


RF EXPOSURE REPORT

FOR

Applicant	:	ION Audio, LLC
Address	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.
Equipment under Test	:	PROJECTOR WITH POWERFUL SPEAKER
Model No.	:	PROJECTOR PLUS, PROJECTOR PA
Trade Mark	:	
FCC ID	:	2AB3E-IPA119
IC	:	10541A-IPA119
Manufacturer	:	ION Audio, LLC
Address	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.

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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REPORT

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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.

Report No:	DDT-R19050906-1E3		
Date of Receipt:	May 16, 2019	Date of Test:	May 16, 2019 ~ Sep. 06, 2019

Prepared By:

Sam Li

Sam Li/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	Sep. 06, 2019	

1. General information

1.1. Description of Equipment

EUT* Name	: PROJECTOR WITH POWERFUL SPEAKER
Model Number	: PROJECTOR PLUS, PROJECTOR PA
Difference of model number	: Model PROJECTOR PLUS have built-in battery, Model PROJECTOR PA have no built-in battery and charging circuit, All models are identical except the appearance and model number, therefore the test performed on the model PROJECTOR PLUS.
EUT function description	: Please reference user manual of this device
Power supply	: Model PROJECTOR PLUS: DC 12V from external adapter or DC 11.1V from built-in battery Model PROJECTOR PA: DC 12V from external adapter
Radio Specification	: Bluetooth V5.0
Operation frequency	: 2402MHz-2480MHz
Modulation	: GFSK, $\pi/4$ -DQPSK
Data rate	: 1Mbps, 2Mbps
Antenna Type	: Integral PCB antenna, maximum PK gain: -0.68 dBi
Maximum tune-up tolerance	: 1dB
Sample Type	: Series production

1.2. Assess laboratory

Dongguan Dongdian Testing Service Co., Ltd.

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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 ²)	Averaging Time E ² , H ² 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

Mode	PK Output power (dBm)	Output power (mW)	Antenna Gain (dBi)	Antenna Gain (linear)	MPE Values (mW/cm ²)	MPE Limit (mW/cm ²)
Bluetooth Max power	2.19	1.66	-0.68	0.86	0.000284	1

Note: The estimation distance is 20cm

Conclusion: No SAR evaluation required since transmitter power is below FCC threshold

END OF REPORT