

Programming Power-Supply Controller Card

Revision History:

Rev. 1.1 SH Dec. 22, 2006 Initial release

Rev. 1.2 MA Mar. 8, 2007 added headers and rev. history

Created on: 22 Dec. 2006

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Programming the PSUC:

This assumes programming of an already verified PSUC. Consult PSUC test plan.

0. ATMEL FLIP must be installed on programming PC (but firmware hex file can be taken from anywhere). Make sure appropriate drivers installed.
1. Ensure USB cable connected to PC. Run Atmel FLIP 2.4.6. Most buttons on FLIP GUI should be not selectable (greyed out).
2. Check USB jumper installed on PSUC PCB.
3. Box in upper right corner of FLIP window should say 'AT89C5131.' If not, choose 'Device'->'Select' from the menu (or press device button) and select 'AT89C5131' from list.
4. Choose 'File'->'Select Hex File' from the menu. Select the correct hex file to load.
5. Choose 'Settings'->'Communication'->'USB' from menu (or press the Connection button and select 'USB.'). The USB Port box should appear.
6. Use one hand to simultaneously press and hold both 'Reset' and 'Prg-En' buttons on the PSUC PCB.
7. Using the other hand, insert free end of USB cable (square connector) into PSUC USB connector. (LED D3 (Power LED) on PSUC should go on as USB cable is inserted. If not jumper likely not installed.)
8. Release the 'Reset' button. Wait a split second (at least 1/10 second). Release 'Prg-En' button. This puts the AT89 microcontroller into program mode.
9. Select 'Open' on the USB Port box.
10. FLIP GUI should change to allow all buttons to be pressed. If this does not happen (i.e. "Cannot Open Port" error message received), repeat from step 5.
11. ***Make sure 'BLJB' tab on FLIP GUI is unchecked¹. If 'BLJB' is set, microcontroller will lose firmware on hard reset!
12. Make sure 'X2' tab on FLIP GUI is also unchecked.
13. PSUC is now ready to program. Press the 'Run' button.
14. Programming completes when 'Erase', 'Blank Check', 'Program', and 'Verify' tabs have all turned green with check marks.
15. Press "Start Application." When this happens PSUC has been successfully programmed. If this fails or an error message is received, go back to step 3 and try again.
16. Perform PSUC firmware verification.
17. USB jumper can now be removed. PSUC is ready for use in a PSU.

¹ Note: A new PSUC when connected will usually default to BLJB pin being checked. Watch out for this.