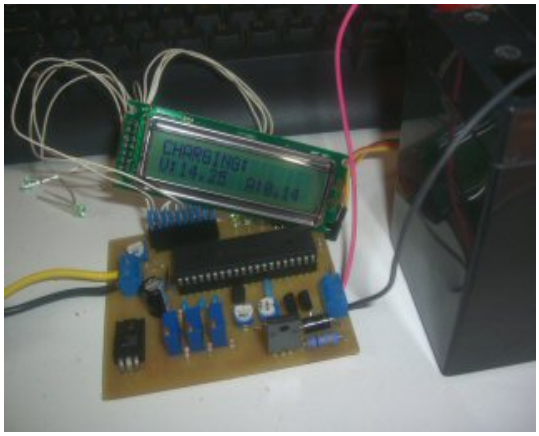
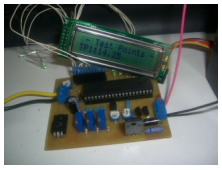


The charging of a lead-acid battery is a process totally different from the process used to charge a Nimh or NiCd battery.

To last as long as possible the life of a lead-acid battery, it must be charged by a costant voltage.

This project assumes a 16F877 (very common and cheap) microcontroller to control the state of a lead-acid battery, to show the voltage and the current of the charge and to switch to a low-charge state when the battery if fully charge just to compensate the natural lost of the battery itself.

Setup: the setting up of the charger is a quite simple

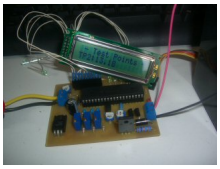


Without connecting any battery short circuit the setup switch (or jumper in our case) and press the reset

1) Rotate the trimmer R6 until to reach a voltage of 14.8-15V on the test point TP0 (see schematics) me

2) Rotate the trimmer R1 (10 turns trimmer) until to read on the display the right voltage (14.8 - 15.00)

Step 1 is done



3) Without connecting any battery rotate the trimmer R19 until to reach a voltage of 13.5-13.8V on the te

4) Rotate the second trimmer R2 (10 turns trimmer) until to read on the display the right value (13.5 - 13

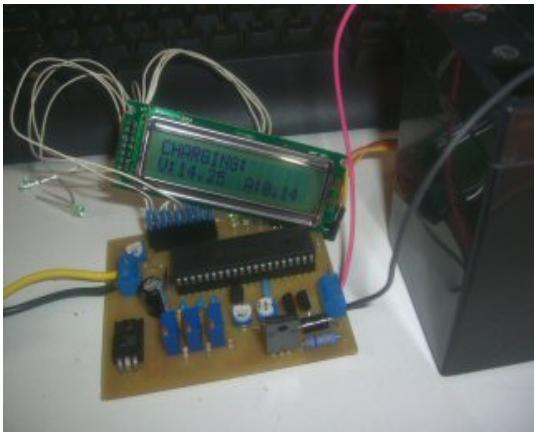
Step 2 is done

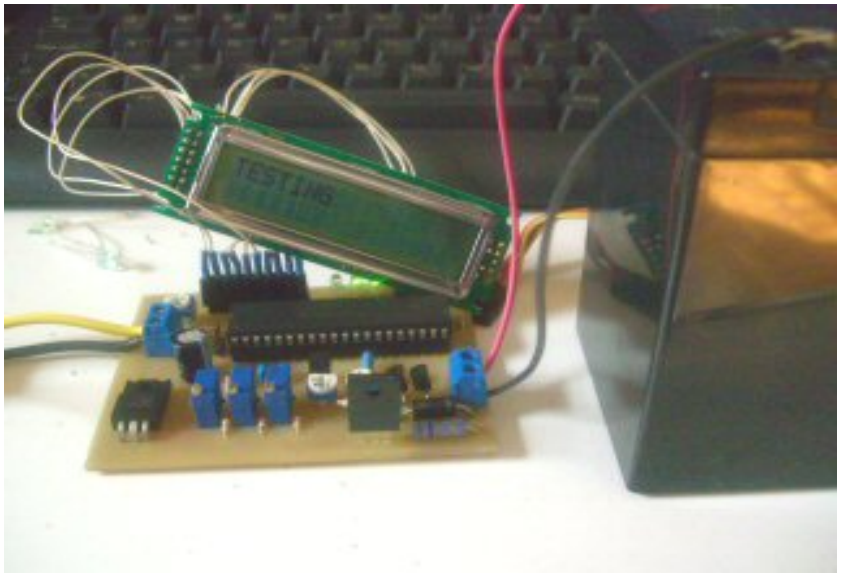
5) measure with a tester the tension on TP2 point (usually 2-2,5 V) and rotate the trimmer R3 (10 turns t

The program will switch automatically from one step to another giving 1 minute (around) for any

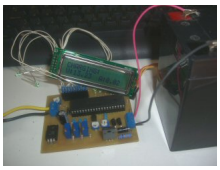
Step 3 is done. Remove the short-circuit (or the switch) on the setup jumper, press again reset and the j

The power supply should be around 20V Also a current of 2A is needed for the 7805 regulator and for the LM317 regulator. If





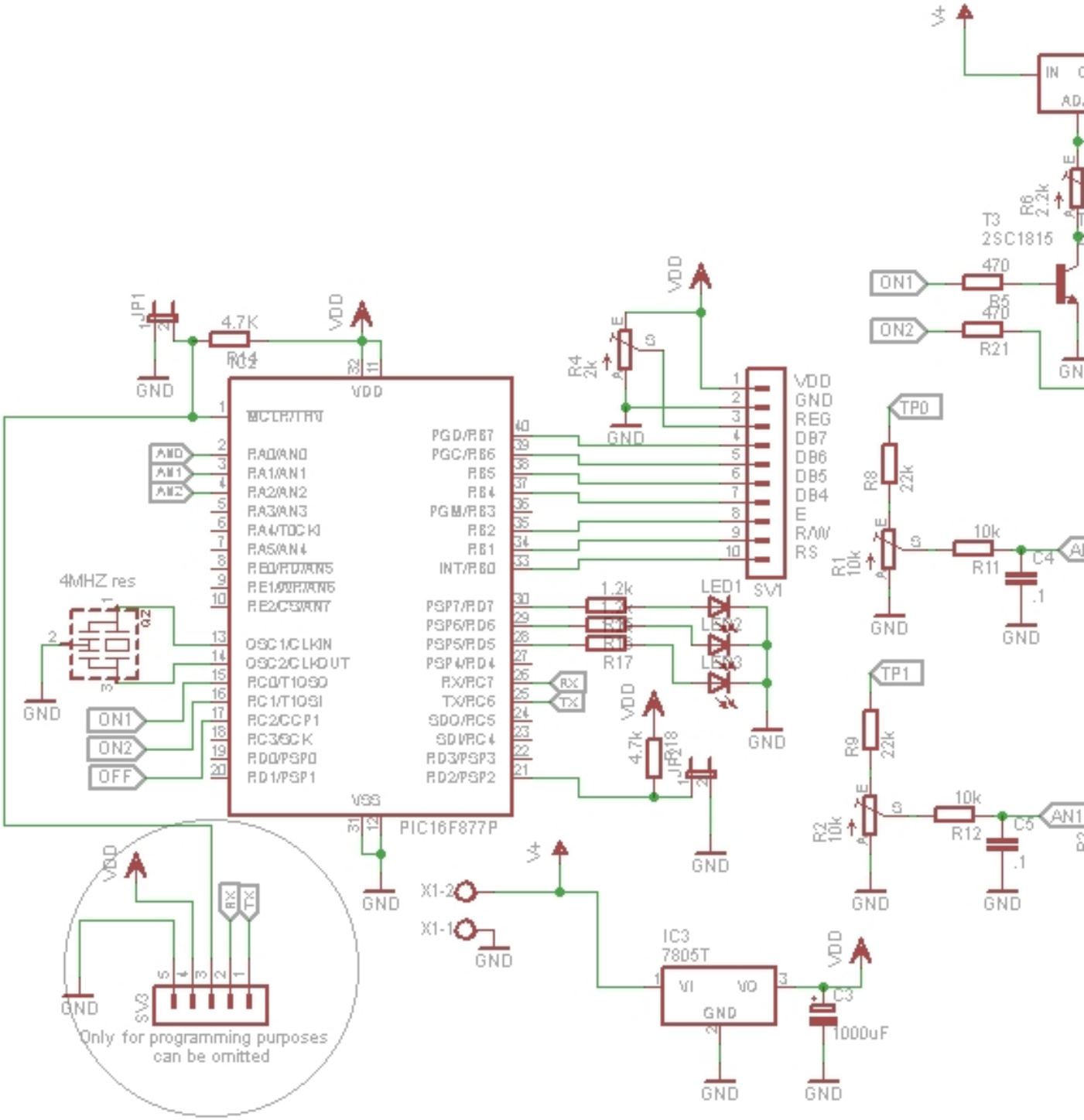
The charger will start to charge the battery, testing it every 30 second (around) and switching to a lower

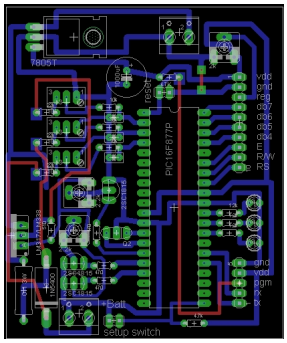


The battery is charged and a very small current will flow just to compensate the natural losts of the batte

There are thousands different ways to realize a project like this. Many components are not critical (2sc1

As usual schematics and HEX files are downloadable from the repository. We suggest to study a new pc




78051
PIC16F877P
Batt
setup switch