Instituto Tecnológico de Aeronáutica

Divisão de Ciência da Computação - IEC

Departamento de Sistemas de Computação - IEC-SC

EEA-25 - Sistemas Digitais Programáveis

Lista de Exercícios Nº 7

Prof. André da Fontoura Ponchet

São José dos Campos - SP

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Sumário

1 Modeling Finite-State Machines in Verilog (10,0)

1.1 Push-Button Window Controller

Consider the system diagram shown in Figure 1:

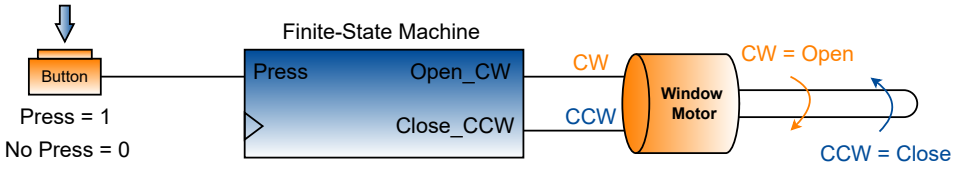

Figura 1: Push-Button Window Controller.

Design a system that will allow a user to open and close a window with a push button. The first input of the motor is asserted when the motor needs to spin in a clockwise (CW) direction to open the window, while the second input is asserted when the motor needs to spin in a counterclosckwise (CCW) direction to close the window. The signals to the motor do not need to be held for the duration of the windows opening/closing.

Follow the steps described in ***sections 7.4.1, 7.4.2 and 9.2 from Brock J. LaMeres book (Introduction to Logic Circuits & Logic Design with Verilog)*** to design a model in Verilog for the Push-Button Window Controller. You can use Examples 9.7 and 9.8 described in page 330 and 331 as a reference for your design.

You must show your code and the simulation waveforms in GTKWave.