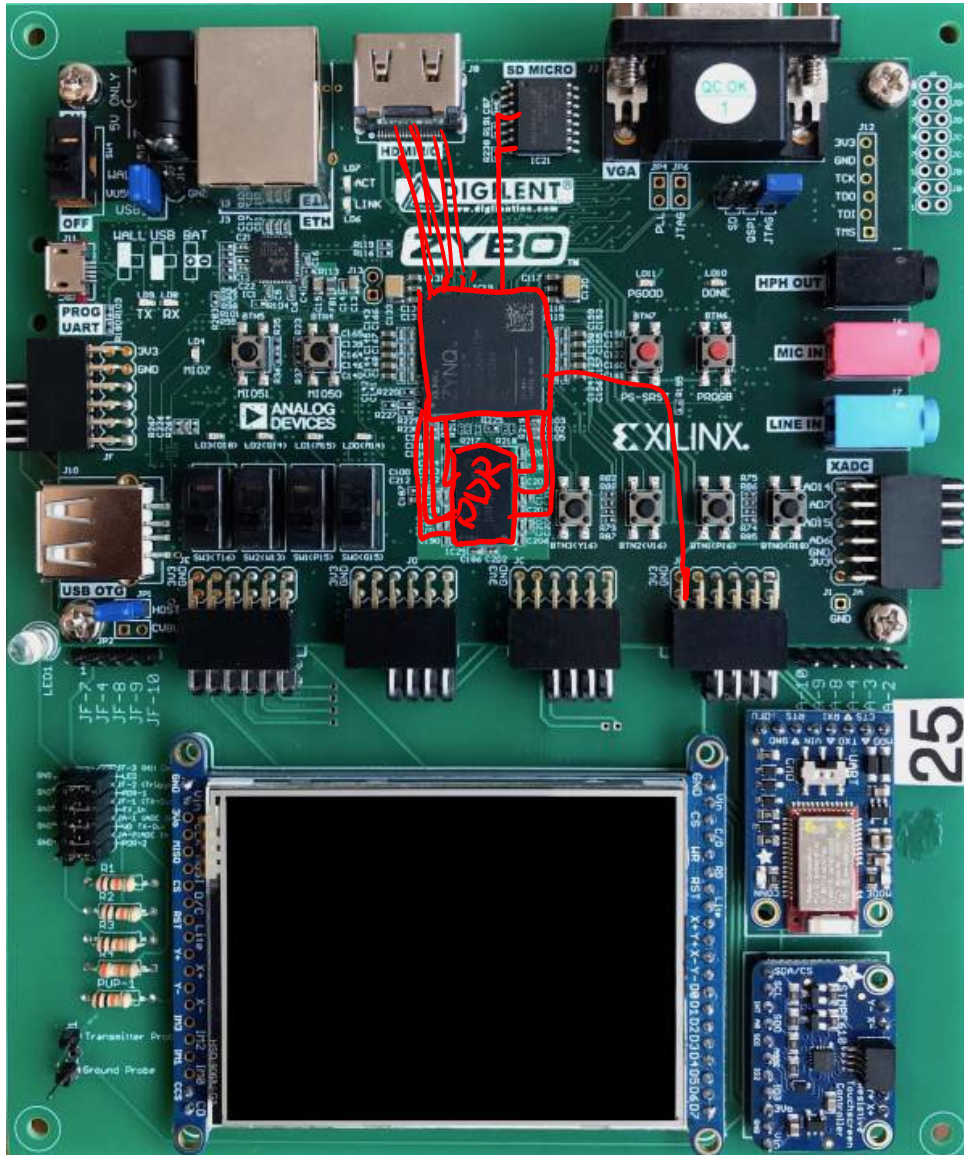


# Lab 2: GPIO Controller

ECEN 330

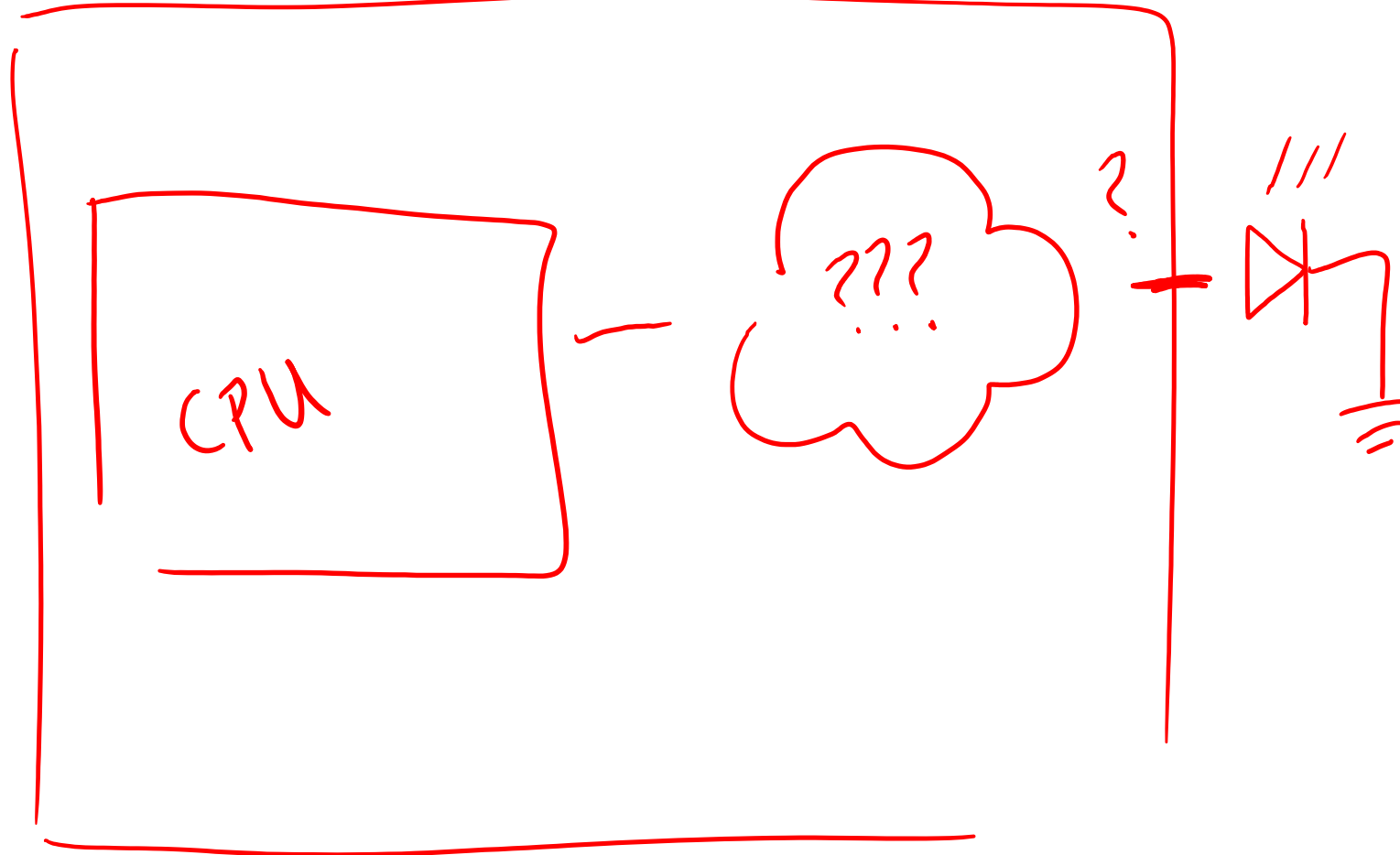
**BYU** Electrical & Computer  
Engineering  
IRA A. FULTON COLLEGE OF ENGINEERING

# GPIO: General Purpose Input/Output

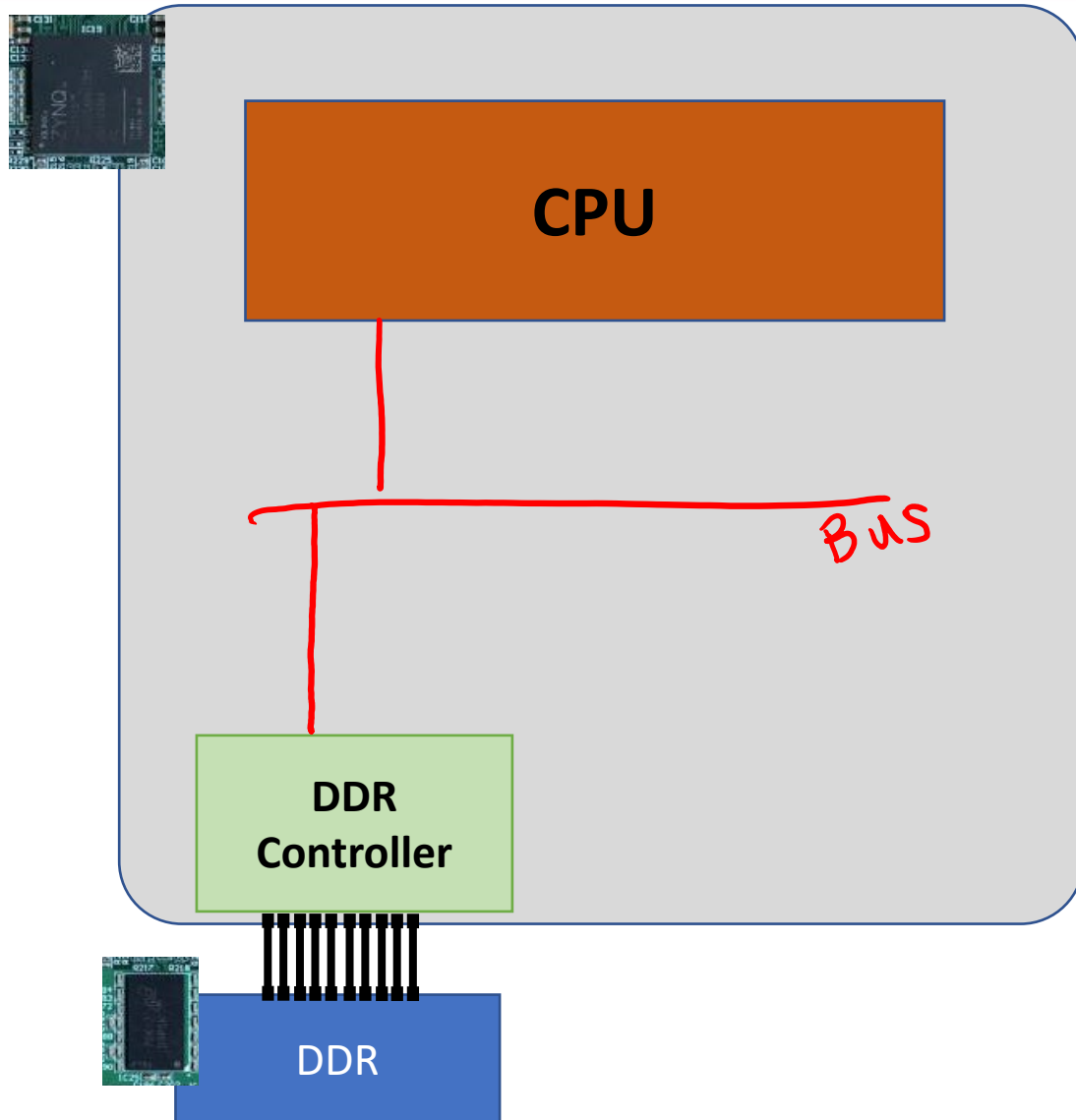


- What is GPIO?

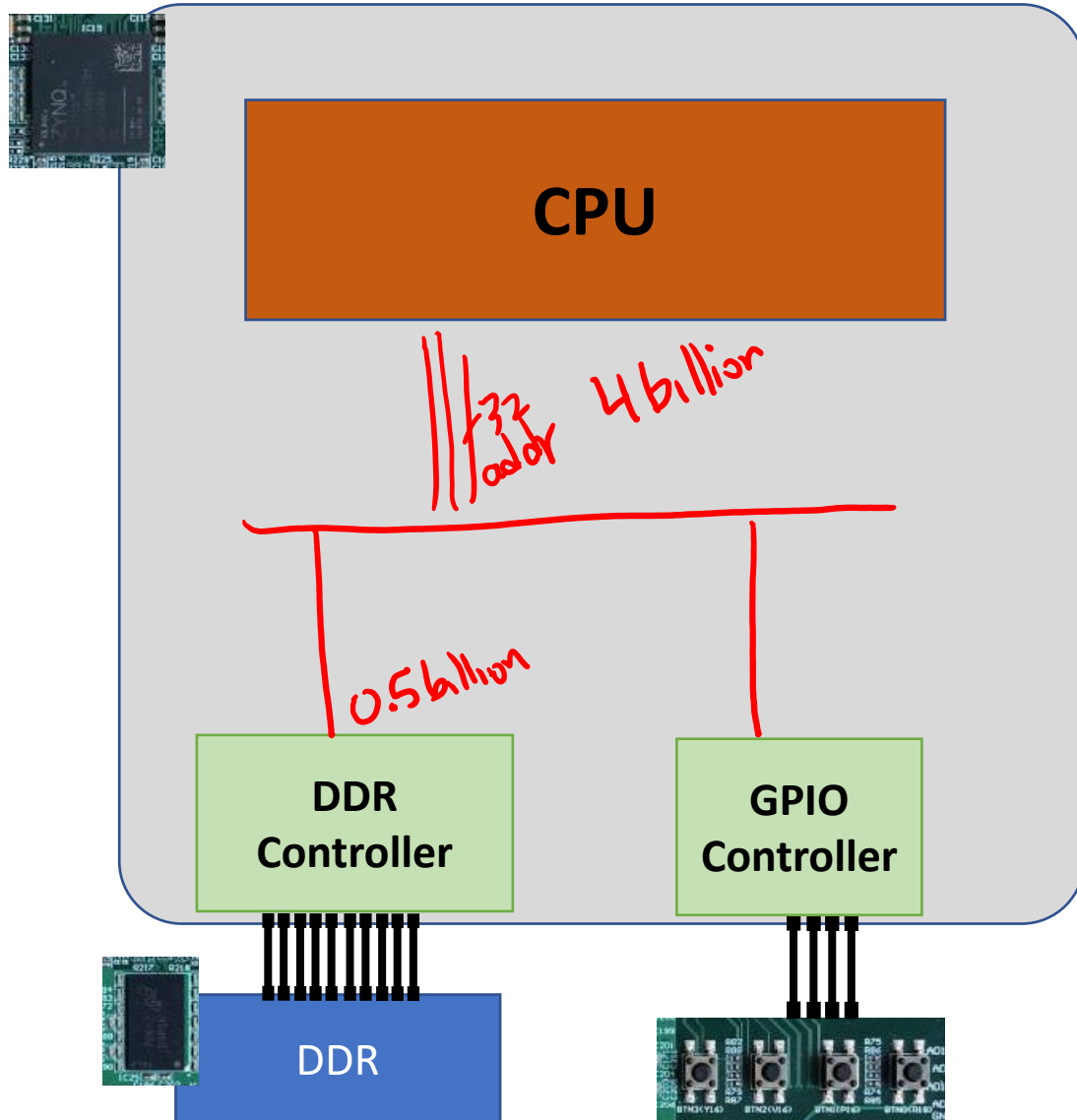
- How do we interface the CPU software with the hardware?



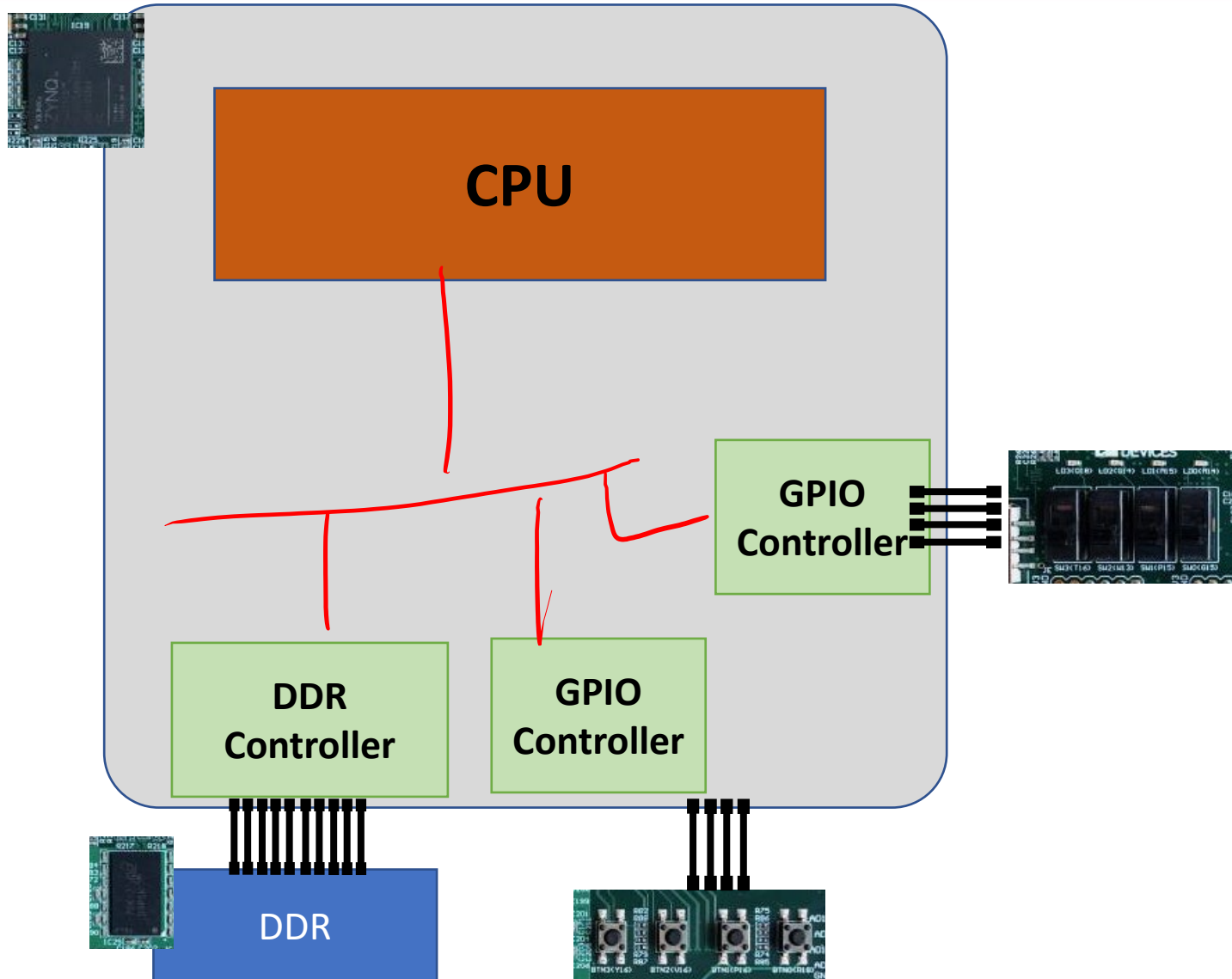
# CPU Bus



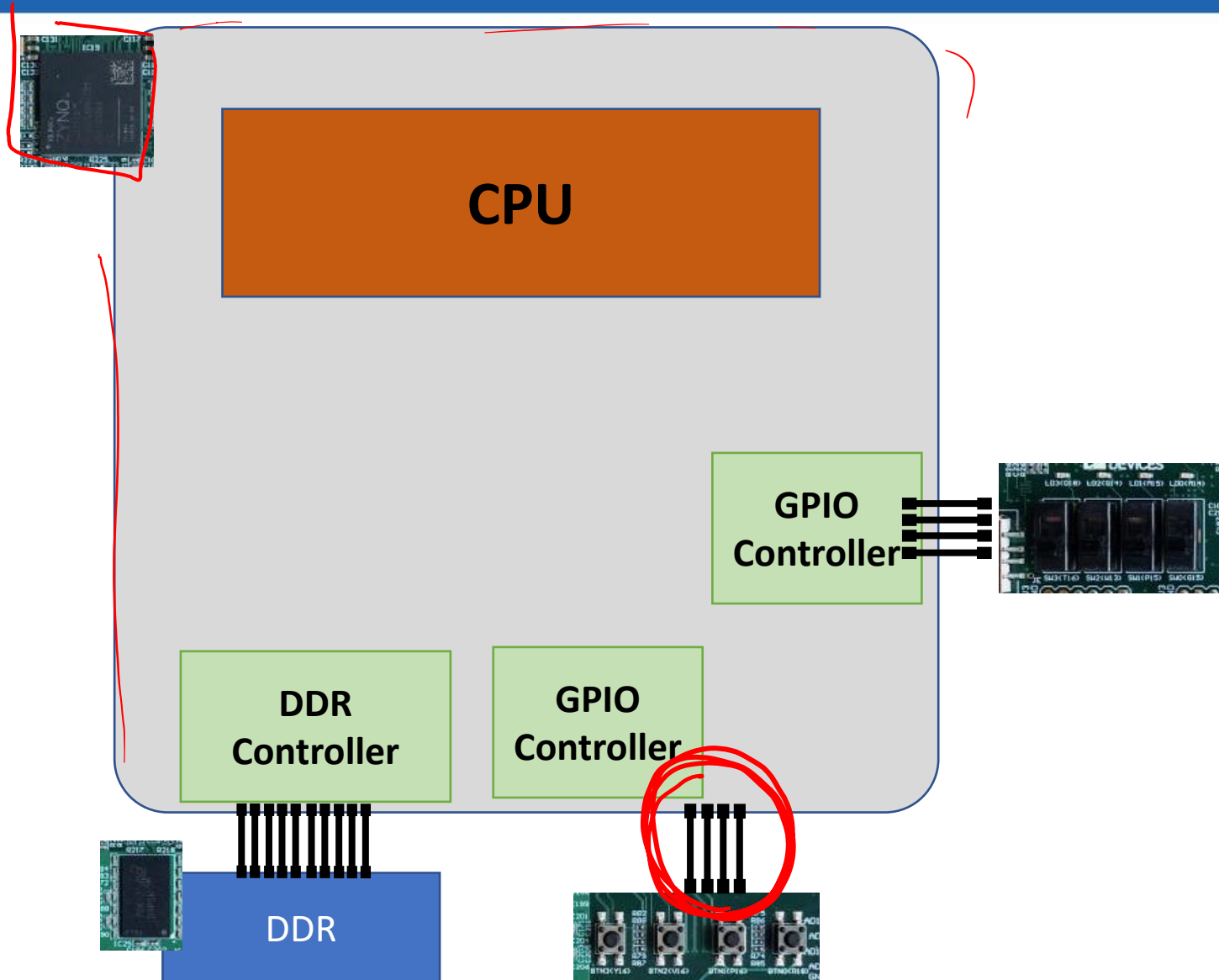
# CPU Bus



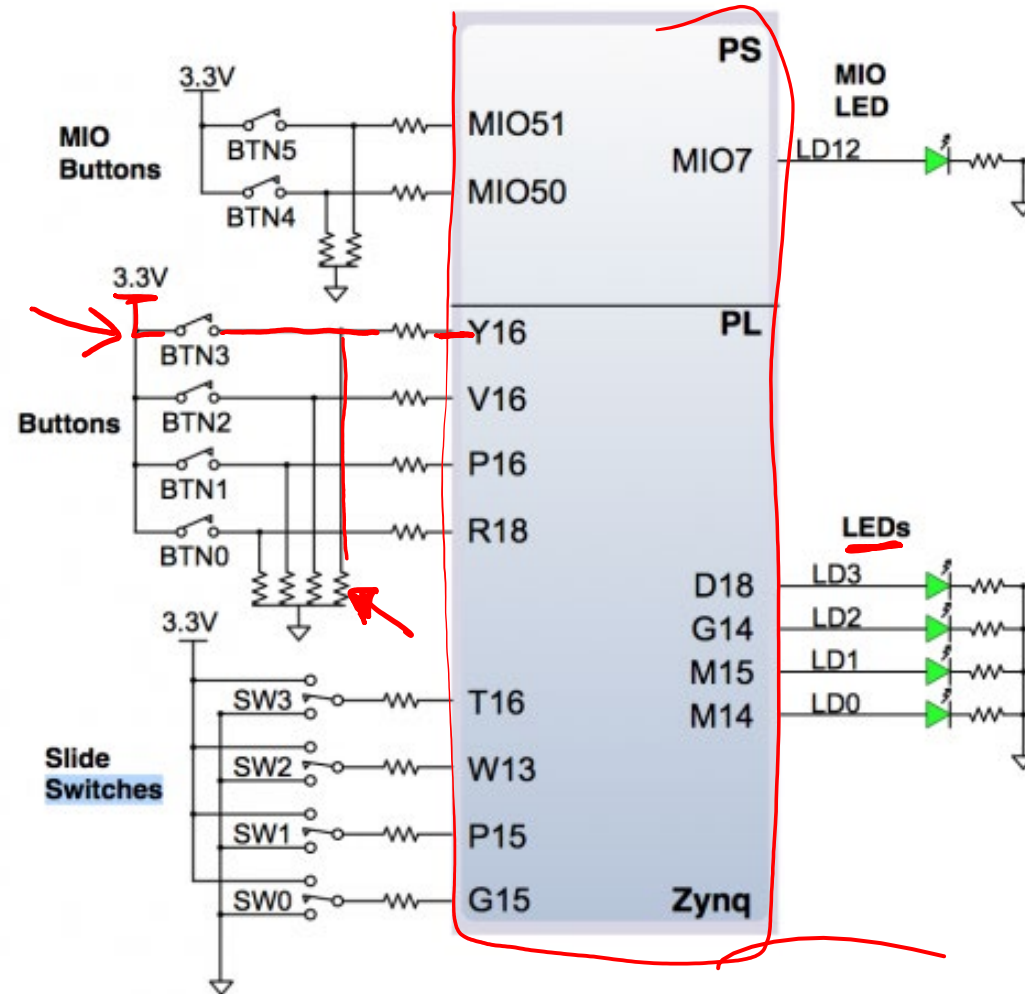
# CPU Bus



# Let's look inside the board wiring...

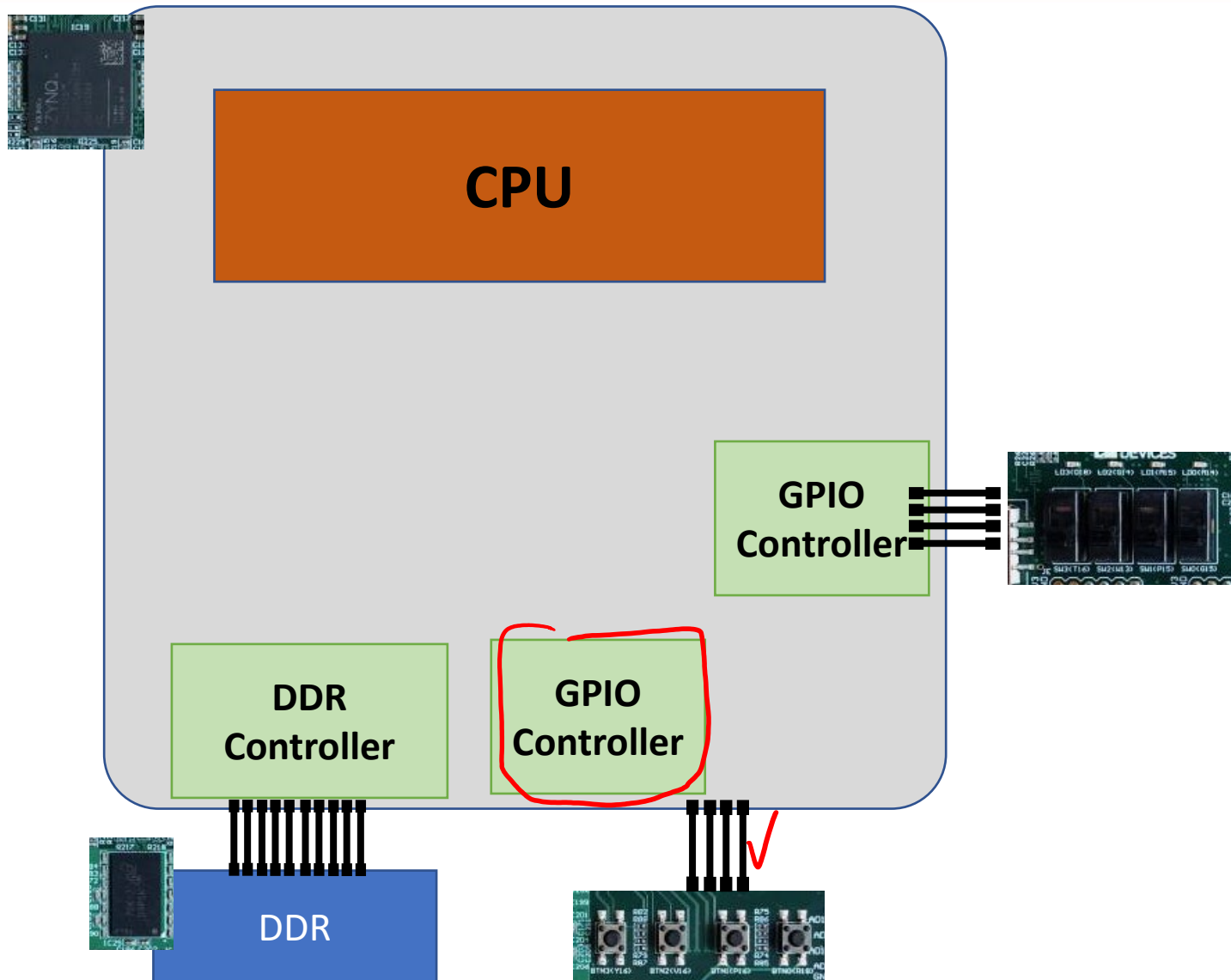


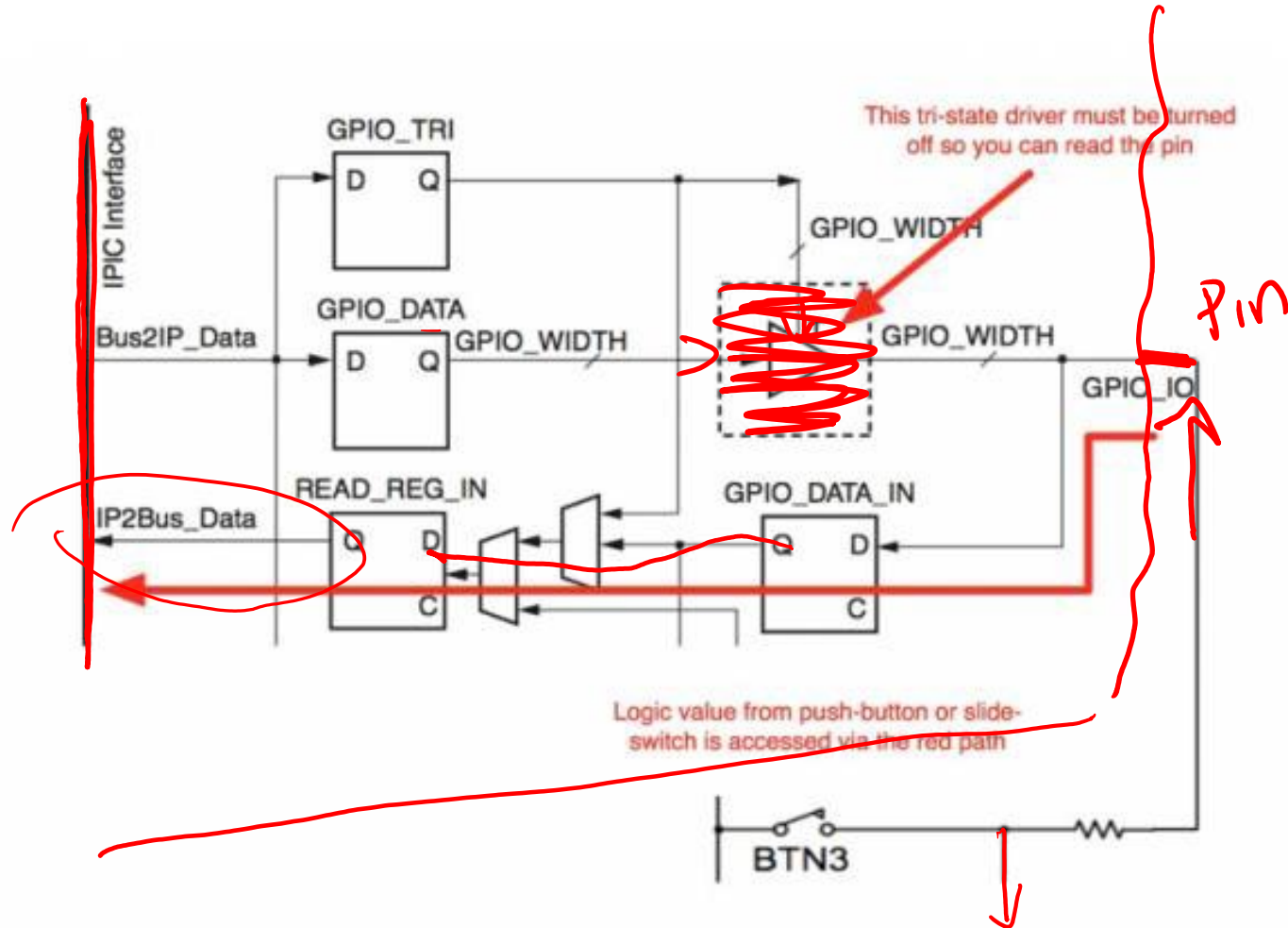
# Board Schematic





# Lets look inside the GPIO Controller





Partial schematic from Page 22 of Zybo reference manual

```
init()  
// write to base addr + 4  
Xil_Out32(addr, 0x0F)
```

```
read()  
// read from base addr  
Xil_In32(addr,
```