

U.S. Technologies, Inc  
Rev: 040103  
Issue Date: September 25,2006  
Model:ZMN2400HP-A

FCC Part 15C  
Report Number: 06-0176  
Customer: Cirronet Corporation

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# RF EXPOSURE

### 5.1 RF Safety Requirements to 2.1091 for Mobile Transmitters

The unit under evaluation has one integral antenna. Cirronet Corporation calculated the MPE emission values for a ZMN2400HP-A. They used the formula shown in OET Bulletin 65 and calculated the minimum distance between antenna and unsuspecting user as 20 cm.

### 5.1 RF Safety Requirements to 2.1091 for Mobile Transmitters – Cont.

#### Power Output

The EUT's maximum expected output power as shown in Section 2.6 was

Frequency of Fundamental (MHz)	Measurement (dBm)*	Measurement (mW)*	FCC Limit (Watt)
2405.43	17.86	61.09	1.0
2444.30	17.67	58.48	1.0
2475.50	17.62	57.81	1.0

**The maximum EIRP expected is with a +0 dBi gain patch antenna. This would yield a maximum EIRP of 17.86 dBm.**

$$\text{Antilog}(17.86 \text{ dBm}/10) = 61.09 \text{ mW}$$

#### MPE Calculations

The limits for this unit (uncontrolled exposure) are  $1.0 \text{ mW/cm}^2$ . Taking the RF Density Field Equation:

$$S = (\text{EIRP in mW}) / (4\pi R^2) \text{ and solving for Density S at } 20 \text{ cm.}$$

$$S = 61.09 / 4\pi 20^2$$

$$S = 61.09 / 5026.55$$

$$S = 0.012 \text{ mW/cm}^2$$

All manual instructions will specify 20 cm for all installations.