



The Chinese University of Hong Kong
Non-confidential Abstract of Technology Disclosure

Title:

A Dual Band Coupled-line Balanced-to-unbalanced Bandpass Filter

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Inventor(s):

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Patent Status:

- ◆ US Patent Pending

Non-confidential abstract:

A new type of device called dual band coupled-line balanced-to-unbalanced band pass filter, or simply dual band balun-filter, is proposed. Based on the traditional coupled-line filter theory and Marchand balun configuration, a new device with both filter-type as well as balun-type characteristics is designed. In addition, it utilizes $\lambda/4$ -type transmission-line stepped-impedance resonators (SIR's) to achieve a dual band operation. Besides providing a simple design procedure for the device, its working mechanism is also revealed mathematically. A prototype balun-filter operating at 2.4-GHz and 5.8-GHz has been realized to validate the proposed concept and theory, showing promising application potentials for future multi-band radio-frequency (RF) wireless transceiver modules.

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