



## 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 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2487A	6K00004714	Feb. 10, 2010
2	Power Meter Sensor	Anritsu	MA2491A	34138	Feb. 10, 2010

Remark: " N/A" denotes No Model Name , Serial No. or No Calibration specified.

#### 9.1.2 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



### 9.1.3 DEVIATION FROM STANDARD

No deviation.

### 9.1.4 TEST SETUP



### 9.1.5 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.



### 9.1.6 TEST RESULTS

EUT :	SCT Wireless Mini WiFi Wireless-N-Router	Model Name :	SCT-2700WNR
Temperature :	26 °C	Relative Humidity :	47%
Test Voltage :	AC 120V/60Hz		
Test Mode :	802.11b		

Frequency (MHz)	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> )
2412	3.48	2.2284	19.8500	96.6051	0.042850	1
2437	3.48	2.2284	19.8600	96.8278	0.042949	1
2462	3.48	2.2284	19.9400	98.6279	0.043747	1

EUT :	IEEE 802.11 bgn Wireless Router	Model Name :	SCT-2700WNR
Temperature :	13 °C	Relative Humidity :	47%
Test Voltage :	AC 120V/60Hz		
Test Mode :	802.11g		

Frequency (MHz)	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> )
2412	3.48	2.2284	23.9300	247.1724	0.109635	1
2437	3.48	2.2284	23.9200	246.6039	0.109383	1
2462	3.48	2.2284	23.8200	240.9905	0.106893	1



EUT :	SCT Wireless Mini WiFi Wireless-N-Router	Model Name :	SCT-2700WNR
Temperature :	26 °C	Relative Humidity :	47%
Test Voltage :	AC 120V/60Hz		
Test Mode :	802.11n HT20		

Frequency (MHz)	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> )
2412	3.48	2.2284	23.6300	230.6747	0.102318	1
2437	3.48	2.2284	23.6600	232.2737	0.103027	1
2462	3.48	2.2284	23.6000	229.0868	0.101613	1

EUT :	SCT Wireless Mini WiFi Wireless-N-Router	Model Name :	SCT-2700WNR
Temperature :	26 °C	Relative Humidity :	47%
Test Voltage :	AC 120V/60Hz		
Test Mode :	802.11n HT40		

Frequency (MHz)	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> )
2412	3.48	2.2284	22.6000	181.9701	0.080714	1
2437	3.48	2.2284	23.6500	231.7395	0.102790	1
2462	3.48	2.2284	23.7000	234.4229	0.103980	1

Remark :

- (1) The MIMO test requirement, MPE shall measure by using the total sum power of each transmitter chain.