

RF EXPOSURE REPORT



FCC Applicant: TIEN HSIN INDUSTRIES CO., LTD.
NO.6, WU-GONG 8TH RD., WUFENG DIST., TAICHUNG
CITY 413, TAIWAN (R.O.C.)

Product Name: PowerBox SC

Brand Name: FSA

Model No.: PowerBox SC

Model Difference: N/A

Report Number: E2/2021/70004

FCC ID 2ALMLPBSC

Issue Date: Oct. 06, 2021

Date of EUT Received: Jul. 05, 2021

Approved By

John Yeh

We hereby certify that:

The above equipment was evaluate by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1093.

The results of this report relate only to the sample identified in this report.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
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Revision History

Report Number	Revision	Description	Issue Date	Revised By
E2/2021/70004	Rev.00	Original.	Oct. 06, 2021	Yi-Shan Tsai

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	PowerBox SC
Brand Name:	FSA
Model No.:	PowerBox SC
Model Difference:	N/A
Hardware Version:	S332 v7.0.1
Firmware Version:	S332 v7.0.1
EUT Series No.:	PJ217005010
Power Supply:	Battery 3Vdc

1.2 Antenna Information:

1.2.1 BLE

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Chip	BS-MoVA Technology Co., Ltd.	WTE86002	2402~2480	-1.56

Note: Antenna information is provided by the applicant.

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2 FCC STANDARD APPLICABLE

2.1 FCC Standard Applicable:

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

As per KDB 447498 D01 4.3.1,

Step a: For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

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

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g Head & Body SAR and ≤ 7.5 for 10-g extremity Hand 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
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as numeric thresholds in **step b)** below

Step b: For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):

- 1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
- 2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

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2.2 Measurement Result:

Step a:					
This is a portable device and the max. output power including tune-up tolerance is 0.944 (mW), lower than the threshold given and derived as formula given above, where					
$=0.944(\text{mW})/5(\text{mm}) \cdot \sqrt{2.402(\text{GHz})} = 0.293 < 3.0$					
Frequency (MHz)	Max. output power including tune-up tolerance(dBm)	Max. output power including tune-up tolerance(mW)	Distance (mm)	Result	≤ 3.0 for 1-g SAR
2402	-0.25	0.944	5	0.293	TRUE

As the result of calculation result indicates, the RF exposure generating from given transmitter (transmitter employed digital modulation) can be excluded from SAR measurement, and is deemed compliant with RF exposure as per FCC.

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