Letters

Correction to "Rigorous Analysis of the Step Discontinuity in a Planar Dielectric Waveguide"

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In Fig. 7 of the above paper,[1] the label $n_2K_0D=1$ is incorrect. It should read $(n_1^2-n_2^2)^{1/2}=2$.

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[1]T. E. Rozzi, *IEEE Trans. Microwave Theory Tech.*, vol. MTT-26, pp. 738–746, Oct. 1978.

Comment on "Broad-Band Coupling to High-Q Resonant Loads"

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The authors of the above paper[1] have suggested the use of a quarter-wavelength transmission line for coupling a series resonant load to a resistive source over a wide band. In order to approximately achieve broad-band coupling, the authors have suggested a procedure wherein the insertion loss is expanded in a Taylor's series about the load-resonance frequency and the normalized characteristic impedance z_I of the line is selected by equating to zero the coefficient of the second term in the series. But the expression derived by them for the coefficient m_2 in (14) of the second term of the series is wrong because the equation $m_2=0$ when the load Q is zero (for a resistive load) does not give the familiar result of $z_I=1$ or r, where r is the normalized load resistance. The error is due to their approximating $\sin\theta$ by unity instead of by $[1-(\pi^2\Delta^2/8)]$ where θ and Δ are as defined in their paper. The correct expression for m_2 should read

$$m_2=L_R^{-1}\left[\pi^2 z_I^4+8\pi rQz_I^3-\pi^2(r^2+1)z_I^2 - 8\pi rQz_I+r^2(\pi^2-16Q^2)\right]$$

where L_R is as defined in [1]. The equation $m_2=0$ gives two positive real roots for z_I when $0\leqslant Q\leqslant(\pi/4)$ and one positive real root when $(\pi/4)<Q$. The values of z_I obtained from equating the above m_2 to zero are found to be lower than those obtainable by using (14), the error in z_I being larger at smaller values of Q.

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[1]T. M. Reeder and W. R. Sperry, *IEEE Trans. Microwave Theory Tech.*, vol. MTT-20, pp. 453–458, July 1972.