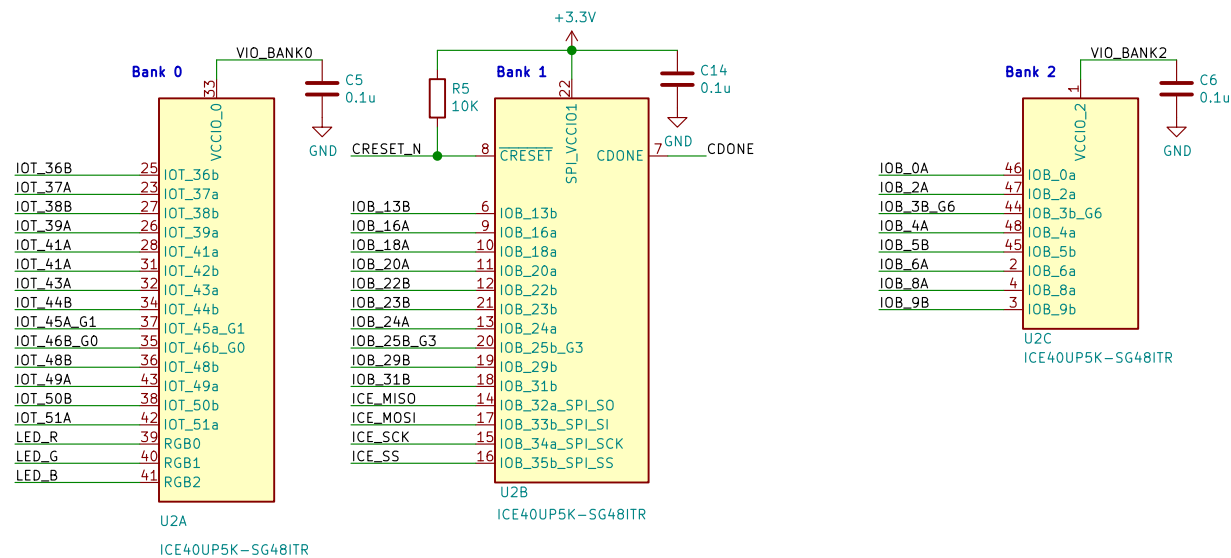
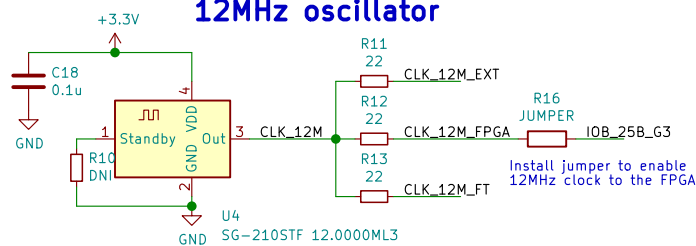


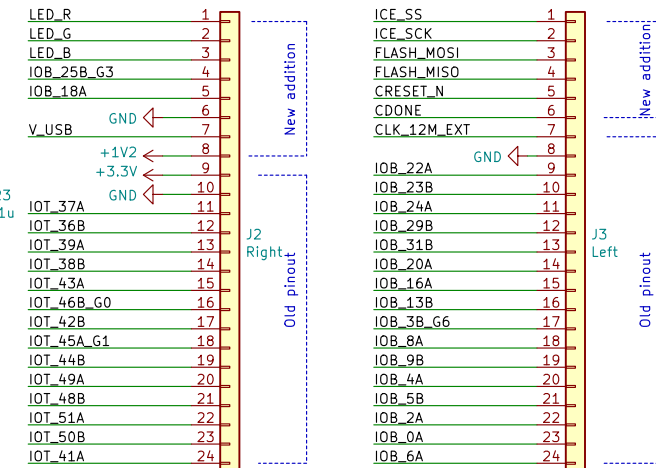
## FPGA Banks



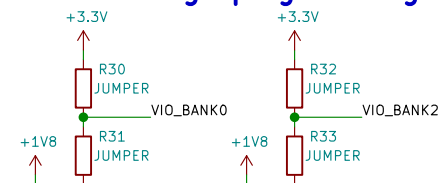
## 12MHz oscillator



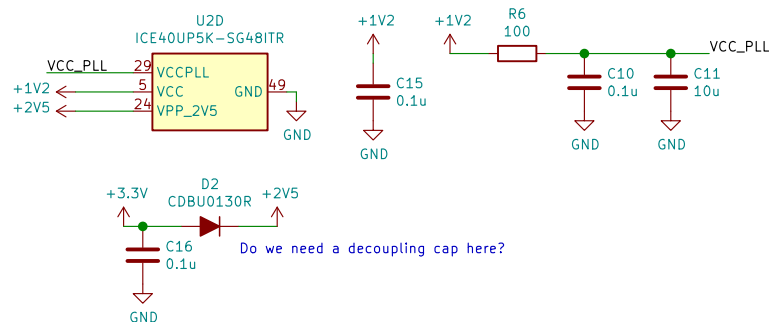
## Board connections



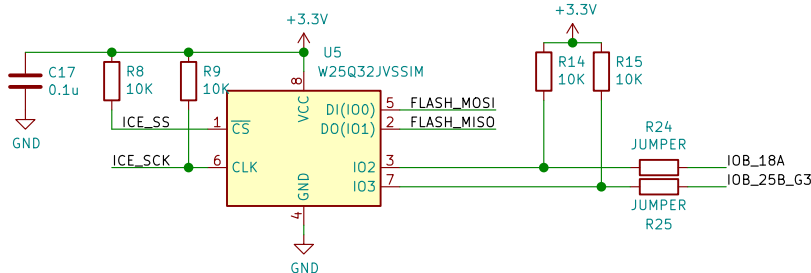
## Bank voltage programming



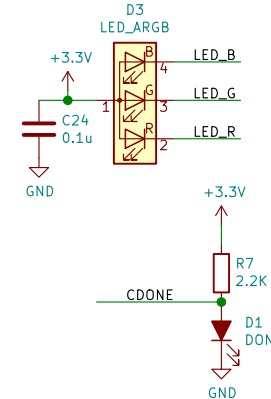
## FPGA Power



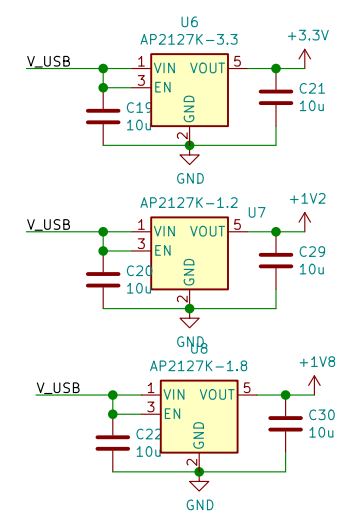
## qSPI/DTR Flash



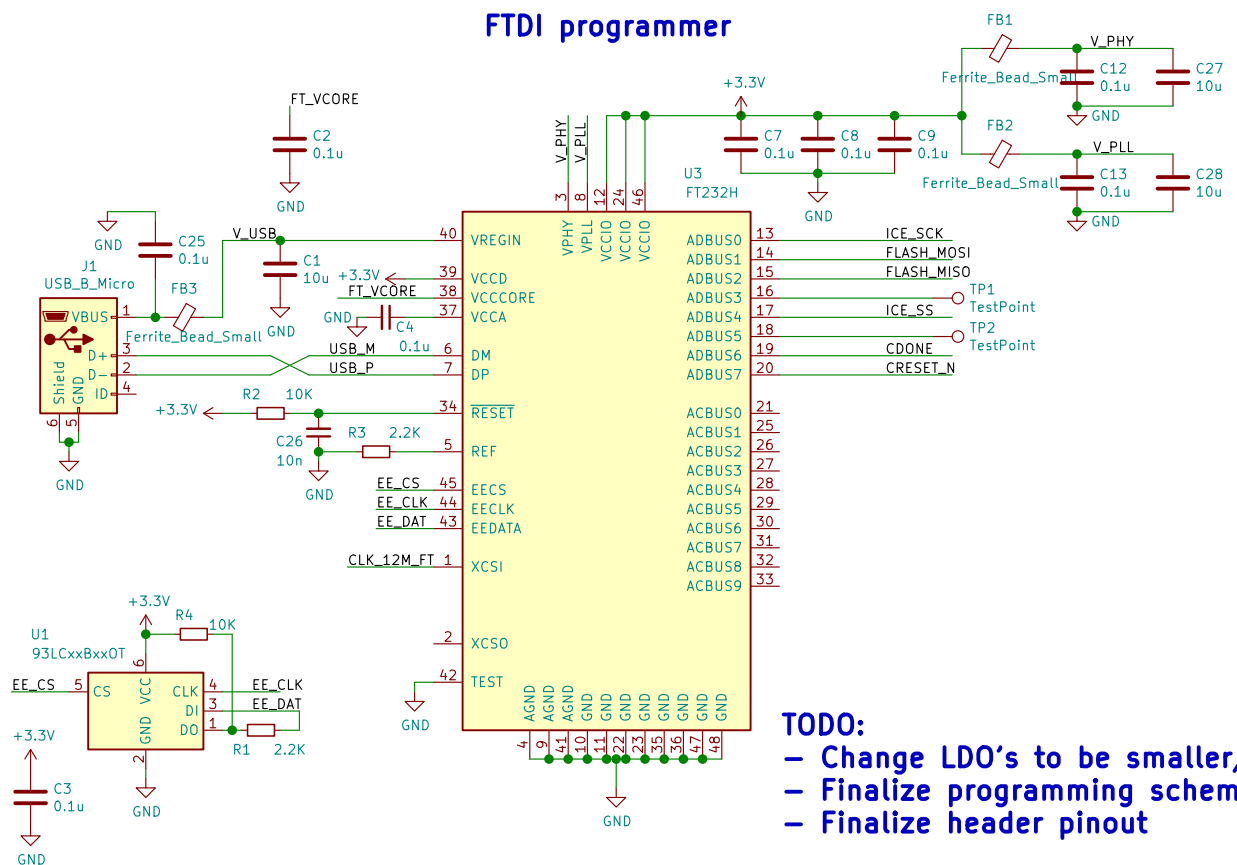
## LED's



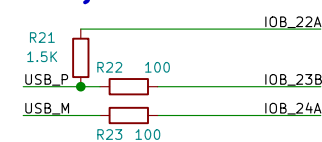
## LDO's (300mA max)



## FTDI programmer



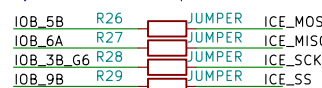
## tinyFPGA Bootloader



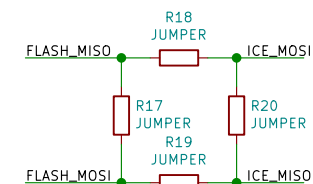
Keep the FTDI in reset to use the tinyFPGA bootloader. This requires the flash to be programmed with the bootloader!

Following jumpers allow the FPGA to talk to the FTDI after configuration using SPI/I2C/UART while not interfering with the memory bus. This is very useful when you want to use the flash for say a RISC-V processor in the FPGA and also the UART to talk to the processor. This would otherwise require an external translator...

NOTE: should be used in conjunction with the tinyFPGA bootloader to prevent bus conflicts.

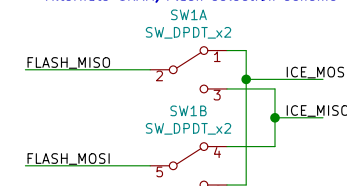


## FPGA/Flash programming



This requires manual configuration, not a pleasant task! Ideally, this would be auto-selected.

## Alternate CRAM/Flash selection scheme



Switches are bidirectional

Switches are selected using the reset signal as follows:  
Flash: Programming is done when reset is held low  
CRAM: Programming is done when reset is held high

## TODO:

- Change LDO's to be smaller/cheaper if needed
- Finalize programming scheme
- Finalize header pinout



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Sheet: /  
File: UPduino.sch

Title: UPduino extended version

Size: A3

Date:

Rev: 3.0 v0.1

KiCad E.D.A. kicad (5.0.2)-1

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