Abstracts

A New Band-Splitting Filter for Guided-Millimeter-Wave Transmission Systems

N. Suzuki. "A New Band-Splitting Filter for Guided-Millimeter-Wave Transmission Systems." 1976 Transactions on Microwave Theory and Techniques 24.5 (May 1976 [T-MTT]): 237-241.

A new Michelson-interferometer (MI) hybrid having a miter angle is developed for use as a millimeter-wave band-splitting filter. The construction and operating principle of the filter are described. The design method and the experimental results are also presented. This filter has low branching loss, yet keeps very wide band characteristics. For the 4W-120-GHz-frequency-range filter with 35° miter angle, the branching loss is 0.68-1.56dB. This is about 40 percent lower than that of the conventional MI filter. The input VSWR is less than 1.29 and the guard bandwidth is less than 250 MHz. This filter can be used for the 40-120-GHz guided-millimeter-wave transmission systems.

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