



REPORT No. : SZ18100181S02

TEST REPORT

MANUFACTURER : Winners'Sun Plastic & Electronic
(Shenzhen) Co., Ltd
PRODUCT NAME : Smartphone 3-axis Stabilizer
MODEL NAME : WS-SQB842B
BRAND NAME : N/A
STANDARD(S) : UR9WS-SQB842B
TEST DATE : 47CFR 2.1093
KDB 447498
ISSUE DATE : 2018-10-31

Edited by:

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MORLAB

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Change History		
Issue	Date	Reason for change
1.0	2018-10-31	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1 Applicant and Manufacturer Information

Applicant:	Winners'Sun Plastic & Electronic (Shenzhen) Co., Ltd
Applicant Address:	Zone E, Ying Tai Industrial Park, Dalang Longhua Town, Bao An District Shenzhen, Guang Dong Province China
Manufacturer:	Winners'Sun Plastic & Electronic (Shenzhen) Co., Ltd
Manufacturer Address:	Floor 1-4, Bild E&Floor 1, Floor 3, Bild D, Yingtai Industrial E Area, Dalang South Street, Langkou Community, Dalang Street, Bao' an District, Shenzhen, Guangdong

1.2 Equipment Under Test (EUT) Description

EUT Type:	Smartphone 3-axis Stabilizer
Hardware Version:	V1.00
Software Version:	V1.002
Frequency Bands:	Bluetooth 4.0LE: 2402MHz-2480MHz
Modulation Mode:	Bluetooth : GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	1.5dBi

Note :

- 1.This test report is updated from report SZ18050311S02, based on the similarity between before, the applicant and applicant address, the manufacturer and manufacturer address, the product name, the model name and brand name are changed. The number of batteries changed from two to one, and the model name of battery was changed. The changes do not affect the test results.
- 2.For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3 Photographs of the EUT

1. EUT Front View



2. EUT Back View





1.3.1 Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	V1.00	V1.002

1.4 Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	47 CFR§2.1093	Radio frequency Radiation Exposure Evaluation: portable devices
2	KDB 447498 D01v06	General RF Exposure Guidance



2. Device Category and RF Exposure Limit

Per user manual, this device is a Smartphone 3-axis Stabilizer. Based on 47CFR 2.1093, this device belongs to portable device category with General Population/Uncontrolled exposure.

Portable Devices:

47CFR 2.1093(b)

For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

47CFR 2.1093(d) (2)

Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.



3. Measurement of RF Output Power

1. Bluetooth output power

Mode	Channel	Frequency (MHz)	Peak power (dBm)
			GFSK
LE	CH 00	2402	4.46
	CH 19	2440	3.88
	CH 39	2480	2.88
Tune-up Limit			5.0

Note: According to KDB 447498, maximum source-based time-average power will be used for calculating MPE.



4. RF Exposure Evaluation

The device only incorporates a Bluetooth transmitter, so standalone SAR evaluation is required for Bluetooth and simultaneous SAR is not required.

Standalone transmission SAR evaluation

According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation Distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$

The maximum tune-up limit power is **3.16mW @ 2.405GHz**

When 3-Axis Stabilizing Gimbal for Action Camera is used on the hand/head, so use **5mm** as the most conservative minimum test separation distance,

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = \mathbf{0.98} \leq 3.0$$

So SAR evaluation is not required for this device.

Note: Declaration of the tune-up limit is 5.0dBm.



Annex A General Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
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Responsible Test Lab Manager:	Mr. Su Feng
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2. Identification of the Responsible Testing Location

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