Updating EVB002 Flash

This brief consolidates information published elsewhere to simplify the process of updating the flash on your EVB002.

The EVB002 is shipped with a bootable polyFORTH® system in its flash (level 03b2 initially. To understand exactly what was done to your board before shipping it to you, read PCBCOM from the Index of Downloads). With no-boot jumper removed, this sytem will boot on reset, await a ~~CR~~ space character on FTDI USB COM-B to autobaud, after which it announces itself and says hi awaiting instructions. You can get to this point by following the instructions in AN021 through 1.5. If this fails on a board you have not used, contact us; if you suspect you've clobbered your flash, follow the instructions in section 9 of DB013.

ASSUMING that you have a bootable polyFORTH system on your flash, you may do the following:

1. If you have not already done so, download the current version of arrayForth-3 from our website (Customer Support Central) with attention to DB013 section 2.2.1 (Installation on Win32 Platforms).

2. Connect to your EVB with SERIAL and bring the system up (reset, space, HI). OFFSET will be 0 and disk structured thus:

    a. 0 DRIVE absolute 0: 16256 usable blocks of flash (starting at absolute 128 on the flash itself).
    b. 20 DRIVE absolute 24000: 24000-block serial disk delivered with the system you installed.
    c. 40 DRIVE absolute 48000: 128-block boot area (starting at absolute 0 on the flash itself).

3. If your existing system is 03b2 (see block 29) as was delivered on the board, you'll need to consider whether you made changes to the system or added your own code in the first 4800 blocks. (If you're not sure, audit with DISKING utility; if you're not familiar with reconciling code in polyFORTH systems, contact hotline@greenarraychips.com for help.)

    a. If you have been using 03c and later systems, and if you've taken our advice to put your code into a project subdirectory of EVB002/projects as illustrated in the DEFAULT model distributed, your project directories will be preserved during installation and, if you choose the backup option during installation, the 4800 blocks of system source and shadows you may have changed will be saved in EVB002/backup . When you start saneFORTH from a shortcut you've made for your project which selects your project, then your code will be mapped on the serial disk in 4800-9600 as it was before the installation. Again, if you need help reconciling any O/S changes you might have made, contact hotline@greenarraychips.com for assistance.

4. After considering the above, copy new code from the serial disk to your flash as follows (the additional content if you plan to assemble F18 code includes your working object code for boot streams, and the reference code for comparison to detect unintended changes):

    a. (you need to be talking to pF on chip:) `0 DRIVE   BULK LOAD`

        i. (if all you want is polyFORTH and your project file:) `24000 0 9600 BLOCKS`
        ii. (OR, if you will be assembling F18 code:) `24000 0 16256 BLOCKS`

5. Once you've updated the flash, hit the reset button on your EVB, hit space on terminal emulator, and whatever mode of booting your project's config.txt file specifies will take place.

6. You've now updated all system source and the polyFORTH nucleus. If you would like to update the flash boot, which includes the polyFORTH virtual machine, do one of the following after saying **AFORTH** (note that the two stream load blocks cited below contain options for ether clock and ethernet NIC; select these options before the following.)

    a. `STREAMER LOAD  1671 LOAD  WRITE-FLASH` (for single chip polyFORTH only)
    b. `STREAMER LOAD  1668 LOAD  WRITE-FLASH` (for 2-chip polyFORTH only)

7. Finally, if you have changed the polyFORTH nucleus you'll need to make your source changes, compile them, and INSTALL to blocks 0..8; and, if you've changed the polyFORTH VM or added F18 code to the boot, you will need to remake your own boot stream and write it to flash. You should know how to do these things because you will have done them before.

If all else fails, start over by performing the full recommissioning procedure in the PCBCOM document from the index of downloads, and, if you have any questions or problems with any of the above, please contact hotline@greenarraychips.com .