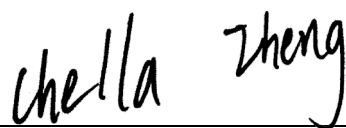


# FCC RF EXPOSURE REPORT

## FCC ID: 2AFZZRA75

**Project No.** : 2104C019  
**Equipment** : Mi WiFi Range Extender AC1200  
**Brand Name** : MI  
**Test Model** : RA75  
**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** : May 17, 2021  
**Date of Test** : May 18, 2021 ~ Jun. 28, 2021  
**Issued Date** : Jul. 14, 2021  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: DG2021040674  
**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.



Prepared by : Chella Zheng



Approved by : Ethan Ma



TESTING CERT #5123.02

Add: No.3, Jinshagang 1st Road, Shixia, Dalang Town,Dongguan, Guangdong, China.

Tel: +86-769-8318-3000

Web: www.newbtl.com

**REPORT ISSUED HISTORY**

Report Version	Description	Issued Date
R00	Original Issue	Jul. 14, 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 Road, Shixia, Dalang Town, Dongguan, Guangdong, 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:

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

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

For 2.4GHz:

Antenna Specification:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1		N12-7508-R0A	Internal	N/A	3.36
2		N12-7509-R0A	Internal	N/A	3.21

Note:









- This EUT supports CDD, and all antenna gains are not equal. Then, Directional gain =  $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$  dBi, that is Directional gain =  $10\log[(10^{3.36/20} + 10^{3.21/20})^2 / 2]$  dBi = 6.30. So, the output power limit is  $30 - (6.30 - 6) = 29.70$ , the power spectral density limit is  $8 - (6.30 - 6) = 7.70$ .
- The antenna gain is provided by the manufacturer.

Table for Antenna Configuration:

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

For 5GHz:

Antenna Specification:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	Note
1		N12-7508-R0A	Internal	N/A	3.85	UNII-1
2		N12-7509-R0A	Internal	N/A	4.05	
1		N12-7508-R0A	Internal	N/A	3.87	UNII-2A
2		N12-7509-R0A	Internal	N/A	4.40	
1		N12-7508-R0A	Internal	N/A	3.72	UNII-2C
2		N12-7509-R0A	Internal	N/A	3.93	
1		N12-7508-R0A	Internal	N/A	2.95	UNII-3
2		N12-7509-R0A	Internal	N/A	3.62	

Note:

- This EUT supports CDD, and all antenna gains are not equal. Then, Directional gain= $10\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]$  dBi.  
For UNII-1: Directional gain= $10\log[(10^{3.85/20}+10^{4.05/20})^2/2]$  dBi =6.96. So the output power limit is 30-(6.96-6)=29.04, the power spectral density limit is 17-(6.96-6)=16.04.  
For UNII-2A: Directional gain= $10\log[(10^{3.87/20}+10^{4.40/20})^2/2]$  dBi =7.15. So the output power limit is 24-(7.15-6)=22.85, the power spectral density limit is 11-(7.15-6)=9.85.  
For UNII-2C: Directional gain= $10\log[(10^{3.72/20}+10^{3.93/20})^2/2]$  dBi =6.84. So the output power limit is 24-(6.84-6)=23.16, the power spectral density limit is 11-(6.84-6)=10.16.  
For UNII-3: Directional gain= $10\log[(10^{2.95/20}+10^{3.62/20})^2/2]$  dBi =6.30. So the output power limit is 30-(6.30-6)=29.70, the power spectral density limit is 30-(6.30-6)=29.70.
- The antenna gain is provided by the manufacturer.

Table for Antenna Configuration:

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. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
6.30	4.2658	26.50	446.6836	0.37927	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 <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
6.96	4.9659	20.10	102.3293	0.10115	1	Complies

For 5GHz UNII-2A:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
7.15	5.1880	18.14	65.1628	0.06729	1	Complies

For 5GHz UNII-2C:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
6.84	4.8306	22.15	164.0590	0.15774	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 <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
6.30	4.2658	22.43	174.9847	0.14858	1	Complies

**For the max simultaneous transmission MPE:**

Power Density (S) (mW/cm <sup>2</sup> )	Power Density (S) (mW/cm <sup>2</sup> )	Total	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
2.4GHz	5GHz			
0.37927	0.15774	0.53701	1	Complies

Note: The calculated distance is 20 cm.

**End of Test Report**