FCC RF EXPOSURE REPORT

FCC ID: V7TI24

Project No. : 1901C087
Equipment : AC1200 Wave2 Gigabit Access Point
Test Model : i24
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

According: : FCC Guidelines for Human Exposure IEEE
C95.1 & FCC Part 2.1091

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Certificate #5123.02

1. GENERAL SUMMARY

Equipment   : AC1200 Wave2 Gigabit Access Point
Brand Name : Tenda
Test Model   : i24
Series Model : N/A
Applicant   : SHENZHEN TENDA TECHNOLOGY CO.,LTD
Manufacturer : SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address   : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052
Date of Test : Jan. 18, 2019~Feb. 23, 2019
Test Sample : Engineering Sample No.: D190100581
Standards   : 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.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-3-1901C087) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

2. 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

Antenna Specification:

For WLAN 2.4G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	2.7
2	N/A	N/A	Internal	N/A	3

Note:
(1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R),any transmit signals are correlated with each other, so Directional gain $=10\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]$dBi, that is Directional gain= $10\log[(10^{2.7/20}+10^{3/20})^2/2]$dBi $=5.86$.

(2) Beamorming Gain: 3dB.
Directional gain=3+3=6

For RLAN 5G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	4.5
2	N/A	N/A	Internal	N/A	4.5

Note:
The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R), all transmit signals are completely correlated, so,

(1) For Non Beamforming function, Directional gain=GANT+Array Gain,
For power spectral density measurements, Array Gain=10log(NANT/NSS) dB
Directional gain=4.50+10log(2/1) =7.51dBi.
So, the UNII-1 power density limit is 17-(7.51-6)=15.49
the UNII-3 power density limit is 30-(7.51-6)=28.49

(2) For Beamforming function, Beamforming gain: 3dB, So,
Directional gain=3+4.50=7.50dBi.
Then, the output power limit is 30-7.50+6=28.50,
the UNII-1 power density limit is 17-(7.50-6)=15.50,
the UNII-3 power density limit is 30-(7.50-6)=28.50.

3. TEST RESULTS

WLAN 2.4G Non-Beamforming:

Directional gain (dBi)	Directional gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
5.86	3.8548	27.16	519.9960	0.39898	1	Complies

WLAN 2.4G Beamforming:

Directional gain (dBi)	Directional gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6	3.9811	26.61	458.1419	0.36304	1	Complies

5G Band UNII-1 Non-Beamforming:

Directional gain (dBi)	Directional gain (numeric)	Max Conducted Output Power (dBm)	Max Conducted Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
7.51	5.6364	26.99	500.0345	0.56098	1	Complies

5G Band UNII-1 Beamforming:

Directional gain (dBi)	Directional gain (numeric)	Max Conducted Output Power (dBm)	Max Conducted Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
7.50	5.6234	26.81	479.7334	0.53697	1	Complies

5G Band UNII-3 Non-Beamforming:

Directional gain (dBi)	Directional gain (numeric)	Max Conducted Output Power (dBm)	Max Conducted Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
7.51	5.6364	26.34	430.5266	0.48300	1	Complies

5G Band UNII-3 Beamforming:

Directional gain (dBi)	Directional gain (numeric)	Max Conducted Output Power (dBm)	Max Conducted Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
7.50	5.6234	26.29	425.5984	0.47638	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm^2) 2.4G	Power Density (S) (mW/cm^2) 5G	Total	Limit of Power Density (S) (mW/cm^2)	Test Result
0.39898	0.56098	0.95996	1	Complies

Note: the calculated distance is 20 cm.

End of Test Report