

# FCC RF EXPOSURE REPORT

## FCC ID: 2BCGWXM730D

**Project No.** : 2405G047  
**Equipment** : AX5400 Indoor/Outdoor Whole Home Mesh Wi-Fi 6 System  
**Brand Name** : tp-link  
**Test Model** : Deco XM73-Outdoor  
**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** : May 22, 2024  
**Date of Test** : May 23, 2024 ~ Jun. 24, 2024  
**Issued Date** : Jul. 02, 2024  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: SSL2024052276  
**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.

**Prepared by** : Grani Zhou  
Grani Zhou

**Approved by** : Chay Cai  
Chay Cai

Room 108, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong,  
People's Republic of China.

Tel: +86-769-8318-3000    Web: [www.newbtl.com](http://www.newbtl.com)    Service mail: [btl\\_qa@newbtl.com](mailto:btl_qa@newbtl.com)

**REPORT ISSUED HISTORY**

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-4-2405G047	R00	Original Report.	Jul. 02, 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.	Manufacturer	P/N	Antenna Type	Connector	Gain (dBi)	Note
1	TP-LINK CORPORATION PTE. LTD.	3101505462	Dipole	ipex	1.9	Horizontal
2	TP-LINK CORPORATION PTE. LTD.	3101506968	Dipole	ipex	1.9	
3	TP-LINK CORPORATION PTE. LTD.	3101505464	Dipole	ipex	1.5	Vertical
4	TP-LINK CORPORATION PTE. LTD.	3101505465	Dipole	ipex	1.5	

Note:

- 1) This EUT supports CDD, the antennas Directional gain which declared by customer is 4.7dBi.
- 2) Beamforming Gain: 3 dB, that is Directional gain=1.9+3=4.9dBi.
- 3) All antennas had been pre-tested and found that Horizontal antennas were the worst case
- 4) 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 CORPORATION PTE. LTD.	3101505462	Dipole	ipex	2
2	TP-LINK CORPORATION PTE. LTD.	3101506968	Dipole	ipex	2
3	TP-LINK CORPORATION PTE. LTD.	3101506969	Dipole	ipex	2
4	TP-LINK CORPORATION PTE. LTD.	3101506970	Dipole	ipex	2

Note:

- 1) This EUT supports CDD, the antennas Directional gain which declared by customer is 7 dBi.
- 2) Beamforming Gain: 6 dB, that is Directional gain=2+6=8 dBi.
- 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 802.11ac(VHT20)		V(Ant. 1 + Ant. 2)
IEEE 802.11ac(VHT40)		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 802.11ac(VHT20)		V(Ant. 1 + Ant. 2)
IEEE 802.11ac(VHT40)		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	4TX
IEEE 802.11a		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT160)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE160)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

## For 5GHz\_Beamforming:

Operating Mode	TX Mode	4TX
IEEE 802.11n(HT20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT160)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE160)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

#### 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 <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
4.7	2.9512	29.75	944.0609	0.38511	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
4.9	3.0903	28.51	709.5778	0.30310	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
7	5.0119	28.96	787.0458	0.54524	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
8	6.3096	27.95	623.7348	0.54399	1	Complies

**For the max simultaneous transmission MPE:**

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.38511	0.54524	0.9304	1	Complies

Note: The calculated distance is 24 cm.

**End of Test Report**