Abstracts

A two-dimensional beam-scanning linear active leaky-wave antenna array

Cheng-Chi Hu, C.F. Jou and Jin-Jei Wu. "A two-dimensional beam-scanning linear active leaky-wave antenna array." 1999 Microwave and Guided Wave Letters 9.3 (Mar. 1999 [MGWL]): 102-104.

This work presents a new technique for electronic two-dimensional beam scanning using a phase-shifterless linear active leaky-wave antenna array. The varactor-tuned voltage-controlled oscillators (VCOs) and coupling network are implemented in this array. The measured pattern of this 4/spl times/1 leaky-wave antenna array shows that the main beam can be continuously scanned from 68/spl deg/ to 40/spl deg/ in elevation as the frequency varied from 8.24 to 9.15 GHz. By tuning the free-running frequencies of the end elements, the main beam can be continuously scanned from -26/spl deg/ to +10/spl deg/ in azimuth. A maximum ERP of 667 mW is measured at 8.9 GHz for this active antenna array.

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