Neutron Engineering Inc.

FCC RF EXPOSURE REPORT

FCC ID: T58WF2409B

Project No.	**:**	1203C098
Equipment	**:**	300Mbps High Performance Wireless-N Broadband Router
Model	**:**	WF-2409; WF2409
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**

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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

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	Cortec	AN2400-92F19BO	Dipole	N/A	5.71	TRX
2	Cortec	AN2400-92F19BO	Dipole	N/A	5.71	TRX
3	Cortec	AN2400-92F19BO	Dipole	N/A	5.71	RX

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 three receivers (2T3R). This EUT supports MIMO, any transmit signals are correlated with each other, so $\text{Directional gain} = G_{ANT} + 10\log(N)\ \text{dBi}$, that is Directional gain=5.71+10log(2)dBi=8.71; So,the out power limit is 30-8.71+6=27.29; and power density limit is 8-8.71+6=5.29

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)

TEST RESULTS

EUT：	300Mbps High Performance Wireless-N Broadband Router	Model Name ：	WF-2409
Temperature：	25 ℃	Relative Humidity：	60 %
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	CH01/CH06/CH11-802.11b		

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
5.71	3.7239	18.40	69.1831	0.05128028	1	Complies
5.71	3.7239	17.80	60.2560	0.04466325	1	Complies
5.71	3.7239	17.96	62.5173	0.04633940	1	Complies

EUT：	300Mbps High Performance Wireless-N Broadband Router	Model Name ：	WF-2409
Temperature：	25 ℃	Relative Humidity：	60 %
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	CH01/CH06/CH11-802.11g		

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
5.71	3.7239	25.01	316.9567	0.23493643	1	Complies
5.71	3.7239	24.76	299.2265	0.22179429	1	Complies
5.71	3.7239	24.95	312.6079	0.23171298	1	Complies

EUT：	300Mbps High Performance Wireless-N Broadband Router	Model Name ：	WF-2409
Temperature：	25 ℃	Relative Humidity：	60 %
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	CH01/CH06/CH11-802.11n 20MHz – 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
5.71	3.7239	19.16	82.4138	0.06108722	1	Complies
5.71	3.7239	19.26	84.3335	0.06251013	1	Complies
5.71	3.7239	19.76	94.6237	0.07013751	1	Complies

EUT：	300Mbps High Performance Wireless-N Broadband Router	Model Name ：	WF-2409
Temperature：	25 ℃	Relative Humidity：	60 %
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	CH01/CH06/CH11-802.11n 20MHz – 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
5.71	3.7239	19.21	83.3681	0.06179458	1	Complies
5.71	3.7239	19.27	84.5279	0.06265423	1	Complies
5.71	3.7239	19.68	92.8966	0.06885736	1	Complies

EUT：	300Mbps High Performance Wireless-N Broadband Router	Model Name ：	WF-2409
Temperature：	25 ℃	Relative Humidity：	60 %
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	CH01/CH06/CH11-802.11n 20MHz – 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
8.71	7.4302	22.20	165.9587	0.24544284	1	Complies
8.71	7.4302	22.28	169.0441	0.25000596	1	Complies
8.71	7.4302	22.73	187.4995	0.27730032	1	Complies

EUT：	300Mbps High Performance Wireless-N Broadband Router	Model Name ：	WF-2409
Temperature：	25 ℃	Relative Humidity：	60 %
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	CH03/CH06/CH09-802.11n 40MHz – 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
5.71	3.7239	19.74	94.1890	0.06981526	1	Complies
5.71	3.7239	19.58	90.7821	0.06728998	1	Complies
5.71	3.7239	19.48	88.7156	0.06575827	1	Complies

EUT：	300Mbps High Performance Wireless-N Broadband Router	Model Name ：	WF-2409
Temperature：	25 ℃	Relative Humidity：	60 %
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	CH03/CH06/CH09-802.11n 40MHz – 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
5.71	3.7239	19.65	92.2571	0.06838335	1	Complies
5.71	3.7239	19.46	88.3080	0.06545614	1	Complies
5.71	3.7239	19.38	86.6962	0.06426143	1	Complies

EUT：	300Mbps High Performance Wireless-N Broadband Router	Model Name ：	WF-2409
Temperature：	25 ℃	Relative Humidity：	60 %
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	CH03/CH06/CH09-802.11n 40MHz – 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
8.71	7.4302	22.71	186.6380	0.27602624	1	Complies
8.71	7.4302	22.53	179.0606	0.26481975	1	Complies
8.71	7.4302	22.44	175.3881	0.25938829	1	Complies