

2.3

$$G_t = 20 \text{ dB}_i =$$

$$G_r = 15 \text{ dB}_i =$$

$$R = 1 \text{ km}$$

$$P_i = 150 \text{ W}$$

$$f = 1 \text{ GHz}$$

$$\begin{aligned} P_r &= G_r \cdot G_t \cdot \left(\frac{\lambda}{4\pi R} \right)^2 \cdot P_i \\ &= 10^{1.5} \cdot 10^2 \left(\frac{3 \text{E}8 / 1 \text{E}9}{4\pi \cdot 1 \text{ km}} \right)^2 \cdot 150 \text{ W} = 0.27 \text{ mW} \end{aligned}$$