



**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**

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**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 :	Professional Outdoor 2.4Ghz 802.11b/g, AP/Bridge/Repeater.	Model Name :	AP-2010
Temperature :	13 °C	Relative Humidity :	64 %
Test Voltage :	DC 48V		
Test Mode :	802.11b (Antenna A)		

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	14.00	25.1189	8.9800	7.9068	0.039532	1
2437	14.00	25.1189	13.1700	20.7491	0.103741	1
2462	14.00	25.1189	8.9800	7.9068	0.039532	1



EUT :	Professional Outdoor 2.4Ghz 802.11b/g, AP/Bridge/Repeater.	Model Name :	AP-2010
Temperature :	13 °C	Relative Humidity :	64 %
Test Voltage :	DC 48V		
Test Mode :	802.11b (Antenna B)		

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	4.50	2.8184	14.7700	29.9916	0.016825	1
2437	4.50	2.8184	17.7800	59.9791	0.033647	1
2462	4.50	2.8184	14.3100	26.9774	0.015134	1



EUT :	Professional Outdoor 2.4Ghz 802.11b/g, AP/Bridge/Repeater.	Model Name :	AP-2010
Temperature :	13 °C	Relative Humidity :	64 %
Test Voltage :	DC 48V		
Test Mode :	802.11g (Antenna A)		

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	14.00	25.1189	7.4200	5.5208	0.027603	1
2437	14.00	25.1189	16.2000	41.6869	0.208425	1
2462	14.00	25.1189	5.4400	3.4995	0.017496	1



EUT :	Professional Outdoor 2.4Ghz 802.11b/g, AP/Bridge/Repeater.	Model Name :	AP-2010
Temperature :	13 °C	Relative Humidity :	64 %
Test Voltage :	DC 48V		
Test Mode :	802.11g (Antenna B)		

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	4.50	2.8184	14.7000	29.5121	0.016556	1
2437	4.50	2.8184	19.3800	86.6962	0.048635	1
2462	4.50	2.8184	12.9300	19.6336	0.011014	1