


FCC RF EXPOSURE REPORT

FCC ID: 2A22E-WWYLWRAX1800

Equipment : AX1800 Wi-Fi 6 Router
Model No. : WRAX1800, AX1800, AX1800P, WQAX1800, WEAX1800 (the last X=A-Z or a-z, which indicates for different appearance, dimension and color.)
Trademark : N/A
Product No. : T221230043-L1-S001
Applicant : Micronet Union Technology(Chengdu) Co., Ltd
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Manufacturer : Micronet Union Technology(Chengdu) Co., Ltd
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Receipt Date : 2023.07.24
Issued Date : 2023.08.16
Test Sample : Final Sample
Standard(s) : FCC 47 CFR Part 1.1310 & FCC 47 CFR Part 2.1091

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1. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

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

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Table for Filed Antenna

For 2.4GWiFi

EUT	Antenna gain	Antenna Type
EUT1/EUT2/EUT3/EUT4/EUT5/EUT6/EUT7	Ant1: 5.25dBi, Ant2: 5.32dBi,	Integral antenna
EUT8/EUT9	Ant1: 4.32dBi, Ant2: 4.32dBi,	Integral antenna

For 5GWiFi

EUT	Antenna gain	Antenna Type
EUT1/EUT2/EUT3/EUT4/EUT5/EUT6/EUT7	Ant1: 5.20dBi, Ant2: 5.26dBi,	Integral antenna
EUT8/EUT9	Ant1: 4.88dBi, Ant2: 6.66dBi,	Integral antenna

2. TEST RESULTS

Worst case as below

For EUT1/EUT2/EUT3/EUT4/EUT5/EUT6/EUT7

Operating Mode	Freq.	Maximum conducted output power	Max. positive tolerance according manufacturer	Directional Antenna Gain	Calculated maximum EIRP		MPE Limit	MPE Value
	(MHz)				(dBm)	(dBm)		
2.4G Wifi ant1	2412-2462	16.72	1	5.25	22.97	198.15	1	0.0394
2.4G Wifi ant2	2412-2462	14.75	1	5.32	21.07	127.94	1	0.0255
5G Wifi ant1	5180-5825	17.89	1	5.20	23.09	203.70	1	0.0405
5G Wifi ant2	5180-5825	17.70	1	5.26	23.96	248.89	1	0.0495

For EUT8/EUT9

Operating Mode	Freq.	Maximum conducted output power	Max. positive tolerance according manufacturer	Directional Antenna Gain	Calculated maximum EIRP		MPE Limit	MPE Value
	(MHz)				(dBm)	(dBm)		
2.4G Wifi ant1	2412-2462	16.72	1	4.32	22.04	159.96	1	0.0318
2.4G Wifi ant2	2412-2462	14.75	1	4.32	20.07	101.62	1	0.0202
5G Wifi ant1	5180-5825	17.89	1	4.88	23.77	238.23	1	0.0474
5G Wifi ant2	5180-5825	17.70	1	6.66	25.36	343.56	1	0.0683

Note: 1. The calculated distance is 20 cm.

2. The 2.4G Wifi function can transmit at the same time with the 5G Wifi function

Simultaneous transmitting consideration

For EUT1/EUT2/EUT3/EUT4/EUT5/EUT6/EUT7

The ratio= $MPE_{2.4G\ Wifi\ ant1}/limit + MPE_{2.4G\ Wifi\ ant2}/limit + MPE_{5G\ Wifi\ ant2}/limit = 0.0394/1 + 0.0255/1 + 0.0495/1 = 0.1144 < 1.0$

For EUT8/EUT9

The ratio= $MPE_{2.4G\ Wifi\ ant1}/limit + MPE_{2.4G\ Wifi\ ant2}/limit + MPE_{5G\ Wifi\ ant2}/limit = 0.0318/1 + 0.0202/1 + 0.0683/1 = 0.1203 < 1.0$

Result: Complies

(END OF REPORT)