# FCC RF EXPOSURE REPORT

## FCC ID: 2AIMRRN06

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|---|---|---|
| **Report No.** | : | BTL-FCCP-4-2405C239E |
| **Equipment** | : | Xiaomi Router BE3600 |
| **Model Name** | : | RN06 |
| **Brand Name** | : | Xiaomi |
| **Applicant** | : | Beijing Xiaomi Electronics Co., Ltd. |
| **Address** | : | Room 802, Floor 8, Building 5, No.15 KeChuang 10th Road, Beijing Economic and Technological Development Zone, Beijing City, China. |
| **Manufacturer** | : | Beijing Xiaomi Electronics Co., Ltd. |
| **Address** | : | Room 802, Floor 8, Building 5, No.15 KeChuang 10th Road, Beijing Economic and Technological Development Zone, Beijing City, China. |
| **Radio Function** | : | WLAN 2.4 GHz<br>RLAN 5 GHz (U-NII 1, U-NII 2a, U-NII 2c, U-NII 3) |
| **FCC Rule Part(s)** | : | FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091<br>FCC Title 47 Part 2.1091 & KDB 447498 D01 v06 |
| **Date of Receipt** | : | 2024/10/22 |
| **Date of Test** | : | 2024/10/22 - 2024/11/15 |
| **Issued Date** | : | 2024/12/4 |

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

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## REPORT ISSUED HISTORY

| Report No. | Version | Description | Issued Date | Note |
|---|---|---|---|---|
| BTL-FCCP-4-2405C239E | R00 | Original Report. | 2024/12/4 | Valid |

## 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

## 2. ANTENNA SPECIFICATION

For WLAN 2.4 GHz:
Group 1:

| Ant. | Manufacture | P/N | Antenna Type | Connector | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | Shenzhen Etheta Communication Technology Co., LTD | L530100082313 | PCB | N/A | 4.27 |
| 2 | Shenzhen Etheta Communication Technology Co., LTD | L530100082513 | PCB | N/A | 4.12 |

Group 2:

| Ant. | Manufacture | P/N | Antenna Type | Connector | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | KunShan Innoware Communication Technology Co., LTD | L530100082439 | PCB | N/A | 5.5 |
| 2 | KunShan Innoware Communication Technology Co., LTD | L530100082239 | PCB | N/A | 5.9 |

NOTE:
1) This EUT supports CDD, and all antenna gains are not equal, Directional gain = $G_{ANT\ MAX}$+Array Gain.
For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$), so the Directional gain=5.9
For power spectral density measurements, $N_{ANT}$=2, $N_{SS}$ = 1.
So the Directional gain=$G_{ANT}$+Array Gain=$G_{ANT}$+10log($N_{ANT}$/ $N_{SS}$)dBi=5.9+10log(2/1)dBi=8.91dBi
2) Beamforming Gain: 3 dB.
3) The antenna gain and beamforming gain are provided by the manufacturer.

For Non Beamforming:

| TX Mode / Operating Mode | 2 TX |
|---|---|
| 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) |
| IEEE 802.11ax (HE20) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11ax (HE40) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT20) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT40) | V(Ant. 1 + Ant. 2) |

For Beamforming:

| TX Mode / Operating Mode | 2 TX |
|---|---|
| IEEE 802.11n (HT20) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11n (HT40) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11ax (HE20) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11ax (HE40) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT20) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT40) | V(Ant. 1 + Ant. 2) |

For RLAN 5 GHz:
Group 1:

| Ant. | Manufacture | P/N | Antenna Type | Connector | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | Shenzhen Etheta Communication Technology Co., LTD | L530100082713 | PCB | N/A | 6.21 |
| 2 | Shenzhen Etheta Communication Technology Co., LTD | L530100082913 | PCB | N/A | 5.94 |

Group 2:

| Ant. | Manufacture | P/N | Antenna Type | Connector | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | KunShan Innoware Communication Technology Co., LTD | L530100082639 | PCB | N/A | 5.6 |
| 2 | KunShan Innoware Communication Technology Co., LTD | L530100082839 | PCB | N/A | 5.8 |

NOTE:

1) This EUT supports CDD, and all antennas are not equal, Directional gain = $G_{ANT}$ +Array Gain.
For power measurements, Array Gain=0dB ($N_{ANT} \leqslant 4$), so the Directional gain=6.21.
For power spectral density measurements, $N_{ANT}$=2, $N_{SS}$= 1.
So the Directional gain=$G_{ANT}$+Array Gain=$G_{ANT}$+10log($N_{ANT}/N_{SS}$)dBi=6.21+10log(2/1)dBi=9.22.
2) Beamforming Gain: 3 dB.
3) The antenna gain and beamforming gain are provided by the manufacturer.

For Non Beamforming:

| Operating Mode \ TX Mode | 2 TX |
|---|---|
| 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) |
| IEEE 802.11ac (VHT160) | 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) |
| IEEE 802.11ax (HE160) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT20) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT40) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT80) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT160) | V(Ant. 1 + Ant. 2) |

For Beamforming:

| Operating Mode \ TX Mode | 2 TX |
|---|---|
| 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 802.11ac (VHT160) | 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) |
| IEEE 802.11ax (HE160) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT20) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT40) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT80) | V(Ant. 1 + Ant. 2) |
| IEEE 802.11be (EHT160) | V(Ant. 1 + Ant. 2) |

## 3. 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 |
|---|---|---|---|---|---|---|
| 5.9 | 3.8905 | 29.04 | 801.6781 | 0.62080 | 1 | Complies |

For RLAN 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 |
|---|---|---|---|---|---|---|
| 6.21 | 4.1783 | 26.47 | 443.6086 | 0.36894 | 1 | Complies |

**For the max simultaneous transmission MPE:**

| Ratio | | Total | Limit of Ratio | Test Result |
|---|---|---|---|---|
| 2.4GHz | 5GHz | | | |
| 0.62080 | 0.36894 | 0.98974 | 1 | Complies |

Note:
(1) The calculated distance is 20 cm.
(2) Ratio=Power Density (S) ($mW/cm^2$)/Limit of Power Density (S) ($mW/cm^2$)
(3) WLAN 2.4GHz and WLAN 5GHz can not simultaneous transmission.

**End of Test Report**