

FCC RF EXPOSURE REPORT

FCC ID: 2BH7FXGB430VPRO

Project No. : 2504G008
Equipment : BE7200 Dual-Band Wi-Fi 7 XGS-PON Router
Brand Name : tp-link
Test Model : XGB430v Pro
Series Model : N/A
Applicant : TP-Link Systems Inc.
Address : 10 Mauchly, Irvine, CA 92618
Manufacturer : TP-Link Systems Inc.
Address : 10 Mauchly, Irvine, CA 92618
Date of Receipt : Apr. 10, 2025
Date of Test : Apr. 11, 2025 ~ Jun. 05, 2025
Issued Date : Jun. 18, 2025
Report Version : R00
Test Sample : Engineering Sample No.: DG20250410244
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-4-2504G008	R00	Original Report.	Jun. 18, 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.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	TP-Link Systems Inc.	N/A	Dipole	ipex	3.26
2	TP-Link Systems Inc.	N/A	Dipole	ipex	2.03
3	TP-Link Systems Inc.	N/A	Dipole	ipex	2.55
4	TP-Link Systems Inc.	N/A	Dipole	ipex	4.06

Note:

- 1) This EUT supports CDD, and all antenna gains are not equal, For power measurements, Directional gain(each angle)= $10\log[(10^{G1/10}+10^{G2/10}+\dots+10^{GN/10})/N] \text{dBi} = 10\log[(10^{-1.34/10}+10^{-0.01/10}+10^{1.41/10}+10^{4.00/10})/4]=1.48$.
- 2) Beamforming Gain=6 dB.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	TP-Link Systems Inc.	N/A	Dipole	ipex	2.31	UNII-1/ UNII-2A
2	TP-Link Systems Inc.	N/A	Dipole	ipex	3.88	
3	TP-Link Systems Inc.	N/A	Dipole	ipex	3.02	
4	TP-Link Systems Inc.	N/A	Dipole	ipex	3.37	
1	TP-Link Systems Inc.	N/A	Dipole	ipex	2.84	UNII-2C/ UNII-3
2	TP-Link Systems Inc.	N/A	Dipole	ipex	4.24	
3	TP-Link Systems Inc.	N/A	Dipole	ipex	3.83	
4	TP-Link Systems Inc.	N/A	Dipole	ipex	4.75	

Note:

- 1) This EUT supports CDD, and all antenna gains are not equal, For power measurements, Directional gain(each angle) = $10\log[(10^{G1/10}+10^{G2/10}+\dots+10^{GN/10})/N] \text{dBi}$. For the UNII-1&UNII-2A Directional gain(each angle) = $10\log[(10^{0.81/10}+10^{0.61/10}+10^{1.99/10}+10^{2.09/10})/4]=1.43$. For the UNII-2C&UNII-3 Directional gain(each angle) = $10\log[(10^{0.09/10}+10^{-0.80/10}+10^{2.79/10}+10^{3.59/10})/4]=1.79$.
- 2) Beamforming Gain=6 dB.
- 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
1.48	1.4060	27.61	576.7665	0.16142	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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
1.43	1.3900	27.74	594.2922	0.16442	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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
1.43	1.3900	23.97	249.4595	0.06902	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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
1.79	1.5101	23.91	246.0368	0.07395	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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
1.79	1.5101	29.98	995.4054	0.29919	1	Complies

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.1614	0.2992	0.4606	1	Complies

Note:

- (1) The calculated distance is 20 cm.
- (2) Output power including tune up tolerance.
- (3) Ratio=Power Density (S) (mW/cm²)/Limit of Power Density (S) (mW/cm²)