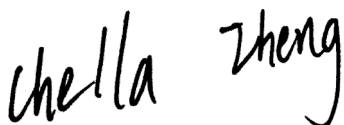


FCC RF EXPOSURE REPORT

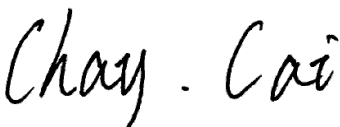
FCC ID: 2AXJ4AX73V2

Project No. : 2204C236
Equipment : AX5400 Wi-Fi 6 Router
Brand Name : tp-link
Test Model : Archer AX73
Series Model : N/A
Applicant : TP-Link Corporation Limited
Address : Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road,
Tsim Sha Tsui, Kowloon, Hong Kong
Manufacturer : TP-Link Corporation Limited
Address : Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road,
Tsim Sha Tsui, Kowloon, Hong Kong
Date of Receipt : Apr. 25, 2022
Date of Test : Apr. 27, 2022 ~ Jun. 21, 2022
Issued Date : Jul. 28, 2022
Report Version : R00
Test Sample : Engineering Sample No.: DG2022042675
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.



Prepared by : Chella Zheng



Approved by : Chay Cai



TESTING CERT #5123.02

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-4-2204C236	R00	Original Report	Jul. 28, 2022	Valid

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town Dongguan City, Guangdong 523792 People's Republic of China.

BTL's Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

2. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi^2} = \frac{EIRP}{4\pi^2}$$

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 2.4GHz:

Antenna Specification:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	3101503773	Dipole	I-PEX	2
2	tp-link	3101503775	Dipole	I-PEX	2

Note:

- 1) This EUT supports CDD, and all antennas have the same gain, Directional gain = $G_{ANT} + \text{Array Gain}$.
For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$), so the Directional gain=2 dBi.
For power spectral density measurements, $N_{ANT}=2$, $N_{SS} = 1$.
So the Directional gain= $G_{ANT} + \text{Array Gain} = G_{ANT} + 10\log(N_{ANT}/N_{SS})\text{dBi} = 2 + 10\log(2/1)\text{dBi} = 5.01 \text{ dBi}$.
- 2) Beamforming Gain: 3 dB. So the Directional gain=3+2=5 dBi.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

Table for Antenna Configuration:

For Non Beamforming:

Operating Mode	TX Mode
IEEE 802.11b	V(Ant. 1 + Ant. 2)
IEEE 802.11g	V(Ant. 1 + Ant. 2)
IEEE 802.11n(HT20)	V(Ant. 1 + Ant. 2)
IEEE 802.11n(HT40)	V(Ant. 1 + Ant. 2)
IEEE 802.11ax(HE20)	V(Ant. 1 + Ant. 2)
IEEE 802.11ax(HE40)	V(Ant. 1 + Ant. 2)

For Beamforming:

Operating Mode	TX Mode	2TX
IEEE 802.11n(HT20)		V(Ant. 1 + Ant. 2)
IEEE 802.11n(HT40)		V(Ant. 1 + Ant. 2)
IEEE 802.11ax(HE20)		V(Ant. 1 + Ant. 2)
IEEE 802.11ax(HE40)		V(Ant. 1 + Ant. 2)

For 5GHz:

Antenna Specification:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	Note
1	tp-link	3101503772	Dipole	I-PEX	1.95	UNII-1
2	tp-link	3101503774	Dipole	I-PEX		
3	tp-link	3101503772	Dipole	I-PEX		
4	tp-link	3101503776	Dipole	I-PEX		
1	tp-link	3101503772	Dipole	I-PEX	1.76	UNII-2A
2	tp-link	3101503774	Dipole	I-PEX		
3	tp-link	3101503772	Dipole	I-PEX		
4	tp-link	3101503776	Dipole	I-PEX		
1	tp-link	3101503772	Dipole	I-PEX	2.50	UNII-2C
2	tp-link	3101503774	Dipole	I-PEX		
3	tp-link	3101503772	Dipole	I-PEX		
4	tp-link	3101503776	Dipole	I-PEX		
1	tp-link	3101503772	Dipole	I-PEX	2.38	UNII-3
2	tp-link	3101503774	Dipole	I-PEX		
3	tp-link	3101503772	Dipole	I-PEX		
4	tp-link	3101503776	Dipole	I-PEX		

Note:

- 1) This EUT supports CDD, and all antennas have the same gain, Directional gain= $G_{ANT} + \text{Array Gain}$. For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$), so the UNII-1 Directional gain=1.95 dBi, the UNII-2A Directional gain=1.76 dBi, the UNII-2C Directional gain=2.50 dBi, the UNII-3 Directional gain=2.38 dBi.
For power spectral density measurements, $N_{ANT}=4$, $N_{SS} = 1$.
Then, the Directional gain= $G_{ANT} + \text{Array Gain} = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ dBi.
So,
For UNII-1: The Directional gain= $1.95 + 10\log(4/1)$ dBi=7.97dBi.
For UNII-2A: The Directional gain= $1.76 + 10\log(4/1)$ dBi=7.78dBi.
For UNII-2C: The UNII-2C Directional gain= $2.50 + 10\log(4/1)$ dBi=8.52dBi.
For UNII-3: The UNII-3 Directional gain = $2.38 + 10\log(4/1)$ dBi=8.40dBi.
- 2) Beamforming Gain: 6dB. Then,
For UNII-1: The Directional gain= $6 + 1.95$ =7.95dBi.
For UNII-2A: The Directional gain= $6 + 1.76$ =7.76dBi.
For UNII-2C: The Directional gain= $6 + 2.50$ =8.50dBi.
For UNII-3: The Directional gain= $6 + 2.38$ =8.38dBi.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

Table for Antenna Configuration:
For Non Beamforming:

Operating Mode	TX Mode	4TX
IEEE 802.11a		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT160)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE160)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

For Beamforming:

Operating Mode	TX Mode	4TX
IEEE 802.11n(HT20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11n(HT40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ac(VHT160)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE20)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE40)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE80)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)
IEEE 802.11ax(HE160)		V (Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4)

3. TEST RESULTS

For 2.4GHz 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	1.5849	29.99	997.7001	0.20143	1	Complies

For 2.4GHz 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	3.1623	28.88	772.6806	0.31127	1	Complies

For 5GHz Non Beamforming:

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
2.38	1.7298	29.71	935.4057	0.20612	1	Complies

For 5GHz Beamforming:

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
8.38	6.8865	27.61	576.7665	0.50598	1	Complies

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.31127	0.50598	0.81725	1	Complies

Note: The calculated distance is 25 cm.

End of Test Report