

$$\text{SNR} = 10 \log_{10} \frac{E_b}{N_0}$$

$$\Rightarrow \frac{\text{SNR}}{10} = \log_{10} \frac{E_b}{N_0} \Rightarrow 10^{\frac{\text{SNR}}{10}} = \frac{E_b}{N_0}$$

$$N_0 = E_b \cdot 10^{-\frac{\text{SNR}}{10}}$$

$a_i + n_0$