Abstracts

Network Modeling of an Aperture Coupling Between Microstrip Line and Patch Antenna for Active Array Applications

X. Gao and K. Chang. "Network Modeling of an Aperture Coupling Between Microstrip Line and Patch Antenna for Active Array Applications." 1988 Transactions on Microwave Theory and Techniques 36.3 (Mar. 1988 [T-MTT]): 505-513.

An analytical method based upon the aperture coupling theory and the derivation of S-parameter matrix has been developed for modeling a microstrip line coupled to a microstrip patch antenna using a circular coupling aperture. Closed-form solutions were derived for scattering parameters of the coupling circuit. Input impedance and matching condition can be calculated from the equivalent six-port network. The theoretical results agree well with the measurements. The analysis should have many applications in active array and spatial power combining systems.

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