

Hilbert-Transform-Derived Relative Group Delay Measurement of Frequency Conversion Systems

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A robust algorithm based on a form of the Hilbert transform has previously been shown to enable measurement based estimation of the group delay ripple of a broad group of passive circuit types. In this work it is tested on an active frequency conversion system. The results show good agreement with expected results for a down conversion system and also for measured results for a up and down conversion path through a complete microwave system. The technique is currently being implemented in a commercial scalar network analyser providing speed and cost benefits to the user.

 [Return to main document.](#)