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RF Exposure Evaluation Report

Report No.: CQASZ20201200039EX-02
Applicant: Shenzhen Chuangquan Electronics Co., Ltd.
Address of Applicant: No. 102, Building 2, Lane 18, Chilingtou Xinyi village Gaofeng Community, Dalang Street, Longhua District, Shenzhen, Guangdong, China
Equipment Under Test (EUT):
EUT Name: Keyboard
Model No.: CQ63, CQ84, CQ006, CQ008, CQ009, CQ010, CQ068, CQ082, CQ87, Z-88, CQ104, CQ088, CQ106, CQ108, CQ109, IK619, BT-815, BT-855, IK3381D, K-600, Z-727, Z-77, K-700, K-620, K-630, X-7100, K-610, EK6210
Test Model No.: CQ63
Brand Name: N/A
FCC ID: 2AYFJ-CQ63N
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2020-11-30
Date of Test: 2020-11-30 to 2020-12-14
Date of Issue: 2020-12-28
Test Result: **PASS***

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

Tested By:

Jun Li

(Jun Li)

Reviewed By:

Ares Liu

(Ares Liu)

Approved By:

Sheek Luo

(Sheek Luo)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20201200039EX-02	Rev.01	Initial report	2020-12-28

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3 General Information

3.1 Client Information

Applicant:	Shenzhen Chuangquan Electronics Co., Ltd.
Address of Applicant:	No. 102, Building 2, Lane 18, Chilingtou Xinyi village Gaofeng Community, Dalang Street, Longhua District, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen Chuangquan Electronics Co., Ltd.
Address of Manufacturer:	No. 102, Building 2, Lane 18, Chilingtou Xinyi village Gaofeng Community, Dalang Street, Longhua District, Shenzhen, Guangdong, China

3.2 General Description of EUT

Product Name:	Keyboard
All Model No.:	CQ63, CQ84, CQ006, CQ008, CQ009, CQ010, CQ068, CQ082, CQ87, Z-88, CQ104, CQ088, CQ106, CQ108, CQ109, IK619, BT-815, BT-855, IK3381D, K-600, Z-727, Z-77, K-700, K-620, K-630, X-7100, K-610, EK6210
Test Model No.:	CQ63
Trade Mark:	N/A
Hardware Version:	V2.0
Software Version:	V1.0.10
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	BLE
Modulation Type:	GFSK
Transfer Rate:	1Mbps
Number of Channel:	40
Product Type:	<input type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location
Test Software of EUT:	Pixart BLE Utility
Antenna Type:	Pcb antenna
Antenna Gain:	0dBi
EUT Power Supply:	lithium battery:DC3.7V, Charge by DC5.0V

Note: All model: CQ63, CQ84, CQ006, CQ008, CQ009, CQ010, CQ068, CQ082, CQ87, Z-88, CQ104, CQ088, CQ106, CQ108, CQ109, IK619, BT-815, BT-855, IK3381D, K-600, Z-727, Z-77, K-700, K-620, K-630, X-7100, K-610, EK6210

Only the model CQ63 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance and model name.

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:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{[\sqrt{f(\text{GHz})}]^2} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where} \right]$$

$f(\text{GHz})$ 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

2) For BLE

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-1.115	-2±1	-1	0.794
Middle(2440MHz)	-1.221	-2±1	-1	0.794
Highest(2480MHz)	-1.271	-2±1	-1	0.794

Worst case: GFSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-1.115	-2±1	-1	0.794	0.246	3.0
Middle (2440MHz)	-1.221	-2±1	-1	0.794	0.248	
Highest (2480MHz)	-1.271	-2±1	-1	0.794	0.250	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20201200039EX-01
BDR and BLE can not simultaneous transmitting at same time.