



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 Chajiabang Road, Xinzhuang Town, Changshu City, Suzhou, China

Manufacturer: Suzhou RaymonIoT Technology Co., Ltd.

Address: No.16, North Chajiabang 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 :

A handwritten signature in black ink, appearing to read 'Yan Zhou'.

, Date:

Nov.16, 2023

Yan ZHOU

Project Engineer

Approved by :



, Date:

Nov.16, 2023

Sean YU



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 ²)	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/cm²

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 ²)	Limit (mW/cm ²)
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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