Abstracts

High efficiency and broadband excitation of leaky mode in microstrip structures

Y. Qian, B.C.C. Chang, T. Itoh, K.C. Chen and C.K.C. Tzuang. "High efficiency and broadband excitation of leaky mode in microstrip structures." 1999 MTT-S International Microwave Symposium Digest 99.4 (1999 Vol. IV [MWSYM]): 1419-1422 vol.4.

This paper reports a novel technique for high efficiency and broadband excitation of the first higher order leaky mode in microstrips. A uniplanar microstrip-to-CPS transition is employed to launch the odd leaky mode, and the mode purity is enhanced by suppressing the even fundamental mode using an optimized mode suppressor. An X-band prototype demonstrates excellent mode conversion efficiency as predicted by simulations. A record bandwidth of 20.2% is achieved for a microstrip leaky-wave source based on this newly proposed structure.

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