Abstracts

A novel nonreciprocal ferrite image guide

A.S. Akyol and L.E. Davis. "A novel nonreciprocal ferrite image guide." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1179-1182 vol.2.

A single ferrite/dielectric image line is analyzed using the effective permittivity method, adapted for ferrites. E/sub pq//sup x/ modes are used in association with a transverse bias direction to obtain nonreciprocal behavior. It is shown that the required conditions can be obtained that enables the composite image line to guide in one direction and leak in the other. Thus, the structure behaves as a "leaky-wave isolator". Dispersion diagrams showing this behavior in the frequency range 14-30 GHz are obtained for a 2/spl times/2 mm/sup 2/ ferrite rod with adjacent dielectric loading with /spl epsi//sub r/=11.

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