

# RF Exposure Evaluation Report

**Product** : ESP-01M  
**Trade mark** : N/A  
**Model/Type reference** : ESP-01M  
**Serial Number** : N/A  
**Report Number** : EED32J00203502  
**FCC ID** : 2AHMR-ESP01M  
**Date of Issue** : Sep. 28, 2017  
47 CFR Part 1.1307  
**Test Standards** : 47 CFR Part 1.1310  
KDB 447498 D01v06  
**Test result** : PASS

Prepared for:

**Shenzhen Ai-Thinker Technology Co., LTD**  
**6/F, Block C2, Huafeng Industrial Park, Hangcheng**  
**Road, Baoan district, Shenzhen, China**

Prepared by:

**Centre Testing International Group Co., Ltd.**  
**Hongwei Industrial Zone, Bao'an 70 District,**  
**Shenzhen, Guangdong, China**

**TEL: +86-755-3368 3668**

**FAX: +86-755-3368 3385**

Tested By:

*Tom chen*

Tom chen (Test Project)

Compiled by:

*Kevin lan*

Kevin lan (Project Engineer)

Reviewed by:

*Kevin yang*

Kevin yang (Reviewer)

Approved by:

*Sheek Luo*

Sheek Luo (Lab supervisor)

Date:

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Check No.:3043801961



## 2 Version

Version No.	Date	Description
00	Sep. 28, 2017	Original

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## 4 General Information

### 4.1 Client Information

Applicant:	Shenzhen Ai-Thinker Technology Co., LTD
Address of Applicant:	6/F, Block C2, Huafeng Industrial Park, Hangcheng Road, Baoan district, Shenzhen, China
Manufacturer:	Shenzhen Ai-Thinker Technology Co., LTD
Address of Manufacturer:	6/F, Block C2, Huafeng Industrial Park, Hangcheng Road, Baoan district, Shenzhen, China
Factory:	Shenzhen Ai-Thinker Technology Co., LTD
Address of Factory:	6/F, Block C2, Huafeng Industrial Park, Hangcheng Road, Baoan district, Shenzhen, China

### 4.2 General Description of EUT

Product Name:	ESP-01M
Model No.:	ESP-01M
Trade Mark:	N/A
EUT Supports Radios application:	Wi-Fi: 802.11 b/g/n(20M) , 2412MHz-2462MHz
Power Supply:	DC 3.3V

### 4.3 Product Specification subjective to this standard

Modulation Type:	DSSS , OFDM
Antenna Type:	PCB Antenna
Antenna Gain:	3dBi
Test Voltage:	DC 3.3V
Sample Received Date:	Sep. 12, 2017
Sample tested Date:	Sep. 12, 2017 to Sep. 28, 2017
The tested sample and the sample information are provided by the client.	

### 4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101

Telephone: +86 (0) 755 3368 3668 Fax: +86 (0) 755 3368 3385

No tests were sub-contracted.

#### **4.5 Deviation from Standards**

None.

#### **4.6 Abnormalities from Standard Conditions**

None.

#### **4.7 Other Information Requested by the Customer**

None.



## 5 RF Exposure Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300 .....	27.5	0.073	0.2	30
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation:

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R= distance to the centre of radiation of the antenna

EIRP = P\*G

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user.

Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. Therefore, the S of the device is calculated with R=20cm, and if it is below the limits, then we can conclude the device complies with the rules.

#### 5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually.

**5.1.3 EUT RF Exposure Evaluation**

**Antenna Gain: 3dBi**

Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Frequency (MHz)	Max Conducted Peak Output Power(dBm)	Gain (dBi)	EIRP* (dBm)	EIRP (mW)	R (cm)	S (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
Lowest	2412	16.99	3	19.99	99.77	20	0.020	1.0	Pass

**Note:** Refer to report No. EED32J00203501 for EUT test Max Conducted Peak Output Power value.

## PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32J00203501 for EUT external and internal photos.

\*\*\* End of Report \*\*\*

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