

FCC RF EXPOSURE REPORT

FCC ID: 2BH7FRE235BEV2

Project No. : 2507C391
Equipment : BE3600 Wi-Fi 7 Range Extender
Brand Name : tp-link
Test Model : RE235BE
Model Name : RE235BE
Hardware Version : V2.0
Software Version : V2.0
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 : Jul. 31, 2025
Date of Test : Aug. 01, 2025 ~ Dec. 11, 2025
Issued Date : Dec. 24, 2025
Test Sample : Engineering Sample No.: DG2025073146
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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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-5-2507C391	R00	Original Report.	Dec. 24, 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	RE235BE	Dipole	ipex	5.57
2	 tp-link	RE235BE	Dipole	ipex	5.19

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 ($N_{ANT} \leq 4$), so the Directional gain=5.57.
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)= $10\log[(10^{2.80/20} + 10^{3.00/20})^2 / 2]$ dBi=5.91.
- 2) Beamforming Gain = 3dB.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz Band 1-4:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	 tp-link	RE235BE	Dipole	ipex	5.62	UNII-1
					5.60	UNII-2A
					6.00	UNII-2C
					6.03	UNII-3
2	 tp-link	RE235BE	Dipole	ipex	6.04	UNII-1
					5.68	UNII-2A
					5.54	UNII-2C
					5.45	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=6.04, the UNII-2A Directional gain=5.68,
the UNII-2C Directional gain=6.00, the UNII-3 Directional gain=6.03,

For power spectral density measurements, the Directional gain(each angle)
= $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$ dBi,
the UNII-1 Directional gain(each angle)= $10\log[(10^{2.90/20} + 10^{3.00/20})^2 / 2]$ dBi=5.96,
the UNII-2A Directional gain(each angle)= $10\log[(10^{2.95/20} + 10^{2.92/20})^2 / 2]$ dBi=5.95,
the UNII-2C Directional gain(each angle)= $10\log[(10^{2.99/20} + 10^{2.98/20})^2 / 2]$ dBi=6.00,
the UNII-3 Directional gain(each angle)= $10\log[(10^{2.99/20} + 10^{2.95/20})^2 / 2]$ dBi=5.98.
- 2) Beamforming Gain = 3dB.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5.9GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	 tp-link	RE235BE	Dipole	ipex	6.03
2	 tp-link	RE235BE	Dipole	ipex	5.45

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 ($N_{ANT} \leq 4$), so the Directional gain=6.03.
For power spectral density measurements, the Directional gain(each angle)
= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$ dBi, so the Directional gain(each angle)= $10 \log[(10^{2.99/20} + 10^{2.95/20})^2 / 2]$ dBi=5.98.
- 2) Beamforming Gain = 3dB.
- 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
5.57	3.6058	24.28	267.9168	0.1922	1	Pass

For 5GHz Band 1-4:

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
6.03	4.0087	27.73	592.9253	0.4729	1	Pass

For 5.9GHz:

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
33.65	2317.3946	0.4610	1	Pass

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
2.4GHz	5GHz Band 1-4			
0.1922	0.4729	0.6651	1	Pass

Note:

- (1) The calculated distance is 20 cm.
- (2) Ratio=Power Density (S) (mW/cm²)/Limit of Power Density (S) (mW/cm²)

End of Test Report