Display Panel

Install

Wegen zu vielen Problemen mit Wayland wird hier **Trixie mit X11** genutzt.

Das Hauptproblem ist, dass das Display beim Stromsparen einen nervigen Bildschirm anzeigt … “No Signal” …

Einstellungen

- `sudo raspi-config`
  - I2C Aktivieren
  - umstellen von Wayland auf X11

100 Mbit Fix

- Man muss dafür per SSH mit WLAN auf dem Pi sein ….
- `sudo nano /etc/systemd/system/eth0fix.service`
  - ```
    [Unit]
    Description=100MBit Fix for eth0
    After=network-online.target
    Requires=network-online.target

    [Service]
    ExecStart=/sbin/ethtool -s eth0 speed 100 duplex full autoneg on
    Type=oneshot

    [Install]
    WantedBy=multi-user.target
    ```
- `sudo systemctl enable eth0fix.service`
- `sudo systemctl restart eth0fix.service`

Updates

- Command Line
  `sudo apt update && sudo apt upgrade -y && sudo apt install -y git git-lfs silversearcher-ag wavemon hexedit sudoku tcpdump iptraf mc htop dcfldd nano usbutils openvpn ranger tldr ncdu can-utils multitail fd-find lsof x11vnc minicom joystick i2c-tools speedtest-cli iotop fio ir-keytable curl inxi lshw nala fzf duf && mkdir -p ~/.local/share && tldr -u`
    ```

- UI Tools
  `sudo apt update && sudo apt upgrade -y && sudo apt install -y flameshot terminator cutecom jstest-gtk xclip`
- Nutzloses Zeug
  `sudo apt autoremove -y modem* cups* avahi* triggerhappy* rpi-connect openvpn`

Display

- `sudo raspi-config` → Screen Blanking aus !
- Screensaver aus
  - `mkdir -p /home/pi/.config/lxsession/LXDE-pi`
  - `cp /etc/xdg/lxsession/LXDE-pi/autostart /home/pi/.config/lxsession/LXDE-pi/autostart`
  - `nano /home/pi/.config/lxsession/LXDE-pi/autostart`

    download

    ```
    @lxpanel --profile LXDE-pi
    @pcmanfm --desktop --profile LXDE-pi
    #@xscreensaver -no-splash
    @xset s off
    @xset -dpms
    ```

  - `sudo apt remove xscreensaver`
- Venv einrichten
  - `sudo apt -y update && sudo apt-get install -y build-essential cmake make gcc pkg-config python3-dev python3-virtualenv libsystemd-dev libopenblas-dev`
  - `cd ~ && mkdir -p DisplayOnOff && cd DisplayOnOff`
  - `python -m venv . && source bin/activate`
  - `pip3 install --upgrade pip && pip3 install RPi.GPIO pynput smbus paho-mqtt psutil`
- Compile VL53 Lib ...
  - `sudo apt-get install build-essential python-dev`
  - `cd ~`
  - `git clone https://github.com/pimoroni/VL53L0X_rasp_python.git`
  - `cd VL53L0X-python`
  - `make`
  - VL53L0X.py in den Scriptordner kopieren ...
- Tests starten ...

Tests

VL

X11VNC

- `sudo apt install x11vnc`
- für einen ersten Test kann man das verwenden
  `x11vnc -usepw -forever -display :0`

- **Einrichtung als Dienst**
- `sudo x11vnc -storepasswd /etc/x11vnc.pass`
- `sudo nano /lib/systemd/system/x11vnc.service`

- ```
  [Unit]
  Description=Start X11VNC
  After=multi-user.target

  [Service]
  Type=simple
  ExecStart=/usr/bin/x11vnc -display :0 -auth guess -forever -loop -
  noxdamage -repeat -rfbauth /etc/x11vnc.pass -rfbport 5900 -shared

  [Install]
  WantedBy=multi-user.target
  ```

- `sudo systemctl enable x11vnc.service`

Motion Detect

- Sensor : VL53L0X

- Altes Script

```
import sys
import time
import VL53L0X
import os
import subprocess
import RPi.GPIO as GPIO
from pynput import mouse

def on_move(x, y):
    global Display_Last_Action
    print('Pointer moved to {0}'.format((x, y)))
    sys.stdout.flush()
    Display_Last_Action = time.time()
    print("Time %d" % (Display_Last_Action))

def on_click(x, y, button, pressed):
    global Display_Last_Action
    print('{0} at {1}'.format('Pressed' if pressed else 'Released', (x,
y)))
    sys.stdout.flush()
```
```

```
    Display_Last_Action = time.time()
    print("Time %d" % (Display_Last_Action))

def on_scroll(x, y, dx, dy):
    global Display_Last_Action
    print('Scrolled {0} at {1}'.format('down' if dy < 0 else 'up', (x,
y)))
    sys.stdout.flush()
    Display_Last_Action = time.time()
    print("Time %d" % (Display_Last_Action))

def toggleOnOff():
    GPIO.output(36, GPIO.HIGH)
    time.sleep(0.4)
    GPIO.output(36, GPIO.LOW)
    print("Toggle Switch ....")
    sys.stdout.flush()

listener = mouse.Listener(
    on_move=on_move,
    on_click=on_click,
    on_scroll=on_scroll)
listener.start()

# Last Time Event happend on Display
Display_Last_Action = time.time()
Display_State       = True
Display_Timeout_Sec = 180

# RPi.GPIO Layout verwenden (wie Pin-Nummern)
GPIO.setmode(GPIO.BOARD)
# RuntimeWarning: This channel is already in use, continuing anyway.
Use GPIO.setwarnings(False) to disable warnings.
GPIO.setwarnings(False)

# Pin 36 (GPIO 16) auf Output setzen -> Display ON / OFF
GPIO.setup(36, GPIO.OUT)
# Pin 38 (GPIO 20) auf Output setzen -> Brightness +
GPIO.setup(38, GPIO.OUT)
# Pin 40 (GPIO 21) auf Output setzen -> Brightness -
GPIO.setup(40, GPIO.OUT)

# Create a VL53L0X object
tof = VL53L0X.VL53L0X(i2c_bus=1,i2c_address=0x29)
tof.open()
tof.start_ranging(VL53L0X.Vl53l0xAccuracyMode.BETTER)

while 1:
    # Distanz vom VL53L0X Sensor messen
    distance = tof.get_distance()
```

```
    #print("%d mm, %d cm" % (distance, (distance/10)))

    # Display ggf. abschalten
    if time.time()-Display_Last_Action >= Display_Timeout_Sec:
        if Display_State == True:
            #subprocess.call("DISPLAY=:0 xset dpms force off",
shell=True)
            toggleOnOff()
            Display_State = False
            print("Display wird abgeschaltet ...")
            sys.stdout.flush()

    # Abstand vom Sensor pruefen
    if distance < 900:
        print("DETECTED, %d cm , %d sec" % (distance/10, time.time()-
Display_Last_Action ))
        sys.stdout.flush()
        Display_Last_Action = time.time()
        print("Time %d" % (Display_Last_Action))

    # Display ggf. wieder einschalten
    if time.time()-Display_Last_Action < Display_Timeout_Sec:
        if Display_State == False:
            #subprocess.call("DISPLAY=:0 xset dpms force on",
shell=True)
            toggleOnOff()
            Display_State = True
            print("Display wird eingeschaltet ...")
            sys.stdout.flush()

        # Display Einschalten
        #os.system('DISPLAY=:0 xdotool key "shift"')
        ###subprocess.call("DISPLAY=:0 xset s reset", shell=True)
        #subprocess.call("DISPLAY=:0 xset dpms force on", shell=True)
        #subprocess.call("DISPLAY=:0 xset dpms 120 120 120",
shell=True)

    time.sleep(0.1)

tof.stop_ranging()
tof.close()
```

- Service

```
pi@SHome-Display-VPN-DNS:/ $ cat lib/systemd/system/display.service
[Unit]
Description=Display Controller

[Service]
Environment=DISPLAY=:0
Environment=XAUTHORITY=/home/pi/.Xauthority
```

```
ExecStart=/usr/bin/python /home/pi/DisplayOn/MotionDetect.py
Restart=always
RestartSec=30s
KillMode=process
TimeoutSec=infinity

[Install]
WantedBy=graphical.target
```

Chromium Start

```
pi@SHome-Display-VPN-DNS:~ $ cat chrome.sh
#!/bin/sh -e

pfad="http://192.168.30.22:8082/vis/index.html?main#Home"

# Chromium ggf. beenden
chromerunning=`ps aux | grep chromium |wc -l`
echo $chromerunning

if test $chromerunning -gt 1; then
    echo "Beende alle Chromium Instanzen ..."
    sudo killall /usr/lib/chromium-browser/chromium-browser-v7
    sleep 4
fi

# Chromium zurücksetzen
sed -i 's/"exited_cleanly":false/"exited_cleanly":true/'
~/.config/chromium/'Local State'
sed -i 's/"exited_cleanly":false/"exited_cleanly":true/;
s/"exit_type":"[^"]\+"/"exit_type":"Normal"/'
~/.config/chromium/Default/Preferences

# Chromium starten
DISPLAY=:0 /usr/lib/chromium-browser/chromium-browser-v7 --touch-
events=enabled --noerrdialogs --check-for-update-interval=31536000 &

# Chromium in Fullscreen
sleep 15
#WID=$(DISPLAY=:0 xdotool search --onlyvisible --class chromium|head -1)
#DISPLAY=:0 xdotool windowactivate ${WID}
#DISPLAY=:0 xdotool key F11

# An Display Position navigieren mit der Maus und Vollbild auslösen
DISPLAY=:0 /usr/bin/xdotool mousemove --sync 954 200 click 1

exit 0
```