FCC RF EXPOSURE REPORT

FCC ID: 2BCGWEAP625GPW

Project No.	:	2410G014
Equipment	:	AX1800 Wall Plate Wi-Fi 6 GPON Access Point
Brand Name	:	tp-link
Test Model	:	EAP625GP-Wall
Series Model	:	N/A
Applicant	:	TP-LINK CORPORATION PTE. LTD.
Address	:	7 Temasek Boulevard #29-03 Suntec Tower One, Singapore 038987
Manufacturer	:	TP-LINK CORPORATION PTE. LTD.
Address	:	7 Temasek Boulevard #29-03 Suntec Tower One, Singapore 038987
Date of Receipt	:	Oct. 14, 2024
Date of Test	:	Oct. 17, 2024 ~ Dec. 05, 2024
Issued Date	:	Jan. 17, 2025
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG2024101430
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-4-2410G014	R00	Original Report.	Jan. 17, 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	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	6035500222	PIFA	N/A	3
2	tp-link	6035500222	PIFA	N/A	3

Note:
1) This EUT supports CDD, and all antennas have the same gain, Directional gain = G_{ANT}+Array Gain.
For power measurements, Array Gain=0dB (N_{ANT}≤4), so the Directional gain=3.
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=3+10log(2/1)dBi=6.01.
Then, the power spectral density limit is 8-(6.01-6)=7.99.
2) Beamforming Gain: 3 dB. Then Directional gain = 3+3 = 6 dBi.
3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	6035500222	PIFA	N/A	3
2	tp-link	6035500222	PIFA	N/A	3

Note:
1) This EUT supports CDD, and all antennas have the same gain, Directional gain = G_{ANT}+Array Gain.
For power measurements, Array Gain=0dB (N_{ANT}≤4), so the Directional gain=3.
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=3+10log(2/1)dBi=6.01.
Then, the UNII-1 power spectral density limit is 17-(6.01-6)=16.99, the UNII-2A, UNII-2C power spectral density limit is 11-(6.01-6)=10.99, the UNII-3 power spectral density limit is 30-(6.01-6)=29.99.
2) Beamforming Gain: 3 dB. Then Directional gain = 3+3 = 6 dBi.
3) The antenna gain and beamforming gain are provided by the manufacturer.

3. 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
3	1.9953	24.1	257.0396	0.10208	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	3.9811	23.66	232.2737	0.18406	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
3	1.9953	23.84	242.1029	0.09615	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
6	3.9811	23.36	216.7704	0.17177	1	Complies

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.18406	0.17177	0.35583	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