

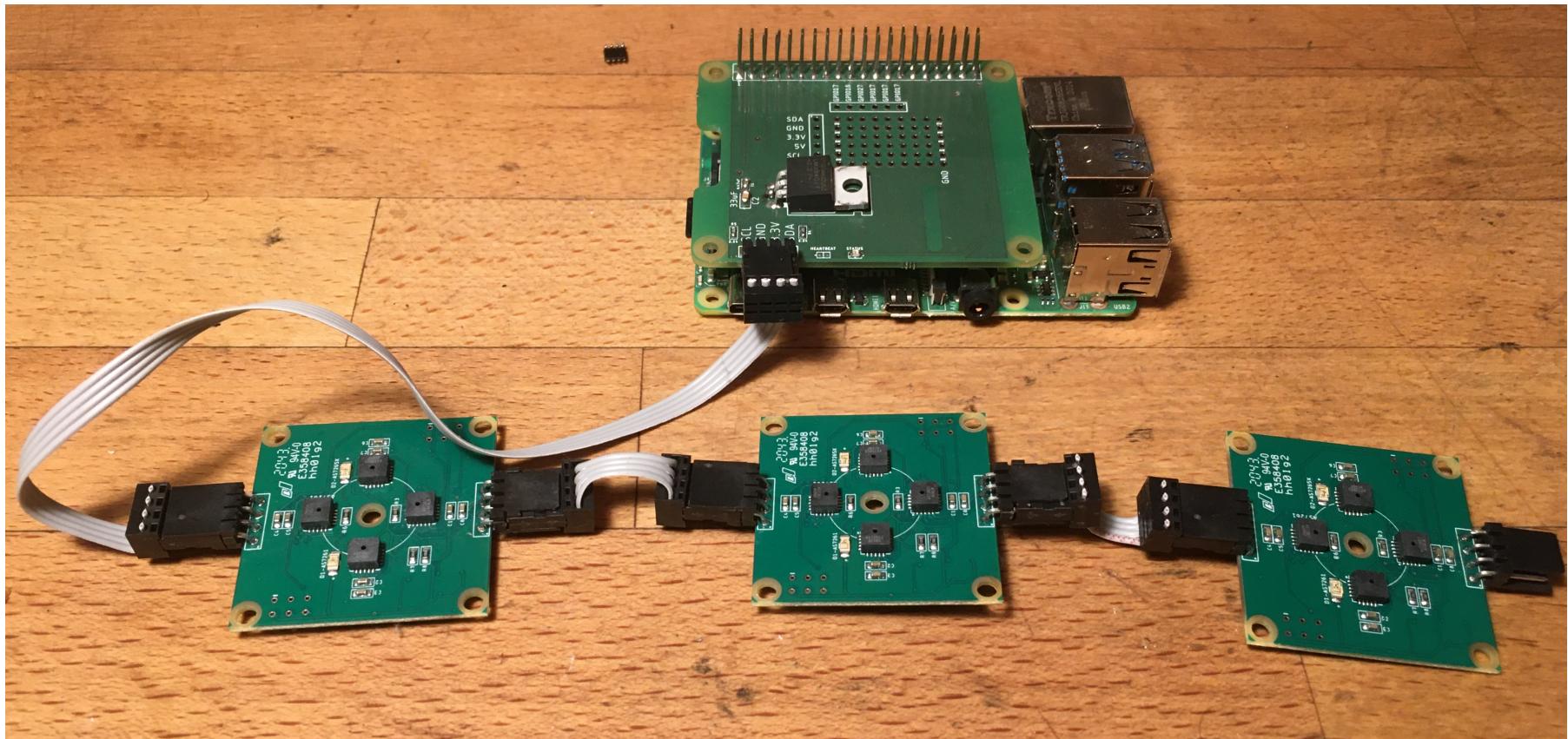
Entwicklung und Realisierung einer Messeinrichtung mit den Sensoren AS7261 und AS72651 von ams

Lennard Bödiger | Fachgebiet Lichttechnik | Abschlussvortrag Bachelorarbeit

Gliederung

1. Thema
2. Demo
3. Software
5. Hardware
6. Probleme
7. Ausblick

1.1 Thema - Messplattform

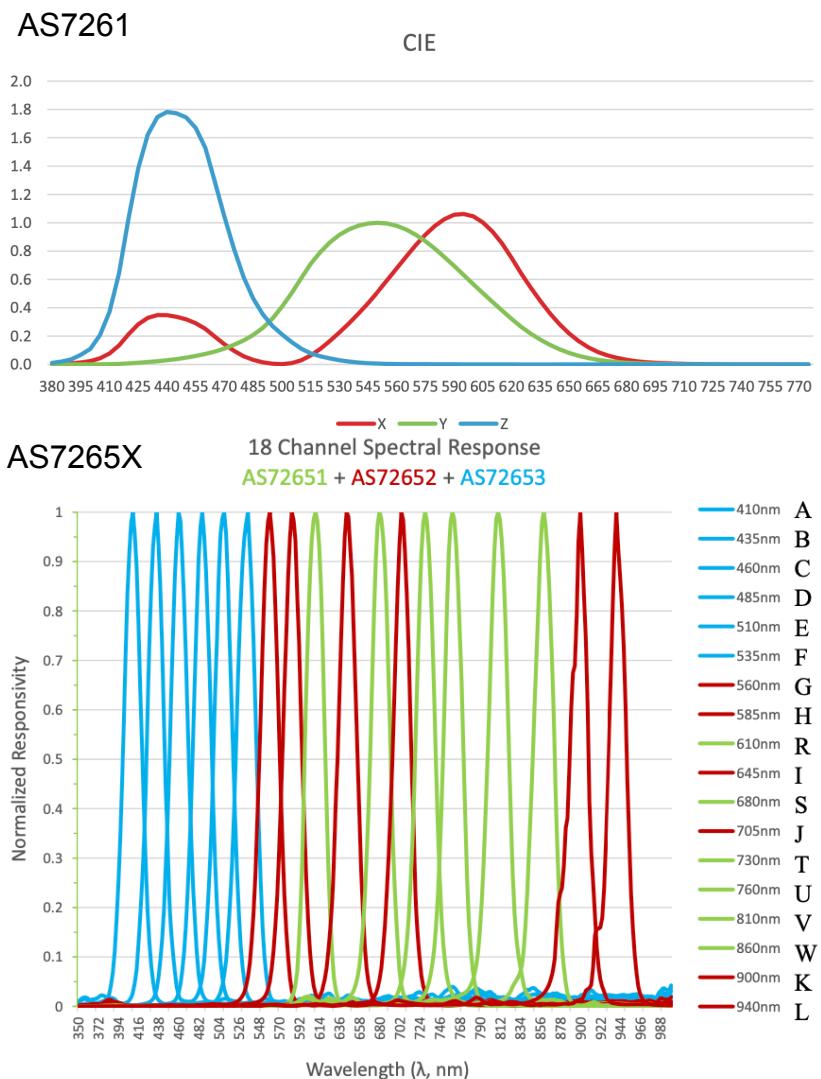


1.2 Thema - Sensoren



Abbildung 2: TrueColour Chip
(Quelle:

<https://www.mouser.de/new/ams/ams-as7265x-sensors/>)



Demo

3. Software

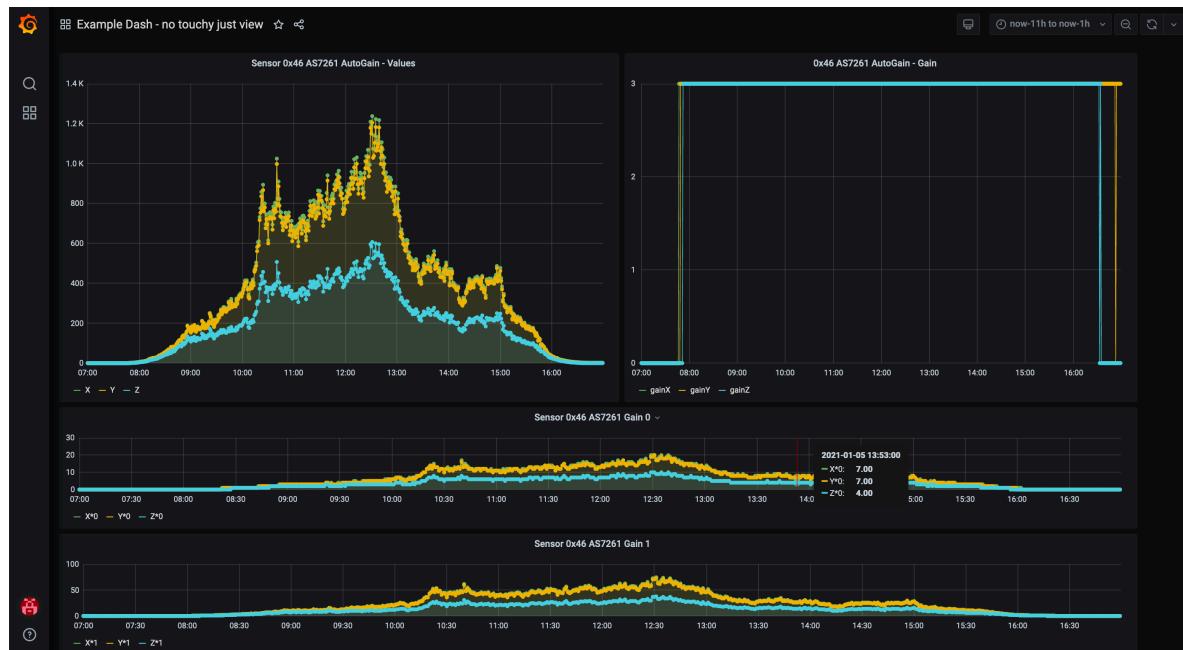
C Code



influxdb



 **Grafana**



4.1 Software Programmierung - wiringPi_AS726X_Library

FOLDERS

- Code
- .idea
- lib
 - influxDB_http_L
 - /* influxdb.c
 - /* influxdb.h
- wiringPi_AS726X_Lib
 - /* AS726X.c
 - /* AS726X.h
- src
 - /* main.c
 - /* measurement.c
 - /* measurement.h
 - /* Mux_Test.c
 - /* welcome.c
 - /* welcome.h
 - /* default_values.h
 - /* Makefile

```

influxdb.c           measurement.c
653 // -----
654 // ----- used gain: %d matched value to gain 3: %d\n",
655 printf("C used gain: %d matched value to gain 3: %d\n",
656 printf("D used gain: %d matched value to gain 3: %d\n",
657 printf("E used gain: %d matched value to gain 3: %d\n",
658 printf("F used gain: %d matched value to gain 3: %d\n",
659
660 saveAS7265XMeasurement(s[i].address ,AS7265X_measurement
661 saveAS7265XGain(s[i].address, used_gain, measurement_tim
662 }
663 }
664
665 // Takes Measurement of selected AS7261 Devices in Fixed Gain Mode an
666 // Input: Current epoch time in ms, pointer to sensor_list struct of
667 // integrationValue [0:255], Gain [0:3]
668 void fixedGainMeasurementAS7261(uint64_t measurement_time, sensor_li
669 AS7261_channel AS7261_measurement;
670 for (int i = 0; s[i].address != -1 && i < 128; ++i){    // going
671     change_mux_channel(s[i].mux_channel);
672     if (s[i].type == SENSORTYPE_AS7261){                    // only
673         settings(s[i].address, integrationValue, gain); // apply
674         MeasurementFromAddress(s[i].address);             // initi
675         AS7261_measurement = getAS7261Measurement(s[i].address,
676         saveAS7261Measurement(s[i].address ,AS7261_measurement,
677     }
678 }
679 }
680
681 // Takes Measurement of selected AS7265X Devices in Fixed Gain Mode a
682 // Input: Current epoch time in ms, pointer to sensor_list struct of
683 // integrationValue [0:255] Gain [0:3]

```

4.2 Software Programmierung - wiringPi_AS726X_Library

 LennardBoediger	Update README.md	b2de804 29 days ago	 4 commits
 src	release 1.0	5 months ago	
 LICENSE.md	release 1.0	5 months ago	
 README.md	Update README.md	29 days ago	

README.md

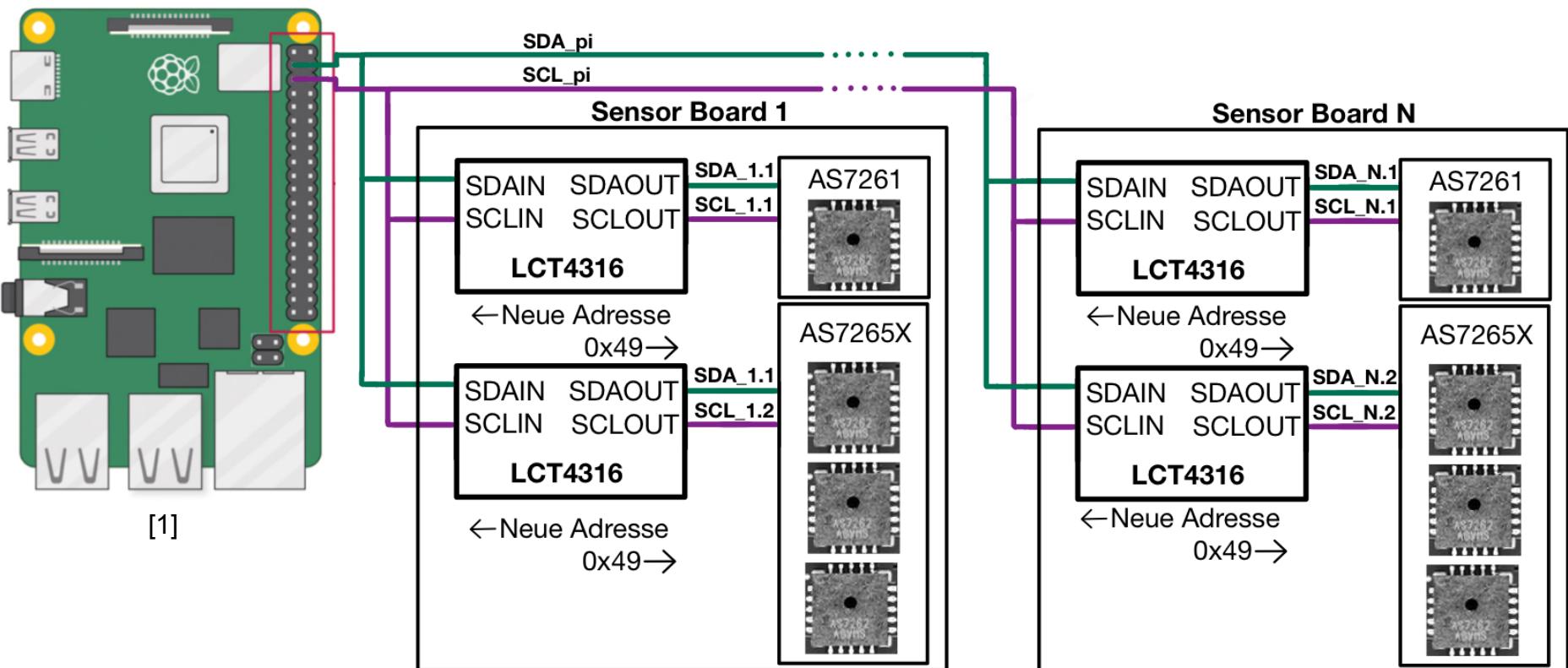


This is a Port of the Spark- Fun AS726X Arduino Library-master to be Pi compatible.

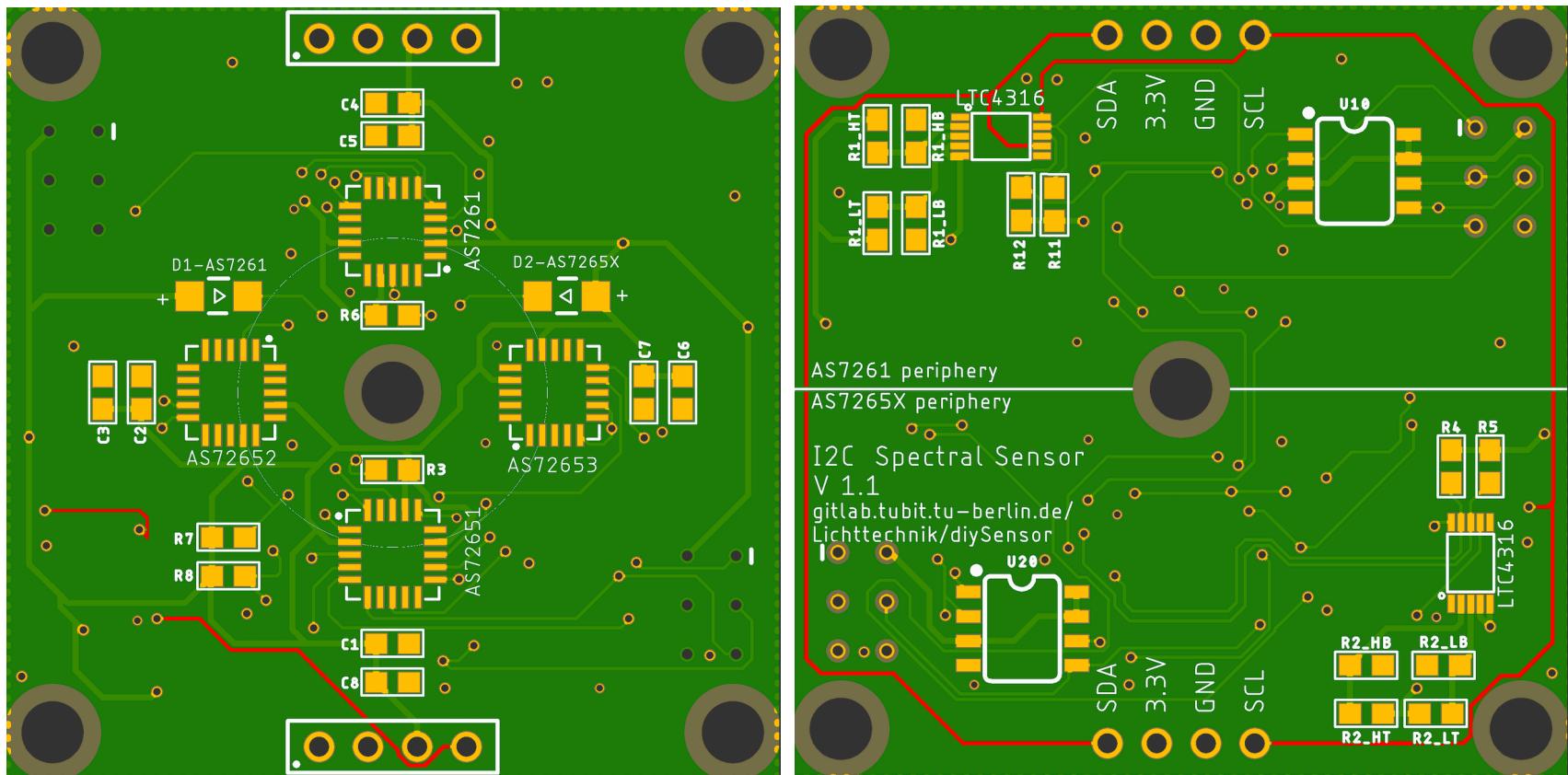
Note that I added minor changes. Includes definitions for the AS7261 and AS7265X.

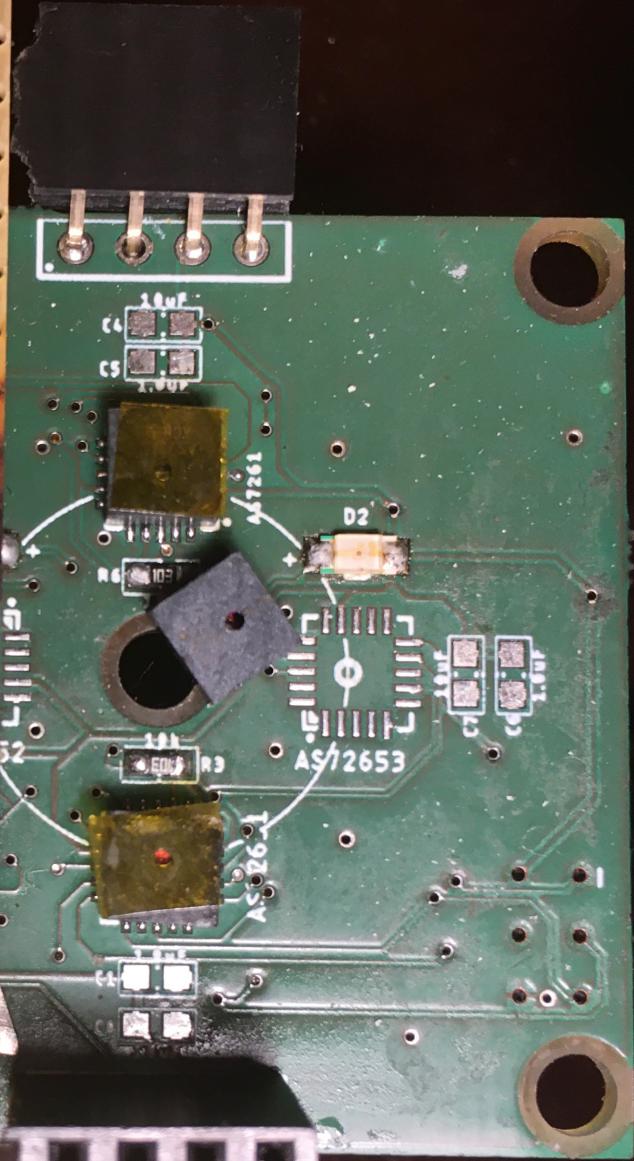
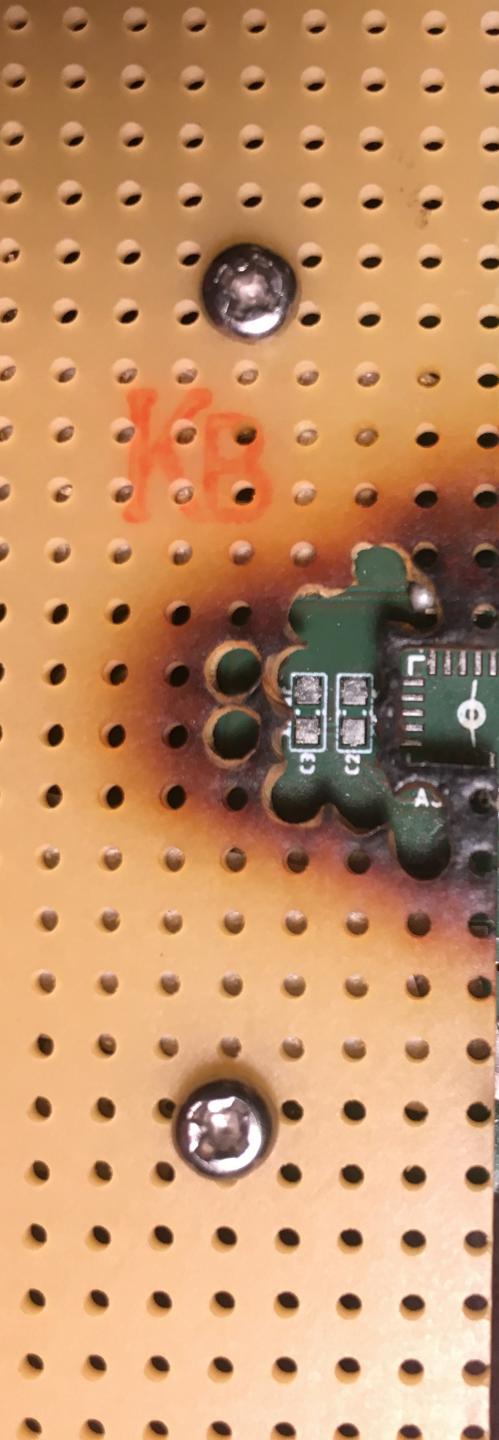
5.1 Hardware - I2C Adressen

Raspberry Pi 4



5.2 Hardware - Prototypen

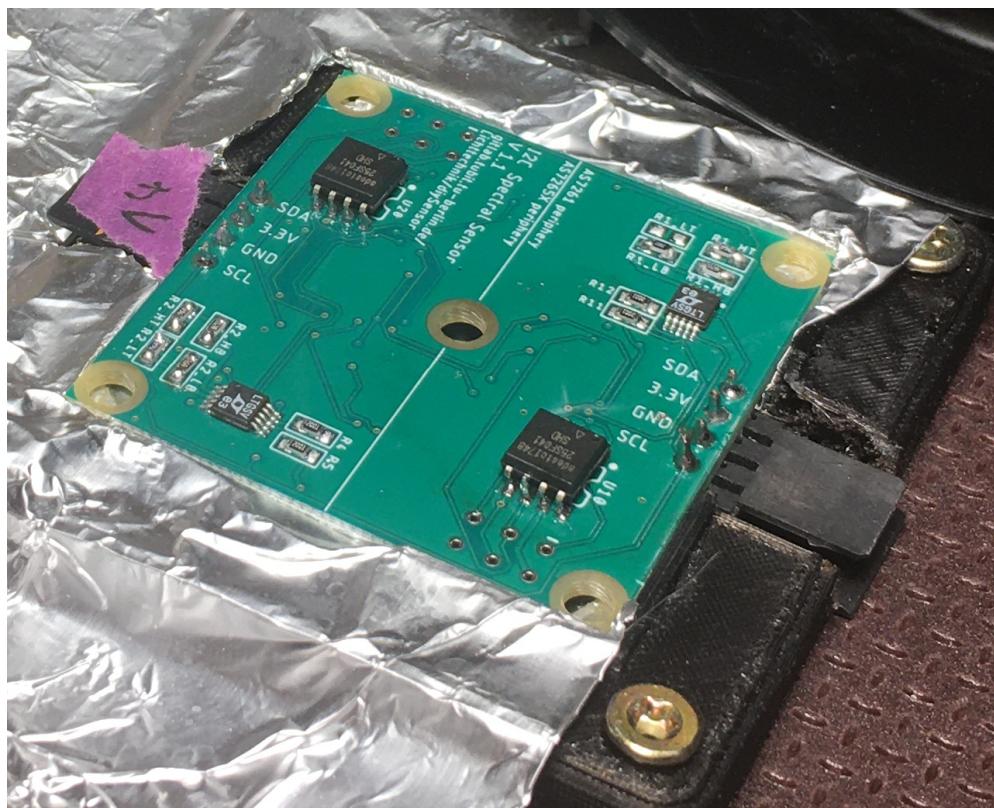


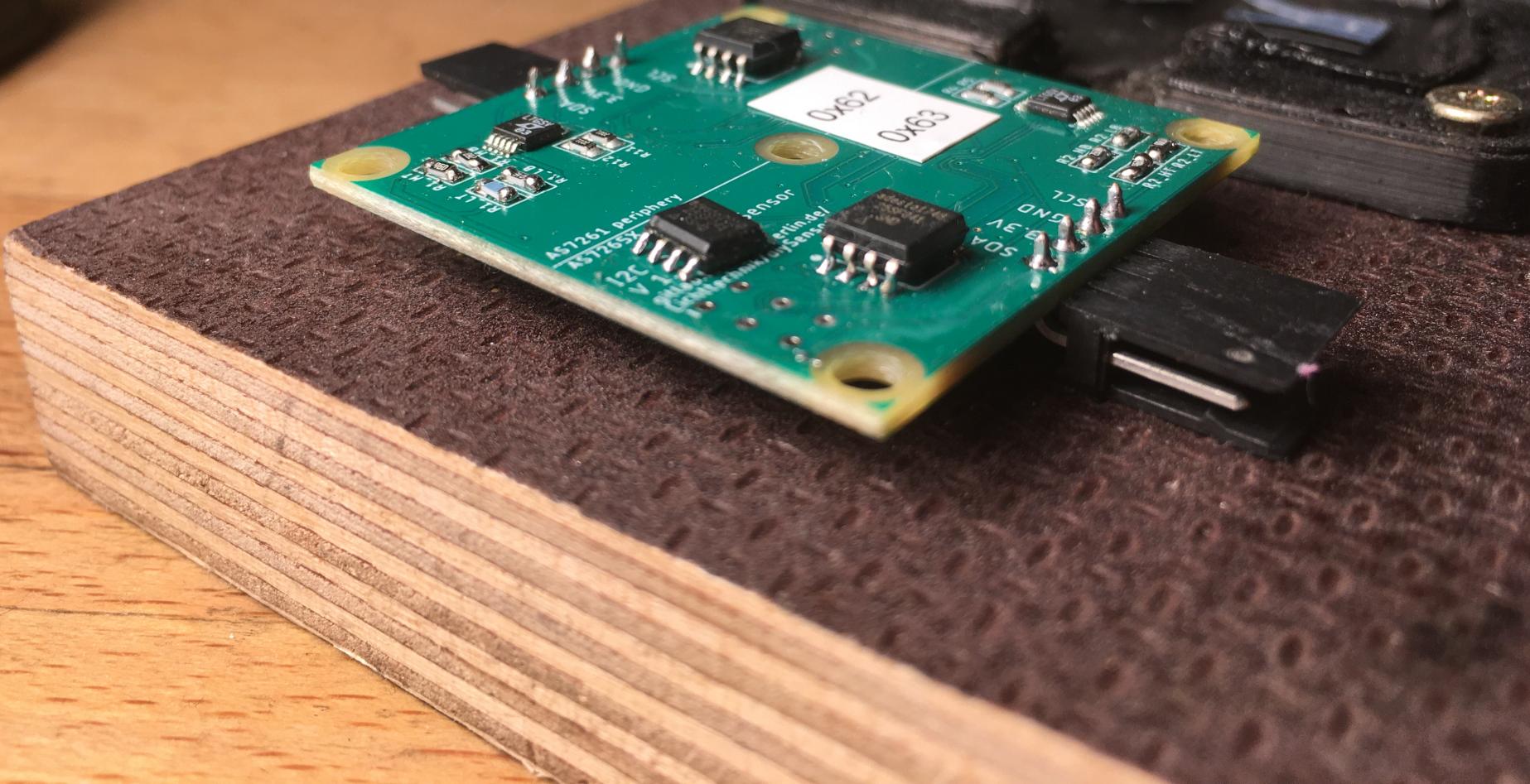


5.4 Hardware - Serienbestückung

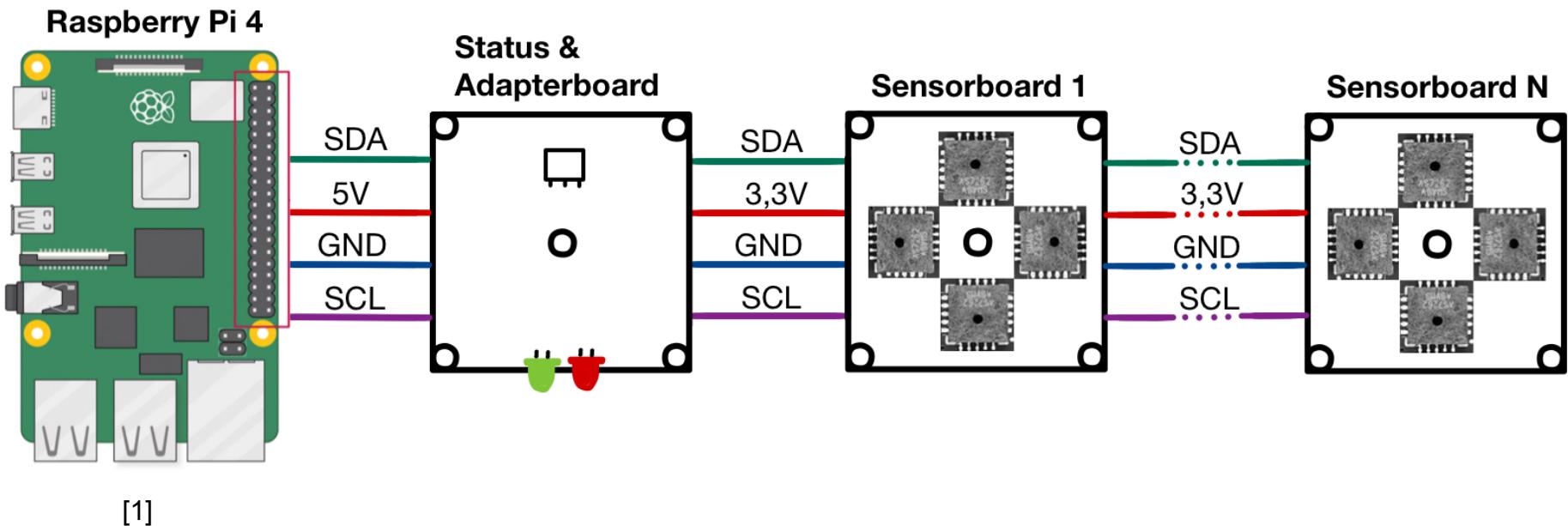


5.5 Hardware - Serienbestückung



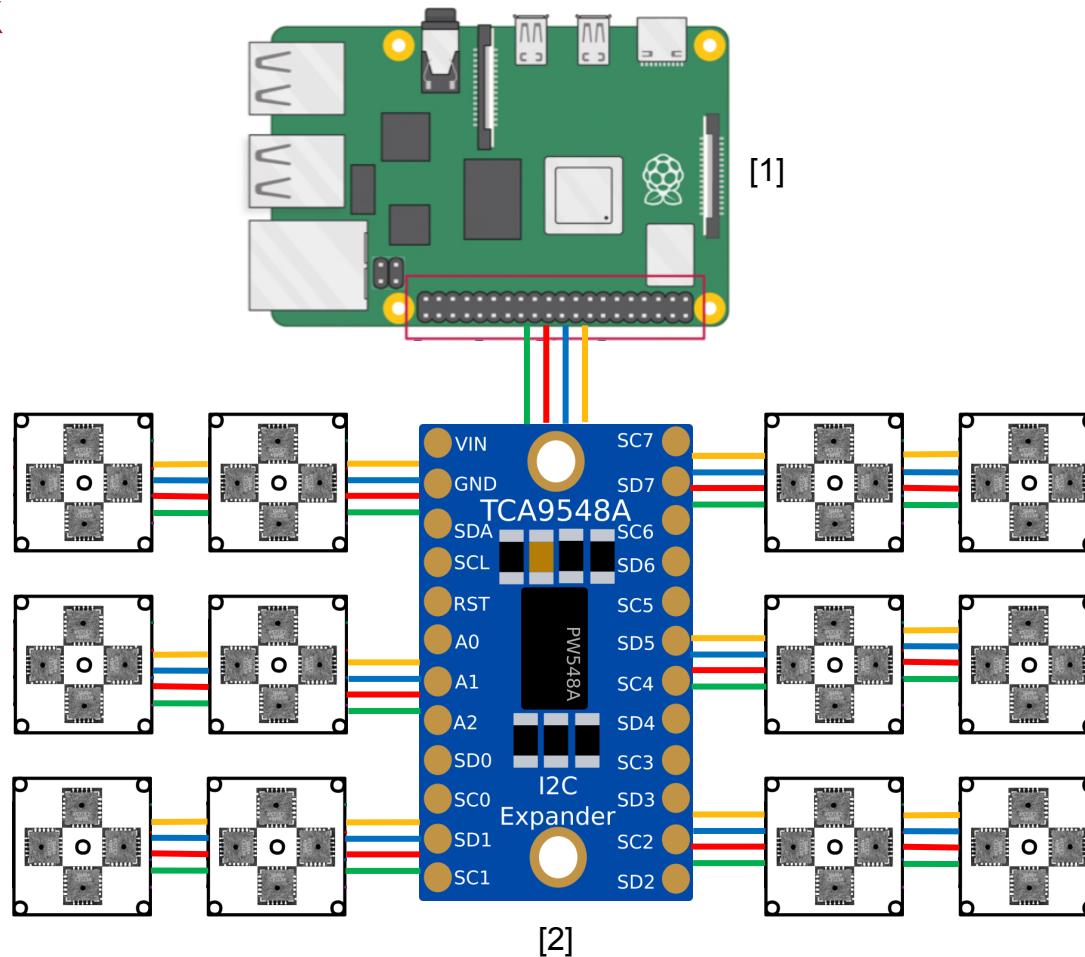


6 Probleme

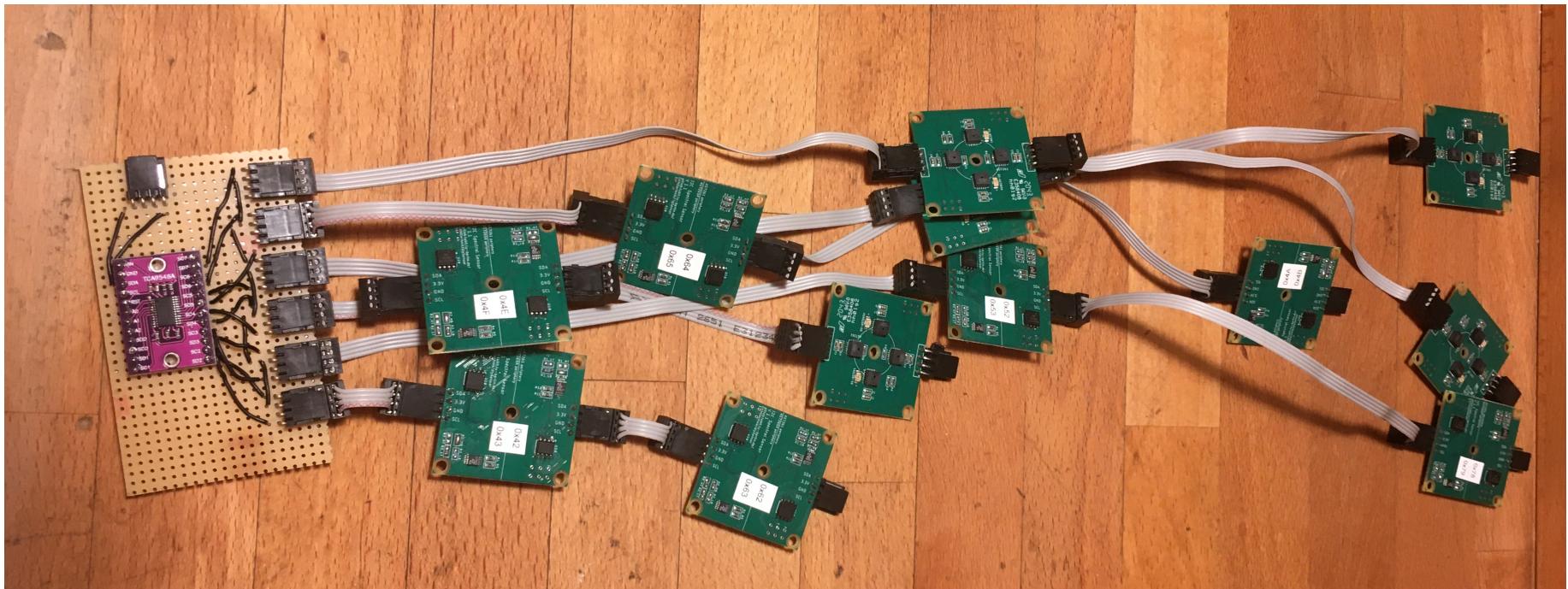


[1]

7 Ausblick



8 Lösung



Vielen Dank für Ihre Aufmerksamkeit!

Quellen

- [1] <https://www.raspberrypi.org/>
- [2] <https://openclipart.org/detail/301843/tca9548a-i2c-multiplexer>