FCC RF EXPOSURE REPORT

FCC ID: V7TAC18

Project No.	**: 1608C055**
Equipment	**: AC1900 Enhanced Smart Dual-band Gigabit WiFi Router**
Model	**: AC18**
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**

BTL INC.

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

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000

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

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	Tenda	AC18 V1.0	Dipole	N/A	3
2	Tenda	AC18 V1.0	Dipole	N/A	3
3	Tenda	AC18 V1.0	Dipole	N/A	3

Note:
The EUT incorporates a MIMO function. Physically, the EUT provides three completed transmitters and receivers (3T3R), all transmit signals are completely uncorrelated, then, **Direction gain = G_{ANT}**, that is Directional gain=3.

2.4G:

Operating Mode / TX Mode	1TX	3TX
802.11b	V (ANT 1)	-
802.11g	V (ANT 1)	-
802.11n(20MHz)	-	V (ANT 1 + ANT 2+ANT 3)
802.11n(40MHz)	-	V (ANT 1 + ANT 2+ANT 3)

5G:

Operating Mode / TX Mode	1TX	3TX
802.11a	V (ANT 1)	-
802.11n (20MHz)	-	V (ANT+1 ANT 2+ANT 3)
802.11n (40MHz)	-	V (ANT+1 ANT 2+ANT 3)
802.11ac (20MHz)	-	V (ANT+1 ANT 2+ANT 3)
802.11ac (40MHz)	-	V (ANT+1 ANT 2+ANT 3)
802.11ac (80MHz)	-	V (ANT+1 ANT 2+ANT 3)

TEST RESULTS

2.4G:

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature：	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode ：	TX B Mode_CH01/06/11		

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	25.72	373.2502	0.14823	1	Complies
3	1.9953	28.12	648.6344	0.25760	1	Complies
3	1.9953	26.61	458.1419	0.18195	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature：	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode ：	TX G Mode_CH01/06/11		

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	26.54	450.8167	0.17904	1	Complies
3	1.9953	27.32	539.5106	0.21426	1	Complies
3	1.9953	26.58	454.9881	0.18070	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 Mode_CH01/06/11_Total		

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	27.34	542.0009	0.21525	1	Complies
3	1.9953	27.29	535.7967	0.21279	1	Complies
3	1.9953	27.38	547.0160	0.21725	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-40M MODE_Total /CH03, CH06, CH09		

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	27.33	540.7543	0.21476	1	Complies
3	1.9953	27.03	504.6613	0.20042	1	Complies
3	1.9953	26.97	497.7371	0.19767	1	Complies

5G:

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature：	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode ：	UNII-1/TX A Mode		

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	18.38	68.8652	0.02735	1	Complies
3	1.9953	19.74	94.1890	0.03741	1	Complies
3	1.9953	17.91	61.8016	0.02454	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature：	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode ：	UNII-1/TX N20 Mode_Total		

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	22.27	168.6553	0.06698	1	Complies
3	1.9953	21.04	127.0574	0.05046	1	Complies
3	1.9953	21.18	131.2200	0.05211	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-1/TX N40 Mode_Total		

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	21.88	154.1700	0.06123	1	Complies
3	1.9953	23.82	240.9905	0.09571	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/ TX A Mode		

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	23.09	203.7042	0.08090	1	Complies
3	1.9953	24.71	295.8012	0.11748	1	Complies
3	1.9953	24.49	281.1901	0.11167	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/TX N20 Mode_Total		

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	26.41	437.5221	0.17376	1	Complies
3	1.9953	24.54	284.4461	0.11297	1	Complies
3	1.9953	24.91	309.7419	0.12301	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/TX N40 Mode_Total		

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
3	1.9953	27.27	533.3349	0.21181	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-1/TX AC20 Mode_Total		

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	21.52	141.9058	0.05636	1	Complies
3	1.9953	20.06	101.3911	0.04027	1	Complies
3	1.9953	20.8	120.2264	0.04775	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-1/TX AC40 Mode_Total		

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	20.74	118.5769	0.04709	1	Complies
3	1.9953	22.14	163.6817	0.06501	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-1/TX AC80 Mode_Total		

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	24.32	270.3958	0.10739	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/TX AC20 Mode_Total		

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	27.51	563.6377	0.22385	1	Complies
3	1.9953	24.31	269.7739	0.10714	1	Complies
3	1.9953	25.78	378.4426	0.15030	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/TX AC40 Mode_Total		

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	26.72	469.8941	0.18662	1	Complies
3	1.9953	27.19	523.6004	0.20795	1	Complies

EUT：	AC1900 Enhanced Smart Dual-band Gigabit WiFi Router	Model Name :	AC18
Temperature:	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/TX AC80 Mode_Total		

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	27.63	579.4287	0.23012	1	Complies

MPE for 2.4G and 5G transmiting simultaneously:

0.25760+0.23012=0.48772 <1 mW/cm^2

Note: the calculated distance is 20 cm.