Abstracts

Properties of NRD-Guide and H-Guide Higher-Order Modes: Physical and Nonphysical Ranges (1994 Vol. I [MWSYM])

C. Di Nallo, F. Frezza, A. Galli, P. Lampariello and A.A. Oliner. "Properties of NRD-Guide and H-Guide Higher-Order Modes: Physical and Nonphysical Ranges (1994 Vol. I [MWSYM])." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 469-472.

New interesting modal properties are presented for the waveguiding structure constituted by a rectangular-section dielectric rod sandwiched between parallel conducting plates, which can represent either a non-radiative dielectric (NRD) guide or an H guide. A rigorous quantitative analysis of the dispersion properties indicates that higher-order modes can show different anomalous behaviors, as geometrical and electromagnetic parameters vary. A discussion of the physical nature of the waves related to complex wavenumbers allows us to illuminate the performance differences between NRD and H guides, as regards certain previously unexplored leakage effects.

❑ Return to main document.