HCS-II CPU Upgrade Instructions – v1.0

Creative Control Concepts

http://www.cc-concepts.com/

Upgrading your HCS-II will result in a performance increase of about 2.5! All without any circuit board modifications. By following these easy instructions, you should have your system upgraded in less than 30 minutes!

If you have any unanswered questions after reading these instructions, check out the FAQ on our website at http://www.cc-concepts.com/ or email us at support@cc-concepts.com

Check the contents of your upgrade kit to ensure you have all the necessary parts:

1 Z8S18020VSC CPU (PLCC)
1 v4.x XPRESS Firmware EPROM
2 62256 32K 70ns RAM ICs (DIP)
1 DIP IC Extraction Tool (Yellow Handle)
1 PLCC IC Extraction Tool (Black Handle)
1 Disposable Static Strap
1 HCS-II Software Floppy

Once you've ensured you have all the proper parts, you are ready to upgrade your system.

First, power down your HCS-II controller and open whatever enclosure it is in (if any). Remove the static strap from its package and follow the directions for putting it on. Ensure you attach the copper end to a clean, grounded, metal surface.

Remove any daughter boards installed on your HCS-II controller (you can remove the whole stack instead of doing it one by one if you like). It is not necessary to remove the HCS-II controller board from its enclosure though it may make things easier. You will need direct access to Sockets U1, U9, U10, and U11.

Remove the backup battery from its holder B1 **OR** slide a thick piece of paper between the top of the battery and the retaining clip.

Using the DIP extraction tool, remove the RAM and EPROM chips U9, U10, and U11 from their sockets. Some of you may not have log RAM in position U10 which is fine. After you finish the upgrade you will. To use the DIP extraction tool, insert the catches underneath the chip at each end (NOT the socket), gently squeeze and pull the DIP from the socket. A gentle rocking motion may help.

If you have an RTC-180 board, you will likely pull the SmartSocket out along with the RAM IC. Simply use a small flat-head screwdriver to remove the RAM IC and then reinstall the SmartSocket, ensuring proper polarity.

Install the new DIP ICs. The XPRESS firmware EPROM should be installed in socket U9. The RAM chips should be installed in sockets U10 & U11. They are identical chips. You may find it beneficial to slightly bend the pins inward on each IC by pressing them into a flat, hard surface first. Once installed, make sure no pins were bent and that all pins are firmly seated in their sockets.

Remove the CPU from socket U1 using the PLCC extraction tool. Do this by inserting the hooks into the two small slots in the socket near two opposing corners. Once the hooks are inserted, squeeze the handles together on the tool and the CPU should pop up to the top of the socket.

Install the new CPU in socket U1. You will notice that the CPU has one corner that is flat. This should be aligned with the corner of the socket that is also flat. Place the CPU on top of the socket and ensure the CPU lies flat and the plastic ridges in the socket line up BETWEEN the CPU pins. When they do, gently press down on the chip until it snaps into place. **BE CAREFUL!** Misaligned chips can break PLCC sockets, which are VERY difficult to replace!

The hardware upgrade is now complete. Reinstall the battery or remove the insulating paper. Reinstall any daughter boards you removed and power up the controller.

Connect the HCS-II to your PC and launch the new HOST from the software floppy included with the upgrade kit. Set the real-time clock using the Alt-C, T command. If the clock then begins to increment, the upgrade is a success! Note you may have to attempt the clock set command a few times before it works.

Using the new compiler, recompile your XPRESS program and upload it using HOST. Your upgrade is complete! No XPRESS changes are needed.

If you encounter any problems, email us at support@cc-concepts.com or call our support department at 919-304-3107.