

# FCC RF EXPOSURE REPORT

## FCC ID: 2BH7FRE700XV2

**Project No.** : 2411G048  
**Equipment** : 1) AX3000 Wi-Fi 6 Range Extender  
2) AX1800 Wi-Fi 6 Range Extender  
**Brand Name** : tp-link  
**Test Model** : 1) RE700X  
**Series Model** : 2) RE600X  
**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** : Nov. 29, 2024  
**Date of Test** : Dec. 02, 2024 ~ Feb. 18, 2025  
**Issued Date** : Apr. 07, 2025  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: SSL2024112916  
**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.

Prepared by

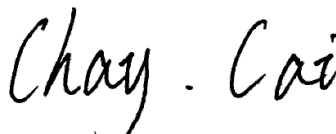
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**REPORT ISSUED HISTORY**

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-4-2411G048	R00	Original Report.	Apr. 07, 2025	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.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	tp-link	RE700X Ant1	Dipole	N/A	0.96
2	tp-link	RE700X Ant2	Dipole	N/A	1.00

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=1.00.  
For power spectral density measurements,  $N_{ANT}=2$ ,  $N_{SS} = 1$ .  
So the Directional gain= $G_{ANT} + \text{Array Gain} = G_{ANT} + 10\log(N_{ANT}/N_{SS})\text{dBi} = 1.00 + 10\log(2/1)\text{dBi} = 4.01$ .
- 2) Beamforming Gain: 3 dB.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	tp-link	RE700X Ant1	Dipole	N/A	1.50
2	tp-link	RE700X Ant2	Dipole	N/A	1.50

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=1.00.  
For power spectral density measurements,  $N_{ANT}=2$ ,  $N_{SS} = 1$ .  
So the Directional gain= $G_{ANT} + \text{Array Gain} = G_{ANT} + 10\log(N_{ANT}/N_{SS})\text{dBi} = 1.00 + 10\log(2/1)\text{dBi} = 4.01$ .
- 2) Beamforming Gain: 3 dB.
- 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. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
1.00	1.2589	29.88	972.7472	0.24375	1	Complies

For 5GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
1.50	1.4125	29.93	984.0111	0.27666	1	Complies

**For the max simultaneous transmission MPE:**

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz			
0.24375	0.27666	0.52041	1	Complies

Note:

- (1) The calculated distance is 20 cm.
- (2) Ratio=Power Density (S) (mW/cm<sup>2</sup>)/Limit of Power Density (S) (mW/cm<sup>2</sup>)

**End of Test Report**