Abstracts

A new asymmetrically grooved NRD guide leaky-wave antenna for millimeter-wave application

S.J. Xu, X.Y. Zeng, T. Yoneyama, K. Wu and K.M. Luk. "A new asymmetrically grooved NRD guide leaky-wave antenna for millimeter-wave application." 1999 MTT-S International Microwave Symposium Digest 99.1 (1999 Vol. I [MWSYM]): 183-186 vol.1.

A new asymmetrically grooved nonradiative dielectric (AGNRD) guide leaky-wave antenna is proposed and investigated theoretically and experimentally for practical use in the 60 GHz frequency band. The AGNRD antenna structure overcomes the difficulty in precision assembling of the dielectric strip while preserving the simplicity of the original NRD guide structure. Leaky-wave characteristics of the new AGNRD guide are studied with a rigorous method that combines multimode network theory with a mode matching technique. Satisfactory agreement between theoretical and experimental results is obtained.

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