Abstracts

Impedance and Polarization-Ratio Transformations by a Graphical Method Using the Isometric Circles

E.F. Bolinder. "Impedance and Polarization-Ratio Transformations by a Graphical Method Using the Isometric Circles." 1956 Transactions on Microwave Theory and Techniques 4.3 (Jul. 1956 [T-MTT]): 176-180.

The isometric circles for the direct and inverse linear fractional transformations can be used for transformations of impedances and polarization ratios. In the Ioxodromic case an inversion is performed in the isometric circle of the direct transformation, followed by a reflection in the symmetry line of the two circles, and a rotation around the origin of the isometric circle of the inverse transformation. In the nonloxodromic case only the first two operations have to be applied. Three illustrative examples are given: the first shows the transformation of the right half of the complex impedance plane into the unit circle (Smith Chart); the second gives a circular proof of the Weissfloch transformer theorem; the third shows an example of cascading, Iossless, two terminal-pair networks.

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