Design of a simple diversion charge controller Monthly report

WindEmpowerment
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During August, we received the PCBs of the first prototype and assembled it. The design of a prototype for 12 Volts systems has also been done.

1 Assembly of the first prototype and testing

We received 10 PCB of the first prototype. We assembled some of them for testing. A picture of one of them is showed in figure 1. We tested it with two different settings :

- With a stabilized voltage source (figure 2) by increasing the voltage. When the voltage reaches the threshold voltage, it stops increasing. Some current is sent to the dump load and the voltage is regulated.

- With a 24V solar panel connected to two 12 Volts batteries. The setting is showed in figure 3. The voltage stays in the working limits of the batteries but it can fluctuate between 28.5 and 29.3 Volts. We are looking for a solution to reduce those fluctuations.

Two assembled regulator have been shipped to members of Tripalium. Two others will be shipped from now until the 15th of September. If you want to receive a regulator for testing, please contact me : clem.gangneux@gmail.com.

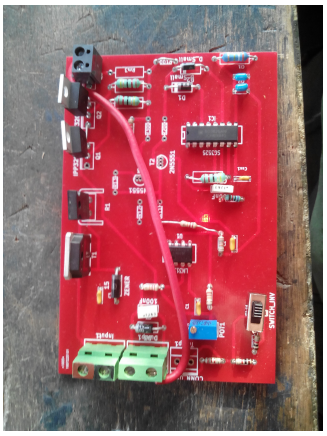

Figure 1: Picture of the regulator

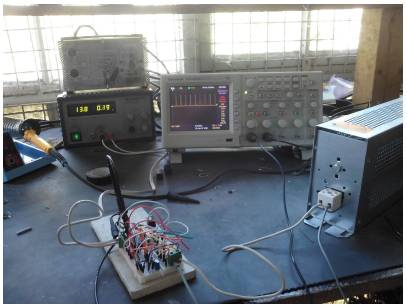

Figure 2: Test with a voltage source

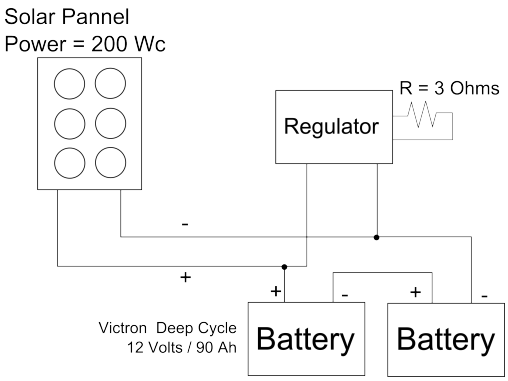

Figure 3: Setting of the installation for testing with a solar panel

Figure 4: Picture of the test with a solar panel

2 12 Volts regulator

A prototype for a regulator working in 12 Volts has been designed and tested. It is simpler than the 24/48 Volts regulator and a picture of the prototype is showed in figure 5.

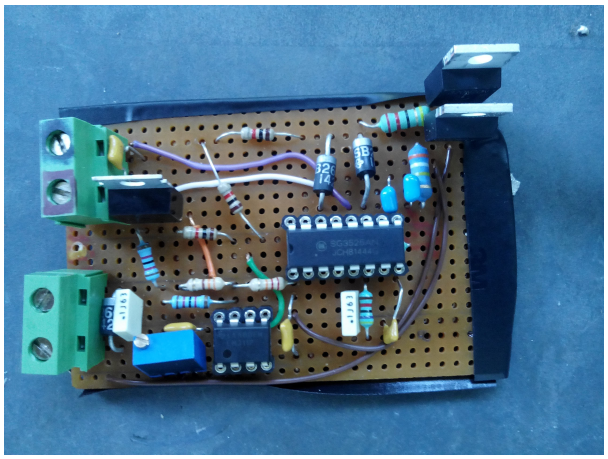

Figure 5: Picture of the 12V prototype

3 Next steps of the project

A second prototype for the 24/48V regulator is in preparation. It will be re-sized to fit in a box with heat radiators (figure **??**) and the buggs of the first PCB will be fixed. We will continue the tests and try to improve the design. Afterwards, we aim to design a PCB for the 12 Volt regulator and develop a prototype using numeric solutions to compare with the analogical solution.

If you have any questions or remark regarding the project, please contact me : `clem.gangneux@gmail.com`.