Abstracts

Novel selected modes on the conductor-backed slotline

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This paper presents a detailed full-wave analysis of the conductor-backed slotline. The occurrence of an even dominant mode is revealed. This mode may propagate alone from dc up to the frequency at which the first leaky mode sets up. Nonphysical solutions of the dispersion equation and also the second leaky mode, taking power in the substrate, are identified. The first odd space leaky mode revealed on the CBSL enables an entirely uniplanar leaky wave antenna to be designed. The dispersion characteristics of particular revealed modes and their field distributions on the cross-sectional plane are also presented.

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