



## RF Exposure Report

FCC ID: 2AAGF-STOCKIIBT

Applicant: Zound Industries International AB

Address: Centralplan 15 SE-111 20 Stockholm Sweden

Manufacturer: Zound Industries International AB

Address: Centralplan 15 SE-111 20 Stockholm Sweden

Product: PORTABLE LOUDSPEAKER

Brand: Marshall

Test Model(s): STOCKWELL II BT

Series Model(s): N/A

Test Date: Dec. 27, 2021~Jan. 06, 2022

Issued Date: Jan. 26, 2022

Issued By: Hwa-Hsing (Dongguan) Testing Co., Ltd.

Address: No.101, Bld N1, Yuyuan 2Rd, Yuyuan Industrial Park, HuangJiang Town, Dongguan, China

Test Firm Registration No.: 915896

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)  
ANSI C63.10:2013

The above equipment has been tested by **Hwa-Hsing (Dongguan) Testing Co., Ltd.**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

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**HWA-HSING** Test Report No.: 211126EL31-SE-US-01

### Release control record

| Issue No.           | Reason for change | Date issued   |
|---------------------|-------------------|---------------|
| 211126EL31-SE-US-01 | Original Release  | Jan. 26, 2022 |

Lab: [Hwa-Hsing \(Dongguan\) Testing Co., Ltd.](#)  
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Release  
Ver. 1.3



## 1 General Information

### 1.1 General Description of EUT

|                     |   |
|---------------------|---|
| Product             | PORTABLE LOUDSPEAKER                                |
| Brand               | Marshall  |
| Test Model(s)       | STOCKWELL II BT                                     |
| Series Model(s)     | N/A   |
| FCC ID:             | 2AAGF-STOCKIIBT                                     |
| Status of EUT       | Engineering Prototype                               |
| Power Supply Rating | DC7.2V from battery or DC 5V-12V,3A Max for Adapter |
| Modulation Type     | GFSK, π/4DQPSK,8DPSK                                |
| Transfer Rate       | 1/2/3Mbps   |
| Operating Frequency | 2402 ~ 2480MHz                                      |
| Number of Channel   | 79  |
| Output Power (AVG)  | 8.83dBm   |
| Antenna Type        | FPCB Antenna  |
| Antenna Gain        | 5.15dBi Maximum peak Gain                           |
| Antenna Connector   | N/A   |
| Accessory Device    | N/A   |
| Cable Supplied      | USB Cable: Unshielded, 120cm                        |

Note:

1. Please refer to the EUT photo document (Reference No.: 211126EL31-1&-2) for detailed product photo.
2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



## 2 Evaluation of SAR Testing Exclusion

Following FCC KDB 447498 D01 "General SAR test exclusion guidance"

The corresponding SAR Exclusion Threshold condition, listed below:

- 1) 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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- 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.

- 2) At 100 MHz to 6 GHz and for test separation distances  $> 50$  mm, the SAR test exclusion threshold is determined according to the following:

- $[\text{Threshold at } 50 \text{ mm in step 1)} + (\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)] \text{ mW, at } 100\text{MHz to } 1500 \text{ MHz}$
- $[\text{Threshold at } 50 \text{ mm in step 1)} + (\text{test separation distance} - 50 \text{ mm}) \cdot 10] \text{ mW at } > 1500 \text{ MHz and } \leq 6 \text{ GHz}$

- 3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion.

- The threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by  $[1 + \log(100/f(\text{MHz}))]$  for test separation distances  $> 50$  mm and  $< 200$  mm.
- The threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by  $\frac{1}{2}$  for test separation distances  $\leq 50$  mm.
- SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable.

### **Smallest distance from the antenna and radiating structures or outer surface of the device**

The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.



### 3 Evaluation Result

The tuned conducted Average Power (declared by client)

| Mode   | Frequency (MHz) | Target Power (dBm) | Tolerance (dBm) | Lower Tolerance (dBm) | Upper Tolerance (dBm) |
|--------|-----------------|--------------------|-----------------|-----------------------|-----------------------|
| BR/EDR | 2402-2480       | 8.0                | +1.0<br>-1.0    | 7                     | 9                     |

The measured conducted Average Power and EIRP

| Mode   | Frequency (MHz) | Maximum Averaged Power (dBm) |
|--------|-----------------|------------------------------|
| BR/EDR | 2402-2480       | 8.83                         |

SAR Test Exclusion Thresholds

| Frequency (MHz) | Maximum source-based time averaged conducted output power (dBm) | Minimum separation distance (mm) | Result of Eq. 1 | Limit for 1-g SAR | Limit for 10-g extremity SAR | Verdict |
|-----------------|---|----------------------------------|-----------------|-------------------|------------------------------|---------|
| 2480            | 9   | 5                                | 2.502           | 3.0               | 7.5                          | Exempt  |



**HWA-HSING** Test Report No.: 211126EL31-SE-US-01

### Appendix – Information on the Testing Laboratories

We, [Hwa-Hsing \(Dongguan\) Co., Ltd.](#), A global provider of TESTING and CERTIFICATION services for consumer products, electronic products and wireless information technology products. Adhering to the core values “HONEST and TRUSTWORTHY, OBJECTIVE and IMPARTIALITY, RIGOROUS and AFFICIENT”, commitment to provide professional, perfect and efficient comprehensive ONE-STOP solution of TESTING and CERTIFICATION services for Manufacturers, Buyers, Traders, Brands, Retailers. Assist client to better manage risk, protect their brands, reduce costs and cut time to over 150 markets in global. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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