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PROMENTUM™

COMPUTE PROCESSING MODULE

INSTALLATION GUIDE

ATCA-4300
ATCA-4310

This document describes how to install and set up the Promentum ATCA-4300 or ATCA-4310 compute processing module (CPM).



ESD procedures

WARNING! Obey the electrostatic discharge (ESD) procedures described at www.radisys.com/esd when you install the product. Electrostatic discharge can cause permanent damage to static-sensitive components in this product.

Important ESD procedures include:

- Keep the product in its ESD shielding bag until a step tells you to remove it.
- Put on a grounded wrist strap before you move near or touch the product.
- Install the product only in a grounded work area.

Before you begin

Check your parts and accessories.

Included in the package

- An ATCA-4300 or ATCA-4310 CPM.

Optional components

- A rear transition module (RTM).
- 1 or 2 advanced mezzanine cards (AMCs).

Not included in the package

- An AdvancedTCA® shelf, such as the ATCA-6000 or ATCA-6006.
- An installer for an operating system (OS), such as Red Hat®.
- The Promentum software distribution (www.radisys.com).
- A USB CD-ROM drive and CD or another USB storage device from which to retrieve the OS for the initial installation.
- A USB cable.
- A console serial cable (RJ-45 to DE9-S, RadiSys order code ATCA-SERIAL-CBL). The same cable is included in shipments of the ATCA-2210 switch and control module.

Note: This installation guide instructs you to load an OS from a CD-ROM drive when you initially install the CPM. If an OS is already installed (for example, on a hard drive AMC), you can ignore many of the steps.

007-02236-0002 • May 2008
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Hardware installation

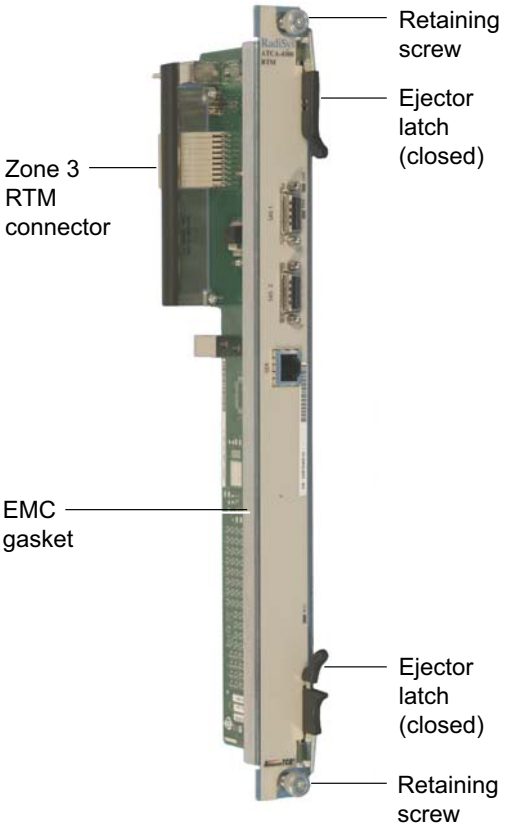
Install the AMCs—optional

If you are adding advanced mezzanine cards (AMCs) to the CPM, follow the steps in the *Advanced Mezzanine Card (AMC) Installation Guide*.

Install the rear transition module—optional

The optional RTM is hot-swappable—it can be installed before or after the CPM is installed and while power is applied to the shelf. This procedure explains where and how to install the RTM.

1. Identify placement in the back of the shelf. For example, if the CPM is installed in slot 1 in the front, the RTM will connect to the back of the shelf in slot 1.
2. Remove the airflow management panel, if present, from the back of the shelf where the RTM is to be installed.
3. Remove the RTM from its ESD shielding bag.
4. Inspect the EMC gasket to make sure it is free of debris. Lift the RTM ejector latches to the open position, and insert the RTM into the back panel slot. Use firm pressure to fully seat the RTM in the backplane connector. Make sure the EMC gasket seals the surfaces it touches.
5. Once the RTM is seated, simultaneously close both ejector latches.
6. Tighten the retaining screws in the top and bottom of the RTM panel.



Install the CPM into an ATCA shelf

The CPM is hot-swappable—it can be installed while power is applied to the shelf. This procedure assumes the power is already applied to the shelf.

1. Determine the node slot where the CPM is to be installed. Avoid the slots reserved for the hub modules. For example, the hub slots are 7 and 8 in an ATCA-6000 shelf and 1 and 2 in an ATCA-6006 shelf.
2. Remove the CPM from its ESD shielding bag.
3. Lift the ejector latches to the open position. Before inserting the CPM, inspect the EMC gasket to make sure it is free of debris.
4. Holding the ejector latches in the open position, slide the CPM all the way into the shelf.
5. When the ejector latches reach the latch rail on the shelf, close both ejector latches, but open the *bottom or right* latch again right away (so only the *top or left* ejector latch remains closed). This will prevent the CPM from booting. In *Set up the BIOS* on page 4, you will be instructed to close the other ejector latch to start the bootup.
6. Make sure the front panel EMC gasket seals the surfaces it touches.

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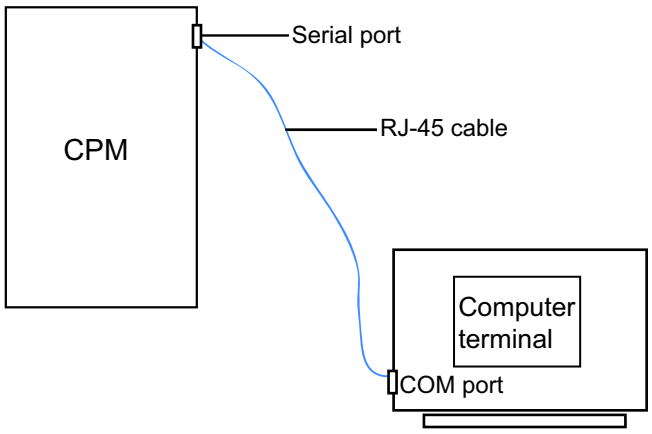
Connect a computer terminal to the serial port

This section explains how to connect a computer terminal in order to display and interact with the operating system software.

1. Connect a serial cable to the serial port of the CPM.
2. Connect the other end of the cable to the COM port of an external computer terminal, such as a laptop.
3. Configure the terminal emulator on the external computer to match the default settings for the CPM serial port: 115200 bps, no parity, 8 data bits, I stop bit, no flow control. For best display results, the terminal should be set to 80 columns by 25 lines.

   Note: If distorted characters are displayed, double-check that the same communication parameters are set for both the serial port and the COM port.

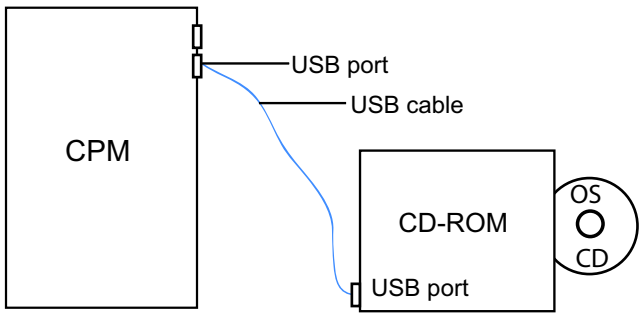
Figure 1. Serial port connections



Connect a CD-ROM drive to the USB port

Connect a CD-ROM drive to the USB port on the front panel of the CPM.

Figure 2. USB connections



Software configuration and installation

The instructions in this section apply to the first-time installation of an OS in a development or integration lab.

Additionally, this section describes how to choose the BIOS menu items that allow booting from the device containing the OS installation media. Once the boot device is selected, the OS can be installed on another hard drive device, such as a hard drive AMC.

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Set up the BIOS

1. Insert the operating system CD into the CD-ROM drive.
2. Close the open latch of the CPM by pushing it toward the center of the front panel to start the power-on process. Tighten the retaining screws of the front panel to ensure proper connector mating and prevent the CPM from loosening due to vibration.

   Wait for the blue hot-swap LED to turn off and for the power LED to turn solid green. It may take 5 to 10 seconds for the CPM to reach this power-on state.

   If the hot-swap LED does not turn off, check to make sure the CPM is fully seated and the latch is completely closed. For additional troubleshooting solutions, refer to the reference manual for your platform.
3. After the CPM is powered on, the BIOS will begin. When the BIOS banner appears, press the F2 function key on the terminal to activate the Main BIOS menu. The following BIOS setup steps are recommended before initial bootup:

   a. Navigate through the Main menu to set the date and time for the system.

   b. Make the USB CD-ROM drive the highest priority boot device for OS installation, as follows:

      i. Navigate to the Boot menu, and select the Boot Device Priority option.

      ii. For the ATCA-4300, in the Boot Device Priority submenu, move the USB Drives option to the top of the list. From the Boot menu, select the USB Drives option, and move the USB CDROM option to the top of the list.

      iii. For the ATCA-4310, in the Boot Device Priority submenu, move the USB CDROM option to the top.

      Note: For initial installation of an ATCA-4310, avoid setting an on-board flash device as the boot device with highest priority, because the flash device may be blank.

      For other BIOS setup options, see the *ATCA-4300/ATCA-4310 Compute Processing Module Reference*.

   c. Save your changes, and exit.

Install the operating system and RadiSys software packages

Once you save and exit the BIOS, the CPM reboots. The BIOS loads the CD from the CD-ROM drive.

1. Use the installation directions provided by the OS vendor to install the OS. If you install a version of Red Hat, be sure to use the serial boot command (**`boot: linux serial`**) when prompted, since this command is needed for a device using a serial connection to a terminal.

   For more information about configuring the OS for the CPM and installing the OS onto a hard disk, see the *RadiSys Developer's Guide*, which is included in the Promentum software distribution.
2. Install the RadiSys RPM packages from the Promentum software distribution (optional).

   For information about installing packages, see the *Software Guide for Management Processors and General Purpose Computing Processors*. For development information such as cross-compiling RPMs, see the *RadiSys Developer's Guide*.
3. For the ATCA-4310, install the 10-Gb Ethernet driver supplied by your OS vendor. The driver enables the Ethernet controller and the Fabric interface to function at 10 Gbps. To make the driver start at boot time, rebuild the module dependencies for the target CPM. For more information, see the *depmod* man page.

Where to get more product information

Please visit the RadiSys Web site at www.radisys.com for product information and other resources. Downloads (manuals, release notes, software, etc.) are available via the Technical Support Library product links at www.radisys.com/support or the product pages at www.radisys.com/products.

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