Fault Detection and Localization of 8 bit Digital to Analog Converter Circuit

(ITC'97 Benchmark Circuit)

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DECLARATION

We declare that this thesis entitled “Fault Detection and Localization of 8 bit Digital to Analog Converter Circuit (ITC’97 Benchmark Circuit)” is a piece of original research work. This work has not been presented any where before for this award of any degree or diploma.

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Abstract

With the advent of high performance (in terms of speed, power and area) digital circuits, the need for data converters with high accuracy for various kinds of applications, has attracted the attention of scientists and technologists all over the world. .The existing literature indicates that there is a need to have a very highly accurate circuit for data converters to achieve these goals. It is really difficult to achieve a fault free circuit with a huge number of components.

In view of this, this thesis proposes a method which works efficiently in conjunction with gain waveforms of faulty & faults free Digital to Analog Converter (DAC) circuit as well as internal node voltages of two stage CMOS Operational Amplifier. We have developed an effective & efficient technique to detect & localize the fault. We have tested this technique on the DAC circuit & manipulated simulation result by Hspice and Matlab program.

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