FCC RF EXPOSURE REPORT

FCC ID: TE7CPE610V2

Project No.	**: 1807C005**
Equipment	**: 5GHz 300Mbps 23dBi Outdoor CPE**
Model	**: CPE610**
Applicant	**: TP-Link Technologies Co., Ltd.**
Address	**: Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park,Shennan Rd, Nanshan, Shenzhen,China**
According:	**: FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091**

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1. CERTIFICATION

Equipment	:	5GHz 300Mbps 23dBi Outdoor CPE
Brand Name	:	tp-link
Test Model	:	CPE610
Series Model	:	N/A
Applicant	:	TP-Link Technologies Co., Ltd.
Manufacturer	:	TP-Link Technologies Co., Ltd.
Address	:	Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park,Shennan Rd, Nanshan, Shenzhen,China
Date of Test	:	Jul. 26, 2018~Aug. 20, 2018
Test Sample	:	Engineering Sample No.: D180705399

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-2-1807C005) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. 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

For Group 1:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	TP-LINK	N/A	Monopole	N/A	20.80
2	TP-LINK	N/A	Monopole	N/A	18.38

Note:

(1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).

(2) The antenna of Group 1 were fixed point to point,so the power and PSD limit not need to be reduced.

For Group 2:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	TP-LINK	N/A	Internal	N/A	6.29
2	TP-LINK	N/A	Internal	N/A	4.4

Note:

(1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R),

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

that is Directional gain=$10\log[(10^{6.29/20}+10^{4.4/20})^2/2]$dBi =8.41;

So,the UNII-3 output power limit is 30-8.41+6=27.59,

The UNII-3 power density limit is 30-8.41+6=27.59.

(2) The antenna of Group 2 were point to multipoint,so the limit will be correspondingly reduced by subtracting the part of Deration Gain greater than 6.

3. TEST RESULTS

For Group 1:

Antenna Gain (dBi)	Antenna Gain (numeric)	AVG Output Power (dBm)	AVG Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
20.80	120.2264	15.3	33.8844	0.81087	1	Complies

For Group 2:

Antenna Gain (dBi)	Antenna Gain (numeric)	AVG Output Power (dBm)	AVG Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.29	4.2560	24.66	292.4152	0.24771	1	Complies

Note:The calculated distance is 20 cm.