



## RF Exposure Evaluation Declaration

Report No.: S20231030848504

Issue Date: 12-14-2023

**Applicant:** Shanghai MXCHIP Information Technology Co., Ltd  
**Address:** 9th Floor, Building B, Lane 2145, Jinsha Jiang Road,  
Putuo District, Shanghai  
**FCC ID:** P53-EMC6069  
**Product:** 2.4GHz Wi-Fi/BLE Module  
**Model No.:** EMC6069-P  
**Trade Mark:** MXCHIP  
**FCC Rule Part(s):** CFR 47, FCC Part 2.1091 Radio frequency radiation  
exposure evaluation: mobile devices.  
**Item Receipt date:** Nov. 01, 2023  
**Test Date:** Nov. 13~ Dec. 01, 2023

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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.

The test report shall not be reproduced except in full without the written approval of Fangguang Inspection & Testing Co., Ltd. Wuxi Branch

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 |
|-----------------|---------|-------------|------------|
| S20231030848504 | Rev. 01 | /           | 12-14-2023 |

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

|                      |                             |
|----------------------|-----------------------------|
| Product Name:        | 2.4GHz Wi-Fi /BLE Module    |
| Model Name:          | EMC6069-P                   |
| Trade Mark:          | MXCHIP                      |
| Input Voltage Range: | DC 3.3V                     |
| Wi-Fi Specification: | 802.11b/g/n20/n40/ax20/ax40 |
| Bluetooth Version:   | 5.0                         |

### 1.2. Product Specification Subjective to this Report

|                     |                                                                                                                                |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range:    | 802.11b/g/n20/ax20: 2412 ~ 2462MHz<br>802.11n40/ax40:2422 ~ 2452MHz<br>BLE:2402~2480MHz                                        |
| Channel Number:     | 802.11b/g/n20/ax20: 11<br>802.11n40/ax40:7<br>BLE:40                                                                           |
| Type of Modulation: | 802.11b: DSSS<br>802.11g/n/ax: OFDM<br>BLE:GFSK                                                                                |
| Data Rate:          | 802.11b: 1/2/5.5/11Mbps<br>802.11g: 6/9/12/18/24/36/48/54Mbps<br>802.11n: MCS0~MCS7<br>802.11ax: MCS0~MCS11<br>BLE:1Mbps/2Mbps |
| Antenna Type:       | PCB antenna                                                                                                                    |
| Antenna Gain:       | 2dBi                                                                                                                           |

## 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<br>(MHz)                                  | Electric Field<br>Strength (V/m) | Magnetic Field<br>Strength (A/m) | Power Density<br>(mW/cm <sup>2</sup> ) | Average Time<br>(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/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 Wi-Fi/BLE Module |
| Test Item | RF Exposure Evaluation  |

| Mode | Frequency<br>(MHz) | Maximum<br>Conducted<br>OutputPower<br>(dBm) | Antenna<br>Gain<br>(dBi) | PG    |       | MPE<br>(mW/cm <sup>2</sup> ) | MPE<br>Limits<br>(mW/cm <sup>2</sup> ) |
|------|--------------------|----------------------------------------------|--------------------------|-------|-------|------------------------------|----------------------------------------|
|      |                    |                                              |                          | (dBm) | (mW)  |                              |                                        |
| WIFI | 2412~2462          | 19.55                                        | 2                        | 21.55 | 142.9 | 0.03                         | 1.00                                   |
| BLE  | 2402~2480          | 6.08                                         | 2                        | 8.08  | 4.1   | 0.0008                       | 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

### CONCULISON:

The Max Power Density at R (20 cm) =  $0.02\text{mW/cm}^2 < 1\text{mW/cm}^2$ .

So the EUT complies with the requirement.

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