

# **FCC RF EXPOSURE REPORT**

**FCC ID: T58WF2780FR**

**Project No. : 1607C232**  
**Equipment : AC1200 WIRELESS DUAL BAND GIGABIT FIBER  
ROUTER**  
**Model : WF2780F**  
**Applicant : NETIS SYSTEMS CO., LTD**  
**Address : 4F&5F R&D Building, Oriental Cyberport, High-Tech  
Industrial Park, Nanshan, Shenzhen, China.**  
**According: : FCC Guidelines for Human Exposure IEEE C95.1**

**B T L I N C .**

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## 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

### 2.4G WIFI

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

### 5G WIFI

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

# TEST RESULTS

## 2.4G WIFI

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	TX B MODE /CH01, CH06, CH11_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	17.03	50.4661	0.03176511	1	Complies
5	3.1623	16.83	48.1948	0.03033544	1	Complies
5	3.1623	16.71	46.8813	0.02950872	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX G MODE /CH01, CH06, CH11_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	23.68	233.3458	0.14687584	1	Complies
5	3.1623	23.53	225.4239	0.14188954	1	Complies
5	3.1623	23.41	219.2805	0.13802265	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 MODE /CH01, CH06, CH11_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	21.68	147.2313	0.09267239	1	Complies
5	3.1623	21.73	148.9361	0.09374549	1	Complies
5	3.1623	21.69	147.5707	0.09288602	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 MODE /CH03, CH06, CH09_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	21.36	136.7729	0.08608954	1	Complies
5	3.1623	21.27	133.9677	0.08432384	1	Complies
5	3.1623	21.20	131.8257	0.08297559	1	Complies

## UNII-1

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A MODE / CH36, CH40, CH48_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	13.70	23.4423	0.01475538	1	Complies
5	3.1623	13.79	23.9332	0.01506435	1	Complies
5	3.1623	13.65	23.1739	0.01458648	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 MODE / CH36, CH40, CH48_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.78	18.9671	0.01193852	1	Complies
5	3.1623	12.67	18.4927	0.01163993	1	Complies
5	3.1623	12.81	19.0985	0.01202127	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 MODE / CH38, CH46_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.69	18.5780	0.01169366	1	Complies
5	3.1623	12.74	18.7932	0.01182906	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC20 MODE / CH36, CH40, CH48_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.71	18.6638	0.01174763	1	Complies
5	3.1623	12.84	19.2309	0.01210460	1	Complies
5	3.1623	12.73	18.7499	0.01180186	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC40 MODE / CH38, CH46_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.66	18.4502	0.01161316	1	Complies
5	3.1623	12.61	18.2390	0.01148022	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC80 MODE / CH42_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.79	19.0108	0.01196604	1	Complies

### UNII-3

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A MODE / CH149, CH157, CH165_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	13.78	23.8781	0.01502970	1	Complies
5	3.1623	13.65	23.1739	0.01458648	1	Complies
5	3.1623	13.82	24.0991	0.01516877	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 MODE / CH149, CH157, CH165_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.69	18.5780	0.01169366	1	Complies
5	3.1623	12.83	19.1867	0.01207676	1	Complies
5	3.1623	12.79	19.0108	0.01196604	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 MODE / CH151, CH159_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.76	18.8799	0.01188366	1	Complies
5	3.1623	12.88	19.4089	0.01221660	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC20 MODE / CH149, CH157, CH165_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.70	18.6209	0.01172061	1	Complies
5	3.1623	12.85	19.2752	0.01213250	1	Complies
5	3.1623	12.85	19.2752	0.01213250	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC40 MODE / CH151, CH159_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.67	18.4927	0.01163993	1	Complies
5	3.1623	12.75	18.8365	0.01185633	1	Complies

EUT:	AC1200 WIRELESS DUAL BAND GIGABIT FIBER ROUTER	Model Name :	WF2780F
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC80 MODE / CH155_ANT 1+ ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
5	3.1623	12.84	19.2309	0.01210460	1	Complies

**For 2.4G+5G simultaneous transmission MPE:**

$$0.1469/1+0.0152/1=0.1621<1$$

Note: the calculated distance is 20 cm.