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CURRENT MODE CMOS ANALOG TO MULTIPLE-VALUED CONVERTER CIRCUIT

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Abstract

There have been great advances in integrated circuits technology in recent years which have both made feasible and generated major interest in electronic circuits which employ more than two levels of signals. These circuits, called multiple valued logic circuits, offer several potential opportunities for the improvement of VLSI circuit designs. Current-mode CMOS multiple-valued logic circuits are interesting and may have application in digital signal processing and computing. In this paper an attempt is made to study developments and potential of multiple-valued logic circuit design, considering both the opportunities they offer and the challenges they face. Various current comparator circuits were studied and a cascode current comparator is proposed for the design of analog to multiple valued converters. A current mode analog to quaternary converter using cascode current mirror is presented.