Abstracts

A transformer of one-third wavelength in two sections - for a frequency and its first harmonic

Y.L. Chow and K.L. Wan. "A transformer of one-third wavelength in two sections - for a frequency and its first harmonic." 2002 Microwave and Wireless Components Letters 12.1 (Jan. 2002 [MWCL]): 22-23.

The quarter-wave transformer transforms in one frequency f/sub 0/, but not its first harmonic 2f/sub 0/. The transform in 2f/sub 0/ is needed in a dual-band operation of GSM and PCS. This requirement can be fulfilled in a two line-sections of 1/6 wavelengths each, adding to 1/3 wavelengths for the total transformer length in the lower band centering at f/sub 0/ (fundamental), or 2/3 wavelengths in the upper band centering at 2f/sub 0/ (1st harmonic). The 1/3-wave transformer is analytically inexact but effectively exact for engineering applications. For example, for impedance transforms of K = 4, the inexactness gives a reflection of |/spl Gamma/| = 0.013.

❑ Return to main document.