
Chapter 3. Installing Options

This chapter provides instructions to help you add options to your system unit. If you have several internal options to install, install them all at one time, while the system unit is still open. Install all SBC options first to prevent removing newly installed adapters or drives to access the SBC.

Use the figures in "General Layout of Components" on page 1-2 to locate components. Before performing any installation procedures, be sure to read the information in "Safety Information" on page E-10 and in "Handling Electrostatic-Discharge-Sensitive Devices" on page E-15. That information will help you work more safely with your computer and options.

CAUTION:

- **Power must always be turned off before performing any removal/replacement procedures. Electrical power and any backup power source also should be disconnected. To ensure that power is switched off and disconnected in the correct order, start every removal and replacement procedure with "Switching Off Power and Disconnecting Cables."**
- **Depending on the options installed, this system unit could weigh more than one person can comfortably lift. Do not attempt to lift it by yourself if you think it is too heavy for you.**

Attention

Whenever handling electronic components, use precautions to prevent component damage due to electrostatic discharge. See "Handling Electrostatic-Discharge-Sensitive Devices" on page E-15 for a list of those precautions.

Switching Off Power and Disconnecting Cables

Use the following procedure to power-down the system unit and disconnect all cables before beginning any removal or replacement procedure. If you need to remove the system unit from its mounting place, use this procedure before removing the system unit.

1. Remove any data media (diskettes, optical discs, and tapes).
2. Turn off the computer and all attached devices.
3. Record the location of all cables connected to the system unit to prevent confusing them while they are unplugged.
4. If you have a modem or fax machine attached, disconnect the telephone line from the wall outlet and then from the system unit.
5. Disconnect all electrical power and any backup power source.
6. Disconnect all other cables connected to the system unit. Where applicable, unplug the cable at the receptacle end first, and then at the device end.

When reassembling the system unit, reverse these steps.

Now you are ready to proceed.

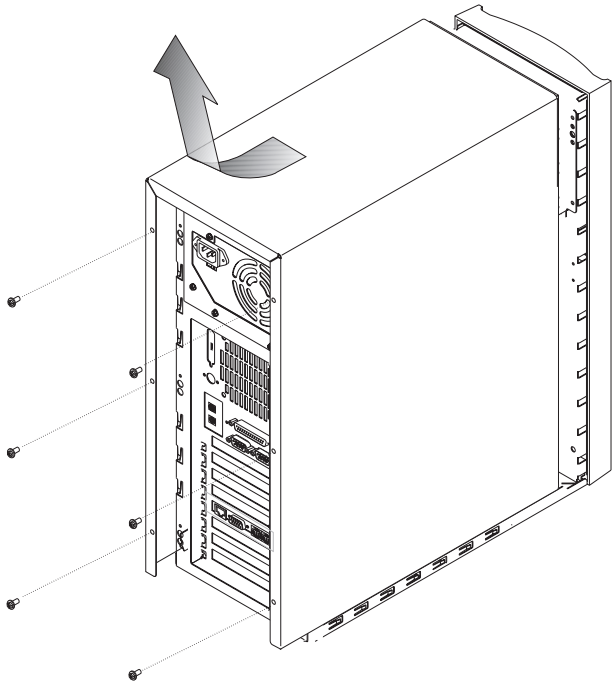
Opening the System Unit

CAUTION:

The system unit weighs 13.5 kilograms (30 pounds). If you must move it, do not try to lift it by yourself; get another person to help you.

To open the system unit, do the following.

1. Remove the six screws on the rear of the system unit that hold the cover in place.

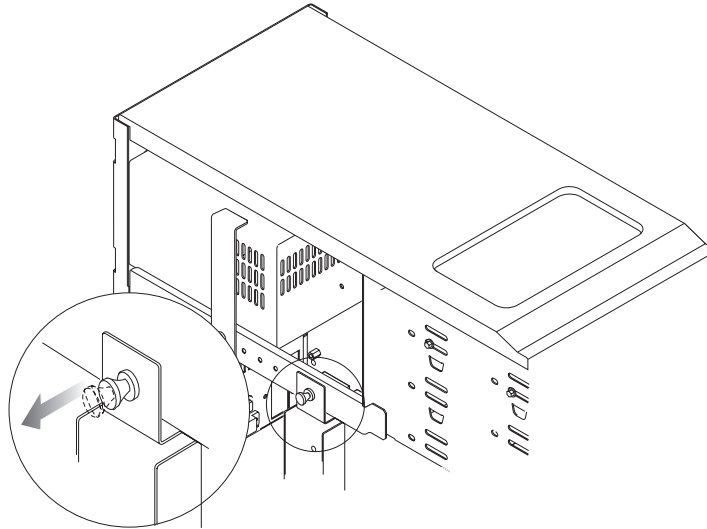


2. Slide the cover toward the rear of the unit until the front end of the cover is clear of the front panel.
3. Lift the cover off the chassis.

Removing the SBC

The 7563 Passive Backplane System uses a single-board computer for its processor. The SBC is described in Chapter 6, "IBM Single-Board Computer." To remove the SBC, do the following.

1. Remove the cover from the system unit.
2. Remove the card retainer bracket.



3. Record the position of any adapters that interfere with disconnecting cables from the SBC, and remove the adapters (see page 8-34).
4. Disconnect all the cables from the SBC.
5. Remove the screw that secures the SBC bracket to the chassis.
6. Pull the cables away from the SBC and carefully lift it out of the unit. (You might have to rock the SBC slightly from front to rear to remove it.)
7. Place the SBC on a flat surface, with the components facing up and the backplane connector toward you. Then continue with "System Memory (SIMMs)" on page 3-4.

System Memory (SIMMs)

Adding system memory to your system increases system performance by providing more memory for programs to use. If you have memory to install, continue with the following. Otherwise, go to “Installing a PMC Card” on page 3-8.

The SBC has four memory connectors that are grouped in two banks. Each connector supports 8-MB, 16-MB, 32-MB, and 64-MB SIMMs that are 60-nanosecond, EDO, gold-tab parity memory.

Memory must be installed in matched pairs (same size, speed, and type). You can increase total system memory by installing additional SIMMs, or by replacing SIMMs with larger capacity SIMMs. The system detects the additional memory automatically as part of POST, and will display a prompt for you to run configuration.

Notes:

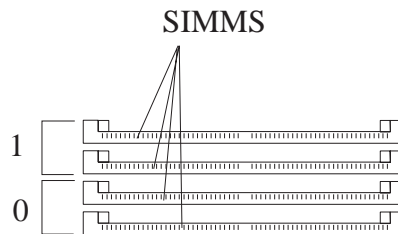
1. SIMMs can have a maximum height of 1.0 inch (25.4 millimeters).
2. Install only parity SIMMs.

Before You Begin

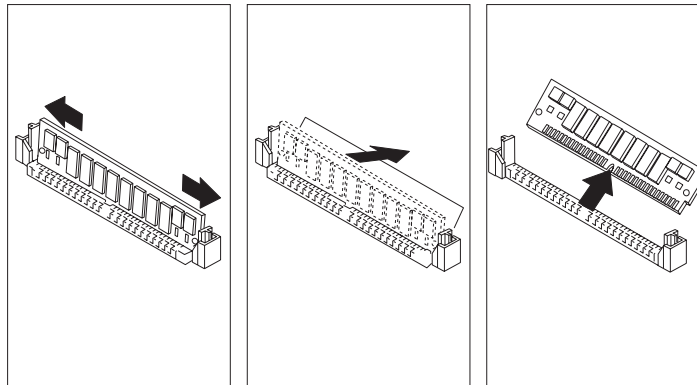
1. Read “Safety Information” on page E-10 and “Handling Electrostatic-Discharge-Sensitive Devices” on page E-15.
2. Turn off the computer.
3. Disconnect all external cables and power cords.
4. Loosen the six cover screws and lift off the system unit cover.
5. Remove the SBC as described in “Removing the SBC” on page 3-3.
6. Locate the SIMM sockets.
7. If any adapters or drives are in the way, record their location and the cables connected to them. Then remove the adapters or drives.
8. Touch the static-protective bag in which the SIMM was packaged to any unpainted metal surface on the system unit. Then remove the SIMM from the package.

Installing SIMMs

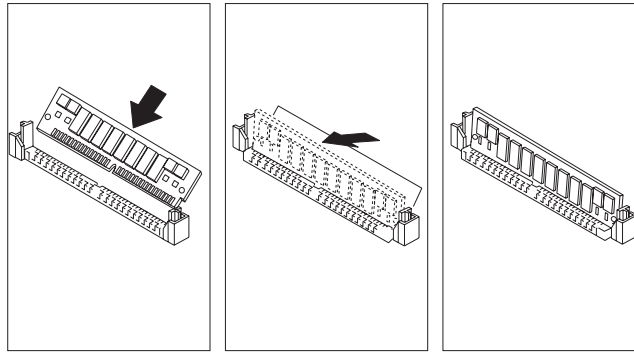
The following illustration shows the SIMM banks on the SBC. Bank 1 and bank 0 hold matched-pair SIMMs. When installing a SIMM, a matched-pair is first loaded into bank 0, and then into bank 1 as required.



1. Place the SBC on a clean, static-free work area.
2. If you are not replacing SIMMs, go to step 7 on page 3-6. If you are replacing SIMMs with larger capacity modules, continue with the next step.
3. Starting with the top-most populated SIMM connector, push outward against the retaining clips at both ends of the SIMM connector.



4. Rotate the SIMM away from the connector until it is released from the clips.
5. Lift the SIMM out of the connector.
6. Repeat these steps for each SIMM you are removing (they must be replaced in pairs).
7. Align the center key of the new SIMM with the connector (the notch in the SIMM should be to the right). Then insert the SIMM into the connector. The SIMM will seat at an angle.



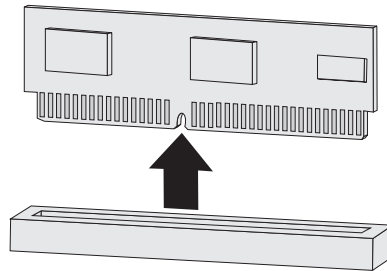
8. Rotate the top of the SIMM until it snaps into the retaining clips, as shown in the previous figure.
9. Repeat these steps for each SIMM. (Remember to install them in matched pairs.)
10. Record the configuration changes in Appendix A, "System Records."
11. Continue with "Installing Cache Memory."

Installing Cache Memory

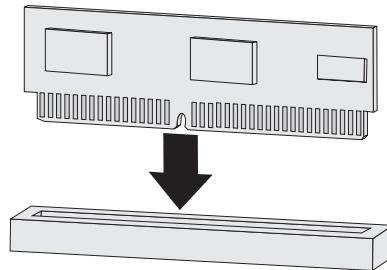
The cache memory module is located on the SBC. Adding cache memory can increase the performance of your system unit. If you are installing a cache memory module, continue with the following. If you are installing a PMC card, go to “Installing a PMC Card” on page 3-8. Otherwise, go to “Reinstalling the SBC” on page 3-8.

One cache memory size is available, 512 KB.

1. Touch the static-protective bag in which the modules were packaged to any unpainted metal surface on the system unit. Then remove the memory modules from the package.
2. Gently pull the top edge of the cache memory module up and out of the connector.



3. Position the new module so the notch on the bottom edge aligns with the notch in the connector.
4. Insert the cache memory module into the connector and push down evenly. Make sure the module is fully seated in the connector.



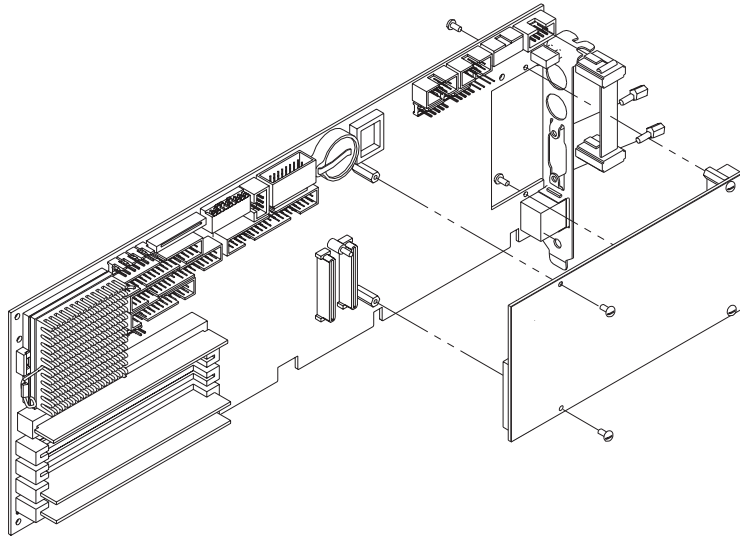
5. Record the size of the cache memory module you just installed in Appendix A, “System Records.”
6. Continue with “Installing a PMC Card” on page 3-8.

Installing a PMC Card

If you are installing a PMC card, continue with the following. Otherwise, go to “Reinstalling the SBC.”

See Chapter 7, “IBM Analog Video PMC Form Factor Card” for information on the video PMC card.

1. Place the SBC on a clean, static-free work area.
2. Remove the retaining bracket from the SBC.
3. Remove the PMC card from the static-free bag.
4. Attach the new retaining bracket and mounting hardware to the SBC.
5. Connect any cables between the PMC card and SBC (refer to the instructions that came with the PMC card).
6. Align the connectors on the PMC card with the connectors on the SBC and press the two cards together.



7. Install the four mounting screws.
8. Record the PMC card in Appendix A, “System Records.”
9. Continue with “Reinstalling the SBC.”

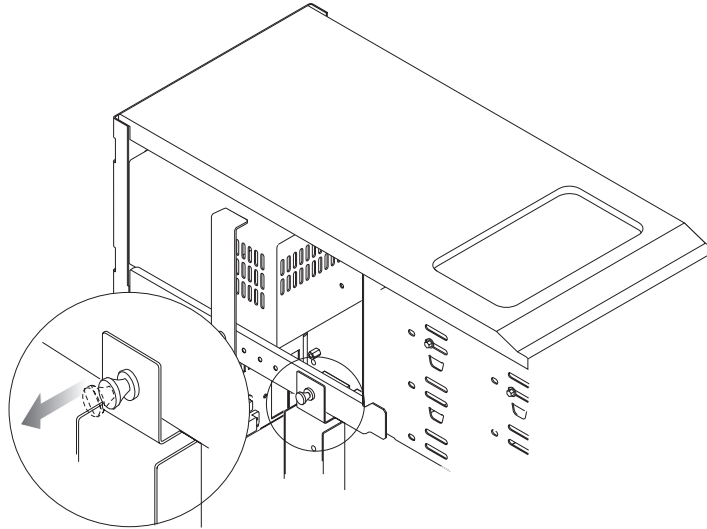
Reinstalling the SBC

1. Reinstall the SBC and reconnect all internal cables.
2. Reinstall any adapters that were removed into the same slots from which they were removed.
3. Continue with “Installing Adapters” on page 3-9.

Installing Adapters

To install an adapter, do the following.

1. Remove the cover from the system unit.
2. Remove the card retainer bracket.



3. Read the instructions that came with the adapter to determine if the adapter must be installed in a certain slot. If not, you can use any empty slot. Determine which empty slot you will use.
4. Record the location of any adapters or drives that are in the way; then remove them.
5. Read the instructions that came with the adapter to determine if you need to set any switches or jumpers on the adapter.
6. Touch the static-protective bag in which the adapter was packaged to any unpainted metal surface on the system unit. Then remove the adapter from the package.
7. Set any required switches or jumpers on the adapter. Also, install any required memory modules on it.
8. Install the adapter as follows.
 - a. Grasp the adapter at the front and rear.
 - b. Align the adapter with the front adapter guide and slide it into the slot. (Some adapters are shorter and do not extend to the front adapter guide.)
 - c. Press the adapter firmly into the expansion slot. Full-length adapters slide into the latch on the front adapter guide.
 - d. Install and tighten the expansion slot screw.
 - e. Record the type of adapter you just installed in Appendix A, "System Records."
9. Reinstall any removed adapters into their original slots.
10. Replace the card retainer.
11. Reinstall the cover.

Installing an Internal Hard Drive

Important

Some drives do not meet the industrially rated environmental specifications of the 7563 Passive Backplane System. Before installing any drive that is not purchased from IBM or an IBM distributor specifically for use in a 7563 Passive Backplane System, be sure the drive specifications meet all environmental conditions to which it might be subjected. See “Hard Disk Drive Jumper Settings” on page B-2 for more information.

To install an internal hard drive, do the following.

1. Turn off the computer and remove the system unit cover.
2. Read the instructions that came with the drive to determine any special instructions, such as the following.
 - Installing or changing drive installation hardware
 - Setting jumpers or switches
 - Removing or installing a terminator
 - Setting a SCSI ID (SCSI drives only)

Note: When you update your system configuration, as explained in “Using the Configuration/Setup Utility Program” on page 4-6, make sure the drive you installed is included as a startup device under **Start Options** in the Configuration/Setup Utility screen; otherwise, you will not be able to boot your computer from that drive.

In addition, if your hard disk drive cannot run in High Performance mode (the default mode selection for the primary and secondary IDE controllers), use the same screen to switch to Compatible mode.

3. Locate an open bay where the hard drive can be installed.
4. Use the screws supplied with the hard drive to mount it to the chassis.
5. Connect the power and signal cables to the new hard drive.

Note: Cable connectors are keyed and connect only one way.

6. Reinstall the cover.
7. Record the drive information in Appendix A, “System Records.”