Abstract

A complementary differential amplifier which has RAIL TO RAIL feature with offset cancellation technique to enhance high color depth and high-resolution liquid crystal display (LCD) drivers, is proposed. The dual complementary differential pairs are used to obtain RAIL TO RAIL input-output swing and an offset canceling capability. Both offset voltage and injection-induced error, due to mismatch of device and charge injection, are greatly reduced. The offset cancellation and charge conservation, which is used to reduce the dynamic power consumption, are operated during the same time slot so that the driving period does not need to increase. It is implemented using LTSPICE simulation.
- Gordon and F. Dingwall, &quot;Matrix addressed LCD display having LCD age indication, and autocalibrated amplification driver, and a cas-caded column driver with capacitor-DAC operating on split groups of data bits,&quot; U. S. Patent 5,739,805, Apr. 14, 1998.
- A New Compact High-Speed Rail-to-Rail Class-B Buffer for LCD Applications Davide Marano, Gaetano Palumbo, Fellow, IEEE, and Salvatore Pennisi, Senior Member, IEEE JOURNAL OF DISPLAY TECHNOLOGY, VOL. 6, NO. 5, MAY 2010
- T. Itakura and H. Minamizaki, &quot;10- µAquiescent current opamp design for LCD

Index Terms

Computer Science
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Keywords
CMOS  Class AB amplifiers  Rail-to-Rail  Push-pull stage  Complementary differential pair  transconductance amplifiers.