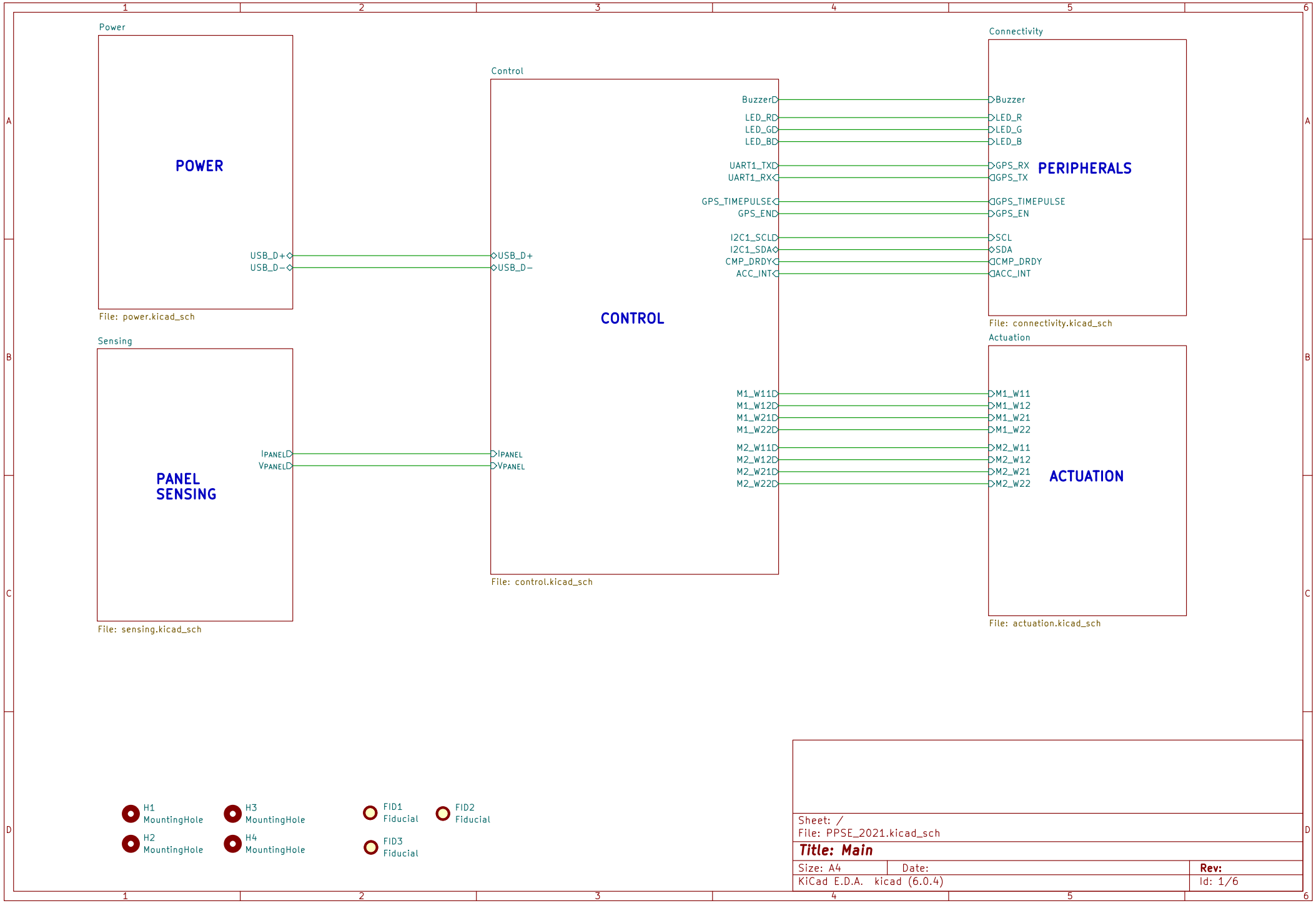
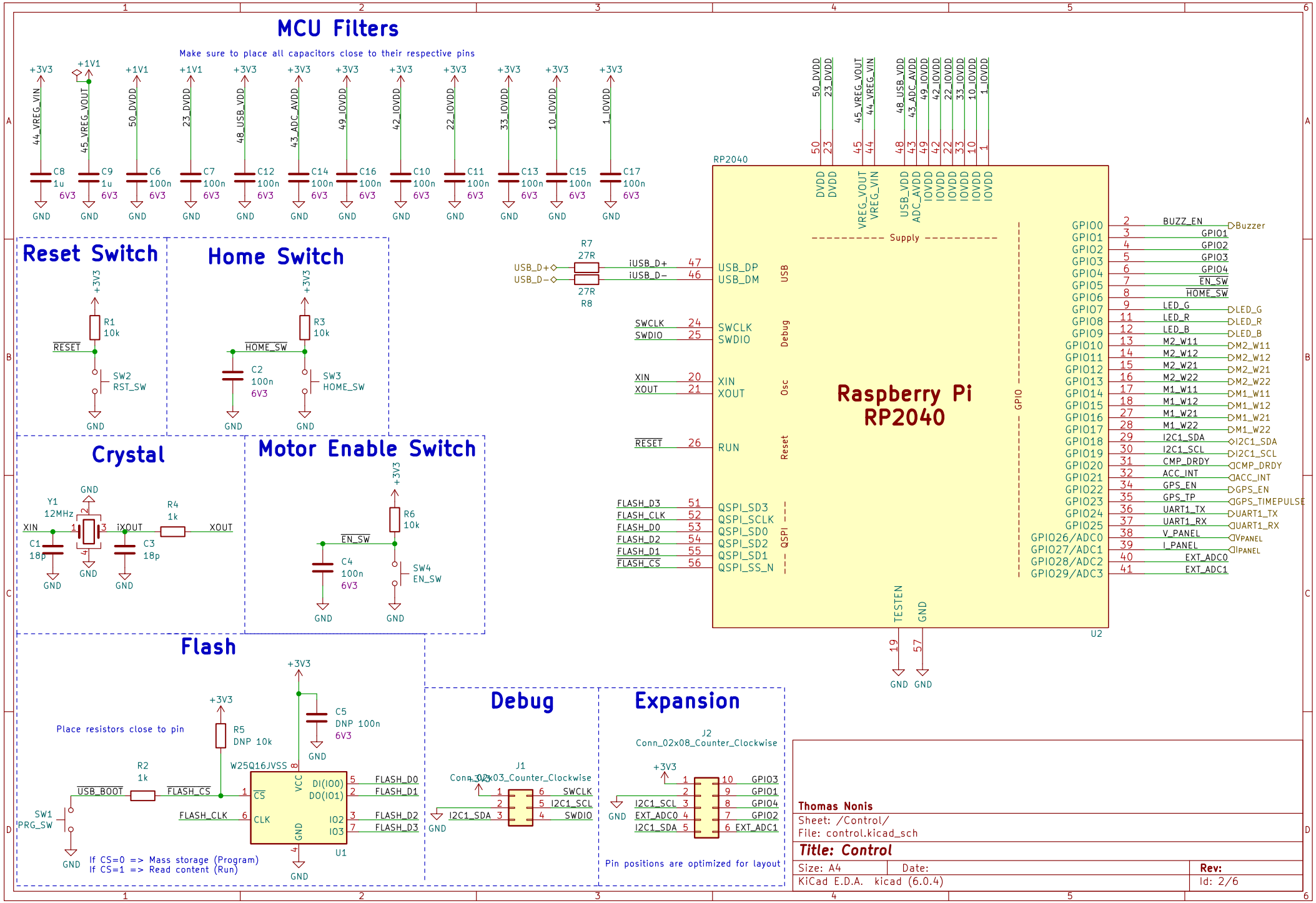
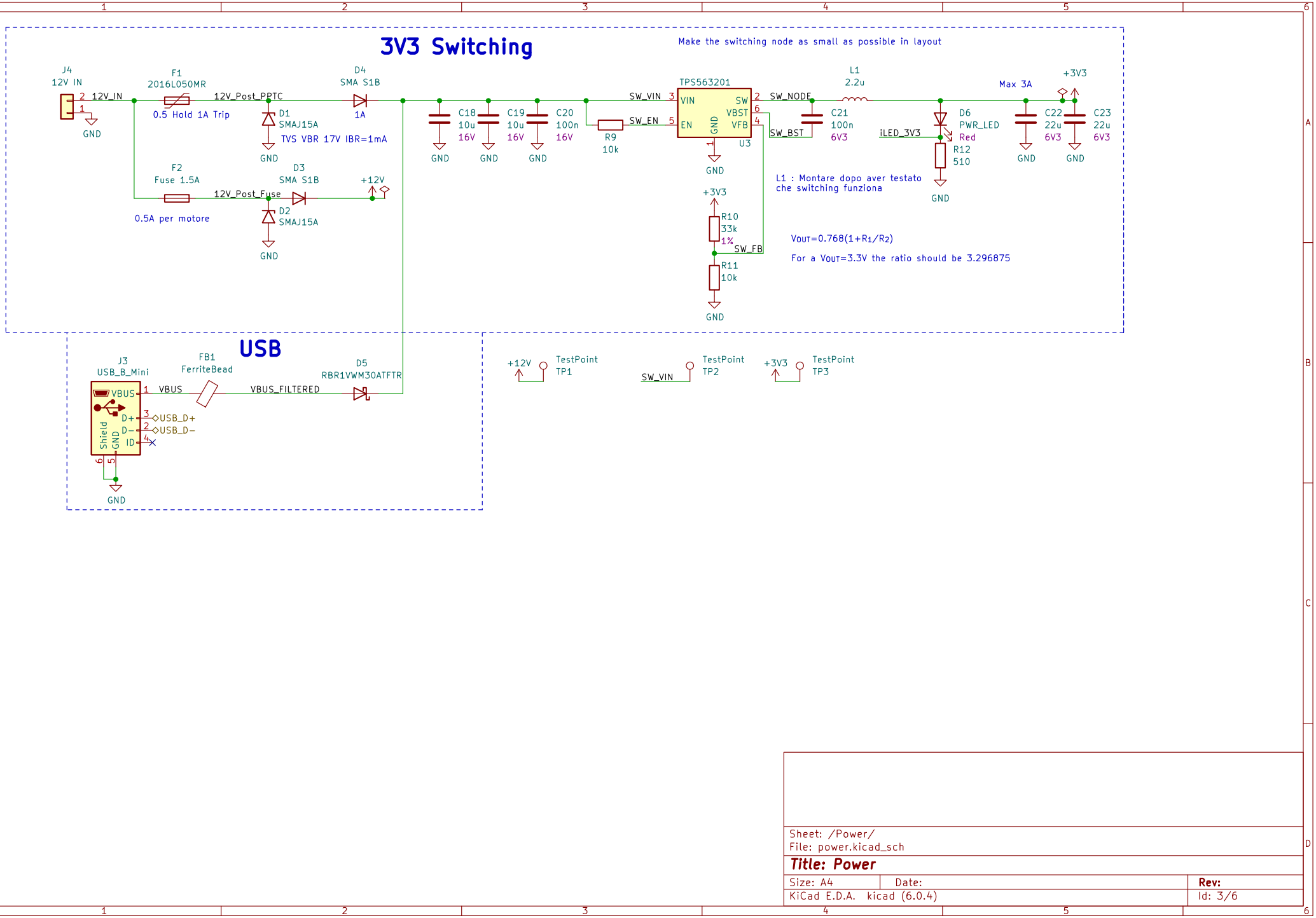
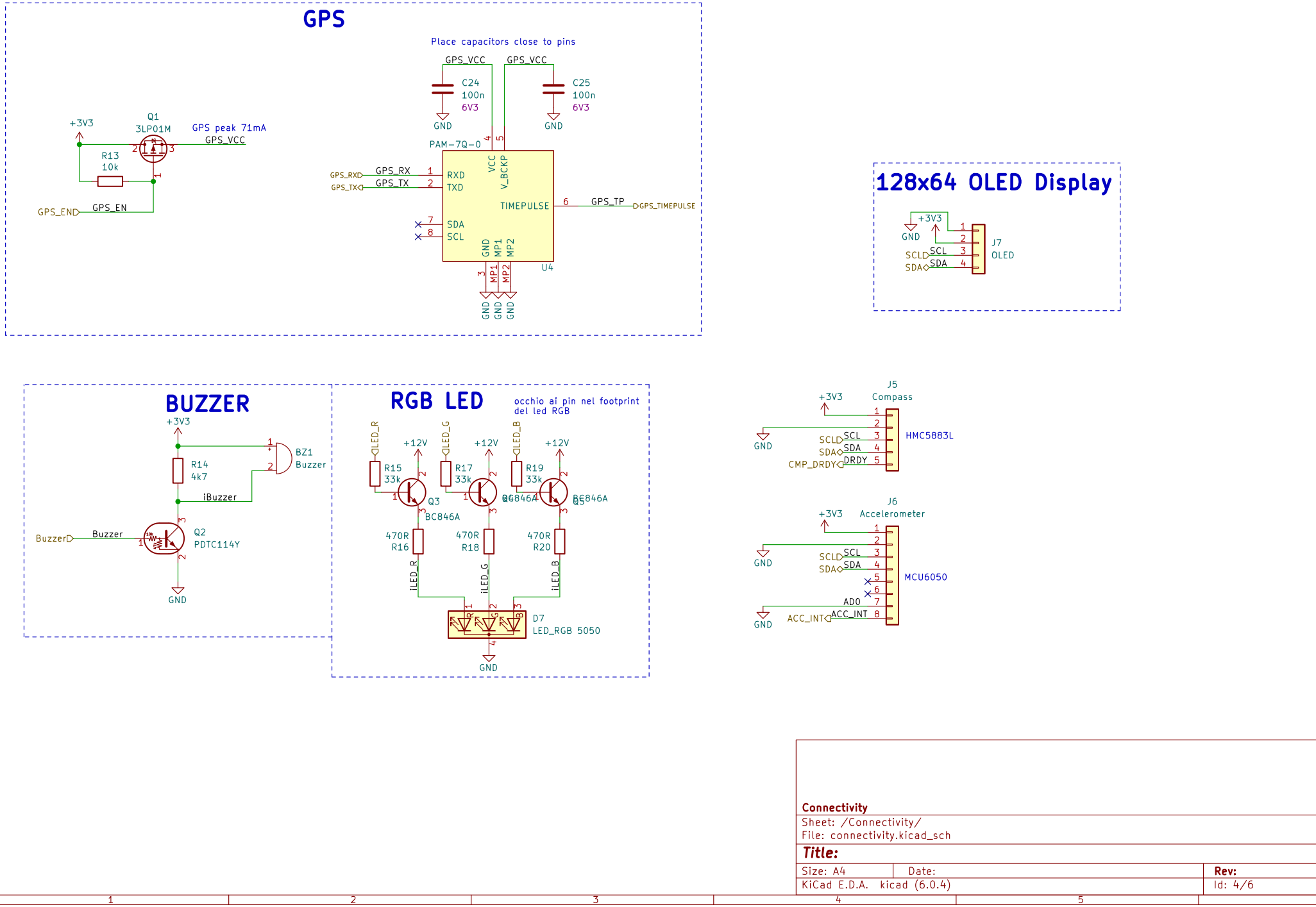

Power
POWER
USB_D+
USB_D−
File: power.kicad_sch
Sensing
PANEL SENSING
IPANEL
VPANEL
File: sensing.kicad_sch
Control
CONTROL
USB_D+
USB_D−
IPANEL
VPANEL
Buzzer
LED_R
LED_G
LED_B
UART1_TX
UART1_RX
GPS_TIMEPULSE
GPS_EN
I2C1_SCL
I2C1_SDA
CMP_DRDY
ACC_INT
M1_W11
M1_W12
M1_W21
M1_W22
M2_W11
M2_W12
M2_W21
M2_W22
File: control.kicad_sch
Connectivity
PERIPHERALS
Buzzer
LED_R
LED_G
LED_B
GPS_RX
GPS_TX
GPS_TIMEPULSE
GPS_EN
SCL
SDA
CMP_DRDY
ACC_INT
File: connectivity.kicad_sch
Actuation
ACTUATION
M1_W11
M1_W12
M1_W21
M1_W22
M2_W11
M2_W12
M2_W21
M2_W22
File: actuation.kicad_sch
H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole
FID1 Fiducial
FID2 Fiducial
FID3 Fiducial
Sheet: /
File: PPSE_2021.kicad_sch
Title: Main
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (6.0.4)
Id: 1/6


MCU Filters
Make sure to place all capacitors close to their respective pins
Reset Switch
Home Switch
Crystal
Motor Enable Switch
Flash
Debug
Expansion
Raspberry Pi
RP2040
Place resistors close to pin
If CS=0 => Mass storage (Program)
If CS=1 => Read content (Run)
Pin positions are optimized for layout
Thomas Nonis
Sheet: /Control/
File: control.kicad_sch
Title: Control
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (6.0.4)
Id: 2/6



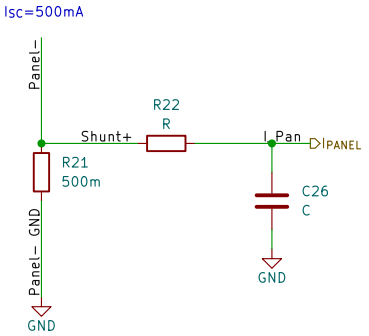
Sheet: /Power/	
File: power.kicad_sch	
Title: Power	
Size: A4	Date:
KiCad E.D.A. kicad (6.0.4)	**Rev:** Id: 3/6



Connectivity		
Sheet: /Connectivity/		
File: connectivity.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (6.0.4)		Id: 4/6

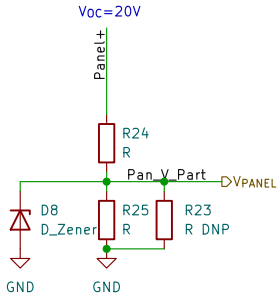
Current sensing

Values need to be determined when the solar panel is defined
OpAmp model needs to be defined



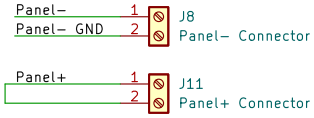
Voltage sensing

Values need to be determined when the solar panel is defined
OpAmp model needs to be defined

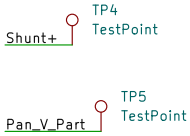


Second resistor is in case we want to increase the sensitivity

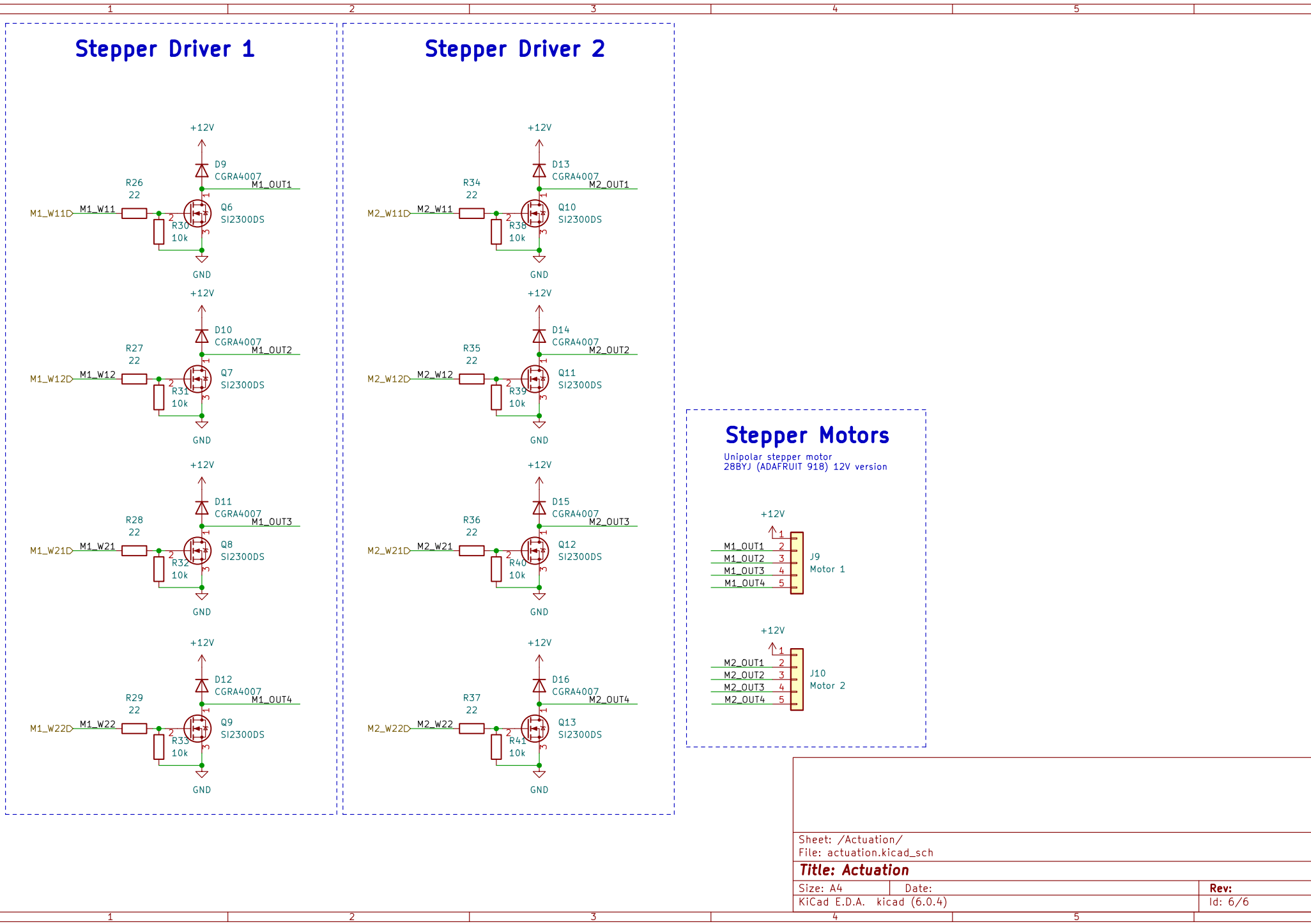
Panel connector



Depending on panel power, might need more suitable connector



Sheet: /Sensing/	
File: sensing.kicad_sch	
Title: Sensing	
Size: A4	Date:
KiCad E.D.A. kicad (6.0.4)	Id: 5/6


Stepper Driver 1
Stepper Driver 2
+12V
D9
CGRA4007
M1_OUT1
R26
22
M1_W11
Q6
SI2300DS
R30
10k
GND
D10
CGRA4007
M1_OUT2
R27
22
M1_W12
Q7
SI2300DS
R31
10k
D11
CGRA4007
M1_OUT3
R28
22
M1_W21
Q8
SI2300DS
R32
10k
D12
CGRA4007
M1_OUT4
R29
22
M1_W22
Q9
SI2300DS
R33
10k
D13
CGRA4007
M2_OUT1
R34
22
M2_W11
Q10
SI2300DS
R38
10k
D14
CGRA4007
M2_OUT2
R35
22
M2_W12
Q11
SI2300DS
R39
10k
D15
CGRA4007
M2_OUT3
R36
22
M2_W21
Q12
SI2300DS
R40
10k
D16
CGRA4007
M2_OUT4
R37
22
M2_W22
Q13
SI2300DS
R41
10k
Stepper Motors
Unipolar stepper motor
28BYJ (ADAFRUIT 918) 12V version
J9
Motor 1
M1_OUT1
M1_OUT2
M1_OUT3
M1_OUT4
J10
Motor 2
M2_OUT1
M2_OUT2
M2_OUT3
M2_OUT4
Sheet: /Actuation/
File: actuation.kicad_sch
Title: Actuation
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (6.0.4)
Id: 6/6