# Maximum Permissible Exposure

Applicable Standard

According to §1.1307(b)(5), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1) The maximum output power for antenna0 is 9.61dBm (9.14mW) at 5230MHz, 5 dBi antenna0 gain(with 3.16 numeric antenna gain.)

The maximum output power for antenna1 is 9.95dBm (9.89mW) at 5230MHz, 5 dBi antenna1 gain(with 3.16 numeric antenna gain.)

**Calculation**

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

*Where* $E$ = *Field Strength in Volts / meter*

$P$ = *Power in Watts*

$G$=*Numeric antenna gain*

$d$=*Distance in meters*

$S$=*Power Density in milliwatts / square centimeter*

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antenna0 output power=9.14mW

Numeric Antenna gain=3.16

antenna1 output power=9.89mW

Numeric Antenna gain=3.16

Substituting the MPE safe distance using d=20cm into above equation.

Yields:

*S=0.000199*P*G*

*Where P=Power in mW*

*G=Numeric antenna gain*

*S=Power density in mW/cm$^2$*

*antenna0 Power density=0.006mW/cm2*

*antenna1 Power density=0.006mW/cm2*

*S1+S2=S Power density=0.012mW/cm2*

*(For mobile or fixed location transmitters, the maximum power density is 1.0 mW/cm$^2$ even if the calculation indicates that the power density would be larger.)*