Abstracts

A novel K-band frequency-controlled beam-steering quasi-Yagi array with mixing frequency compensation

T. Nishio, Yuanxun Wang, Yongxi Qian and T. Itoh. "A novel K-band frequency-controlled beam-steering quasi-Yagi array with mixing frequency compensation." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 1345-1348 vol.2.

A new type of compact K-band frequency-controlled beam-steering array utilizing fixed progressive delay lines in combination with passive double-balanced MMIC mixers integrated with quasi-Yagi antenna elements is presented. The beam steering is carried out by simply changing the frequency of the LO and IF signals at the same time such that the radiation frequency keeps constant. The K-band (20 GHz) four-element array fabricated on the Alumina substrate demonstrates 40 degree scanning with an LO frequency change from 22 to 26.2 GHz by the short delay lines installed in the LO line and ensures broadband data transmission with well-defined radiation patterns.

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