

The diagram illustrates a power management circuit for a battery-powered system. It features a 3.7V LiPo battery (U3) connected to a 4-channel relay (MASTER HAD-04H-R). The relay's four channels are controlled by a microcontroller (not shown) and are used to switch between different power sources for two motor drivers (MOTORS MT3608 and PIPOWER MT3608). The circuit also includes a LiPo charger (M1, 03962A) and a USB connection (USB1) for charging the battery. Two switches (SW2 and SW3) are used to manually control the power flow.

**Components and Connections:**

- U3 LiPo battery:** 3.7V. Pin 1 (GND) is connected to the common terminal of the relay. Pin 2 (VCC) is connected to the top terminal of the relay.
- MASTER HAD-04H-R:** A 4-channel relay. The top terminal is connected to the battery's VCC. The bottom terminal is connected to the battery's GND. The four channels are labeled 1, 2, 3, and 4.
- M1 LiPo Charger (03962A):**
  - Pin 1 (Out+) is connected to the top terminal of the relay.
  - Pin 2 (Bat+) is connected to the bottom terminal of the relay.
  - Pin 3 (Bat-) is connected to the bottom terminal of the relay.
  - Pin 4 (Out-) is connected to the bottom terminal of the relay.
  - Pin 5 (Sun-) is connected to the bottom terminal of the relay.
  - Pin 6 (Sun+) is connected to the top terminal of the relay.
- MOTORS MT3608:**
  - Pin 1 (VIN) is connected to the top terminal of the relay.
  - Pin 2 (GND) is connected to the bottom terminal of the relay.
  - Pin 3 (5V) is connected to the top terminal of the relay.
  - Pin 4 (GND) is connected to the bottom terminal of the relay.
- PIPOWER MT3608:**
  - Pin 1 (VIN) is connected to the top terminal of the relay.
  - Pin 2 (GND) is connected to the bottom terminal of the relay.
  - Pin 3 (5V) is connected to the top terminal of the relay.
  - Pin 4 (GND) is connected to the bottom terminal of the relay.
- SW2 Switch:** A manual switch connected between the top and bottom terminals of the relay.
- SW3 Switch:** A manual switch connected between the top and bottom terminals of the relay.
- USB1 USB:** A USB connection used for charging the battery. It is connected to the bottom terminal of the relay.

JP1  
RASPBERRYPI-B+-GPIO

Pin	Function
1	5V
2	5V
3	SDA
4	5V
5	SCL
6	GND
7	GP18#
8	3.3V
9	GND
10	TXO
11	GP4
12	GP17
13	3.3V
14	GND
15	GP22
16	GP23
17	GND
18	GP24
19	MISO
20	GND
21	SCLK
22	GP25
23	GP5
24	CE0
25	GND
26	CE1
27	ID_SD
28	ID_SC
29	GP6
30	GND
31	GP12
32	GP13
33	GP16
34	GND
35	GP19
36	GP20
37	GP21
38	GP26
39	GND
40	GND

The diagram illustrates a motor control circuit using an L293D motor controller. The controller is connected to two DC motors, H1 (Motor 1) and H2 (Motor 2), and four GPIO pins (5, 6, 7, 8).

**Motor Controller (L293D) Pin Connections:**

- Pin 9 (ENABLE2):** Connected to GPIO 5.
- Pin 10 (INPUT3):** Connected to GPIO 6.
- Pin 11 (OUTPUT3):** Connected to GPIO 7.
- Pin 12 (GND):** Connected to GND.
- Pin 13 (GND):** Connected to GND.
- Pin 14 (OUTPUT4):** Connected to GPIO 8.
- Pin 15 (INPUT4):** Connected to GPIO 8.
- Pin 16 (VSS):** Connected to GND.
- Pin 8 (VS):** Connected to 5V.
- Pin 7 (INPUT2):** Connected to 5V.
- Pin 6 (OUTPUT2):** Connected to 5V.
- Pin 5 (GND):** Connected to GND.
- Pin 4 (GND):** Connected to GND.
- Pin 3 (OUTPUT1):** Connected to 5V.
- Pin 2 (INPUT1):** Connected to 5V.
- Pin 1 (ENABLE1):** Connected to 5V.

**Motor Connections:**

- Motor 1 (H1):** Connected to 5V and GND.
- Motor 2 (H2):** Connected to 5V and GND.

**GPIO Connections:**

- GPIO 5:** Connected to 5V.
- GPIO 6:** Connected to 5V.
- GPIO 7:** Connected to 5V.
- GPIO 8:** Connected to 5V.

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