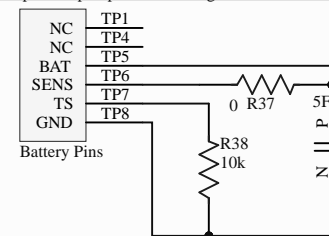
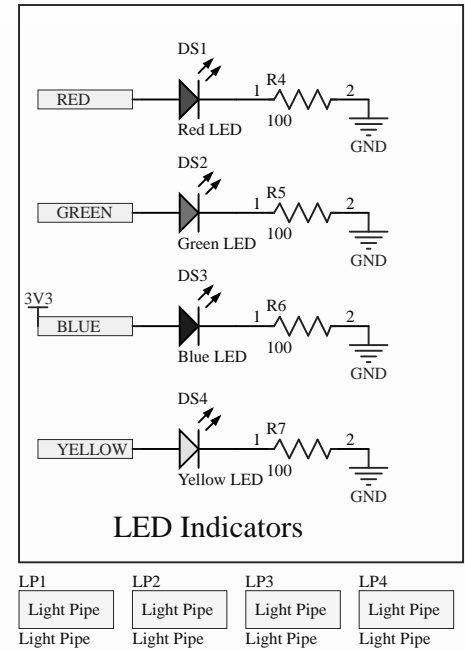
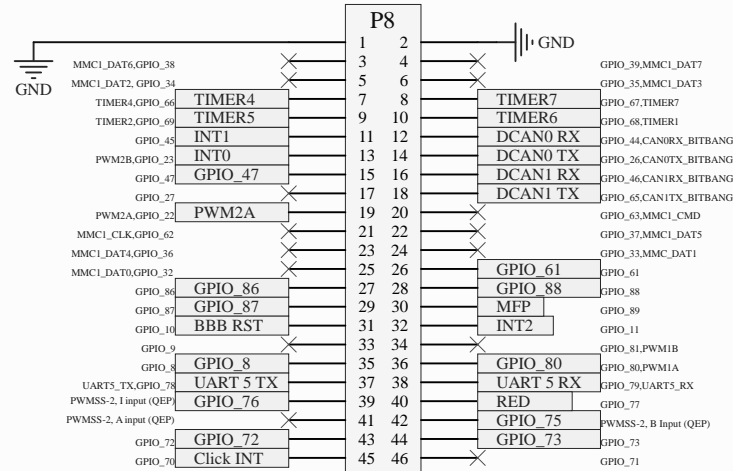
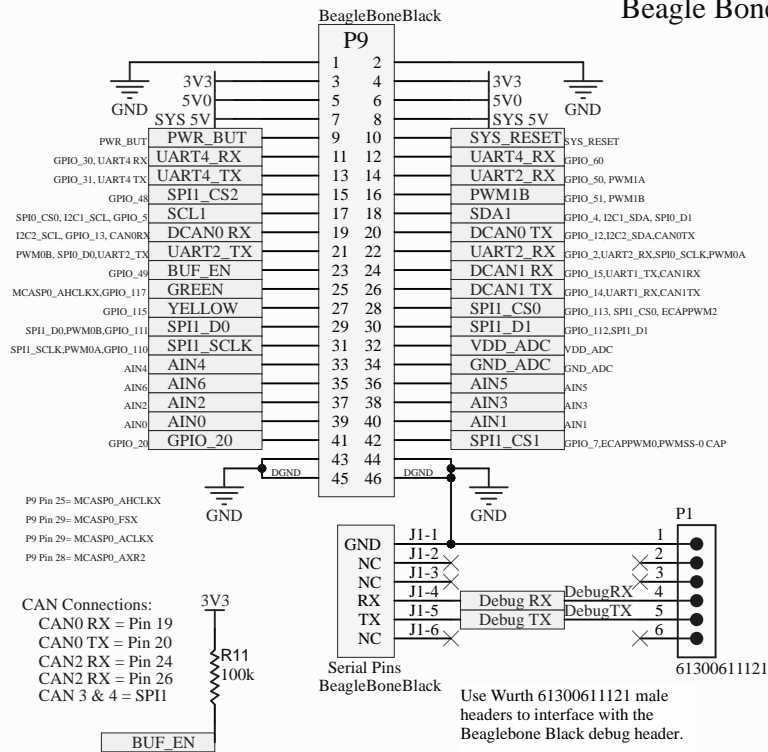


References:

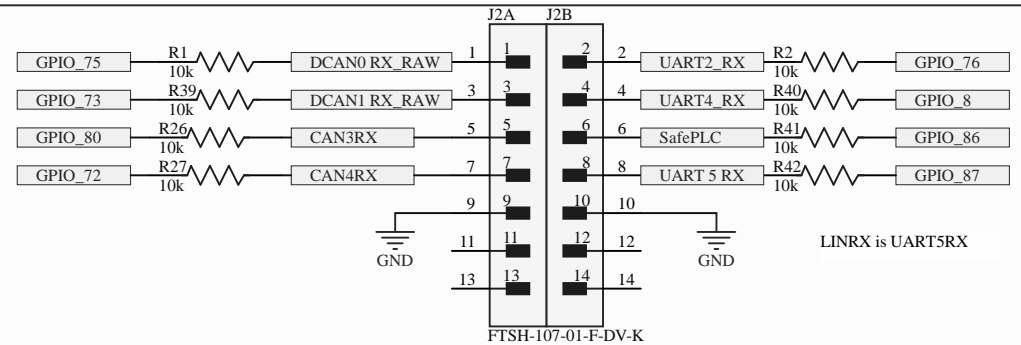
https://users.freebasic-portal.de/tjf/Projekte/libruio/doc/html/_cha_pins.html

Beagle Bone Connections



Supercapacitor to hold power for safe shutdowns

Use TE 5-534206-2 or equivalent to connect to the UTHP Board.
 Use TE 9-146261-0-02 or equivalent on the BBB to interface.
 These parts should be manually added to the bill of materials.

Title: **Ultimate Truck Hacking Platform**

Subtitle: Beagle Bone Black Headers

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File: UTHP BeagleBone Headers v3.SchDoc

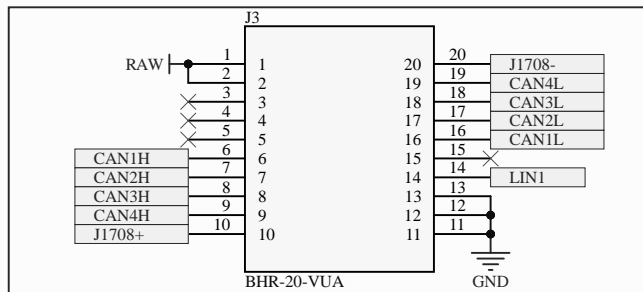
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 Carson Green
 *

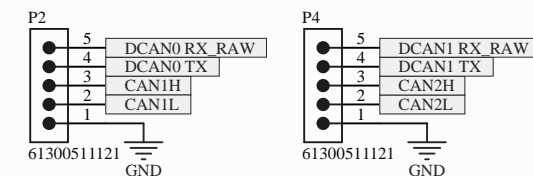
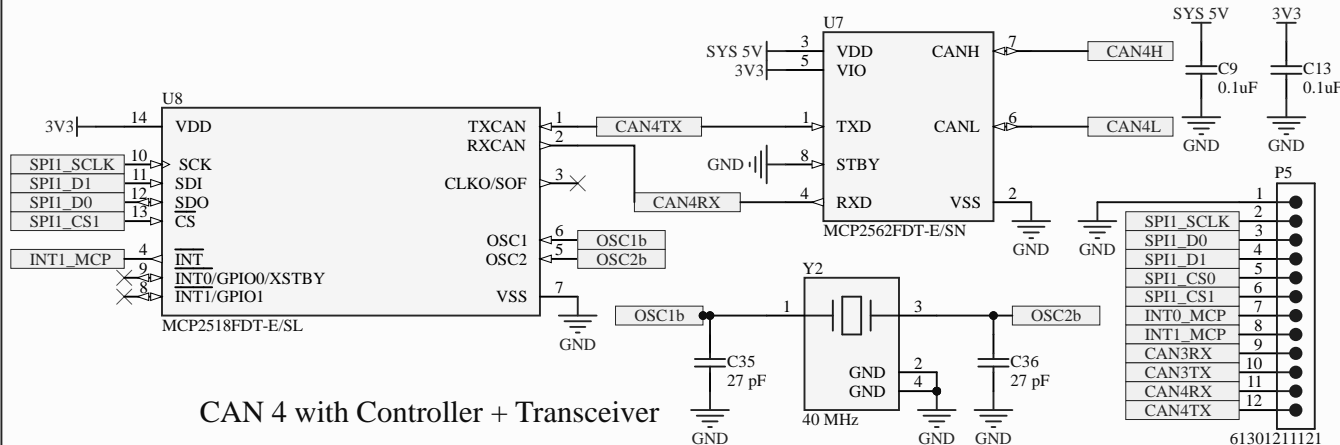
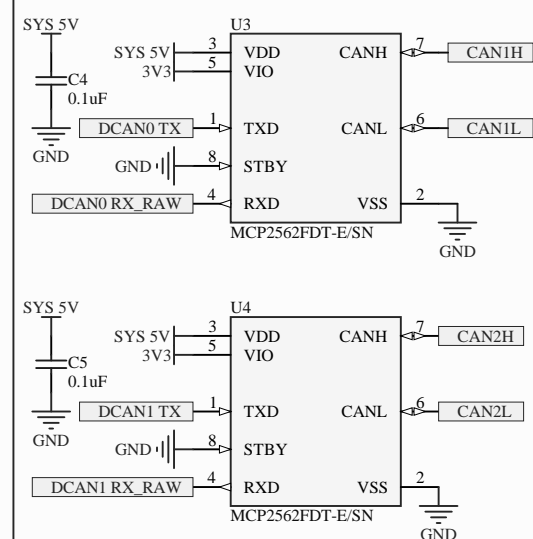
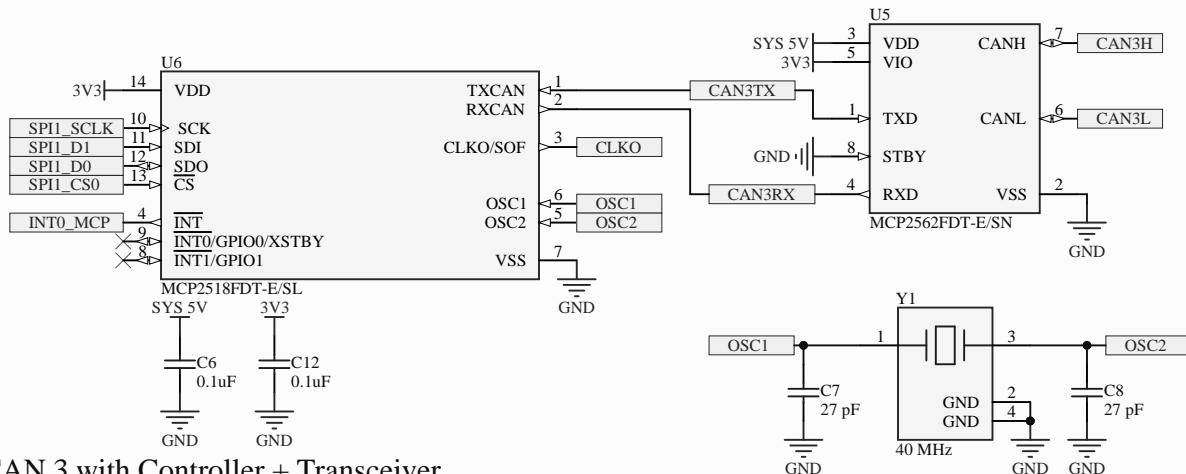


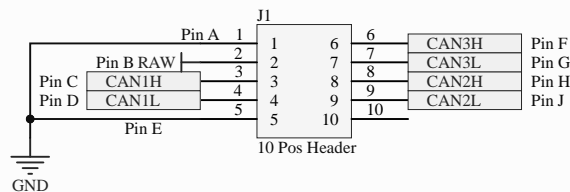
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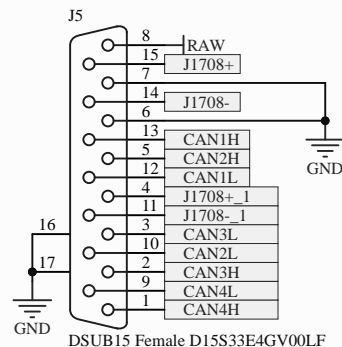
Internal Ribbon Cable to Banana Jack Board





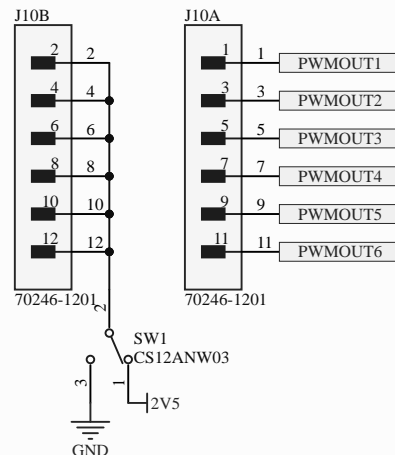


Internal Deutsch 9-pin Connectors
9-Pin connector Interface (Use PG11 Cordgrip)

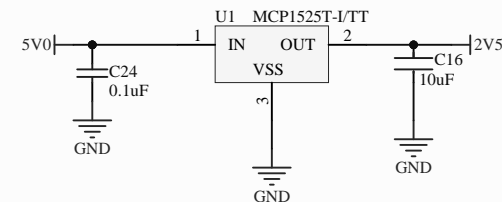


Pinout Compatible with the DG DPA 4

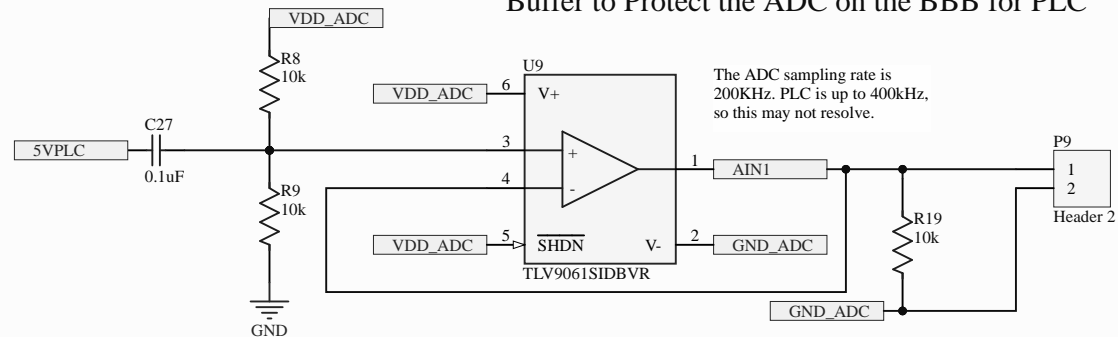
External Vehicle Connector



Signal outputs to simulate wheel speed sensors

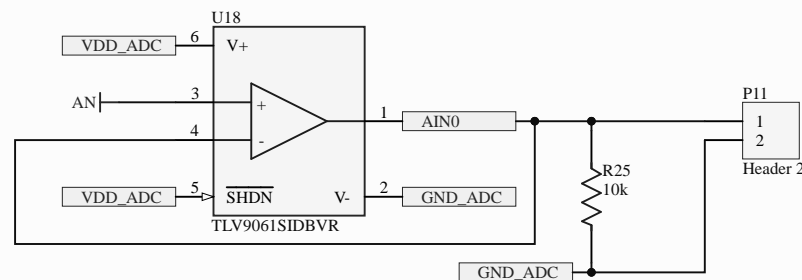


2.5V Reference Signal for 2nd order Filter on PLC

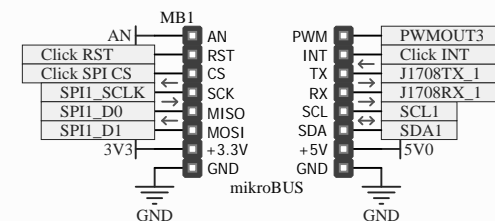


The ADC sampling rate is 200KHz. PLC is up to 400kHz, so this may not resolve.

Optional: Buffer to Protect the ADC on the BBB for MikroBus



MikroBus Expansion



<https://www.mikroe.com/click>

<https://download.mikroe.com/documents/standards/mikrobus/mikrobus-standard-specification-v200.pdf>

Title: **Ultimate Truck Hacking Platform**

Subtitle: Board Interfaces

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File: UTHP Edge Connectors v3.SchDoc

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A

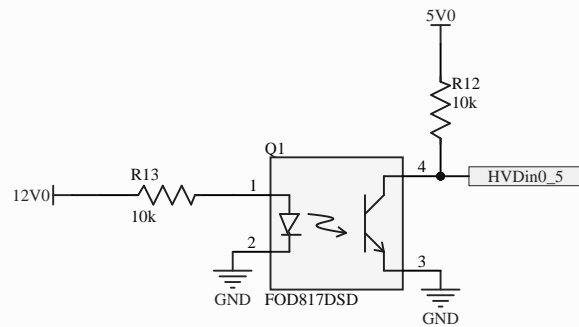


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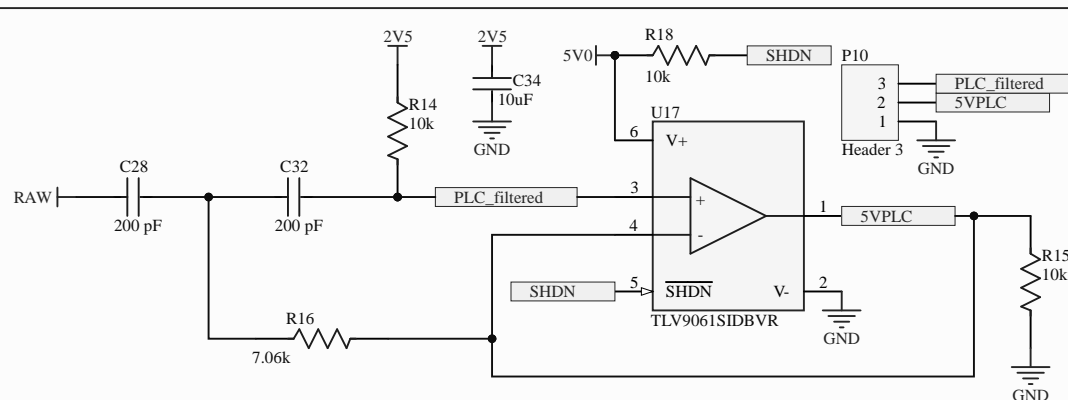
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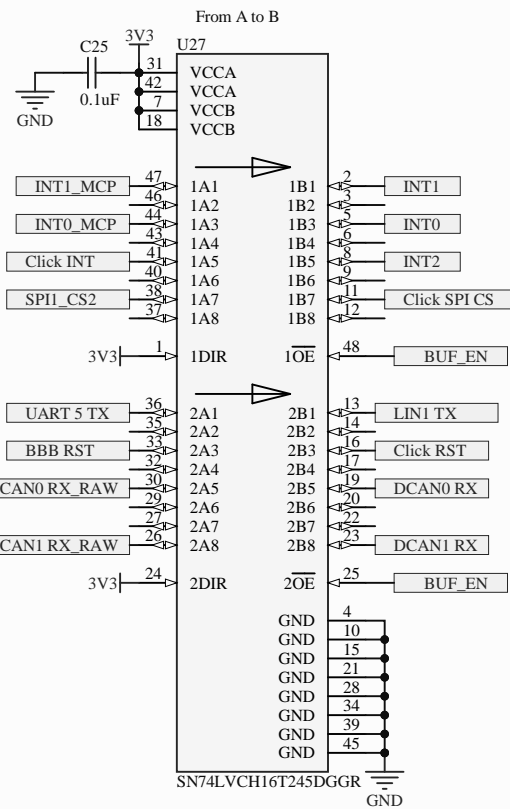
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Optoisolator to detect power disconnects

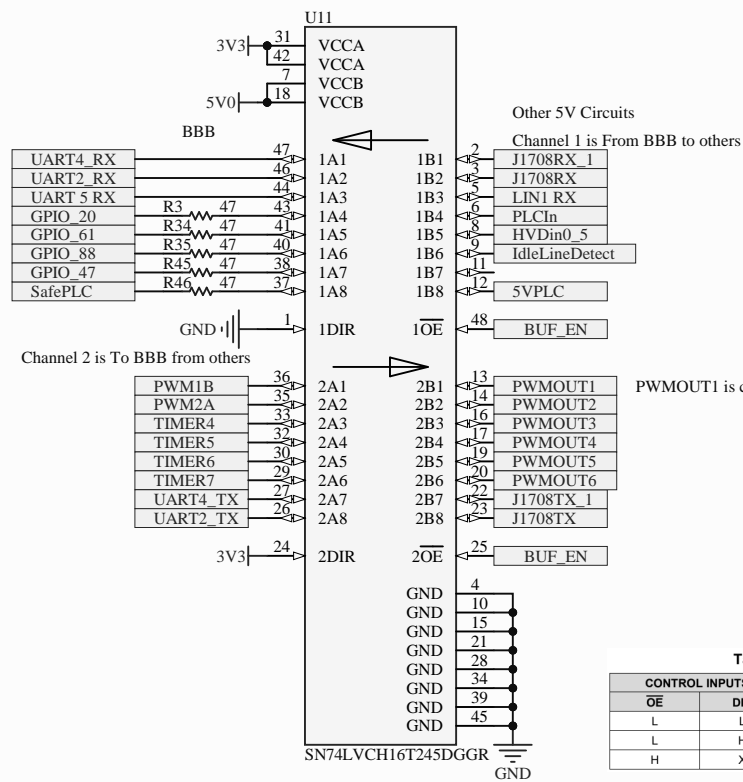


2nd Order Sallen-Key High Pass Filter for 80 KHz Cutoff for PLC Connections



SN74LVCH16T245DGGR

1DIR connected to 3.3V, 2DIR connected to ground. When OE is low and DIR is high, data transmission is from A to B. When OE is low and DIR is low, data transmission is from B to A. When OE is high, both output ports will be high-impedance. See <https://www.ti.com/lit/ds/symlink/sn74lvch16t245.pdf>



SN74LVCH16T245DGGR

PWMOUT1 is coupled to RAW (PLC) with a capacitor.

Table 1. Function Table (Each Transceiver)⁽¹⁾

CONTROL INPUTS		OUTPUT CIRCUITS		OPERATION
OE	DIR	A PORT	B PORT	
L	L	Enabled	Hi-Z	B data to A bus
L	H	Hi-Z	Enabled	A data to B bus
H	X	Hi-Z	Hi-Z	Isolation

Title: **Ultimate Truck Hacking Platform**

Subtitle: Circuit Protections

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Date: 10/10/2024 Time: 12:35:04 PM

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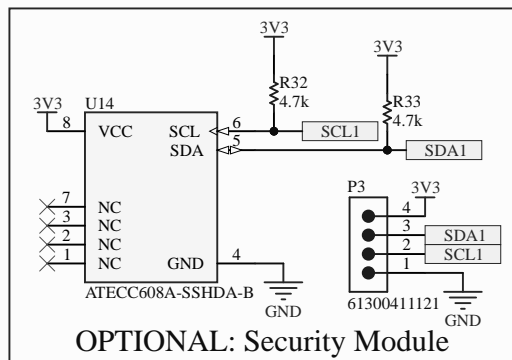
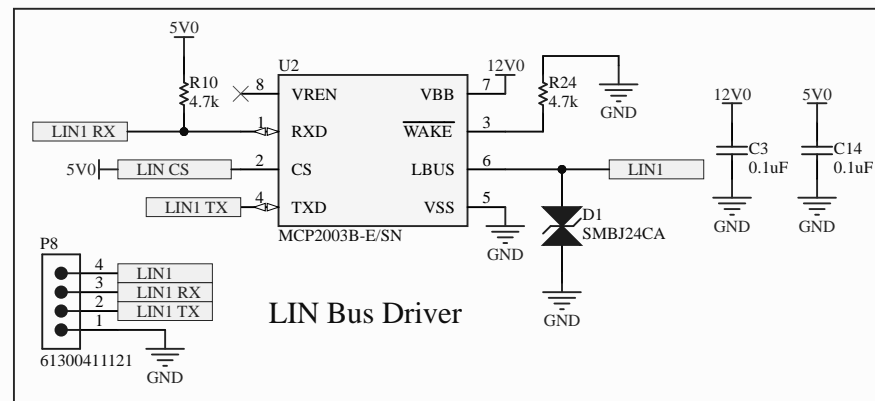
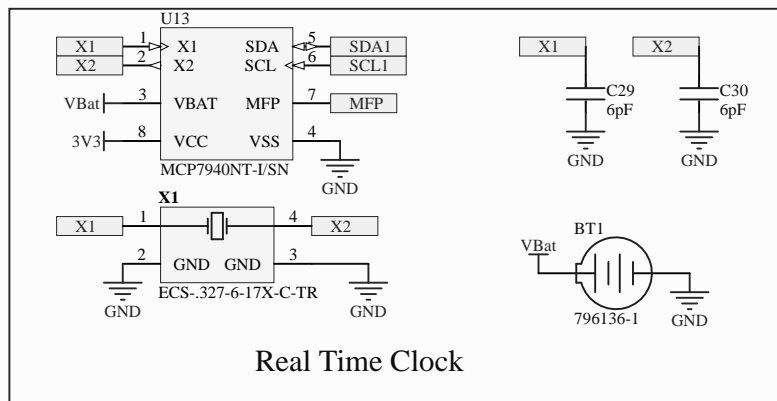
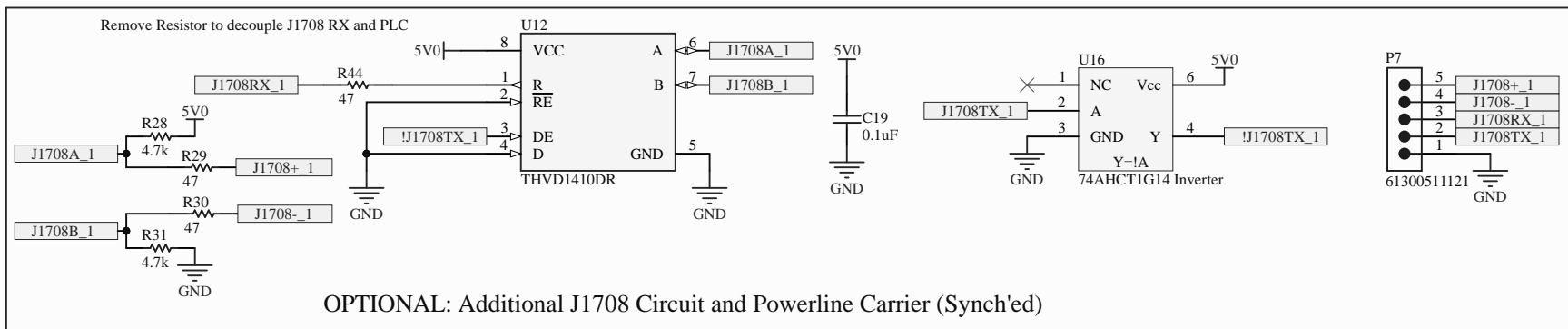
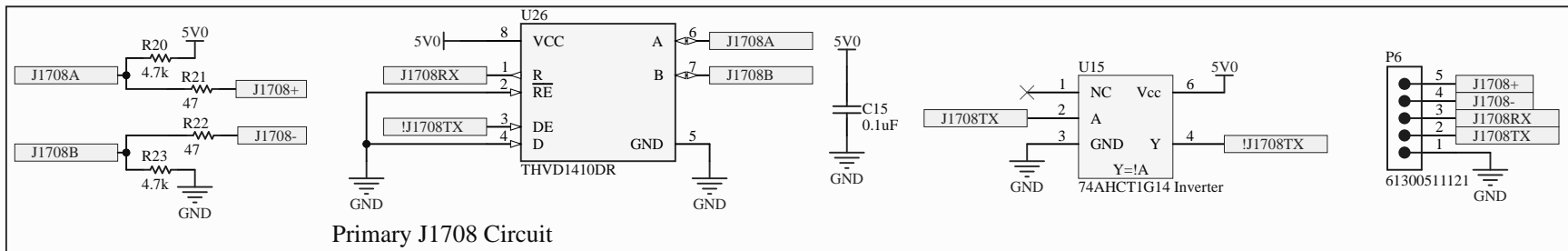
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Title: **Ultimate Truck Hacking Platform**

Subtitle: I2C and J1708

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File: UTHP J1708 LIN RTC v3.SchDoc

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