A Programmable Gain Amplifier With Optimized Frequency Compensation

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Abstract

This paper presents an enhanced programmable gain amplifier (PGA: its voltage gain can be varied between -6 and +23dB, in 1dB steps, by using a digital control word. The same control word is used to modify the frequency compensation network of the main operational amplifiers, in order to obtain a constant-bandwidth or a constant phase-margin operation of the PGA.