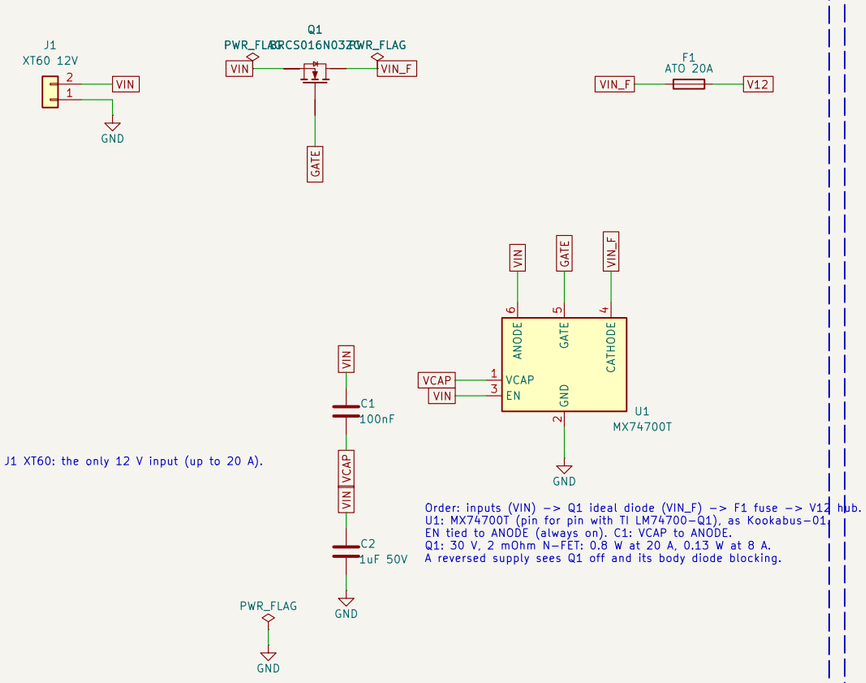
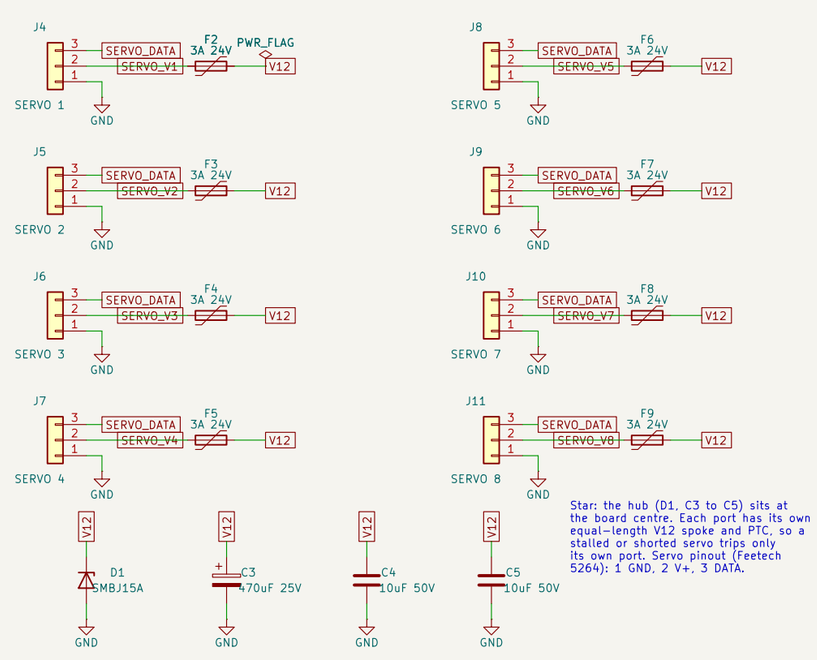
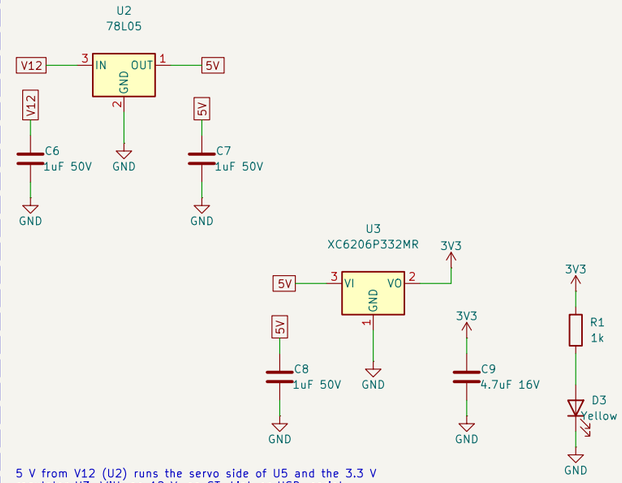
A. 12 V input and reverse-polarity protection



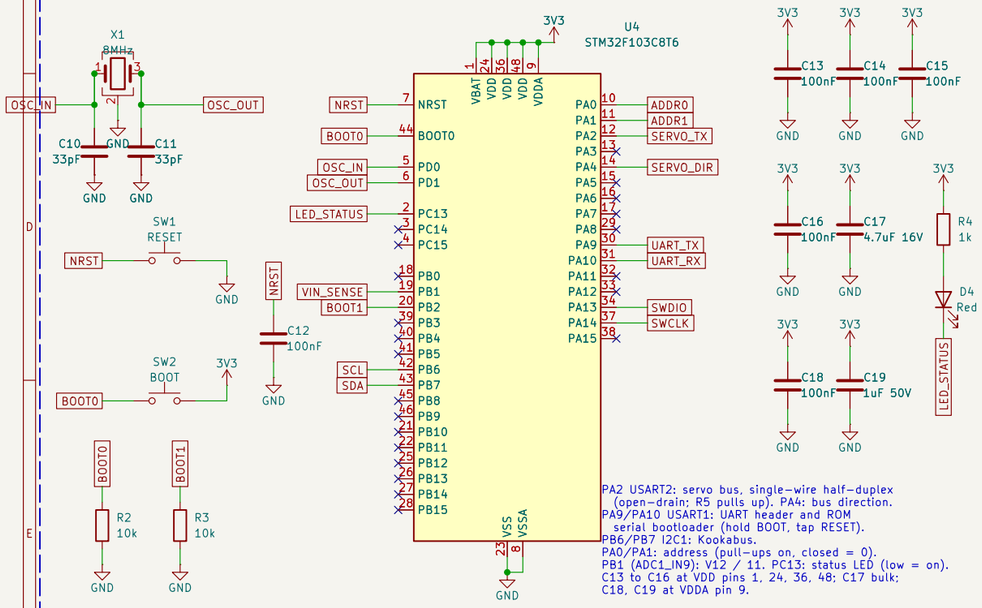
B. 12 V hub and star distribution to 8 servo ports



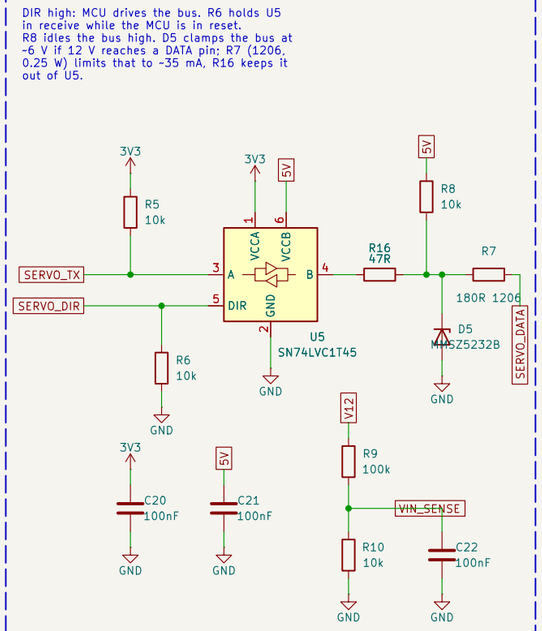
C. Logic power: 5 V and 3.3 V



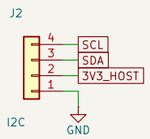
D. Microcontroller: STM32F103C8T6



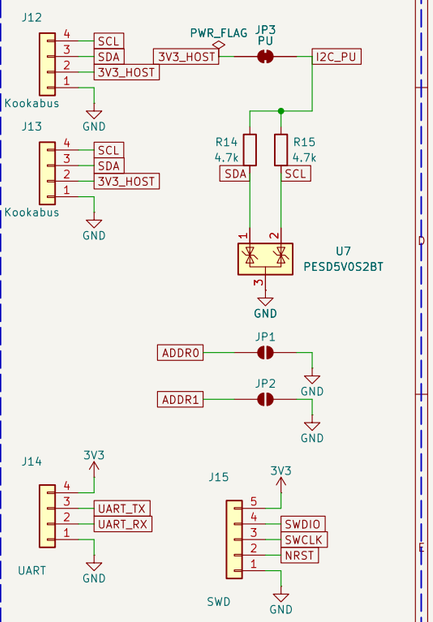
E. Servo bus: 3.3 V to 5 V, half-duplex



F. I2C pin header (backup to Kookabus)



G. Kookabus I2C, UART, SWD



Notes

1. Servo supply 6 to 12.6 V (ST3215 at 12 V: 0.2 A idle, 2.7 A stall). F1 20 A total; F2 to F9 3 A hold, 6 A trip, per port.
2. Power nets (poured, 2 oz, 0.5 mm clearance): VIN, VIN_F, V12, SERVO_V1 to SERVO_V8, GND. Spokes SERVO_Vn equal length from the hub.
3. Flashing: (a) ST-Link on J15 with STM32CubeProgrammer or the Arduino IDE (STM32duino), or (b) USB-serial adapter on J14: hold BOOT, tap RESET, then STM32CubeProgrammer (UART).
4. Kookabus J12/J13 and I2C header J2: 1 GND, 2 3V3, 3 SDA, 4 SCL. Host 3V3 feeds only the I2C pull-ups (cut JP3 to drop them). JP1/JP2 set the address.
5. J14 UART (3.3 V logic): 1 GND, 2 RX in, 3 TX out, 4 3V3. J15 SWD: 1 GND, 2 NRST, 3 SWCLK, 4 SWDIO, 5 3V3.

H1 H2 H3 H4
M3 M3 M3 M3

STM32F103C8T6; Kookabus I2C control, UART header backup
ST3215 and Feetech-protocol servos, 12 V, star distribution

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Title: *Kookabus-02: 8-port serial bus servo driver*

Size: A3	Date: 2026-09-28	**Rev: 2**
KiCad E.D.A. 10.0.5		Id: 1/1