

## MPE Test Report

**Report No.:** CMJP-ESH-P23090618B-3

**FCC ID:** 2BDAX-X-C13SG

**Product:** Wi-Fi Module

**Model:** X-C13SG(X-C13SG-1, X-C13SG-0)

**Received Date:** Oct.09, 2023

**Test Date:** Oct.09 to Nov.15, 2023

**Issued Date:** Nov.16, 2023

**Applicant:** Suzhou RaymonIoT Technology Co., Ltd.

**Address:** No.16, North Chajiang Road, Xinzhuang Town, Changshu City, Suzhou, China

**Manufacturer:** Suzhou RaymonIoT Technology Co., Ltd.

**Address:** No.16, North Chajiang Road, Xinzhuang Town, Changshu City, Suzhou, China

**Issued By:** BUREAU VERITAS ADT (Shanghai) Corporation

**Lab Address:** No. 829, Xinzhuang Road, Shanghai, P.R.China (201612)

**FCC Registration /  
Designation Number:** 176467/ CN1213



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### Release Control Record

Issue No.	Description	Date Issued
CMJP-ESH-P23090618B-3	Original release	Nov.16, 2023



## 1 Certificate of Conformity

**Product:** Wi-Fi Module

**Brand:** --

**Model:** X-C13SG(X-C13SG-1, X-C13SG-0)

**Applicant:** Suzhou RaymonIoT Technology Co., Ltd.

**Test Date:** Oct.09 to Nov.15, 2023

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-2019

The above equipment has been tested by **BUREAU VERITAS ADT (Shanghai) Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :**

, **Date:**

Nov.16, 2023

Yan ZHOU

Project Engineer

**Approved by :**



Sean YU

RF Supervisor

, **Date:**

Nov.16, 2023

## 2 General Information

### 2.1 General Description of EUT

Wi-Fi:

Product	Wi-Fi Module
Brand	--
Test Model	X-C13SG(X-C13SG-1, X-C13SG-0)
Power Rating	DC 2.7~3.6V
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Operating Frequency	2412MHz-2462MHz
Number of Channel	802.11b, 802.11g and 802.11n (HT20):11
Antenna Type	PIFA
Antenna Connector	--
Antenna Gain	4.3 dBi

Note:

1. For more details, please refer to the User's manual of the EUT.

BLE:

Product	Wi-Fi Module
Brand	--
Test Model	X-C13SG(X-C13SG-1, X-C13SG-0)
Power Rating	DC 2.7~3.6V
Modulation Type	GFSK
Modulation Technology	Bluetooth Low Energy 5.0
Operating Frequency	2402MHz ~ 2480MHz
Number of Channel	40
Antenna Type	PIFA
Antenna Connector	--
Antenna Gain	4.5 dBi

Note:

1. For more details, please refer to the User's manual of the EUT.

## 2.2 Description of Support Unit

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	RATING
Adaptor	I.T.E. AV POWER SUPPLY	KA06E-0501000US	NA	100-240V~ 50/60Hz 0.25A Max

### 3 RF Exposure

#### 3.1 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> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1,500	-	-	F/1500	30
1,500-100,000	-	-	1.0	30

F = Frequency in MHz

#### 3.2 MPE Calculation Formula

Power density (S) is calculated according to the formula:

$$S = PG / (4\pi R^2)$$

Where S = power density in mW/cm<sup>2</sup>

P = transmit power in mW

G = numeric gain of transmit antenna (numeric gain=Log-1(dB antenna gain/10))

R = distance (cm)

#### 3.3 MPE Calculation Formula

The antenna of this product, under normal use condition, is at least 20cm from the body of the user. So the device is classified as Mobile Device.

#### 3.4 Calculation Result of Maximum Permissible Exposure

Frequency Band (MHz)	Max. Conducted output power(dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN 2.4GHz					
2412-2462	12.23	4.3	20	0.0090	1
BLE 5.0					
2402-2480	4.25	4.5	20	0.0015	1
WLAN 2.4GHz + BLE 5.0					
2412-2462	12.23	4.3	20	0.0105	1
2402-2480	4.25	4.5			

#### Conclusion:

The calculation result of MPE is less than the limit.

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