Monday, October 31, 2005

WAVW01 – A1 SPEEDLAN 9200

Maximum Permissible Exposure Calculation

FCC, Part 15 Subpart C §15.247(b)(5)

Calculations for Maximum Permissible Exposure Levels

Power Density = Pd (mW/cm^2) = $EIRP/(4\pi d^2)$

EIRP = P * G

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

Numeric Gain = 10 ^ (G (dBi)/10)

2.4 GHz 802.11g = Max. Output Power +22.01 dBm, 158.9 mW

Max. Antenna Gain = 24 dBi, **251.2 numeric**

Min. Antenna Gain = 8 dBi, **6.3 numeric**

5.8 GHz 802.11a = Max. Output Power +21.02 dBm, 126.5 mW

Max. Antenna Gain = 29 dBi, **794.3 numeric**

Min. Antenna Gain = 10 dBi, **10.0 numeric**

The EUT belongs to the General Population/Uncontrolled Exposure, power density limit is $1.0mW/cm^2$

Minimum Gain Antennas

Freq. Band	Antenna Gain (Numeric)	Peak Output Power (mW)	Calculated RF Exposure at d=20cm (mW/cm^2)	Limit (mW/cm^2)
2.4 GHz	6.3	158.9	0.2	1
5.8 GHz	10	126.5	0.25	1

Maximum Gain Antennas – Calculated Safe Distance @ 1 mW/cm^2

Freq. Band	Antenna Gain (Numeric)	Peak Output Power (mW)	Calculated Safe Distance (at 1 mW/cm^2) (cm)	Limit (mW/cm^2)
2.4 GHz	251.2	158.9	56.4	1
5.8 GHz	794.3	126.5	89.4	1