FCC RF EXPOSURE REPORT

FCC ID: TE7C50V5

Project No.	**: 1808C179**
Equipment	**: AC1200 Wireless Dual Band Router, AC1200 Dual Band Wi-Fi Router**
Test Model	**: Archer C50, Archer A5**
Series Model	**: N/A**
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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Certificate #5123.02

1. CERTIFICATION

Equipment	:	AC1200 Wireless Dual Band Router, AC1200 Dual Band Wi-Fi Router
Brand Name	:	tp-link
Test Model	:	Archer C50, Archer A5
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	:	Sep. 03, 2018~Nov. 27, 2018
Test Sample	:	Engineering Sample No.: D181110288
Standards	:	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.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-3-1808C179) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA 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

Table for Filed Antenna

For 2.4G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Dipole	N/A	1.87
2	N/A	N/A	Dipole	N/A	1.93

Note:

This EUT supports MIMO 2X2, any transmit signals are correlated with each other,

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

Directional gain=10log[($10^{1.87/20}$+$10^{1.93/20}$)^2/2]dBi =4.91.

For 5G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Dipole	N/A	1.78
2	N/A	N/A	Dipole	N/A	1.94

Note:

This EUT supports MIMO 2X2, any transmit signals are correlated with each other,
so Directional gain =10log[($10^{G1/20}$+$10^{G2/20}$+...$10G^{N/20}$)^2/N]dBi,
Directional gain=10log[($10^{1.78/20}$+$10^{1.94/20}$)^2/2]dBi =4.87.

For 2.4G:
The worst case for2TX as follow:

Operating Mode / TX Mode	2TX
802.11b	V (ANT 1+ANT 2)
802.11g	V (ANT 1+ANT 2)
802.11n(20 MHz)	V (ANT 1+ANT 2)
802.11n(40 MHz)	V (ANT 1+ANT 2)

For 5G:

Operating Mode / TX Mode	2TX
802.11a	V (ANT 1+ANT 2)
802.11n (20 MHz)	V (ANT 1+ANT 2)
802.11n (40 MHz)	V (ANT 1+ANT 2)
802.11ac (20 MHz)	V (ANT 1+ANT 2)
802.11ac (40 MHz)	V (ANT 1+ANT 2)
802.11ac (80 MHz)	V (ANT 1+ANT 2)

3. TEST RESULTS

2.4G

Directional gain (dBi)	Directional gain (numeric)	Average Output Power (dBm)	Average Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
4.91	3.0974	23.13	205.5891	0.12675	1	Complies

5G Band UNII-1:

Directional gain (dBi)	Directional gain (numeric)	Average Output Power (dBm)	Average Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
4.87	3.0690	28.95	785.2356	0.47968	1	Complies

5G Band UNII-3

Directional gain (dBi)	Directional gain (numeric)	Average Output Power (dBm)	Average Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
4.87	3.0690	28.61	726.1060	0.44356	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
2.4G	5G			
0.12675	0.47968	0.60643	1	Complies

Note: the calculated distance is 20 cm.

End of Test Report