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10/2/2015

Fixing read and connection error on ATmega328P (and maybe some others)

In some cases the EEPROM on the ATmega32U4 gets corrupted or experiences problems. One of the clear signs is unrecognized characters in the mEDBG serial string. The usually look like <?>. If you are experiencing problems connecting to your device, this could be because your EEPROM is corrupted.

IMPORTANT: if you have bricked your device, this guide will not work exactly as described! It is possible that fiddling with your device may still allow you to regain functionality, but if your computer does not recognize the Xplained device as an “ATmega32U4” in the device manager under USB you will need to try uninstalling/reinstalling various drivers, and the driver package from ATMEL. This requires a more in depth process than covered in this guide. Contact Tyler.m.Hayslett@gmail.com for more details.

Step 1: Install FLIP. Its ATMEL software for writing hex directly to an ATMEL device over USB. Find it on the ATMEL website.

Step 2: Connect FLIP to the ATmega32U4. This may take some fiddling (see important notice, I had play around a bit with my drivers). Select the correct device from the devices list in FLIP and click the little button that looks like a USB plug.

Step 3: Select Flash, and clear the flash (erase). Then select EEPROM. (This will allow you to write to the EEPROM)

Step 4: in “C:\Program Files (x86)\Atmel\Atmel Studio 6.2\tools\mEDBG” (wherever ATMEL studio is installed) on your machine find “medbg_fw.zip”. In there will be a hex file. Extract the hex to somewhere you can find it easily.

Step 5: From FLIP, select the hex file, and with all the boxes checked, hit “Run”.

Step 6: When finished this should have fixed everything, and ATMEL studio should see the restored mEDBG with a clear new serial number. If not try reinstalling, rebooting, unplugging the device a couple times, or just repeat the whole hex writing steps. They don't take too long.

