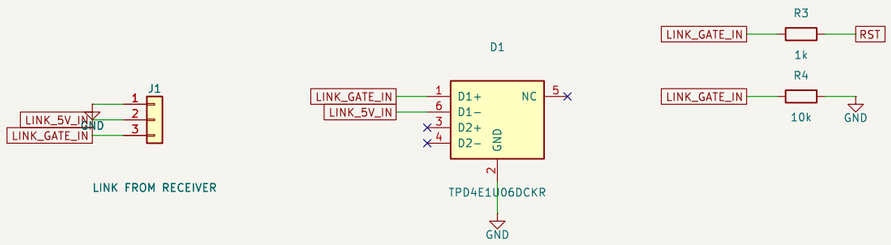
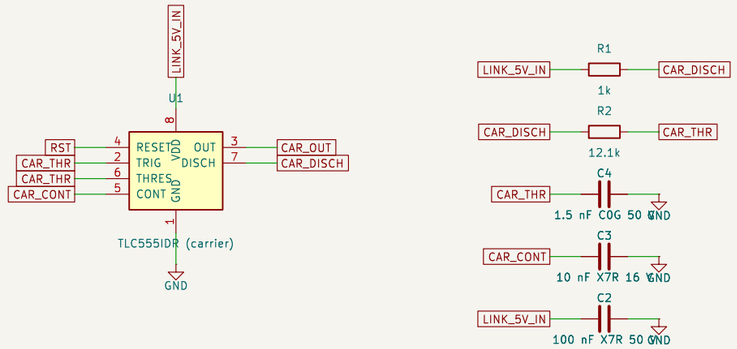
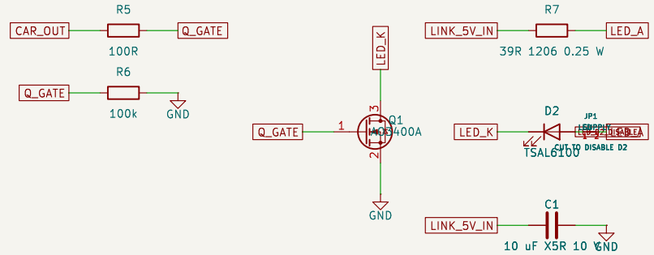
01 / LINK INPUT J1 (FROM RECEIVER), ESD CLAMP D1, GATE PULL-DOWN R4, SERIES R3



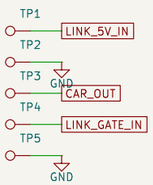

02 / CARRIER U1 (TLC555, ~38.2 kHz, RESET = GATE) AND TIMING R1/R2/C3/C4, DECOUPLING C2

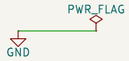


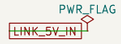

03 / LED DRIVER Q1 (AO3400A low side), R5/R6, LED CURRENT R7, LED D2 (TSAL6100 940 nm), RESERVOIR C1




04 / BOTTOM-SIDE TEST POINTS TP1..TP5 (OBSERVE ONLY)




NOT A SAFETY DEVICE. INVISIBLE IR — do not view with optical aids. IEC 62471 risk group not assessed. CAD STUDY: routing and physical qualification pending, not qualified, not for fabrication.
J1 pin 1 GND, pin 2 LINK_5V_IN, pin 3 LINK_GATE_IN (593 Hz, 3.3 V from the receiver). Gate low or open = RESET low = no carrier = LED off (R4 pull-down).
U1 astable: RA R1 1k, RB R2 12.1k, CT C4 1.5 nF C0G = ~38.2 kHz, 52 % high. Q1 gate R5 100R, pull-down R6 100k. LED current R7 39R from LINK_5V_IN (about 94 mA peak, 26 % duty).
D2 pad 1 (square) = cathode in the KiCad footprint: verify against the TSAL6100 drawing before release. Test points are observation only.
CERN-OHL-S-2.0 | KiCad only | black solder mask, white silkscreen

Non-certified study; not for fabrication
Group3 host-contract; version-local contract and symbol library
**Smoothieware / CERN-OHL-S-2.0**

Sheet: /
File: emitter.kicad_sch

***Title: Laser barrier EMITTER (940 nm IR LED, TLC555 carrier gated by the rec***

| Size: A3 | Date: 2026-10-01 | **Rev: v16** |
|---|---|---|
| KiCad E.D.A. 9.0.8 | | Id: 1/1 |