

# RF EXPOSURE REPORT

## FOR

<b>Applicant</b>	:	Harman International Industries, Inc.
<b>Address</b>	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
<b>Equipment under Test</b>	:	2.1CH Soundbar with Wireless Subwoofer(Wireless Soundbar)
<b>Model No.</b>	:	CINEMA SB170
<b>Trade Mark</b>	:	JBL
<b>FCC ID</b>	:	APISB170MKII
<b>Manufacturer</b>	:	Harman International Industries, Inc.
<b>Address</b>	:	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  
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## 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.**

<b>Report No.:</b>	DDT-R21121618-2E09		
<b>Date of Receipt:</b>	Dec. 22, 2021	<b>Date of Test:</b>	Dec. 22, 2021 ~ Jan. 19, 2022

**Prepared By:**

*Ben Jin*

**Ben Jin/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	Jan. 19, 2022	

## 1. General information

### 1.1. Description of Equipment

EUT* Name	: 2.1CH Soundbar with Wireless Subwoofer(Wireless Soundbar)
Model Number	: CINEMA SB170
EUT Function Description	: Please reference user manual of this device
Power Supply	: AC 100-240V-50/60Hz 30W
Radio Specification	: Bluetooth V5.1, 2.4GHz SRD
Operation Frequency	: Bluetooth: 2402 MHz - 2480 MHz 2.4GHz SRD: 2406 MHz - 2474 MHz
Modulation	: Bluetooth: GFSK, $\pi/4$ -DQPSK 2.4GHz SRD: GFSK
Data Rate	: Bluetooth: 1 Mbps, 2 Mbps 2.4GHz SRD: 2 Mbps
Antenna Gain	: Bluetooth Maximum PK gain: 2.24 dBi 2.4GHz SRD Maximum PK gain: 2.62 dBi
Sample Type	: Series production
Series Number	: RS0160-KL0000506 for conductive

### 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](mailto: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

### 2.1. Requirement

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2. Calculation Method

$$E(\text{V/m}) = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } S(\text{mW/cm}^2) = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = Peak RF output power (mW)

**G** = EUT Antenna numeric gain (numeric)=

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

We can change the formula to:

$$S = \frac{30 \times P \times G}{377 \times d^2} \quad \text{or, } d = \sqrt{\frac{30 \times P \times G}{377 \times S}}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.



## 2.3. Estimation Result

### Manufacturing Tolerance

GFSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	6	6	6
Tolerance $\pm$ (dB)	1	1	1
$\pi/4$ DQPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	5	6	6
Tolerance $\pm$ (dB)	1	1	1
2.4GHz SRD (Peak)			
Channel	Channel 0	Channel 7	Channel 15
Target (dBm)	8	7	8
Tolerance $\pm$ (dB)	1	1	1

### Estimation Result

Mode	F (GHz)	Distance (cm)	RF output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE Values (mW/cm <sup>2</sup> )	MPE limits (mW/cm <sup>2</sup> )	MPE Test Exclusion
			dBm	mW					
BDR	2.441	20	7	5.01	2.24	1.67	0.00167	1	Yes
EDR	2.441	20	7	5.01	2.24	1.67	0.00167	1	Yes
2.4GHz SRD	2406	20	9	7.94	2.62	1.83	0.00289	1	Yes

Note: The estimation distance is 20cm

**END OF REPORT**