

Lossy Line Example

$$Z_L = 100 + j50 \Omega$$

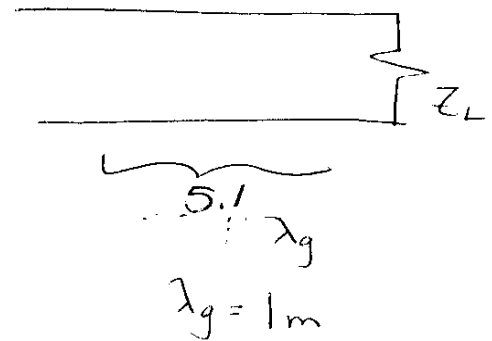
$$Z_0 = 50 \Omega$$

$$Z_{in} = 2 + j1 \text{ plot}$$

$$\text{Measure } |r| = 0.46$$

Line has $\alpha = 0.2 \text{ m}^{-1}$

$$e^{-\alpha z} = e^{-\overset{\downarrow 2 \times 5.1}{(0.2)(10.2)}(1\text{m})}$$



$$= 0.13$$

Rotate $10.2 \lambda_g$ TWTG

(this is actually $0.2 \lambda_g$ since "10" is multiple full circles)

$$\text{New } |r| = (0.46)(0.13) = 0.06 \text{ Plot}$$

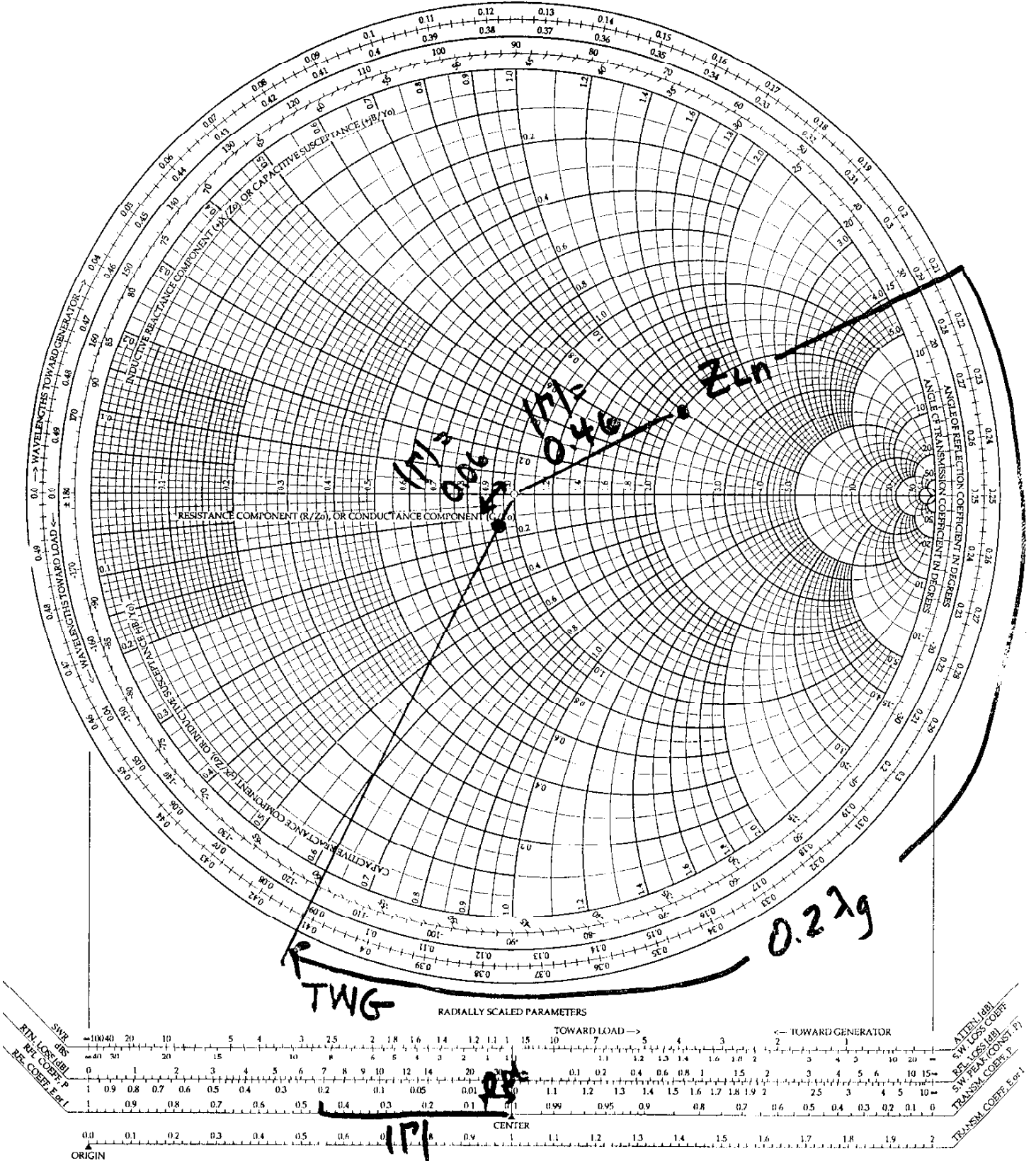
Wow! Great new matching network!

Too bad almost no power gets

to your load...

The Complete Smith Chart

Black Magic Design



5/11/24
11-13-24