FCC RF EXPOSURE REPORT

FCC ID: TE7X20

Project No.	:	1910C060A
Equipment	:	AX1800 Whole Home Mesh Wi-Fi System
Brand Name	:	tp-link
Test Model	:	Deco X20
Series Model	:	Deco W3600, Deco X25
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	:	Apr. 07, 2020
Date of Test	:	Apr. 07, 2020 ~ Apr. 24, 2020
Issued Date	:	May 07, 2020
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG2020040788
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	Compared with the previous report (BTL-FCCP-3-1910C060), added the description and test data of UNII-3.	May 07, 2020
R01	Added a series model which does not affect the test result.	May 15, 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

Antenna Specification:

For 2.4GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	TP-LINK	3101502752	PCB	I-PEX	1.95
2	TP-LINK	3101502753	PCB	I-PEX	1.97

Note:
This EUT supports CDD, any transmit signals are correlated with each other, so Directional gain = $10\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]$dBi, that is Directional gain=$10\log[(10^{1.95/20}+10^{1.97/20})^2/2]$dBi =4.97.

For 5GHz UNII-1:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	TP-LINK	3101502754	PCB	I-PEX	0.76
2	TP-LINK	3101502755	PCB	I-PEX	0.80

Note:
This EUT supports CDD, any transmit signals are correlated with each other, so Directional gain = $10\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]$dBi, that is Directional gain=$10\log[(10^{0.76/20}+10^{0.80/20})^2/2]$dBi =3.79.

For 5GHz UNII-3:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	TP-LINK	3101502754	PCB	I-PEX	0.81
2	TP-LINK	3101502755	PCB	I-PEX	0.88

Note:
This EUT supports CDD, any transmit signals are correlated with each other, so Directional gain = $10\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]$dBi, that is Directional gain=$10\log[(10^{0.81/20}+10^{0.88/20})^2/2]$dBi =3.86.

2. TEST RESULTS

For 2.4GHz:

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
4.97	3.1405	28.78	755.0922	0.47201	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
3.79	2.3933	28.25	668.3439	0.31838	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
3.86	2.3335	26.69	415.9106	0.19317	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			
0.47201	0.31838	0.79039	1	Complies

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

End of Test Report