A Homework Assignment for

ELEC7250-001 VLSI Testing

ELEC7770-001 Advanced VLSI Design

(Updated 4/19/12 for Spring 2012)

Assigned 4/19/12, due 4/25/12

Problem Statements

Following experiments are to be conducted in the VLSI Test Lab, located in Room 318, Broun Hall. The Lab contains an Advantest T2000GS ATE and some guidelines for its usage are available at:

[www.eng.auburn.edu/~vagrawal/COURSE/E7250\_Spr09/Solution Guidelines.docx](http://www.eng.auburn.edu/~vagrawal/COURSE/E7250_Spr09/Solution%20Guidelines.docx)

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Experiment 1:

To determine the maximum frequency of operation of the SN74LS393 IC using random, stuck-at and transition patterns. Tabulate the time period at which the chip fails for each pattern set. Point out which pattern set is most effective in determining the maximum frequency of operation and why.

Experiment 2:

To determine the minimum voltage of operation of the SN74LS393 IC using random, stuck-at and transition patterns. Tabulate the voltage at which the chip fails for each pattern set. Point out which pattern set is most effective in determining the minimum operating voltage and why.