SAR CALCULATIONS

Using the field strength measured at 10m, calculate the distance from the product where the maximum allowed exposure level allowed under OET 65C, occurs.

$E_i := 31.68$ The value of electric field measured at 10m distance.

$$E_L := 20 \cdot \log\left(\frac{\frac{824}{13.56}}{1 \cdot 10^{-6}} \right)$$ Calculate the maximum exposure allowed under OET 65C

$E_L = 155.673$ Units are dBuV/m

$r := 0.1$ Guess value for Mathcad solution

Given

$$E_i + 20 \cdot \log\left[\left(\frac{10}{r} \right)^2 \right] = E_L$$ Calculate the distance r from the source where the field strength would be equal to the maximum level. Assume a 1/r^2 rolloff i.e. 40 dB/decade.

$\text{Find}(r) = 7.946 \times 10^{-3}$ Distance in meters. Distance is < 20 cm so as long as user maintains at least 20 cm separation, exposure levels will be well below limit.