

Building Your Own Keyboard with Free Software

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SeaGL 2019



Who am I?

- 2012 Software developer
- 2013 First mech keeb
- 2018 Rabbit hole
- PDXKBC
 - Aug 2018 attend
 - Feb 2019 organizer
- 2019 Japanese TV



何に日本へ?
好きなモノが大好きYOU!

アキバに行くプログラマーYOU
オリジナルのキーボードを作りたい!



👁️ Overview

- Why?
- Keyboard bodies
 - case, plate, PCB
- Keyswitches
- Keycaps
- Hardware freedom
- Soldering
- Software freedom with QMK
- Questions



? Why?

- Comfort
- Customization
- Fashion
- Fun
- My keeps 📍





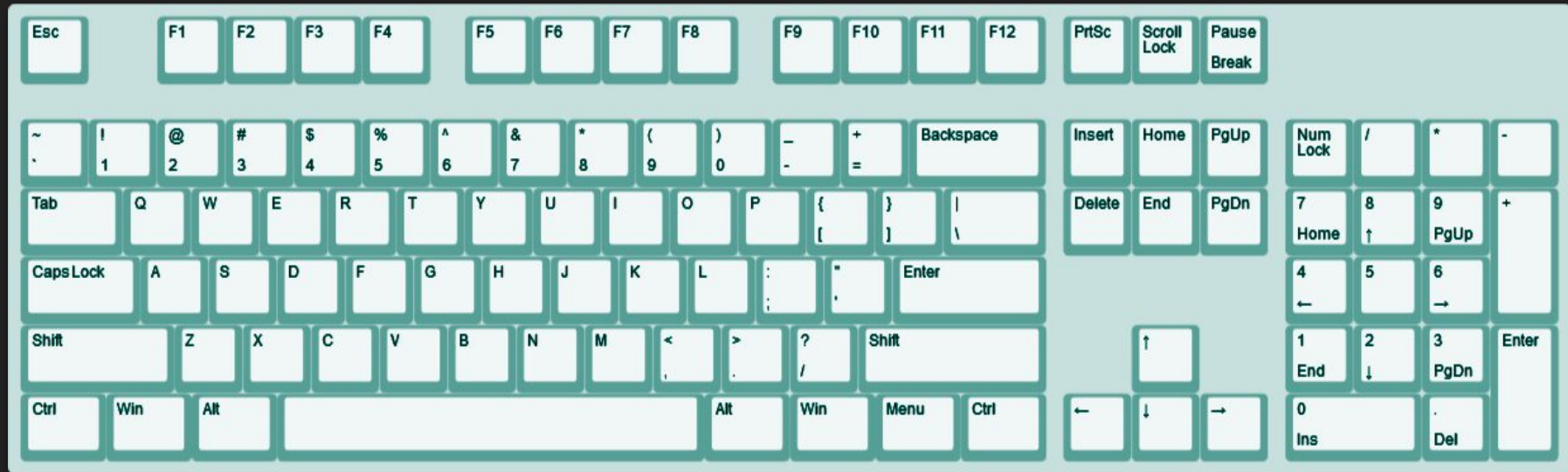
Keyboard bodies - case, plate, PCB

- Size (full, TKL, 75%, 65%, 60%, 40%)
- Shape (split, ortho)
- Sound
- Wired or wireless
- LEDs or not





Keyboard bodies: full size (100%)





Keyboard bodies - tenkeyless (TKL)





Keyboard bodies - 75%





Keyboard bodies - 65%





Keyboard bodies - 60%





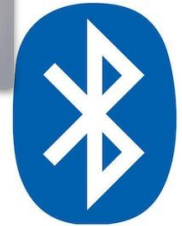
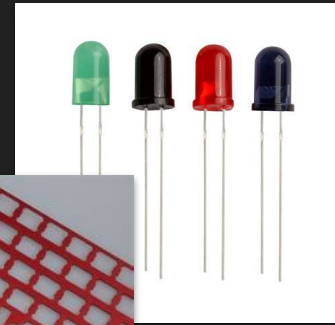
Keyboard bodies - Planck (40%)





Keyboard bodies - misc.

- Plate
- Sound
- Bluetooth
- LEDs





Keyswitches

- Types: Linear, Tactile, Clicky
- Mounts: PCB, plate
- Brands: Cherry, Kailh, Gateron

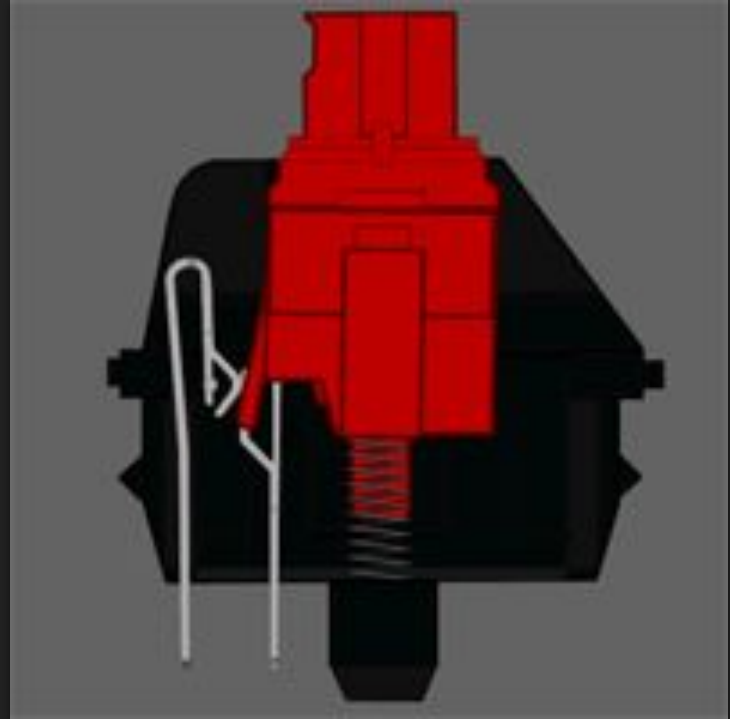


Clicky	Linear	Tactile	Linear	Linear	Linear	Clicky
55g	45g	45g	60g	35g	50g	80g



Keyswitches - Types

Linear





Keyswitches - Types

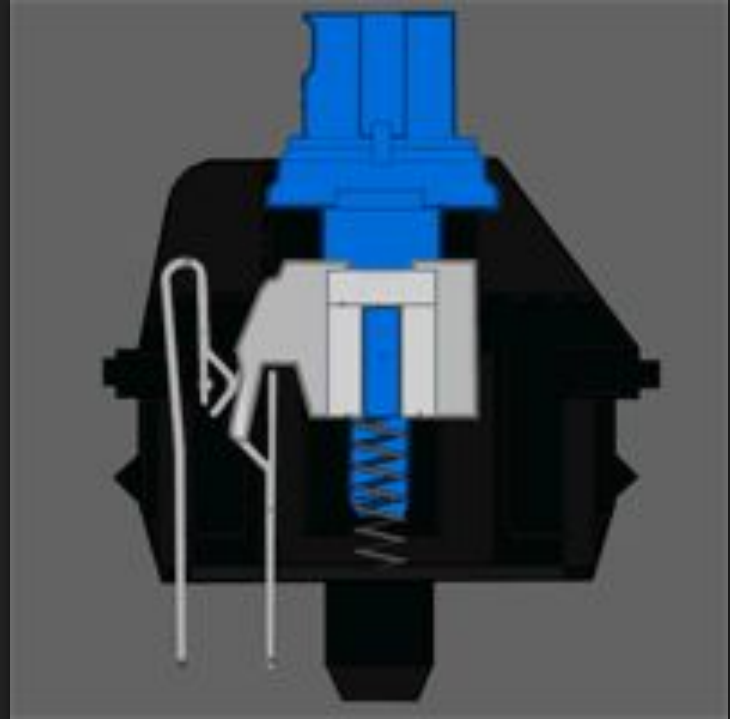
Tactile





Keyswitches - Types

Clicky





Keyswitches - Mounts

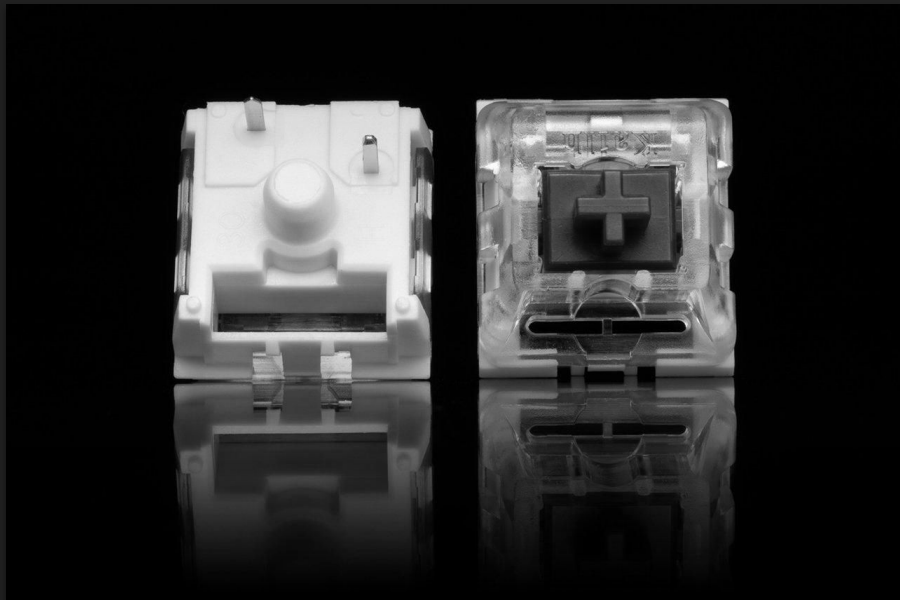
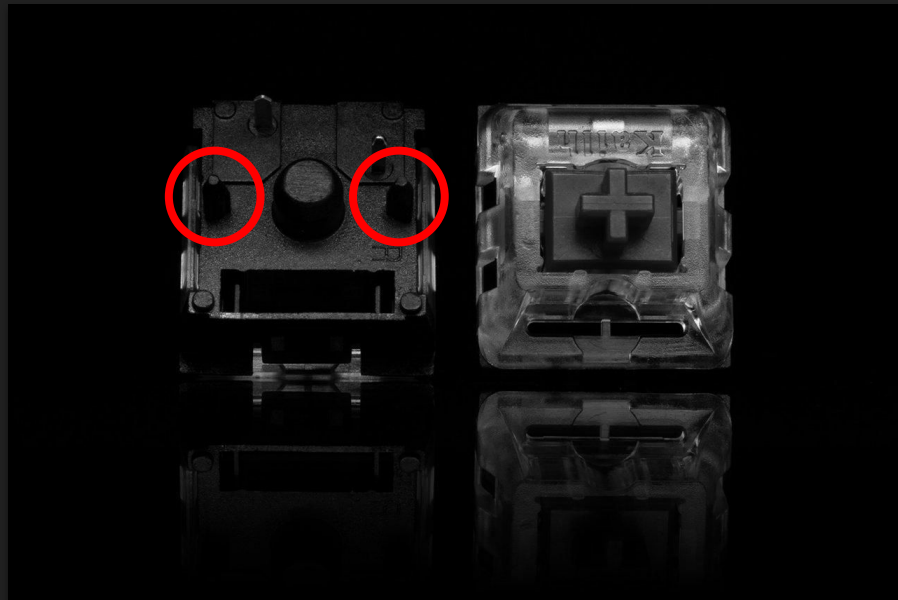


Plate mount



PCB mount



Keyswitches - Brands

- Cherry
 - Original
- Kailh
 - Unique new designs
- Gateron
 - The smoothest



■ Keycaps

- Shapes (profiles)
- Materials
- How to buy



Keycaps - DCS, Cherry, OEM (cylindrical)



ROW
(ANGLE)

5
(-6°)

1
(-1°)

2
(3°)

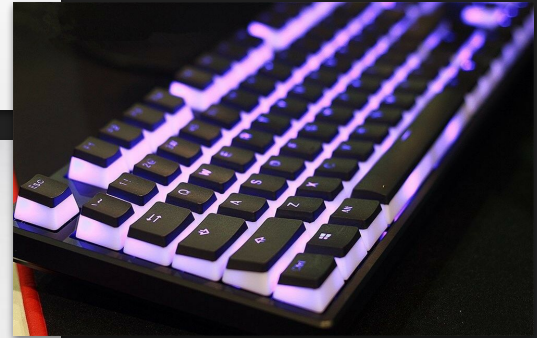
3
(7°)

4
(16°)

4
(16°)

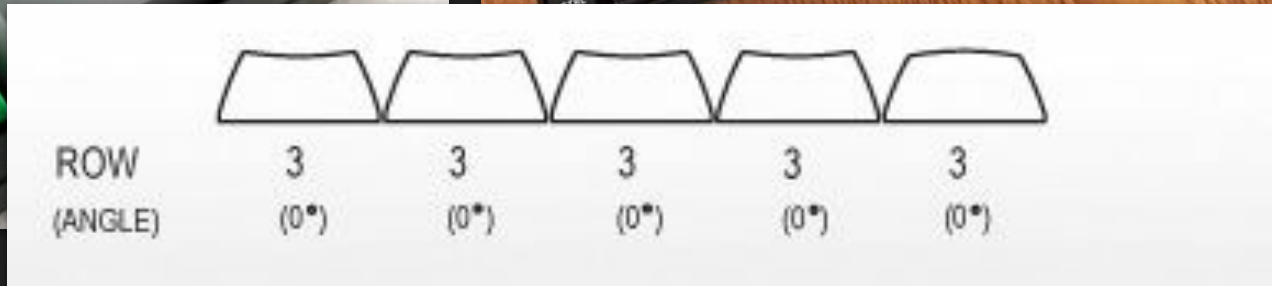
DCS

Cherry

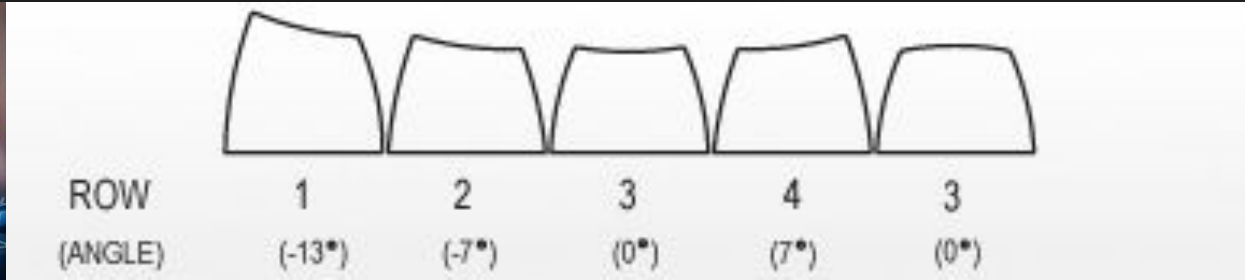
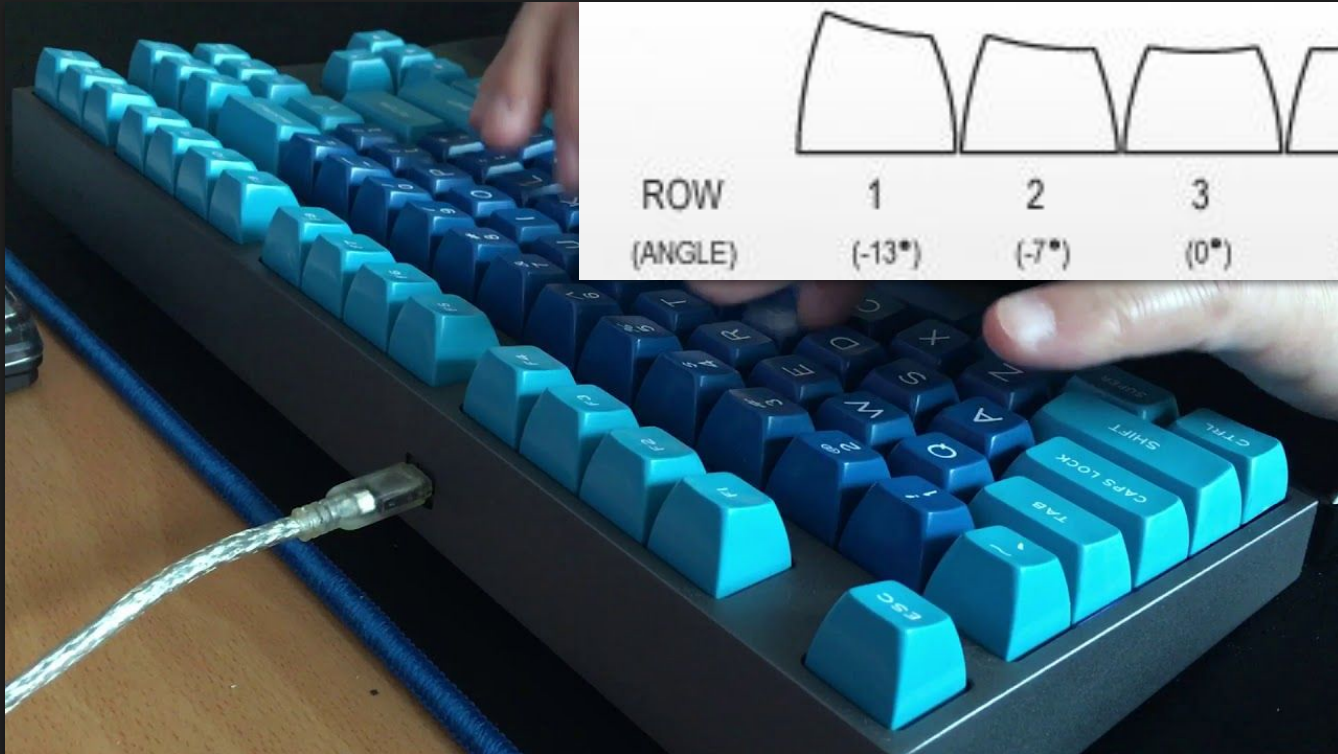


OEM

Keycaps - DSA (spherical)



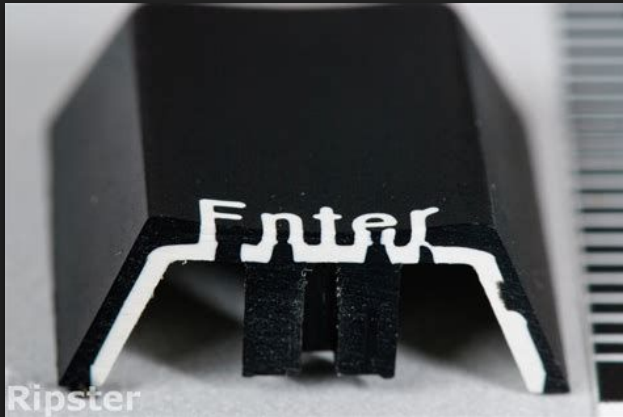
■ Keycaps - SA (spherical)



Also SA
R3 exists

■ Keycaps - Materials

- PBT vs ABS
- Texture and shine
- Double-shot vs dye-sub



💰 Keycaps - How to buy?

- PimpMyKeyboard.com
- NovelKeys.xyz
- TheKey.company
- KBDFans.com
- Group buy?

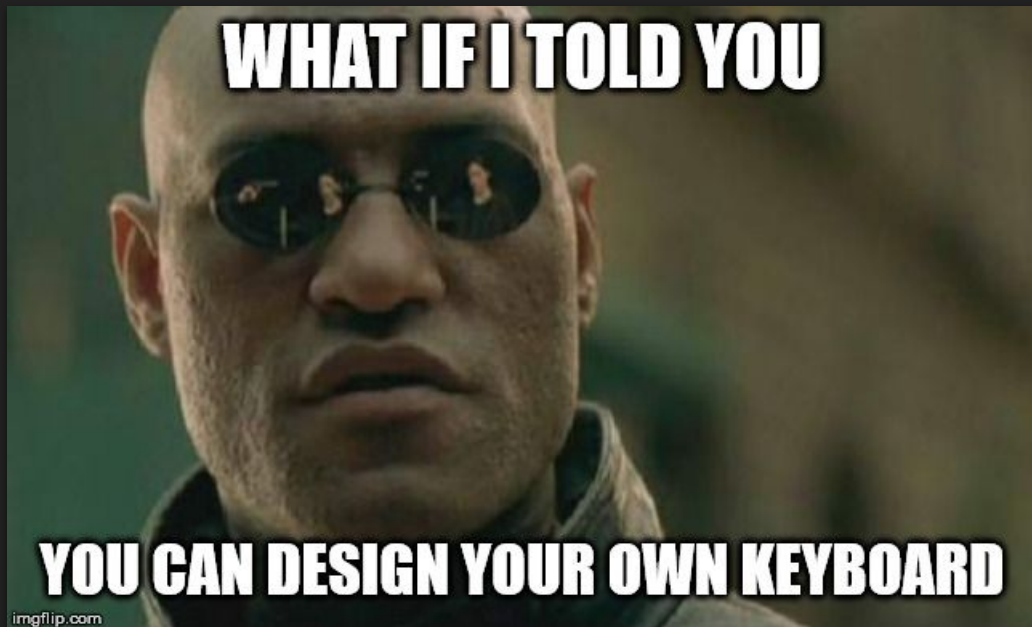
estimated delivery:
9 months from today



FREE

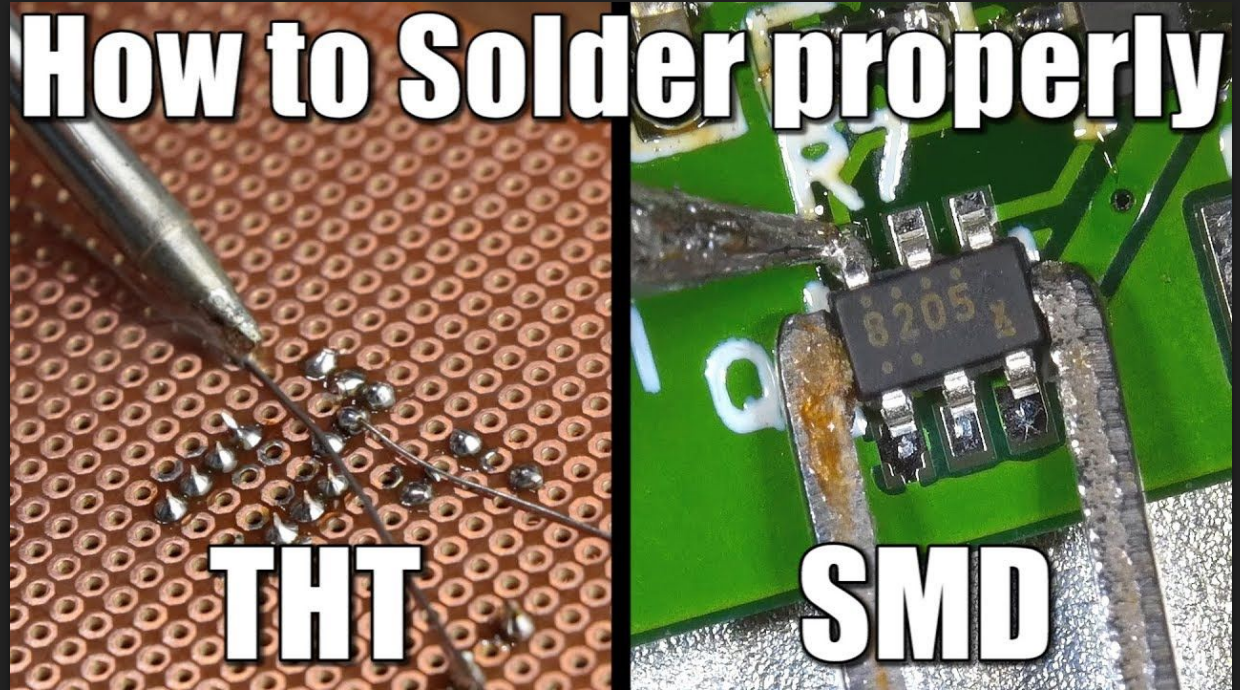
Hardware freedom

- Many choices
- Swap switches, keycaps
- Build your own
 - MIT licensed kits
- Design your own



🔥 Soldering

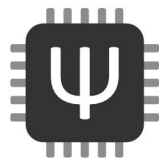
- YouTube tutorials
- Don't be scared
- Hacker space



FREE

Software freedom with QMK

- GPL2, GPL3, Modified BSD
- Supremely configurable
- Custom C code or web UI
- On GitHub



Powered by
QMK Firmware

LAYER: KEYMAP: GMK Olivia

A screenshot of the QMK web interface showing a keyboard layout for the GMK Olivia keyboard. The interface includes a layer selection dropdown (set to 'KEYMAP'), a keyboard layout with 87 keys, and a 'KEYCODES:' section at the bottom. The keyboard layout is a standard QWERTY layout with various function keys and modifiers. The keys are color-coded: orange for Esc, space, and enter; dark grey for most alphanumeric keys; and light grey for function and modifier keys. The right side of the keyboard has three columns of keys: Print Screen, Scroll Lock, Pause; Insert, Home, Page Up; Del, End, Page Down; an arrow key; and left, down, right arrow keys. A green trash icon is visible in the bottom left corner of the interface.

KEYCODES:

87 Keys



Next Steps

- Build/buy a keyboard



ergodox-ez.com

PDXKBC.com
Macro Pad Kit

Anne Pro 2 (Bluetooth)



Ducky Miya

? Questions

- mockbrian.com
 - I have blog posts about keyboards
- [@wavebeem](https://twitter.com/wavebeem) on Twitter
 - I post about keyboards, often with the hashtag **#keep**
- pdxkbc.com
 - Macro pad links
 - Discord link

