

ACTIVE LAYER DATALOGGER

28/06/2021

CODES AND LIBRARIES

<https://drive.google.com/file/d/1p5YNaihr11poGbyB7VgrX87fkZRCeL2C/view?usp=sharing>

There are three sketches which have to be run in consecutive order to setup the logger.

1_Set_RTC_Check_Logger

Sets date and time and check if SD card reader is working

2_Set_Logger_ID

Sets unique logger ID on the EEPROM memory

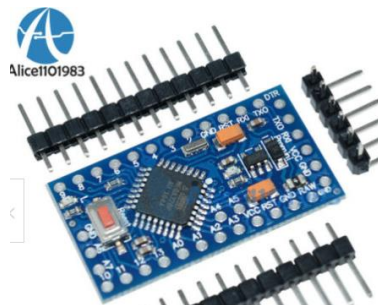
3_Active_layer_logger_Multiple_DS18B20

This is the main logger code. The only user inputs required are the DS18B20 sensors addresses.

HARDWARE

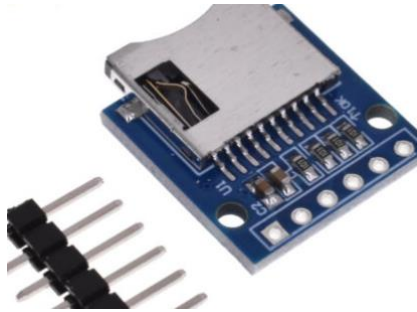
1-Arduino Pro Mini 3.3v

<https://www.ebay.com/itm/201562503063?hash=item2eee0fb797:g:Sv0AAOSw-L5bpFdV>



2-Unsoldered Micro sd reader

<https://www.ebay.com/itm/141785241121?hash=item21030f1621:g:x8sAAOSweR9fzyBQ>



3-Micro sd card (64 mb)

<https://www.ebay.com/itm/223937679233?hash=item3423b9cf81:g:h9oAAOSwymteYa5Y>



4-Clock DS3231

<https://www.ebay.com/itm/274283810907?hash=item3fdc96d05b:g:tj0AAOSws11eUkRT>



5-Transistors

NPN 2n2222

<https://www.ebay.com/itm/201995365454?hash=item2f07dcac4e:g:0IAOSw5cNYgeyU>

PNP 2n3906

<https://www.ebay.com/itm/263444856535?hash=item3d56897ed7:g:mQQAAOxysE5SajWO>



6-Capacitor (330uF 25v 8x12mm)

<https://www.ebay.com/itm/333797026331?hash=item4db7da6a1b:g:csEAAOSwcMlfugfK>



7-Battery Holder (18650 Battery Case with Pin one slot)

<https://www.ebay.com/itm/203045994263?hash=item2f467bff17:g:8Y0AAOSwCKBfCiJa>



8-Battery 18650

<https://www.ebay.com/itm/133765950126?hash=item1f25126aae:g:d1UAAOSw7OlgpdlO>



9-Resistances (3 x 100 ohm)

<https://www.ebay.com/itm/302233222045?hash=item465e80fb9d:g:iKAAAOSwWxNYruhV>



10-Resistance (1 x 4.7 k)

<https://www.ebay.com/itm/302233222045?hash=item465e80fb9d:g:iKAAAOSwWxNYruhV>



11-Green Led

<https://www.ebay.com/itm/201149909310?hash=item2ed578093e:g:i6kAAOSweW5VTFZq>



12-Rocker Switch 2 pins (SPST)

<https://www.ebay.com/itm/382498900057?hash=item590eb60859:g:3DsAAOSwp0pazhJv>



13- PCB screw terminals

3 pins total length 5 mm

<https://www.ebay.com/itm/174592863556?hash=item28a68bad44:g:GesAAOSwS0Jf~VAV>



4 pins total length 11 mm

<https://www.ebay.com/itm/384139253029?hash=item59707bd525:g:i3YAAOSwVw9ghR5D>

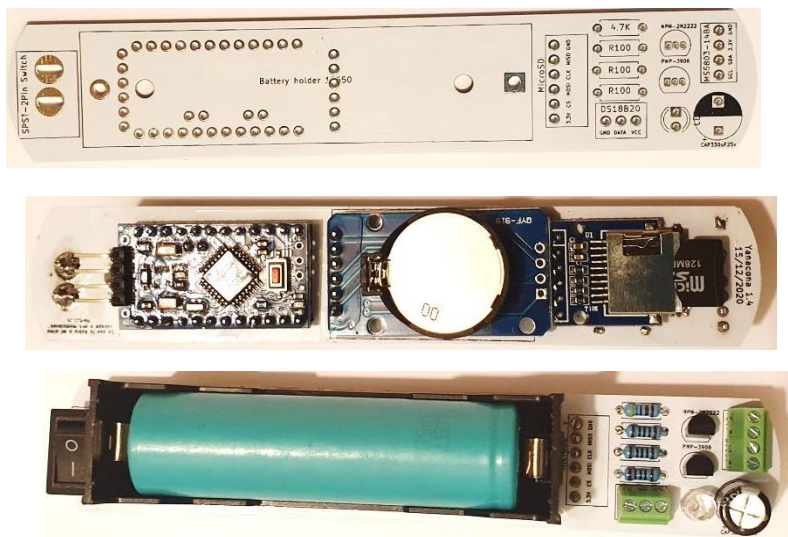


14- Dataloggers PCBs

Yanacona v 1.4

Link gerber files

<https://drive.google.com/file/d/1IdSXhP7IISMwiKviPdJfGORJDBbt53eJ/view?usp=sharing>



PCB for 25 DS18B20 Sensors

Link gerber files

<https://drive.google.com/file/d/1atiX57-DjJ5HLIH0PxK7Ipe1TuuetXZx/view?usp=sharing>

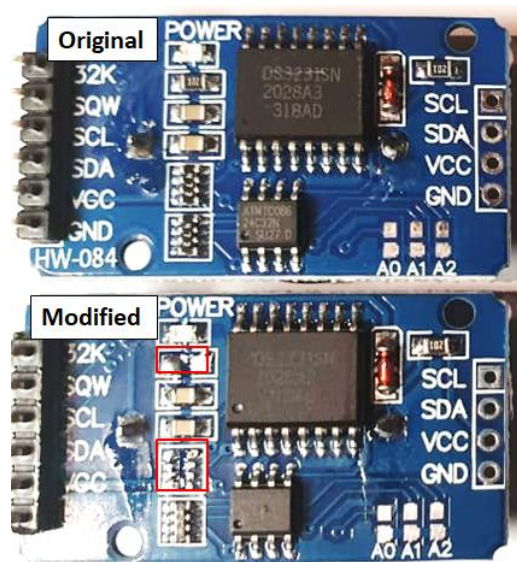


HARDWARE MODIFICATIONS

These hardware modifications are needed to save power and use the DS31321 Clock alarm to wake up the logger. I do them by placing the hot soldering iron on solder joints and pushing.

DS3231 Clock

<https://youtu.be/teElhnwU8YY>



Arduino Pro Mini

<https://youtu.be/PYjWs-L8v6I>

