

FCC RF EXPOSURE REPORT

FCC ID: 2AFZZR4AC

Project No. : 2103C213
Equipment : Mi Router 4A
Brand Name : MI
Test Model : R4AC
Series Model : N/A
Applicant : Xiaomi Communications Co.,Ltd
Address : #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China
Manufacturer : Xiaomi Communications Co.,Ltd
Address : #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China
Factory : Huizhou MTN WEIYE Technology Development Co.,Ltd
Address : No.2 Huitai Road,Huinan High-tech Industrial Park,Huiao Avenue,Huizhou City,Guangdong Province,China. 516000
Date of Receipt : Mar. 31, 2021
Date of Test : Apr. 06, 2021 ~ Jul. 17, 2021
Issued Date : Jul. 23, 2021
Report Version : R00
Test Sample : Engineering Sample No.: DG2021062350
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

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



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TESTING CERT #5123.02

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue	Jul. 23, 2021

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town, Dongguan City, Guangdong, People's Republic of China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

2. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

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

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

Antenna Specification:





For 2.4GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	 South star	N12-7460-R0A	Dipole	N/A	6.06
2	 South star	N12-7461-R0A	Dipole	N/A	6.05

Note:

- This EUT supports CDD, and all antenna gains are not equal. Then, Directional gain=10log[(10^{G₁/20}+10^{G₂/20}+...10^{G_N/20})²/N]dBi, that is Directional gain=10log[(10^{6.06/20}+10^{6.05/20})²/2]dBi=9.07. So, the output power limit is 30-(9.07-6)=26.93, the power spectral density limit is 8-(9.07-6)=4.93.
- The antenna gain is provided by the manufacturer.

For 5GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	Note
1	 South star	N12-7462-R0A	Dipole	N/A	5.77	UNII-1
2	 South star	N12-7463-R0A	Dipole	N/A	5.13	
1	 South star	N12-7462-R0A	Dipole	N/A	5.76	UNII-3
2	 South star	N12-7463-R0A	Dipole	N/A	5.26	

Note:

- This EUT supports CDD, and all antenna gains are not equal. Then, Directional gain=10log[(10^{G₁/20}+10^{G₂/20}+...10^{G_N/20})²/N]dBi.
 For UNII-1: Directional gain=10log[(10^{5.77/20}+10^{5.13/20})²/2]dBi=8.47. So, the output power limit is 30-(8.47-6)=27.53, the power spectral density limit is 17-(8.47-6)=14.53.
 For UNII-3: Directional gain=10log[(10^{5.76/20}+10^{5.26/20})²/2]dBi=8.52. So, the output power and power spectral density limit are 30-(8.52-6)=27.48.
- The antenna gain is provided by the manufacturer.

Table for Antenna Configuration:
For 2.4GHz:

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 5GHz:

Operating Mode	TX Mode	2TX
IEEE 802.11a		V(Ant. 1 + Ant. 2)
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)

3. TEST RESULTS

For 2.4GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Average Output Power (dBm)	Max. Average Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
9.07	8.0724	19.82	95.9401	0.15415	1	Complies

For 5GHz UNII-1:

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
8.47	7.0307	22.66	184.5015	0.25820	1	Complies

For 5GHz UNII-3:

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
8.52	7.1121	24.61	289.0680	0.40921	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm ²)	Power Density (S) (mW/cm ²)	Total	Limit of Power Density (S) (mW/cm ²)	Test Result
2.4GHz	5GHz			
0.15415	0.40921	0.56336	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report