Abstract

XOR gate forms an indispensable component in the design of code converters. The paramount concern in the design of code converters is power dissipation along with issues in delay and layout area. Various topologies to design code converters and several techniques for designing XOR gate are analyzed. GDI approach tends to provide the optimized conditions. The methodology then is applied to the conventional Binary code to Gray code converter and Gray code to Binary code converter. In this paper conventional code converters are analyzed and then a hybrid architecture for obtaining high speed, lower area, reduced power dissipation and lower propagation delay is presented. In addition to this an architecture of BCD to Excess-3 code conversion is also presented. The circuits are schematized using a Dsch tool. The layout and analysis is done through BSIM simulator and Microwind 3.1 tool.

References


Index Terms

Computer Science

Information Sciences
Keywords

Low power converter, Gate Diffusion Input, Pass transistor logic, Binary to Gray code converter, Gray to Binary code converter, BCD to Excess 3 code converter, modified GDI, hybrid code converters.