Abstracts

A Rotary Joint for Two Microwave Transmission Channels of the Same Frequency Band

H.P. Raabe. "A Rotary Joint for Two Microwave Transmission Channels of the Same Frequency Band." 1955 Transactions on Microwave Theory and Techniques 3.4 (Jul. 1955 [T-MTT]): 30-41.

This paper describes a rotary joint for two microwave transmission channels of the same frequency band. It consists of two pairs of rectangular waveguide terminals, a circular waveguide which transmits both channels, and coupling elements between the rectangular waveguide terminals and the circular waveguide which convert the rectangular H/sub 10/ mode into the circular H/sub 01/ and E/sub 01/ modes. If pure H/sub 01/ and E/sub 01/ modes can be excited, perfect separation of the channels as well as constant amplitudes and phases can be obtained when the joint rotates. While the conversion into the circular E/sub 01/ mode is performed by a conventional method, a new method had to be developed for the conversion of the rectangular H/sub 10/ into the circular H/sub 01/ mode.

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