Wednesday, 1st March 2006

EXLT01-A1 Exalt Communications Inc , Model 2400

Antenna Gains, Transmit Power Settings, and Minimum Safe Distance

FCC, Part 15 Subpart C §15.247(b)

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)

P (worst case) = +29.96 dBm, 990.80 mW

Antenna Gain (Worst Case) = 30.3 dBi, 1071.5 numeric

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm^2

Antenna Gain - Maximum Allowable Power Level

For fixed point to point operation.
Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Gain (dBi)	Numeric Gain (numeric)	Antenna Gain >6dBi (dB)	Power Reduction (dB)	Max Allowable Peak Power (dBm)	Max Allowable Peak Power (mW)	Calculated Safe Distance at 1 mW/cm^2 (cm)
21.3	134.9	15.3	5.10	24.9	309.03	57.60
30.3	1071.5	24.3	8.10	21.9	154.88	114.92
20.0	100	14.0	4.67	25.3	338.84	51.93