Abstracts

A New Active Array Module for Spatial Power Combiners and Active Antennas (Short Papers)

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We present the design and performance of a new module of spatial power combiners, which consists of four symmetrical slot coupled patch radiators and four MESFET negative resistance elements, based on a single active antenna design. These circuits are suitable for use in millimeter-wave systems as well as at microwave frequencies. Tests carried out with a prototype circuit showed a radiated power of 20.44 mW with about 16% dc-to-RF efficiency at 8.7 GHz. Feed networks for linear polarization and circular polarization are discussed. Design procedures for dual-frequency application are also addressed.

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