

MPE TEST REPORT

Report No.: SHE21120050-02CE

Date: 2022-01-24

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Applicant : Shanghai XinMiaoLink Technology Co., Ltd.
Address of Applicant : Floor 1, building 28, No. 6055, Jinhai highway, Fengxian District, Shanghai, China

Product Name : Wi-Fi&BLE Module
Model No. : X-C13SM-0, X-C13SM-1
Sample No. : E21120050-02#01
FCC ID : 2A3M5-X-C13SM

Standards : FCC Part 2.1093
OET Bulletin 65 Edition 97-01 June 2001

Date of Receipt : 2021-12-15
Date of Test : 2021-12-16 ~ 2022-01-24
Date of Issue : 2022-01-24

Remark:

This report details the results of the testing carried out on one sample, the results contained in this report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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1 General Information

1.1 Testing Laboratory

Company Name	ICAS Testing Technology Services (Shanghai) Co., Ltd.
Address	No.1298 Pingan Rd, Minhang District, Shanghai, China
Telephone	0086 21-51682999
Fax	0086 21-54711112
Homepage	www.icasiso.com

1.2 Environmental conditions

Temperature (°C)	18-25
Humidity (%RH)	40-65
Barometric Pressure (mbar)	960-1060
Ambient noise & Reflection (W/kg)	< 0.012

1.3 Details of Application

Applicant Company Name	Shanghai XinMiaoLink Technology Co., Ltd.
Address	Floor 1, building 28, No. 6055, Jinhai highway, Fengxian District, Shanghai, China
Contact Person	Yue liren
Telephone	13818419836
Email	tomas@chipfresh.com
Manufacturer Company Name	Shanghai XinMiaoLink Technology Co., Ltd.
Address	Floor 1, building 28, No. 6055, Jinhai highway, Fengxian District, Shanghai, China

1.4 Details of EUT

Product Name	Wi-Fi&BLE Module
Brand Name	N/A
Test Model No.	X-C13SM-0
Series Model No.	X-C13SM-1
FCC ID	2A3M5-X-C13SG-0
Mode of Operation	WLAN 802.11b/g/n(HT20);Bluetooth BLE
Frequency Range	2400MHz ~ 2483.5MHz
Modulation Type	DSSS, OFDM, GFSK
Antenna Type	X-C13SM-0 Model: External antenna X-C13SM-1 Model: PCB antenna
Antenna Gain	X-C13SM-0 Model: 3dBi X-C13SM-1 Model: 2dBi

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Hardware version	V1.0
Software version	V1.00.10

Note(s):All applicable tests as described in test case and measurement sections were performed on model TC22H1.

2 Maximum Permissible Exposure (MPE)

2.1 Limits

According to FCC Part 1.1307, systems operating under the provisions of this section shall be operated in a manner the ensures that the public is not exposed to radio frequency energy level in excess of the commission's guidelines.

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 ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

2.2 Assessment methods

Calculation Formula from FCC OET 65:

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

Where:

S = Power Density (mW/cm²)

P = Input Power of the Antenna (mW)

G = Antenna Gain Relative to an Isotropic Antenna

R = Distance from the Antenna to the Point of Investigation (cm)

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2.3 Test Result

Operation Mode	Frequency Range (MHz)	Max Conducted Power (dBm)	Antenna Gain (dBi)	Max EIRP (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Result
WLAN 2.4GHz	2400 ~ 2483.5	16.75	3.00	87.50	0.0188	1.0	Pass
BLE	2400 ~ 2483.5	7.46	3.00	13.84	0.0022	1.0	Pass

Note(s):

The device can not transmit with WIFI and BT simultaneously, so MPE is not evaluated in this configuration.

For 300 – 1,500MHz: Power Density limit is $f/1500$ mW/cm²

For 1,500 – 100,000MHz: Power Density limit is 1.0 mW/cm²

2.4 Conclusion

The Power Density at the position which is 20 cm far from the EUT is smaller than the General Population/Uncontrolled Exposure limit.

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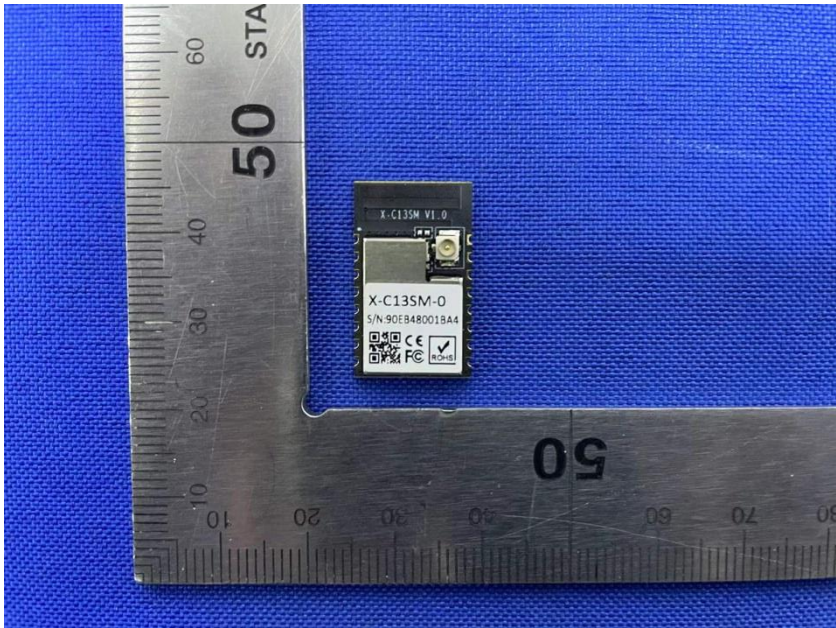
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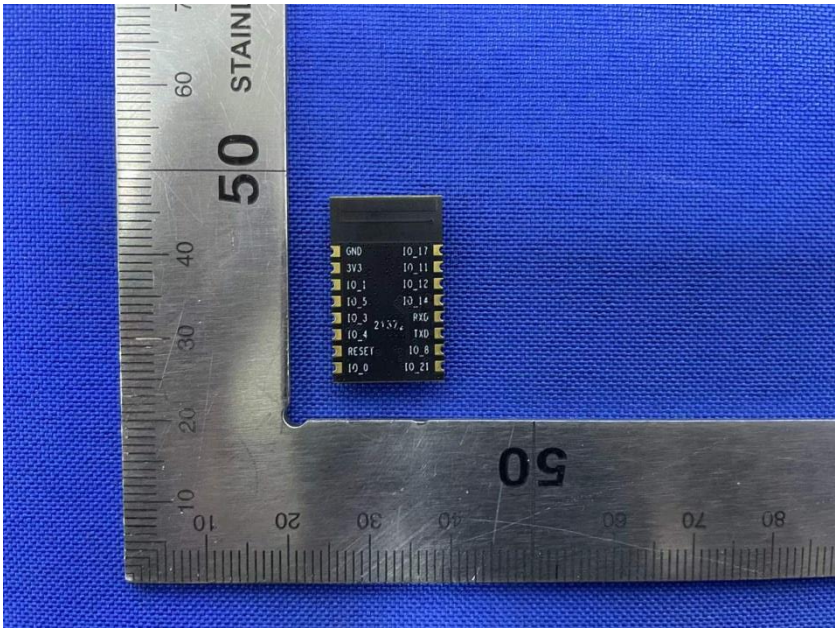
3 Appendixes

3.1 Sample Photograph

X-C13SM-0 Model



Front of the sample



Rear of the sample

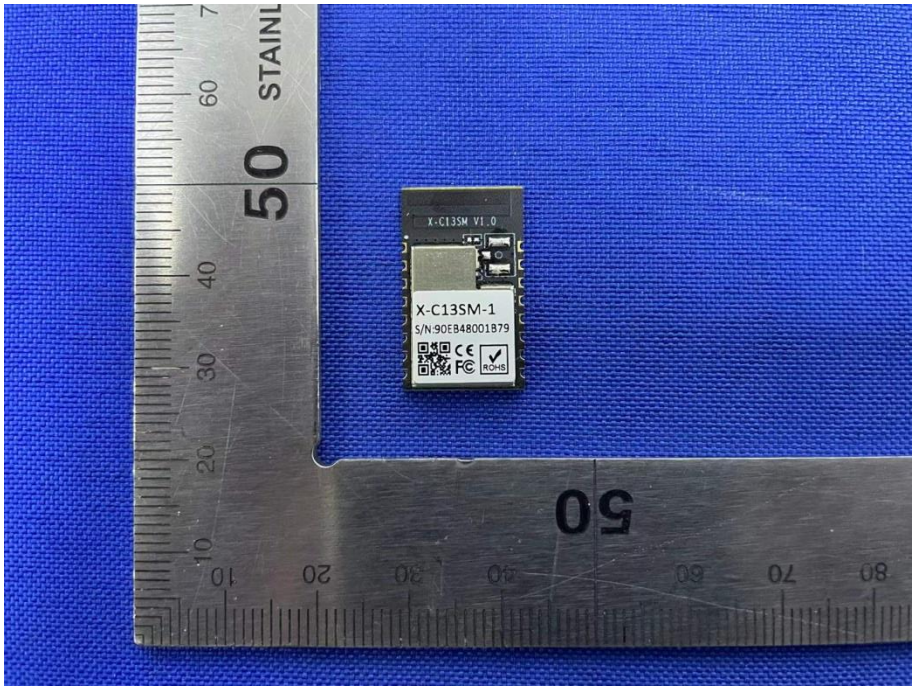
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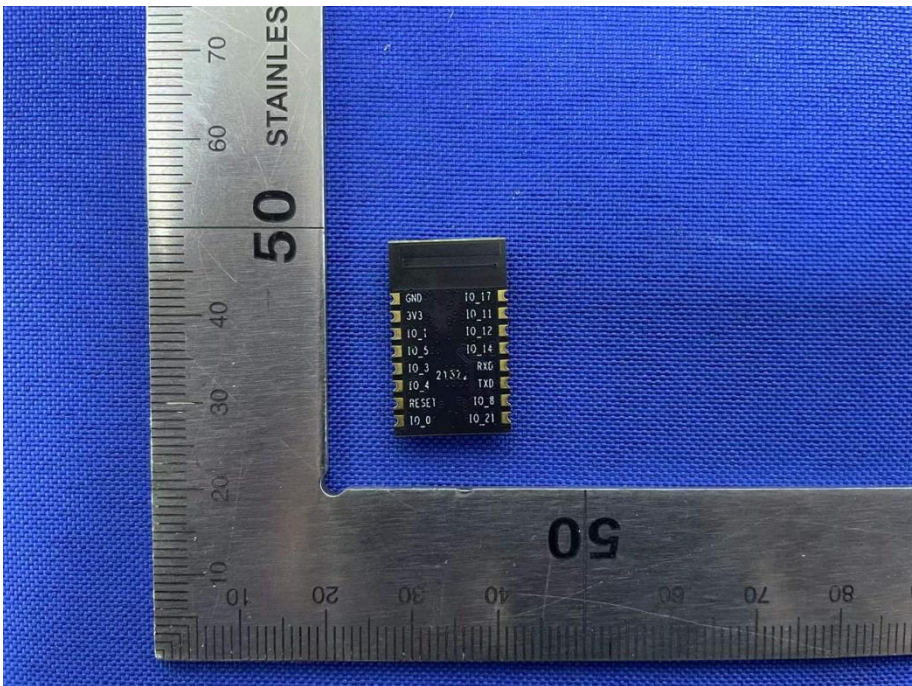
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X-C13SM-1 Model



Front of the sample



Rear of the sample

End of the report