

Sheet: appendix\_ESP32



ESP\_RX\_STM  
ESP\_TX\_STM

ESP\_TX\_USB  
ESP\_RX\_USB

ESP\_DTR  
ESP\_RTS

File: appendix\_ESP32.sch

Sheet: appendix\_UART\_USB



FT\_RX\_A  
FT\_TX\_A

FT\_RX\_B  
FT\_TX\_B

FT\_DTR\_B  
FT\_RTS\_B

File: appendix\_UART\_USB.sch

Sheet: appendix\_STM32F103



USART1\_TX  
USART1\_RX  
USART2\_TX  
USART2\_RX

SPI2\_SCK  
SPI2\_MOSI  
SPI2\_MISO

DIR\_X  
STEP\_X  
EN\_X  
CS\_X  
STALL\_X

DIR\_Y  
STEP\_Y  
EN\_Y  
CS\_Y  
STALL\_Y

DIR\_Z1  
STEP\_Z1  
EN\_Z1  
CS\_Z1  
STALL\_Z1

DIR\_E1  
STEP\_E1  
EN\_E1  
CS\_E1  
STALL\_E1

ADC\_TEMP\_E1D  
ADC\_TEMP\_BEDD  
ADC\_TEMP\_PCB

SW\_Min\_XD  
SW\_Min\_YD  
SW\_Min\_ZD  
SW\_End\_Filament1D

FAN1D  
FAN2D  
FAN3D  
POWER\_BEDD  
POWER\_E1D

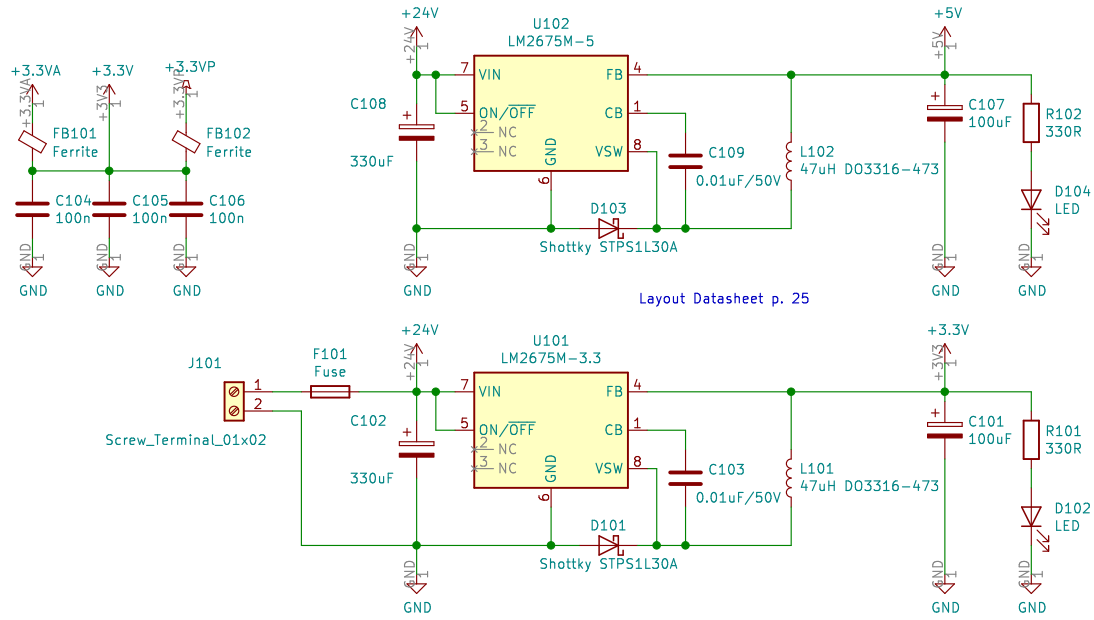
ADC\_TEMP\_E1  
ADC\_TEMP\_BED  
ADC\_TEMP\_PCB  
SW\_End\_X  
SW\_End\_Y  
SW\_End\_Z  
SW\_End\_Filament1  
FAN1\_ON  
FAN2\_ON  
FAN3\_ON  
BED\_ON  
E1\_ON

Sheet: appendix\_TMC2660\_X



File: appendix\_TMC2660\_X.sch  
Sheet: appendix\_SENSORS\_POWER

File: appendix\_SENSORS\_POWER.sch



File: appendix\_STM32F103.sch



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Sheet: /  
File: FHNW-Pro4E-FS19T8-3DPrinterBoard-STM32.sch

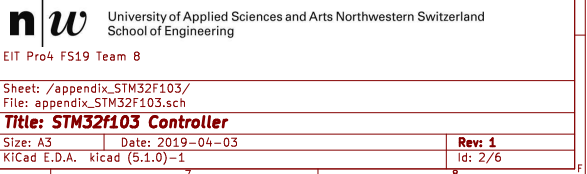
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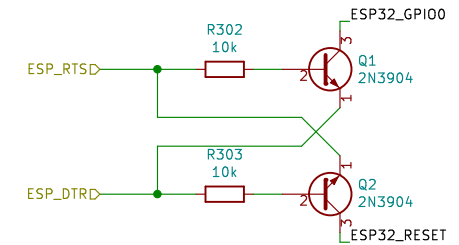
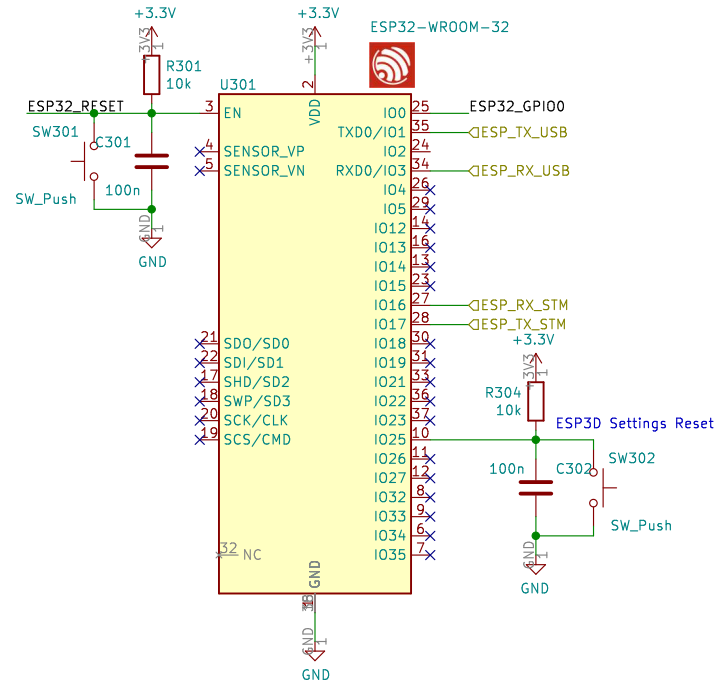
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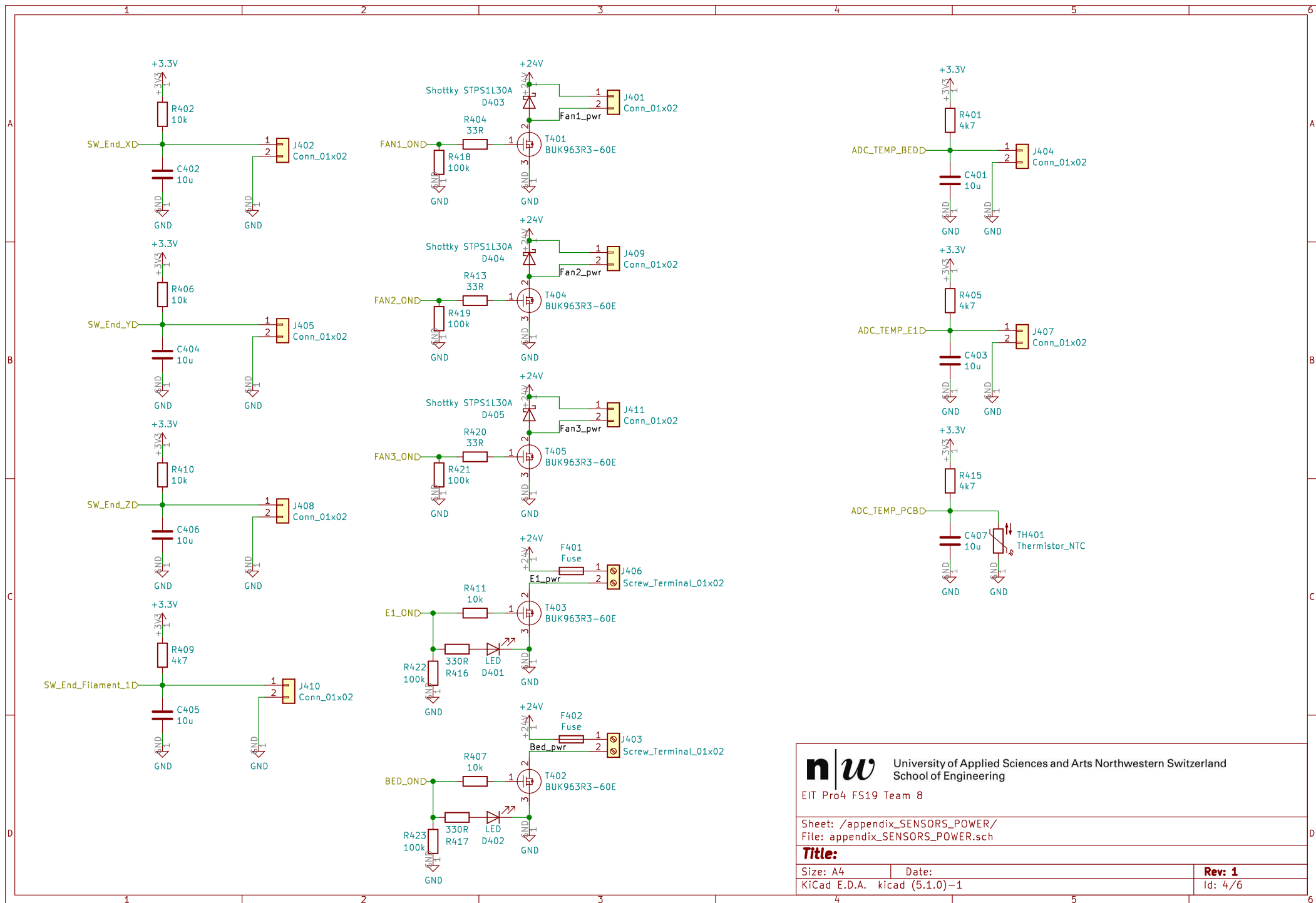
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Rev: 1

Id: 1/6







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Sheet: /appendix\_SENSORS\_POWER/  
File: appendix\_SENSORS\_POWER.sch

**Title:**

Size: A4

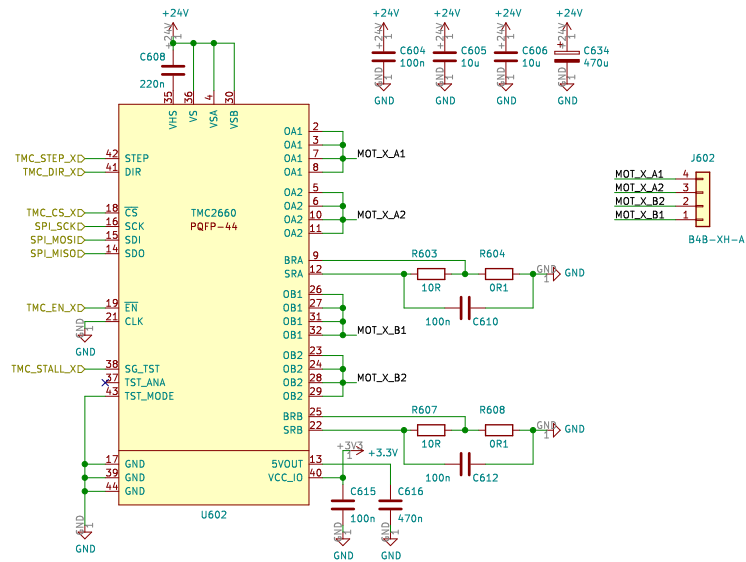
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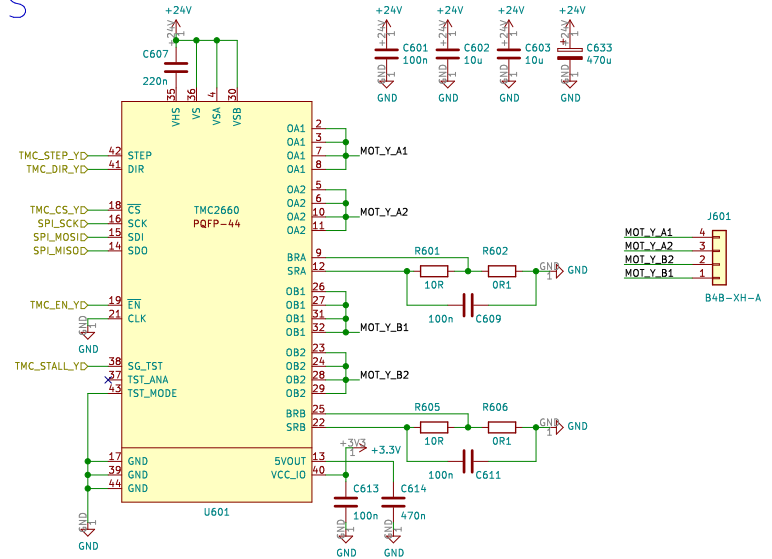
**Rev: 1**

Id: 4/6

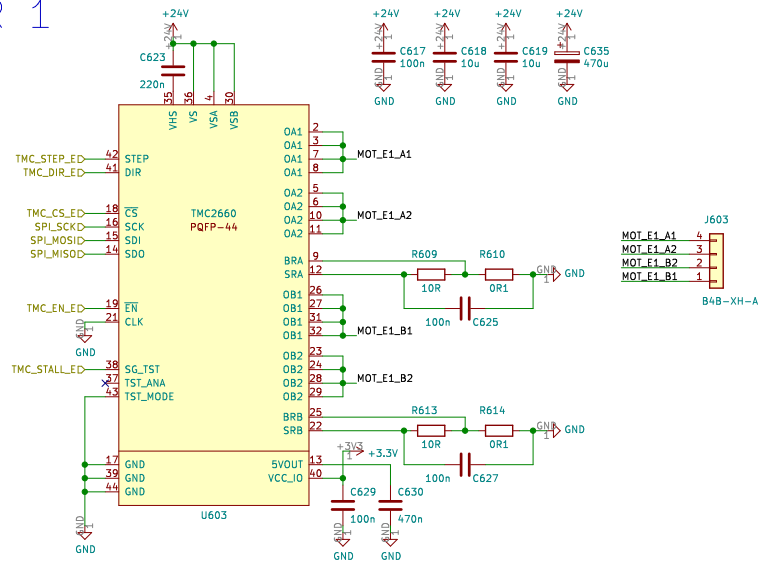
## X AXIS



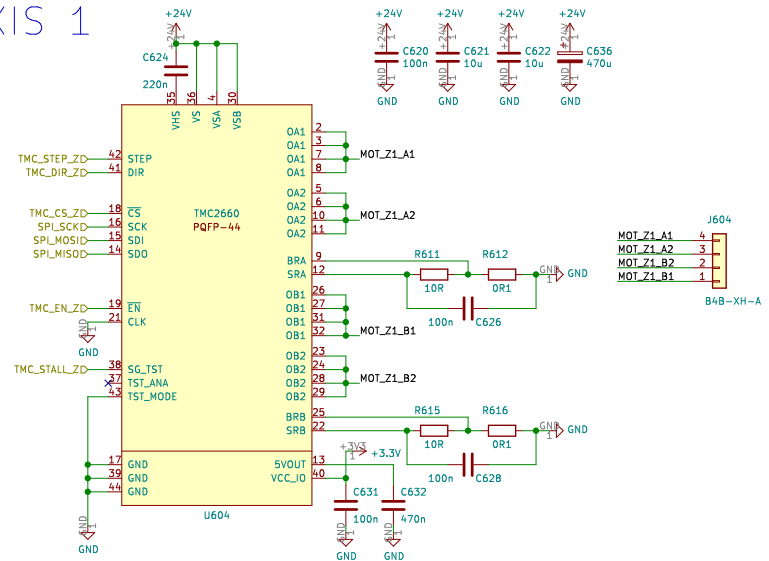
## Y AXIS



## EXTRUDER 1



## Z AXIS 1



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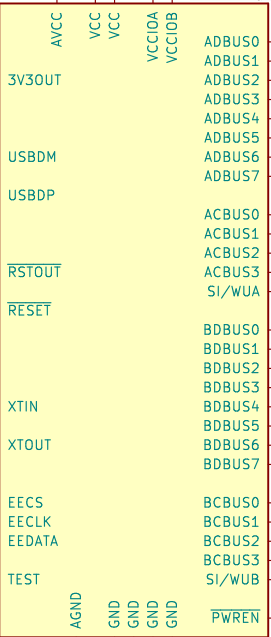
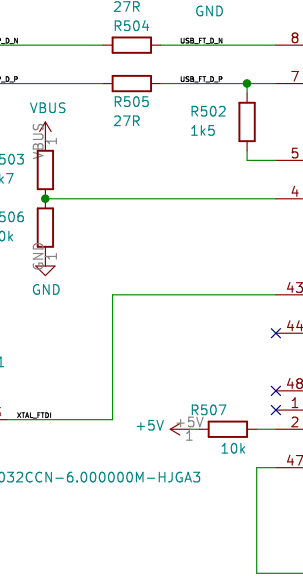
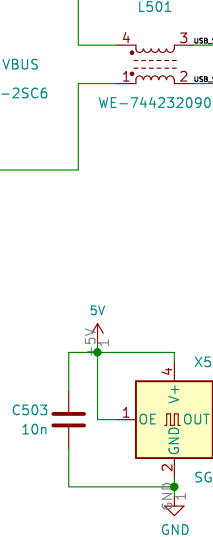
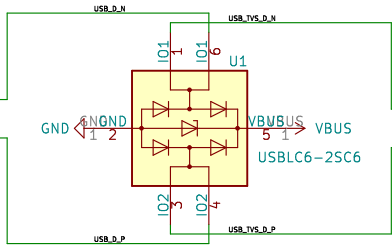
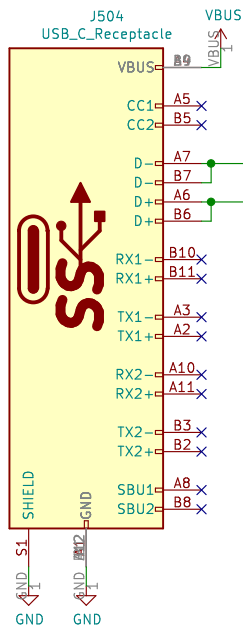
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Sheet: /appendix\_TMC2660\_X/  
File: appendix\_TMC2660\_X.sch

**Title: TMC2660 Stepper Drivers**

Size: A3 Date:  
KiCad E.D.A. kicad (5.1.0)-1

Rev: 1  
Id: 5/6



RX\_STM\_to\_TX\_FTDI  
TX\_STM\_to\_RX\_FTDI

RX\_ESP\_to\_TX\_FTDI  
TX\_ESP\_to\_RX\_FTDI  
RTS\_ESP32

DTR\_ESP32

