

Microwave Faraday Effect and Propagation in a Circular Solid-State Plasma Waveguide¹

On page 663 it is stated, in reference to (14), that in general k_T^2 is a complex quantity. It is also stated that, since the imaginary part of k_T^2 is very small, the dissipation term that is due to the imaginary part of k_T is treated as a perturbation.

It has been pointed out to us by Dr. Fred E. Gardiol, Electronics Research Laboratories, Louvain University, Belgium, that k_T^2 is constrained to pure real values by the perfect conductor wall assumption, viz., assumption 5), and the choice made on k_T to be real value is not an approximation but an exact consequence of the boundary condition. Under this condition, the relationship given by (14) can always be met by letting k be complex.

The authors wish to express their appreciation to Dr. Gardiol.

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¹ H. J. Kuno and W. D. Hershberger, *IEEE Trans. Microwave Theory and Techniques*, vol. MTT-15, pp. 661-668, December 1967.

TABLE I

MINIMUM STOPBAND ATTENUATION (A_s) FOR NORMALIZED ($\Omega_s = 1$) DIGITAL ELLIPTIC PSEUDO-COMPLEMENTARY FILTER PAIRS $n = 4, 6, 8, 10, 12$ BRANCHES
PROTOTYPE PASSBAND RIPPLE = 1.00 dB (0.06 dB TRANSMISSION RIPPLE)

k	$\eta = 4$ Branches Table I	$\eta = 6$ Branches Table II	$\eta = 8$ Branches Tables III and IV(P)	$\eta = 10$ Branches Tables V and VI(P)	$\eta = 12$ Branches Tables VII and VIII(P)
$k < 0.80$ Values Listed in Original Tables ¹ are Correct to Within 1 dB					
0.80	25 dB	50 dB	75 dB	100 dB	124 dB
0.82	—	—	72 dB	46 dB	119 dB
0.84	—	—	69 dB	92 dB	115 dB
0.85	21 dB	45 dB	—	—	—
0.86	—	—	66 dB	88 dB	110 dB
0.88	—	—	62 dB	84 dB	105 dB
0.90	—	38 dB	59 dB	79 dB	99 dB
0.92	—	—	55 dB	74 dB	93 dB
0.94	—	—	50 dB	68 dB	86 dB
0.96	—	—	45 dB	61 dB	78 dB
0.98	—	—	37 dB	52 dB	66 dB

Wideband, High-Selectivity Diplexers Utilizing Digital-Elliptic Filters¹

The author wishes to thank Dr. E. M. T. Jones of Technology for Communications International for pointing out a discrepancy between the minimum stopband attenuation values (A_s dB) listed in the element value tables and those obtained by direct analysis for high values of the selectivity parameter k . The

minimum stopband attenuation values (A_s dB) have been recomputed and the correct values (to within 1 dB) are listed in Table I above.

The errors in the original tables are small for $k < 0.90$, but become substantial as k approaches unity. The element values and maximum input standing-wave ratio ($VSWR_M$) are correct as given, and have been verified by direct analysis of each complete diplexer network.

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¹ R. J. Wenzel, *IEEE Trans. Microwave Theory and Techniques*, vol. MTT-15, pp. 669-680, December 1967.