14-2016



1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Pulse Link
Model No.	C01-BR30NA LINK
Frequency Range	Buletooth:
	2402~2480MHz
	Wireless:
	5150~5250MHz, 5725~5850MHz
Type of Modulation	Buletooth:
	1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK)
	Wireless:
	QPSK

1.2. Antenna Description

Antenna No.	Antenna Type	Frequency Band	Manufacturer	Tx Paths	Max Peak Gain	
		(MHz)			(dBi)	
Bluetooth Antenna						
			Zhejiang shenghui			
Antenna	PCB Antenna	2402 ~ 2480	lighting Co., Ltd.	1	3.1	
			Shanghai Branch			
Wireless Antenna						
Antenna A PCB Ant	DCB Antonno	5180 ~ 5240	CMCC Inc	1	3.0	
	PCB Antenna	5736 ~ 5814	SMSC Inc.	1	3.2	
Antonno D. DCD Antonn		5180 ~ 5240	SMSC Inc.	1	3.0	
Antenna B	PCB Antenna	5736 ~ 5814	SIVISO INC.	1	3.2	



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 ²)	(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/cm²

Pout = output power to antenna in mW

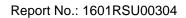
G = gain of antenna in linear scale

Pi = 3.1416

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

Pd is the limit of MPE, 1mW/cm². 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.

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2.2. Test Result of RF Exposure Evaluation

Product	Pulse Link
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to Clause 1.2 of antenna description.

Test Mode	Frequency Band (MHz)	Maximum Output Power (dBm)	Power Density at $R = 20 \text{ cm}$ (mW/cm^2)	Limit (mW/cm²)
Bluetooth	2402 ~ 2480	0.44	0.0004	1
Wireless	5180 ~ 5240	9.46	0.0035	1
Wireless	5736 ~ 5814	13.18	0.0086	1

CONCULISON:

Both of the Bluetooth 2.4GHz and Wireless 5GHz can transmit simultaneously. Therefore, the Max Power Density at R (20 cm) = $0.0004 \text{mW/cm}^2 + 0.0086 \text{mW/cm}^2 = 0.0090 \text{mW/cm}^2 < 1 \text{mW/cm}^2$. So the EUT complies with the requirement.

_____ The End