

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.

Kai Xu

Prepared by : Kai Xu

Ethan Ma

Approved by : Ethan Ma



Certificate #5123.02

Add: No.3, Jinshagang 1st Road, Shixia, Dalang Town,Dongguan, Guangdong, China.

Tel: +86-769-8318-3000

Web: www.newbtl.com

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

Note: The calculated distance is 20 cm.

End of Test Report