

FCC RF EXPOSURE REPORT

FCC ID: 2BH7FWR3012X

Project No. : 2510C294
Equipment : AX3000 Wi-Fi 6 Portable Router
Brand Name : tp-link
Test Model : TL-WR3012X
Model Name : TL-WR3012X
Hardware Version : 1.0
Software Version : 1.0
Applicant : TP-Link Systems Inc.
Address : 10 Mauchly, Irvine, CA 92618
Manufacturer : TP-Link Systems Inc.
Address : 10 Mauchly, Irvine, CA 92618
Date of Receipt : Oct. 29, 2025
Date of Test : Oct. 30, 2025 ~ Jan. 08, 2026
Issued Date : Feb. 12, 2026
Test Sample : Engineering Sample No.: DG920251029133
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091 & KDB 447498 D01 v06

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

Prepared by :

Terry Deng

Terry Deng

Approved by :

Chay . Cai

Chay Cai

No.3, Jinshagang 1st Road, Dalang, Dongguan, Guangdong People's Republic of China

Tel: +86-769-8318-3000

Web: www.newbtl.com

Service mail: btl_qa@newbtl.com

REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-4-2510C294	R00	Original Report.	Feb. 03, 2026	Invalid
BTL-FCCP-4-2510C294	R01	It is a revision of the report BTL-FCCP-4-2510C294 R00, with the following revisions: a. The tune up tolerance ($\pm 0.5\text{dB}$) was considered in Tune-up power. So recalculated. This is a newly released report, replacing the BTL-FCCP-4-2510C294 R00 report.	Feb. 12, 2026	Valid

1. 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

2. ANTENNA SPECIFICATION

For 2.4GHz:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	TP-Link Systems Inc.	TL-WR3012X	Dipole	IPEX	2.69
2	TP-Link Systems Inc.	TL-WR3012X	Dipole	IPEX	2.98

Note:

- 1) This EUT supports CDD, and all antenna gains are not equal, Directional gain = $G_{ANT} + \text{Array Gain}$.
For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$), so the Directional gain=2.98.
For power spectral density measurements, Directional gain= $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ dBi, that is Directional gain(each angle)= $10\log[(10^{0.7/20} + 10^{2.98/20})^2/2]$ dBi =4.92.
- 2) Beamforming Gain = 3dB.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	TP-Link Systems Inc.	TL-WR3012X	Dipole	IPEX	4.18	UNII-1
					4.17	UNII-2A
					3.73	UNII-2C
					4.10	UNII-3
2	TP-Link Systems Inc.	TL-WR3012X	Dipole	IPEX	2.99	UNII-1
					3.22	UNII-2A
					4.01	UNII-2C
					4.09	UNII-3
3	TP-Link Systems Inc.	TL-WR3012X	Dipole	IPEX	3.18	UNII-1
					3.06	UNII-2A
					3.04	UNII-2C
					2.94	UNII-3

Note:

- 1) This EUT supports CDD, and all antennas are not equal, Directional gain = $G_{ANT} + \text{Array Gain}$.
For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$),
the UNII-1 Directional gain=4.18, the UNII-2A Directional gain=4.17,
the UNII-2C Directional gain=4.01, the UNII-3 Directional gain=4.10.
- 2) Beamforming Gain = 4.5dB.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

3. CALCULATED RESULT

For 2.4GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Tune-up (dB)	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.98	1.9861	24.24	0.50	24.74	297.8516	0.1177	1	Complies

For 5GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Tune-up (dB)	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
4.09	2.5645	29.91	0.50	30.41	1099.0058	0.5607	1	Complies

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.1177	0.5607	0.6784	1	Complies

Note:

- (1) The calculated distance is 20 cm.
- (2) Ratio=Power Density (S) (mW/cm²)/Limit of Power Density (S) (mW/cm²)
- (3) Output power including tune up tolerance (±0.5dB).

End of Test Report