



Neutron Engineering Inc.

FCC RF EXPOSURE REPORT

FCC ID: VW7SR510N

Project No. : 1205C057D
Equipment : 802.11n VDSL2 Gateway
Model : SR510n
Applicant : SmartRG, Inc.
Address : 501 SE Columbia Shores Blvd., Suite 500, Vancouver,
Washington, United States, 98661

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

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	T&W	800073110005	Dipole	R-SMA	2.23	
2	T&W	800073110005	Dipole	R-SMA	2.23	

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R)

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)



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TEST RESULTS

EUT:	802.11n VDSL Gateway	Model Name :	SR510n
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 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
2.23	1.6711	19.6	91.2011	0.03033544	1	Complies
2.23	1.6711	18.95	78.5236	0.02611863	1	Complies
2.23	1.6711	19.41	87.2971	0.02903691	1	Complies

EUT:	802.11n VDSL Gateway	Model Name :	SR510n
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 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
2.23	1.6711	23.15	206.5380	0.06869899	1	Complies
2.23	1.6711	23.03	200.9093	0.06682675	1	Complies
2.23	1.6711	23.77	238.2319	0.07924108	1	Complies



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EUT:	802.11n VDSL Gateway	Model Name :	SR510n
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M 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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.23	1.6711	25.78	378.4426	0.12587816	1	Complies
2.23	1.6711	26.44	440.5549	0.14653804	1	Complies
2.23	1.6711	26.12	409.2607	0.13612891	1	Complies

EUT:	802.11n VDSL Gateway	Model Name :	SR510n
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M 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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.23	1.6711	23.14	206.0630	0.06854099	1	Complies
2.23	1.6711	25.58	361.4099	0.12021270	1	Complies
2.23	1.6711	24.03	252.9298	0.08412990	1	Complies

Note: the calculation distance is 20cm.