

Bandwidth and losses of 4-port ferrite coupled line circulators

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For the first time, the bandwidth and the losses of a 4-port Ferrite Coupled Line (FCL) circulator are analysed and reported. A broadband hybrid coupler with an improved air-bridge has been designed for the circulator and the performance of a 4-port microstrip FCL circulator is predicted by cascading the S-matrices of the FCL and hybrid coupler using signal flow graphs. The possibility of realising a broadband circulator is investigated and it is found that there is a trade-off in performance between bandwidth and loss.

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