

Power Supply and Voltage Regulator

The diagram illustrates a power supply and voltage regulator circuit. The input is a 12V source (J2) connected to a 1000mA fuse (F1) and a 100uF/50V capacitor (C1). The input voltage is measured at TP1 (12VSAFE). The input is connected to the VIN pin of the LM2575D2T-3P3R4G voltage regulator (U2). The regulator's GND pin is connected to ground, and its OUTPUT pin is connected to a 330uH 4A inductor (L1). The inductor's other end is connected to a 330uF/50V capacitor (C9) and a 500mA fuse (F2). The output voltage is 3.3V, measured at TP2. A feedback network consisting of a 1k/25W resistor (R5) and a blue LED (D4) is connected between the feedback pin and ground. A 1N5819 diode (D1) is connected between the input and output lines. A 1002AH component (J1) is connected to the input line. The circuit is powered by a 12V source and includes various test points (TP1, TP2, TP5) for monitoring.

UART Daisy Chain Connectors

The diagram illustrates a UART daisy chain connection between two headers, J6 (Upstream Header) and J7 (Downstream Header). The connection is as follows:

- Upstream Header (J6):** Pins 1-8 are shown. Pins 2-7 are crossed out, indicating they are not used. Pin 1 is connected to pin 1 of J7. Pin 8 is connected to ground.
- Downstream Header (J7):** Pins 1-8 are shown. Pins 2-7 are crossed out, indicating they are not used. Pin 1 is connected to pin 8 of J6. Pin 8 is connected to ground.
- Power Supply:** A +12VRAW supply is connected to pin 2 of J3 (labeled JUMPER). Pin 1 of J3 is connected to pin 1 of J6.
- Test Points:** TP3 is connected to pin 2 of J6. TP4 is connected to pin 1 of J7.
- Resistors:** A RC6/Rx resistor is connected between pin 2 of J6 and pin 1 of J7. A RC7/Tx resistor is connected between pin 1 of J7 and pin 8 of J6.

Stepper Motor Subsystem

The schematic diagram illustrates the Stepper Motor Subsystem. It features a Stepper Motor Header (J8) with pins 1 (T POS), 2 (OUT1A), 3 (OUT1B), 4 (OUT2A), and 5 (OUT2B). The header is connected to a driver circuit. The driver circuit includes two IFX9201SGAUMA1 stepper motor drivers (U3 and U4). The driver circuit also includes a 12VSAFE supply, a 3.3V regulator, and a 12VRAW supply. The driver circuit includes a 1N5819 diode bridge (D5-D12) and a 1000mA fuse (F4). The driver circuit is connected to a Stepper Motor Header (J8) which has pins 1 (T POS), 2 (OUT1A), 3 (OUT1B), 4 (OUT2A), and 5 (OUT2B). The driver circuit also includes a 1N5819 diode bridge (D5-D12) and a 1000mA fuse (F4).

The diagram shows a PIC18F27Q84-I/SO_BMP microcontroller (U1) with the following connections:

- Power:** VDD (pin 20) is connected to a 3.3V regulator (R6) and a 1uF/50V capacitor (C8). VSS (pin 8) is connected to ground.
- Reset:** RESET (pin 1) is connected to a 3.3V source through a 10k/25W resistor (R2) and a switch (SW2).
- Configuration:** MCLR (pin 4) is connected to a 3.3V source through a 10k/25W resistor (R1) and a switch (SW1).
- Header J5 (8-pin):** RA0 (pin 1), RA1 (pin 2), RA2 (pin 3), RA3 (pin 4), RA4 (pin 5), RA5 (pin 6), RA6 (pin 7), RA7 (pin 8).
- Header J10 (5-pin):** ICSPDAT (pin 4), ICSPCLK (pin 5).
- Header J4 (4-pin):** MCLR (pin 1), RESET (pin 2), JUMPER (pin 3), GND (pin 4).
- LEDs:** RB4-LED1 (D2) and RB0-LED2 (D3) are connected to pins 25 and 21 respectively, through current-limiting resistors R3 and R4.

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