Abstracts

A Low Cost Multiplexer for Channelized Receiver Front Ends at Millimeter Waves

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Work with millimeter-wave components using printed-circuit techniques has led to the successful development of multiplexers that are compatible with low-cost fabrication and packaging techniques. This paper will describe a 26 to 42-GHz multiplexer exhibiting 1.2 to 2.8 -dB insertion loss over a 4-GHz channel passband and a 45-dB rejection bandwidth of less than 8 GHz. This multiplexer uses a channel-dropping filter technique that splits the band into 4-GHz subbands (channels). Each channel-dropping filter consists of dual band-pass filters separated by a pair of 3-dB directional couplers. Fabrication costs are kept low by using chemically-milled broadwall couplers and E-plane filter resonators. A series of normalized filter design nomograph's have been generated. Measured multiplexer performance will be presented.

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