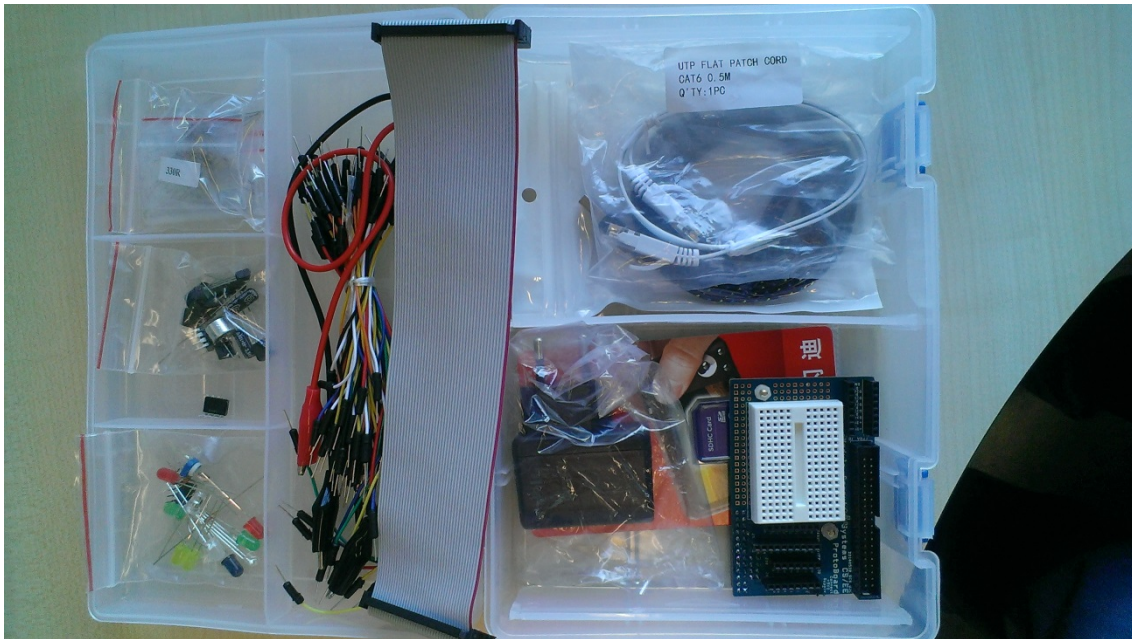


# CS ProtoBox



Available 15-Sept-2014 at the Stores shop.



The content of the CS Protobox is similar to the Create Protobox.

The Arduino Uno, USB A-B cable, DC Motor, Battery and Clip are replaced by a USB Power supply, micro Usb cable, Ethernet Cable, 8GB SD-card, CS ProtoBoard, 40pin flatcable.

Due to the lack of an ADC on the Raspberry Pi, a dual channel 12bit ADC is included (MCP3202).

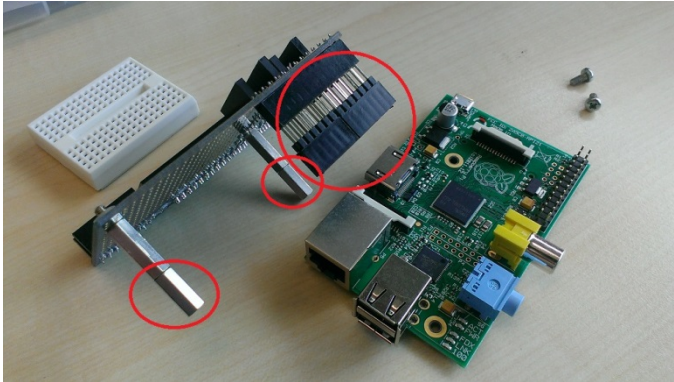
See [https://www.scintilla.utwente.nl/assets/stores/protobox\\_quickref.pdf](https://www.scintilla.utwente.nl/assets/stores/protobox_quickref.pdf) for details about the specific components.

**The box does not contain a Raspberry Pi model B, you need to purchase this separately.**

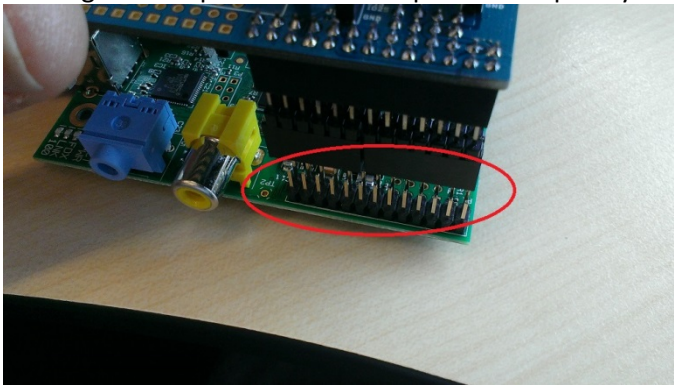
- SD card requirements  
The included SD card is not yet formatted with the NOOBS image.  
You can find the required info to format and load it with the NOOBS files here :  
<http://www.raspberrypi.org/help/noobs-setup/>
  
- Backing up your SD card  
After installing an OS on the SD card, your card will contain linux partitions.  
To backup or restore the full content of the SD card use disk image tool like “dd” (linux) or Win32 Disk Imager (windows) <http://sourceforge.net/projects/win32diskimager/> .
  
- Starting the first time  
See the following site for starting your Pi for the first time..  
<http://www.raspberrypi.org/help/quick-start-guide/>
  
- CS-OS Assignments  
The actual assignments for CS-OS students are located here :  
[http://wwwhome.ewi.utwente.nl/~pieter/CS-OS/Lecture\\_Assignments.pdf](http://wwwhome.ewi.utwente.nl/~pieter/CS-OS/Lecture_Assignments.pdf)
  
- Connecting signals to your Raspberry Pi / Breadboard.  
**Keep in mind that your Raspberry Pi works with a low voltage signal.**  
Applying a higher voltage than 3.3 Volt can destroy your Pi..

See the next pages for hooking up the CS ProtoBoard to your Raspberry Pi.

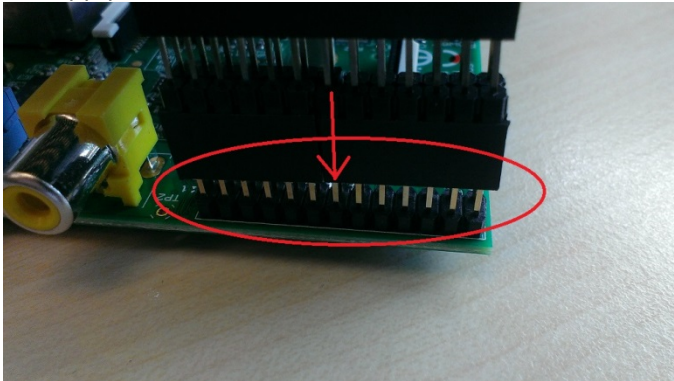
- Combining the Raspberry Pi model B and the CS Protoboard.
  1. Check if the additional stack connectors and spacers are fitted correctly



2. Align the CS proto board on top of the Raspberry Pi

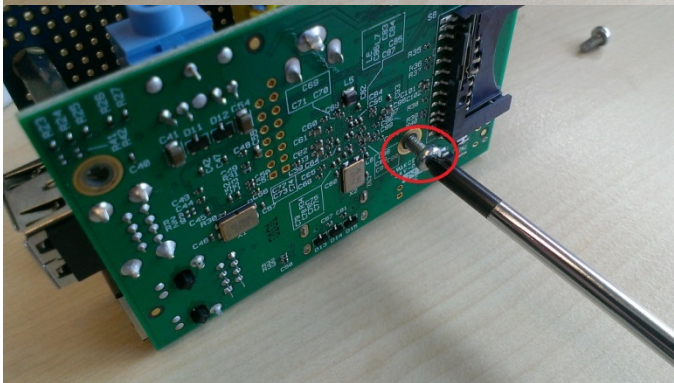
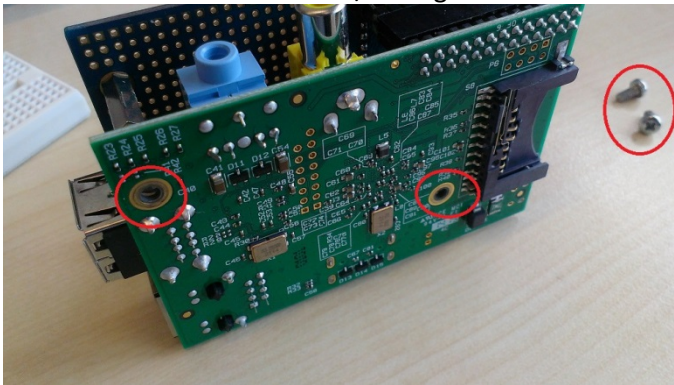


3. Apply a little force that allows the connectors to mate.

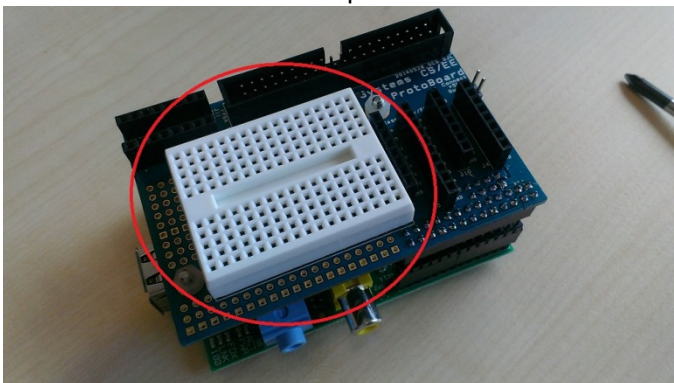




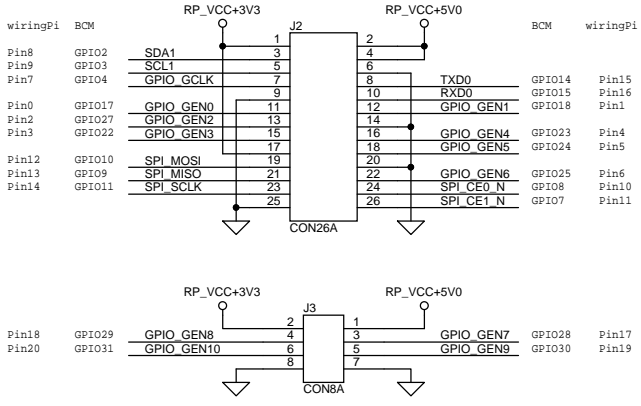
4. Fix the two boards together with two M3 screws on the bottom side of the Pi. Be care full not to scratch/damage the Pi board with your screwdriver !



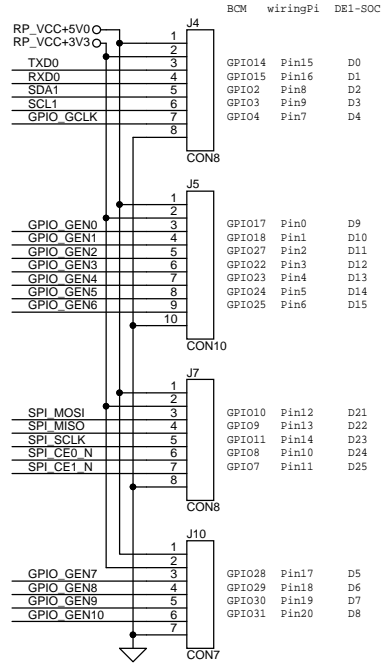
5. Fix the breadboard on top of the CS Protoboard



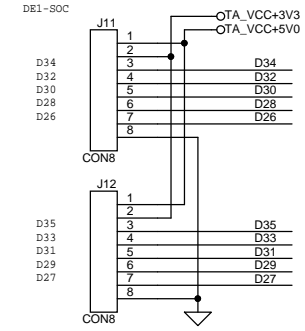
## Raspberry Pi I/O



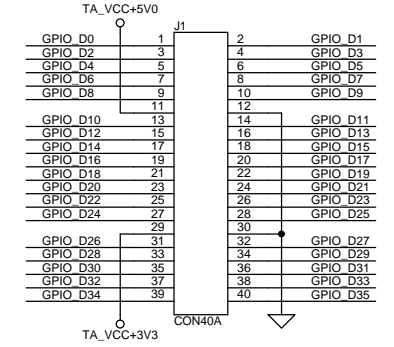
## Breadboard Connection



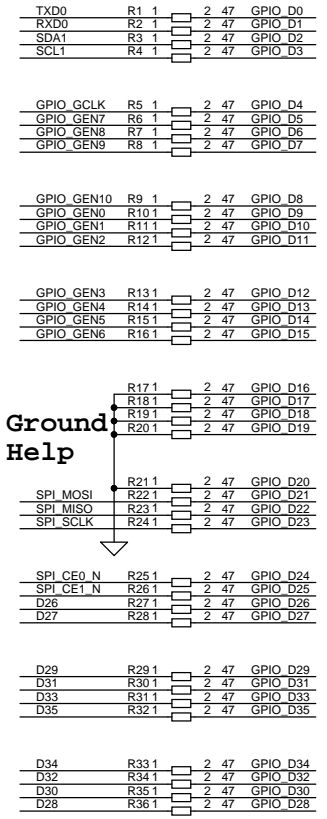
## Breadboard Connection



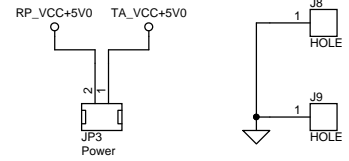
## Fpga Soc I/O



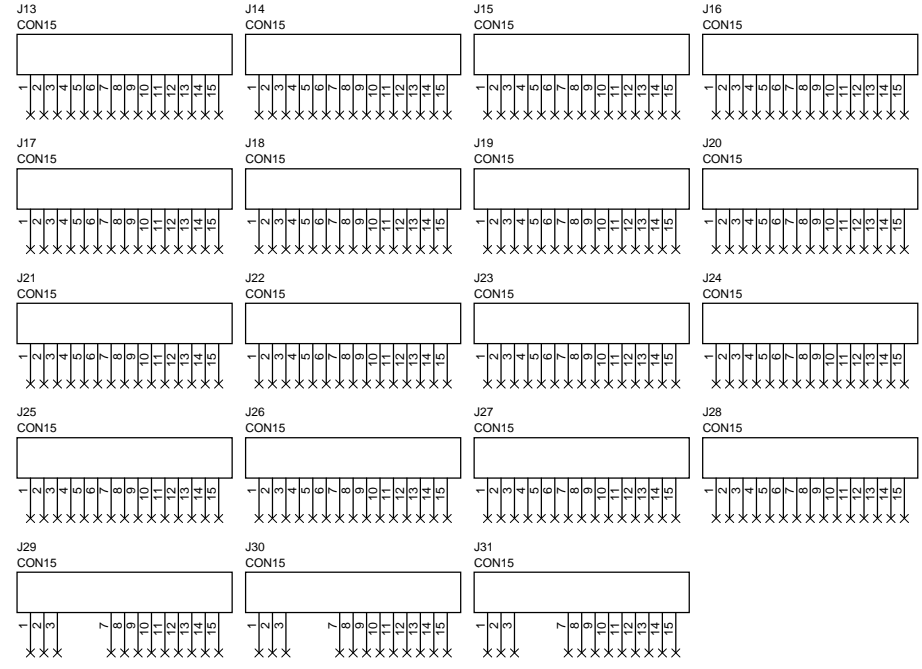
## GPIO protection



## Supply Raspberry from FpgaSoc

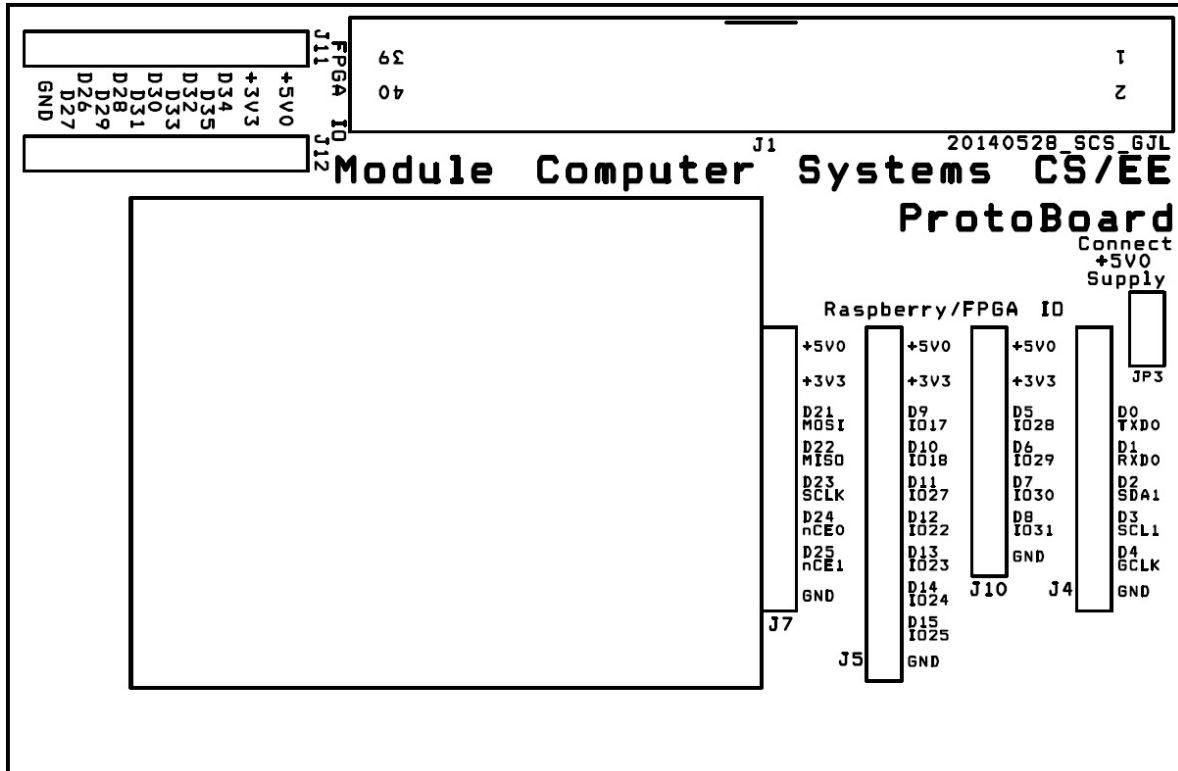


## Experimental Area

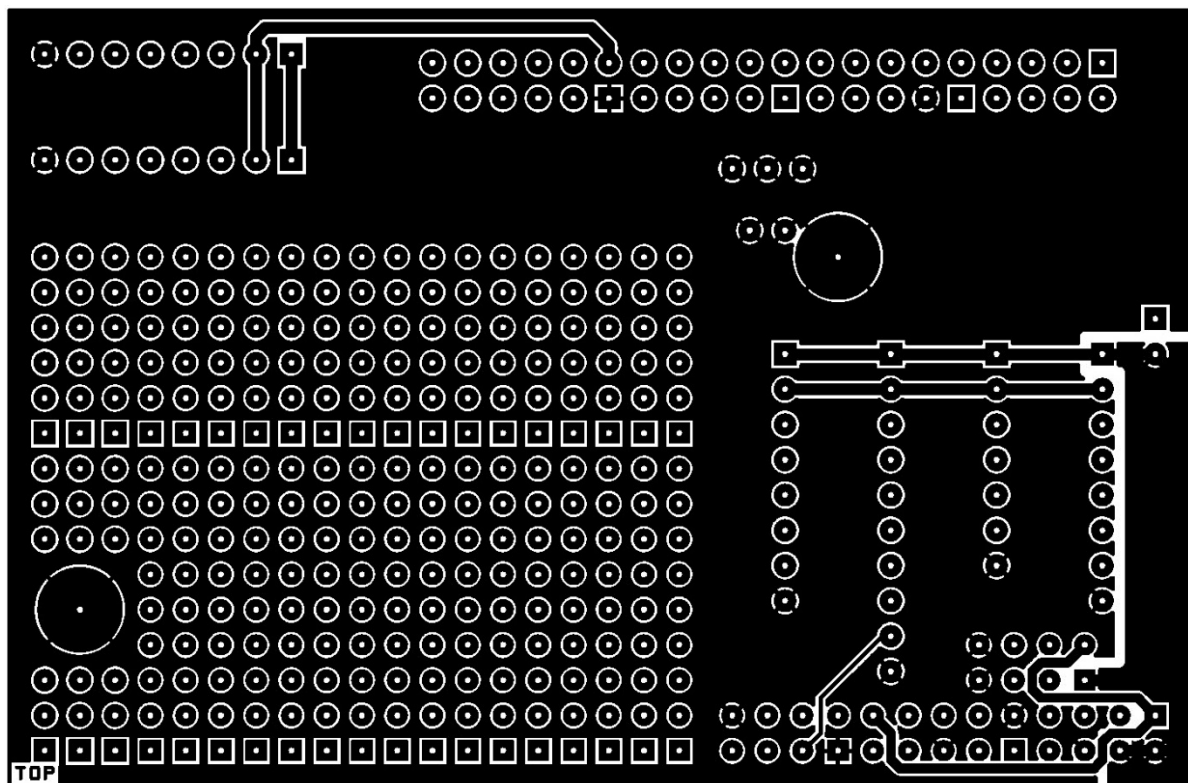


Title		
Module5 ProtoBoard		
Size	Document Number	Rev
A3	PIProtoboard	0
Date:	Monday, October 27, 2014	Sheet 1 of 1

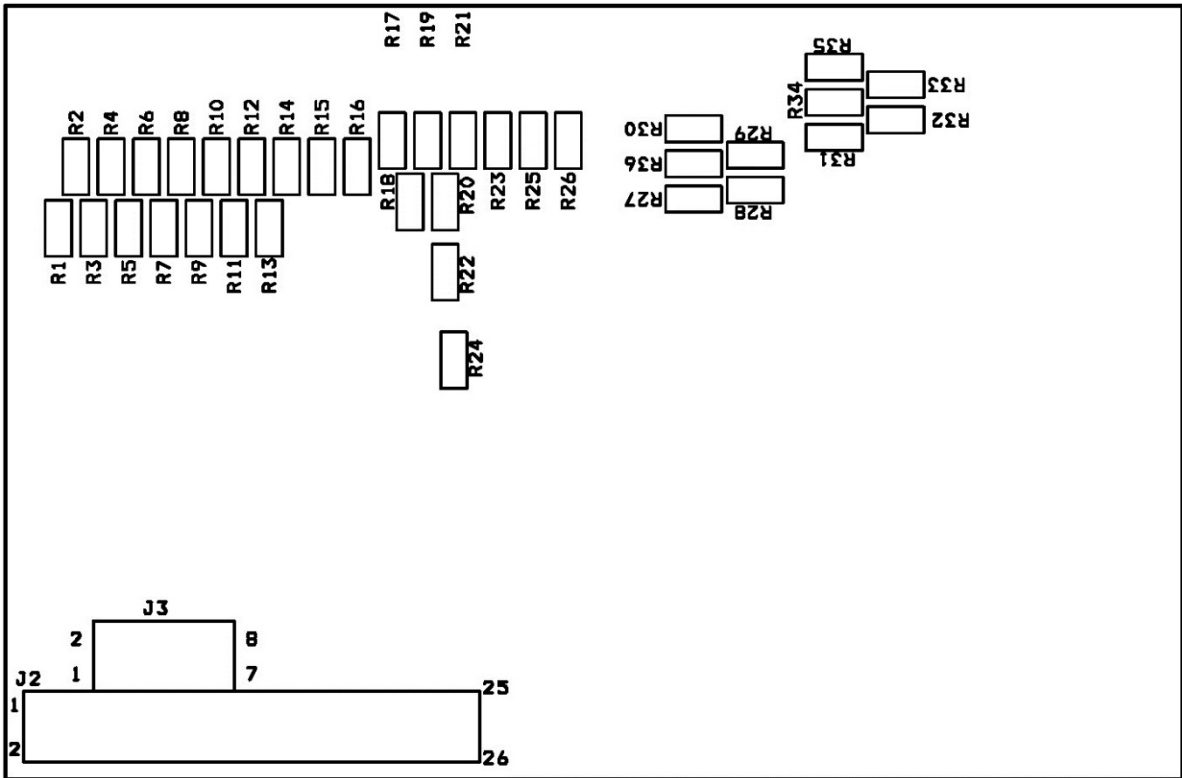
Appendix B : CS ProtoBoard PCB Layout



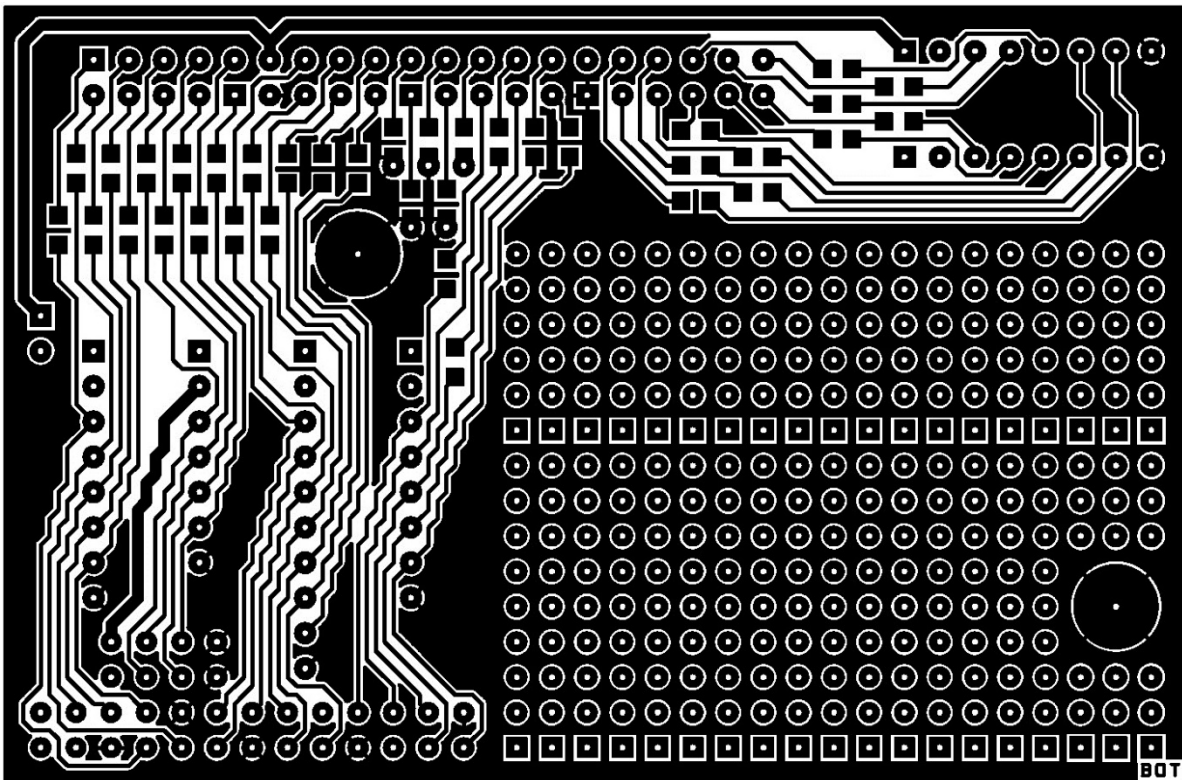
Top Side (silkscreen)



Top Side (Copper)



Bottom Side (Silkscreen)



Bottom Side (Copper)