Abstracts

A Coaxial Waveguide Commutator Feed for a Scanning Circular Phased Array Antenna (Short Papers)

E.P. Irzinski. "A Coaxial Waveguide Commutator Feed for a Scanning Circular Phased Array Antenna (Short Papers)." 1981 Transactions on Microwave Theory and Techniques 29.3 (Mar. 1981 [T-MTT]): 266-270.

A coaxial waveguide amplitude commutation feed system has been developed for application to the scanning circular array antenna problem. A dominant TEM mode and a pair of orthogonal TE/sub 11/ modes suitably excited at the input of a coaxial waveguide feed are employed to generate a simply commutatable low-sidelobe discrete amplitude distribution at the peripheral output ports of the coaxial circular array feed. The major advantages of the coaxial commutator feed compared to other circular array feed types are the broad bandwidth and small insertion loss simultaneously achieved with a simple feed geometry. The design and measured performance capability of a 30-percent RF bandwidth low-sidelobe coaxial commutator feed are described in detail.

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