EE 281 Logic Design Lab

Lab 2

Other Logical Building Blocks and Design Process

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Introduction

In this lab we will be designing a redundant fault detector circuit for an airplane that monitors serious faults which the aircraft encounters such as engine failure, fire inside the aircraft, cabin pressure variation and bird impact on the aircraft. We will use a 7 segment display to indicate the pilot about the status of the sensors which detects the fault in the aircraft.

Experiment and Description

We will design a logic circuit by using TTL arts from output from the sensors to a two bit code , C1C0. The circuit will ouput a overall status signal of ERR\_L as logic level 1 when there is nothing is wrong and zero when nothing is wrong.

Priority encoders in the circuit will output the signal based on the most important error and the priority of the errors will as follows:

1. Engine Failure
2. Fire
3. Cabin Pressure
4. Bird Impact

First we will draw the truth table of the inputs and then

\*\*\*\*\*\*\*\*\*Draw the design logic for the inputs E F C b \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Output Display

Results

Conclusions