

| Pin Name | Signal on Pin | Pin Cont... | GPIO out... | GPIO m... | GPIO P... | Maximum... | Fast Mode |
|----------|---------------|-------------|-------------|--------------|--------------|------------|-----------|
| PB10 | SPI2_SCK | n/a | n/a | Alternate... | No pull-u... | Low | n/a |
| PC1 | SPI2_MOSI | n/a | n/a | Alternate... | No pull-u... | Low | n/a |
| PC2_C | SPI2_MISO | n/a | n/a | Alternate... | No pull-u... | Low | n/a |

| Pin Name | Signal on Pin | Pin Cont... | GPIO out... | GPIO mode | GPIO Pul... | Maximum... | Fast Mode |
|----------|---------------|-------------|-------------|--------------|--------------|------------|-----------|
| PA5 | SPI1_SCK | n/a | n/a | Alternate... | No pull-u... | Low | n/a |
| PA7 | SPI1_MOSI | n/a | n/a | Alternate... | No pull-u... | Low | n/a |
| PG9 | SPI1_MISO | n/a | n/a | Alternate... | No pull-u... | Low | n/a |

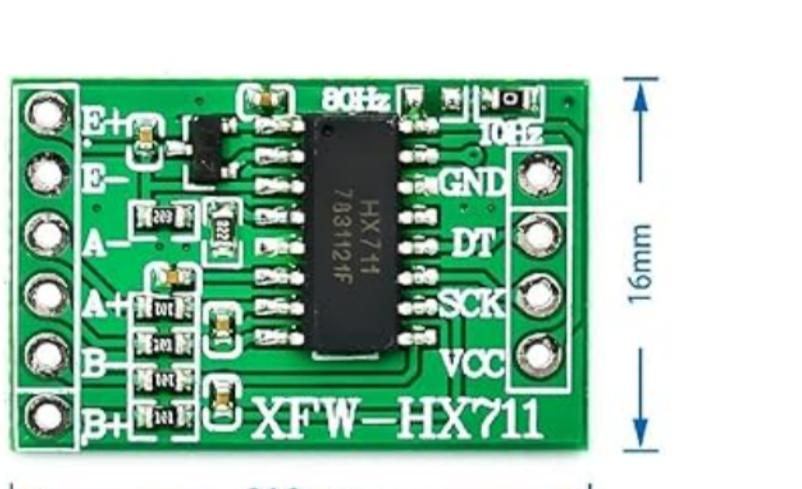
| Pin Name | Signal on Pin | Pin Cont... | GPIO out... | GPIO m... | GPIO Pul... | Maximum... | Fast Mode |
|----------|---------------|-------------|-------------|--------------|--------------|------------|-----------|
| PB6 | I2C1_SCL | n/a | n/a | Alternate... | No pull-u... | Low | n/a |
| PB7 | I2C1_SDA | n/a | n/a | Alternate... | No pull-u... | Low | n/a |

| Pin Name | Signal on Pin | Pin Cont... | GPIO out... | GPIO m... | GPIO Pul... | Maximum... | Fast Mode |
|----------|---------------|-------------|-------------|--------------|--------------|------------|-----------|
| PF0 | I2C2_SDA | n/a | n/a | Alternate... | No pull-u... | Low | n/a |
| PF1 | I2C2_SCL | n/a | n/a | Alternate... | No pull-u... | Low | n/a |

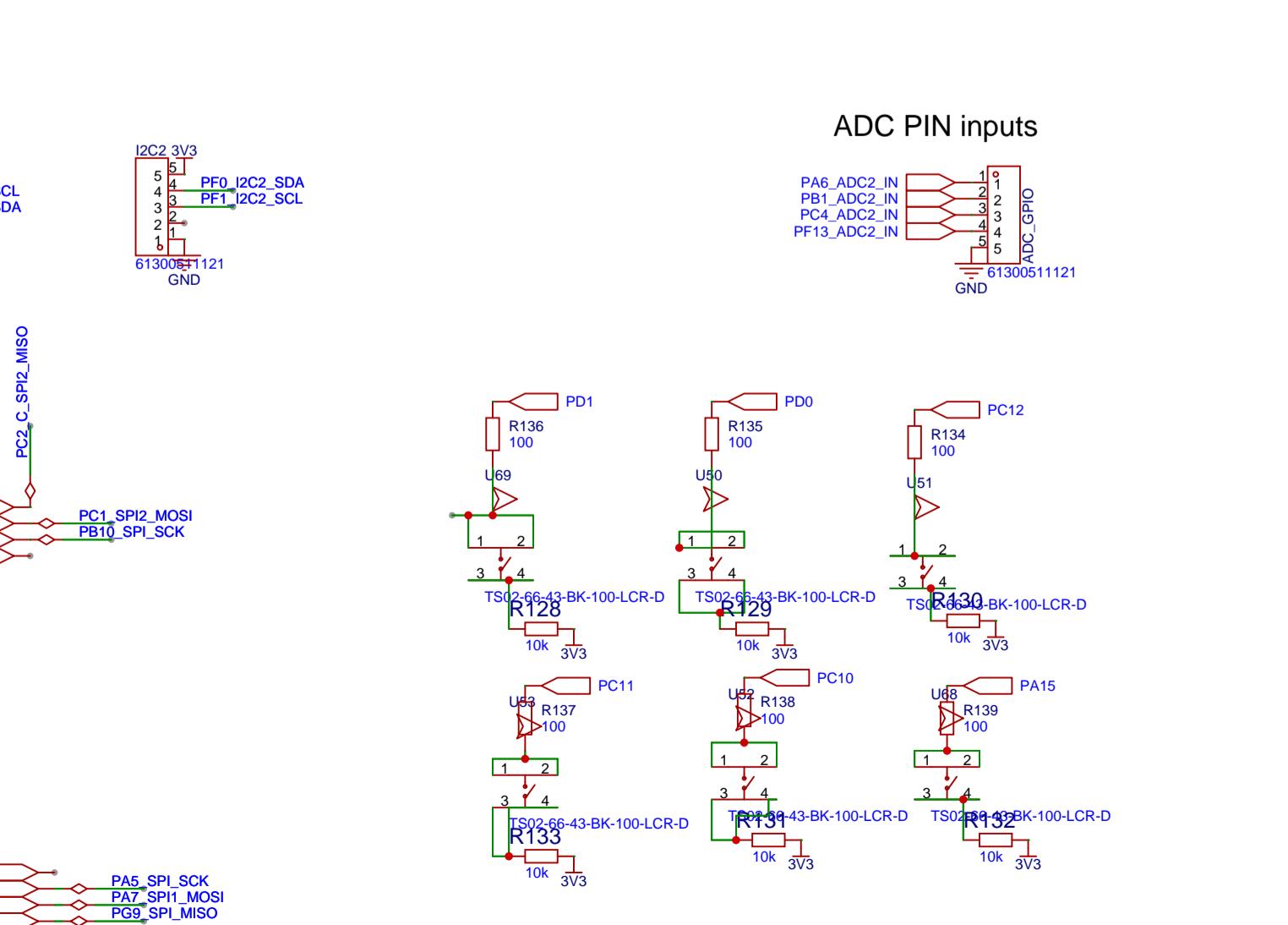
| Pin N... | Signal on... | Pin Cont... | GPIO out... | GPIO mode | GPIO Pul... | Maximum... | Fast Mode | User Label |
|----------|--------------|-------------|-------------|--------------|--------------|------------|-----------|------------|
| PA0 | TIM2_CH1 | n/a | n/a | Alternate... | No pull-u... | Low | n/a | |
| PA1 | TIM2_CH2 | n/a | n/a | Alternate... | No pull-u... | Low | n/a | |
| PA2 | TIM2_CH3 | n/a | n/a | Alternate... | No pull-u... | Low | n/a | |
| PA3 | TIM2_CH4 | n/a | n/a | Alternate... | No pull-u... | Low | n/a | |

| Pin N... | Signal on... | Pin Cont... | GPIO out... | GPIO mode | GPIO Pul... | Maximum... | Fast Mode |
|----------|--------------|-------------|-------------|--------------|--------------|------------|-----------|
| PD12 | TIM4_CH1 | n/a | n/a | Alternate... | No pull-u... | Low | n/a |
| PD13 | TIM4_CH2 | n/a | n/a | Alternate... | No pull-u... | Low | n/a |
| PD14 | TIM4_CH3 | n/a | n/a | Alternate... | No pull-u... | Low | n/a |

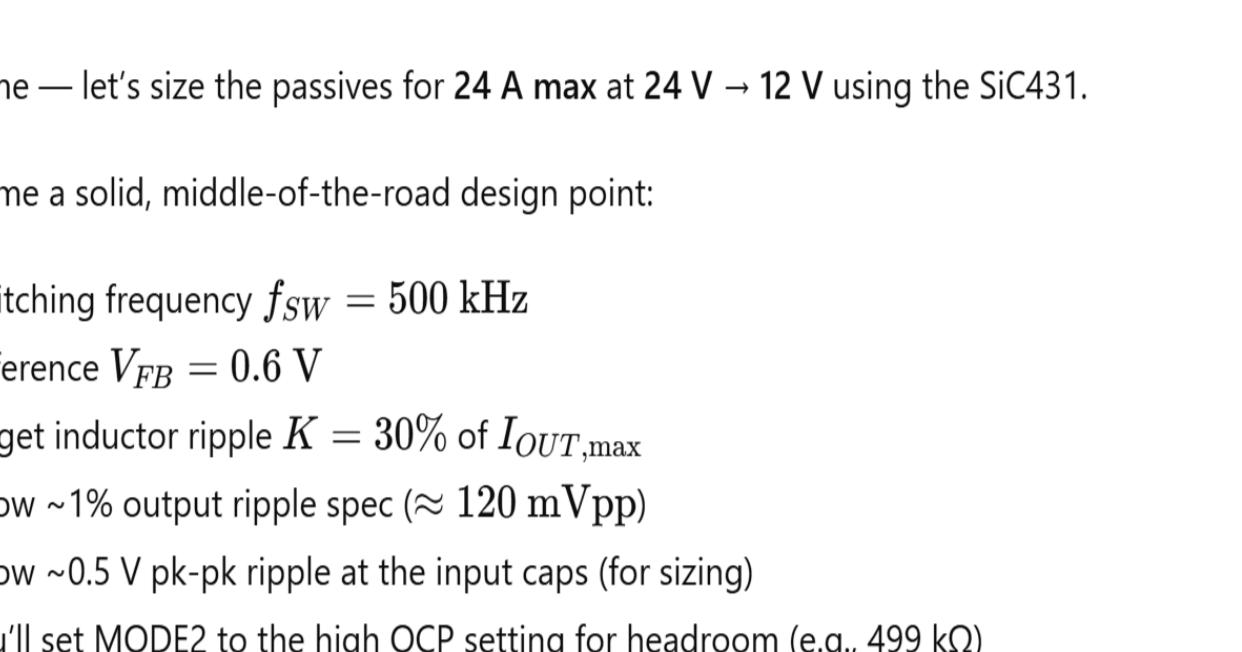
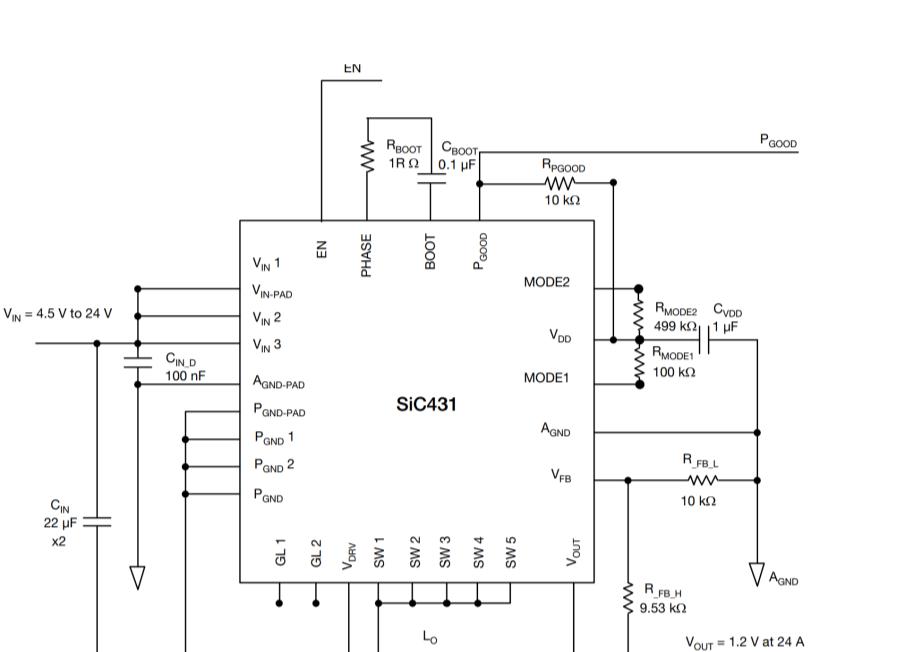
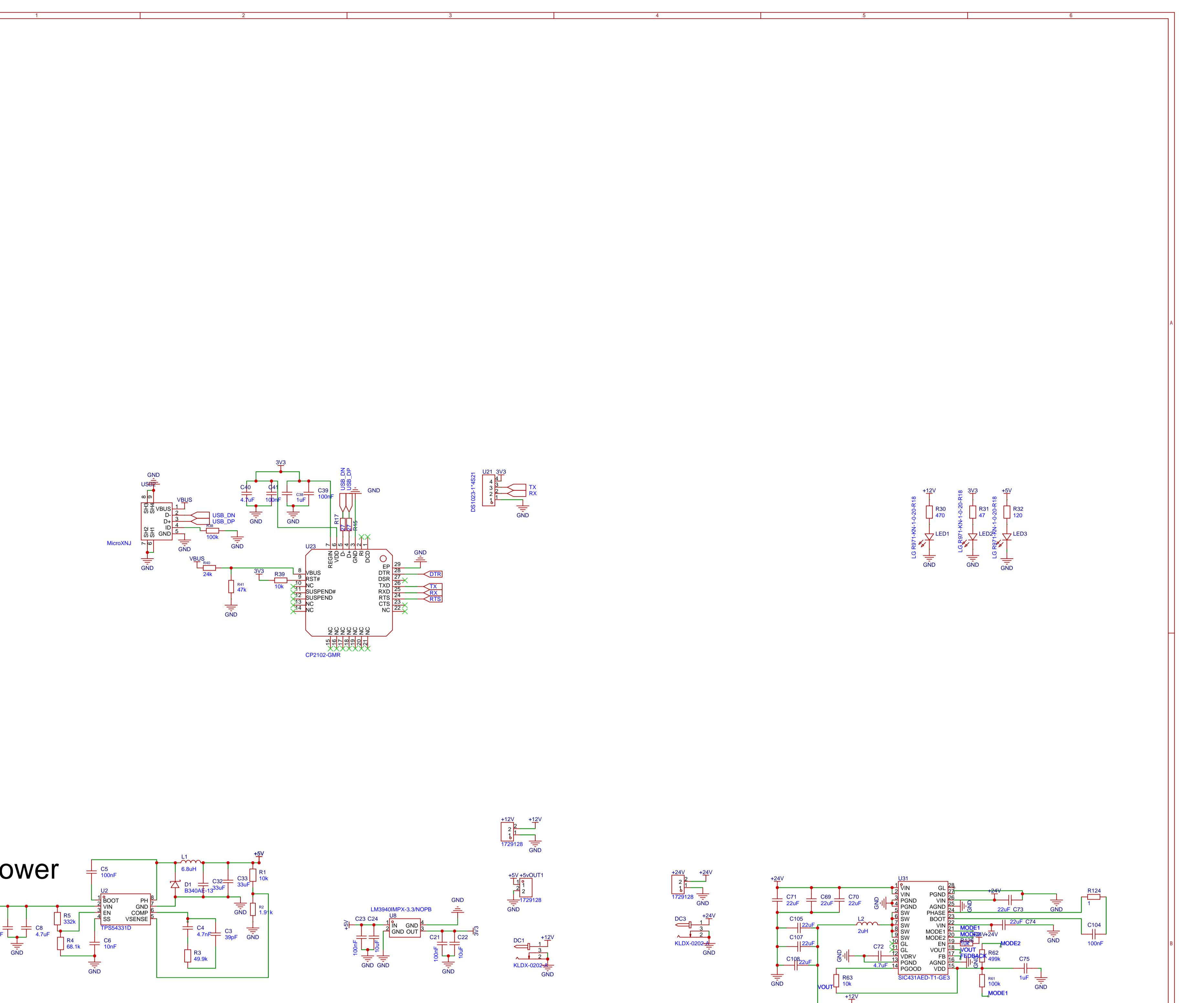
【Package Includes】:
 4Pcs HX711 Weighing Sensor Module
 4Pcs 10pin (6+4) Male to Male Header pins in 0.1 inch pitch
 10Pin 21cm/8 in Male to Female Jumper Wires.
 10Pin 21cm/8 in Female to Female Jumper Wires.



Connect 1 (VWZMD1B) to each
connector as well as a
loadcell to the module



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Output Voltage Adjustment
 If a different output voltage is needed, simply change the value of V_{OUT} and solve for $R_{FB,H}$ based on the following formula:

$$R_{FB,H} = \frac{R_{FB,L}(V_{OUT} - V_{FB})}{V_{FB}}$$

Where V_{FB} is 0.6 V for the SiC43X. $R_{FB,L}$ should be a maximum of 10 kΩ to prevent V_{OUT} from drifting at no load.

Awesome — let's size the passives for 24 A max at 24 V → 12 V using the SiC43X.

I'll assume a solid, middle-of-the-road design point:

- Switching frequency $f_{SW} = 500$ kHz
- Reference $V_{FB} = 0.6$ V
- Target inductor ripple $K = 30\%$ of $I_{OUT,max}$
- Allow ~1% output ripple spec (~120 mVpp)
- Allow ~0.5 V pk-pk ripple at the input caps (for sizing)
- You'll set MODE2 to the high OCP setting for headroom (e.g., 499 kΩ)

If you want different ripple or f_{SW} , tell me and I'll re-compute.

But size for RMS current:

$$I_{IN,RMS} \approx I_{OUT} \sqrt{D(1-D)} = 24 \cdot 0.5 = 12 \text{ A}$$

use multiple ceramics plus bulk polymer with high ripple rating

Output cap ESR limit (from ripple)

$$ESR_{max} = \frac{V_{OUT,pp}}{\Delta I} = 0.12 \approx 17 \text{ mΩ}$$

Output cap (transient, 50% step, 50 µs loop response, 2% drop)

$$C_{out} \gtrsim \frac{\Delta V \Delta t}{\Delta V} = 12 \cdot 50 \mu\text{s} \approx 2.5 \text{ mF}$$

(Capacitive ripple term with this C: $V_{pp,C} \approx \frac{\Delta V}{2} \approx 0.72 \text{ mV}$; ripple will be ESR-dominated)

Feedback diode for 12 V

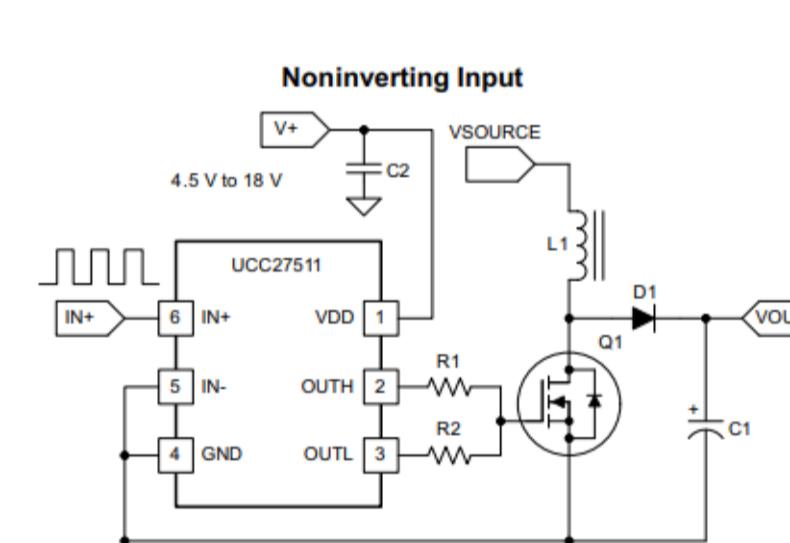
Pick $R_{FB,H} = 10 \text{ kΩ}$

$$R_{FB,H} = R_{FB,L} \cdot \frac{V_{OUT} - V_{FB}}{V_{FB}} = 10k \cdot \frac{12 - 0.6}{0.6} = 190 \text{ kΩ}$$

Feed-forward cap C_{FF} (place FF zero/pole near $f_c = f_{SW}/10 \approx 50$ kHz)

Using the app-note equations and $R_{FB,H} = 190\text{kΩ}$, $C_{FF} = 10\text{kΩ}$

$$(R_{FB,L} \parallel R_{FB,H}) \approx 9.5\text{kΩ} \rightarrow [C_{FF} \approx 75 \text{ pF}]$$



1

2

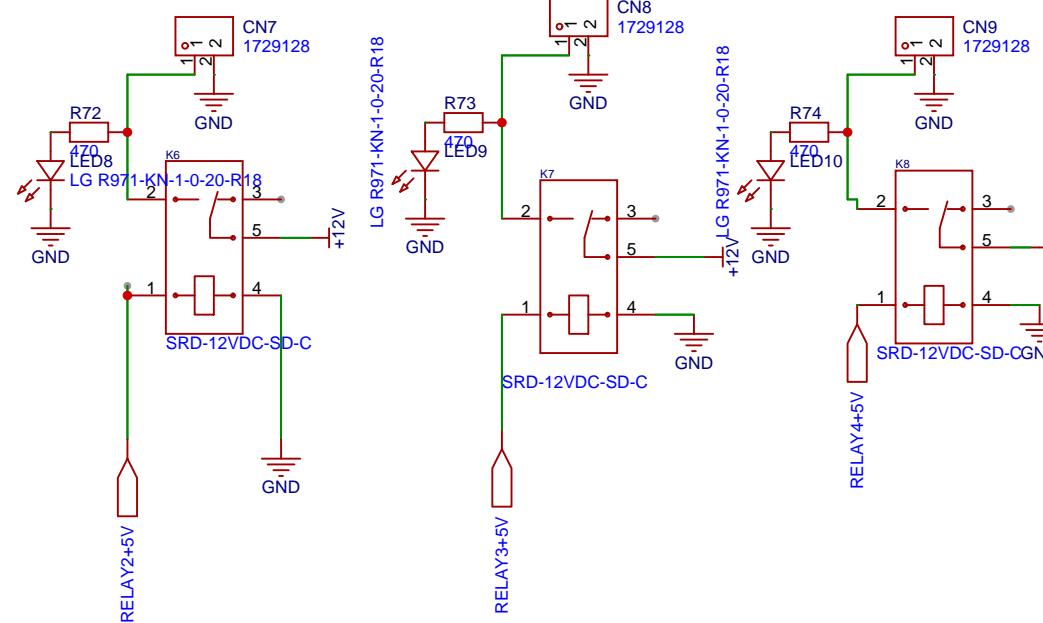
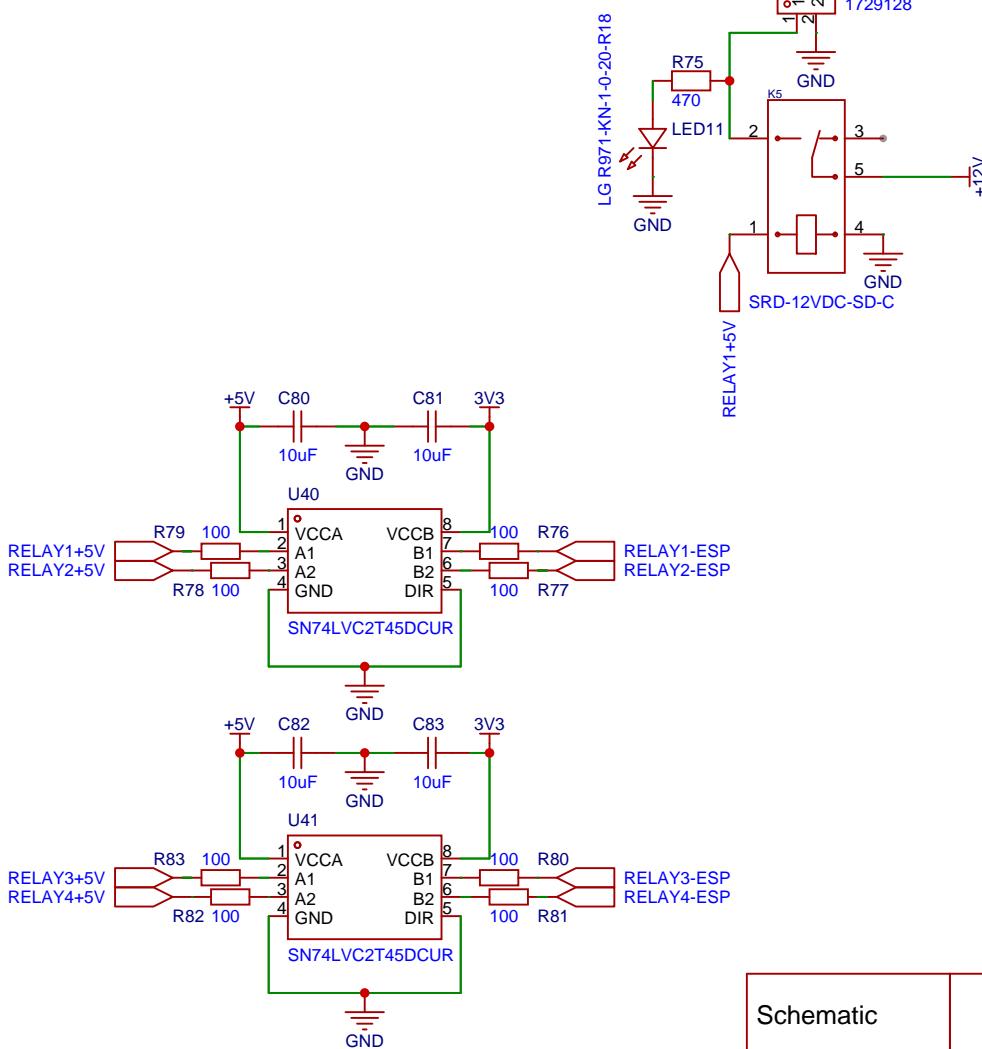
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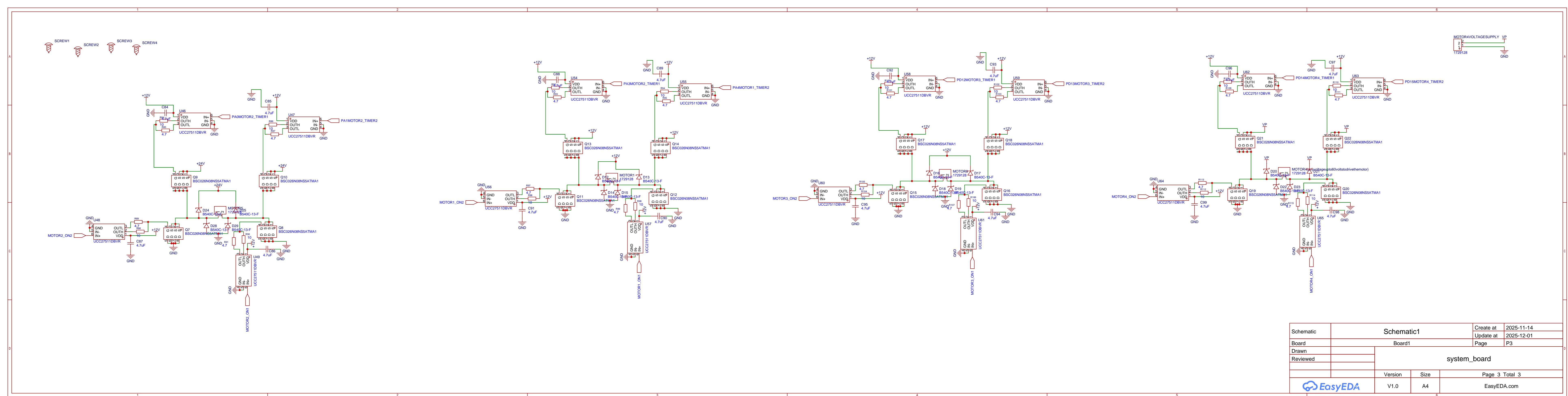
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Relay section



| | | | | |
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