R. Ludwig and G. Bogdanov
"RF Circuit Design: Theory and Applications"
2nd edition

Figures for Chapter 3

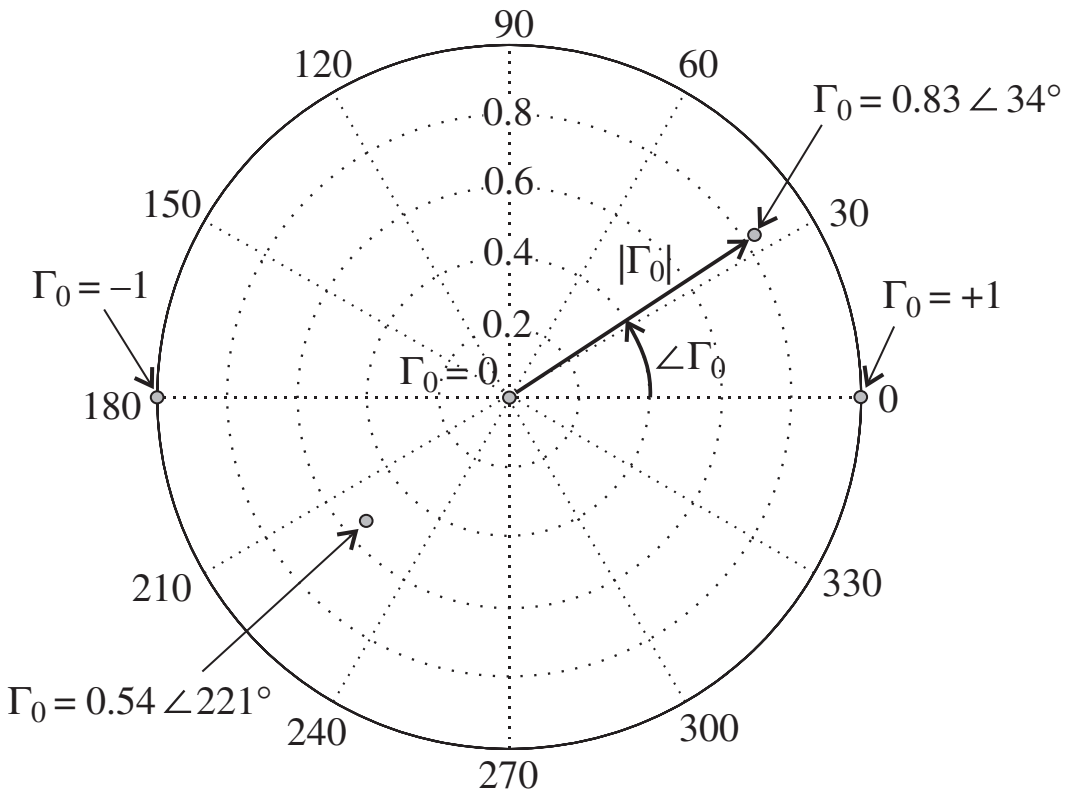


Figure 3-1 Complex Γ-plane and various locations of Γ_0.

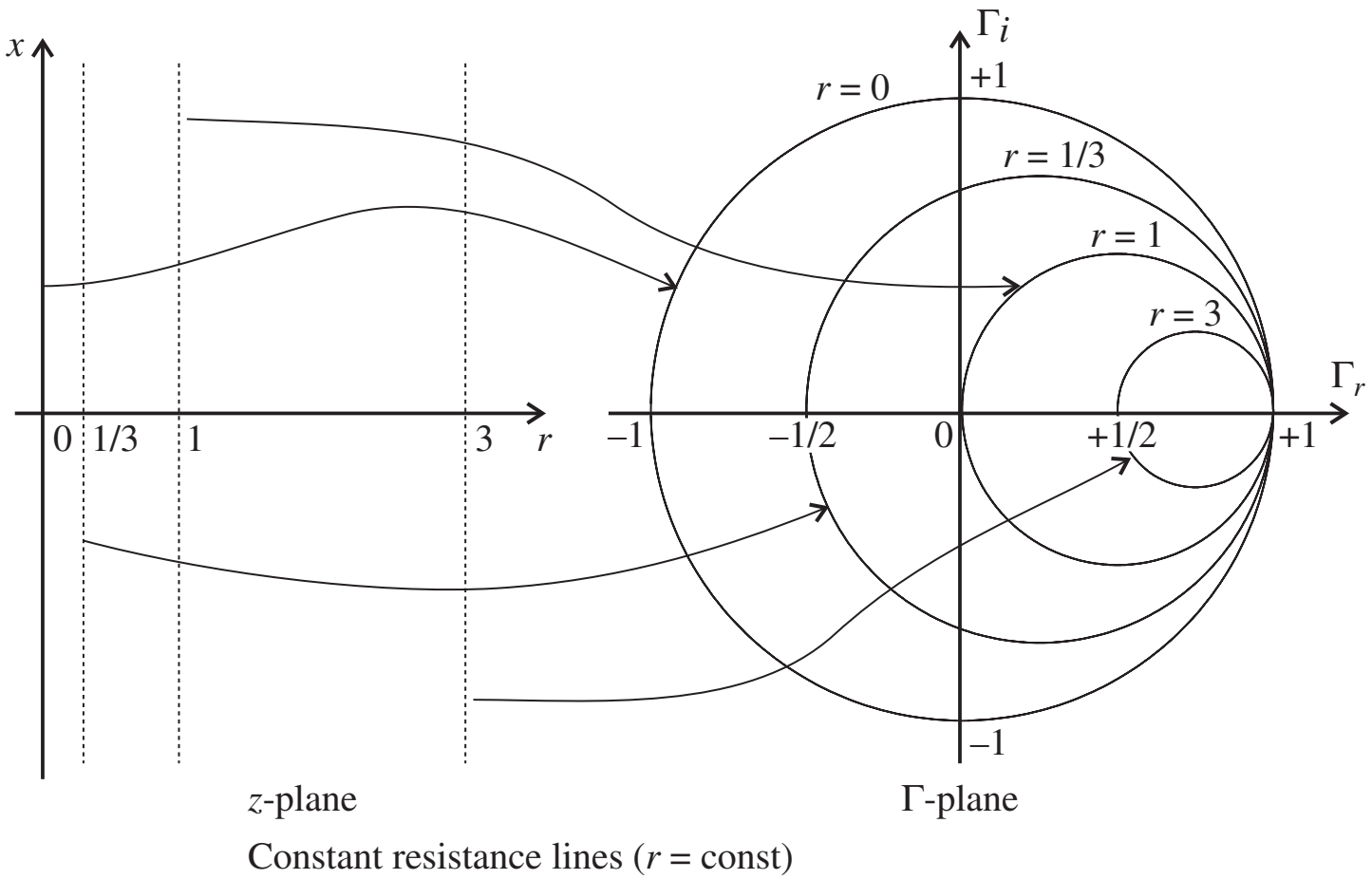


Figure 3-2 Parametric representation of the normalized resistance *r* in the complex Γ-plane.

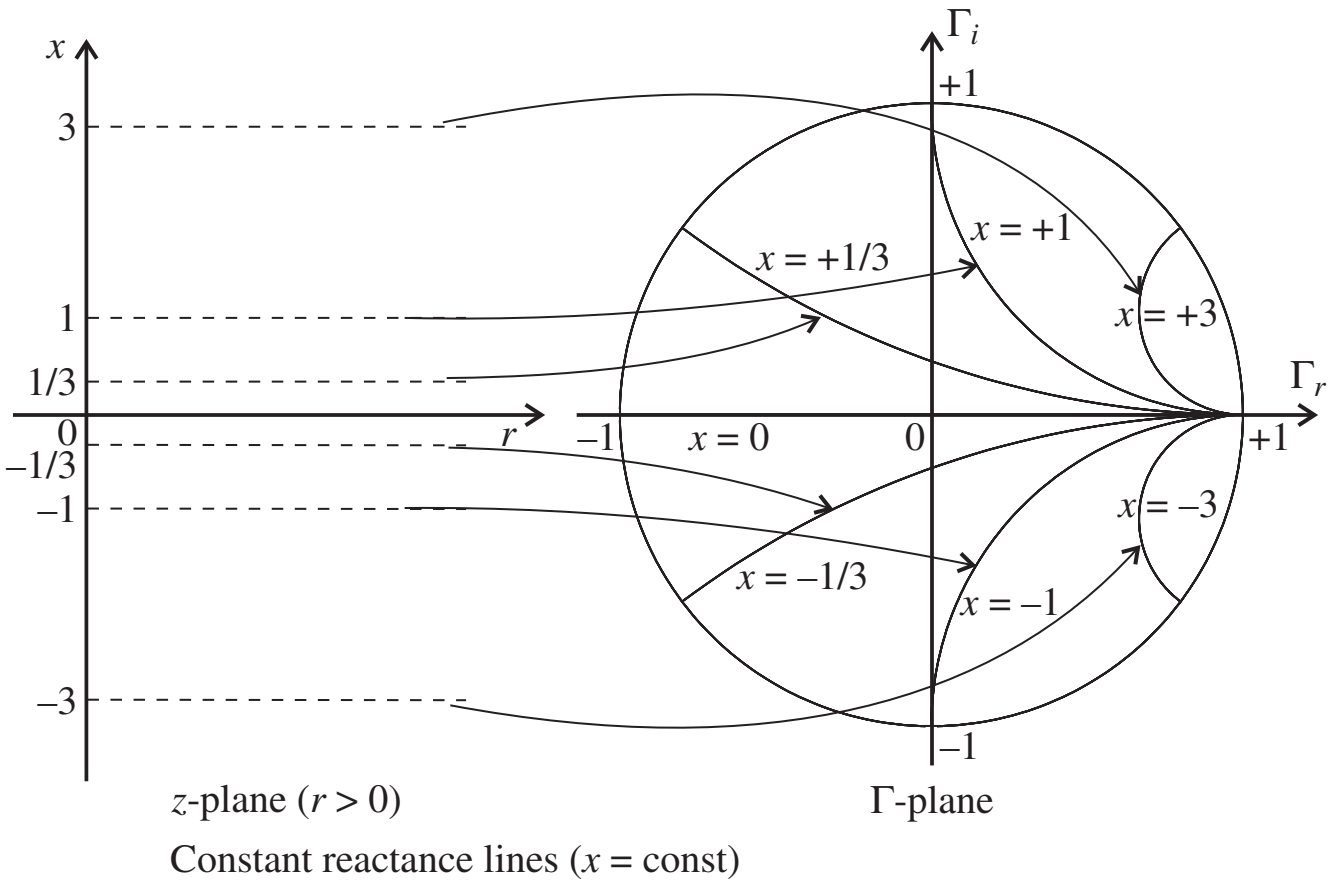


Figure 3-3 Parametric representation of the normalized reactance x in the complex Γ-plane.

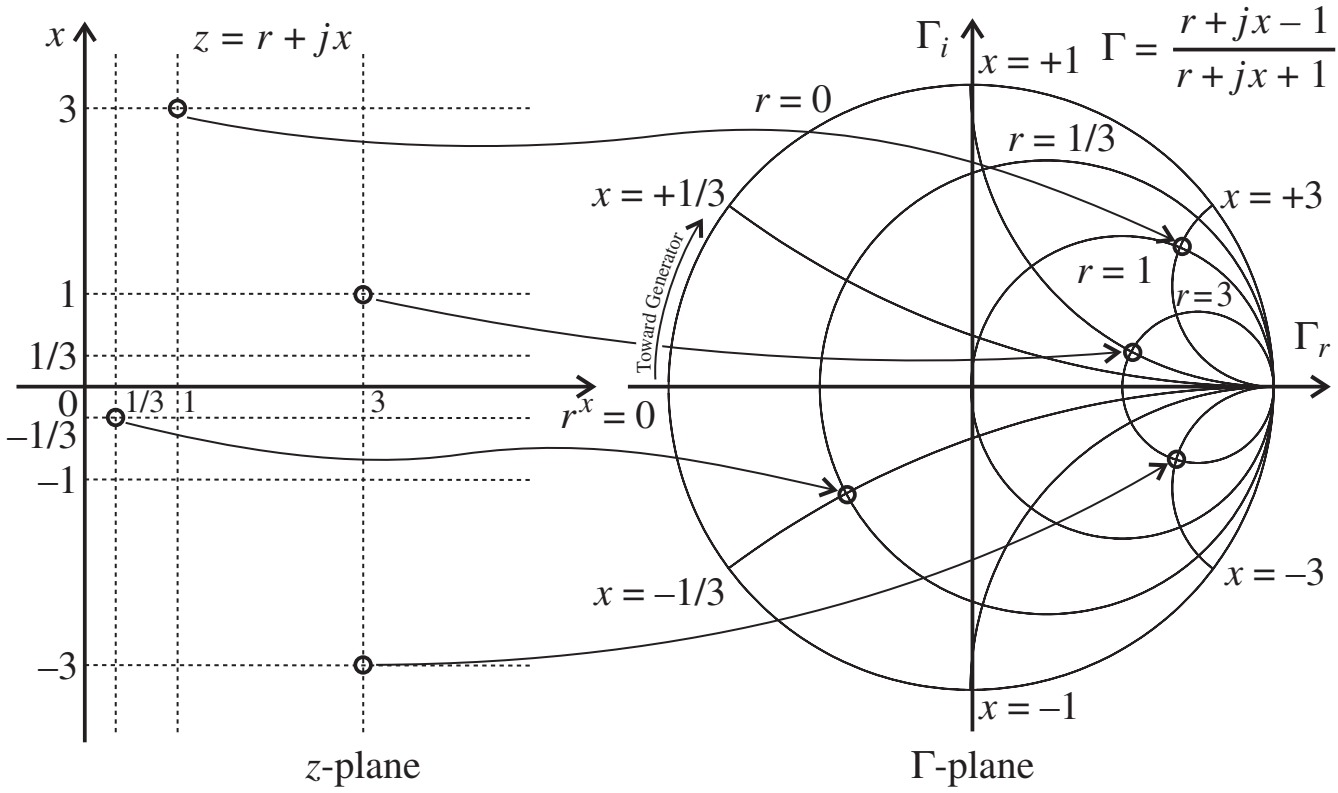


Figure 3-4 Smith Chart representation formed by combining *r* and *x* circles for $|\Gamma| \leq 1$.

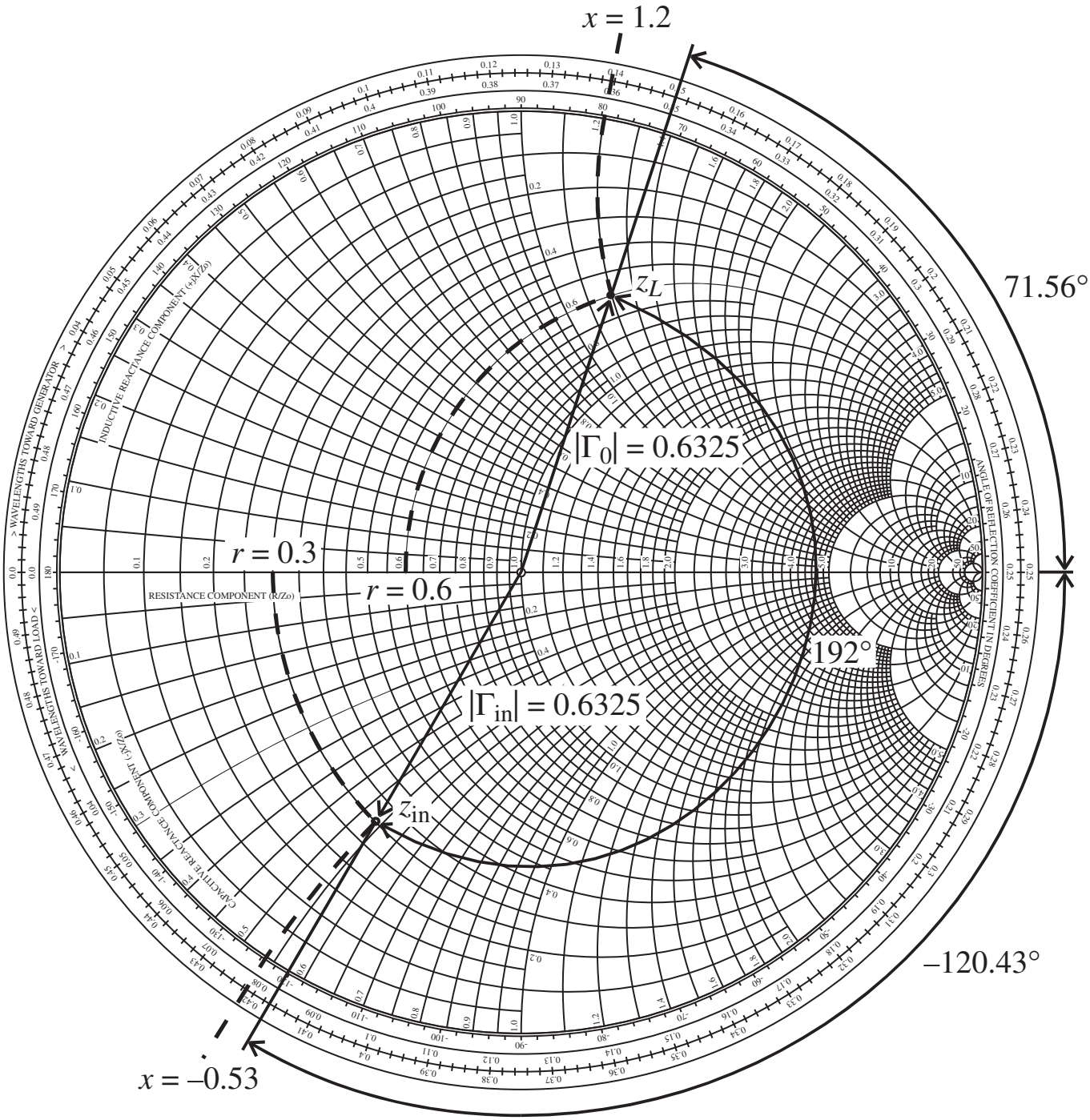


Figure 3-5 Usage of the Smith Chart to determine the input impedance for Example 3-3.

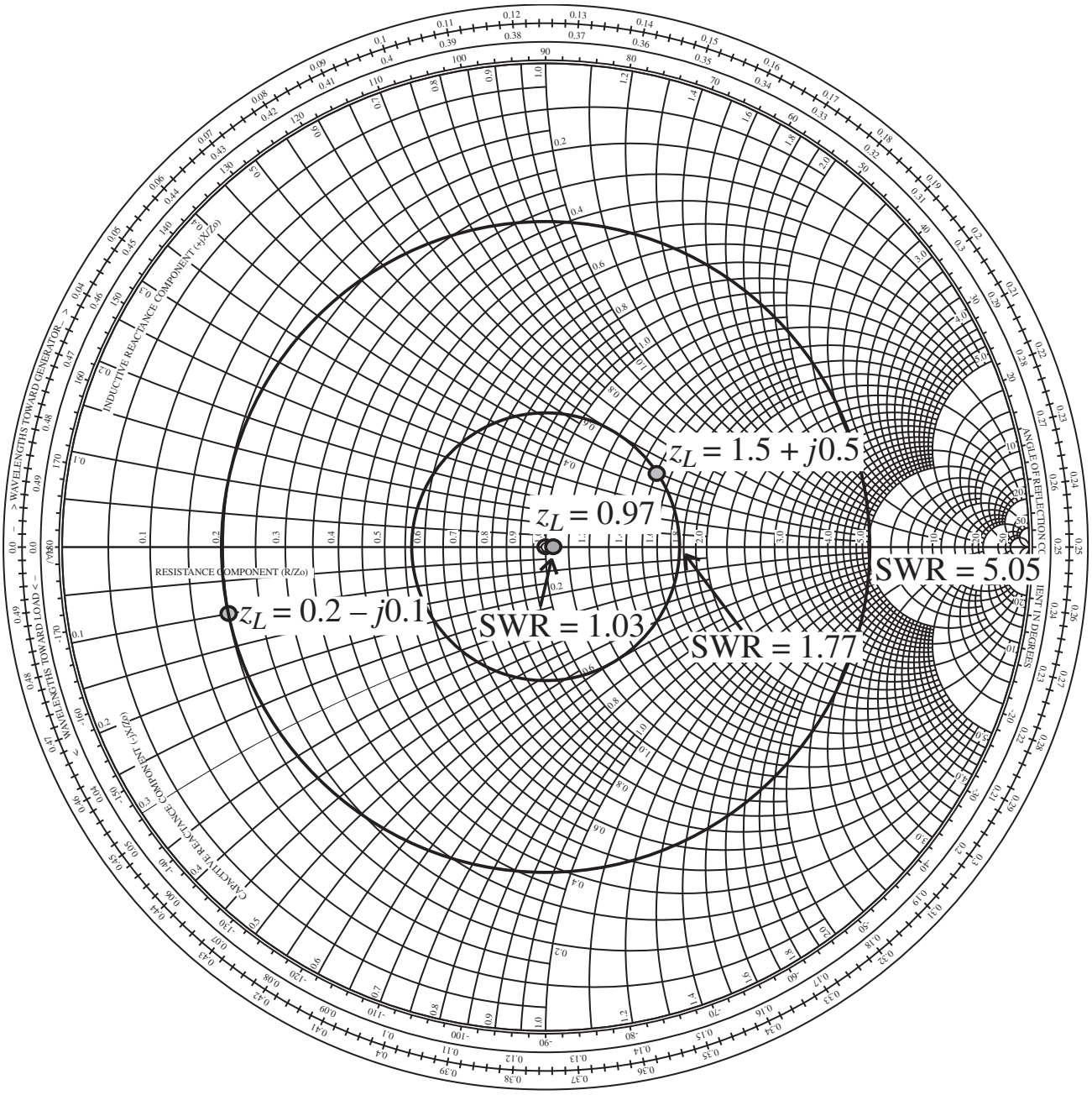


Figure 3-6 SWR circles for various reflection coefficients.

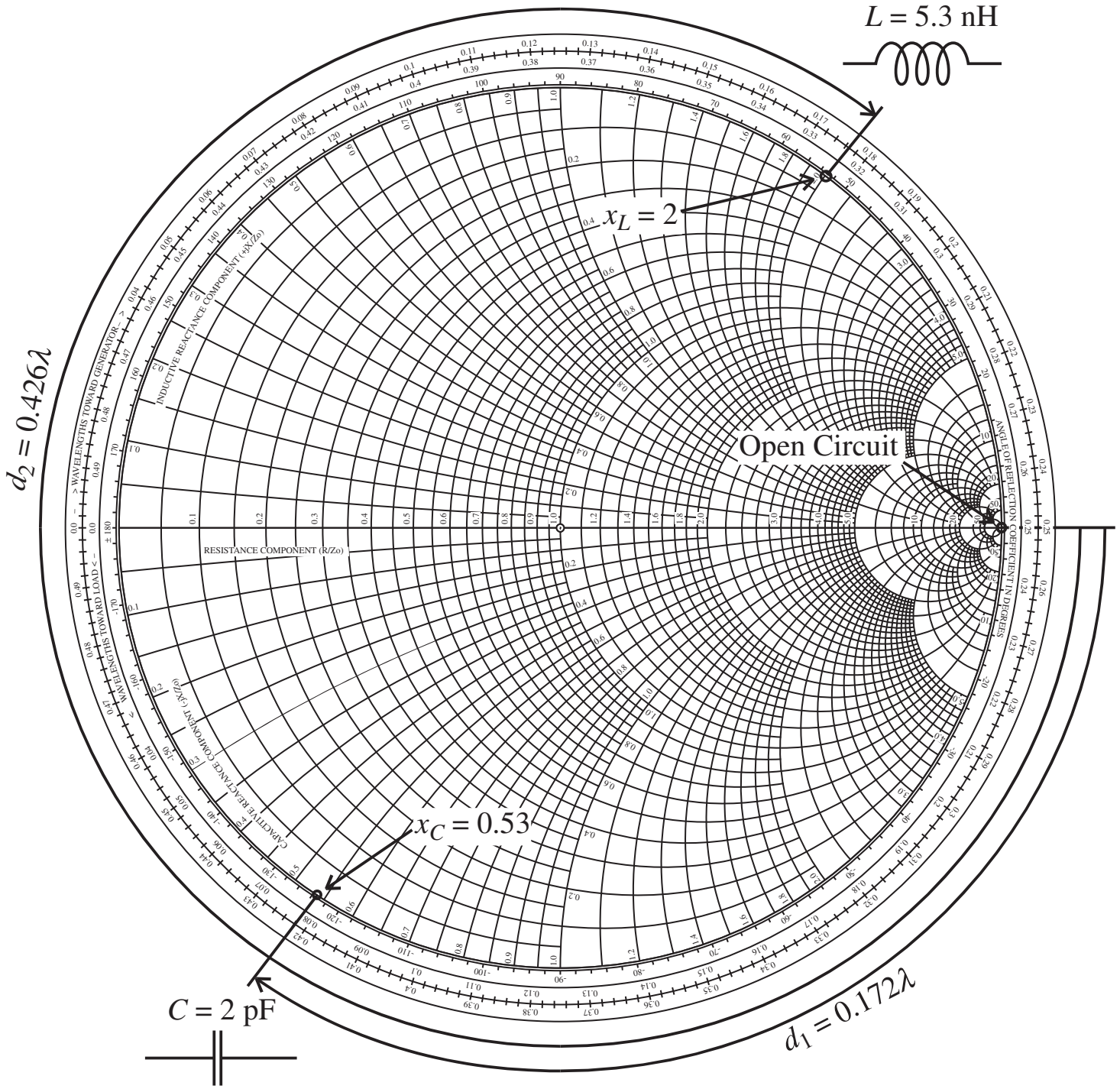


Figure 3-7 Creating capacitive and inductive impedances via an open-circuited transmission line at 3 GHz.

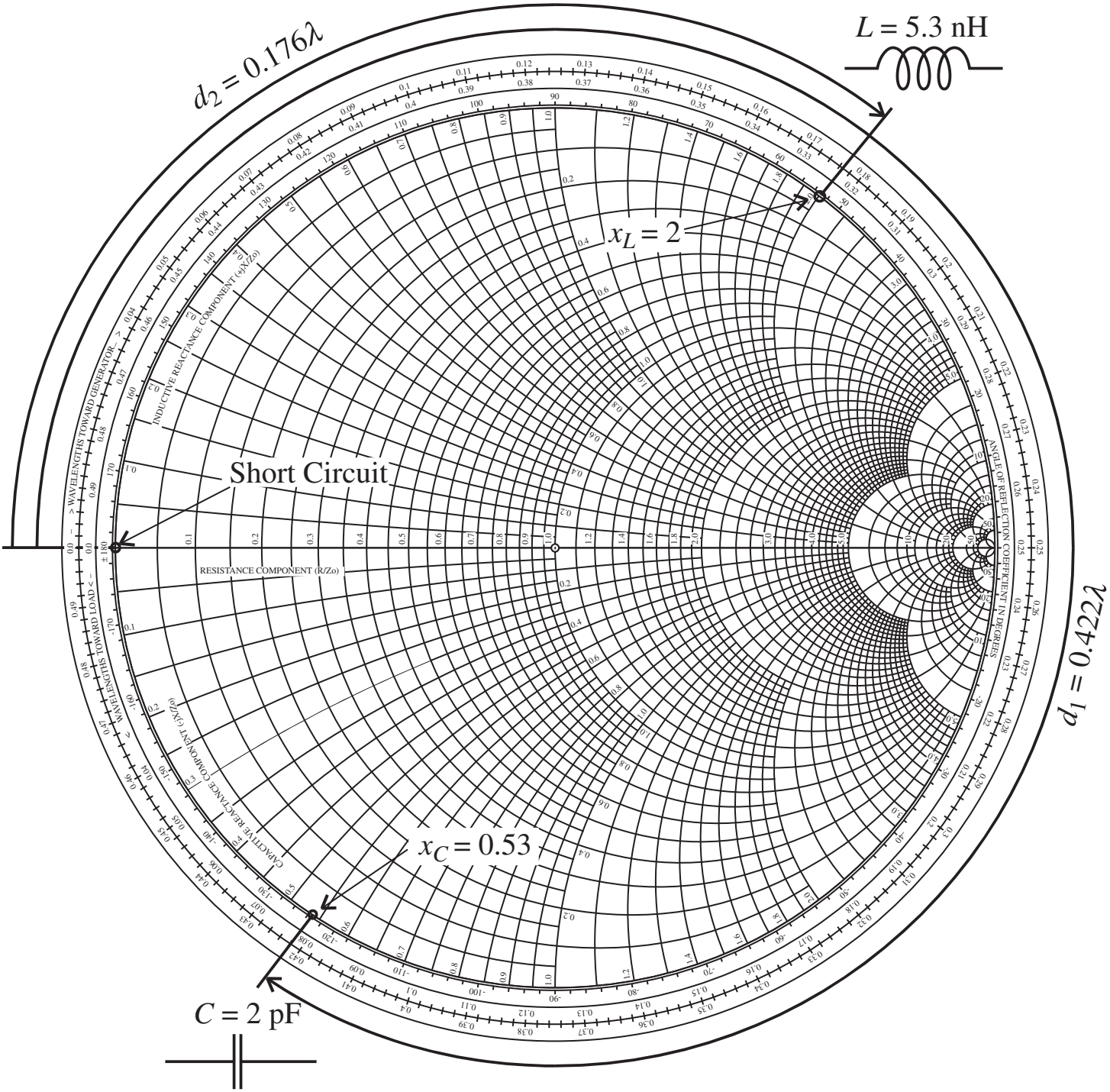


Figure 3-8 Creating capacitive and inductive impedances via a short-circuited transmission line at 3 GHz.

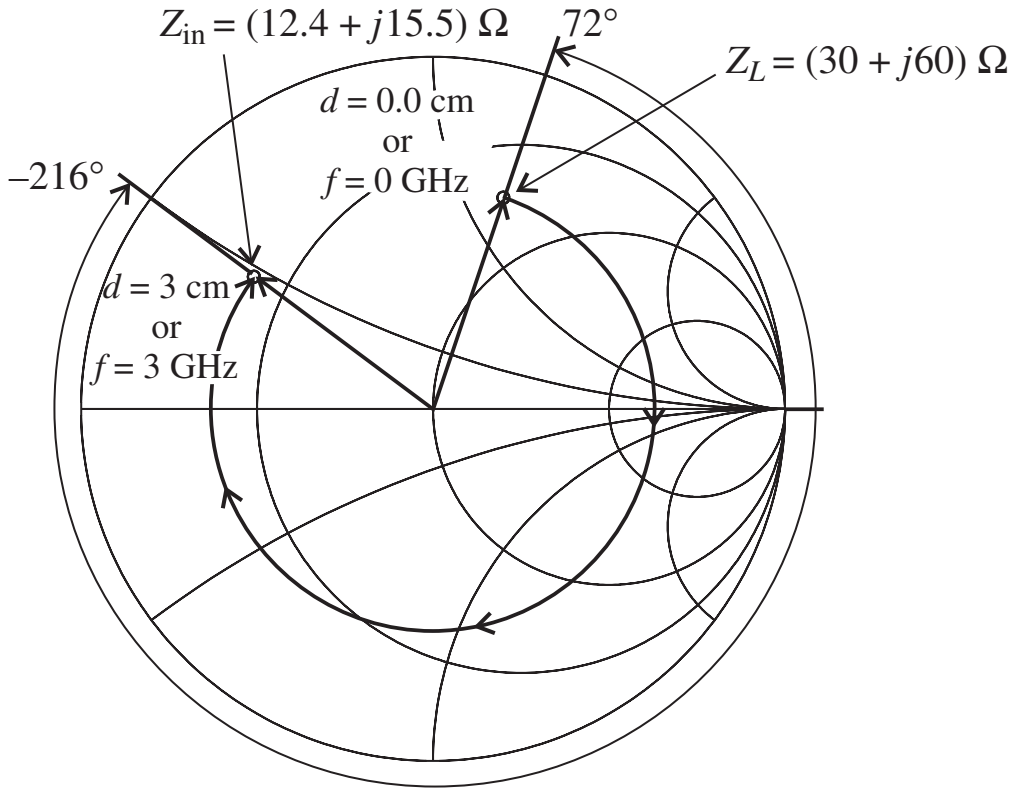


Figure 3-9 Input impedance of a loaded line of 2 cm length for a sweep in operating frequency from 0.0 to 3 GHz. If the frequency is fixed at 2 GHz and the line length is varied from 0.0 to 3 cm, the same impedance curve is obtained.

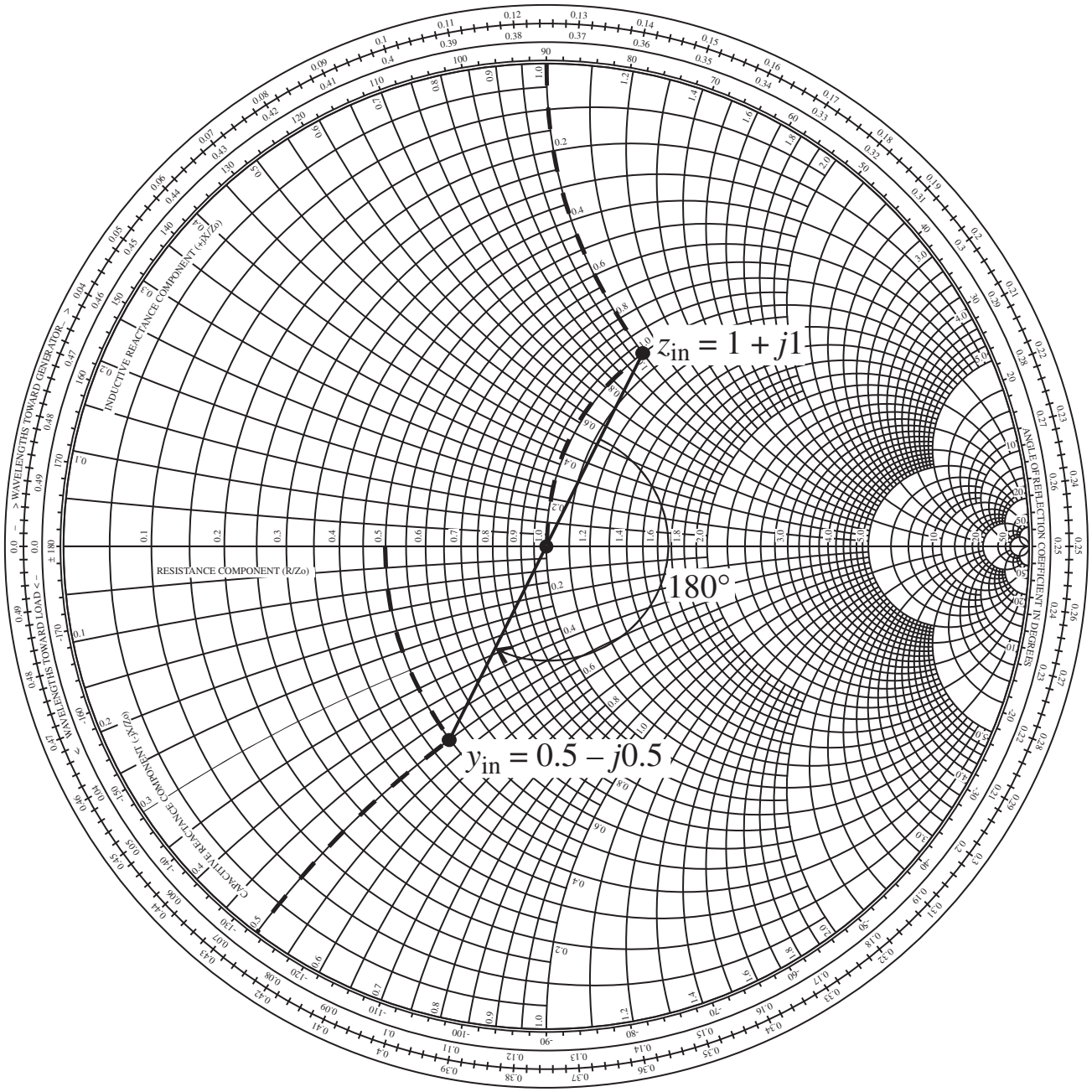
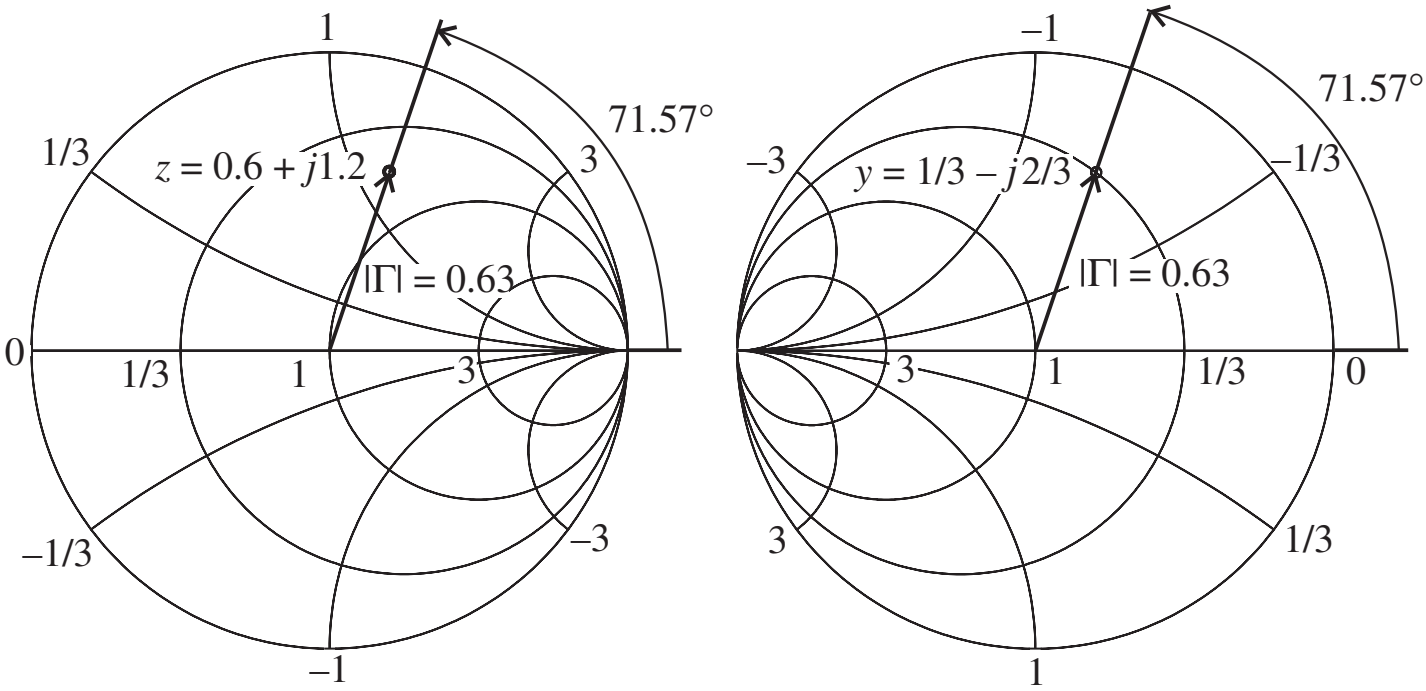


Figure 3-10 Conversion from impedance to admittance by 180° rotation.



(a) *Z*-Smith Chart (b) *Y*-Smith Chart

Figure 1-1 Reinterpretation of the *Z*-Smith Chart as a *Y*-Smith Chart.

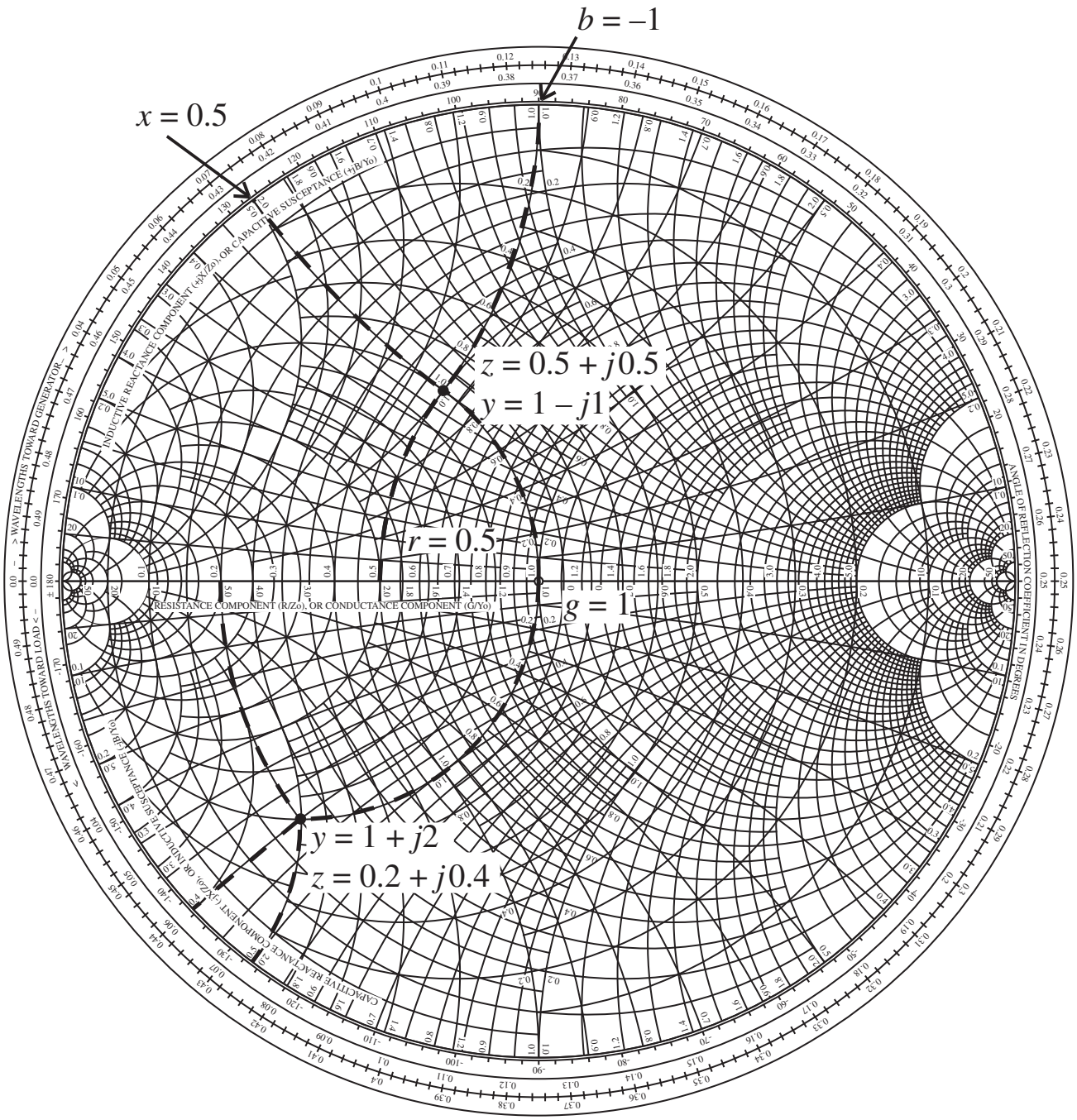


Figure 3-11 The *ZY*-Smith Chart superimposes the *Z*- and *Y*-Smith Charts in one graphical display.

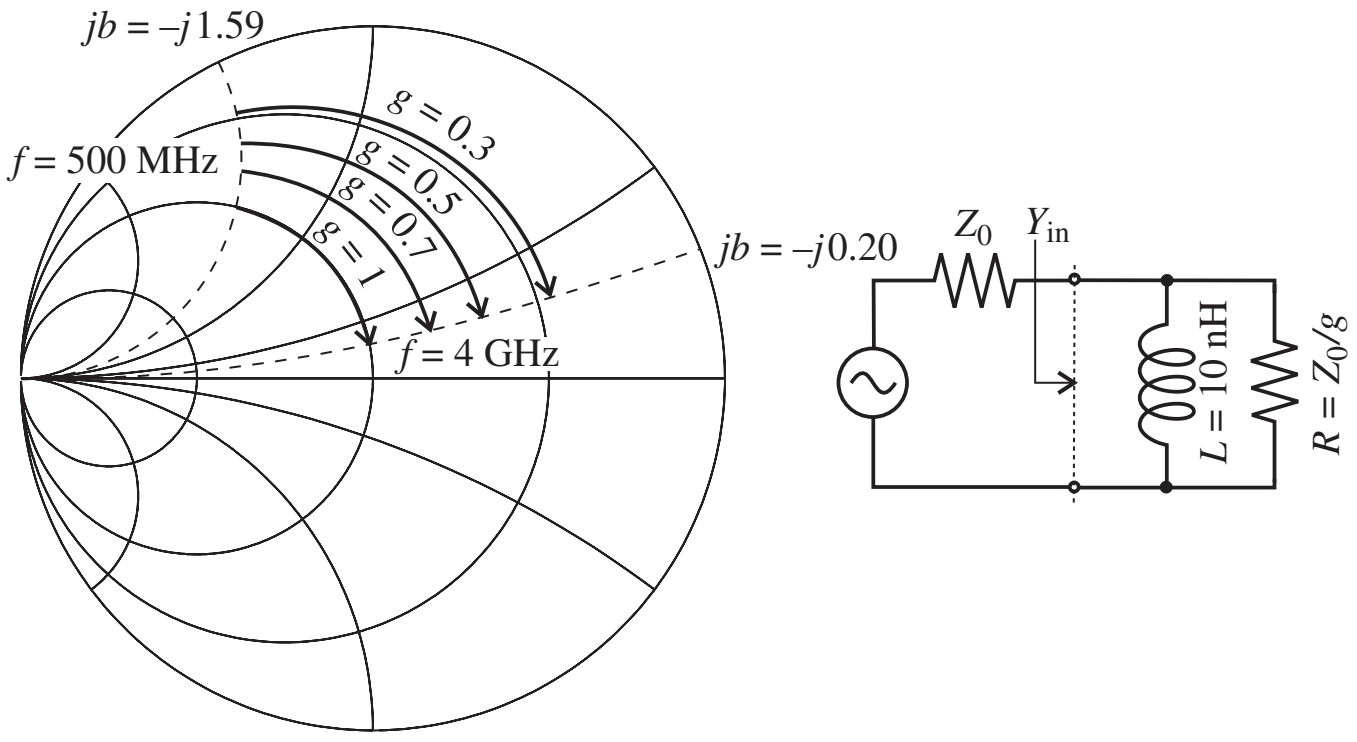


Figure 3-12 Admittance response of parallel *RL* circuit for $\omega_L \leq \omega \leq \omega_U$ at constant conductances g = 0.3, 0.5, 0.7, and 1.

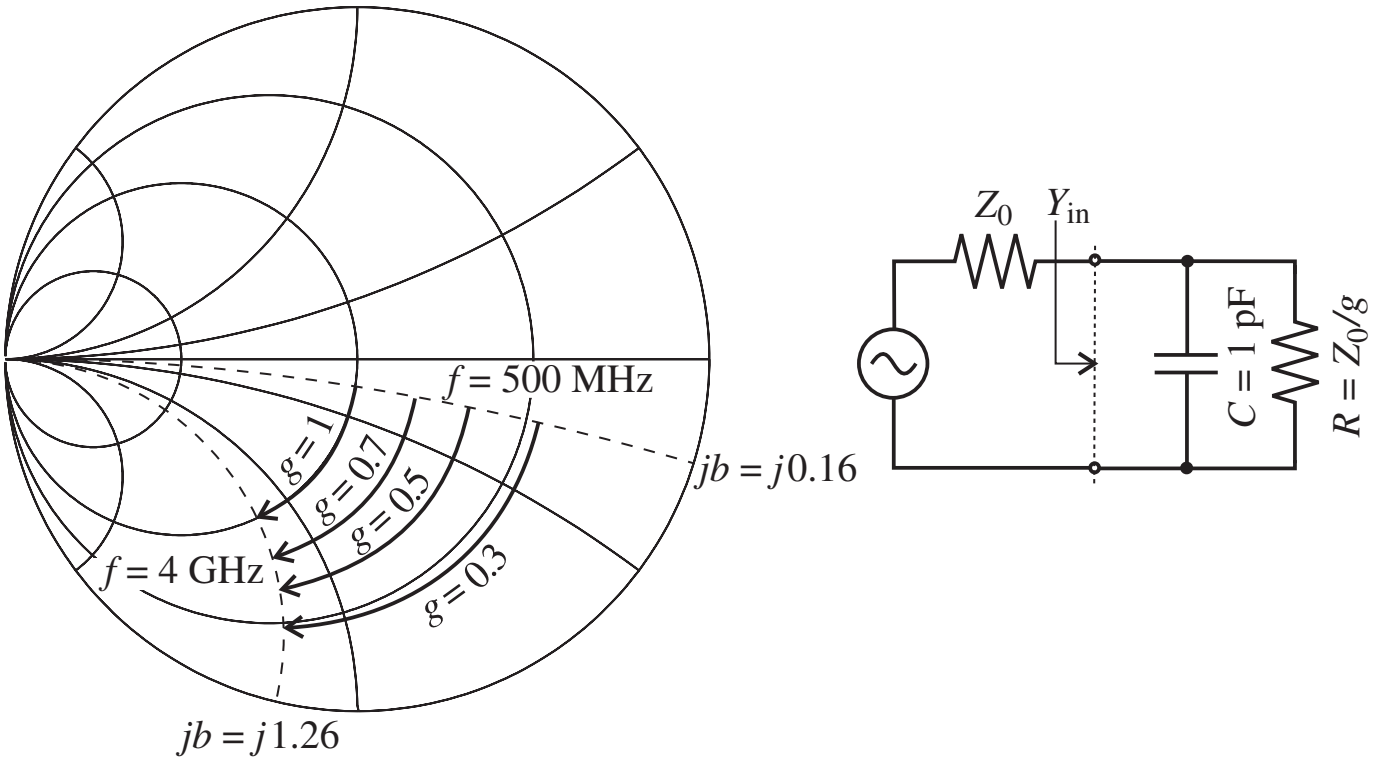


Figure 3-13 Admittance response of parallel *RC* circuit for $\omega_L \le \omega \le \omega_U$ at constant conductances g = 0.3, 0.5, 0.7, and 1.

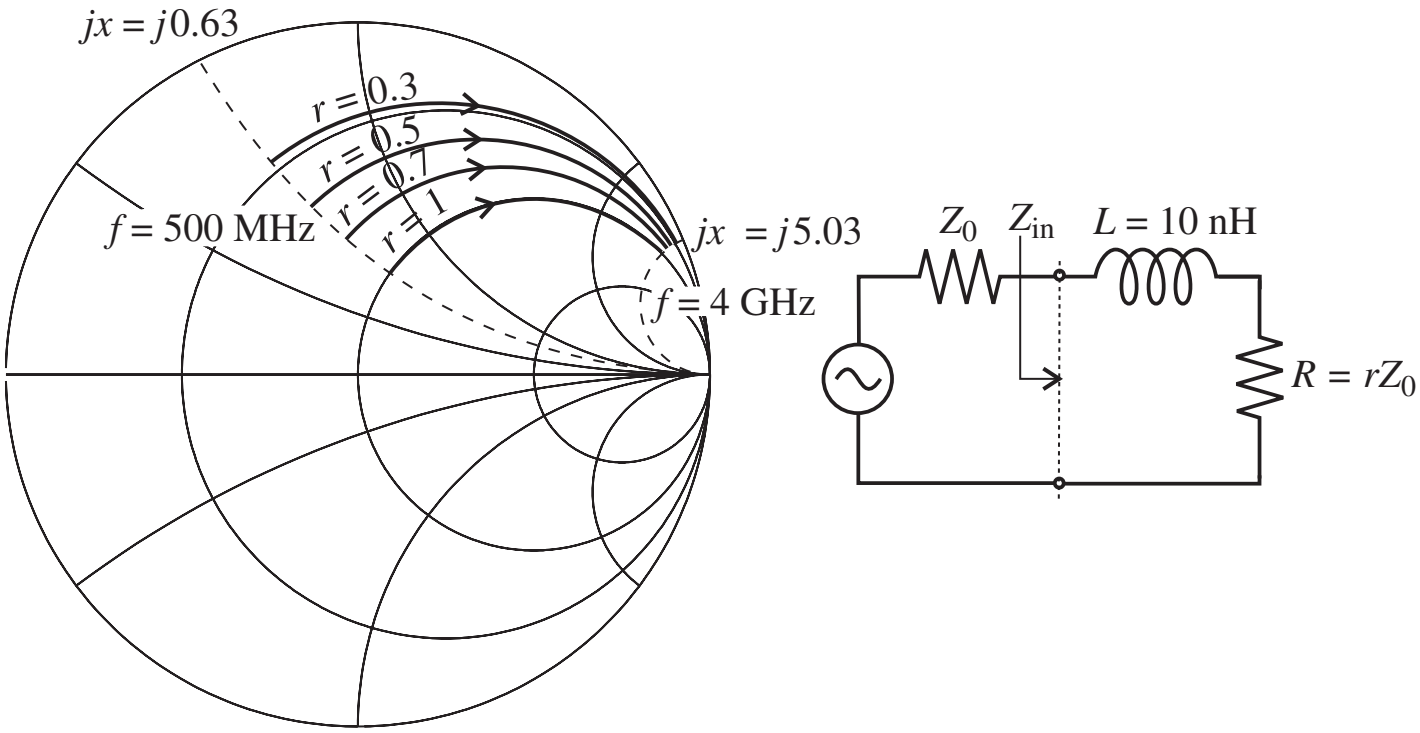


Figure 3-14 Impedance response of series *RL* circuit for $\omega_L \le \omega \le \omega_U$ and constant resistances r = 0.3, 0.5, 0.7, and 1.

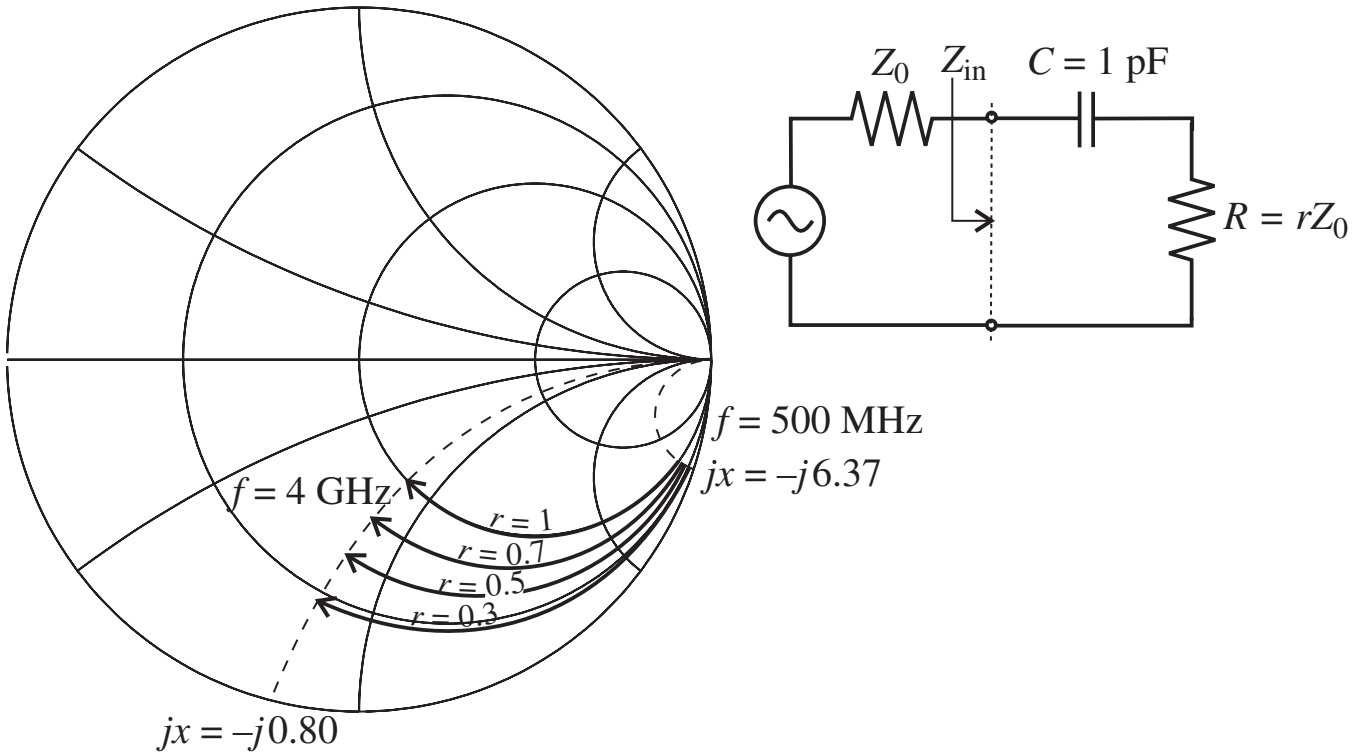


Figure 3-15 Impedance response of series *RC* circuit for $\omega_L \le \omega \le \omega_U$ at constant resistances r = 0.3, 0.5, 0.7, and 1.

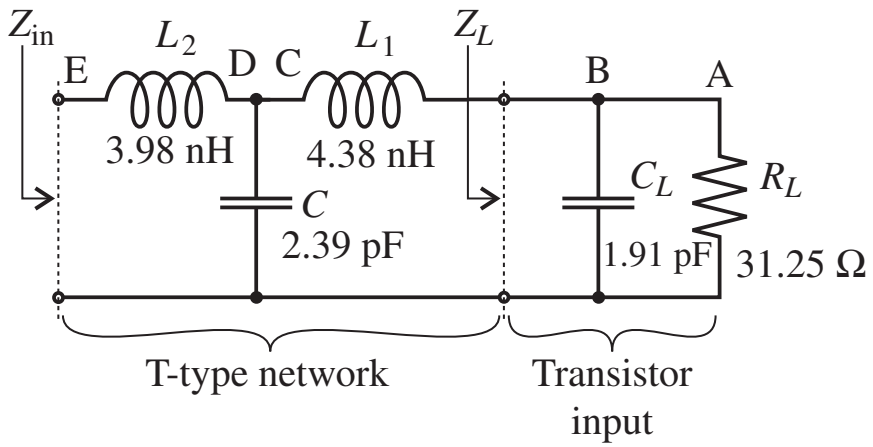


Figure 3-16 T-network connected to the base-emitter input impedance of a bipolar transistor.

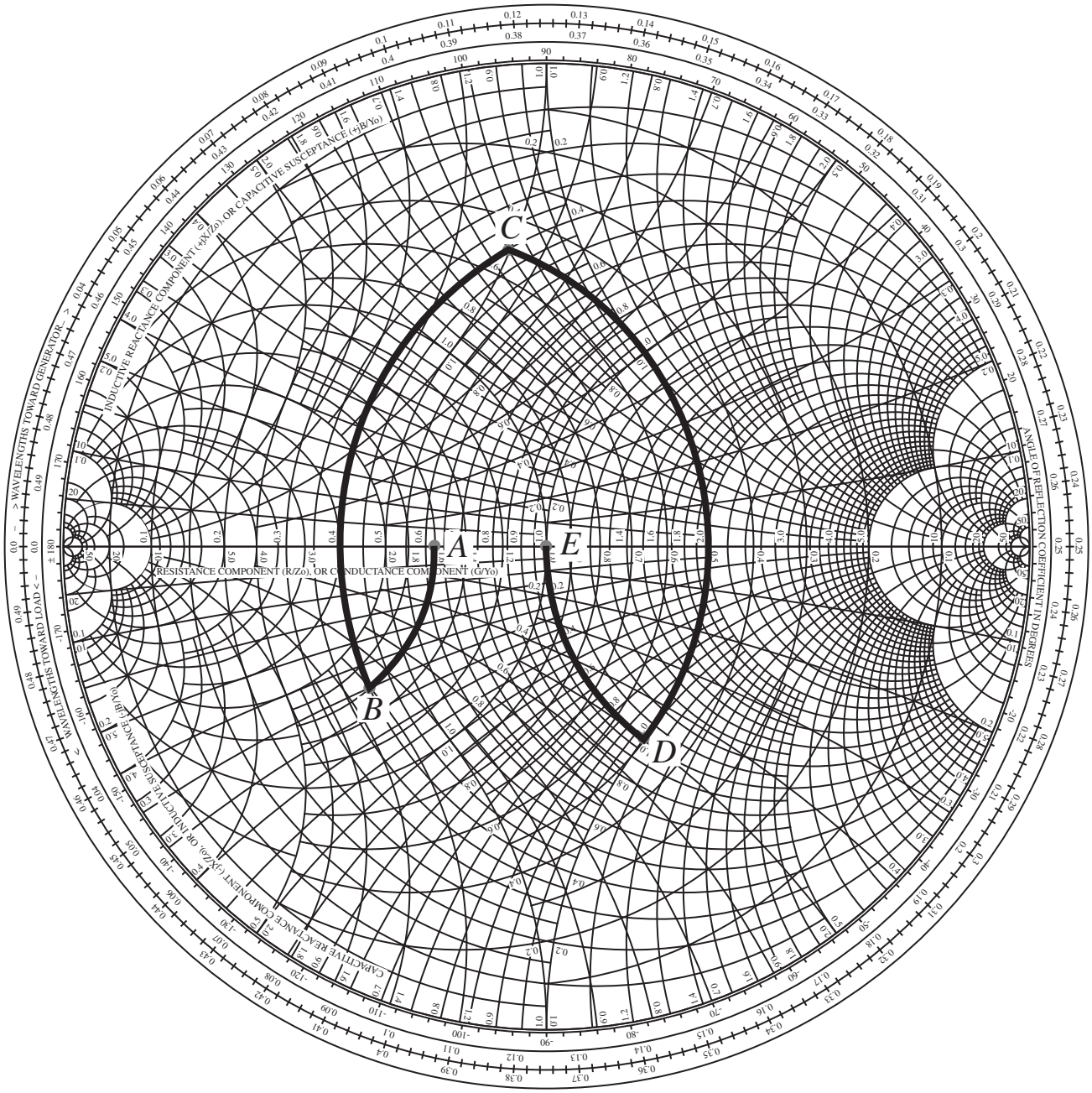


Figure 3-17 Computation of the normalized input impedance of the T-network shown in Figure 16 for a center frequency f = 2 GHz.

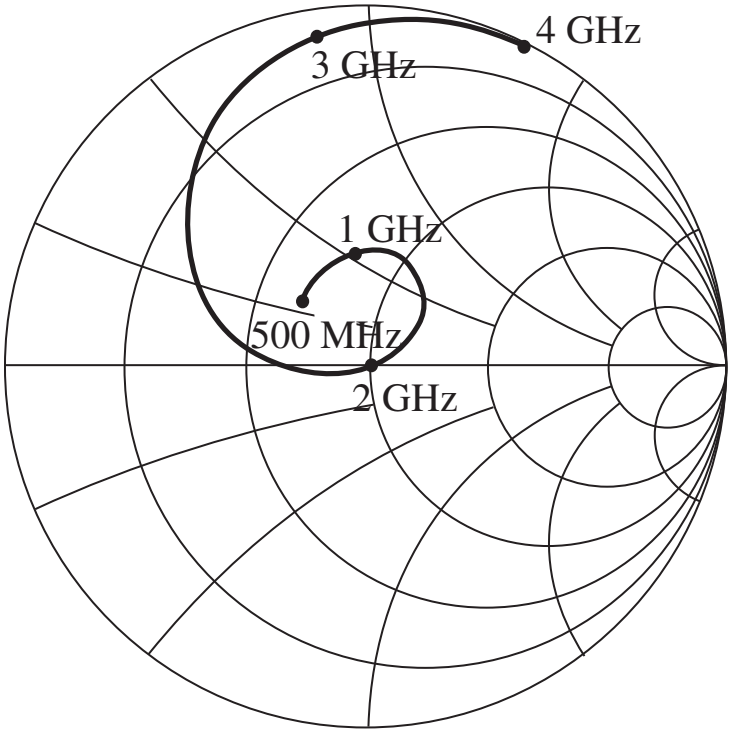


Figure 3-18 CAD simulation of the normalized input impedance Z_{in} for the network depicted in Figure 16 over the frequency range 500 MHz–4 GHz.

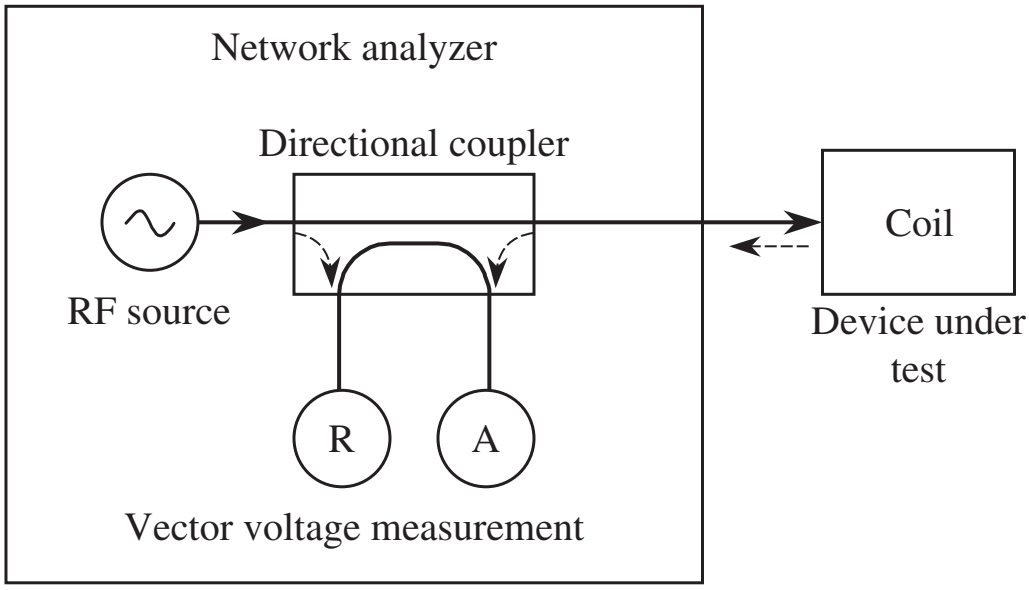


Figure 3-19 Reflection coefficient measurement chain internal to the network analyzer.

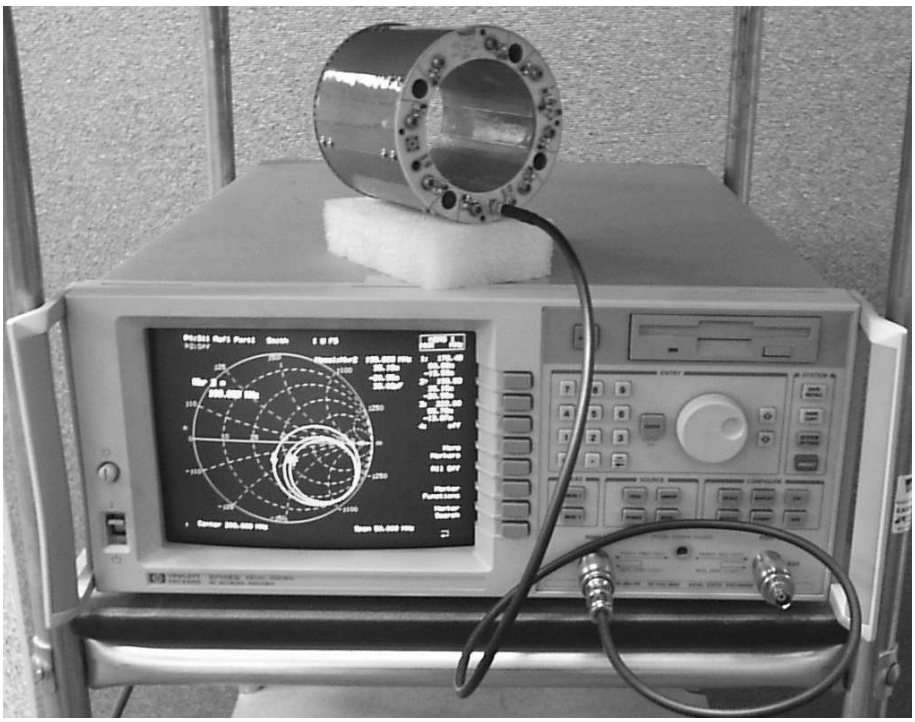


Figure 3-20 Network analyzer with the MRI RF coil attached.

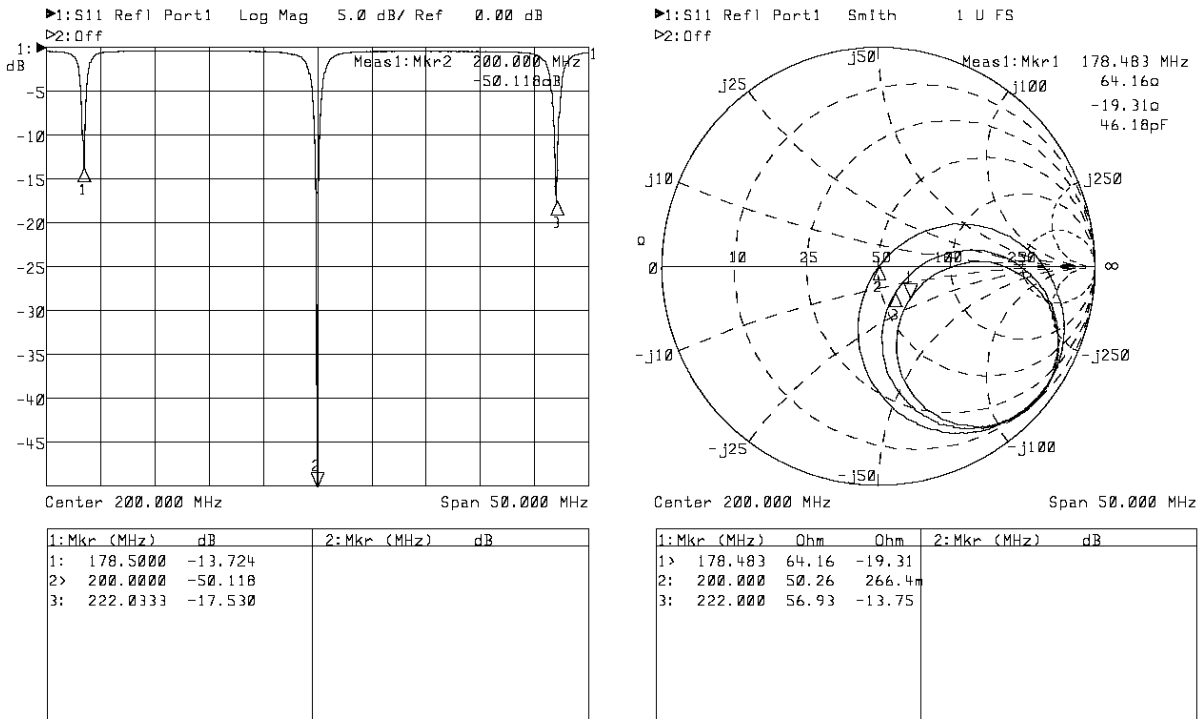


Figure 3-21 Network analyzer measurement results for the MRI RF coil.