SAR Exclusion Evaluation Report

Applicant	:	ShenZhen JinHe Global Elec Co.,Ltd
Product Type	:	Mobile game mechanical controller
Trade Name	:	SMOS
Model Number	:	Phantom CP1 Pro, Phantom CP1 Max
Date of Received	:	Dec. 27, 2019
Test Period	:	Jan. 18 ~ Jan. 25, 2019
Date of Issued	:	Jan. 26, 2019

Issue by

Approved By : Jet Lu (Jet Lu)

Tested By : Edison Hu (Edison Hu)

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Taiwan Accreditation Foundation accreditation number: 1330
Test Firm MRA designation number: TW0010

Revision History

Rev.	Issue Date	Revisions
00	Jan. 26, 2019	Initial Issue

Contents

1. Description of Equipment under Test (EUT)

<table>
<tr><td>Applicant</td><td>ShenZhen JinHe Global Elec Co.,Ltd
Area A,7thF, Bldg B,Haoye Logistics Park Port channel,Xixiang street,Baoan,ShenZhen,China</td></tr>
<tr><td>Manufacturer</td><td>ShenZhen JinHe Global Elec Co.,Ltd
Area A,7thF, Bldg B,Haoye Logistics Park Port channel,Xixiang street,Baoan,ShenZhen,China</td></tr>
<tr><td>Product Type</td><td>Mobile game mechanical controller</td></tr>
<tr><td>Trade Name</td><td>SMOS</td></tr>
<tr><td>Model Number</td><td>Phantom CP1 Pro, Phantom CP1 Max</td></tr>
<tr><td>Models different description</td><td>The materials used are the same except for the following sizes (same material), and the other materials/parts/components are the same.
<table>
<tr><th>Model</th><th>Maximum Product Length (Between Left/Right Handle)</th><th>Hand device Loading Width</th></tr>
<tr><td>Phantom CP1 Pro</td><td>302.00 mm</td><td>64.00mm</td></tr>
<tr><td>Phantom CP1 Max</td><td>316.00mm</td><td>74.00mm</td></tr>
</table></td></tr>
<tr><td>FCC ID</td><td>2ASASCP1</td></tr>
<tr><td rowspan="2">Frequency Range</td><td>Operate Band</td><td>Frequency Range (MHz)</td></tr>
<tr><td>Bluetooth LE</td><td>2402 - 2480</td></tr>
<tr><td rowspan="2">Antenna information</td><td>Type</td><td>Max. Gain (dBi)</td></tr>
<tr><td>PIFA</td><td>0.477</td></tr>
</table>

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1093. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

2. Reference Testing Standards

Standard	Description	Version
ANSI/IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 kHz to 100 GHz, New York.	1992
IEEE 1528	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head From Wireless Communications Devices: Measurement Techniques.	2013
FCC 47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices.	---
FCC KDB 865664 D01	SAR measurement 100 MHz to 6 GHz - describes SAR measurement procedures for devices operating between 100 MHz to 6 GHz	v01r04
FCC KDB 865664 D02	RF Exposure Reporting - provides general reporting requirements as well as certain specific information required to support MPE and SAR compliance.	v01r02
FCC KDB 447498 D01	General RF Exposure Guidance - provides guidance pertaining to RF exposure requirements for mobile and portable device equipment authorizations.	v06

3. SAR Test Exclusion

As RF exposure evaluation of portable device, SAR test is not required when the evaluation results. According to KDB 447498 4.3.1, unless excluded by specific FCC test procedures, portable devices shall include SAR data for equipment approval. SAR test necessity will be based on the exclusion result.

The test exclusion refers KDB 447498 as below:

≤50 mm:

[(*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

>50 mm and <200 mm:

a) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz

b) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

3.1 Conducted Power

The conducted power turn-up tolerance, please reference manufacturer specification.

Band	Modulation Type	Data Rate (Mbps)	Frequency (MHz)	Average Power (dBm)
Bluetooth LE	GFSK	1	2402.0	-8.77
			2440.0	-8.13
			2480.0	-6.89

3.2 Antenna Location

Transmitter and antenna implementation	
Band	Bluetooth Antenna
Bluetooth LE	V

Ant. Used	Antenna to user distance (mm)					
	Front	Back	Side 1	Side 2	Side 3	Side 4
Bluetooth Antenna	5	5	-	-	-	-

Note: We use a minimum distance of 5mm for bluetooth function.

3.3 Evaluation Results

The evaluation of SAR test reduction according to KDB447498

SAR test is not required when the results showed “EXEMPT”.

SAR test reduction										
Ant. Used	Band	Frequency (GHz)	Power		Calculated threshold value					
			(dBm)	(mW)	Front	Back	Side 1	Side 2	Side 3	Side 4
Bluetooth Antenna	Bluetooth LE (GFSK)	2.48	-6	0.251	0.1	0.1	-	-	-	-
					EXEMPT	EXEMPT	-	-	-	-

Exclusion Considerations: SAR is not required

Note: 1. Calculated Value include string "mW",that is meam through compare output power with threshold, if the output power more than threshold value the SAR test should be perform. Otherwise, the SAR test could be exempt. (> 50 mm)

2. Calculated Value only include number format, that is mean through compare output power with threshold, if the Calculated value more than 3, the SAR test should be perform. Otherwise, the SAR test could be exempt. (<50 mm)
3. When an antenna qualifies for the standalone SAR test exclusion of KDB 447498 section 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to KDB 447498 section "4.3.2. Simultaneous transmission SAR test exclusion considerations b) "
4. We used highest frequency and power, that result should be evaluated the worst case.
5. Power and distance are rounded to the nearest mW and mm before calculation.
6. The result is rounded to one decimal place for comparison.
7. We use a minimum distance of 5 mm for bluetooth function.