

## Controller interfaces

4th joint controller

File: Connector\_layout.kicad\_sch

Gripper controller

File: Connector\_layout.kicad\_sch

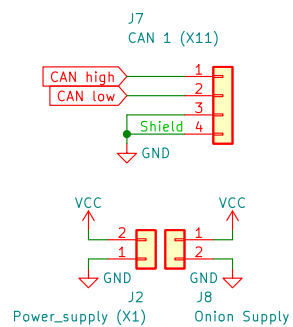
5th joint controller

File: Connector\_layout.kicad\_sch

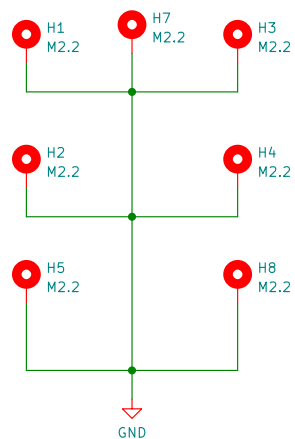
6th joint controller

File: Connector\_layout.kicad\_sch

## Power connectors



## Mounting holes



Author: Yassine Bakkali

EPFL XPlore

Sheet: /

File: can\_controller\_board.kicad\_sch

**Title: CAN interfacing board**

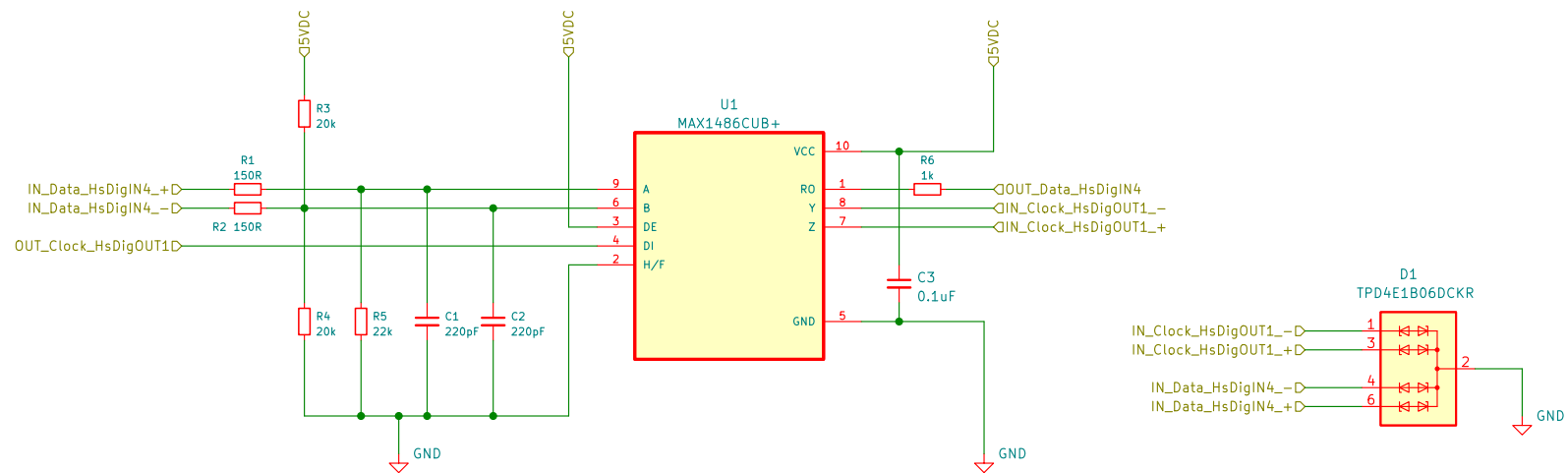
Size: A4

Date: 2022-10-07

KiCad E.D.A. kicad (6.0.4)

Rev: 1.0

Id: 1/9



Author: Yassine Bakkali

EPFL XPlore

Sheet: /5th joint controller/Encoder interface1/

File: Encoder\_control.kicad\_sch

**Title: RS422 interface**

Size: A4

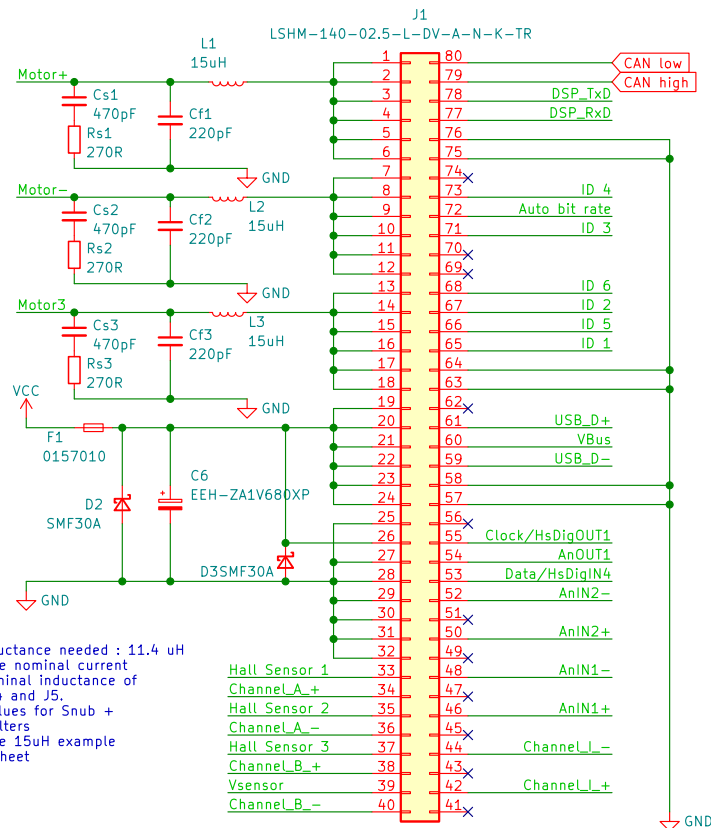
Date: 2022-10-07

Rev: 1.0

KiCad E.D.A. kicad (6.0.4)

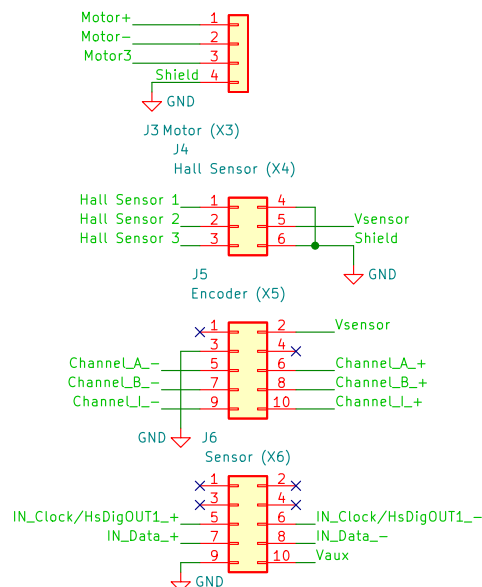
Id: 2/9

## Bridge to micro EPOS 4

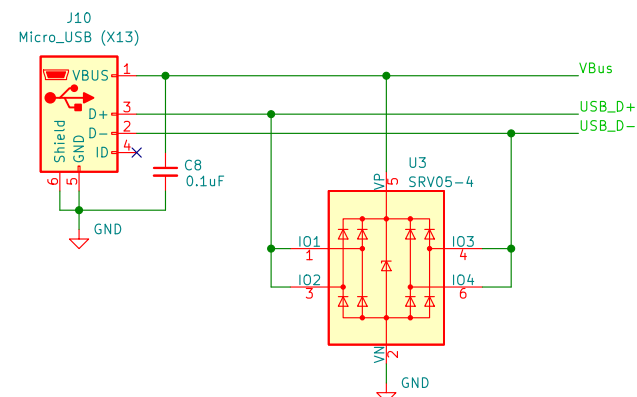
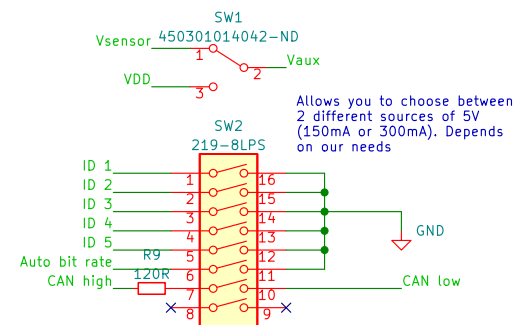


Max inductance needed : 11.4 uH  
given the nominal current  
and terminal inductance of  
joints J4 and J5.  
Used values for Snub +  
choke filters  
given the 15uH example  
in datasheet

## General connectors

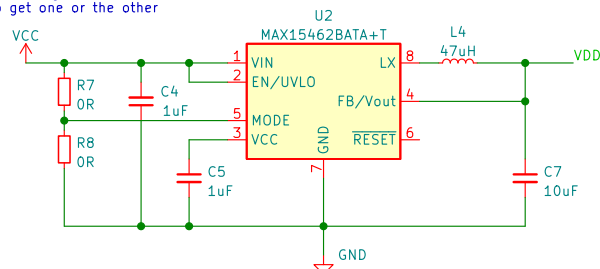


## CAN ID & power switches

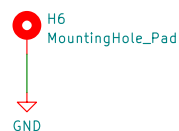


### Step-Down 5v, 300mA DC/DC converter

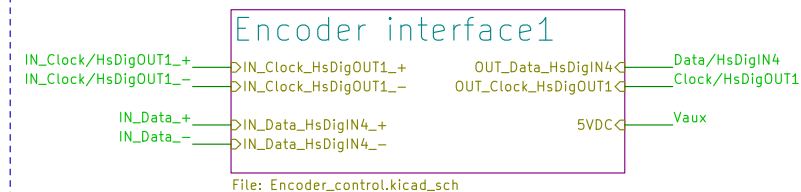
Mode can be chosen between  
PWM mode and PFF mode.  
Just bridge R1 or R2 in order  
to get one or the other



## Misc



## RS422 interface



Author: Yassine Bakkali

EPFL XPlore

Sheet: /5th joint controller/  
File: Connector\_layout.kicad\_sch

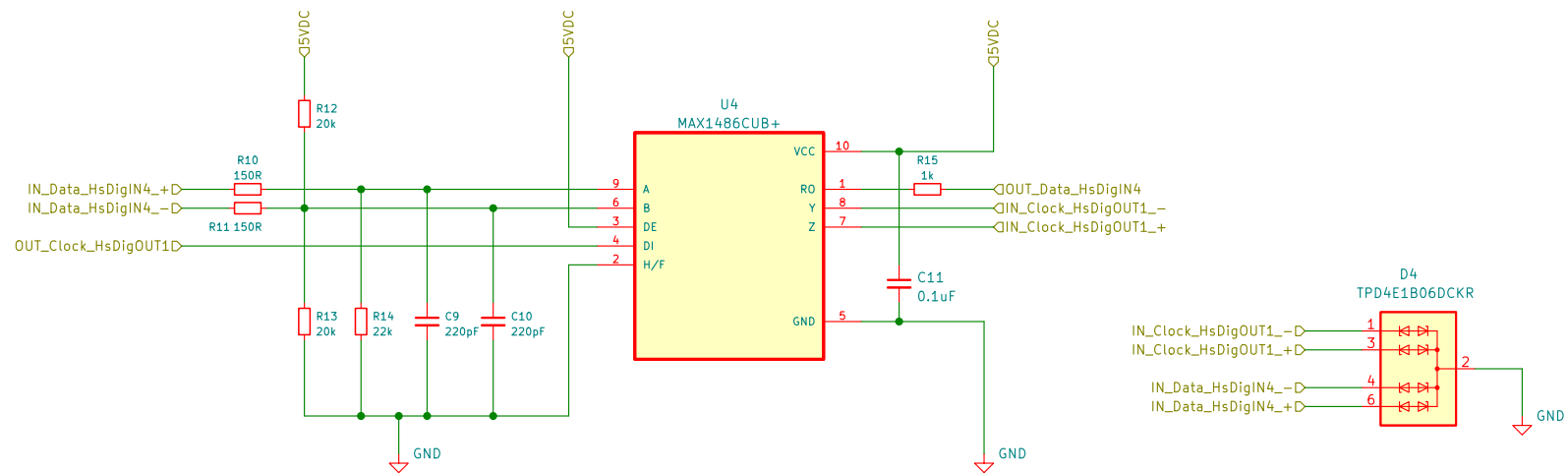
**Title: CAN controller**

Size: A4	Date: 2022-10-07
----------	------------------

Size: A4	Date: 20
KiCad E.D.A.	kicad (6.0.4)

Rev: 1.0

Id: 3/9



Author: Yassine Bakkali

EPFL XPlore

Sheet: /6th joint controller/Encoder interface1/  
File: Encoder\_control.kicad\_sch

**Title: RS422 interface**

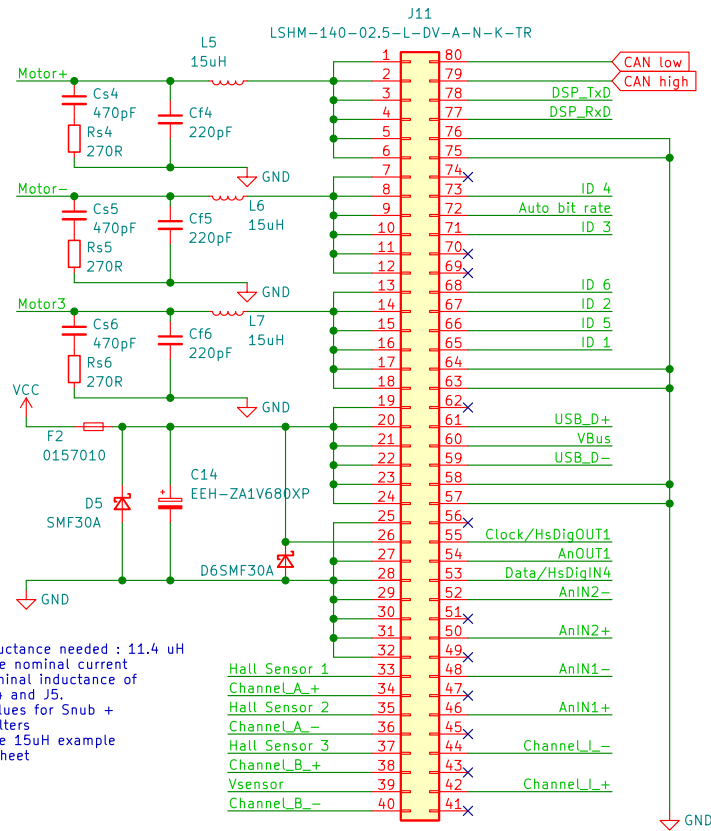
Size: A4 Date: 2022-10-07

KiCad E.D.A. kicad (6.0.4)

Rev: 1.0

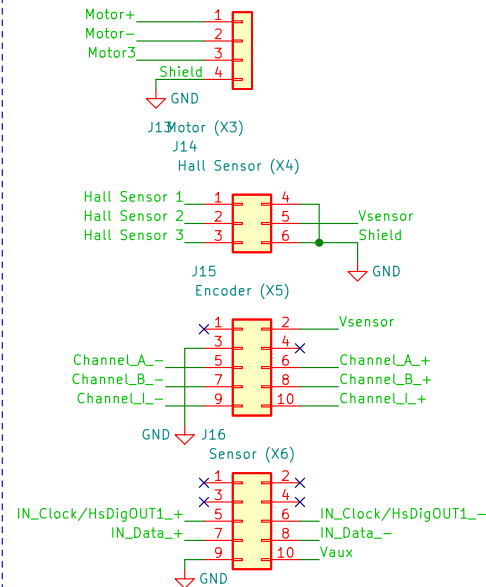
Id: 4/9

## Bridge to micro EPOS 4

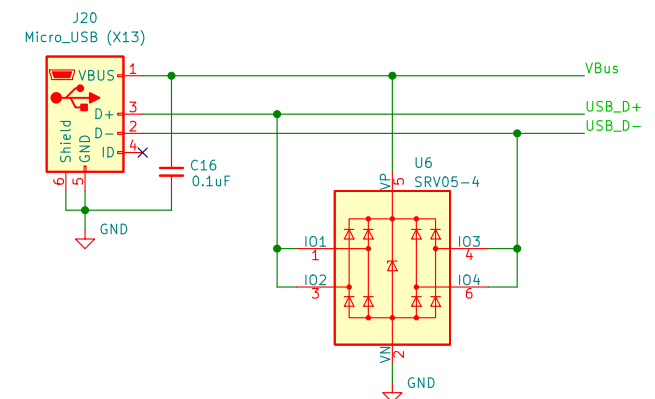
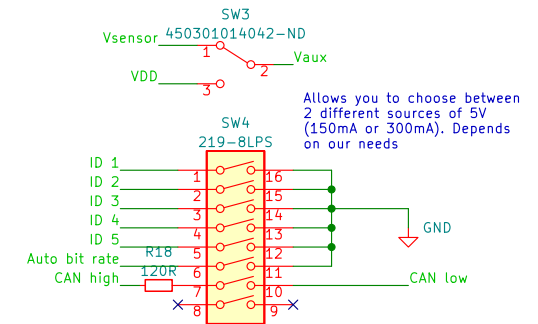


Max inductance needed : 11.4 uH  
given the nominal current  
and terminal inductance of  
joints J4 and J5.  
Used values for Snub +  
choke filters  
given the 15uH example  
in datasheet

## General connectors

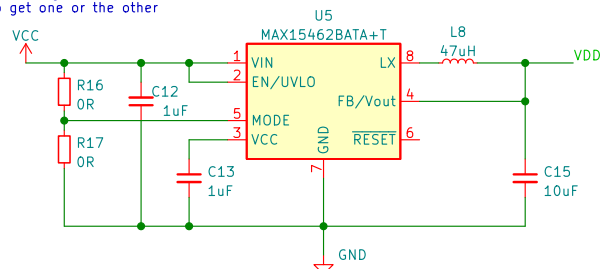


## CAN ID & power switches

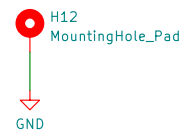


### Step-Down 5v, 300mA DC/DC converter

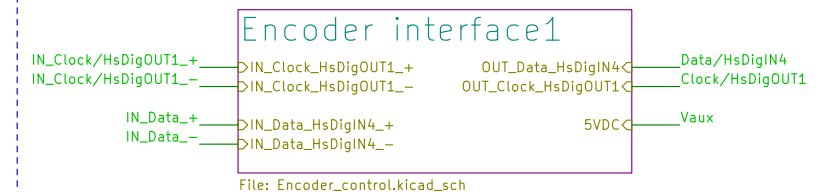
Mode can be chosen between PWM mode and PFF mode.  
Just bridge R1 or R2 in order to get one or the other



**Misc**



## RS422 interface



Author: Yassine Bakkali

EPFL XPlore

Sheet: /6th joint controller/  
File: Connector\_layout.kicad\_sch

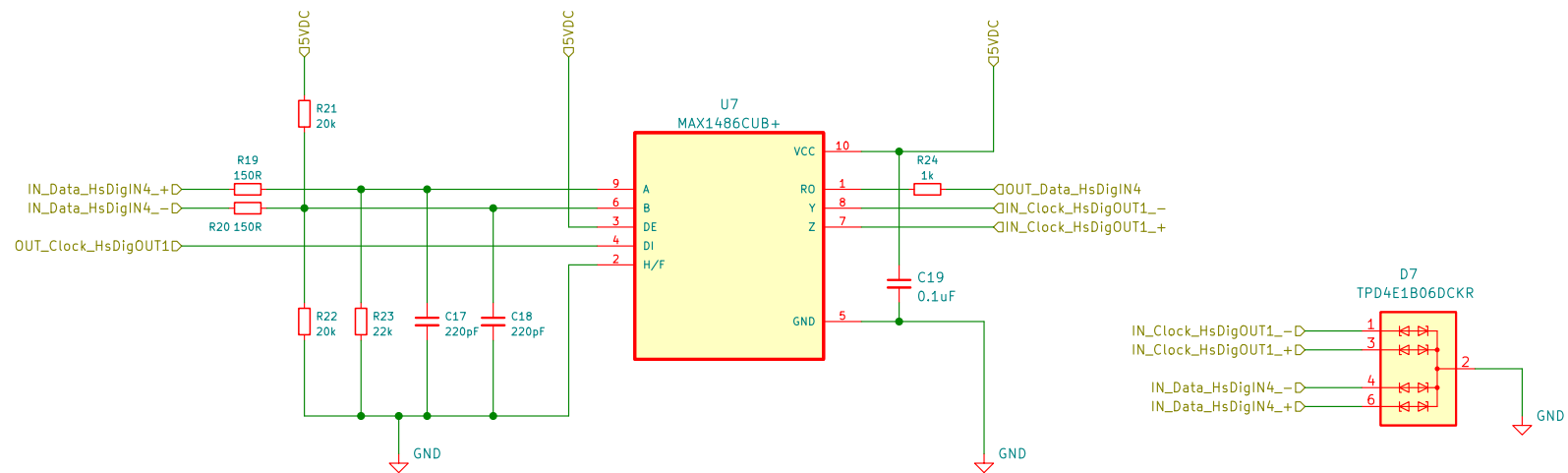
**Title: CAN controller**

Size: A4	Date: 2022-10-07
----------	------------------

Size: 7.11	Date: 2020-01-20
KiCad E.D.A.	kicad (6.0.4)

Rev: 1.0

Id: 5/9



Author: Yassine Bakkali

EPFL XPlore

Sheet: /4th joint controller/Encoder interface1/

File: Encoder\_control.kicad\_sch

**Title: RS422 interface**

Size: A4

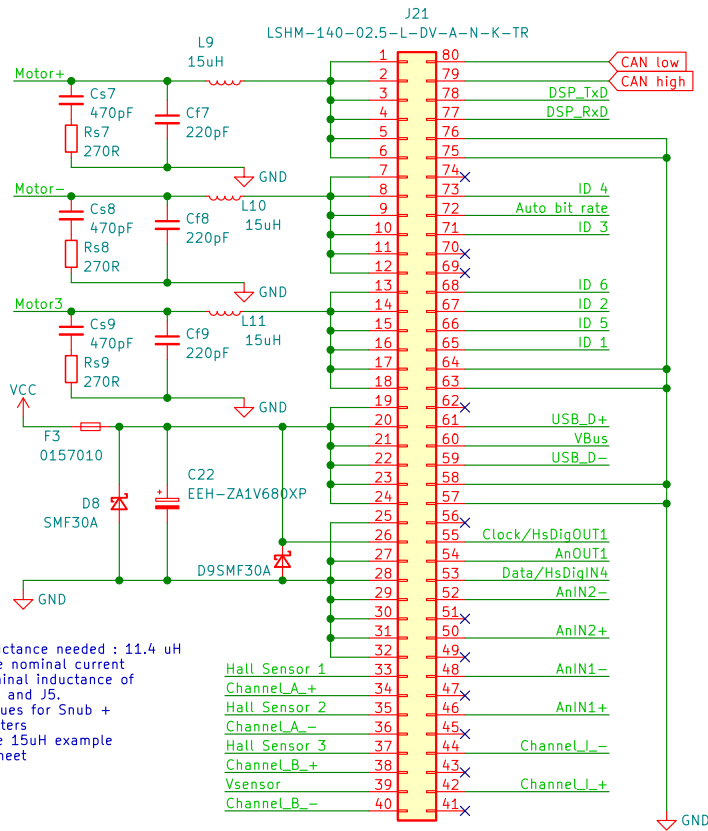
Date: 2022-10-07

Rev: 1.0

KiCad E.D.A. kicad (6.0.4)

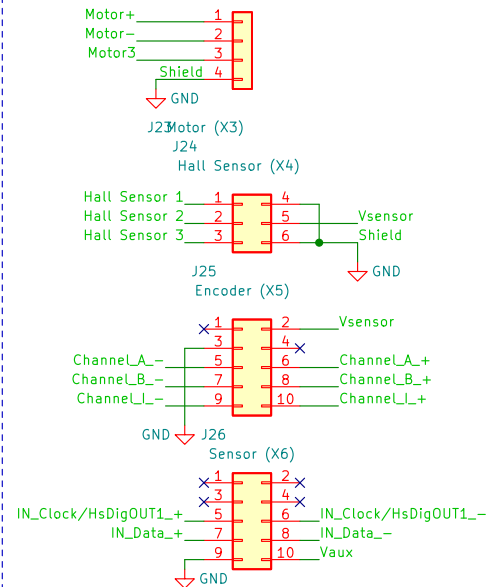
Id: 6/9

## Bridge to micro EPOS 4

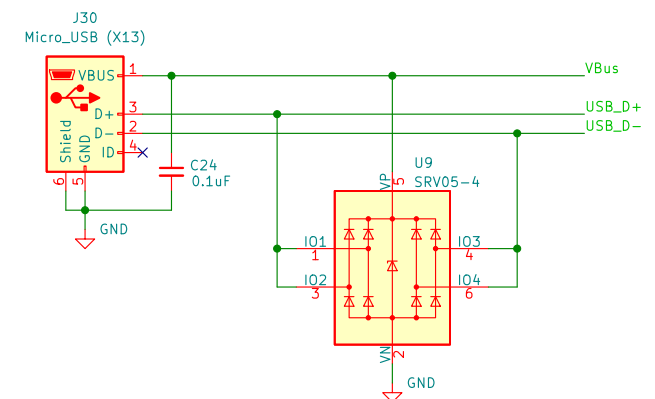
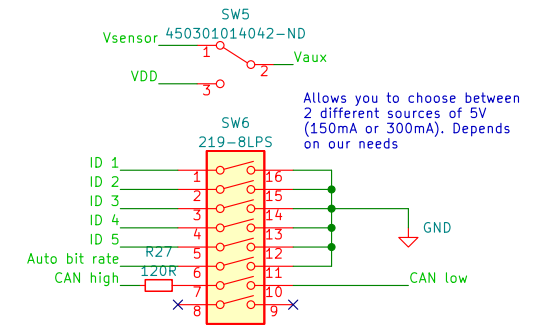


Max inductance needed : 11.4 uH  
given the nominal current  
and terminal inductance of  
joints J4 and J5.  
Used values for Snub +  
choke filters  
given the 15uH example  
in datasheet

## General connectors

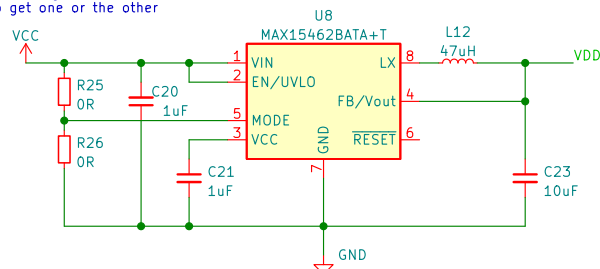


## CAN ID & power switches

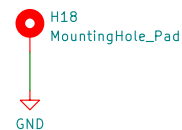


### Step-Down 5v, 300mA DC/DC converter

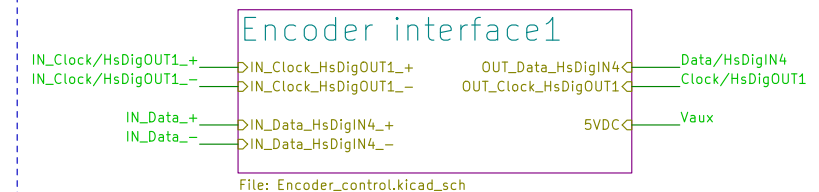
Mode can be chosen between PWM mode and PFF mode.  
Just bridge R1 or R2 in order to get one or the other



**Misc**



## RS422 interface



Author: Yassine Bakkali

EPFL XPlore

Sheet: /4th joint controller/  
File: Connector\_layout.kicad\_sch

**Title: CAN controller**

Size: A4	Date: 2022-10-07
----------	------------------

Size: 771	Date: 2020-01-20
KiCad E.D.A.	kicad (6.0.4)

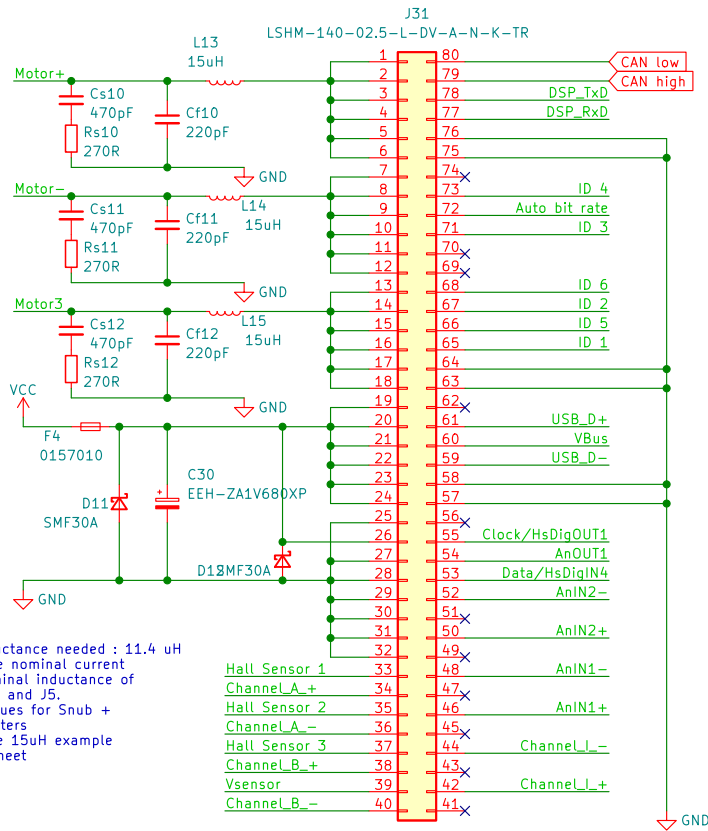
Rev: 1.0

Id: 7/9

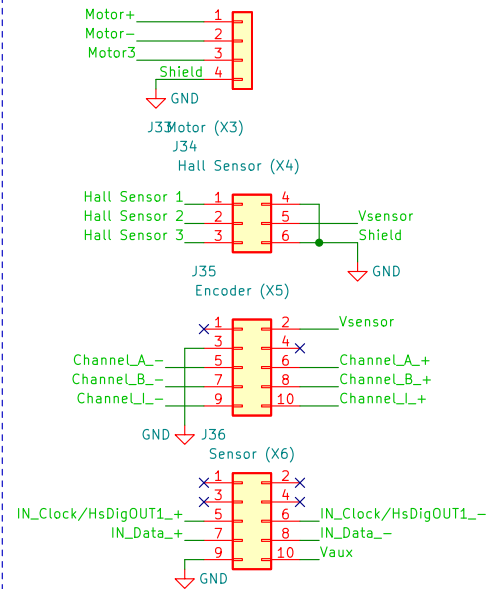
Id: 8/9



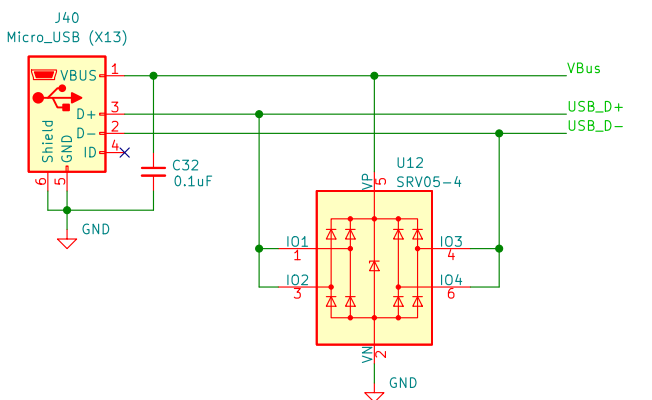
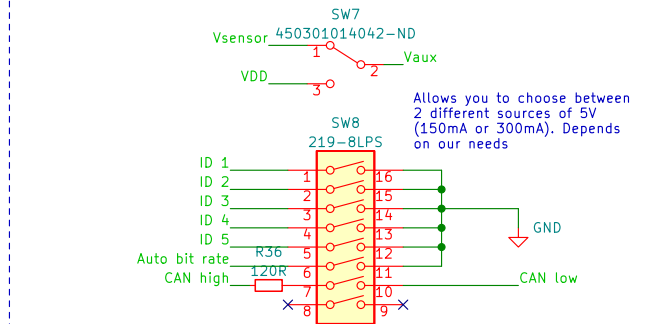
## Bridge to micro EPOS 4



## General connectors

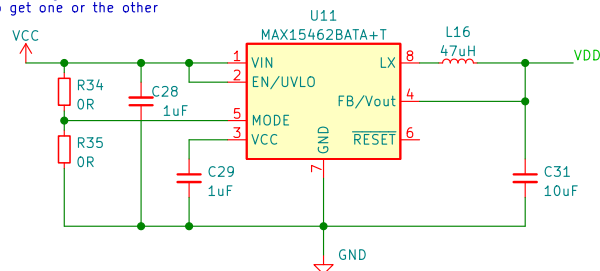


## CAN ID & power switches



## Step-Down 5v, 300mA DC/DC converter

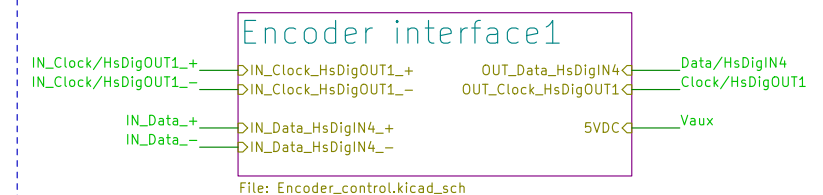
Mode can be chosen between PWM mode and PFF mode. Just bridge R1 or R2 in order to get one or the other



## Misc



## RS422 interface



Author: Yassine Bakkali

EPFL XPlore

Sheet: /Gripper controller/  
File: Connector\_layout.kicad\_sch

Title: CAN controller

Size: A4 Date: 2022-10-07

KiCad E.D.A. kicad (6.0.4)

Rev: 1.0

Id: 9/9