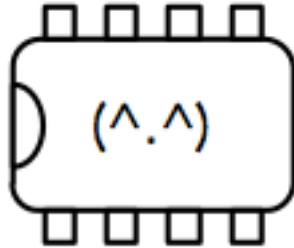


# ZenAI Community of Robots ch5



**[www.ZENMCU.com](http://www.ZENMCU.com)**

Draft 1 2023-03-09

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## zenai-0.0a #5

I have had numerous non-hobby related activities to attend to so I have not made great strides forward recently. However, I did decide to go ahead and try my hand at some circular PCBs.

In the spirit of trying to do something I believe I can actually finish, I designed a circular robot board, r0001c, for a SAMD10C, dual motors, and line following using an LED to light the floor for a pair of CdS LDRs.

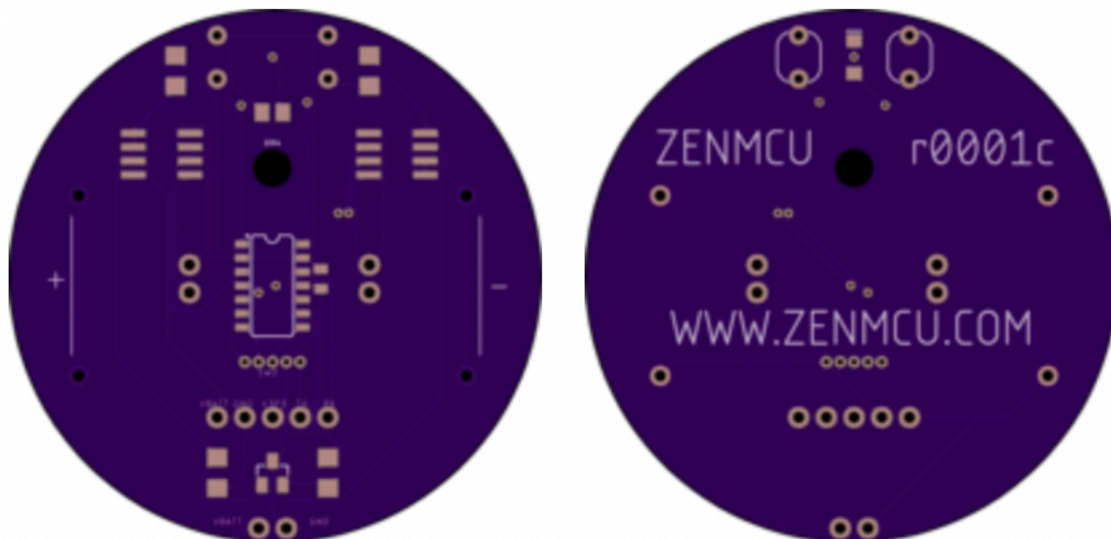
Like Robigotichi and contemporaries the LDRs are paired with caps and are operated as one-shots; charged through a pin then timed until discharge. Similar to the LEDs but it takes only one pin per sensor. (Yet another really crude DIY ADC.)

It has an LDO for a battery and, since tiny slide switches somehow cost between 1 and 5 dollars now, I decided to use a jumper as a power switch.

I added a 5 pin vertical bus with VBATT, GND, V3P3, TX, RX to go to another board as an add-on. And I added a hole for a hex standoff to help support an expansion board. The battery is to be held in place by two contacts made of cleverly bent paperclips.

I am not confident about the placement of the components. The SWD pins are near the center of the robot, under the edge of the battery, and possibly on top of the motors. The expansion bus is sort of arbitrarily located near the LDO, and the hole for the standoff is kind of roughly opposite that.

But, at least it's a start. I ordered three boards, and building at least one of these should be informative and help to refine the design.



Architecturally this design is a Spanda card. While it is capable of operating on its own, and accepting 4th scripts via the HIF UART, the long term intent is for this to be controlled by another MCU; the Base, in Spanda terminology. However, I have taken to calling the r0001c the "Rykor", and the future controlling MCU as the "Kaldane". If you are not familiar with Edgar Rice Burroughs' Mars stories then that will mean nothing to you. If you are then that may make some sort of twisted sense.

In any case, this is an intermediate step on the way towards getting to the real robot colony. I'm hoping that this is a significant evolutionary step along the way, resulting in a platform to build upon. I think the form factor is close to what I'd hoped for, and the decomposition of responsibilities between the Rykor and the (future) Kaldane seem to make some sense.

There are obviously other ways to do this that may actually be better, but I cannot keep building things in my head without actually trying them forever. I have to actually make a start, even if it is potentially naive.

**End**