FCC RF EXPOSURE REPORT

FCC ID: V7TMESH5

Project No. : 1806C125
Equipment : AC1200 Whole Home Mesh WiFi System
Model : Mesh5
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

B T L I N C .

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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
2.4G

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

Note:
The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R), all transmit signals are completely correlated,
then,
for non-beamforming function,
Direction gain = G_{ANT}+10log(N)dBi=3+10log(2), that is Directional gain=6.01.
So, the out power limit is 30-6.01+6=29.99,
the power density limit is 17-6.01+6=16.99.
for beamforming function,
Beamforming Gain=3 dBi, Direction gain =6.01.
So,the out power limit is 30-6.01-3+6=26.99,
the power density limit is 17-6.01-3+6=13.99.

5G

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	PCB	IPEX	3
2	N/A	N/A	PCB	IPEX	3

Note:
The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R), all transmit signals are completely correlated, then,
for non-beamforming function,
Direction gain = $G_{ANT}+10\log(N)$dBi=$3+10\log(2)$, that is Directional gain=6.01.
So, for UNII-1,
the out power limit is 30-6.01+6=29.99,
the power density limit is 17-6.01+6=16.99.
for UNII-3,
the out power limit is 30-6.01+6=29.99,
the power density limit is 30-6.01+6=29.99.
for beamforming function,
Beamforming Gain=3 dBi, Directional gain=6.01.
So,for UNII-1,
the out power limit is 30-6.01-3+6=26.99,
the power density limit is 17-6.01-3+6=13.99.
for UNII-3,
the out power limit is 30-6.01-3+6=26.99,
the power density limit is 30-6.01-3+6=26.99.

TEST RESULTS

2.4G WIFI

Non-Beamforming:

EUT：	AC1200 Whole Home Mesh WiFi System	Model Name :	Mesh5
Temperature：	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		

WIFI 2.4G Non-Beamforming:

Antenna Gain (dBi)	Antenna 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
3	1.9953	29.85	966.0509	0.38366	1	Complies

WIFI 2.4G with Beamforming:

Antenna Gain (dBi)	Antenna 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
3	1.9953	26.82	480.8393	0.19096	1	Complies

UNII-1 Non-Beamforming:

Antenna Gain (dBi)	Antenna 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
3	1.9953	28.25	668.3439	0.26543	1	Complies

UNII-1 with Beamforming

Antenna Gain (dBi)	Antenna 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
3	1.9953	23.72	235.5049	0.09353	1	Complies

UNII-3 Non-Beamforming:

Antenna Gain (dBi)	Antenna 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
3	1.9953	28.61	726.1060	0.28837	1	Complies

UNII-3 with Beamforming

Antenna Gain (dBi)	Antenna 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
3	1.9953	26.63	460.2566	0.18279	1	Complies

For 2.4G+5G simultaneous transmission MPE:

$$0.38366/1+0.28837/1=0.67203$$

Note: the calculated distance is 20 cm.