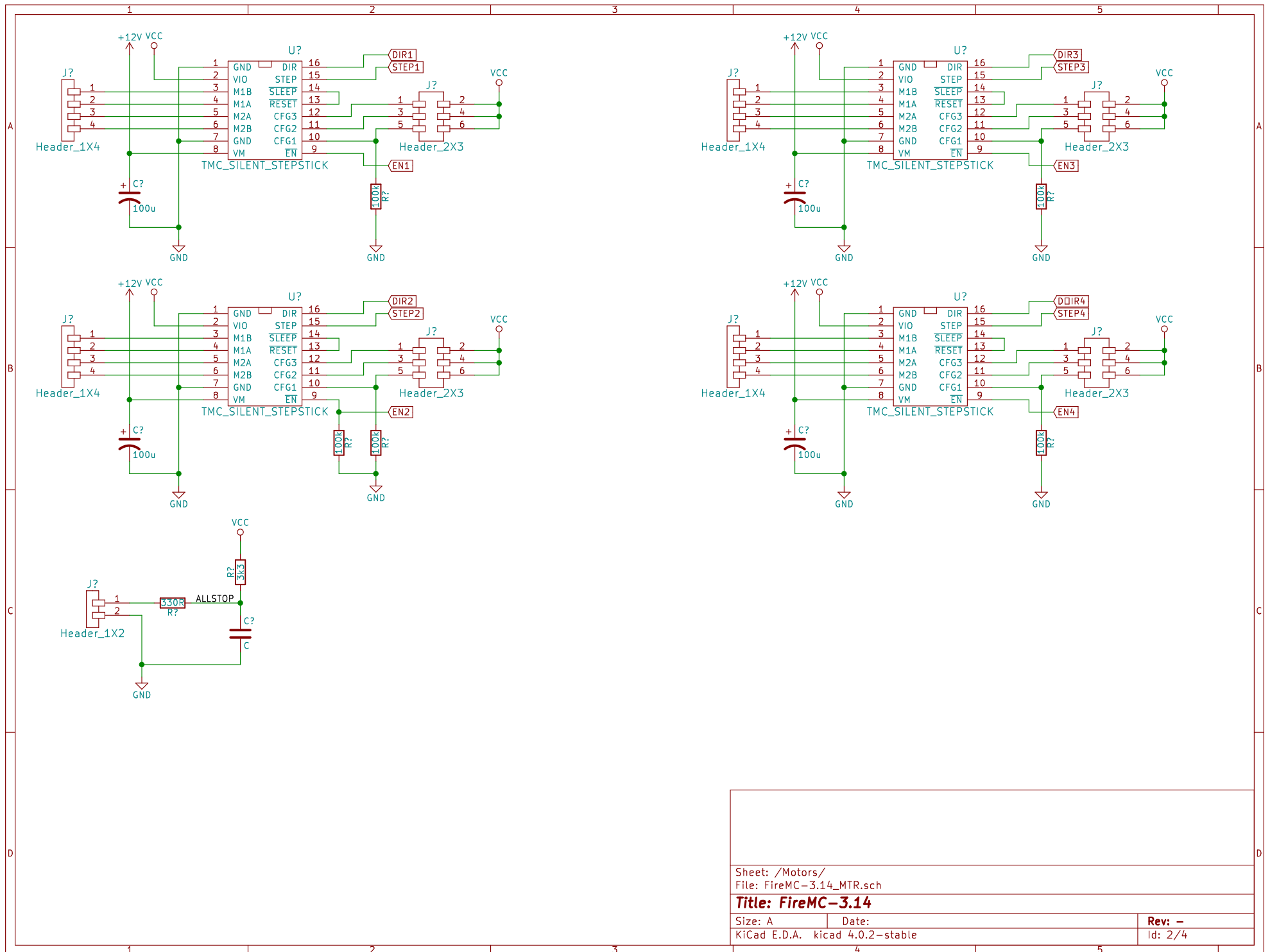


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Sheet: Power
File: FireMC-3.14_PWR.sch
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File: FireMC-3.14_IO.sch
Sheet: Motors
File: FireMC-3.14_MTR.sch

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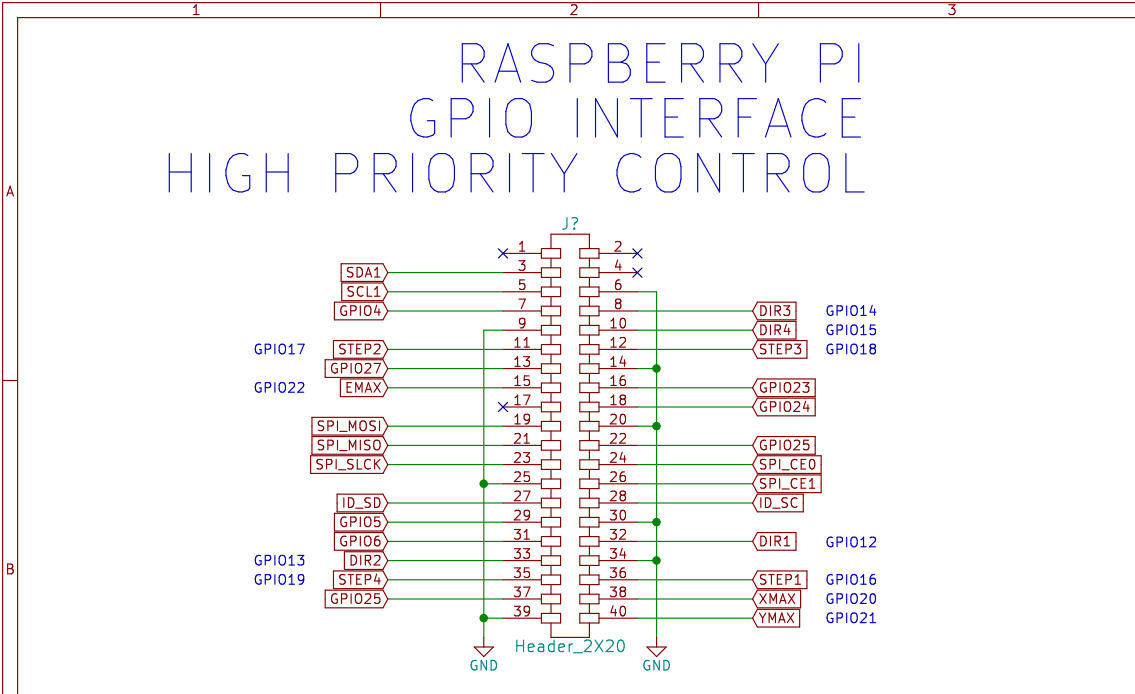
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RASPBERRY PI GPIO INTERFACE HIGH PRIORITY CONTROL

The diagram illustrates the pin configuration for a Raspberry Pi's 2X20 GPIO header, specifically focusing on high-priority motor control signals. The header is divided into two rows of 20 pins each, with GND pins at the ends. The left side of the header (pins 1-20) is connected to various motor control signals, while the right side (pins 21-40) is connected to other motor control signals. The connections are as follows:

Pin	Signal	GPIO Pin
1	SDA1	GPIO17
2	SCL1	GPIO17
3	GPIO4	GPIO17
4	STEP2	GPIO17
5	GPIO27	GPIO17
6	EMAX	GPIO22
7	SPI_MOSI	GPIO22
8	SPI_MISO	GPIO22
9	SPI_SCLK	GPIO22
10	ID_SD	GPIO13
11	GPIO5	GPIO19
12	GPIO6	GPIO19
13	DIR2	GPIO19
14	STEP4	GPIO19
15	GPIO25	GPIO19
16	DIR3	GPIO14
17	DIR4	GPIO15
18	STEP3	GPIO18
19	GPIO23	GPIO18
20	GPIO24	GPIO18
21	GPIO25	GPIO18
22	SPI_CE0	GPIO12
23	SPI_CE1	GPIO12
24	ID_SC	GPIO12
25	DIR1	GPIO12
26	STEP1	GPIO16
27	XMAX	GPIO20
28	YMAX	GPIO21
29	GPIO14	GPIO14
30	GPIO15	GPIO15
31	GPIO18	GPIO18
32	GPIO23	GPIO18
33	GPIO24	GPIO18
34	GPIO25	GPIO18
35	GPIO12	GPIO12
36	GPIO16	GPIO16
37	GPIO20	GPIO20
38	GPIO21	GPIO21
39	GPIO14	GPIO14
40	GPIO15	GPIO15

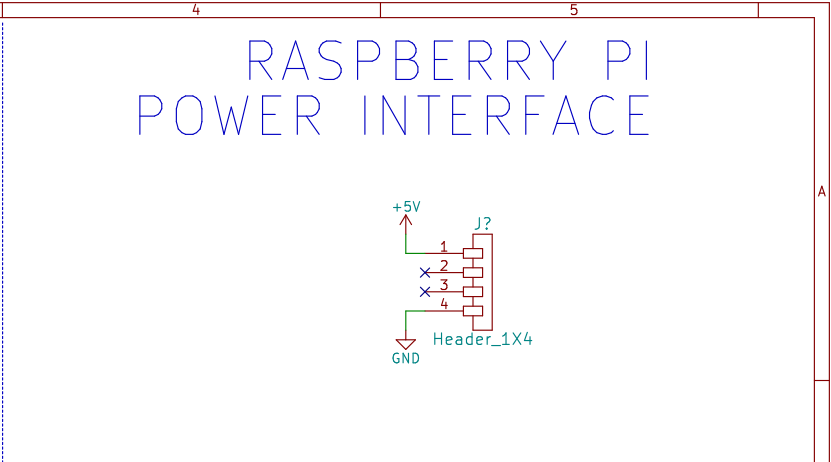


RASPBERRY PI POWER INTERFACE

The diagram illustrates a power interface for a Raspberry Pi. It features a 4-pin header labeled 'Header_1X4'. The connections are as follows:

- Pin 1: Connected to +5V.
- Pin 2: Marked with an 'X', indicating it is not connected.
- Pin 3: Marked with an 'X', indicating it is not connected.
- Pin 4: Connected to GND.

A component labeled 'J?' is connected to all four pins of the header.



GPIO EXPANTION LOW PRIORITY CONTROL

The diagram illustrates the wiring of an MCP23S17 I2C-to-GPIO module. The module is labeled 'U7' and 'MCP23S17'. It has two main sections of pins: a top section for I2C and power, and a bottom section for GPIO pins.

Power and I2C Connections:

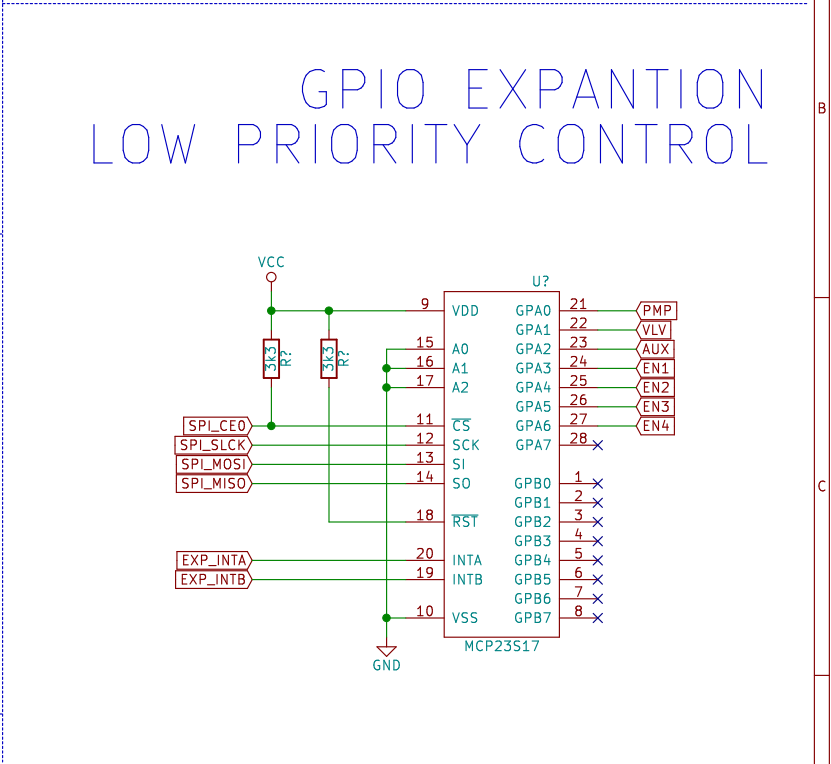
- VCC:** Connected to pin 9.
- GND:** Connected to pin 10.
- A0, A1, A2:** Address pins connected to pins 15, 16, and 17 respectively. Each pin has a 3k3 resistor connected to VCC.
- CS:** Chip select pin connected to pin 11.
- SCLK:** Serial clock pin connected to pin 12.
- SI:** Serial input pin connected to pin 13.
- SO:** Serial output pin connected to pin 14.
- RST:** Reset pin connected to pin 18.

GPIO Connections:

- INTA:** Interrupt A pin connected to pin 20.
- INTB:** Interrupt B pin connected to pin 19.
- GPIO Pins:** The module has 8 GPIO pins (GPB0-GPB7) connected to pins 1, 2, 3, 4, 5, 6, 7, and 8. These pins are shown with 'X' marks, indicating they are not connected to any external components in this diagram.

External Components:

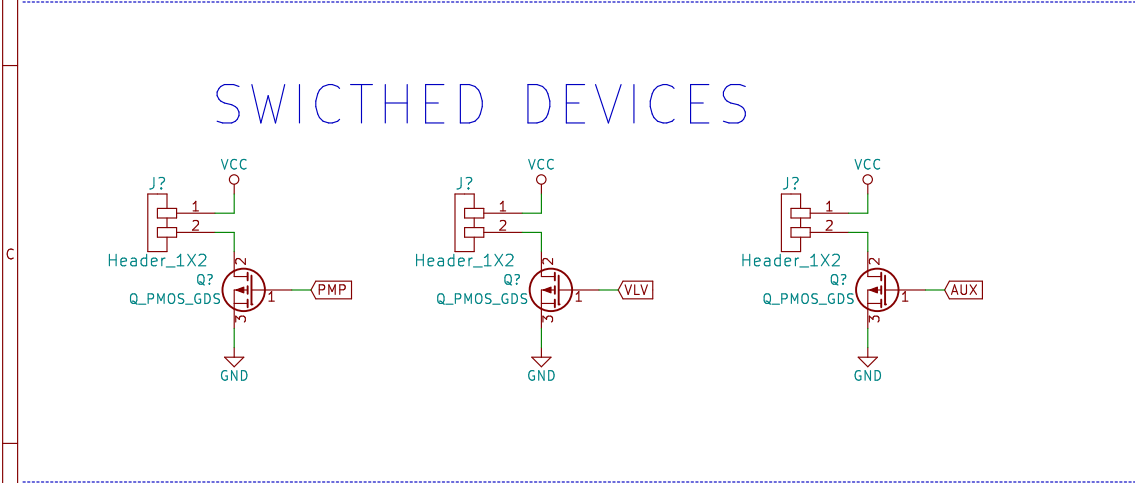
- PMP:** Connected to pin 21.
- VLV:** Connected to pin 22.
- AUX:** Connected to pin 23.
- EN1:** Connected to pin 24.
- EN2:** Connected to pin 25.
- EN3:** Connected to pin 26.
- EN4:** Connected to pin 27.



SWITCHED DEVICES

The image displays three circuit diagrams, each illustrating a PMOS transistor (Q_PMOS_GDS) used as a switch. The transistor's gate is connected to a header (Header_1X2) via a jumper (J?). The source of the transistor is connected to VCC, and the drain is connected to a load device, which is then connected to GND. The load devices are labeled PMP, VLV, and AUX.

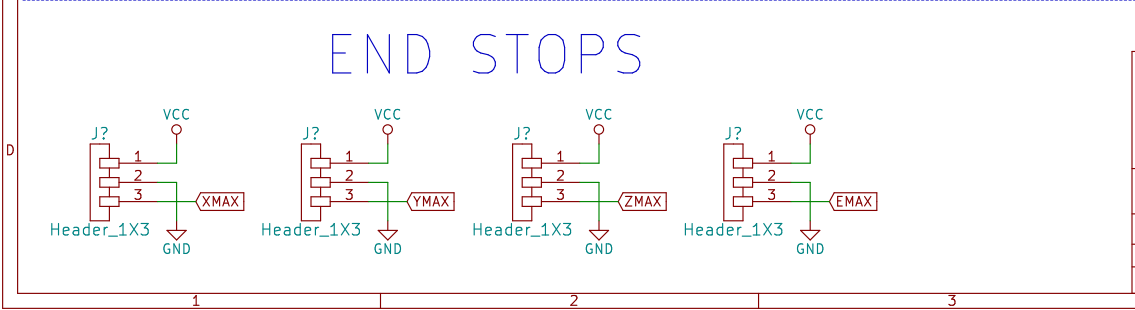
- Diagram 1 (Left):** The load device is PMP. The transistor's gate is connected to Header_1X2 pin 1 (labeled J?). The source is connected to VCC, and the drain is connected to GND.
- Diagram 2 (Middle):** The load device is VLV. The transistor's gate is connected to Header_1X2 pin 2 (labeled J?). The source is connected to VCC, and the drain is connected to GND.
- Diagram 3 (Right):** The load device is AUX. The transistor's gate is connected to Header_1X2 pin 1 (labeled J?). The source is connected to VCC, and the drain is connected to GND.



END STOPS

Four circuit diagrams for end stops are shown, each connected to a 3-pin header (Header_1X3) and a J? connector. The connections are as follows:

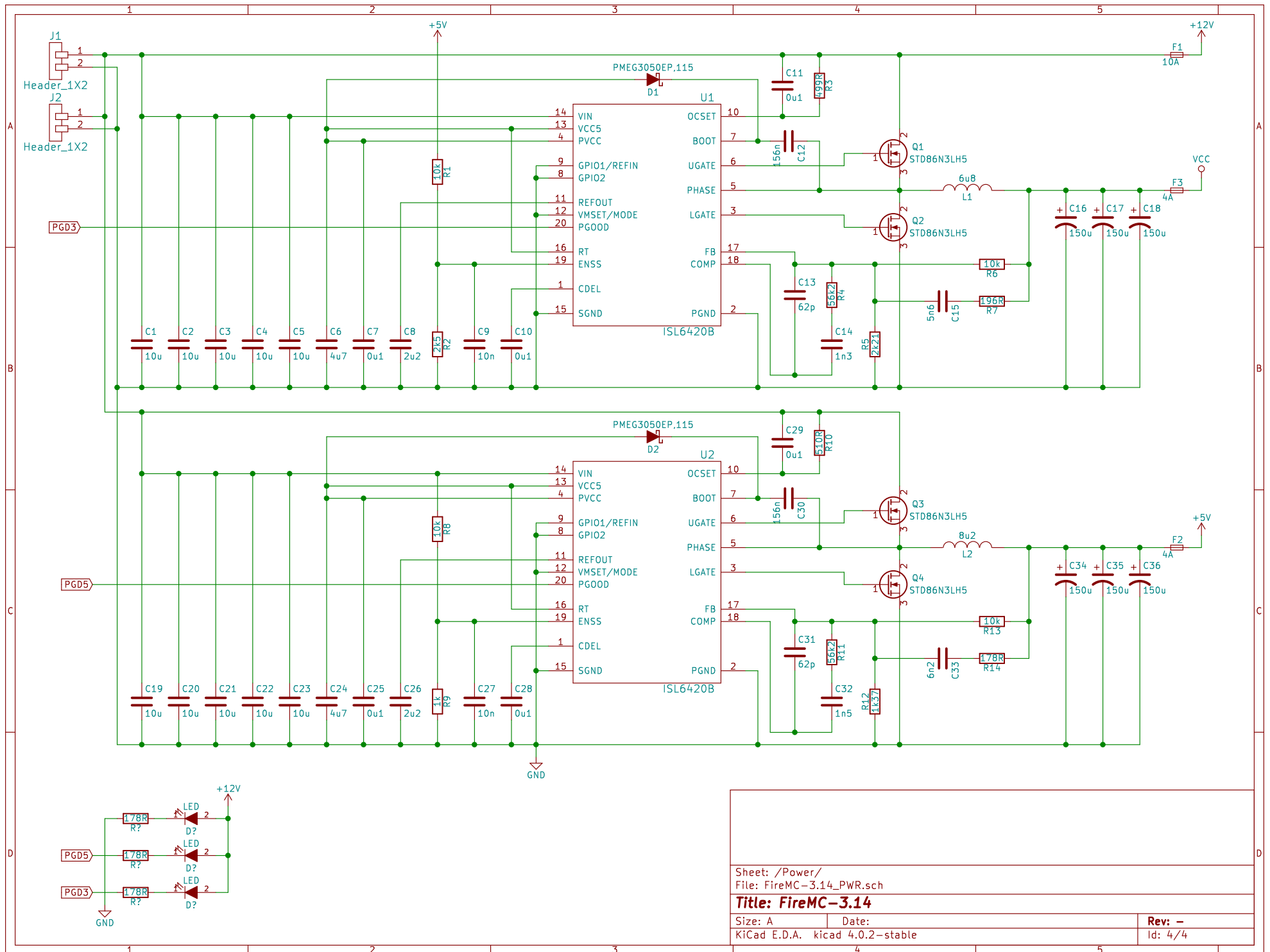
- XMAX:** Pin 1 to VCC, Pin 2 to GND, Pin 3 to XMAX.
- YMAX:** Pin 1 to VCC, Pin 2 to GND, Pin 3 to YMAX.
- ZMAX:** Pin 1 to VCC, Pin 2 to GND, Pin 3 to ZMAX.
- EMAX:** Pin 1 to VCC, Pin 2 to GND, Pin 3 to EMAX.



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