雙膜微帶濾波器設計

洪誠志、許崇宜

E-mail: 9707899@mail.dyu.edu.tw

摘 要

本篇論文將通帶中心頻率設計在2.5 GHz的環形雙模態濾波器，利用曲折的方式，減少結構體積。其次，在論文我們提出一雙模態濾波器之雙工器，其通帶中心頻率為2.43和2.76 GHz的三角環形雙模濾波器，對應之最小插入損失（minimum insertion loss）分別為1.96和1.92 dB，比起傳統的環形雙模態濾波器構成的雙工器有更好的微小化結構。

關鍵詞 : 雙模態濾波器 ; 雙工器

目錄

參考文獻

[1] I. Wolff, “ Microstrip Bandpass Filters Using Degenerate Modes of a Microstrip Ring, ” Electron. Letters, vol. 8, pp. 163-164, June 1972.

[2] M. Matsuo, Hi. Yabuki, and M. Makimoto, “ Dual-Mode Stepped-Impedance Ring Resonator for Bandpass Filter Applications, ” IEEE Transactions on Microwave Theory and Techniques, vol. 49, pp. 1235-1240, July 2001.

[3] J. S. Hong and, M. J. Lancaster, “ Bandpass Characteristics of New Dual-Mode Microsrtip Square Loop Resonator, ” Electronics Letters, vol. 31, pp. 891-92, 1995.

[4] A. Gorur, “ Description of Coupling Between Degenerate Modes of a Dual-Mode Microstrip Loop Resonator Using a Novel Perturbation Arrangement and Its Dual-Mode Bandpass Filter Applications, ” IEEE Transactions on Microwave Theory and Techniques, vol. 52, pp. 671 - 677, February 2004.

[5] A. Gorur, “ Realization of A Dual-Mode Bandpass Filter Exhibiting Either a Chebyshev or an Elliptic Characteristic by Changing Perturbation ’ s Size, ” IEEE Microwave and Wireless Components Letters, vol. 14, pp. 118-120, March 2004.

[6] A. Gorur, and C. Karpuz, “ Miniature Dual-Mode Microstrip Filters, ” IEEE Microwave and Wireless Components Letters, vol. 17, pp. 37-39, January 2007.

[7] T. W. Soong, J. C. Liu, C. H. Shie, and C. Y. Wu, “ Modified Dual-Mode Double-Ring Resonators for Wide Band-Pass Filter Design, ” IEE Proc.-Microw. Antennas Propag, vol. 152, pp. 245-250, August 2005.

[8] S. T. Lu, P. C. Deng, J. C. Liu, and T. I. Wu, “ On the Relationship Among Dual-Mode Double-Ring and Double Slot-Ring Resonators for Wide Band-Pass Filter Design, ” Microwave and Optical Technology Letters, vol. 50, pp. 117-122, January 2008.

[9] X. W. Dai, C. H. Liang, and Z. Chen, “ Novel Dual-Mode Dual-Band Bandpass Filter Using Nested Microstrip Meander-Loop Resonators, ” Microwave and Optical Technology Letters, vol. 50, pp. 836-838, March 2008.

[10] R. Wu, and S. Amari, “ New Triangular Microstrip Loop Resonators for Bandpass Dual-Mode Filter Applications, ” IEEE Microwave Symposium Digest, pp. 941-944, June 2005.

[11] Y. C. Chiou, J. T. Kuo, and J. Shiuan, “ Miniaturized Dual-Mode Ring Resonator Bandpass Filter with Microstrip-to-CPW Broadside-Coupled Structure, ” IEEE Microwave and Wireless Components Letters, vol. 18, pp. 97-99, February 2008.

[12] M. H. Awida, A. M. E. Safwat, and H. E. Hennawy, " Dual-Mode Microstrip Bandpass Filter Using Ring of Arrows Resonator, " Electronics Letters, vol. 41, pp. 1335-1336, November 2005.
[13] B. Strassner, and K. Cheng, " Wide-Band Low-Loss High-Isolation Microstrip Periodic-stub Diplexer for Multiple-Frequency Applications, " IEEE Trans. Microwave Theory Tech., vol. 49, pp. 1818-1820, October 2001.
[14] C. M Tsai, S. Y. Lee, C. C. Chuang and C. C. Tsai, " A Folded Coupled-Line Structure and Its Application to Filter and Diplexer Design, " IEEE MTT-S International Microwave Symposium Digest, pp. 1927-1930, June 2002.