Abstracts

Integrated microstrip to NRD-guide transition using a spurious mode suppressing technique

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This paper reports our recent effort in developing a broadband planar/NRD-guide transition with low spurious modes for hybrid integrated NRD-guide filter design. An effective spurious mode suppressing technique is proposed in this work. All potential spurious modes may be suppressed with a simple scheme that involves the design of microstrip-to-NRD-guide transition and a bounded mode suppressor. It is found through our preliminary investigation that the rejection to all the spurious modes (including TE and LSE modes) is better than -37 dB for a single transition over a broadband frequency of interest, and the performance could be further enhanced. This hybrid integration technique also provides a unique solution to the inherent problem of spurious mode (especially TE modes) in the standard NRD-guide circuit design.

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