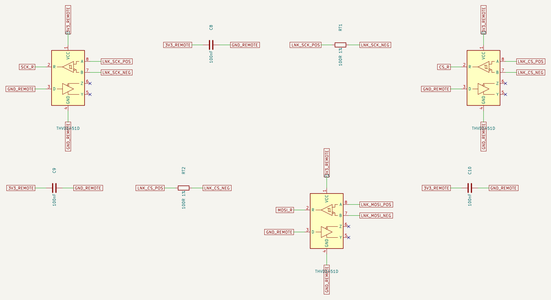
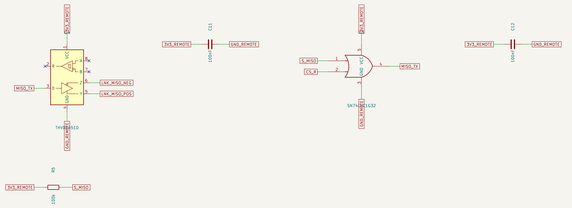
01 / GADGETEER S SOCKET TO THE PERIPHERAL (J1, SOURCES 3V3 AND 5V), SERIES 100R



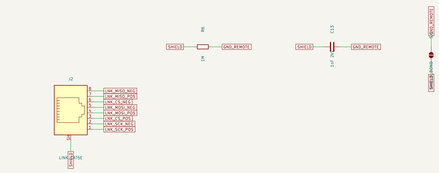
02 / LINK RECEIVERS: SCK (U1), CS (U2), MOSI (U3) WITH 100R TERMINATIONS



03 / MISO DRIVER (U4) AND CS-GATED MISO (U5 OR GATE)



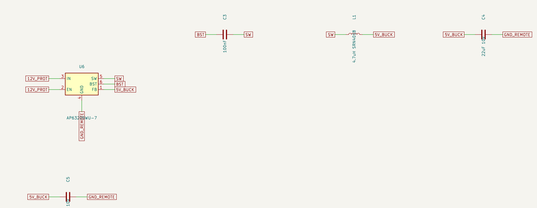
04 / RJ45 LINK JACK J2 AND SHIELD NETWORK



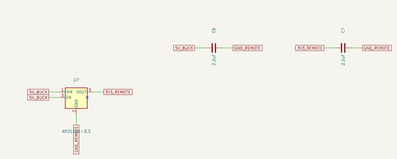
05 / 12 V LINK INPUT AND PROTECTION (J3, D1, D2, C1, C2)



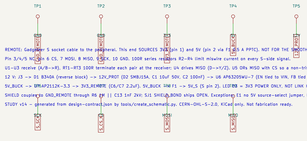
06 / AP63205 5 V BUCK (U6, L1, C3, C4, C5) PER DATASHEET TABLE 3



07 / AP2112K 3V3 LDO (U7), 5 PIN-2 5 V OUTPUT PPTC (F1), POWER LED



08 / TEST PADS (BOTTOM SIDE, OBSERVE ONLY)



REMOTE: Gadgeteer S socket cable to the peripheral. This end SOURCES 5 V (pin 1) and 3V (pin 2 via F1 5 A PPTC). NOT FOR THE SMARTWATCHBOARD.
Pin 3/4/5 MOSI/CS/SCK 6 CS, 7 MOSI, 8 MISO, 9 SCK, 10 GND. 100R series resistors R2–R4 limit mis-wire current on every S-slide signal.
U1–U3 receive (V/B-=9), RT1–RT3 100R terminate each pair at the receiver; U4 drives MISO (D-=5/2), U5 ORs MISO with CS so a non-initiating peripheral reads high when deselected.
12 V: J3 -> D1 B340A (reverse block) -> 12V_PROT (D2 SMBJ15A, C1 10uF 50V, C2 100nF) -> U6 AP63205WU-7 (EN tied to VIN, FB tied to 5V_BUCK, L1 4.7uH, C4=C5 2x22uF, C3 100nF).
5V_BUCK -> BMAP2112K-3.3 -> 3V3_REMOTE (C6/C7 2.2uF). 5V_BUCK 1R8 F1 -> 5V_S (S pin 2). LED7 88 -> 3V3 POWER ONLY, NOT LINK HEALTH.
SHIELD couplings: GND_REMOTE through R6 0R (1 C13 1nF 2kV; 5.1 SHIELD_BOND strap OPEN. Exceptionally 01 no 5V source-select jumper. E2 no second S port. E3 no external ESD clamp.
STUDY v1A — generated from design-context.json by tools/create_schematic.py. CERN-OHL-S-2.0. KiCad only. Not fabrication ready.