



# RF Exposure Evaluation Declaration

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**FCC ID:** 2AQVB-T19V0315

**APPLICANT:** Taisync Technology LLC

**Application Type:** Certification

**Product:** 2.4GHz HD Wireless Link

**Model No.:** WLN210-BM-a, WLN210-BM-b, WLN210-BM-c

**Brand Name:** TAISYNC

**FCC Classification:** Digital Transmission System (DTS)

**Test Procedure(s):** KDB 447498 D01v06

**Test Date:** March 01 ~ March 14, 2019

Reviewed By:

*Kevin Guo*

( Kevin Guo )

Approved By:

*Robin Wu*

( Robin Wu )



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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## Revision History

Report No.	Version	Description	Issue Date	Note
1902RSU015-U2	Rev. 01	Initial Report	03-15-2019	Valid

### §2.1033 General Information

<b>Applicant:</b>	Taisync Technology LLC
<b>Applicant Address:</b>	6th floor,75 E. Santa Clara St., San Jose, CA 95113
<b>Manufacturer:</b>	Taisync
<b>Manufacturer Address:</b>	B-702 ,Creative Park, NO.100 dicui road, Binhu District, Wuxi, Jiangsu, China
<b>Test Site:</b>	MRT Technology (Suzhou) Co., Ltd
<b>Test Site Address:</b>	D8 Building, No.2 Tian’edang Rd., Wuzhong Economic Development Zone, Suzhou, China
<b>FCC Registration No.:</b>	893164
<b>Test Device Serial No.:</b>	N/A <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

### Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian’edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



## 1. PRODUCT INFORMATION

### 1.1. Feature of Equipment under Test



Product Name:	2.4GHz HD Wireless Link
Model No.:	WLN210-BM-a, WLN210-BM-b, WLN210-BM-c
Brand Name:	TAISYNC
RF Specification:	2.4GHz
Working Voltage:	DC 5V

Note: Same of hardware and software between these models except the different size of metal shielding.

### 1.2. Product Specification Subjective to this Report

RF Specification (2.4GHz)	
Frequency Range:	2412 ~ 2472 MHz
Type of Modulation:	OFDM
Channel Bandwidth	2.5MHz / 10MHz
Data Rate:	Bandwidth 2.5MHz: 115200kbps Bandwidth 10MHz: 2.3 Mbps ~12Mbps

### 1.3. Description of Available Antennas

Antenna	Manufacturer	Frequency Band (GHz)	Antenna Name	Tx Paths
	airgain	2.4	RP-SMA Antenna	1Tx + 1Rx
	saixun	2.4	PCB Antenna	1Tx + 1Rx

Antenna Name	Frequency Band (GHz)	TX Paths	Max Peak Gain (dBi)
RP-SMA Antenna (Ant 1)	2.4 ~ 2.5	1	5.0
PCB Antenna (Ant 2)	2.4 ~ 2.5	1	2.0

Note: The device can only use the Ant 1 When it is working at 2.5MHz Bandwidth. This caution will be described in Operational description and User manual of this device by manufacturer.

## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: 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 1.1307(b)

#### 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> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

r = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

## 2.2. Test Result of RF Exposure Evaluation

Product	2.4GHz HD Wireless Link
Test Item	RF Exposure Evaluation

Test Mode / Bandwidth	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
<b>Ant 1</b>				
10MHz	2412 ~ 2472	24.57	0.0570	1
2.5MHz	2412 ~ 2472	25.31	0.0676	1
<b>Ant 2</b>				
2.5MHz	2412 ~ 2472	24.03	0.0503	1

Note 1: It will be by a RF cable (Cable loss = 1.2dB) if Ant 1 needs to connect to device.

So  $EIRP_{Ant\ 1} (dBm) = \text{Conducted Power}(dBm) + \text{Peak Gain}_{Ant\ 1}(dBi) - \text{RF Cable Loss}(dB)$

Note 2:  $EIRP_{Ant\ 2} (dBm) = \text{Conducted Power}(dBm) + \text{Peak Gain}_{Ant\ 2}(dBi)$

### CONCLUSION:

The max Power Density at R (20 cm) = 0.0676mW/cm<sup>2</sup> < 1 mW/cm<sup>2</sup> for 2.4G Radio Frequency..

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## **Appendix A – EUT Photograph**

Refer to “1902RSU015-UE” file.