



Neutron Engineering Inc.

FCC RF EXPOSURE REPORT

FCC ID: T58WF2420R

Project No. : 1205C015B
Equipment : 300Mbps Wireless-N AP/ Repeater / Router client
Model : WF2420
Applicant : NETIS SYSTEMS CO., LTD.
Address : 9F,B Block, Tsinghua Information Park, High-tech
Industrial Park, Nanshan, Shenzhen, China

According: : **FCC Guidelines for Human Exposure IEEE C95.1**

Neutron Engineering Inc.

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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

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	Kuang-Chi	KCI2401	Integral	N/A	4.10	
2	Kuang-Chi	KCI2402	Integral	N/A	4.62	

Note:

The antenna of EUT could be rotated, but the Antenna Polarity vertical is max.

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

then, Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi , that is Directional gain=7.37; so, the out power limit is 30-7.37+6=28.63, the power density limit is 8-7.37+6=6.63

Operating Mode TX Mode	1TX	2TX
	802.11b	V (ANT1 or ANT2)
802.11g	V (ANT1 or ANT2)	-
802.11n(20MHz)	-	V (ANT1 & ANT2)
802.11n(40MHz)	-	V (ANT1 & ANT2)



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Test Result:

EUT:	300Mbps Wireless-N AP/ Repeater / Router client	Model Name :	WF2420
Temperature:	25 °C	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

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
4.62	2.8973	17.25	53.0884	0.06108722	1	Complies
4.62	2.8973	17.45	55.5904	0.06396617	1	Complies
4.62	2.8973	17.49	56.1048	0.06455804	1	Complies

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Temperature:	25 °C	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

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
4.62	2.8973	24.23	264.8500	0.30475467	1	Complies
4.62	2.8973	24.26	266.6859	0.30686713	1	Complies
4.62	2.8973	24.11	257.6321	0.29644926	1	Complies

EUT:	300Mbps Wireless-N AP/ Repeater / Router client	Model Name :	WF2420
Temperature:	25 °C	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT1		

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
4.10	2.5704	20.48	111.6863	0.12851398	1	Complies
4.10	2.5704	20.75	118.8502	0.13675725	1	Complies
4.10	2.5704	20.54	113.2400	0.13030179	1	Complies



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Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT2		

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
4.62	2.8973	21.46	139.9587	0.16104616	1	Complies
4.62	2.8973	21.89	154.5254	0.17780762	1	Complies
4.62	2.8973	21.98	157.7611	0.18153082	1	Complies

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Temperature:	25 °C	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09 - ANT 1		

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
4.10	2.5704	21.16	130.6171	0.15029702	1	Complies
4.10	2.5704	21.11	129.1219	0.14857658	1	Complies
4.10	2.5704	21.04	127.0574	0.14620101	1	Complies

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Temperature:	25 °C	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09 - ANT 2		

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
4.62	2.8973	22.26	168.2674	0.19362007	1	Complies
4.62	2.8973	22.57	180.7174	0.20794590	1	Complies
4.62	2.8973	22.60	181.9701	0.20938732	1	Complies



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Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
7.37	5.4576	24.01	251.7677	0.28970125	1	Complies
7.37	5.4576	24.37	273.5269	0.31473886	1	Complies
7.37	5.4576	24.33	271.0192	0.31185332	1	Complies

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Test Mode :	TX N MODE-40MHz /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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
7.37	5.4576	24.76	299.2265	0.34431058	1	Complies
7.37	5.4576	24.91	309.7419	0.35641040	1	Complies
7.37	5.4576	24.90	309.0295	0.35559068	1	Complies