# Hardware

List of all the hardware I'm using and what I'm using it for.

Also has stuff of others that I want to keep track of.

# Mine

# Networking

- Xiaomi Redmi AX6S RB03 - Router flashed with OpenWRT Firmware update
- TP-Link Archer C7 v2 - Router, flashed with OpenWRT Firmware update
- TP-Link TD-W9980B - VDSL modem/router, flashed with OpenWRT (for W8980) Firmware update
- D-Link - DGS-1100-08 - Firmware update (B1 version)
- D-Link - DGS-1100-05 - Firmware update (B1 version)
- Zyxel VMG3625-T50B - ADSL2/VDSL2 modem/router - Firmware update
- TL-WN722N v2(?) - 2.4GHz b/g/n USB adapter, works well with pentesting tools

# Peripherals and Other

- 12000 BTU portable AC - Gree GPC12AL-K3NNA1A - Cause otherwise I'd be cooked alive in here during summer.
- Corsair XENEON 27QHD240 - 240Hz, 1440p, 27", OLED - Main screen Firmware update
- ASUS MG279Q - 144Hz, 1440p, 27", IPS - Secondary screen
- ACER XB270HAbprz - 144Hz, 1080p, 27", TN - Main screen for secondary PC
- Genius SW-J2.1 1200 - 2.1 speakers. They sound alright.
- Idobao x YMDK ID75 - Fancy ortholinear 75% mechanical keyboard with FOSS firmware FW
- A4TECH XL-750BK - Laser mouse with 1000Hz polling rate and 3600 DPI, good enough for my needs, keeping it until it dies, then it's P93s only.

- 2x A4TECH Bloody P93, 1x J95 - Laser mice with 1000Hz polling rate and 3000(up to 5K) DPI, good enough for my needs. Also has extensive macro support and RGB lights.
- 3x Steam Controller - the only controller that works without hassle on all OSs, especially Linux
- Wacom Intuos Pen Small (CTL-480)
- 2x Korad KA3005P - Lab PSU
- HyperX Cloud 2 - Headset - modified sound card to support USB-C instead of being soldered Firmware update
- Brother PT-D600 - Label printer Firmware update and software. Last 9 characters of serial number: C8Z952846 (Downloads and installs are locked behind it)
- FUNC KB-460 Cherry MX Blue - Mechanical keyboard
- HyperX Cloud Alpha - Buy HyperX Cloud 2 instead, the only advantage this has is detachable cable, but you need ear pads from the old ones and get no USB sound card
- Kindle Paperwhite 4 32GB - Jailbroken e-reader Firmware update Software updates KOReader(kindlepw2)
  - Install latest JB hotfix first!
  - ;log mrpi after installing mrpi and dropping new packages in the folder
- 55" IPS 4K LG TV (55UK6200PLA) VESA mounted with SQM3642
- Yamaha P-125 with LP-1 and L-125 stand (all black)
- KELLY's Madman 50 Black Green 29"(19) - A bike
- Wenger Pegasus 17" - Laptop Backpack
- Hyundai HD 170 - A hair dryer
- Xiaomi Mi Dual Driver Earphones (Type-C) Black - Wired earphones
- AlzaPower Q100 Quick Charge 3.0 Black - power brick
- AlzaPower Source 16000mAh Quick Charge 3.0 - powerbank
- Xiaomi Power Bank 16000mAh - old powerbank
- TS80 - Soldering iron OEM firmware Custom firmware(TS80_EN.hex)
- Mi Band 6 - Fitness tracker - Mostly for notifications and MPRIS control via KDEConnect
- PS3 Slim - jailbroken
- Valve Index - VR
- BlitzWolf BW-SHP6 15A - IoT 230V electric socket Custom firmware
- TUSON Basic 80W - Glue gun
- KOKKEDAL chairs from JYSK (3601324)

# PC

- Corsair 450D Obsidian Series
- X670 AORUS ELITE AX rev 1.0 - UEFI update
- MSI MEG Ai1300P PCIE5

- AMD Ryzen 5 7600X + Noctua NH-D15 AM4 with back fan swapped for NOCTUA NF-F12 PWM Chromax Black Swap which is 120mm instead of 140mm due to RAM clearance
- GIGABYTE GeForce RTX 4090 GAMING OC 24G
- Intel 760p 1TB - Firmware update
- ADATA XPG SX8200 PRO 1TB
- Apacer AS2280P4U Pro 2TB
- 3TB WD RED
- 2x 6TB WD BLUE
- 2x 8TB WD Elements Desktop
- Kingston FURY Beast Black 64GB (2x 32GB) DDR5 5600MHz - KF556C40BBK2-64
- STW-3125 - front panel with 3x 5Gbit USB-A, 1x USB-C and lots of cards slots
- VP1200ELCD - 720W UPS

# PC

- Corsair Carbide Series 200R
- Gigabyte GA-AX370-Gaming K5 - UEFI update
- Evga G3 750
- AMD Ryzen 5 3600 + NOCTUA NH-D14
- MSI Radeon RX 580 ARMOR 8G OC
- 525GB MX300
- 3TB WD RED (dying)
- G.SKILL 2x16GB DDR4 3200MHz CL14 Trident Z - F4-3200C14D-32GTZ

# Laptop

- Lenovo Legion 5 Pro (16ACH6H-82JQ) - UEFI update
- Ryzen 7 5800H
- Micron SO-DIMM 32GB KIT DDR4 2300MHz CL22 (2x16GB)
- NVIDIA GeForce RTX 3060
- AMD Radeon RX Vega 8
- 1TB SSD SKHynix HFS001TDE9X084N
- Intel AX200 802.11ax (replaced a buggy Realtek chip)
- 16" - 2560x1600@165

# Laptop

- DELL Vostro 3560 (0C05GV) - UEFI update
- i7-3612QM
- Corsair SO-DIMM 16GB KIT DDR3L 1600MHz CL9 Vengeance (2x8GB)
- AMD Radeon HD 7670M
- Intel(R) HD Graphics 4000
- 500GB 860 EVO
- 120GB 840 EVO
- Intel® Dual Band Wireless-AC 3160
- 15.6" - 1920x1080

# Phones & Tablets

- Samsung S5 mini (kminilte[G800F])
- Xperia Z (yuga[C6603])
- Xiaomi Redmi 3S (land)
- Xiaomi Mi 9T (davinci[128GB, EEA]) ROM update TWRP
- Xiaomi 12 (cupid)
- Lenovo Tab K10 (TB-X6C6F_EEA) - ROM update (arm64_bgN - 7z e the image and fastboot flash system it)

# Spares

- FLATRON W2243S - 60Hz overclockable to 74Hz, 1080p, TN, 22" ish
- Raspberry Pi 3 model B
- 2TB external drive (offline backups)
- another external drive (unused)
- ASRock B450 Pro4 - UEFI update
- Realtek RTL8852AE 802.11ax
- AMD Stock cooler - Wraith Stealth
- AK-PCCM2P-05 PCIe adapter
- MHPower MS9-12 (12V 9Ah)
- Corsair RM650
- MSI GeForce GTX 1080Ti GAMING 11G

# Puzzles

- 2x2 Meilong

- 2x2 YJ MGC
- 3x3 Meilong
- 3x3 Meilong 3C
- 3x3 Meilong M
- 3x3 MoYu RS3M 2020
- 4x4 Meilong
- 4x4 YJ YuSu V2 M
- 5x5 Meilong
- 5x5 QiYi MS - Logo removable by ethanol
- 6x6 YJ Yushi V2 M
- 7x7 YJ Yufu V2 M
- Megaminx YJ Yuhu V2 M
- Square-1 Meilong
- 3x3 Meilong Mirror (silver)
- 3x3 Qiyi Axis - Logo removable by ethanol (but ever so slightly damages the texture)
- 3x3 Qiyi Fisher - Logo removable by ethanol (but ever so slightly damages the texture)
- 3x3 Yj Windmill
- 4x4 Fanxin Axis
- 4x4 Fanxin Fisher
- 4x4 Fanxin Windmill

# 3D Printers

# Ender 3 V2

## Cura settings

Start G-code:

```
; Ender 3 Custom Start G-code
; Heat up the bed and extruder at the same time, saves time, the power supply can handle it
M104 S{material_print_temperature_layer_0} ; Start heating extruder
M140 S{material_bed_temperature_layer_0}   ; Start heating bed
M109 S{material_print_temperature_layer_0} ; Wait for extruder to reach temp before proceeding
M190 S{material_bed_temperature_layer_0}   ; Wait for bed to reach temp before proceeding
G92 E0                                     ; Reset Extruder
G28                                        ; Home all axes
;G29                                       ; Mesh leveling (takes a while)
;M500                                      ; Save mesh
M420 S1                                    ; Load saved mesh
```

```
G1 Z2.0 F3000                ; Move Z Axis up little to prevent scratching of Heat Bed
G1 X0.1 Y20 Z0.3 F5000.0     ; Move to start position
G1 X0.1 Y200.0 Z0.3 F1500.0 E15  ; Draw the first line
G1 X0.4 Y200.0 Z0.3 F5000.0  ; Move to side a little
G1 X0.4 Y20 Z0.3 F1500.0 E30  ; Draw the second line
G92 E0                       ; Reset Extruder
G1 Z2.0 F3000                ; Move Z Axis up little to prevent scratching of Heat Bed
G1 X5 Y20 Z0.3 F5000.0       ; Move over to prevent blob squish
```

End G-Code:

```
G91              ; Relative positioning
G1 E-2 F2700     ; Retract a bit
G1 E-2 Z0.2 F2400 ; Retract and raise Z
G1 X5 Y5 F3000   ; Wipe out
G1 Z10           ; Raise Z more
G90              ; Absolute positioning

G1 X0 Y{machine_depth} ; Present print
M106 S0          ; Turn-off fan
M104 S0          ; Turn-off hotend
M140 S0          ; Turn-off bed

M84 X Y E        ; Disable all steppers but Z
```

## Filament specific settings

- 2021-12 Ender 1.75mm filament
  - 60°C bed just doesn't stick, 70°C seems to cause warping, 65°~ seems to be the sweet spot
  - 190°C-200°C filament seems to have decent quality

# Printer itself

v4.2.2 mainboard

Upgrades:

- CR Touch
- 8x20mm replacement bed springs
- Landscape LCD mount

Tools:

- Feeler gauge

Firmware:

- Marlin 2.1.x-bugfix [2023-12-31]
  - Built using STM32F103RET6_creality environment, changes from stock noted below:
    - Configuration_adv.h
      - `PROBE_OFFSET_WIZARD` defined - *Add a Probe Z Offset calibration option to the LCD menu*
      - `BOOTSCREEN_TIMEOUT` changed from `3000` to `1500 - *(ms) Total Duration to display the boot screen(s)*
    - Configuration.h
      - `BLTOUCH` defined - *I own CR-Touch, so enable it*
      - `PROBE_MANUALLY` commented out - *Because we define `BLTOUCH`*
      - `USE_PROBE_FOR_Z_HOMING` defined - *Force the use of the probe for Z-axis homing*
      - `Z_MIN_PROBE_USES_Z_MIN_ENDSTOP_PIN` commented out - *Enable this option for a probe connected to the Z-MIN pin*
      - `Z_SAFE_HOMING` defined - *Use "Z Safe Homing" to avoid homing with a Z probe outside the bed area.*
      - `CUSTOM_MACHINE_NAME` changed from "Ender-3 V2" to "Former E3V2" - *Name displayed in the LCD "Ready" message and Info menu*
      - `NOZZLE_TO_PROBE_OFFSET` changed from `{ 10, 10, 0 }` to `{ -47, -8, -1.5 }` - *Measured by caliper and Z probe wizard and repeated print attempts*
      - `DWIN_MARLINUI_PORTRAIT` commented out
      - `DWIN_MARLINUI_LANDSCAPE` defined
      - `DEFAULT_AXIS_STEPS_PER_UNIT` changed from `{ 80, 80, 400, 93 }` to `{ 80, 80, 400, 100.5 }` - *Default Axis Steps Per Unit (linear=steps/mm, rotational=steps/°) - X, Y, Z [, I [, J [, K...]]], E0 [, E1[, E2...]]*
        - My esteps need to be more than default, measured by manually printing out 100mm of filament, measuring the actual printed out length as M and using it in the following equation: `(100/M) x E_Steps = New E-Steps`*
- Marlin 2.0.9.3
  - Built using STM32F103RET6_creality environment, changes from stock noted below:
    - Configuration_adv.h
      - LCD_SET_PROGRESS_MANUALLY defined
      - SHOW_REMAINING_TIME defined
      - PROBE_OFFSET_WIZARD defined
    - Configuration.h
      - BLTOUCH defined
      - PROBE_MANUALLY commented out
      - Z_MIN_PROBE_USES_Z_MIN_ENDSTOP_PIN commented out
      - USE_PROBE_FOR_Z_HOMING defined
      - AUTO_BED_LEVELING_BILINEAR defined - seems to be in stock? Check and remove if so

    - Z_SAFE_HOMING defined
    - CUSTOM_MACHINE_NAME set to have my nickname in it
    - Change NOZZLE_TO_PROBE_OFFSET to { -47, -8, 0 }
        - Varies wildly from someone else's measurement, why?

## Marlin build instructions

https://marlinfw.org/docs/basics/auto_build_marlin.html

https://marlinfw.org/docs/basics/install_platformio_vscode.html

https://marlinfw.org/meta/download/

Grab latest stable or latest bugfix (see what's usually recommended at the time of flash), unzip and open its config folder, read that to download configurations too.

Relevant config for the Ender is in `config/examples/Creality/Ender-3 V2/CrealityV422` - copy the two header files from the MarlinUI subfolder to the main firmware folder under Marlin subfolder, overwriting the defaults.

Screen FW needs to be in sync with printer FW, update from 4096 sector VFAT fs `mkfs.vfat -S 4096 /dev/sdg`, see Marlin config folder for instructions.

Printer FW won't update from a 4096 sector FS, use defaults (16k).

# Elegoo Saturn

On the way!

# Others

- Huawei HG622u - DSL modem/router
- LG TV 55UH605V - 4K TV. Has dumb dimming that can only be disabled via IN START menu(IR code 20DFDF20 - password is 0413).
- STRAFE RGB Mechanical Gaming Keyboard — Cherry MX Silent
- Brother MFC-9340CDW - Drivers
- HP Envy 15" bq100nc x360 - UEFI update
- Philips LatteGo EP3246/70

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