Assignment #6 – 555 Timer Design Project Manufacture Files

Schematic Design (15 points)

The following must be included to receive full points:

- A schematic in Altium Designer of your 555-timer design. The schematic must contain every component used in your design, and in the proper packaging that you wish to use (THT vs SMD) (7.5 points)
- Your schematic must not contain any errors, including those that would not be flagged by the validation checker. This would include having some method to applied external power to you circuit (connector, header pin, battery socket, etc.) and access/verify the circuits output signal if necessary (header pin, LED, any indicator that the circuit is functioning properly) (7.5 points)

PCB Design (35 points)

The following must be included to receive full points:

- A PCB with valid connections and zero errors from the rule checker. Be sure that you import the rules for the SERC milling machine to ensure that your board can be manufactured. (10 points)
- The PCB must include at least one "best design practice" as discussed in class. You will be able to further elaborate on this in your report (10 points)
- The PCB must contain minimal wasted boarder space. Once you complete your design, scale the perimeter of your board to remove empty board space. (5 points)
- The PCB must include an identification mark, so you are able to identify you board after fabrication (5 points)
- The PCB must include a boarder outline (5 points)

Fabrication Files (25 points)

The following must be included to receive full points:

- Your submission must include all the necessary fabrication files in the proper submission format (15 points)
- Your PCB manufacturability must be verified using a website such as https://oshpark.com/ (10 points)

Report (25 points)

The following must be included to receive full points:

- A PDF submitted containing the following:
    - An explanation of your design. What does it do? How does it work? (10 points)

- An explanation about the “best practice” that was used in your design. How does this make your PCB more efficient? (10 points)
- Screenshots of your schematic, PCB, and Oshpark manufacturable board. (5 points)

Late Submission Policy:

- All work submitted after the specified date and time deadline will receive a **30% deduction** penalty. An additional 30% deduction will also occur for **every class period that occurs** after the assignment deadline if the late assignment has not yet been submitted.