FCC RF EXPOSURE REPORT

FCC ID: TE7EAP235WALL

Project No.	:	1909C126
Equipment	:	AC1200 Wireless MU-MIMO Gigabit Wall Plate Access Point
Brand Name	:	tp-link
Test Model	:	EAP235-Wall
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	:	Sep. 20, 2019
Date of Test	:	Sep. 20, 2019 ~ Nov. 06, 2019
Issued Date	:	Nov. 22, 2019
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG2019092092
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	Nov. 22, 2019

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 2.4GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	2.68
2	N/A	N/A	PCB	N/A	2.83

Note:
This EUT supports CDD, and antenna gains are not equal, so Directional gain= $10\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]$dBi, that is Directional gain=$10\log[(10^{2.68/20}+10^{2.83/20})^2/2]$dBi =5.77.

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	2.44
2	N/A	N/A	PCB	N/A	2.94

This EUT supports CDD, and antenna gains are not equal, so.
(1) For Non Beamforming Function:
Directional gain=10 $\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]$dBi, that is Directional gain = $10\log[(10^{2.44/20}+10^{2.94/20})^2/2]$dBi=5.70.
(2) For With Beamforming Function:
Beamforming Gain: 3 dB. So Directional gain = 2.94+3=5.94.

2. TEST RESULTS

For 2.4GHz:

Antenna Gain (dBi)	Antenna 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
5.77	3.7757	23.30	213.7962	0.16068	1	Complies

For 5GHz UNII-1 Non Beamforming:

Antenna Gain (dBi)	Antenna 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
5.70	3.7154	23.90	245.4709	0.18153	1	Complies

For 5GHz UNII-3 Non Beamforming:

Antenna Gain (dBi)	Antenna 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
5.70	3.7154	23.90	245.4709	0.18153	1	Complies

For 5GHz UNII-1 With Beamforming:

Antenna Gain (dBi)	Antenna 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
5.94	3.9264	23.86	243.2204	0.19009	1	Complies

For 5GHz UNII-3 With Beamforming:

Antenna Gain (dBi)	Antenna 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
5.94	3.9264	23.85	242.6610	0.18965	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			
0.16068	0.19009	0.35077	1	Complies

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

End of Test Report