

ENDSTOPS & DRIVERS

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Motor Endstop Connections:

- X Motor:** XEN (1), XSTP (5), XD (6) to XENR (2), XSTPR (3), XDIRR (4)
- Y Motor:** YEN (1), YSTP (5), YD (6) to YENR (2), YSTPR (3), YDIRR (4)
- Z Motor:** ZEN (1), ZSTP (5), ZD (6) to ZENR (2), ZSTPR (3), ZDIRR (4)
- E Motor:** EOEN (1), EOSTP (5), EOD (6) to EOENR (2), EOSTPR (3), EODIRR (4)

Stepper Driver Schematic:

- UART_RX to UART_RX
- UART_TX to UART_TX

File: Stepper_Drivers.kicad_sch

Driver Board Connections:

- Power Supply:** +5V, GND, GND
- Endstop Connections:**
 - X-STOP (J6) to R10 (100R), R11 (10K), C12 (0.1uF), GND
 - Y-STOP (J8) to R21 (100R), R23 (10K), C15 (0.1uF), GND
 - Z-STOP (J9) to R22 (100R), R24 (10K), C16 (0.1uF), GND
 - E0-RUNOUT (J10) to R14 (100R), R20 (10K), C17 (0.1uF), GND

FANS & HEATERS

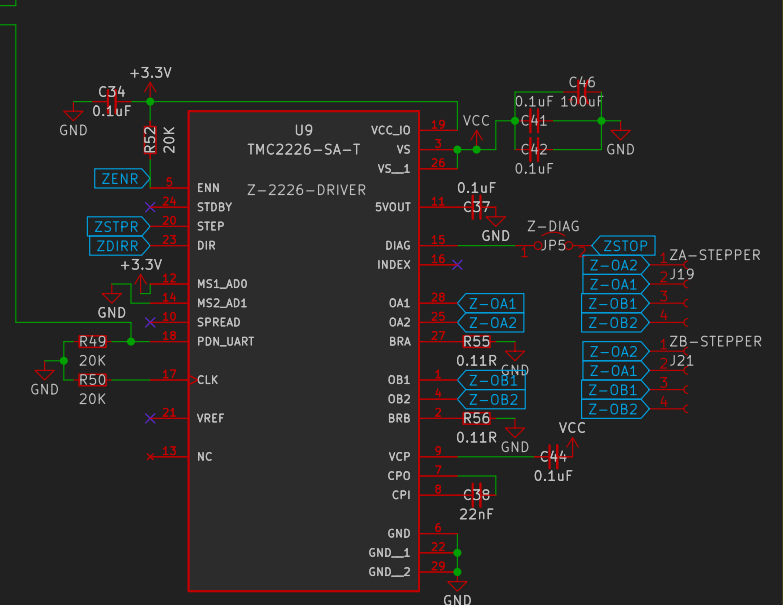
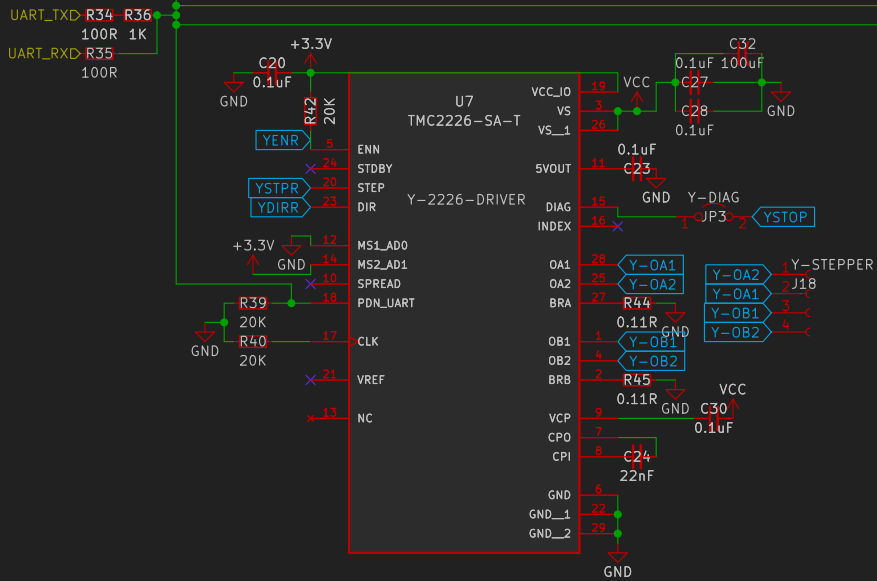
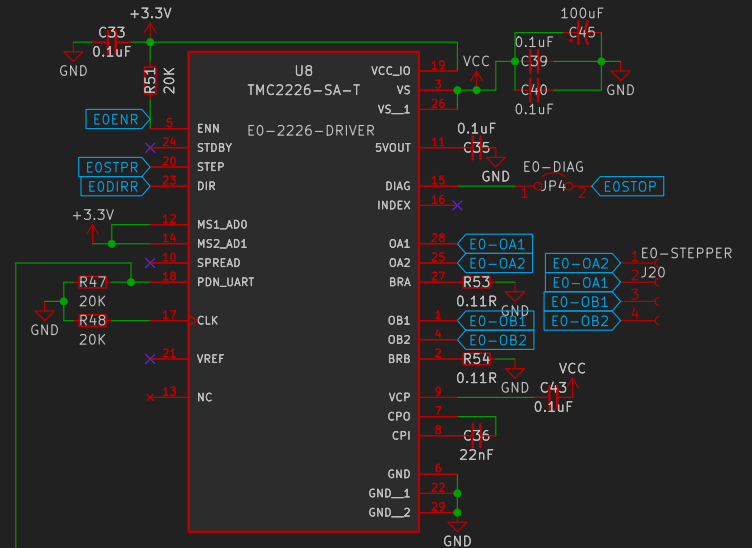
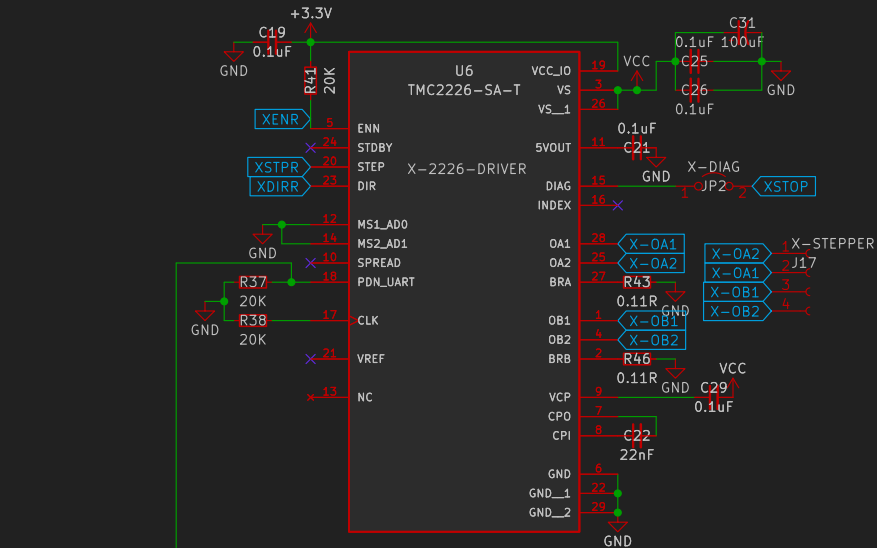
The circuit diagram for FANS & HEATERS includes the following components and connections:

- Power Supply:** A 5V regulator (U3, 7805) is connected to a 0.1uF capacitor (C14) and a 10K pull-up resistor (R9). The output of the regulator is connected to the VCC pin of the MOSFET drivers (U4 and U5).
- Fan Drivers:** Two MOSFET drivers (U4 and U5, FDS896) are used to drive the fans. The GATE pin of U4 is connected to FAN0, and the GATE pin of U5 is connected to FAN1. The SOURCE pin of U4 is connected to GND, and the SOURCE pin of U5 is connected to GND. The DRAIN pin of U4 is connected to FAN2, and the DRAIN pin of U5 is connected to FAN3.
- Heater Drivers:** Two MOSFET drivers (U4 and U5, FDS896) are used to drive the heaters. The GATE pin of U4 is connected to HB, and the GATE pin of U5 is connected to EO. The SOURCE pin of U4 is connected to GND, and the SOURCE pin of U5 is connected to GND. The DRAIN pin of U4 is connected to HB, and the DRAIN pin of U5 is connected to EO.
- Resistors:** A 10K pull-up resistor (R9) is connected to the VCC pin of the MOSFET drivers. A 10K pull-down resistor (R19) is connected to the GATE pin of the MOSFET drivers.

POWER SUPPLY

The diagram illustrates a power supply circuit for a system. The main circuit includes an LM61460AANRJR (U2) op-amp configured as a voltage follower, a 24V input transformer (F1), a 20A fuse (F1), and an AMS1117-3.3 (U1) voltage regulator. The circuit is populated with various passive components: capacitors (C1, C2, C3, C4, C9, C10, C11, C58, C59, C60, C61, C6, C8), resistors (R4, R5, R63, R64), and an inductor (L1). The diagram shows the connection of VCC, GND, and AGND rails, as well as the connection of the op-amp's input and output pins. A secondary circuit, highlighted in yellow, shows the connection of a TJA1051TK-3 CAN transceiver to the main circuit's VCC and GND rails.

THERMISTORS



STEPPER MOTOR DRIVERS

Sheet: /Stepper Driver Schematic/
File: Stepper_Drivers.kicad_sch

Title: RP2040 Board

Size: USLetter | Date:
KiCad E.D.A. eeschema (6.0.11)

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