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Addendum to HPCN User's Guide: Quick-Start Guide

This quick-start guide explains how to prepare the High-Performance Computing Platform-Net (HPCN) evaluation board, connect it to a host system, and boot Linux. For more information and details about the platform, consult the HPCN user's guide, entitled *HPCN—A High-Performance, Low-Profile Networking Server System* (order no. HPCNUG).

Contents

1 Connecting HPCN

This section describes how to connect the HPCN system to the local host computer and configure terminal emulator software to communicate with HPCN.

Figure 1 shows a rear view of the HPCN evaluation board chassis.

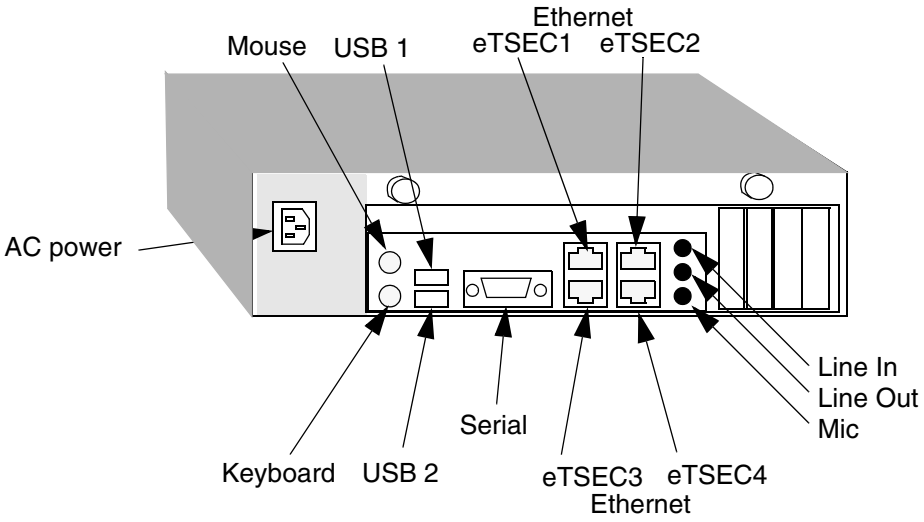


Figure 1. HPCN Evaluation Board Chassis—Rear View

1.1 Connect Ethernet, Serial, and Power Cables

1. Connect the AC power cable to the matching receptacle.
   NOTE: **AC input power is set to 115V @ 60Hz.**. For specific instruction on how to change the input selection, consult the Input Power Selection Flyer enclosed in the kit.
1. Plug the power cord into a surge-protected power strip (recommended).
2. Connect the surge-protected power strip to an AC outlet.
3. Connect a 9-pin “null-modem” serial cable (included) between the HPCN serial connector and the host-computer serial port (any COM port compatible with the host-computer’s terminal emulator, typically COM1 or COM2)
4. If network capability is desired, connect Ethernet cable between Ethernet port “eTSEC1” and your local 10/100/1G-bit network or hub (the other Ethernet ports may also be used). The ports automatically adjust to the correct speed
5. If a Linux GUI (Graphical User Interface) is desired, attach a mouse and keyboard (not provided) to the legacy PS/2 ports or to the USB ports. Attach a video monitor to the slot-based video card (not provided).

1.2 Set Up Serial Communications with Host System

Using a terminal emulator (such as Terminal or PowerTerm on Linux, or HyperTerminal or SmartComm on Windows).

- Baud rate: 115,200 kbps
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

- Terminal Emulation: VT102/VT52

2 Power-Up and Log-On

2.1 Power Up System

Press the power button on the front panel. Figure 2 shows a front view of the current HPCN evaluation board chassis.

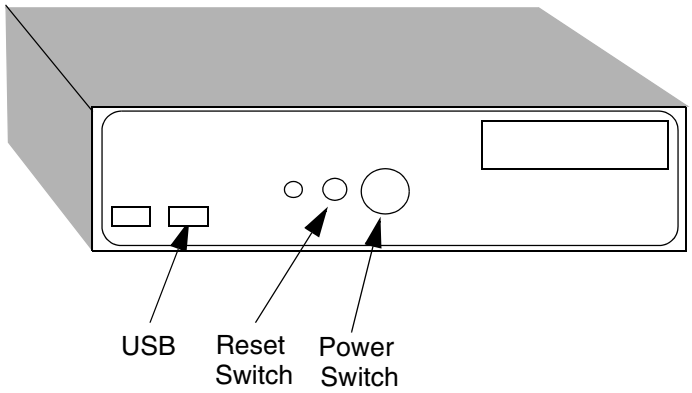


Figure 2. HPCN Evaluation Board Chassis—Front View

Note that the chassis market undergoes rapid obsolescence, so Freescale may substitute equivalent ATX/microATX chassis as needed.

2.2 Log On

1. When powered up, the system will automatically boot. By default, U-boot write several diagnostic messages to the serial port, and will automatically boot Linux after the system is setup.
   NOTE: Early systems may require the reset switch to be manually pressed after power-up. If no messages are seen on the serial console after power-up, press the reset switch.
2. Wait for the system to boot (this may take a few minutes). The terminal will display numerous messages while booting.
3. If necessary, the boot process can be interrupted by pressing any key while U-boot is booting up. Booting can be resumed by executing the **boot** command at the U-boot prompt. If the Linux kernel has started booting, it cannot be interrupted.
4. At the login prompt, enter the user name ‘root’. No password is required. (The same username and password are also used if connecting remotely via Ethernet.)
5. The Linux command prompt will appear, indicating that Linux has been successfully booted. If the command prompt does not occur, the system can be reset or powered down.

2.3 Powering Down

If Linux was booted, and in particular if the hard disk was used, a more graceful powerdown sequence is strongly recommended (as opposed to simply turning the power off). At the Linux console, enter the command:

```
shutdown -h now
```

If Linux was not booted, either due to a kernel panic or some sort of error; or if only U-boot or DINK were used, the system can be simply turned off or reset when needed.

2.4 Powering Off

To prevent accidental power-off of the system, the APM (advanced power management) function of the ULI M1575 defaults to requiring a 4 second duration of the power button.

To turn off the system, simply press the power button for 4 seconds.

3 What's Inside

This section describes how to open the case in order to verify factory default settings and change system hardware settings. To change system settings, or if the system does not appear to operate correctly, the case must be opened.

CAUTION: Always observe appropriate static precautions while performing the operations described in this section.

3.1 Open Case.

1. Power down the system by pressing the power button on the front panel for four seconds.
2. Disconnect the AC power cable.
3. Remove the two thumbscrews at the top of the rear panel; see Figure 3.

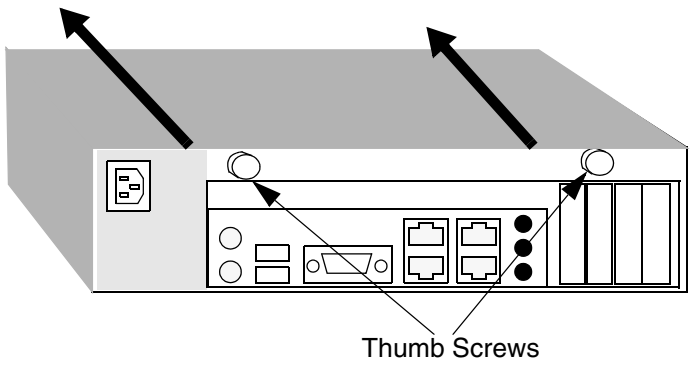


Figure 3. Removing the Cover—Rear View

5. Grasping each side of the case, slide the top of the case forward, then lift and remove the top cover. Figure 4 is a diagram of the HPCN evaluation board.

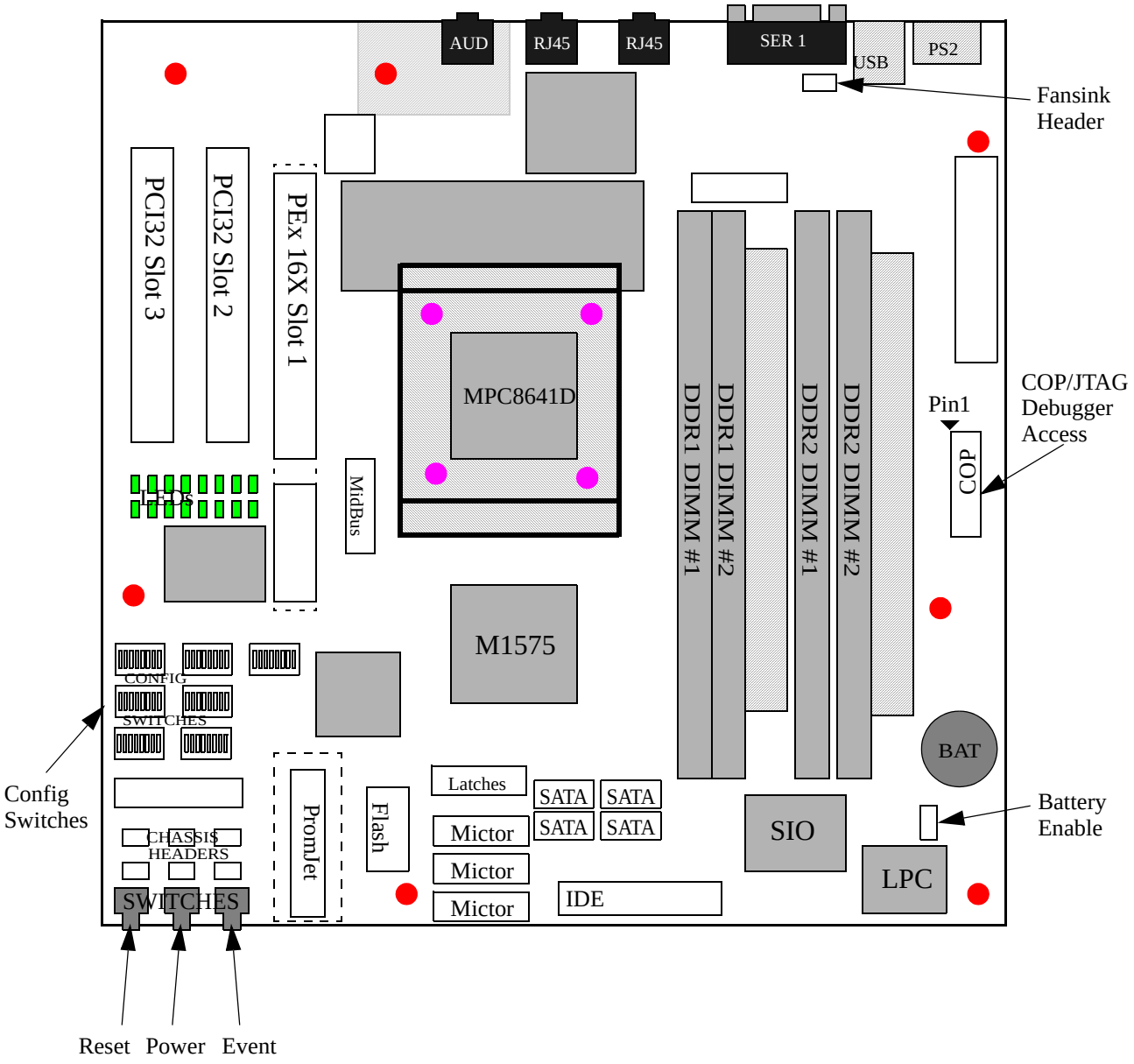
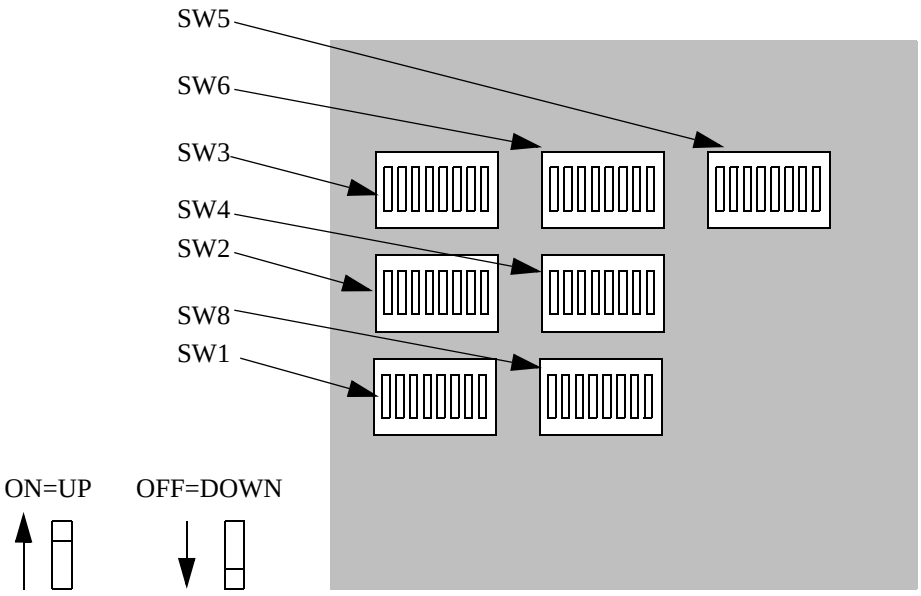


Figure 4. HPCN Evaluation Board Diagram

3.2 Confirm Factory Settings for Jumper Headers

1. Verify that a jumper is installed in "Battery Enable" header J14, across pins 1-2 (those closest to the battery).
2. Verify that CPU fansink power cable is connected to the Fansink Power Header.
3. Verify that chassis power switch is connected to header J18.
4. Verify that chassis reset switch is connected to header J16.

3.3 Verify and/or Change Configuration Switch Settings



Switch functions and default settings are provided in the HPCN Design Workbook, entitled *HPCN—A High-Performance, Low-Profile Server System* (order no. HPCNUG). The following are some typical examples of settings or modes that may be desired:

1. Boot DINK32 instead of U-boot/Linux

   Set SW5-1 (SW5, position 1) to OFF.

CAUTION: Some switch settings, especially those controlling CPU core voltage and frequency, may cause unreliable operation and/or device damage. Consult the HPCN Design Workbook before changing any other switch settings from their factory default positions.

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