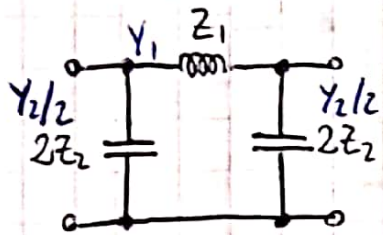


4) FILTRO PASA-BAJOS π

$$R = 50 \Omega$$



$$Y_1 = \frac{1}{j\omega L}$$

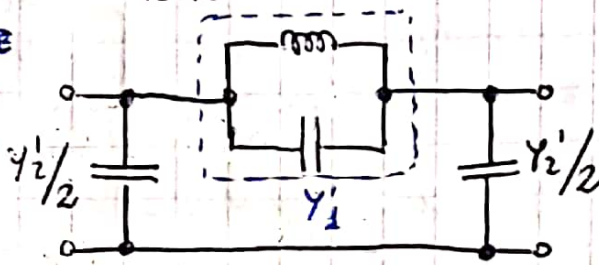
$$Y_2 = j\omega C$$

$$\begin{cases} \omega_c = 2\pi \cdot 10^9 = \frac{2}{\sqrt{LC}} \\ R = \sqrt{\frac{L}{C}} = 50 \Omega \end{cases}$$

$$\text{IMPEDANCIA} \rightarrow \infty @ f = 1 \text{ GHz}$$

$$\alpha_{\text{FILTRO}} \rightarrow \infty @ f = 1,1 \text{ GHz}$$

+ CERO DE TX
→



$$Y'_2 = m \cdot Y_2 = j\omega m \cdot C$$

$$Y'_1 = \frac{1}{j\omega m L} + j\omega C \left(\frac{1-m^2}{4m} \right)$$

$$\omega_\infty = \frac{\omega_c}{\sqrt{1-m^2}} = 2\pi \cdot 1,1 \cdot 10^9$$

$$\omega_c = 2\pi \cdot 10^9 \text{ rad/s}$$

$$\text{CERO DE TRANSMISION @ } \omega_\infty = 2\pi \cdot 1,1 \cdot 10^9 \text{ rad/s}$$

$$\text{IMPEDANCIA} \rightarrow \infty$$

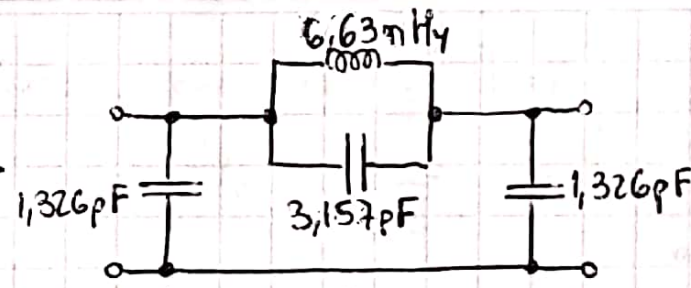
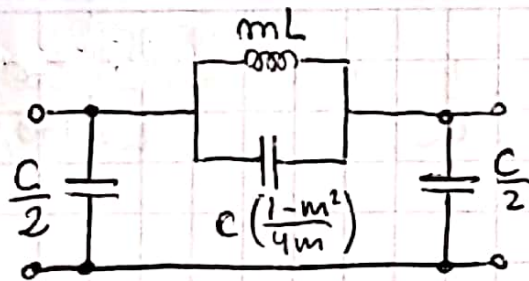
$$\hookrightarrow \text{ADMITANCIA} \rightarrow 0$$

$$\frac{\omega_\infty}{\omega_c} = 1,1 = \frac{1}{\sqrt{1-m^2}}$$

$$\hookrightarrow \underline{m = 0,417} = \frac{\sqrt{21}}{11}$$

NOTA

$$\hookrightarrow \underline{C = 6,366 \text{ pF}} \\ \underline{L = 15,915 \text{ nH}}$$



CIRCUITO RESULTANTE