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RF Exposure Evaluation Report

Report No. : CQASZ20210400021EX-02

Applicant: Shenzhen powerful intelligence co., LTD

Address of Applicant: Room 3616H9, Building A, Xinghe Century, No. 3069, Caitian Road, Gangxia Community, Futian Street, Futian District, Shenzhen

Manufacturer: Shenzhen powerful intelligence co., LTD

Address of Manufacturer: Room 3616H9, Building A, Xinghe Century, No. 3069, Caitian Road, Gangxia Community, Futian Street, Futian District, Shenzhen

Equipment Under Test (EUT):

Product: Electric Skateboard Controller

All Model: P6555, P5045, P5052, P6566

Test Model No.: P6555

Brand Name: Powerfvl

FCC ID: 2AZJG-P6555

Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01 General RF Exposure Guidance v06

Date of Test: 2021-03-25 to 2021-04-13

Date of Issue: 2021-04-13

Test Result : PASS

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Sheek Luo
(Sheek Luo)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20210400021EX-02	Rev.01	Initial report	2021-04-13

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3 General Information

3.1 Client Information

Applicant:	Shenzhen powerful intelligence co., LTD
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Manufacturer:	Shenzhen powerful intelligence co., LTD
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3.2 General Description of EUT

Product Name:	Electric Skateboard Controller
Test Model No.:	P6555
Trade Mark:	Powerful
Hardware Version:	V1.0
Software Version:	V1.6
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
EUT Power Supply:	battery: 3.0V(2*1.5V)

3.3 General Description of 2.4G

Operation Frequency:	2402-2480MHz
Modulation Type:	GFSK
Transfer Rate:	2Mbps
Number of Channel:	16
Fixed frequency mode	Combine buttons to enter engineering mode
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Antenna Type:	FPC Antenna
Antenna Gain:	0dBi

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

4.1.3 EUT RF Exposure Evaluation

1) For 2.4G

Antenna Gain: 0dB

Measurement Data

GFSK mode				
Test Channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	1.969	2±1	3	1.995
Middle(2440MHz)	1.751	2±1	3	1.995
Highest(2480MHz)	1.508	2±1	3	1.995

Worst case:						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tuneup Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	1.969	2±1	3	1.995	0.618	3.0
Middle (2440MHz)	1.751	2±1	3	1.995	0.623	
Highest (2480MHz)	1.508	2±1	3	1.995	0.628	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20210400021EX-01