$Z_L = 100 + j100\ \Omega$

$Z_0 = 50\ \Omega$

$Z_{LN} = 2 + j2$

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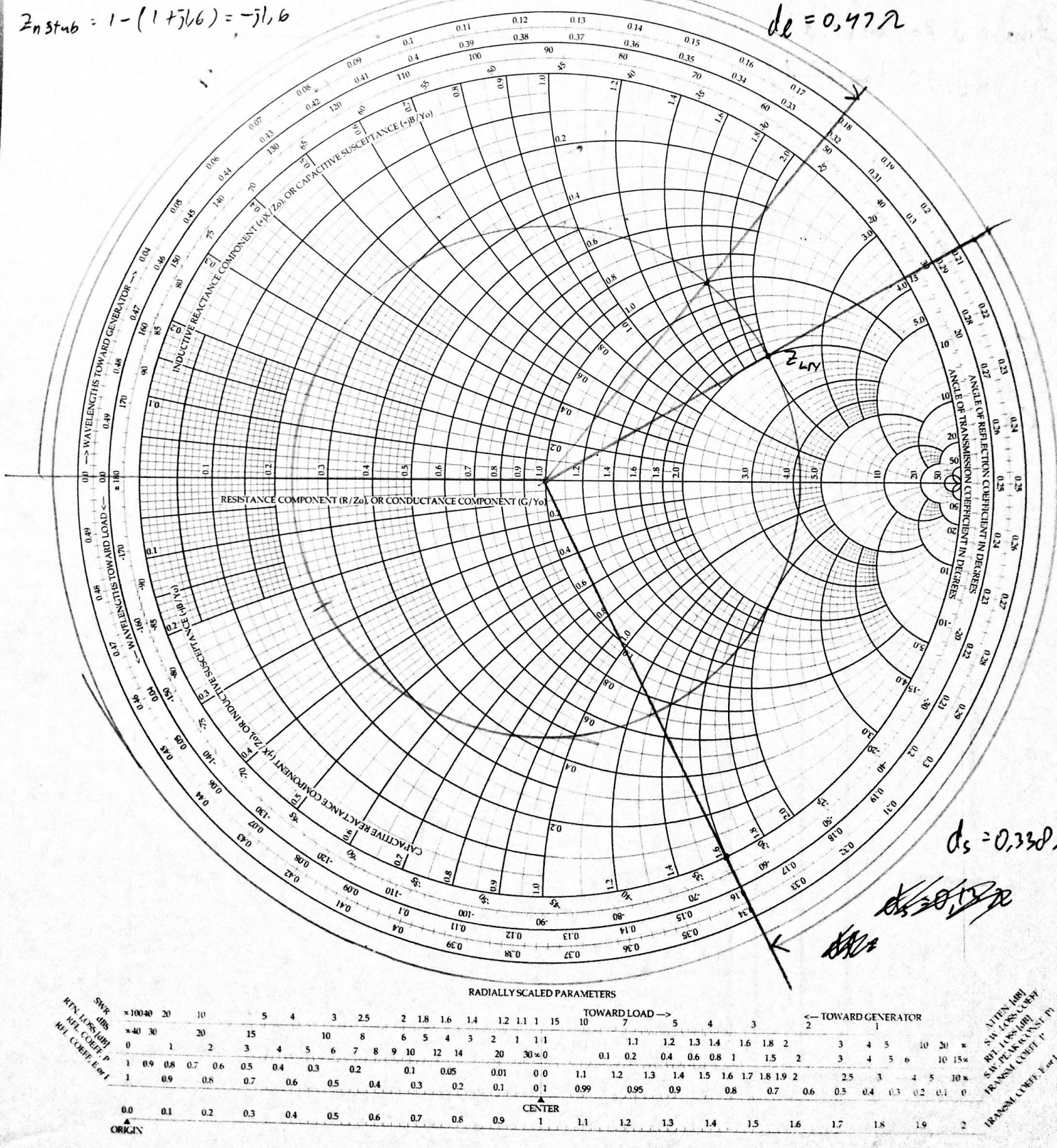
TT-43-11

The Complete Smith Chart

Black Magic Design

$Z_{n\,stub} = 1 - (1 + j1{,}6) = -j1{,}6$

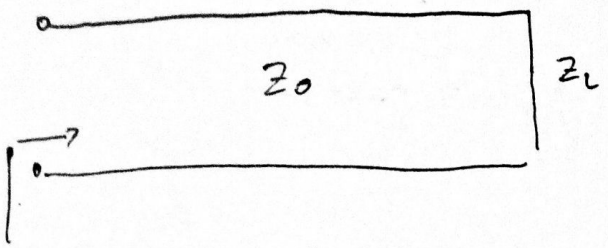
$d_l = 0{,}47\lambda$



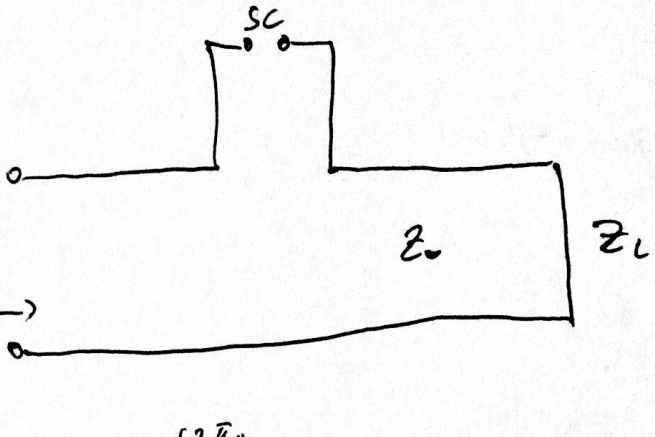
$d_s = 0{,}338\lambda$

~~$d_s = 0{,}13\lambda$~~

a.



$$Z_{ins} = j\, Z_0 \tan(\beta \cdot d)$$
$$= j \cdot 50 \tan\left(\frac{2\pi}{\lambda} \cdot d\right)$$



$$Z_{ins} = j\,50 \tan\left(\frac{2\pi}{\lambda} d\right)$$

b. $d_L = 0{,}47\,\lambda$

c. $d_S = 0{,}330\,\lambda$