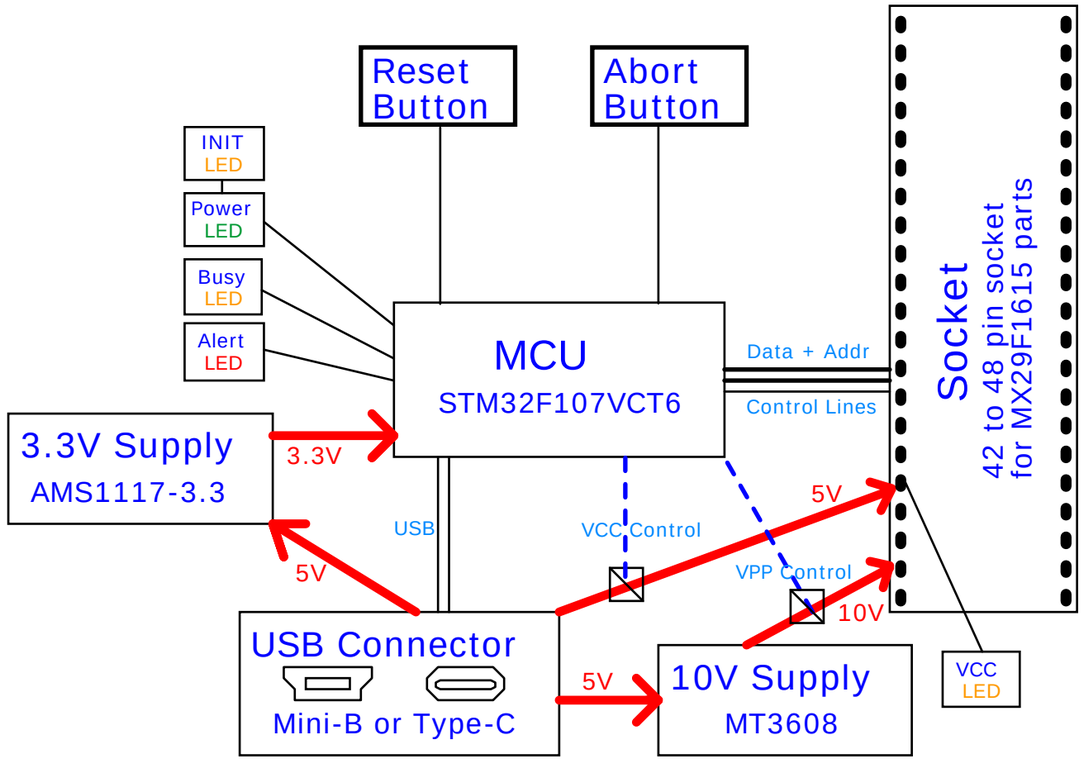
MX29F1615 Programmer

Rev 6 - 2021-07-19

An STM32 Cortex-M3 CPU (STM32F107VCT6) is used to provide a programmer interface between a PC and the Macronix MX29F1615 EEPROM part. The implementation is a combination of hardware, custom firmware, and Linux software to achieve easy erasure, programming, and verification of MX29F1615 EEPROM parts. The Linux mxprog command has been ported to MacOS. It could be ported to Windows, as well. It mostly just requires a working USB ACM driver to communicate with the firmware running on the STM32.

The major hardware components consist of the STM32 (256KB integrated flash and 48K integrated SRAM), a USB connector, three status LEDs, three buttons, a 3.3V power supply, and a 10V power supply (both fed by USB 5V power), and finally a socket with holes large enough to accommodate a commonly available 48-pin ZIF socket. Note that the MX29F1615 is a 42-pin device, so you may choose to install a cheaper 42-pin socket instead.



As of July 2021, the global chip shortage has made finding STM32 chips extremely difficult. You can substitute several different parts.

No disadvantage:

STM32F107VCT6 STM32F107VBT6
STM32F105VCT6 STM32F105VBT6

No USB DFU mode (Update with ST-Link):

STM32F103VCT6 STM32F103VBT6

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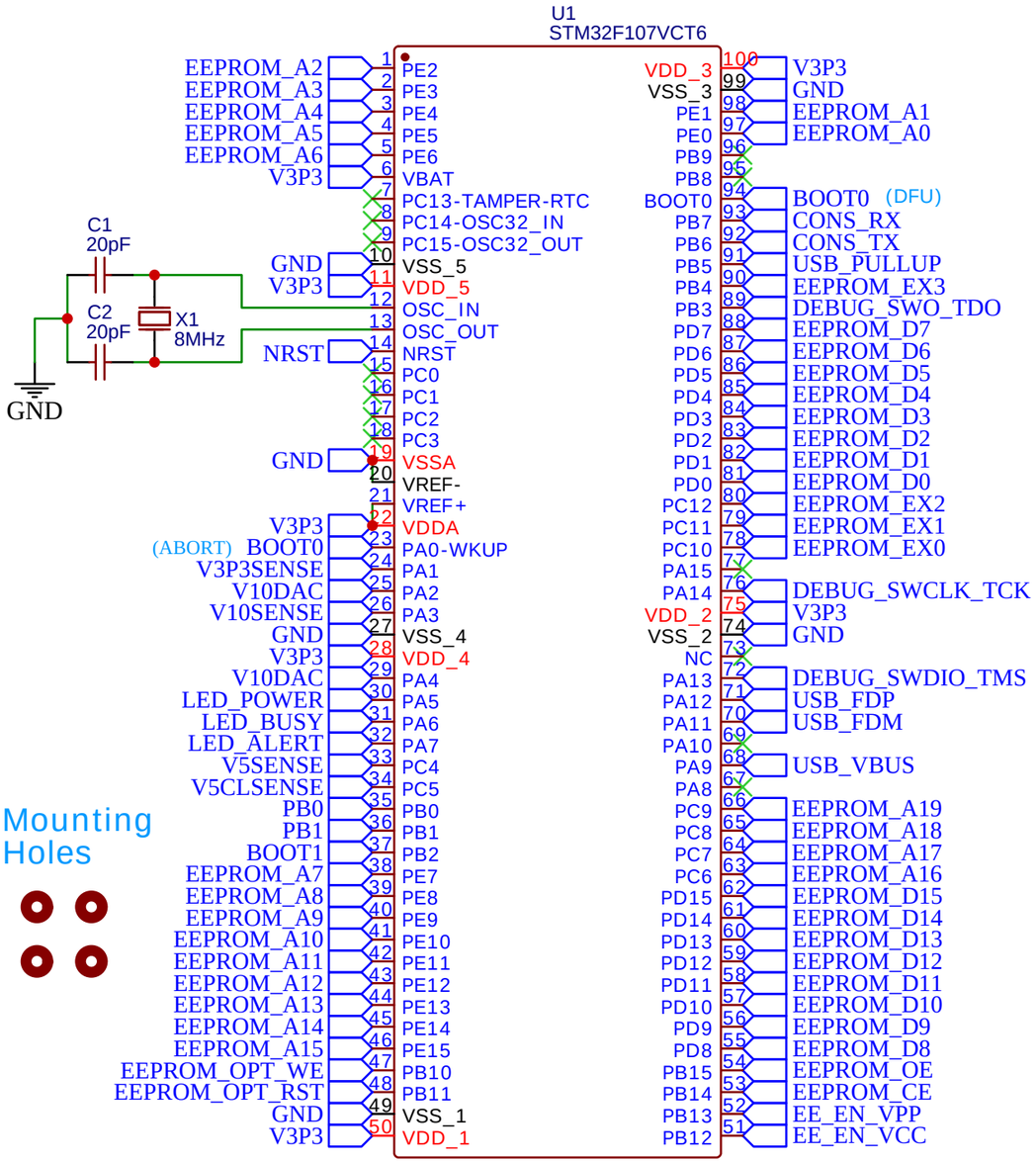
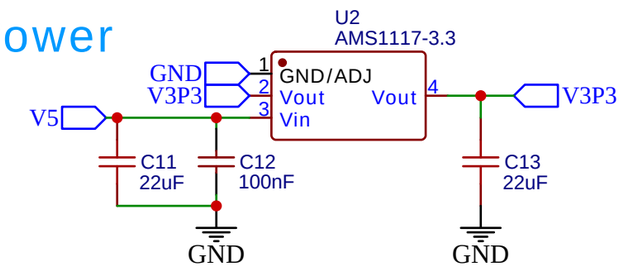
STM32F107VCT6

72 MHz, 256K Flash, 64K SRAM, 80 IO pins



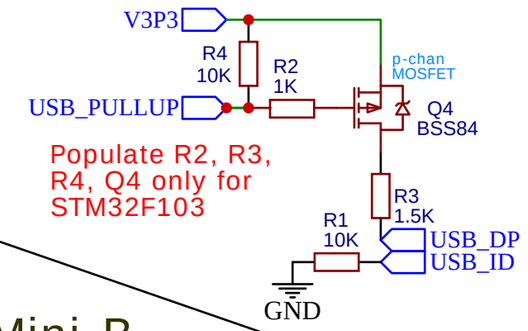
Mounting Holes

Power



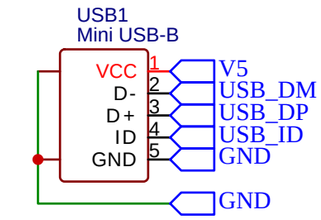
Switchable USB "present" signal

REMOVE FOR STM32F105 and STM32F107

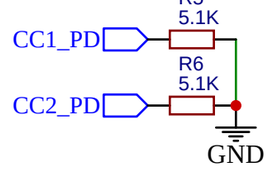


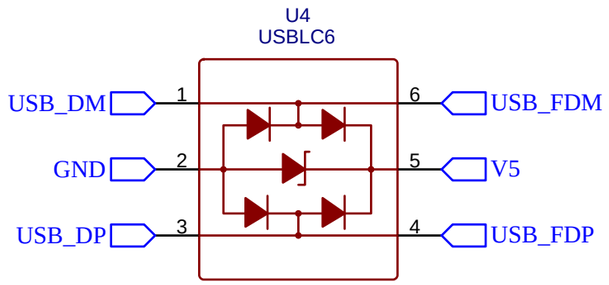
Populate R2, R3, R4, Q4 only for STM32F103

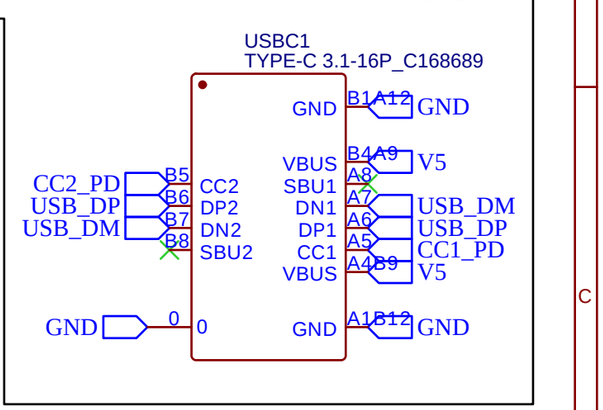
USB Mini-B



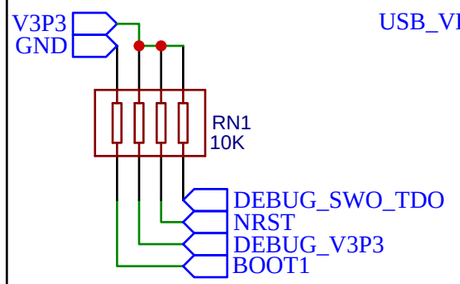
USB-C



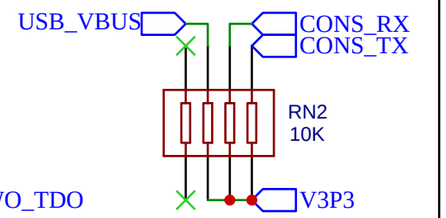




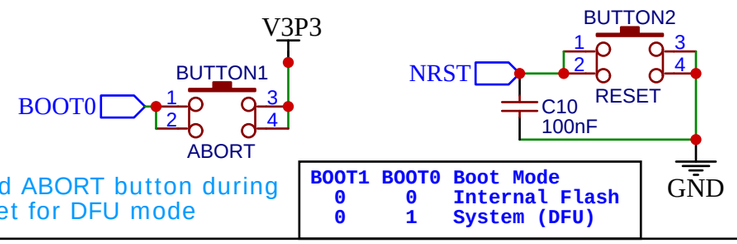
Misc. Pullup / Pulldown



PB6 CONS_TX pullup for USB DFU VBUS



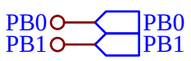
Boot and reset options



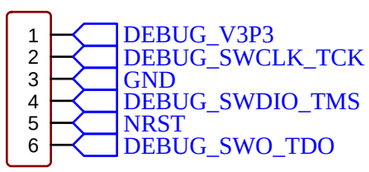
Hold ABORT button during reset for DFU mode

BOOT1	BOOT0	Boot Mode
0	0	Internal Flash
0	1	System (DFU)

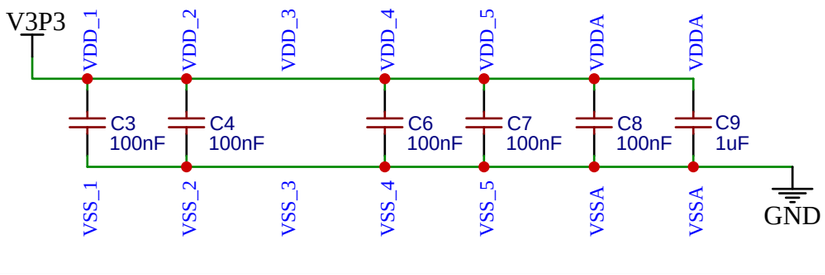
Extra pins



H3 STM32 SWD



Decoupling



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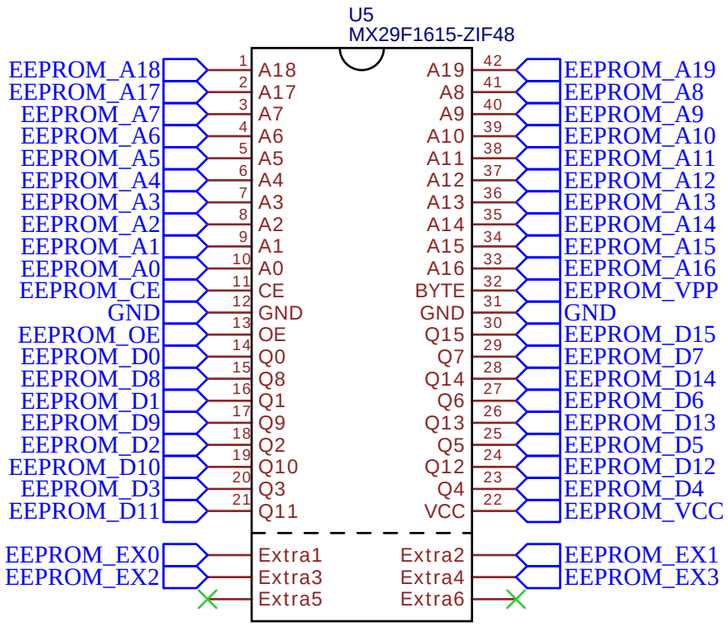
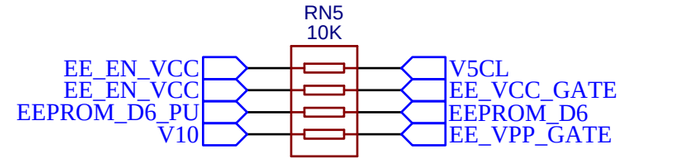
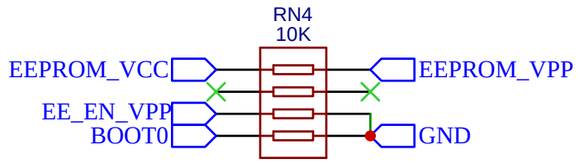
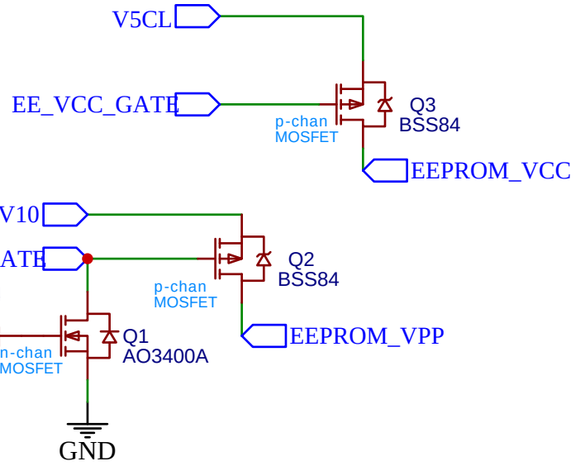
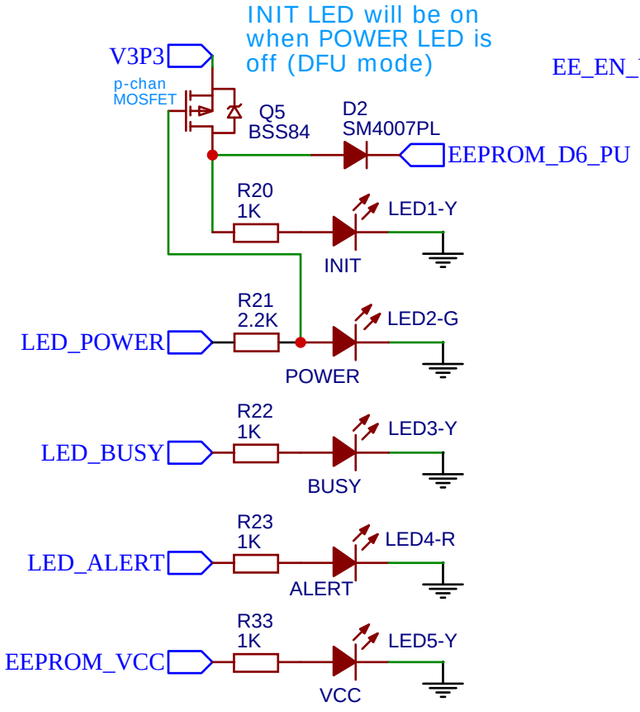
MX29F1615 Programming Header (ZIF-48 socket compatible)

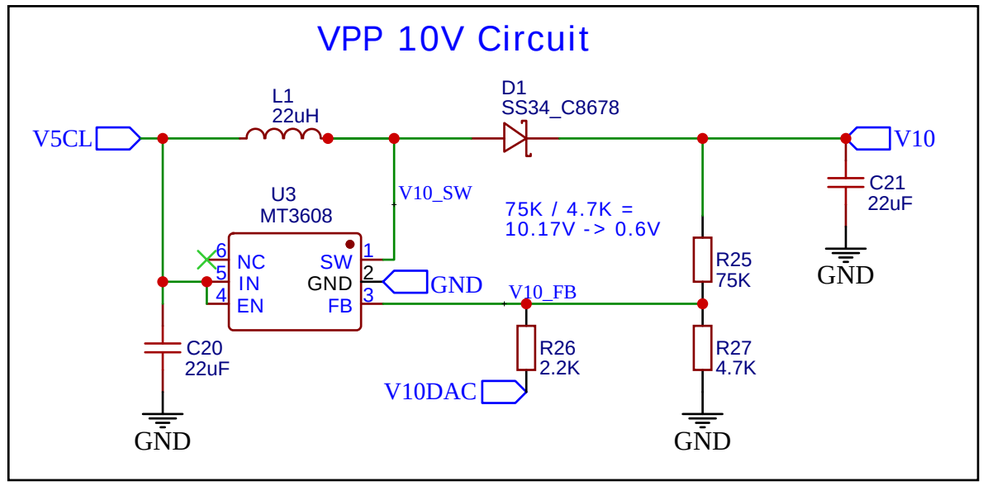


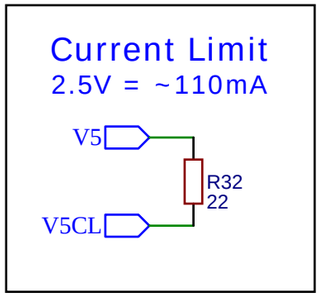


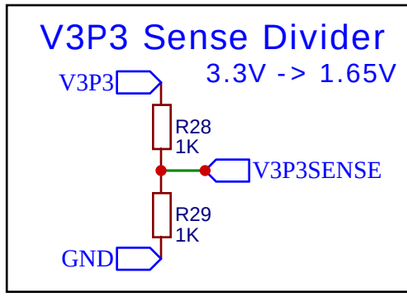


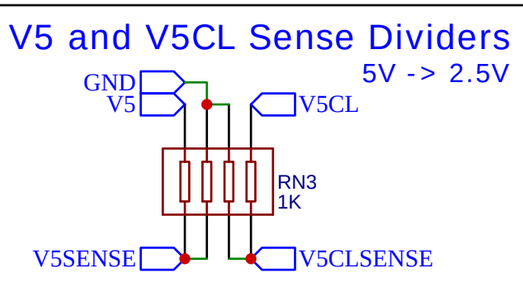


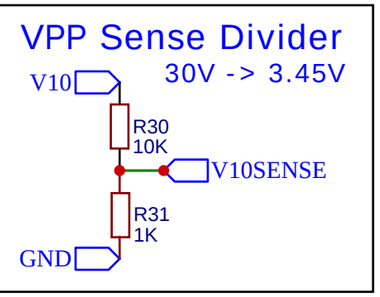












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