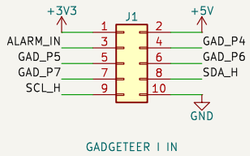
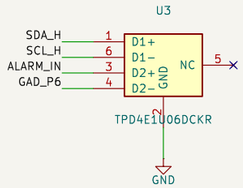
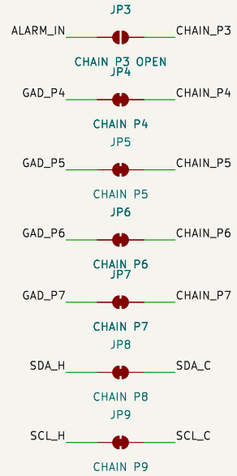
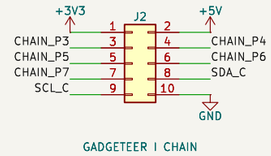
01 / GADGETEER I SOCKET J1 (HOST), ESD CLAMP U3, CHAIN JUMPERS JP3..JP9, CHAIN SOCKET J2







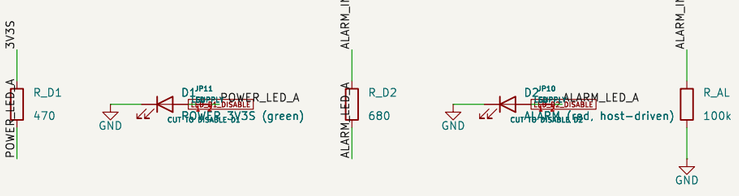


02 / SENSOR SUPPLY: 5V LINK JP_5V, LDO U2 (+5V -> 3V3S), C1 IN, C2 OUT

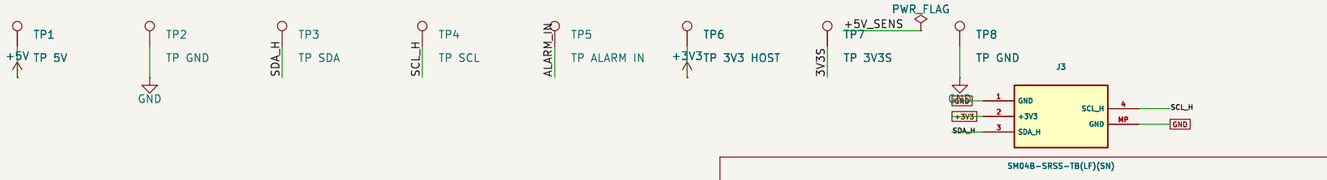
03 / SCD41-D-R2 CO2 SENSOR (I2C 0x62), BYPASS C3

04 / I2C PULL-UPS (10 k to 3V3S via JP_PU)

05 / INDICATORS: POWER (D1) ON 3V3S, ALARM (D2) HOST-DRIVEN, R_AL 100 k PULL-DOWN



06 / BOTTOM-SIDE TEST POINTS (OBSERVE ONLY)



SCOPE: CO2 ONLY (SCD41 photoacoustic NDIR) plus its temperature and relative humidity. NOT carbon monoxide, NOT smoke, NOT flame, NOT a fire alarm.
NON-CERTIFIED. NOT A SMOKE, CO OR FIRE ALARM. Alarm, warm-up, fault and shutdown logic is HOST policy; this board has no firmware or MCU.
Socket map (D1, CLAUDE.md I row): 1 +3V3 (passed to J2 only, 0 mA local), 2 +5V, 3 ALARM_IN (host output to D2), 4/5/7 forwarded, 6 forwarded (ESD),
8 SDA, 9 SCL, 10 GND. WARNING: the physical V2 Prime header was not inspected; do a continuity check of pins 1, 2, 8, 9, 10 before first power (Q1).
U2 makes the 3.3 V sensor rail 3V3S from +5V (budget 250 mA peak, 25 mA average). U1 VDD (7) and VDDH (19) are both on 3V3S, tied at the sensor.
U1 pads 1-5, 8, 11-18 are DNC: soldered to floating pads, no net. Pull-ups R_PU1/R_PU2 go to 3V3S through JP_PU (bridged; cut if the host owns pull-ups).
Chain policy: J2 repeats J1. Pins 1, 2, 10 direct. JP3 (ALARM) OPEN by default; JP4..JP9 bridged (cut to isolate a downstream board).
JP_5V bridged = supply feed (cut and place an ammeter across it to measure current). ALARM LED unlit does NOT mean safe (host may be down).
D1 is labelled POWER 3V3S only. Not hot-pluggable. Accuracy claims are the SCD41 datasheet figures and nothing tighter.
CERN-OHL-S-2.0 | KiCad only | black solder mask, white silkscreen | v01 STUDY: first cut, not qualified, not for fabrication.

CO2 monitor on Gadgeteer I (I2C) socket; NON-CERTIFIED, not a smoke, CO or fire alarm; v05 study
Generated from design_contract.json by tools/create_schematic.py
Smoothieware / CERN-OHL-S-2.0

Sheet: /
File: smoke-detector.kicad_sch

Title: Smoothie CO2 air-quality monitor (smoke-detector slug)

Size: A3	Date: 2026-10-01	**Rev: v11**
KiCad E.D.A. 9.0.8		Id: 1/1