

# Institut für Telenautik

Werkstatt Mixed Media / Netzkunst

<https://telenautik.de>

<https://42loop.de/garage>

<https://code.hfbk.net/42loop>

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usually live at R240, Lerchenfeld

# difference between computer & microcontroller

**computer usually has**

**operating system(OS), multi tasking !**

**graphical user interface(GUI)**

**input / output:**

**keyboard, (mouse)**

**screen**

**network**

**audio**

**usb / (bluetooth)**

**raspberry pi: SD Card slot**

**raspberry pi: General Purpose Input/Output (GPIO)**

**raspberry pi: connector for raspicam**

## **disclaimer / addendum**

**- supply chain problems !**

**-- <http://rpilocator.com>**

**- beware: advertisement:**

**-- tutorials and sensors:**

**<https://funduino.de/>**

**- open source software:**

**<https://42loop.hfbk-hamburg.de/garage/366>**

# Philosophy of the Raspberry Platform

## about philosophy

**<https://raspberrypi.org>**

**- open source (almost)**

**- RaspberryPi Foundation is a charity**

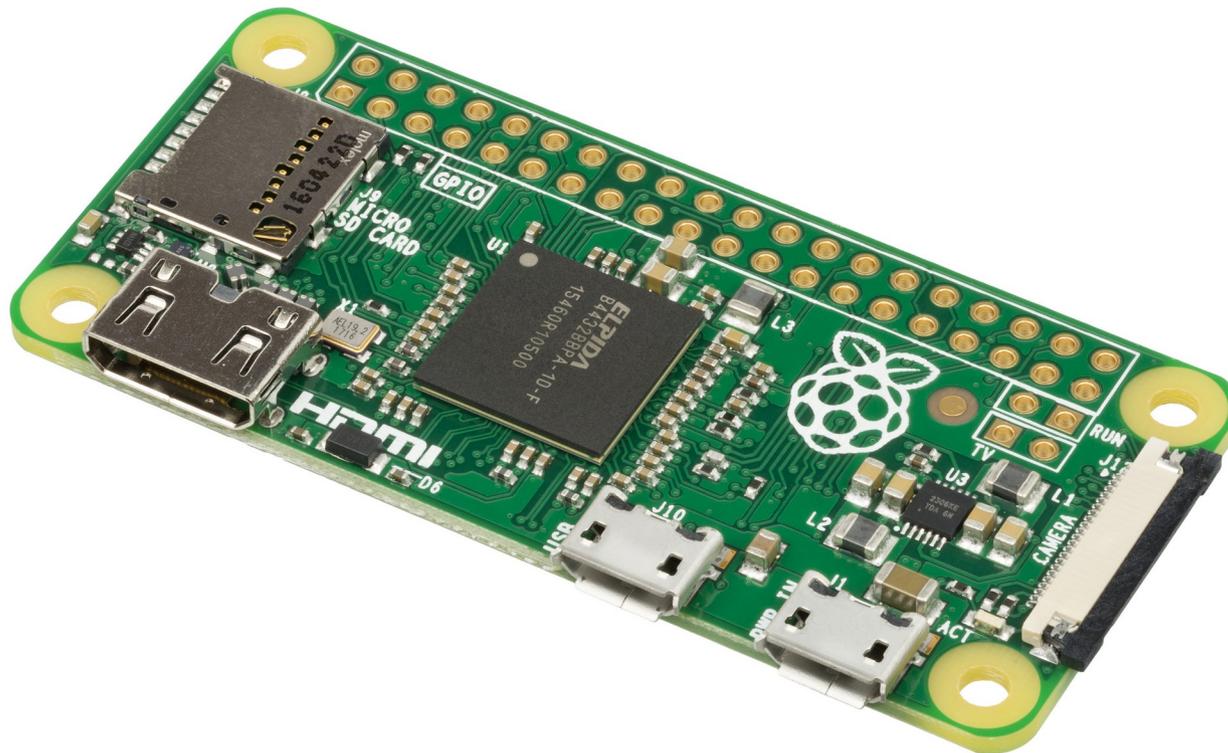
-- manufactured in UK

**- aim: provide cheap computers to everyone,**

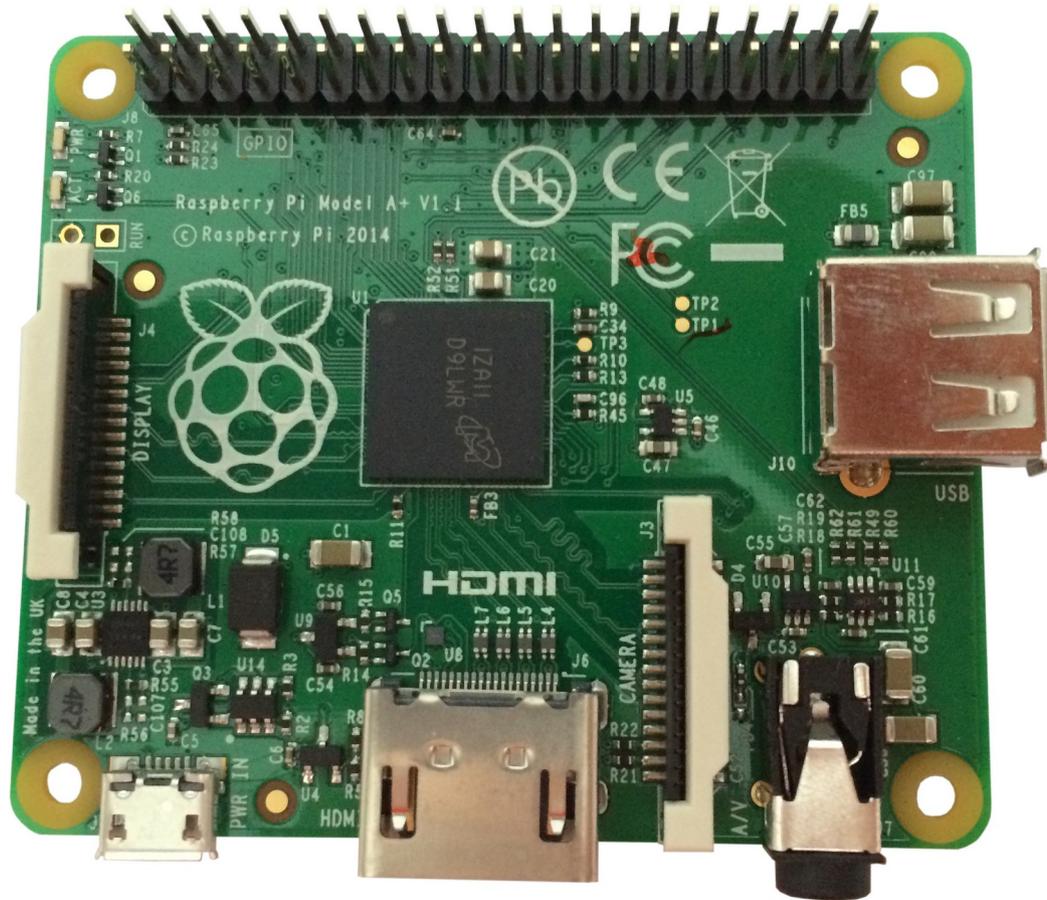
-- even in Africa or so: tv-output, battery power

**alternatives: odroid, ...**

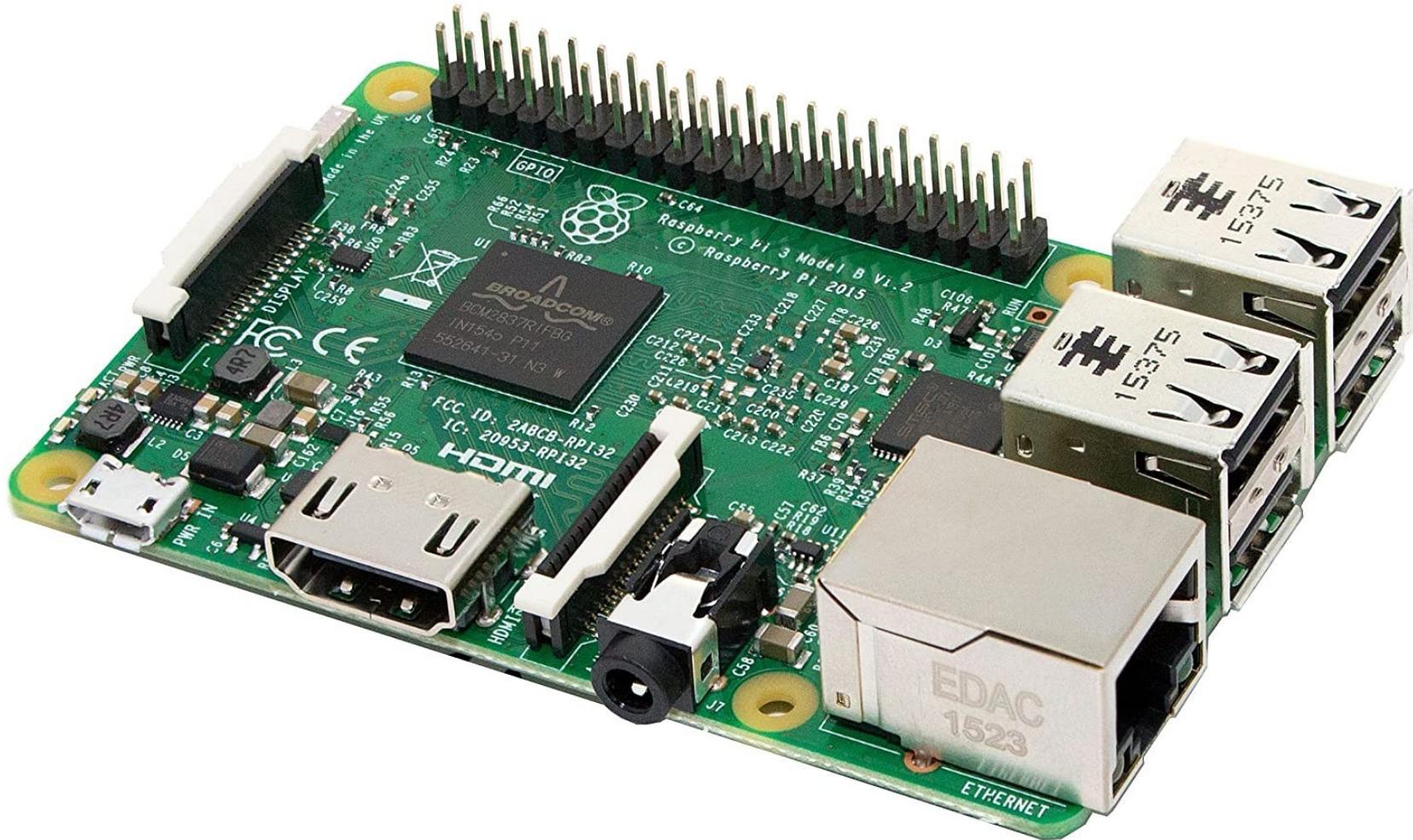
# Raspberry ZeroW



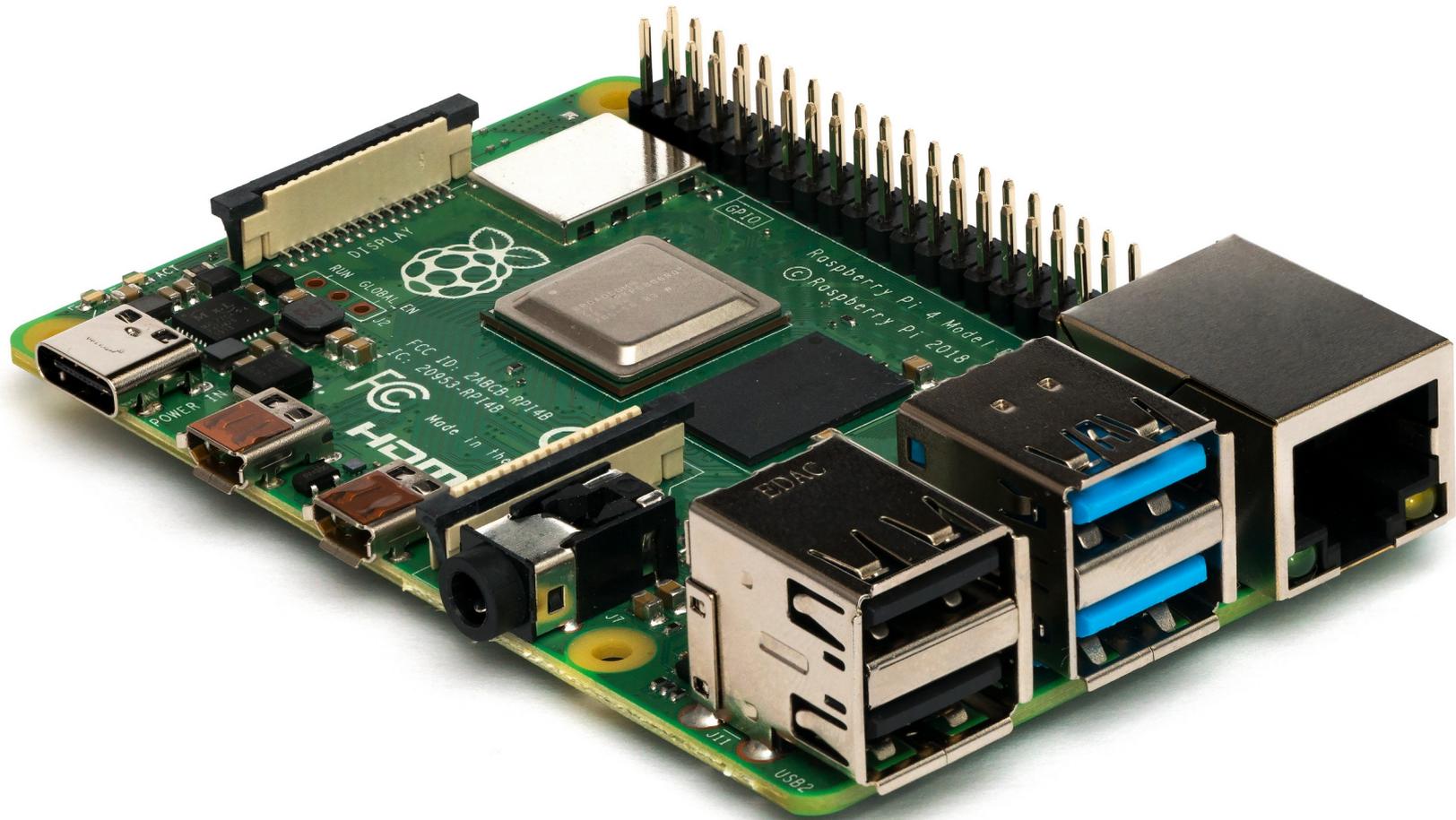
# Raspberry Pi 3 A+



# Raspberry 3B+



# Raspberry 4



# what to buy to get started:

**raspberry**

**sd-card (maybe with noobs preinstalled)**

**micro-usb power supply (usb-c for rpi4)**

5V, 2.5A for Raspberry 3

**(micro hdmi to hdmi adaptor for rpi4)**

**case (optional)**

# get an Operating System

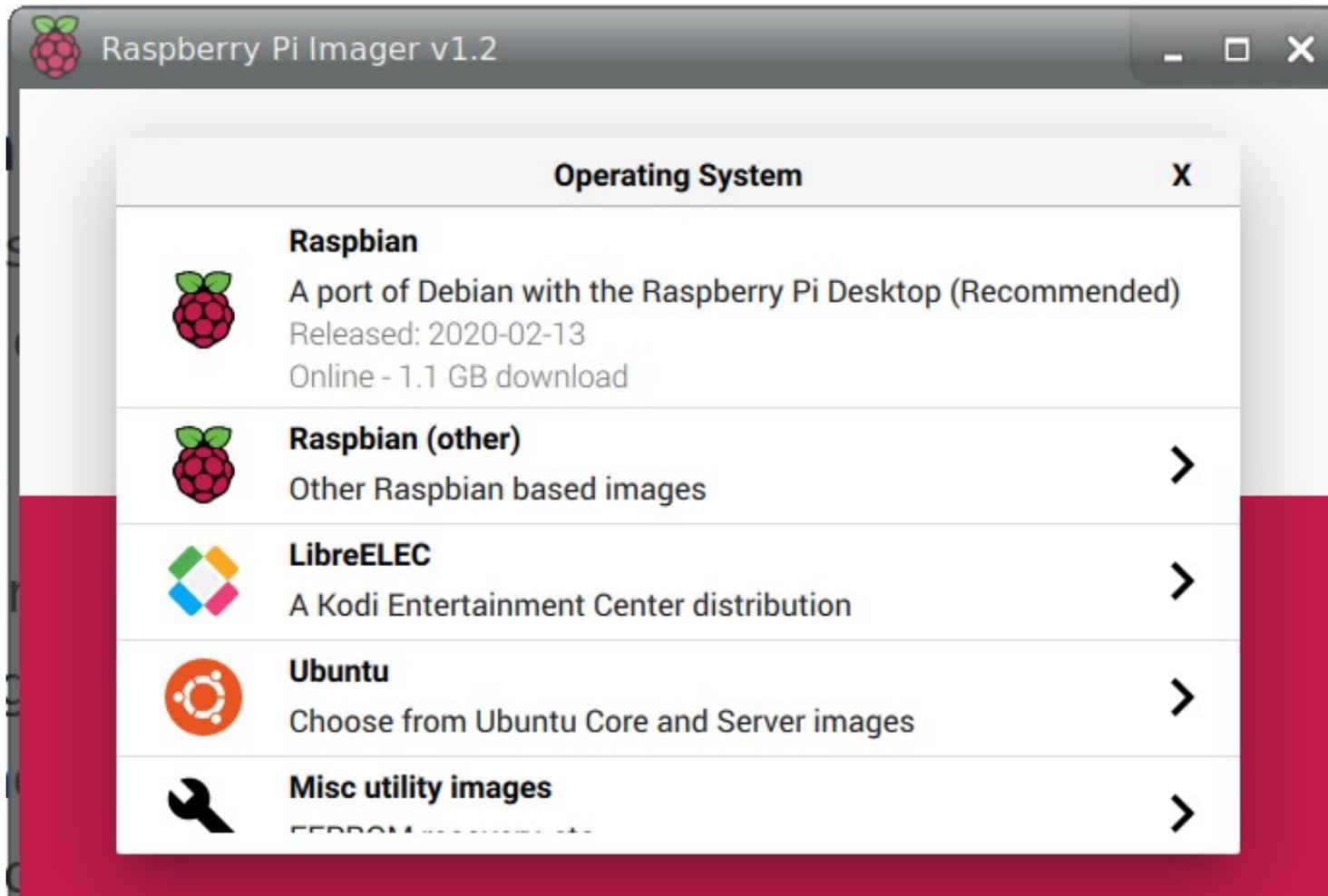
## - **download a current 'Raspbian' image from**

<https://www.raspberrypi.org/software>

[an image is a complete OS to put onto an SD-Card]

- **or**: download the raspberrypi imager for your platform
- put SD-Card into your Computer / SD-Adaptor
- start the imager and follow instructions to
  - download and copy the download to the SD-Card
  - copy the .img file to the SD-Card
- (be patient, this will take some time)
- eject SD-Card

# alternative OS (maybe you want a media center ?)



# Start it up (RaspiOS):

- **insert SD Card**
  - **plug in HDMI cable !**
  - **connect to power supply**
- will start into regular Desktop Environment**
- **configure Country/Language/Timezone**
  - **configure Screen settings**
  - **configure Wifi**
  - **update Operating System**
  - **restart**

**Congratulations !**

**You now have a fully functional Desktop  
Computer for [~45€]**

# besides 'fancy Desktops'

**use ssh: 'secure shell'**

**ssh pi@1.2.3.4 (default password: 'raspberrry')**

**additional software:**

**- e.g. sudo apt install omxplayer**

# Use Cases

**most popular:**

- **OSMC based media player for use in video presentations (no buttons/logos, autostart, loopable, synchronizable, extendable)**

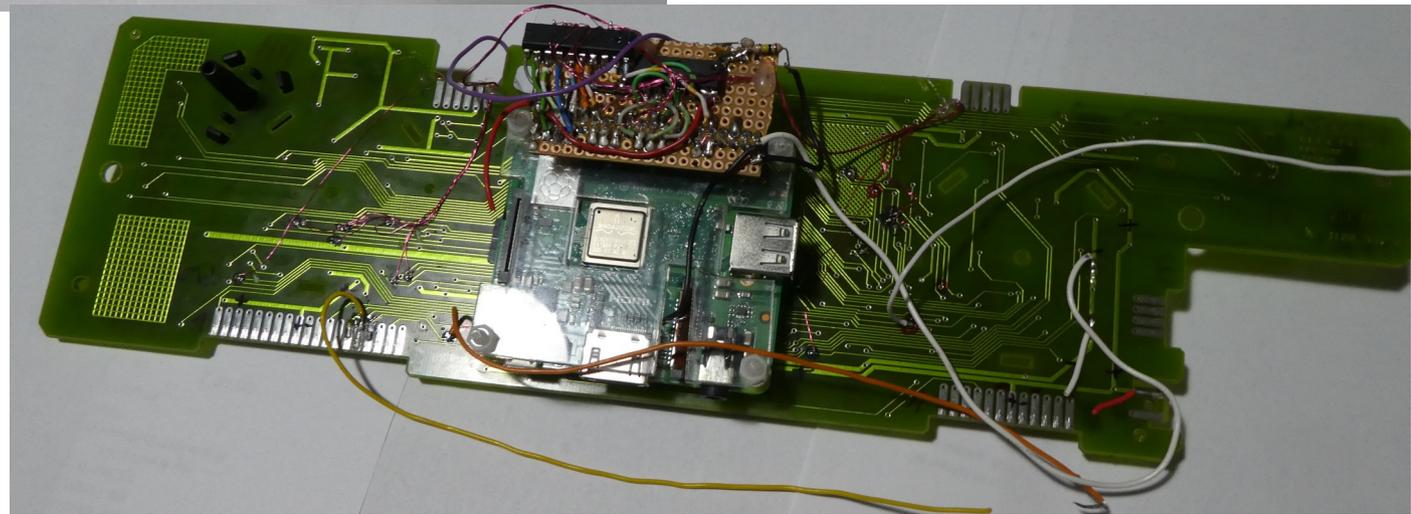
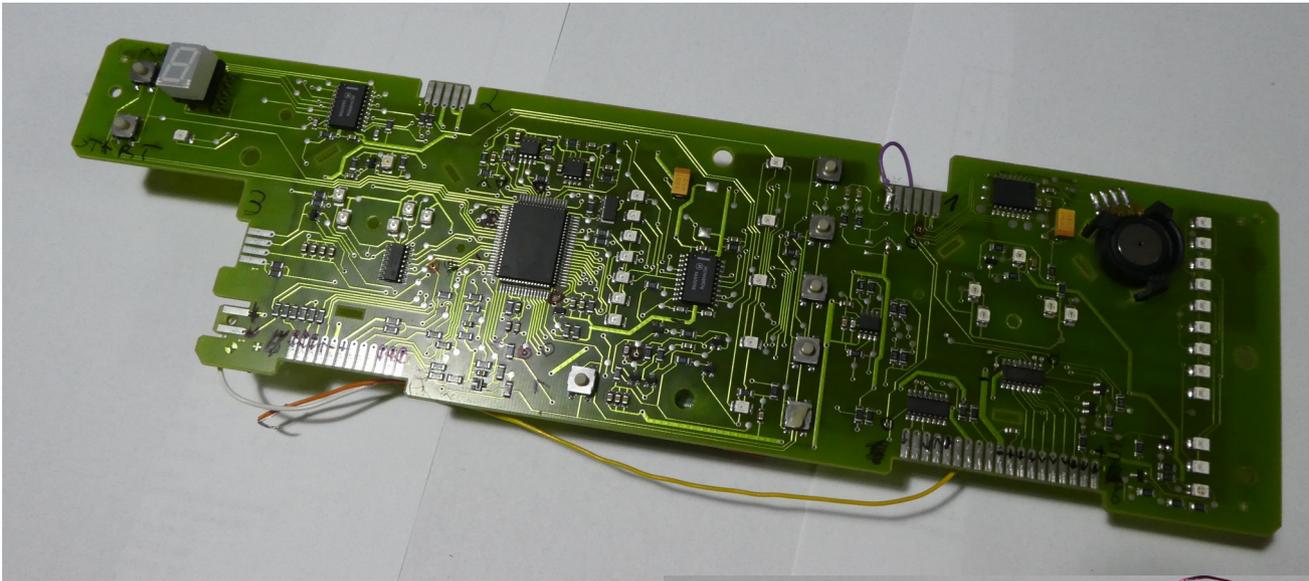
# use cases: infoprinter



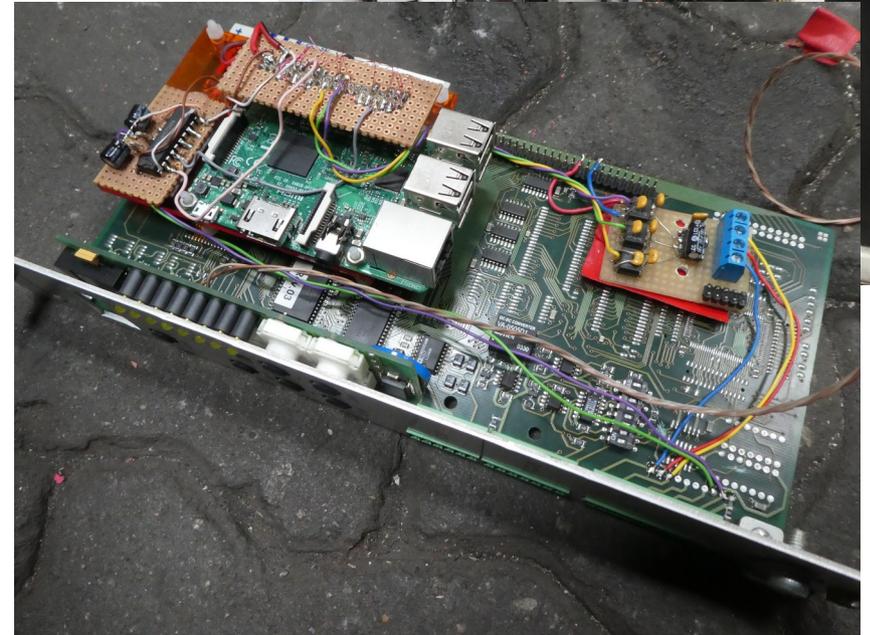
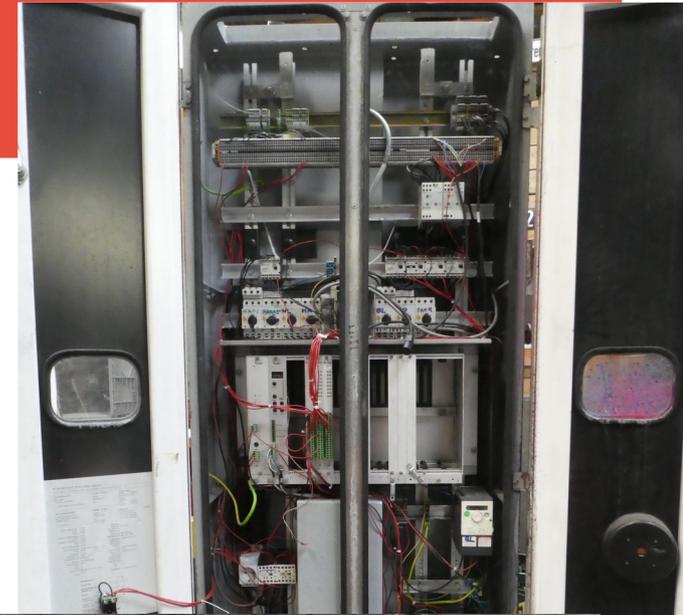
# use cases: infoscreens



# use cases: machinery control [washing machine]



# use cases: car wash control [with android app]



# use cases:utilities [SD Card Copier]

