FCC RF EXPOSURE REPORT

FCC ID: 2BH7FHB810

Project No.	:	2409G041B
Equipment	:	BE22000 Whole Home Mesh Wi-Fi 7 AP
Brand Name	:	tp-link
Test Model	:	HB810
Series Model	:	N/A
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	:	Sep. 24, 2024
Date of Test	:	Sep. 27, 2024 ~ Jan. 14, 2025
Issued Date	:	Jul. 23, 2025
Test Sample	:	Engineering Sample No.: SSL20240924146
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)

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-5-2409G041B	R00	This is a copy report which referencing test data are provided from the original test report (BTL-FCCP-5-2409G041). The product has replaced the pin to pin of FEM which does not affect the test results. The test results are kept the same with original report.	Jul. 23, 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	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	3101505537	Dipole	IPEX	1.98
2	tp-link	3101505538	Dipole	IPEX	1.97
3	tp-link	3101505539	Dipole	IPEX	1.96
4	tp-link	3101505540	Dipole	IPEX	1.99

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=1.99.
For power spectral density measurements, N_{ANT}=4, N_{SS} = 1.
So the Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/ N_{SS})dBi=1.99+10log(4/1)dBi=8.01.
2) Beamforming Gain: 6dBi. Then the Directional gain=6+1.99=7.99.
3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	3101505537	Dipole	IPEX	2.99
2	tp-link	3101505538	Dipole	IPEX	2.98
3	tp-link	3101505539	Dipole	IPEX	2.98
4	tp-link	3101505540	Dipole	IPEX	2.97

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=2.99.
For power spectral density measurements, N_{ANT}=4, N_{SS} = 1.
So the Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/ N_{SS})dBi=2.99+10log(4/1)dBi=9.01.
2) Beamforming Gain: 6dBi. Then the Directional gain=6+2.99=8.99.
3) The antenna gain and beamforming gain are provided by the manufacturer.

For WIFI 6E:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	3101505936	Dipole	IPEX	2.98
2	tp-link	3101505937	Dipole	IPEX	2.96
3	tp-link	3101505938	Dipole	IPEX	2.99
4	tp-link	3101505939	Dipole	IPEX	2.98

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=2.99. For power spectral density measurements, N_{ANT}=4, N_{SS} = 1 and N_{SS} = 4. So the NSS1 Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/N_{SS})dBi=2.99+10log(4/1)dBi=9.01, NSS2 Directional gain=G_{ANT}+Array Gain=G_{ANT}+10log(N_{ANT}/N_{SS})dBi=2.99+10log(4/4)dBi=2.99.
2) Beamforming Gain: 6dBi. so the Directional gain=2.99+6=8.99.
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
1.99	1.5812	29.06	805.3784	0.25348	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
2.99	1.9907	29.88	972.7472	0.38543	1	Complies

For WIFI 6E:

Max. e.i.r.p. (dBm)	Max. e.i.r.p. (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
29.62	916.2205	0.18237	1	Complies

For the max simultaneous transmission MPE:

Ratio			Total	Limit of Ratio	Test Result
2.4GHz	5GHz	WIFI 6E			
0.25348	0.38543	0.18237	0.82128	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