

Design of a Microstrip Diplexer
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Diplexers are three terminal devices that take two or more frequencies into one input port and separate them to two output ports. They are commonly used behind wide-band or multi frequency antennas in transceiver applications. Diplexers became widely studied in the early 1960's by Matthaei *et al.* [1], [2] and Wendel [3]. They studied microstrip diplexers that used bandpass/band-stop configurations as well as waveguide diplexers. In the late 1960's, waveguides became widely used due to their very low insertion loss and high isolation. However, waveguides generally entail much more manufacturing complexity than planar etched microstrip diplexers. For this reason, microstrip diplexers have remained an active area of research. In the 1990's, microstrip diplexers such as low-pass/bandpass [4] and ring diplexers [5] have gained notice [6].

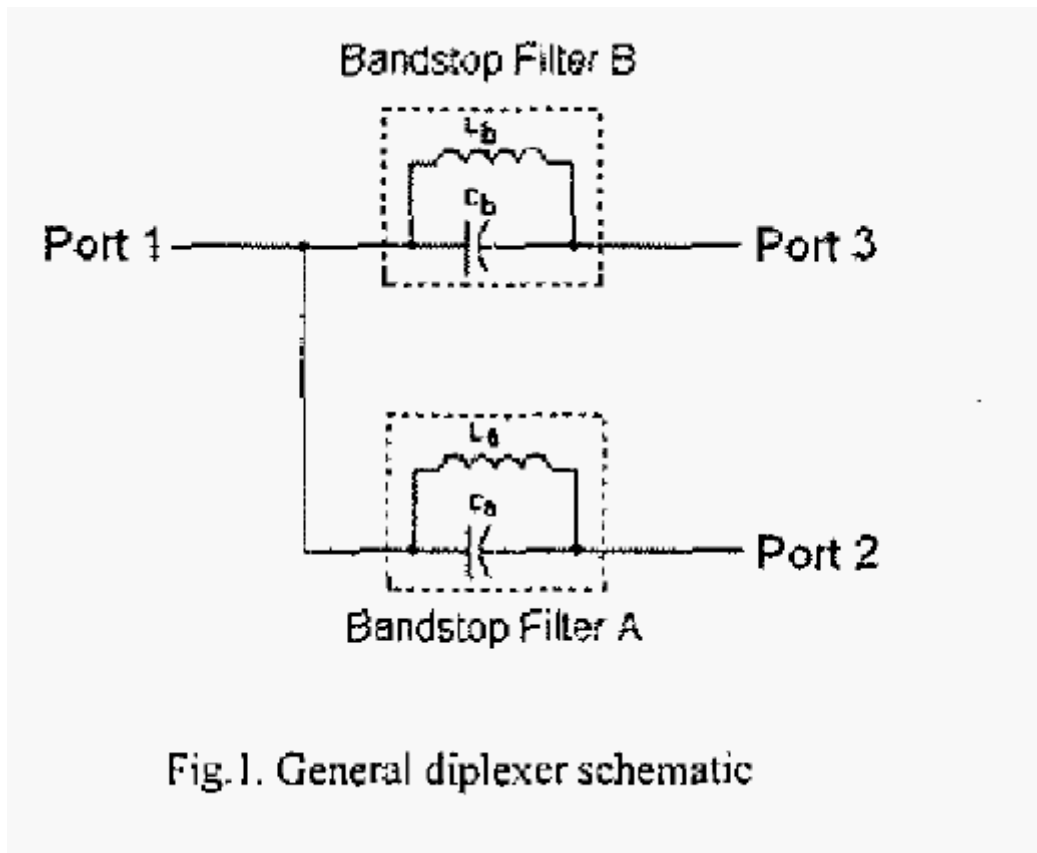


Fig.1. General diplexer schematic

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