

FCC RF EXPOSURE REPORT

FCC ID: TE7X60V2

Project No. : 2006C089
Equipment : AX3000 Whole Home Mesh Wi-Fi 6 System
Brand Name : tp-link
Test Model : Deco X60
Series Model : N/A
Applicant : TP-Link Technologies Co., Ltd.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Manufacturer : TP-Link Technologies Co., Ltd.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Date of Receipt : Jun. 11, 2020
Date of Test : Jun. 15, 2020 ~ Jul. 30, 2020
Issued Date : Aug. 03, 2020
Report Version : R00
Test Sample : Engineering Sample No.: DG20200611223
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

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 Version	Description	Issued Date
R00	Original Issue.	Aug. 03, 2020

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

Table for Filed Antenna

For WLAN 2.4GHz:

Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1		3101502756	Dipole	I-PEX	1.93
2		3101502757	Dipole	I-PEX	1.94

Note:

This EUT supports CDD, and antenna gains are not equal, so

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$ dBi = $10 \log[(10^{1.93/20} + 10^{1.94/20})^2 / 2]$ = 4.95dB.

Table for Antenna Configuration:

Operating Mode	TX Mode	2TX
802.11b		V (Ant. 1 + Ant. 2)
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 (HEW20)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax (HEW40)		V (Ant. 1 + Ant. 2)

For WLAN 5GHz:

Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1		3101502754	Dipole	I-PEX	0.81
2		3101502755	Dipole	I-PEX	0.88
3		3101502756	Dipole	I-PEX	0.90
4		3101502757	Dipole	I-PEX	0.97

Note:

This EUT supports CDD, and antenna gains are not equal,

so Directional gain= $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$ dBi,

that is Directional gain= $10\log[(10^{0.81/20} + 10^{0.88/20} + 10^{0.90/20} + 10^{0.97/20})^2 / 4]$ dBi = 6.91.

So, the the UNII-1 and UNII-3 output power limit is 30-(6.91-6)=29.09,

the the UNII-1 power spectral density limit is 17-(6.91-6)=16.09,

the the UNII-3 power spectral density limit is 30-(6.91-6)=29.09

Table for Antenna Configuration:

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 802.11ax (HEW20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax (HEW40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax (HEW80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

2. TEST RESULTS

For 2.4GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Average Output Power (dBm)	Max. Average Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
4.95	3.1261	25.94	392.6449	0.1564	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
6.91	4.9091	25.94	392.6449	0.2455	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
6.91	4.9091	28	630.9573	0.3946	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm ²)	Power Density (S) (mW/cm ²)	Total	Limit of Power Density (S) (mW/cm ²)	Test Result
2.4GHz	5GHz			
0.1564	0.3946	0.5510	1	Complies

Note: The calculated distance is 25 cm.
Output power including tune up tolerance.

End of Test Report