Abstract

Reversible logic synthesis techniques will definitely be a necessary part of the long-term future of computing. The paper introduces the design of a new reversible logic module (RLM) with three versions I, II, and III. It is universal in two arguments. A proposed design of reversible programmable gate array (RPGA) based on the new (RLM) is presented. It is superior to previous types of (RPGA) structures in that the same type of reversible logic modules is used in the implementation of the entire circuit. Symmetric and no symmetric functions can be realized by the proposed (RPGA). Synthesizing reversibly the logic functions using this method is good for multi-output functions as well as it can be extended to incompletely specified functions.

**Index Terms**

Computer Science

Information Sciences
Keywords
Reversible Logic Module  Reversible Logic Synthesis  RPGA