

# RF EXPOSURE REPORT

## FOR

<b>Applicant</b>	:	MODERN ELECTRONICS FACTORY LIMITED
<b>Address</b>	:	FLAT/RM C, BLK 4, 10/F., KWUN TONG INDUSTRIAL CENTRE, 436-446 KWUN TONG ROAD, KWUN TONG, HONG KONG.
<b>Equipment under Test</b>	:	Smart Android Wi-Fi Home Theater Projector
<b>Model No.</b>	:	PJ38, RPJ129, PJ129, SPJ129
<b>Trade Mark</b>	:	MET, RCA, PROSCAN, SYLVANIA, MODERN
<b>FCC ID</b>	:	2ANH7696PJ38
<b>Manufacturer</b>	:	MODERN ELECTRONICS FACTORY LIMITED
<b>Address</b>	:	FLAT/RM C, BLK 4, 10/F., KWUN TONG INDUSTRIAL CENTRE, 436-446 KWUN TONG ROAD, KWUN TONG, HONG KONG.

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

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# REPORT

# 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
- 2.1. Requirement .....5
- 2.2. Calculation Method .....6
- 2.3. Estimation Result.....6

## 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-R18031604-1E3		
<b>Date of Receipt:</b>	Apr. 04, 2018	<b>Date of Test:</b>	Apr. 04, 2018 ~ May 10, 2018

**Prepared By:**

*Sam Li*

**Sam Li/Engineer**

**Approved By:**



**Kevin Feng/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	May 15, 2018	

## 1. General information

### 1.1. Description of Equipment

EUT* Name	: Smart Android Wi-Fi Home Theater Projector
Model Number	: PJ38, RPJ129, PJ129, SPJ129
Difference of model number	: All models are identical except the model number, therefore the test performed on the model PJ38.
EUT function description	: Please reference user manual of this device
Power supply	: DC 36V from external AC Adapter
Radio Technology	: IEEE802.11b/g/n
FCC Operation frequency	: IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz IEEE 802.11n HT40: 2412MHz—2452MHz
Modulation	: 802.11b: CCK, DQPSK, DBPSK 802.11g: 64-QAM, 16-QAM, QPSK, BPSK 802.11n: 64-QAM, 16-QAM, QPSK, BPSK
Transmitter rate	: 802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: 150Mbps(MAX)
Spread Spectrum	: IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) IEEE 802.11g/n: OFDM (Orthogonal Frequency Division Multiplexing)
Antenna Type	: Integral antenna (Copper pipe): 2.4G band maximum PK gain 2dBi
Sample Type	: Series production

### 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: +86-0769-89201699, E-mail: ddt@dgddt.com, <http://www.dgddt.com>

CNAS Accreditation No. L6451; A2LA Accreditation No. 3870.01

## 2. RF Exposure evaluation for FCC

### 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

Mode	PK Output power (dBm)	Output power (mW)	Antenna Gain (numerical)	MPE Values (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
2.4G WIFI Max power	24.07	255.27	1.585	0.081	1

Note: The estimation distance is 20cm

Conclusion: No RF exposure evaluation is required.

**END OF REPORT**