

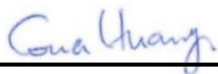
# RF EXPOSURE EVALUATION REPORT

FCC ID : 2A3G3-WMU721X  
Equipment : Wi-Fi 802.11ax 2x2 Tri-band Module  
Brand Name : Emwicon  
Model Name : WMU721X (X=2,3,4,5,6,7)  
Applicant : Emwicon Corporation  
7F.-5, No. 258, Liancheng Rd., Zhonghe Dist.,  
New Taipei City 235, Taiwan (R.O.C.)  
Manufacturer : Emwicon Corporation  
7F.-5, No. 258, Liancheng Rd., Zhonghe Dist.,  
New Taipei City 235, Taiwan (R.O.C.)  
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full.



Approved by: Cona Huang / Deputy Manager



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## History of this test report

Report No.	Version	Description	Issued Date
FA450901	Rev. 01	Initial issue of report	Oct. 15, 2024

**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
EUT Type	Wi-Fi 802.11ax 2x2 Tri-band Module
Brand Name	Emwicon
Model Name	WMU721X (X=2,3,4,5,6,7)
FCC ID	2A3G3-WMU721X
Wireless Technology and Frequency Range	WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz WLAN 5.9 GHz Band: 5850 MHz ~ 5895 MHz WLAN 6E: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
HW Version	Rev.2
SW Version	5001.19.102.1

**Reviewed by: Jason Wang****Report Producer: Carlie Tsai****2. Maximum RF average output power among production units**

Band / Mode	Bluetooth 2.4GHz	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz (LPI)
Tune-up Limit (dBm)	5	22	22	12



### **3. RF Exposure Limit Introduction**

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



## **4. Radio Frequency Radiation Exposure Evaluation**

### **4.1. Standalone Power Density Calculation**

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum PG (mW)	Power Density at 20cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Power Density / Limit
WLAN2.4GHz Band	2.79	22.00	24.8	301.30	0.060	1.000	0.060
WLAN5GHz Band	4.92	22.00	26.9	492.04	0.098	1.000	0.098
WLAN6GHz Band	5.75	12.00	17.8	59.57	0.012	1.000	0.012
Bluetooth	2.79	5.00	7.8	6.01	0.001	1.000	0.001

### **4.2. Collocated Power Density Calculation**

WLAN Power Density / Limit	Bluetooth Power Density / Limit	$\Sigma$ (Power Density / Limit) of WLAN + Bluetooth
0.098	0.001	0.099

**Note:**

1.  $\Sigma$  (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WLAN + Bluetooth.
2. Considering the WLAN module collocation with the Bluetooth transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant.

## **Conclusion:**

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.