電磁波與天線導論 HW12

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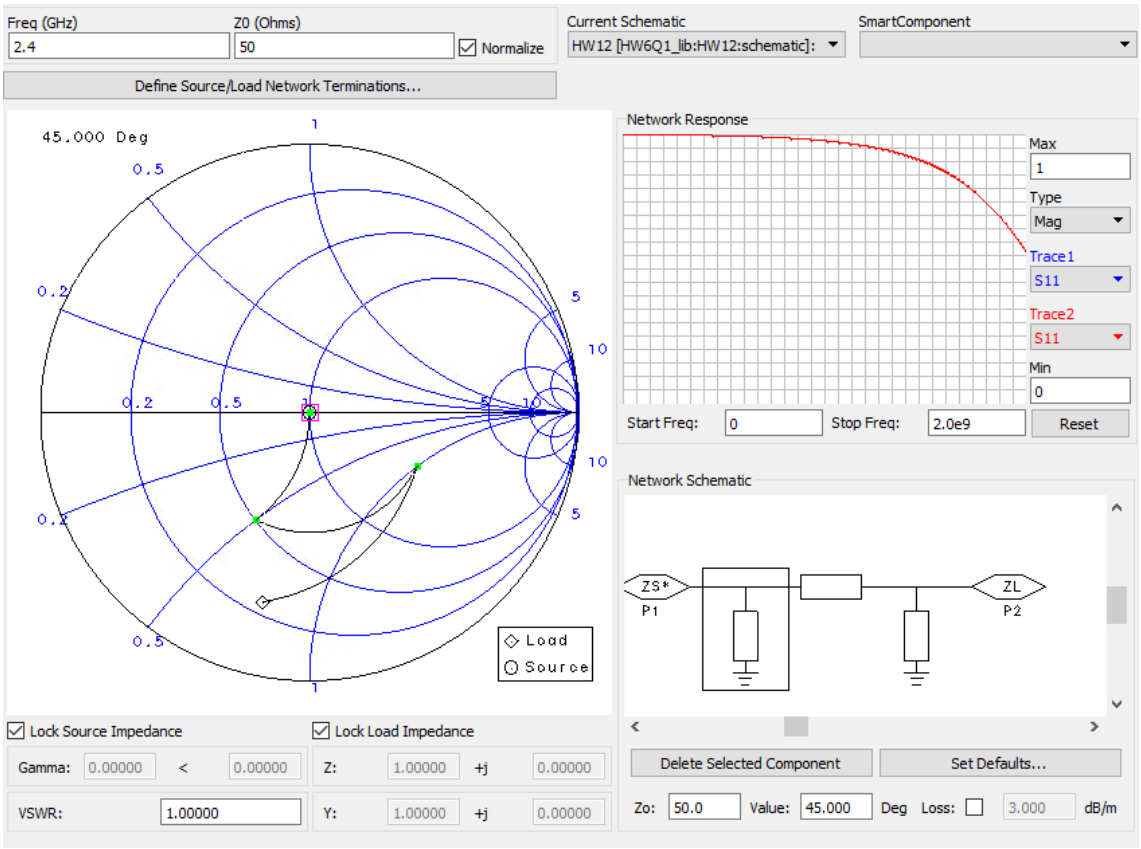
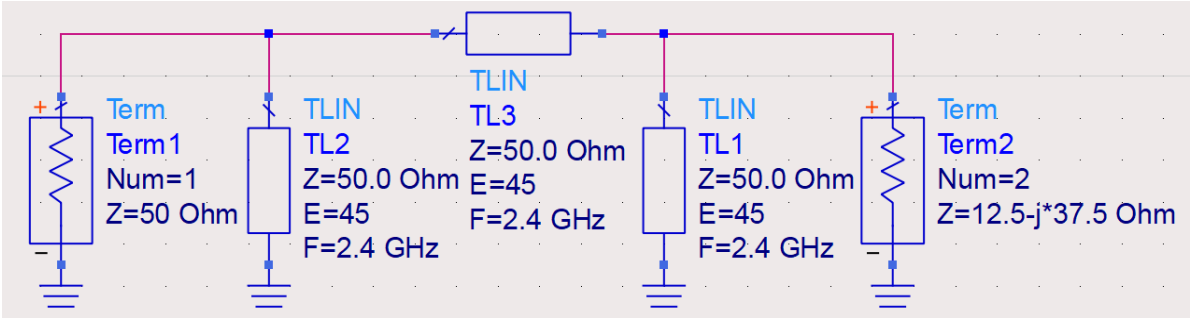
1

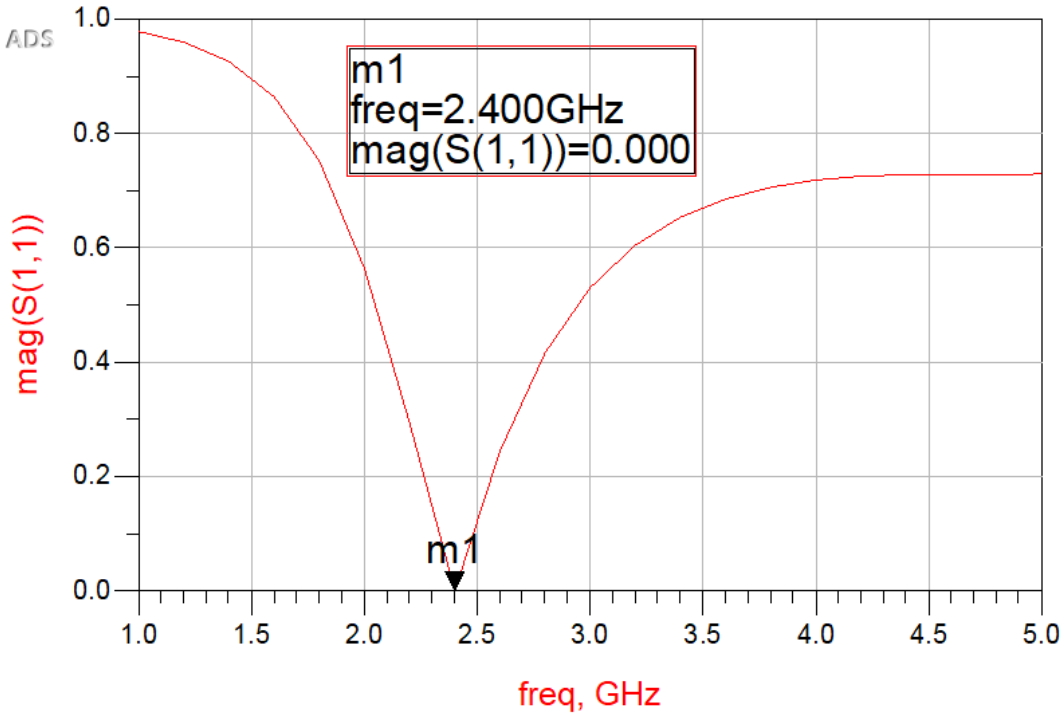
Design in Smith chart



ADS simulation

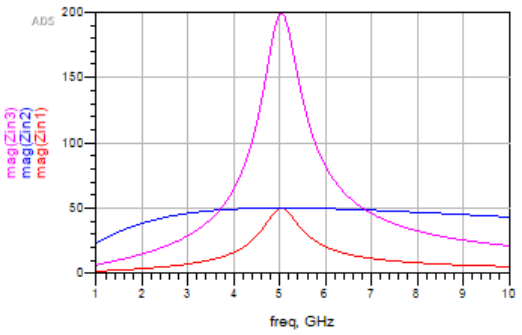


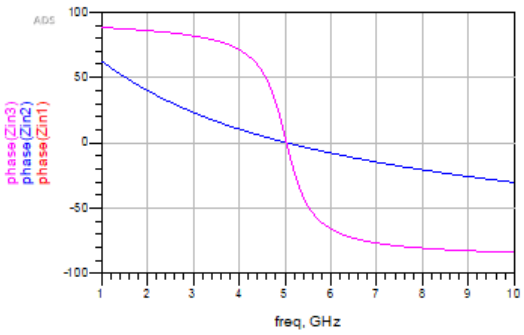
reflection coefficient



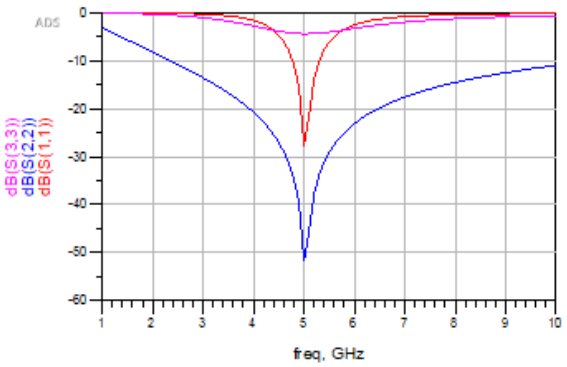
2

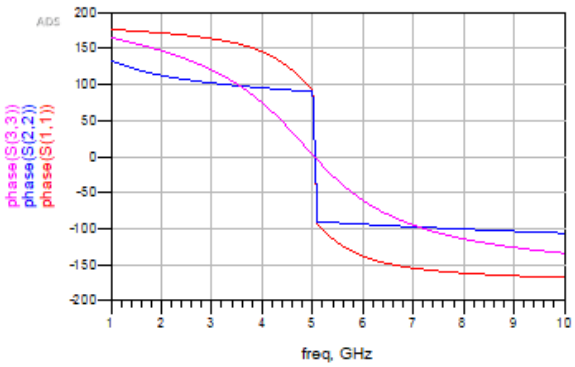
input impedance





reflection coefficient





$w_0 = \frac{1}{2\pi\sqrt{LC}} = 5.03(GHz)$

$Q = \frac{R}{\omega_0 L} = w_0 RC(for\ \ parallel)$

Q值正比於$R,\ C,$ 反比於L

$\therefore Q_a > Q_c > Q_b$

$Case(c)$的R最大，因此Z_{in}會最大,$reflection\ coefficient$也最大

$Case(a)$的電容值較大，因此在共振頻率附近會較$Case(b)$窄

$\therefore Case(a)$較敏感，只要微調L, C的值就可較大幅改變共振頻率