# Abstracts

## K-Band Quasi-Planar Tapped Combline Filter and Diplexer

*W.-T. Lo and C.-K.C. Tzuang. "K-Band Quasi-Planar Tapped Combline Filter and Diplexer." 1993 Transactions on Microwave Theory and Techniques 41.2 (Feb. 1993 [T-MTT]): 215-223.*

The quasi-planar realizations of combline bandpass filter and diplexer using multiple coupled suspended substrate striplines (MCSSS's) have demonstrated good performance at 1K-band without any tuning. The N MCSSS's excite N zero-cutoff-frequency quasi-TEM modes. A new computer-aided filter design approach employing rigorous SDA (spectral-domain-approach) and 2N-port microwave circuit theory accounts for the effects of the N quasi-TEM modes, the couplings through non-adjacent MCSSS's, and cover height. Two 19.5 -to-20.5 GHz MCSSS's combline filters with different cover heights are built and tested to compare their filter characteristics. The reduction in cover height decreases the amount of non-adjacent couplings through MCSSS's and results in better filter stopband performance. Another 18.5-to-19 GHz and 20-to-20.5 GHz MCSSS's diplexer is also presented. All the measured results for the combline filters and diplexer agree well with the theoretic calculations.

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