

- [3] V. K. Tripathi, "Asymmetric coupled transmission lines in an inhomogeneous medium," *IEEE Trans. Microwave Theory and Tech.*, vol. MTT-23, pp. 734-739, Sept. 1975.
- [4] V. K. Tripathi, "On the analysis of symmetrical three-line microstrip circuits," *IEEE Trans. Microwave Theory Tech.*, vol. MTT-25, pp. 726-729, Sept. 1977.
- [5] Y. K. Chin, "Analysis and applications of multiple coupled line structures in an inhomogeneous medium," Ph.D. Dissertation, Oregon State University, Corvallis, 1982.
- [6] V. K. Tripathi and R. J. Bucolo, "Analysis and modeling of multilevel parallel and crossing interconnection lines," *IEEE Trans. Electron Devices*, pp. 630-638, Mar. 1987.
- [7] V. K. Tripathi and J. B. Rettig, "A SPICE model for multiple coupled microstrips and other transmission lines," *IEEE Trans. Microwave Theory Tech.*, pp. 1513-1518, Dec. 1985.

### Corrections to "Modeling Three-Dimensional Discontinuities in Waveguides using Non-Orthogonal FDTD Algorithm"

Jin-Fa Lee, Robert Palandech, and Raj Mittra

In the above paper<sup>1</sup> there were several typographical errors:

Manuscript received March 13, 1992.

J.-F. Lee was with the Electromagnetic Communication Laboratory, Department of Electrical and Computer Engineering, University of Illinois, 1406 N. Green St., Urbana, IL 61801-2991. He is presently with the Department of Electrical Engineering, Worcester Polytechnic Institute, Worcester, MA 01609.

R. Palandech was with the Department of Electrical and Computer Engineering, University of Illinois, 1406 W. Green St., Urbana, IL 61801-2991. He is presently with Motorola, Inc., 1301 E. Algonquin Rd., Schaumburg, IL 60196.

R. Mittra is with the Electromagnetic Communications Laboratory, Department of Electrical and Computer Engineering, University of Illinois, 1406 W. Green St., Urbana, IL 61801-2991.

IEEE Log Number 9200870.

<sup>1</sup> J.-F. Lee, R. Palandech, and R. Mittra, *IEEE Trans. Microwave Theory Tech.*, vol. 40, no. 2, pp. 346-352, Feb. 1992.

- In Eqs. (24), (25),  $g_{lm}$  should be replaced by  $g^{lm}$ .
- Equation (30) should be modified as

(a) Two-Dimensional Case:

$$\begin{aligned} \|\nabla\| &= \sup_E \frac{\|\nabla E\|}{\|E\|} \\ &= 2 \sqrt{\frac{1}{(\Delta_x)^2} + \frac{1}{(\Delta_y)^2}} \\ \Rightarrow \Delta_t &\leq \frac{1}{\sqrt{\frac{1}{(\Delta_x)^2} + \frac{1}{(\Delta_y)^2}}} \end{aligned}$$

(b) Three-Dimensional Case:

$$\begin{aligned} \|\nabla\| &= \sup_E \frac{\|\nabla E\|}{\|E\|} \\ &= 2 \sqrt{\frac{1}{(\Delta_x)^2} + \frac{1}{(\Delta_y)^2} + \frac{1}{(\Delta_z)^2}} \\ \Rightarrow \Delta_t &\leq \frac{1}{\sqrt{\frac{1}{(\Delta_x)^2} + \frac{1}{(\Delta_y)^2} + \frac{1}{(\Delta_z)^2}}} \end{aligned}$$

Furthermore, in Fig. 13 of the paper, the oscillations observed in the measurements were due to the mismatches at the input/output ports; likewise, the oscillations in the non-orthogonal FDTD results are attributable to the imperfect absorbing boundary conditions (ABCs). We thank Prof. C. H. Chan at University of Washington in Seattle for bringing this matter to our attention.