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# RF Exposure Evaluation Report

**Report No. :** CQASZ20200400321E-02  
**Applicant:** AKSys Co.,Ltd.  
**Address of Applicant:** A706, Ace Cheonggye Tower, 53 Seonggogae-ro, Uiwang-si, Gyeonggi-do, Korea  
**Equipment Under Test (EUT):**  
**EUT Name:** WIRELESS CONTROLLER  
**Mode No.:** Gamepad S2i  
**Brand Name:** SHAKS  
**FCC ID:** 2AQKJ-S2I  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2020-04-30  
**Date of Test:** 2020-04-30 to 2020-05-09  
**Date of Issue:** 2020-05-09  
**Test Result :** **PASS\***

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

**Tested By:**

*Tom Chen*

(Tom Chen)

**Reviewed By:**

*Sheek, Luo*

(Sheek Luo)

**Approved By:**

*Jamesi*  
( Jack Ai)



## 1 Version

### Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200400321E-02	Rev.01	Initial report	2020-05-09

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### 3 General Information

#### 3.1 Client Information

Applicant:	AKSys Co.,Ltd.
Address of Applicant:	A706, Ace Cheonggye Tower, 53 Seonggogae-ro, Uiwang-si, Gyeonggi-do, Korea
Manufacturer:	AKSys Co.,Ltd.
Address of Manufacturer:	A706, Ace Cheonggye Tower, 53 Seonggogae-ro, Uiwang-si, Gyeonggi-do, Korea

#### 3.2 General Description of EUT

Product Name:	WIRELESS CONTROLLER
Model No.:	Gamepad S2i
Trade Mark:	SHAKS
Hardware Version:	CSR5342-V7.0 20200221
Software Version:	200001
Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Transfer Rate:	1Mbps
Number of Channel:	40
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Test Software of EUT:	Blue test3 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
EUT Power Supply:	lithium battery: DC 3.7V, 500mAh, Charge by DC 5.0V

## 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  $\leq 50$  mm are determined by:

$$\left[ \frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0$$
 for 1-g SAR and  $\leq 7.5$  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 calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  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

For BLE

#### Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	4.77	4.0±1	5.0	3.162
Middle(2440MHz)	5.31	4.5±1	5.5	3.548
Highest(2480MHz)	5.64	5.0±1	6.0	3.981

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	4.77	4.0±1	5.0	3.162	0.980	3.0
Middle (2440MHz)	5.31	4.5±1	5.5	3.548	1.108	
Highest (2480MHz)	5.64	5.0±1	6.0	3.981	1.254	

Conclusion: the calculated value ≤3.0, SAR is exempted.

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20200400321E-01.