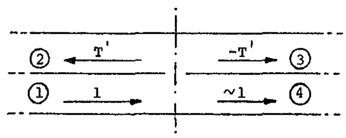

Fig. 1. Aperture coupling described by Levy [2] and cited by Kumar and Sharma. All four ports are matched.

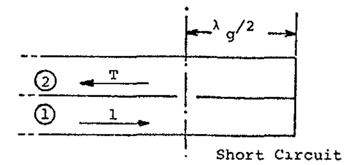

Fig. 2. Aperture coupling described in our paper [1]. Both waveguides are short circuited at $\lambda_g/2$ beyond the coupling hole.

figures shows that the coefficient of transmission form port 1 to port 2 is four times larger in Fig. 2 than in Fig. 1. Consequently, the coupling inductance between ports 1 and 2 in Fig. 2 is only one forth of that in Fig. 1. Thus

$$x=\frac{x'}{4}=\frac{T}{2j}$$

which is (13) in our paper [1]. This situation is equivalent to the coupling through an identical small aperture in a common transverse plane.

The following argument shows that this must be so. In the absence of the coupling hole, the total magnetic field at the bottom wall at $\lambda_g/2$ from the short circuit is the same as at the transverse plane. The electric field is zero at both locations, thus the coupling is purely magnetic in both cases. If the exciting fields as well as all line and aperture dimensions are the same in both cases, the coupling inductances must also be the same.

This statement is supported by such classical authors as Wilson, Schramm, and Kinzer [3]. Their expression for the coefficient of magnetic coupling between a rectangular waveguide and a cavity is identical for an aperture in the end-wall of the guide and the same aperture in the broad wall of the guide at $\lambda_g/2$ from a short circuit.

Thus we believe that the result obtained for x in our paper [1] needs no modification.

References

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Correction to "A Directional Coupler with Very Flat Coupling"

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In the above paper[1], (17) of Section VI should read

$$\frac{\sin\theta}{Y_1}-(1+Y_2/Y_1)\left(Y_1\sin\theta-Y_2\frac{\cos^2\theta}{\sin\theta}\right)=-\left(\frac{Y+1}{Y-1}\right)^{1/2}. \qquad (17)$$

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[1] G. P. Riblet, *IEEE Trans. Microwave Theory Tech.*, vol. MTT-26, pp. 70–74, Feb. 1978.