

FCC RF EXPOSURE REPORT

FCC ID: V7TA18V2

Project No. : 2102C285
Equipment : 1) AC1200 Dual Band WiFi Repeater
2) AC750 Dual Band WiFi Repeater
Brand Name : Tenda
Test Model : A18
Series Model : A15
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 : Feb. 24, 2021
Date of Test : Feb. 24, 2021 ~ Apr. 06, 2021
Issued Date : Apr. 13, 2021
Report Version : R00
Test Sample : Engineering Sample No.: DG20210224147
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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Certificate #5123.02

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue	Apr. 13, 2021

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

2. 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:

For 2.4GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	3.5
2	N/A	N/A	Internal	N/A	3.5

Note:

- 1) This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain= $G_{ANT}+10\log(N)$ dBi, that is Directional gain= $3.5+10\log(2)$ dBi=6.51. So, the output power limit is $30-(6.51-6)=29.49$, the power spectral density limit is $8-(6.51-6)= 7.49$.
- 2) Beamforming Gain: 3 dB. Directional gain= $3.5+3=6.5$ dB. So, the output power limit is $30-(6.5-6)=29.5$.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

Table for Antenna Configuration:

For Non Beamforming

Operating Mode	TX Mode	1TX	2TX
IEEE 802.11b		V (Ant. 1)	-
IEEE 802.11g		V (Ant. 1)	-
IEEE 802.11n(HT20)		-	V (Ant. 1+Ant. 2)
IEEE 802.11n(HT40)		-	V (Ant. 1+Ant. 2)

For Beamforming

Operating Mode	TX Mode	2TX
IEEE 802.11n(HT20)		V (Ant. 1+Ant. 2)
IEEE 802.11n(HT40)		V (Ant. 1+Ant. 2)

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	3
2	N/A	N/A	Internal	N/A	3

Note:

- 1) This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain= $G_{ANT}+10\log(N)$ dBi, that is Directional gain= $3+10\log(2)$ dBi=6.01. So, the UNII-1, UNII-3 output power limit is $30-(6.01-6)=29.99$. The UNII-1 power spectral density limit is $17-(6.01-6)=16.99$, the UNII-3 power spectral density limit is $30-(6.01-6)=29.99$.
- 2) Beamforming Gain: 3 dB. Directional gain= $3+3=6$ dB.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

Table for Antenna Configuration:

For Non Beamforming:

Operating Mode TX Mode	1TX	2TX
IEEE 802.11a	V (Ant. 1)	-
IEEE 802.11n(HT20)	-	V (Ant. 1+Ant. 2)
IEEE 802.11n(HT40)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT20)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT40)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT80)	-	V (Ant. 1+Ant. 2)

For Beamforming:

Operating Mode TX Mode	2TX
IEEE 802.11n(HT20)	V (Ant. 1+Ant. 2)
IEEE 802.11n(HT40)	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT20)	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT40)	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT80)	V (Ant. 1+Ant. 2)

3. 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
6.51	3.9719	29.36	862.9785	0.76904	1	Complies

For 2.4GHz 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
6.50	4.4668	29.27	845.2788	0.75154	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
6.01	3.9902	21.92	155.5966	0.12358	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
6.00	3.9811	21.66	146.5548	0.11613	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
6.01	7.2444	23.40	218.7762	0.17376	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
6.00	3.9811	23.01	199.9862	0.15847	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			
0.76904	0.17376	0.94280	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report