

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

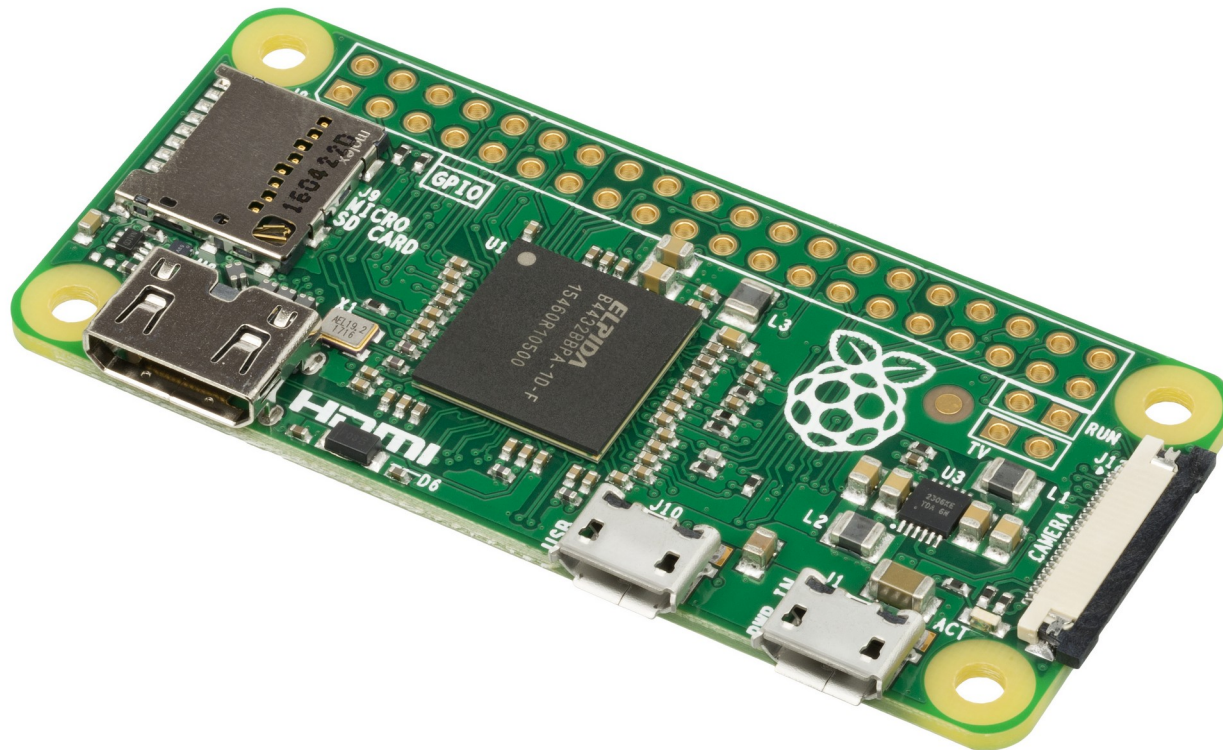
-- manufactured in UK

- aim: provide cheap computers to everyone,

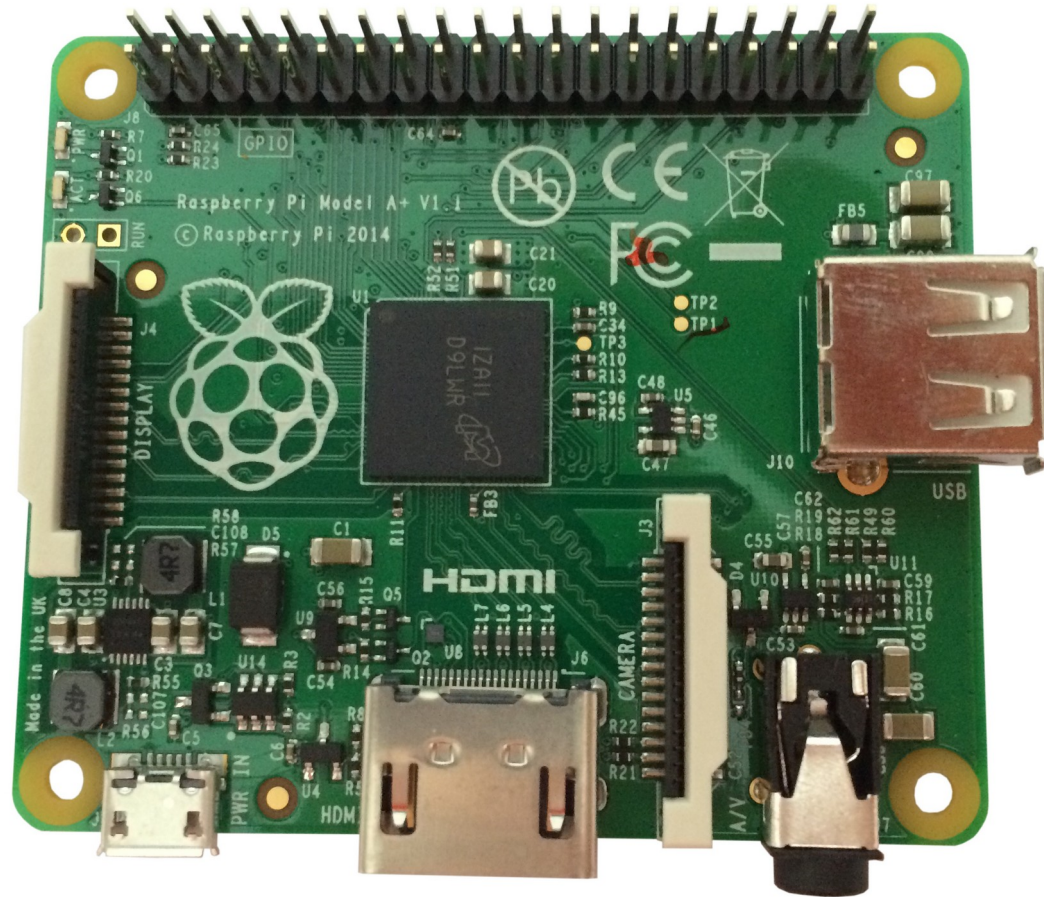
-- even in Africa or so: tv-output, battery power

alternatives: odroid, ...

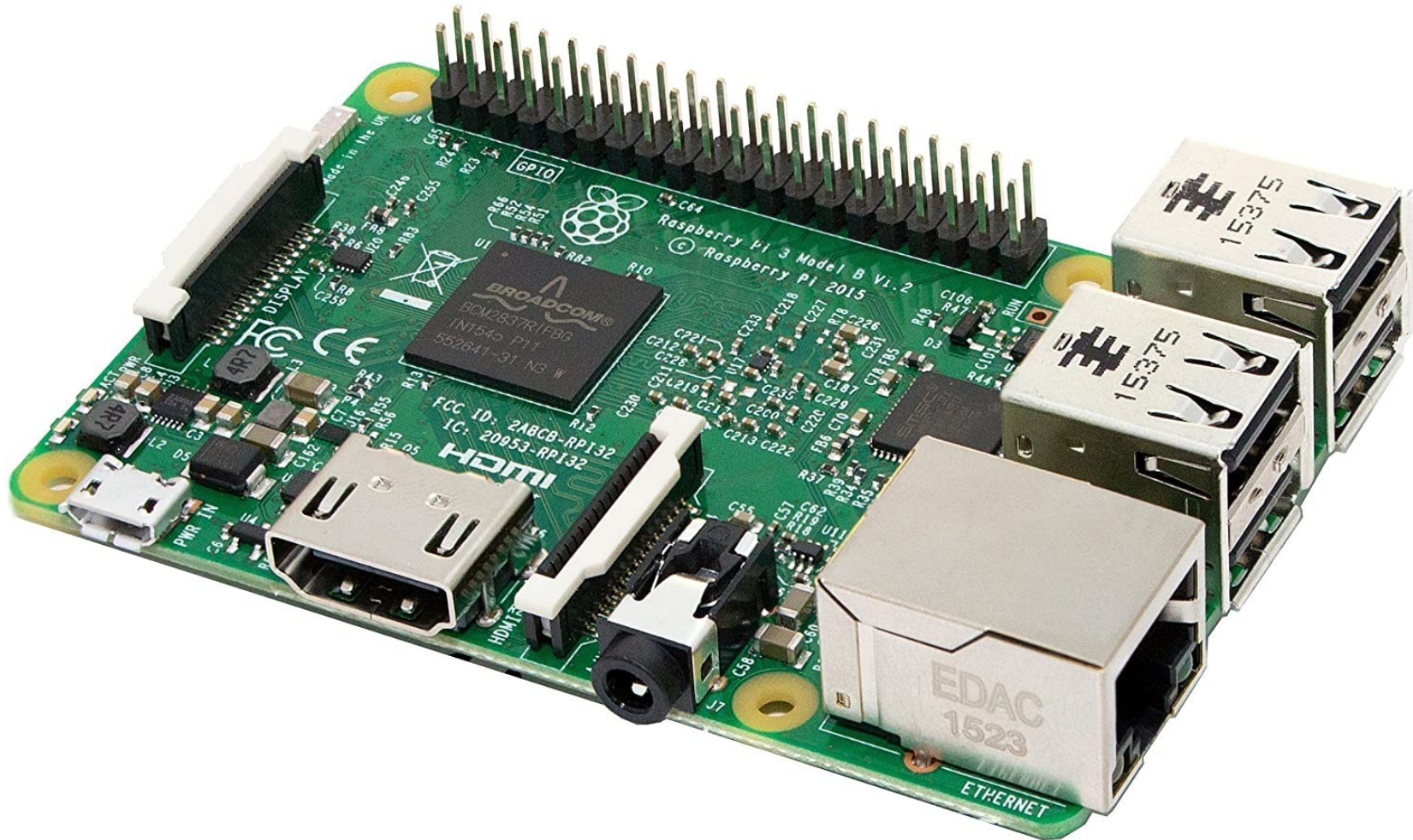
Raspberry ZeroW



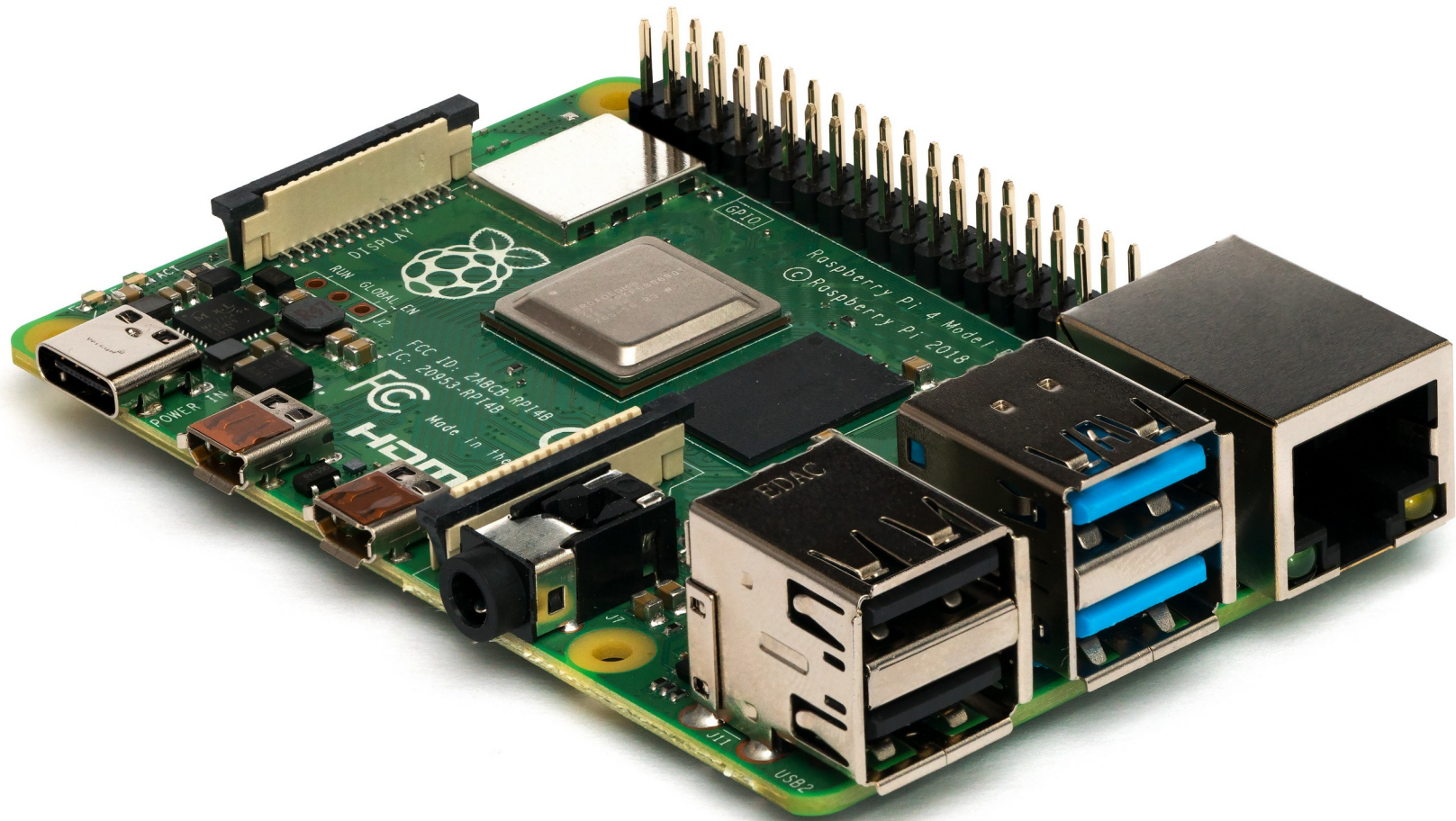
Raspberry Pi 3 A+



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

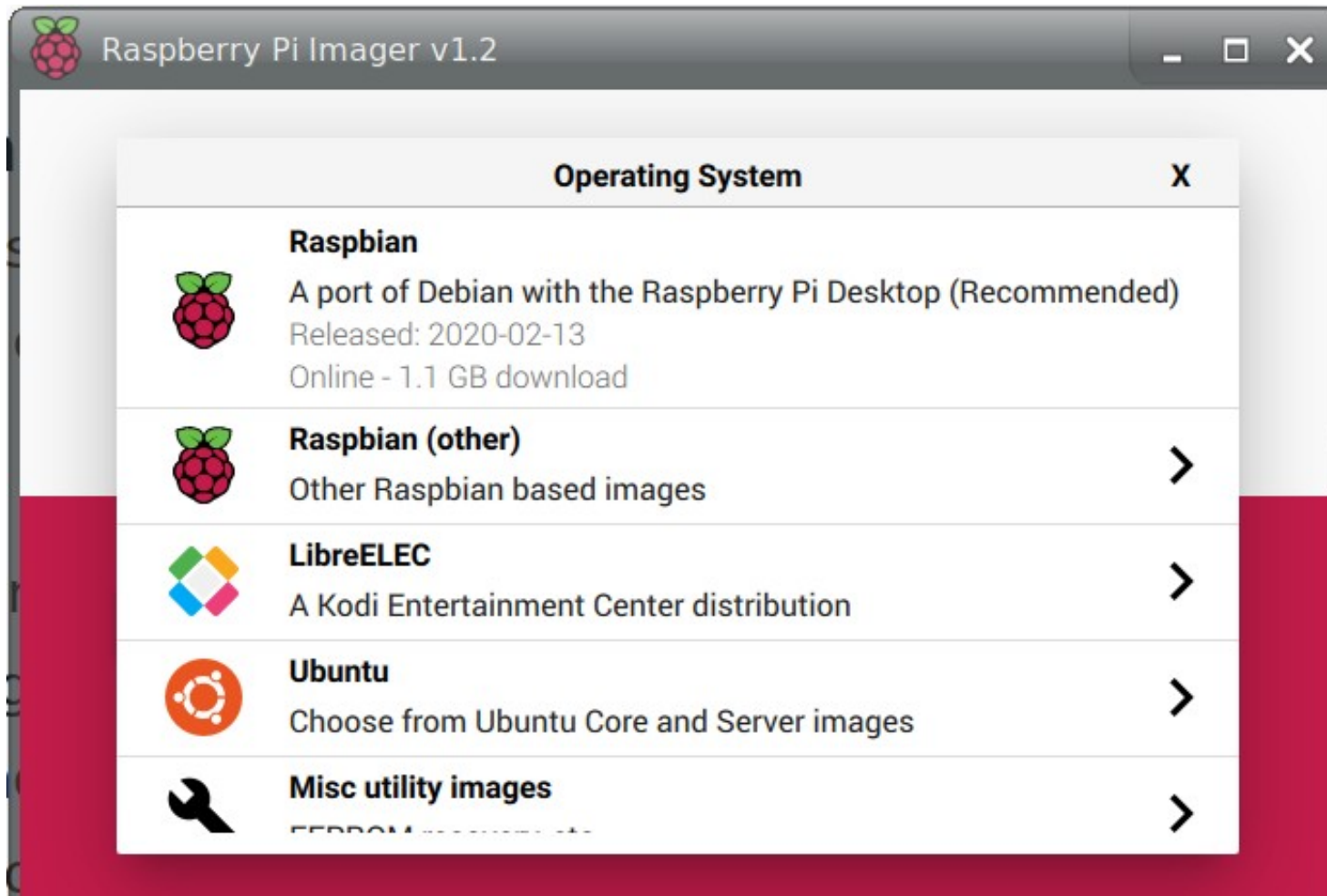
- **download a current 'Raspbian' image from**

<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)**

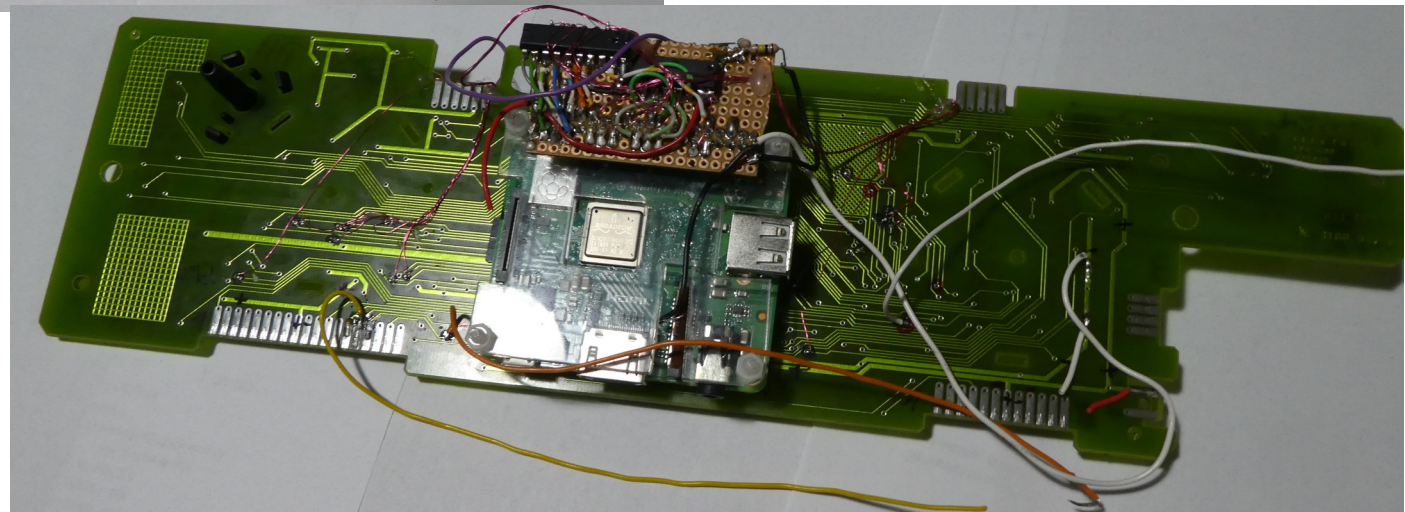
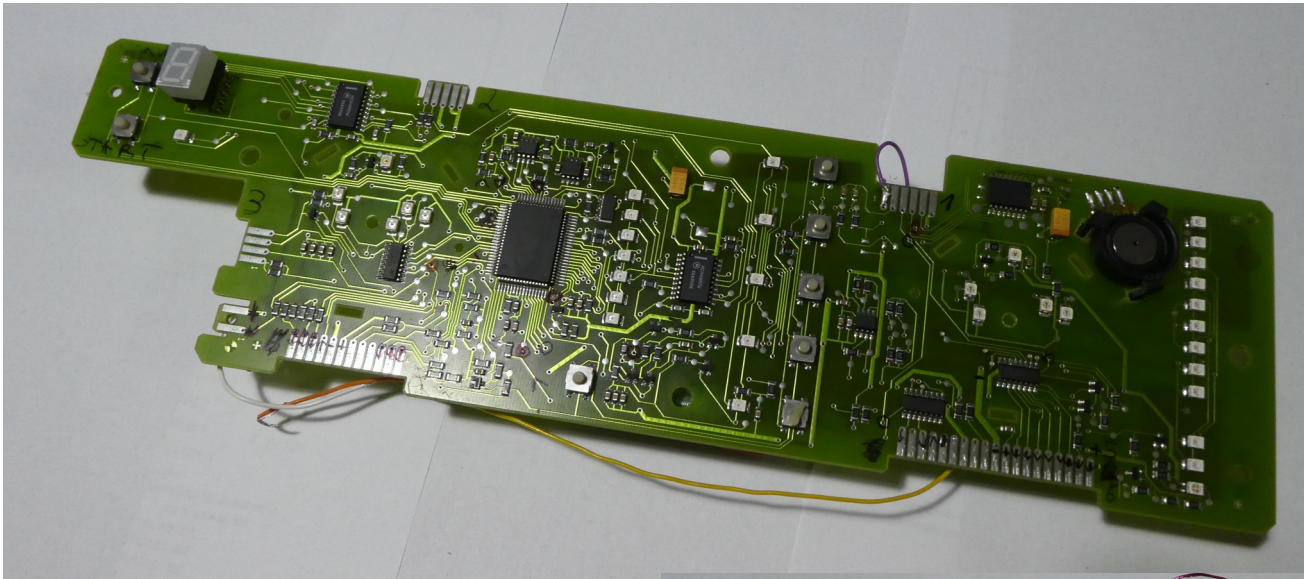
use cases: infoprinter



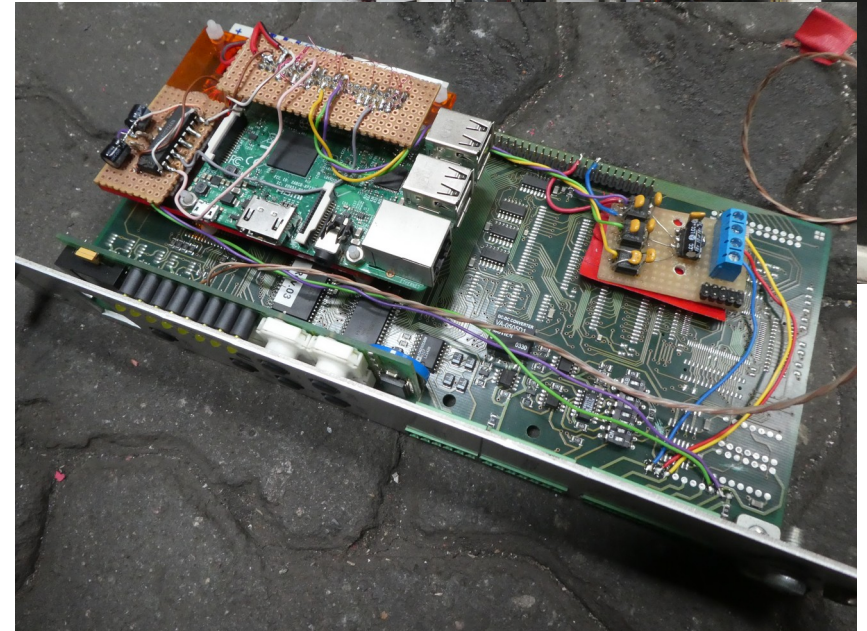
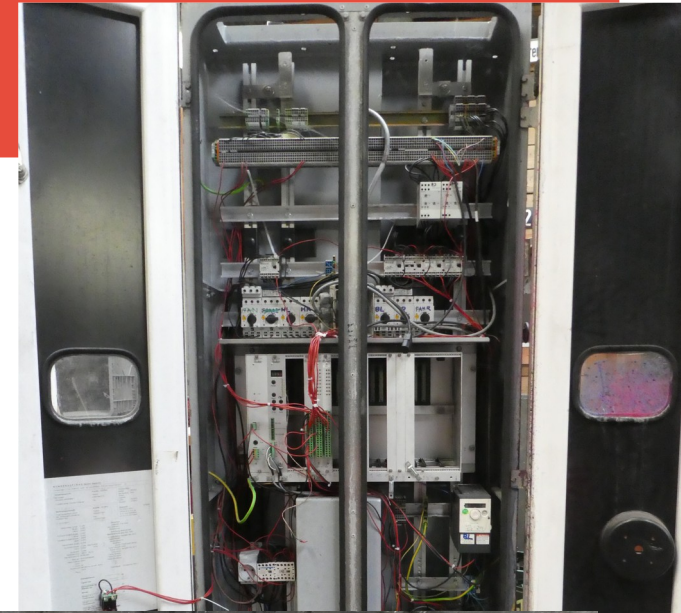
use cases: infoscreens



use cases: machinery control [washing machine]



use cases: car wash control [with android app]



use cases:utilities [SD Card Copier]

