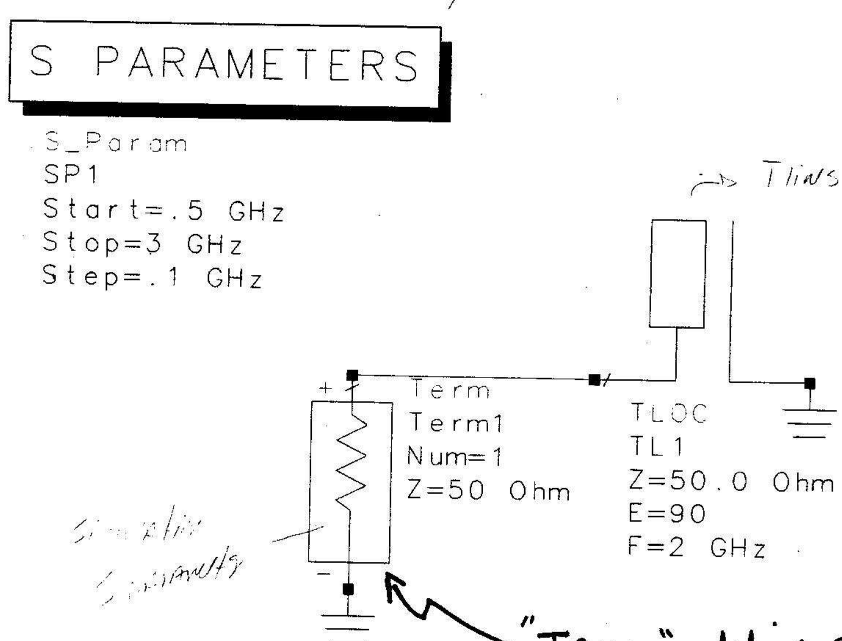
"OPEN CIRCUIT" ⟶ 1 solo puerto

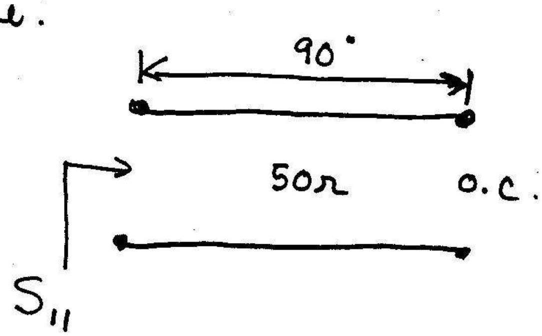
Simulate
∘ Simulate

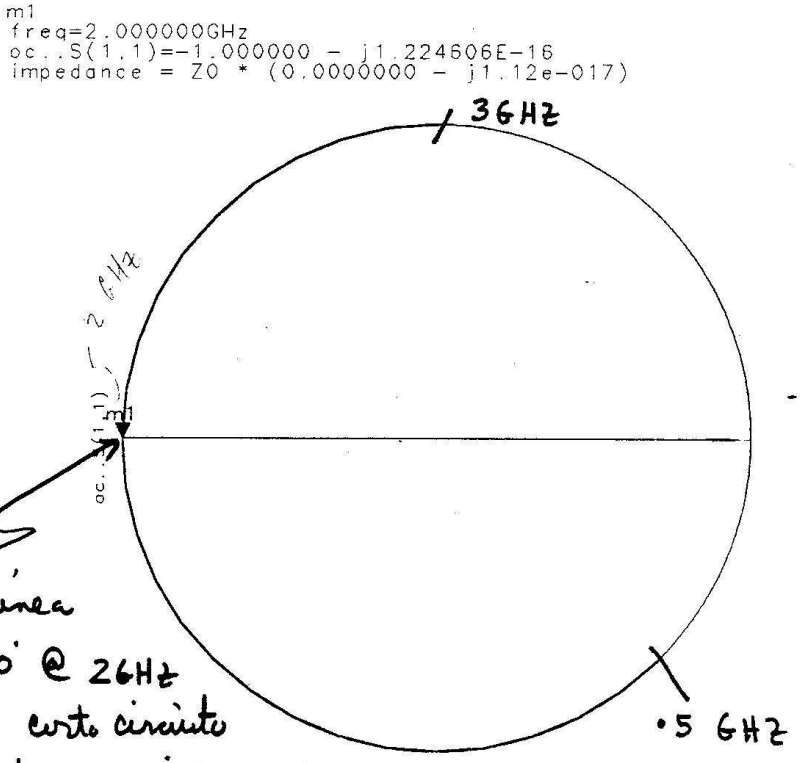
Window
▪ New data display



"Term" define puerto #1
Tiene q. colocarse
SIEMPRE

Equivalente:





como línea tiene 90° @ 2GHz vemos corto circuito a esta frecuencia

Largo físico:

$$\frac{\pi}{2} = \beta l = \frac{2\pi}{\lambda} l$$

$$l = \frac{\pi}{2}\frac{\lambda}{2\pi} = \frac{\lambda}{4} \text{ @ 2GHz}$$

$$l = \frac{3\times10^8 / 2\times10^9}{4} = 37.5\times10^{-3}\,m$$

Si $f = .5GHz$

$$\theta = \beta l = \frac{2\pi}{\lambda}\cdot l = \frac{2\pi}{c/f}(37.5\times i$$

$$\theta = \frac{2\pi}{\frac{3\times10^8}{.5\times10^9}}\left(37.5\times10^{-3}\right) = 22.5°$$

Si $f = 3GHz \Rightarrow \theta = 135°$

Línea de Transmisión 1 puerto definido

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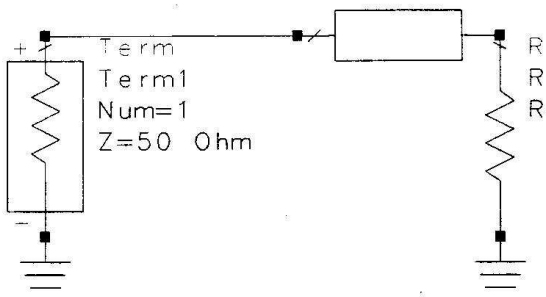
S PARAMETERS

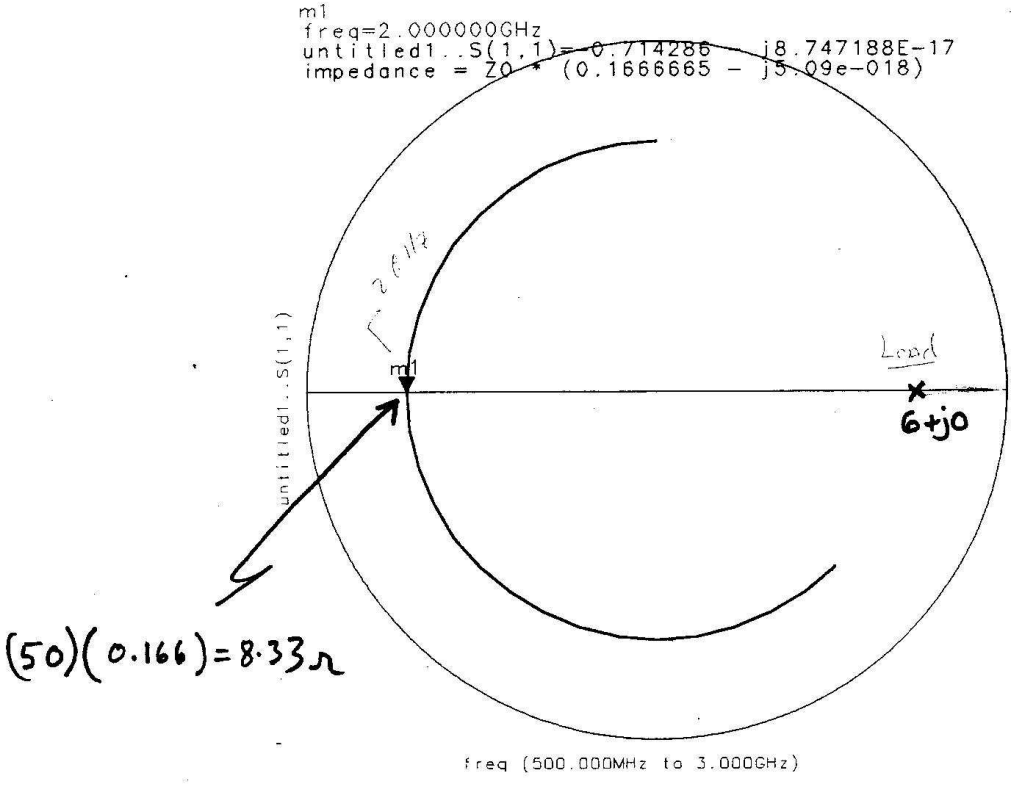
S_Param
SP1
Start=.5 GHz
Stop=3 GHz
Step=.1 GHz

TLIN
TL1
Z=50.0 Ohm
E=90
F=2 GHz



$Z_L = \frac{300}{50} = 6$

$$Z_{in} = \frac{Z_0^2}{Z_L} = \frac{(50)^2}{300} = 8.33$$



$(50)(0.166) = 8.33\Omega$

Acoplar 300Ω a 50Ω

$Z' = \sqrt{300(50)} = 122.47\,\Omega$

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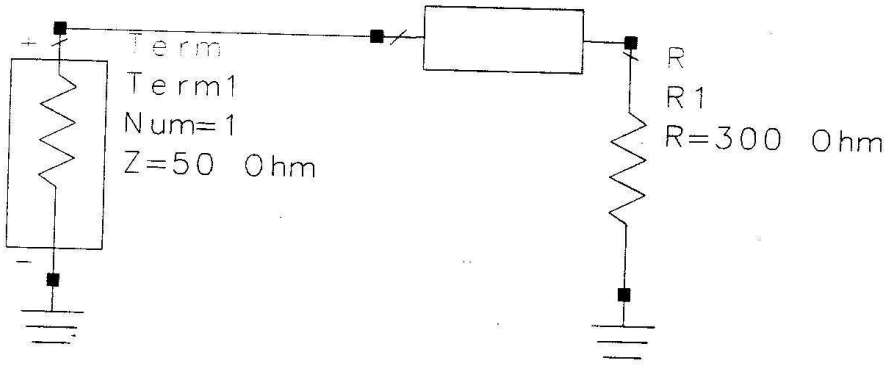
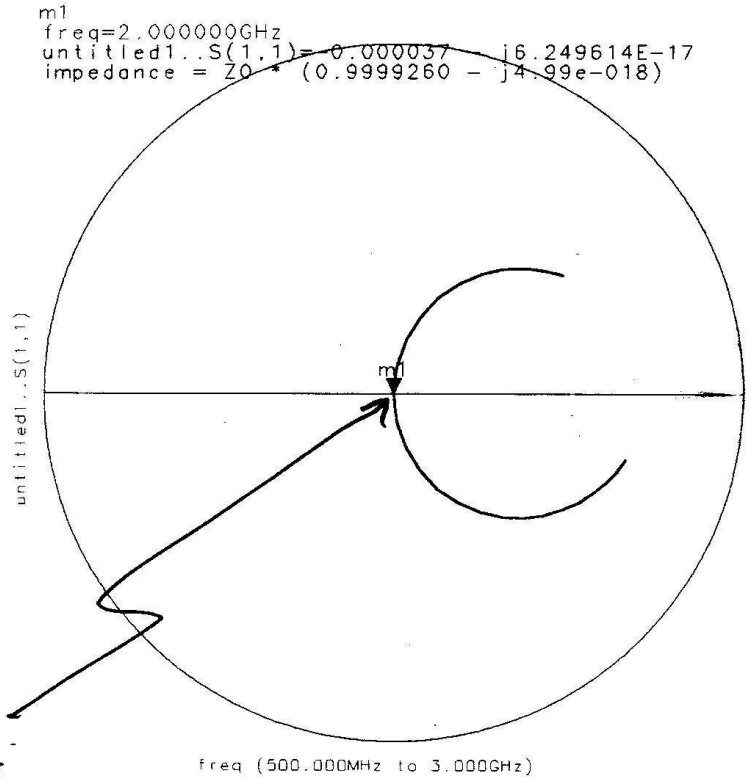
S PARAMETERS

S_Param
SP1
Start=.5 GHz
Stop=3 GHz
Step=.1 GHz

TLIN
TL1
Z=122.47 Ohm
E=90
F=2 GHz





@ 2GHz

$Z_{in} = 50\Omega$

Línea de Transmisión con dos puertos definidos

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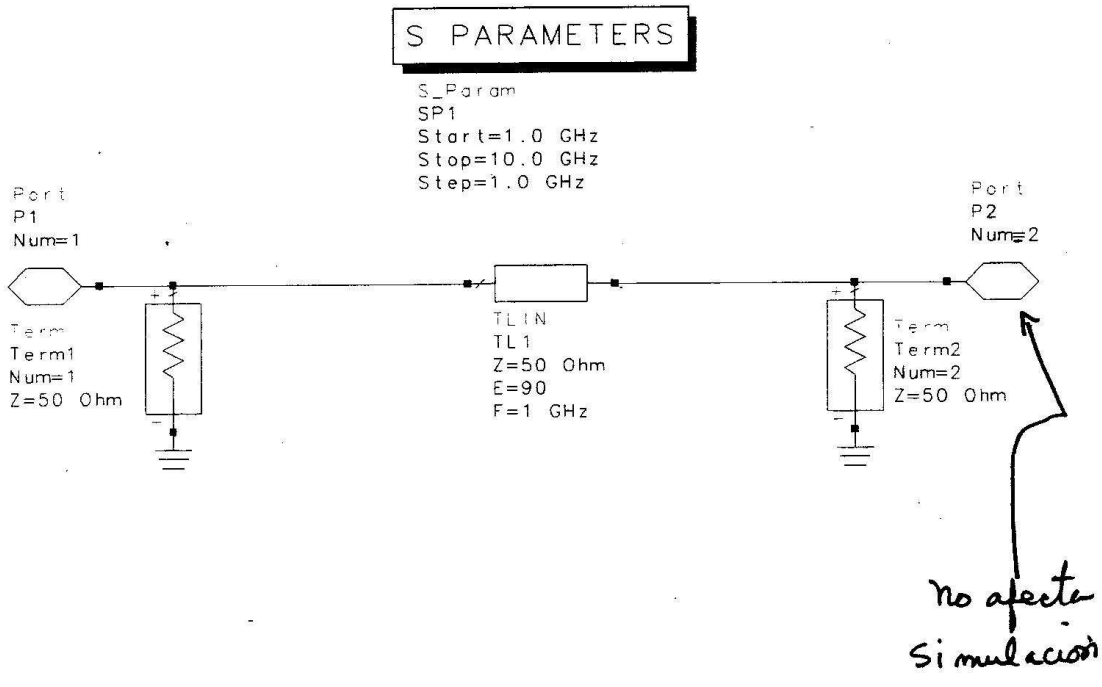
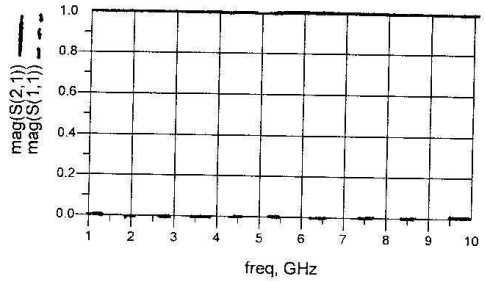
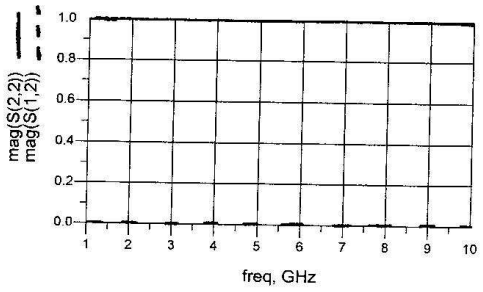


Parámetros S :

Magnitud (|S|) :





En dB (20 log |S|) :