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# RF Exposure Evaluation Report

**Report No. :** CQASZ20180700073E-02

**Applicant:** Sound Crush Company Limited

**Address of Applicant:** Bldg 8, Xiangyuer Ind Park, LongSheng Rd, Longgang, Shenzhen, China

**Manufacturer:** Sound Crush Company Limited

**Address of Manufacturer:** Bldg 8, Xiangyuer Ind Park, LongSheng Rd, Longgang, Shenzhen, China

**Factory:** Sound Crush Company Limited

**Address of Factory:** Bldg 8, Xiangyuer Ind Park, LongSheng Rd, Longgang, Shenzhen, China

**Equipment Under Test (EUT):**

**Product:** Bluetooth speaker

**Model No.:** SC-190, EL161

**Test Model No.:** SC-190

**Brand Name:** N/A

**FCC ID:** 2ABPR-SC-190

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

**Date of Test:** 2018-07-23 to 2018-07-26

**Date of Issue:** 2018-07-26

**Test Result :** PASS\*

**Tested By:** Martin Lee  
( Martin Lee)

**Reviewed By:** Jack Ai  
( Jack Ai)

**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
CQASZ20180700073E-02	Rev.01	Initial report	2018-07-26

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### 3 General Information

#### 3.1 Client Information

Applicant:	Sound Crush Company Limited
Address of Applicant:	Bldg 8, Xiangyuer Ind Park, LongSheng Rd, Longgang, Shenzhen, China
Manufacturer:	Sound Crush Company Limited
Address of Manufacturer:	Bldg 8, Xiangyuer Ind Park, LongSheng Rd, Longgang, Shenzhen, China
Factory:	Sound Crush Company Limited
Address of Factory:	Bldg 8, Xiangyuer Ind Park, LongSheng Rd, Longgang, Shenzhen, China

#### 3.2 General Description of EUT

Product Name:	Bluetooth speaker
Model No.:	SC-190, EL161
Test Model No.:	SC-190
Trade Mark:	N/A
Hardware Version:	1.0
Software Version:	4.1
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.1
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:	BK3256 RF Test-V1.3 (manufacturer declare )
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery: Model: HYY 18650 DC3.7V, 2200mAh, Charge by DC5.0V

All model: SC-190, EL161

Only the model SC-190 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  $\leq 50$  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(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 BT:

Measurement Data

GFSK mode	
Test channel	Peak Output Power (dBm)
Lowest	-0.210
Middle	-0.560
Highest	-1.060
π/4DQPSK mode	
Test channel	Peak Output Power (dBm)
Lowest	-0.350
Middle	-0.630
Highest	-1.150
8DPSK mode	
Test channel	Peak Output Power (dBm)
Lowest	-0.370
Middle	-0.630
Highest	-1.060

The Max Conducted Peak Output Power is -0.210dBm in lowest channel(2.402GHz);

The best case gain of the antenna is 0dBi.

EIRP= -0.210dBm + 0dBi = -0.210dBm

-0.210dBm logarithmic terms convert to numeric result is nearly 0.953mW

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 =  $(0.953\text{mW} / 5 \text{ mm}) \times \sqrt{2.402\text{GHz}} = 0.295$  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.: CQASZ20180700073E-01