Abstracts

A 4:1 unequal Wilkinson power divider

Jeng-Sik Lim, Sung-Won Lee, Chul-Soo Kim, Jun-Seok Park, Dal Ahn and Sangwook Nam. "A 4:1 unequal Wilkinson power divider." 2001 Microwave and Wireless Components Letters 11.3 (Mar. 2001 [MWCL]): 124-126.

This letter presents the design and measured performances of a microstrip 4:1 unequal Wilkinson power divider. The divider is designed using the conventional Wilkinson topology with the defected ground structure (DGS). The DGS on the ground plane provides an additional effective inductive component to the microstrip line. This enables the microstrip line to be realized with very high impedance of over 150 /spl Omega/. By employing the DGS to the unequal Wilkinson topology, 4:1 power dividing ratio can be obtained easily without any problem in realization, while it has been impractical to fabricate a 4:1 divider using the conventional microstrip line because of very thin conductor width and extremely low aspect ratio (W/H). As an example, a 4:1 divider has been designed and measured at 1.5 GHz in order to show the validity of the proposed DGS and unequal divider. The measured performances of the 4:1 unequal power divider well agree with the exactly same dividing ratio as that expected.

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