Abstract

The purpose of this paper is to perform structural testing on GALS (Globally Asynchronous and Locally Synchronous) components, such as wrapper designs. GALS consists of three main parts: synchronous block, I/O ports and a local clock generator. The I/O Ports and the local clock generator form the wrapper design. Testing has been done for every net in each of the wrapper components. The feedback nets that are usually uncontrollable are also tested using same methodology. The collapse ratio and the maximum number of test vectors required are calculated for every component. A 2:1 mux is used to detect 3 faults that could not be detected using structural testing. Fault coverage of 100% is obtained for every component of the wrappers. The testing is performed on two different wrappers using Pyxis schematic in Mentor Graphics for 180 nm technology.
Testing of GALS Components

References

- S Zeidler; M Krstić, 2015 A survey about testing asynchronous circuits, European Conference Circuit Theory and Design ECCTD, 1-4, 24-26

Index Terms

Computer Science Software Engineering
Keywords
Gals  Wrapper Testing  Fault Coverage.