

RF EXPOSURE REPORT

FOR

Applicant	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
Equipment under Test	:	Portable Bluetooth Speaker
Model No.	:	TUNER 2
Trade Mark	:	JBL
FCC ID	:	APIJBLTUNRE2
Manufacturer	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City,
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TABLE OF CONTENTS

- Test report declares.....3
- 1. General information..... 5
- 1.1. Description of Equipment 5
- 1.2. Assess laboratory 5
- 2. RF Exposure evaluation for FCC 5

TEST REPORT DECLARE

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Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:

The equipment described above is assessed by Dongguan Dongdian Testing Service Co., Ltd and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Dongguan Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No:	DDT-R19110815-1E8		
Date of Receipt:	Dec. 11, 2019	Date of Test:	Dec. 11, 2019 ~ Dec. 29, 2019

Prepared By:

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Ella Gong/Engineer

Approved By:


Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision history

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Dec. 29, 2019	

1. General information

1.1. Description of Equipment

EUT* Name	: Portable Bluetooth Speaker
Model Number	: TUNER 2
EUT function description	: Please reference user manual of this device
Power supply	: DC 5V from external AC Adapter : DC 3.63V Polymer Li-ion built-in battery
Radio Specification	: Bluetooth V4.2
Operation frequency	: 2402MHz-2480MHz
Modulation	: GFSK, $\pi/4$ -DQPSK, 8DPSK
Data rate	: 1 Mbps, 2 Mbps, 3 Mbps
Antenna Type	: Integral PCB antenna, maximum PK gain: 2.83 dBi
Sample Type	: Series production

1.2. Assess laboratory

Dongguan Dongdian Testing Service Co., Ltd.

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2. RF Exposure evaluation for FCC

According to 447498 D01 General RF Exposure Guidance v06

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:

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

The result is rounded to one decimal place for comparison

Manufacturing Tolerance

GFSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	2	2	2
Tolerance \pm (dB)	1	1	1
$\pi/4$ DQPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	2	2	2
Tolerance \pm (dB)	1	1	1
8DPSK (Peak)			

Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	2	2	2
Tolerance ±(dB)	1	1	1

Estimation Result

Worse case is as below: [2402MHz, 3 dBm, 2 mW) output power]

$(2/5) \cdot [\sqrt{2.402(\text{GHz})}] = 0.620 < 3.0$ for 1-g SAR

Then SAR evaluation is not required

END OF REPORT