

E17

$$Z_{ut} = R_3 // \left(\frac{h_{11} + (R_2 // R_1 // R_0)}{1 + h_{21}} \right)$$

$$R_0 = 10 \, \Omega \Rightarrow Z_{ut} \approx 4,0 \, \Omega$$

$$R_0 = 100 \, \Omega \Rightarrow Z_{ut} \approx 4,8 \, \Omega$$

$$R_0 = 1000 \, \Omega \Rightarrow Z_{ut} \approx 12 \, \Omega$$

$$R_0 = 10000 \, \Omega \Rightarrow Z_{ut} \approx 50 \, \Omega$$