

RF Exposure Evaluation Declaration

Report No.: S20250424832202E03

Issue Date: 06-13-2025

Applicant: Shanghai MXCHIP Information Technology Co., Ltd

Address: 9th Floor, No.5, Lane 2145, JinshaJiang Road, Putuo District, Shanghai, China(200333)

FCC ID: P53-EMC3186

Application Type: Certification

Product: Embedded Wi-Fi/BLE Module

Model No.: EMC3186-E

Trade Mark: **MXCHIP**

FCC Rule Part(s): CFR 47, FCC Part 2.1091 Radio frequency radiation exposure evaluation: mobile devices.

Item Receipt date: Apr. 24, 2025

Test Date: Apr. 26 ~ May. 26, 2025

Compiled By Stone Zhang.
(Stone Zhang)
Senior Test Engineer

Approved By Line Chen
(Line Chen)
Engineer Manager



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 558074 D01. Test results reported herein relate only to the item(s) tested.

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The test report must not be used by the client to claim product certifications, approval, or endorsement by NVLAP, NIST or any agency of U.S. Government.

Revision History

Report No.	Version	Description	Issue Date
S20250424832202E03	Rev. 01	/	06-13-2025

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§2.1033 General Information

Applicant:	Shanghai MXCHIP Information Technology Co., Ltd
Applicant Address:	9th Floor, No.5, Lane 2145, JinshaJiang Road, Putuo District, Shanghai, China(200333)
Manufacturer:	Shanghai MXCHIP Information Technology Co., Ltd
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Factory:	Chengdu Xuguang Technology Co., Ltd
Factory Address:	No.86, Section 2, Gongyuan Road, Longquan Town, Chengdu, Sichuan, China.
Test Site:	Fanguang Inspection & Testing Co., Ltd.
LAB ID:	CN5037
Test Site Address:	No.8 Ningyun Rd., Xinwu District Wuxi, Jiangsu 214000 China
FCC Rule Part(s):	FCC Part 2.1091
FCC ID:	P53-EMC3186
Test Device Serial No.:	S/N.: / ☐ Production ☒ Pre-Production ☐ Engineering

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	Embedded Wi-Fi/BLE Module
Test Model:	EMC3186-E
Trade Mark:	MXCHIP
Input Voltage Range:	DC 3.3V
Software Version:	A245
Hardware Version:	1.0
EUT sample number:	S20250424832202-1-1/-1-2

Note: This information is provided by the Customer and its authenticity is the responsibility of the Customer.

1.2. Product Specification Subjective to this Report

Operating Frequency	BLE: 2402~2480MHz 802.11b/g/n-HT20: 2412 ~ 2462MHz
Number of Channels	BLE: 40 802.11b/g/n-HT20: 11
Channel Spacing	BLE: 2MHz 802.11b/g/n-HT20: 5MHz
Type of modulation	BLE: GFSK 802.11g/n-HT20: OFDM
Antenna Type:	Copper tube Antenna
Antenna Gain:	2.0dBi

Note: The maximum Antenna Gain was declared by the 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 ²)	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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is the limit of MPE, 1mW/cm². 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.

For simultaneous transmission exposure cases, calculation formula is:

$$\sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

2.2. Calculation Method

Temperature:	26.3 °C
Relative Humidity:	36 %
ATM Pressure:	101.6 kPa
Test Data:	2025-05-26
Test Engineer:	Stone Zhang

Product	Embedded Wi-Fi/BLE Module
Test Item	RF Exposure Evaluation

Mode	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Antenna Gain (dBi)	PG		MPE (mW/cm ²)	MPE Limits (mW/cm ²)
				(dBm)	(mW)		
BLE	2480	6.82	2.0	8.82	7.62	0.0015	1.00
802.11b	2462	19.06	2.0	21.06	127.64	0.0254	1.00

Remark: 1. MPE use distance is 20cm from manufacturer declaration of user manual.

Remark: 2. Use the maximum gain of all bands when evaluating.

Remark: 3. For simultaneous transmission is BLE and WLAN (worst case).

$$\sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} = 0.0015 + 0.0254 = 0.0269 < 1.$$

CONCULISON:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

Statement

1. This report is invalid for the following states: without the special inspection and testing stamp or the official stamp of our institution; without the signature of the report authorized officer; if the report is altered.
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3. The client shall provide the test sample(s) and commission information and be responsible for their authenticity.
4. The report content is only applicable to the tested sample(s) this time.
5. If there are any objections to the report content, please submit them to our company in writing within 15 days from the date of receiving the report.
6. If the reports include both Chinese and English versions, when there are any inconsistencies caused by language, the Chinese version shall prevail.
7. Information about laboratory sites involved in our company:

No.2, Fangda Road, Yunpu Industrial Zone, Huangpu District, Guangzhou, Guangdong, China (Huangpu Laboratory)

Building 2 and Building 3, GRGTest Science and Technology Industrial Park, No.8, Chuangyun Road, Panyu District, Guangzhou, Guangdong, China (Panyu Laboratory)

Building G9, China Sensor Network International Innovation Park, No.200, Linghu Avenue, Wuxi, Jiangsu, China (Wuxi Innovation Park Laboratory)

Building 3, Maoxuan Industrial Park, No.81, Jinma Road, Hongshan Subdistrict, Xinwu District, Wuxi, Jiangsu, China (Maoxuan Industrial Park Laboratory)

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