

FCC RF EXPOSURE REPORT

FCC ID: 2AIMRRD12

Report No. : eLab-FCCP-4-2312C025B
Equipment : Xiaomi Router AX1500
Brand Name : Xiaomi
Test Model : RD12
Series Model : N/A
Applicant : Beijing Xiaomi Electronics Co., Ltd.

Radio Function : WLAN 2.4 GHz, WLAN 5 GHz (UNII-1, UNII-2A, UNII-2C, UNII-3)

FCC Rule Part(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091

Date of Receipt : 2024/03/11
Date of Test : 2024/03/11 ~ 2024/03/22
Issued Date : 2024/03/27

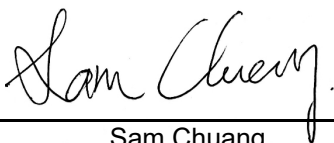
The above equipment has been tested and found compliance with the requirement of the relative standards by eLab Inc.

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
eLab-FCCP-4-2312C025B	R00	Original Report.	2024/03/25	Invalid
eLab-FCCP-4-2312C025B	R01	Updated the description of antenna and calculated results.	2024/03/27	Valid

1. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi^3} = \frac{EIRP}{4\pi^3}$$

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

2. ANTENNA SPECIFICATION



For WLAN 2.4 GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	 South star	N/A	Dipole	N/A	2.51
2	 South star	N/A	Dipole	N/A	2.46

Note:

- 1) This EUT supports SISO and MIMO, any transmit signals are correlated with each other, so Directional gain=10log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})²/N]dBi, that is Directional gain=10log[(10^{2.51/20}+10^{2.46/20})²/2]dBi=5.50.
- 2) The antenna gain is provided by the manufacturer.

For WLAN 5 GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	 South star	3.N102.1161	Dipole	N/A	2.46
2	 South star	3.N102.1160	Dipole	N/A	2.48

Note:

- 3) This EUT supports SISO and MIMO, any transmit signals are correlated with each other, so Directional gain=10log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})²/N]dBi, that is Directional gain=10log[(10^{2.46/20}+10^{2.48/20})²/2]dBi=5.48.
- 4) The antenna gain is provided by the manufacturer.

3. TABLE FOR ANTENNA CONFIGURATION

For WLAN 2.4 GHz:

Operating Mode / TX Mode	1TX	2TX
IEEE 802.11b	V (Ant. 1)	-
IEEE 802.11g	V (Ant. 1)	-
IEEE 802.11n(HT20)	-	V(Ant. 1 + Ant. 2)
IEEE 802.11n(HT40)	-	V(Ant. 1 + Ant. 2)

For WLAN 5 GHz:

Operating Mode / TX Mode	1TX	2TX
IEEE 802.11a	V (Ant. 1)	-
IEEE 802.11n (HT20)	-	V(Ant. 1 + Ant. 2)
IEEE 802.11n (HT40)	-	V(Ant. 1 + Ant. 2)
IEEE 802.11ac (VHT20)	-	V(Ant. 1 + Ant. 2)
IEEE 802.11ac (VHT40)	-	V(Ant. 1 + Ant. 2)
IEEE 802.11ac (VHT80)	-	V(Ant. 1 + Ant. 2)
IEEE 802.11ax (HE20)	-	V(Ant. 1 + Ant. 2)
IEEE 802.11ax (HE40)	-	V(Ant. 1 + Ant. 2)
IEEE 802.11ax (HE80)	-	V(Ant. 1 + Ant. 2)

4. CALCULATED RESULT

For WLAN 2.4 GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5.50	3.5481	22.28	169.0441	0.11939	1	Complies

For WLAN 5 GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5.48	3.5318	23.10	204.1738	0.14353	1	Complies

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
WLAN 2.4 GHz	WLAN 5 GHz			
0.11939	0.14353	0.26292	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report