

フィードフォワードによって短収束時間デジタルPLL

Direct Reference Feed-Forward Compensation for Fast Settling All Digital Phase-Locked Loops

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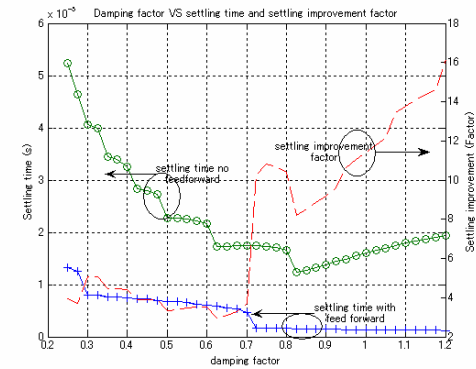
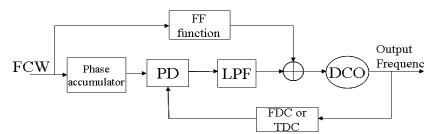
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Introduction : Feed-forward compensation is introduced as a method for speeding up the settling time of all-digital phase-locked loops. Our method obtains the necessary feed-forward function parameters from self monitoring of the system.

Implementation : Matlab and Verilog-AMS simulation models were built and simulated. Simulation results match well with theoretical analysis.

Conclusion : Feed-forward compensation has been shown to be able to achieve fast settling while maintaining good system's stability. The method provides an alternative to the loop parameter adjustment approach which can lead to a trade-off between system's settling speed and stability [1].



[1] W. Chaivipas, A. Matsuzawa, and P. C. Oh, "Feed-Forward Compensation Technique for All Digital Phase Locked Loop Based Synthesizers", IEEE ISCAS, pp.3209-3212, May 2006

