

FCC RF EXPOSURE REPORT

FCC ID: TE7A6V3

Project No. : 1912C003
Equipment : AC1200 MU-MIMO Wi-Fi Router
Brand Name : tp-link
Test Model : Archer A6
Series Model : Archer C6
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. 02, 2020
Date of Test : Apr. 28, 2020 ~ May 18, 2020
Issued Date : Jun. 04, 2020
Report Version : R00
Test Sample : Engineering Sample No.: DG20200415179 for conducted, DG20200415178 for radiated.
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1
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	Jun. 04, 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		3101502812	Dipole	Weld	1.98
2		3101502813	Dipole	Weld	1.98

Note:

This EUT supports CDD, and all antennas have the same gain, Directional gain = G_{ANT} +Array Gain, where Array Gain is as follows:

For power measurements, Array Gain = 0 dB ($N_{ANT} \leq 4$), so Directional gain=1.98.

For power spectral density measurements, $N_{ANT} = 2$, $N_{SS} = 1$,so Directional gain = $G_{ANT} + \text{Array Gain} = 10 \log (N_{ANT}/ N_{SS})$ dB =0.97+10log(2/1)dBi=4.99

For 5GHz:

Ant.	rand	P/N	Antenna Type	Connector	Gain (dBi)
1		3101502814	Dipole	Weld	2.98
2		3101502815	Dipole	Weld	2.98

Note:

This EUT supports CDD, and all antennas have the same gain, Directional gain = G_{ANT} +Array Gain, where Array Gain is as follows:

For Non-Beamforming function, Directional gain= G_{ANT} +Array Gain,

for power measurements, Array Gain = 0 dB ($N_{ANT} \leq 4$), so Directional gain=2.98

for power spectral density measurements, $N_{ANT} = 2$, $N_{SS} = 1$.,so Directional gain = $G_{ANT} + \text{Array Gain} = 10 \log (N_{ANT}/ N_{SS})$ dB =2.98+10log(2/1)dBi=5.99

0 log (N_{ANT}/ N_{SS}) dB =2.98+10log(2/1)dBi=5.99

For Beamforming function, Beamforming Gain: 3.00 dB. So Directional gain = 2.98+3.00=5.98.

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
1.98	1.5776	23.86	243.2204	0.0764	1	Complies

For 5GHz UNII-1 Non-Beamforming:

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
2.98	1.9861	23.37	217.2701	0.0859	1	Complies

For 5GHz UNII-3 Non-Beamforming:

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
2.98	1.9861	25.17	328.8516	0.1300	1	Complies

For 5GHz UNII-1 Beamforming:

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
5.98	3.9628	22.82	191.4256	0.1510	1	Complies

For 5GHz UNII-3 Beamforming:

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
5.98	3.9628	23.65	231.7395	0.1828	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			
0.0764	0.1510	0.2274	1	Complies

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

End of Test Report