Abstracts

A 4-, 6-, 20-, and 30-GHz-Band Branching Network Using a Multilayer Dielectric Filter for a Satellite Communication Earth Station (Dec. 1976 [T-MTT])

S. Shindo, I. Ohtomo and M. Koyama. "A 4-, 6-, 20-, and 30-GHz-Band Branching Network Using a Multilayer Dielectric Filter for a Satellite Communication Earth Station (Dec. 1976 [T-MTT])." 1976 Transactions on Microwave Theory and Techniques 24.12 (Dec. 1976 [T-MTT] (1976 Symposium Issue)): 953-958.

This paper describes a four-frequency broad-band branching network for transferring microwave (4 and 6 GHz)- and millimeter-wave (20 and 30 GHz)-band signals between an antenna and transmitter-receivers in a satellite communication earth station. A filter for separating the microwave band from the millimeter-wave band employs a multilayer dielectric filter with matching layers and is included in the primary antenna feed system. The design method used for the multilayer dielectric filter and the construction and experimental results of the four-frequency broad-band branching network are described. Measurements show that its insertion loss, VSWR, and axial ratio are less than 1.2, 1.2, and 2.1 dB, respectively.

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