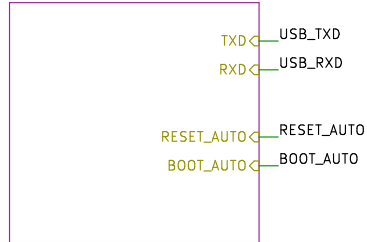


Sheet: Power input



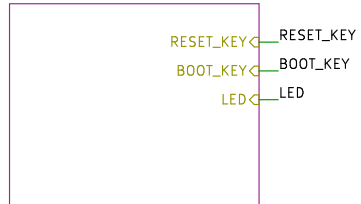
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Sheet: USB



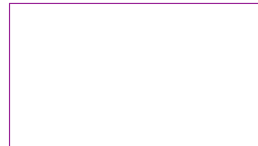
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Sheet: User Interface



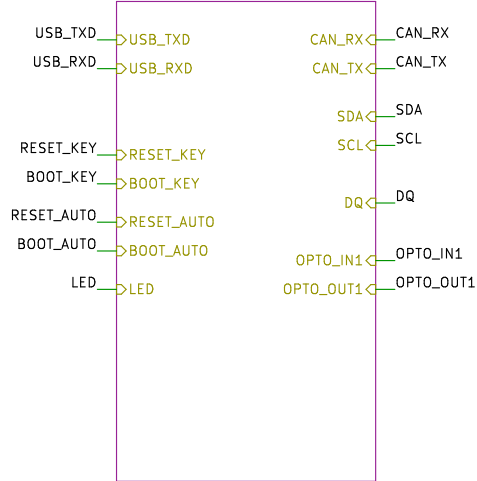
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Sheet: PCB



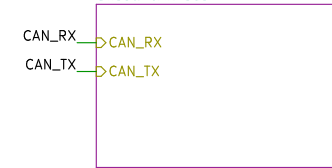
File: PCB.sch

Sheet: ESP32



File: ESP32.sch

Sheet: CAN bus



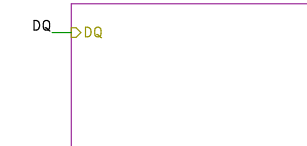
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Sheet: I2C



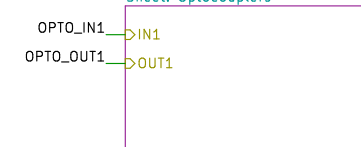
File: I2C.sch

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: 2021-04-26  
 KiCad E.D.A. kicad (5.1.9-0-10\_14)

**Rev: 1.0.0**  
 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

PWR\_FLAG

D303  
B5819W

Vin\_protected

Reverse polarity and current protection

Prevent feeding Vin to USB

D201  
B5819W

USB\_5V

Vin\_protected

PWR\_FLAG

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

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

BS

LX

FB

GND

GND

C303  
100nF

D302  
B5819W

GND

L301  
MWSA0503S-100MT

C304  
22uF/6.3V

GND

C305  
10nF/50V

GND

R302  
68k

GND

R303  
15k

GND

Vout +3.3V

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

Vin\_protected  
GND  
J302  
Conn\_01x02

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

Title: Sailor Hat with ESP32

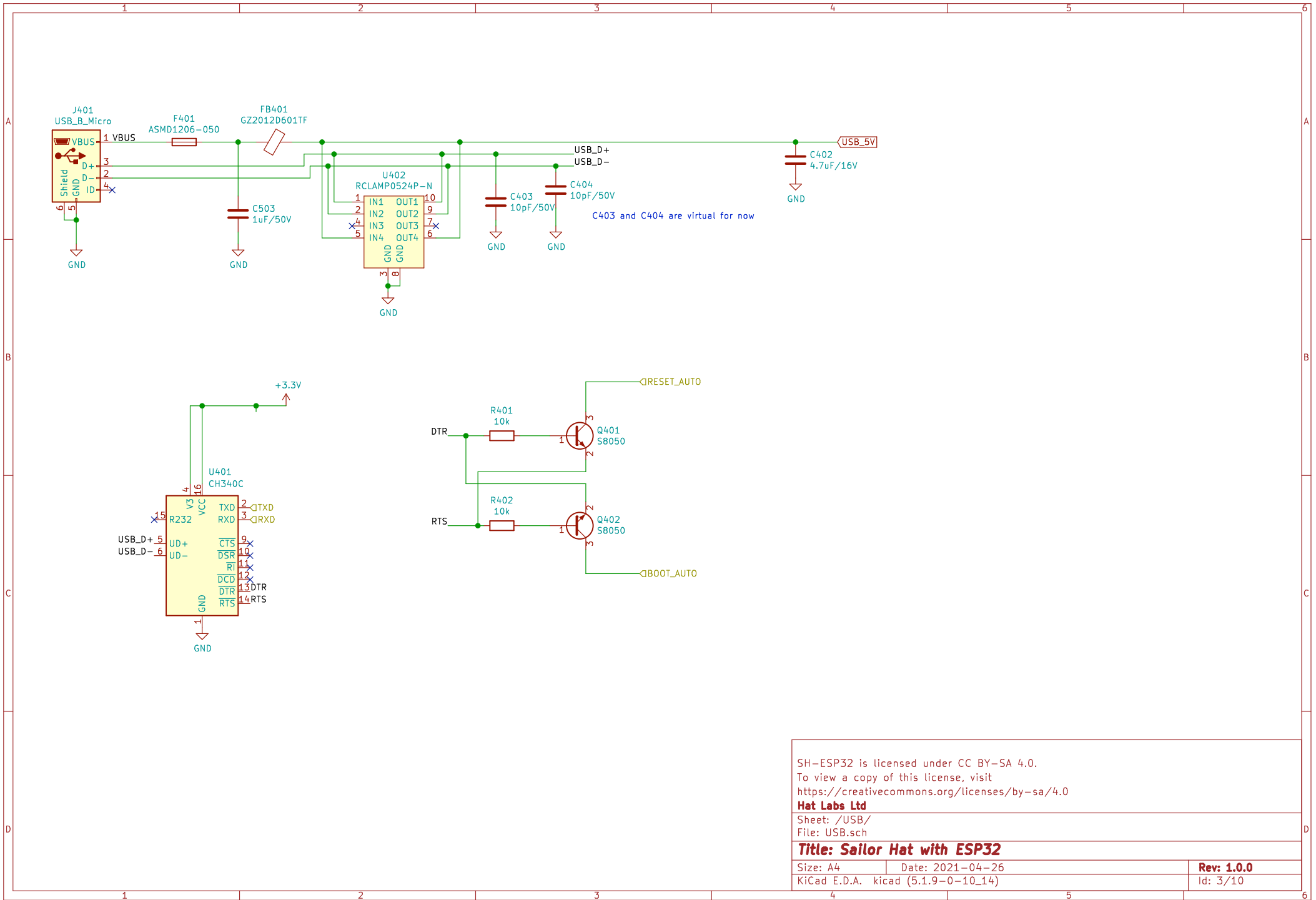
Size: A4

Date: 2021-04-26

Rev: 1.0.0

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

Id: 2/10



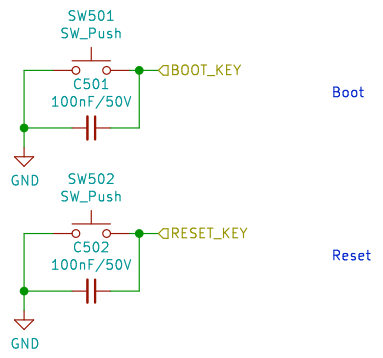
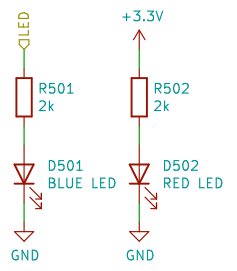
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Sheet: /USB/  
 File: USB.sch

**Title: Sailor Hat with ESP32**

Size: A4	Date: 2021-04-26	<b>Rev: 1.0.0</b>
KiCad E.D.A. kicad (5.1.9-0-10_14)		Id: 3/10



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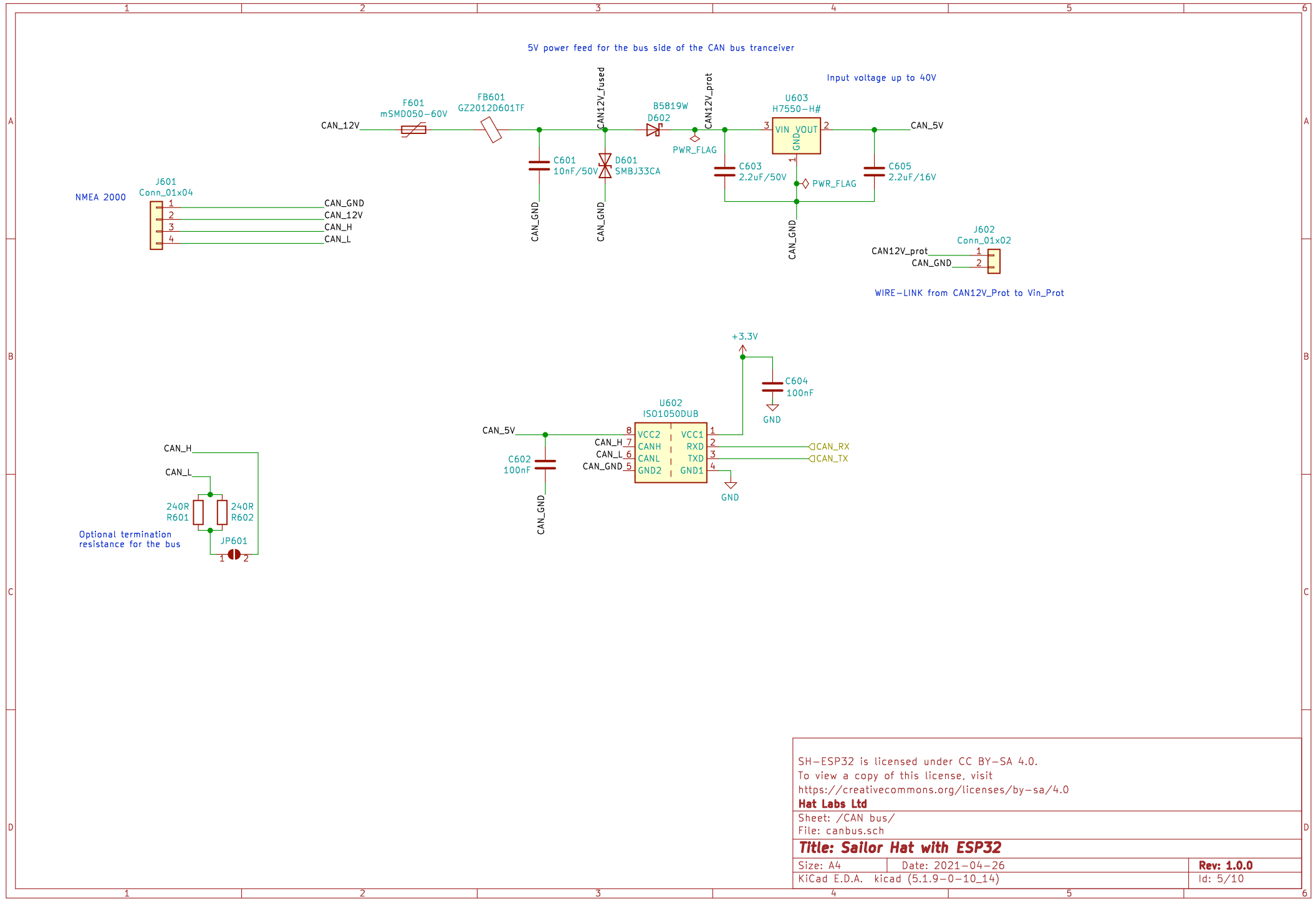
**Hot Labs Ltd**

Sheet: /User Interface/  
 File: UI.sch

**Title: Sailor Hat with ESP32**

Size: A4 Date: 2021-04-26  
 KiCad E.D.A. kicad (5.1.9-0-10\_14)

**Rev: 1.0.0**  
 Id: 4/10



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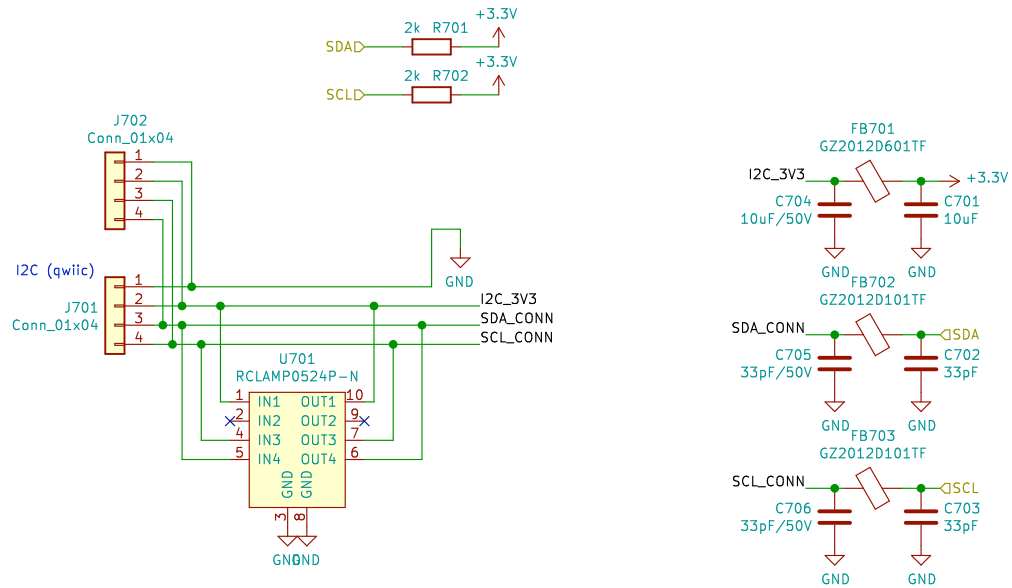
**Hot Labs Ltd**

Sheet: /CAN bus/  
 File: canbus.sch

**Title: Sailor Hat with ESP32**

Size: A4 Date: 2021-04-26  
 KiCad E.D.A. kicad (5.1.9-0-10\_14)

**Rev: 1.0.0**  
 Id: 5/10



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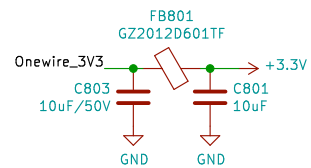
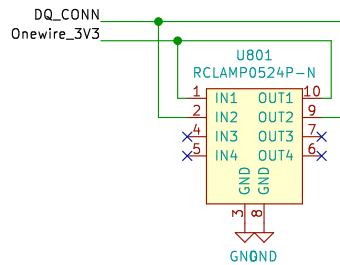
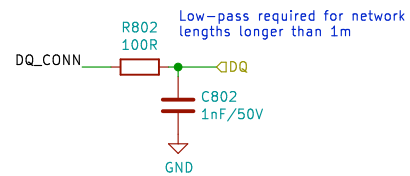
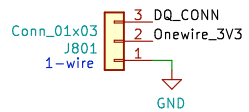
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Sheet: /I2C/  
 File: I2C.sch

**Title: Sailor Hat with ESP32**

Size: A4 Date: 2021-04-26  
 KiCad E.D.A. kicad (5.1.9-0-10\_14)

**Rev: 1.0.0**  
 Id: 6/10



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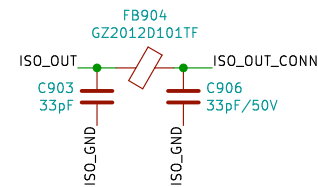
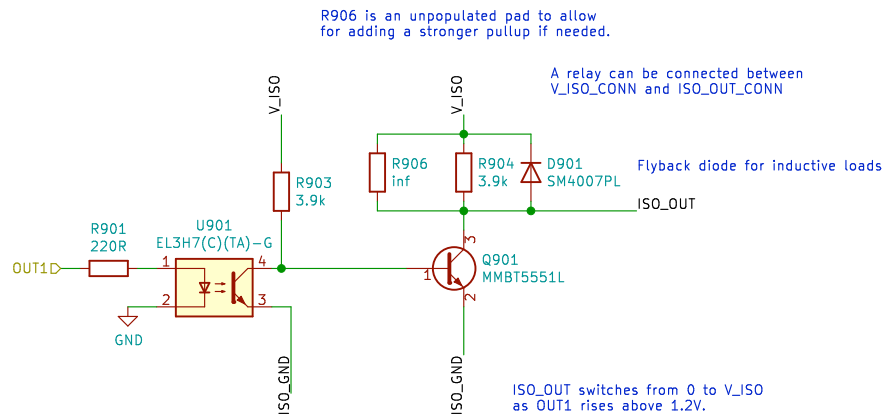
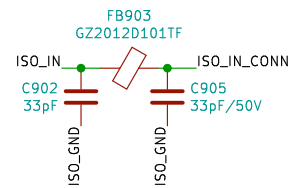
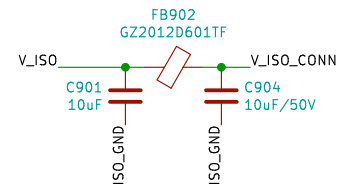
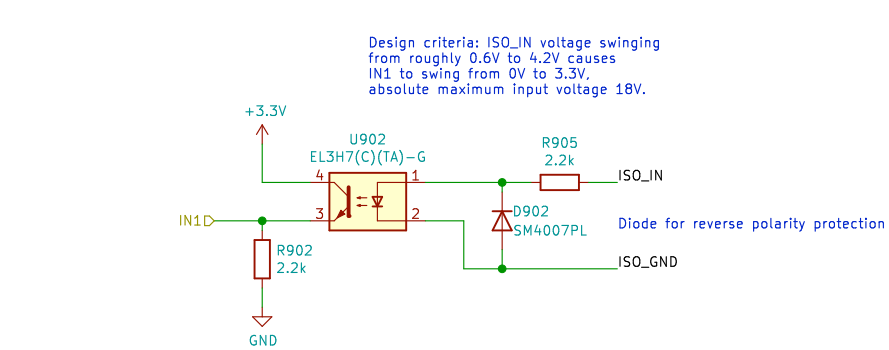
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Sheet: /Onewire/  
 File: onewire.sch

**Title: Sailor Hat with ESP32**

Size: A4 Date: 2021-04-26  
 KiCad E.D.A. kicad (5.1.9-0-10\_14)

**Rev: 1.0.0**  
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Sheet: /Optocouplers/  
 File: optocouplers.sch

**Title: Sailor Hat with ESP32**

Size: A4 Date: 2021-04-26  
 KiCad E.D.A. kicad (5.1.9-0-10\_14)

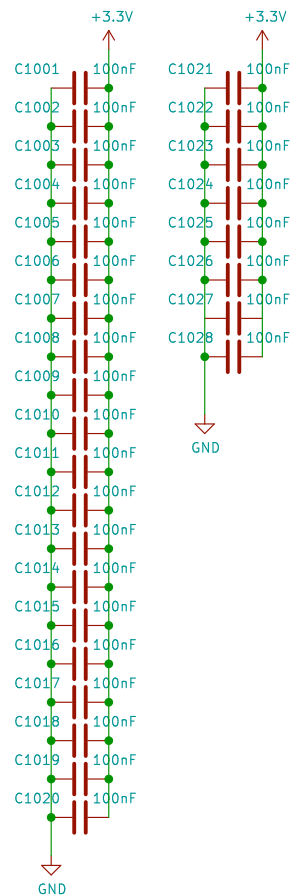
**Rev: 1.0.0**  
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Mounting holes

- H1001 MountingHole
- H1002 MountingHole

Decoupling caps



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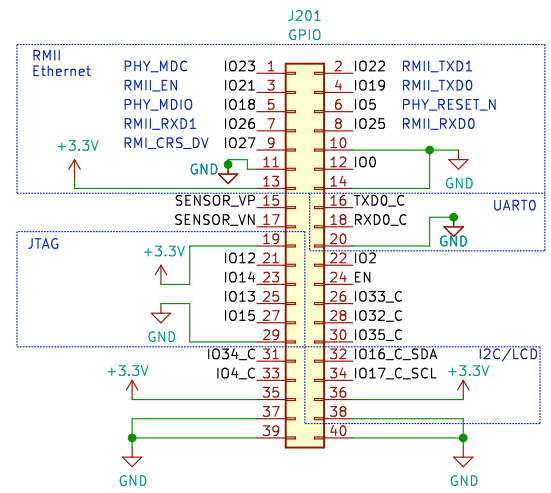
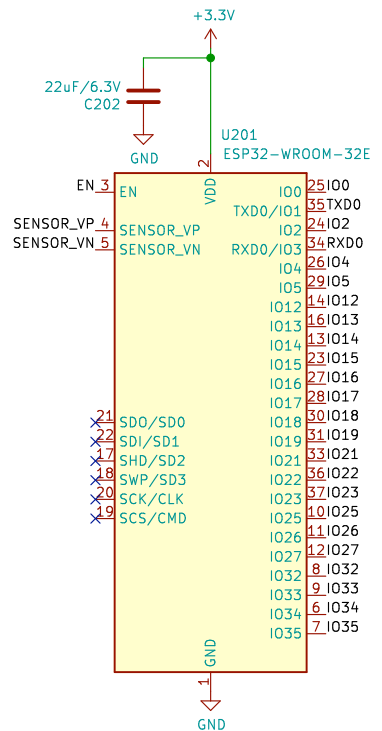
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Sheet: /PCB/  
File: PCB.sch

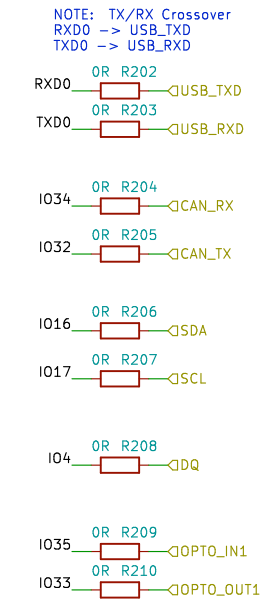
**Title: Sailor Hat with ESP32**

Size: A4 Date: 2021-04-26  
KiCad E.D.A. kicad (5.1.9-0-10\_14)

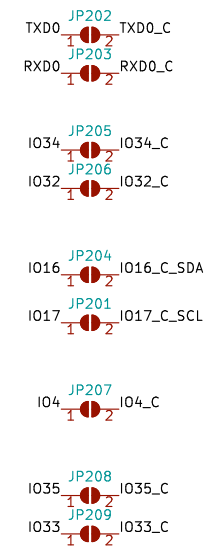
**Rev: 1.0.0**  
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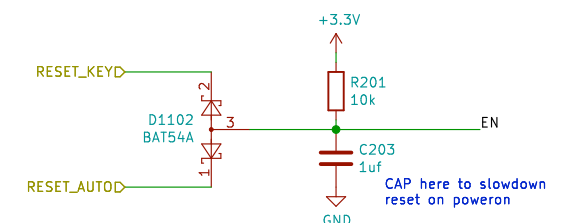
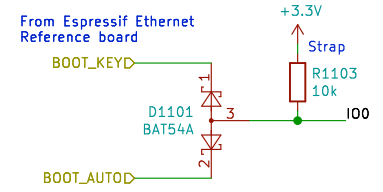
OR jumpers allow for rerouting and disabling peripherals



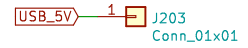
Solder jumpers allow for rerouting peripherals GPIOs to J201



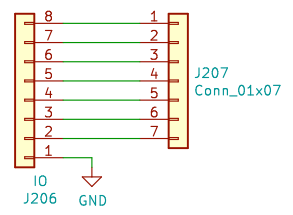
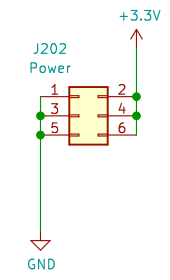
From Espressif Ethernet Reference board



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



LEDD I02



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Sheet: /ESP32/  
File: ESP32.sch

**Title: Sailor Hat with ESP32**

Size: A4	Date: 2021-04-26	<b>Rev: 1.0.0</b>
KiCad E.D.A. kicad (5.1.9-0-10_14)		Id: 10/10