



## 9. RF EXPOSURE TEST

### 9.1 APPLIED PROCEDURES / LIMIT

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

#### 9.1.1 MPE CALCULATION METHOD

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d}$$

$$\text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = Peak RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

#### 9.1.2 DEVIATION FROM STANDARD

No deviation.

#### 9.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



#### 9.1.4 TEST RESULTS

EUT :	802.11n Wireless Broadband Router	Model Name :	NW705 PLUS
Temperature :	30°C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	<b>TX B MODE CH01, CH06, CH11</b>		

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
2.0	1.5849	15.43	34.9140	0.01101413	1	Complies
<b>2.0</b>	<b>1.5849</b>	<b>15.73</b>	<b>37.4111</b>	<b>0.01180186</b>	<b>1</b>	<b>Complies</b>
2.0	1.5849	15.53	35.7273	0.01127069	1	Complies

EUT :	802.11n Wireless Broadband Router	Model Name :	NW705 PLUS
Temperature :	30°C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	<b>TX G MODE CH01, CH06, CH11</b>		

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
<b>2.0</b>	<b>1.5849</b>	<b>14.45</b>	<b>27.8612</b>	<b>0.00878922</b>	<b>1</b>	<b>Complies</b>
2.0	1.5849	14.32	27.0396	0.00853003	1	Complies
2.0	1.5849	14.23	26.4850	0.00835508	1	Complies



EUT :	802.11n Wireless Broadband Router	Model Name :	NW705 PLUS
Temperature :	30°C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	<b>TX N MODE-20M CH01</b> , CH06, CH11		

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
<b>2.0</b>	<b>1.5849</b>	<b>14.32</b>	<b>27.0396</b>	<b>0.00853003</b>	<b>1</b>	<b>Complies</b>
2.0	1.5849	14.26	26.6686	0.00841299	1	Complies
2.0	1.5849	14.22	26.4241	0.00833586	1	Complies

EUT :	802.11n Wireless Broadband Router	Model Name :	NW705 PLUS
Temperature :	30°C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	<b>TX N MODE-40M CH03</b> , CH06, CH09		

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
<b>2.0</b>	<b>1.5849</b>	<b>14.32</b>	<b>27.0396</b>	<b>0.00853003</b>	<b>1</b>	<b>Complies</b>
2.0	1.5849	14.18	26.1818	0.00825944	1	Complies
2.0	1.5849	14.01	25.1768	0.00794237	1	Complies