

FCC RF EXPOSURE REPORT

FCC ID: 2APRGP5

Project No. : 2403G078
Equipment : 5G NR AX3000 Wi-Fi 6 Router
Brand Name : Cudy
Test Model : P5
Series Model : N/A
Applicant : Shenzhen Cudy Technology Co., Ltd.
Address : Room A606, Gaoxinqi Industrial Park, Liuxianyi Road, Baoan District, Shenzhen, China
Manufacturer : Shenzhen Cudy Technology Co., Ltd.
Address : Room A606, Gaoxinqi Industrial Park, Liuxianyi Road, Baoan District, Shenzhen, China
Factory : Shenzhen Cudy Technology Co., Ltd.
Address : Room A606, Gaoxinqi Industrial Park, Liuxianyi Road, Baoan District, Shenzhen, China
Date of Receipt : Mar. 14, 2024
Date of Test : Mar. 18, 2024 ~ May 30, 2024
Issued Date : May 31, 2024
Report Version : R00
Test Sample : Engineering Sample No.: SSL2024031423
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091 & KDB 447498 D01 v06

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

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-4-2403G078	R00	Original Report.	May 31, 2024	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 2.4GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	RFlink	U00T01S004N03481	Dipole	MHF Plug	3.59
2	RFlink	U00T01S004N03483	Dipole	MHF Plug	2.84

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= $10\log[(10^{3.59/20}+10^{2.84/20})^2/2]$ dBi =6.23.
- 2) Beamforming Gain: 3 dB, that is Directional gain=3+3.59=6.59.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	RFlink	U00T01S004N03481	Dipole	MHF Plug	4.79
2	RFlink	U00T01S004N03483	Dipole	MHF Plug	4.49

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= $10\log[(10^{4.79/20}+10^{4.49/20})^2/2]$ dBi =7.65.
- 2) Beamforming Gain: 3 dB, that is Directional gain=3+4.79=7.79.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

3. TABLE FOR ANTENNA CONFIGURATION

For 2.4GHz Non Beamforming:

Operating Mode	TX Mode	2TX
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)

For 2.4GHz Beamforming:

Operating Mode	TX Mode	2TX
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)

For 5GHz Non Beamforming:

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)
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)

For 5GHz Beamforming:

Operating Mode	TX Mode	2TX
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)

4. CALCULATED RESULT

For 2.4GHz 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
6.23	4.1976	26.7	467.7351	0.25011	1	Complies

For 2.4GHz 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
6.59	4.5604	26.36	432.5138	0.25126	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
7.65	5.8210	27.90	616.5950	0.45723	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
7.79	6.0117	27.45	555.9043	0.42573	1	Complies

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.25126	0.45723	0.70849	1	Complies

Note: The calculated distance is 25 cm.

End of Test Report