



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

## Maximum Permissible Exposure Calculations

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Calculations prepared for:

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Model Number: EMIV- Dual  
FCC Identification: NA

Fundamental Operating Frequency:

824.04- 848.97, 1851.25-1908.75 MHz

Maximum Rated Output Power:

+25.5 dBm (0.3548Watt) Conducted

Measured Output Power: 836.52 MHz

+26.1 dBm (0.4074Watt) EIRP

Measured Output Power: 1880.00 MHz

+28.3 dBm (0.6792Watt) EIRP

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

$$\text{MPE Limit for 824.25-848.97 MHz} = f / 1500 \text{ mW/cm}^2 = 1.25 \text{ mW/cm}^2 (12.5 \text{ W/m}^2)$$

$$\text{MPE Limit for 1851.25-1908.75 MHz} = 1 \text{ mW/cm}^2 (10 \text{ W/m}^2)$$

| Power Output<br>(Watts) | Power Density<br>Limit<br>(mW/cm <sup>2</sup> ) | Minimum<br>Distance<br>(Meters) |
|-------------------------|-------------------------------------------------|---------------------------------|
| <b>0.6792</b>           | <b>1</b>                                        | 0.0532m                         |
| <b>0.4074</b>           | <b>1.25</b>                                     | 0.0509m                         |

$$\text{Power Density (W/m}^2\text{)} = \frac{30 \times P_t \times G}{d^2 \times Z_0}$$

$P_t$  = Power Delivered to the Antenna  
 $d$  = Distance in meters

$G$  = Antenna Gain  
 $Z_0$  = Impedance of Free Space

The typical antennas to be used with the EUT are structure mount antenna which under normal operation has an antenna height of at least 0.2 meters (20 cm). As can be seen from the MPE result, this device passes the limit specified in 1.1310 at a distance of 0.0532 and 0.0509 meter.

Calculation:

$$d = \sqrt{\frac{30 \times 0.6792 \times 1}{10 \times 377}}$$

$$= 0.0532\text{m}$$

$$d = \sqrt{\frac{30 \times 0.4074 \times 1}{12.5 \times 377}}$$

$$= 0.0509\text{m}$$