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RF Exposure Evaluation Report

Report No. :	CQASZ20180700041E-02
Applicant:	Zhejiang Dot Lighting Co., LTD
Address of Applicant:	No.768, Anchang Road, Keqiao District, Shaoxing, Zhejiang, China
Manufacturer:	Shenzhen ChenDaZhiKe Electronic Co., Ltd
Address of Manufacturer:	The 4th Floor, B Building, Huahui property management office, Liuxiandong Intustry Park, Xili, Nanshan, Shenzhen, China

Equipment Under Test (EUT):

Product:	RGB Remote control
Model No.:	41617
Brand Name:	N/A
FCC ID:	2AMB5-CD14F
Standards:	47 CFR Part 1.1307
	47 CFR Part 2.1093
	KDB447498D01 General RF Exposure Guidance v06
Date of Test:	2018-07-11 to 2018-08-02
Date of Issue:	2018-08-02
Test Result :	**PASS***

Tested By： _Martin Lee_

(*Martin Lee*)

Reviewed By:

(*Jack Ai*)

Approved By:

(*Jack Ai*)

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* In the configuration tested, the EUT complied with the standards specified above.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1   Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20180700041E-02	Rev.01	Initial report	2018-08-02

2   Contents

3   General Information

3.1 Client Information

Applicant:	Zhejiang Dot Lighting Co., LTD.
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3.2 General Description of EUT

Product Name:	RGB Remote control
Model No.:	41617
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Sample Type:	Portable production
Operation Frequency:	433.92MHz
Channel Numbers:	1
Modulation Type:	ASK
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	Button battery: DC3.0V

Note: Using the new battery for testing.

4   SAR Evaluation

4.1   RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

　　　Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

　　f(GHz) is the RF channel transmit frequency in GHz
　　Power and distance are rounded to the nearest mW and mm before calculation[17]
　　The result is rounded to one decimal place for comparison
The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.1.3 EUT RF Exposure

$eirp = pt \times gt = (E \times d)^2/30$

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, $---10^{((dB\mu V/m)/20)}/10^6$,

d = measurement distance in meters (m)---3m,

So $pt = (E \times d)^2/30 / gt$

The worst case (refer to report CQASZ20180700041E-01) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dBuV/m)	Polarization
433.92	88.83	Peak
433.92	79.73	Average

Antenna polarization: Vertical		
Frequency (MHz)	Level (dBuV/m)	Polarization
433.92	86.39	Peak
433.92	77.29	Average

For 433.92MHz wireless:

Field strength = 88.83dBµV/m @3m

Ant. gain 0dBi; so Ant numeric gain=1.0

So $pt=\{[10^{(88.83/20)}/10^6 \times 3]^2/30 /1.0\} \times 1000mW =0.229mW$

So $(0.229mW/5mm) \times \sqrt{0.43392GHz} = 0.0302$,

0.0302<3.0 for 1-g SAR

So the SAR report is not required.