A   Servicing Components

Powering Down the System

To power down the OmniCore routing switch, simply unplug the power cords. There will be a short power down sequence in which the LED on each power supply will change from green to amber to off. Please wait until the OmniCore routing switch has completed the power down sequence before performing any maintenance.

Removing and Installing Interface Modules and EMMs

This section provides information needed to remove and install interface modules and EMMs on the OmniCore routing switch. The OmniCore 5052 chassis has a total of fourteen slots and the OmniCore 5022 has seven slots. Slots 1 and 2 are reserved for EMMs. EMM cards can only reside in slots 1 or 2. Slots 3 through 14 (5052) or slots 3 through 7 (5022) may be populated with any combination of interface modules.

❖ **Hot-Swapping Modules** ❖

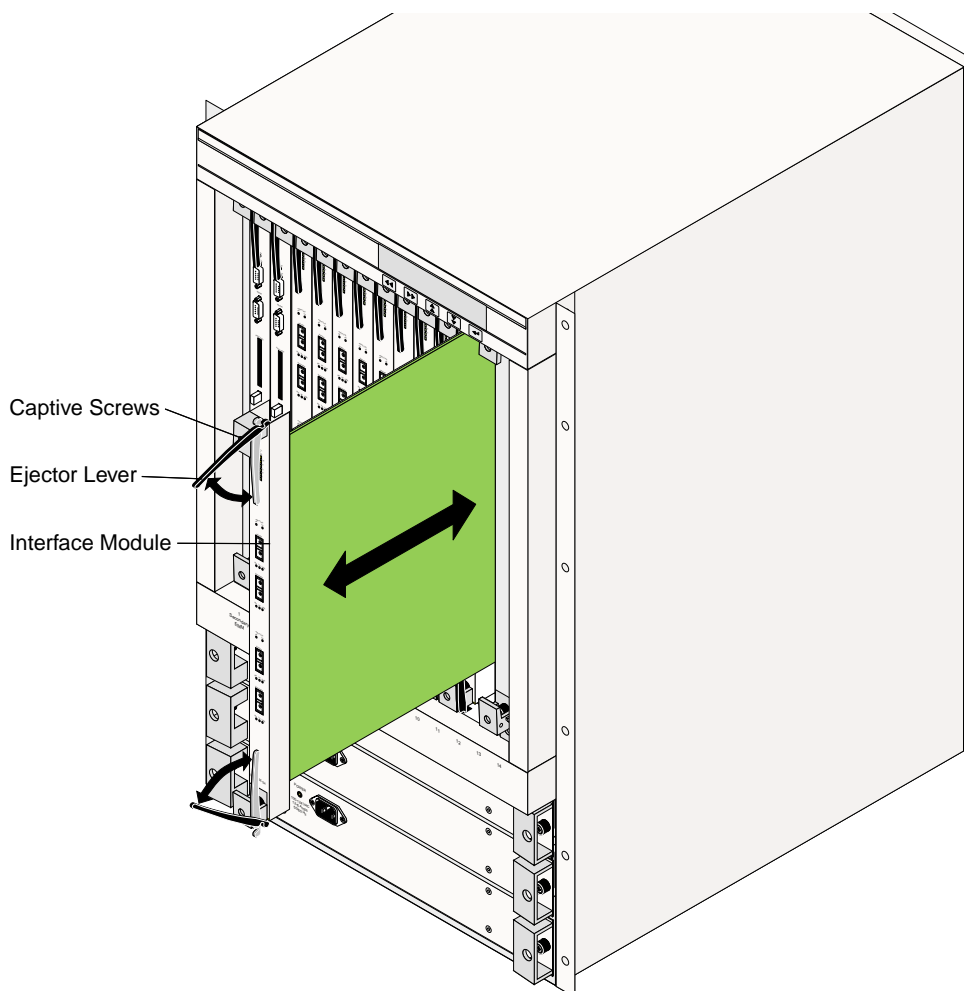When hot-swapping modules, an interface module may not load its software image if it is removed and then quickly reinserted. Wait at least 5 seconds before reinserting the interface module into the slot.

❖ **Removing and Re-Seating Modules** ❖

When removing and re-seating a module, it is important to remove any connectors, remove the module, and wait 5 seconds before re-seating the card and re-attaching the connectors.

Removing an Interface Module or EMM

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore routing switch provides one grounding plug on the far-left front of the chassis.

2. Loosen the captive screws at the top and bottom of the interface module by inserting a Phillips-head screwdriver into the holes on the yellow brackets.

3. Pull outward on the top and bottom ejector levers until the board is freed from the midplane connector, as seen in the following illustration.

4. Carefully slide the interface module out of the slot, pulling it straight toward you.

5. Place the interface module into an anti-static bag (or on an anti-static surface).

6. If the slot is not going to be populated for an extended period of time, cover the slot with a blanking panel to ensure the OmniCore routing switch receives adequate airflow and cooling.

7. Repeat steps 1-6 to remove an additional interface module or EMM.

Captive Screws

Ejector Lever

Interface Module

Removing/Installing an Interface Module
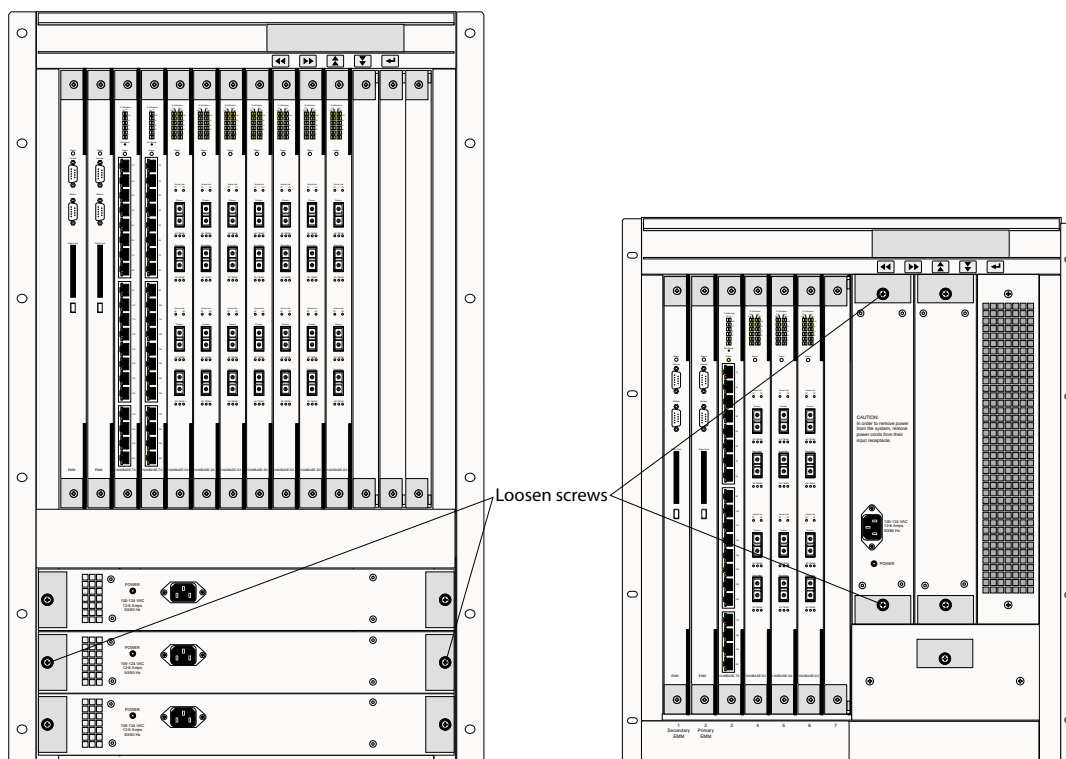
Installing an Interface Module or EMM

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore routing switch provides one grounding plug on the far-left front of the chassis.

2. Take off the blanking panel covering the slot where you will install an interface module. To ensure the OmniCore routing switch receives adequate airflow and cooling, keep all other slots covered.

3. Carefully remove the card from the shipping box.

4. Take the card out of its anti-static bag. It is recommended that you save all packing materials for the interface module in case you need to reship it or store it.

5. Inspect the card for any shipping damage. If the module is damaged, immediately contact Alcatel Customer Support. Do not install a damaged module.

6. To install the card, orient the card so that the component side of the board is to your left, see figure *Removing/Installing an Interface Module* on page A-2. Keeping the card straight and ensuring that the card lines up with both the upper and lower card guides, slowly slide it into any of the chassis' available slots.

7. Examine both the upper and lower tracks, making sure that the card is properly seated in the card guides, then engage the ejector levers into the chassis and press them inward until the board seats in the midplane connector.

8. Tighten the captive screws at the top and bottom of the board.

9. Repeat steps 1-8 to install an additional interface module or EMM.

Removing and Installing AC Power Supplies

This section provides information on the removal and installation of the AC power supplies in the OmniCore 5052 and 5022 routing switch. You will need a Phillips-head screwdriver to remove or install a power supply.

Removing an OmniCore AC Power Supply

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore routing switch provides one grounding plug on the far-left front of the chassis.

2. Insert a Phillips-head screwdriver through the hole in the protective handle on each side of the power supply and loosen the captive screws securing the power supply assembly, see following figure.
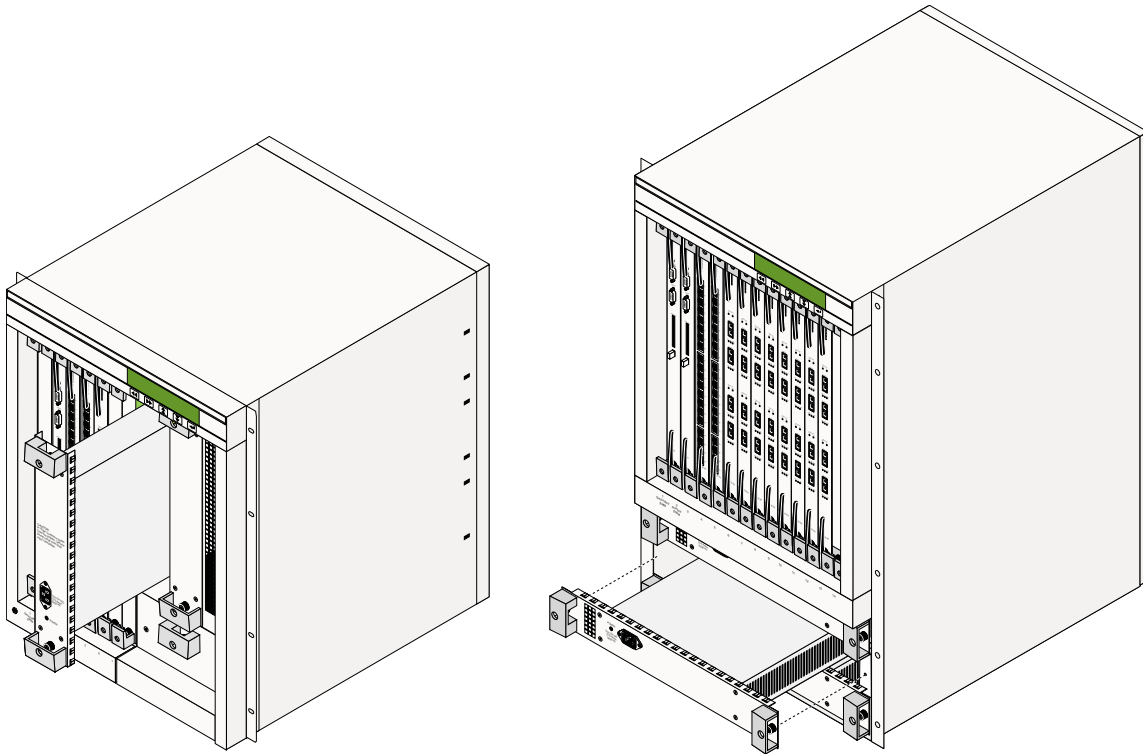
Captive Screws

3. Slide the power supply out of its slot. Grasp the power supply by the two handles and gently pull it straight towards you, see following figure.

4. Repeat steps 1-3 to remove any additional power supply assemblies.

❖ Warning ❖

If you are not immediately installing a new power supply, please install the power supply blanking panel (included) to prevent dust from entering the chassis and to maintain proper airflow for cooling. Leaving a power supply slot open for extended periods of time may cause the system to overheat.

Removing/Installing an AC Power Supply

Installing an OmniCore AC Power Supply

A power supply is installed by sliding it into one of the three power supply slots located at the bottom of the OmniCore 5052 switch, or into one of the two power supply slots located at the OmniCore 5022's front right side, see figure *Removing/Installing an AC Power Supply* on page A-5. Please note, normally two power supplies are required for switch operation on the OmniCore 5052, and one is required for the OmniCore 5022.

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore routing switch provides one grounding plug on the far-left front of the chassis.

2. If you are replacing an AC power supply, remove it first (as described in *Removing and Installing AC Power Supplies* on page A-4).

3. Remove the new power supply from its packing material.

❖ **Note** ❖

It is recommended that you save all packing materials for the power supply in case you need to return it.

4. Inspect the power supply for damage. If the power supply appears to be damaged, do not install it. Contact Alcatel Customer Service for further instructions (see Appendix D, "Technical Support", for more information on how to contact Alcatel).

5. Slide the power supply into an open power supply slot on the front of the OmniCore routing switch, see figure *Removing/Installing an AC Power Supply* on page A-5. Hold the power supply by the front handles and slide the power supply into its slot until it is seated.

6. Secure the new power supply to the OmniCore chassis. Tighten the captive screws by pushing in on them with a Phillips-head screwdriver and turning them clockwise**.**

7. Repeat steps 1 through 6 to install any additional AC power supply assemblies.

8. For power-up procedures, please refer to the OmniCore Getting Started.

Removing and Installing DC Power Supplies

This section provides information needed to remove and install DC power supplies on the OmniCore 5052 and 5022 routing switches. You need a Phillips-head screwdriver to remove or install a power supply.
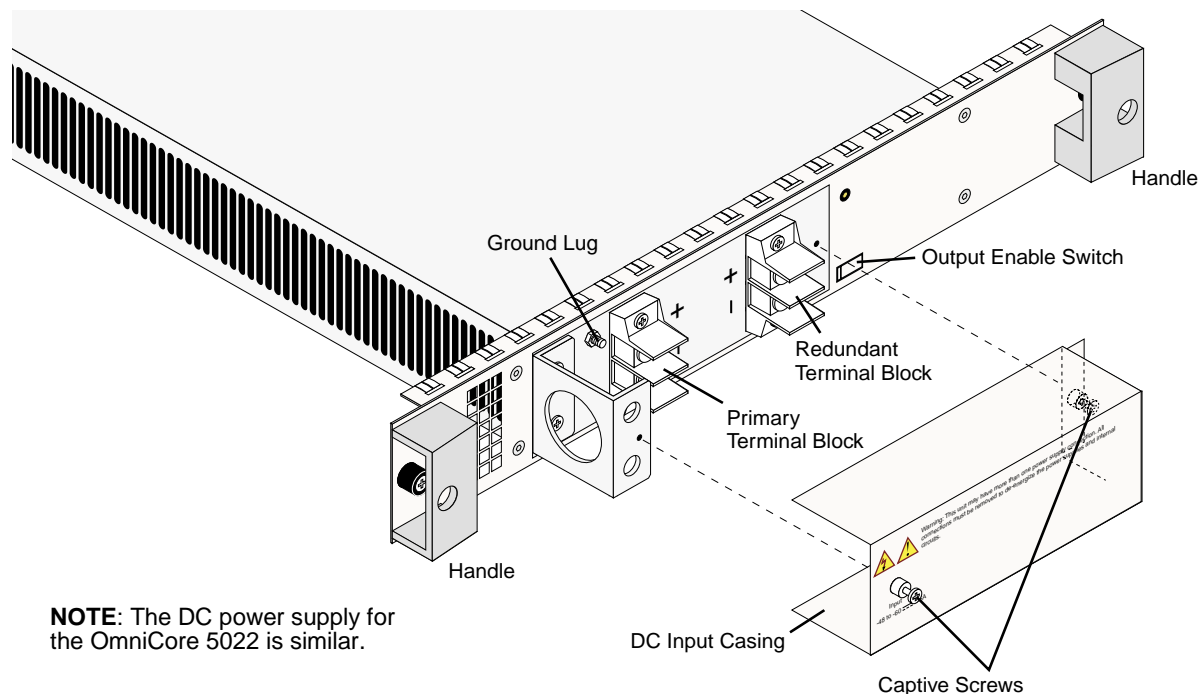
Removing an OmniCore DC Power Supply

1. Locate your building's circuit breaker and turn off power to the circuit that services the power supply you wish to remove. If redundant DC wiring leads are attached, you will need to turn off power to each circuit that services a set of inputs.

❖ Warning ❖

Before removing a DC power supply, ensure all power is removed to the equipment and the DC connection wiring. Do so by locating the disconnect device that feeds the circuit, switching it to the OFF position, and tag the circuit breaker and/or lock it into the OFF position.

2. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore routing switch provides one grounding plug on the far-left front of the chassis.

3. Ensure that the Output Enable switch is in the standby (|) position. The Output Enable switch is located on the power supply's front panel, just to the right of the DC input casing, see following illustration.
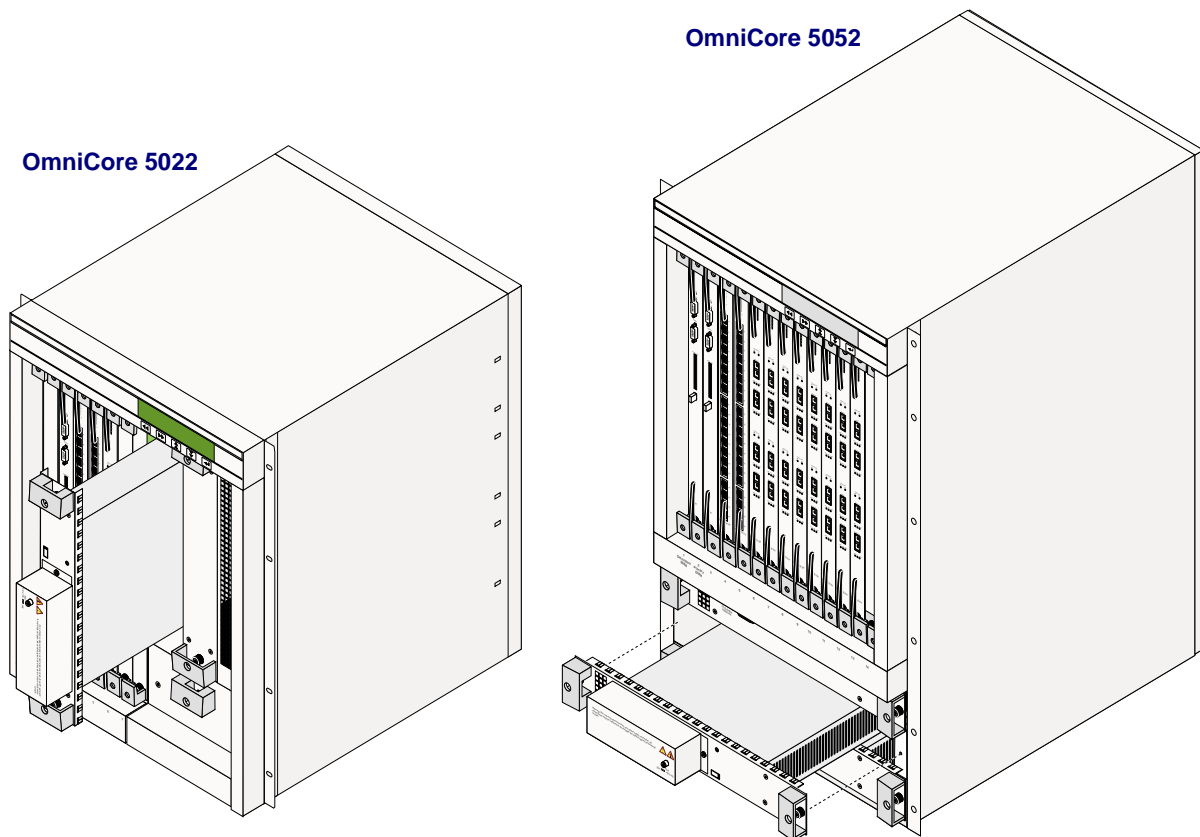

NOTE: The DC power supply for the OmniCore 5022 is similar.

DC Power Supply of the OmniCore 5052

4. Using a Phillips-head screwdriver, loosen the 2 captive screws on the DC input casing and remove it, see figure *DC Power Supply of the OmniCore 5052* on page A-7.

5. Disconnect the ground wire from its ground lug and the DC wiring leads from their terminal blocks.

6. After removing the ground and DC input leads replace the DC input casing.

7. Insert a Phillips-head screwdriver into the hole of the handle on each side of the power supply, and loosen the captive screws securing the DC power supply to the chassis.

8. Slide the power supply out of its slot. Grasp the power supply by the handles and gently pull it straight towards you, see following illustration.

9. Repeat steps 1 through 8 to remove any additional DC power supplies.

<p align="center">❖ **Warning** ❖</p>

If you will not be immediately installing a new power supply, please install the power supply blanking panel (included) to prevent dust from entering the chassis and to maintain proper airflow for cooling. Leaving a power supply slot open for extended periods of time may cause the system to overheat.

OmniCore 5052

OmniCore 5022

<p align="center">**Removing/Installing a DC Power Supply**</p>

Installing an OmniCore DC Power Supply

A power supply is installed by sliding it into one of the three power supply slots located at the bottom of the OmniCore 5052 switch, or into one of the two power supply slots located at the OmniCore 5022's front right side. Please note, normally two power supplies are required for switch operation on the OmniCore 5052 switch, and one is required for the OmniCore 5022 switch.

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore routing switch provides one grounding plug on the far-left front of the chassis.

2. If you are replacing a DC power supply, remove it, see *Removing an OmniCore DC Power Supply* on page A-7.

3. Remove the new power supply from its packing material.

❖ **Note** ❖

It is recommended that you save all packing materials for the power supply in case you need to return it.

4. Inspect the power supply for damage. If the power supply appears to be damaged, do not install it. Contact Alcatel Customer Service for further instructions.

5. Slide the power supply into an open power supply slot on the front of the OmniCore routing switch. Hold the power supply by the front flanges and slide the power supply into the slot until it is seated, see figure *Removing/Installing a DC Power Supply* on page A-8.

6. Secure the power supply to the OmniCore chassis. Tighten the screw under each handle by pushing in on them with a Phillips-head screwdriver and turning them clockwise.

7. Repeat steps 1 through 6 to install any additional DC power supply assemblies.

8. For power-up procedures, refer to the *OmniCore Getting Started Guide*.

Removing and Installing Rear Cards

This section provides information needed to remove and install rear cards for the OmniCore 5052 and 5022 routing switches. As with the front interface modules, each rear card is placed in a slot that guides it into proper alignment with the switch interface.

Removing a Rear Card on the OmniCore 5052

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore 5052 routing switch provides one grounding plug on the far-left front of the chassis.

❖ Caution ❖

All OmniCore 5052 rear cards are hot-swappable. However, data loss or interruption of service may occur if you remove a rear card that is in use. It is recommended that only non-functional rear cards be removed.

2. Although OmniCore 5052 rear cards are hot-swappable, you may, if desired, power down the system by unplugging the power cords.

3. Using a Phillips-head screwdriver, loosen the screws on the rear card cover and lift it from the chassis, see figure *OmniCore 5052 Rear-Card Removal* on page A-11.

4. Locate the card to be removed. Ensure that the card you are removing is nonfunctional. The LED on a nonfunctional card will be either yellow (not operating properly) or off (not operational).

5. Pull firmly on both release levers of the card to disconnect it from the switch interface.

6. Grasping the opened release levers, slide the card toward you, being careful to maintain its parallel orientation to the other rear cards in the switch.

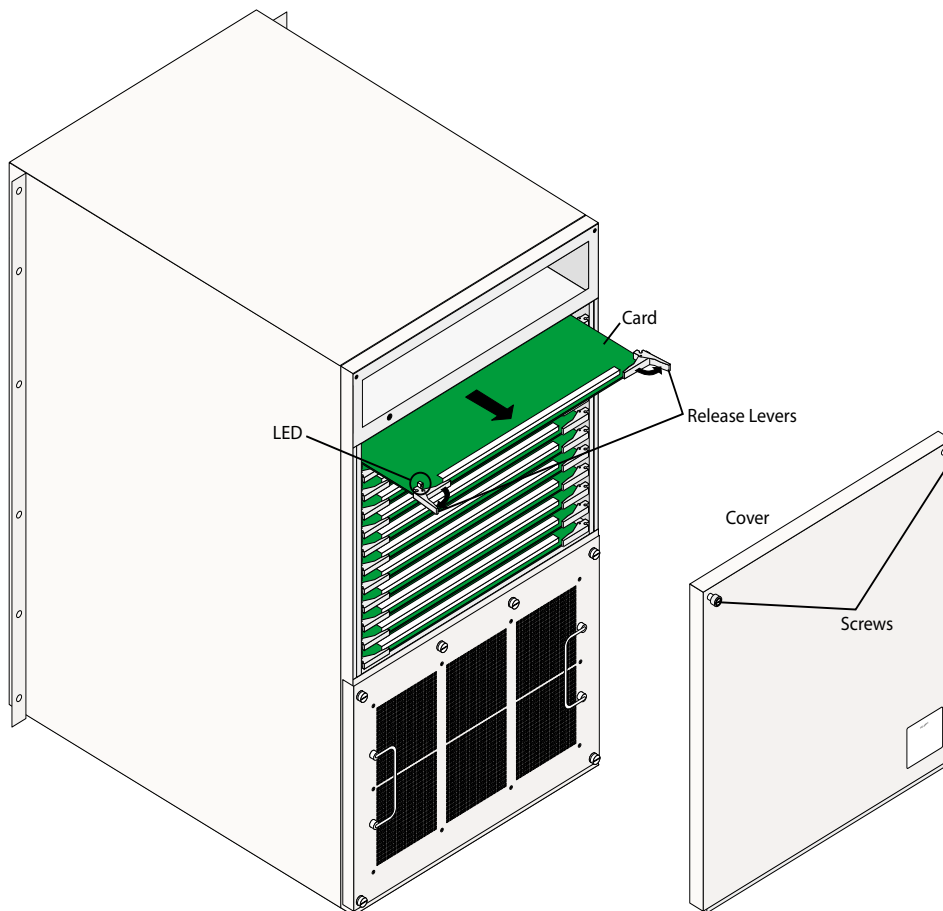## Installing a Rear Card in the OmniCore 5052 Switch

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore 5052 routing switch provides one grounding plug on the far-left front of the chassis.

2. Although OmniCore 5052 rear cards are hot-swappable, you may, if desired, power down the system by unplugging the power cords.

3. Using a Phillips-head screwdriver, loosen the screws on the rear panel and lift it from the chassis, see figure *OmniCore 5052 Rear-Card Removal* on page A-11.

❖ Note ❖

Before installing a rear card, be sure that you are installing it into the proper position. For more information, see Chapter 1, "OmniCore 5052 and 5022 Overview", for a description of the OmniCore hardware or contact Alcatel Customer Service.

4. Align the card with both card guides on the appropriate slot.

5. Gently slide the card into the slot until it just touches the switch interface.

6. Check that the release levers have engaged the frame rails.

7. Push both release levers toward the center of the card to lock the card into place.

8. Replace the rear-card cover and then replace and tighten the card cover screws.

OmniCore 5052 Rear-Card Removal

❖ **Caution** ❖

Operating the system with the rear card cover removed for extended periods may cause the unit to overheat and shut down
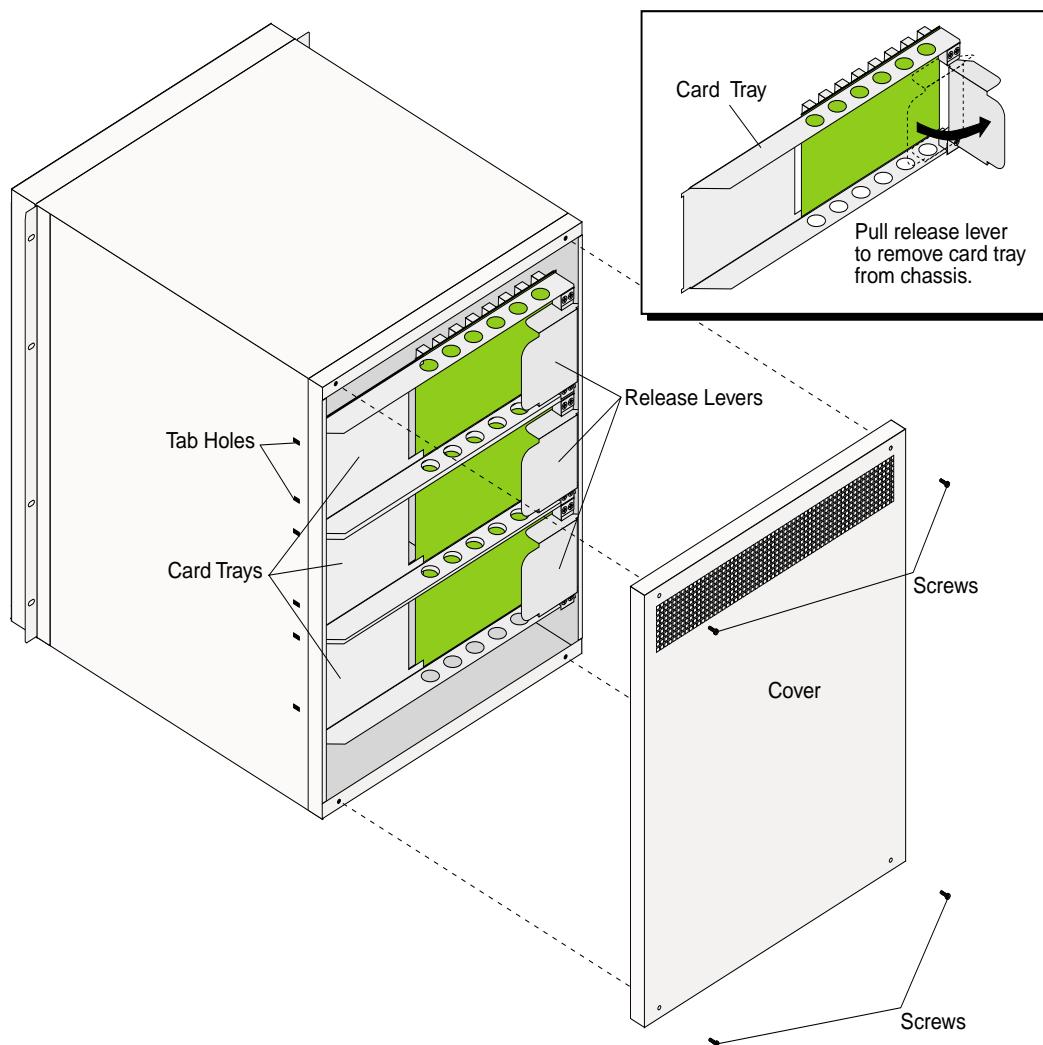
Remove a Rear Card in the OmniCore 5022

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore 5022 routing switch provides one grounding plug on the far-left front of the chassis.

✦ Caution ✦

OmniCore 5022 rear cards are **not** hot-swappable. Therefore, you must power down the switch before removing any rear cards. It is recommended that only non-functional rear cards be removed.

2. Using a Phillips-head screwdriver, take the rear card cover off by removing the 4 screws securing it and lift it from the chassis.

OmniCore 5022 Rear-Card Removal

3. Locate (but do not yet service) the rear card you plan to remove, and ensure that it is nonfunctional. The LED on a nonfunctional card will be either yellow (not operating properly) or off (not operational).

4. Power down the system by unplugging the power cords.

5. Gently pull the release lever towards you until the connectors on the card tray disengage the chassis, see figure *OmniCore 5022 Rear-Card Removal* on page A-12.

6. Pull the card tray away from the chassis and place it in an anti-static bag (or on an anti-static surface).

❖ **Caution** ❖

Operating the system with the rear card cover removed for extended periods may cause the unit to overheat and shut down.

Installing a Rear Card in the OmniCore 5022

1. Avoid unnecessary ESD damage by putting on a wrist strap and connecting it to the chassis. The OmniCore 5022 routing switch provides one grounding plug on the on the far-left front of the chassis.

2. Power down the system by unplugging the power cords.

3. Using a Phillips-head screwdriver, take the rear card cover off by removing the 4 screws securing it and lift it from the chassis, see figure *OmniCore 5022 Rear-Card Removal* on page A-12.

❖ **Note** ❖

Before installing a rear card, be sure that you are installing it into the proper location.

4. Align the card tray tabs with both of the tab holes on the *left side* of the chassis, which correspond to the vacant rear card position, and insert the tabs into the holes, see figure *OmniCore 5022 Rear-Card Removal* on page A-12.

5. Ease the card tray towards the chassis until the card engages the guide pins.

6. With the release lever tabs inserted into their corresponding tab holes on the *right side* of the chassis, gently push the release lever toward the center of the chassis to lock the card into place.

7. Replace the rear card cover and then replace and tighten the card cover screws.

Using a Modem with the Console Port

If necessary, you can connect a modem to the console port on a OmniCore 5052 or 5022 EMM for remotely configuring the routing switch. While most modems are compatible, Alcatel recommends the US Robotics Modem, which is described in this section. If you are using a different modem, your installation procedures may vary.

To use a modem with the console port, you will need two modems (one for the OmniCore routing switch and one for your remote PC); two standard, non-null, AT 9-pin (female) to 25-pin (male) modem cables; and access to the Microsoft Windows HyperTerminal program. You must perform these tasks to use a modem with the console port:

- Attaching a modem to the EMM's console port
- Attaching a modem to your PC
- Configuring HyperTerminal settings
- Establishing a HyperTerminal session

Attaching a Modem to the EMM's Console Port

1. Ensure the modem's power is turned off.

2. On the back of the modem, set the Dual In-line Package (DIP) switches to the following:

   ```
   Off – 3, 5, 6
   On – 1, 2, 4, 7, 8, 9, 10
   ```

3. Using one of the two modem cables, attach the 9-pin connector to the EMM's console port, and the 25-pin connector to the back of the modem.

4. Plug in the modem's power adapter to a standard AC power outlet.

5. Connect one end of a phone line to a standard wall jack, and the other end to the JACK receptacle on the back of the modem.

6. Turn on the modem's power.

Attaching a Modem to Your PC

1. Ensure that the power on the second modem is turned off.

2. On the back of the modem, set the Dual In-line Package (DIP) switches to the following:

   ```
   Off – 1, 2, 4, 6, 7, 9
   On – 3, 5, 8, 10
   ```

3. Using the other modem cable, attach the 9-pin connector to the desired COM port of your PC, and the 25-pin connector to the back of the modem.

4. Plug in the modem's power adapter to a standard AC power outlet.

5. Connect one end of a phone line to a standard wall jack, and the other end to the JACK receptacle on the back of the modem.

6. Turn on the modem's power.

Configuring HyperTerminal Settings

1. Launch the Hyper Terminal program. By default, Hyper Terminal can be launched from the Windows Start bar on your PC by selecting Programs>Accessories>Hyperterminal>HyperTerminal.

2. Select Properties from the File menu.

3. In the Connect To tab, click the Configure button and enter the following settings in the appropriate fields, then click OK.

```
Bits Per second:      9600
Data bits:            8
Parity:               None
Stop bits:            1
Flow control:         None
```

4. Click on the Settings tab and select Auto Detect from the Emulation pull-down menu.

5. Click the ASCII Setup button and make sure that the Wrap Lines that Exceed Terminal Width checkbox is selected, then click OK.

6. Click OK to return to the session screen.

Establishing a HyperTerminal Session

1. In the HyperTerminal session screen, type **at** and press Enter. The modem should respond with OK.

   If you do not see OK, select Properties from the File menu and ensure that the COM port listed in the Connect Using field is the same COM port on your PC to which you attached the modem cable.

2. Type **atdt <phone number of the switch modem's phone line>** and press Enter. Remember to include any required prefixes, such as access codes, area codes, etc. For example, if the switch modem's phone line is (509) 555-6449, you would enter **atdt 1-509-555-6449**.
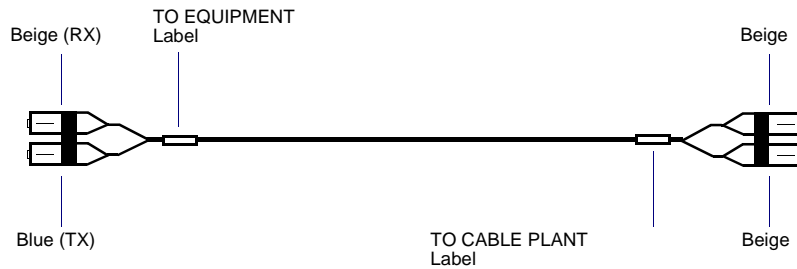
   Once the modems are communicating, you should see **CONNECT 9600/ARQ** on your session screen.

3. Press Enter. The CLI prompt will appear.

4. Perform the desired configuration tasks. Once you are finished, select Disconnect from the Call menu to end the session.

Using Mode-Conditioning Patch Cords

You can use mode-conditioning patch cords to avoid the loss of signal integrity that may occur when connecting a 1000BASE-LX or 1000BASE-LH transceiver to multimode fiber. These patch cords solve this potential problem by offsetting the light from the center of the cable.

As shown in the following figure, each cord provides labels to indicate which end connects to the equipment, and which end connects to the cable plant. The end that connects to the equipment is colored **blue** to indicate which connector attaches to the **transmitter**.
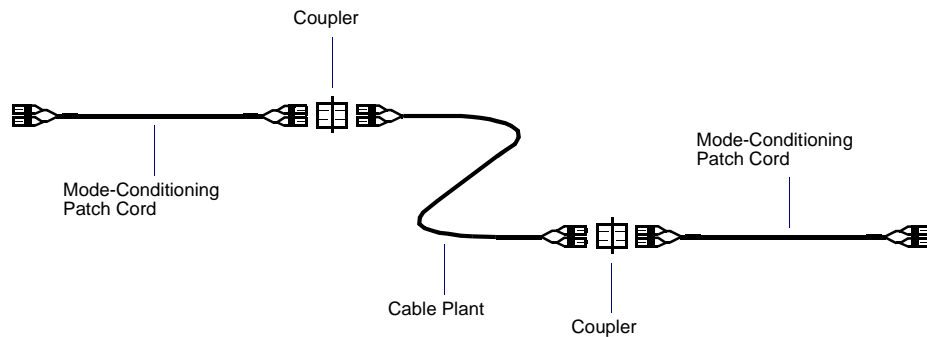

Mode-Conditioning Patch Cord

As shown in the following figure, a typical patch cord installation consists of the following for each cable plant:

- Two mode-conditioning patch cords
- Two multimode couplers

On each end of the cable plant, a multimode coupler is used to connect a mode-conditioning patch cord to the cable plant.

Typical Patch Cord Installation

Alcatel offers mode-conditioning patch cords in either 62.5/125 μm or 50/125 μm multimode fiber. While standard cord length is 3 meters long, any length (specified in meters or feet) can be specially ordered. For more information, please contact your Alcatel sales representative.