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RF Exposure Evaluation Report

Report No. : CQASZ20181000011E-02

Applicant: Sound Crush Company Limited.

Address of Applicant: Bldg 8,Xiang YuEr Ind.Park,LongSheng Road, Long Gang,ShenZhen,China

Manufacturer: Sound Crush Company Limited.

Address of Manufacturer: Bldg 8,Xiang YuEr Ind.Park,LongSheng Road, Long Gang,ShenZhen,China

Factory: Sound Crush Company Limited.

Address of Factory: Bldg 8,Xiang YuEr Ind.Park,LongSheng Road, Long Gang,ShenZhen,China

Equipment Under Test (EUT):

Product: Portable Bluetooth Speaker

All Model No.: SC-192, EL175

Test Model No.: SC-192

Brand Name: Sound Crush

FCC ID: 2ABPR-SC-192

Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06

Date of Test: 2018-10-15 to 2018-10-22

Date of Issue: 2018-10-22

Test Result : **PASS***

Tested By:

Tiny You

(Tiny You)

Reviewed By:

Aaron Ma

(Aaron Ma)

Approved By:

Jack Ai

(Jack Ai)



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

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20181000011E-02	Rev.01	Initial report	2018-10-22

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3 General Information

3.1 Client Information

Applicant:	Sound Crush Company Limited.
Address of Applicant:	Bldg 8, Xiang YuEr Ind. Park, LongSheng Road, Long Gang, ShenZhen, China
Manufacturer:	Sound Crush Company Limited.
Address of Manufacturer:	Bldg 8, Xiang YuEr Ind. Park, LongSheng Road, Long Gang, ShenZhen, China
Factory:	Sound Crush Company Limited.
Address of Factory:	Bldg 8, Xiang YuEr Ind. Park, LongSheng Road, Long Gang, ShenZhen, China

3.2 General Description of EUT

Product Name:	Portable Bluetooth Speaker
All Model No.:	SC-192, EL175
Test Model No.:	SC-192
Trade Mark:	Sound Crush
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	portable production
Test Software of EUT:	RF Test_V1.5 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery: DC7.4V, 2200mAh, Charge by USB

Note:

All model: SC-192, EL175

Only the model SC-192 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance and model name.

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 ≤ 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 ≤ 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 calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 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 BT:

Measurement Data

GFSK mode	
Test channel	Peak Output Power (dBm)
Lowest	0.390
Middle	0.020
Highest	-0.870
π/4DQPSK mode	
Test channel	Peak Output Power (dBm)
Lowest	-0.040
Middle	-0.300
Highest	-1.180
8DPSK mode	
Test channel	Peak Output Power (dBm)
Lowest	0.030
Middle	-0.300
Highest	-1.170

The Max Conducted Peak Output Power is 0.39dBm in Lowest channel(2.402GHz);

The best case gain of the antenna is 0dBi.

EIRP= 0.39dBm + 0dBi = 0.39dBm

0.39dBm logarithmic terms convert to numeric result is nearly 1.094mW

According to the formula. calculate the EIRP test result:

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

General RF Exposure = $(1.094\text{mW} / 5 \text{ mm}) \times \sqrt{2.402\text{GHz}} = 0.34$ ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.

Remark: The Max Conducted Peak Output Power data refer to report Report No.:CQASZ20181000011E-01