Abstracts

Microstrip Bandpass Filters Using MMIC Negative Resistance Circuits for Loss Compensation

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A new bandpass filter design technique is presented which uses microstrip resonators assisted by MMIC negative resistance circuits to compensate for the resonator losses. Two filters have been designed and tested in order to demonstrate the high performance that can be achieved with this approach: One uses end-coupled resonators, and has a measured 3-dB bandwidth of only 10 MHz at a center frequency of 5.35 GHz. The second is a 4-pole filter employing dual-mode microstrip ring resonators, and this has a 70 MHz 3 dB bandwidth, centered at 5.27 GHz. These results represent some of the best selectivity performances achieved to date for miniature microwave active fiiters.

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