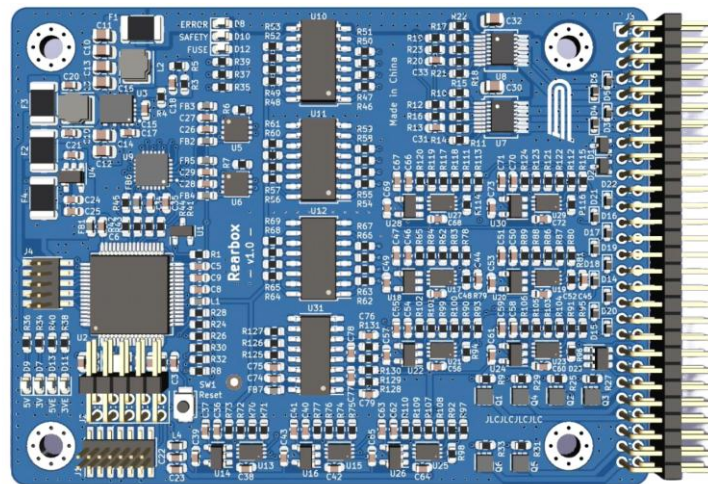
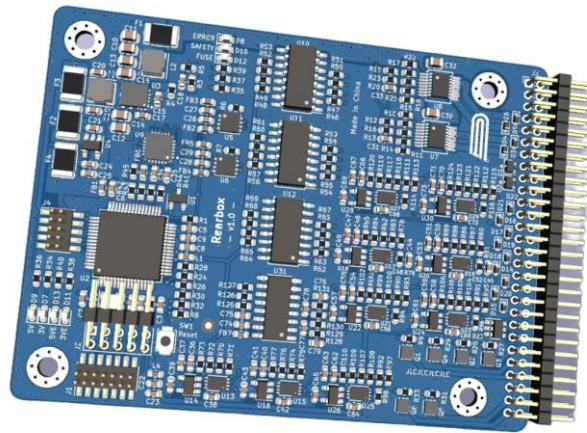


Rear Box PCB



Introduction

PUT Motorsport, headquartered in Poland, is engaged in an international racing competition known as Formula Student, wherein engineering teams from across Europe vie to construct the finest racing vehicle. Presently, we are in the process of crafting our new generation fully electric racing car. The integration of electric propulsion necessitates a plethora of bespoke electronic systems for effective control. While some of these components may seem rudimentary, they are indispensable as they serve as dependencies for other crucial elements. One such example is the Rear Box, developed by PUT Motorsport.

Features

Communication:

- 2 CAN transceivers
- UART (internal only)
- SPI (internal only)
- I2C (internal only)

Outputs:

- 2 fan drivers
- 2 pump drivers
- ASSI driver
- RTDS driver
- brake light driver

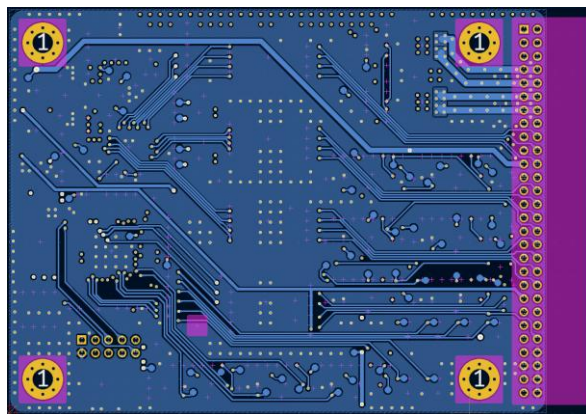
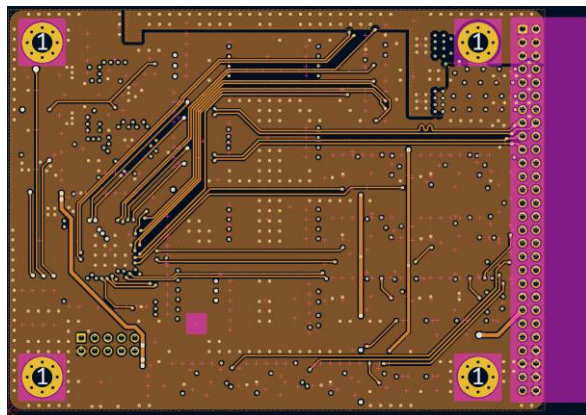
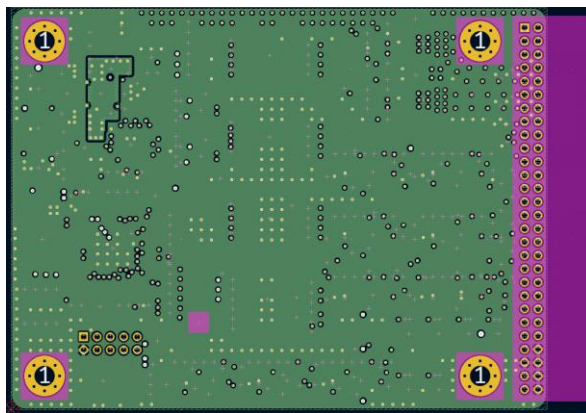
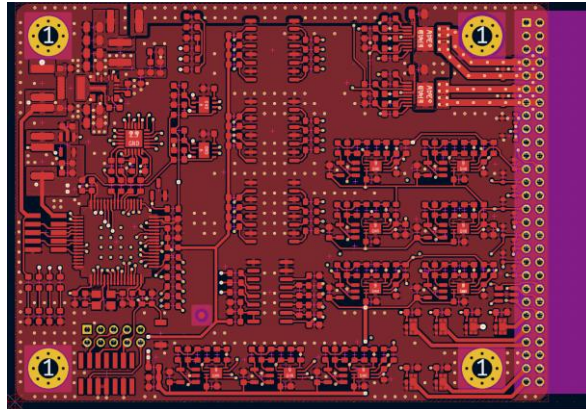
Inputs:

- 12 digital safety inputs
- 2 suspension load cell sensors
- 2 suspension potentiometer sensors
- 2 water pressure sensors
- 2 water temperature sensors
- monocoque temperature sensors

Challenges during design phase:

- Accuracy of analogue measurements
- Packaging constraints

The PCB consists of these layers shown below:

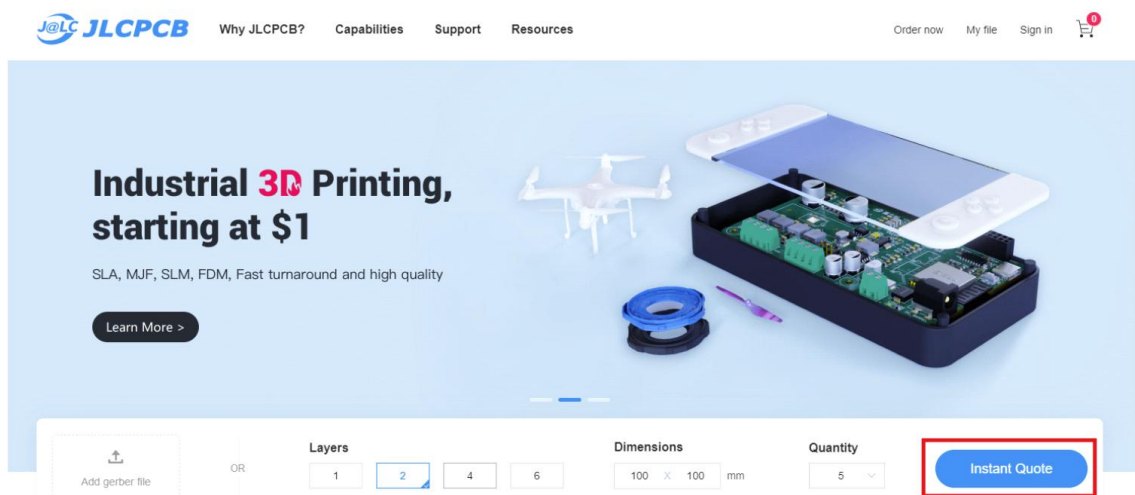


The whole project including both the hardware, and the firmware is open source. The repository is available at:

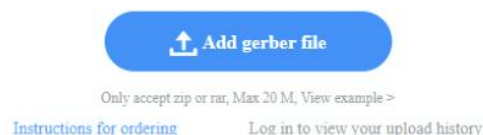
https://github.com/PUT-Motorsport/PUTM_EV_REARBOX_2023

Manufacturing

PCBs designed by our team are manufactured by JLCPCB - a hardware production company that specializes in batch PCB production. You can create PCBs with up to six layers, and order a batch size that fits your needs. Batch production is beneficial since during PCB assembly, many things could go wrong and the board could get damaged, that's where excess copies come in handy. If unlike us you don't enjoy assembling PCBs, JLCPCB has got you covered as PCB assembly is also a part of their offer! To order a PCB of your design, simply go to <https://jlcpcb.com/HAR> and click the "Instant quote" button.

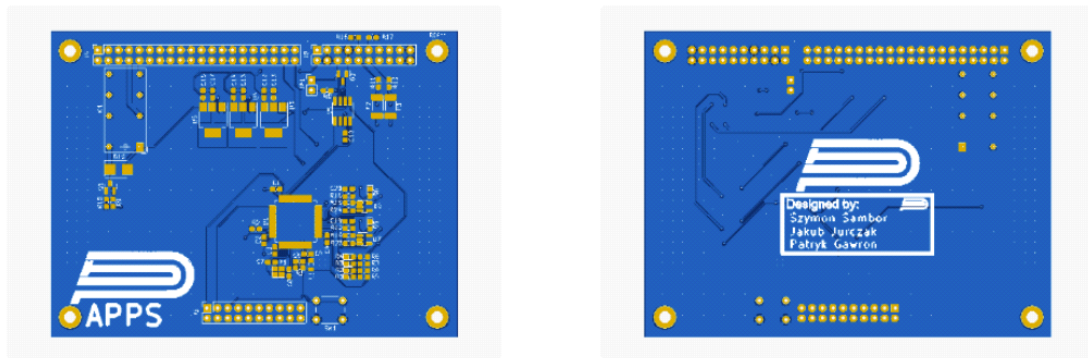


You will be forwarded to the order editor where you'll find plenty of options to customize your batch of PCB to fully meet your needs. Firstly you'll need to upload your gerber files archived into .zip or .rar format



After the files have been uploaded successfully, you'll see a board preview.

Your upload has finished processing. Enter the project details below and we'll move on to checking all the individual layers to make sure that they're correct.



The preview as well as the summary view will change accordingly to options you have chosen. Some of the options (like dimensions or layer number) will be pulled from the gerber files you have uploaded.

[← Back to Upload File](#) [Gerber Viewer](#)

Base Material	<input checked="" type="radio"/> FR-4	<input type="radio"/> Aluminum					
Layers	<input type="radio"/> 1	<input checked="" type="radio"/> 2	<input type="radio"/> 4	<input type="radio"/> 6			
Dimensions	<input type="text" value="75"/>	*	<input type="text" value="100"/>	<input type="text" value="mm"/>			
PCB Qty	<input type="text" value="5"/>						
Product Type	<input checked="" type="radio"/> Industrial/Consumer electronics	<input type="radio"/> Military/Aerospace	<input type="radio"/> Medical				
Different Design	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4			
Delivery Format	<input checked="" type="radio"/> Single PCB	<input type="radio"/> Panel by Customer	<input type="radio"/> Panel by JLCPCB				
PCB Thickness	<input type="radio"/> 0.4	<input type="radio"/> 0.6	<input type="radio"/> 0.8	<input type="radio"/> 1.0	<input type="radio"/> 1.2	<input checked="" type="radio"/> 1.6	<input type="radio"/> 2.0
PCB Color	<input checked="" type="radio"/> Green	<input type="radio"/> Purple	<input type="radio"/> Red	<input type="radio"/> Yellow	<input checked="" type="radio"/> Blue	<input type="radio"/> White	<input type="radio"/> Black
Silkscreen	<input checked="" type="radio"/> White						
Surface Finish	<input checked="" type="radio"/> HASL(with lead)	<input type="radio"/> LeadFree HASL-RoHS	<input type="radio"/> ENIG-RoHS				
Outer Copper Weight	<input checked="" type="radio"/> 1 oz	<input type="radio"/> 2 oz					
Gold Fingers	<input checked="" type="radio"/> No	<input type="radio"/> Yes					
Confirm Production file	<input checked="" type="radio"/> No	<input type="radio"/> Yes					
Flying Probe Test	<input checked="" type="radio"/> Fully Test	<input type="radio"/> Not Test					
Castellated Holes	<input checked="" type="radio"/> No	<input type="radio"/> Yes					
Remove Order Number	<input checked="" type="radio"/> No	<input type="radio"/> Yes	<input type="text" value="Specify a location"/>				

After you've customized the board, you can proceed to the checkout located at the right side of the editor.

Charge Details

Special Offer

\$2.00

Build Time

PCB: 3 days

\$0.00

Calculated Price

\$4.00

\$2.00

Additional charges may apply for special cases

Weight

0.23kg

SAVE TO CART

Shipping Estimate

Charge: Choose destination country first

Each and every board we've received from JLCPCB is of highest quality and we've always enjoyed working with them!

Made By Wiktor Krakowski for PUT Motorsport