



5473A Clouds Rest Road : Mariposa, CA 95338 : Phone 209-966-5420 : Fax 209-742-6133

## Maximum Permissible Exposure Calculations

Date of Report: January 9, 2002

Calculations prepared for:

*IP Mobile Net*  
11909 East Telegraph Road  
Santa Fe Springs, CA 90670

Model Number: IP1  
FCC Identification: MI7-IPMNIP1

Fundamental Operating Frequency: 150MHz - 156MHz

Maximum Rated Output Power: 60.00 Watts  
Measured Output Power: 60.25 Watts

Power Output and Operating Frequency Information used for these calculations were from:  
CKC Laboratories, Test Report # FC01-064A

In accordance with 47CFR2.1093(d)(2), source based time averaging is allowed for this type of device:

$$\begin{aligned}\text{Source Based Time Averaging} &= 20\log(\text{ON time}/\text{TOTAL time}) \\ &= 20\log(372\text{mS}/992\text{mS}) \\ &= -8.6\text{dB}\end{aligned}$$

Therefore the Power Output = 47.8dBm (60.25W) - 8.6dB = **39.2dBm (8.32W)**

MPE Limit in accordance with 1.1310(b): Limits for general population/uncontrolled exposure

$$\text{MPE Limit} = \mathbf{0.2\text{mW/cm}^2 \text{ or } 27.5\text{V/M}}$$

Power Output (Watts)	Distance (Meters)	Power Density (mW/cm <sup>2</sup> )	Result
8.32	1.0	0.0662	PASS
8.32	0.6	0.1839	PASS

$$\text{Power Density (W/M}^2\text{)} = (30 * P_t * G) / (d^2 * Z_0)$$

P<sub>t</sub> = Power Delivered to the Antenna  
d = Distance in meters

G = Antenna Gain  
Z<sub>0</sub> = Impedance of Free Space

The typical vehicle used by police was measured, and a separation distance of 1 meter was found to be an appropriate distance. Under normal operating conditions, the antenna will maintain a separation of 1 meter from all persons. As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a distance of 0.6 Meters ( 23.5 Inches).