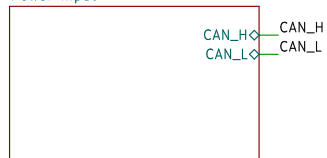
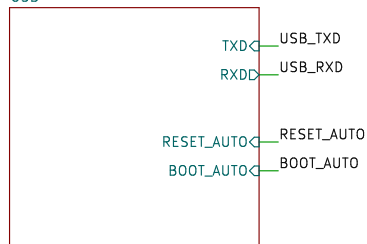


Power input



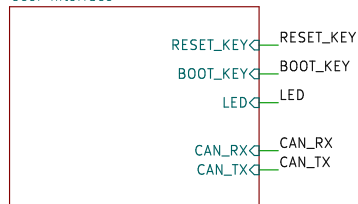
File: power-input.kicad_sch

USB



File: USB.kicad_sch

User Interface



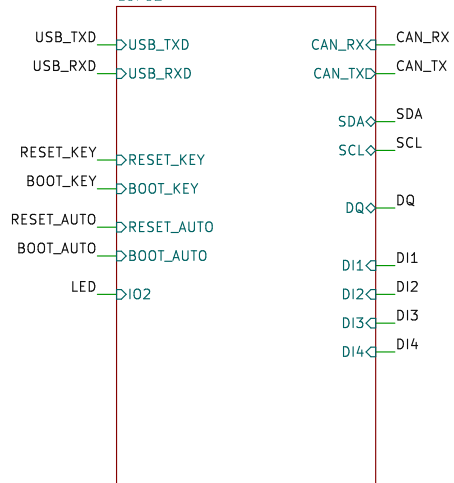
File: UI.kicad_sch

PCB



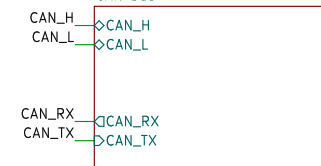
File: PCB.kicad_sch

ESP32



File: ESP32.kicad_sch

CAN bus



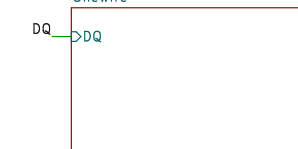
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I2C



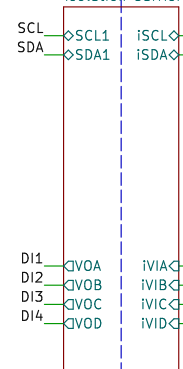
File: I2C.kicad_sch

Onewire



File: onewire.kicad_sch

Isolation barrier



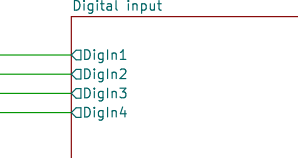
File: isolation.kicad_sch

Analog input



File: analog_input.kicad_sch

Digital input



File: digital_input.kicad_sch

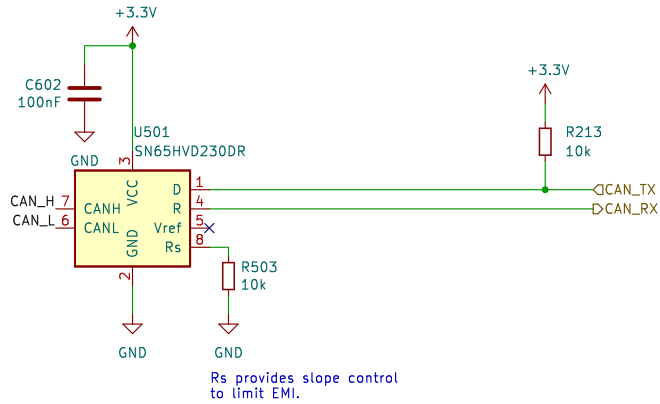
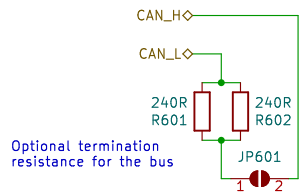
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Sheet: /
 File: HALMET.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)

Size: A4 Date: 2023-11-27 Rev: 1.0.0
 KiCad E.D.A. kicad 7.0.9 Id: 1/12



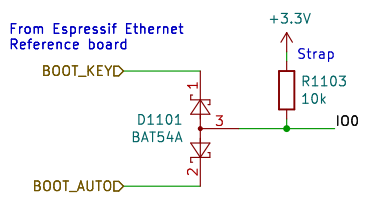
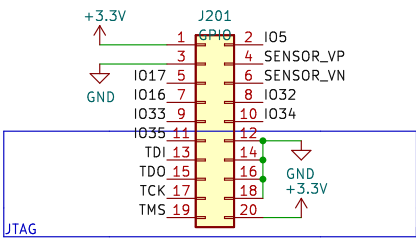
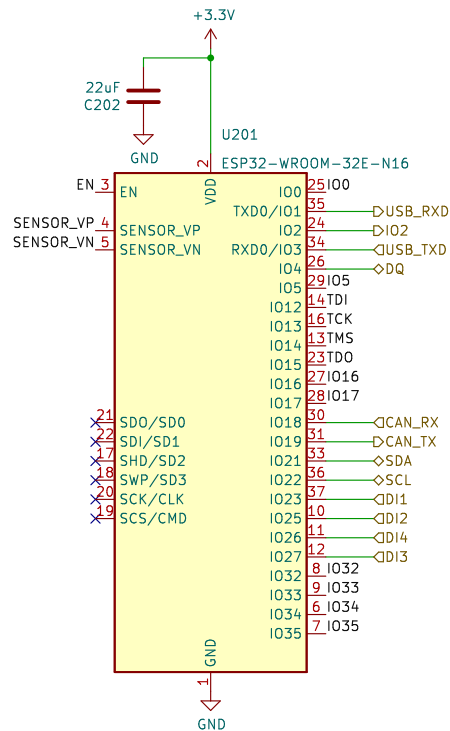
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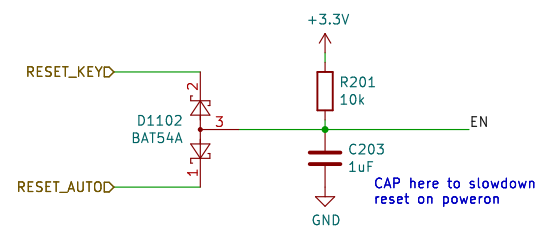
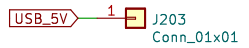
Sheet: /CAN bus/
 File: canbus.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)

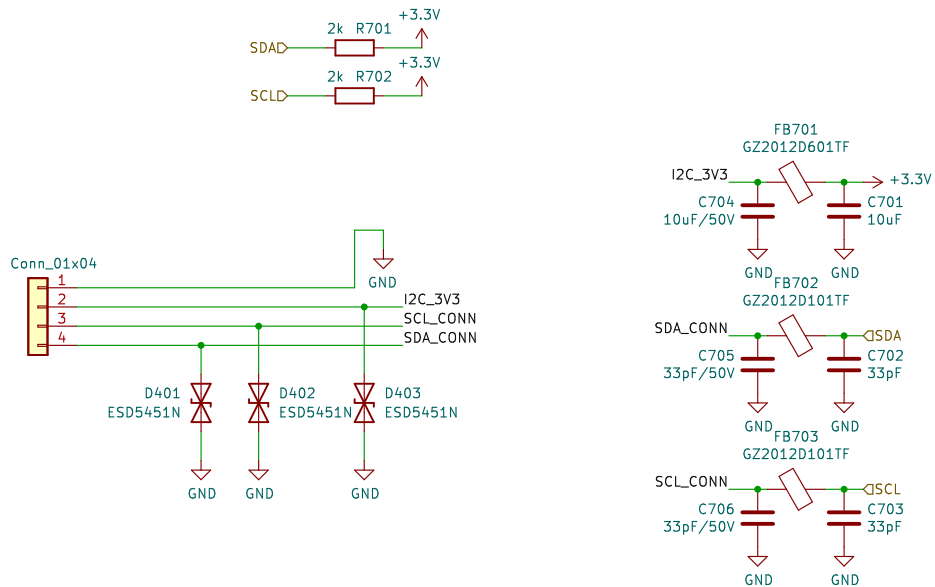
Size: A4	Date: 2023-11-27	Rev: 1.0.0
KiCad E.D.A. kicad 7.0.9		Id: 2/12



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



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Hat Labs Ltd	
Sheet: /ESP32/ File: ESP32.kicad_sch	
Title: Hat Labs Marine Engine & Tank interface (HALMET)	
Size: A4	Date: 2023-11-27
KiCad E.D.A. kicad 7.0.9	Rev: 1.0.0 Id: 3/12



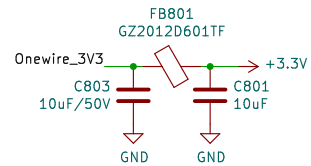
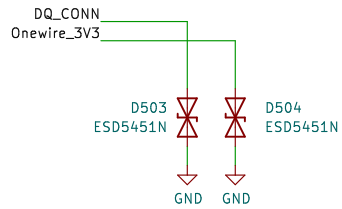
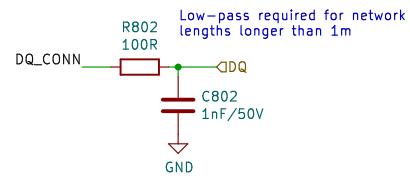
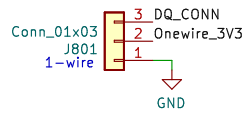
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Sheet: /I2C/
 File: I2C.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)

Size: A4	Date: 2023-11-27	Rev: 1.0.0
KiCad E.D.A. kicad 7.0.9		Id: 4/12



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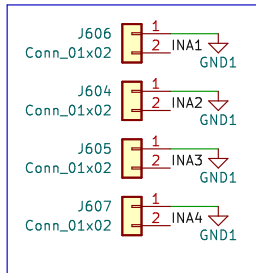
Hat Labs Ltd

Sheet: /Onewire/
 File: onewire.kicad_sch

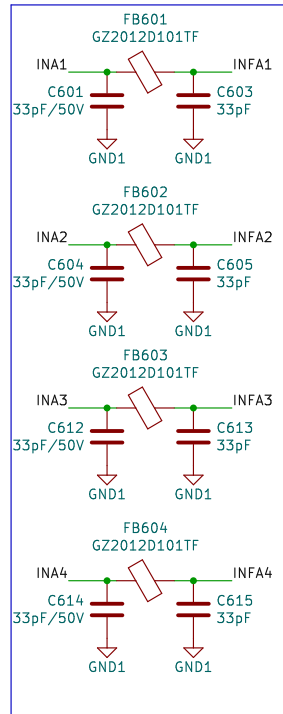
Title: Hat Labs Marine Engine & Tank interface (HALMET)

Size: A4	Date: 2023-11-27	Rev: 1.0.0
KiCad E.D.A. kicad 7.0.9		Id: 5/12

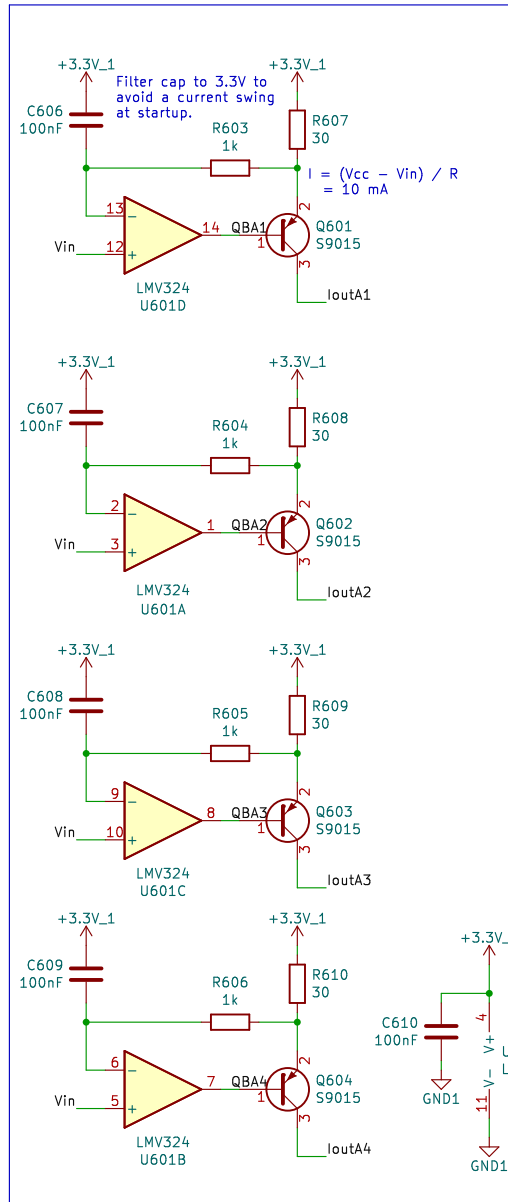
Input from tank senders.
Max measurable resistance
320 ohms.



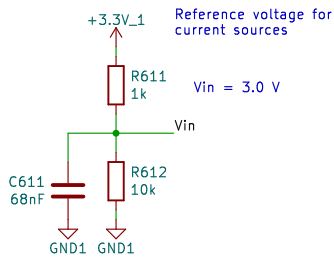
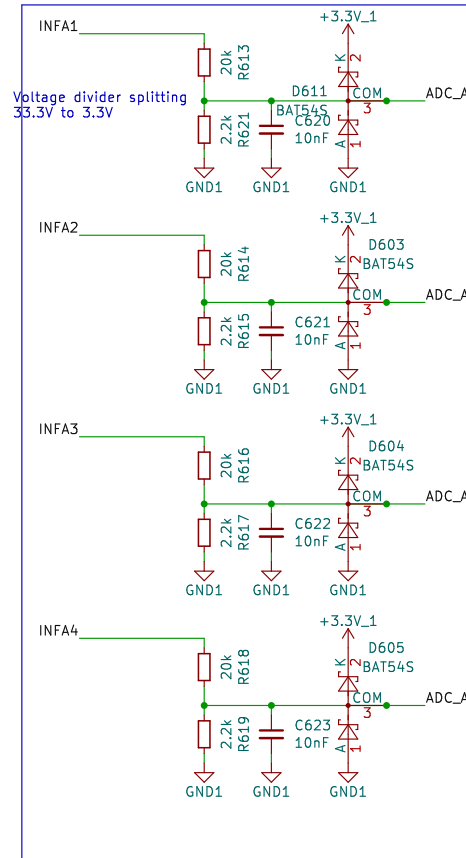
EMI filtering



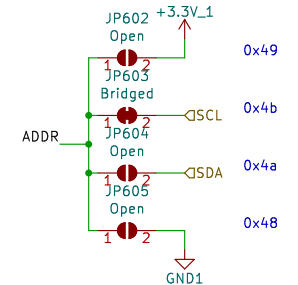
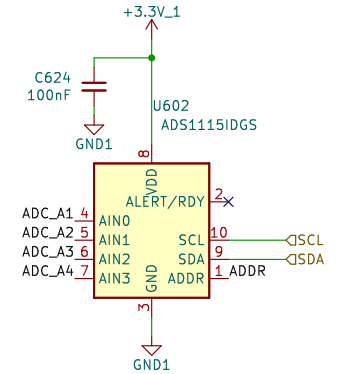
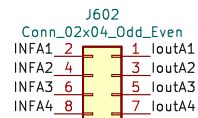
Constant current source



LP-filter with cutoff at 160 Hz



Connect headers with a jumper to enable the constant current source (active resistance measurement).



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Sheet: /Analog input/
 File: analog_input.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)

Size: A4 Date: 2023-11-27
 KiCad E.D.A. kicad 7.0.9

Rev: 1.0.0
 Id: 6/12

Mounting holes



H1001
MountingHole



H1002
MountingHole



G601
CC-BY



G602
CE-Logo



G603
WEEE-Logo



G604
OSHW-Logo



G605
HL-Logo



G701
HL-Pictogram

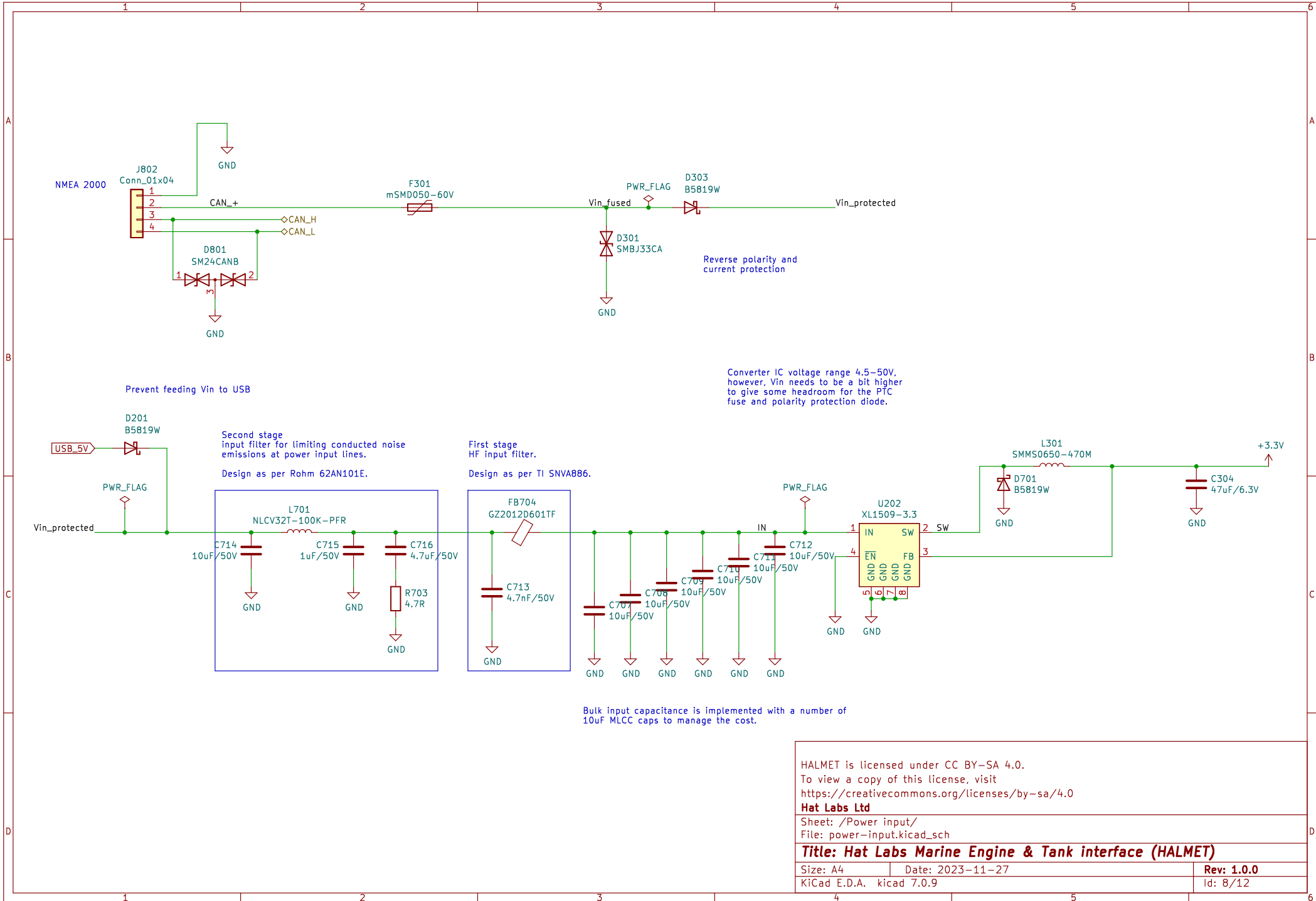
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Sheet: /PCB/
File: PCB.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)

Size: A4	Date: 2023-11-27	Rev: 1.0.0
KiCad E.D.A. kicad 7.0.9		Id: 7/12



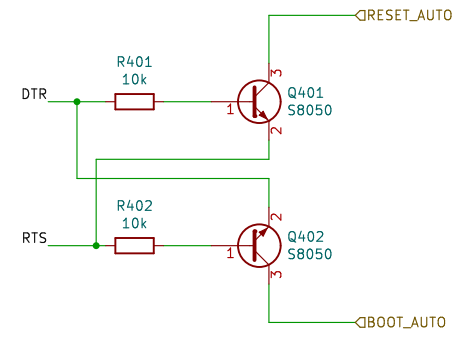
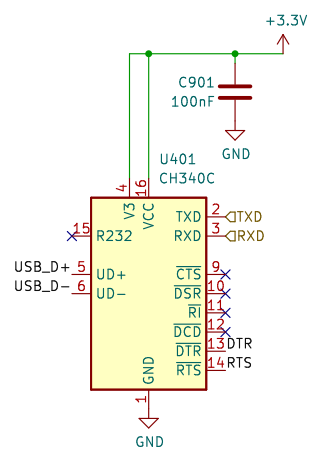
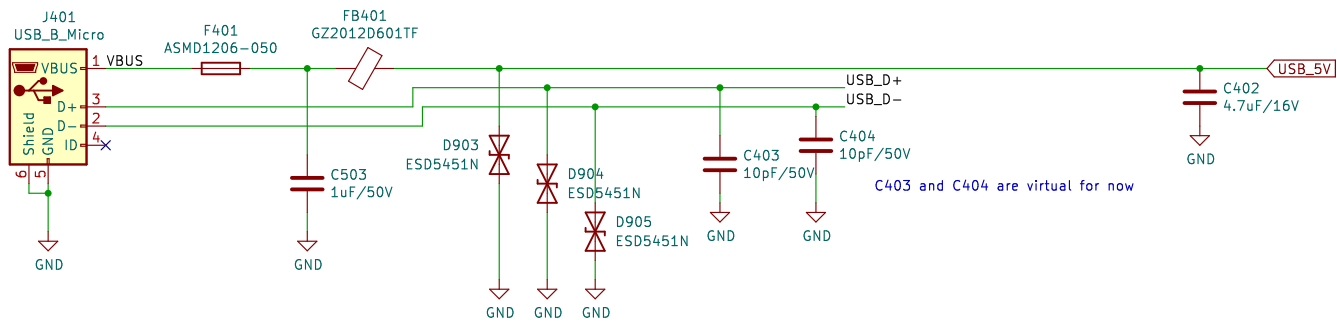
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Sheet: /Power input/
 File: power-input.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)

Size: A4	Date: 2023-11-27	Rev: 1.0.0
KiCad E.D.A. kicad 7.0.9		Id: 8/12

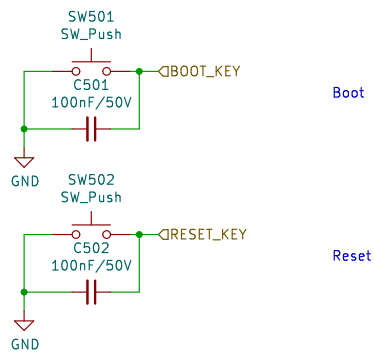
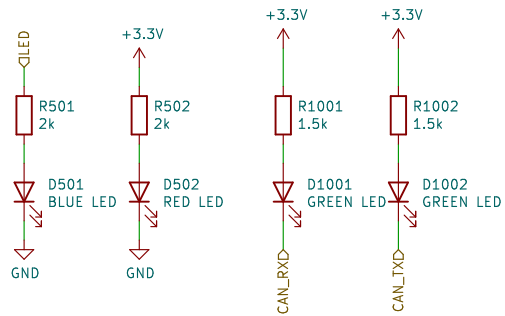


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Sheet: /USB/
 File: USB.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)	
Size: A4	Date: 2023-11-27
KiCad E.D.A. kicad 7.0.9	Rev: 1.0.0
	Id: 9/12



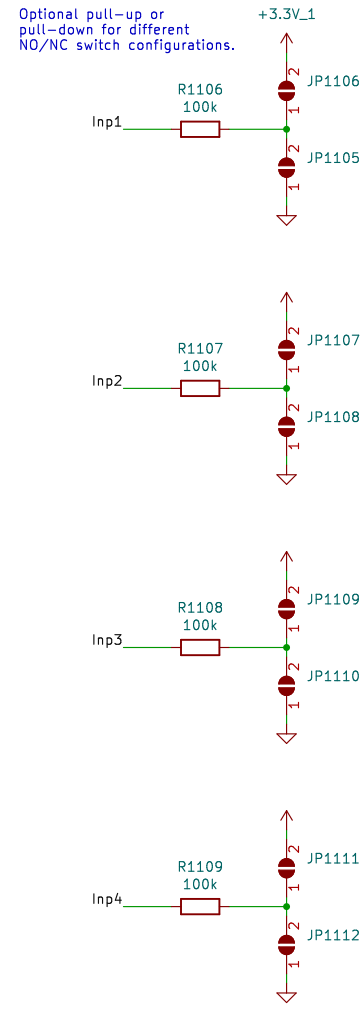
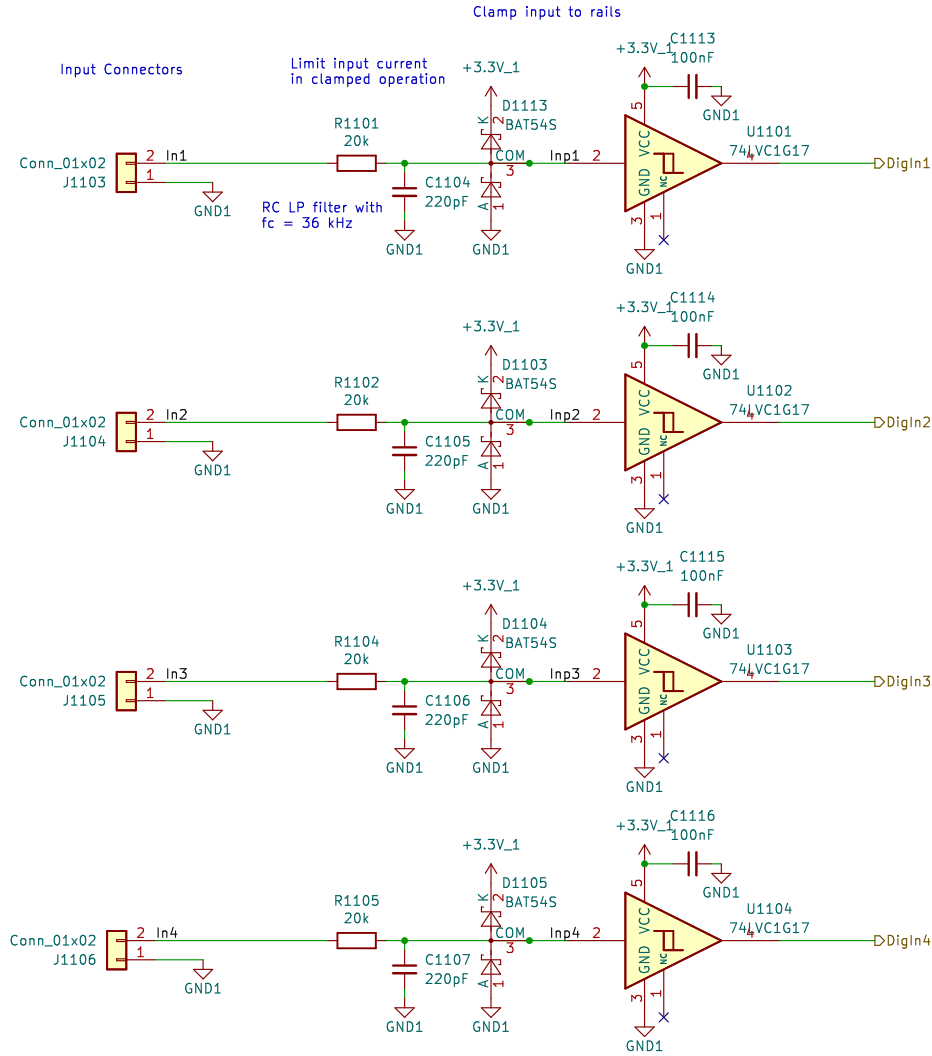
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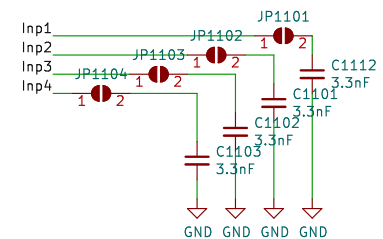
Sheet: /User Interface/
 File: UI.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)

Size: A4	Date: 2023-11-27	Rev: 1.0.0
KiCad E.D.A. kicad 7.0.9		Id: 10/12

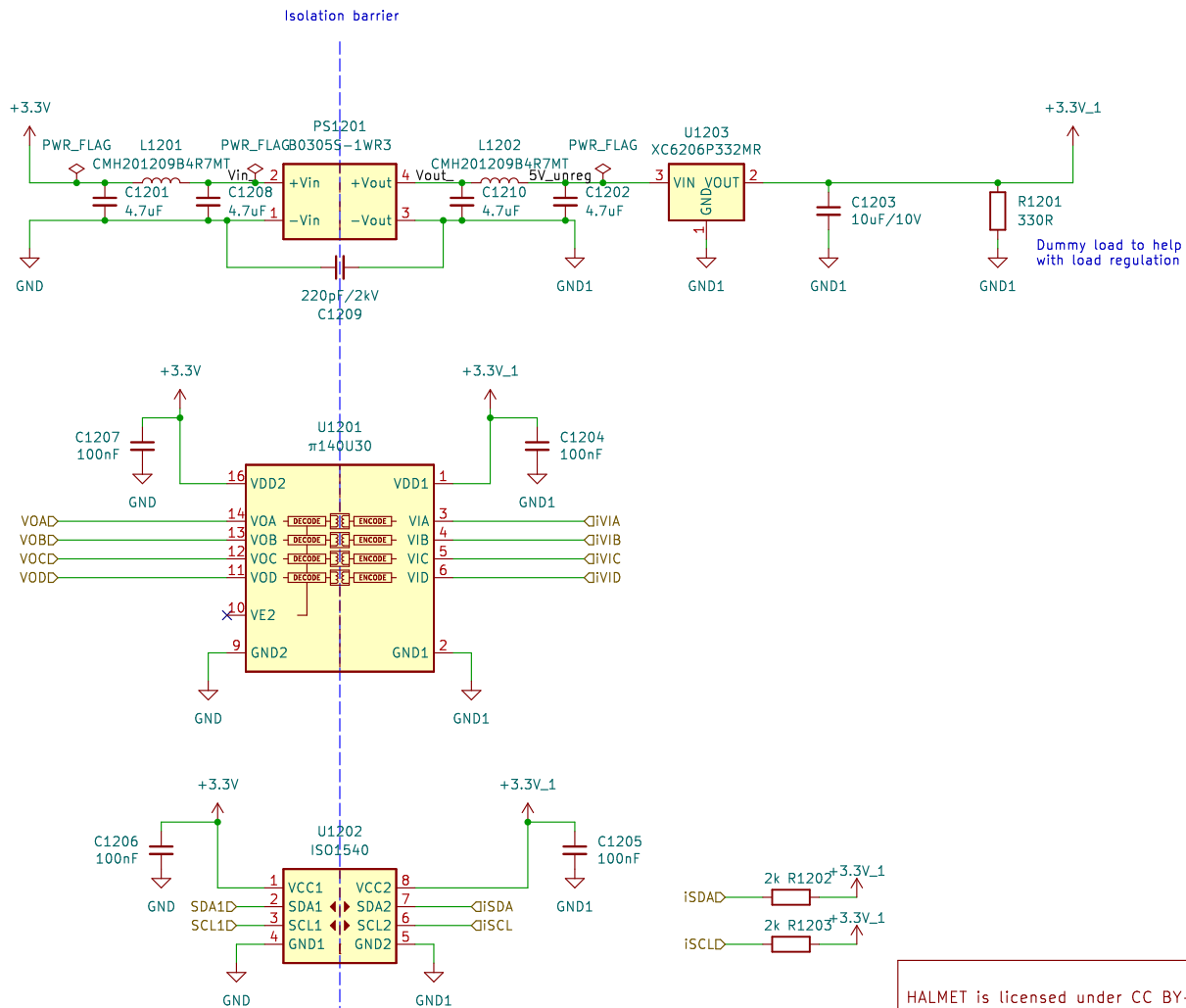


Solder jumpers enable optional lowpass filters with f_c at 2.3 kHz



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Hat Labs Ltd	
Sheet: /Digital input/ File: digital_input.kicad_sch	
Title: Hat Labs Marine Engine & Tank interface (HALMET)	
Size: A4	Date: 2023-11-27
KiCad E.D.A. kicad 7.0.9	Rev: 1.0.0
	Id: 11/12



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Hat Labs Ltd

Sheet: /Isolation barrier/
 File: isolation.kicad_sch

Title: Hat Labs Marine Engine & Tank interface (HALMET)

Size: A4	Date: 2023-11-27	Rev: 1.0.0
KiCad E.D.A. kicad 7.0.9		Id: 12/12