

ASH Power

Variant: [No Variations]

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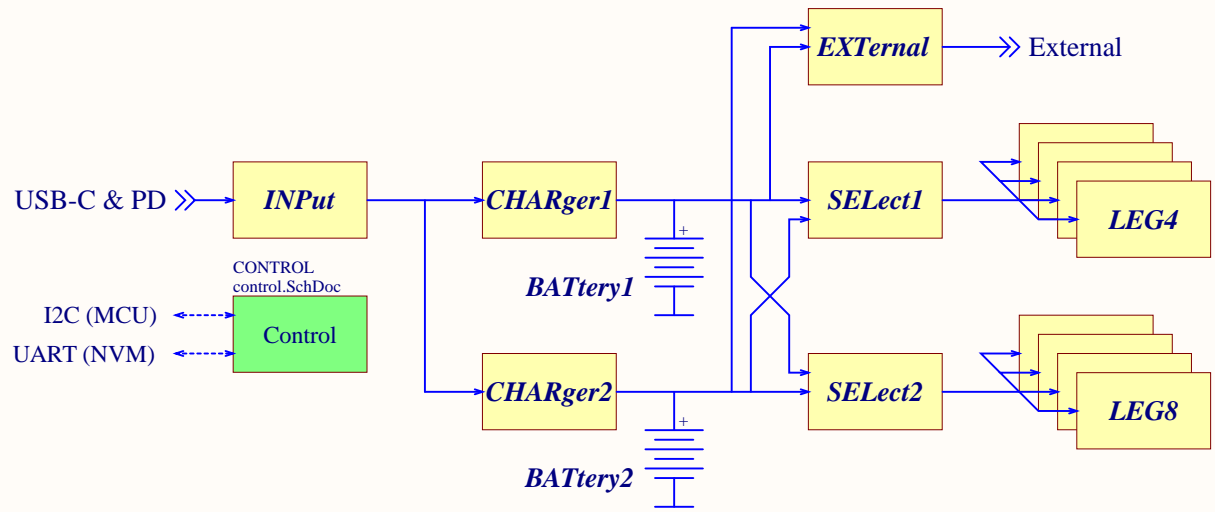
Text

Introduction

Text

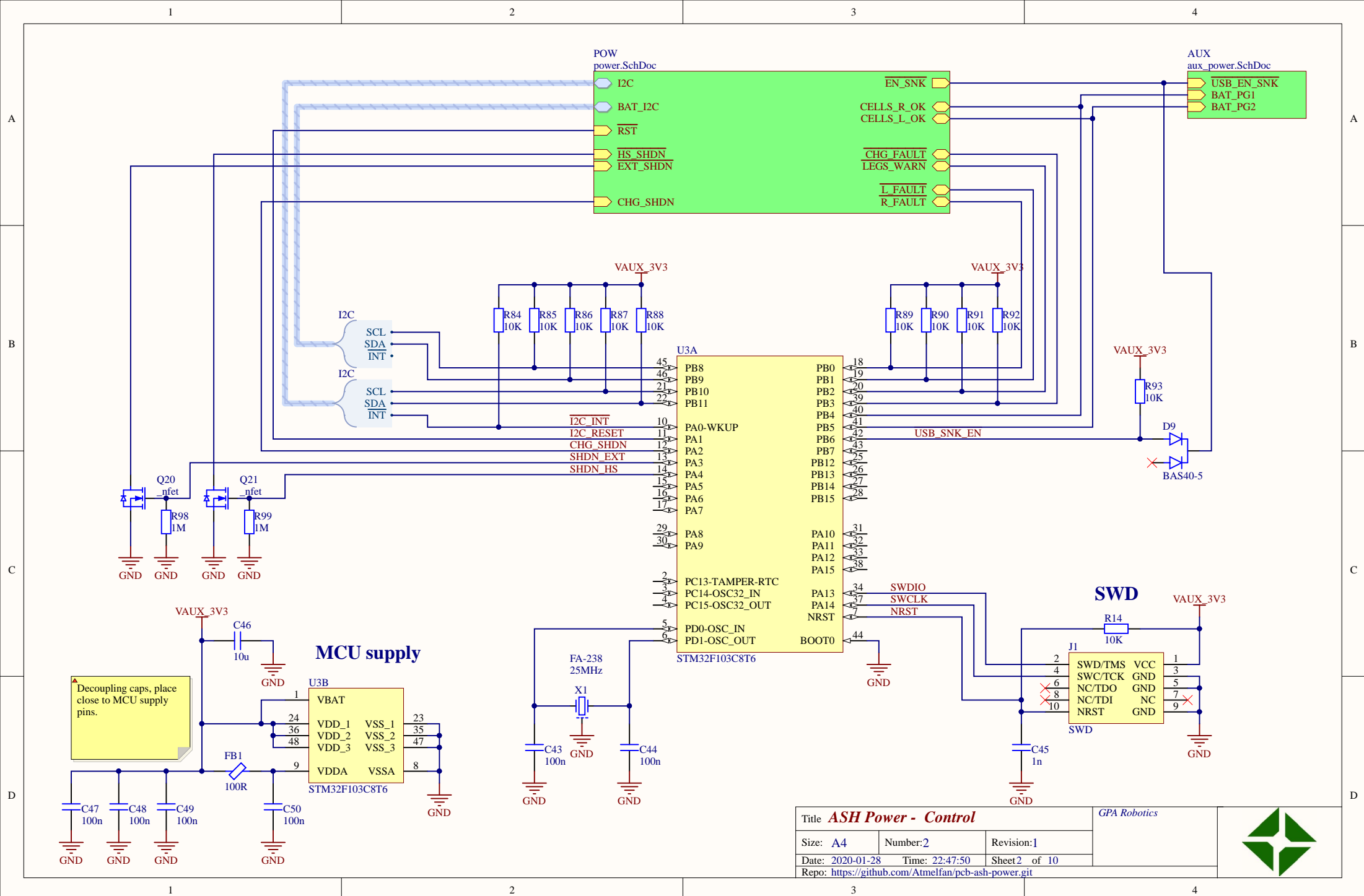
Specifications

Text



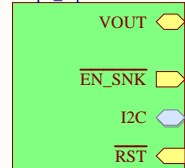
External connector

- 1 - SCL
- 2 - GND
- 3 - GND
- 4 - SDA
- 5 - VS
- 6 - VS



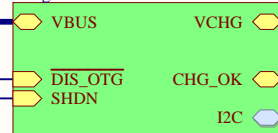
USB-PD

USB
usbpd_input.SchDoc



▲ USB sink disables charger OTG mode to prevent reverse current.

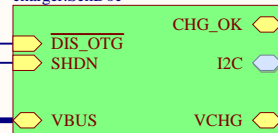
CHG_R
charger.SchDoc



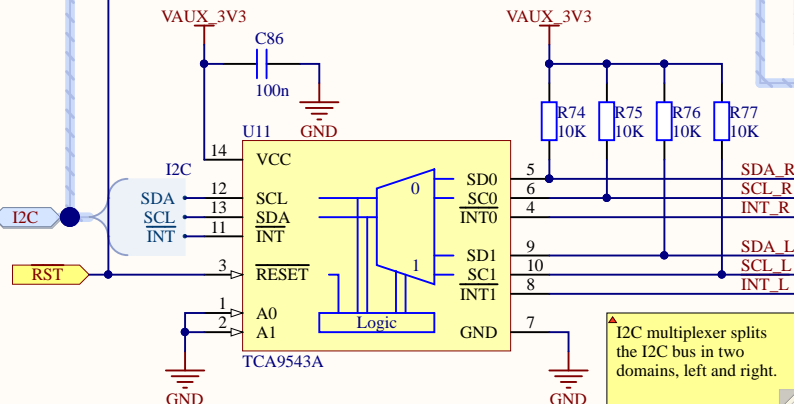
▲ Pull \SHDN low to, well, shutdown... Do NOT drive as doing so will override battery UVLO.

Chargers

CHG_L
charger.SchDoc

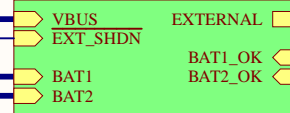


I2C multiplexer



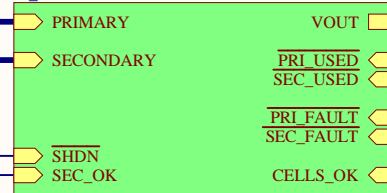
External switch

EXT
ext_power.SchDoc



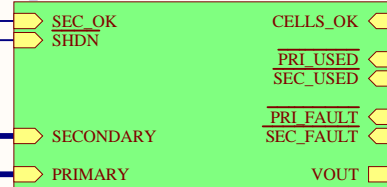
VBAT1_7V4

HS_R
hs_switch.SchDoc



Battery switches

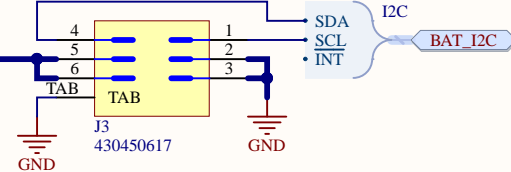
HS_L
hs_switch.SchDoc



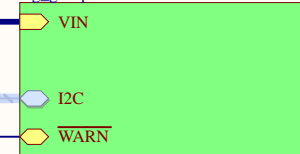
▲ The highside switches controls the power to the servos. Each side is independently controlled.

The switch can use both batteries but will prioritize the battery on the same side as itself. E.g. HS_R will use BAT_R unless it is in UVLO/OVLO where it'll use BAT_L instead (assuming BAT_L is OK).

Ext connector



LEG_R
leg_group.SchDoc

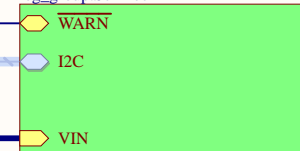


CELLS_R_OK

CELLS_L_OK

Legs

LEG_L
leg_group.SchDoc



LEGS_WARN

Title **ASH Power - Power**

GPA Robotics

Size: A4

Number: 3

Revision: 1

Date: 2020-01-28

Time: 22:47:50

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Repo: <https://github.com/Atmelfan/pcb-ash-power.git>



A

A

B

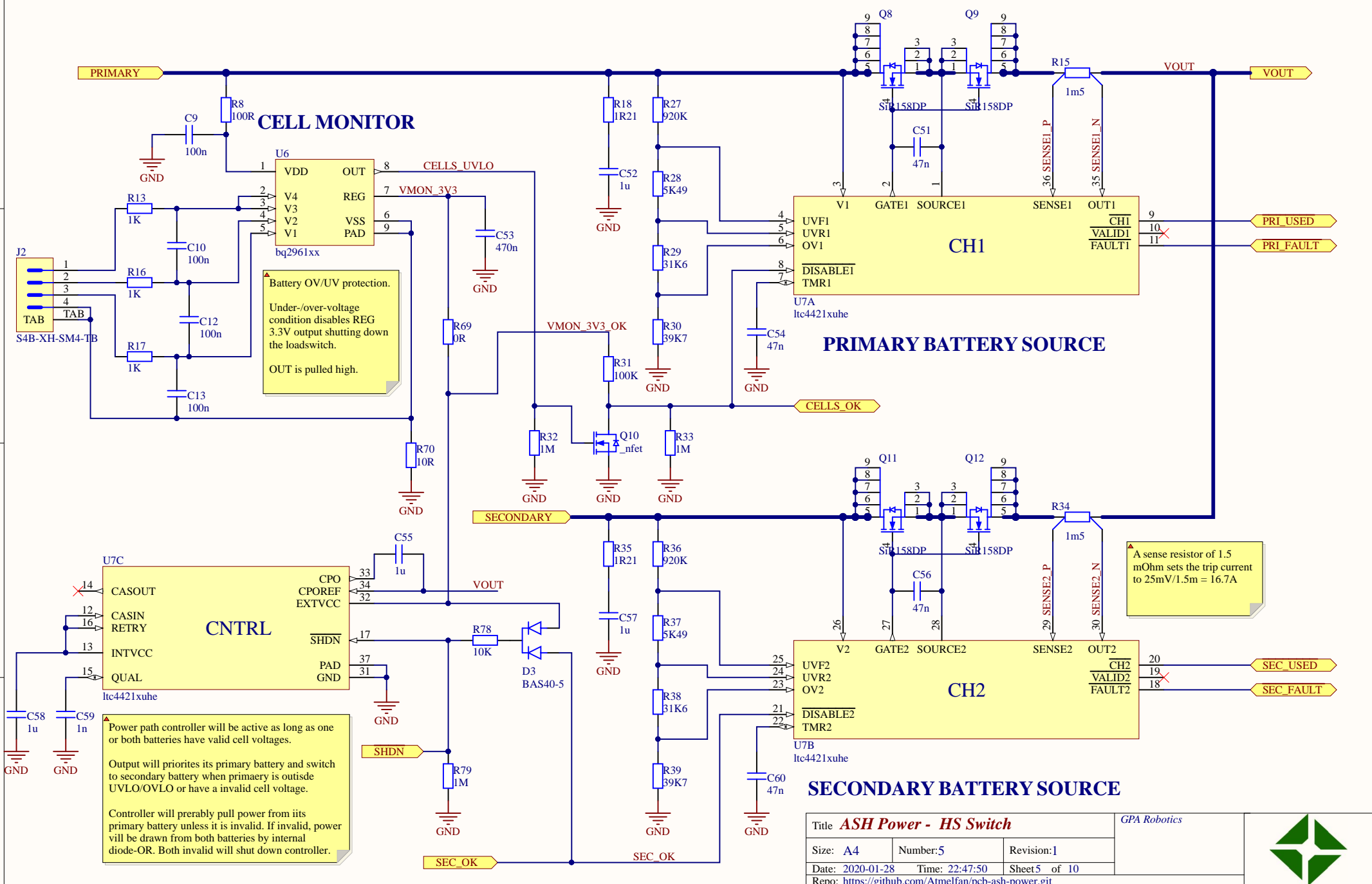
B

C

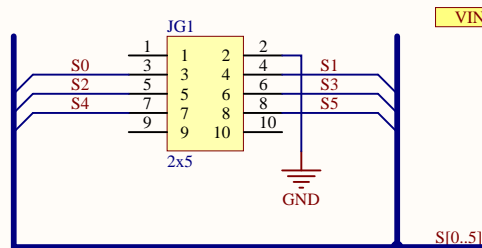
C

D

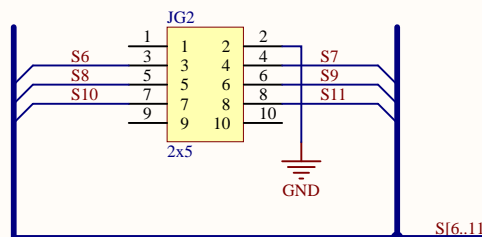
D



Front pair



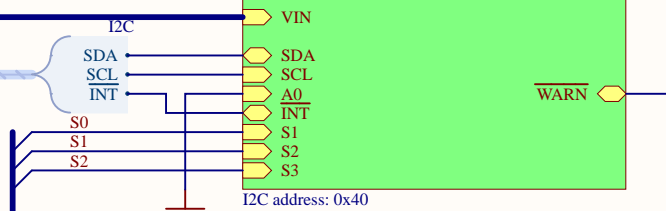
Back pair



S[6..11]

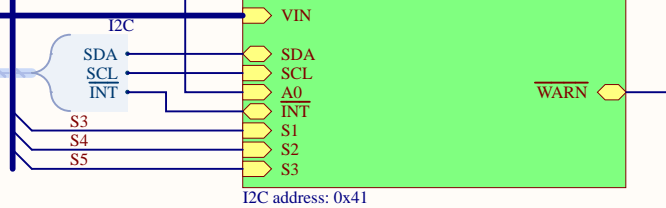
LEG1

leg_module.SchDoc



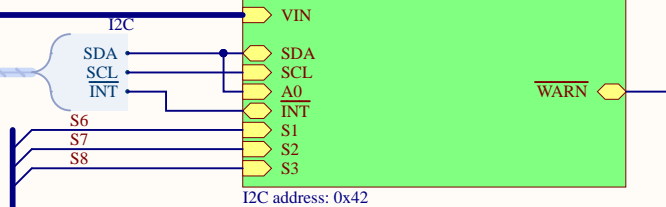
LEG2

leg_module.SchDoc



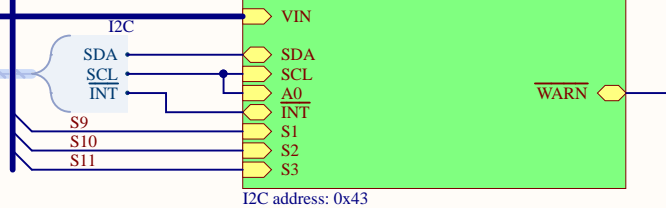
LEG3

leg_module.SchDoc



LEG4

leg_module.SchDoc



The board has two leg groups, right and left. Each group consists of four legs which is further divided into two pairs, front and back. Each pair has a input PWM signal connector (JG1 and JG2).

Each leg has its own independent step-down converter and power monitor (for each of the legs three servos).

Title **ASH Power - Leg group**

GPA Robotics

Size: A4

Number: 6

Revision: 1

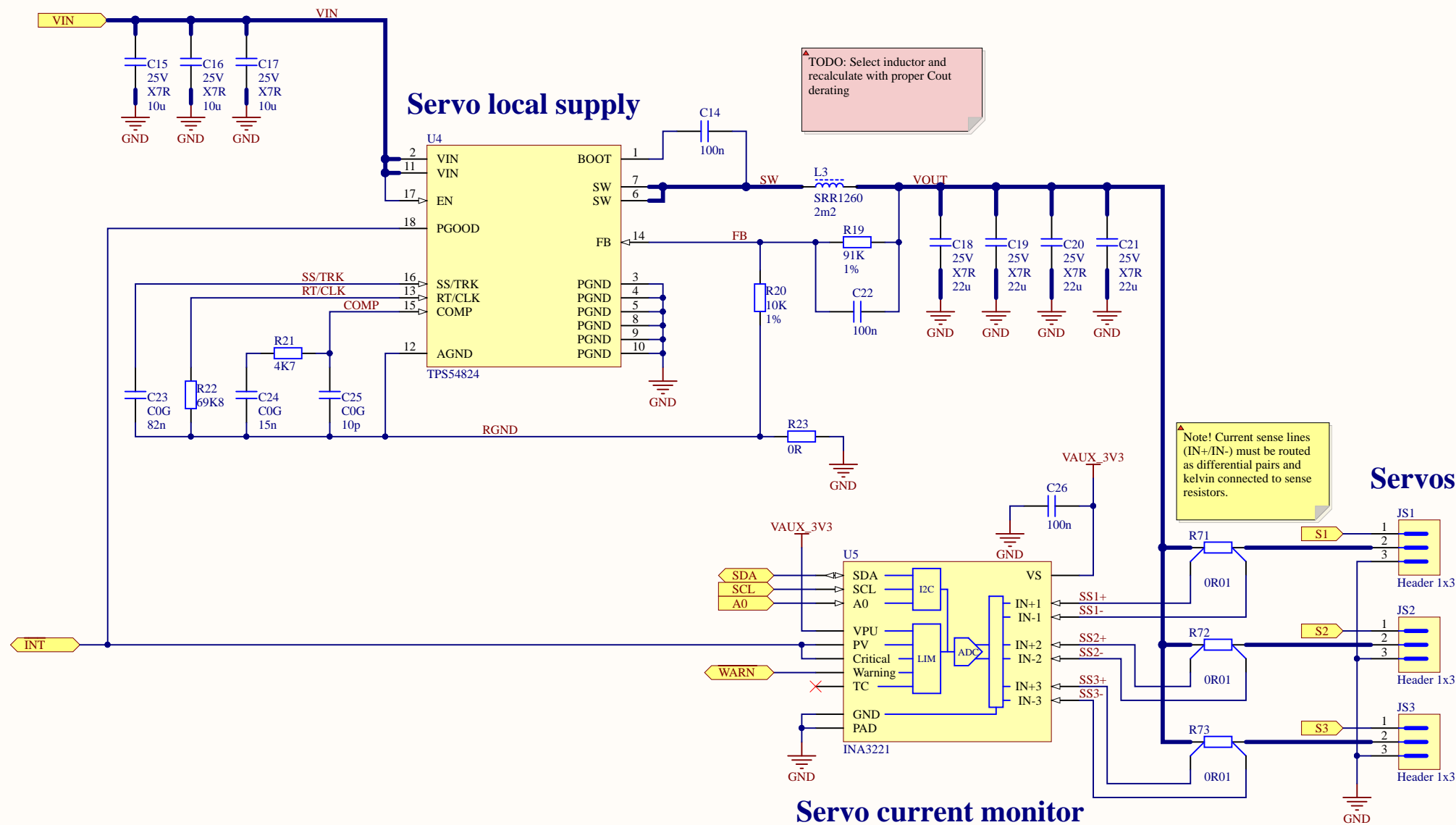
Date: 2020-01-28

Time: 22:47:50

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Repo: <https://github.com/Atmelfan/pcb-ash-power.git>





A

A

B

B

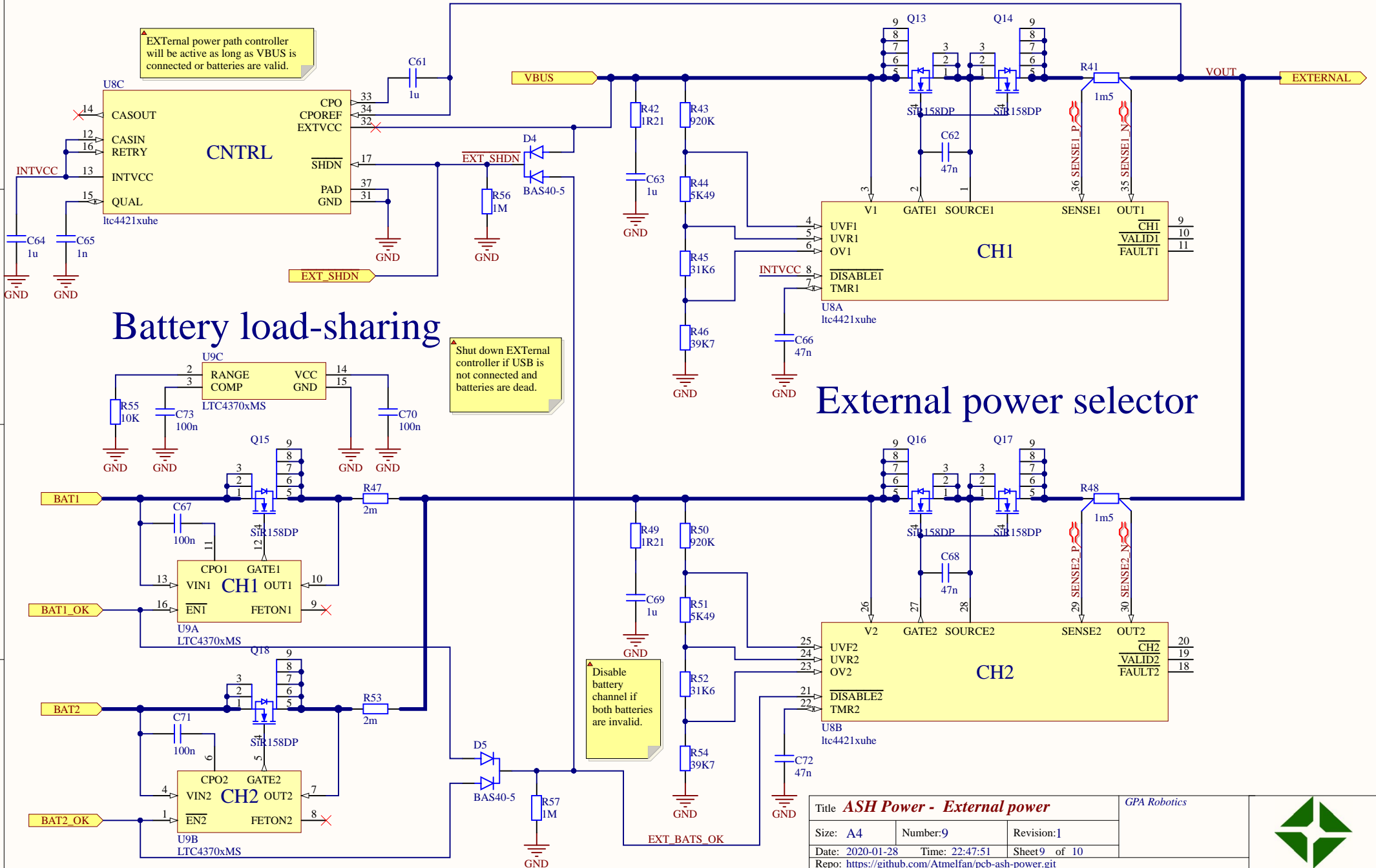
C

C

D

D

EXTERNAL power path controller will be active as long as VBUS is connected or batteries are valid.



Title **ASH Power - External power**

GPA Robotics

Size: A4

Number: 9

Revision: 1

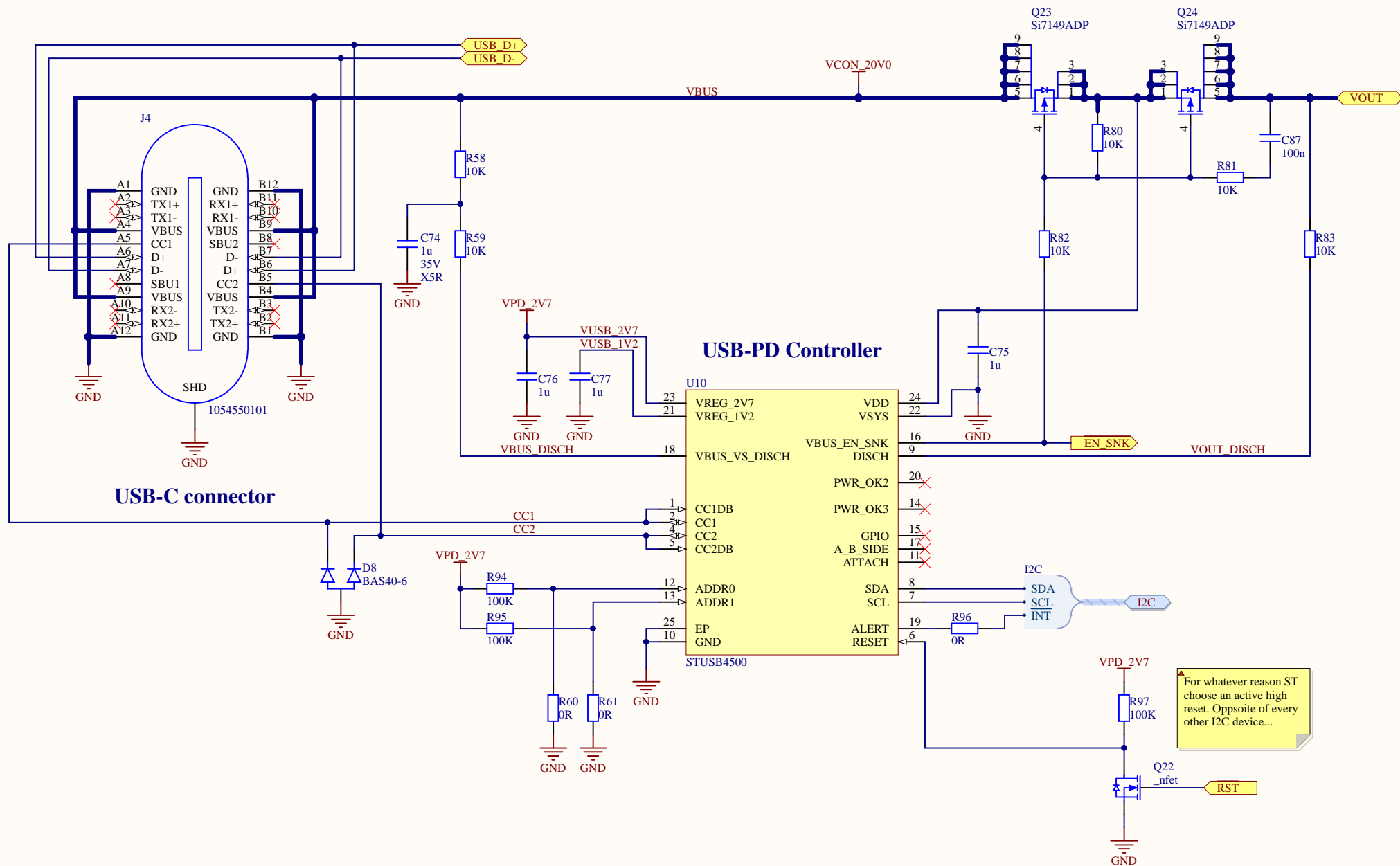
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Time: 22:47:51

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Repo: <https://github.com/Atmelfan/pcb-ash-power.git>





Title **ASH Power - USB-PD**

GPA Robotics

Size: **A4**

Number:

Revision:1

Date: 2020-01-28

Time: 22:47:51

Sheet of

Repo: <https://github.com/Atmelfan/pcb-ash-power.git>

