RF EXPOSURE EVALUATION REPORT

Application No.:	GZCR2109021137AT
Applicant:	SKULLCANDY, INC.
Address of Applicant:	6301 N Landmark Dr Park City UT 84098, Utah United States of America
Manufacturer:	SKULLCANDY, INC.
Address of Manufacturer:	6301 N Landmark Dr Park City UT 84098, Utah United States of America
Equipment Under Test (EUT):	
EUT Name:	FUELBASE 2 WIRELESS CHARGE PAD
Model No.:	S7FEZ
Trade Mark:	Skullcandy
Standard(s) :	47 CFR PART 1, Subpart I, Section 1.1310 47 CFR PART 2, Subpart J, Section 2.1091
Date of Receipt:	2021-09-23
Date of Evaluation:	2021-09-23 to 2021-09-26
Date of Issue:	2021-09-27
Evaluation Result:	**Pass***

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

Kobe Jian
EMC Laboratory Manager

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		*2021-09-27*		*Original*

Authorized for issue by				
Tested By		 **Curry Wu/Project Engineer**		
Reviewed By		 **Ricky Liu/Reviewer**		

2 Evaluation Summary

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
RF Exposure	47 CFR PART 1, Subpart I, Section 1.1310; 47 CFR PART 2, Subpart J, Section 2.1091	KDB 680106 D01	47 CFR PART 1, Subpart I, Section 1.1310; 47 CFR PART 2, Subpart J, Section 2.1091	Pass

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	INPUT:QC/PD,5V/3A 9V/2.22A 12V/1.67A OUTPUT:5W/7.5W/10W /15W
Cable(s):	USB cable:71cm unshielded
Operation Frequency:	115.400KHz-147.400KHz
Modulation Type:	Load modulation
Antenna Type:	Loop antenna

4.2 Test modes description:

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charge mode_Keep the EUT charging(5W)
Pre-scan	01	Charge mode_Keep the EUT charging(7.5W)
Pre-scan	02	Charge mode_Keep the EUT charging(10W)
Final test	03	Charge mode_Keep the EUT charging(15W)

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
E-loading	Client supply	Huier wireless	N/A
Mobile Phone	SAMSUNG	SM-G9810	RFCN309Q9QF
Provided by applicant	APPLE	LS-QW20-A	N/A

4.4 Measurement Uncertainty

Test Item	Measurement Uncertainty
RF Exposure Evaluation	MF: 0.13dB, EF: 0.4dB

5 Equipments Used during Test

RF Exposure					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
743 Compact 3m Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	EMC0525	2019-10-20	2022-10-19
Electric and Magnetic Field Analyzer	Narada	NBM-550	EMC2143	2020-01-07	2022-01-06
Probe	Narada	EHP-50F	EMC2143	2020-01-07	2022-01-06

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DMM	Fluke	73	EMC0006	2021-07-08	2022-07-07
DMM	Fluke	73	EMC0007	2021-07-08	2022-07-07

5.1 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

5.2 Facility

The facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

5.3 Deviation from Standards

None

5.4 Abnormalities from Standard Conditions

None

6 Test Results

6.1 RF Exposure test

Test Requirement: 47 CFR PART 1, Subpart I, Section 1.1310

Measurement Distance: 15cm

Limit:

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in Part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f^2)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f^2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz

*=Plane-wave equivalent power density

RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

According to IEEE C95.3:2002 section 5.5.1.1, The power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula

$$S = \frac{PG}{4\pi d^2}$$

S = power density (mW/cm^2)

P = the net power delivered to the antenna (mW)

G = gain of the antenna in linear scale

d = distance between observation point and center of the radiator (cm)

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.8 °C Humidity: 52.7% RH Atmospheric Pressure: 1010 mbar

EUT Operation:

This device has been tested the worst status of full load and the device has been tested with load at zero charge, intermediate charge, and full charge.

6.1.2 Measurement Data

The max output power =15W;

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)	50% Limit (A/m)
127.2 kHz	15	Side 1	0.0599	0.815
		Side 2	0.0543	0.815
		Side 3	0.0544	0.815
		Side 4	0.0533	0.815
		Top	0.0612	0.815

Mobile phone has been charged at zero charge, intermediate charge, and full charge.

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50%Limit (A/m)
			zero charge	intermediate charge	full charge	
127.2 kHz	15	Side 1	0.0597	0.0502	0.0399	0.815
		Side 2	0.0584	0.0491	0.0390	0.815
		Side 3	0.0572	0.0480	0.0382	0.815
		Side 4	0.0605	0.0508	0.0404	0.815
		Top	0.0659	0.0554	0.0440	0.815

7 Photographs- RF exposure Setup photos

Refer to Appendix - RF Exposure SetupPhoto for GZCR2109021137AT.

- End of the Report -