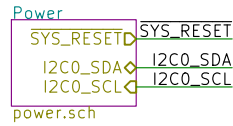
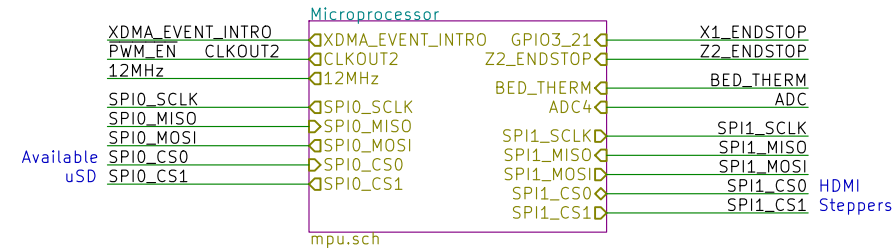
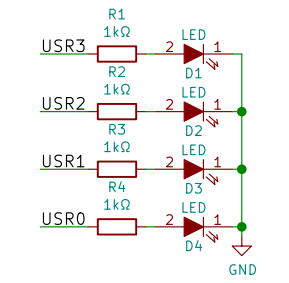


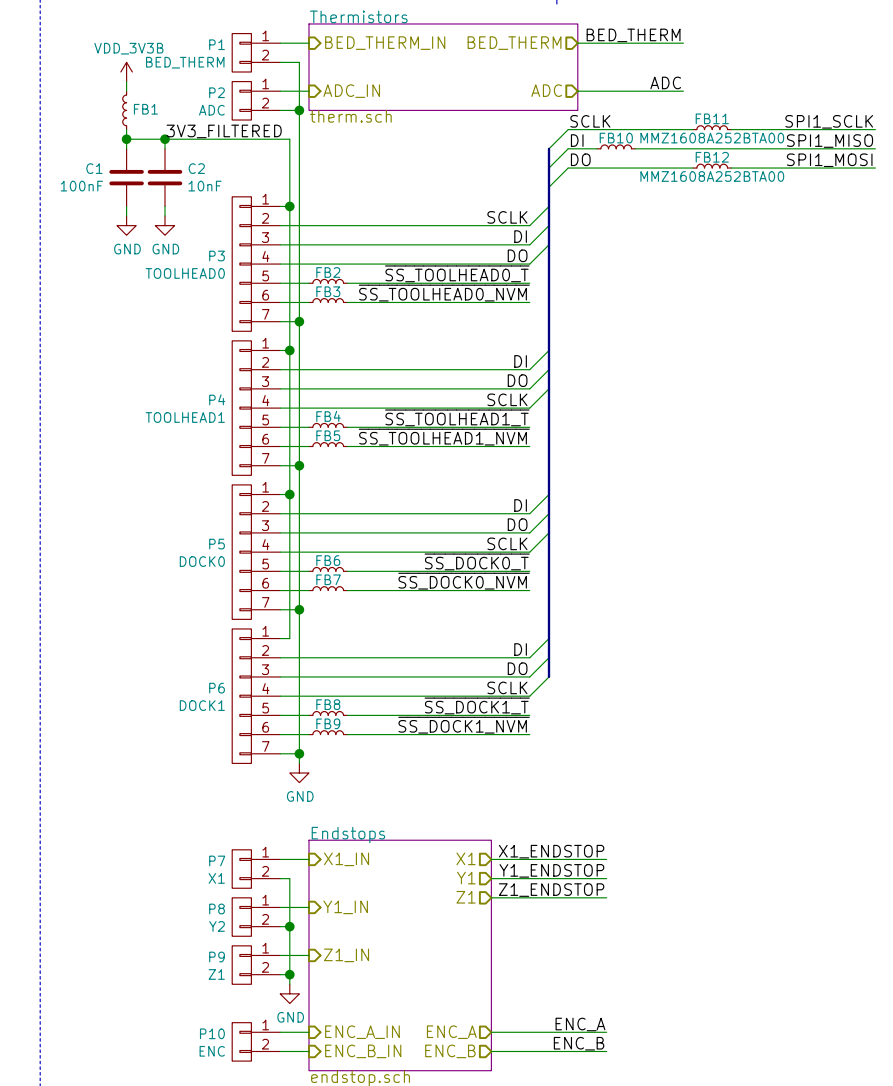
Power



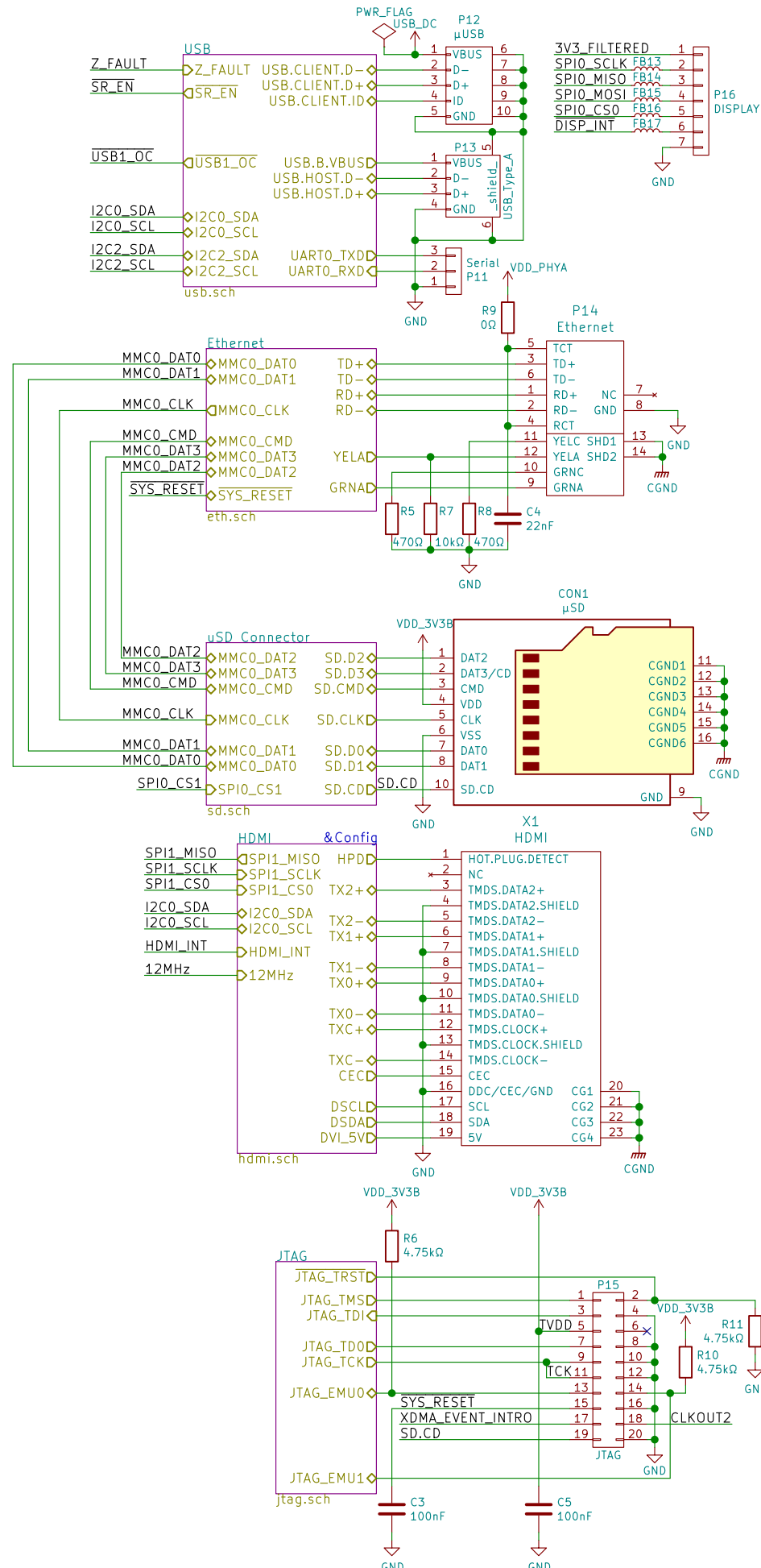
User LEDs



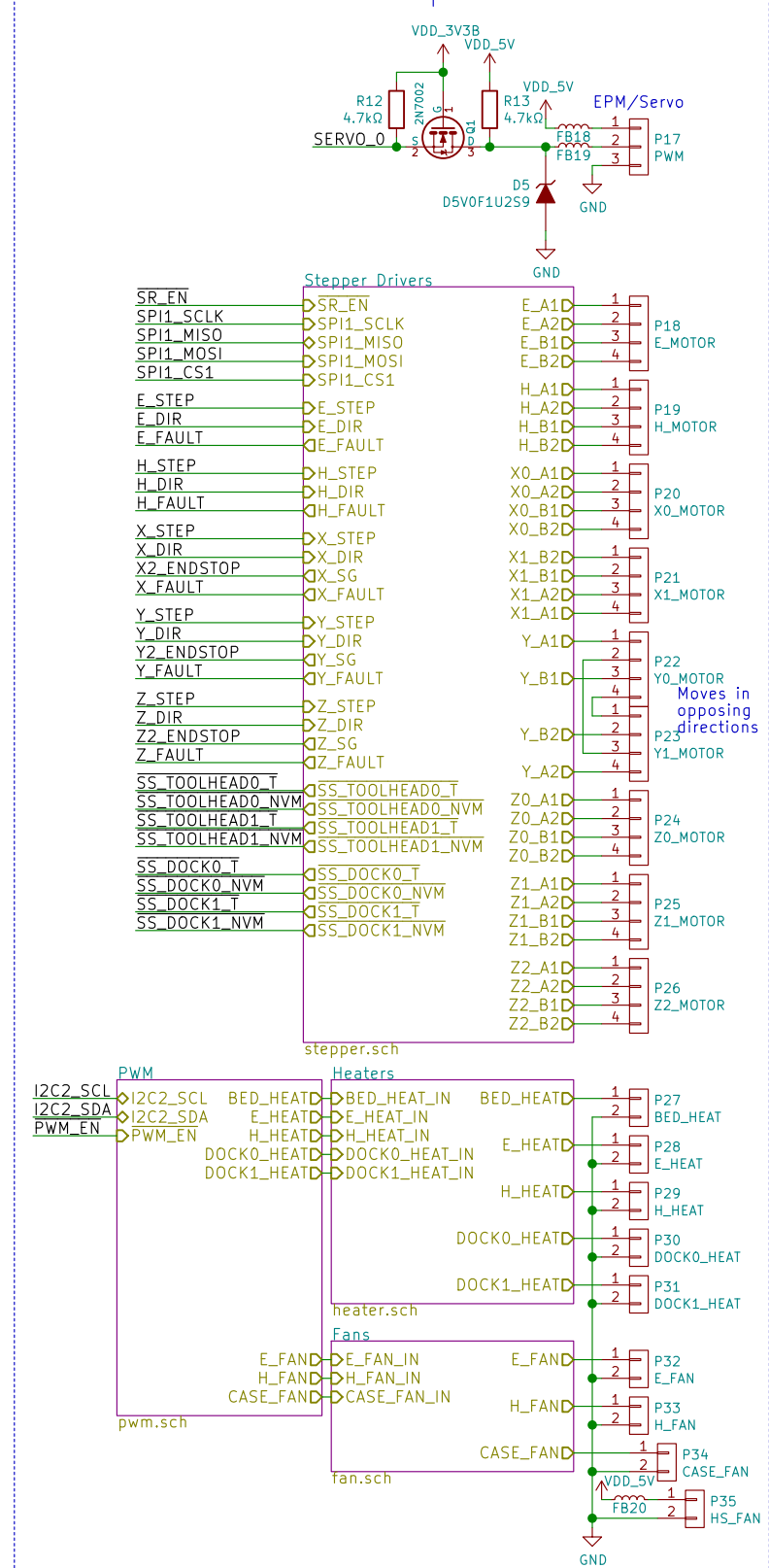
Feedback Input



Interfaces



Output



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Aleph Objects Inc.

Sheet: /

File: KiMBo.sch

Title: KiMBo

Size: A3

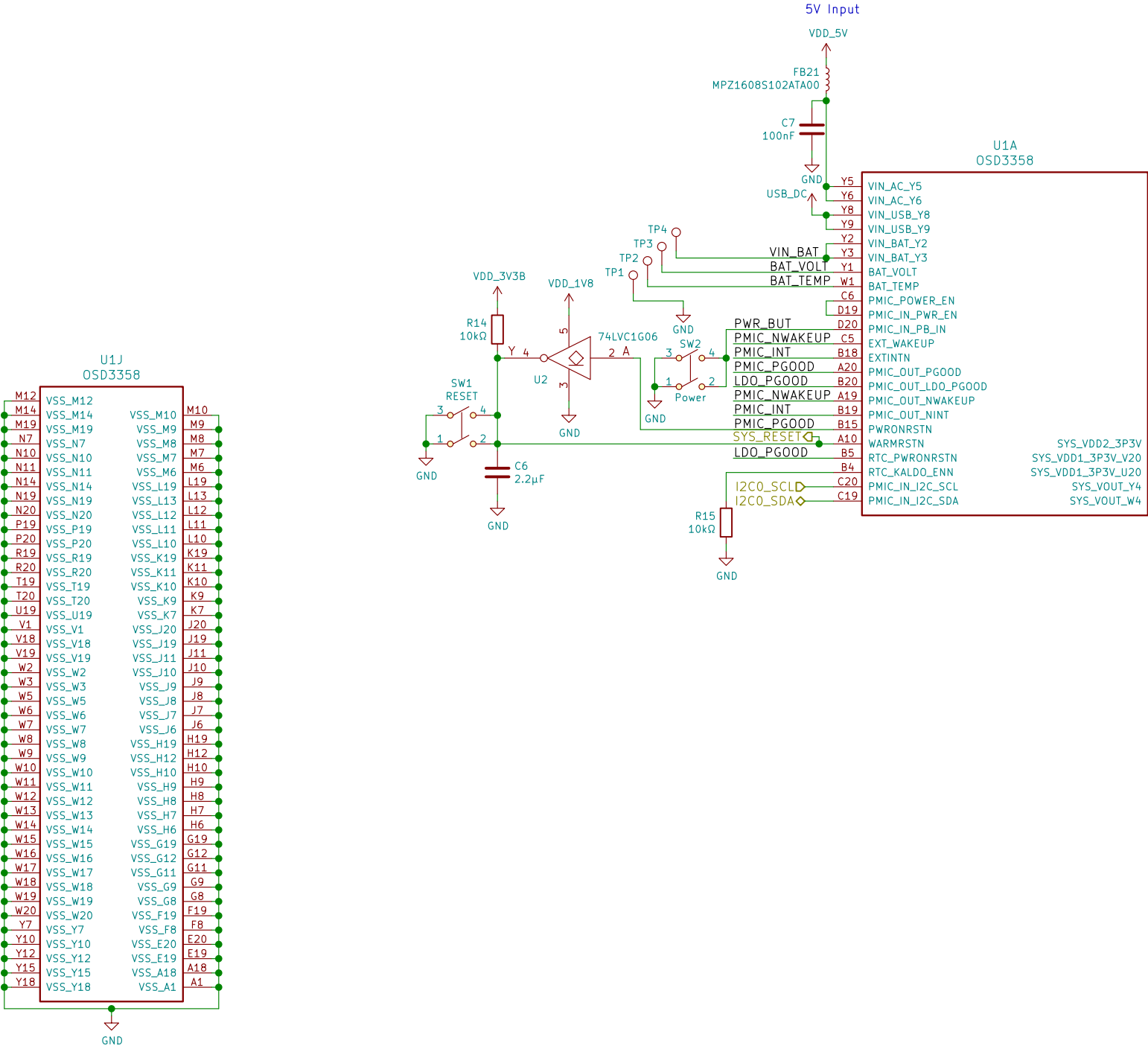
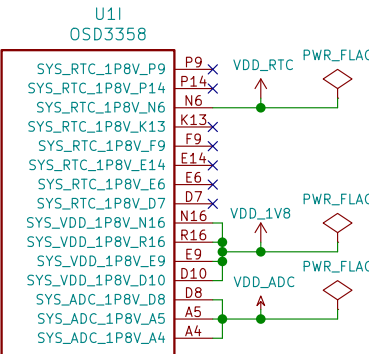
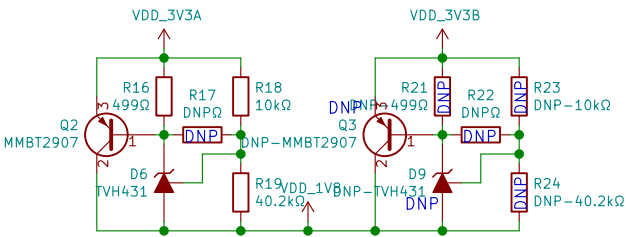
Date: 2017-03-17

Rev:

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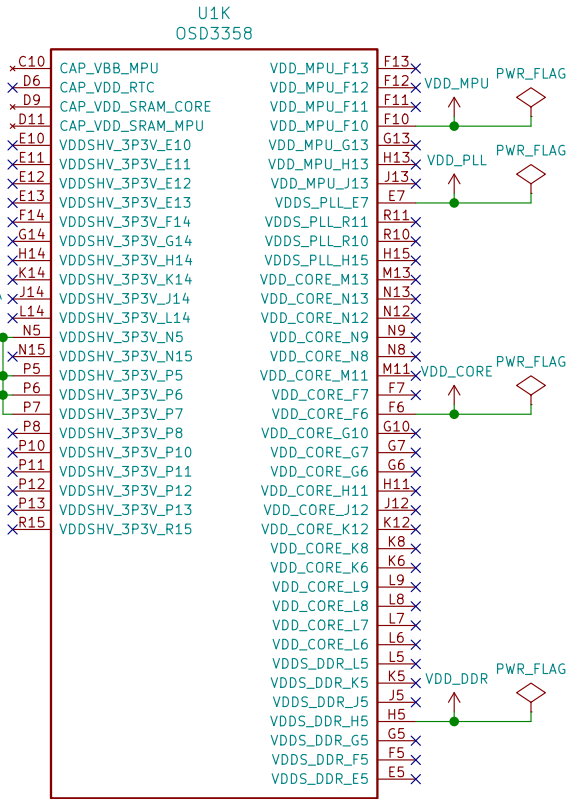
Id: 1/26

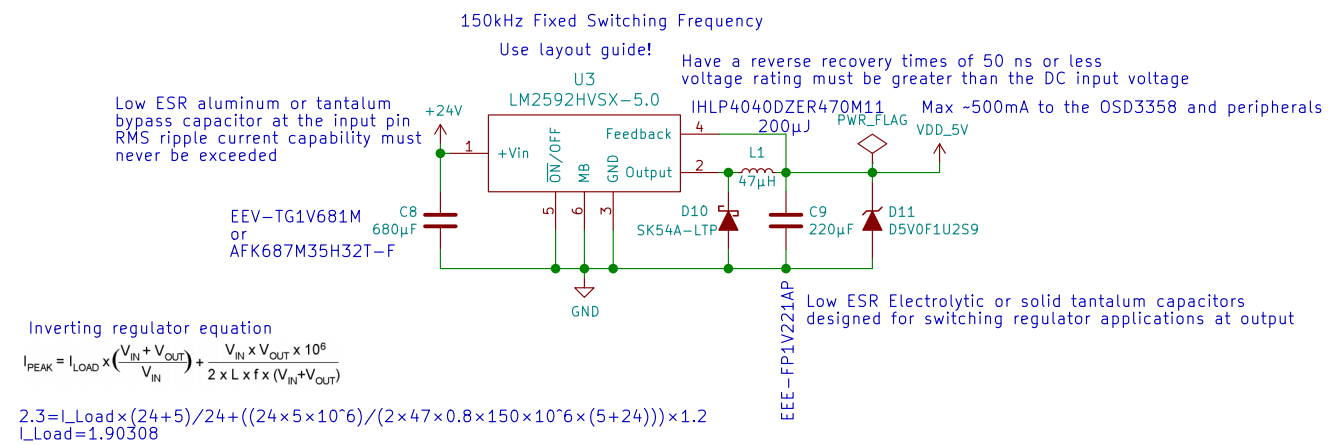
Input
input.sch
Voltage_Regulator
voltage_regulator.sch



Internal Power Supply
Test Point

Output Power Supply
Secondary, 3.3VDC





Sheet: /Power/Voltage Regulator/
File: voltage_regulator.sch

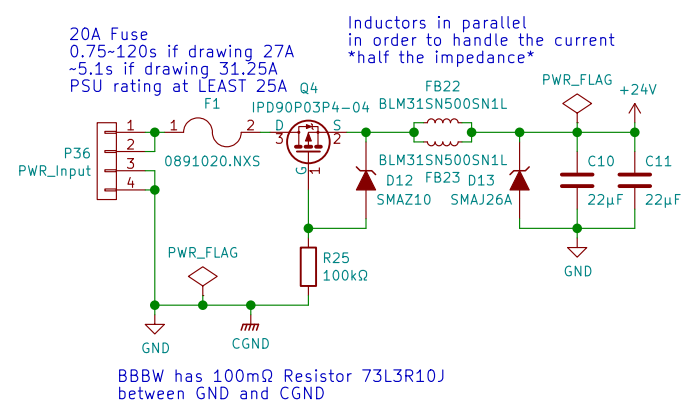
Title:

Size: A3

Date:

Size: AS	Date:
KiCad E.D.A. kicad (2016-12-15 revision b13c7e4)-master	

Rev:
Id: 3/26



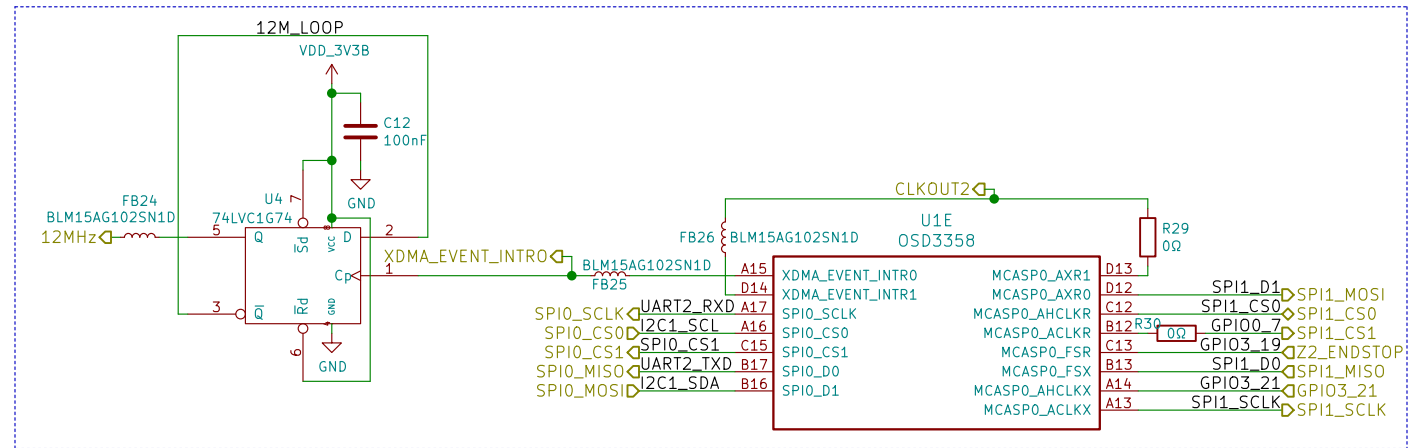
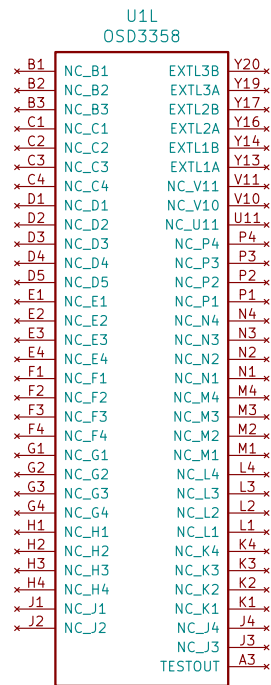
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File: input.sch

Title:

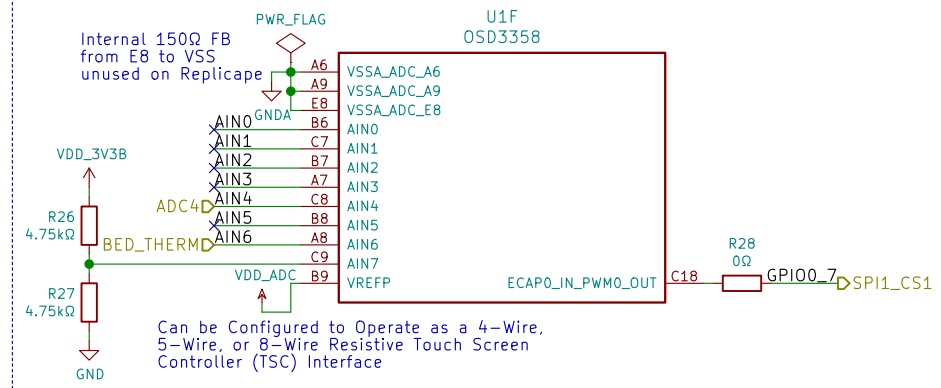
Size: A3

Size: A3	Date:	Rev:
KiCad E.D.A. kicad (2016-12-15 revision b13c7e4)-master		Id: 4/26

Unused



Analog I/O



Sheet: /Microprocessor/
File: mpu.sch

Title:

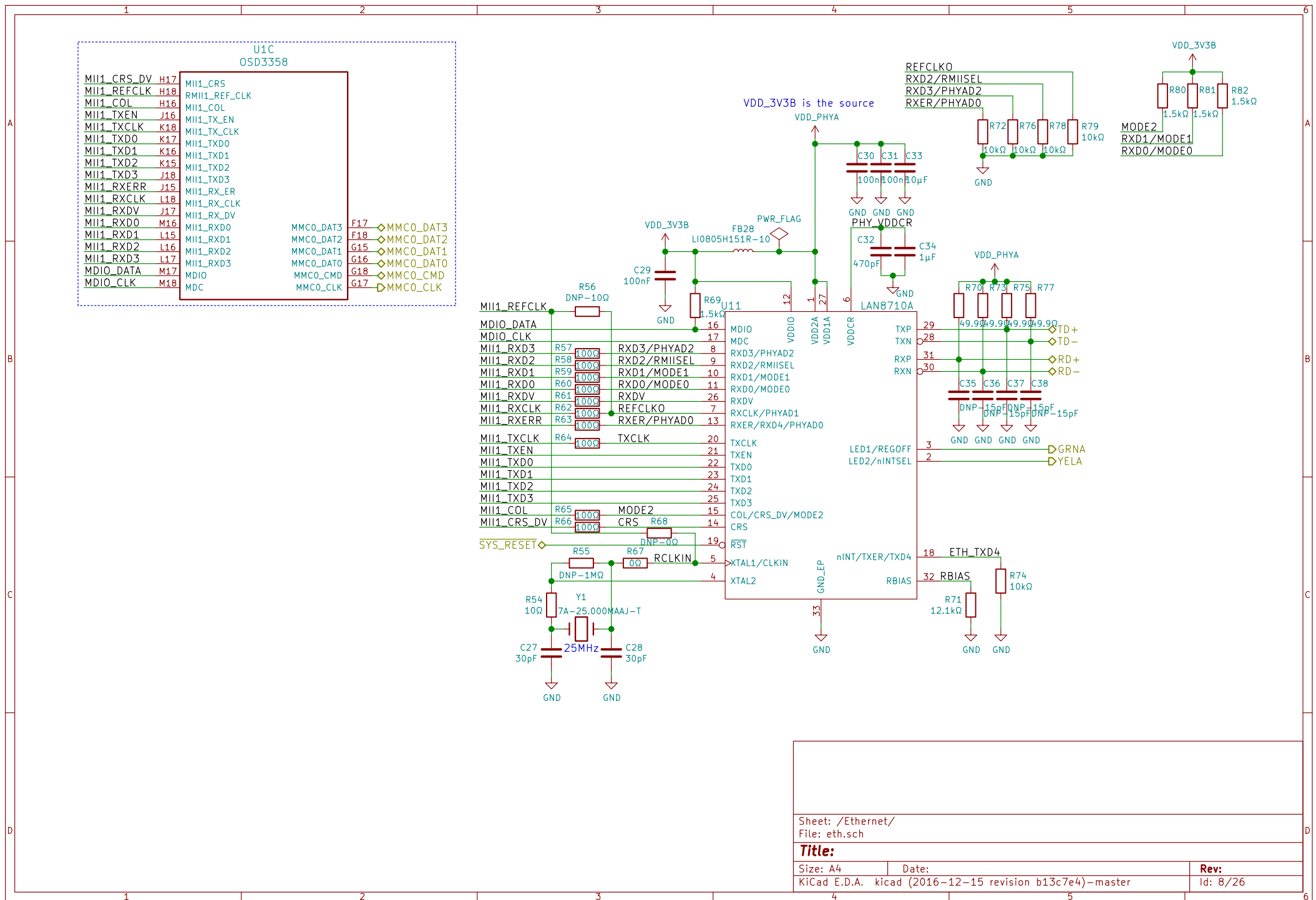
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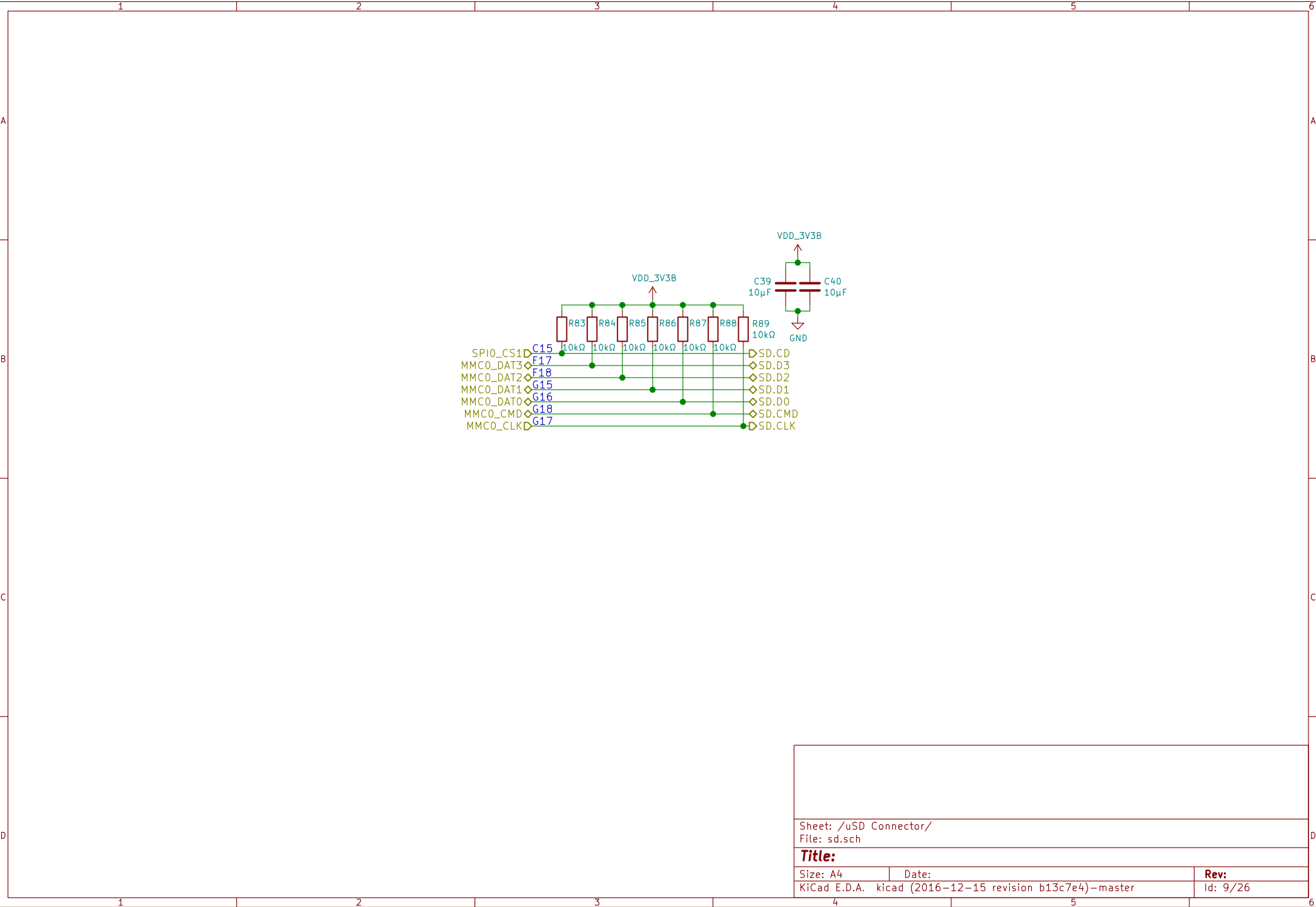
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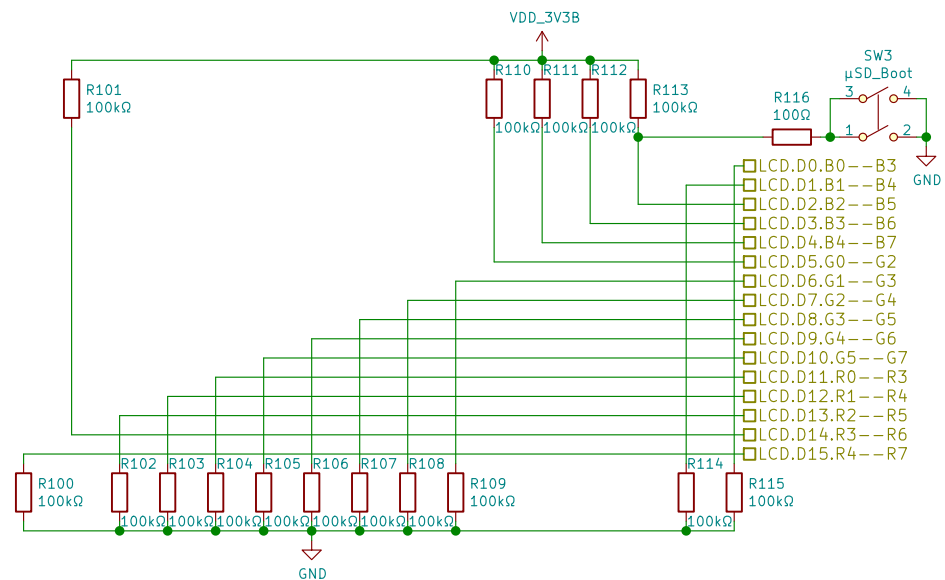
Rev:

KiCad E.D.A. kicad (2016-12-15 revision b13c7e4)-master

Id: 5/26





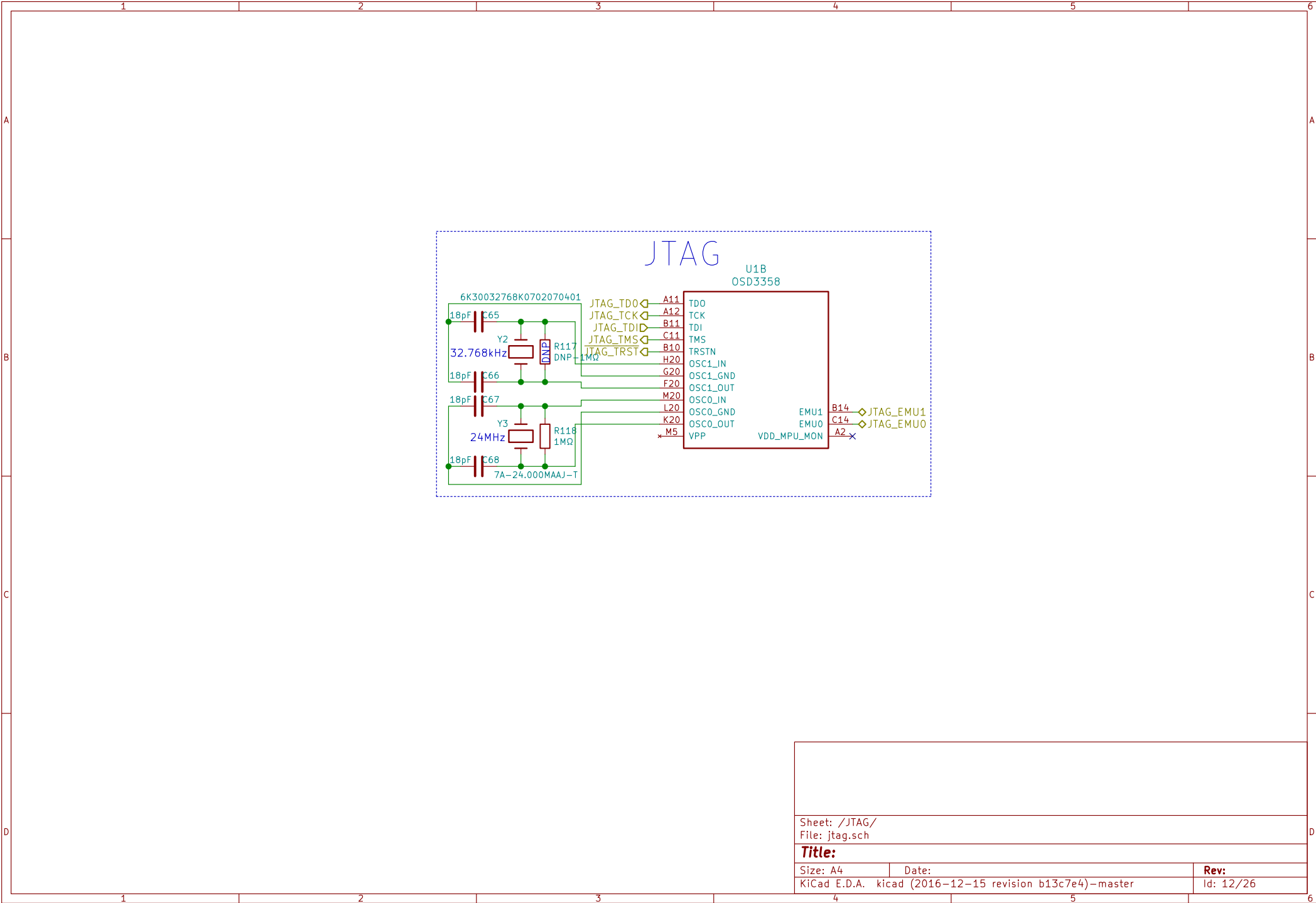


Sheet: /HDMI/Configuration/
File: config.sch

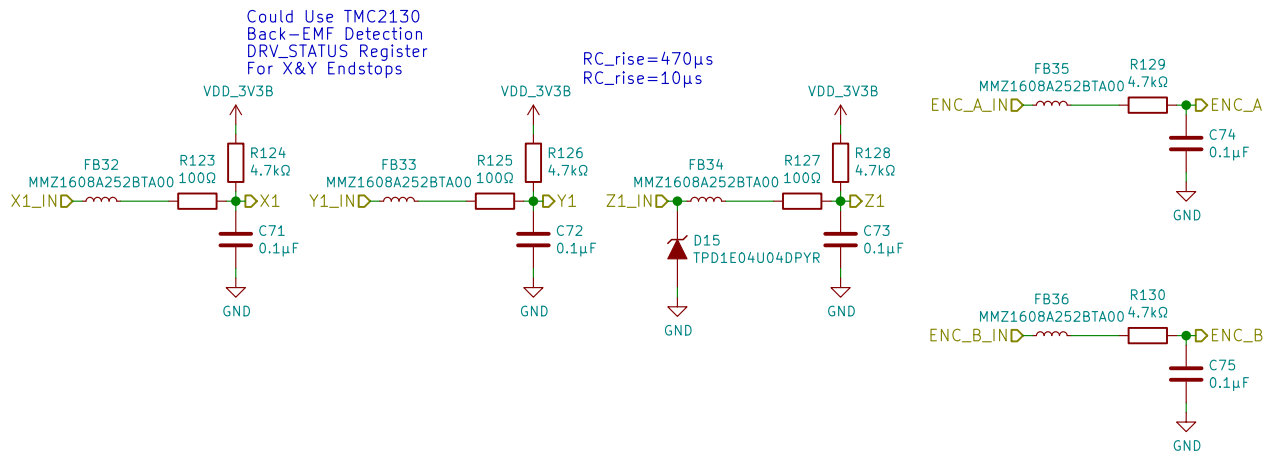
Title:

Size: A4 Date: Kicad E.D.A. kicad (2016-12-15 revision b13c7e4)-master

Rev: Id: 11/26



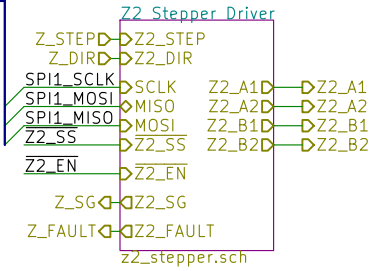
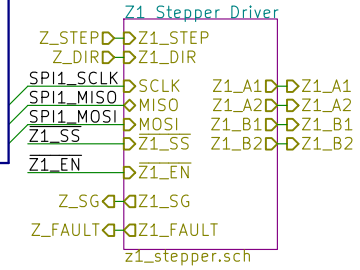
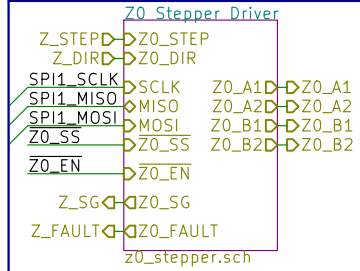
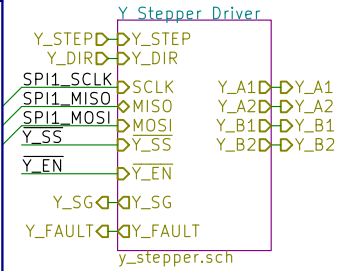
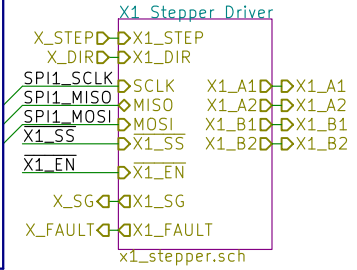
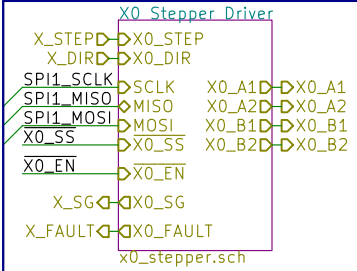
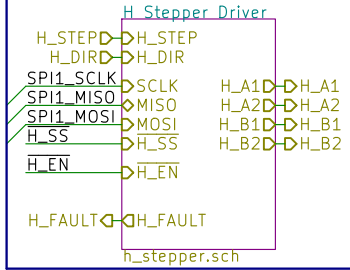
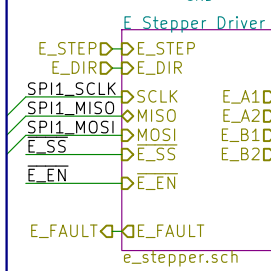
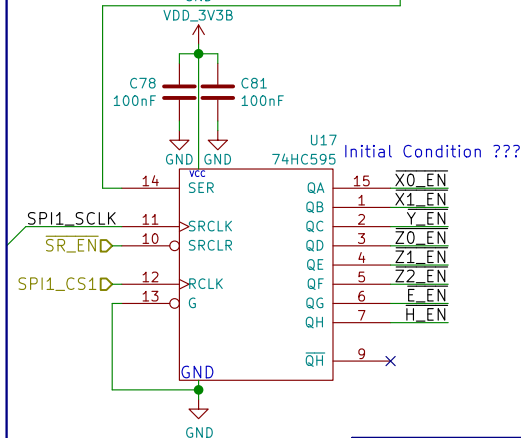
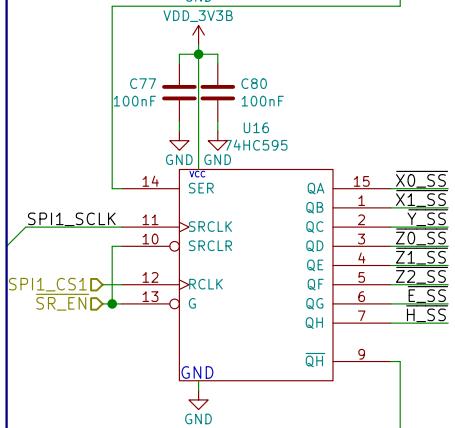
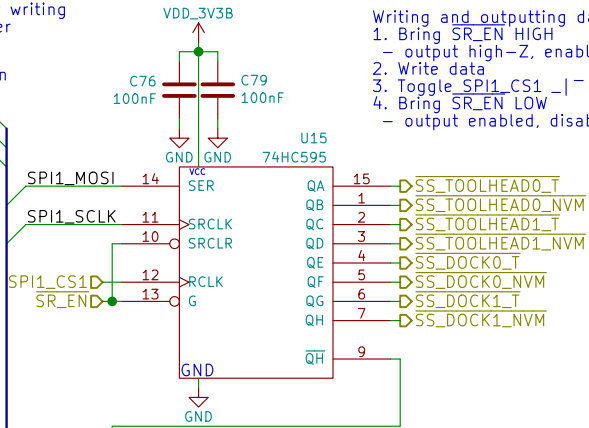




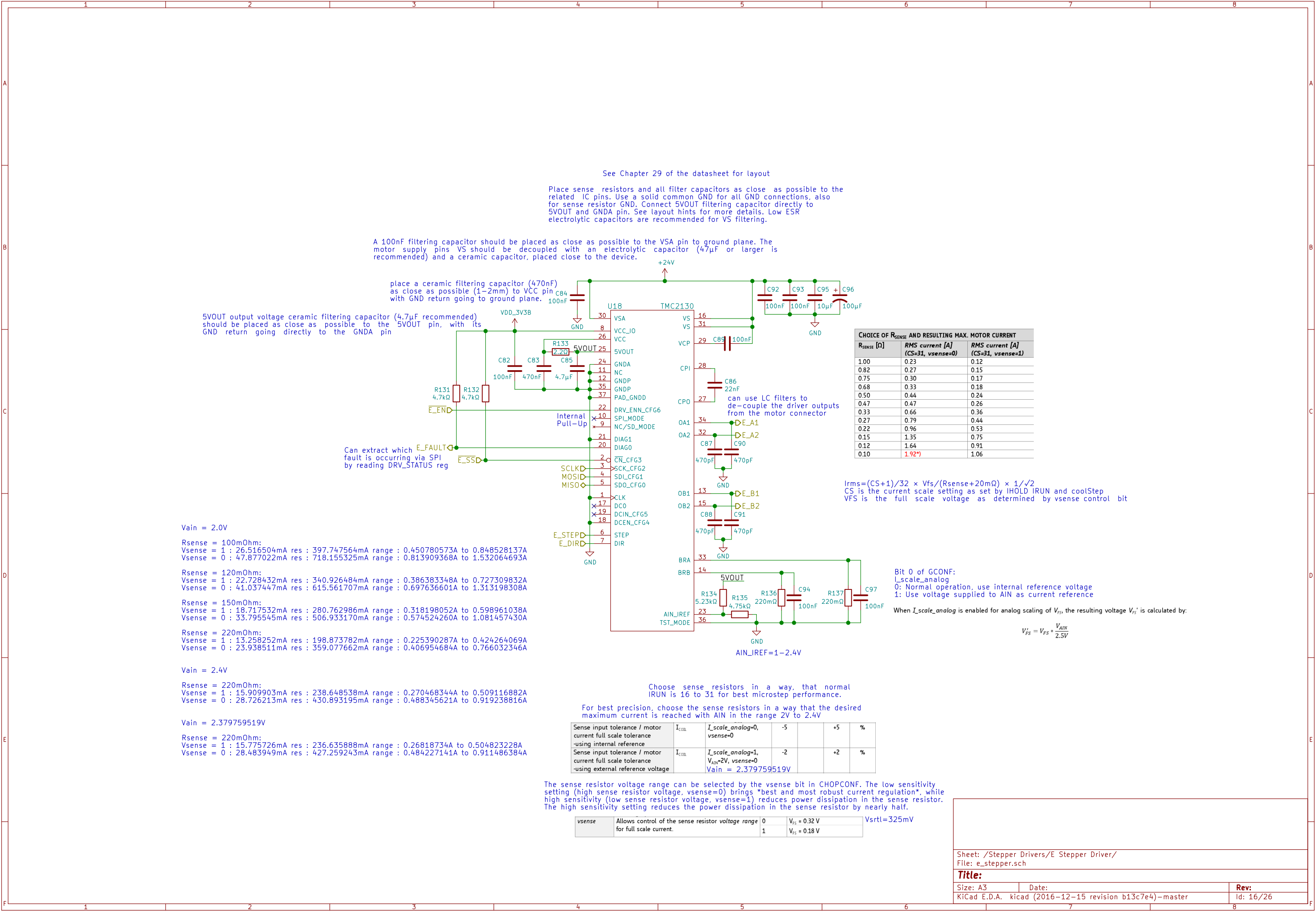
When SR_EN transitions from LOW to HIGH each D-FF of the shift-register come out of their reset states and the output is set to high-Z, ready for writing
When SR_EN transitions from HIGH to LOW each D-FF of the shift-register goes into their reset states and the output is enabled, SS/EN selected
SPI1_CS1 captures the data in the shift register and is ready to be driven by the second stage of D-FFs

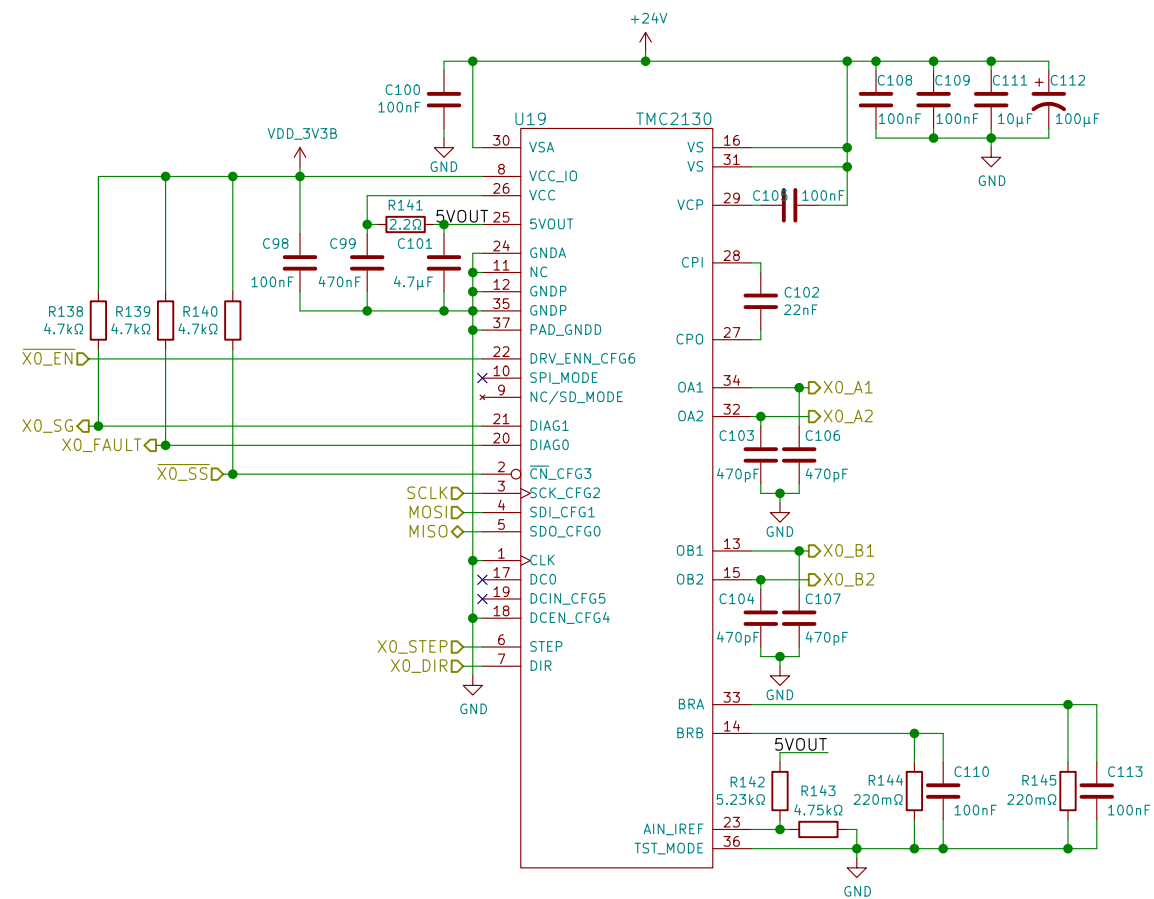
SPI1_SCLK
SPI1_MOSI
SPI1_MISO
check fanout!!!

Writing and outputting data:
1. Bring SR_EN HIGH
- output high-Z, enables all motors
2. Write data
3. Toggle SPI1_CS1 -| -|
4. Bring SR_EN LOW
- output enabled, disable specific motors/ready to configure



Can extract which fault is occurring via SPI by reading DRV_STATUS reg





Sheet: /Stepper Drivers/X0 Stepper Driver/
File: x0_stepper.sch

Title:

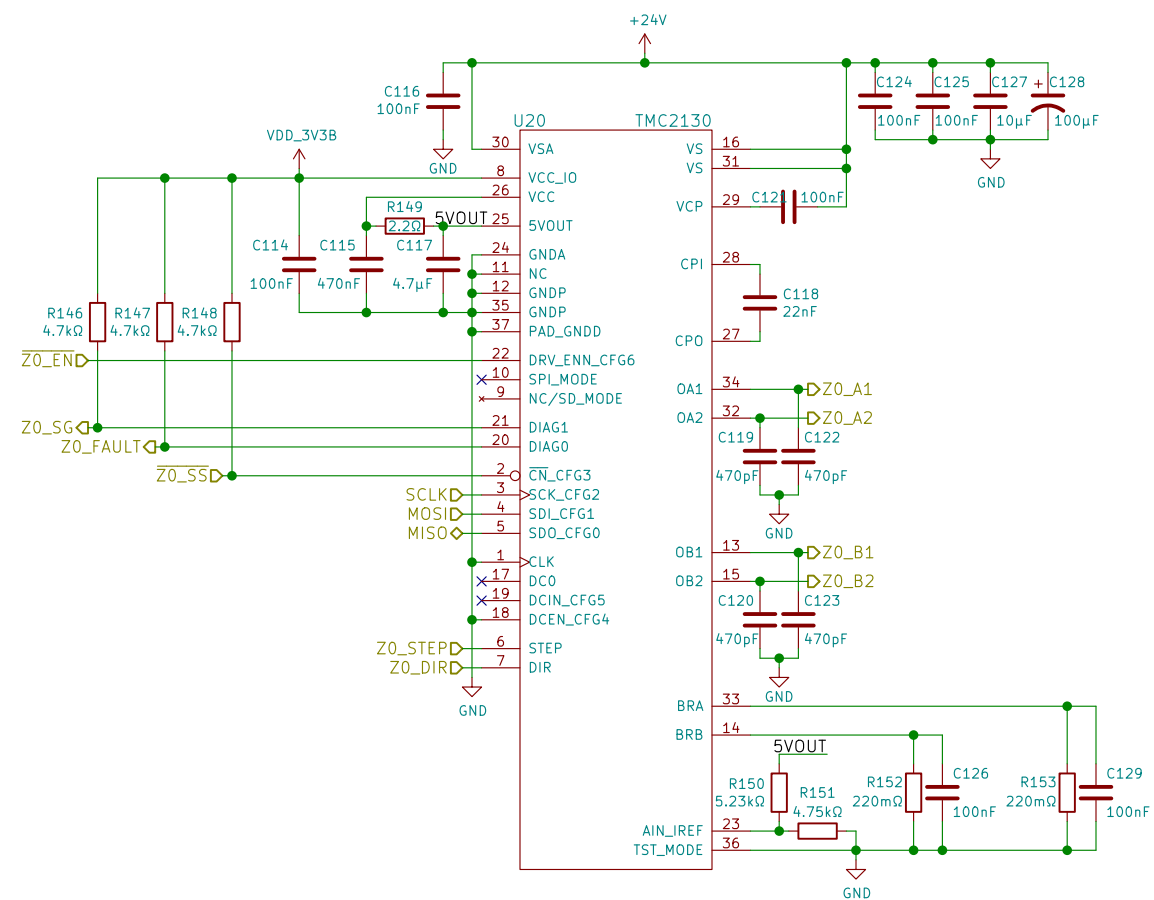
Size: A3

Date:

Size: AS	Date:
KiCad E.D.A. kicad (2016-12-15 revision b13c7e4)-master	

Rev:

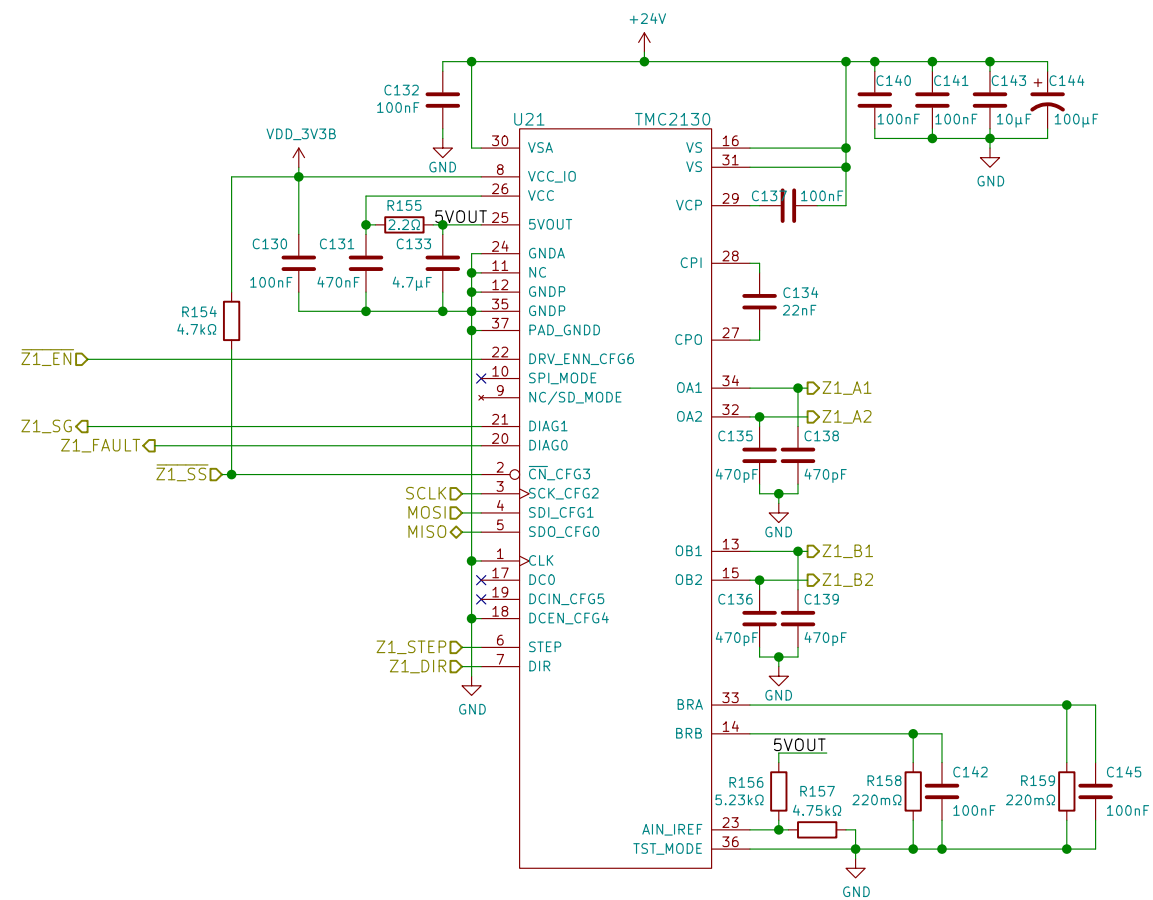
Id: 17/26



Sheet: /Stepper Drivers/Z0 Stepper Driver/
File: z0_stepper.sch

Title:

Size: A3	Date:	Rev:
KiCad E.D.A. kicad (2016-12-15 revision b13c7e4)-master		Id: 18/26



Sheet: /Stepper Drivers/Z1 Stepper Driver/
File: z1_stepper.sch

Title:

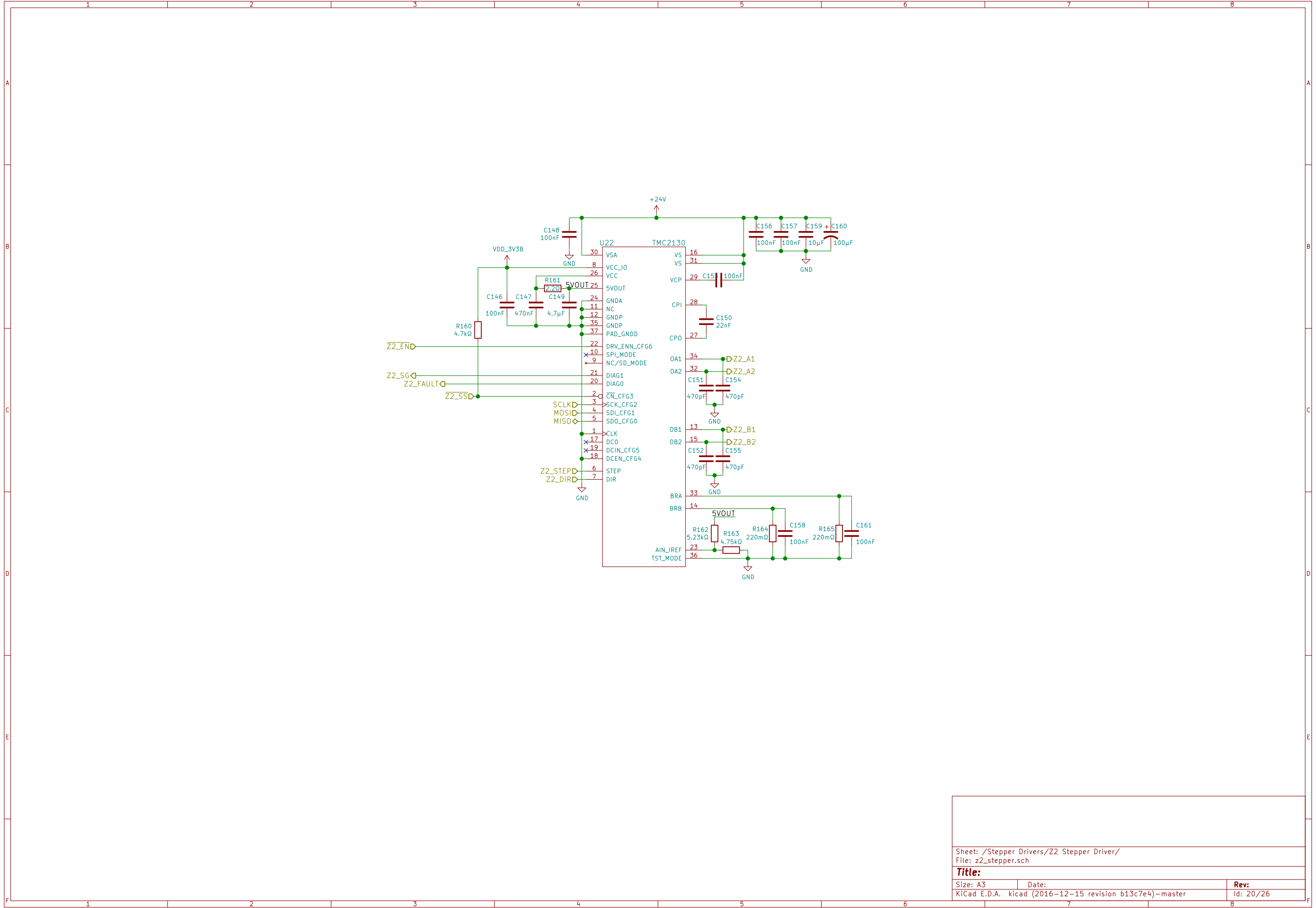
Size: A3

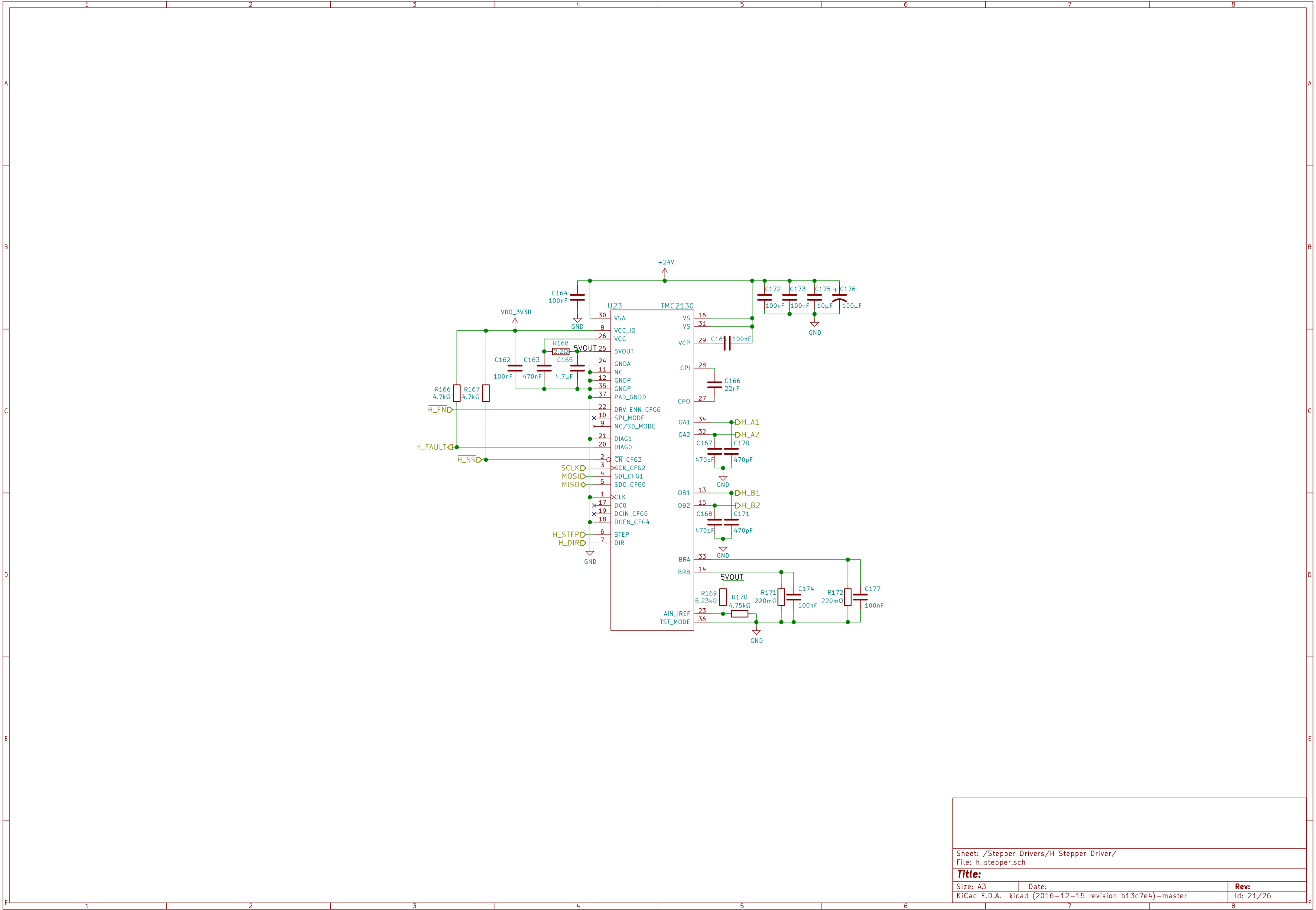
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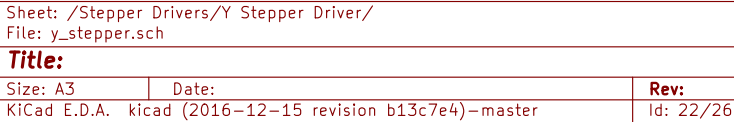
Size: AS	Date:
KiCad E.D.A. kicad (2016-12-15 revision b13c7e4)-master	

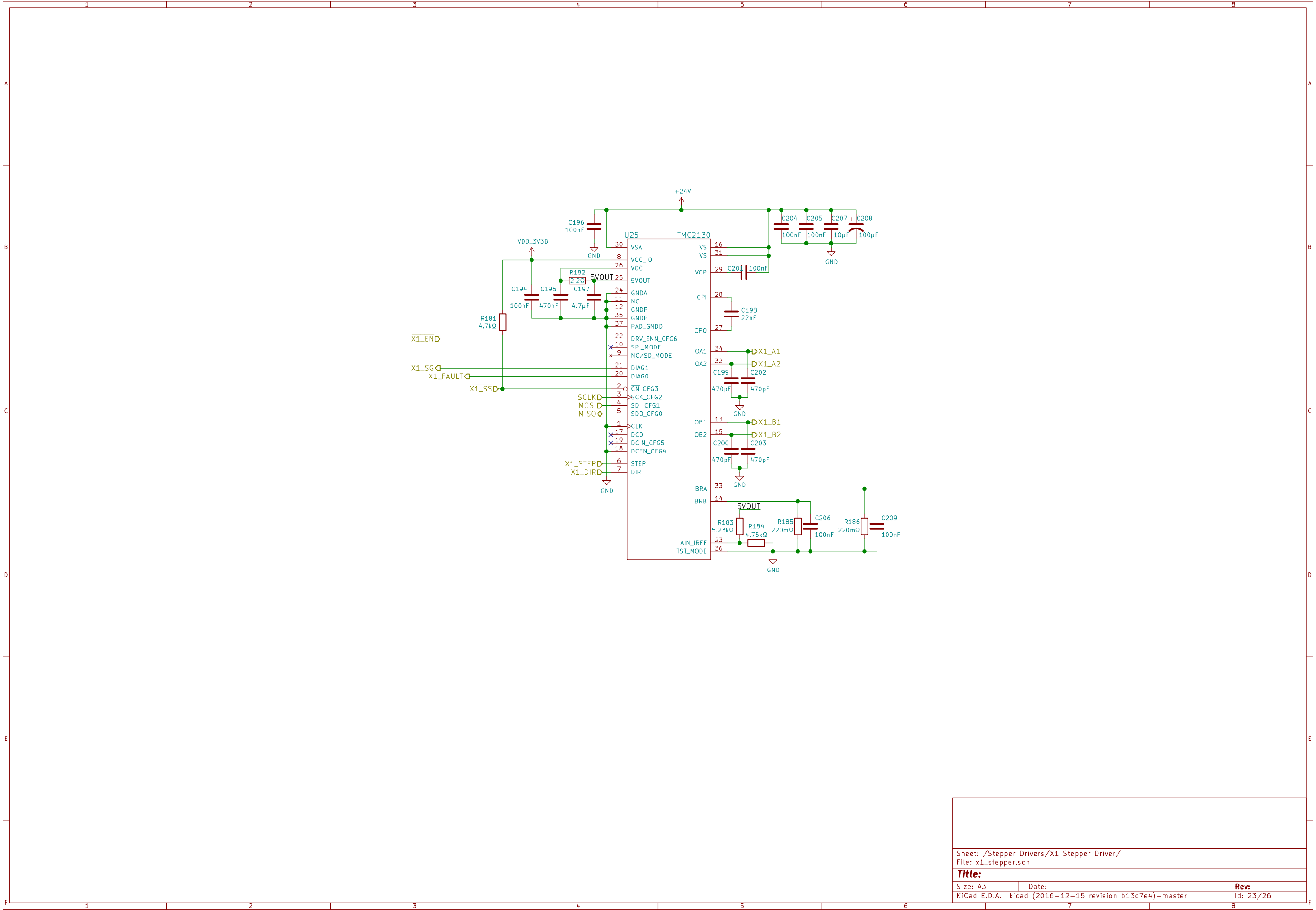
Rev:

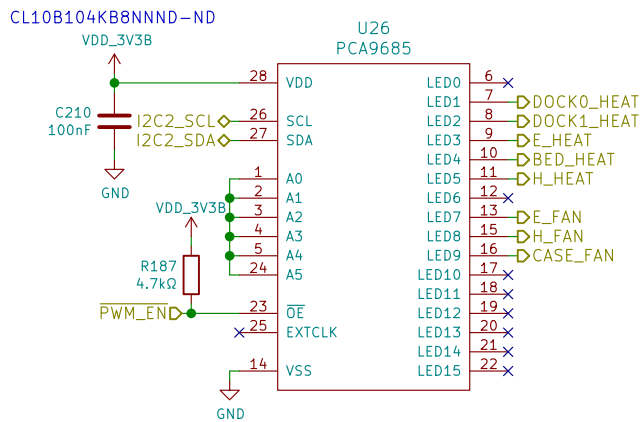
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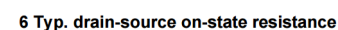
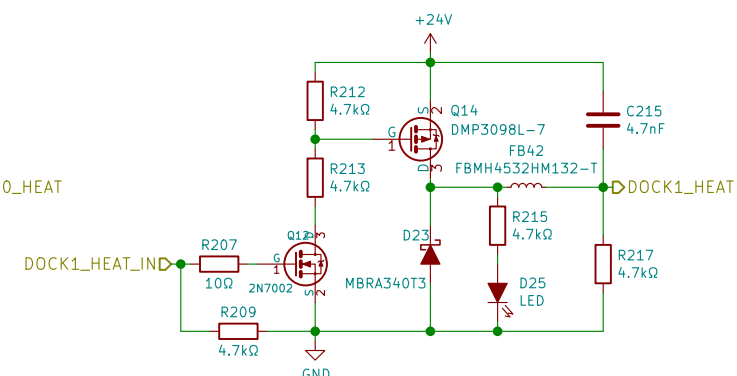
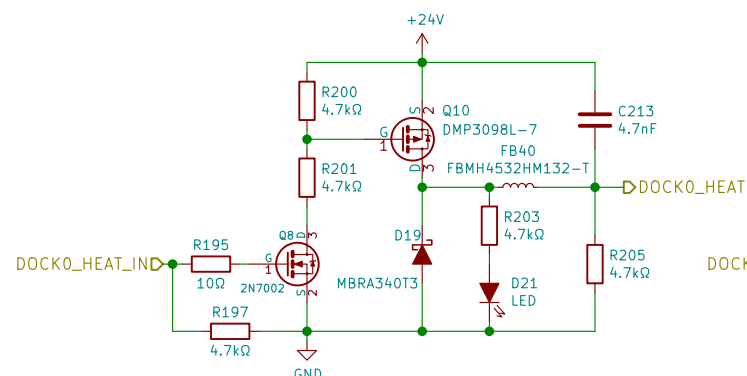
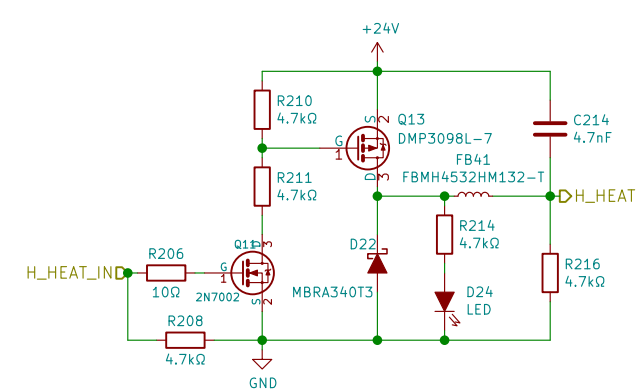
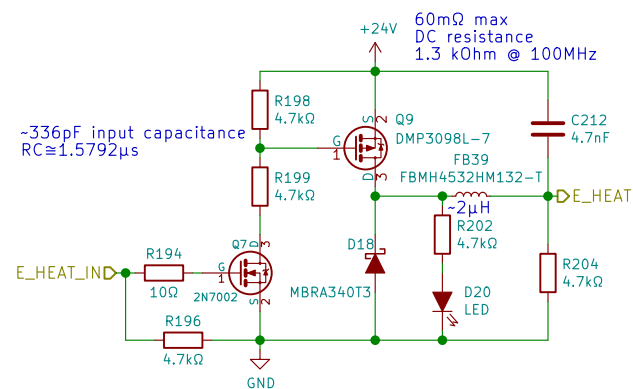
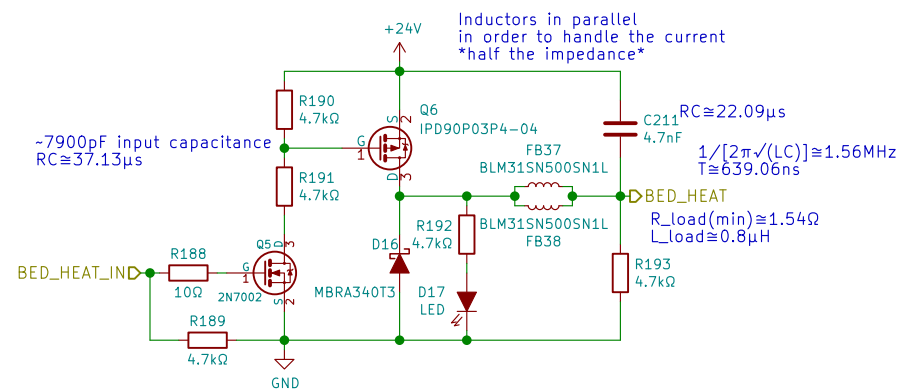
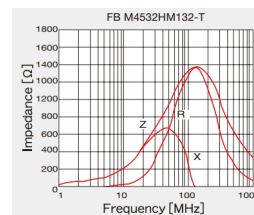




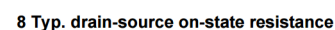
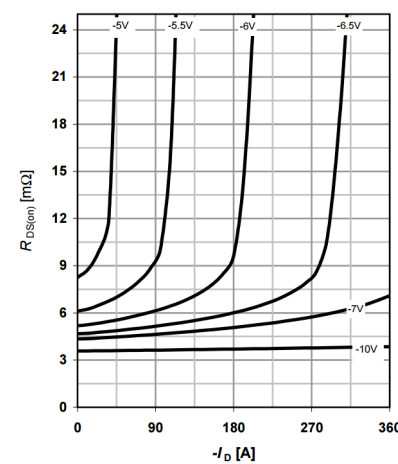








$$R_{DS(on)} = (I_D); T_j = 25^\circ\text{C}$$

parameter: V_{GS} 

$$R_{DS(on)} = f(T_j); I_D = -90 \text{ A}; V_{GS} = -10 \text{ V}$$

