





MPE TEST REPORT

Applicant Sengled Co., Ltd.

FCC ID 2AGN8-E11N1X

Product Sengled Smart LED

Brand sengled

Marketing Sengled Smart LED

Model E11-N13,E11-N14,E11-N13A,E11-N14A

Report No. R1901A0024-M1

Issue Date February 19, 2019

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 1.1310**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Songyan tan

Approved by: Songyan Fan

Guangchang Fan

Approved by: Guangchang Fan

TA Technology (Shanghai) Co., Ltd.

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1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology** (shanghai) co., Ltd. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein . Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support

regulatory compliance of the applicable standards stated above.

1.2 Test facility

CNAS (accreditation number:L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

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1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.

Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

City: Shanghai

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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C		
Relative humidity	Min. = 30%, Max. = 70%		
Ground system resistance	< 0.5 Ω		
Ambient major is absolved and found year, lay	wand in compliance with requirement of standards		

Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.



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2 Description of Equipment under Test

Client Information

Applicant	Sengled Co., Ltd		
Applicant address	Room 201/15,Building 1, No.498, Guoshoujing Road, Pilot Free Trade Zone, Shanghai, P.R. China		
Manufacturer	Sengled Co., Ltd		
Manufacturer address	Room 201/15,Building 1, No.498, Guoshoujing Road, Pilot Free Trade Zone, Shanghai, P.R. China		

General Technologies

Model	E11-N13,E11-N14,E11-N13A,E11-N14A		
SN	1		
Hardware Version	0x01		
Software Version	V16		
Date of Testing:	January 22, 2019 ~ January 23, 2019		

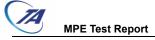


3 Maximum conducted output power (measured) and antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by Numeric gain (G)=10^(antenna gain/10)

Band		nducted Output r (dBm)	Antenna Gain	Numeric gain
	(dBm)	(mW)	(dBi)	
Zigbee	3.690	2.339	1.000	1.259

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4 Test Result

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following

TABLE 1 - LIMITS FOR MAXIMUN PERMISSIBLE EXPOSURE (MPE)

Frequency Range	Electric Field	Magnetic Field	Power Density	Averaging Time
(MHz)	Strength	Strength		
	(V/m)	(AVm)	(mW/cm2)	(minutes)
	(A) Limits for Occu	upational/Controlle	d Exposures	
0.3-3.0	614	1.63	*(100)	6
3-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B)	Limits for General	Population/Uncont	rolled Exposure	
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

f = frequency in MHz

- Note1. Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.
- Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

^{* =} Plane-wave equivalent power density



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The maximum permissible exposure for 1500~100,000MHz is 1.0.So

Band	The maximum permissible exposure		
Zigbee	1.0mW/cm ²		

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RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain antenna provided. This calculation is based on the conducted power, considering maximum power and antenna gain. The formula shown in KDB 447498 D01 is used in the calculation.

Equation from KDB 447498 D01 General RF Exposure Guidance v06 (10/23/2015) is:

$$S = PG / 4 \square R^2$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)

G = the numeric gain of the antenna

R = distance to the center of radiation of the antenna (20 cm = limit for MPE)

Band	PG (mW)	Test Result (mW/cm ²)	Limit Value (mW/cm ²)	Conclusion
Zigbee	2.944	0.001	1.000	Pass
Note: R = 20cm				

Note: **R** = 20cm \square = 3.1416

Note: For transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.



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ANNEX A: The EUT Appearance

A.1 EUT Appearance



a: EUT

Picture 1 EUT