



RF Exposure Evaluation Declaration

Report No.: S20240603102301E03 Issue Date: 07-30-2024

Applicant: Shanghai MXCHIP Information Technology Co., Ltd

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FCC ID: P53-EMC6083

Certification Application Type:

Product: 2.4GHz Wi-Fi/BLE Module

Model No.: EMC6083-E

MXCHIP® Trade Mark:

CFR 47, FCC Part 2.1091 Radio frequency radiation

FCC Rule Part(s): exposure evaluation: mobile devices.

Item Receipt date: Jun 03, 2024

Test Date: Jun 05 ~ Jul 09, 2024

Compiled By

(Stone Zhang) Senior Test Engineer

Approved By

(Line Chen)

Engineer Manage

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

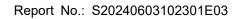
The test report must not be used by the client to claim product certifications, approval, or endorsement by NVLAP, NIST or any agency of U.S. Government.

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Revision History

Report No.	Version	Description	Issue Date
S20240603102301E03	Rev. 01	1	07-30-2024





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1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	2.4GHz Wi-Fi/BLE Module
Model Name:	EMC6083-E
Trade Mark:	MXCHIP®
Input Voltage Range:	DC3.3V 300mA

1.2. Product Specification Subjective to this Report

Antenna Gain:	2dBi			
Antenna Type:	PCB Antenna			
	802.11ax-HE20: MCS0~MCS11			
	802.11n-HT20: MCS0~MCS7			
	802.11g: 6/9/12/18/24/36/48/54Mbps			
	802.11b: 1/2/5.5/11Mbps			
Data Rate:	BLE:1Mbps			
	802.11b/g/n-HT20/ax-HE20: 2412 ~ 2462MHz			
	BLE_2M: 2404~2478MHz			
Frequency Range:	BLE_1M:2402~2480MHz			



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	Electric Field	Magnetic Field	Power Density	Average Time		
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm ²)	(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		6		
1500-100,000			1	30		

f= Frequency in MHz

Calculation Formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm²

Pout = 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

Pd 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.



2.2. Calculation Method

Product	2.4GHz Wi-Fi/BLE Module
Test Item	RF Exposure Evaluation

Mode	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Antenna Gain (dBi)	(dBm)	G (mW)	MPE (mW/cm²)	MPE Limits (mW/cm²)
WLAN	2412 - 2462	19.87	2	21.87	153.82	0.31	1.00
BLE	2402 - 2480	5.58	2	7.58	5.73	0.01	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 measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

