

https://altbier.us/ch552g/Intro_to_the_CH552G_Microcontroller.pdf

RGB micropad 3 keys 1 rotary encoder

RGB micropad with three buttons and rotary encoder based on CH552G

https://github.com/eccherda/ch552g_mini_keyboard/

<https://hackaday.io/project/189914-rgb-macropad-custom-firmware>

https://github.com/biemster/3keys_1knob

fork with hid sending (which somehow doesn't work)

https://github.com/mgrenonville/3keys_1knob/tree/serial

fork with ability to send sequence of keys (with different eeprom config)

<https://github.com/MrGeorgeK55/Macropad-3-keys-1-knob>

flashing tools

<https://github.com/MarsTechHAN/ch552tool>

<https://github.com/rgwan/librech551>

<https://github.com/frank-zago/isp55e0> - can read and write flash data

usb original

```
[Thu Dec 12 11:24:45 2024] usb 3-3.3.4.4: new full-speed USB device number 28 using xhci_hcd
[Thu Dec 12 11:24:45 2024] usb 3-3.3.4.4: New USB device found, idVendor=1189, idProduct=8890, bo
[Thu Dec 12 11:24:45 2024] usb 3-3.3.4.4: New USB device strings: Mfr=0, Product=0, SerialNumber=
[Thu Dec 12 11:24:45 2024] input: HID 1189:8890 as /devices/pci0000:00/0000:00:14.0/usb3/3-3/3-3.
[Thu Dec 12 11:24:46 2024] hid-generic 0003:1189:8890.0022: input,hidraw6: USB HID v1.11 Keyboard
[Thu Dec 12 11:24:46 2024] usbhid 3-3.3.4.4:1.1: couldn't find an input interrupt endpoint
[Thu Dec 12 11:24:46 2024] input: HID 1189:8890 Keyboard as /devices/pci0000:00/0000:00:14.0/usb3
[Thu Dec 12 11:24:46 2024] hid-generic 0003:1189:8890.0023: input,hidraw7: USB HID v1.00 Keyboard
[Thu Dec 12 11:24:46 2024] input: HID 1189:8890 as /devices/pci0000:00/0000:00:14.0/usb3/3-3/3-3.
[Thu Dec 12 11:24:46 2024] hid-generic 0003:1189:8890.0024: input,hidraw8: USB HID v1.10 Mouse [H
```

after shoring unpopulated pad on bottom of board and plugging back in to enter bootloader mode

```
[Thu Dec 12 11:31:40 2024] usb 3-3.3.4.4: new full-speed USB device number 29 using xhci_hcd
[Thu Dec 12 11:31:40 2024] usb 3-3.3.4.4: New USB device found, idVendor=4348, idProduct=55e0, bo
[Thu Dec 12 11:31:40 2024] usb 3-3.3.4.4: New USB device strings: Mfr=0, Product=0, SerialNumber=
```

Arduino

After compiling and flashing doesn't work with error because of permissions to device in bootloader mode.

Re-run flashing command with sudo:

```
dpavlin@nuc:~$ sudo /home/dpavlin/.arduino15/packages/CH55xDuino/tools/MCS51Tools/2023.10.10/linux
```

```
-----  
CH55x Programmer by Deqing  
Updated on: 2023/10/10  
-----
```

```
usbRertySeconds 2  
target: CH552  
config bytes: 3  
Load file as hex  
  Loaded 12673 bytes between: 0000 to 31CE  
DeviceVersion of CH55x: 2.40  
MCU ID: 52 11  
Found Device CH552  
Bootloader: 2.4.0  
ID: 4E 8F 51 BC  
XOR Mask: EA EA EA EA EA EA EA 3C  
Write 12751 bytes from bin file.
```

```
.....  
Write complete!!!  
Verify chip  
.....  
Verify complete!!!  
-----
```

```
Reset OK
```

```
dpavlin@nuc:~$
```

```
[Thu Dec 12 11:36:59 2024] usb 3-3.3.4.4: USB disconnect, device number 29  
[Thu Dec 12 11:36:59 2024] usb 3-3.3.4.4: new full-speed USB device number 30 using xhci_hcd  
[Thu Dec 12 11:36:59 2024] usb 3-3.3.4.4: New USB device found, idVendor=1209, idProduct=c55d, bcdDevice=0000  
[Thu Dec 12 11:36:59 2024] usb 3-3.3.4.4: New USB device strings: Mfr=1, Product=2, SerialNumber=0  
[Thu Dec 12 11:36:59 2024] usb 3-3.3.4.4: Product: CH55xduino  
[Thu Dec 12 11:36:59 2024] usb 3-3.3.4.4: Manufacturer: Deqing  
[Thu Dec 12 11:36:59 2024] usb 3-3.3.4.4: SerialNumber: CH55x kbd mos  
[Thu Dec 12 11:36:59 2024] input: Deqing CH55xduino Keyboard as /devices/pci0000:00/0000:00:14.0/usb3/3-3.3.4.4/input3-3.3.4.4-0/input0  
[Thu Dec 12 11:36:59 2024] input: Deqing CH55xduino Mouse as /devices/pci0000:00/0000:00:14.0/usb3/3-3.3.4.4/input3-3.3.4.4-0/input1  
[Thu Dec 12 11:36:59 2024] hid-generic 0003:1209:C55D.0025: input,hidraw6: USB HID v1.10 Keyboard [Deqing CH55xduino] on usb-Linux_00:14.0-3.3.4.4  
[Thu Dec 12 14:40:42 2024] input: WH-1000XM5 (AVRCP) as /devices/virtual/input/input75
```

better yet, copy udev rules

```
dpavlin@nuc:~/arduino15/packages/CH55xDuino/tools/MCS51Tools/2023.10.10$ sudo cp -v linux/99-ch55xbl.rules /etc/udev/rules.d/99-ch55xbl.rules
```

```
root@nuc:~# udevadm control --reload-rules && udevadm trigger
```