

EZ DIY IOT w/ ESP

KNF-Kongress 2017

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Ziel

Ein IOT-Gerät für die Haus-Automatisierung (Smart Home) mit den Aufgaben:

- Messen der Raum-Temperatur
- Messen der relativen Feuchte
- Erfassen von Bewegungen
- Abschätzen der Helligkeit
- Tür- und Fensterkontakt
- Wifi → MQTT-Broker → OpenHAB

Ziel (optional)

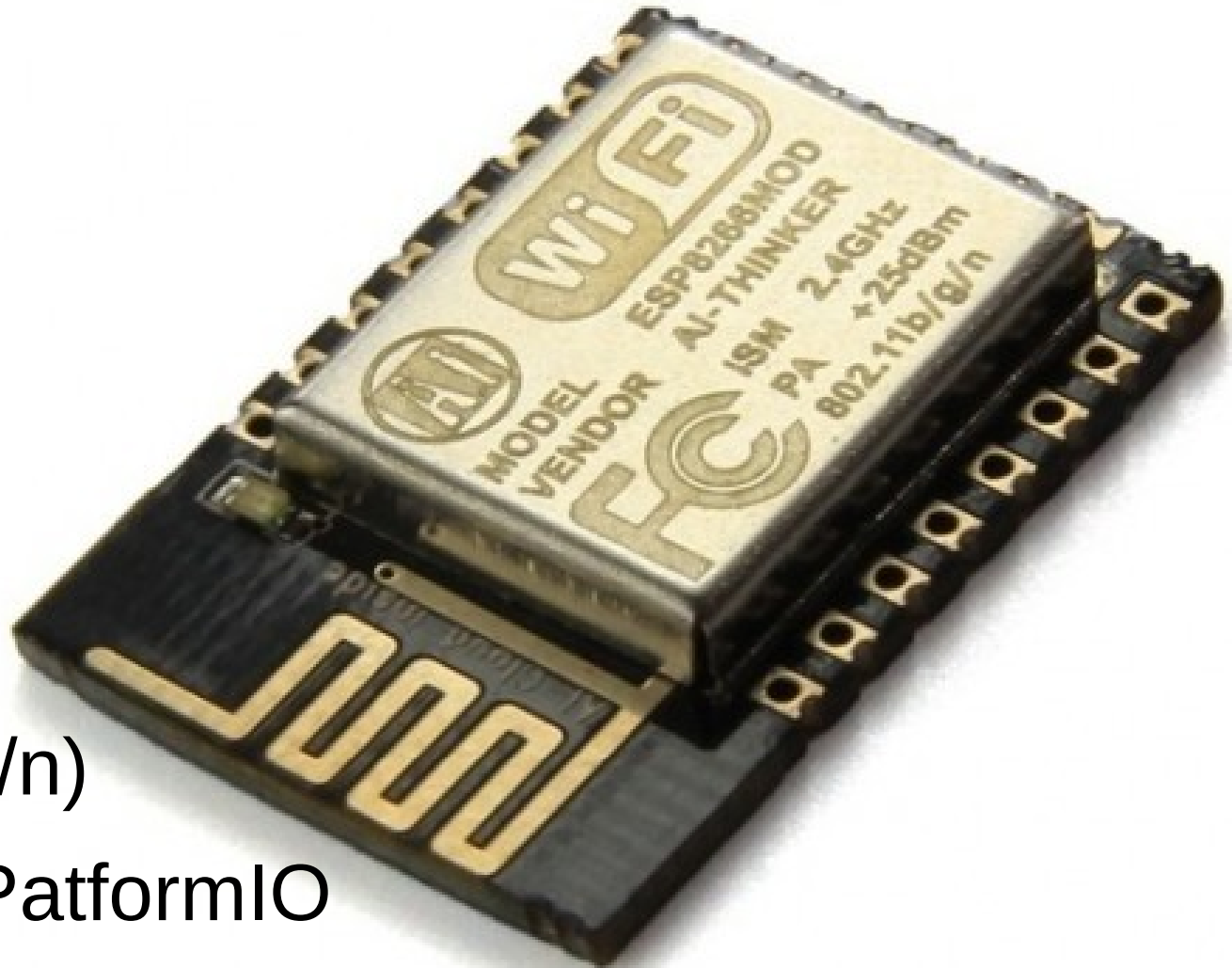
Weitere optionale Aufgaben:

- Steuern von Funksteckdosen (433MHz)
- IR-Fernbedienung
- Taster/Schalter → OpenHAB
- Licht (RGB-Strip, WS2812, 230V-Relais)
- Statusanzeige (LCD, LED)
- Messen von Feinstaub, NOX, VOC, ...

Prozessor

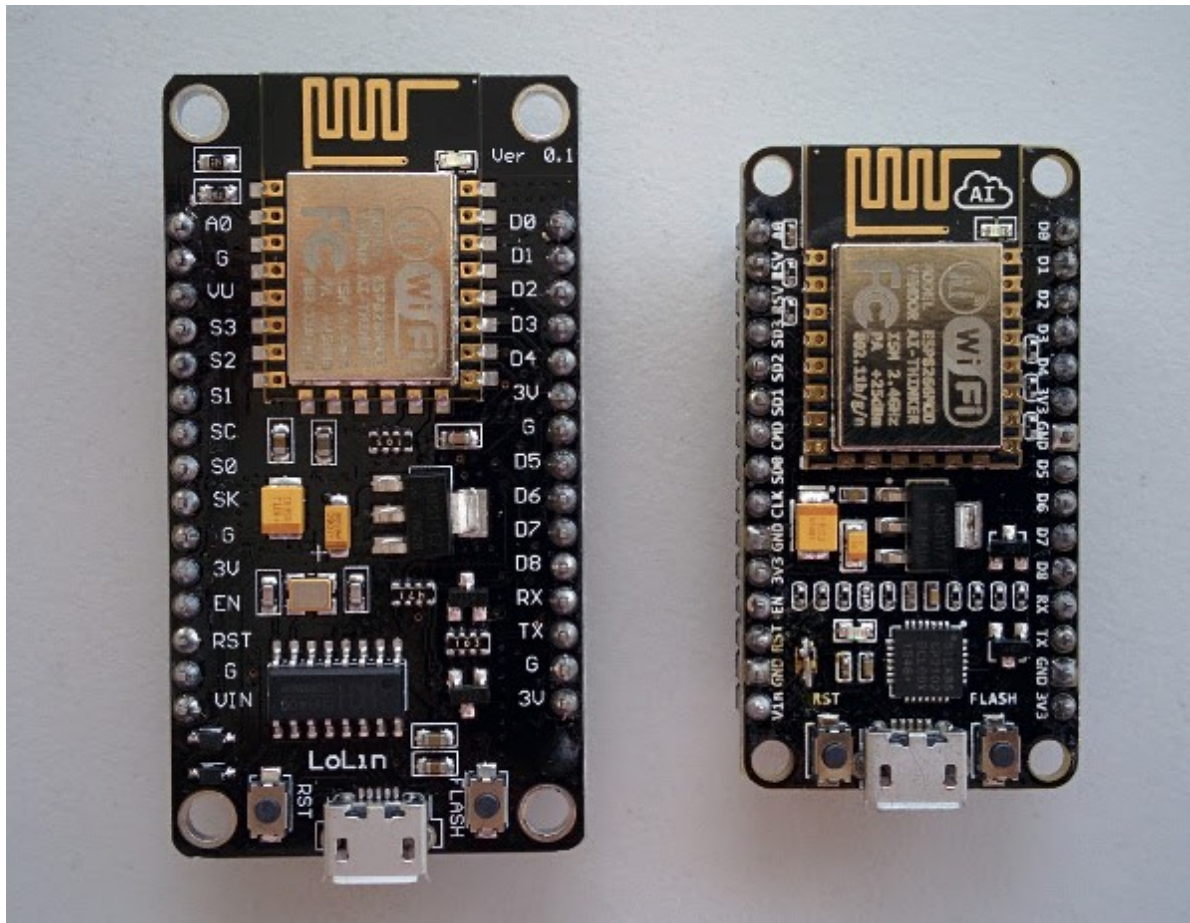
ESP8266-12E

- 32 Bit
- 80 MHz
- 4 MB Flash
- 20 kB RAM
- Wifi (802.11b/g/n)
- Arduino-IDE, PlatformIO

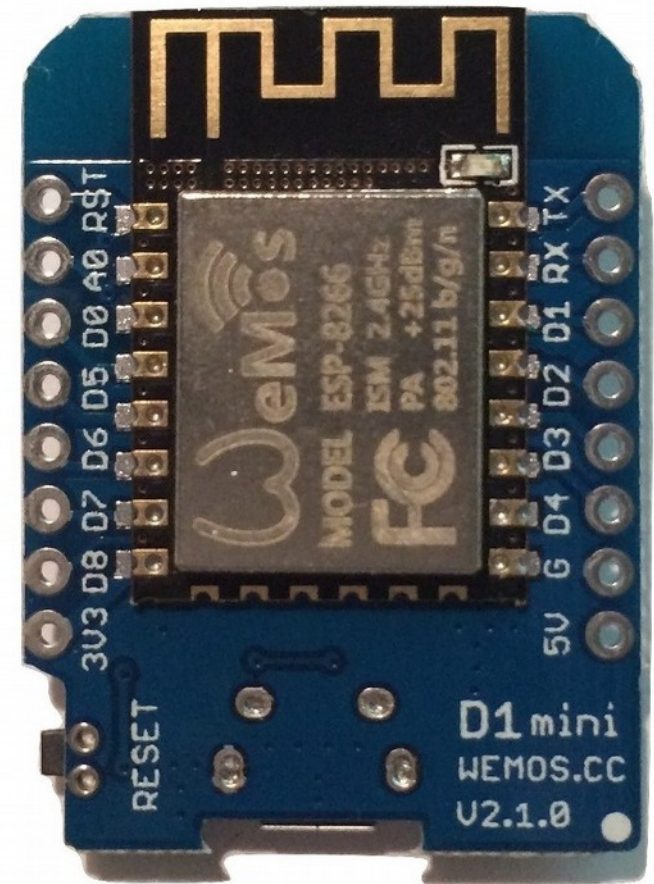


ESP-Boards

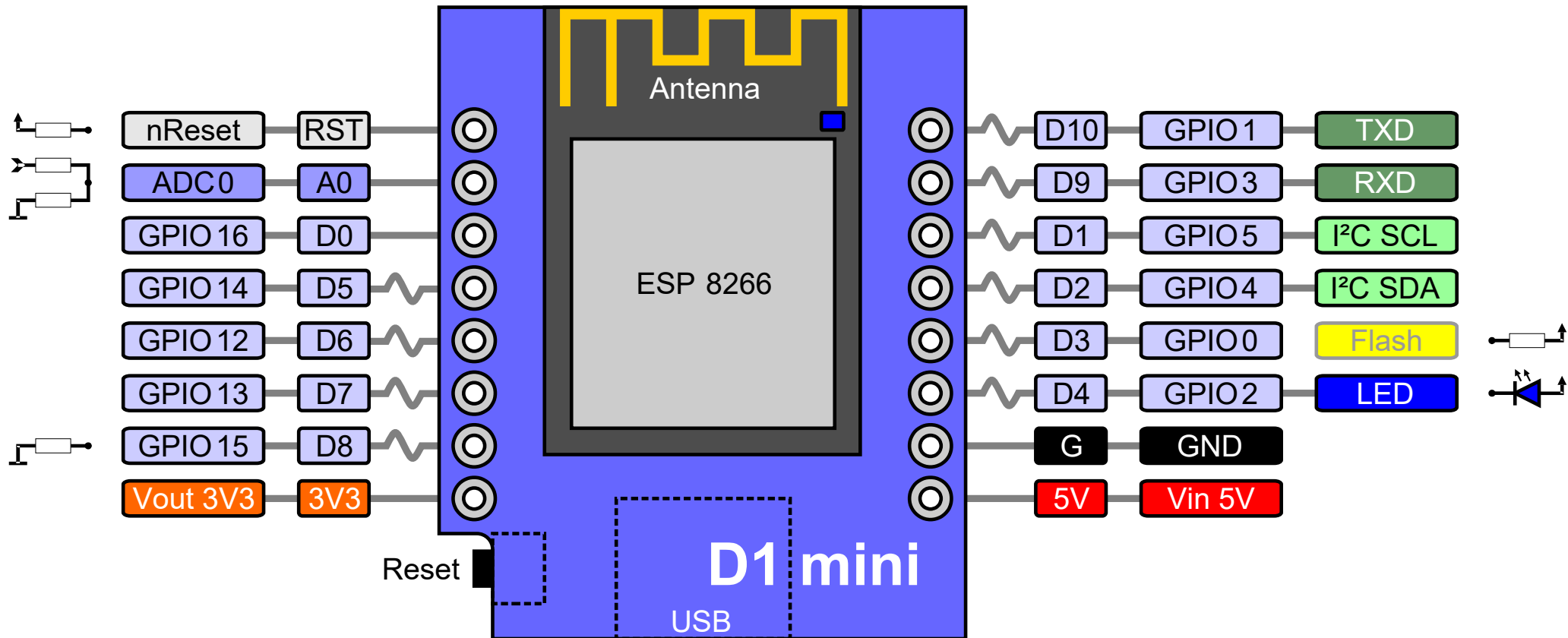
Node-MCU



Wemos D1 mini

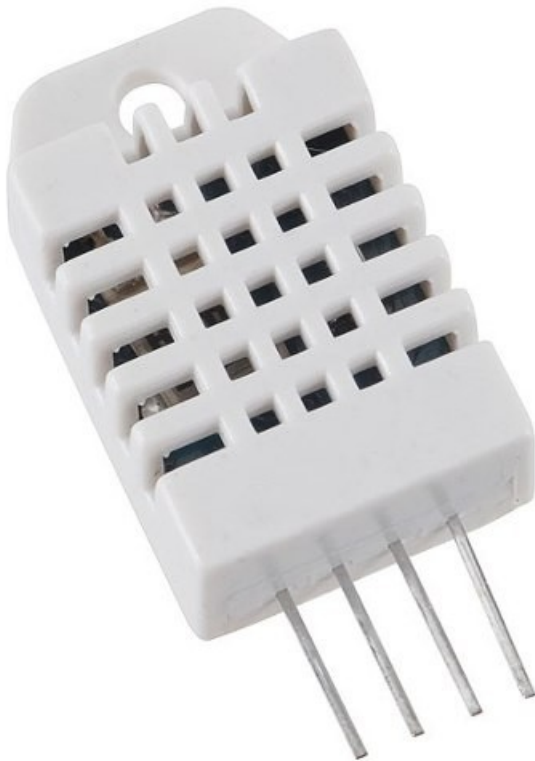


Wemos D1 mini (pro)



Sensoren

- DHT22 = Temperatur + Feuchte
- HC-SR501 = PIR-Bewegung
- LDR A905014 = Helligkeit
- ...

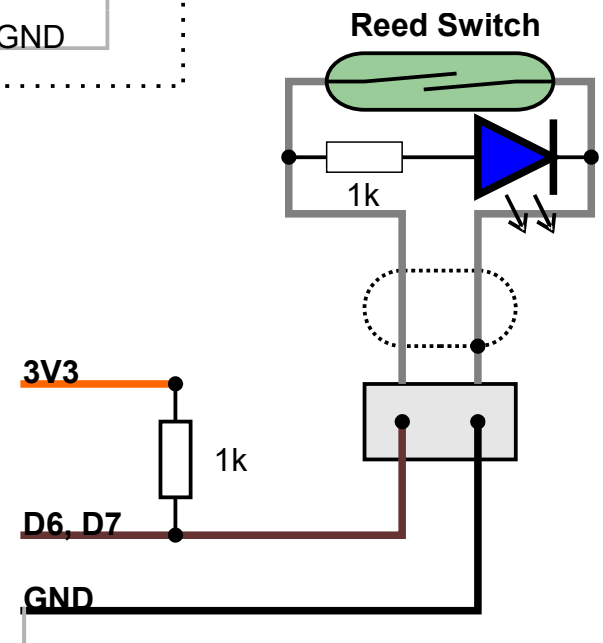
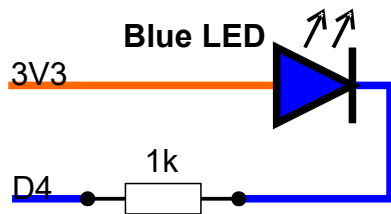
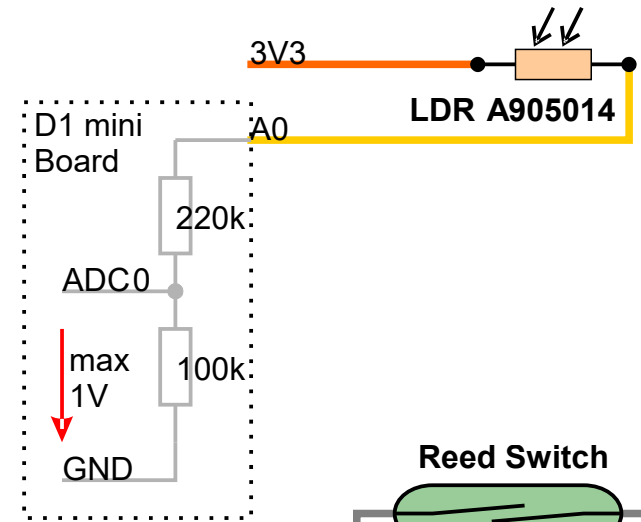
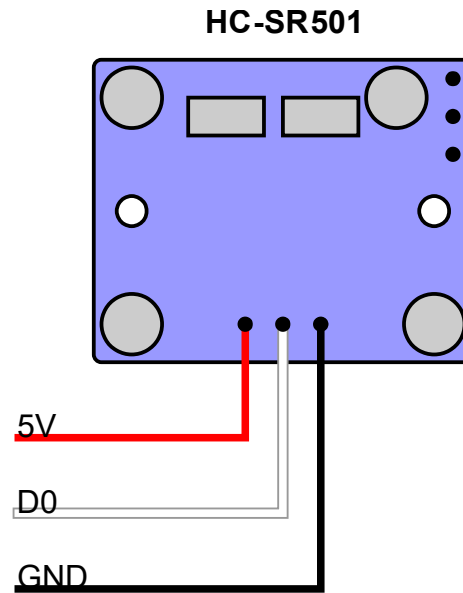
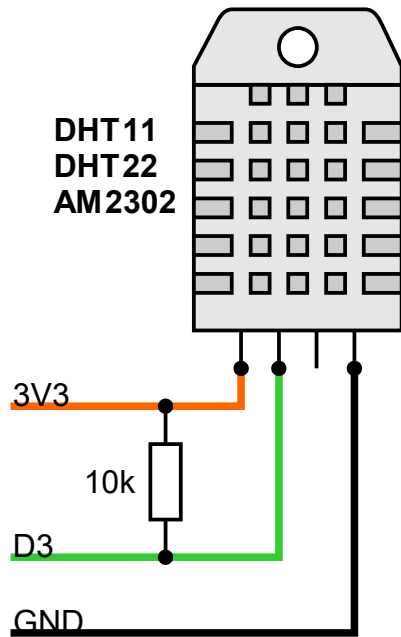


live

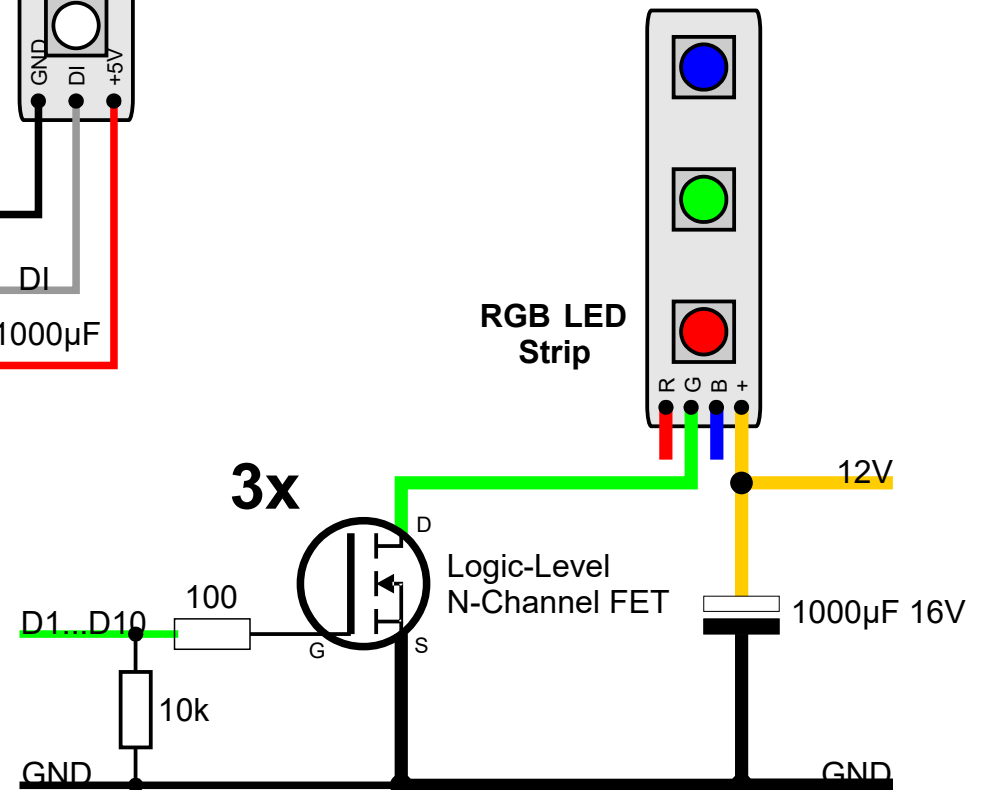
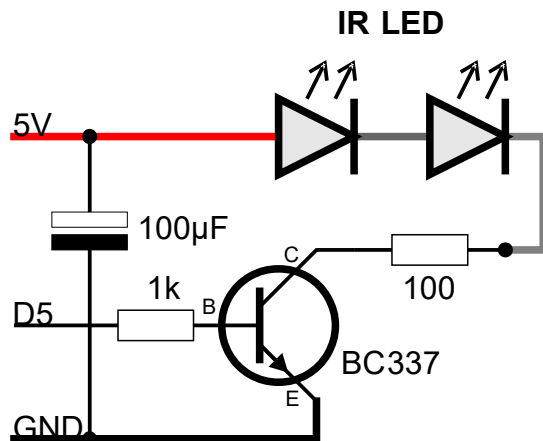
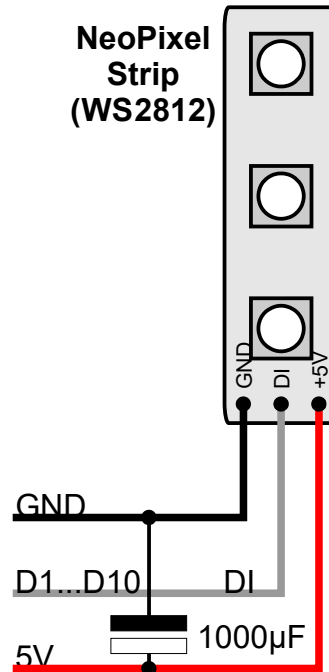
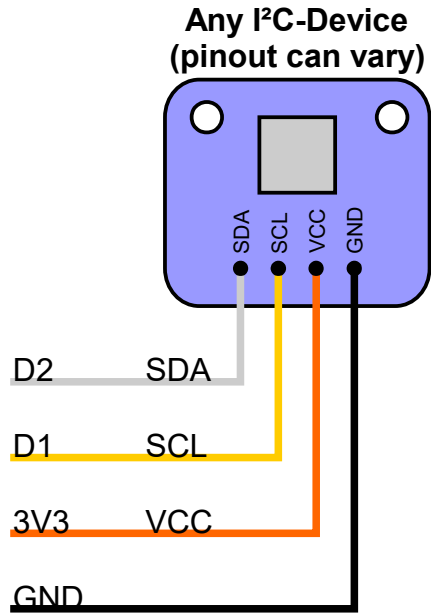
Sensoren

live

Verkabelung

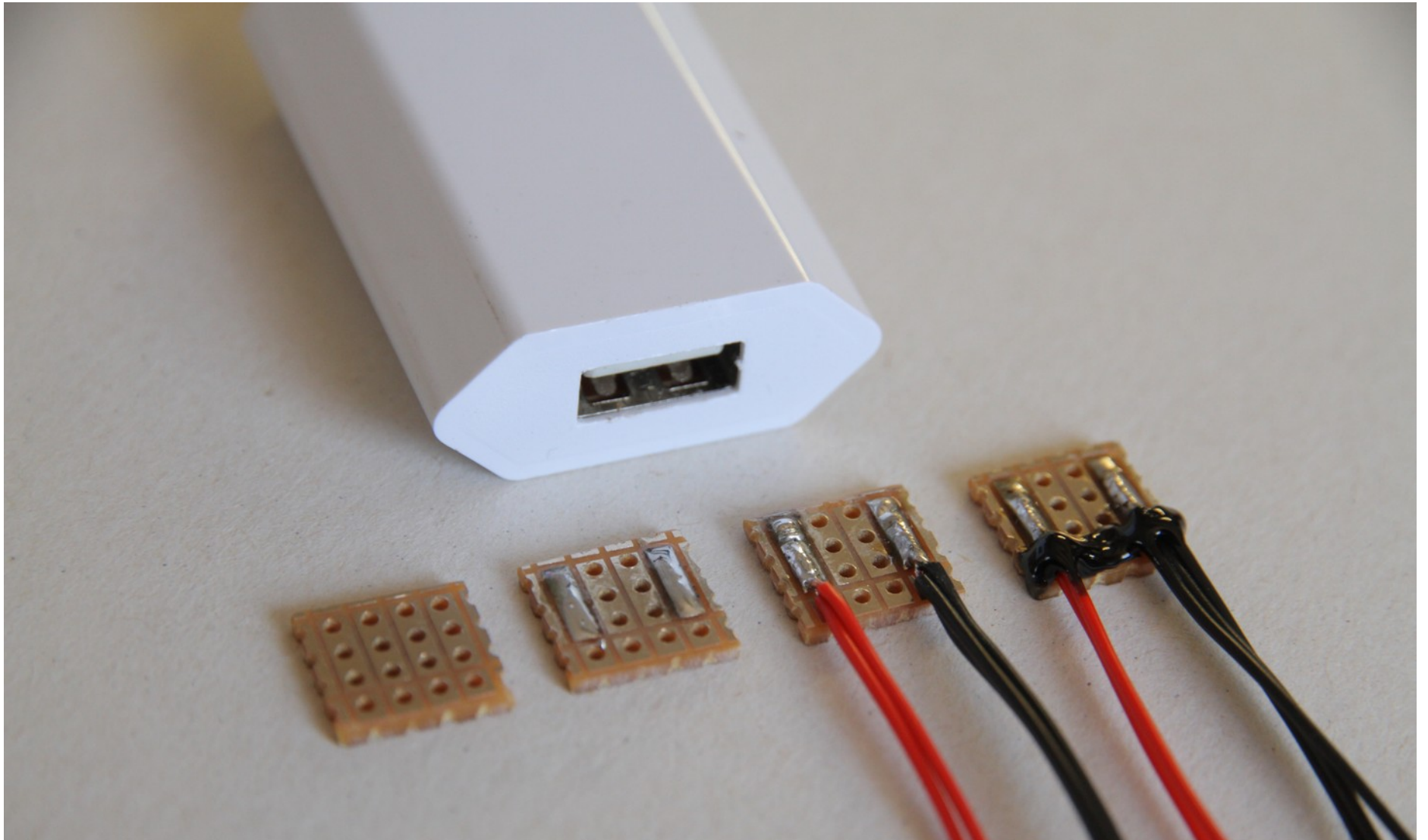


Verkabelung (weitere)



Stromversorgung

5V 200mA (typisch)



Gehäuse

- Zigarrenkiste
- Haushalts-Box
- Verteiler-Dose
- 3D-Druck
- Laser-Cutter
- ...

Gehäuse

live

Software V1

- DHT22-Lib aus GITHUB
- Sensor-XXX-Lib aus GITHUB
- WebServer-Lib aus GITHUB
- MQTT-Lib aus GITHUB
- Alles in Arduino-IDE mergen ...
- Google/Stackoverflow fragen...

Software V2

- **ESPEasy**

<https://github.com/letscontrolit/ESPEasy>

[https://www.letscontrolit.com/
wiki/index.php/ESPEasy](https://www.letscontrolit.com/wiki/index.php/ESPEasy)

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Software ESPEasy

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Fragen?

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