



Tuesday, February 08, 2005

TUVR48-A1 CISCO 74-3624, 802.11a/b/g

Maximum Permissible Exposure

FCC, Part 15 Subpart C §15.247(b)(5)

Industry Canada RSS-210 §14

Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d \text{ (mW/cm}^2\text{)} = \text{EIRP}/(4\pi d^2)$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10^{(G \text{ (dBi)}/10)}$$

P (worst case) 2.4GHz = **+23.62 dBm, 230mW**, Antenna Gain = 5.5 dBi / **3.55 numeric**

P (worst case) 5,725GHz = **+22.22 dBm, 168mW**, Antenna Gain = 6.0 dBi / **3.98 numeric**

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm²

Freq. Band (MHz)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated RF Exposure at d=20cm (mW/cm ²)	Limit (mW/cm ²)
2,400	3.55	23.62	230.14	0.162	1
5,725	3.98	22.22	166.72	0.132	1