

$$P_s = P_{\text{semnal}} ; R_s = R_{\text{semnal}}$$

$$P_m = P_{\text{zgomot}}$$

$$R_s = 90 \text{ dB} \Rightarrow 10 \log_{10} \frac{P_s}{P_0} \text{ dB} = 90 \text{ dB}$$

$$\log_{10} \frac{P_s}{P_0} = 9$$

$$10 \log_{10} \frac{P_s}{P_0} = 10^9$$

$$\frac{P_s}{P_0} = 10^9 \Rightarrow P_s = 10^9 P_0$$

$$\text{SNR}_{\text{dB}} = 80 \text{ dB} \Rightarrow 10 \log_{10} \text{SNR}_{\text{dB}} = 80 \text{ dB}$$

$$\log_{10} \text{SNR} = 8$$

$$\text{SNR} = 10^8$$

$$\text{SNR} = \frac{P_s}{P_m} \quad \Bigg| \Rightarrow \frac{P_s}{P_m} = 10^8$$

$$\frac{10^9 P_0}{P_m} = 10^8$$

$$\Rightarrow P_m = \frac{10^9}{10^8} P_0 \Rightarrow P_m = 10 P_0,$$

unde P_0 este puterea de referință,