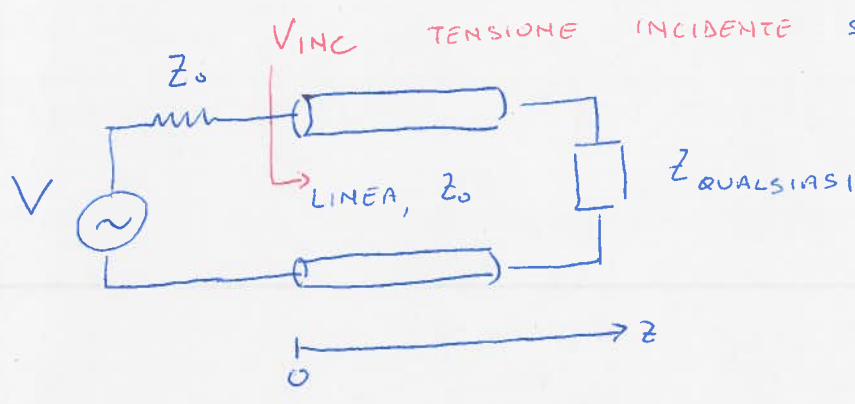
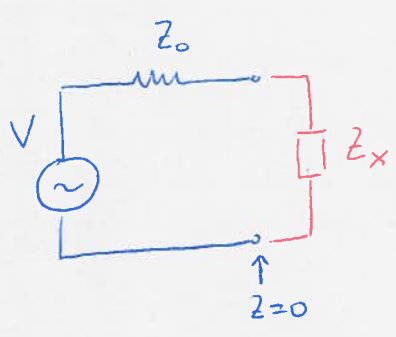


CIRCUITI EQUIVALENTI E MISURE DI S_{12}



COEFFICIENTE DI RIFLESSIONE
↓

$V(z=0)$ = TENSIONE MISURATA A $z=0$ $V(z=0) = (1 + \rho) V_{INC}$

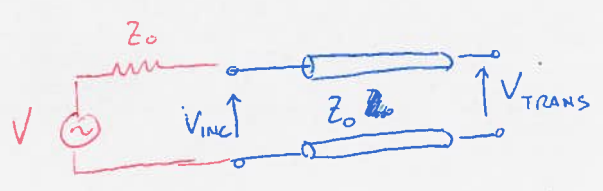


$$\rho = \frac{Z_x - Z_0}{Z_x + Z_0}$$

$$V(z=0) = V \frac{Z_x}{Z_x + Z_0} = \frac{2 Z_x}{Z_x + Z_0} V_{INC}$$

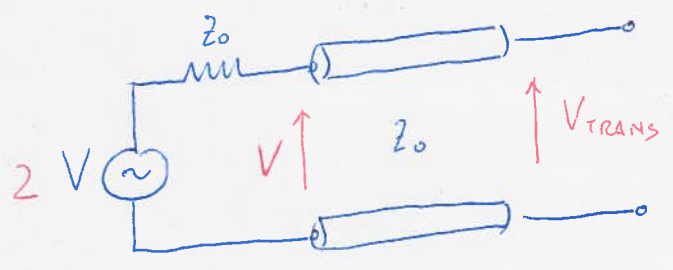
$\Rightarrow V_{INC} = \frac{V}{2}$ SEMPRE !!

MISURA DI S_{21}



$$S_{21} = \frac{V_{TRANS.}}{V_{INC}} = \frac{2 V_{TRANS}}{V}$$

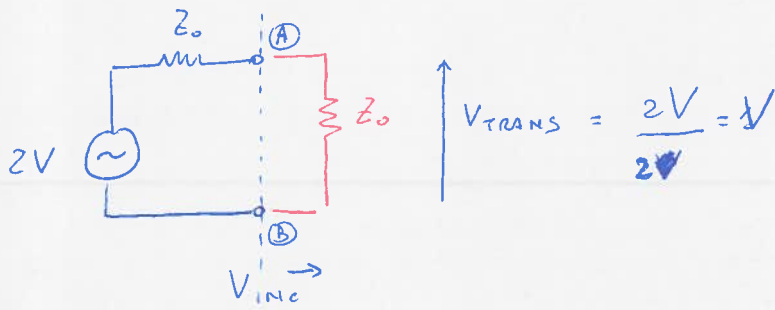
IN PRATICA



$$S_{21} = \frac{V_{TRANS}}{2V}$$

ESEMPI

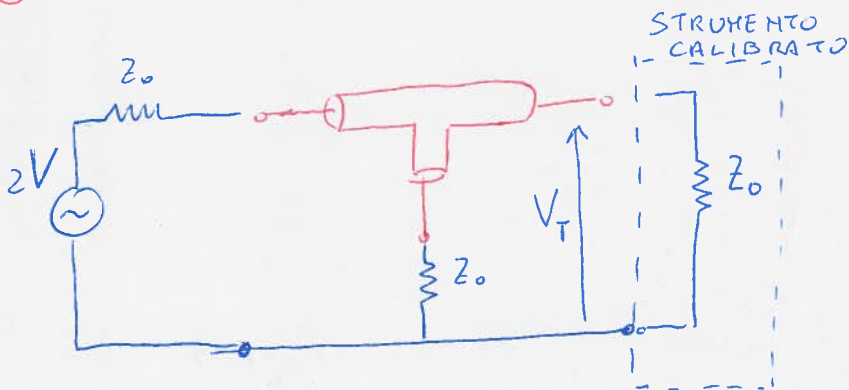
① CARICO ADATTATO $S_{21} = 1$



$$S_{21} = \frac{V}{V} = 1$$

LA TENSIONE SU Z_0 (V_{AB}) È $\frac{V}{2}$ XCHÉ NON C'È RIFRESSIONE
 $V(z=0) = V_{INC} = \frac{V}{2}$

② GIUNZIONE A T



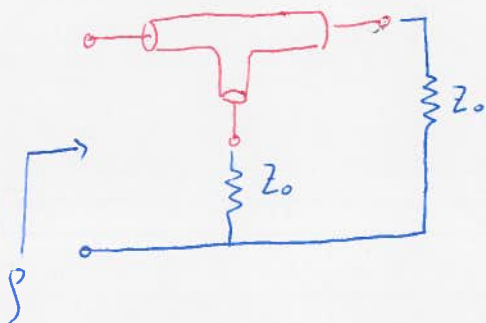
$$S_{21} = \frac{V_T}{V}$$

$$V_T = 2V \frac{Z_0/2}{Z_0 + Z_0/2} = \frac{2}{3} V$$

$$S_{21} = \frac{2}{3} \left(= -3,522 \text{ dB} \right)$$

PER COMPLETEZZA

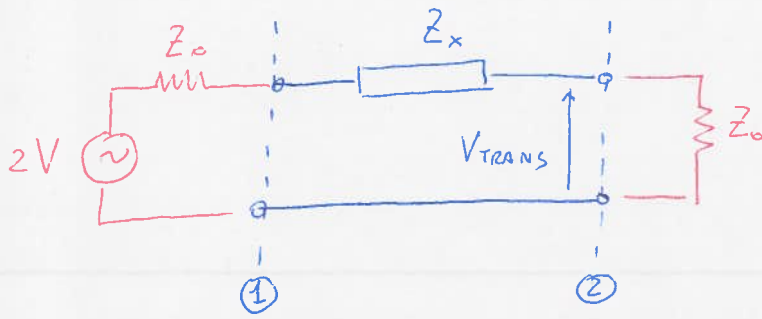
GIUNZIONE A T CON DUE CARICHI A 50Ω



$$\rho = \frac{Z_0/2 - Z_0}{Z_0/2 + Z_0} = -\frac{1}{3}$$

$$|S_{11}| = \frac{1}{3} \left(= -9,542 \text{ dB} \right)$$

③ S_{12} DI IMPEDENZA



$$S_{12} = \frac{V_{TRANS}}{V} = \frac{2Z_0}{2Z_0 + Z_x}$$

$$Z_x = Z_0 \frac{2(1 - S_{21})}{S_{21}}$$