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T. DE LOQUI 58 - 9400 RIO GALLEGOS

Open DLogger

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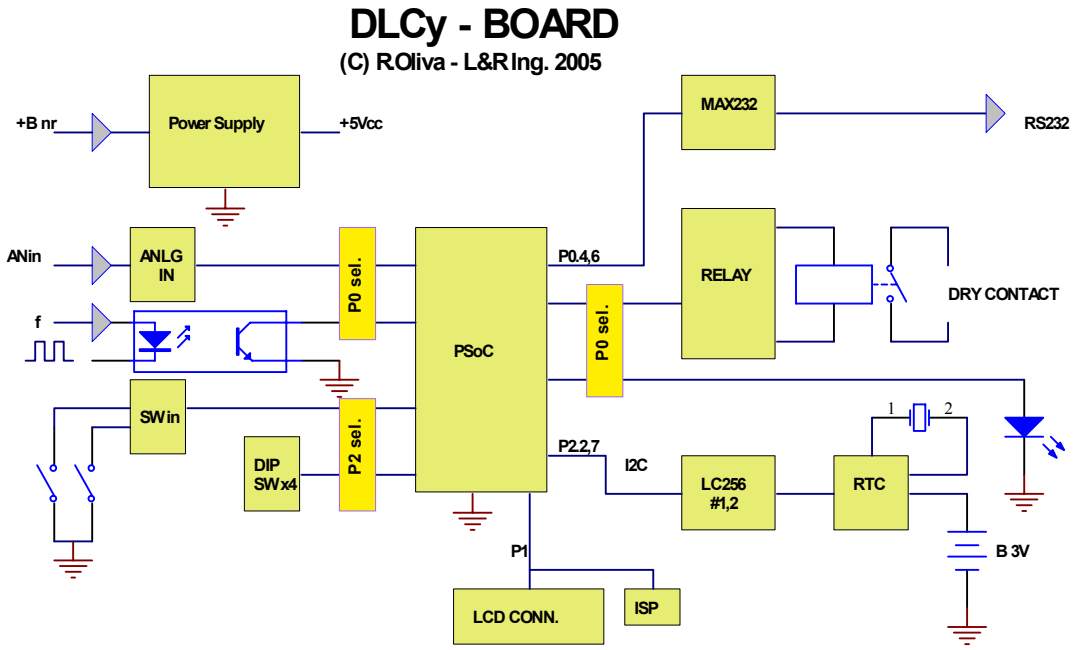
The Open DLogger Project is intended to conform a flexible data acquisition module, for multiple science & technology applications with moderate precision requirements and limited budget. It will involve an open system in its hardware design and C source-code. The basic system is based on the DLCy-PSoC board, designed an produced through an ANR-SeCyT (an official R&D funding from Argentina - project SC002/2003) which has been tested in different applications since July 2005.

We are aiming to a low power system with 4 analog channels, available ranges in 0-5V or 0-10V, using a 13-bit A/D conversion (0 to 8191 levels). Components used in the board are:

- CPU PSoC 29466/32K flash memory – with configurable analog and digital modules.
- PCF8563 real time clock with a CR3032 lithium battery.
- 24LC256 /512 serial flash memory.
- Character LCD support from 2x16 to 4x20
- Auxiliary board for I/O and 4 key membrane keypad.
- Serial RS232 or USB FT232 based module.
- Option: external switching power supply (LM2575) and mini-UPS using an external 12V battery and PV panel.



An ISP (In-System-Programming) connector is included, which allows for quick firmware updates using the low-cost Cypress mini-Prog USB module (available from L&R , from Digi-Key.com or other sources). As with all Cypress PSoC components, development can be performed using the free and robust PSoC Designer (v5.0 - http://www.cypress.com/psoc2/?id=1353 or later). Latest releases (since 2008) include an M8C assembly language and two C compilers to work with: ImageCraft or HiTech (HT). The latter includes a free Lite version which performs no optimizations. This can be a limiting factor if the applications grow in size. The PSoC 32K Flash limit can be severe for many data-logging systems. Still, the price-tag for the very effective optimizing HT version (USD 1500) is steep, so a compromise is necessary. Code written for the older ImageCraft compiler has compiled with no problems with the new HT compiler in our tests. The HT compiler includes many useful features, including a printf() instruction which was absent in the ImageCraft unit.

The results are to be stored in .CSV (Excel –readable) text-only files. Configuration will take place via the serial or USB port.

We plan to make the C-source files for the basic logger application available soon, and the possibility of purchasing the bare boards or assembled units, the Cypress mini-Prog and own or user-generated application notes.

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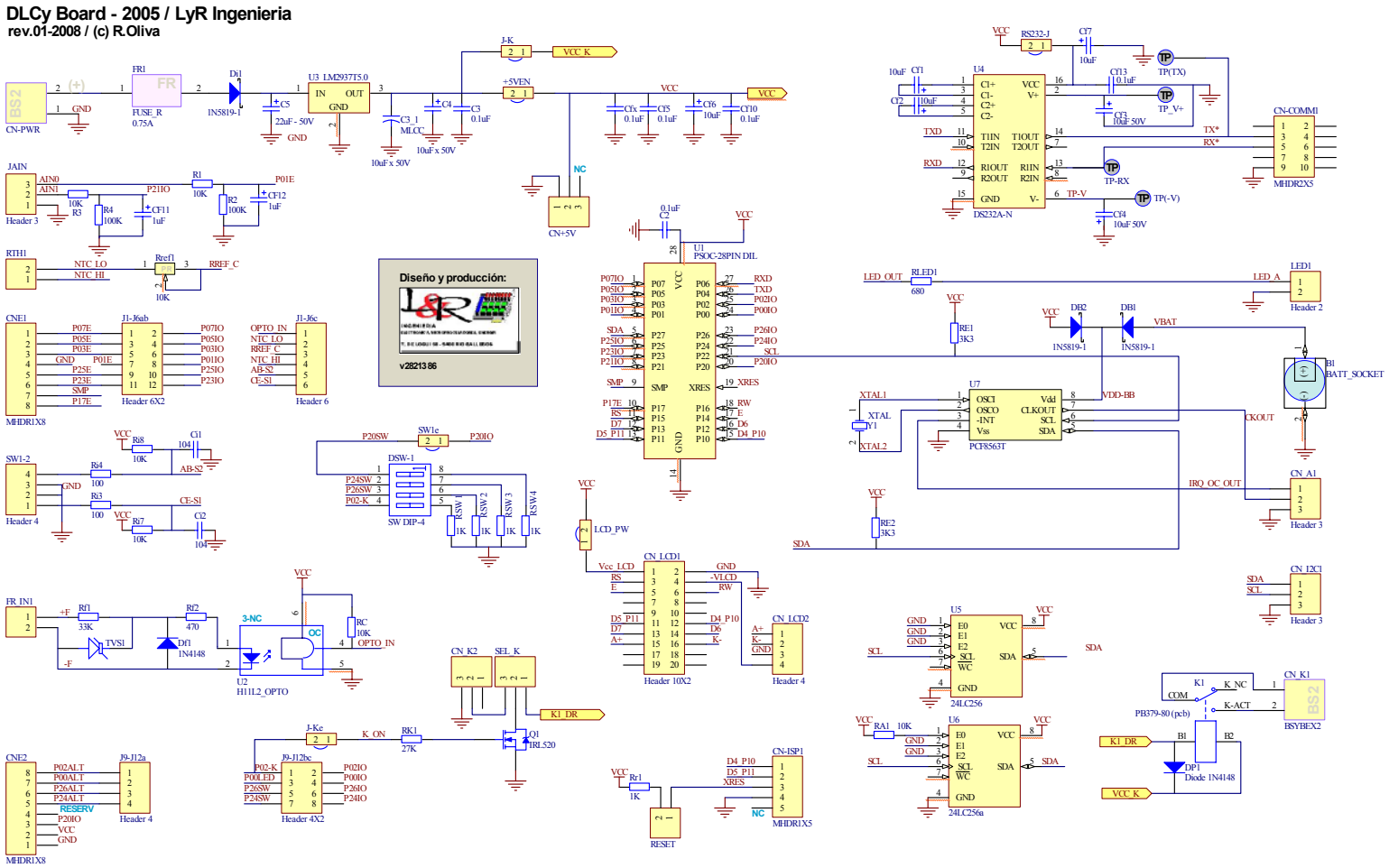
Schematic Diagram – DLCy PSoC Board



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