

# FCC RF EXPOSURE REPORT

## FCC ID: 2BCGWEAP615GPW

**Project No.** : 2312G170A  
**Equipment** : AX1800 Wall Plate Wi-Fi 6 GPON Access Point  
**Brand Name** : tp-link  
**Test Model** : EAP615GP-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** : Dec. 20, 2023  
**Date of Test** : Dec. 21, 2023 ~ Jan. 20, 2024  
**Issued Date** : May 30, 2024  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: SSL2023122074  
**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-3-2312G170A	R00	This is a copy report which referencing test data are provided from the original test report (BTL-FCCP-3-2312G170). Changed the signal transformer of the network port which does not affect the test results, the rest are kept the same.	May 30, 2024	Valid

## 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 523792.

BTL's Registration Number for FCC: 162128

BTL's Designation Number for FCC: CN5042

## 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

For 2.4GHz:

Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	BIG FIELD GLOBAL PTE. LTD	EAP615GP-Wall	PIFA	N/A	3
2	BIG FIELD GLOBAL PTE. LTD	EAP615GP-Wall	PIFA	N/A	3

Note:

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

Table for Antenna Configuration:

For 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 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:

## Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	BIG FIELD GLOBAL PTE. LTD	EAP615GP-Wall	PIFA	N/A	3
2	BIG FIELD GLOBAL PTE. LTD	EAP615GP-Wall	PIFA	N/A	3

## Note:

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

## Table for Antenna Configuration:

## For 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 802.11ax(HE20)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax(HE40)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax(HE80)		V (Ant. 1 + Ant. 2)

## For 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 802.11ax(HE20)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax(HE40)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax(HE80)		V (Ant. 1 + Ant. 2)

### 3. TEST RESULTS

For 2.4GHz\_Non Beamforming:

Directional gain (dBi)	Directional gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3	1.9953	23.02	200.4472	0.07961	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 <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
6	3.9811	22.33	171.0015	0.13550	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 <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3	1.9953	23.31	214.2891	0.08510	1	Complies

For 5GHz\_Beamforming:

Directional gain (dBi)	Directional gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
6	3.9811	22.97	198.1527	0.15702	1	Complies

#### For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.13550	0.15702	0.29252	1	Complies

Note: The calculated distance is 20 cm.  
Output power including tune up tolerance.

**End of Test Report**