FCC RF EXPOSURE REPORT

FCC ID: V7TAC5V3

Project No.	:	1912C183
Equipment	:	AC1200 Smart Dual-band WiFi Router
Brand Name	:	Tenda
Test Model	:	AC5
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	:	Dec. 27, 2019
Date of Test	:	Jan. 03, 2020 ~ Jan. 12, 2020
Issued Date	:	Feb. 11, 2020
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG2019122778
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	Feb. 11, 2020

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

Table for Filed Antenna

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: This EUT supports MIMO 2X2, and all antennas have the same gain,

(1) Antenna Gain=5 dBi. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain = GANT+10log(N)dBi, that is Directional gain =5+10log(2)dBi=8.01. So, the output power limit is 30-(8.01-6)=27.99, the power spectral density limit is 8-(8.01-6)=5.99.

(2) For Beamforming Function:
Beamforming Gain=3 dBi, Directional gain=3+5=8 dBi. So, the output power limit is 30-(8-6)=28, the power spectral density limit is 8-(8-6)=6.

For 5G:

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: This EUT supports MIMO 2X2, and all antennas have the same gain,

(1) For Non-Beamforming Function:
Antenna Gain=5 dBi. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain = $G_{Ant.}$+10log(N)dBi, that is Directional gain =5+10log(2)dBi=8.01. So, the UNII-1, UNII-3 output power limit is 30-(8.01-6)=27.99. The UNII-1 power spectral density limit is 17-(8.01-6)=14.99, the UNII-3 power spectral density limit is 30-(8.01-6)=27.99.

(2) For Beamforming Function:
Beamforming Gain=3 dBi, Directional gain=3+5=8 dBi. So, the UNII-1, UNII-3 output power limit is 30-(8-6)=28. The UNII-1 power spectral density limit is 17-(8-6)=15, the UNII-3 power spectral density limit is 30-(8-6)=28.

2. TEST RESULTS

For 2.4GHz_Non Beamforming:

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
8.01	6.3241	27.94	622.3003	0.78334	1	Complies

For 2.4GHz_With Beamforming:

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
8.00	6.3096	27.85	609.5369	0.76551	1	Complies

For 5GHz UNII-1_Non Beamforming:

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
8.01	6.3241	20.35	108.3927	0.13644	1	Complies

For 5GHz UNII-1_Beamforming:

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
8.00	6.3096	20.25	105.9254	0.13303	1	Complies

For 5GHz UNII-3_Non Beamforming:

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
8.01	6.3241	18.32	67.9204	0.08550	1	Complies

For 5GHz UNII-3_Beamforming:

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
8.00	6.3096	18.01	63.2412	0.07942	1	Complies

For the max simultaneous transmission MPE:

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			
0.78334	0.13644	0.91978	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report