

FCC RF EXPOSURE REPORT

FCC ID: 2BCGWXM73OD

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.

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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:

$$S = \frac{PG}{4\pi^2} = \frac{EIRP}{4\pi^2}$$

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 ²)	Limit of Power Density (S) (mW/cm ²)	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 ²)	Limit of Power Density (S) (mW/cm ²)	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 ²)	Limit of Power Density (S) (mW/cm ²)	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 ²)	Limit of Power Density (S) (mW/cm ²)	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