



■ Report No.: DDT-R20120722-3E03

■ Issued Date: Jun. 11, 2021

RF EXPOSURE REPORT

FOR

Applicant	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
Equipment under Test	:	Head Unit
Model No.	:	2415980
Trade Mark	:	JBL
FCC ID	:	APIHEADUNITCAL
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,
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REPORT

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Test Report Declare

Applicant	:	Harman International Industries, Inc.
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Equipment under Test	:	Head Unit
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Manufacturer	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES

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-R20120722-3E03		
Date of Receipt:	Mar. 29, 2021	Date of Test:	Apr. 09, 2021 - Jun. 10, 2021

Prepared By:

Approved By:

Sam Li/Engineer

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	Jun. 11, 2021	

1. General Information

1.1. Description of equipment

EUT* Name	: Head Unit
Model Number	: 2415980
EUT function description	: Please reference user manual of this device
Power Supply	: Range of operation voltage: 9V ~ 16V, : Max operation current: 15A
Radio Specification	: Bluetooth V5.0
Operation Frequency	: 2402 MHz - 2480 MHz
Modulation	: GFSK, $\pi/4$ -DQPSK, 8DPSK
Data Rate	: 1 Mbps, 2 Mbps, 3 Mbps
Antenna Type	: Integral antenna, maximum PK gain: 0 dBi
Serial Number	: N/A

1.2. Assess laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City,
Guangdong Province, China, 523808.

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, G-20118

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

BT Manufacturing Tolerance

GFSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	0	-1	-3
Tolerance ±(dB)	1	1	1
π/4DQPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	0	-1	-3
Tolerance ±(dB)	1	1	1
8DPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	0	-1	-3
Tolerance ±(dB)	1	1	1

BLE Manufacturing Tolerance

GFSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	-2	-3	-5
Tolerance ±(dB)	1	1	1

Estimation Result

Worse case is as below: [2402 MHz, 1 dBm, 1.26 mW) output power]

$(1.26/5) \cdot [\sqrt{2.402(\text{GHz})}] = 0.39 < 3.0$ for 1-g SAR

Then SAR evaluation is not required

END OF REPORT