

**Problem 2.51** Repeat Problem 2.50 using CD Module 2.6.

**Solution:** Figure P2.51(a) is the solution from CD Module 2.6 for line  $l_2$ , giving an input impedance

$$z_{\text{in}_2} = 0.48 - j0.36 \quad @l_2 = \frac{5\lambda}{8} = 0.625\lambda.$$

Hence,

$$Z_{\text{in}_2} = (0.48 - j0.36) \times 50 = (24 - j18) \, \Omega.$$

This becomes the load to line 1. Figure P2.51(b) provides the input to line 1 as

$$z_{\text{in}_1} = 0.66 - j1.25 \quad @l_1 = \frac{3\lambda}{8} = 0.375\lambda.$$

Hence,

$$Z_{\text{in}} = (0.66 - j1.25) \times 100 = (66 - j125) \, \Omega.$$

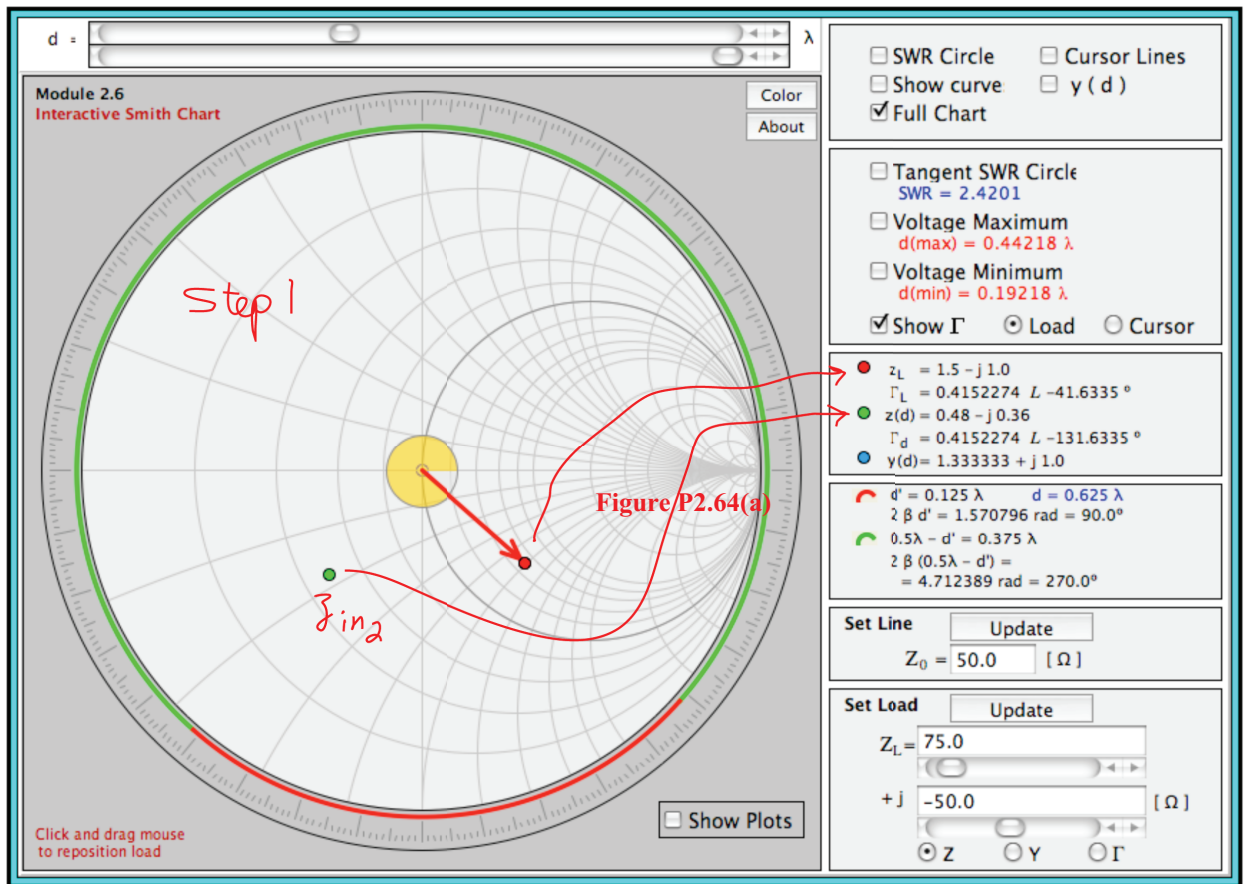


Figure P2.51(a)

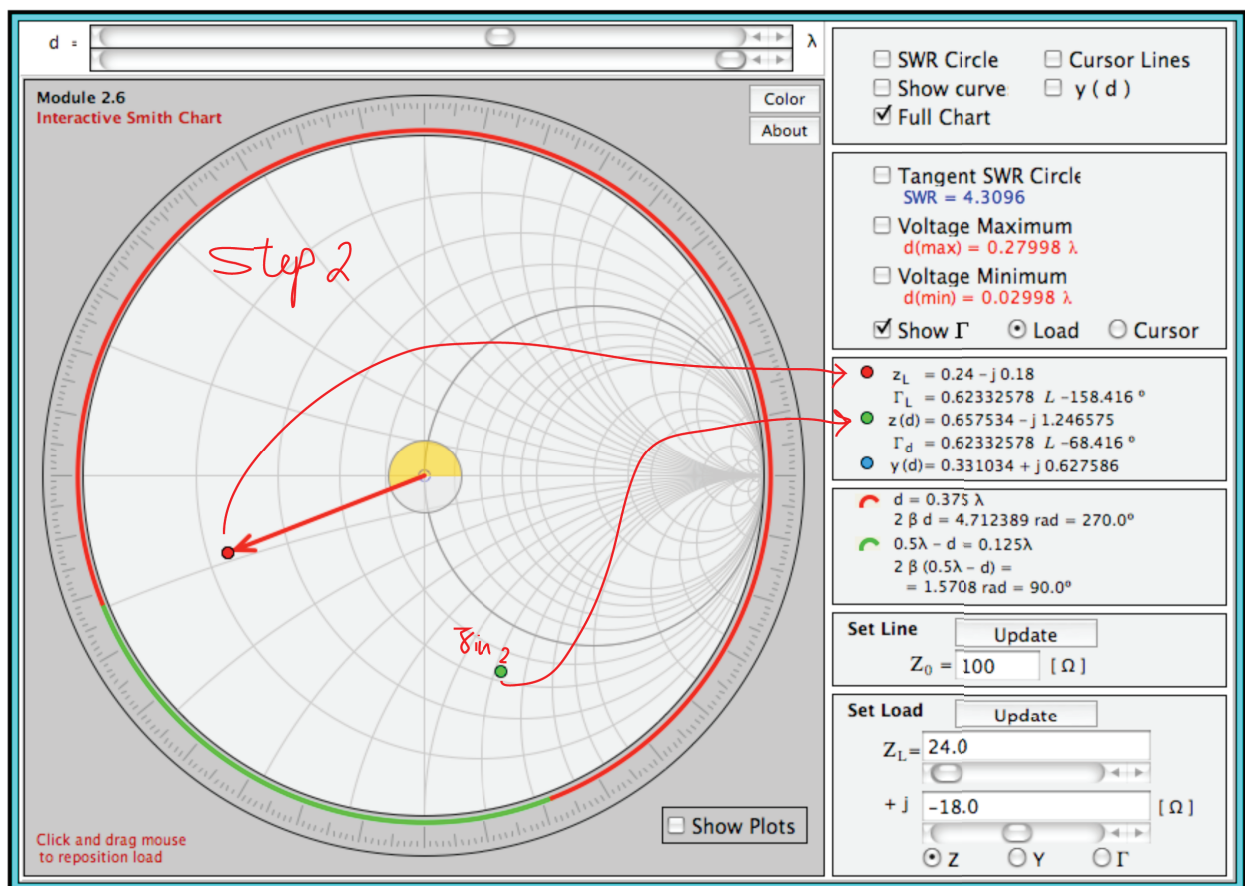


Figure P2.51(b)