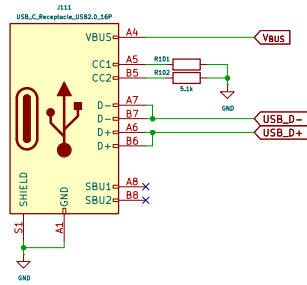
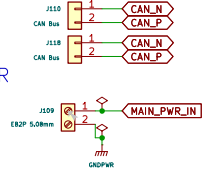


# Interface

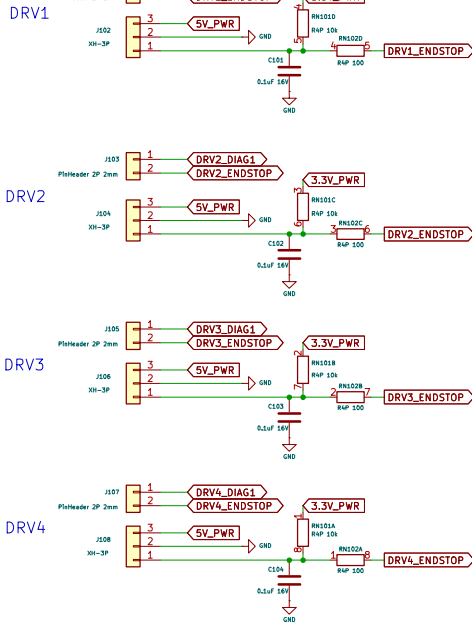
## CONTROL



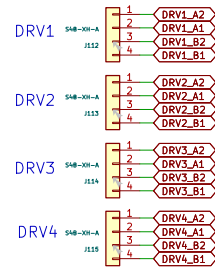
## POWER



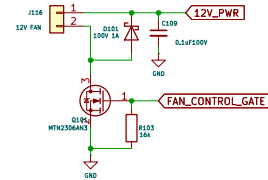
## END STOP



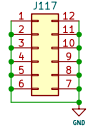
## MOTOR



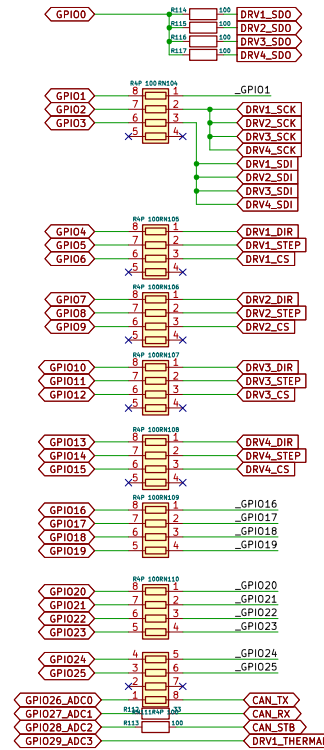
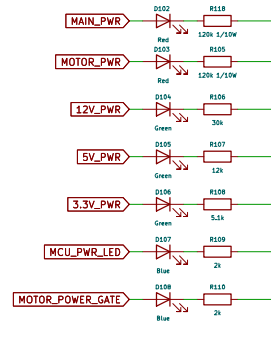
## FAN



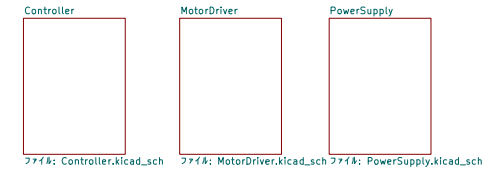
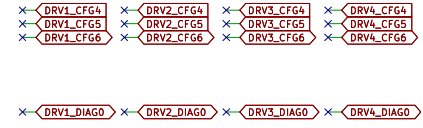
## Jumper Stock



## LED

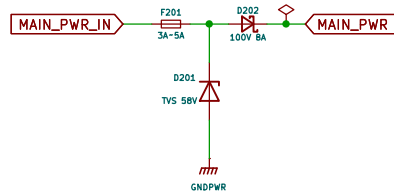


MISO	Master In	Slave Out	SDO	Serial Data Out	SDI	Serial Data In	Tx	Transmitter	Fxxk	Rx	Receiver	Fxxk
spi0a	gpio0	gpio3	gpio2	gpio6	gpio18	gpio18	gpio18	gpio18	gpio18	gpio18	gpio18	gpio18
spi0b	gpio4	gpio7	gpio6	gpio19	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0c	gpio16	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0d	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0e	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0f	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0g	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0h	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0i	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0j	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0k	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0l	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0m	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0n	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0o	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0p	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0q	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0r	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0s	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0t	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0u	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0v	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0w	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0x	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0y	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22
spi0z	gpio20	gpio23	gpio18	gpio23	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22	gpio22

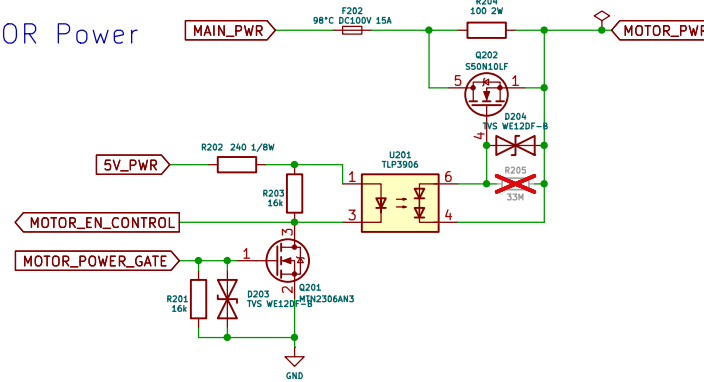


Sheet: /	File: Pico5160HV.kicad_sch	Rev: 1/8
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Size: A3	Date:	Id: 1/8
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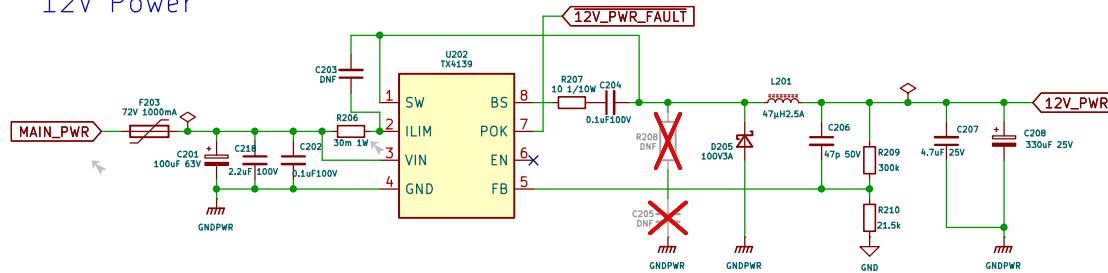
## Power Input



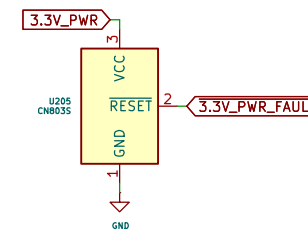
## MOTOR Power



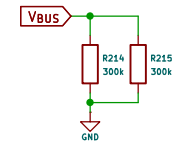
## 12V Power



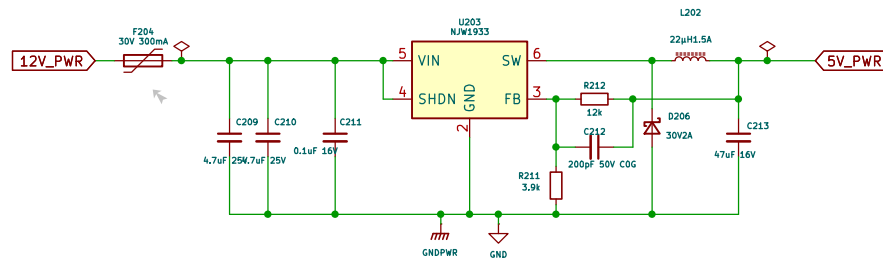
## Power Fault



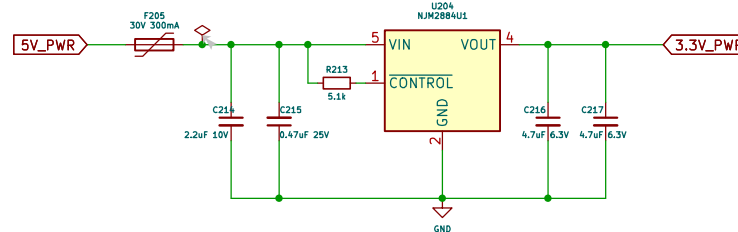
## VBUS



## 5V Power



## 3.3V Power



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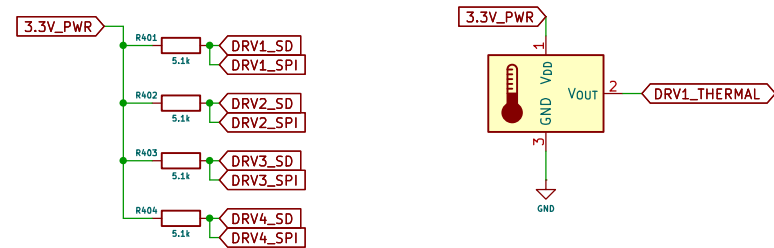
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# MotorDriver



Driver1



ファイル: Driver1.kicad\_sch

Driver2



ファイル: Driver2.kicad\_sch

Driver3



ファイル: Driver3.kicad\_sch

Driver4



ファイル: Driver4.kicad\_sch

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**Title:**

Size: A4

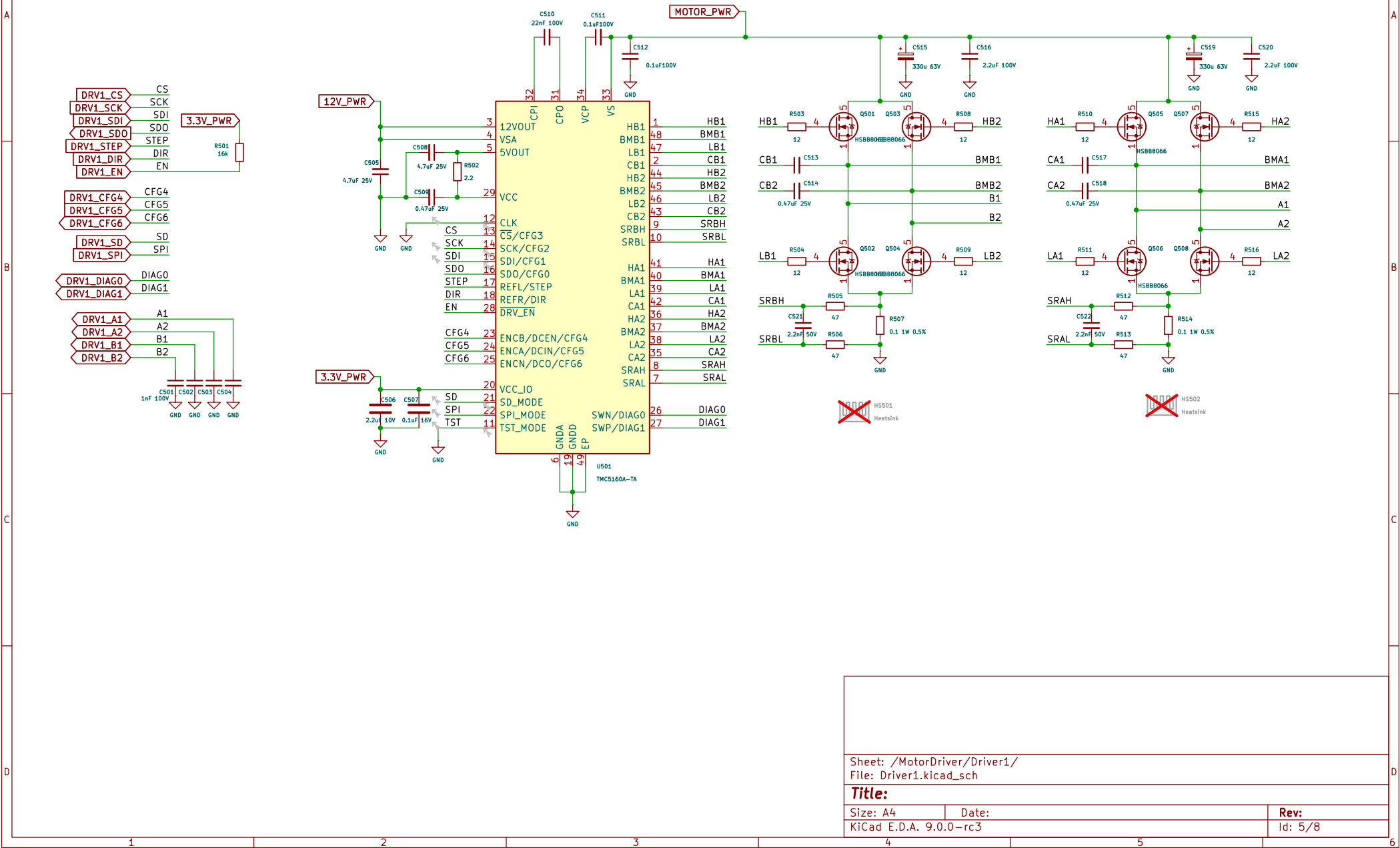
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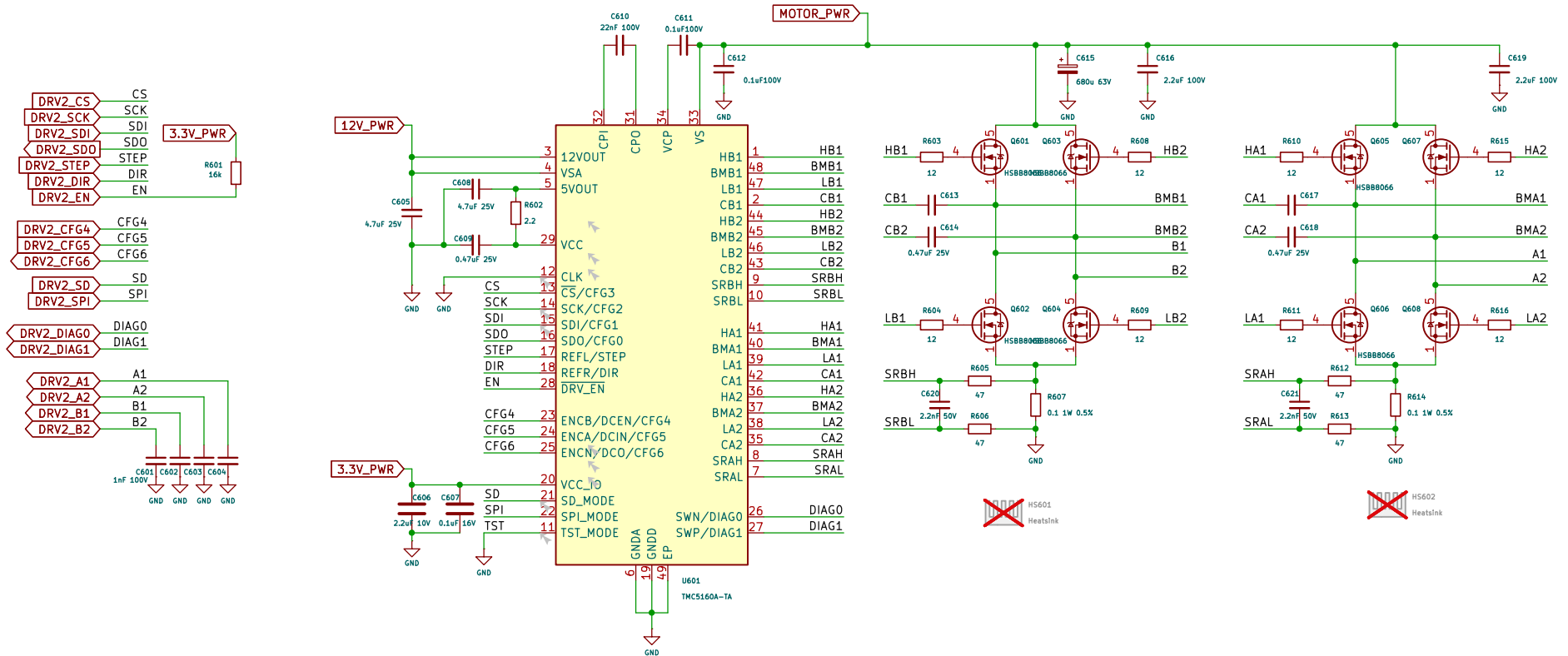
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Driver1



# Driver2



Sheet: /MotorDriver/Driver2/  
File: Driver2.kicad\_sch

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Driver3

Sheet: /MotorDriver/Driver3/  
File: Driver3.kicad\_sch

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The schematic diagram illustrates the electrical design of a Motor Driver PCB. It features a central U801 TMC5160A-TA motor driver IC, which is powered by a 12V\_PWR supply through a network of capacitors (C810, C811, C812) and resistors (R801). The IC's pins are connected to various control signals (DRV4\_CS, DRV4\_SCK, etc.) and motor terminals (HB1, HB2, LB1, LB2, HA1, HA2, LA1, LA2). The motor terminals are driven by four MOSFETs (Q801-Q804) in a half-bridge configuration, with gate drivers provided by resistors (R803-R806) and capacitors (C813-C816). The output of the motor driver is connected to a motor terminal block (U801 TMC5160A-TA). The PCB layout includes various passive components like capacitors (C805-C809, C817-C820) and resistors (R807-R814) for timing and signal conditioning. The overall design is intended for a 4-wire stepper motor application.

Pin	Signal	Component
1	HB1	MOSFET Q801
2	LB1	MOSFET Q802
3	HA1	MOSFET Q803
4	LA1	MOSFET Q804
5	BMB1	Resistor R803
6	GND	-
7	SRAL	Resistor R807
8	SRAH	Resistor R808
9	CB2	Capacitor C814
10	SRBL	Resistor R809
11	TST_MODE	Resistor R810
12	CA1	Capacitor C817
13	CS/CFG3	Resistor R811
14	SCK/CFG2	Resistor R812
15	SDI/CFG1	Resistor R813
16	SDO/CFG0	Resistor R814
17	REFL/STEP	Resistor R815
18	DIR	Resistor R816
19	GND	-
20	VCC_I/O	Resistor R817
21	SD_MODE	Resistor R818
22	SPI	Resistor R819
23	ENCB/DCEN/CFG4	Resistor R820
24	ENCA/DCIN/CFG5	Resistor R821
25	ENCN/DCC/CFG6	Resistor R822
26	DIAG0	Resistor R823
27	DIAG1	Resistor R824
28	EN	Resistor R825
29	VCC	Resistor R826
30	VS	Resistor R827
31	CPO	Resistor R828
32	CPI	Resistor R829
33	VCP	Resistor R830
34	VSA	Resistor R831
35	CA2	Capacitor C818
36	HA2	MOSFET Q805
37	BMA2	Resistor R804
38	LA2	MOSFET Q806
39	BMA1	Resistor R805
40	BMA1	Resistor R806
41	HA1	MOSFET Q807
42	CA1	Capacitor C817
43	CB1	Capacitor C813
44	HB2	MOSFET Q808
45	BMB2	Resistor R803
46	LB2	MOSFET Q809
47	BMB1	Resistor R804
48	BMB1	Resistor R805
49	EP	Resistor R806
50	GND	-

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