**Visual Indication Block Prototype Datasheet**

**I Provide a level 1 block diagram, schematic diagram, flowchart, data flow diagram, and/or comprehensive function list of your block.**

* Make sure that ALL arrows on your block diagram are labeled with enough information that someone reviewing your block diagrams is able to measure the signals/data/power represented by each arrow.
* Label all test point positions.
* Make sure instruments do not obscure the schematic.
* Label all inputs and outputs on the schematic with names that are consistent with the tables below.
* If giving a function list, provide the names, descriptions, inputs, and return values of each function.

**II List all software and hardware inputs to your block.**

* State the types of signals and the expected ranges of signals entering your block.
* If you are doing code development provide test inputs used to verify functionality. Provide all function names, a description of each function, input parameters, and each function’s return value.
* You may add more lines to these tables as needed. Please expand message boxes as required for detail.

|  |  |  |
| --- | --- | --- |
| Input Name | Description of Signal | Expected Range |
| 4 Bits from PIC | 4 bit Binary number that represents the number of blades | 0-5V |
| Power | Input power to 7-segment and Decoder | 5V |
| 1-bit to Transistor(for 5 different LEDs) | 1 bit is used to either open (low) or close(high) the transistor to light or turn off the led at the appropriate time | 0-5V |
| Power to Transistor | All 5 Transistor receive power that they supply to the LED when the switch is closed | 5V |

**III List the outputs to your block.**

* State the types of signals and the expected ranges of signals leaving your block.
* If you are doing code development please use dummy functions as test outputs. Provide all function names, a description of each function, input parameters, and each function’s return value.
* You may add more lines to these tables as needed. Please expand message boxes as required for detail.

|  |  |  |
| --- | --- | --- |
| Output  Name | Description of Signal | Expected Range |
| 7 Binary Bits (a-g) | Each line is pin high or low based on what segments must be lit to represent the binary input. | 0-5V |
| LED Light | Segment display will light up to display the binary number input | λ=470nm |
| LED Light | Each of the 5 LED’s will light if the transistor input from pic is high. | Varying colors of light depending on LED in the circuit |
|  |  |  |

**Provide graphs of time dependent signals at each output in the space below. Make sure the graph is formatted professionally and readable. If your project is code then provide a table of example output values with explanations and recorded test output.**

**IV Signals at test points.**

* State the types of signals at each of the test points of your block. Provide a minimum and maximum range for these signals.
* If you are doing code development please use debug statements to test values. Provide locations and the expected values for each of these statements.
* You may add more lines to these tables as needed. Please expand message boxes as required for detail.

|  |  |  |
| --- | --- | --- |
| T.P.  Name | Description of Signal and measurement conditions | Range of  Values |
| Decoder Input from PIC | We may check the values being supplied to the Decoder to give us any particular output. We can see the 7-segment is or is not working correctly. | 0-5V |
| Transistor Input from PIC | We may need to test what voltage is being supplied to the transistor from the PIC Since we will know if circuit is working by LED lighting up or not. | 0-5V |
|  |  |  |
|  |  |  |

**Provide graphs of time dependent signals at each test point in the space below. Make sure the graph is formatted professionally and readable. If your project is code then provide a table of example internal/test values with explanations and recorded test output.**

**TA Scoring Sheet**

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TA Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Due Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date Demonstrated: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Points Awarded** | **What Evaluator is Looking For** | **Possible Points** |
| ######## | **I Diagrams, flowchart, and/or pseudocode** | **15** |
|  | * Level 1 Block diagram | 5 |
|  | * Inputs and outputs and testpoints clearly labeled? | 5 |
|  | * Is diagram sufficiently detailed and correct? | 5 |
| ######## | **II Inputs** | **15** |
|  | * Are all inputs from block diagram and schematic listed and are values backed up by measured data? | 10 |
|  | * Are inputs measured and graphed/tabulated? | 5 |
| ######## | **III Outputs** | **15** |
|  | * Are outputs from block diagram and schematic listed and are values backed up by measured data? | 10 |
|  | * Are outputs measured and graphed/tabulated? | 5 |
| ######## | **IV Test points** | **15** |
|  | * Are test points from block diagram and schematic listed and are values backed up by measured data? | 10 |
|  | * Are “test points” / “dummy function” graphs/ values given in a manner they can be used for system debugging? Software execution times listed? | 5 |
| ######## | **Overall: System Works** | **40** |
|  | Does the system function as it is supposed to? | 20 |
|  | Does the student have a clear path to correct/improve this block? | 10 |
|  | Is the student knowledgeable about their project? | 10 |
| **\_\_\_\_\_/100** | **Overall Evaluation** | **100** |

Comments: