Maximum Permissible Exposure (MPE) Calculation

- Page 19 in the Speedway User Guide recommends users maintain a safe distance of 25 centimeters from the antenna for prolonged exposure
- FCC power density limit is (f/1500) mW/cm^2 for long term exposure (> 30 minutes) in an uncontrolled environment, where f is the frequency in MHz.
- This results in an allowed power density ($P_{density}$) of 0.6013 mW/cm^2 at the worst case frequency of operation = 902 MHz
- The safe distance from the antenna is calculated from:
  $D = \sqrt{(EIRP/(4\pi P_{density})}$
- At the maximum allowable peak EIRP of 4000mW, D = 23 centimeters
- Note that the average power would be considerably less than this due to envelope fluctuations of the modulation and less than 100% duty cycle in actual operation.