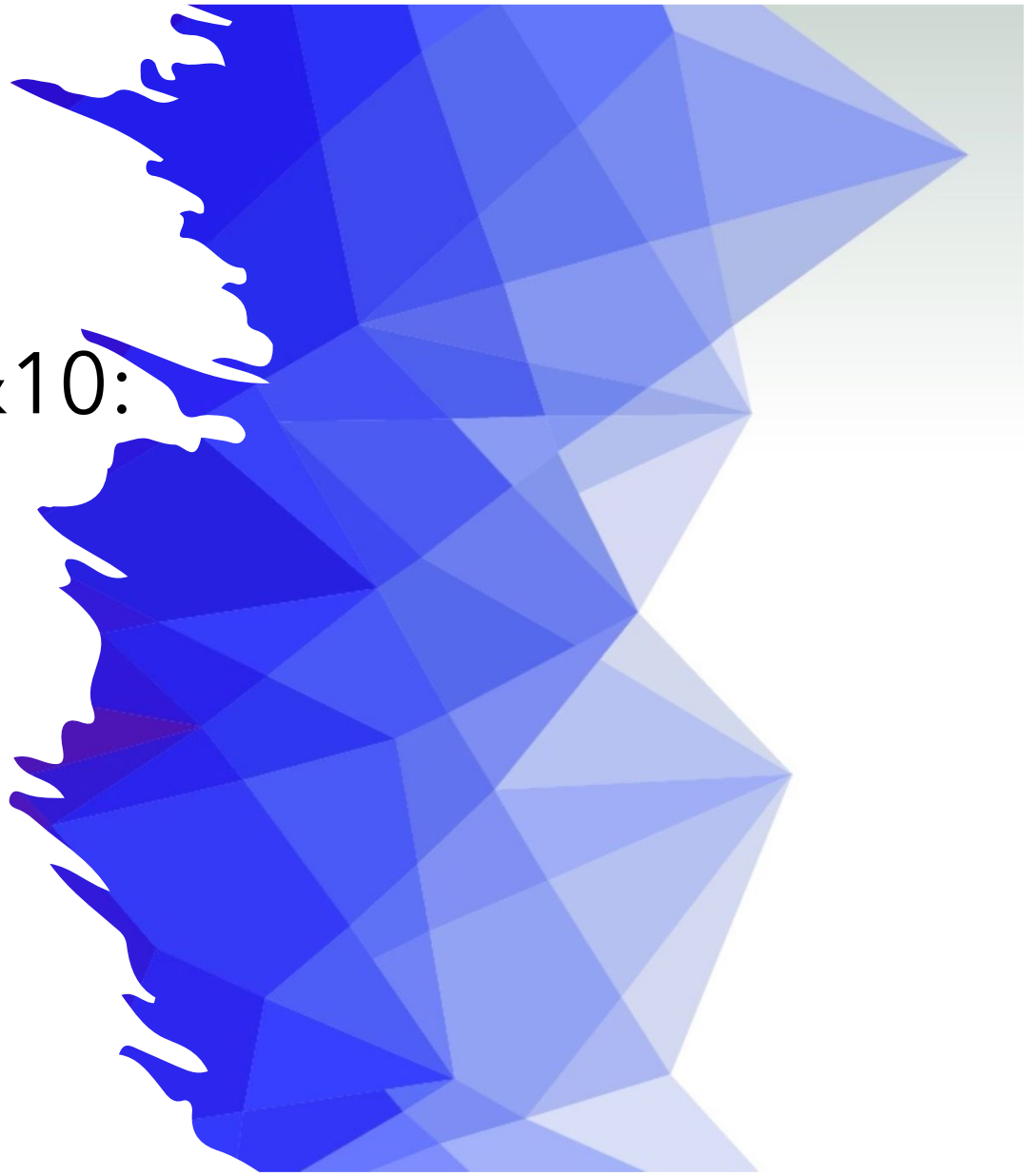
ECE3520 Lab Session 9&10:

Counting Switch Presses &Debouncing Switches



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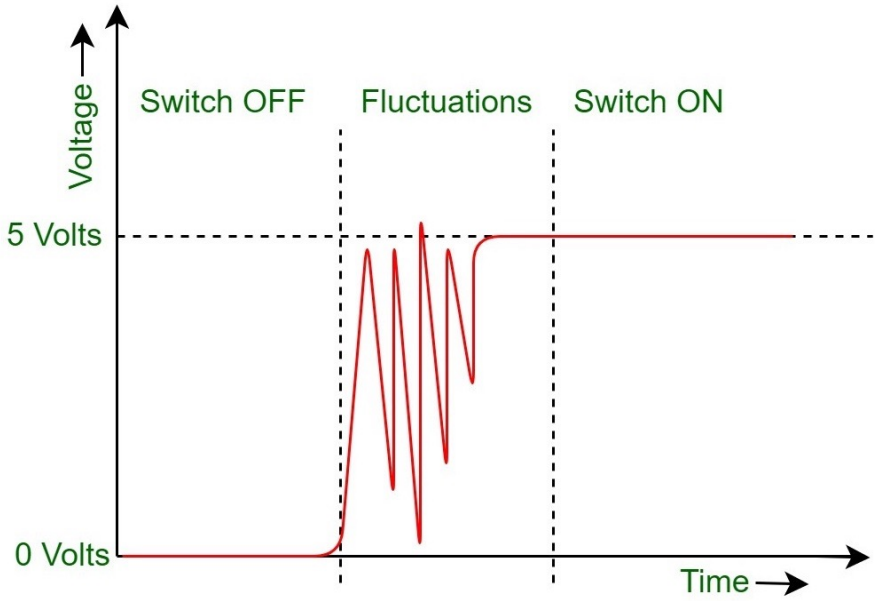
Step1: Lab Preparation

- Lab9: Write first C program for STK500 ***without Debouncing***
  - count the number of presses (any switch)
  - display the binary result to LEDs

- Lab10: Write second C program for STK500 ***with Debouncing***
  - count the number of presses (any switch)
  - display the binary result to LEDs

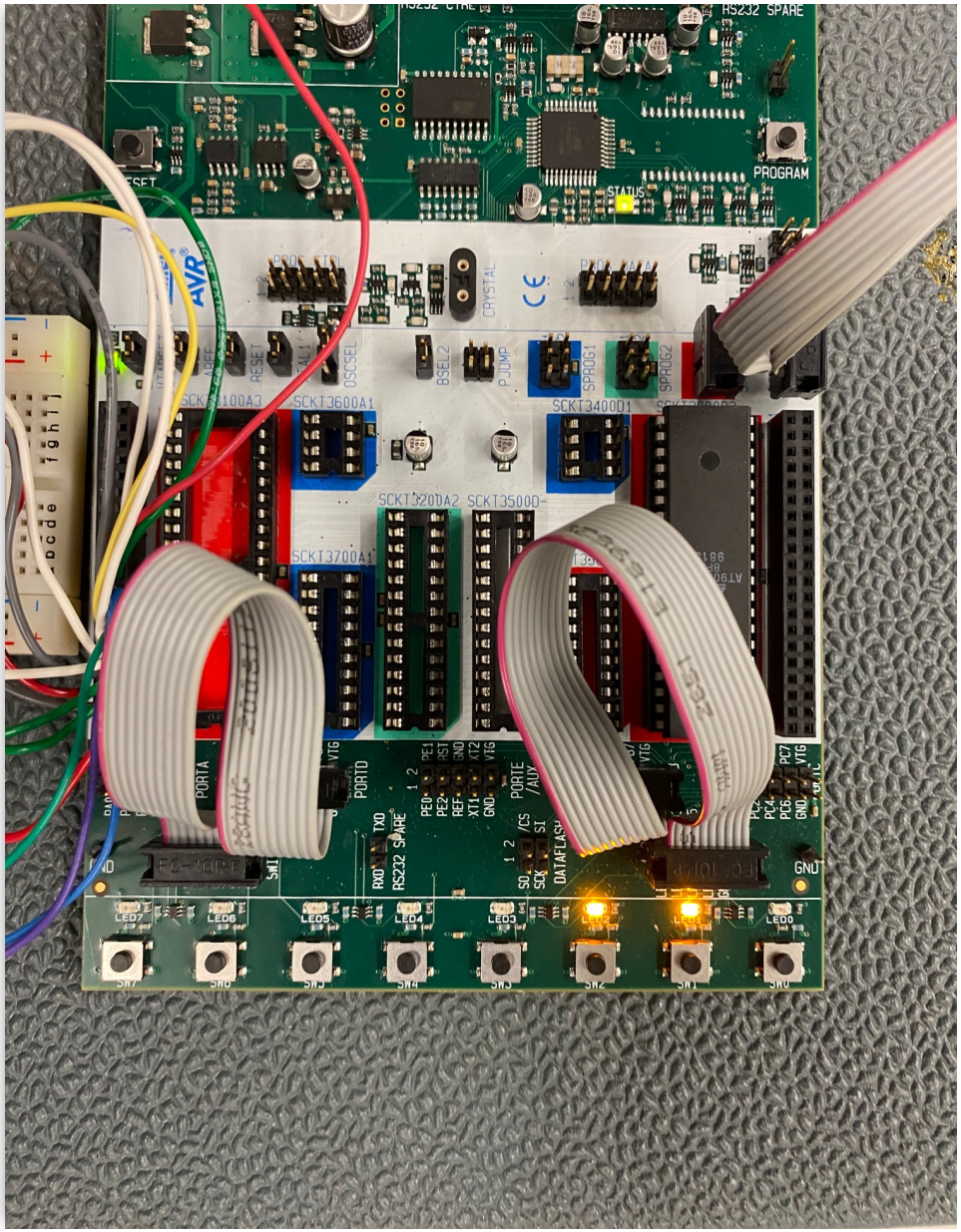
Step2: Debouncing vs. No Debouncing

- Debouncing smooths erratic, noisy switch signals
- Without debouncing may result in noise
- Debouncing prevents false positives/negatives
- No debouncing can lead to glitches
- Consistent input vs. erratic input.



Step3: Configure Experiment

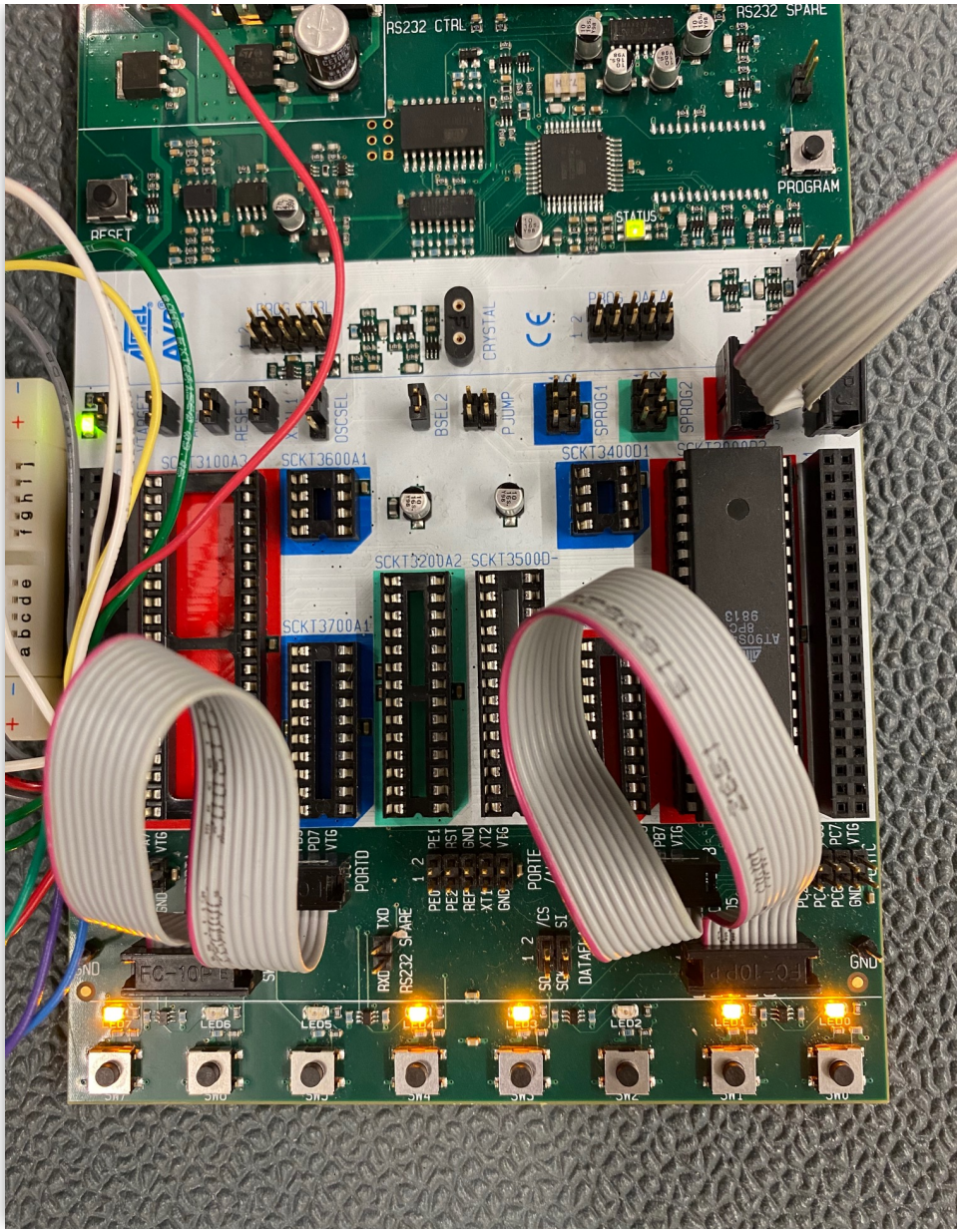
- Set up the STK500 board as in Experiment 4
- Write program for AT90S4414 using C language
- Download the Hex file onto board after compiling your C code



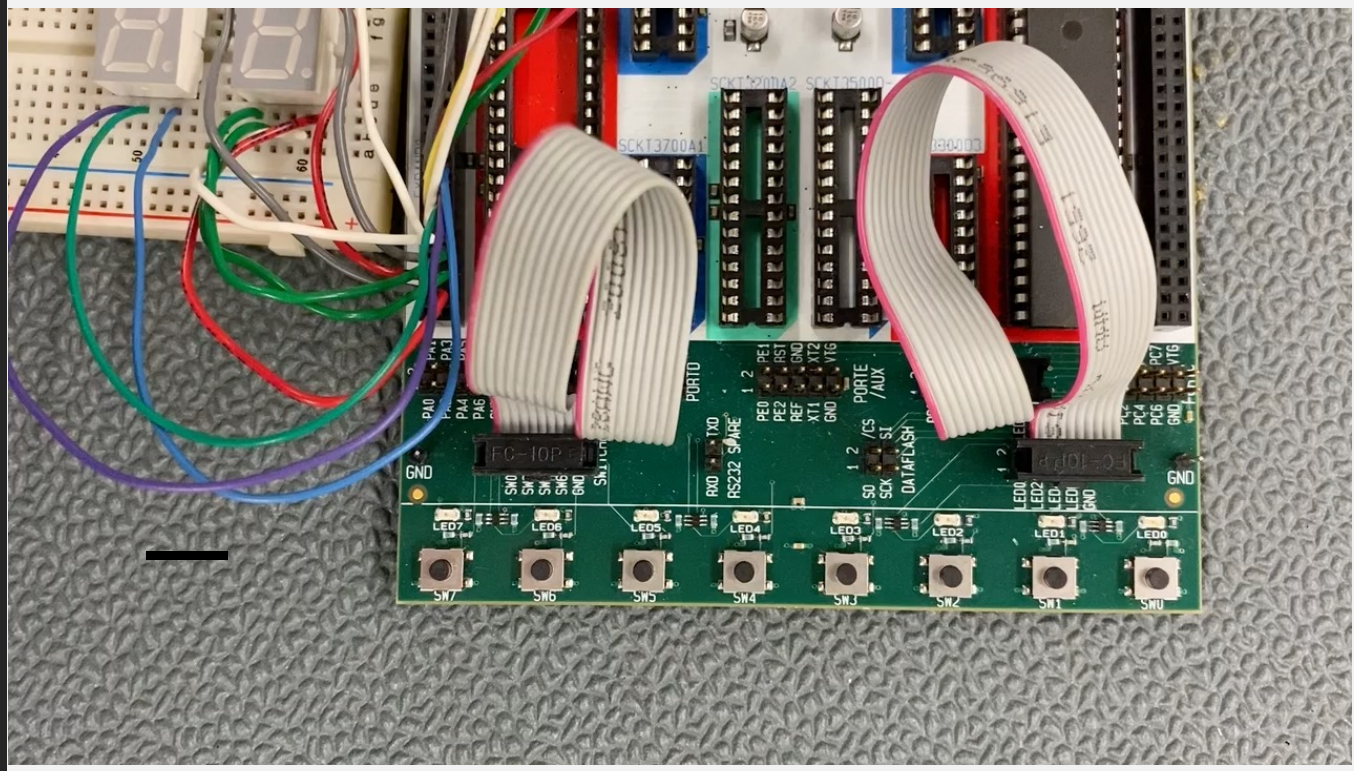
Step4: Test and Observe with and without Debouncing

- Test if your program without debouncing works correctly

- Test if your program with debouncing works correctly



Step5: Demo Video without Debouncing



- Please reference the video after you finished the experiment.

Step6: Demo Video with Debouncing

- Please reference the video after you finished the experiment.