Abstracts

A new circuit topology for continuous group delay synthesis

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A new circuit topology is realized in order to synthesize group delay continuously. The circuit is based upon a new variable coupling coefficient coupled line section and a microstrip feedback loop. The new variable coupler is designed by periodically loading an edge coupled microstrip coupler. With this new design, coupling variation of more than 10 dB may be achieved. To the best of the authors knowledge, this is the first report of this type of microstrip coupler. The complete circuit consumes no do power and exhibits more than 500 ps of continuous variable true time delay. Insertion loss is better than 3 dB and return loss is better than 15 dB.

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