Abstracts

A dual-beam asymmetrically scanning leaky-wave antenna by utilizing a HEMT resistive upconverter

Chien-Jen Wang, Yu-Hau Sheu and C.F. Jou. "A dual-beam asymmetrically scanning leaky-wave antenna by utilizing a HEMT resistive upconverter." 2001 Microwave and Wireless Components Letters 11.12 (Dec. 2001 [MWCL]): 492-494.

A dual-beam asymmetrical scanning microstrip leaky-wave antenna (LWA) has been demonstrated in this paper. A HEMT resistive upconverter output is connected to one terminal of the LWA, and a local oscillator (LO) signal is connected to the other terminal. In this experiment, we set the LO frequency at 9.5 GHz so that the right beam is fixed at 48/spl deg/. By changing the IF frequency from 0.7 GHz to 1.5 GHz, the module of the LWA can steer the left main beam of the far-field pattern from 136/spl deg/ to 158/spl deg/ (the total scanning angle of 22/spl deg/). Comparisons between the measured and theoretical results indicate that the design can achieve the asymmetrically scanning capability and agree well over the tuning bandwidth of 0.8 GHz.

❑ Return to main document.