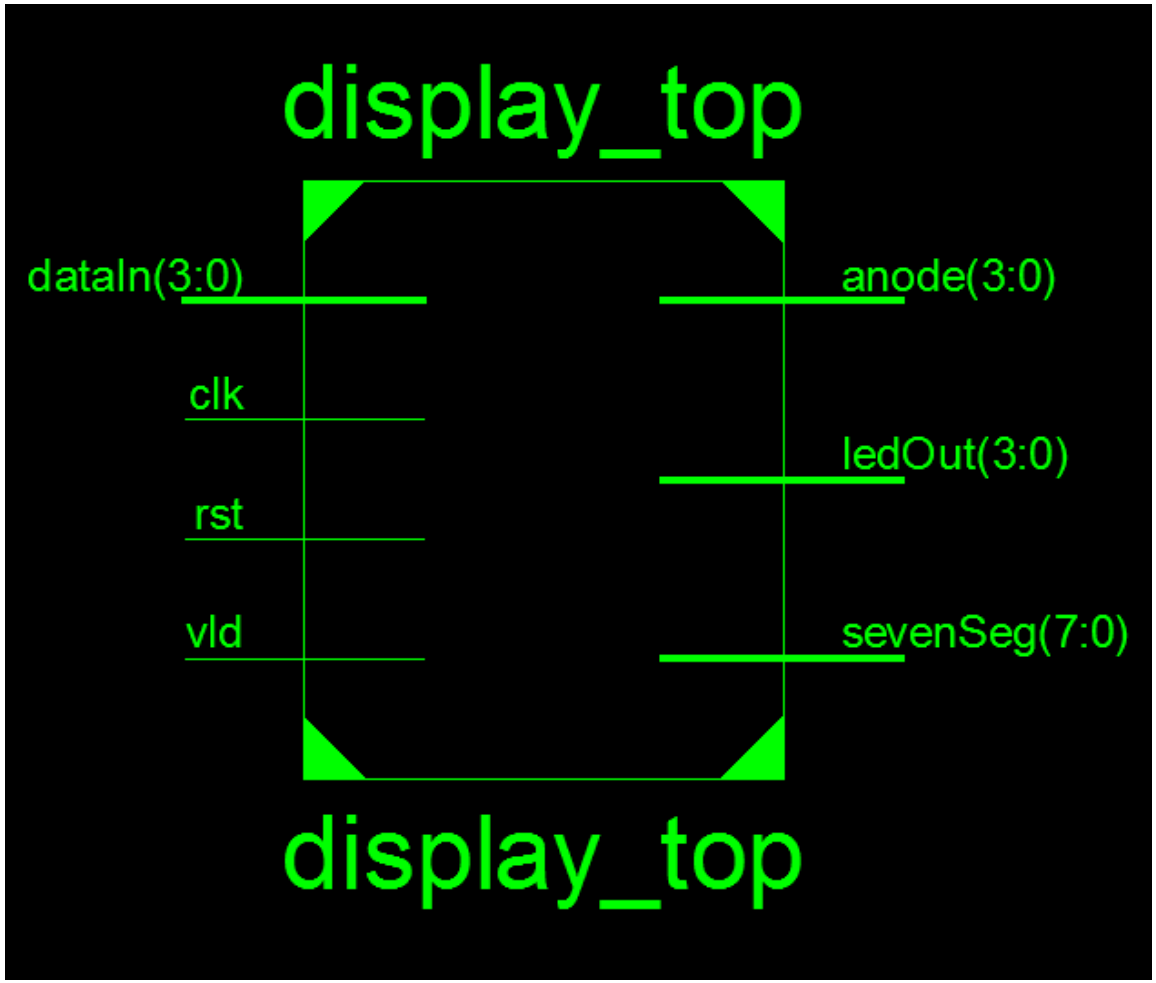
7 Segment Rotating Display with Enter Button

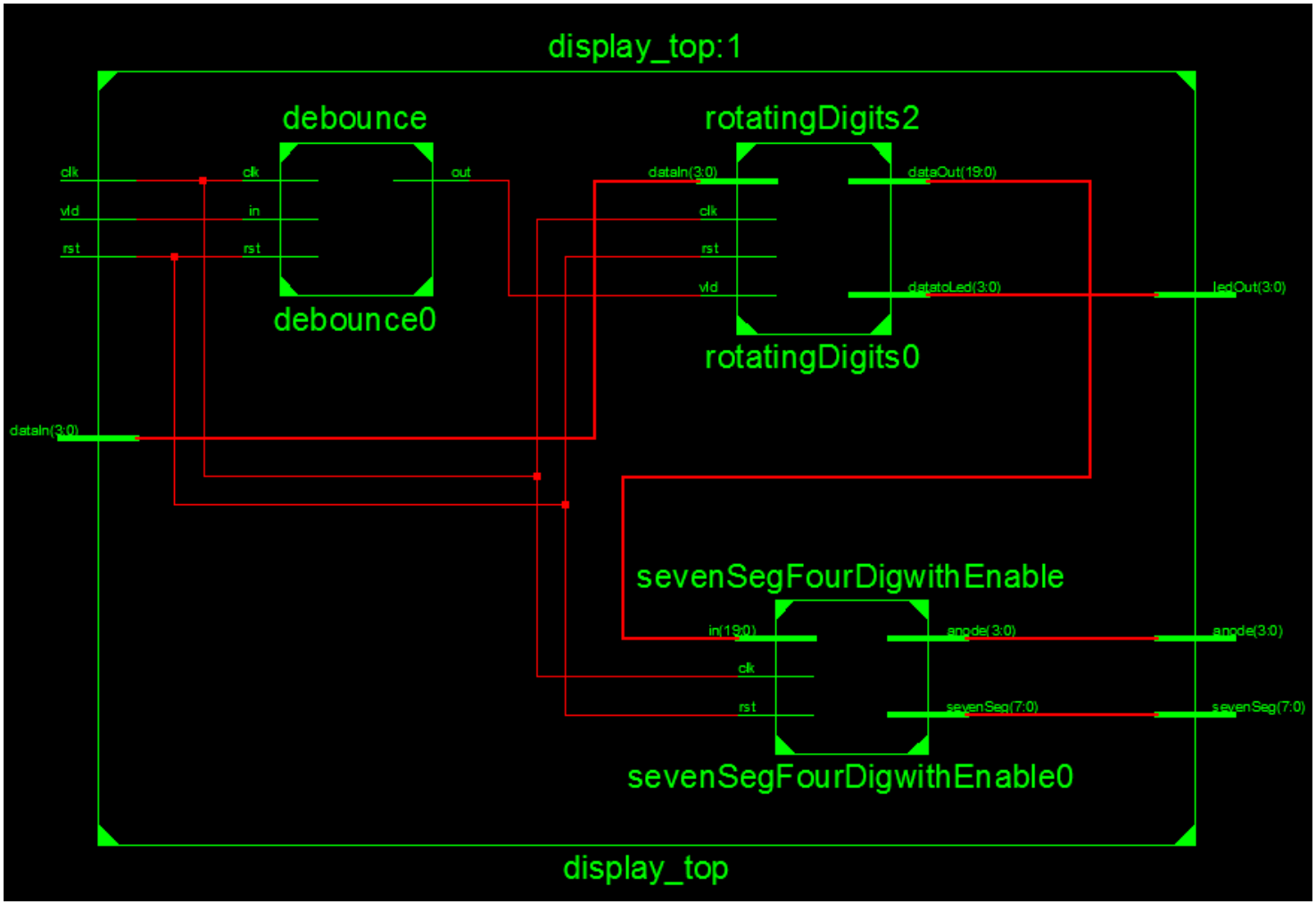
Design Top Level:



Design Top Level:

- Inputs
  - dataIn[3:0] will be tied to the switches (SW3-SW0) on the board.
  - clk will be connected to the clock pin.
  - rst will be connected to the button BTN0 on the board.
  - vld will be tied to the button BTN3 on the board.
- Outputs
  - anode[3:0] will be connected to 7 segment anode pins.
  - sevenSeg[7:0] will be connected to each of the seven segment displays.
  - ledOut[3:0] will be showing the last input on leds (LD3-LD0).

Submodule Connections:

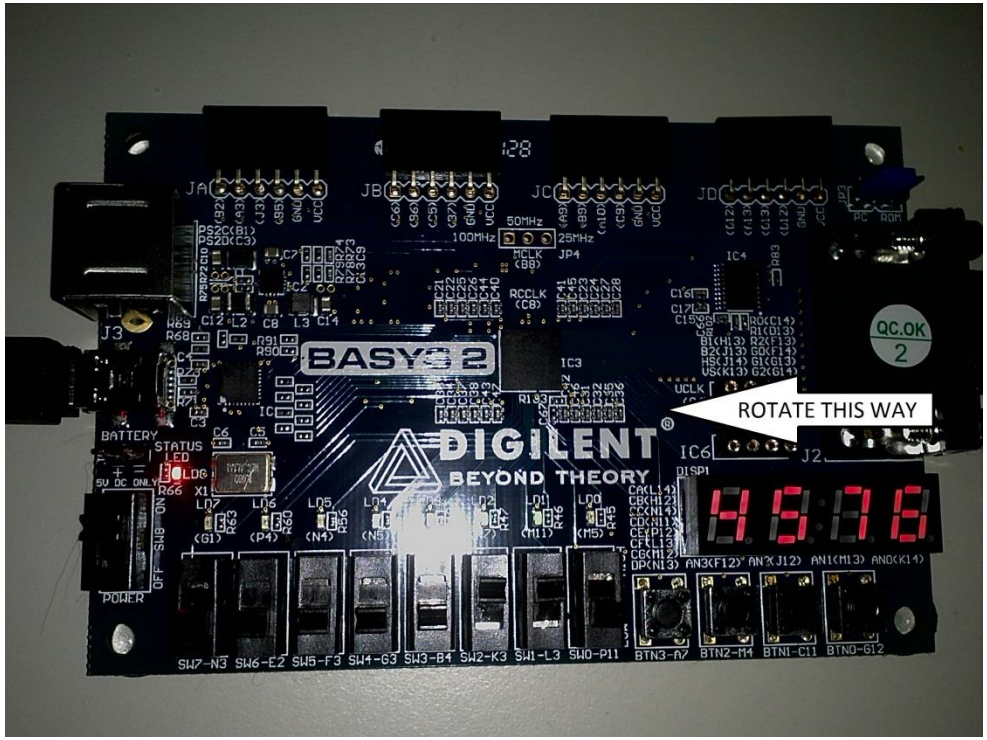


Submodule Connections:

There are three modules inside the topmodule.

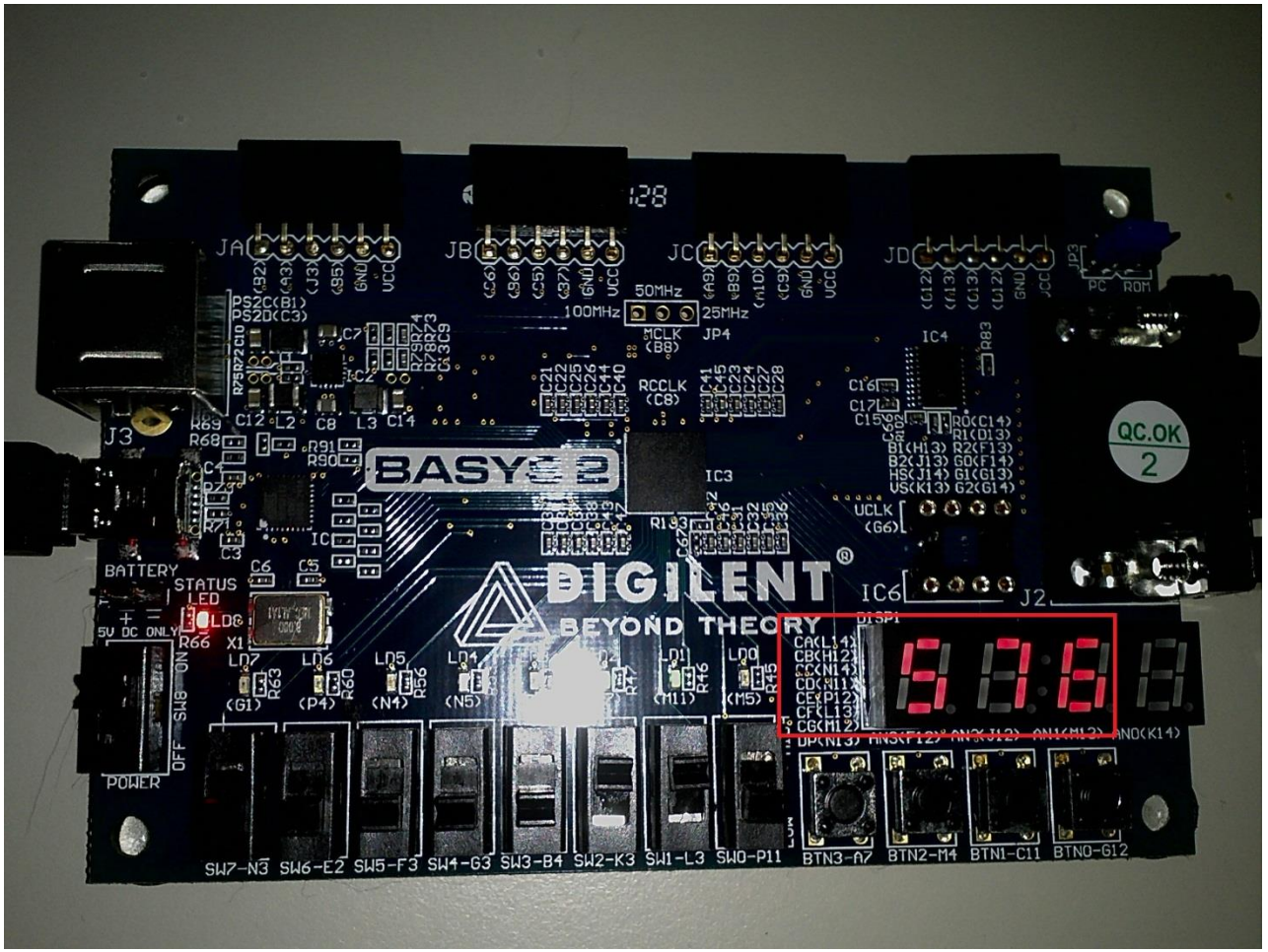
- Interface module takes input number, store numbers with valid input until 4 numbers are stored and output the number with rotation.
- debounce module takes noisy vld input from BTN3 and gives out clean valid signal.
- SevenSegFourDig module takes the output from the interface module and produce anode and sevenSeg outputs for seven segment display.

Design Behavior:

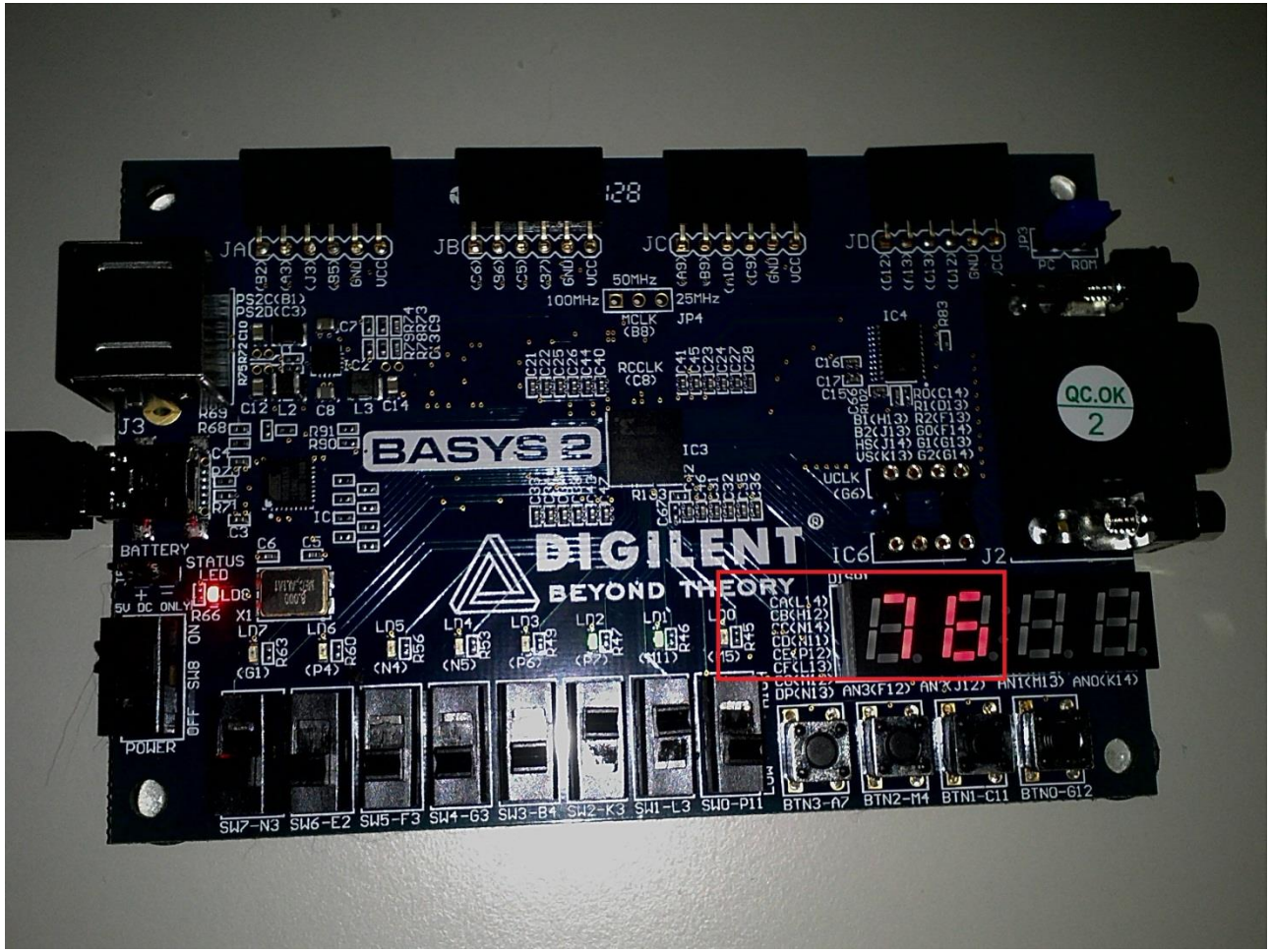


Data is entered from the 4 rightmost switches. To validate the number a valid button is arranged. The four digit hexadecimal number that will rotate is entered one digit at a time and stored whenever the valid button is pressed. The number is updated only when all four digits are entered.

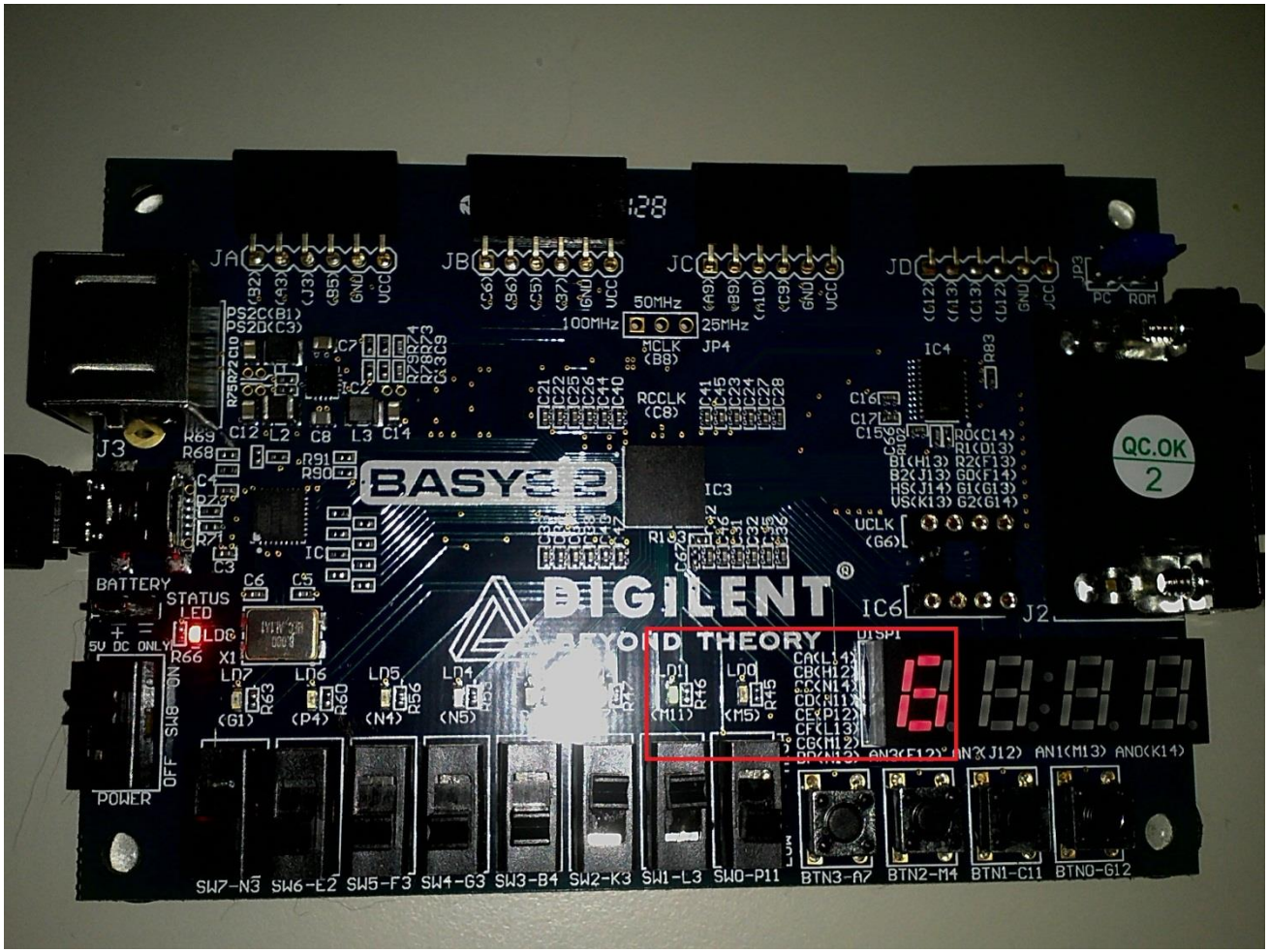
Design Behavior:



Design Behavior:



Design Behavior:



Design Behavior: