



# FCC/ IC TEST REPORT

According to  
FCC CFR Title 47 Part 15 Subpart C (15.247)

Applicant	:	Hangzhou AiXiangJi Technology Co., Ltd
Address	:	Room 701, Building 3, More Center, No.87 GuDun Road, Hangzhou, China
Manufacturer	:	Hangzhou AiXiangJi Technology Co., Ltd
Address	:	Room 701, Building 3, More Center, No.87 GuDun Road, Hangzhou, China
Equipment	:	WiFi Module
Model No.	:	TYWE3S
Trade	:	TUYA
FCC ID	:	2AFNL-TYWE3S
Test Period	:	Aug.07,2017~Aug.09, 2017

■ The test result refers exclusively to the test presented test model / sample.

■ Without written approval of **CERPASS TECHNOLOGY CORPORATION TEST LABORATORY** the test report shall not be reproduced except in full.

■ The test report must not be used by the clients to claim product certification approval by **NVLAP** or any agency of the Government.

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.10 – 2013&FCC Part15.247** and the energy emitted by this equipment was **passed**.

Approved by:

Laboratory Accreditation:

  
Mark Liao / Assistant Manager



Cerpass Technology Corporation Test Laboratory

**NVLAP LAB Code:**

**200954-0**

**TAF LAB Code:**

**1439**



# Radio Frequency Exposure

## LIMIT

For 2.4G Band: According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

**EUT Specification**

<b>EUT</b>	WiFi Module
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )
<b>Antenna diversity</b>	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input checked="" type="checkbox"/> Tx/Rx diversity
<b>Max. output power for 2.4G Band</b>	IEEE802.11b: 22.09 dBm (0.1618W) IEEE802.11g: 22.34 dBm (0.1714W) IEEE802.11n HT20: 21.34 dBm (0.1361W)
<b>Antenna gain (Max)</b>	3dBi for 2.4G Band
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A

**Remark:**

1. The maximum output power is 22.34dBm (0.1714W) at 2437MHz (with numeric 2.00antenna gain.) for 2.4G band
2. DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.
3. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm<sup>2</sup> even if the calculation indicates that the power density would be larger.

\*Note: Simultaneous transmission is not applicable for this EUT.

**TEST RESULTS FOR 2.4G BAND**

No non-compliance noted.

**Calculation**

Given  $E = \frac{\sqrt{30 \times P \times G}}{d}$  &  $S = \frac{E^2}{3770}$

Where  $E$  = Field strength in Volts / meter

$P$  = Power in Watts

$G$  = Numeric antenna gain

$d$  = Distance in meters

$S$  = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where  $d$  = Distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>

**Maximum Permissible Exposure**

Modulation Mode	Frequency band (MHz)	Max. Conducted output power(dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
IEEE802.11b	2412-2462	22.09	3	20	0.06	1
IEEE802.11g	2412-2462	22.34	3	20	0.07	1
IEEE802.11n HT20	2412-2462	21.34	3	20	0.05	1