Letters

Correction to "Constraints to the Optimum Performance and Bandwidth Limitations of Diplexers Employing Three-Port Junctions"

A. Morini

The above paper[1] contains some oversights. The first oversite is that $s_{11} = s_{22}$ for both E-plane and H-plane three-port junctions that have one symmetry plane.

Therefore (6b) becomes

$$s_{11} = s_{22} \tag{6b}$$

In the same section, for the E- and H-plane three-port junctions we took the reflection at the symmetry port $|s_{33}|$ to be equal to $|\Gamma_e|$ and $|\Gamma_o|$, respectively. This is not the general case as $|s_{33}|$ can be equal either to $|\Gamma_e|$ or to $|\Gamma_o|$, depending upon the polarization of the excitation with respect to the symmetry plane. The reasoning developed in that section, however, still remains valid, provided one assumes the correct symmetries of the junction $s_{23} = s_{13}$ or $s_{23} = -s_{13}$. In the first case, $|s_{33}| = |\Gamma_e|$, in the second case $|s_{33}| = |\Gamma_o|$. Therefore, this section should read:

1) [following (8)]—*Proof*: We will first deal with junctions having $s_{23} = s_{13}$.
2) [following (11)]—Instead of "The H-plane case. . .," the sentence should read "The case where $s_{23} = -s_{13}$ follows simply by exchanging Γ_e with Γ_o."

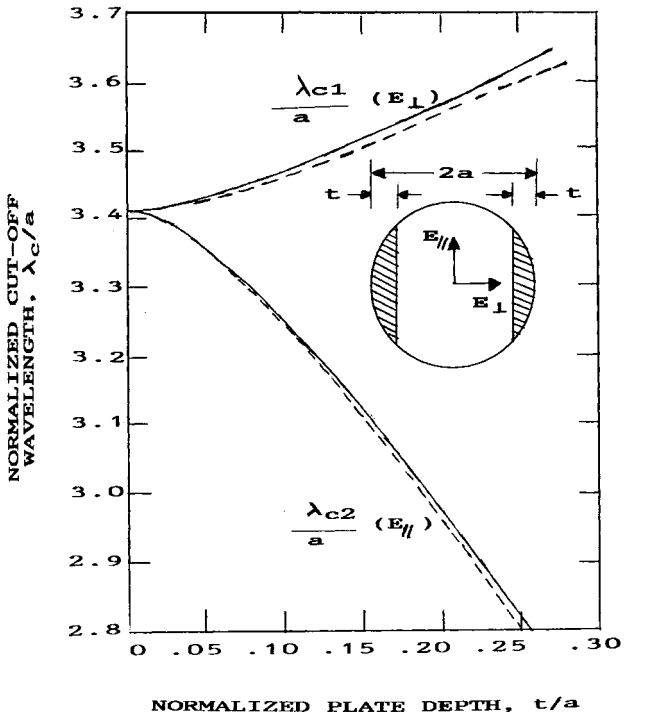

Fig. 7. Curves of cutoff wavelengths of perpendicular and parallel polarizations as a function of flat depth. (———): Finite difference theory [15], (——): Perturbation theory (this paper).

Correction to "The Relationship Between Dual Mode Cavity Cross-Coupling and Waveguide Polarizers"

R. Levy

The author of the above paper[1] is grateful to Prof. Harry E. Green of The University of South Australia, for pointing out that a more accurate finite difference solution for the circular waveguide with flats was presented in the following reference, which should be added as the final reference to the above paper[1]:

[15] D. H. Sinnott, G. K. Cambrell, C. T. Carson, and H. E. Green, "The finite difference solution of microwave circuit problems," *IEEE Trans. Microwave Theory Tech.*, vol. MTT-17, pp. 464–478, Aug. 1969.

The more accurate results reported in [15, Fig. 12] improve the agreement between the finite difference solution and the perturbation theory[1] for the $E_{||}$ field, but apparently give a worse result for the $E_{\perp}$ field. However, an error has been discovered in the expression for $E_{\perp}$ in the above paper[1] where the constant 0.1334 should be halved, leading to the corrected expression:

$$\frac{\Delta\lambda c\ \perp}{\lambda c} = 1 + 0.0667 N_f \left[\frac{1}{2}\sin 2\phi - \phi\cos 2\phi\right] \tag{48}$$

where $\lambda = 3.412\ a$.

The factor of 2 arises from the $1/2$ in the first line of (44) being missed out from the second line, and (44) should read:

$$\Delta U_{\perp} = \frac{1}{2}\mu|H_{\theta}|^2 \cdot \Delta V = \mu I^2 \frac{J_1^2(\chi)}{2a} \int\int r\cos^2\theta\, \mathrm{d}r\, \mathrm{d}\theta \tag{44}$$

The corrected results are given in the revised Fig. 7, where it is noted that, fortunately, the agreement between the theories is now much closer than previously thought.

E. Wollack of the National Radio Astronomy Observatory, Charlottesville, VA, also wrote, pointing out several typographical errors as follows:

Manuscript received December 13, 1996.
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Publisher Item Identifier S 0018-9480(97)02898-6.

[1] A. Morini and T. Rozzi, *IEEE Trans. Microwave Theory Tech.*, vol. 44, no. 2, pp. 242–248, Feb. 1996.

Manuscript received December 30, 1996.
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Publisher Item Identifier S 0018-9480(97)02899-8.

[1] R. Levy, *IEEE Trans. Microwave Theory Tech.*, vol. 43, no. 11, pp. 2614–2620, Nov. 1995.