Neutron Engineering Inc.

FCC RF EXPOSURE REPORT

FCC ID: QISWS319

Project No.	:	1401C069
Equipment	:	300Mbps Wireless Router
Model	:	WS319
Applicant	:	Huawei Technologies Co.,Ltd.
Address	:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, 518129 Shenzhen, P.R.C
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 Field Antenna:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	DONGGUAN SENLING INDUSTRIAL CO.,LTD	SLA-200200180	Dipole	N/A	5
2	DONGGUAN SENLING INDUSTRIAL CO.,LTD	SLA-200200070	Dipole	N/A	5

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R), all transmit signals are completely uncorrelated, then, Direction gain = G_{ANT}, that is Directional gain=5.

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

TEST RESULTS

EUT:	300Mbps Wireless Router	Model Name	WS319
Temperature:	25 ℃	Relative Humidity:	55 %
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
5	3.1623	16.81	47.9733	0.03019607	1	Complies
5	3.1623	16.82	48.0839	0.03026568	1	Complies
5	3.1623	16.81	47.9733	0.03019607	1	Complies

EUT:	300Mbps Wireless Router	Model Name	WS319
Temperature:	25 ℃	Relative Humidity:	55 %
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
5	3.1623	24.12	258.2260	0.16253630	1	Complies
5	3.1623	24.32	270.3958	0.17019640	1	Complies
5	3.1623	24.41	276.0578	0.17376022	1	Complies

EUT：	300Mbps Wireless Router	Model Name	WS319
Temperature：	25 ℃	Relative Humidity：	55 %
Test Voltage ：	AC 120V/60Hz		
Test Mode ：	TX N-20M MODE /CH01, CH06, CH11– ANT 0 + 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	3.1623	25.86	385.4784	0.01448606	1	Complies
5	3.1623	25.93	391.7419	0.01570183	1	Complies
5	3.1623	26.17	413.9997	0.01496065	1	Complies

EUT：	300Mbps Wireless Router	Model Name	WS319
Temperature：	25 ℃	Relative Humidity：	55 %
Test Voltage ：	AC 120V/60Hz		
Test Mode ：	TX N-40M MODE /CH03, CH06, CH09– ANT 0 + 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	3.1623	22.81	190.9853	0.12021270	1	Complies
5	3.1623	22.85	192.7525	0.12132502	1	Complies
5	3.1623	22.86	193.1968	0.12160470	1	Complies

Note: the calculation distance is 20 cm.