

TinyFPGA BX

What is it

LED (user, power)

USB connector

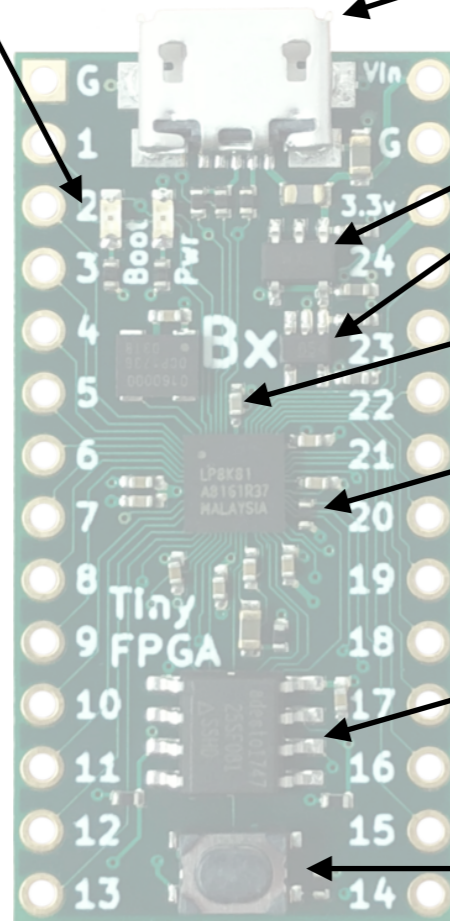
Power Regulators

16Mhz clock

Lattice LP8K

0.5 - 1MByte SPI Flash

Reset button



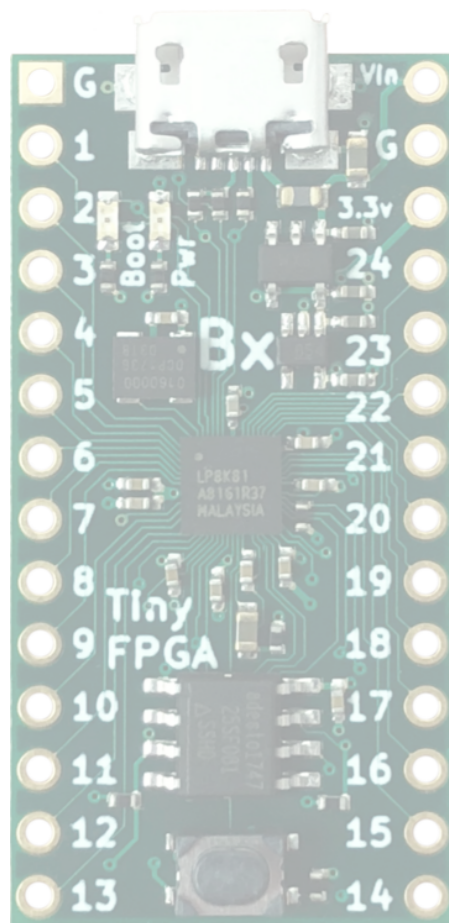
How it works

SPI Flash contents

0 - 128K Boot loader

128K - 256K Your design

256K - 512 / 1024K extra space



On! (or reset)

LP8K loads FPGA config from location 0 of SPI Flash

Boot loader implements USB protocol *in the FPGA* and communicates with your computer to download design to location 128K in SPI Flash. Once downloaded the LP8K is told to load the config from this location

Your design is now running!

Notes & Caution - 1

- There is no FTDI chip on the device. If you want USB protocol support you have to implement it in the FPGA. This takes ~ 1500 LUTs. This is why the debugger takes ~2000 LUTs.
- WHILE IN THIS CLASS DO NOT EXPOSE THE SPI FLASH MEMORY CHIP PINS TO YOUR DESIGN. YOUR DESIGN CAN BRICK YOUR DEVICE BY ACCIDENT.
 - DON'T DO IT
 - PLEASE DON'T DO IT
 - PRETTY PLEASE