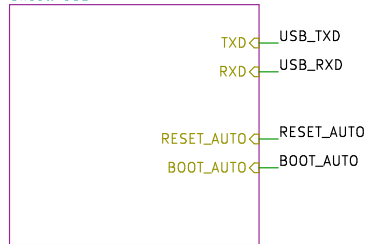


Sheet: Power input



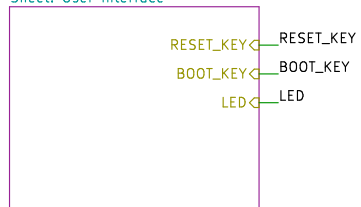
File: power-input.sch

Sheet: USB



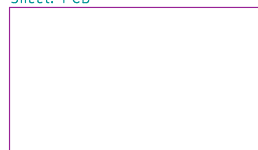
File: USB.sch

Sheet: User Interface



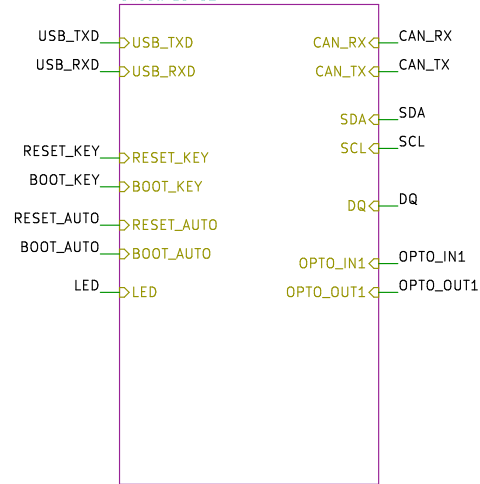
File: UI.sch

Sheet: PCB



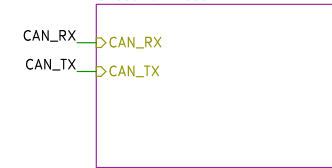
File: PCB.sch

Sheet: ESP32



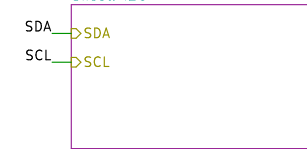
File: ESP32.sch

Sheet: CAN bus



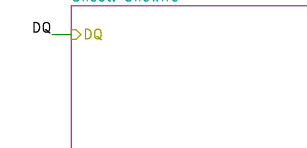
File: canbus.sch

Sheet: I2C



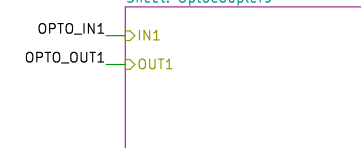
File: I2C.sch

Sheet: Onewire



File: onewire.sch

Sheet: Optocouplers



File: optocouplers.sch

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Sheet: /
 File: SH-ESP32.sch

Title: Sailor Hat with ESP32

Size: A4 Date: 2021-02-18
 KiCad E.D.A. kicad (5.1.9-0-10_14)

Rev: 0.3.1
 Id: 1/10

CAN12V_Prot

J303
Conn_01x02

GND
J301
Conn_01x02

Vin

Vin

F301
mSMD050-60V

FB301
GZ2012D601TF

C302
10nF/50V

GND

D301
SMBJ33CA

GND

Vin_fused

GND

GND

PWR_FLAG

D303
B5819W

Vin_protected

Reverse polarity and current protection

Prevent feeding Vin to USB

USB_5V

D201
B5819W

Vin_protected

PWR_FLAG

Input filter for limiting conducted noise emissions at power input lines.

L302
CBC3225T100KR

C306
470nF/50V

GND

C307
1uF/50V

GND

C308
4.7uF/50V

GND

R304
4.7R

GND

C301
10uF/50V

GND

PWR_FLAG

IN
EN
GND
BS
LX
FB

GND

C303
100nF

L301
MWSA0503S-100MT

D302
B5819W

GND

C304
22uF/6.3V

GND

PWR_FLAG +3.3V

C305
10nF/50V

GND

R302
68k

GND

R303
15k

GND

FB voltage divider designed to have a 3.32V voltage at Vbuck

Vin_protected

1

2

J302
Conn_01x02

GND

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Sheet: /Power input/
File: power-input.sch

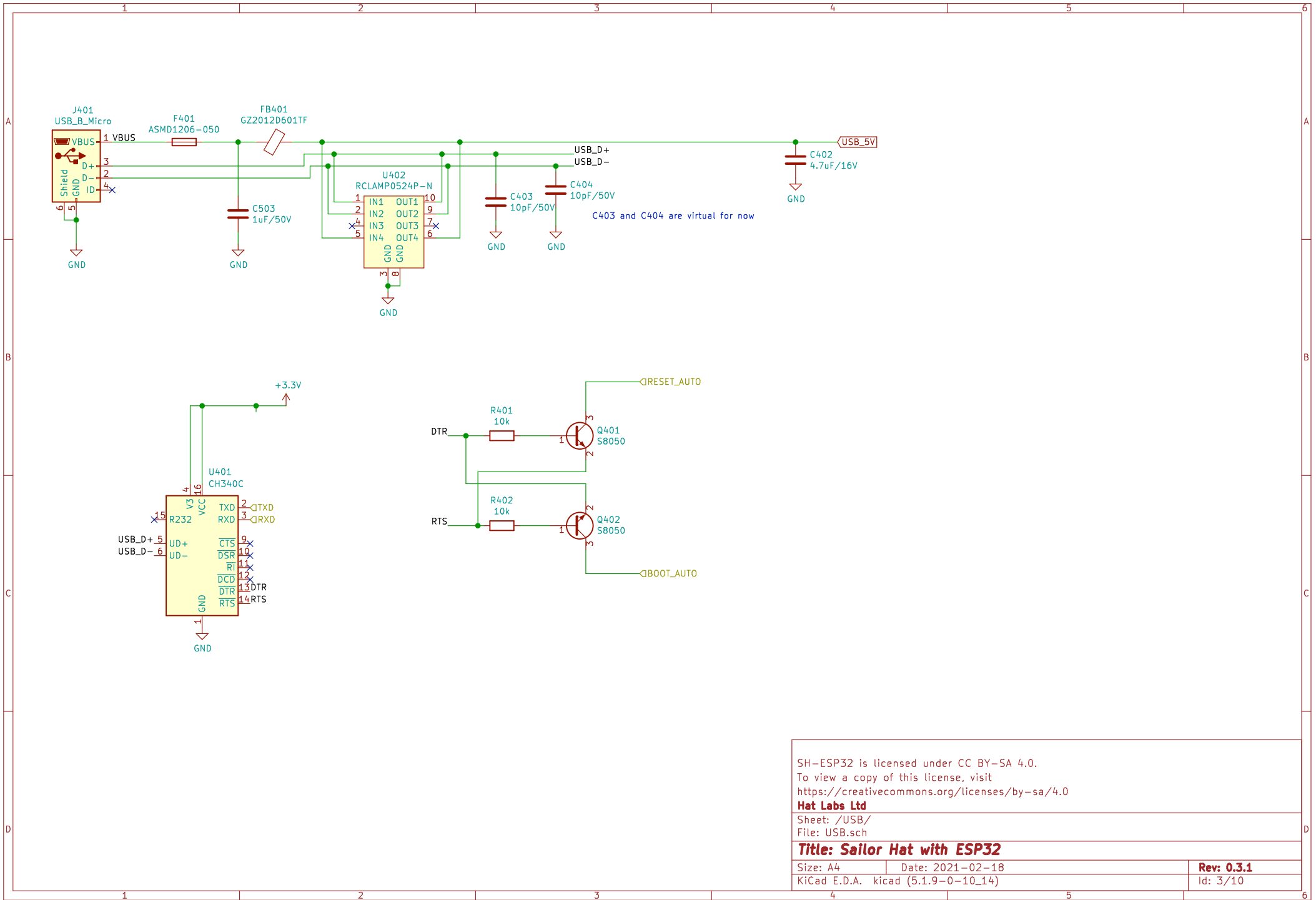
Title: Sailor Hat with ESP32

Size: A4 Date: 2021-02-18

KiCad E.D.A. kicad (5.1.9-0-10_14)

Rev: 0.3.1

Id: 2/10



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Sheet: /USB/
 File: USB.sch

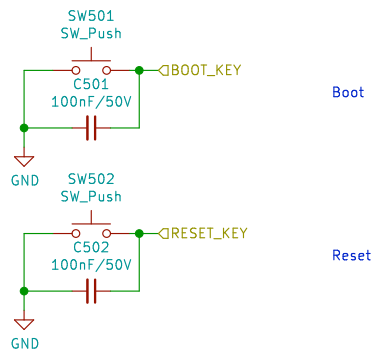
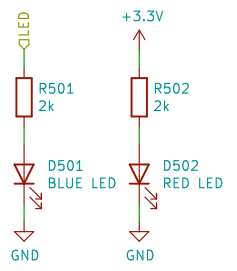
Title: Sailor Hat with ESP32

Size: A4
 KiCad E.D.A. kicad (5.1.9-0-10_14)

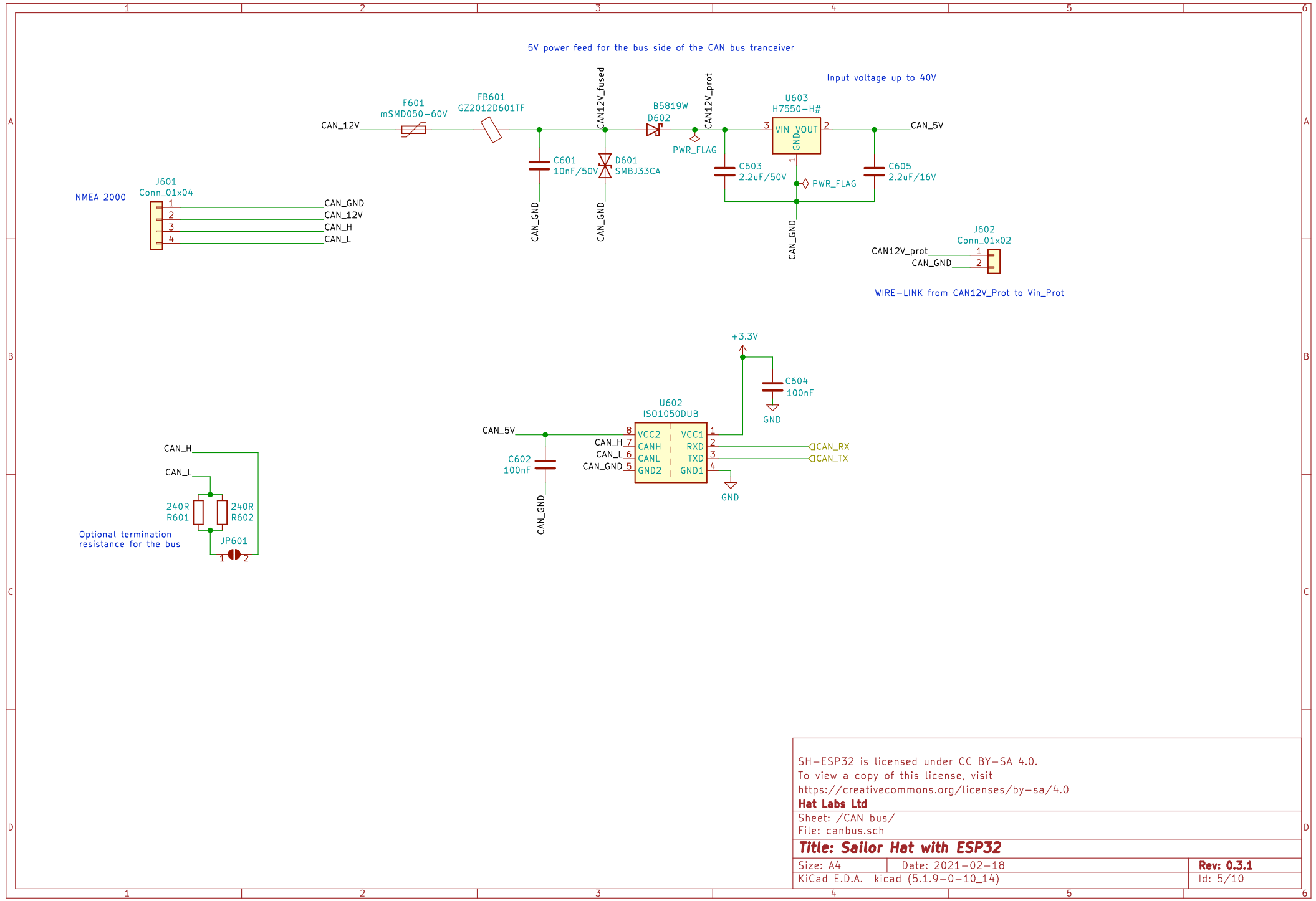
Date: 2021-02-18

Rev: 0.3.1

Id: 3/10



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Sheet: /User Interface/ File: UI.sch		
Title: Sailor Hat with ESP32		
Size: A4	Date: 2021-02-18	Rev: 0.3.1
KiCad E.D.A. kicad (5.1.9-0-10_14)		Id: 4/10



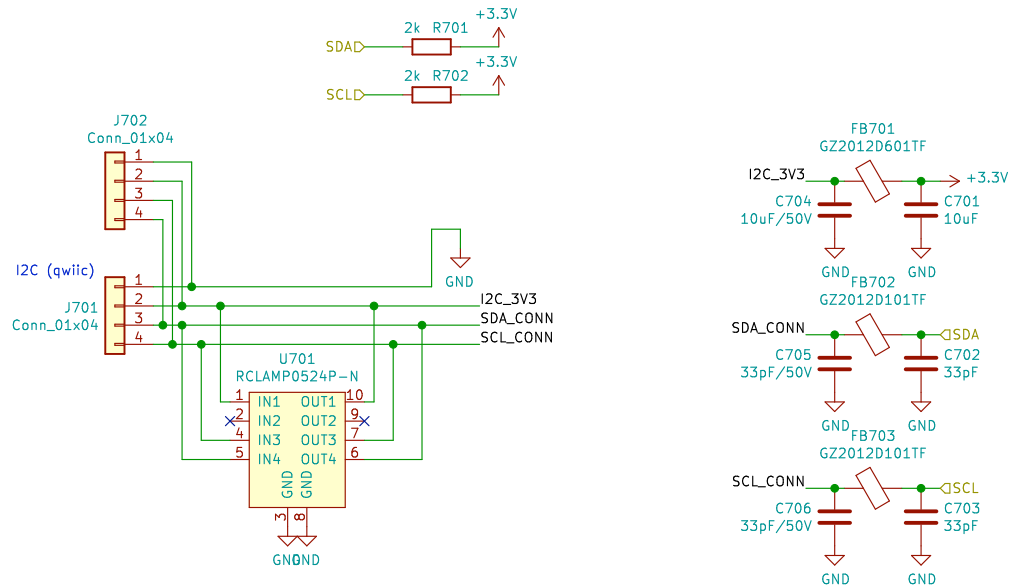
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Sheet: /CAN bus/
 File: canbus.sch

Title: Sailor Hat with ESP32

Size: A4	Date: 2021-02-18	Rev: 0.3.1
KiCad E.D.A. kicad (5.1.9-0-10_14)		Id: 5/10



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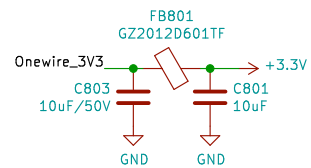
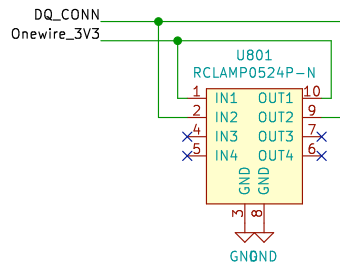
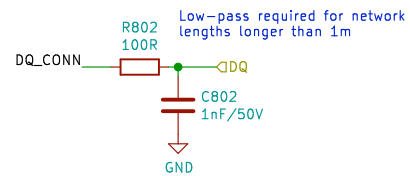
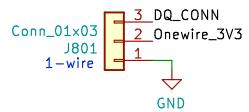
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Sheet: /I2C/
 File: I2C.sch

Title: Sailor Hat with ESP32

Size: A4 Date: 2021-02-18
 KiCad E.D.A. kicad (5.1.9-0-10_14)

Rev: 0.3.1
 Id: 6/10



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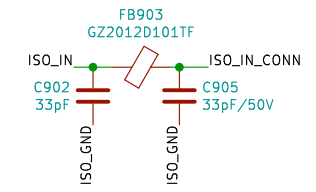
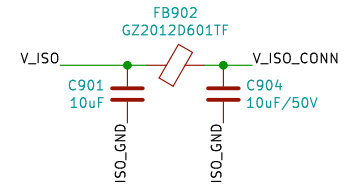
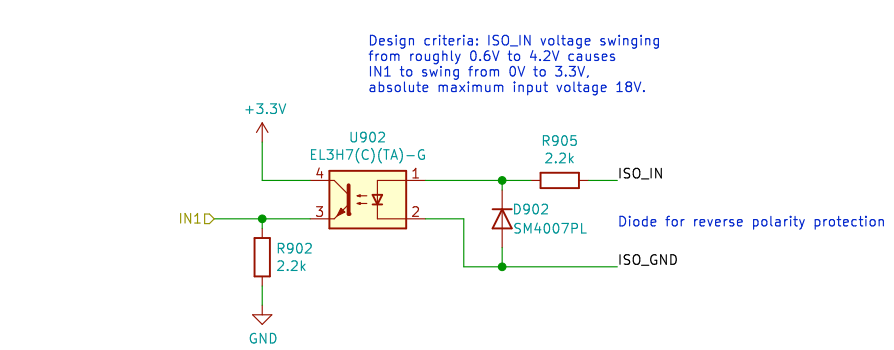
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Sheet: /Onewire/
 File: onewire.sch

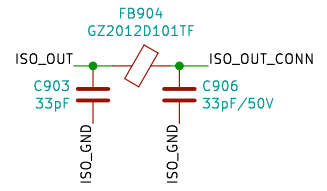
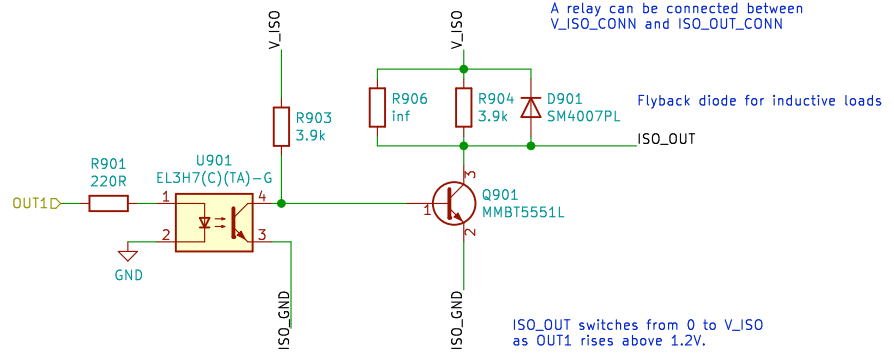
Title: Sailor Hat with ESP32

Size: A4 Date: 2021-02-18
 KiCad E.D.A. kicad (5.1.9-0-10_14)

Rev: 0.3.1
 Id: 7/10



R906 is an unpopulated pad to allow for adding a stronger pullup if needed.



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Sheet: /Optocouplers/
 File: optocouplers.sch

Title: Sailor Hat with ESP32

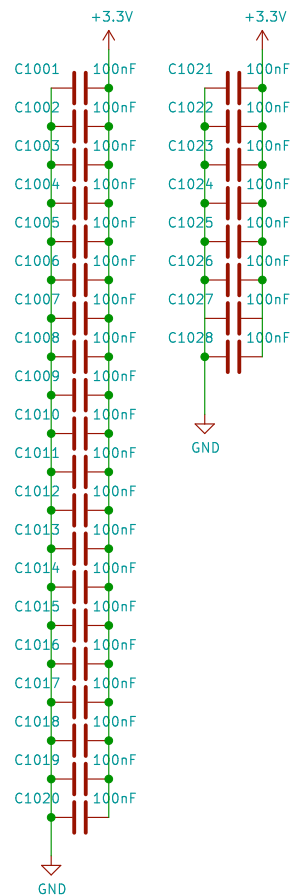
Size: A4 Date: 2021-02-18
 KiCad E.D.A. kicad (5.1.9-0-10_14)

Rev: 0.3.1
 Id: 8/10

Mounting holes

- H1001 MountingHole
- H1002 MountingHole

Decoupling caps



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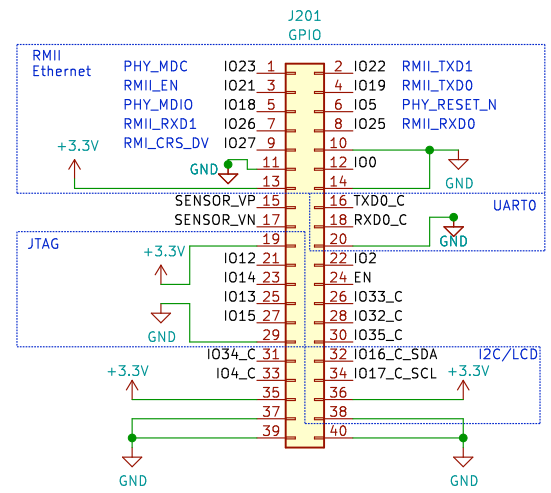
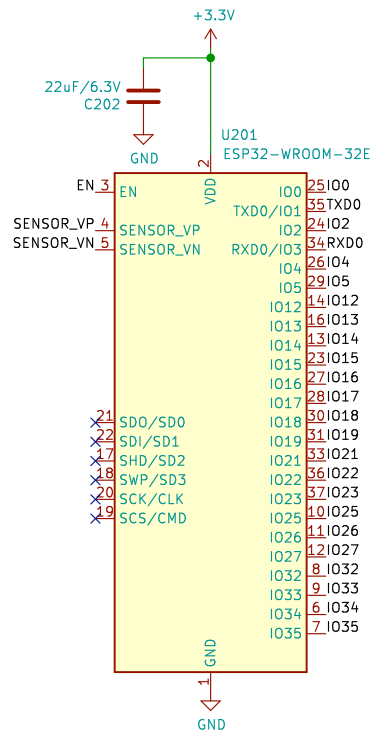
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Sheet: /PCB/
File: PCB.sch

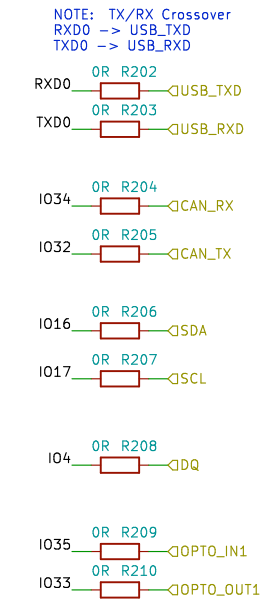
Title: Sailor Hat with ESP32

Size: A4 Date: 2021-02-18
KiCad E.D.A. kicad (5.1.9-0-10_14)

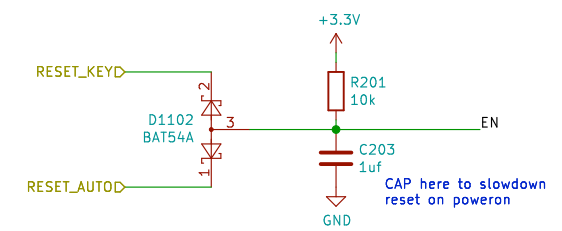
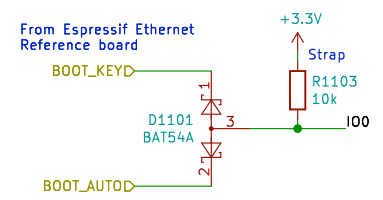
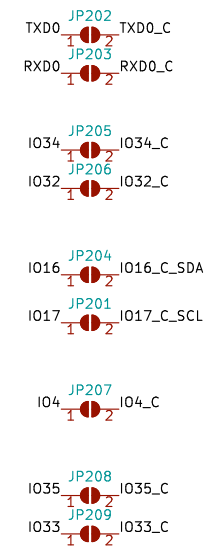
Rev: 0.3.1
Id: 9/10



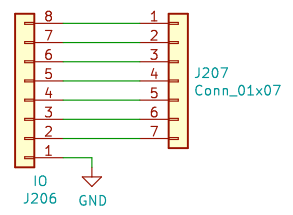
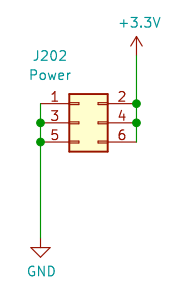
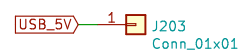
OR jumpers allow for rerouting and disabling peripherals



Solder jumpers allow for rerouting peripherals GPIOs to J201



For safety reasons, a USB 5V two-pin header was downgraded to a single pin test point.



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Sheet: /ESP32/
File: ESP32.sch

Title: Sailor Hat with ESP32

Size: A4	Date: 2021-02-18	Rev: 0.3.1
KiCad E.D.A. kicad (5.1.9-0-10_14)		Id: 10/10