



Wednesday, 1<sup>st</sup> 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**

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

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

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

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

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<sup>2</sup>

**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 <sup>2</sup> (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                                                 |