Abstracts

Design of a beam-switching active microstrip antenna array

Young-Huang Chou and Shyh-Jong Chung. "Design of a beam-switching active microstrip antenna array." 1998 Microwave and Guided Wave Letters 8.5 (May 1998 [MGWL]): 202-204.

An active microstrip antenna array with dual switching beams were developed and demonstrated. The array contained several active antennas and an extra amplifier-embedded coupling (microstrip) line. Two injection-locking signals were used in the design, that is, the free-space mutual coupling between antennas and the injection signal on the coupling line tapped from the first oscillator in the array. By turning on and off the amplifier on the line, these two signals dominated in turn, producing two radiation modes with different main beams. A three-element H-plane array and a two-element E-plane array were designed and measured. Both of the arrays had an out-of-phase radiation mode when the amplifier was turned off, and had an in-phase mode when the amplifier was on. Also, clean frequency spectra and good radiation patterns were measured, which demonstrated the validity of the present design.

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