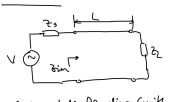


Ex 1 Smith

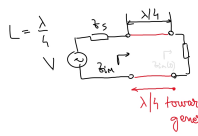
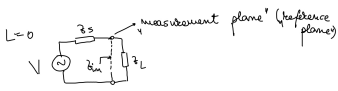


$Z_1 = 100 \Omega$
 $Z_0 = 50 \Omega$
 $Z_L = \frac{Z_1}{Z_0} = \frac{100}{50} = 2$
 $Z_{in} = Z_L$

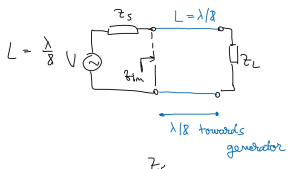
$L = 0$
 $\Gamma = \frac{Z_L - Z_0}{Z_L + Z_0} = \frac{100 - 50}{100 + 50} = \frac{50}{150} = \frac{1}{3} = 0.333$
 $SWR = \frac{1 + |\Gamma|}{1 - |\Gamma|} = \frac{1 + 0.333}{1 - 0.333} \approx 2$

Reprezentări pe diag. Smith și det. Z_{in}
 pentru $L = 0, \frac{\lambda}{8}, \frac{\lambda}{4}, \frac{3\lambda}{8}$

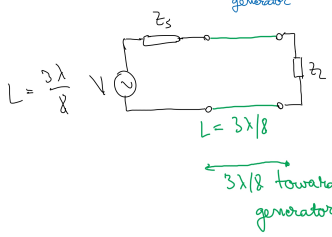
$Z_{in}(0) = Z_L = 2$



Din diag. Smith
 $\Gamma(\lambda/4) = 0.5 = \frac{Z_{in}}{Z_0} = \frac{Z_{in}}{50}$
 $Z_{in} = 50 \times 0.5 = 25 \Omega$

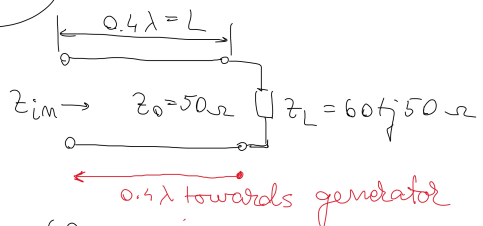


Din diag. Smith
 $Z_{in}(\lambda/8) = 0.8 - j0.6$
 $Z_{in} = 50 Z_{in} = 40 - j30 \Omega$



$Z_{in}(3\lambda/8) = 0.8 + j0.6$
 $Z_{in} = 50 \cdot Z_{in} = 40 + j30 \Omega$

P 2.20.



$Z_L = \frac{60}{50} + j = 1.2 + j$

Din diag. Smith
 $SWR = 2.4$
 $|\Gamma| = 0.41 \angle 46^\circ$

La sarcină ($L = 0$)

Din diag. Smith de impedanță:

$Y_L = 0.5 - 0.4j$

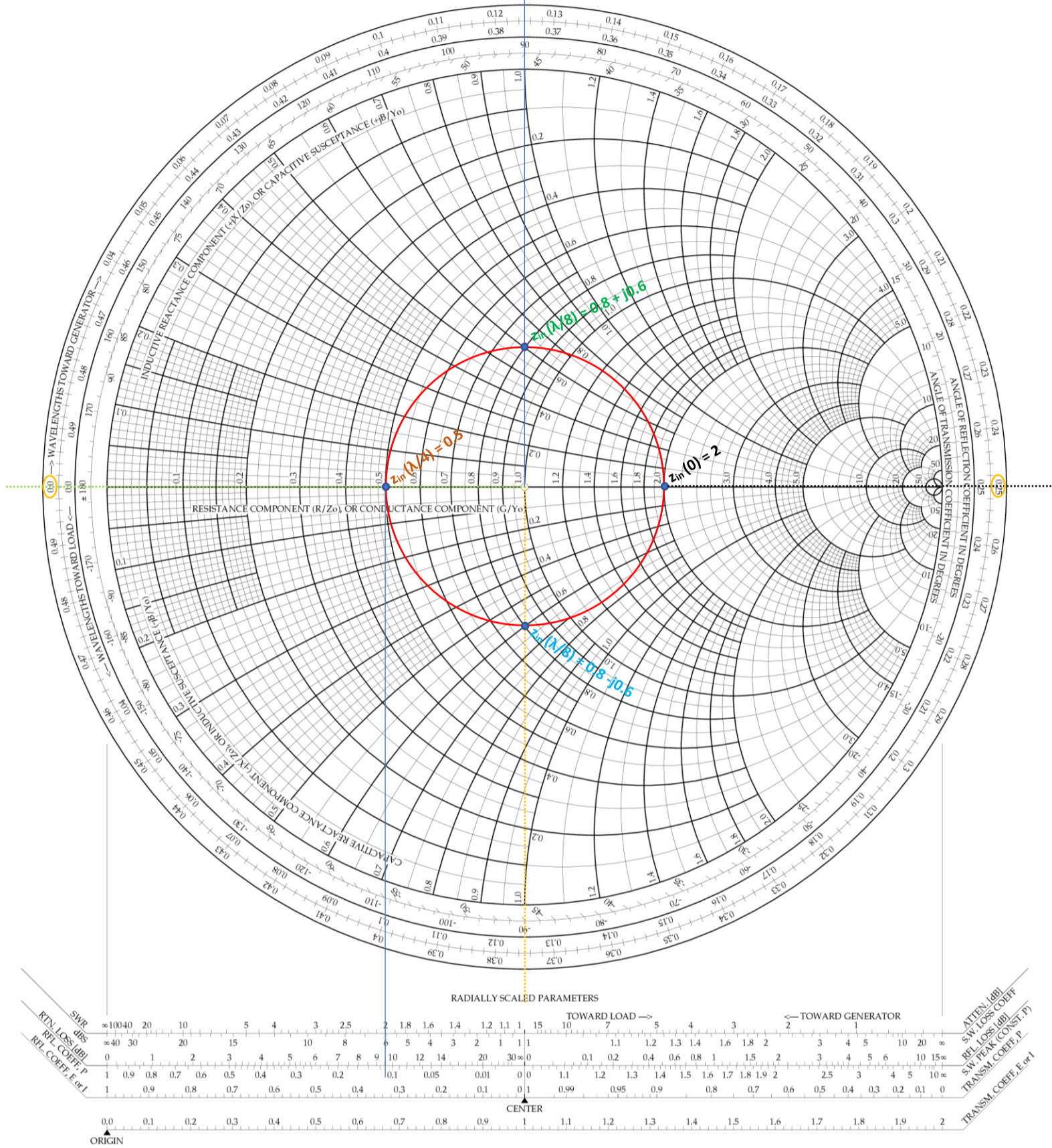
calcul $Y_L = \frac{1}{Z_L} = \frac{1}{1.2 + j} = \frac{1.2 - j}{(1.2 + j)(1.2 - j)} = \frac{1.2 - j}{1.44 + 1.2j - 1.2j - j^2} =$
 $= \frac{1.2 - j}{2.44} = 0.49 - 0.41j$

$V_{max} \rightarrow 0.064 \lambda$ față de sarcină

$V_{min} \rightarrow 0.314 \lambda$ față de sarcină

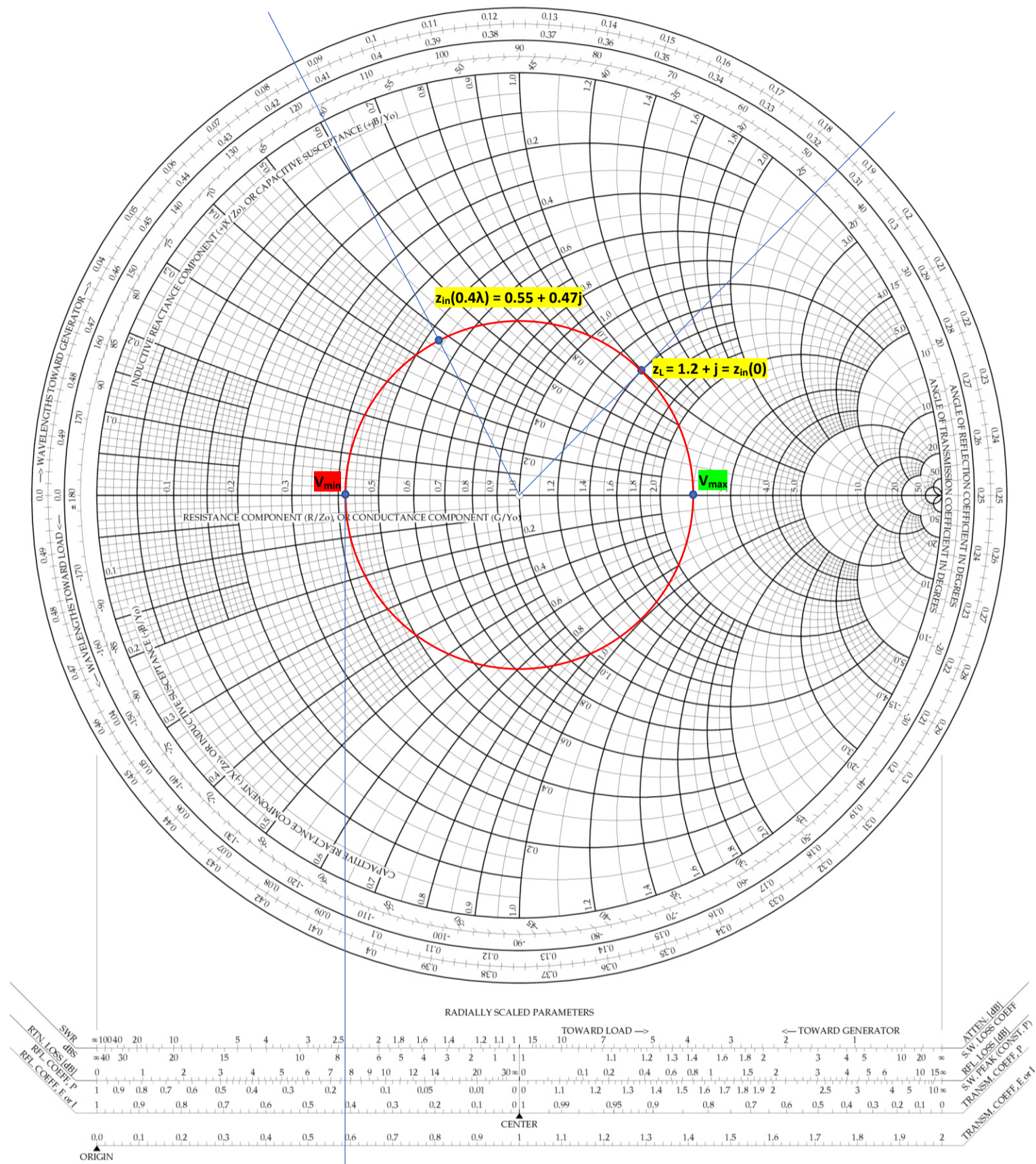
The Complete Smith Chart

Black Magic Design



The Complete Smith Chart

Black Magic Design



NAME	TITLE	DWG. NO.
SMITH CHART ENGS 120	COLOR BY J. COLVIN, UNIVERSITY OF FLORIDA, 1997	DATE

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES

