Lab #3 – CAD: Pin Assignments, Download and Testing

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**Car Alarm UCF**

NET Alarm LOC = "R4"; # Bank = 3, Pin name = IO/VREF\_3, Type = VREF, Sch name = LD7

NET Seat LOC = "L13"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW5

NET Key LOC = "N17"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW6

NET Door LOC = "R17"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW7

**Car Alarm simulation vs. download truth table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Door | Key | Seat | Alarm\_Simulation | Alarm\_Download |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 |

**Alarm Fan UCF**

NET Fan LOC = "F4"; # Bank = 3, Pin name = IO, Type = I/O, Sch name = LD6

NET Alarm LOC = "R4"; # Bank = 3, Pin name = IO/VREF\_3, Type = VREF, Sch name = LD7

NET Temperature LOC = "L13"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW5

NET Low\_battery LOC = "N17"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW6

NET Cord LOC = "R17"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW7

**Alarm Fan simulation vs. download truth table**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Cord | Low\_Battery | Temperature | Alarm\_Simulation | Fan\_Simulation | Alarm\_Download | Fan\_Download |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 |

**Problem 2.1 UCF**

F1 is the original wave form and F2 is the simplified wave form. So I just recorded the result of F2.

NET F2 LOC = "F4"; # Bank = 3, Pin name = IO, Type = I/O, Sch name = LD6

NET F1 LOC = "R4"; # Bank = 3, Pin name = IO/VREF\_3, Type = VREF, Sch name = LD7

NET D LOC = "L14"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW4

NET C LOC = "L13"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW5

NET B LOC = "N17"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW6

NET A LOC = "R17"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW7

**Problem 2.1 simulation vs. download truth table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A | B | C | D | F2\_Simulation | F2\_Download |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 | 0 |
| 1 | 1 | 0 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 | 0 |

**Problem 2.2 UCF**

F1 is the original wave form and F2 is the simplified wave form. So I just recorded the result of F2.

NET F2 LOC = "F4"; # Bank = 3, Pin name = IO, Type = I/O, Sch name = LD6

NET F1 LOC = "R4"; # Bank = 3, Pin name = IO/VREF\_3, Type = VREF, Sch name = LD7

NET D LOC = "L14"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW4

NET C LOC = "L13"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW5

NET B LOC = "N17"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW6

NET A LOC = "R17"; # Bank = 1, Pin name = IP, Type = INPUT, Sch name = SW7

**Problem 2.2 simulation vs. download truth table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A | B | C | D | F2\_Simulation | F2\_Download |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 | 1 |
| 0 | 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 0 |
| 1 | 1 | 0 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 | 0 |

**Anomalies**

In UCF files, I got caught by an error because I didn’t have ‘#’ on which I should have had. Other than this, I didn’t have much trouble. It was a fun lab !