FCC RF EXPOSURE REPORT

FCC ID: 2APRGWR3000H

Project No.	:	2502C176
Equipment	:	AX3000 2.5G Mesh Wi-Fi 6 Router
Brand Name	:	Cudy
Test Model	:	WR3000H
Series Model	:	N/A
Applicant	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	7/F, Lepu Tower (West), 66 Xingke Rd, Nanshan, Shenzhen, China
Manufacturer	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	7/F, Lepu Tower (West), 66 Xingke Rd, Nanshan, Shenzhen, China
Factory	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	7/F, Lepu Tower (West), 66 Xingke Rd, Nanshan, Shenzhen, China
Date of Receipt	:	Feb. 21, 2025
Date of Test	:	Feb. 26, 2025 ~ Apr. 27, 2025
Issued Date	:	May 13, 2025
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG20250221202
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. (Dongguan)

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-4-2502C176	R00	Original Report.	May 13, 2025	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	Model Name	Antenna Type	Connector	Gain (dBi)
1	South star	WR3000H	Dipole	IPEX	5.17
2	South star	WR3000S	Dipole	IPEX	5.49

Note:
1) This EUT supports CDD, and all antenna gains are not equal, Directional gain = G_{ANT}+Array Gain.
For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$), so the Directional gain=5.49.
For power spectral density measurements, N_{ANT}=4, N_{SS} = 1.
So the Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/ N_{SS})dBi=5.49+10log(2/1)dBi=8.5.
Then, the power spectral density limit is 8-(8.5-6)=5.5.
2) Beamforming Gain=4.5 dBi, Directional gain=4.5+5.49=9.99 dBi.
3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	South star	WR3000H	Dipole	IPEX	5.31
2	South star	WR3000S	Dipole	IPEX	5.81
3	South star	WR3000H	Dipole	IPEX	5.44

Note:
1) This EUT supports CDD, and all antenna gains are not equal, Directional gain = G_{ANT}+Array Gain.
For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$), so the Directional gain=5.81.
For power spectral density measurements, N_{ANT}=3, N_{SS} = 1.
So the Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/ N_{SS})dBi=5.81+10log(3/1)dBi=10.58.
Then, the UNII-1 power spectral density limit is 17-(10.58-6)=12.42, UNII-2A and UNII-2C power spectral density limit is 11-(10.58-6)=6.42, the UNII-3 power spectral density limit is 30-(10.58-6)=25.42.
2) Beamforming Gain=4.5 dBi, Directional gain=4.5+5.81=10.31 dBi.
3) The antenna gain and beamforming gain are provided by the manufacturer.

3. CALCULATED RESULT

For 2.4GHz:

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
5.49	3.5400	24.66	292.4152	0.20604	1	Complies

For 5GHz:

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
5.81	3.8107	28.63	729.4575	0.55329	1	Complies

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.20604	0.55329	0.75933	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)

End of Test Report