

# FCC RF EXPOSURE REPORT

## FCC ID: V7TAC8

**Project No.** : 1906C044A  
**Equipment** : AC1200 Dual-band Gigabit Wireless Router  
**Brand Name** : Tenda  
**Test Model** : AC8  
**Series Model** : N/A  
**Applicant** : SHENZHEN TENDA TECHNOLOGY CO.,LTD  
**Address** : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052  
**Manufacturer** : SHENZHEN TENDA TECHNOLOGY CO.,LTD  
**Address** : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052  
**Date of Receipt** : Aug. 26, 2019  
**Date of Test** : Aug. 26, 2019~Sep. 25, 2019  
**Issued Date** : Oct. 21, 2019  
**Report Version** : R01  
**Test Sample** : Engineering Sample No.: DG19082228  
**Standard(s)** : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091  
FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

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 Version	Description	Issued Date
R00	Original Issue	Oct. 12, 2019
R01	Updated the test result.	Oct. 21, 2019

## 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

Table for Filed Antenna

Antenna Specification:

For 2.4G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Dipole	N/A	5
2	N/A	N/A	Dipole	N/A	5

Note:

- (1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R), all transmit signals are completely correlated, then, Direction gain =  $G_{ANT} + 10\log(N)\text{dBi} = 5 + 10\log(2)$ , that is Directional gain=8.01.  
So, the out power limit is  $30 - 8.01 + 6 = 27.99$ , the power density limit is  $8 - 8.01 + 6 = 5.99$
- (2) Beamforming Gain: 3 dB.  
So, Direction gain =  $3 + 5 = 8$ , the out power limit is  $30 - 8 + 6 = 28$ ,  
the power density limit is  $8 - 8 + 6 = 6$ .

For 5G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	N/A	N/A	Dipole	N/A	5
	N/A	N/A	Dipole	N/A	5

Note:

- (1) This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =  $G_{ANT} + 10\log(N)\text{dBi}$ , that is Directional gain= $5 + 10\log(2)\text{dBi} = 8.01$ ; So the UNII-1, UNII-3 output power limit is  $30 - 8.01 + 6 = 27.99$ . The UNII-1 power density limit is  $17 - 8.01 + 6 = 14.99$ , the UNII-3 power density limit is  $30 - 8.01 + 6 = 27.99$ .
- (2) Beamforming Gain: 3 dB, So, Direction gain =  $3 + 5 = 8$ , the UNII-1, UNII-3 out power limit is  $30 - 8 + 6 = 28$

## 2. TEST RESULTS

For 2.4GHz Non Beamforming:

Direction gain (dBi)	Antenna 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
8.01	6.3241	22.06	160.6941	0.20228	1	Complies

For 2.4GHz Beamforming :

Direction gain (dBi)	Antenna 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
8	6.3096	21.46	139.9587	0.17577	1	Complies

For 5GHz UNII-1 Non Beamforming:

Direction gain (dBi)	Antenna 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
8.01	6.3241	25.55	358.9219	0.45180	1	Complies

For 5GHz UNII-1 Beamforming:

Direction gain (dBi)	Antenna 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
8	6.3096	24.94	311.8890	0.39170	1	Complies

For 5GHz UNII-3 Non Beamforming:

Direction gain (dBi)	Antenna 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
8.01	6.3241	24.69	294.4422	0.37064	1	Complies

For 5GHz UNII-3 Beamforming:

Direction gain (dBi)	Antenna 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
8	6.3096	24.07	255.2701	0.32059	1	Complies

**For the max simultaneous transmission MPE:**

2.4G+5G

Power Density (S) (mW/cm <sup>2</sup> )	Power Density (S) (mW/cm <sup>2</sup> )	Total	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
2.4GHz	5GHz			
0.20228	0.45180	0.65408	1	Complies

Note: The calculated distance is 20 cm.

**End of Test Report**