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.

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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:

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

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

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}+Array Gain.
For power measurements, Array Gain=0dB (N_{ANT}≤4), so the Directional gain=1.00.
For power spectral density measurements, N_{ANT}=2, N_{SS} = 1.
So the Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/ N_{SS})dBi=1.00+10log(2/1)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}+Array Gain.
For power measurements, Array Gain=0dB (N_{ANT}≤4), so the Directional gain=1.00.
For power spectral density measurements, N_{ANT}=2, N_{SS} = 1.
So the Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/ N_{SS})dBi=1.00+10log(2/1)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^2)	Limit of Power Density (S) (mW/cm^2)	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^2)	Limit of Power Density (S) (mW/cm^2)	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^2)/Limit of Power Density (S) (mW/cm^2)

End of Test Report