

FCC RF EXPOSURE REPORT

FCC ID: 2AX5J-R6

Project No. : 2107C197
Equipment : 3200M Wi-Fi 6 Dual-band Mesh Router
Brand Name : **Ruijie** Ruijie | 瑞捷 REYEE **REYEE**

Test Model : RG-R6
Series Model : N/A
Applicant : Ruijie Networks Co.,Ltd.
Address : Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District, Fuzhou, Fujian, China

Manufacturer : Ruijie Networks Co.,Ltd.
Address : Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District, Fuzhou, Fujian, China

Date of Receipt : Jul. 28, 2021
Date of Test : Jul. 30, 2021 ~ Sep. 05, 2021
Issued Date : Sep. 10, 2021
Report Version : R00
Test Sample : Engineering Sample No.: DG20210730110
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	Sep. 10, 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:

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

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

Antenna Specification:

For 2.4GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	RFlink	RF11C00717A	PCB	N/A	4.06
2	RFlink	RF11C00718A	PCB	N/A	4.16
3	RFlink	RF11C00718A	PCB	N/A	4.16
4	RFlink	RF11C00717A	PCB	N/A	4.06

Note:

- 1) This EUT supports CDD, and all antenna gains are not equal, so Directional gain= $10\log[(10^{G1/20}+10^{G2/20}+\dots+10^{GN/20})^2/N]$ dBi, that is Directional gain= $10\log[(10^{4.06/20}+10^{4.16/20}+10^{4.16/20}+10^{4.06/20})^2/4]$ dBi =10.13. So, the output power limit is $30-(10.13-6)=25.87$, the power spectral density limit is $8-(10.13-6)=3.87$.
- 2) Beamforming Gain: 4dB. Then, Directional gain= $4.16+4=8.16$. So the output power limit is $30-(8.16-6)=27.84$.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	RFlink	RF11C00717A	PCB	N/A	4.14
2	RFlink	RF11C00718A	PCB	N/A	3.82
3	RFlink	RF11C00718A	PCB	N/A	3.82
4	RFlink	RF11C00717A	PCB	N/A	4.14

Note:

- 1) This EUT supports CDD, and all antenna gains are not equal, so Directional gain= $10\log[(10^{G1/20}+10^{G2/20}+\dots+10^{GN/20})^2/N]$ dBi, that is Directional gain= $10\log[(10^{4.14/20}+10^{3.82/20}+10^{3.82/20}+10^{4.14/20})^2/4]$ dBi =10.00. So, the UNII-1, UNII-3 output power limit is $30-(10-6)=26.00$, the UNII-2A, UNII-2C output power limit is $23.98-(10-6)=19.98$. The UNII-1 power spectral density limit is $17-(10-6)=13.00$, the UNII-2A, UNII-2C power spectral density limit is $11-(10-6)=7.00$, the UNII-3 power spectral density limit is $30-(10-6)=26.00$.
- 2) Beamforming Gain: 4dB. Then, Directional gain= $4.14+4=8.14$. So, the UNII-1, UNII-3 output power limit is $30-(8.14-6)=27.86$, the UNII-2A, UNII-2C output power limit is $23.98-(8.14-6)=21.84$.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

Table for Antenna Configuration:
For 2.4GHz Non Beamforming:

Operating Mode	TX Mode	4TX
IEEE 802.11b		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11g		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT20)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT40)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

For 2.4GHz Beamforming:

Operating Mode	TX Mode	4TX
IEEE 802.11n(HT20)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT40)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

For 5GHz Non Beamforming:

Operating Mode	TX Mode	4TX
IEEE 802.11a		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT20)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT40)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT20)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT40)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT80)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE20)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE40)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE80)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

For 5GHz Beamforming:

Operating Mode	TX Mode	4TX
IEEE 802.11n(HT20)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT40)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT20)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT40)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT80)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE20)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE40)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE80)		V(Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

3. TEST RESULTS

For 2.4GHz Non Beamforming:

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
10.13	10.3039	20.16	103.7528	0.21279	1	Complies

For 2.4GHz Beamforming:

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
8.16	6.5464	19.81	95.7194	0.12472	1	Complies

For 5GHz Non Beamforming:

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
10.00	10.0000	25.97	395.3666	0.78696	1	Complies

For 5GHz Beamforming:

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
8.14	6.5163	25.61	363.9150	0.47201	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			
0.21279	0.78696	0.99975	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report