

The schematic diagram illustrates the Ignition001-QFN module and its connections. The module contains a microcontroller (U1A, IGNITION001-QFN), a voltage detector (V2P5), and a reset switch (SW?). The module is powered by V3P3 and has a ground connection (GND). It features several signal lines, including AUX0, AUX1, PWR, ROT, SYS_RST, and ID. The module is connected to a system through a series of jumpers (J?) and capacitors (C?).

Module Connections:

- Power:** V3P3 (3.3V) and GND.
- Signal Lines:**
 - AUX0_RX_P, AUX0_TX_P, AUX0_RX_N, AUX0_TX_N (AUX0)
 - AUX1_RX_P, AUX1_TX_P, AUX1_RX_N, AUX1_TX_N (AUX1)
 - PWR_FLT0_L, PWR_FLT1_L, PWR_FLT2_L, PWR_FLT3_L, PWR_FLT4_L, ROT_FLT_L (PWR/ROT)
 - SYS_RST_L (SYS_RST)
 - ID0, ID1, ID2, ID3, ID4 (ID)

Module Internal Components:

- U1A:** IGNITION001-QFN
- V2P5:** Voltage Detector
- SW?:** Reset Switch
- C?:** Capacitors (1uF, 25V, X7R, 0603)
- R?:** Resistors (50 1%, 10K 1%, 50 1%, 10K 1%)

- Document program/configuration modes
- Rework AUX_RX for alternative prototyping
- Pick LED and limit resistor


One possible application of this alternative scheme is to allow the Ignition protocol to be carried using single ended LVCMOS signalling at 3.3V between this board and an ECP5 dev board without requiring SMA connectors for the link partner. This would simplify initial prototyping work.

The diagram shows a 12-pin connector J7 (Conn_02x06_Odd_Even) with pins 1 through 12. Pins 1, 3, 5, 7, 9, and 11 are connected to ground (GND). Pins 2, 4, 6, 8, 10, and 12 are connected to a series of 10k resistors (R?). The output of these resistors is connected to a common output line, which is controlled by a switch SW? FLT and connected to ground (GND).

Diagram illustrating the ID straps configuration. The header J2 (Conn_02x06_Odd_Even) shows pins 1, 3, 5, 7, 9, and 11 connected to V3P3. Pins 2, 4, 6, 8, 10, and 12 are connected to a common ground through 10K resistors (R7). The pins are labeled ID0, ID1, ID2, ID3, ID4, and ID5 respectively.

Diagram showing the connection for J7 connector (Conn_01x04):

- Pin 1: PWR_EN_L
- Pin 2: CMD1
- Pin 3: CMD2
- Pin 4: GND

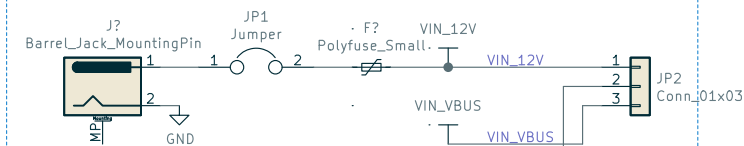


A circuit diagram showing a green wire labeled 'PWR_EN_L' connected to a resistor labeled 'R? 10K'. The other end of the resistor is connected to the anode of a green LED labeled 'D? LED'. The cathode of the LED is connected to a ground symbol labeled 'GND'.

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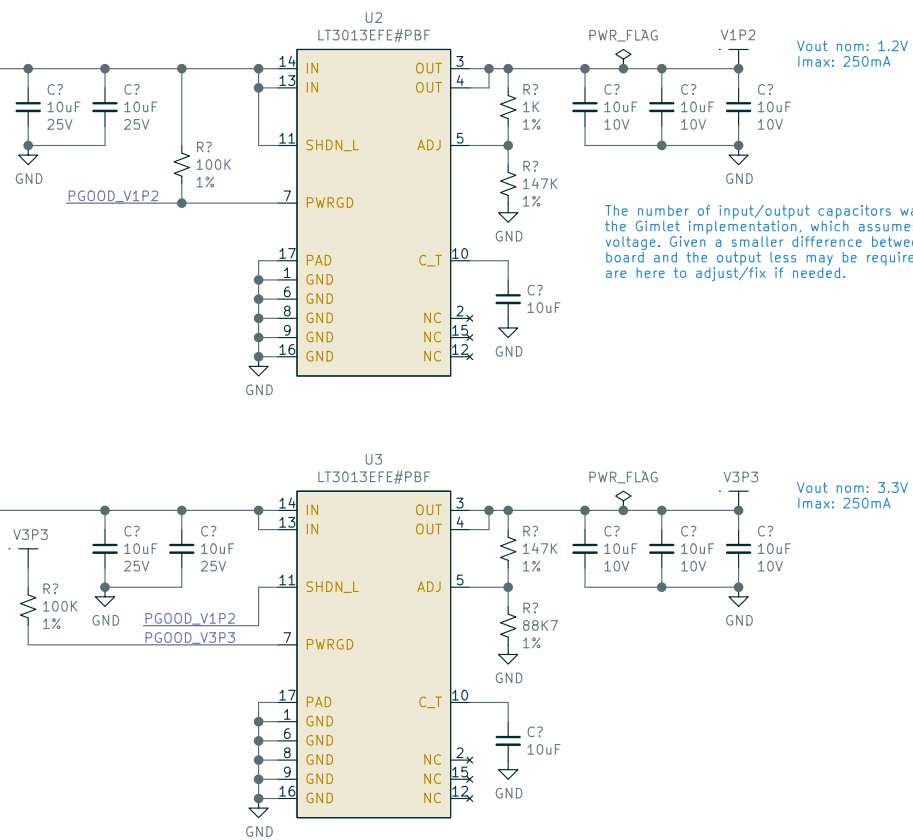
Rev: 1
Id: 1/3

Fake Bus Bar



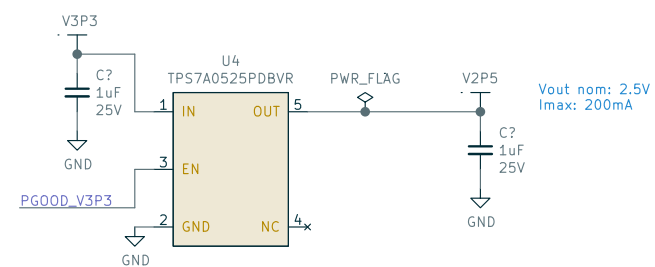
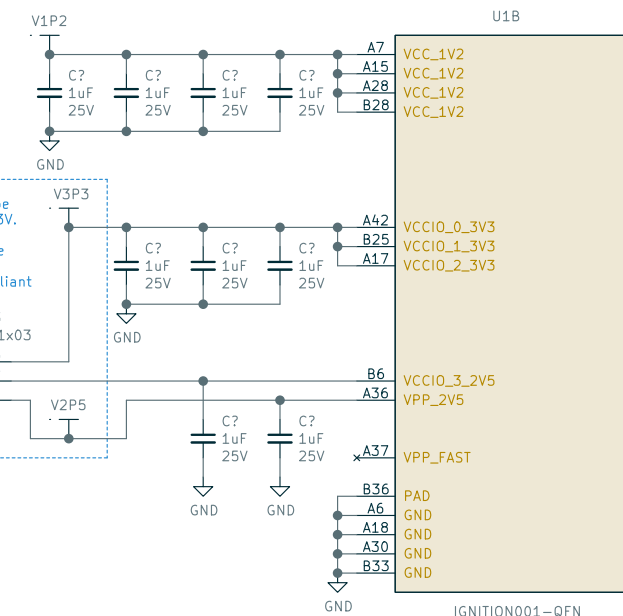
The Fake Bus Bar can take 5–12V from the barrel jack or 5V from VBUS, provided through the programming header. The three-pin jumper is deliberate as to avoid accidentally connecting both inputs.

JP1 is intended to allow disconnecting the barrel jack as well as injecting 12V from the Gimletlet using short Dupont wires. This allows both boards to be powered by a single supply.



The number of input/output capacitors was copied from the Gimlet implementation, which assumes a 54V input voltage. Given a smaller difference between VIN of this board and the output less may be required. The footprints are here to adjust/fix if needed.

JP3 allows VCCIO_3 to be configurable as 2.5V/3.3V. If configured as 3.3V the LVDS TX resistors need to be adjusted for compliant diff swing. 2.5V: pins 1–2 3.3V: pins 2–3



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Title: Power

Size: A3 Date: 2021-06-17

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Rev: 1

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