Abstracts

Radiation and leakage characteristics of transverse slot in NRD-guide operating in LSE/sub 00/ mode

Xiang-yin Zeng, Kwai-Man Luk and Shan-jia Xu. "Radiation and leakage characteristics of transverse slot in NRD-guide operating in LSE/sub 00/ mode." 2002 Transactions on Microwave Theory and Techniques 50.6 (Jun. 2002 [T-MTT]): 1636-1639.

Characteristics of a transverse slot in the upper plate of a nonradiative dielectric guide operating in the dominant LSE/sub 00/ mode have been analyzed. A fundamental radiation phenomenon due to the open property of the guiding structure is observed theoretically. It is found that the propagation direction of the leakage covers the whole angular spectrum in the plane parallel to the metallic plates. An explanation to its physical existence is given. A simple, but efficient method is developed to determine its angular power density. Numerical computation shows that the leakage is substantially high when the slot is near resonance.

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