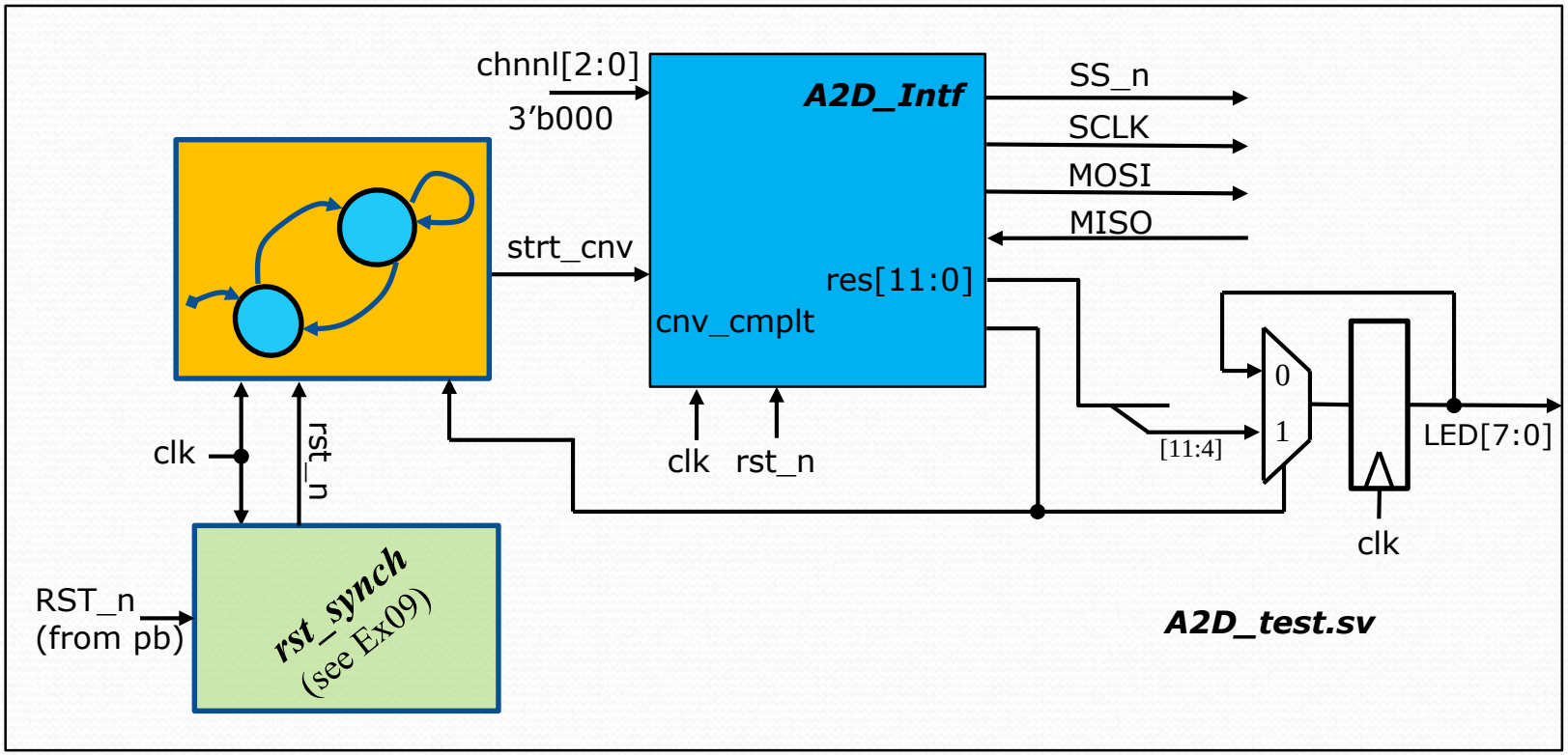
# Exercise 18: Mapping A2D_Intf to DE0 Nano

- In exercise 17 you built A2D_Intf.sv and tested it. Now you will map it to the DE0-Nano board so you can test it "for real".

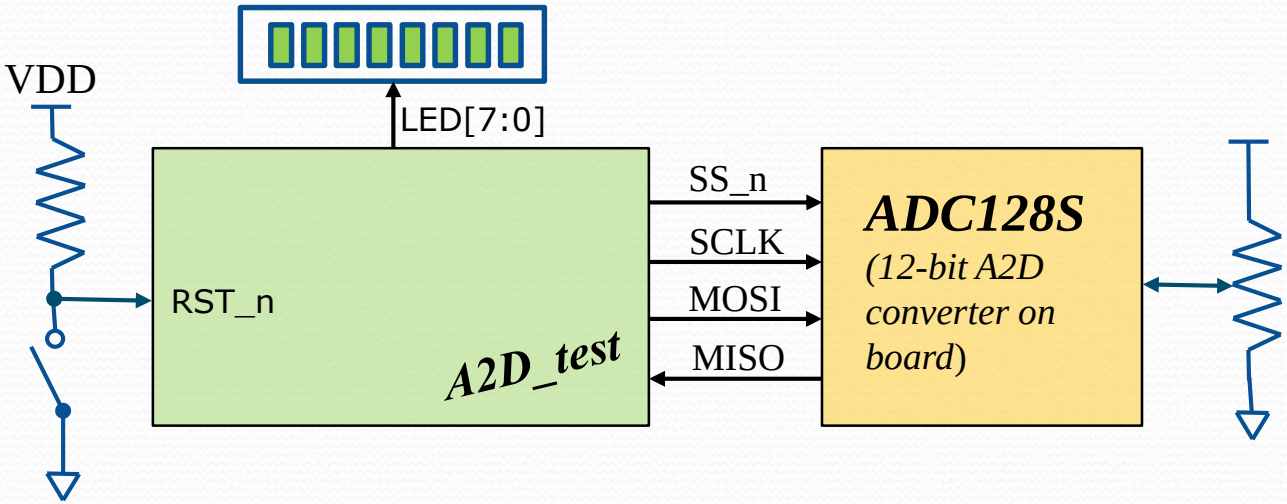



- It will have a simple SM that continually requests conversions and waits for them to complete. The upper 8-bits of the result will be written to an output called LED[7:0]. It will have a SPI interface to the A2D on the DE0-Nano board. It will use a push button for the RST_n input.

# Exercise 18: Mapping A2D_Intf to DE0 Nano

| Signal: | Dir: | Description: |
|---|---|---|
| clk | in | 50MHz clock |
| RST_n | in | Unsynchronized input from push button |
| LED[7:0] | out | Flopped upper 8-bits of conversion results. Flopped when **cnv_cmplt**. |
| SPI Intf | out/ in | The SS_n, SCLK, MOSI, and MISO of SPI interface to the A2D converter on DE0-Nano |

- Create **A2D_test.sv** with the interface and functionality described




- 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
- Once it does program your DE0-Nano and call Dave or Eric over to demo.