

MPE CALCULATIONS

The following Power density for the Spectrum Management Trac Pac transmitter was calculated from the worst case measured ERP. For the Wavecom module, Power density was calculated from the worst case measured EIRP operating in the PCS band.

WaveCom Module Power density calculation:

$$\begin{aligned}\text{Frequency} &= 1851.5 \text{ MHz} \\ \text{EIRP} &= 21.67 \text{ dBm} = 147.2 \text{ mWatts} \\ S1 &= (\text{EIRP})/(4\pi R^2) = 0.0293 \text{ mW/cm}^2\end{aligned}$$

Spectrum Management Trac Pac Power density calculation:

$$\begin{aligned}\text{Frequency} &= 216.979 \text{ MHz} \\ \text{ERP} &= -1.062 \text{ dBm} \\ \text{EIRP} &= \text{ERP} + 2.15 \\ \text{EIRP} &= 1.088 \text{ dBm} = 1.288 \text{ mWatts} \\ S2 &= (\text{EIRP})/(4\pi R^2) = 0.0002562 \text{ mW/cm}^2\end{aligned}$$

Limits for general population exposure:

Limit for S1;

$$\begin{aligned}\text{Frequency} &= 1851.5 \text{ MHz} \\ \text{Limit at } 1851.5 \text{ MHz} &= 1 \text{ mW/cm}^2\end{aligned}$$

Limit for S2;

$$\begin{aligned}\text{Frequency} &= 216.979 \text{ MHz} \\ \text{Limit at } 216.979 \text{ MHz} &= 0.2 \text{ mW/cm}^2\end{aligned}$$

S	Power density (mW/cm ²)	General Population Limit (mW/cm ²)	S as a fraction of the limit (%)
S1	0.0293	1.0	2.93
S2	0.0002562	0.2	0.13

The total percentage does not exceed 100 % per OET 65 requirements when the spectral power density is calculated at 20cm away from the unit.