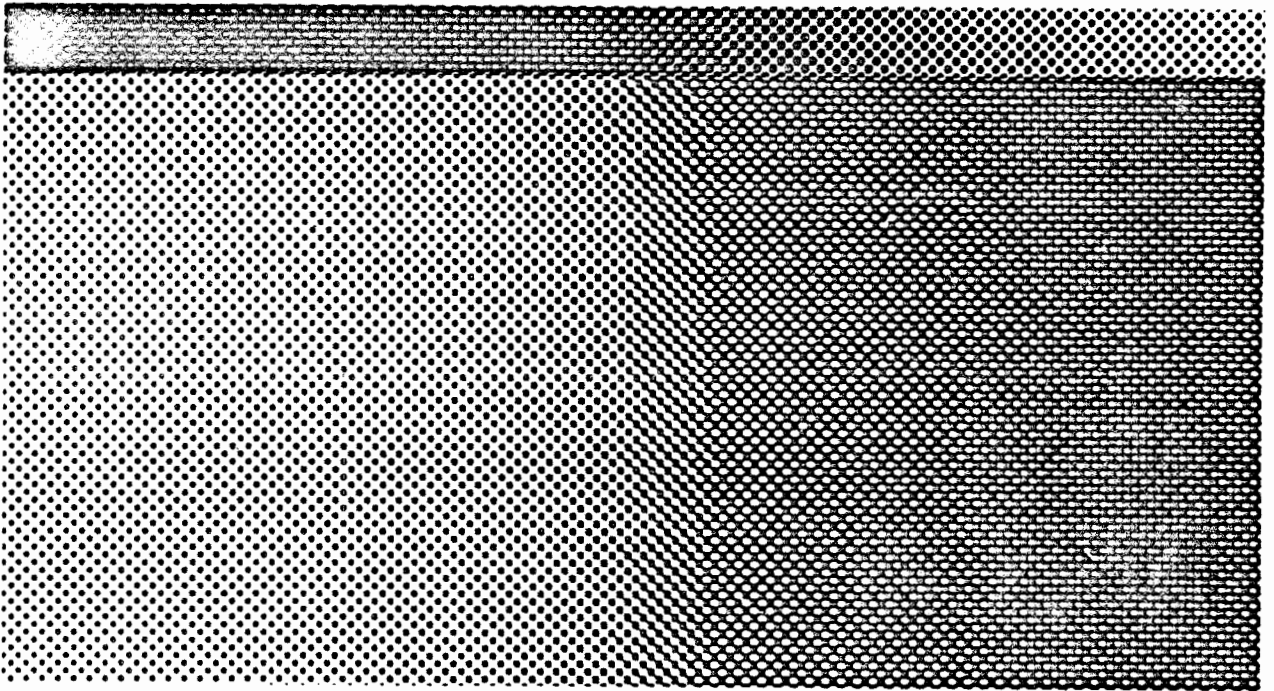# AT&T 3B2 Computer
Migration
Technician Manual

·6¼ × 8½" BLK + WHT

NOTICE

The information in this document is subject to change without notice AT&T assumes no responsibility for any errors that may appear in this document

---

TRADEMARKS

The following trademark is used in this manual:

- UNIX — Trademark of AT&T

ORDERING INFORMATION

Additional copies of this document can be ordered by calling

      1-800-432-6600   Inside the U.S.A.

      1-800-255-1242   Inside Canada

        OR

      1-317-352-8557   Outside the U.S.A.

        OR by writing to:

AT&T Customer Information Center (CIC)
Attn: Customer Service Representative
P.O. Box 19901
Indianapolis, IN   46219

CONTENTS

Chapter 1

INTRODUCTION

Chapter 1

INTRODUCTION

This document describes how to " migrate " an AT&T 3B2/300 Computer to an AT&T 3B2/310 Computer. The migration involves hardware and probably software changes. In order to migrate a 3B2/300 Computer to a 3B2/310 Computer, these requirements must be met:

1. The operating system must be UNIX* System V Release 2.0 or a later release.

2. The computer must be equipped with at least 1 megabyte of Random Access Memory (RAM)

3. A 30-megabyte hard disk must be installed in the computer.

If the computer is not at Release 2.0, have the customer contact his/her Account Representative and arrange for an upgrade.

---

* Trademark of AT&T

SYSTEM BOARD RETURN POLICY

The migration of a 3B2/300 Computer to a 3B2/310 Computer includes a
return policy on the 3B2/300 Computer system board. It is your
responsibility (technician's) to return the system board to your Material
Stock Location (MSL).

CONVENTIONS

Screen displays are included in this document to help you understand
described procedures. The following conventions are used on these screen
displays to show terminal inputs and system responses.

```
This style of type is used to show system generated
responses displayed on your screen.

This style of bold type is used to show inputs
entered from your keyboard that are displayed on your
screen.

These bracket symbols, < >, identify inputs from the
keyboard that are not displayed on your screen, such
as: <CR> carriage return, <CTRL d> control d, <ESC g>
escape g, passwords, and tabs.

This style of italic type is used for notes that provide you
with additional information. This style of type is also
used to show variable inputs such as times and dates.
```

The screen displays are only examples of the system responses that you
should receive. System responses that you receive may differ for various
reasons. For example, some system generated responses are affected by
the utilities that are installed. Also, many system responses contain
variables such as numbers of files, number of blocks, file sizes, times, and
dates. It is not very likely that these variables will agree with the displays
on your terminal screen.

MANUAL ORGANIZATION

The rest of this manual is organized as follows:

- Chapter 2, " PREPARATION," describes what has to be done to get ready for the migration.

- Chapter 3, " LOAD NEW SOFTWARE RELEASE," provides the procedural steps for installing the new software release.

- Chapter 4, " REPLACE SYSTEM BOARD," describes the tasks that need to be performed to replace a 3B2/300 Computer system board with a 3B2/310 Computer system board.

- Chapter 5, " VERIFY SYSTEM OPERATION," describes the tasks that need to be performed to verify that the system is operating normally after the migration.

Chapter 2

PREPARATION

Chapter 2

PREPARATION

This chapter describes the tasks that you need to perform to get ready for the migration. Successful completion of these tasks should ensure a smooth migration.

CHECK SYSTEM RELEASE

It is important to know the system release for a couple of reasons. First of all, in order to be able to do the migration, the UNIX Operating System must be at.least UNIX System V Release 2.0. Second, if a release later than Release 2.0 is installed, then only the hardware portion of the migration procedure needs to be performed.

1. Log in as **root**.

2. Enter:

   uname -r<CR>

   Response:

   UNIX System release that is installed on the computer is displayed.

TOOLS

The only tools you will need to do the migration are:

- 1/4-inch straight slot screwdriver

- Antistatic wrist strap

- Tool for removing Integrated Circuits (IC's)

VERIFY CONTENTS OF MIGRATION KIT

There are two migration kits (Package A and Package B) to support the migration of a 3B2/300 Computer to a 3B2/310 Computer. The migration kits are the same except for the system board. The system board in Package A does not have a MAU (Math Accelerator Unit) and the system board in Package B does.

A migration kit contains:

- Core System Floppy Disks containing new software release
- System Board
- Migration Manuals (305-481 and 305-482)
- Set of 3B2 Computer utilities
- New set of documents
- 3B2/310 Computer labels
- Indicator replacement wires
- File Permission Update Floppy (Migration Floppy).

A check list is included with each migration kit. Verify the contents of the kit using this check list.

VERIFY THAT CUSTOMER HAS A CURRENT BACKUP OF HARD DISK DATA

Although doing a backup is not necessary for the migration procedure itself, it is highly recommended that the hard disk data be backed up as a precautionary measure. Make sure the owner has backed up and verified all the data he considers to be critical before you start the migration.

VERIFY INTEGRITY OF 3B2/300 HARDWARE

In order to verify the integrity of the 3B2/300 hardware, run all the
system board diagnostic phases. The Floppy Interface/Control Test
requires a formatted floppy disk to be inserted in order to run the test.
Therefore, before you start the diagnostics, format a floppy disk so you will
have one available when this test is run. (**sysadm diskmgmt/format**).

1. Enter:

    shutdown -y -g0 -i5<CR>

    to go to the firmware mode.

    Response:

    A series of messages is displayed ending with

    FIRMWARE MODE

2. Enter the firmware password:

    mcp<CR>.

    Note: If the customer has changed the firmware mode
    password, ask the customer to enter the firmware password.

    Response:

    Enter name of program to execute [   ]:

3. Enter:

    dgmon<CR>

A typical response is:

```
              Possible load devices are:

Option Number    Slot    Name
.............................................
        0          0     FD5
        1          0     HD30

Enter Load Device Option Number [1 (HD30)]:
```

4. Select the default load device by depressing carriage return.

    <CR>

    Response:

    The following prompt is displayed:

                    3B2 DIAGNOSTIC MONITOR
            DGMON >

5. Enter:

    dgn sbd ph=*<CR>

    to execute all of the system board diagnostic phases.

    Some of the diagnostic phases will require a response on your part.
    Answer all the questions that can be responded to with a " y " or
    " n " (yes or no) with a " y." The response to the Floppy
    Interface/Control Test prompt is an " r." It is not necessary to
    enter a <CR> after a response.

Response:

The response for a successful completion is:

     SBD 0 (IN SLOT 0) DIAGNOSTICS PASSED

DGMON >

If either of the following messages is displayed, a hardware problem exists which must be corrected before you can perform the migration:

     SDB 0 (IN SLOT 0) DIAGNOSTICS FAILED

          or

     DIAGNOSTIC CONTROL PROGRAM ERROR

> **Note:** Repair of hardware trouble is not included with the purchase of a migration kit. It is the customer's responsibility to have the computer repaired, unless the computer is covered by an AT&T maintenance contract.

6. If all the tests passed successfully, enter:

    q<CR>

to exit the diagnostic monitor.

Response:

Enter name of program to execute [ ]:

7. Enter:

    unix\<CR\>

    A typical response is:

    ```
                  Possible load devices are:

    Option Number    Slot     Name
    .........................................
         0            0       FD5
         1            0       HD30

    Enter Load Device Option Number [1 (HD30)]:
    ```

8. Enter:

    1\<CR\>.

    Response:

    After a slight delay, messages are displayed reporting the status of
    the boot process. The final message to appear is:

    Console Login:

2-7

VERIFY CORE SYSTEM FLOPPY DISKS

Use the following procedure to verify the integrity of the Core System
Floppy Disks and to make a copy of *DISK 1*. The customer will provide you
with a blank, formatted floppy to make this copy. Leave the Core System
Floppy Disks, plus the copy of *DISK 1*, with the owner after you complete
the migration.

1. At the console, log in as **root**.

2. Make sure that *DISK 1* of the 3B2 Core System Floppy Disks is write
   protected, and insert it in the floppy disk drive.

   *Caution: Do NOT turn power off or execute shutdown while
   the floppy disk is in the disk drive.*

3. Enter the following command to copy the floppy disk to a temporary
   file named **tmpfile**:

   ```
   dd bs=9b if=/dev/rdiskette of=/usr/tmp/tmpfile<CR>
   ```

   Response:

   Indicator on the floppy disk drive lights.

4. Allow approximately 3 minutes for the contents of the floppy to be
   transferred to **tmpfile**. If the transfer is successful, the following
   output messages are printed:

   ```
   158+0 blocks in
   158+0 blocks out
   ```

   Any other message implies that the transfer failed. Do NOT continue if
   the transfer failed.

5. Remove *DISK 1* of the 3B2 Core System Floppy Disks from the drive. Label a blank formatted floppy disk " *DISK 1 COPY*." Make sure the floppy disk is not write protected, and insert it in the floppy disk drive.

6. Enter the following command to copy **tmpfile** to the floppy disk:

```
dd bs=9b if=/usr/tmp/tmpfile of=/dev/rdiskette<CR>
```

Response:

Indicator on the floppy disk drive lights.

7. Wait approximately 3 minutes for **tmpfile** to be copied to the floppy disk. The following messages indicate that the copy was successful:

```
158+0 blocks in
158+0 blocks out
```

Any other messages imply that the copy failed.

8. If you want to verify the copy of *DISK 1*, enter:

```
dd bs=9b if=/dev/rdiskette of=/dev/null<CR>
```

Response:

After approximately 3 minutes the following messages are displayed indicating that the copy is good:

```
158+0 blocks in
158+0 blocks out
```

9. Remove the floppy disk from the disk drive.

10. Using the command line

    dd bs=9b if=/dev/rdiskette of=/dev/null<CR>

    verify the other four 3B2 Core System Floppy Disks.

    Note: Do NOT continue if you could not copy *DISK 1* or if any of
    the original 3B2 Core System Floppy Disks did not pass verification.
    Do NOT attempt the migration using a faulty floppy disk.

HAVE OWNER REMOVE 3B2 COMPUTER FROM NETWORK

If the computer is on a local area network, have the owner remove the
computer from the network before you start the migration. If the 3B2
Computer is on a structured or administered network, that is, a network
with 3B5, 3B15, and/or 3B20 Computers, the removal has to be done
from the network master using the **nirmnode** command.

If the migration only requires the installation of a new system board, then
skip the next chapter and go to Chapter 4.

Chapter 3

LOAD NEW SOFTWARE RELEASE

Chapter 3

LOAD NEW SOFTWARE RELEASE

This chapter provides the procedure for loading a new software release.

> *Caution: Do NOT install a new " core system " if the UNIX System installed on the computer is a later release than UNIX System V Release 2.0. If a later release is installed, skip this chapter.*

INSTALL MIGRATION UTILITIES

In order to correct some minor problems encountered when loading a new
software release, a special utilities, 3B2 310 Migration Utilities, needs to be
installed before you start the upgrade procedure. This utilities is on a
floppy disk labeled " *File Permission Update Floppy*," but is commonly
referred to as the " migration floppy."

Use the following procedure to install the migration utilities.

1. Enter:

    sysadm installpkg<CR>

    Typical response:

```
Running  subcommand 'installpkg' from menu 'softwaremgmt',
SOFTWARE MANAGEMENT

Select which device to use:

    1   ctape1
    2   diskette1

Enter a number, a name, the initial part of a name, or
? for HELP, q to QUIT:
```

2. Select device 2 (diskette1).

3. Insert the migration floppy disk in the disk drive and depress
    <RETURN> as instructed.

Response:

```
Installing the 3B2 310 Migration Utilities.
Copyright (c) 1985 AT&T.
All Rights Reserved.

The following files are being installed:
//usr/options/310migr.name
1 blocks
11 blocks

 Note: An error message:

        cp: cannot access /etc/disks

    may be displayed. You can ignore this message.

Installation of 3B2 310 Migration Utilities is complete.

You may now remove the medium from the diskettel drive.
```

4. Enter q<CR> to exit Simple Administration and remove the
    migration floppy disk.

PERFORM RELEASE UPGRADE

> *Caution: Do NOT attempt to do this procedure during periods when there is a higher than normal possibility of a sudden loss of power, for example, during an electrical storm. Loss of power during certain parts of the upgrade procedure may cause loss of user data.*

After you installed the migration utilities, you are ready to install the new software release. The new release is installed by transferring files from the Core System Floppy Disks to the hard disk. A program stored on the floppy disks controls the file transfer. Use extreme caution and carefully adhere to the programmed instructions to guarantee a smooth upgrade.

1. Change directories to the **root** directory.

2. Enter the following command to enter the firmware mode:

   shutdown -y -i5<CR>

   Response:

```
Shutdown started.     date

Broadcast Message from root (console)  date
THE SYSTEM IS BEING SHUT DOWN NOW ! ! !
Log off now or risk your files being damaged.

INIT: New run level: 5
The system is coming down.  Please wait.
System services are now being stopped.

The system is down.

SELF-CHECK

FIRMWARE MODE
```

3. Enter **mcp** (default firmware password) or the current firmware password if it was changed.

   Response:

   ```
   Enter name of program to execute [ ]:
   ```

   Note: If DEMON EPROMs are installed, the following message appears after entering .mcp:

   ```
   3B2 Monitor/Control Program-erase '^H', kill '@'
   Physical Mode
   >
   ```

   Enter **boot**<CR> and the response will be:

   ```
   Enter name of program to execute [ ]:
   ```

4. Make sure that *DISK 1* of the five disk set is NOT write protected, then insert it into the floppy disk drive.

5. Enter:

   ```
   unix<CR>
   ```

   A typical response is:

   ```
                 Possible load devices are:

   Option Number    Slot     Name
   ...........................................
         0           0       FD5
         1           0       HD30

   Enter Load Device Option Number [1 (HD30)]:
   ```

6. Enter:

    @<CR>

After approximately 30 seconds, a response similar to the following is displayed:

```
UNIX System V Release 2.0 3B2 Version 2
system name
Copyright (c) 1984 AT&T.
All Rights Reserved

Note: There is a delay between messages.

3B2 Version 2 Installation

        1)  Full Restore
        2)  Partial Restore
        3). Dual-Disk Upgrade
        4)  Release Upgrade

When responding to a question, you may use the "backspace" key
to erase the last character typed or the "@" key to erase the
entire line.  Enter "help" for additional information.


Selection? [1 2 3 4 quit help ]
```

7. The selection to make for a migration is " Release Upgrade." After you make the selection, the installation program will guide you through the rest of the procedure. The program is interactive and will prompt you to respond to various questions. You may enter *help* when appropriate to get additional information.

    **Caution: Once the automated upgrade procedure from
    DISK 1 begins, DO NOT interrupt the process. Interruption
    may cause loss of user files.**

Enter:

4<CR>

to start the upgrade procedure.

Response:

```
-- Release Upgrade --

The "Release Upgrade" option replaces most of the core
system files on the integral hard disk(s) with 3B2 Version 2
files.  The system configuration, installed packages and
user files are not affected.

Continue? [ y n help ]
```

8. Enter:

y<CR>

Response:

```
Checking the hard disk file systems.

/dev/dsk/c1d0s0
File System: root Volume: 1.1

**Phase 1 - Check Blocks and Sizes
**Phase 2 - Check Pathnames
**Phase 3 - Check Connectivity
**Phase 4 - Check Reference Counts
**Phase 5 - Check Free List
785 files 12172 blocks 3240 free

Continued
```

3-7

```
Continued from previous screen

/dev/dsk/c1d0s2
File System: usr Volume: 1.1

**Phase 1 - Check Blocks and Sizes
**Phase 2 - Check Pathnames
**Phase 3 - Check Connectivity
**Phase 4 - Check Reference Counts
**Phase 5 - Check Free List
4791 files 36646 blocks 3484 free

Saving system configuration files in /usr/old.

Installing the initial core system files.  This should
take no more than ten minutes.

1246 blocks  (displayed after installation completes)
1 block

The system is restarting itself from the hard disk. This
should take no more than five minutes. The installation
procedure will then continue automatically.
```

9. After the system restarts itself, a response similar to the following
   will be displayed.

```
UNIX System V Release 2.0.4 3B2 Version 2
system name
Copyright (c) 1984 AT&T.
All Rights Reserved

Checking the hard disk file systems.

/dev/dsk/c1d0s0
File System: root Volume: 2042up

Continued
```

```
Continued from previous screen

**Phase 1 - Check Blocks and Sizes
**Phase 2 - Check Pathnames
**Phase 3 - Check Connectivity
**Phase 4 - Check Reference Counts
**Phase 5 - Check Free List
687 files 11614 blocks 3264 free

/dev/dsk/cld0s2
File System: usr Volume: 2042up

**Phase 1 - Check Blocks and Sizes
**Phase 2 - Check Pathnames
**Phase 3 - Check Connectivity
**Phase 4 - Check Reference Counts
**Phase 5 - Check Free List
4816 files 36710 blocks 3420 free

Please insert the 3B2 Core System floppy number 2.

Type "go" when ready [ go quit help ]
```

10. Enter:

         go<CR>.

     Response:

```
Installing additional core system files.  This should take no
more than ten minutes.

1249 blocks (displayed after installation completes)
```

11. As each floppy is loaded, the response will be the number of blocks
    that were installed. After the number of blocks is displayed, you are
    prompted to insert the next floppy disk. Be sure to insert the floppy
    disks in the proper sequence, *DISK 2* through *DISK 5*. After the last
    floppy is installed, the following messages are displayed.

```
You may now remove the last 3B2 Core System floppy.
83 blocks
89 blocks

See /usr/old/README regarding changes to system
configuration files.

Installation is now complete.  The system is restarting
itself from the hard disk.  It will be ready to use when
you receive the "Console Login" prompt.  This should take
no more than five minutes.

SELF-CHECK

DIAGNOSTICS PASSED

UNIX System V Release 2.0.4 3B2 Version 2
system name
Copyright (c) 1984 AT&T.
All Rights Reserved

    Note:  If an XDC is installed the following
        messages will be displayed:

            WARNING: too few HDE equipped disk slots

            Bad block handling skipped for maj/min = 17/18

    You can ignore these messages.

The system is coming up.  Please wait.
Generating a new /unix
AT&T 3B2 SYSTEM CONFIGURATION:

Memory size: 1 Megabyte
System Peripherals:

        Device Name          Subdevices

        SBD

                        Floppy Disk
                        30 Megabyte Disk
        PORTS
        PORTS

The system is ready.

Console Login:
```

The computer is now operating on the new software release with the
3B2/300 Computer system board.

REMOVE MIGRATION UTILITIES

Note: It is important that you remove the migration utilities because removing this utilities does more than just remove the **310migr.name** file.

1. Log in as **root** and enter:

       sysadm removepkg<CR>

   Typical response:

```
Running  subcommand 'removepkg' from menu 'softwaremgmt',
SOFTWARE MANAGEMENT

        The following software packages have been installed:

        Listing of
        installed
        utilities

Select which device to use:

    1    ctape1
    2    diskette1

Enter a number, a name, the initial part of a name, or
? for HELP, q to QUIT:
```

2. Select device 2 (diskette1).

3. Insert the migration floppy disk in the disk drive, and depress **<RETURN>** as instructed.

3-11

Response:

```
Removing the 3B2 310 Migration Utilities.
11 blocks
The following files are being removed:
/usr/options/310migr.name
The 3B2 310 Migration Utilities have been removed.
Execute "shutdown -i6 -y -g0"
You may now remove the medium from the diskettel drive.
```

4. Remove the migration floppy disk from the disk drive.

5. Enter:

   q<CR>

   to exit Simple Administration.

   Response:

   # (Root prompt)

6. Enter:

   shutdown -i6 -y -g0<CR>

   Response:

   A series of messages is displayed reporting the progress of the
   reboot. First the system is taken down, then an automatic reboot
   is done, diagnostics are run, the system comes back up, a new
   " unix" file is generated, and finally the system is ready and
   a Console Login prompt is displayed. This entire reboot
   process takes approximately 6 minutes to complete.

Chapter 4

REPLACE SYSTEM BOARD

PAGE

Chapter 4

REPLACE SYSTEM BOARD

Be careful not to damage the carton that the new system board is packed in since this same carton will be used to return the 3B2/300 Computer system board. The only tools you will need to replace the system board are a 1/4-inch straight slot screwdriver and an antistatic wrist strap.

SAFETY REMINDERS

1. Always unplug the 3B2 Computer before removing the cover.

2. Be sure to always wear an antistatic wrist strap and ground yourself to the computer chassis before you do anything inside the computer.

3. Be alert for sharp edges when handling hardware.

4. Follow instructions carefully to avoid personal injury or equipment damage.

EXECUTE touch /etc/system AND REMOVE POWER

1. If you are not logged in, log in as **root**.

2. Enter:

   touch /etc/system<CR>

   to force a full self-configuration when the system is powered up.

3. Enter:

   shutdown -y -i0<CR>

   to shut down the computer.

   > *Caution: Never pull the power plug or externally remove power until the shutdown sequence has completed. Data could be permanently lost if the computer is not shut down properly.*

4. Wait for the computer to complete its shutdown sequence. The broadcast message will end with "The system is down," and the POWER indicator will turn off.

5. Unplug the power cord.

PREPARE TO REMOVE SYSTEM BOARD

Remove Cable Access Door and Computer Cover

1. Remove the cable access door by pulling up on the latch, then lifting up and pulling out on the door. (See Figure 4-1.)

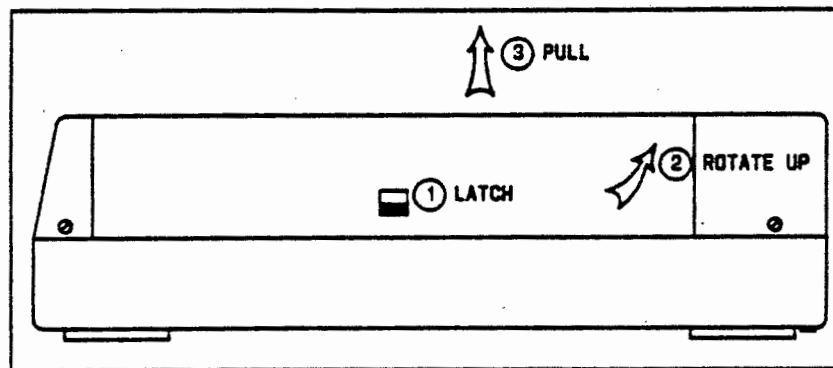   *Caution: Never remove the 3B2 Computer cover unless the power is removed.*

Figure 4-1. Removing Cable Access Door

2. Remove the four screws holding the computer cover.

3. Remove the cover.

4. Compare Figure 4-2 to the inside of the 3B2/300 Computer, and familiarize yourself with the location and placement of the major components.

Remove RAM (Random Access Memory) Card(s)

1. Loosen the screw on the bracket holding the memory card(s) in place. (See Figure 4-2.)

2. Slide the bracket up and remove it from the cage assembly.

3. Note the orientation of the memory card(s).

4. If a RAM card is installed in the M1 connector slot, remove it first. To remove the card, hold it gently by the edges and slowly pull straight up.

    Note: A gentle rocking motion may be necessary to loosen the card enough to remove it.

5. Carefully place the card aside.

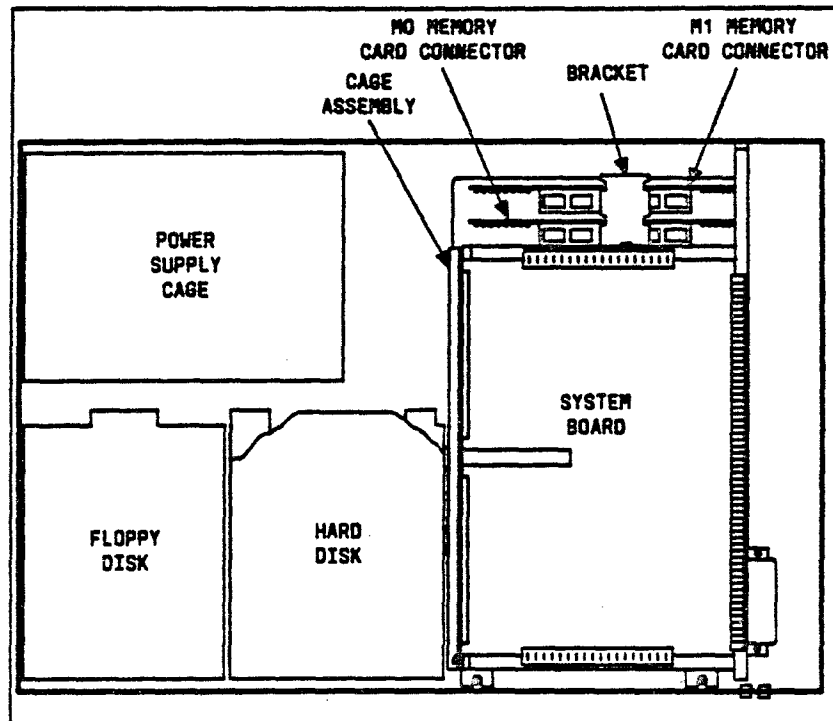6. If you have a second memory card, repeat Steps 4 and 5.

Figure 4-2. Internal View of 3B2/300 Computer

Remove Feature Card Cables

Caution: It is not necessary to remove the feature cards from the feature card cage assembly. However, if you do remove the feature cards instead of disconnecting the cables, be sure to record their location so the cards are placed back in the correct slots.

Before removing any feature card cables, make sure that all the cables are labeled and that feature card labels are on the cable access door. (See Figure 4-3.) If different types of feature cards are installed, you may encounter different types of plugs going to the feature cards. These plugs will require different techniques to remove them.

A. Modular Plugs— Modular plugs are connected to serial ports. To remove this type of plug, squeeze in the tab that is sticking out, and pull the plug out of the jack.

B. Parallel Port Plug—To remove the plug going to a parallel port jack, you need to remove the screw used to secure the adapter plug to the parallel port jack. (See Figure 4-3.)

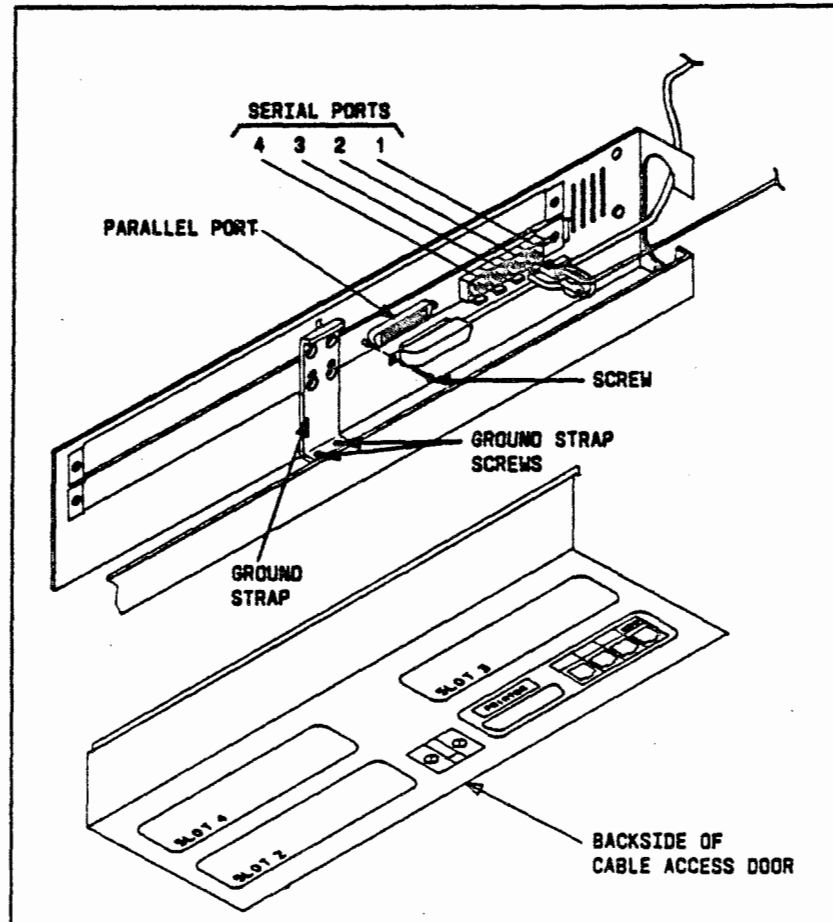**Figure 4-3. Disconnecting Parallel Port Plug**

C. CTC and XDC Cards— In order to remove the cable from a CTC (Cartridge Tape Controller) or an XDC (Expansion Disk Controller) feature card, you need to slide the card out a few inches.

> **Note:** Before you can slide the card out, you need to remove the ground strap and the ground clip (Figure 4-4).

After sliding the card out, loosen but do not remove the two strain relief securing screws that are located in the holes below the cutout on the faceplate of the card. Unplug the cable from the card and slide the card back into the slot. (See Figure 4-4 and Figure 4-5.)
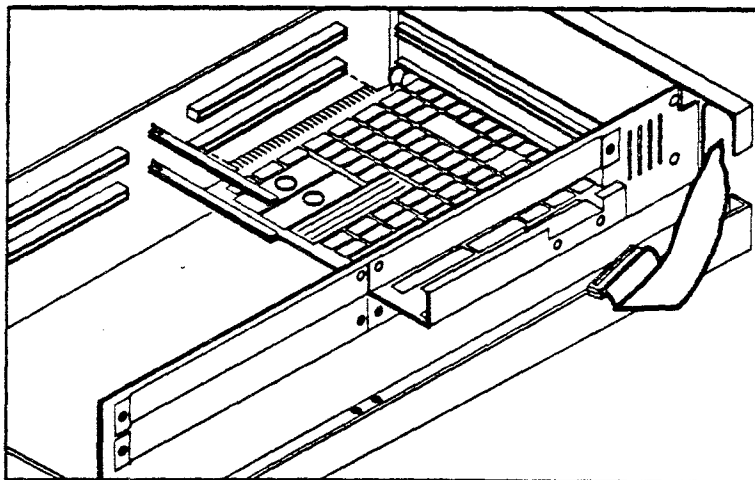
D. 3BNET Card— The cable going to a 3BNET feature card is secured to the card by a locking latch clip on the connector. In order to remove the cable, you need to unlock the connector by sliding back the locking latch clip.

GROUND
CLIP

FOLDED
CABLE

STRAIN
RELIEF
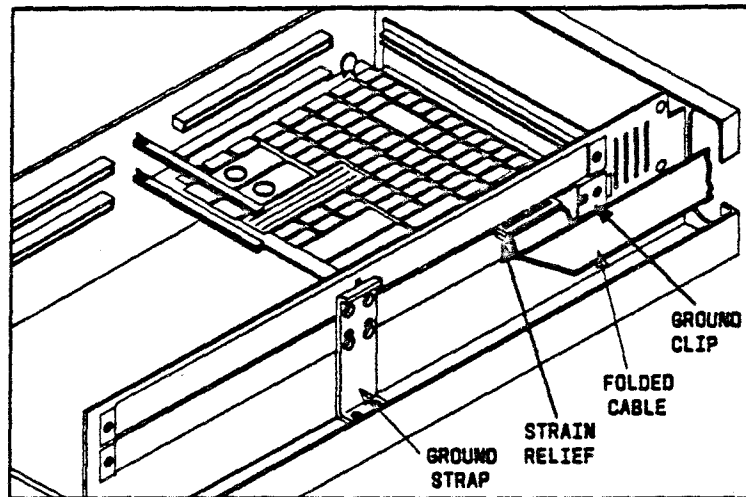
GROUND
STRAP

Figure 4-4. Installed CTC/XDC Feature Card

Figure 4-5. CTC/XDC Feature Card With Cable Removed

4-9

Remove Feature Card Cage Assembly

1. Remove and save the two screws holding the ground strap to the chassis. (See Figure 4-3.)

2. Remove and save the four screws holding the cage assembly to the chassis. (See Figure 4-6.)

3. Gently lift the card cage assembly [with feature card(s) still installed] from its chassis.

   Note: Since the backplane is connected to the cage assembly, the backplane must be disconnected from the system board before the cage assembly can be removed. In order to loosen the backplane from its system board connector, you may need to gently rock the left side of the card cage back and forth.

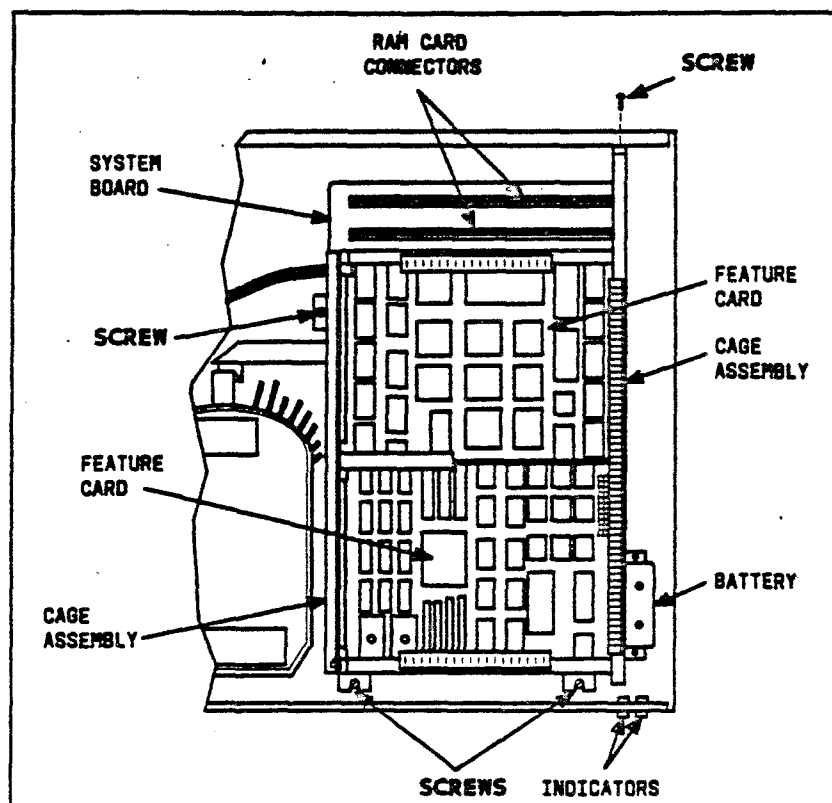**Figure 4-6. Removing Feature Card Cage Assembly**

REMOVE SYSTEM BOARD

Refer to Figure 4-7, and do the following steps to remove the system board:

1. Unplug the dual UART ribbon cable from the system board.

2. Unplug power cable.

3. If a disk power cable is connected to the system board, remove it.

    Note: Early versions of system boards will not have a connector for the disk power cable.

4. Unplug disk interface cables.

5. Unplug the battery wires.

6. Unplug the wires going to the POWER and DIAGNOSTIC indicators.

    Note: On some older model system boards these wires are soldered onto the system board. The migration kits include replacement wires to use with the 3B2/310 Computer system boards.

7. Remove and save the six screws holding the system board to the chassis.
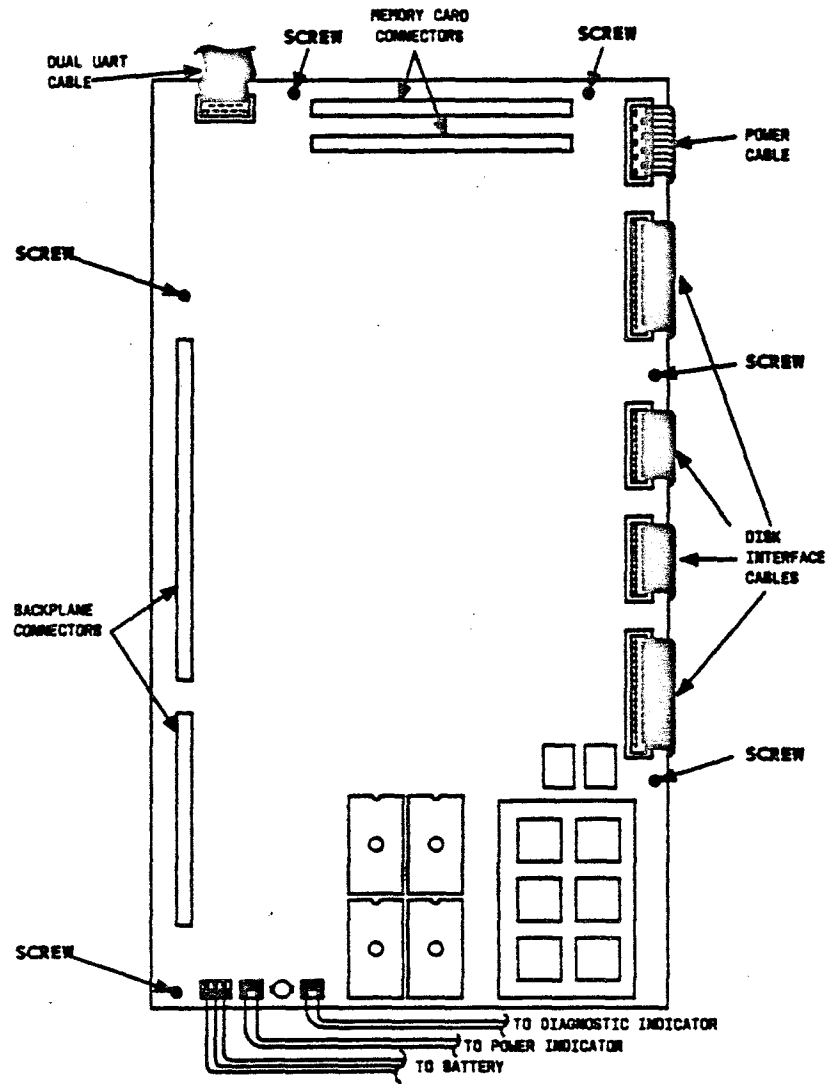
8. Carefully remove the system board.

Figure 4-7. Removing 3B2/300 Computer System Board

INSTALL 3B2/310 COMPUTER SYSTEM BOARD

Refer to Figure 4-8, and install the 3B2/310 Computer System Board.

1. Make sure the ribbon cables that pass under the system board are lying flat.

2. If the power wires passed under the system board, move them out of the way so the wires will not be under the system board when you install it.

   Note: On early versions of the 3B2/300 Computer System Board the power connector was on the right side, and the power wires passed under the system board. On the 3B2/310 Computer System Board the power connector is on the left side of the system board.

3. Using the six screws from the old system board, fasten the system board to the chassis.

4. Connect the battery wires.

5. Connect the POWER and DIAGNOSTIC indicator wires. If the wires were soldered to the old system board, use the new wires that came with the migration kit.

6. Connect the dual UART plug to the system board.

7. Connect the disk power cable to the system board if one was connected to the old system board.

8. Connect the power wires to the system board.
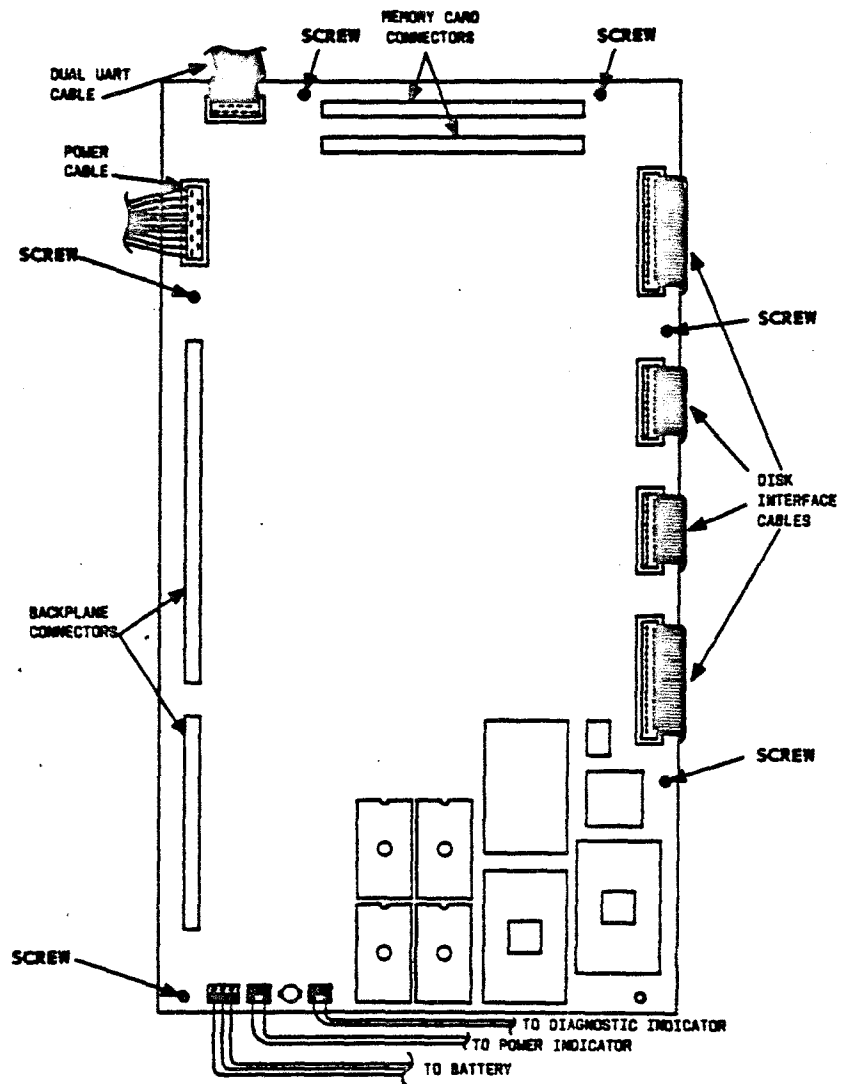
9. Connect the disk interface cables.

Figure 4-8. Installing 3B2/310 Computer System Board

INSTALL 3B2/310 COMPUTER DEMON EPROMs

In order to have the Debug Monitor feature on a 3B2/310 Computer, 3B2/310 Computer DEMON EPROMs must be installed on the system board; 3B2/300 Computer DEMON EPROMs are not compatible with a 3B2/310 Computer. If DEMON EPROMs are to be installed, install the EPROMs at this time. Refer to the installation procedure in the *AT&T 3B2 Computer Debug Monitor Guide*.

REASSEMBLE COMPUTER

Install Feature Card Cage Assembly

1. Carefully position the cage assembly over the system board. (See Figure 4-9.) Align the back plane connectors and brackets.

   Caution: Be careful that you DO NOT pinch any wires or cables under the cage assembly supports. Also take care not to damage the indicators on the front of the 3B2 Computer.

2. Gently push down on the left side (as you face the front of the computer) of the cage assembly to firmly seat the back plane connectors in the back plane connector slots on the system board.

3. Using the four screws, secure the cage assembly to the chassis.

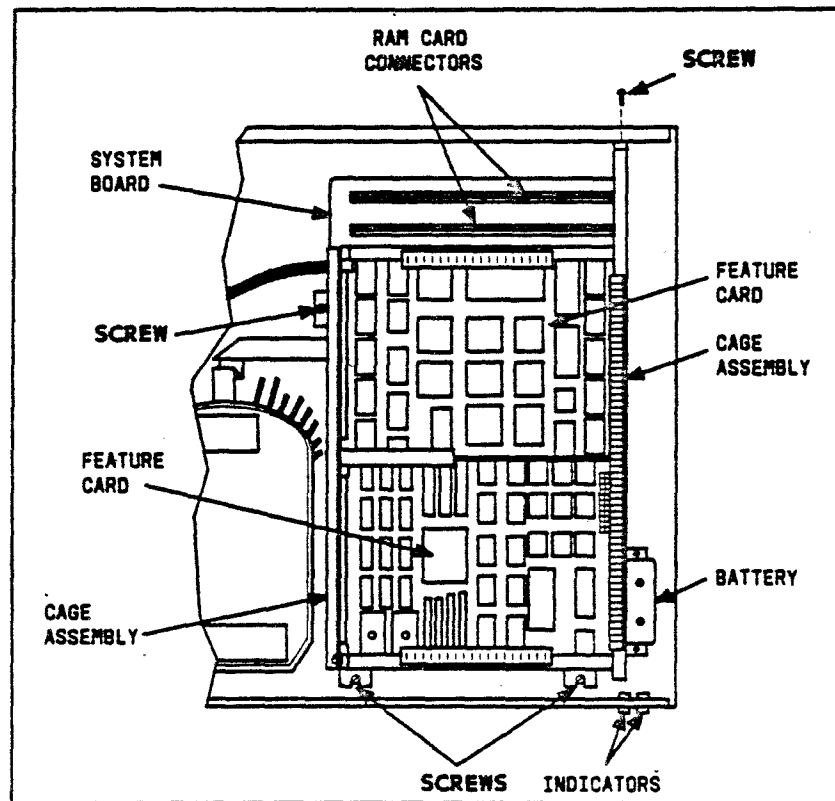Figure 4-9. Installing Feature Card Cage Assembly

Connect Feature Card Cables

1. Using the diagram shown on the back of the cable access door, connect the feature card cables to the appropriate jacks.

    A. Modular Plugs—Align the plug with the serial port, and push in the plug until you hear a click.

    B. Parallel Port Plugs—After connecting the adapter plug to the parallel port jack, tighten the screw to secure the plug to the jack. (See Figure 4-10.)

    C. CTC/XDC Cards—Slide the card out a few inches and connect the plug. Slide the card back into the slot and then tighten the two strain relief screws. Attach and secure the ground clip.

    D. 3BNET Card—After connecting the cable to the feature card, lock the connector in place by sliding the locking latch clip to the locked position.

2. Connect the ground strap to the chassis. (See Figure 4-10.)

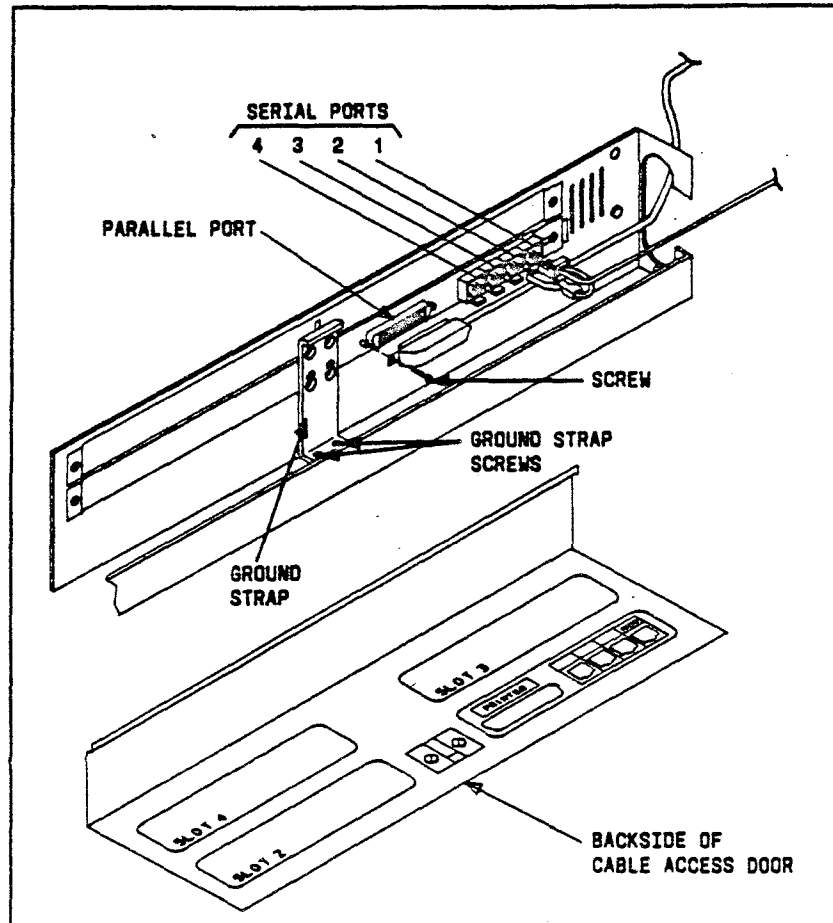Figure 4-10. Connecting Feature Card Cables and Ground Strap

Install RAM Memory Card(s)

1. Carefully pick up a memory card by its edges.

2. With the component side facing toward the cage assembly, hold the memory card over the M0 connector slot. (See Figure 4-11.)

3. Gently insert the card into the connector until it is firmly in place.

4. If you have a second memory card, repeat Steps 2 and 3 at the M1 connector slot.

5. Place the bracket on top of the memory card(s), and slide the bracket down onto the screw attached to the cage assembly.

6. Tighten the screw to lock the bracket and the memory card(s) in place.

Replace Computer Cover and Cable Access Door

1. Place the top cover over the chassis, and secure the cover with the four screws.

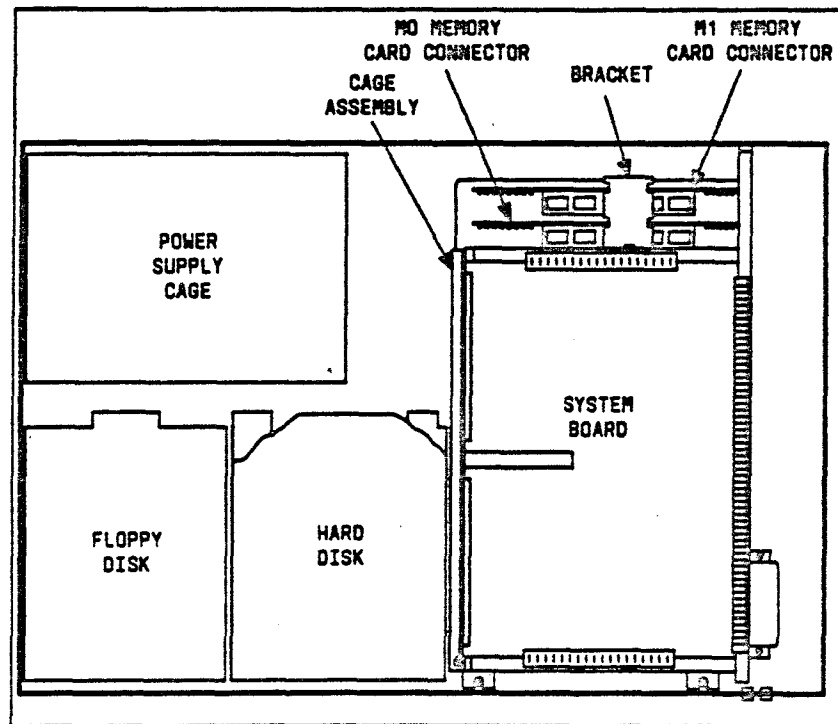2. Replace the cable access door. (See Figure 4-1.)

3. Plug in the power cord.

Figure 4-11. Internal View of 3B2/310 Computer

PLACE NEW LABEL ON COMPUTER

Each migration kit contains labels to change the identity of the 3B2/300 Computer to a 3B2/310 Computer. Choose the appropriate *AT&T 3B2/310* Computer label and place it on the front of the computer.

You also need to make a minor modification to the label on the back of the computer; the label which contains the model, code, serial number, and FCC information. With a marker place an " M" at the end of the serial number to identify the computer as a 3B2/310 Computer.

RETURN SYSTEM BOARD

The migration of a 3B2/300 Computer to a 3B2/310 Computer includes a return policy on the system board. Return the 3B2/300 Computer System Board to your Material Stock Location (MSL) where it will go through the normal repair process.

Chapter 5

VERIFY SYSTEM OPERATION

Chapter 5

VERIFY SYSTEM OPERATION

APPLY POWER

1. Before you apply power, make sure the baud rate of the console terminal is set at 9600 baud.

2. Depress the POWER SWITCH to the ON position.

   Since the battery was disconnected, the following message will be displayed:

   ```
   FW ERROR 1-01:   NVRAM SANITY FAILURE
                    DEFAULT VALUES ASSUMED
                    IF REPEATED, CHECK THE BATTERY
   ```

3. Wait for Console Login: to appear.

RUN DEMAND DIAGNOSTICS

In order to " check out" the new system board, run the system board demand diagnostics.

1. Log in as **root** and enter:

   shutdown -y -g0 -i5<CR>

   to go to the firmware mode.

   Response:

   A series of messages is displayed ending with

   FIRMWARE MODE

2. Enter the firmware password:

   mcp<CR>.

   Response:

   Enter name of program to execute [   ]:

3. Enter:

   dgmon<CR>

   Response:

   A table of possible load devices is displayed.

4. Select the default load device by depressing carriage return.

   <CR>

Response:

The following prompt is displayed:

                    3B2 DIAGNOSTIC MONITOR
          DGMON >

5. Enter:

   1 sbd<CR>

to display the diagnostic phase table for the system board. The phase table lists the phase numbers, phase types, and a phase description.

6. Run the diagnostic phases that are labeled " DEMAND." For example, to run system board diagnostic phase 11, enter:

   dgn sbd ph=11<CR>

An example of a successful completion would be:

```
      <<<  DIAGNOSTIC MODE  >>>
Test: Dynamic Memory Diagnostic DEMAND
Time Taken = ˉ70 seconds
1 2 3 4
Dynamic Memory Diagnostic Completed ATP

    SBD 0 (IN SLOT 0) DIAGNOSTICS PASSED

DGMON >
```

7. Enter:

    q<CR>

    to exit the diagnostic monitor.

    Response:

    Enter name of program to execute [ ]:

8. Enter:

    unix<CR>

    A typical response is:

```
              Possible load devices are:

Option Number    Slot    Name
......................................
      0           0      FD5
      1           0      HD30

Enter Load Device Option Number [1 (HD30)]:
```

9. Enter:

    1<CR>.

    Response:

    After a slight delay, messages are displayed reporting the status of
    the boot process. The final message to appear is:

                    Console Login:

INSTALL UTILITIES

Log in and enter `sysadm listpkg` to list the utilities that are currently installed on the computer. Install all those utilities included in the migration package that are not already installed.

> *Caution: Be particularly careful to not install the following utilities if they are already installed:*
>
> - *Basic Networking*
> - *Terminal Filters*
> - *Line Printer Spooling*
>
> *If you reinstall the Basic Networking and Line Printer Spooling utilities, files that were changed or created when setting up these utilities will be overwritten. Considerable work may be required to return these utilities to their pre-migration states.*

The recommended sequence for installing the utilities is:

1. Terminal Information

2. Directory and File Management

3. Editing

4. Security Administration (Only available in the United States)

5. System Administration

6. User Environment

7. Inter-Process Communication

8. Basic Networking

9. Help

10. Terminal Filters

11. Line Printer Spooling

12. Performance Measurements

13. Spell

14. Graphics

This completes the migration of the 3B2/300 Computer to a 3B2/310 Computer. Before you leave:

- Call 1-800-922-0354 (hot line) and inform the National Software Support Center (NSSC) that the 3B2/300 Computer has been migrated to a 3B2/310 Computer.

- Remind the customer that there are tasks in the *Customer Migration Manual* that need to be performed, for example, making a new floppy key and re-establishing networking.

- Don't forget to return the 3B2/300 Computer System Board to your MSL.

Your comments and suggestions are appreciated and will help us to provide the best documentation for your use.

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