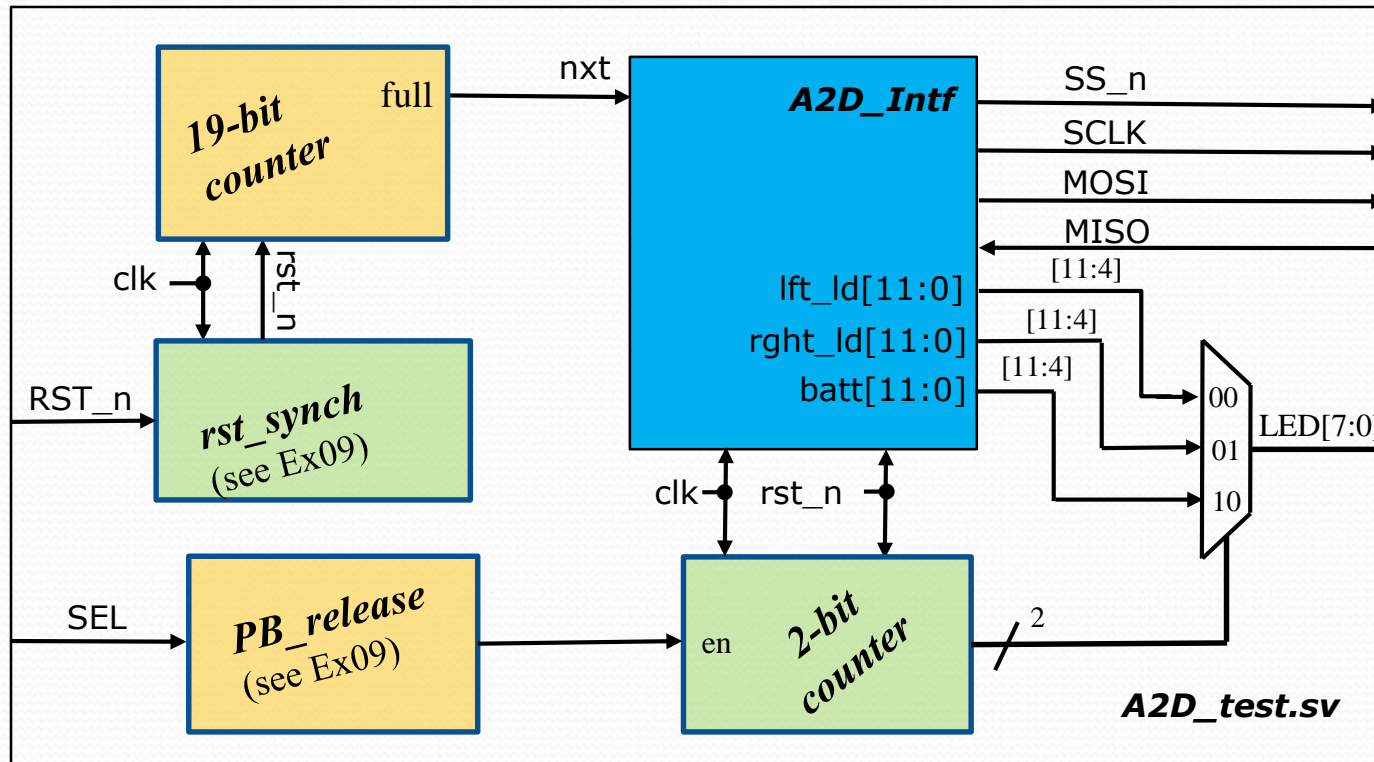# Exercise 18: Mapping A2D_Intf to DE0 Nano

- A shell for **A2D_test.sv** exists on the webpage. Download it and flush it out.

- Make a 19-bit free running counter with a **full** output (full = &cnt). The full output will drive **nxt** so we will get roughly 100 conversions a second.
- The PB_release block will drive a 2-bit counter which will select which output we are looking at. Of course it should roll from 10 → 00.

Exercise 18: Mapping A2D_Intf to DE0 Nano

Signal:	Dir:	Description:
clk	in	50MHz clock
RST_n	in	Unsynchronized input from push button
SEL	In	From 2nd push button. Selects next thing to look at (lft,rght,batt)
LED[7:0]	out	Upper 8-bits of conversion results of selected output
SPI Intf	out/ in	The SS_n, SCLK, MOSI, and MISO of SPI interface to the A2D converter on DE0-Nano
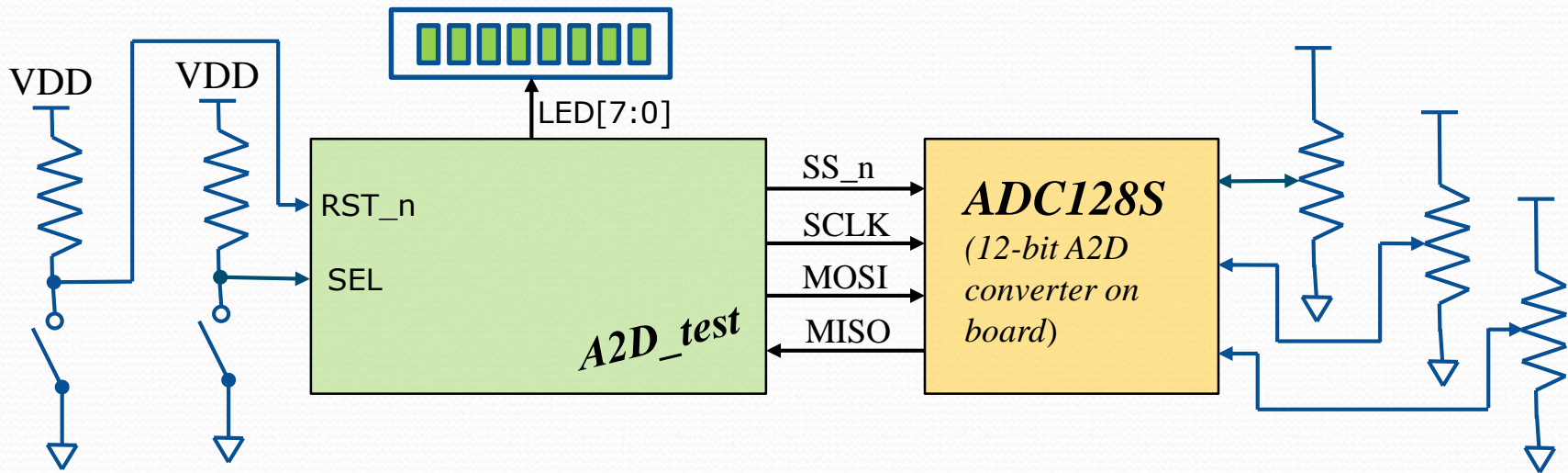
- A2D_test will be mapped and tested on the DE0-Nano board.

Exercise 18: Testing UART Wrapper on DE0 Nano

- There are Quartus project file and settings file available for download: (**A2D_test.qpf**, **A2D_test.qsf**).

- Open the **.qpf** and ensure you add all necessary files to the project.

- Ensure the project builds with no errors

- The outputs on the LEDs should seem pretty random and might fluctuate wildly as you run your finger near the respective A2D input pins. Remember the pins are floating right now, you need something to drive an analog value on them. If it seems to be working call Fego or Eric over to demo.