Abstracts

A capacitively loaded half-wavelength tapped-stub resonator

J.M. Drozd and W.T. Joines. "A capacitively loaded half-wavelength tapped-stub resonator." 1997 Transactions on Microwave Theory and Techniques 45.7 (Jul. 1997 [T-MTT]): 1100-1104.

This paper examines a new resonator which is created by adding capacitive loading to a half-wavelength tapped-stub resonator. This capacitively loaded resonator has the property that both the Q and the resonant frequency can be set independently. This property is important because it allows this resonator to be used as either a tracking filter which maintains a constant bandwidth or as a filter which can vary its Q while maintaining a fixed resonant frequency. In this paper, equations are derived for choosing capacitance values that yield a desired resonant frequency and value of Q. Examples of using this resonator as both a fixed-frequency variable-Q filter and a constant-bandwidth tracking filter are provided. Theoretical results are verified by measurements.

❑ Return to main document.