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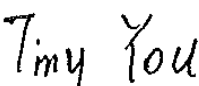
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RF Exposure Evaluation Report

Report No. : CQASZ20201101424E-02
Applicant: The Coleman Company, Inc.
Address of Applicant: 3600 N Hydraulic wichita, KS 67219
Equipment Under Test (EUT):
EUT Name: 360 Light & Sound
Model No.: 2000033083, 2000033384, 2000034919, 2000033992
Test Model No.: 2000033083
Brand Name: N/A
FCC ID: 2APLV-2000033083R
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2020-11-27
Date of Test: 2020-11-27 to 2020-12-07
Date of Issue: 2020-12-07
Test Result : PASS*

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

Tested By:


(Tiny You)

Reviewed By:


(Sheek Luo)

Approved By:


(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20201101424E-02	Rev.01	Initial report	2020-12-07

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3 General Information

3.1 Client Information

Applicant:	The Coleman Company, Inc.
Address of Applicant:	3600 N Hydraulic wichita,KS 67219
Manufacturer:	Ningbo Changrong Lighting & Electronics Technology Co., Ltd.
Address of Manufacturer:	NO.72, WUSHI ROAD, XIDIAN TOWN, NINGHAI NINGBO 315600 CHINA

3.2 General Description of EUT

Product Name:	360 Light & Sound
Model No.:	2000033083, 2000033384, 2000034919, 2000033992
Test Model No.:	2000033083
Trade Mark:	N/A
Hardware Version:	V02
Software Version:	V01
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK
Transfer Rate:	1Mbps/2Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	FCCAssist 2.4 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	1.2dBi
Power Supply:	lithium battery:DC3.7V, Charge by DC5.0V

Note:

Model No.: 2000033083, 2000033384, 2000034919, 2000033992

Only the model 2000033083 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, The differences are shown in the following table.

Model	Description
2000033083	LANTERN LIGHT & SOUND 400L LI-ION C002
2000033384	LANTERN LIGHT & SOUND 400L LI-ION TRI C002
2000034919	LANTERN LIGHT & SOUND 400L ULINE 001
2000033992	LANTERN LIGHT & SOUND 400 LI-ION C004

4 RF Exposure 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:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

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

4.2 1.1.3 EUT RF Exposure Evaluation

1) For BT

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.450	0±1	1	1.259
Middle(2441MHz)	0.100	0±1	1	1.259
Highest(2480MHz)	0.380	0±1	1	1.259
$\pi/4$ DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.430	0±1	1	1.259
Middle(2441MHz)	0.120	0±1	1	1.259
Highest(2480MHz)	0.390	0±1	1	1.259

Worst case: $\pi/4$ DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-0.430	0±1	1	1.259	0.390	3.0
Middle (2441MHz)	0.120	0±1	1	1.259	0.393	
Highest (2480MHz)	0.390	0±1	1	1.259	0.397	
Conclusion: the calculated value ≤ 3.0 , SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20201101424E-01