

MPE Calculator      Electrosonics      DBZUM450V      Test 0600809V

MPE uses EIRP for calculation. EIRP is based on TX power added to the antenna gain in dBi.  
dBi = dB gain compared to an isotropic radiator.  
S = power density in mW/cm<sup>2</sup>

Antenna Gain (dBi)      0

Output Power      dBd + 2.17 = dBi      dBi to dBd      2.17

Tx Frequency (MHz)      947.5      (Watts)      0.2500      Antenna Gain (dBd)      -2.17

Cable Loss (dB)      0.0      (dBm)      23.98      Antenna minus cable (dBi)      0.00

Calculated ERP (mw) 151.684      EIRP = Po(dBm) + Gain (dB)

Calculated EIRP (mw) 250.000      Radiated (EIRP) dBm      23.979

ERP = EIRP - 2.17 dB

Radiated (ERP) dBm      21.809

**Occupational Limit**      Power density  
3.15833      mW/cm<sup>2</sup>      (S)  
EIRP

**General Public Limit**      ----- =  
0.63167      mW/cm<sup>2</sup>      mW/cm<sup>2</sup>  
4 π r<sup>2</sup>

| FCC radio frequency radiation exposure limits per 1.1310 |                    |              |
|----------------------------------------------------------|--------------------|--------------|
| Frequency (MHz)                                          | Occupational Limit | Public Limit |
| 300-1,500                                                | f/300              | f/1500       |
| 1,500-10,000                                             | 5                  | 1            |

| FCC radio frequency radiation exposure limits per 1.1310 |                                                          |                                                 |
|----------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------|
| Frequency (MHz)                                          | Occupational Limit<br>@ Tx Freq<br>(mW/cm <sup>2</sup> ) | Public Limit @ Tx Freq<br>(mW/cm <sup>2</sup> ) |
| 300-1,500                                                | 3.158333333                                              | 0.631666667                                     |
| 1,500-10,000                                             | 5                                                        | 1                                               |

| EIRP       | Distance | Distance | S                  |
|------------|----------|----------|--------------------|
| milliwatts | cm       | inches   | mW/cm <sup>2</sup> |
| 250.000    | 50.00    | 19.69    | 0.00796            |
| 250.000    | 40.00    | 15.75    | 0.01243            |
| 250.000    | 30.00    | 11.81    | 0.02210            |
| 250.000    | 25.00    | 9.84     | 0.03183            |
| 250.000    | 20.00    | 7.87     | 0.04974            |
| 250.000    | 15.00    | 5.91     | 0.08842            |
| 250.000    | 14.00    | 5.51     | 0.10150            |
| 250.000    | 13.00    | 5.12     | 0.11772            |
| 250.000    | 12.00    | 4.72     | 0.13816            |
| 250.000    | 11.00    | 4.33     | 0.16442            |
| 250.000    | 10.00    | 3.94     | 0.19894            |
| 250.000    | 9.00     | 3.54     | 0.24561            |
| 250.000    | 8.00     | 3.15     | 0.31085            |
| 250.000    | 7.00     | 2.76     | 0.40601            |
| 250.000    | 6.00     | 2.36     | 0.55262            |
| 250.000    | 5.75     | 2.26     | 0.60172            |
| 250.000    | 5.50     | 2.17     | 0.65767            |
| 250.000    | 3.00     | 1.18     | 2.21049            |
| 250.000    | 2.75     | 1.08     | 2.63066            |
| 250.000    | 2.55     | 1.00     | 3.05950            |
| 250.000    | 2.00     | 0.79     | 4.97359            |
| 250.000    | 1.50     | 0.59     | 8.84194            |
| 250.000    | 1.00     | 0.39     | 19.89437           |
| 250.000    | 0.75     | 0.30     | 35.36777           |
| 250.000    | 0.50     | 0.20     | 79.57747           |

| Frequency (MHz) | Occupational Limit<br>minimum Distance<br>(cm) | Public Limit minimum<br>distance (cm) |
|-----------------|------------------------------------------------|---------------------------------------|
| 300-1,500       | 2.55                                           | 5.75                                  |
| 1,500-10,000    | N/A                                            | N/A                                   |

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MODEL: UM450      FCCID#: DBZUM450V  
Test #: 060809V      S/N: P404  
Test to: FCC Parts 2 and 74