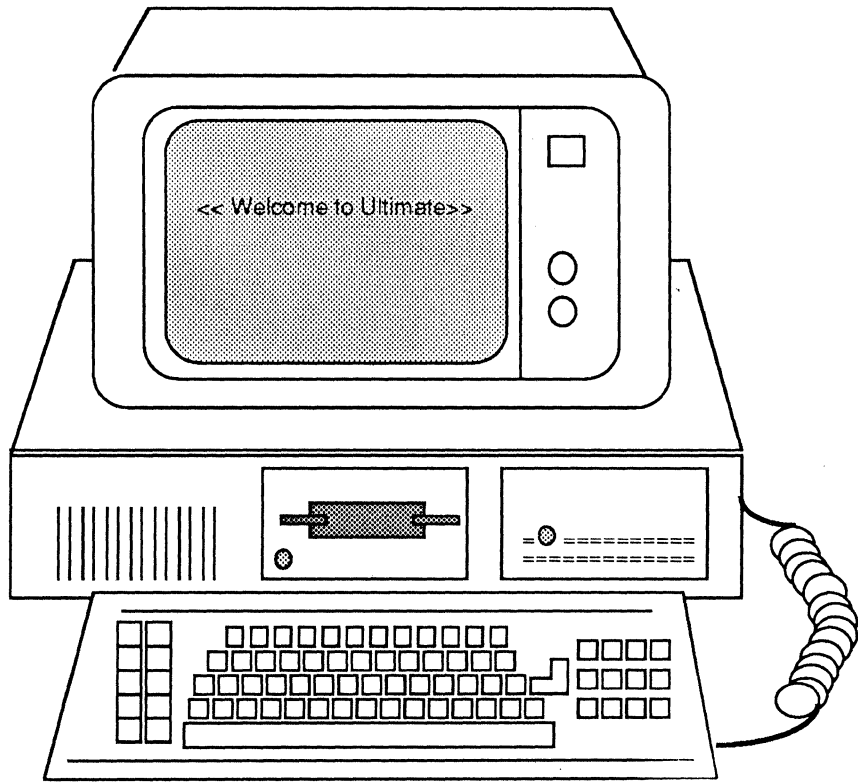


ULT

PC Operations and Maintenance



THE ULTIMATE CORP.

PC Operations and Maintenance

PROPRIETARY INFORMATION

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Document No. POM-01-C

FCC Warning

FCC WARNING

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manuals, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his or her own expense, will be required to take whatever measures necessary to correct the interference.

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How To Use This Manual

HOW TO USE THIS MANUAL

The PC Operations and Maintenance Manual is designed to guide you through normal operating procedures and scheduled maintenance of your PC when used with the Ultimate Operating System.

You should read and become familiar with all of the steps in this manual, and refer to specific sections as they are required.

Section 1 lists the **CONFIGURATION REQUIREMENTS** for using the Ultimate Operating System on your PC.

Section 2 lists the steps necessary in **GETTING STARTED** with your PC. This section explains what you will need to do before you can use your system, and it provides a checklist so you may check your progress and ensure you have completed all the steps necessary in getting started.

Section 3 explains the procedures for **POWERING ON AND OFF** your PC.

Section 4 explains the procedures for **INSTALLING THE OPERATING SYSTEMS ON YOUR PC**. You must load DOS and the Ultimate Operating System on your hard disk(s) before you can begin using your system. At the end of each major step in this procedure, there is a summary. These summaries are quick-references for the experienced user only. Other users should follow the complete step-by-step instructions.

Section 5 explains the procedures for **LOADING ULTIWORD** on your PC. You may use these instructions to load UltiWord (the WP account) on your system at any time.

Section 6 explains the procedures for **CHECKING YOUR EQUIPMENT**. You should check and set up your terminals and printers before you begin using your system.

Section 7 explains the **SYSTEM STARTUP OPTIONS** available for your system. These options are accessed when you boot your system.

Section 8 explains the various procedures for **BACKING UP THE SYSTEM**. These instructions are vital in preventing data losses. For the experienced user, this section also contains summaries of each type

How To Use This Manual

- Section 9 explains **RESTORING DATA**. If your data is lost or corrupted, it can be recovered if you have used one of the backup methods explained in Section 8. For the experienced user, this section also contains summaries of each type of restore procedure.
- Section 10 explains **MAINTENANCE**. Ultimate recommends that you periodically perform certain maintenance functions to keep your system running smoothly. Procedures are given for daily, weekly, monthly, and semi-monthly maintenance.
- Section 11 explains the steps necessary for **ADDING EQUIPMENT**. Whenever you add a piece of equipment, you need to make sure that your system recognizes it.
- Section 12 provides information on **COMMUNICATIONS**, which are utilities used to transfer information.
- Section 13 explains **TROUBLESHOOTING** procedures. If you experience a problem with your system, follow the steps in this section to try to determine the problem. Of course, whenever you need help with your system, you may contact your Ultimate dealer. If you have a maintenance plan, you may contact Ultimate Technical Support (see Section 13.2).
- Section 14 explains the procedures involved in **INSTALLING A NEW VERSION OF THE ULTIMATE OPERATING SYSTEM**. Use these instructions to load a new revision (upgrade to a higher release) of the Ultimate Operating System.
- Appendix A is a **GLOSSARY** of terms used throughout the manual.
- Appendix B provides **CRT CONFIGURATIONS**, to aid you in setting up your CRTs.
- Appendix C provides **PRINTER CONFIGURATIONS**, to aid you in setting up your printers.
- Appendix D provides **HARDWARE CONFIGURATIONS**, to aid you in setting up your system. It also tells you what specific types of hardware are supported by Ultimate and can be used with your system.

How To Use This Manual

The end of this document contains a Reader Comment Form and a Bug Report Form. If you find a problem or error in this manual, or with the PC software, please complete the appropriate form. Then fold and tape the form so that Ultimate's address appears on the outside, and send it to The Ultimate Corp.



Configuration Requirements

1 CONFIGURATION REQUIREMENTS

You must have the following equipment to run the Ultimate Operating System on your PC. For more information on hardware requirements, see Appendix D.

1. The Ultimate 110 PC, IBM AT (or compatible), or IBM XT (or compatible), with at least a 10 megabyte hard disk.
2. At least 256K memory.
3. Either a monochrome text, monochrome graphic, or color graphics communications board and monitor.
4. A minimum of DOS 2.1, complete with PRIME, FDISK, and diagnostics utilities. The IBM AT requires DOS 3.1 or higher.
5. The Ultimate PC SYS-GEN (ABS and Files) diskette set.

1.1 PC REVISION NUMBERING SCHEME

Beginning with Revision 102PC, Ultimate software revisions are numbered as follows: All even-numbered revisions of the Ultimate PC/OS will only load on the IBM XT (and compatible hardware) and the Ultimate 110 PC. All odd-numbered revisions will load on the IBM XT (and compatible hardware), the IBM AT (and compatible hardware), and the Ultimate 110 PC.

When you attempt to load an even-numbered Ultimate PC/OS revision on IBM AT hardware, you get the following message:

"THIS VERSION OF THE ULTIMATE OPERATING SYSTEM WILL NOT
OPERATE ON THE IBM-AT"

If you see this message, call your Ultimate dealer to obtain an odd-numbered Ultimate PC/OS revision.

Configuration Requirements

NOTES

Getting Started

2 GETTING STARTED

The following checklist contains all the steps you should follow to get started with your system. You must complete each item on the checklist before you can begin creating and using files on your Ultimate system.

- 1. Power up your system. (See Section 3, "Powering On and Off".)
- 2. Install the Ultimate PC Operating System. (See Section 4, "Installing the Operating Systems on Your PC".)
- 3. If you will be using UltiWord, load the WP account and set up user accounts and user names. (See Section 5, "Loading UltiWord".)
- 4. Check the location and baud rate of each terminal on your system. (See Section 6, "Checking Your Equipment".)
- 5. Check the location and baud rate of each printer on your system. See Section 6, "Checking Your Equipment".)

When you have completed each item on this checklist, refer to the instructions in the remainder of this manual to maintain and use your system.

Getting Started

NOTES

3 POWERING ON AND OFF

3.1 POWERING ON

1. Turn the main power switch on. (Refer to your hardware manual for the location of this switch.)
2. Turn your PC monitor on. (Refer to your hardware manual for the location of this switch.)

NOTE: If you have not yet installed the Ultimate PC/OS, skip Step 3 and go on to the instructions in Section 4, "Installing the Operating Systems on Your PC."

3. If the system was :WARMSTOPped before it was powered off, you should Warmstart the system. See Section 7.3 for instructions.

If the system was not :WARMSTOPped before it was powered off, you must Coldstart the system. See Section 7.1 for instructions.

3.2 POWERING OFF

Generally, your Ultimate system may be left powered on. You may want to power off, however, during a long weekend or vacation, or if you are having power problems.

A **:WARMSTOP** brings the system down in a controlled manner. It halts all processing and flushes memory to protect data integrity.

1. Make sure all users are logged off the system. To do so, go to the main monitor (line 0), and at TCL (>) type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL. Type:

LISTU and press RETURN.

The main monitor (line 0) should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

2. Make sure there is no diskette in drive A:. Also, complete the printing of any current spool files. (Refer to the System Management and Support Guide if you need information on how to spool the files to tape or diskette.) Be sure to complete this step before proceeding to the next step.

3. At TCL (>), type:

:WARMSTOP and press RETURN.

Wait for your PC to beep before you proceed.

If you wish to completely power down the system, continue with the following steps:

4. Turn your PC monitor off. (Refer to your hardware manual for the location of this switch.)
5. Turn the main power switch off. (Refer to your hardware manual for the location of this switch.)

4 INSTALLING THE OPERATING SYSTEMS ON YOUR PC

Follow the procedures in this section to install the Disk Operating System (DOS) and the Ultimate Operating System (PC/OS) onto your PC system.

In order for the hard disk to contain both the Ultimate PC/OS and DOS, you must separate the disk into two partitions. The first partition, DOS, must contain at least 5 cylinders. The rest of the disk is left for the Ultimate PC/OS. The PC/OS partition must contain at least 125 cylinders, or there will not be enough disk space to load the operating system.

If you already have one or more partitions on your hard disk(s), you will have to delete the partition(s) before you can create the new partitions. Then, once you have created the partitions, you will prepare each partition and install DOS and the Ultimate PC/OS on your hard disk(s).

Before you use the steps contained in this section, check off the answers to the following questions. The answers you check determine which set of instructions you must follow. (The instructions are all clearly labeled and easy to find.) By finding the answers to these questions before you begin, you will avoid having to stop and get more information when you are in the middle of this procedure.

1. How many hard disks does your system have?

One Hard Disk

Two Hard Disks

If you have a one hard disk system, start with the instructions in Section 4.1. If you have a two hard disk system, start with the instructions in Section 4.2.

2. What type of hardware do you have?

IBM AT or Compatible

IBM XT or Compatible

Ultimate 110 PC

The instructions you must follow are different, depending on whether you have an IBM XT or Ultimate 110 PC, or an IBM AT. You will be told which set of procedures to follow for your hardware.

Installing the Operating Systems on Your PC

3. Is your version of the Ultimate Operating System an odd or even revision number?

Odd Revision Number (for example, PC113)

Even Revision Number (for example, PC112)

If you have an IBM AT (or compatible), you must use an odd-numbered revision. If you have the wrong type of revision, call your Ultimate dealer.

4. Has an operating system (such as DOS) already been installed on your system? If you don't know, ask your dealer.

Yes, my hard disk contains an operating system.

No, my hard disk does not contain an operating system.

If your system already contains an operating system, you will have to delete its partition. (You will be instructed to do this if necessary.)

5. Do you already have a version of the Ultimate PC/OS on your hard disk(s)?

Yes, I have Ultimate PC/OS on my hard disk.

No, I do not have Ultimate PC/OS on my hard disk.

If your answer is yes, and you want to install a new version of the Ultimate PC/OS, do not use these instructions. Instead, go to Section 14, "Installing A New Version of the Ultimate Operating System."

If your answer is yes, and you want to change the size of the partitions, use the instructions in this section (Section 4).

If your answer is no, use the instructions in this section (Section 4).

6. If you have the Ultimate PC/OS on your hard disk(s), is Ultimate a permanent partition entry?

Yes, Ultimate PC/OS is a permanent partition entry.

No, Ultimate PC/OS is not a permanent partition entry.

If you made Ultimate a permanent partition entry, you will be instructed to delete it.

Installing the Operating Systems on Your PC

Now that you have answered the questions, you are ready to begin loading DOS and the Ultimate Operating System. In general, the instructions in Section 4 are divided into two parts:

Section 4.1 Installing the Operating Systems on a One Hard Disk System

Section 4.2 Installing the Operating Systems on a Two Hard Disk System

Be sure to follow the correct set of instructions.

There are also summaries at the end of each section. If you are already familiar with DOS commands and partitions, you may use the instructions in the summaries as a quick reference aid. However, Ultimate recommends that you follow the step by step instructions if you are not already familiar with these procedures.

To make sure you complete all the necessary steps, use the following checklist.

INSTALLING OPERATING SYSTEMS CHECKLIST

- Answer the questions.
- If necessary, back up the data in the existing partition(s), and then delete the partition(s).
- Create the Ultimate and DOS partitions.
- Prepare the DOS partition and install DOS.
- Prepare the Ultimate partition.
- Install the Ultimate PC/OS.

4.1 INSTALLING THE OPERATING SYSTEMS ON A ONE HARD DISK SYSTEM

Use these instructions only if you have a one hard disk system. If you have a two hard disk system, follow the instructions in Section 4.2.

4.1.1 IF YOUR HARD DISK ALREADY CONTAINS AN OPERATING SYSTEM (ONE HARD DISK SYSTEM)

If your computer already contains an operating system, then your system has one or more partitions on its hard disk. You must delete these existing partition(s) before you can go on to the steps for creating the DOS and Ultimate partitions.

If your hard disk does not contain an operating system, skip these instructions and go on to Section 4.1.2, "Creating the Ultimate and DOS Partitions (One Hard Disk System)."

Use the following instructions to delete any existing partition(s) on your one hard disk system.

1. Completely back up your system.

If you have DOS on your hard disk, use the DOS BACKUP command to back up your system. (See your DOS manual for more information.)

If you have the Ultimate operating system on your hard disk, do a full File-Save to back up the Ultimate partition, and then use the DOS BACKUP command to back up your DOS partition. (Refer to Section 8.2 for instructions on performing a File-Save, and refer to your DOS manual for instructions on using the DOS BACKUP command.)

WARNING: All your files and data are deleted when you delete the partition(s). Therefore, you must back up your system.

2. If you created a permanent Ultimate partition entry, you must now delete it by using the DEUPART.EXE Utility.

a. At the C> prompt, type:

DEUPART and press RETURN.

The following screen is displayed.

Installing the Operating Systems on Your PC

```
C>DEUPART
SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):
```

NOTE: Your system does not have a drive D:.

- b. To delete the partition entry in drive C:, press RETURN.

When the DEUPART.EXE Utility is finished, the following screen is displayed.

```
DEUPART FINISHED
C>
```

3. Load the DOS diskette in drive A:.
4. Turn on both the main power and your monitor. (Refer to your hardware manual for the positions of these switches.)
5. When asked for a new date, press RETURN.
When asked for a new time, press RETURN.
6. At the A> prompt, type:
FDISK and press RETURN.

The following screen is displayed.

NOTE: The wording on your screens may be different, according to the version of DOS you are using.

FDISK OPTIONS

Current Fixed Disk Drive: 1

Choose one of the following:

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data

Enter choice: [1]

Press Esc to return to DOS

CAUTION: This step deletes all the data and files on your hard disk. Do not continue with these instructions unless you have completely backed up your system.

Enter **3** and press RETURN to select Delete DOS Partition.

The following screen is displayed.

Installing the Operating Systems on Your PC

Delete DOS Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | A | DOS | X | XX | XX |

Total disk space is XXX cylinders.

Warning! Data in the DOS partition
will be lost. Do you wish to
continue.....? []

Press Esc to return to FDISK Options

Enter **Y** and press RETURN to delete the DOS partition.

The following screen is displayed.

Delete DOS Partition

Current Fixed Disk Drive: 1

No partitions defined.

Total disk space is XXX cylinders.

DOS partition deleted.

Press Esc to return to FDISK Options

Press **ESC** to return to the FDISK Options menu.

Because the FDISK Options menu is already displayed, you can skip the first three steps in the following instructions, "Creating the Ultimate and DOS Partitions (One Hard Disk System)." Go directly to Step 4.

**SUMMARY OF "IF YOUR HARD DISK ALREADY CONTAINS
AN OPERATING SYSTEM (ONE HARD DISK SYSTEM)"**

1. Completely back up your system.
2. If you created a permanent Ultimate partition entry, you must now delete it.
 - a. At the C> prompt, type **DEUPART** and press RETURN.
 - b. Press RETURN to select drive C:.
3. Load the DOS diskette in drive A:.
4. Turn on both the main power and your monitor.
5. Press RETURN when asked for a new date and a new time.
6. At the A> prompt, type **FDISK** and press RETURN.
7. Enter **3** and press RETURN to select Delete DOS Partition.
8. Enter **Y** and press RETURN to delete the DOS partition.
9. Press ESC to return to the FDISK Options menu.

4.1.2 CREATING THE ULTIMATE AND DOS PARTITIONS (ONE HARD DISK SYSTEM)

To install more than one operating system on your hard disk, you must partition your disk. Each partition holds an operating system. The first partition holds DOS, and the second partition holds the Ultimate Operating System.

Use the following steps to create the DOS and Ultimate partitions.

1. Load the DOS diskette in drive A:.
2. Turn on both the main power and your monitor. (Refer to your hardware manual for the locations of these switches.)
3. When asked for a new date, press RETURN.
When asked for a new time, press RETURN.
4. At the A> prompt, type:
FDISK and press RETURN.

The following screen is displayed.

NOTE: The wording on your screens may be different, according to the version of DOS you are using.

Installing the Operating Systems on Your PC

FDISK OPTIONS

Current Fixed Disk Drive: 1

Choose one of the following:

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data

Enter choice: [1]

Press Esc to return to DOS

NOTE: The 1 is displayed automatically.

Press RETURN to select Create DOS Partition.

The following prompt is displayed.

Do you wish to use the entire fixed disk for DOS (Y/N)?

Enter **N** and press RETURN.

The following screen is displayed.

Installing the Operating Systems on Your PC

Create DOS Partition

Current Fixed Disk Drive: 1

No partitions defined.

Total disk space is XXX cylinders.
Maximum available space is XXX
cylinders at cylinder 0.

Enter partition size.....: [XXX]

Press Esc to return to FDISK Options

Enter the size (in cylinders) of the DOS partition, and press RETURN. For example, enter **20** and press RETURN.

NOTE: You may make the partition any size you wish, as long as it contains at least 5 cylinders, and leaves at least 125 cylinders for the Ultimate PC/OS.

The following screen is displayed.

Installing the Operating Systems on Your PC

Create DOS Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total Disk space is XXX cylinders.

Enter partition size.....: 20
Enter starting cylinder number...: [000]

Press Esc to return to FDISK Options

Enter 0 and press RETURN for the starting cylinder number.

The following screen is displayed.

Create DOS Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Enter partition size.....: 20
Enter starting cylinder number...: 0

DOS partition created

Press Esc to return to FDISK Options

Press ESC to return to the FDISK Options menu.

Installing the Operating Systems on Your PC

The following screen is displayed.

FDISK OPTIONS

Current Fixed Disk Drive: 1

Choose one of the following:

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data

Enter choice: [1]

Press Esc to return to DOS

Enter 2 and press RETURN to select Change Active Partition.

The following screen is displayed.

Installing the Operating Systems on Your PC

Change Active Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Enter the number of the partition you
want to make active.....: []

Press Esc to return to FDISK Options

Enter **1** and press RETURN to make partition 1 active.

This step allows DOS to automatically boot from the
hard disk when you power up your computer.

The following screen is displayed.

Change Active Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | A | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Partition 1 made active.

Press Esc to return to FDISK Options

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Press ESC to return to the FDISK Options menu.

5. At the FDISK Options menu, press ESC to return to DOS.

The following screen is displayed.

```
-----  
System will now restart  
  
Insert DOS diskette in drive A:  
Press any key when ready . . .  
-----
```

Check to make sure the DOS diskette is in drive A:, then press any key to continue.

6. At the "Enter new date" prompt, press RETURN.

At the "Enter new time" prompt, press RETURN.

You are returned to the A> prompt. Go on to Section 4.1.3, "Preparing the DOS Partition and Installing DOS (One Hard Disk System)."

**SUMMARY OF CREATING THE ULTIMATE AND DOS PARTITIONS
(ONE HARD DISK SYSTEM)**

1. Load the DOS diskette in drive A:.
2. Turn on both the main power and your monitor.
3. Press RETURN when asked for a new date and a new time.
4. At the A> prompt, type **FDISK** and press RETURN.
5. Press RETURN to select Create DOS Partition.
6. At the "Do you wish to use the entire fixed disk for DOS (Y/N)?" prompt, enter **N** and press RETURN.
7. Enter the size (in cylinders) of the DOS partition, and press RETURN.
8. Enter **0** and press RETURN for the starting cylinder number.
9. Press ESC to return to the FDISK Options menu.
10. Enter **2** and press RETURN to select Change Active Partition.
11. Enter **1** and press RETURN to make partition 1 active.
12. Press ESC to return to the FDISK Options menu. Then press ESC again to return to DOS.
13. At the "Insert DOS diskette in drive A:" prompt, make sure the DOS diskette is still in drive A:.. Then press any key to continue.
14. Press RETURN when asked for a new date and a new time.

4.1.3 PREPARING THE DOS PARTITION AND INSTALLING DOS (ONE HARD DISK SYSTEM)

To install DOS on your hard disk, you must use the FORMAT command. This command erases and prepares the DOS partition, and then installs DOS on your hard disk.

Use the following steps to prepare the DOS partition and install DOS on your one hard disk system.

1. Make sure the DOS diskette is in drive A:.
2. At the A> prompt, type:

FORMAT C:/S and press RETURN.

This command formats drive C:.. The "S" option transfers the DOS operating system from the diskette to the drive specified, which in this case is drive C:..

The following screen is displayed.

NOTE: The wording on your screens may be different, according to the version of DOS you are using.

```
-----  
| WARNING, ALL DATA ON NON-REMOVABLE DISK  
| DRIVE C: WILL BE LOST!  
| Proceed with Format (Y/N)?  
|  
-----
```

Enter **Y** and press RETURN to proceed with the formatting process.

When formatting is complete, a screen similar to the following is displayed.

Installing the Operating Systems on Your PC

```
WARNING, ALL DATA ON NON-REMOVABLE DISK  
DRIVE C: WILL BE LOST!  
Proceed with Format (Y/N)?Y
```

```
Formatting...Format complete  
System transferred
```

```
667648 bytes total disk space  
65536 bytes used by system  
602112 bytes available on disk
```

```
A>
```

3. Unload the DOS diskette and load the diskette labeled "UT.EXE and Utilities" in drive A:.

4. Then type:

COPY A:*. * C: and press RETURN.

When the system is finished copying the utilities diskette, a screen similar to the following is displayed.

```
A>COPY A:*. * C:  
A:UT.EXE  
A:BADSECT.EXE  
A:CLEARUC.EXE  
A:DEUPART.EXE  
4 File(s) copied
```

```
A>
```

5. If you used the DOS BACKUP command to save your data in the DOS partition, use the DOS RESTORE command to load the data now. See your DOS manual for more information.

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6. Then type:

C: and press RETURN.

If you have an IBM XT (or compatible) or an Ultimate 110 PC, go on to Section 4.1.4. If you have an IBM AT (or compatible), go on to Section 4.1.5.

SUMMARY OF PREPARING THE DOS PARTITION AND INSTALLING DOS (ONE HARD DISK SYSTEM)

1. Make sure the DOS diskette is in drive A:.
 2. At the A> prompt, type **FORMAT C:/S** and press RETURN.
 3. Enter **Y** and press RETURN to proceed with the formatting process.
 4. When formatting is complete, unload the DOS diskette and load the diskette labeled "UT.EXE and Utilities" in drive A:.
 5. Type **COPY A:*. * C:** and press RETURN.
 6. If you used the DOS BACKUP command to save your data in the DOS partition, use the DOS RESTORE command to load the data now.
 7. Then type **C:** and press RETURN.
-

4.1.4 PREPARING THE ULTIMATE PARTITION ON YOUR IBM XT OR ULTIMATE 110 PC (ONE HARD DISK SYSTEM)

In this section, you will be preparing the Ultimate partition on your IBM XT (or compatible), or Ultimate 110 PC system. If you have an IBM AT (or compatible), do not use these instructions. Instead, go on to the instructions in Section 4.1.5, "Preparing the Ultimate Partition on Your IBM AT (One Hard Disk System)."

1. At the C> prompt, type:

CLEARUC and press RETURN.

This command starts the disk preparation utilities.

The following screen is displayed.

```
-----  
C>CLEARUC  
BEGINNING ULTIMATE CYLINDER = XXX  
ENDING ULTIMATE CYLINDER   = XXX  
CYLINDER = XXX  
  
CLEARUC FINISHED  
  
C>
```

Go on to the instructions in Section 4.1.6, "Installing the Ultimate PC/OS (One Hard Disk System)."

SUMMARY OF PREPARING THE ULTIMATE PARTITION ON YOUR IBM XT OR ULTIMATE 110 PC (ONE HARD DISK SYSTEM)

1. At the C> prompt, type **CLEARUC** and press RETURN.

4.1.5 PREPARING THE ULTIMATE PARTITION ON YOUR IBM AT (ONE HARD DISK SYSTEM)

If you have an IBM AT (or compatible) computer, you must use Ultimate's BADSECT Utility to prepare the Ultimate partition on your hard disk.

By using the BADSECT Utility, the Ultimate PC/OS can use certain tracks that were flagged as bad by the manufacturer. To use these tracks, the utility builds an alternate track table in the first two cylinders of the Ultimate partition. BADSECT first resets these tracks, and then checks them along with the rest of the Ultimate partition. The BADSECT Utility is only available on IBM ATs (and compatibles) with 20 and 33 megabyte drives as of Revision PC105 and later (kernel 200).

Use the following steps to prepare the Ultimate partition of your IBM AT (or compatible) one hard disk system.

1. At the C> prompt, type:

BADSECT and press RETURN.

A screen similar to the following is displayed.

```
-----  
THIS PROGRAM IS AN ADJUNCT TO THE ULTIMATE OPERATING SYSTEM.  
  
THE FUNCTION OF THIS PROGRAM IS TO PRODUCE A "BAD SECTOR TABLE".  
IT HAS BEEN TESTED ONLY ON IBM-AT'S WITH TYPE 2  
AND TYPE 3 (20 & 33 MEGABYTE) DISKS.  
THIS IS THE VERSION OF 12-4-85 FOR REV 200 & UP.  
  
THIS PROGRAM DESTROYS THE DATA IN THE ULTIMATE PARTITION!!!  
  
SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):  
-----
```

Press RETURN to select drive C:.

NOTE: Your system does not have a drive D:.

The following prompt is displayed.

DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R):

If you are preparing the Ultimate partition for the first time, or changing the size of the Ultimate partition, type R and press RETURN to reset the tables.

If you are not preparing the Ultimate partition for the first time or changing the partition size, Ultimate recommends you just press RETURN. By not resetting the tables, the system can retain the bad spots it has gradually accumulated.

The following prompt is displayed.

DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C):

NOTE: Ultimate recommends that you do not create a permanent Ultimate partition entry. If you don't make the partition permanent, you avoid having to delete it if you want to change the partition size later.

If you do not want to create a permanent entry, press RETURN.

To create a permanent entry, type C and press RETURN.

If you create the entry, you make a permanent partition entry for Ultimate in the FDISK partition table. The entry appears as "U". For instructions on displaying the partition table, see Section 4.4.

If you later wish to remove the entry, you must use the DEUPART.EXE Utility. For instructions, refer to Section 4.3.

2. The utility now goes through two passes on the hard disk. The first pass formats and tests the disk. The second pass builds the bad sector table. (This process takes about 15

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minutes, depending on your system configuration.)

When the C> prompt appears, type:

CLEARUC and press RETURN.

The following screen is displayed.

```
C>CLEARUC
BEGINNING ULTIMATE CYLINDER = 20
ENDING ULTIMATE CYLINDER = XXX
CYLINDER = XXX

CLEARUC FINISHED

C>
```

Go on to the instructions in Section 4.1.6, "Installing the Ultimate PC/OS (One Hard Disk System)."

**SUMMARY OF PREPARING THE ULTIMATE PARTITION ON YOUR IBM AT
(ONE HARD DISK SYSTEM)**

1. At the C> prompt, type **BADSECT** and press RETURN.
2. Press RETURN to select drive C:.
3. At the "DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R" prompt, type **R** and press RETURN (if preparing the Ultimate partition for the first time or changing the partition size), or press RETURN to reset.
4. At the "DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C)" prompt, either press RETURN, or type **C** and press RETURN to create. (Ultimate recommends that you do not create a permanent partition entry.)
5. At the C> prompt, type **CLEARUC** and press RETURN.

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4.1.6 INSTALLING THE ULTIMATE PC/OS (ONE HARD DISK SYSTEM)

If the Ultimate Operating System has never been installed on your computer, use the following instructions to load the Ultimate PC/OS.

If you changed the partition size, do not use these instructions. Instead, follow the instructions for performing a File-Restore in Section 9.1.

1. At the C> prompt, type:

UT and press RETURN.

The following screen is displayed.

```
C>UT
```

```
UT LOADED AT X'XXXXX'
```

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option:
```

Enter **F** to select File-Restore.

The following screen is displayed.

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This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option: **F**
MEMORY SIZE = XXX KB

USING DISK C:
02 COMM LINES

LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY
Insert COLD section floppy
Press <CR> when ready

NOTE: If your system does not have a tape drive, the "LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY" prompt is not displayed on your screen. If you do have a tape drive, enter **F** and press RETURN to indicate that you are going to use an ABS and Files diskette. (Do not load the diskette now.) You are then prompted to "Insert COLD section floppy."

Unload the "UT.EXE and Utilities" diskette, and load the diskette labeled "Cold Load Section" in drive A:. Then press RETURN.

The following screen is displayed.

Disc cartridge attached Block size: 500

System serial # is presently

Enter system serial # or <CR> to accept

Enter your system serial number and press RETURN. For example, enter PA1234 and press RETURN.

Your system serial number is assigned to you by Ultimate. If you do not have one, please call Ultimate's Administration department to get one.

The following screen is displayed.

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```
-----  
Disc cartridge attached Block size: 500  
System serial # is presently  
Enter system serial # or <CR> to accept PA1234  
System serial # is presently PA1234  
Enter system serial # or <CR> to accept  
-----
```

Press RETURN if the serial number is correct.

You may re-enter your serial number if you made a mistake. Press RETURN after you enter the correct serial number.

The following screen is displayed.

```
-----  
System serial # is presently PA1234  
Enter system serial # or <CR> to accept  
Mount ABS tape and enter number of files to skip, if any:  
-----
```

2. Unload the "Cold Load Section" diskette, and load the diskette labeled "ABS and Files Disk #1" in drive A:. Then press RETURN.

The following screen is displayed.

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Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

Press RETURN.

CAUTION: Do not change the diskette.

The following screen is displayed.

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

```
L 01F4 time date DATA PC FILES R10*PC113          01
Seq# of this data tape:  0  0  0  0
Is this the right tape (Y/N)?
```

Check the diskette label to verify that the diskette in drive A: is the ABS and Files Disk #1. (If you are not sure how to check the diskette label, refer the topic System Sequencing Information under the heading "Update Save Procedures" in the System Management and Support Guide.)

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Then type:

Y and press RETURN.

The File-Restore will now begin. Each filename on the diskette is listed on your screen. The following screen is a sample of what is displayed.

```
-----  
Mount DATA tape and press RETURN  
L 01F4 time date DATA PC FILES R10*PC113 01  
Seq# of this data tape: 0 0 0 0  
Is this the right tape (Y/N)?Y  
  SYSTEM 3521,11,1  
  SYSTEM-ERRORS 3568,1,1  
  SYSTEM-ERRORS 3569,1,1  
  SYSTEM-ERRORS 3570,29,1  
  BLOCK-CONVERT 3599,19,1  
Mount reel #2  
Label : 11 FEB 1987 DATA BLOCK-CONVERT PC FILES R10*PC113  
(C)ontinue/(Q)uit?  
-----
```

Unload the first ABS and Files diskette. Then load the diskette labeled "ABS and Files Disk #2." When you are ready, enter **C** to continue.

You will continue to be prompted at the end of each diskette to mount the next reel (which means to load the next diskette). There are approximately six ABS and Files diskettes.

3. When all the diskettes have been loaded, the following screen is displayed.

```
-----  
Update/transaction tapes (Y/N)?  
-----
```

Enter **N** and press RETURN.

The following screen is displayed.

Installing the Operating Systems on Your PC

```
Update/transaction tapes (Y/N)? N
Saving Monitor
Linking workspace for line 0

date      time    Logon please:

<<< Welcome to the Ultimate Computer System >>>
<<< Copyright      date      The Ultimate Corp. >>>
<<<      time      Release XX Rev XXXX      date      >>>

This is the Cold-Start Procedure
Enter <CR> to continue
```

Press RETURN.

The following screen is displayed.

```
date      time    Logon please:

<<< Welcome to the Ultimate Computer System >>>
<<< Copyright      date      The Ultimate Corp. >>>
<<<      time      Release XX Rev XX      date      >>>

This is the Cold-Start Procedure
Enter <CR> to continue

Linking secondary TCL workspaces

X additional task workspaces initialized

time      date

Time =
```

NOTE: If your system has an external clock, you are not prompted for the time and date.

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Enter the time in military format (HH:MM:SS) and press RETURN.

For example, enter 5 PM as 17:00:00. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
  
Time = 17:00:00  
17:00:00      date  
Date =
```

Enter the date in the following format: MM/DD/YY. Then press RETURN.

For example, enter February 3, 1987 as 02/03/87. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
  
Time = 17:00:00  
17:00:00      date  
Date = 02/03/87  
17:00:00    03 FEB 1987
```

The system will display several messages. If there are any error messages, call your Ultimate dealer or

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Ultimate Technical Support (see Section 13.2).

The following screen is displayed.

```
-----  
|                                     |  
|   date           time       Logon please:   |  
|                                     |  
|-----|
```

4. You may now log on.
5. When you are finished, Ultimate recommends that you do a PC-SAVE on your system. This procedure creates backup tapes or diskettes of the ABS and Files diskettes. Refer to Section 8.6 for more information and instructions.

**SUMMARY OF INSTALLING THE ULTIMATE PC/OS
(ONE HARD DISK SYSTEM)**

1. At the C> prompt, type **UT** and press RETURN.
2. Enter **F** to select File-Restore.
3. If you have a tape drive, enter **F** and press RETURN to indicate that you will be using an ABS and Files diskette. (Do not load this diskette now.)
4. Load the Cold Load Section diskette in drive A:. Then press RETURN.
5. Enter your system serial number.
6. Unload the Cold Load Section diskette, and load the ABS and Files disk #1 in drive A:. Then press RETURN.
7. At the "Mount DATA tape" prompt, press RETURN.
8. At the "Is this the right tape (Y/N)?" prompt, check the diskette label to verify that the diskette in drive A: is the ABS and Files Disk #1. Then type **Y** and press RETURN.
9. Continue mounting the ABS and Files diskettes as prompted. When all the diskettes have been loaded, enter **N** and press RETURN at the "Update/transaction tapes (Y/N)?" prompt.
10. Press RETURN at "This is the Cold-Start Procedure."
11. If your system does not have an external clock, enter the time in military format (HH:MM:SS) and press RETURN. Then enter the date (MM/DD/YY) and press RETURN.
12. You may now log on.
14. Ultimate recommends that you do a PC-SAVE on your system.

4.2 INSTALLING THE OPERATING SYSTEMS ON A TWO HARD DISK SYSTEM

Use these instructions only if you have a two hard disk system.

4.2.1 IF YOUR HARD DISK ALREADY CONTAINS AN OPERATING SYSTEM (TWO HARD DISK SYSTEM)

If your computer already contains an operating system, then your system has one or more partitions on its hard disks. You must delete these existing partitions before you can go on to the steps for creating the DOS and Ultimate partitions.

If your hard disk does not contain an operating system, skip these instructions and go on to Section 4.2.2, "Creating the Ultimate and DOS Partitions (Two Hard Disk System)."

Use the following instructions to delete any existing partitions on your two hard disk system.

1. Completely back up your system.

If you have DOS on your hard disks, use the DOS BACKUP command to back up your system. (See your DOS manual for more information.)

If you have the Ultimate operating system on your hard disks, do a full File-Save to back up the Ultimate partitions, and then use the DOS BACKUP command to back up your DOS partitions. (Refer to Section 8.2 for instructions on performing a File-Save, and refer to your DOS manual for instructions on using the DOS BACKUP command.)

WARNING: All your files and data are deleted when you delete the partitions. Therefore, you must back up your system.

2. If you created permanent Ultimate partition entries, you must now delete them by using the DEUPART.EXE Utility.

- a. At the C> prompt, type:

DEUPART and press RETURN.

The following screen is displayed.

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```
C>DEUPART
SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):
```

- b. You must now delete the permanent partition entry in each drive that it exists: drive C:, drive D:, or both.

To delete the partition entry for drive C:, press RETURN.

To delete the partition entry for drive D:, type **D** and press RETURN.

To delete the permanent partition entry in both drives, press RETURN to select drive C:. Then type **D** and press RETURN to select drive D:.

When the DEUPART.EXE Utility is finished, the following screen is displayed.

```
DEUPART FINISHED
C>
```

3. Load the DOS diskette in drive A:.
4. Turn on both the main power and your monitor. (Refer to your hardware manual for the positions of these switches.)
5. When asked for a new date, press RETURN.
When asked for a new time, press RETURN.
6. At the A> prompt, type:
FDISK and press RETURN.

The following screen is displayed.

NOTE: The wording on your screens may be different, according to the version of DOS you are using.

Installing the Operating Systems on Your PC

FDISK OPTIONS

Current Fixed Disk Drive: 1

Choose one of the following:

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data
5. Select Next Fixed Disk Drive

Enter choice: [1]

Press Esc to return to DOS

CAUTION: This step deletes all the data and files on your hard disk. Do not continue with these instructions unless you have completely backed up your system.

Enter **3** and press RETURN to select Delete DOS Partition.

The following screen is displayed.

Installing the Operating Systems on Your PC

Delete DOS Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | A | DOS | X | XX | XX |

Total disk space is XXX cylinders.

Warning! Data in the DOS partition
will be lost. Do you wish to
continue.....? []

Press Esc to return to FDISK Options

Enter **Y** and press RETURN to delete the DOS partition.

The following screen is displayed.

Delete DOS Partition

Current Fixed Disk Drive: 1

No partitions defined.

Total disk space is XXX cylinders.

DOS partition deleted.

Press Esc to return to FDISK Options

Press **ESC** to return to the FDISK Options menu.

The following screen is displayed.

Installing the Operating Systems on Your PC

FDISK OPTIONS

Current Fixed Disk Drive: 1

Choose one of the following:

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data
5. Select Next Fixed Disk Drive

Enter choice: [1]

Press Esc to return to DOS

Enter 5 and press RETURN to select Select Next Fixed Drive.

The following screen is displayed.

FDISK OPTIONS

Current Fixed Disk Drive: 2

Choose one of the following:

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data
5. Select Next Fixed Disk Drive

Enter choice: [1]

Press Esc to return to DOS

Enter 3 and press RETURN to select Delete DOS Partition.

The following screen is displayed.

Delete DOS Partition

Current Fixed Disk Drive: 2

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | A | DOS | X | XX | XX |

Total disk space is XXX cylinders.

Warning! Data in the DOS partition
will be lost. Do you wish to
continue.....? []

Press Esc to return to FDISK Options

Enter Y and press RETURN to delete the DOS partition.

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The following screen is displayed.

```
-----  
Delete DOS Partition  
Current Fixed Disk Drive: 2  
No partitions defined.  
  
Total disk space is XXX cylinders.  
  
DOS partition deleted.  
  
Press Esc to return to FDISK Options  
-----
```

7. Press ESC to return to the FDISK Options menu.
8. Then, at the FDISK Options menu, enter 5 and press RETURN to select Select Next Fixed Drive.

Because the FDISK Options menu is already displayed, you can skip the first three steps in the following instructions, "Creating the Ultimate and DOS Partitions (Two Hard Disk System)." Go directly to Step 4.

**SUMMARY OF "IF YOUR HARD DISK ALREADY CONTAINS
AN OPERATING SYSTEM (TWO HARD DISK SYSTEM)"**

1. Completely back up your system.
2. If you created a permanent Ultimate partition entries, you must now delete them.
 - a. At the C> prompt, type **DEUPART** and press RETURN.
 - b. At the "SELECT DISK DRIVE C: OR D: (<CR> OR D)" prompt, select the drive(s) that contain a permanent Ultimate partition entry.
3. Load the DOS diskette in drive A:.
4. Turn on both the main power and your monitor.
5. Press RETURN when asked for a new date and a new time.
6. At the A> prompt, type **FDISK** and press RETURN.
7. Enter **3** and press RETURN to select Delete DOS Partition.
8. Enter **Y** and press RETURN to delete the DOS partition.
9. Press ESC to return to the FDISK Options menu.
10. Enter **5** and press RETURN to select Select Next Fixed Drive.
11. Enter **3** and press RETURN to select Delete DOS Partition.
12. Enter **Y** and press RETURN to delete the DOS partition.
13. Press ESC to return to the FDISK Options menu.
14. Enter **5** and press RETURN to select Select Next Fixed Drive.

4.2.2 CREATING THE ULTIMATE AND DOS PARTITIONS (TWO HARD DISK SYSTEM)

To install more than one operating system on your hard disks, you must partition your disks. Each partition holds an operating system. The first partition holds DOS and the second partition holds the Ultimate Operating System.

Use the following steps to create the DOS and Ultimate partitions on your two hard disk system.

1. Load the DOS diskette in drive A:.
2. Turn on both the main power and your monitor.
3. When asked for a new date, press RETURN.
When asked for a new time, press RETURN.

4. At the A> prompt, type:

FDISK and press RETURN.

The following screen is displayed.

NOTE: The wording on your screens may be different, according to the version of DOS you are using.

FDISK OPTIONS

Current Fixed Disk Drive: 1

Choose one of the following:

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data
5. Select Next Fixed Disk Drive

Enter choice: [1]

Press Esc to return to DOS

NOTE: The 1 is displayed automatically.

Press RETURN to select Create DOS Partition.

The following prompt is displayed.

Do you wish to use the entire fixed disk for DOS (Y/N)?

Enter **N** and press RETURN.

The following screen is displayed.

Installing the Operating Systems on Your PC

Create DOS Partition

Current Fixed Disk Drive: 1

No partitions defined.

Total disk space is XXX cylinders.
Maximum available space is XXX
cylinders at cylinder 0.

Enter partition size.....: [XXX]

Press Esc to return to FDISK Options

Enter the size (in cylinders) of the DOS partition, and press RETURN. For example, enter **20** and press RETURN.

NOTE: You may make the partition any size you wish, as long as it contains at least 5 cylinders and leaves at least 125 cylinders for the Ultimate PC/OS.

The following screen is displayed.

Create DOS Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total Disk space is XXX cylinders.

Enter partition size.....: 20
Enter starting cylinder number..: [000]

Press Esc to return to FDISK Options

Enter 0 and press RETURN for the starting cylinder number.

The following screen is displayed.

Create DOS Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Enter partition size.....: 20
Enter starting cylinder number...: 0

DOS partition created

Press Esc to return to FDISK Options

Installing the Operating Systems on Your PC

Press ESC to return to the FDISK Options menu.

The following screen is displayed.

```
-----  
FDISK OPTIONS  
  
Current Fixed Disk Drive: 1  
  
Choose one of the following:  
  
    1. Create DOS Partition  
    2. Change Active Partition  
    3. Delete DOS Partition  
    4. Display Partition Data  
    5. Select Next Fixed Disk Drive  
  
Enter choice: [1]  
  
Press Esc to return to DOS  
-----
```

Enter **2** and press RETURN to select Change Active Partition.

The following screen is displayed.

Change Active Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Enter the number of the partition you want to make active.....: []

Press Esc to return to FDISK Options

Enter 1 and press RETURN to make partition 1 active.

This step allows DOS to automatically boot from hard disk when the computer is powered up.

The following screen is displayed.

Change Active Partition

Current Fixed Disk Drive: 1

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | A | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Partition 1 made active.

Press Esc to return to FDISK Options

Installing the Operating Systems on Your PC

Press ESC to return to the FDISK Options menu.

5. At the FDISK Options menu, enter

5 and press RETURN to select Select Next Fixed Disk Drive.

This entry selects fixed drive number 2. Your screen should look like the following.

```
-----  
FDISK OPTIONS
```

```
Current Fixed Disk Drive: 2
```

```
Choose one of the following:
```

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data
5. Select Next Fixed Disk Drive

```
Enter choice: [1]
```

```
Press Esc to return to DOS
```

```
-----  
NOTE: The 1 is displayed automatically.
```

Press RETURN to select Create DOS Partition.

The following prompt is displayed.

```
-----  
Do you wish to use the entire fixed disk for DOS (Y/N)?
```

Enter **N** and press RETURN.

Installing the Operating Systems on Your PC

The following screen is displayed.

```
-----  
Create DOS Partition  
  
Current Fixed Disk Drive: 2  
  
No partitions defined.  
  
Total disk space is XXX cylinders.  
Maximum available space is XXX  
cylinders at cylinder 0.  
  
Enter partition size.....: [ XXX]  
  
Press Esc to return to FDISK Options  
-----
```

Enter the size (in cylinders) of the DOS partition, and press RETURN. For example, enter **20** and press RETURN.

NOTE: You may make the partition any size you wish, as long as it contains at least 1 cylinder.

The following screen is displayed.

Installing the Operating Systems on Your PC

Create DOS Partition

Current Fixed Disk Drive: 2

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total Disk space is XXX cylinders.

Enter partition size.....: 20
Enter starting cylinder number...: [000]

Press Esc to return to FDISK Options

Enter 0 and press RETURN for the starting cylinder number.

The following screen is displayed.

Create DOS Partition

Current Fixed Disk Drive: 2

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Enter partition size.....: 20
Enter starting cylinder number...: 0

DOS partition created

Press Esc to return to FDISK Options

Installing the Operating Systems on Your PC

Press ESC to return to the FDISK Options menu.

The following screen is displayed.

FDISK OPTIONS

Current Fixed Disk Drive: 2

Choose one of the following:

1. Create DOS Partition
2. Change Active Partition
3. Delete DOS Partition
4. Display Partition Data
5. Select Next Fixed Disk Drive

Enter choice: [1]

Press Esc to return to DOS

Enter 2 and press RETURN to select Change Active Partition.

The following screen is displayed.

Installing the Operating Systems on Your PC

Change Active Partition

Current Fixed Disk Drive: 2

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | N | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Enter the number of the partition you
want to make active.....: []

Press Esc to return to FDISK Options

Enter **1** and press RETURN to make partition 1 active.

The following screen is displayed.

Change Active Partition

Current Fixed Disk Drive: 2

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | A | DOS | 0 | 19 | 20 |

Total disk space is XXX cylinders.

Partition 1 made active.

Press Esc to return to FDISK Options

Press ESC to return to the FDISK Options menu.

Installing the Operating Systems on Your PC

6. At the FDISK Options menu, press ESC to return to DOS.

The following screen is displayed.

```
-----  
|  
| System will now restart  
|  
| Insert DOS diskette in drive A:  
| Press any key when ready . . .  
|  
|-----
```

Make sure the DOS diskette is in drive A:. Then just press any key to continue.

7. At the "Enter new date" prompt, press RETURN.

At the "Enter new time" prompt, press RETURN.

The A> prompt is displayed. Go on to Section 4.2.3 "Preparing the DOS Partition and Installing DOS (Two Hard Disk System)."

**SUMMARY OF CREATING THE ULTIMATE AND DOS PARTITIONS
(TWO HARD DISK SYSTEM)**

1. Load the DOS diskette in drive A:. Then turn on both the main power and your monitor.
2. Press RETURN when asked for a new date and a new time.
3. At the A> prompt, type **FDISK** and press RETURN.
4. Press RETURN to select Create DOS Partition.
5. At the "Do you wish to use the entire fixed disk for DOS (Y/N)?" prompt, enter **N** and press RETURN.
6. Enter the size (in cylinders) of the DOS partition, and press RETURN. Then enter **0** and press RETURN for the starting cylinder number.
7. Press ESC to return to the FDISK Options menu.
8. Enter **2** and press RETURN to select Change Active Partition. Then enter **1** and press RETURN to make partition 1 active.
9. Press ESC to return to the FDISK Options menu.
10. Enter **5** and press RETURN to select Select Next Fixed Disk Drive. Then press RETURN to select Create DOS Partition.
11. At the "Do you wish to use the entire fixed disk for DOS (Y/N)?" prompt, enter **N** and press RETURN.
12. Enter the size (in cylinders) of the DOS partition, and press RETURN. Then enter **0** and press RETURN for the starting cylinder number.
13. Press ESC to return to the FDISK Options menu.
14. Enter **2** and press RETURN to select Change Active Partition. Then enter **1** and press RETURN to make partition 1 active.
15. Press ESC to return to the FDISK Options menu. Then press ESC again to return to DOS.
16. At the "Insert DOS diskette in drive A:" prompt, make sure the DOS diskette is still in drive A:. Then press any key to continue.
17. Press RETURN when asked for a new date and a new time.

4.2.3 PREPARING THE DOS PARTITION AND INSTALLING DOS (TWO HARD DISK SYSTEM)

To install DOS on your hard disks, you must use the FORMAT command. This command erases and prepares the DOS partition, and then installs DOS on your hard disks.

Use the following steps to prepare the DOS partitions and install DOS on your two hard disk system.

1. Make sure the DOS diskette is in drive A:.
2. At the A> prompt, type:

FORMAT C:/S and press RETURN.

This command formats drive C:.. The "S" option transfers the DOS operating system from the diskette to the drive specified, which in this case is drive C:..

The following screen is displayed.

NOTE: The wording on your screens may be different, according to the version on DOS you are using.

```
-----  
| WARNING, ALL DATA ON NON-REMOVABLE DISK  
| DRIVE C: WILL BE LOST!  
| Proceed with Format (Y/N)?  
|  
-----
```

Enter **Y** and press RETURN to proceed with the formatting process.

When formatting is complete, a screen similar to the following is displayed.

Installing the Operating Systems on Your PC

```
WARNING, ALL DATA ON NON-REMOVABLE DISK  
DRIVE C: WILL BE LOST!  
Proceed with Format (Y/N)?Y
```

```
Formatting...Format complete  
System transferred
```

```
667648 bytes total disk space  
65536 bytes used by system  
602112 bytes available on disk
```

```
A>
```

3. Now type:

FORMAT D: and press RETURN.

The following screen is displayed.

```
WARNING, ALL DATA ON NON-REMOVABLE DISK  
DRIVE D: WILL BE LOST!  
Proceed with Format (Y/N)?
```

Enter **Y** and press RETURN to proceed with the formatting process.

When formatting is complete, a screen similar to the following is displayed.

```
WARNING, ALL DATA ON NON-REMOVABLE DISK  
DRIVE D: WILL BE LOST!  
Proceed with Format (Y/N)?Y
```

```
Formatting...Format complete  
System transferred
```

```
667648 bytes total disk space  
667648 bytes available on disk
```

```
A>
```

4. Unload the DOS diskette and load the diskette labeled "UT.EXE and Utilities" in drive A:.

5. Then type:

COPY A:*. * C: and press RETURN.

When the system is finished copying the utilities diskette, a screen similar to the following is displayed.

```
A>COPY A:*. * C:  
A:UT.EXE  
A:BADSECT.EXE  
A:CLEARUC.EXE  
A:DEUPART.EXE  
4 File(s) copied
```

```
A>
```

6. If you used the DOS BACKUP command to save your data in the DOS partition, use the DOS RESTORE command to load the data now. See your DOS manual for more information.

7. Then type:

C: and press RETURN.

Installing the Operating Systems on Your PC

If you have an IBM XT (or compatible) or an Ultimate 110 PC, go on to Section 4.2.4. If you have an IBM AT (or compatible), go on to Section 4.2.5.

SUMMARY OF PREPARING THE DOS PARTITION AND INSTALLING DOS (TWO HARD DISK SYSTEM)

1. Make sure the DOS diskette is in drive A:.
2. At the A> prompt, type **FORMAT C:/S** and press RETURN.
3. Enter **Y** and press RETURN to proceed with the formatting process.
4. At the A> prompt, type **FORMAT D:** and press RETURN.
5. Enter **Y** and press RETURN to proceed with the formatting process.
6. When the formatting process is complete, unload the DOS diskette and load the diskette labeled "UT.EXE and Utilities" in drive A:.
7. Type **COPY A:*. * C:** and press RETURN.
8. If you used the DOS BACKUP command to save your data in the DOS partitions, use the DOS RESTORE command to load the data now.
9. Then type **C:** and press RETURN.

4.2.4 PREPARING THE ULTIMATE PARTITION ON YOUR IBM XT OR ULTIMATE 110 PC (TWO HARD DISK SYSTEM)

In this section, you will be preparing the Ultimate partitions on your IBM XT (or compatible) or Ultimate 110 PC system. If you have an IBM AT (or compatible) do not use these instructions. Instead, go on to the instructions in Section 4.2.5, "Preparing the Ultimate Partition on Your IBM AT (Two Hard Disk System)."

1. At the C> prompt, type:

CLEARUC and press RETURN.

This command starts the disk preparation utilities.

The following screen is displayed.

```
C>CLEARUC
BEGINNING ULTIMATE CYLINDER = XXX
ENDING ULTIMATE CYLINDER   = XXX
CYLINDER = XXX

CLEARUC FINISHED

C>
```

Go on to the instructions in Section 4.2.6, "Installing the Ultimate PC/OS (Two Hard Disk System)."

SUMMARY OF PREPARING THE ULTIMATE PARTITION ON YOUR IBM XT OR ULTIMATE 110 PC (TWO HARD DISK SYSTEM)

1. At the C> prompt, type **CLEARUC** and press RETURN.

Installing the Operating Systems on Your PC

4.2.5 PREPARING THE ULTIMATE PARTITION ON YOUR IBM AT (TWO HARD DISK SYSTEM)

If you have an IBM AT (or compatible) computer, you must use Ultimate's BADSECT Utility to prepare the Ultimate partition of your hard disks.

By using the BADSECT Utility, the Ultimate PC/OS can use certain tracks that were flagged as bad by the manufacturer. To use these tracks, the utility builds an alternate track table in the first two cylinders of the Ultimate partition. BADSECT first resets these tracks, and then checks them along with the rest of the Ultimate partition. The BADSECT Utility is only available on IBM ATs (and compatibles) with 20 and 33 megabyte drives as of Revision PC105 and later (kernel 200).

Use the following steps to prepare the Ultimate partition of your IBM AT (or compatible) two hard disk system.

1. At the C> prompt, type:

BADSECT and press RETURN.

A screen similar to the following is displayed.

```
-----  
THIS PROGRAM IS AN ADJUNCT TO THE ULTIMATE OPERATING SYSTEM.  
  
THE FUNCTION OF THIS PROGRAM IS TO PRODUCE A "BAD SECTOR TABLE".  
IT HAS BEEN TESTED ONLY ON IBM-AT'S WITH TYPE 2  
AND TYPE 3 (20 & 33 MEGABYTE) DISKS.  
THIS IS THE VERSION OF 12-4-85 FOR REV 200 & UP.
```

```
THIS PROGRAM DESTROYS THE DATA IN THE ULTIMATE PARTITION!!!
```

```
SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):
```

Press RETURN to select drive C:.

The following prompt is displayed.

DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R):

If you are preparing the Ultimate partition for the first time, or changing the size of the Ultimate partitions, type R and press RETURN to reset the tables.

If you are not preparing the Ultimate partition for the first time or changing the partition size, Ultimate recommends you just press RETURN. By not resetting the tables, the system can retain the bad spots it has gradually accumulated.

The following prompt is displayed.

DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C):

NOTE: Ultimate recommends that you do not create a permanent Ultimate partition entry. If you don't make the partition permanent, you avoid having to delete it if you want to change the partition size later.

If you do not want to create a permanent entry, press RETURN.

To create a permanent entry, type C and press RETURN.

If you create the entry, you make a permanent partition entry for Ultimate in the FDISK partition table. The entry appears as "U". For instructions on displaying the partition table, see Section 4.4.

If you later wish to remove the entry, you must use the DEUPART.EXE Utility. For instructions, see Section 4.3.

2. The utility now goes through two passes on the hard disk. The first pass formats and tests the disk. The second pass builds the bad sector table. (This process takes about 15 minutes, depending on your system configuration.)

Installing the Operating Systems on Your PC

When the C> prompt appears, type:

CLEARUC and press RETURN.

The following screen is displayed.

```
C>CLEARUC
BEGINNING ULTIMATE CYLINDER = 20
ENDING ULTIMATE CYLINDER = XXX
CYLINDER = XXX

CLEARUC FINISHED

C>
```

3. At the C> prompt, type:

BADSECT and press RETURN.

A screen similar to the following is displayed.

```
THIS PROGRAM IS AN ADJUNCT TO THE ULTIMATE OPERATING SYSTEM.

THE FUNCTION OF THIS PROGRAM IS TO PRODUCE A "BAD SECTOR TABLE".
IT HAS BEEN TESTED ONLY ON IBM-AT'S WITH TYPE 2
AND TYPE 3 (20 & 33 MEGABYTE) DISKS.
THIS IS THE VERSION OF 12-4-85 FOR REV 200 & UP.

THIS PROGRAM DESTROYS THE DATA IN THE ULTIMATE PARTITION!!!

SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):
```

Enter **D** and press RETURN to select drive D:.

The following prompt is displayed.

Installing the Operating Systems on Your PC

DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R):

If you are preparing the Ultimate partition for the first time, or changing the size of the Ultimate partitions, type **R** and press RETURN to reset the tables.

If you are not preparing the Ultimate partition for the first time or changing the partition size, Ultimate recommends you just press RETURN. By not resetting the tables, the system can retain the bad spots it has gradually accumulated.

The following prompt is displayed.

DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C):

NOTE: Ultimate recommends that you do not create a permanent Ultimate partition entry. If you don't make the partition permanent, you avoid having to delete it if you want to change the partition size later.

If you do not want to create a permanent entry, press RETURN.

To create a permanent entry, type **C** and press RETURN.

If you create the entry, you make a permanent partition entry for Ultimate in the FDISK partition table. The entry appears as "U". For instructions on displaying the partition table, see Section 4.4.

If you later wish to remove the entry, you must use the DEUPART.EXE Utility. For instructions, see Section 4.3.

4. The utility now goes through two passes on the hard disk. The first pass formats and tests the disk. The second pass builds the bad sector table. (This process takes about 15

minutes, depending on your system configuration.)

Go on to the instructions in Section 4.2.6, "Installing the Ultimate PC/OS (Two Hard Disk System)."

**SUMMARY OF PREPARING THE ULTIMATE PARTITION ON YOUR IBM AT
(TWO HARD DISK SYSTEM)**

1. At the C> prompt, type **BADSECT** and press RETURN.
2. Press RETURN to select drive C:.
3. At the "DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R" prompt, type **R** and press RETURN (if preparing the Ultimate partition for the first time or changing the partition size) or, press RETURN to reset.
4. At the "DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C)" prompt, either press RETURN, or type **C** and press RETURN to create. (Ultimate recommends that you do not create a permanent partition entry.)
5. At the C> prompt, type **CLEARUC** and press RETURN.
6. At the C> prompt, type **BADSECT** and press RETURN.
7. Enter **D** and press RETURN to select drive D:.
8. At the "DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R" prompt, type **R** and press RETURN (if preparing the Ultimate partition for the first time or changing the partition size) or, press RETURN to reset.
9. At the "DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C)" prompt, either press RETURN, or type **C** and press RETURN to create. (Ultimate recommends that you do not create a permanent partition entry.)

4.2.6 INSTALLING THE ULTIMATE PC/OS (TWO HARD DISK SYSTEM)

If the Ultimate Operating System has never been installed on your computer use the following instructions to load the Ultimate PC/OS.

If you changed the partition size, do not follow these instructions. Instead, use the instructions in Section 9.1 to perform a File-Restore.

1. At the C> prompt, type:

UT and press RETURN.

The following screen is displayed.

```
C>UT
UT LOADED AT X'XXXXX'

This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option:
```

Enter **F** to select File-Restore.

The following screen is displayed.

```
This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option: F
MEMORY SIZE = XXX KB

USE DISK D: FOR ULTIMATE? (Y OR N):
```

Installing the Operating Systems on Your PC

Enter **Y** and press RETURN to use disk D: for Ultimate.

The following screen is displayed.

```
-----  
USE DISK D: FOR ULTIMATE? (Y OR N):Y  
  
USING DISKS C: AND D:  
02 COMM LINES  
  
LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY  
Insert COLD section floppy  
Press <CR> when ready  
-----
```

NOTE: If your system does not have a tape drive, the "LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY" prompt is not displayed on your screen. If you do have a tape drive, enter **F** and press RETURN to indicate that you are going to use an ABS and Files diskette. (Do not load the diskette now.) You are then prompted to "Insert COLD section floppy."

Unload the "UT.EXE and Utilities" diskette, and load the diskette labeled "Cold Load Section" in drive A:. Then press RETURN.

The following screen is displayed.

```
-----  
Disc cartridge attached Block size: 500  
  
System serial # is presently  
  
Enter system serial # or <CR> to accept  
-----
```

Enter your system serial number and press RETURN. For example, enter PA1234 and press RETURN.

Your system serial number is assigned to you by Ultimate. If you do not have one, please call Ultimate's Administration department to get one.

The following screen is displayed.

Installing the Operating Systems on Your PC

```
Disc cartridge attached Block size: 500
System serial # is presently
Enter system serial # or <CR> to accept PA1234
System serial # is presently PA1234
Enter system serial # or <CR> to accept
```

Press RETURN if the serial number is correct.

You may re-enter your serial number if you made a mistake. Press RETURN after you enter the correct serial number.

The following screen is displayed.

```
System serial # is presently PA1234
Enter system serial # or <CR> to accept
Mount ABS tape and enter number of files to skip, if any:
```

2. Unload the "Cold Load Section" diskette, and load the diskette labeled "ABS and Files Disk #1" in drive A:. Then press RETURN.

The following screen is displayed.

Installing the Operating Systems on Your PC

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

Press RETURN.

CAUTION: Do not change the diskette.

The following screen is displayed.

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

L 01F4 time date DATA PC FILES R10*PC113 01
Seq# of this data tape: 0 0 0 0
Is this the right tape (Y/N)?

Check the diskette label to verify that the diskette in drive A: is the ABS and Files Disk #1. (If you are not sure how to check the diskette label, refer to the topic System Sequencing Information under the heading "Update Save Procedures" in the System Management and Support Guide.)

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Then type:

Y and press RETURN.

The File-Restore will now begin. Each filename on the diskette is listed on your screen. The following screen is a sample of what is displayed.

```
-----  
Mount DATA tape and press RETURN  
L 01F4 time date DATA PC FILES R10*PC113 01  
Seq# of this data tape: 0 0 0 0  
Is this the right tape (Y/N)?Y  
SYSTEM 3521,11,1  
SYSTEM-ERRORS 3568,1,1  
SYSTEM-ERRORS 3569,1,1  
SYSTEM-ERRORS 3570,29,1  
BLOCK-CONVERT 3599,19,1  
Mount reel #2  
Label : 11 FEB 1987 DATA BLOCK-CONVERT PC FILES R10*PC113  
(C)ontinue/(Q)uit?  
-----
```

Unload the first ABS and Files diskette. Then load the diskette labeled "ABS and Files Disk #2." When you are ready, enter **C** to continue.

You will continue to be prompted at the end of each diskette to mount the next reel (which means to load the next diskette). There are approximately six ABS and Files diskettes.

3. When all the diskettes have been loaded, the following screen is displayed.

```
-----  
Update/transaction tapes (Y/N)?  
-----
```

Enter **N** and press RETURN.

The following screen is displayed.

Installing the Operating Systems on Your PC

```
Update/transaction tapes (Y/N)? N
Saving Monitor
Linking workspace for line 0
```

```
date time Logon please:
```

```
<<< Welcome to the Ultimate Computer System >>>
<<< Copyright date The Ultimate Corp. >>>
<<< time Release XX Rev XXXX date >>>
```

```
This is the Cold-Start Procedure
Enter <CR> to continue
```

Press RETURN.

The following screen is displayed.

```
date time Logon please:
```

```
<<< Welcome to the Ultimate Computer System >>>
<<< Copyright date The Ultimate Corp. >>>
<<< time Release XX Rev XX date >>>
```

```
This is the Cold-Start Procedure
Enter <CR> to continue
```

```
Linking secondary TCL workspaces
```

```
X additional task workspaces initialized
```

```
time date
```

```
Time =
```

NOTE: If your system has an external clock, you are not prompted for the time and date.

Installing the Operating Systems on Your PC

Enter the time in military format (HH:MM:SS) and press RETURN.

For example, enter 5 PM as 17:00:00. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
  
Time = 17:00:00  
17:00:00      Date  
Date =
```

Enter the date in the following format: MM/DD/YY. Then press RETURN.

For example, enter February 3, 1987 as 02/03/87. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
  
Time = 17:00:00  
17:00:00      date  
Date = 02/03/87  
17:00:00    03 FEB 1987
```

The system will display several messages. If there are any error messages, call your Ultimate dealer or

**SUMMARY OF INSTALLING THE ULTIMATE PC/OS
(TWO HARD DISK SYSTEM)**

1. At the C> prompt, type **UT** and press RETURN.
2. Enter **F** to select File-Restore.
3. At the "USE DISK D: FOR ULTIMATE? (Y OR N)" prompt, enter **Y** and press RETURN.
4. If you have a tape drive, enter **F** and press RETURN to indicate that you will be using an ABS and Files diskette. (Do not load this diskette now.)
5. Load the Cold Load Section diskette in drive A:. Then press RETURN.
6. Enter your system serial number.
7. Unload the Cold Load Section diskette, and load the "ABS and Files Disk #1" in drive A:. Then press RETURN.
8. At the "Mount DATA tape" prompt, press RETURN.
9. At the "Is this the right tape (Y/N)?" prompt, check the diskette label to verify that the diskette in drive A: is the ABS and Files Disk #1. Then type **Y** and press RETURN.
10. Continue mounting the ABS and Files diskettes as prompted. When all the diskettes have been loaded, enter **N** and press RETURN at the "Update/transaction tapes (Y/N)?" prompt.
11. Press RETURN at "This is the Cold-Start Procedure."
12. If your system does not have an external clock, enter the time in military format (HH:MM:SS) and press RETURN. Then enter the date (MM/DD/YY) and press RETURN.
13. You may now log on.
14. Ultimate recommends that you do a PC-SAVE on your system.

4.3 DELETING A PERMANENT ULTIMATE PARTITION ENTRY

If you created a permanent partition entry for Ultimate, you may delete it by using the DEUPART.EXE Utility.

1. Do a full File-Save.

You will need this File-Save to restore your own accounts later in this procedure. See Section 8.2 for instructions on performing a File-Save.

2. At the C> prompt, type:

DEUPART and press RETURN.

The following screen is displayed.

```
C>DEUPART
SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):
```

3. You may now either delete the permanent partition entry for disk drive C:, drive D:, or both.

To delete the partition entry in drive C:, press RETURN.

To delete the partition entry in drive D:, type **D** and press RETURN.

If you have two drives, and wish to delete both the permanent partition entries, press RETURN to select drive C:. Then type **D** and press RETURN to select drive D:.

When the DEUPART.EXE Utility is finished, the following screen is displayed.

```
DEUPART FINISHED
C>
```

Installing the Operating Systems on Your PC

4.4 DISPLAYING PARTITION DATA

If you wish, you may display the FDISK partition table from the FDISK Options menu at any time. The table tells you the current size of your DOS partition(s).

1. Load the DOS diskette in drive A:.
2. At the A> prompt, type:
FDISK and press RETURN.
3. At the FDISK Options menu, type **4** and press RETURN to select Display Partition Data.

The following is a sample of what is displayed.

Display Partition Information

| Partition | Status | Type | Start | End | Size |
|-----------|--------|------|-------|-----|------|
| 1 | A | DOS | 0 | 19 | 20 |

Total disk space is 979 cylinders.

Press Esc to return to FDISK Options.

Press ESC to return to the FDISK Options menu.

4.5 CALCULATING OVERFLOW SPACE

Once you have installed the Ultimate Operating System, you may use this utility to see how much overflow space your system has. Overflow is the disk space available for your applications, which includes your programs and data.

This utility is also a planning tool. By entering different partition sizes into the program, you can see how much overflow space you gain or lose by changing the DOS partition.

After you enter some basic information about your system, the utility calculates the MAXFID, which is the maximum number of frames available on the Ultimate partition of your hard disk(s). Then it calculates the number of frames used by the Ultimate Operating System. Finally, it subtracts the frames used by the operating system from the MAXFID, to get the number of frames available for overflow. All three numbers (the MAXFID, the frames used by the Ultimate Operating System, and the overflow) are displayed.

1. Logto SYSPROG.

The following menu is displayed.

SYSPROG MAIN MENU
(PC-Based Systems)

1. File-Save with automatic GFE fixer
- 1A. File-Save without automatic GFE fixer
2. ALL-UPDATE-SAVE
3. PART-UPDATE-SAVE
4. Documentation Menu
5. Spooler Menu
6. Calculate Overflow Space
7. Automatic File Reallocation Menu
8. Load WP Account From SYS-GEN Diskette
9. Load Utilink Account From SYS-GEN Diskette

88. Logoff
99. Go to TCL

ENTER SELECTION _

Installing the Operating Systems on Your PC

Enter **6** and press RETURN to select Calculate Overflow Space.

The following screen is displayed.

```
*** PC OVERFLOW UTILITY ***
```

```
This utility calculates the maximum frame ID (MAXFID)
and also the amount of overflow frames left after restoring a
virgin system. The calculation is based on a PC configured for
3 ports and doesn't include Ultiword.
```

```
Hit <CR> to continue or 'X' to exit
```

To continue, press RETURN.

To exit to TCL, enter **X** and press RETURN.

If you just press RETURN, the following screen is displayed.

*** PC OVERFLOW UTILITY ***

This utility calculates the maximum frame ID (MAXFID) and also the amount of overflow frames left after restoring a virgin system. The calculation is based on a PC configured for 3 ports and doesn't include Ultiword.

Hit <CR> to continue or 'X' to eXit

Do you have an IBM (A)T or (X)T compatible?

If you have an IBM AT (or compatible), enter **A** and press RETURN.

If you have an IBM XT (or compatible), or an Ultimate 110 PC, enter **X** and press RETURN.

For this example, type A and press RETURN. The following screens are all for the IBM AT (or compatible). The screens for IBM XT or Ultimate 110 PC are the same except as noted.

Installing the Operating Systems on Your PC

*** PC OVERFLOW UTILITY ***

This utility calculates the maximum frame ID (MAXFID) and also the amount of overflow frames left after restoring a virgin system. The calculation is based on a PC configured for 3 ports and doesn't include Ultiword.

Hit <CR> to continue or 'X' to eXit

Do you have an IBM (A)T or (X)T compatible? A

How many hard disk drives are you using (1 or 2)?

If you have a one hard disk system, enter 1 and press RETURN.

If you have a two hard disk system, enter 2 and press RETURN.

For this example, type 2 and press RETURN. The following screens are all for a two hard disk system. The screens for the one hard disk system are the same except as noted.

Installing the Operating Systems on Your PC

*** PC OVERFLOW UTILITY ***

This utility calculates the maximum frame ID (MAXFID) and also the amount of overflow frames left after restoring a virgin system. The calculation is based on a PC configured for 3 ports and doesn't include Ultiword.

Hit <CR> to continue or 'X' to eXit

Do you have an IBM (A)T or (X)T compatible? A

How many hard disk drives are you using (1 or 2)? 2

What REV PC number is your PC running on? PC

Enter the revision number your PC is on, and press RETURN.
For example, type 113 and press RETURN.

The following screen is displayed.

Installing the Operating Systems on Your PC

*** PC OVERFLOW UTILITY ***

What size is drive 1 (20,33)?

NOTE: If you chose the IBM XT (or Ultimate 110 PC), your choice for disk size is (10,15) instead of (20,33).

Enter either 20 or 33 (megabytes) and press RETURN, depending on your disk size.

For example, type 33 and press RETURN. The following screen is displayed.

Installing the Operating Systems on Your PC

*** PC OVERFLOW UTILITY ***

What size is drive 1 (20,33)? 33

How many cylinders are you using for DOS on drive 1?

Enter the number of cylinders you are using for DOS on the first drive, and press RETURN.

For example, type 20 and press RETURN. The following screen is displayed.

NOTE: The DOS partition must contain at least 5 cylinders. If you enter a number that is less than 5, the following message is displayed.

** MUST be GREATER than 4

Press RETURN. You are again prompted with "How many cylinders are you using for DOS on drive 1?" Enter a number greater than 4 and press RETURN.

Installing the Operating Systems on Your PC

*** PC OVERFLOW UTILITY ***

What size is drive 1 (20,33)? 33

What size is drive 2 (20,33)?

How many cylinders are you using for DOS on drive 1? 20

NOTE: If you chose the one hard disk system instead of the two hard disk system, this prompt is not displayed.

Enter either 20 or 33 and press RETURN, depending on your disk size.

For example, type 33 and press RETURN. The following screen is displayed.

Installing the Operating Systems on Your PC

*** PC OVERFLOW UTILITY ***

What size is drive 1 (20,33)? 33

What size is drive 2 (20,33)? 33

How many cylinders are you using for DOS on drive 1? 20

How many cylinders are you using for DOS on drive 2?

NOTE: If you chose the one hard disk system instead of the two hard disk system, this prompt is not displayed.

Enter the number of cylinders you are using for DOS on the second drive, and press RETURN.

For example, type 3 and press RETURN. The following screen is displayed.

Installing the Operating Systems on Your PC

*** PC OVERFLOW UTILITY ***

What size is drive 1 (20,33)? 33

What size is drive 2 (20,33)? 33

How many cylinders are you using for DOS on drive 1? 20

How many cylinders are you using for DOS on drive 2? 3

| MAXFID | OVERFLOW |
|--------|----------|
| ----- | ----- |
| 121890 | 114635 |

FRAMES USED BY OPERATING SYSTEM -> 7255

>

You are now at TCL.



Loading Ultiword

5 LOADING ULTIWORD

Follow this procedure only if UltiWord (the word processing account, also referred to as WP) has never been installed on your system. If UltiWord has already been installed, and you want to load a new version of the WP account, refer to the instructions contained in Section 14, "Installing a New Version of the Ultimate Operating System." You may install UltiWord on your system at any time.

1. Make sure your system has been powered on and that the Ultimate PC/OS has been booted.
2. Load the diskette labeled "UltiWord and Upgrade" in drive A:.
3. At TCL, type:

LOGTO SYSPROG and press RETURN.

The following screen is displayed.

SYSPROG MAIN MENU
(PC-Based Systems)

1. File-Save with automatic GFE fixer
- 1A. File-Save without automatic GFE fixer
2. ALL-UPDATE-SAVE
3. PART-UPDATE-SAVE
4. Documentation Menu
5. Spooler Menu
6. Calculate Overflow Space
7. Automatic File Reallocation Menu
8. Load WP Account From SYS-GEN Diskette
9. Load Utilink Account From SYS-GEN Diskette

88. Logoff
99. Go to TCL

ENTER SELECTION _

Your menu may be different, according to your system configuration.

Loading Ultiword

Enter **8** and press RETURN to select Load WP Account From SYS-GEN Diskette.

The system searches for and loads the WP account.

4. When the WP account has been loaded, unload the "UltiWord and Upgrade" diskette.
5. Set up the accounts in which you want to enable UltiWord.

At the TCL prompt (>), type:

LOGTO WP and press RETURN.

You are now in the WP account. The following menu, which is the WP Main Menu, is displayed.

```
***** The Ultimate Corp. *****
***** WORD PROCESSING *****
***** Document Manager *****
          Main Menu
```

```
YOUR USER NAME:
DOCUMENT NAME:
```

```
(C)opy documents
(D)elete user
(E)dit/Enter
(L)ist
(N)ew
(P)rint
(S)et up user account
(U)tility
(V)iew
e(X)it
```

Enter option wanted:

Enter **S**

This selects the program to set up user accounts. The following screen is displayed.

Loading Ultiword

```
***** The Ultimate Corp. *****
***** WORD PROCESSING *****
***** Document Manager *****
          Main Menu
```

YOUR USER NAME:
DOCUMENT NAME:

Enter name of account to set up or <EDIT>

Enter the name of an account you want to set up for
UltiWord, and press RETURN.

The following screen is displayed.

```
***** The Ultimate Corp. *****
***** WORD PROCESSING *****
***** Document Manager *****
          Main Menu
```

YOUR USER NAME:
DOCUMENT NAME:

Enter name of account to set up or <EDIT>
The master dictionary of XXXX contains the following

These will be overwritten if Y is answered. (Y)es or
<EDIT>

Enter **Y**

You are now able to use WP from this account. Repeat
this step for all accounts for which you want to

Loading Ultiword

enable WP.

6. Enter user names for each account in which you will use WP. One or more user names may be established within the same user account.

If you set up an account for WP, logto that account. Then type **WP** and press RETURN. The following menu, which is the WP Main Menu, is displayed.

```
***** The Ultimate Corp. *****
***** WORD PROCESSING *****
***** Document Manager *****
          Main Menu
```

```
YOUR USER NAME:
DOCUMENT NAME:
```

```
(C)opy documents
(D)elete user
(E)dit/Enter
(L)ist
(N)ew
(P)rint
(S)et up user account
(U)tility
(V)iew
e(X)it
```

```
Enter option wanted:
```

Enter **N**

The following screen is displayed.

Loading Ultiword

```
***** The Ultimate Corp. *****
***** WORD PROCESSING *****
***** Document Manager *****
      Main Menu
```

```
YOUR USER NAME: _ <CR> for current User Name or
DOCUMENT NAME: _ <EDIT> to exit
```

```
(C)opy documents
(D)elete user
(E)dit/Enter
(L)ist
(N)ew
(P)rint
(S)et up user account
(U)tility
(V)iew
e(X)it
```

```
Enter option wanted: N
```

Enter a User Name and press RETURN. The name may consist of from 1 to 20 characters.

The following screen is displayed.

Loading Ultiword

```
***** The Ultimate Corp. *****
***** WORD PROCESSING *****
***** Document Manager *****
          Main Menu
```

```
YOUR USER NAME: _      USER NAME NOT ON FILE! ADD IT (Y/CR)?
DOCUMENT NAME: _
```

```
(C)opy documents
(D)elete user
(E)dit/Enter
(L)ist
(N)ew
(P)rint
(S)et up user account
(U)tility
(V)iew
e(X)it
```

```
Enter option wanted: N
```

Enter **Y** to create this user name.

The following screen is displayed.

Loading Ultiword

```
***** The Ultimate Corp. *****
***** WORD PROCESSING *****
***** Document Manager *****
          Main Menu
```

```
YOUR USER NAME: _
DOCUMENT NAME: _
```

```
(C)opy documents The USER file will be created as follows
(D)elete user
(E)dit/Enter CREATE-FILE DATA WP-DOCUMENTS,USER 41,1
(L)ist
(N)ew Enter <CR>, New Modulo or <EDIT> to exit
(P)rint
(S)et up user account
(U)tility
(V)iew
e(X)it
```

```
Enter option wanted: N
```

Press RETURN to create the user name.

You are prompted to enter a DOCUMENT NAME. If you are ready to begin creating documents, enter a name for your first document. This document is stored in the user name and user account you specified.

If you are not ready to create a document, press the Edit key (usually F1) to go to the "Enter option wanted" prompt. Then enter X to exit to TCL.

7. Refer to the UltiWord Training Manual and the UltiWord Reference Manual for instructions on using UltiWord.



6 CHECKING YOUR EQUIPMENT

After you have successfully installed the Ultimate Operating System (and UltiWord if you will be using it), follow the instructions in this section to locate your terminals (CRTs) and printers. You need to know what numbers are assigned to each terminal and printer, and where each terminal and printer is physically located. You also need to know at what baud rate your terminals and printers are running.

To begin, you need a description or list of the physical layout of your system.

6.1 TERMINALS

All CRT terminals attach to the system via asynchronous RS-232 ports. The baud rate for each port may be set independently, from 110 baud to 9600 baud.

NOTE: If your terminals have not yet been installed, refer to Appendix B for options and switch settings for each terminal supported by Ultimate.

Location

Each terminal (or CRT) is identified by a line number. To list the line number of a particular terminal, go to the TCL prompt (>) and type:

WHO and press RETURN.

The line number and the account that it is logged on to is displayed. To list all line numbers and the accounts logged onto those lines, type:

WHO * and press RETURN.

(For more information on the WHO command, refer to your System Commands Guide.)

Baud Rate

In addition to the line numbers, you should know the baud rates of each of your CRTs. To check the baud rate of a particular port, type:

LOGTO SYSPROG and press RETURN.

Checking Your Equipment

Then press RETURN to go to TCL. At the TCL prompt (>), type:

SET-BAUD and press RETURN.

The port (line number) and line speed (baud rate) are displayed, along with other information about the port. (For more information about the SET-BAUD command, refer to your System Commands Guide.)

If you want the system to automatically set the baud rate and term type whenever you log on, you can use the TERMINAL command. This command displays a menu which allows you to set all the parameters for your terminal. (For more information, refer to your Systems Commands Guide.)

Checking Your Equipment

6.2 PRINTERS

Printers may be attached to your system via the standard asynchronous ports for serial printers, or via a parallel printer adapter for parallel printers. All printers are required to have the XON/XOFF protocol for proper operation.

NOTE: If your printers have not been installed, refer to Appendix C for options and switch settings of printers supported by Ultimate.

Location

Each printer is identified by a line number, logical printer number, and a job queue number. To list the line, logical, and job queue numbers of each printer, at TCL, type:

SP-LISTLPTR and press RETURN.

Information about each of your printers is displayed. The following is a sample of what might be displayed.

```
>SP-LISTLPTR

Printer assignments                                time

Printer      Output queues  Page   Dev or  Status
Type  Number                skip   line #

Parallel    0           3           0         0  Active
Serial      1           0   15           0         1  Inactive
Serial      2           16           0         2  Inactive
```

In this example, the parallel printer has a logical number of 0, and a job queue number of 3. (Note that serial printer #1 has two job queue numbers: 0 and 15).

NOTE: If your printer numbers have not yet been assigned, refer to the System Commands Guide for instructions on assigning them (use the SP-STARTLPTR command).

Checking Your Equipment

Baud Rate

To check the baud rate of all ports on your system, type:

LOGTO SYSPROG and press RETURN.

Then press RETURN to go to TCL. At the TCL prompt (>), type:

SET-BAUD Z and press RETURN.

The ports (line numbers) and line speeds (baud rates) are displayed, along with other information about each port. (For more information about the SET-BAUD command, refer to your System Commands Guide.)

System Startup Options

7 SYSTEM STARTUP OPTIONS

Whenever you boot your Ultimate system, the following screen is displayed.

```
C>UT
```

```
UT LOADED AT X'XXXXX'
```

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option:
```

You have the choice of three options:

```
(C)oldstart  
(F)ile-Restore  
(W)armstart
```

A brief explanation of the purpose of each option is contained below. Refer to Sections 7.1 through 7.3 for instructions on performing each of these options.

Coldstart

A Coldstart is used to load all virtual system software from the ABS and Files #1 tape or diskette onto your system. The procedure ensures that all system software has been properly loaded. This procedure will not load your files.

A Coldstart is normally required if your system fails, or if you bring the system down without first :WARMSTOPping it.

File-Restore

The File-Restore procedure is used to load the program frames (ABS) and all the files, both dictionary and data, from tape or diskette. Unlike the Coldstart procedure, this option is used to restore your entire system from your File-Save tapes or diskettes. The File-Restore will overwrite data previously written on your system.

System Startup Options

Warmstart

The Warmstart procedure allows you to recover from a :WARMSTOP and resume working where you left off, without losing your data. This option should only be attempted if your system was brought down with a :WARMSTOP.

NOTE: If you Warmstart a system that was not :WARMSTOPped, you will cause Group Format Errors (GFES). See Section 13.3 for more information on GFES.

System Startup Options

7.1 COLDSTART

A Coldstart is normally required if your system fails or if you need to recover from a system hang. There are also times when a :WARMSTOP and a Coldstart are necessary to reload the operating system back into the computer. See Section 3.2 for more information about :WARMSTOPping the system.

1. Make sure you have followed the power-on instructions in Section 3.1. DOS is automatically booted on drive C:.
2. At the C> prompt, type:

UT and press RETURN.

The following screen is displayed.

```
C>UT
UT LOADED AT X'XXXXX'

This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option:
```

3. Enter **C** to select the Coldstart procedure.

The following screen is displayed.

```
Enter Option: C
MEMORY SIZE = XXX KB

USING DISK C:
02 COMM LINES

LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY
Insert COLD section floppy
Press <CR> when ready
```

System Startup Options

NOTE: If your system does not have a tape drive, the "LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY" prompt is not displayed on your screen. If you do have a tape drive, enter **T** or **F** and press RETURN to indicate whether you will be using an ABS and Files tape or diskette. (Do not load the tape or diskette now.) You are then prompted to "Insert COLD section floppy."

Load your Coldload diskette in drive A:. Then press RETURN.

4. In the next screen, you are asked for your system serial number.

Disc cartridge attached Block size: 500

System serial # is presently

Enter system serial # or <CR> to accept

Enter your system serial number and press RETURN.

For example, enter PA1234 and press RETURN. If the serial number shown is correct, press RETURN to accept it.

Your system serial number is assigned to you by Ultimate. If you do not have one, please call Ultimate's Administration department to get one.

The following screen is displayed.

System Startup Options

```
Disc cartridge attached Block size: 500
System serial # is presently .....
Enter system serial # or <CR> to accept PA1234
System serial # is presently PA1234
Enter system serial # or <CR> to accept
```

Press RETURN if the number is correct.

You may re-enter the correct number if you made a mistake. Press RETURN after you enter the correct number.

The following screen is displayed.

```
System serial # is presently PA1234
Enter system serial # or <CR> to accept
Mount ABS tape and enter number of files to skip, if any:
```

At this point, unload your Coldload diskette from drive A:, and load the diskette labeled "ABS and Files Disk #1." Then press RETURN.

The following screen is displayed.

System Startup Options

Mount ABS tape and enter number of files to skip, if any:

XX-XXX

XXXX-XXX

XXXX-XXX

XXXX-XXX

XXXX-XXX

Saving Monitor

Spooler started

Linking workspace for line 0

date time Logon Please:

<<< Welcome to the Ultimate Computer System >>>

<<< Copyright date The Ultimate Corp. >>>

<<< time Release XX Rev XXX date >>>

This is the Cold-Start Procedure

Enter <CR> to continue

Press RETURN.

The following screen is displayed.

System Startup Options

date time Logon Please:

```
<<< Welcome to the Ultimate Computer System >>>
<<< Copyright    date            The Ultimate Corp. >>>
<<<    time    Release XX Rev XXX    date            >>>
```

This is the Cold-Start Procedure
Enter <CR> to continue

Linking secondary TCL workspaces

X additional task workspaces initialized

time date

Time =

NOTE: If your system has an external clock, you are not asked for the time or date.

Enter the time in military format (HH:MM:SS) and press RETURN.

For example, enter 5PM as 17:00:00. The following screen is displayed.

System Startup Options

```
This is the Cold-Start Procedure  
Enter <CR> to continue
```

```
Linking secondary TCL workspaces
```

```
X additional task workspaces initialized
```

```
time      date
```

```
Time = 17:00:00
```

```
17:00:00   date
```

```
Date =
```

Enter the date in the following format: MM/DD/YY. Then press RETURN.

For example, enter February 3, 1987 as 02/03/87. The following screen is displayed.

```
This is the Cold-Start Procedure  
Enter <CR> to continue
```

```
Linking secondary TCL workspaces
```

```
X additional task workspaces initialized
```

```
time      date
```

```
Time = 17:00:00
```

```
17:00:00   date
```

```
Date = 02/03/87
```

```
17:00:00   03 FEB 1987
```

The system will display several messages. If there are any error messages (for example, "System does not

System Startup Options

verify"), call your Ultimate dealer or Ultimate Technical Support immediately (see Section 13.2).

The following screen is displayed.

```
-----  
|                                     |  
|           date           time       Logon please: |  
|                                     |  
|-----|
```

5. Everyone can now log on.

SUMMARY OF COLDSTART PROCEDURE

1. Power up the system.
2. At the C> prompt, enter **UT** and press RETURN.
3. At the "Enter Option" prompt, enter **C**.
4. If you have a tape drive, enter **T** or **F** to indicate whether you will be using an ABS and Files tape or diskette. (Do not load the tape or diskette now.)
5. At the "Insert COLD section floppy" prompt, load Coldload diskette in drive A:. Then press RETURN.
6. Enter your system serial number.
7. At the "Mount ABS tape" prompt, unload your Coldload diskette and load your "ABS and Files Disk #1" diskette in drive A: (or load your ABS tape). Then press RETURN.
8. Press RETURN at "This is the Cold-Start Procedure."
9. If prompted, enter the time and date in military format.
10. Check for error messages.

7.2 FILE-RESTORE

Use this procedure whenever you need to restore your entire system from your File-Save or PC-SAVE tapes or diskettes. This procedure should also be performed approximately once every three months, to improve system performance. The File-Restore reorganizes your files into contiguous frames.

A File-Restore should also be done whenever you add communication boards to your system. The system will not recognize the boards until the File-Restore is performed.

NOTE: A File-Restore overwrites your existing data, so you should do a File-Save or PC-SAVE first, then use that save to do the File-Restore. File-Restores may only be done with File-Save or PC-SAVE tapes or diskettes.

Refer to Section 9.1 for instructions on performing a File-Restore.

System Startup Options

7.3 WARMSTART

CAUTION: Only use the Warmstart procedure if your system was :WARMSTOPped.

1. At the C> prompt, type:

UT and press RETURN.

The following screen is displayed.

```
C>UT
```

```
UT LOADED AT X'XXXXX'
```

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option:
```

Enter **W** to select the Warmstart procedure.

The following screen is displayed.

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option: W  
MEMORY SIZE = XXX KB  
XX COMM LINES
```

```
>
```

2. Log on to SYSPROG.

The following screen is displayed.

System Startup Options

SYSPROG MAIN MENU (PC-Based Systems)

1. File-Save with automatic GFE fixer
- 1A. File-Save without automatic GFE fixer
2. ALL-UPDATE-SAVE
3. PART-UPDATE-SAVE
4. Documentation Menu
5. Spooler Menu
6. Calculate Overflow Space
7. Automatic File Reallocation Menu
8. Load WP Account From SYS-GEN Diskette
9. Load Utilink Account From SYS-GEN Diskette

88. Logoff
99. Go to TCL

ENTER SELECTION _

Press RETURN to go to TCL.

3. If your system does not have an external clock, you should reset the date and time. To reset the date, type:

SET-DATE DD/MM/YY and press RETURN.

DD is the day, MM is the month, and YY is the year.

To reset the time, type:

SET-TIME HH:MM:SS and press RETURN.

HH is the hour, MM is the minutes, and SS is the seconds, in military format.

4. Everyone may now log on to the system.

System Startup Options

SUMMARY OF WARMSTART PROCEDURE

1. At the C> prompt, enter **UT** and press RETURN.
2. At the "Enter Options" prompt, enter **W**.
3. Log on to SYSPROG, and go to TCL.
4. If necessary, reset the date and time.
5. You may now log on.

System Startup Options

7.4 GOING FROM DOS TO THE ULTIMATE PC/OS

Follow these instructions to go from the Disk Operating System (DOS) to the Ultimate PC Operating System (PC/OS).

1. At the C> prompt, type:

UT and press RETURN.

The following screen is displayed.

```
C>UT
```

```
UT LOADED AT X'XXXXX'
```

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option:
```

You are now on the Ultimate PC Operating System.

If your system was brought down with a :WARMSTOP, you should now Warmstart the system. If your system was not :WARMSTOPped, you must use the Coldstart procedure. See Sections 7.3 and 7.1 for more information on Warmstarting and Coldstarting the system.

System Startup Options

7.5 :WARMSTOP AND RETURNING TO DOS

A :WARMSTOP is used to bring the system down in a controlled manner. It halts all processing and flushes memory to protect data integrity. It also moves you from the Ultimate Operating System (PC/OS) to the Disk Operating System (DOS).

1. Make sure all users are logged off the system. To do so, go to the main monitor (line 0), and at TCL (>), type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL. Type:

LISTU and press RETURN.

The main monitor (line 0) should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

2. Make sure there is no diskette in drive A:. Also, complete the printing of any current spool files. (Refer to the System Management and Support Guide if you need information on how to spool the files to tape or diskette.) Be sure to complete this step before proceeding to the next step.
3. At TCL (>), type:
:WARMSTOP and press RETURN.
4. Your PC automatically reboots DOS and executes any AUTOEXEC.BAT programs you may have in your DOS partition.



8 BACKING UP THE SYSTEM

Ultimate strongly recommends that you back up your files at least once a day. This step ensures that you always have a method of recovery if you lose data.

There are various backup procedures you may use to make an offline copy of your data base files. If you ever need to recover your files, you can use the offline copy (the backup tapes or diskettes) to restore them.

Once you have made backup copies of your files, you must organize and store them so that they may be easily located and identified.

8.1 ORGANIZING BACKUP TAPES OR DISKETTES

Backup tapes or diskettes are very important in ensuring that you are able to restore your system in the event of data loss. It is equally important that you store your backups in an orderly manner, so that they may be quickly and easily identified when they are needed. When you need to restore from a backup tape or diskette, it is important that you use the most recent backup available. Otherwise, you may have to spend time recreating some of your data.

Ultimate recommends that you have separate backup tapes or diskettes for each day of the week, and a monthly backup for each month in the previous year. Some situations may also require a weekly backup cycle for the past month. Use a separate tape or diskette set for each day of the week, one for each week of the month, and one for each month of the year. The longer cycle tape or diskette sets should be stored off premises to provide protection in the event of physical damage, such as a fire or flood.

There are two steps to organizing your backup tapes or diskettes: labeling and rotating.

8.1.1 LABELING

Be sure to label every one of your backup tapes or diskettes so that you may easily locate and identify them when they are needed. Make sure you label the tape or diskette itself, as well as the casing or cover, so that tapes or diskettes separated from their covers will not be confused. The label should include:

1. The type of backup (FILE-SAVE, PC-SAVE, ACCOUNT-SAVE, T-DUMP, ALL-UPDATE-SAVE, or PART-UPDATE-SAVE). Labeling the type of backup on your tape or diskette is very

Backing Up the System

important, as it dictates the type of restore method that may be used.

2. The sequence number of the tape or diskette (Tape 1 of 2, Tape 2 of 2, Diskette 2 of 3, etc.). If your backup includes more than one tape or diskette, you must preserve the sequence. When you restore from a multiple reel save, the tapes or diskettes must be restored in the exact order in which they were saved. Otherwise, you will not be able to fully restore your data.
3. The date the backup was made. It is very important to date every backup tape or diskette so that you will be able to identify the most recent backups when they are needed. The date should be in the format DD/MM/YY, where DD is the day, MM is the month, and YY is the year.

8.1.2 ROTATING

It is important to rotate the sets of tapes or diskettes you use for backups, so that you do not always use the same set, and so that you do not take the chance of losing your most recent backup while you are creating another.

For example, if you use the same daily backup tape or diskette every day, it is possible that something could happen to that tape or diskette while you are creating a new File-Save with it. If this happens, you may have lost your most recent daily backup.

Ultimate recommends that you keep a tape or diskette set for each day of the work week--one for Monday, one for Tuesday, etc. This set should only be used for daily backups, and only on the day of the week specified (Monday's tape or diskette should only be used for each Monday's daily backup).

If you choose to maintain a weekly backup cycle in addition to the daily and monthly cycles, then you should maintain at least two sets of tapes or diskettes for this cycle. Set 1 may be used for the first week's backup, and Set 2 may be used for the second week's backup. On the third week, you may use Set 1, and on the fourth week, use Set 2. This way, you always have a current weekly backup tape or diskette.

Your monthly backup tapes or diskettes should include one set for each month of the year. You should never reuse a monthly tape or diskette until a full year has passed. This way, you will be able to recreate your data from the previous year, if necessary.

8.2 FILE-SAVE

The File-Save method is the most common backup method. This method allows you to easily backup your entire system files in one operation. Ultimate recommends you perform a File-Save at the end of each work day. You must also perform a File-Save immediately prior to performing a full File-Restore.

1. Select the tapes or diskettes you want to use for the File-Save. All diskettes used must have previously been formatted under DOS. (See Appendix D for more information on formatting diskettes.) Make sure the tapes or diskettes do not contain data you need to save, because the File-Save process overwrites any data that already exists on the tapes or diskettes.
2. Load the tape or diskette.
3. Make sure all users are logged off the system. To do so, go to the TCL prompt (>), and type:

LISTU and press RETURN.

The main monitor should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

Ultimate recommends that you do not have users logged on during the File-Save. If you do, the process takes longer to complete, and any work updated while the File-Save is in process may not be backed up.

4. After all users have logged off, go to port 0 (the main monitor). Type:

LOGTO SYSPROG and press RETURN.

The following screen is displayed.

Backing Up the System

SYSPROG MAIN MENU
(PC-Based Systems)

1. File-Save with automatic GFE fixer
- 1A. File-Save without automatic GFE fixer
2. ALL-UPDATE-SAVE
3. PART-UPDATE-SAVE
4. Documentation Menu
5. Spooler Menu
6. Calculate Overflow Space
7. Automatic File Reallocation Menu
8. Load WP Account from SYS-GEN Floppy
9. Load Utilink Account from SYS-GEN Floppy

88. Logoff
99. Go to TCL

ENTER SELECTION _

Enter **1** and press RETURN to select File-Save with automatic GFE fixer.

A list of questions now appears on your screen. The first question must be answered to establish the type of media used, either tapes or diskettes. The other questions are automatically answered by the File-Save proc, as shown below. (Other messages appear along with the questions.)

NOTE: If you want to change the answers to any of the questions below, do not select File-Save from the SYSPROG menu. Instead, go to TCL and type **T-ATT 0** and press RETURN if you are using a tape, or type **T-ATT C** and press RETURN, and then **T-REW** and press RETURN if you are using a diskette. Then type:

FILE-SAVE and press RETURN.

You are asked each question below individually, and you may enter your own answers.

Backing Up the System

```
File Save to (D)iskette or (T)ape?  
Do you want the Console listing to go to the Printer?(Y/N/X)) - N  
Enter tape block size (500-8192) - 500  
Do you want to generate File Statistics (Y/N/X) - Y  
Would you like GFE's fixed by the FILE-SAVE process? (Y/N) - Y
```

The File-Save will begin.

The following information is displayed on your terminal when the File-Save is complete.

NOTE: If your File-Save requires more than one tape or diskette, you are prompted to mount the next reel (which means to load the next tape or diskette).

```
Block size: 500  
XXX items dumped.  
Block size: 500  
  
Disc cartridge reset  
File-Save finished at      time      date  
  
File Statistics Report  
To Lineprinter? (Y/N/X) - Y  
Detail Suppress? (Y/N/X) - N  
Now generating statistics report
```

The File Statistics report should now be printing.

5. Unload the File-Save tapes or diskettes.
6. Store the File-Save tape(s) or diskette(s) in a safe place, along with the file statistics report.

SUMMARY OF FILE-SAVE PROCEDURE

1. Select the tapes or previously formatted diskettes to be used for the File-Save.
2. Load the tape or diskette.
3. Make sure all users have logged off.
4. Log to SYSPROG from the main monitor, and select 1, File-Save with automatic GFE fixer, from the menu.
5. Enter **T** or **D** and press RETURN to indicate whether you will be using tapes or diskettes.
6. When the File-Save is complete, unload the tape or diskette.
7. Store the File-Save tape(s) or diskette(s) in a safe place, along with the corresponding file-stats report.

Backing Up the System

8.3 ACCOUNT-SAVE

The Account-Save method allows you to back up all files for a particular account. (In contrast, the File-Save allows you to back up all accounts on your system.) You may want to do an Account-Save if only one account has been updated since the last backup procedure.

1. Select the tape or diskette you want to use for the Account-Save. All diskettes used must have previously been formatted under DOS. (See Appendix D for more information on formatting diskettes.) Make sure the tape or diskette does not contain data you need to save, because the Account-Save process overwrites any data that already exists on it.
2. Load the tape or diskette.
3. It is not necessary for all users to log off the system during the Account-Save, however, no work should be performed on the account that is being saved.
4. Go to port 0 (the main monitor). Type:
LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL.

5. If you are using a tape, type:
T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:
T-REW and press RETURN.

6. Then type:
ACCOUNT-SAVE and press RETURN.

The following screen is displayed.

NOTE: If you want to generate a File-Statistics report for the account at the end of the Account-Save, do not type ACCOUNT-SAVE. Instead, type:

SAVE (D,F,I,T,S) and press RETURN.

Backing Up the System

```
>ACCOUNT-SAVE
```

```
Tape Label if desired
```

Enter a tape label and press RETURN.

For easy reference, Ultimate suggests you label your tapes or diskettes in the following format: ACCOUNT-SAVE (MM-DD-YY). MM is the month, DD is the day, and YY is the year in which the Account-Save was performed.

The following screen is displayed.

```
>ACCOUNT-SAVE
```

```
Tape Label if desired
```

```
Account name?
```

Enter the account name you wish to save, and press RETURN.

The account name must be of a valid account in the system dictionary. The Account-Save will begin.

NOTE: If your Account-Save requires more than one tape or diskette, you are prompted to mount the next reel (which means to load the next tape or diskette).

The following screen is displayed when the Account-Save is complete.

Backing Up the System

ACCOUNT SAVE COMPLETED

7. Unload the Account-Save tape or diskette.
8. If you entered the SAVE command with the (D,F,I,T,S) options, you may now generate the File-Statistics report. To do so, go to TCL and type:

LIST-FILE-STATS and press RETURN.

The following prompt is displayed.

To Lineprinter? (Y/N/X)

Enter **Y** and press RETURN.

The following prompt is displayed.

Detail Suppress? (Y/N/X)

Enter **N** and press RETURN.

The report will now print.

9. Store the Account-Save tape(s) or diskette(s) in a safe place, along with the file statistics report.

SUMMARY OF ACCOUNT-SAVE PROCEDURE

1. Select the tape or previously formatted diskette to be used.
2. Load the tape or diskette.
3. Make sure no work is being done on the account to be saved.
4. Log to SYSPROG from the main monitor and go to TCL.
5. If you are using a tape, type **T-ATT 0** and press RETURN. If you are using a diskette, type **T-ATT C** and press RETURN, then type **T-REW** and press RETURN.
6. At TCL, type **ACCOUNT-SAVE** and press RETURN.
7. Enter the tape label.
8. Enter the account name to be saved.
9. Unload the tape or diskette.
10. Store the Account-Save tape(s) or diskette(s) in a safe place.

8.4 T-DUMP

The T-DUMP command allows you to copy a single file or individual items to a tape or diskette.

1. Load the tape or diskette to which you want to dump your file(s). The diskette you use must have been previously formatted under DOS. (See Appendix D for more information on formatting diskettes.)
2. Go to TCL (>). If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

3. Use the T-DUMP command to dump your file(s). T-DUMP is a RECALL command, and its general form is as follows:

```
T-DUMP {DICT} filename {item-list} {selection-criteria}
        {HEADER "name"} {(options)}
```

The filename may be preceded by the DICT modifier to dump dictionary data. File definition items (such as D/CODE=D) are not dumped.

The filename is the name of the source file to be dumped, or copied, onto the tape or diskette.

As explained in the Recall manual, the item-list and selection criteria select a sub-set of the items in the specified file, which are to be written to tape or diskette. If the item-list and selection-criteria are omitted, then all items in the file are written to tape or diskette. As in other Recall statements, each item-id must be enclosed in double quotes (").

The HEADER allows a "name" to be included in the tape label at the start of the file.

Options:

- (I) Inhibits listing to the terminal of items dumped.
- (O) Enables overwrite of items in the file with item-ids corresponding to the item-ids of items in the tape file.

Backing Up the System

An EOF mark is written to the tape or diskette at the completion of the T-DUMP.

4. Unload the tape or diskette and store it in a safe place.

SUMMARY OF T-DUMP PROCEDURE

1. Load the tape or previously formatted diskette to which you will dump your files.
 2. Go to TCL. If you are using a tape, type **T-ATT 0** and press RETURN. If you are using a diskette, type **T-ATT C** and press RETURN, then type **T-REW** and press RETURN.
 3. Type T-DUMP {DICT} filename {item-list}
 {selection-criteria} {HEADER "name"}
 {(options)} and press RETURN.
 4. Unload the tape or diskette and store it in a safe place.
-

8.5 UPDATE-SAVES

The Update-Save, also called Incremental File-Save, allows you to save only those file groups that have been changed since the last File-Save. Associated with each group of each disk file is a flag indicating whether any item in the group has been updated. To allow you to do Update-Saves, two procs have been set up in your SYSPROG account. They are ALL-UPDATE-SAVE and PART-UPDATE-SAVE. Only one type of Update-Save can be used per File-Save.

WARNING: Following a full File-Restore, you must do a full File-Save before you can use the Update-Save methods. It is by this full File-Save that the Update-Saves are referenced.

8.5.1 ALL-UPDATE-SAVE

The ALL-UPDATE-SAVE allows you to do an Update-Save, but it does not reset the "group-updated" flags. Therefore, each ALL-UPDATE-SAVE tape or diskette will contain all the changes since the last full File-Save. To restore the system from this backup method, only the most recent full File-Save tape or diskette and the most recent ALL-UPDATE-SAVE tape or diskette are required.

If you are using this method, Ultimate recommends that you do an ALL-UPDATE-SAVE every day, and a full File-Save once a week.

1. Select the tape or diskette you want to use for the ALL-UPDATE-SAVE. The diskette must have been previously formatted under DOS. (See Appendix D for more information on formatting diskettes.) Make sure the tape or diskette does not contain data you need to save, because the ALL-UPDATE-SAVE process overwrites any data that already exists on it.
2. Load the tape or diskette.
3. Make sure all users are logged off the system. To do so, go to the TCL prompt, and type:

LISTU and press RETURN.

The main monitor should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

Ultimate recommends that users do not remain logged on during the ALL-UPDATE-SAVE. If they do, the process takes longer to complete, and any work updated while

Backing Up the System

the ALL-UPDATE-SAVE is in process may not be backed up.

4. After all users have logged off, go to port 0 (the main monitor). Type:

LOGTO SYSPROG and press RETURN.

The following screen is displayed.

```
-----  
SYSPROG MAIN MENU  
(PC-Based Systems)
```

1. File-Save with automatic GFE fixer
- 1A. File-Save without automatic GFE fixer
2. ALL-UPDATE-SAVE
3. PART-UPDATE-SAVE
4. Documentation Menu
5. Spooler Menu
6. Calculate Overflow Space
7. Automatic File Reallocation Menu
8. Load WP Account From SYS-GEN Diskette
9. Load Utilink Account From SYS-GEN Diskette

88. Logoff
99. Go to TCL

```
ENTER SELECTION _
```

Enter 2 and press RETURN to select ALL-UPDATE-SAVE.

A list of questions now appears on your screen. The first question must be answered to establish the type of media used, either tapes or diskettes. The other questions are automatically answered by the ALL-UPDATE-SAVE proc, as shown below. (Other messages appear along with the questions.)

Backing Up the System

Save to (D)iskette or (T)ape?

Do you want the Console listing to go to the Printer? (Y/N/X) - N

Enter tape block size (500-8192) - 500

Enter Tape label - Y File-Save

To Lineprinter (Y/N/X) - Y

The ALL-UPDATE-SAVE will begin.

NOTE: If your ALL-UPDATE-SAVE requires more than one tape or diskette, you are prompted to mount the next reel (which means to load the next tape or diskette).

5. Unload the ALL-UPDATE-SAVE tape or diskette.
6. Store the tape(s) or diskette(s) in a safe place.

SUMMARY OF ALL-UPDATE-SAVE PROCEDURE

1. Select the tape or previously formatted diskette to be used.
2. Load the tape or diskette.
3. Make sure all users have logged off.
4. Log to SYSPROG from the main monitor, and select 2, ALL-UPDATE-SAVE, from the menu.
5. Enter **T** or **D** and press RETURN to indicate whether you will be using tapes or diskettes.
6. When the ALL-UPDATE-SAVE is complete, unload the tape or diskette.
7. Store the tape(s) or diskette(s) in a safe place.

NOTE: For complete instructions on the ALL-UPDATE-SAVE method, refer to the System Management and Support Guide and the System Commands Guide.

8.5.2 PART-UPDATE-SAVE

The PART-UPDATE-SAVE allows you to do an Incremental File-Save, and it resets the "group-updated" flags. Therefore, each PART-UPDATE-SAVE tape or diskette will contain only those changes since the last PART-UPDATE-SAVE or File-Save. To restore the system from this backup method, the most recent full File-Save tape or diskette and every subsequent PART-UPDATE-SAVE tape or diskette are required.

If you are using this method, Ultimate recommends that you do a PART-UPDATE-SAVE every day, and a full File-Save once a week.

NOTE: If for any reason a PART-UPDATE-SAVE is aborted, the next save you attempt is automatically a full File-Save.

1. Select the tape or diskette you want to use for the PART-UPDATE-SAVE. The diskette you use must have been previously formatted under DOS. (See Appendix D for more information on formatting diskettes.) Make sure the tape or diskette does not contain data you need to save, because the PART-UPDATE-SAVE process overwrites any data that already exists on it.
2. Load the tape or diskette.
3. Make sure all users are logged off the system. To do so, go to the TCL prompt, and type:

LISTU and press RETURN.

The main monitor should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

Ultimate recommends that all users log off during the PART-UPDATE-SAVE. If they do not, the process takes longer to complete, and any work updated while the PART-UPDATE-SAVE is in process may not be backed up.

4. After all users have logged off, go to port 0 (the main monitor). Type:

LOGTO SYSPROG and press RETURN.

The following screen is displayed.

Backing Up the System

SYSPROG MAIN MENU
(PC-Based Systems)

1. File-Save with automatic GFE fixer
- 1A. File-Save without automatic GFE fixer
2. ALL-UPDATE-SAVE
3. PART-UPDATE-SAVE
4. Documentation Menu
5. Spooler Menu
6. Calculate Overflow Space
7. Automatic File Reallocation Menu
8. Load WP Account From SYS-GEN Diskette
9. Load Utilink Account From SYS-GEN Diskette

88. Logoff
99. Go to TCL

ENTER SELECTION _

Enter 3 and press RETURN to select PART-UPDATE-SAVE.

A list of questions now appears on your screen. The first question must be answered to establish the type of media used, either tapes or diskettes. The other questions are automatically answered by the ALL-UPDATE-SAVE proc, as shown below. (Other messages appear along with the questions.)

Save to (D)iskette or (T)ape?

Do you want the Console listing to go to the Printer? (Y/N/X) - N

To Lineprinter (Y/N/X) - Y

The PART-UPDATE-SAVE will begin.

NOTE: If your PART-UPDATE-SAVE requires more than one tape or diskette, you are prompted to mount the next reel (which means to load the next tape or diskette).

Backing Up the System

5. Unload the PART-UPDATE-SAVE tape or diskette.
6. Store the tape(s) or diskette(s) in a safe place.

SUMMARY OF PART-UPDATE-SAVE PROCEDURE

1. Select the tape or previously formatted diskette to be used.
2. Load the tape or diskette.
3. Make sure all users have logged off.
4. Log to SYSPROG from the main monitor, and select 3, PART-UPDATE-SAVE, from the menu.
5. Enter **T** or **D** and press RETURN to indicate whether you are using tapes or diskettes.
6. When the PART-UPDATE-SAVE is complete, unload the tape or diskette.
7. Store the tape(s) or diskette(s) in a safe place.

NOTE: For complete instructions on the PART-UPDATE-SAVE method, refer to the System Management and Support Guide and the System Commands Guide.

Backing Up the System

8.6 PC-SAVE

The PC-SAVE command is the only save command that you can use to create backup tapes or diskettes of the operating system. Ultimate recommends that you use this command to back up your Ultimate Operating System as soon as you have installed it. (Instructions for installing the Ultimate PC/OS are in Section 4.) When you perform a PC-SAVE on your "new" system, you create backup tapes or diskettes of the ABS and Files diskettes.

On a system that has files and data that you created, PC-SAVE backs up both the operating system and your files. Then, to restore your system, use the File-Restore procedure (see Section 9.1). The PC-SAVE tapes or diskettes contain both the ABS section and data files needed for the restore.

1. Select the tapes or diskettes you want to use for the save. All diskettes used must have been previously formatted under DOS. (See Appendix D for more information on formatting diskettes.) Make sure the tape or diskette does not contain data you need to save, because the PC-SAVE process overwrites any existing data.
2. Load the tape or diskette.
3. Make sure all users are logged off the system. To do so, go to the TCL prompt and type:

LISTU and press RETURN.

The main monitor should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

If users remain logged on during the PC-SAVE, the process takes longer to complete, and any work updated while the save is in process is not backed up.

4. After all users have logged off, go to port 0 (the main monitor) and log to SYSPROG. Then go to TCL.
5. If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

Backing Up the System

6. At TCL, type:

PC-SAVE and press RETURN.

A screen similar to the following is displayed.

```
-----  
>PC-SAVE  
  Block size: 500  
  Block size: 500  
  
Disc cartridge reset  
  
C1  
  
R3948-3953  
R3954-3961  
R3962-3963  
R3964-3983  
A1-399  
A600-659  
A665-699  
A700-715  
A750-849  
A990-995  
  Block size: 500  
Seq# of this data tape:      8      2      0      0  
*   1SYSTEM  
1   2 SYSTEM-ERRORS  
1   3  SYSTEM-ERRORS  
1   4  SYSTEM-ERRORS  
1   5 SECURITY  
1   6  OLD-LOCKS  
1   7  OLD-LOCKS  
1   8  LOGONH  
1   9  LOGONH  
Mount reel #2  
Label : 22 MAY 1987 DATA SECURITY PC FILES R10*PC113  
(C)ontinue/(Q)uit?  
-----
```

Load the next tape or formatted diskette. Then enter C to continue.

Continue mounting the reels as prompted. When the save is complete, the following message is displayed.

Backing Up the System

```
PC-SAVE COMPLETE
```

```
>
```

7. Unload the PC-SAVE tape or diskette.
8. Store the PC-SAVE tape(s) or diskette(s) in a safe place.

SUMMARY OF THE PC-SAVE PROCEDURE

1. Select the tapes or previously formatted diskettes to be used.
2. Load the tape or diskette.
3. Log to SYSPROG from the main monitor (port 0), and make sure all users are logged off.
4. Go to TCL. If you are using a tape, type **T-ATT 0** and press RETURN. If you are using a diskette, type **T-ATT C** and press RETURN, then type **T-REW** and press RETURN.
5. At TCL, type **PC-SAVE** and press RETURN.
6. Continue mounting reels as prompted.
7. Unload the PC-SAVE tape(s) or diskette(s) and store them in a safe place.



9 RESTORING DATA

There are basically three reasons to restore your files: a) to recover lost data, b) to improve system performance when disk space becomes fragmented, and c) to allow the system to recognize the addition of communications boards to your system.

Just as there are various methods to save your files, there are various methods to restore them. Each method is discussed below.

9.1 FILE-RESTORE

The File-Restore is the most common restore method. This method allows you to recover lost data and improve system performance. It also allows your system to recognize added communications boards.

Ultimate recommends you do a full File-Restore approximately every three months. This will reclaim lost overflow frames.

NOTE: If you want to restore from Update-Save tapes or diskettes, see the instructions in Section 9.5.

CAUTION: A File-Restore overwrites your existing data, so you should do a File-Save or PC-SAVE first, then use that save to do the File-Restore. File-Restores may only be done with File-Save or PC-SAVE tapes or diskettes.

1. Make sure all users are logged off the system. To do so, go to the main monitor (line 0), and at TCL (>), type:

LOGTO SYSPROG and press RETURN.

Then press RETURN to go to TCL. Type:

LISTU and press RETURN.

The main monitor (line 0) should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

2. Make sure there is no diskette in drive A:. Also, complete the printing of any current spool files. (Refer to the System Management and Support Guide if you need information on how to spool the files to tape or diskette.) Be sure to complete this step before proceeding to the next step.

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3. At TCL (>), type:

:WARMSTOP and press RETURN.

DOS is automatically booted on drive C:.

4. At the C> prompt, type:

UT and press RETURN.

The following screen is displayed.

```
C>UT
```

```
UT LOADED AT X'XXXXX'
```

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option:
```

Enter **F** to select File-Restore.

The following screen is displayed.

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option: F  
MEMORY SIZE = XXX KB
```

```
USING DISK C:  
02 COMM LINES
```

```
LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY  
Insert COLD section floppy  
Press <CR> when ready
```


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NOTE: If your system does not have a tape drive, the "LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY" prompt does not appear on your screen. If you do have a tape drive, enter T or F and press RETURN to indicate whether you are going to use an ABS and Files tape or diskette. (Do not load the tape or diskette now.) You are then prompted to "Insert COLD section floppy."

Load the diskette labeled "Cold Load Section" in drive A:.
Then press RETURN.

5. In the next screen you are asked for your system serial number.

```
-----  
| Disc cartridge attached Block size: 500  
| System serial # is presently .....  
| Enter system serial # or <CR> to accept  
|  
-----
```

Enter your system serial number and press RETURN.

For example, enter PA1234 and press RETURN. If the serial number shown is correct, press RETURN to accept it.

Your system serial number is assigned to you by Ultimate. If you do not have one, please call Ultimate's Administration department to get one.

The following screen is displayed.

Restoring Data

```
Disc cartridge attached Block size: 500
System serial # is presently .....
Enter system serial # or <CR> to accept PA1234
System serial # is presently PA1234
Enter system serial # or <CR> to accept
```

Press RETURN if the number is correct.

You may re-enter the correct number if you made a mistake. Press RETURN after you enter the correct number.

The following screen is displayed.

```
System serial # is presently PA1234
Enter system serial # or <CR> to accept
Mount ABS tape and enter number of files to skip, if any:
```

File-Restore From Diskettes

If you are using tapes for your File-Restore, go on to the "File-Restore From Tapes" section.

If you are using diskettes for your File-Restore, load the diskette labeled "ABS and Files Disk #1" or the first diskette of a PC-SAVE in drive A:. Then press RETURN.

NOTE: You may use the first diskette of either an old or current PC-SAVE. Both contain the ABS section, which is required at this point. (For more information on PC-SAVE, see Section 8.6.)

The following screen is displayed.

Restoring Data

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

If you used the diskette labeled "ABS and Files Disk #1" for the last prompt, unload this diskette and load the first diskette of your File-Save. Then press RETURN.

If you used an old PC-SAVE diskette for the last prompt, unload this diskette and load the first diskette of your File-Save. Then press RETURN. But if the PC-SAVE diskette you used is the first diskette of your most recent save, do not unload it. Just press RETURN to continue with the File-Restore process. (See Section 8.6 for more information on PC-SAVE.)

The following screen is displayed.

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

L 01F4 time date DATA File-Save 01
Seq# of this data tape: 0 0 0 0
Is this the right tape (Y/N)?

Restoring Data

Check the label to verify that this is your most recent File-Save or PC-SAVE diskette. (If you are not sure how to check the tape label, refer to the topic System Sequencing Information under the heading "Update Save Procedures" in the System Management and Support Guide.)

Then type:

Y and press RETURN.

The File-Restore will now begin. Each filename on the tape or diskette is listed on your screen. The following screen is a sample of what is displayed.

```
-----  
Mount DATA tape and press RETURN  
L 01F4 time date DATA FILE SAVE 01  
Seq# of this data tape: 0 0 0 0  
Is this the right tape (Y/N)?Y  
SYSTEM 3521,11,1  
SYSTEM-ERRORS 3568,1,1  
SYSTEM-ERRORS 3569,1,1  
SYSTEM-ERRORS 3570,29,1  
BLOCK-CONVERT 3599,19,1  
Mount reel #2  
Label : 11 FEB 1987 DATA FILE SAVE  
(C)ontinue/(Q)uit?  
-----
```

Load the next diskette of your File-Save or PC-SAVE. When you are ready, enter **C** to continue.

You will continue to be prompted at the end of each diskette to mount the next "reel" (diskette). You are also asked if you want to continue or quit. After you have loaded each diskette, enter **C** to continue.

When all the diskettes have been loaded, go on to Step 6.

File-Restore From Tapes

If you are using tapes for your File-Restore, load the first tape of a PC-SAVE, and press RETURN.

NOTE: You may use the first tape of either an old or current PC-SAVE. Both contain the ABS section, which is required at this point. (For more

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information on PC-SAVE, see Section 8.6.)

The following screen is displayed.

```
Mount ABS tape and enter number of files to skip, if any:
```

```
XX-XXX  
XXXX-XXX  
XXXX-XXX  
XXXX-XXX  
XXXX-XXX
```

```
Spooler started
```

```
Mount DATA tape and press RETURN
```

If you used an old PC-SAVE tape for the last prompt, unload the tape and load the first tape of your most recent File-Save. But if the PC-SAVE tape you used is the first tape of your most recent save, do not unload it. Just press RETURN to continue with the File-Restore process. (See Section 8.6 for more information on PC-SAVE.)

The following screen is displayed.

```
Mount ABS tape and enter number of files to skip, if any:
```

```
XX-XXX  
XXXX-XXX  
XXXX-XXX  
XXXX-XXX  
XXXX-XXX
```

```
Spooler started
```

```
Mount DATA tape and press RETURN
```

```
L 01F4 time date DATA File-Save 01  
Seq# of this data tape: 0 0 0 0  
Is this the right tape (Y/N)?
```

Restoring Data

Check the label to verify that this is your most recent File-Save or PC-SAVE tape. (If you are not sure how to check the tape label, refer to the topic System Sequencing Information under the heading "Update Save Procedures" in the System Management and Support Guide.)

Then type:

Y and press RETURN.

The File-Restore will now begin. Each filename on the tape is listed on your screen. The following screen is a sample of what is displayed.

```
-----  
Mount DATA tape and press RETURN  
L 01F4 time date DATA FILE SAVE 01  
Seq# of this data tape: 0 0 0 0  
Is this the right tape (Y/N)?Y  
SYSTEM 3521,11,1  
SYSTEM-ERRORS 3568,1,1  
SYSTEM-ERRORS 3569,1,1  
SYSTEM-ERRORS 3570,29,1  
BLOCK-CONVERT 3599,19,1  
Mount reel #2  
Label : 11 FEB 1987 DATA FILE SAVE  
(C)ontinue/(Q)uit?  
-----
```

Load the next tape of your File-Save or PC-SAVE. When you are ready, enter **C** to continue.

You will continue to be prompted at the end of each tape to mount the next "reel" (tape). You are also asked if you want to continue or quit. After you have loaded each tape, enter **C** to continue.

When all the tapes have been loaded, go on to Step 6.

After All Your Files Have Been Restored

6. After all your files have been restored, the following screen is displayed.

Restoring Data

Update/transaction tapes (Y/N)?

Enter **N** and press RETURN.

The following screen is displayed.

Update/transaction tapes (Y/N)? **N**

Saving Monitor

Linking workspace for line 0

date time Logon please:

<<< Welcome to the Ultimate Computer System >>>

<<< Copyright date The Ultimate Corp. >>>

<<< time Release XX Rev XXXX date >>>

This is the Cold-Start Procedure

Enter <CR> to continue

Press RETURN.

The following screen is displayed.

Restoring Data

date time Logon please:

```
<<< Welcome to the Ultimate Computer System >>>
<<< Copyright date The Ultimate Corp. >>>
<<< time Release XX Rev XX date >>>
```

This is the Cold-Start Procedure
Enter <CR> to continue

Linking secondary TCL workspaces

X additional task workspaces initialized

time date

Time =

NOTE: If your system has an external clock, you are not asked for the time and date.

Enter the time in military format (HH:MM:SS) and press RETURN.

For example, enter 5 PM as 17:00:00. The following screen is displayed.

This is the Cold-Start Procedure
Enter <CR> to continue

Linking secondary TCL workspaces

X additional task workspaces initialized

time date

Time = 17:00:00
17:00:00 date
Date =

Enter the date in the following format: MM/DD/YY. Then press RETURN.

Restoring Data

For example, enter February 3, 1987 as 02/03/87. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
  
Time = 17:00:00  
17:00:00      date  
Date = 02/03/87  
17:00:00    03 FEB 1987  
-----
```

The system will display several messages. If there are any error messages (for example, "Ultimate system software does not verify"), call your Ultimate dealer or Ultimate Technical Support (see Section 13.2).

The following screen is displayed.

```
-----  
date          time          Logon please:  
-----
```

7. You may now log on.

SUMMARY OF THE FILE-RESTORE PROCEDURE

1. Make sure all users are logged off the system.
2. **:WARMSTOP** the system.
3. At the C> prompt, enter **UT** and press RETURN.
4. When prompted to enter an option, enter **F**.
5. If you have a tape drive, enter **T** or **F** and press RETURN to indicate whether you will be using an ABS and Files tape or diskette. (Do not load the tape or diskette now.)
6. When prompted, load your Coldload diskette in drive A: and press RETURN.
7. Enter your system serial number.
8. At the "Mount ABS tape" prompt, load the diskette labeled "ABS and Files Disk #1", or load the first reel of a PC-SAVE tape or diskette. Then press RETURN. (If using a PC-SAVE tape or diskette, see **NOTE** in complete instructions).
9. At "Mount data tape," unload the tape or diskette and load the first reel of your most recent File-Save. Then press RETURN. But if your most recent save is a PC-SAVE, do not change the reel. Instead, just press RETURN.
10. Verify the tape or diskette label, then enter **Y** and press RETURN.
11. When prompted to mount the next reel, load the next File-Save or PC-SAVE tape or diskette. Then enter **C** to continue.
12. Enter **N** and press RETURN at "Update/transaction tapes?"
13. Press RETURN at "This is the Cold-Start Procedure."
14. Enter the time and date in military format.
15. Check error messages.
16. Log on to the system.

9.2 ACCOUNT-RESTORE

An Account-Restore may be done to restore files from a single account, rather than restoring the entire system. An Account-Restore may be done from a File-Save, an Update-Save, or an Account-Save tape or diskette.

You cannot restore an account if it already exists on the system. If the account exists, you may either delete it before performing the restore, or you may restore it under a different account name.

If restoring the account from a File-Save or Account-Save tape or diskette, an Account-Restore may be started from any multiple reel on which the account resides. If restoring from an Update-Save tape or diskette, you must begin with File-Save reel #1. Then you may skip to the reel containing the account you want to restore. If you do not know which reel the account is on, refer to the File Statistics report. Locate the account name on the report, and then look in the column labeled R# (reel number) to determine the particular tape or diskette on which the account is located.

9.2.1 ACCOUNT-RESTORE FROM FILE-SAVE OR ACCOUNT-SAVE TAPE OR DISKETTE

To begin the restore, load the tape or diskette containing the account, or load the first tape or diskette of the Account-Save or File-Save. (The system prompts you for successive "reels" until the desired account is found.)

1. Log on to the SYSPROG account, and go to TCL.
2. Load the first reel of the save tape or diskette.
3. If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

4. Type:

ACCOUNT-RESTORE accountname and press RETURN.

Enter the account name you wish to restore. If you wish, you can change the name of the account to a

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different account name. For more information, see your System Commands Guide.

The following screen is displayed.

```
>ACCOUNT-RESTORE accountname
```

```
Account name on tape:
```

Enter the name of the account from which you are restoring, and press RETURN.

NOTE: You must enter the exact name under which the account was originally saved. (See the File Statistics report if you don't know the name.)

The following screen is displayed.

```
>ACCOUNT-RESTORE accountname
```

```
Account name on tape:
```

```
Password(s) (Y/N)?
```

If you want to assign one or more passwords to the account when it is restored, enter **Y** and press RETURN. If you do not want to use passwords, enter **N** and press RETURN.

If you entered Y, you are prompted:

```
Password(s) or <CR> (use password(s) from tape)
```

Either type the new password and press RETURN, or just press RETURN to use the password(s) that were stored on the tape or diskette along with the account. If you type a new password, it is not displayed on the screen. You are prompted to enter the password again:

```
Re-enter password(s) to confirm:
```

Type the password again. Multiple passwords must be

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separated with spaces.

5. As the system looks for the specified account, it lists each account it finds on screen. When the account you specified is found, the restore will begin, one file at a time. The filenames appear on the screen as they are loaded. Once the account has been restored, the TCL prompt (>) is displayed.
6. Unload the save tape or diskette and store it in a safe place.

SUMMARY OF ACCOUNT-RESTORE FROM FILE-SAVE OR ACCOUNT-SAVE

1. Log to SYSPROG, and go to TCL.
 2. Load the File-Save tape or diskette.
 3. If you are using a tape, type **T-ATT 0** and press RETURN. If you are using a diskette, type **T-ATT C** and press RETURN, then type **T-REW** and press RETURN.
 4. Type **ACCOUNT-RESTORE accountname** and press RETURN.
 5. Enter the account name from which you are restoring.
 6. At "Passwords?", enter **Y** to restore the account with a password, or enter **N** for no password.
 7. When the restore is complete, unload the tape or diskette and store it in a safe place.
-

Restoring Data

9.2.2 ACCOUNT-RESTORE FROM UPDATE-SAVE TAPE OR DISKETTE

To restore an account from an Update-Save, you must first restore the account from the latest File-Save. Then you are prompted to load the Update-Save.

If you have a multiple reel File-Save, you must start the restore with reel #1. If your account is located on another reel, after reel #1 has been loaded, you may interrupt the restore, unload reel #1, and load the reel containing your account. For example, if your File-Save consists of three reels and the account you want to restore is on reel #3, you must start with reel #1. Then, as instructed in Step 5, you may interrupt the restore, unload reel #1, and load reel #3. You may then resume the Account-Restore with reel #3.

WARNING: If at any point in the Account-Restore from Update-Save procedure, the Update-Save tape or diskette label cannot be read, unload the tape or diskette and do not try to continue. If you continue, your account may be deleted!

1. To begin the restore, load Reel #1 of the File-Save tape or diskette that accompanies the Update-Save (each Update-Save must be accompanied by the latest full File-Save).
2. Log on to the SYSPROG account, and go to TCL.
3. If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

4. Then at TCL, type:

ACCOUNT-RESTORE accountname (U and press RETURN.

Enter the account name you wish to restore. (Do not enter an account name that already exists on the system.) The (U option indicates that you are restoring from an Update-Save. The following screen is displayed.

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```
>ACCOUNT-RESTORE accountname (U
```

```
Account name on tape:
```

Enter the name of the account from which you are restoring, and press RETURN.

NOTE: You must enter the exact name under which the account was originally saved. (See the File Statistics report if you don't know the name.)

The following screen is displayed.

```
>ACCOUNT-RESTORE accountname (U
```

```
Account name on tape:
```

```
Password(s) (Y/N)?
```

If you want to assign one or more passwords to the account when it is restored, enter **Y** and press RETURN. If you do not want to use passwords, enter **N** and press RETURN.

If you entered Y, you are prompted:

```
Password(s) or <CR> (use password(s) from tape)
```

Either type the new password and press RETURN, or just press RETURN to use the password(s) that were stored on the tape or diskette along with the account. If you type a new password, it is not displayed on the screen. You are prompted to enter the password again:

```
Re-enter password(s) to confirm:
```

Type the password again. Multiple passwords must be separated with spaces.

5. The system displays the sequence number on the File-Save tape or diskette, as shown in the following screen.

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```
L 01F4   time       date       DATA File-Save
Seq# of this data tape:   X       X       X       X
Is this the right tape (Y/N)?
```

Check the label displayed to verify that this is your most recent File-Save tape or diskette. Then enter **Y** and press RETURN.

6. As the system looks for the specified account, it lists each account it finds on screen.

NOTE: At this point, if you have a multiple-reel File-Save and the account is on another reel, you may interrupt the restore to load the reel that contains the account. To do so, press CTRL BREAK (do not type END). You should see the debugger prompt: an exclamation point (!). Unload reel #1, and load the reel that contains the account. When the reel is online and at load point, type **G** and press RETURN to continue the restore.

When the account you specified is found, the account is restored from the File-Save tape or diskette.

The following screen is displayed.

```
Update/transaction tapes (Y/N)?
```

Unload the File-Save tape or diskette. If you are restoring from an ALL-UPDATE-SAVE, load the first reel of the latest ALL-UPDATE-SAVE tape or diskette. If you are restoring from a PART-UPDATE-SAVE, you will have to load every PART-UPDATE-SAVE reel since the last full File-Save, in the same sequence in which the reels were made. Load the Update-Save tape or diskette. Then enter **Y** and press RETURN. The following screen is displayed.

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Update/transaction tapes (Y/N)? **Y**

Account name on tape

WARNING: Be sure to type the account name correctly. If you enter the wrong account name, the account will be deleted!

Enter the account name from which you are restoring, and press RETURN.

Once you have entered the account name, the following screen is displayed.

Mount DATA tape and press RETURN

Make sure the Update-Save tape or diskette is loaded. Then press RETURN.

The following screen is displayed.

Restoring Data

```
Mount DATA tape and press RETURN
L 01F4   time       date       DATA ALL-UPDATE-SAVE
Seq# of this data tape:   X       X       X       X
Seq# of last data tape:  X       X       X       X
Is this the right tape (Y/N)?
```

Check the label displayed to verify that this is the correct Update-Save tape or diskette. Then enter **Y** and press RETURN.

WARNING: If an incorrect sequence number of the tape or diskette is displayed, enter **Q** to Quit at the "(C)ontinue/(Q)uit?" prompt. If you continue, your account will be deleted. After you enter **Q**, you are prompted with "Update/transaction tapes (Y/N)?". Load the correct tape or diskette, and then enter **Y** and press RETURN.

Once the tape or diskette has been loaded, you are again prompted to mount the next "reel". When you are ready, enter **C** at the "(C)ontinue/(Q)uit?" prompt. Repeat this step until all of the Update-Save tapes or diskette have been loaded. Then enter **N** and press RETURN at the "Update/transaction tapes (Y/N)?" prompt.

7. When the TCL prompt is displayed, unload the Update-Save tape or diskette and store it in a safe place.

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SUMMARY OF ACCOUNT-RESTORE FROM UPDATE-SAVE

1. Load reel #1 of the File-Save tape or diskette.
2. Log to SYSPROG, and go to TCL.
3. If you are using a tape, type **T-ATT 0** and press RETURN. If you are using a diskette, type **T-ATT C** and press RETURN, then type **T-REW** and press RETURN.
4. Type **ACCOUNT-RESTORE accountname (U** and press RETURN.
5. Enter the account name from which you are restoring.
6. At "Passwords?", enter **Y** to restore the account with a password, or enter **N** for no password.
7. At "Is this the right tape?" verify the tape or diskette label and enter **Y**.
8. If restoring from a multiple-reel File-Save and the account is on another reel, press CTRL BREAK after the list of account names begins. Unload reel #1, and load the reel that contains the account. Then type **G** and press RETURN to resume.
9. When the account has been restored from the File-Save, load the Update-Save, and enter **Y** at "Update/transaction tapes?"
10. Enter the account name from which you are restoring, and press RETURN.
11. At "Mount DATA tape," press RETURN.
12. At "Is this the right tape?" verify the tape or diskette label and enter **Y**.
13. If you have a multiple-reel Update-Save, you are prompted to mount the next reel. Then enter **C** at the "(C)ontinue/(Q)uit (Y/N)?" prompt. When there are no more reels, enter **N** and press RETURN at the Update/transaction tapes (Y/N)?" prompt.
14. When the restore is complete and the TCL prompt is displayed, unload the tape or diskette, and store it in a safe place.

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9.3 T-LOAD

The T-LOAD command may be used to restore files that have been T-DUMPed.

1. Load the tape or diskette from which you want to load your file(s).
2. If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

3. Use the T-LOAD command to load your file(s): T-LOAD is a RECALL command, and its general form is as follows:

```
T-LOAD {DICT} filename {item-list} {selection-criteria}
        {HEADER "name"} {(options)}
```

The filename may be preceded by the DICT modifier to load dictionary data. File definition items (such as D/CODE=D) are not loaded.

The filename is the name of the source file to be loaded, or copied, onto the disk.

As explained in the Recall Manual, the item-list and selection criteria select a sub-set of the items in the specified file, which are to be written to disk. If the item-list and selection-criteria are omitted, then all items in the file on the tape are written to disk. As in other Recall statements, each item-id must be enclosed in double quotes (").

The HEADER allows a "name" to be included in the label at the start of the file.

Options:

- (I) Inhibits listing to the terminal of items loaded.
- (O) Enables overwrite of items in the file with item-ids corresponding to the item-ids of items in the disk file.

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4. Unload the tape or diskette, and store it in a safe place.

SUMMARY OF T-LOAD PROCEDURE

1. Load the T-DUMPed tape or diskette from which you will load your files.
2. If you are using a tape, type **T-ATT 0** and press RETURN.
If you are using a diskette, type **T-ATT C** and press RETURN, then type **T-REW** and press RETURN.
3. Type T-LOAD {DICT} filename {item-list}
 {selection-criteria} {HEADER "name"}
 {(options)}
4. Unload the tape or diskette, and store it in a safe place.

9.4 SELECTIVE-RESTORE

The Selective-Restore allows you to restore data to individual existing files or items, from a File-Save or Account-Save tape or diskette.

NOTE: Selective-Restores may be started from any tape or diskette of a multiple-reel File-Save, ALL-UPDATE-SAVE, or PART-UPDATE-SAVE. To save time in searching the tape or diskette, check the File-Stats listing to determine on which reel the file's data starts. Then load that reel. A Selective-Restore may be started at any place on any reel of the File-Save tape or diskette.

If the file is on a different reel than the beginning of its account, you must use the A option. This option tells the system that the tape or diskette is already positioned at the desired account. Therefore, you will not be prompted for the account name.

1. Log on to the account that contains the file to be restored, and go to TCL.
2. Load the first reel of the save tape or diskette.
3. If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

4. Type:

SEL-RESTORE {DICT} filename {item-list} {(options)}

and press RETURN.

The filename may be preceded by the DICT modifier to restore dictionary data. File definition items (such as D/CODE=D) are not restored.

The filename is the name of the file in which the restored items will be placed. This filename must exist on the account from which the restore is run.

The item-list selects a sub-set of the items within the

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- (C) This option only has an effect when it is used with the N option. It causes every item before the next end-of-file to be a candidate for restore. This method ensures that data can be restored even if a D-pointer is damaged on the tape or diskette.
- (I) The item-ids of the restored items will not be printed.
- (N) The file is to be identified on tape or diskette by its file number, instead of filename. The file number may be obtained from a listing of the STAT-FILE when the tape or diskette was created. If this option is used, the prompt "File name" will be replaced with the prompt "File #."
- (O) Overlay items already on the file.
- (S) Skips forward spacing of the tape or diskette. This option is used when at the beginning of the second or later reels of a File-Save tape or diskette.

5. Unload the tape or diskette.

SUMMARY OF SELECTIVE-RESTORE PROCEDURE

1. Log on to the account that contains the file to be restored, and go to TCL.
2. Load the save tape or diskette.
3. If you are using a tape, type **T-ATT 0** and press RETURN. If you are using a diskette, type **T-ATT C** and press RETURN, then type **T-REW** and press RETURN.
4. Type **SEL-RESTORE {DICT} filename {item-list} {(options)}** and press RETURN.
5. Enter the account name on tape or diskette.
6. Enter the filename (or file number, if using the N option), on tape or diskette. The Selective-Restore will begin.
7. When the restore is complete, unload the tape or diskette and store it in a safe place.

Restoring Data

9.5 FILE-RESTORE FROM UPDATE-SAVE TAPES OR DISKETTES

Use this procedure to restore your data from ALL-UPDATE-SAVES and PART-UPDATE-SAVES. You will start by restoring your data from the File-Save. Then you will be prompted to mount the Update-Save tapes or diskettes.

NOTE: For instructions on restoring an account (via the ACCOUNT-RESTORE command) from an Update-Save tape or diskette, see Section 9.2.2.

1. Make sure all users are logged off the system. To do so, go to the the main monitor (line 0), and at TCL (>), type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL. Type:

LISTU and press RETURN.

The main monitor (line 0) should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

2. Make sure there is no diskette in drive A:. Also, complete the printing of any current spool files. (Refer to the System Management and Support Guide if you need information on how to spool the files to tape or diskette.) Be sure to complete this step before proceeding to the next step.

3. At TCL (>), type:

:WARMSTOP and press RETURN.

DOS is automatically booted on drive C:.

4. At the C> prompt, type:

UT and press RETURN.

The following screen is displayed.

Restoring Data

```
C>UT
```

```
UT LOADED AT X'XXXXX'
```

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option:
```

Enter **F** to select File-Restore.

The following screen is displayed.

```
This is the Ultimate Operating System  
Copyright (c) The Ultimate Corp. 1985
```

```
Enter Option: F  
MEMORY SIZE = XXX KB
```

```
USING DISK C:  
02 COMM LINES
```

```
LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY  
Insert COLD section floppy  
Press <CR> when ready
```

NOTE: If your system does not have a tape drive, the "LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY" prompt does not appear on your screen. If you do have a tape drive, enter **T** or **F** and press RETURN to indicate whether you are going to use the ABS section from a tape or diskette. (Do not load the tape or diskette now.) You are then prompted to "Insert COLD section floppy."

Load the diskette labeled "Cold Load Section" in drive A:.
Then press RETURN.

5. In the next screen you are asked for your system serial

Restoring Data

number.

```
-----  
Disc cartridge attached Block size: 500
```

```
System serial # is presently .....
```

```
Enter system serial # or <CR> to accept  
-----
```

Enter your system serial number and press RETURN.

For example, enter PA1234 and press RETURN. If the serial number shown is correct, press RETURN to accept it.

Your system serial number is assigned to you by Ultimate. If you do not have one, please call Ultimate's Administration department to get one.

The following screen is displayed.

```
-----  
Disc cartridge attached Block size: 500
```

```
System serial # is presently .....
```

```
Enter system serial # or <CR> to accept PA1234
```

```
System serial # is presently PA1234
```

```
Enter system serial # or <CR> to accept  
-----
```

Press RETURN if the number is correct.

You may re-enter the correct number if you made a mistake. Press RETURN after you enter the correct number.

The following screen is displayed.

Restoring Data

System serial # is presently PA1234

Enter system serial # or <CR> to accept

Mount ABS tape and enter number of files to skip, if any:

If you are using diskettes for your File-Restore, load the diskette labeled "ABS and Files Disk #1" or the first diskette of a PC-SAVE in drive A:. Then press RETURN.

If you are using tapes for your File-Restore, load the first tape of a PC-SAVE, and press RETURN.

NOTE: You may use the first tape or diskette of either an old or current PC-SAVE. Both contain the ABS section, which is required at this point. (For more information on PC-SAVE, see Section 8.6.)

The following screen is displayed.

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

If you used the diskette labeled "ABS and Files Disk #1" for the last prompt, unload this diskette and load the first diskette of your File-Save. Then press RETURN.

If you used an old PC-SAVE diskette for the last prompt, unload this diskette and load the first diskette of your File-Save. Then press RETURN. But if the PC-SAVE diskette you used is the first diskette of your most recent save, do not unload it. Just press RETURN to continue with the File-Restore process. (See Section 8.6 for more infor-

Restoring Data

mation on PC-SAVE.)

If you used an old PC-SAVE tape for the last prompt, unload the tape and load the first tape of your most recent File-Save. But if the PC-SAVE tape you used is the first tape of your most recent save, do not unload it. Just press RETURN to continue with the File-Restore process. (See Section 8.6 for more information on PC-SAVE.)

The following screen is displayed.

```
-----  
Mount ABS tape and enter number of files to skip, if any:
```

```
XX-XXX  
XXXX-XXX  
XXXX-XXX  
XXXX-XXX  
XXXX-XXX
```

```
Spooler started
```

```
Mount DATA tape and press RETURN  
L 01F4 time date DATA File-Save  
Seq# of this data tape: 0 0 0 0  
Is this the right tape (Y/N)?
```

```
-----  
Check the label to verify that this is your most recent  
File-Save or PC-SAVE tape or diskette. (If you are not  
sure how to check the tape label, refer to the topic  
System Sequencing Information under the heading "Update  
Save Procedures" in the System Management and Support  
Guide.)
```

The type:

Y and press RETURN.

The File-Restore now begins. Each filename on the tape or diskette is listed on your screen. The following screen is a sample of what is displayed.

Restoring Data

```
Mount DATA tape and press RETURN
L 01F4 time date DATA File-Save
Seq# of this data tape: 0 0 0 0
Is this the right tape (Y/N)?Y
SYSTEM 3521,11,1
SYSTEM-ERRORS 3568,1,1
SYSTEM-ERRORS 3569,1,1
SYSTEM-ERRORS 3570,29,1
BLOCK-CONVERT 3599,19,1
Mount reel #2
Label : 11 FEB 1987 DATA File-Save
(C)ontinue/(Q)uit?
```

Load the next File-Save or PC-SAVE tape or diskette. When you are ready, enter **C** to continue.

You will continue to be prompted at the end of each tape or diskette to mount the next reel (which means to load the next tape or diskette). You are also asked if you want to continue or quit. After you have loaded each tape or diskette, enter **C** to continue.

6. After all the files have been restored, the following screen is displayed.

```
Update/transaction tapes (Y/N)?
```

Restoring From ALL-UPDATE-SAVES

If you are restoring from an ALL-UPDATE-SAVE, load the latest Update-Save tape or diskette. Then enter **Y** and press RETURN. The following screen is displayed.

Restoring Data

```
Mount DATA tape and press RETURN
L 2000#   time       date       DATA All-Update-Save
Seq# of this data tape:
Seq# of last data tape:
Is this the right tape (Y/N)?
```

Check the label displayed to verify that this is the correct tape or diskette. Then enter **Y** and press RETURN.

If this is a multiple reel Update-Save, the following screen is displayed.

```
Mount reel #2
(C)ontinue/(Q)uit?
```

Load the next reel (which means to load the next tape or diskette). When ready, enter **C**. Continue loading the tapes or diskettes as prompted. When all the Update-Save reels have been loaded, enter **N** and press RETURN at the "Update/transaction tapes (Y/N)?" prompt.

Restoring From PART-UPDATE-SAVES

If you are restoring from a PART-UPDATE-SAVE, you will have to load every Update-Save tape or diskette since the last full File-Save, in the same sequence in which the reels were made. Load the first Update-Save tape or diskette made after the last full File-Save. Then enter **Y** and press RETURN. The following screen is displayed.

Restoring Data

```
Mount DATA tape and press RETURN
L 2000#   time       date       DATA Part-Update-Save
Seq# of this data tape:
Seq# of last data tape:
Is this the right tape (Y/N)?
```

Check the label displayed to verify that this is the correct tape or diskette. Then enter **Y** and press RETURN.

If this is a multiple reel Update-Save, the following screen is displayed.

```
Mount reel #2
(C)ontinue/(Q)uit?
```

Load the next tape or diskette. When ready, enter **C**. Continue loading the tapes or diskettes as prompted. When all the Update-Save reels have been loaded, enter **N** and press RETURN at the "Update/transaction tapes (Y/N)?" prompt.

After All Tapes or Diskettes Have Been Loaded

When all the update tapes or diskettes have been loaded, the following screen is displayed.

Restoring Data

```
Update/transaction tapes (Y/N)? N
Saving Monitor
Linking workspace for line 0

    date      time      Logon Please:

<<< Welcome to the Ultimate Computer System >>>
<<< Copyright    date    The Ultimate Corp. >>>
<<<   time      Release XX Rev XX      date    >>>

This is the Cold-Start Procedure
Enter <CR> to continue
```

Press RETURN.

The following screen is displayed.

```
    date      time      Logon Please:

<<< Welcome to the Ultimate Computer System >>>
<<< Copyright    date    The Ultimate Corp. >>>
<<<   time      Release XX Rev XX      date    >>>

This is the Cold-Start Procedure
Enter <CR> to continue

Linking secondary TCL workspaces

X additional task workspaces initialized

    time      date

Time =
```

NOTE: If your system has an external clock, you are not asked for the time or date.

Restoring Data

Enter the time in military format (HH:MM:SS) and press RETURN.

For example, enter 5PM as 17:00:00. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
   time          date  
Time = 17:00:00  
17:00:00      date  
Date =
```

Enter the date in the following format: MM/DD/YY. Then press RETURN.

For example, enter February 3, 1986 as 02/03/86. The following screen is displayed.

Restoring Data

```
This is the Cold-Start Procedure
Enter <CR> to continue
```

```
Linking secondary TCL workspaces
```

```
X additional task workspaces initialized
```

```
time          date
```

```
Time = 17:00:00
```

```
17:00:00      date
```

```
Date = 02/03/86
```

```
17:00:00     03 FEB 1986
```

The system will display several messages. If there are any error messages (for example, "Ultimate system software does not verify"), call your Ultimate dealer or Ultimate Technical Support immediately (see Section 13.2).

The following screen is displayed.

```
date          time          Logon please:
```

7. You may now log on.

**SUMMARY OF THE FILE-RESTORE FROM UPDATE-SAVE
TAPES OR DISKETTES**

1. Make sure all users are logged off the system. Then **:WARMSTOP** the system.
2. At the C> prompt, enter **UT** and press RETURN. Then enter **F** to select File-Restore.
3. If you have a tape drive, enter **T** or **F** and press RETURN to indicate whether you will be using an ABS and Files tape or diskette. (Do not load the tape or diskette now.)
4. When prompted, load your Coldload diskette in drive A: and press RETURN.
5. Enter your system serial number.
6. At the "Mount ABS tape" prompt, load the diskette labeled "ABS and Files Disk #1", or load the first reel of a PC-SAVE tape or diskette. Then press RETURN. (If you are using a PC-SAVE tape or diskette, see **NOTE** in detailed instructions).
7. At "Mount data tape," unload the tape or diskette and load the first reel of your most recent File-Save. Then press RETURN. But if your most recent save is the PC-SAVE, do not change the reel. Instead, just press RETURN.
8. Verify the tape or diskette label, then enter **Y** and press RETURN.
9. When prompted to mount the next "reel", load the next File-Save or PC-SAVE tape or diskette. Then enter **C** to Continue.
10. At "Update/transaction tapes?" load the first reel of the update tapes or diskettes. Then enter **Y** and press RETURN. If you are using a multiple-reel set, you are prompted to mount the next "reel". Then enter **C** at the "(C)ontinue/(Q)uit?" prompt. When all the tapes or diskettes have been loaded, enter **N** and press RETURN at the "Update/transaction tapes (Y/N)?" prompt.
11. Press RETURN at "This is the Cold-Start Procedure."
12. Enter the time and date in military format.
13. Log on to the system.



10 MAINTENANCE

The steps in this section should be performed routinely to ensure that your Ultimate system runs smoothly and efficiently. Ultimate strongly recommends that you follow all daily, weekly, monthly, and semi-monthly procedures.

10.1 DAILY

10.1.1 BACK UP YOUR DATA

Ultimate strongly recommends that you back up your data at the end of each work day. If you don't, you could lose a considerable amount of data if the system fails. Such a failure (without a backup) would require that you re-enter all of your data.

Note that full File-Saves should be done at least once each week.

For more information on backup methods, see Section 8.

10.1.2 CHECK FILE STATISTICS REPORT

Each time you perform a File-Save, you should also generate a file statistics report. This report may also be generated at any time by typing **LIST-FILE-STATS** and pressing RETURN at TCL.

The file stats report lists one item for each D-pointer saved on the File-Save tape or diskette. The report also adds security data by providing a list of file Base, Modulo, and Separation parameters, and by recording the order of the files on a File-Save tape or diskette. The information on the file stats report is only updated when a File-Save or the SAVE (D,F,I,T,S) command is performed. If you want a current file stat report, you have to print it immediately after a File-Save or SAVE (D,F,I,T,S) command.

The report is broken down by account, with a line of information generated for each file in the account, that includes:

1. total and average item size
2. total and average number of items per group
3. use of file space
4. actual data stored, and "pad" space used in the file

A total line is generated for each account, showing the total:

1. items

Maintenance

2. bytes (characters)
3. frames (includes linked)
4. Group Format Errors (GFEs)

The file stats report is cleared after every File-Restore because the data is no longer applicable. The report is regenerated with every File-Save.

Check the file stats report at the end of every File-Save. Pay particular attention to the total line for each account, which shows the total number of Group Format Errors (GFEs).

IMPORTANT: If any GFEs are indicated on the file stats report, they must be corrected immediately! Refer to Section 13.3 of this manual, and call your Ultimate dealer or Ultimate Technical Support (see Section 13.2). Do not do any further processing until the GFEs have been corrected.

10.1.3 VERIFY-SYSTEM

The verify-system procedure ensures that the system software is correct.

The verify-system generates a checksum for every frame of software, from 1 to 399 and from 600 to 1023. These check-sums are compared with those in the ERRMSG file, in an item named "CHECK-SUM." This item contains the correct check-sum for all the system software frames. Each line in the item contains a check-sum for one frame of code, optionally followed by one or more hexadecimal limits. Limits are sometimes used because some frames contain tables that change from time to time, such as the system overflow table. (Table entries are not check-summed, only assembly code is check-summed.) If there are limits, the check-sum is generated only for bytes within the limits. If there are no limits, the check-sum is generated for bytes 0--X'1FF.'

1. Log to the SYSPROG account, and go to TCL.
2. Type:

VERIFY-SYSTEM and press RETURN.

If all the program frames verify, the following message is displayed:

[341] Ultimate System Software Verified

If a frame generates a check-sum that does not match the check-sum for that frame in the "CHECK-SUM" item, then the FID of the frame, the generated check-sum, and the stored

check-sum from the item are printed, and the following message is displayed:

[342] Ultimate system software does not verify!

If this message is displayed, your system has mismatches. See Section 13.8 for causes and possible solutions for mismatches.

10.1.4 CHECK PRINT OVERFLOW TABLE

The POVF command is used to check the system overflow table, which displays the amount of disk space available on the system.

1. From TCL, type:

POVF and press RETURN.

You may also specify the (P) option to print the overflow table on the printer.

The overflow table is displayed. The following is an example of an overflow table.

```

-----
>POVF
          3936  (    823)
5549-    5551  :      3  6746-    6746  :      1
6748-    7160  :    431  7254-    7258  :      2
23054-   23289  :    236
Total number of contiguous frames      :    655
>
-----

```

The first line of output is the FID of the first frame in linked overflow, followed by the number of frames in the linked chain. The next lines describe blocks of contiguous overflow, and have the following format:

m - n : p m - n : p

m = the first frame of a contiguous block
n = the last frame of the block
p = the number of frames in the block

Maintenance

The total number of frames contained in all the contiguous overflow is then displayed:

Total number of contiguous frames :

As you use your system, the total number of the contiguous frames decreases. So you should regularly check the rate of change in the number of contiguous frames. When the number is low, you should either delete old files to create additional space, or do a File-Save and then a File-Restore to gain back overflow space and contiguous frames.

10.2 WEEKLY

10.2.1 FILE-SAVE

If your daily backup method is one other than the File-Save, you should perform a full File-Save at least once each week. Note that if your daily method is the Update-Save, each Update-Save tape or diskette should be associated with a full File-Save tape or diskette. For more information on Update-Saves and File-Saves, see Sections 8.5 and 8.2.

10.2.2 CLEAN TAPE HEADS

If your system is equipped with a tape drive, you should clean the tape heads once a week. Refer to the tape drive manual for instructions.

10.3 MONTHLY

10.3.1 CLEAR ACC FILE

You should check and clear, if necessary, the accounting history items in the accounting history (ACC) file for specific users. If you do not do this, the ACC file will overflow.

The point of overflow is determined by the amount of activity for each user (approximately 1000 logon/logoffs are allowed). If you do not clear the ACC file before it overflows, you may experience abort errors when attempting to log on.

1. From TCL, type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL.

2. Type:

SORT ACC WITH NAME LPTR and press RETURN.

This command prints a list of users that are logged on.

3. Type:

SELECT ACC WITH NO NAME and press RETURN.

This command selects updated items only.

WARNING: If you accidentally pressed an extra RETURN, do not continue to Step 4. If you do, all your accounting records will be deleted. Instead, repeat Step 3 before you go to Step 4.

4. Type:

DELETE ACC and press RETURN.

The ACC file is cleared. Refer to the System Commands Guide and the System Management and Support Guide for more information on the ACC file.

10.4 SEMI-MONTHLY

10.4.1 FILE-RESTORE

You should perform a full File-Restore approximately once every 3 months, or as needed, to repair any fragmented disk space. See Section 9.1 for instructions and more information.

SUMMARY OF MAINTENANCE ITEMS

Daily

1. Back up your data.
2. Create and check the File Stats Report for GFES (if your daily backup method is a File-Save). If GFES appear, correct them or call Ultimate immediately (see Section 13.2).
3. From SYSPROG, run a VERIFY-SYSTEM. If the system does not verify, see Section 13.8.
4. Check the Print Overflow Table (POVF).

Weekly

1. If you have a tape drive system, clean the tape heads.
2. If your daily backup method is one other than a File-Save, then perform a full File-Save.

Monthly

1. Clear the ACC file.

Semi-Monthly

1. Perform a full File-Restore.
-



11 ADDING EQUIPMENT

11.1 SERIAL DEVICES

Serial devices, such as printers or CRTs, may be added to your system at any time. No special instructions are required.

If you are adding CRTs, refer to Appendix B for configurations of CRTs supported by Ultimate. If you are adding printers, refer to Appendix C for configurations of printers supported by Ultimate.

11.2 COMMUNICATIONS BOARDS

Whenever you add a communication board to your system, you must perform a File-Save, and then a full File-Restore so that the system can recognize the board(s) and build workspace for it.

Refer to Section 8.2 for instructions on performing a File-Save, and Section 9.1 for instructions on performing a full File-Restore.

11.3 OTHER DEVICES

Disk Drive

Use the following steps to add a disk drive:

1. Perform a File-Save (see Section 8.2).
2. Add the disk drive.
3. Create the Ultimate and DOS partitions (see Section 4.2.2).
4. Prepare the DOS partitions and install DOS (see Section 4.2.3).
5. Prepare the Ultimate partitions (see Section 4.2.4 if you have an IBM XT or Ultimate 110 PC, or see Section 4.2.5 if you have an IBM AT.)
6. Perform a File-Restore (see Section 9.1).

Memory

When adding memory, perform a Warmstart to enable the system to recognize the additional memory. Refer to Section 7.3 for

Adding Equipment

instructions.

Parallel Printer Adapter

When adding a parallel printer adapter, do a Coldstart. Refer to Section 7.1 for instructions.

Tape Drive

When adding a second tape drive, do a File-Save and then a File-Restore. Refer to Sections 8.2 and 9.1 for instructions.

SUMMARY OF PROCEDURES FOR ADDING EQUIPMENT

Serial Devices

No special instructions are required.

Communications Boards

1. Perform a File-Save.
2. Perform a full File-Restore.

Disk Drives

1. Perform a File-Save.
2. Add the disk drive.
3. Create the Ultimate and DOS partitions (see Section 4.2.2).
4. Prepare the DOS partitions and install DOS (see Section 4.2.3).
5. Prepare the Ultimate partitions (see Section 4.2.4 if you have an IBM XT or Ultimate 110 PC or see Section 4.2.5 if you have an IBM AT).
6. Perform a File-Restore.

Memory

1. Perform a Warmstart.

Parallel Printer Adapters

1. Perform a File-Save.
2. Perform a full File-Restore.

Tape Drives

1. Perform a File-Save.
2. Perform a full File-Restore.



12 COMMUNICATIONS

12.1 ASYNCHRONOUS COMMUNICATIONS

The Ultimate PC/OS operating system has the ability to transfer information to and from another Ultimate computer system via asynchronous communications, which is a standard feature of the Ultimate PC/OS (after release 123FX). Asynchronous communications has very few commands and a help screen, which makes it very simple to use. It is capable of transferring items only. For more information, see your System Management and Support Guide.

12.2 SMARTERM

SmarTerm gives a PC the ability to upload DOS files to a host Ultimate system, and download Ultimate data to a DOS file. By setting the term type to D, SmarTerm also allows the PC to emulate a DEC VT100 terminal on the Ultimate system. See your SmarTerm document for more information.

12.3 ULTILINK

UltiLink is an asynchronous communications utility that provides a means of transferring data from one Ultimate system to another system, without operator intervention. Because UltiLink is easy to use, Ultimate recommends you use this type of communication for your PC. UltiLink is capable of item, account, and file transfer, and it allows you to integrate data transfer into your applications software. For more information, see your UltiLink Manual.



Troubleshooting

13 TROUBLESHOOTING

13.1 GENERAL PROCEDURES

These procedures apply to all types of problems:

1. Whenever you encounter any type of error or problem, always write down all messages and prompts that appear on your screen and on line 0 (the main monitor). Troubleshooting is very difficult without this information.
2. Whenever possible, leave your system in its failed state until the service organization responds to your call. Otherwise, valuable diagnostic information may be lost.
3. Whenever you encounter an error or problem, do not try to continue processing until the problem has been corrected. In many cases, processing under error conditions may create more errors.
4. Keep a log of all problems on your system so that recurring problems may be tracked. Make copies of the log sheet at the end of this section, and use them to track the history of your system.
5. If you have a problem or question about your operating system that you cannot solve, call your Ultimate dealer or Ultimate Technical Support for assistance (see Section 13.2).
6. If you have a problem with your application software, call your application software dealer.
7. Before calling your Ultimate dealer or Ultimate Technical Support, be prepared to answer the following questions:
 - a. What is your system number?
 - b. What is the nature of your problem?
 - c. What software release are you on?
 - d. When did you notice the problem? Has this been a recurring problem?
 - e. Have you recently made any hardware replacements or upgrades?
 - f. Are you upgrading to a new release?
 - g. Is this a new installation?
8. Before turning your system over to a field engineer for

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service, make sure you :WARMSTOP the system first! See Section 7.5 for instructions.

9. When sending correspondence to The Ultimate Corp., be sure to include your system number.

Troubleshooting

13.2 CALLING YOUR ULTIMATE DEALER OR ULTIMATE TECHNICAL SUPPORT

If you have a problem with your system, you should contact your Ultimate dealer for assistance. You may also purchase a maintenance contract with Ultimate Technical Support.

The telephone number for Ultimate Technical Support is (201) 887-2721. You are only eligible to use this number if you have purchased a maintenance contract. This number should be used for technical questions and problems dealing with the Ultimate PC/OS only. Calls cannot be transferred to other departments.

Questions regarding shipments or billings should be directed to the Administration department, at (201) 887-9222.

Ultimate Technical Support works on a call-back system, meaning that when you place a call, the call is entered into Ultimate's online support system, and the next available support technician will call you.

Ultimate's software support is available in the continental U.S. from 8am to 8pm, your local time. Tutorial or question-type calls after 5pm are deferred until the next working day. All service calls received after 8pm (your local time) are deferred until the next working day, unless your system is covered by an extended maintenance contract.

Technical support is available outside the normal hours on a contract basis only. Extended maintenance is available for second and third shifts, Saturdays and/or Sundays, or 24 hours per day, seven days per week.

For information on pricing and arrangements for extended maintenance, contact the Administration group at (201) 887-9222.

13.3 GROUP FORMAT ERRORS (GFES)

A Group Format Error (GFE) is an error in the format of a virtual storage frame of a file.

When a GFE message is displayed, always write down all data in the message. This data is vital to correcting the GFE. Then call your Ultimate dealer or Ultimate Technical Support (see Section 13.2).

Group Format Errors (GFES) should always be corrected as soon as they are discovered. If a file containing GFES has records written against it, you will cause more GFES. Eventually, they may cross into other files and even into other accounts.

WARNING: Unattended GFES can eventually cause loss of data!

The following are types of GFES and some possible causes:

1. The most common type of GFE is a bad forward or backward frame link. It can be caused by:
 - a. having to do a Warmstart (because of a system hang) while users were logged on,
 - b. power losses,
 - c. system hangs,
 - d. the system going down without being :WARMSTOPped first,
 - e. problems with the spooler when using the SP-KILL command,
 - f. starting the spooler while the spooler is still active,
 - g. memory problems or other hardware problems.

2. Another type of GFE is one with a bad count field. Each item in a group is made up of a count field, a key, and the data. The count field is used as a pointer to the end of the item. The end of the item must be an attribute mark followed by a segment mark. If the count field does not point to this pattern, then a Group Format Error is generated. (For more information on groups and count fields, see the System Management and Support Guide.) This type of GFE can be caused by:
 - a. the system going down during processing,
 - b. a hardware failure.

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All GFES may cause a loss of data. The amount of data lost depends on the type and number of GFES.

Ultimate recommends that when you do a File-Save, you select 1 on the SYSPROG Main Menu. This selects File-Save with automatic GFE fixer. The automatic GFE fixer has the ability to correct 80% of the types of GFES. If you are still having GFE problems, type:

FIX-FILE-ERRORS filename and press RETURN.

This command loads the data removed to the TSYM file. After fixing GFES you should type:

COUNT filename and press RETURN.

Any existing GFES are displayed. If you are still having problems, call Ultimate (see Section 13.2).

NOTE: Once your GFES have been corrected, Ultimate recommends that you do a File-Save to determine if there are more GFES. In any case, if there were many GFES or several files affected, you should selectively restore the affected files with a prior File-Save, ALL-UPDATE-SAVE, or PART-UPDATE SAVE. The restore ensures that your system is back on a clean base.

CAUTION: Never use the DELETE-FILE or CLEAR-FILE commands on a file that contains a GFE. If you do, you will not be able to determine the cause of the GFE and you will probably still have GFES.

13.4 ABORTS

When an abort message is displayed, always write down all data in the message. This data is vital to correcting your problem.

The following are possible causes and solutions for aborts. If you need assistance, call your Ultimate dealer or Ultimate Technical Support (see Section 13.2).

1. The data that the system is trying to manipulate may be corrupted. Try to determine which item was being accessed when the abort occurred, and then check that item for errors.
2. The WORKSPACE for the line may be blown, especially if the process being run works on another line. Simply run the LINK-WS command, as instructed below.

Workspace links are particularly suspect if a program or process aborts on one channel, but works correctly on others. The workspace may be (re)linked on a live system using the LINK-WS command on the SYSPROG account. But first, be sure the affected line is logged off.

Log to SYSPROG. At TCL, type:

LINK-WS {(n{-m})} and press RETURN.

If the (n) or (n-m) is omitted, the workspace of all lines are relinked, except those of the lines logged on and those of the spooler process. The parameters in parentheses may be used to limit the relinking process to lines n, or n through m only. (The affected lines are given in the abort message.)

As the linkage proceeds, the line number of the process whose workspace is currently being linked is displayed on the terminal. If the line is logged on, the messages "On!" is displayed and the work-space is not relinked.

The spooler's workspace can be linked via a Coldstart. However, internally the spooler's workspace is not used in a manner that can cause problems if its links are not correct. Therefore, a Coldstart is not necessary.

3. Refer to the Aborts Definition List to see if it contains your abort message.
4. Your system software may not verify. Type **VERIFY-SYSTEM** and press RETURN, to determine if there are any mismatches. It is possible that a mismatch caused the

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abort. If this is the case, try to find out why the mismatch occurred. If there are mismatches, you must reload the ABS section of the "ABS and Files Disk #1" via a Coldstart (see Section 7.1).

5. Have there been any recent hardware problems or hardware upgrades to the system? The hardware replacement may not have corrected the problem for which it was intended, or the upgrade may not have been installed properly.
6. If you abort with an asterisk (*) prompt, you have an application program problem. Call your Ultimate dealer for assistance.

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13.5 SYSTEM HANGS

System hangs can occur on a single line, on several lines, or on a total system. There are many different causes of system hangs, so they are difficult to troubleshoot. You should always call your Ultimate dealer or Ultimate Technical Support (see Section 13.2) for all system hangs. However, there are some things you can check first.

13.5.1 SYSTEM

1. Check for error messages on all of your CRTs. If there are any messages, write them down.
2. Are there ampersands (&) on any of your screens? If so, you may have a disk error.
3. Are all of your terminals hung? Check each terminal, not just those in the computer room.
4. Check to see if there is any drive activity. Is the red light on your disk drive on, off, or blinking?
5. Have you been hearing beeping sounds? If you have, you should check for unterminated cables, or a noisy modem, CRT, or other device.
6. Call your Ultimate dealer or Ultimate Technical Support (see Section 13.2) before attempting to boot your system.

13.5.2 TERMINALS

1. Check your communications cables. You may have a CRT cable connected to the back of the system, but not connected to a CRT. This is known as an "unterminated" cable. Either connect the cable to a CRT, or disconnect the CRT cable from the back of the system.
2. Are ampersands (&) being displayed on your terminal? If so, you may have disk errors.
3. The LOCK table may be full, or the File-Save process may have a lock on a file that you are also trying to access from the hung line. Refer to the BASIC Manual, the System Commands Guide, and the System Management and Support Guide for information on group and item locks. Call Ultimate for further assistance (see Section 13.2).
4. If you are working on a modem line and you cannot get a connection, press CTRL BREAK.

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5. If your terminal has recently been installed, check the cables, switch settings, and configuration options to make sure it was installed correctly. Refer to Appendix B for more information.

13.5.3 HANGS DURING A FILE-SAVE

If you experience a hang during the File-Save process, it may be caused by hardware, software, or media. In most cases, only the File-Save process is in a halted state, and not the entire system. If this is the case, do not end the File-Save process. Write down the name of the account and file, and call your Ultimate dealer or Ultimate Technical Support (see Section 13.2).

13.5.3.1 DISK ERRORS

The File-Save process can halt if it encounters a "hard disk error." This means that a portion of the disk cannot have data written to or read from it. This error is usually indicated by ampersands (&) displayed on your terminal.

If you have ampersands (&) displayed on your screen at any time, use the following instructions to correct the problem.

IBM AT (or Compatible)

1. Do a File-Save if possible. Otherwise, back up your system as completely as you can.
2. Follow the instructions in Section 4.1.5 (for a one hard disk system) or Section 4.2.5 (for a two hard disk system) to run the BADSECT and CLEARUC Utilities.

CAUTION: When running the BADSECT Utility, do not reset the interleave and error tables.

3. The CLEARUC Utility lists any bad cylinders. The following is a sample listing.

```
CYL = 025   HD = 01   SEC = 04
```

If the bad cylinder is in the first 10 cylinders of the Ultimate partition, you will have to delete the Ultimate partition and move it beyond the bad cylinder.

If the bad cylinder is not in the first 10 cylinders of the Ultimate partition, skip to Step 4.

Troubleshooting

Use the following instructions to move the Ultimate partition beyond the bad cylinder.

- a. If you created a permanent Ultimate partition(s), you must now delete it. Follow the instructions in Section 4.4, "Deleting a Permanent Ultimate Partition Entry."
- b. Delete the DOS partition(s). Follow the instructions in Section 4.1.1 (for a one hard disk system) or Section 4.2.1 (for a two hard disk system).
- c. Create the DOS and Ultimate partitions. Follow the instructions in Section 4.1.2 (for a one hard disk system) or Section 4.2.2 (for a two hard disk system).

NOTE: When you enter the partition size for the DOS partition, enter a number higher than the bad cylinder to place the bad cylinder in the DOS partition.

For example, if the bad cylinder is number 25, you could make the DOS partition size 30. The DOS partition (cylinders 0 to 29) now includes cylinder 25.

- d. Prepare the DOS partition and install DOS. Follow the instructions in Section 4.1.3 (for a one hard disk system) or Section 4.2.3 (for a two hard disk system).
- e. Prepare the Ultimate partition. Follow the instructions in Section 4.1.5 (for a one hard disk system) or Section 4.2.5 (for a two hard disk system).

4. Fully restore your data.

IBM XT (or Compatible) and the Ultimate 110 PC

1. Do a File-Save if possible. Otherwise, back up your system as completely as you can.
2. Follow the instructions in Section 4.1.4 (for a one hard disk system) or Section 4.2.4 (for a two hard disk system) to run the CLEARUC Utility.

CAUTION: When running the BADSECT Utility, do not reset the interleave and error tables.

3. The CLEARUC Utility lists any bad cylinders. The following is a sample listing.

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CYL = 025 HD = 01 SEC = 04

If the bad cylinder is in the first 10 cylinders of the Ultimate partition, you will have to delete the Ultimate partition and move it beyond the bad cylinder.

If the bad cylinder is not in the first 10 cylinders of the Ultimate partition, skip to Step 4.

Use the following instructions to move the Ultimate partition beyond the bad cylinder.

- a. If you created a permanent Ultimate partition(s), you must now delete it. Follow the instructions in Section 4.4, "Deleting a Permanent Ultimate Partition Entry."
- b. Delete the DOS partition(s). Follow the instructions in Section 4.1.1 (for a one hard disk system) or Section 4.2.1 (for a two hard disk system).
- c. Create the DOS and Ultimate partitions. Follow the instructions in Section 4.1.2 (for a one hard disk system) or Section 4.2.2 (for a two hard disk system).

NOTE: When you enter the partition size for the DOS partition, enter a number higher than the bad cylinder to place the bad cylinder in the DOS partition.

For example, if the bad cylinder is number 25, you could make the DOS partition size 30. The DOS partition (cylinders 0 to 29) now includes cylinder 25.

- d. Prepare the DOS partition and install DOS. Follow the instructions in Section 4.1.3 (for a one hard disk system) or Section 4.2.3 (for a two hard disk system).
 - e. Prepare the Ultimate partition. Follow the instructions in Section 4.1.4 (for a one hard disk system) or Section 4.2.4 (for a two hard disk system).
4. Fully restore your data.

13.5.3.2 TAPE AND DISKETTE ERRORS

1. If you are using tape, you may have lost an interrupt during the File-Save. Press the tape drive's ON/OFF LINE button twice. If the tape is moving back and forth on the same spot, it may have a bad spot. Try a different tape.
2. If you are using a tape and percent signs (%) are being displayed, or if you are using a diskette and you see dollar signs (\$), you may have a bad spot on the tape or diskette. Load another tape or diskette and try the File-Save again.

Checking a Tape or Diskette For Parity Errors

Use the following procedure to determine if a tape or diskette has parity errors before you use it to backup your data. (See Sections 8 and 9 for backup and restore methods.)

This procedure involves doing a Selective-Restore on an account and file that does not exist. This step forces the system to read all of the tape(s) or diskette(s), thereby checking them for parity errors. Parity errors are signalled on your terminal by percent signs (%) for tapes and dollar signs (\$) for diskettes.

- a. Load the first reel of your File-Save tape or diskette (or the tape or diskette you will use for backup).

- b. At TCL, type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL.

- c. If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

- d. Then at TCL, type:

SEL-RESTORE SYSPROG-PL * and press RETURN.

You are prompted:

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Account name on tape?

Type a name that you know does not exist on the tape or diskette. For example, type TEST-ACCOUNT and press RETURN. Next, you will see the following prompt:

Filename on tape?

Again, type a name that does not exist on the tape or diskette. For example, type TEST-FILE and press RETURN.

- e. The system begins reading the tape or diskette for the account and filename you entered. If the tape or diskette is a reel of a multiple reel set, you are prompted to enter Reel #2, then Reel #3, etc., until all the tapes or diskettes have been loaded. Of course, the system will not find the account and file names, so when all reels have been loaded, you will see the message:

0 items restored

If you see percent signs (%) or dollar signs (\$) on the terminal at any point during this procedure, then your tape(s) or diskette(s) contains parity errors, and should not be used. If the entire procedure runs without displaying percent signs (%) or dollar signs (\$), then your tape(s) or diskette(s) does not contain parity errors, and may be used to back up your data.

13.5.3.3 LOCK ERRORS

1. If the total system is not hung, and if there are no diskette or tape errors, then the hang was probably caused by locks. Use the WHAT, WHERE, or LIST-LOCKS commands to determine if you have a lock problem. Also, if you are on a release prior to PC100 and you press CTRL BREAK and the address is 48.xxx, then you have a lock problem. If you are on release PC100 or later and you press CTRL BREAK and the address is 667.xxx, then you have a lock problem.

The File-Save process LOCKS a group while it is being saved. If a BASIC program leaves a lock on that group set, or if the LOCK table is full, then the File-Save process will definitely hang. End out of the BASIC program, and call Ultimate (see Section 13.2).

NOTE: If you try to clear the locks, subsequent updates may contain errors.

If the LOCK table continually becomes full, have your ap-

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plication software vendor check your programs to make sure each process is releasing the LOCKS being set.

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13.6 PRINTER PROBLEMS

The following are possible causes and solutions for printer problems.

1. Is the printer online? Make sure the ONLINE button is lit.
2. Is the printer loaded with paper?
3. Are you assigned to the correct printer? At TCL, type **SP-ASSIGN ?** and press RETURN to determine to which printer you are assigned. Type **SP-LISTLPTR** and press RETURN for a listing of printers installed on your system.
4. Is the printer connected to its parallel or serial port?
5. Is the printer connected to the auxiliary port on a terminal? If it is, it is a slave printer and can only be used from that terminal.
6. Has this printer ever worked before? If not, it may not have been installed correctly. Check the printer's cabling and switch settings. Refer to Appendix C for options and switch settings of printers supported by Ultimate.
7. Was this printer recently added to your system? If yes, see Section 11, "Adding Equipment."
8. Is there sufficient voltage for the printer? Insufficient voltage can cause the printer to stop in the middle of a job or not print at all. If all the lights on the printer remain solid and it cannot be taken offline, then the printer's power cord should be put on another circuit.

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13.7 CRT PROBLEMS

1. If the cursor control is not working properly on port 0 (the main monitor):
 - a. type **TERM** and press RETURN to make sure the monitor is set to term type P. If it is not, go to TCL. Then type **TERM P** and press RETURN.
 - b. is the problem occurring while you are using BASIC or PROC? If it is, make sure you are using the @ Function Negative Values. For more information, see your BASIC and PROC Manuals.

13.8 MISMATCHES

A mismatch occurs when the check sum of the actual frame on the disk does not match the predetermined check sum item in the ERRMSG file.

Use the following steps to get a list of your system's mismatches.

1. Log to SYSPROG, then press RETURN to go to TCL.
2. At the > prompt, type:

VERIFY-SYSTEM and press RETURN.

The following screen is a sample of what is displayed.

```
>VERIFY-SYSTEM
034 F7BE F89E
103 0D49 0D39
308 0200 E491
[342] ***Ultimate system software does not verify!***
      There are 3 frames with mismatches.
```

The following are possible causes and solutions for mismatch problems.

1. Are you booting the system with the wrong release tape or diskette? If you are, reboot with the right tape or diskette, or upgrade to the new release.
2. Was your operating system properly upgraded? If the mismatches accompanied an upgrade, you should go over your upgrade instructions to see if you followed them correctly. If you find a mistake, all or part of the upgrade procedure may need to be repeated.
3. Did you add or modify any ABS frames or change the checksum? If you believe this is causing the mismatches, call Ultimate Technical Support (see Section 13.2).
4. Do you have a hardware failure? Mismatches that occur consistently and cannot be attributed to software are probably hardware related. DOS diagnostics can be run to determine if a hardware problem is present. See Section 13.11 for more information.

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If your mismatch was not caused by booting the system with the wrong release diskette (or tape), or by problems during the upgrade procedure, you should :WARMSTOP the system. Then follow the procedure in Section 7.1 to run a Coldstart. Run the VERIFY-SYSTEM procedure again. If the system still does not verify, call your Ultimate dealer or if you have a maintenance plan, call Ultimate Technical Support (see Section 13.2).

13.9 ERRORS WHILE INSTALLING THE ULTIMATE PC/OS

The following are error messages and problems that you might encounter when loading the Ultimate PC/OS on your PC.

1. "&&&&"

- a) This error message can occur at the "Mount ABS tape" prompt. It appears when you erroneously press RETURN without loading the ABS and Files tape or diskette.

2. "Disk cartridge not configured"

- a) The door on the floppy disk drive may not be closed.
- b) You may not have formatted the diskette under DOS. (See Appendix D for instructions on formatting diskettes.)

3. "Insufficient Disk Space"

- a) The Ultimate partition may be too small.
- b) If PC/OS has previously been loaded, disk space may have run out. You should backup the hard disk's data to tape or diskette, and then either File-Restore to create a greater area of contiguous space, or delete unnecessary files to release additional disk space. Also, you also could make the DOS partition smaller.

4. "Unusable partition or no partition found"

- a) You may not have left any space for the Ultimate PC/OS when you created or moved the DOS partition. See Section 4 for more information.
- b) You may have defined multiple volumes. This cannot be done because the Ultimate PC/OS does not recognize virtual drives. It only recognizes physical drives and the drive cannot have more than two partitions: DOS and PC/OS.
- c) You may not have made the DOS partition active. If you did not, the system is trying to boot from the Ultimate PC/OS.

5. If your system hangs immediately after loading the Cold Load diskette:

- a) The CLEARUC or BADSECT utilities may not have been used properly when preparing the Ultimate PC/OS portion of the disk.

13.10 FLOPPY DRIVE ERRORS

The following are some floppy drive problems and their possible solutions.

1. Parity errors or "\$\$\$\$" occur when there is a problem reading or writing to a floppy diskette.
 - a) The diskette may not have been formatted under DOS. If it was not, the Ultimate PC/OS will not be able to write to it. (See Appendix D for instructions on formatting diskettes.)
 - b) The errors may be caused by a bad spot on the diskette. This problem can be solved by either reformatting the diskette or using another one. For more information on formatting, see Appendix D. See Section 13.5.3.2 for instructions on how to check a diskette for parity errors.
 - c) If the errors persist, the floppy drive and the disk controller should be checked.
2. The floppy disk is not operating properly.
 - a) There could be a bad spot on the diskette. Try a different diskette.
 - b) The controller may be hung. If it is, perform a :WARMSTOP and then a Warmstart to reinitialize the controller. See Section 7.5 and 7.3 for more information on :WARMSTOPping and Warmstarting the system.
 - c) If problems persist, you may be having hardware problems. Run a DOS diagnostics test on your system to see exactly what is wrong. See Section 13.11 for more information.

13.11 DOS DIAGNOSTICS

DOS diagnostics should be run on your PC whenever it is not operating properly. This test covers problems with your floppy drive, memory, monitor, serial and parallel ports, and the keyboard. For instructions on running this test, see your IBM Operations Guide.

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13.12 POWER FAILURES

There are many different causes of power failures. The following are possible causes and solutions. If you need assistance, call your Ultimate dealer or Ultimate Technical Support (see Section 13.2).

Occasional power fluctuations may cause your system to hang. Constant system hangs caused by power fluctuations can cause extreme damage to both hardware (for example, boards going bad) and software (for example, data corruption and GFES).

If power is a constant problem in your business environment, identify the types of power problems you are having, and install an appropriate device to correct the problem. Available devices include power conditioners and uninterruptable power supplies.

13.12.1 POWER FAILURE RECOVERIES

The most critical step in recovering from a power failure is to make sure memory is flushed to disk. If your system is equipped with an uninterruptable power supply, try to :WARMSTOP the system to ensure that memory is properly flushed. If you do not have an uninterruptable power supply and power is lost, turn the machine off. When power returns, power up the PC and attempt a Coldstart (see Section 7.1). If you do not perform a Coldstart, you will have Group Format Errors.

Power Conditioners

Power conditioners are designed to prevent the most common forms of electrical disturbances (noise and surges) from reaching your computer. These disturbances account for 95 percent of the electrical problems affecting computers.

Although a power conditioner does not regulate, it provides a degree of "ride-through." That is, in the case of momentary power dips that cause the lights to flicker, the power conditioner maintain voltages to the system and prevent a power failure.

Uninterruptable Power Supply (UPS)

The UPS is the preferred power control device. Its primary purpose is to maintain power to the system if the main power source fails. Its batteries, from which the system draws power, can keep a system up from 10 minutes to over an hour. If power is restarted within that time, :WARMSTOP the system

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to ensure that memory is properly flushed.

Although the UPS does provide isolation from certain types of power disturbances, it does not provide total protection. The UPS is primarily for systems in areas subject to frequent or prolonged power losses.

If you have a power failure and you do not have a UPS, then perform a Coldstart to reduce the possibility of data corruption. See Section 7.1 for instructions on the Coldstart procedure.

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NOTES

ULTIMATE SITE LOG

SYSTEM NUMBER -

| Date | Reported by | Repaired by | Time Reported | Start Time | Stop Time |
|------|-------------|-------------|---------------|------------|-----------|
|------|-------------|-------------|---------------|------------|-----------|

Symptom/Problem

Solution

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NOTES

14 INSTALLING A NEW VERSION OF THE ULTIMATE OPERATING SYSTEM

Follow the instructions in this section when you want to install a new version of the Ultimate Operating System (also called upgrading your system to a higher release). If you have never installed the Ultimate Operating System on your system, do not use these instructions. Instead, follow the instructions in Section 4.

Use one of the following two upgrade methods:

1. File-Restore From SYS-GEN Diskettes Method

This method can be used to upgrade your system from any revision. However, certain revisions must use this method. Check the Delta Document that accompanies the new SYS-GEN diskettes for more information.

NOTE: The SYS-GEN diskettes for the PC are the ABS and Files diskettes.

3. Selective Upgrade Method

You can only use this upgrade method for certain revisions. Check the Delta Document that accompanies the new SYS-GEN diskettes for more information.

NOTE: The Selective Upgrade Method is called Method 3 to maintain compatibility with other Ultimate systems, and to avoid confusing those PC users who run other Ultimate systems. Therefore, there is no method 2 for the PC.

Installing a New Version of the Ultimate Operating System

14.1 METHOD 1: FILE-RESTORE FROM SYS-GEN DISKETTES

NOTE: The SYS-GEN diskette for the PC is the ABS and Files Disk #1.

To install the new version of the Ultimate Operating System, you must complete three major steps:

1. Prepare the Ultimate partition.
2. Install the new version of the Ultimate PC/OS.
3. Restore your application accounts.

The instructions for the first two steps are different, depending on whether you have a one hard disk system or a two hard disk system:

If your system has one hard disk, follow the instructions in Section 14.1.1, "Installing a New Version of the Ultimate Operating System on a One Hard Disk System."

If your system has two hard disks, follow the instructions in Section 14.1.2, "Installing a New Version of the Ultimate Operating System on a Two Hard Disk System."

Installing a New Version of the Ultimate Operating System

14.1.1 INSTALLING A NEW VERSION OF THE ULTIMATE OPERATING SYSTEM ON A ONE HARD DISK SYSTEM

Use these instructions only if you have a one hard disk system. If you have a two hard disk system, follow the instructions in Section 14.1.2.

The first step to installing a new version of the Ultimate Operating System is to prepare the Ultimate partition of your hard disk. The instructions you should follow depend on the type of hardware you have. If you have an IBM XT (or compatible) or an Ultimate 110 PC, follow the instructions in the next section (Section 14.1.1.1). If you have an IBM AT (or compatible) skip to the instructions in Section 14.1.1.2.

14.1.1.1 PREPARING THE ULTIMATE PARTITION ON YOUR IBM XT OR ULTIMATE 110 PC (ONE HARD DISK SYSTEM)

In this section, you will prepare the Ultimate partition on your IBM XT (or compatible), or Ultimate 110 PC system. If you have an IBM AT (or compatible), do not use these instructions. Instead, go on to the instructions in Section 14.1.1.2, "Preparing the Ultimate Partition on Your IBM AT (One Hard Disk System)."

1. Make sure everyone is logged off the system.
2. Do a full File-Save.

You will need this File-Save to restore your own accounts later in this procedure. See Section 8.2 for instructions on performing a File-Save.

3. From TCL, type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL.

4. Now type:

:WARMSTOP and press RETURN.

5. When the :WARMSTOP process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.

6. At the C> prompt, type:

COPY A:*. * C: and press RETURN.

When copying is complete, a screen similar to the

Installing a New Version of the Ultimate Operating System

following is displayed.

```
C>COPY A:*. * C:
A:UT.EXE
A:BADSECT.EXE
A:CLEARUC.EXE
A:DEUPART.EXE
      4 File(s) copied

C>
```

7. At the C> prompt, type:

CLEARUC and press RETURN.

This command starts the disk preparation utilities.

The following screen is displayed.

```
C>CLEARUC
BEGINNING ULTIMATE CYLINDER = XXX
ENDING ULTIMATE CYLINDER   = XXX
CYLINDER = XXX

CLEARUC FINISHED

C>
```

Go on to the instructions in Section 14.1.1.3, "Installing the Ultimate PC/OS (One Hard Disk System)."

**SUMMARY OF PREPARING THE ULTIMATE PARTITION ON YOUR IBM XT
OR ULTIMATE 110 PC (ONE HARD DISK SYSTEM)**

1. Make sure everyone is logged off the system.
2. Do a full File-Save.
3. Logto SYSPROG and go to TCL. Then type **:WARMSTOP** and press RETURN.
4. When the **:WARMSTOP** process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.
5. At the C> prompt, type **COPY A:*. * C:** and press RETURN.
6. At the C> prompt, type **CLEARUC** and press RETURN.

14.1.1.2 PREPARING THE ULTIMATE PARTITION ON YOUR IBM AT (ONE HARD DISK SYSTEM)

If you have an IBM AT (or compatible) computer, you must use Ultimate's BADSECT Utility to prepare the Ultimate partition on your hard disk.

By using the BADSECT Utility, the Ultimate PC/OS can use certain tracks that were flagged as bad by the manufacturer. To use these tracks, the utility builds an alternate track table in the first two cylinders of the Ultimate partition. BADSECT first resets these tracks, and then checks them along with the rest of the Ultimate partition. The BADSECT Utility is only available on IBM ATs (and compatibles) with 20 and 33 megabyte drives, as of Revision PC105 and later (kernel 200).

Use the following steps to prepare the Ultimate partition of your IBM AT (or compatible) one hard disk system.

1. Make sure everyone is logged off the system.
2. Do a full File-Save.

You will need this File-Save to restore your own accounts later in this procedure. See Section 8.2 for instructions on performing a File-Save.

3. From TCL, type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL.

4. Now type:

:WARMSTOP and press RETURN.

5. When the :WARMSTOP process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.

6. At the C> prompt, type:

COPY A:*. * C: and press RETURN.

When copying is complete, a screen similar to the following is displayed.

Installing a New Version of the Ultimate Operating System

```
C>COPY A:*. * C:
A:UT.EXE
A:BADSECT.EXE
A:CLEARUC.EXE
A:DEUPART.EXE
      4 File(s) copied

C>
```

7. At the C> prompt, type:

BADSECT and press RETURN.

A screen similar to the following is displayed.

```
THIS PROGRAM IS AN ADJUNCT TO THE ULTIMATE OPERATING SYSTEM.

THE FUNCTION OF THIS PROGRAM IS TO PRODUCE A "BAD SECTOR TABLE".
IT HAS BEEN TESTED ONLY ON IBM-AT'S WITH TYPE 2
AND TYPE 3 (20 & 33 MEGABYTE) DISKS.
THIS IS THE VERSION OF 12-4-85 FOR REV 200 & UP.

THIS PROGRAM DESTROYS THE DATA IN THE ULTIMATE PARTITION!!!

SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):
```

Press RETURN to select drive C:.

NOTE: Your system does not have a drive D:.

The following prompt is displayed.

Installing a New Version of the Ultimate Operating System

DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R):

Press RETURN.

The following prompt is displayed.

DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C):

NOTE: Ultimate recommends that you do not create a permanent Ultimate partition entry. If you don't make the partition permanent, you avoid having to delete it if you want to change the partition size later.

If you do not want to create a permanent entry, press RETURN.

To create a permanent entry, type C and press RETURN.

If you create the entry, you make a permanent partition entry for Ultimate in the FDISK partition table. The entry appears as "U". For instructions on displaying the partition table, see Section 4.4.

If you later wish to remove the entry, you must use the DEUPART.EXE Utility. For instructions, refer to Section 4.3.

8. The utility now goes through two passes on the hard disk. The first pass formats and tests the disk. The second pass builds the bad sector table. (This process takes about 15 minutes, depending on your system configuration.)

When the C> prompt appears, type:

CLEARUC and press RETURN.

The following screen is displayed.

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```
C>CLEARUC
BEGINNING ULTIMATE CYLINDER = 20
ENDING ULTIMATE CYLINDER = XXX
CYLINDER = XXX

CLEARUC FINISHED

C>
```

Go on to the instructions in Section 14.1.1.3 "Installing the Ultimate PC/OS (One Hard Disk System)."

**SUMMARY OF PREPARING THE ULTIMATE PARTITION ON YOUR IBM AT
(ONE HARD DISK SYSTEM)**

1. Make sure everyone is logged off the system.
2. Do a full File-Save.
3. Logto SYSPROG and go to TCL. Then type **:WARMSTOP** and press RETURN.
4. When the **:WARMSTOP** process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.
5. At the C> prompt, type **COPY A:*. * C:** and press RETURN.
6. At the C> prompt, type **BADSECT** and press RETURN.
7. Press RETURN to select drive C:.
8. At the "DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R" prompt, press RETURN.
9. At the "DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C)" prompt, either press RETURN, or type **C** and press RETURN to create. (Ultimate recommends that you do not create a permanent partition entry.)
10. At the C> prompt, type **CLEARUC** and press RETURN.

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14.1.1.3 INSTALLING THE ULTIMATE PC/OS (ONE HARD DISK SYSTEM)

Use these instructions to install the new version of the Ultimate Operating System on your one hard disk system. These instructions apply to all one hard disk systems (IBM XT, IBM AT, and Ultimate 110 PC).

1. At the C> prompt type:

UT and press RETURN.

The following screen is displayed.

```
C>UT
UT LOADED AT X'XXXXX'

This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option:
```

Enter **F** to select File-Restore.

The following screen is displayed.

Installing a New Version of the Ultimate Operating System

This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option: **F**
MEMORY SIZE = XXX KB

USING DISK C:
02 COMM LINES

LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY
Insert COLD section floppy
Press <CR> when ready

NOTE: If your system does not have a tape drive, the "LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY" prompt is not displayed on your screen. If you do have a tape drive, enter **F** and press RETURN to indicate that you will be using an ABS and Files diskette. (Do not load the diskette now.) You are then prompted to "Insert COLD section floppy."

Load the diskette labeled "Cold Load Section" in drive A:.
Then press RETURN.

The following screen is displayed.

Disc cartridge attached Block size: 500

System serial # is presently

Enter system serial # or <CR> to accept

Enter your system serial number and press RETURN.

For example, enter PA1234 and press RETURN. If the serial number shown is correct, press RETURN to accept it.

Your system serial number is assigned to you by Ultimate. If you do not have one, please call Ultimate's Administration Department to get one.

Installing a New Version of the Ultimate Operating System

The following screen is displayed.

```
-----  
Disc cartridge attached Block size: 500  
System serial # is presently .....  
Enter system serial # or <CR> to accept PA1234  
System serial # is presently PA1234  
Enter system serial # or <CR> to accept  
-----
```

Press RETURN if the number is correct.

You may re-enter the correct number if you made a mistake. Press RETURN after you enter the correct number.

The following screen is displayed.

```
-----  
System serial # is presently PA1234  
Enter system serial # or <CR> to accept  
Mount ABS tape and enter number of files to skip, if any:  
-----
```

2. Unload the "Cold Load Section" diskette, and load the diskette labeled "ABS and Files Disk #1" in drive A:. Then press RETURN.

The following screen is displayed.

Installing a New Version of the Ultimate Operating System

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

Press RETURN.

CAUTION: Do not change the diskette at this time.

The following screen is displayed.

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

L 01F4 time date DATA PC FILES R10*PC113
Seq# of this data tape: 0 0 0 0
Is this the right tape (Y/N)?

Check the diskette label to verify that the diskette in drive A: is the ABS and Files Disk #1. (If you are not sure how to check the diskette label, refer to the topic System Sequencing Information under the heading "Update Save Procedures" in the System Management and Support Guide.)

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Then type:

Y and press RETURN.

The File-Restore will now begin. Each filename on the diskette is listed on your screen. The following screen is a sample of what is displayed.

```
-----  
Mount DATA tape and press RETURN  
L 01F4 time date DATA PC FILES R10*PC113  
Seq# of this data tape: 0 0 0 0  
Is this the right tape (Y/N)?Y  
SYSTEM 3521,11,1  
SYSTEM-ERRORS 3568,1,1  
SYSTEM-ERRORS 3569,1,1  
SYSTEM-ERRORS 3570,29,1  
BLOCK-CONVERT 3599,19,1  
Mount reel #2  
Label : 11 FEB 1987 DATA BLOCK-CONVERT PC FILES R10*PC113  
(C)ontinue/(Q)uit?  
-----
```

Unload the first ABS and Files diskette. Then load the diskette labeled "ABS and Files Disk #2." When you are ready, enter **C** to continue.

You will continue to be prompted at the end of each diskette to mount the next "reel" (diskette).

3. When all the diskettes have been loaded, the following screen is displayed.

```
-----  
Update/transaction tapes (Y/N)?  
-----
```

Enter **N** and press RETURN.

The following screen is displayed.

Installing a New Version of the Ultimate Operating System

```
-----  
Update/transaction tapes (Y/N)? N  
Saving Monitor  
Linking workspace for line 0  
  
date      time  Logon please:  
  
<<< Welcome to the Ultimate Computer System >>>  
<<< Copyright      date    The Ultimate Corp. >>>  
<<<   time    Release XX Rev XXXX   date >>>  
  
This is the Cold-Start Procedure  
Enter <CR> to continue  
-----
```

Press RETURN.

The following screen is displayed.

```
-----  
date      time  Logon please:  
  
<<< Welcome to the Ultimate Computer System >>>  
<<< Copyright      date    The Ultimate Corp. >>>  
<<<   time    Release XX Rev XX   date >>>  
  
This is the Cold-Start Procedure  
Enter <CR> to continue  
  
Linking secondary TCL workspaces  
X additional task workspaces initialized  
  
time      date  
Time =  
-----
```

NOTE: If your system has an external clock, you are not prompted for the time and date.

Enter the time in military format (HH:MM:SS) and press RETURN.

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For example, enter 5 PM as 17:00:00. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
Time = 17:00:00  
17:00:00      date  
Date =
```

Enter the date in the following format: MM/DD/YY. Then press RETURN.

For example, enter February 3, 1987 as 02/03/87. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
Time = 17:00:00  
17:00:00      date  
Date = 02/03/87  
17:00:00    03 FEB 1987
```

The system will display several messages. If there are any error messages, call your Ultimate dealer or Ultimate Technical Support (see Section 13.2).

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The following screen is displayed.

```
-----  
|         date         time         Logon please:         |  
-----
```

4. You may now log on.

Go on to Section 14.1.1.4, "Restoring Application Accounts (One Hard Disk System)," to restore your accounts, files, and data.

**SUMMARY OF INSTALLING THE ULTIMATE PC/OS
(ONE HARD DISK SYSTEM)**

1. At the C> prompt, type **UT** and press RETURN.
2. Enter **F** to select File-Restore.
3. If you have a tape drive, enter **F** and press RETURN to indicate that you will be using an ABS and Files diskette. (Do not load this diskette now.)
4. Load the Cold Load Section diskette in drive A:. Then press RETURN.
5. Enter your system serial number.
6. Unload the Cold Load Section diskette, and load the ABS and Files disk #1 in drive A:. Then press RETURN.
7. At the "Mount DATA tape" prompt, press RETURN.
8. At the "Is this the right tape (Y/N)?" prompt, check the diskette label to verify that the diskette in drive A: is the ABS and Files Disk #1. Then type **Y** and press RETURN.
9. Continue mounting the ABS and Files diskettes as prompted. When all the diskettes have been loaded, enter **N** and press RETURN at the "Update/transaction tapes (Y/N)?" prompt.
10. Press RETURN at "This is the Cold-Start Procedure."
11. If your system does not have an external clock, enter the time in military format (HH:MM:SS) and press RETURN. Then enter the date (MM/DD/YY) and press RETURN.
12. You may now log on.

14.1.1.4 RESTORING APPLICATION ACCOUNTS (ONE HARD DISK SYSTEM)

In this section, you will restore your application accounts, which includes all your software and data. Use these instructions for all one hard disk systems.

1. Log on to the SYSPROG account. Then press RETURN again to go to TCL.
2. Load the first diskette of your File-Save in drive A:, or load the first File-Save tape in the tape drive.
3. If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

4. There are two methods for restoring your accounts: the ACCOUNT-RESTORE method and the ALL-ACCOUNT-RESTORE method. The ALL-ACCOUNT-RESTORE will not work if your File-Save was not made from the File-Save proc supplied by The Ultimate Corp. If it was made from any other source, you must use the ACCOUNT-RESTORE command.

NOTE: You must use File-Save tapes or diskettes. Update-Save tapes or diskettes will not work.

If you are using the ALL-ACCOUNT-RESTORE method, go to Step 5. If you are using the ACCOUNT-RESTORE method, go to Step 6.

5. ALL-ACCOUNT-RESTORE method

a. At TCL, type:

RUN DICT SYSPROG-PL ALL-ACCOUNT-RESTORE

and press RETURN.

The following screen is displayed.

>RUN DICT SYSPROG-PL ALL-ACCOUNT-RESTORE

This program restores all accounts from the FILE-SAVE tape that are not already on the system.

THIS PROGRAM ONLY ACCEPTS FILE-SAVE TAPES MADE FROM:
- THE FILE-SAVE PROC SUPPLIED BY THE ULTIMATE CORP
- OR SELECTION 1 (File-save) IN THE SYSPROG MENU SUPPLIED BY THE ULTIMATE CORP
AND ONLY RUNS ON TAPE DRIVE ZERO (0).

WARNING - THIS PROGRAM WILL NOT WORK WITH TAPES MADE FROM ANY OTHER SOURCES.

Enter (Y)es to continue or <CR> to END :

NOTE: You may use your tape or diskette drive for this procedure.

Type **Y** and press RETURN to continue with the ALL-ACCOUNT-SAVE.

This program will now restore all application accounts not already on the system. When it is finished, go to Step 7.

6. ACCOUNT-RESTORE method

a. At TCL, type:

ACCOUNT-RESTORE accountname and press RETURN.

The following screen is displayed.

>ACCOUNT-RESTORE accountname

Account name on tape:

b. Enter the name of the account from which you are restoring, and press RETURN.

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NOTE: You must enter the exact name under which the account was originally saved.

The following screen is displayed.

```
>ACCOUNT-RESTORE accountname  
  
Account name on tape:  
  
Password(s) (Y/N)?
```

Enter **Y** and press RETURN to restore the account with a password, or enter **N** and press RETURN to restore the account without a password.

- c. When the account has been restored, the TCL prompt (>) is displayed.
 - d. Repeat this procedure until you have restored each application account not on the system. When you are finished, go on to Step 7.
7. Make sure you are logged on to the SYSPROG account and at TCL. Then type:

RUN DICT SYSPROG-PL UPG.NEWAC and press RETURN.

This program displays the names of all the application accounts to be upgraded. When all the names have been displayed, the following message is displayed.

```
(C)ontinue or (Q)uit?
```

Enter **C** to continue.

This program upgrades the Master Dictionary of each

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application account displayed.

8. Use the following steps to load UltiWord (the WP account):

NOTE: If UltiWord was not on your system before the upgrade, do not use these instructions. Instead, follow the instructions in Section 5, "Loading UltiWord."

- a. Load the diskette labeled "UltiWord and Upgrade" in drive A:.
 - b. Log on to the SYSPROG account.
 - c. Enter **8** and press RETURN to select Load WP Account From SYS-GEN Diskette.
-
9. Use the following steps to load the UltiLink account:
 - a. Load the diskette labeled "UltiLink Asynchronous Communications" in drive A:.
 - b. Log on to the SYSPROG account.
 - c. Enter **9** and press RETURN to select Load UltiLink Account From SYS-GEN Diskette.

You are now finished with the Method 1 upgrade procedure, and may begin using your system again.

14.1.2 INSTALLING A NEW VERSION OF THE ULTIMATE OPERATING SYSTEM ON A TWO HARD DISK SYSTEM

Use these instructions only if you have a two hard disk system. (If you have a one hard disk system, follow the instructions in Section 14.1.1.)

The first step to installing a new version of the Ultimate Operating System is to prepare the Ultimate partition of your hard disks. The instructions you should follow depend on the type of hardware you have. If you have an IBM XT (or compatible) or an Ultimate 110 PC, follow the instructions in the next section (Section 14.1.2.1). If you have an IBM AT (or compatible) skip to the instructions in Section 14.1.2.2.

14.1.2.1 PREPARING THE ULTIMATE PARTITION ON YOUR IBM XT OR ULTIMATE 110 PC (TWO HARD DISK SYSTEM)

In this section, you will prepare the Ultimate partition on your IBM XT (or compatible), or Ultimate 110 PC system. If you have an IBM AT (or compatible), do not use these instructions. Instead, go on to the instructions in Section 14.1.2.2, "Preparing the Ultimate Partition on Your IBM AT (Two Hard Disk System)."

1. Make sure everyone is logged off the system.
2. Do a full File-Save.

You will need this File-Save to restore your own accounts later in this procedure. See Section 8.2 for instructions on performing a File-Save.

3. From TCL, type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL.

4. Now type:

:WARMSTOP and press RETURN.

5. When the :WARMSTOP process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.

6. At the C> prompt, type:

COPY A:*. * C: and press RETURN.

When copying is complete, a screen similar to the

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following is displayed.

```
C>COPY A:*. * C:
A:UT.EXE
A:BADSECT.EXE
A:CLEARUC.EXE
A:DEUPART.EXE
      4 File(s) copied

C>
```

7. At the C> prompt, type:

CLEARUC and press RETURN.

This command starts the disk preparation utilities.

The following screen is displayed.

```
C>CLEARUC
BEGINNING ULTIMATE CYLINDER = XXX
ENDING ULTIMATE CYLINDER   = XXX
CYLINDER = XXX

CLEARUC FINISHED

C>
```

Go on to the instructions in Section 14.1.2.3, "Installing the Ultimate PC/OS (Two Hard Disk System)."

**SUMMARY OF PREPARING THE ULTIMATE PARTITION ON YOUR IBM XT
OR ULTIMATE 110 PC (ONE HARD DISK SYSTEM)**

1. Make sure everyone is logged off the system.
2. Do a full File-Save.
3. Logto SYSPROG and go to TCL. Then type **:WARMSTOP** and press RETURN.
4. When the **:WARMSTOP** process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.
5. At the C> prompt, type **COPY A:*. * C:** and press RETURN.
6. At the C> prompt, type **CLEARUC** and press RETURN.

14.1.2.2 PREPARING THE ULTIMATE PARTITION ON YOUR IBM AT (TWO HARD DISK SYSTEM)

If you have an IBM AT (or compatible) computer, you must use Ultimate's BADSECT Utility to prepare the Ultimate partitions on your hard disks.

By using the BADSECT Utility, the Ultimate PC/OS can use certain tracks that were flagged as bad by the manufacturer. To use these tracks, the utility builds an alternate track table in the first two cylinders of the Ultimate partition. BADSECT first resets these tracks, and then checks them along with the rest of the Ultimate partition. The BADSECT Utility is only available on IBM ATs (and compatibles) with 20 and 33 megabyte drives, as of Revision PC105 and later (kernel 200).

Use the following steps to prepare the Ultimate partitions of your IBM AT (or compatible) two hard disk system.

1. Make sure everyone is logged off the system.
2. Do a full File-Save.

You will need this File-Save to restore your own accounts later in this procedure. See Section 8.2 for instructions on performing a File-Save.

3. From TCL, type:

LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL.

4. Now type:

:WARMSTOP and press RETURN.

5. When the :WARMSTOP process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.

6. At the C> prompt, type:

COPY A:*. * C: and press RETURN.

When copying is complete, a screen similar to the following is displayed.

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```
C>COPY A:*. * C:
A:UT.EXE
A:BADSECT.EXE
A:CLEARUC.EXE
A:DEUPART.EXE
      4 File(s) copied

C>
```

7. At the C> prompt, type:

BADSECT and press RETURN.

A screen similar to the following is displayed.

```
THIS PROGRAM IS AN ADJUNCT TO THE ULTIMATE OPERATING SYSTEM.

THE FUNCTION OF THIS PROGRAM IS TO PRODUCE A "BAD SECTOR TABLE".
IT HAS BEEN TESTED ONLY ON IBM-AT'S WITH TYPE 2
AND TYPE 3 (20 & 33 MEGABYTE) DISKS.
THIS IS THE VERSION OF 12-4-85 FOR REV 200 & UP.

THIS PROGRAM DESTROYS THE DATA IN THE ULTIMATE PARTITION!!!

SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):
```

Press RETURN to accept drive C:.

The following prompt is displayed.

```
DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>,
RESET = R):
```

Press RETURN.

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The following prompt is displayed.

```
-----  
DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>,  
CREATE = C):  
-----
```

NOTE: Ultimate recommends that you do not create a permanent Ultimate partition entry. By not making the partition permanent, you avoid having to delete it if you later want to change the partition size.

If you do not want to create the entry, press RETURN.

To create the entry, enter **C** and press RETURN.

If you create the entry, you make a permanent partition entry for Ultimate in the FDISK partition table. The entry appears as "U". For instructions on displaying the partition table, see Section 4.4.

If you later wish to remove the entry, you can use the DEUPART.EXE Utility. For instructions, refer to Section 4.3.

8. The utility now goes through two passes on the hard disk. The first pass formats and tests the disk. The second pass builds the bad sector table.

When the C> prompt appears, type:

CLEARUC and press RETURN.

The following screen is displayed.

```
-----  
C>CLEARUC  
BEGINNING ULTIMATE CYLINDER = 20  
ENDING ULTIMATE CYLINDER = XXX  
CYLINDER = XXX  
  
CLEARUC FINISHED  
  
C>  
-----
```

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9. At the C> prompt, type:

BADSECT and press RETURN.

A screen similar to the following is displayed.

```
-----  
THIS PROGRAM IS AN ADJUNCT TO THE ULTIMATE OPERATING SYSTEM.  
  
THE FUNCTION OF THIS PROGRAM IS TO PRODUCE A "BAD SECTOR TABLE".  
IT HAS BEEN TESTED ONLY ON IBM-AT'S WITH TYPE 2  
AND TYPE 3 (20 & 33 MEGABYTE) DISKS.  
THIS IS THE VERSION OF 12-4-85 FOR REV 200 & UP.  
  
THIS PROGRAM DESTROYS THE DATA IN THE ULTIMATE PARTITION!!!  
  
SELECT DISK DRIVE "C:" OR "D:" (<CR> OR D):  
-----
```

Enter **D** and press RETURN to select drive D:.

The following prompt is displayed.

```
-----  
DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>,  
RESET = R):  
-----
```

Press RETURN.

The following prompt is displayed.

```
-----  
DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>,  
CREATE = C):  
-----
```

NOTE: Ultimate recommends that you do not create a permanent Ultimate partition entry. By not making the

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partition permanent, you avoid having to delete it if you later want to change the partition size.

If you do not want to create the entry, press RETURN.

To create the entry, enter **C** and press RETURN.

If you create the entry, you make a permanent partition entry for Ultimate in the FDISK partition table. The entry appears as "U". For instructions on displaying the partition table, see Section 4.4.

If you later wish to remove the entry, you can use the DEUPART.EXE Utility. For instructions, refer to Section 4.3.

10. The utility now goes through two passes on the hard disk. The first pass formats and tests the disk. The second pass builds the bad sector table.

Go on to the instructions in Section 14.1.2.3, "Installing the Ultimate PC/OS (Two Hard Disk System)."

**SUMMARY OF PREPARING THE ULTIMATE PARTITION ON YOUR IBM AT
(TWO HARD DISK SYSTEM)**

1. Make sure everyone is logged off the system.
2. Do a full File-Save.
3. Logto SYSPROG and go to TCL. Then type **:WARMSTOP** and press RETURN.
4. When the **:WARMSTOP** process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.
5. At the C> prompt, type **COPY A:*. * C:** and press RETURN.
6. At the C> prompt, type **BADSECT** and press RETURN.
7. Press RETURN to select drive C:.
8. At the "DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R" prompt, press RETURN.
9. At the "DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C)" prompt, either press RETURN, or type **C** and press RETURN to create. (Ultimate recommends that you do not create a permanent partition entry.)
10. At the C> prompt, type **CLEARUC** and press RETURN.
11. At the C> prompt, type **BADSECT** and press RETURN.
12. Enter **D** and press RETURN to select drive D:.
13. At the "DO NOT RESET INTERLEAVE AND ERROR TABLES (AGREE = <CR>, RESET = R" prompt, press RETURN.
14. At the "DO NOT CREATE PERMANENT ULTIMATE PARTITION ENTRY (AGREE=<CR>, CREATE = C)" prompt, either press RETURN, or type **C** and press RETURN to create. (Ultimate recommends that you do not create a permanent partition entry.)

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14.1.2.3 INSTALLING THE ULTIMATE PC/OS (TWO HARD DISK SYSTEM)

Use these instructions to install the new version of the Ultimate Operating System on your two hard disk system. These instructions apply to all two hard disk systems (IBM XT, IBM AT, and Ultimate 110 PC).

1. At the C> prompt, type:

UT and press RETURN.

The following screen is displayed.

```
C>UT
UT LOADED AT X'XXXXX'

This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option:
```

Enter **F** to select File-Restore.

The following screen is displayed.

```
This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option: F
MEMORY SIZE = XXX KB

USE DISK D: FOR ULTIMATE? (Y OR N):
```

Enter **Y** and press RETURN.

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The following screen is displayed.

```
-----  
USE DISK D: FOR ULTIMATE? (Y OR N):Y  
  
USING DISKS C: AND D:  
02 COMM LINES  
  
LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY  
Insert COLD section floppy  
Press <CR> when ready  
-----
```

NOTE: If your system does not have a tape drive, the "LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY" prompt is not displayed on your screen. If you do have a tape drive, enter **F** and press RETURN to indicate that you are going to use an ABS and Files diskette. (Do not load the diskette now.) You are then prompted to "Insert COLD section floppy."

Load the diskette labeled "Cold Load Section" in drive A:.
Then press RETURN.

The following screen is displayed.

```
-----  
Disc cartridge attached Block size: 500  
  
System serial # is presently .....  
  
Enter system serial # or <CR> to accept  
-----
```

Enter your system serial number and press RETURN.

For example, enter PA1234 and press RETURN. If the serial number shown is correct, press RETURN to accept it.

Your system serial number is assigned to you by Ultimate. If you do not have one, please call Ultimate's Administration department to get one.

The following screen is displayed.

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```
-----  
Disc cartridge attached Block size: 500  
System serial # is presently .....  
Enter system serial # or <CR> to accept PA1234  
System serial # is presently PA1234  
Enter system serial # or <CR> to accept  
-----
```

Press RETURN if the number is correct.

You may re-enter the correct number if you made a mistake. Press RETURN after you enter the correct number.

The following screen is displayed.

```
-----  
System serial # is presently PA1234  
Enter system serial # or <CR> to accept  
Mount ABS tape and enter number of files to skip, if any:  
-----
```

2. Unload the "Cold Load Section" diskette, and load the diskette labeled "ABS and Files Disk #1" in drive A:. Then press RETURN.

The following screen is displayed.

Installing a New Version of the Ultimate Operating System

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

Press RETURN.

CAUTION: Do not change the diskette at this time.

The following screen is displayed.

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started

Mount DATA tape and press RETURN

L 01F4 time date DATA PC FILES R10*PC113

Seq# of this data tape: 0 0 0 0

Is this the right tape (Y/N)?

Check the diskette label to verify that the diskette in drive A: is the ABS and Files Disk #1. (If you are not sure how to check the diskette label, refer to the topic System Sequencing Information under the heading "Update Save Procedures" in the System Management and Support Guide.)

Installing a New Version of the Ultimate Operating System

Then type:

Y and press RETURN.

The File-Restore will now begin. Each filename on the diskette is listed on your screen. The following screen is a sample of what is displayed.

```
-----  
Mount DATA tape and press RETURN  
L 01F4 time date DATA PC FILES R10*PC113  
Seq# of this data tape: 0 0 0 0  
Is this the right tape (Y/N)?Y  
SYSTEM 3521,11,1  
SYSTEM-ERRORS 3568,1,1  
SYSTEM-ERRORS 3569,1,1  
SYSTEM-ERRORS 3570,29,1  
BLOCK-CONVERT 3599,19,1  
Mount reel #2  
Label : 11 FEB 1987 DATA BLOCK-CONVERT PC FILES R10*PC113  
(C)ontinue/(Q)uit?  
-----
```

Unload the first ABS and Files diskette. Then load the diskette labeled "ABS and Files Disk #2." When you are ready, enter **C** to continue.

You will continue to be prompted at the end of each diskette to mount the next "reel" (diskette).

3. When all the diskettes have been loaded, the following screen is displayed.

```
-----  
Update/transaction tapes (Y/N)?  
-----
```

Enter **N** and press RETURN.

The following screen is displayed.

Installing a New Version of the Ultimate Operating System

```
Update/transaction tapes (Y/N)? N
Saving Monitor
Linking workspace for line 0

date      time    Logon please:

<<< Welcome to the Ultimate Computer System >>>
<<< Copyright      date      The Ultimate Corp. >>>
<<<   time    Release XX Rev XXXX   date      >>>

This is the Cold-Start Procedure
Enter <CR> to continue
```

Press RETURN.

The following screen is displayed.

```
date      time    Logon please:

<<< Welcome to the Ultimate Computer System >>>
<<< Copyright      date      The Ultimate Corp. >>>
<<<   time    Release XX Rev XX   date      >>>

This is the Cold-Start Procedure
Enter <CR> to continue

Linking secondary TCL workspaces

X additional task workspaces initialized

time      date

Time =
```

NOTE: If your system has an external clock, you are not prompted for the time and date.

Enter the time in military format (HH:MM:SS) and press RETURN.

Installing a New Version of the Ultimate Operating System

For example, enter 5 PM as 17:00:00. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
  
Time = 17:00:00  
17:00:00      Date  
Date =
```

Enter the date in the following format: MM/DD/YY. Then press RETURN.

For example, enter February 3, 1987 as 02/03/87. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
  Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
  time          date  
  
Time = 17:00:00  
17:00:00      date  
Date = 02/03/87  
17:00:00    03 FEB 1987
```

The system will display several messages. If there are any error messages, call your Ultimate dealer or Ultimate Technical Support (see Section 13.2).

Installing a New Version of the Ultimate Operating System

The following screen is displayed.

| | | |
|------|------|---------------|
| date | time | Logon please: |
|------|------|---------------|

4. You may now log on.

Go on to Section 14.1.2.4, "Restoring Application Accounts (Two Hard Disk System)," to restore your accounts, files, and data.

**SUMMARY OF INSTALLING THE ULTIMATE PC/OS
(TWO HARD DISK SYSTEM)**

1. At the C> prompt, type **UT** and press RETURN.
2. Enter **F** to select File-Restore.
3. At the "USE DISK D: FOR ULTIMATE?" prompt, enter **Y** and press RETURN.
4. If you have a tape drive, enter **F** and press RETURN to indicate that you will be using an ABS and Files diskette. (Do not load this diskette now.)
5. Load the Cold Load Section diskette in drive A:. Then press RETURN.
6. Enter your system serial number.
7. Unload the Cold Load Section diskette, and load the ABS and Files Disk #1 in drive A:. Then press RETURN.
8. At the "Mount DATA tape" prompt, press RETURN.
9. At the "Is this the right tape (Y/N)?" prompt, check the diskette label to verify that the diskette in drive A: is the ABS and Files Disk #1. Then type **Y** and press RETURN.
10. Continue mounting the ABS and Files diskettes as prompted. When all the diskettes have been loaded, enter **N** and press RETURN at the "Update/transaction tapes (Y/N)?" prompt.
11. Press RETURN at "This is the Cold-Start Procedure."
12. If your system does not have an external clock, enter the time in military format (HH:MM:SS) and press RETURN. Then enter the date (MM/DD/YY) and press RETURN.
13. You may now log on.

14.1.2.4 RESTORING APPLICATION ACCOUNTS (TWO HARD DISK SYSTEM)

In this section, you will restore your application accounts, which includes all your software and data. Use these instructions for all two hard disk systems.

1. Log on to the SYSPROG account. Then press RETURN again to go to TCL.
2. Load the first diskette of your File-Save in drive A:, or load the first File-Save tape in the tape drive.
3. If you are using a tape, type:

T-ATT 0 and press RETURN.

If you are using a diskette, type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

4. There are two methods for restoring your accounts: the ACCOUNT-RESTORE method and the ALL-ACCOUNT-RESTORE method. The ALL-ACCOUNT-RESTORE will not work if your File-Save was not made from the File-Save proc supplied by The Ultimate Corp. If it was made from any other source, you must use the ACCOUNT-RESTORE command.

NOTE: You must use File-Save tapes or diskettes. Update-Save tapes or diskettes will not work.

If you are using the ALL-ACCOUNT-RESTORE method, go to Step 5. If you are using the ACCOUNT-RESTORE method, go to Step 6.

5. ALL-ACCOUNT-RESTORE method

a. At TCL, type:

RUN DICT SYSPROG-PL ALL-ACCOUNT-RESTORE

and press RETURN.

The following screen is displayed.

>RUN DICT SYSPROG-PL ALL-ACCOUNT-RESTORE

This program restores all accounts from the FILE-SAVE tape that are not already on the system.

THIS PROGRAM ONLY ACCEPTS FILE-SAVE TAPES MADE FROM:

- THE FILE-SAVE PROC SUPPLIED BY THE ULTIMATE CORP
- OR SELECTION 1 (File-save) IN THE SYSPROG MENU SUPPLIED BY THE ULTIMATE CORP

AND ONLY RUNS ON TAPE DRIVE ZERO (0).

WARNING - THIS PROGRAM WILL NOT WORK WITH TAPES MADE FROM ANY OTHER SOURCES.

Enter (Y)es to continue or <CR> to END :

NOTE: You may use your tape or diskette drive for this procedure.

Type Y and press RETURN to continue with the ALL-ACCOUNT-SAVE.

This program will now restore all application accounts not already on the system. When it is finished, go to Step 7.

6. ACCOUNT-RESTORE method

a. At TCL, type:

ACCOUNT-RESTORE accountname and press RETURN.

The following screen is displayed.

>ACCOUNT-RESTORE accountname

Account name on tape:

b. Enter the name of the account from which you are restoring, and press RETURN.

Installing a New Version of the Ultimate Operating System

NOTE: You must enter the exact name under which the account was originally saved.

The following screen is displayed.

```
>ACCOUNT-RESTORE accountname
```

```
Account name on tape:
```

```
Password(s) (Y/N)?
```

Enter **Y** and press RETURN to restore the account with a password, or enter **N** and press RETURN to restore the account without a password.

- c. When the account has been restored, the TCL prompt (>) is displayed.
- d. Repeat this procedure until you have restored each application account not on the system. When you are finished, go on to Step 7.

- 7. Make sure you are logged on to the SYSPROG account and at TCL. Then type:

RUN DICT SYSPROG-PL UPG.NEWAC and press RETURN.

This program displays the names of all the application accounts to be upgraded. When all the names have been displayed, the following message is displayed.

```
(C)ontinue or (Q)uit?
```

Enter **C** to continue.

This program upgrades the Master Dictionary of each
PC Operations and Maintenance

Installing a New Version of the Ultimate Operating System

application account displayed.

8. Use the following steps to load UltiWord (the WP account):

NOTE: If UltiWord was not on your system before the upgrade, do not use these instructions. Instead, follow the instructions in Section 5, "Loading UltiWord."

- a. Load the diskette labeled "UltiWord and Upgrade" in drive A:.
- b. Log on to the SYSPROG account.
- c. Enter **8** and press RETURN to select Load WP Account From SYS-GEN Diskette.

9. Use the following steps to load the UltiLink account:

- a. Load the diskette labeled "UltiLink Asynchronous Communications" in drive A:.
- b. Log on to the SYSPROG account.
- c. Enter **9** and press RETURN to select Load UltiLink Account From SYS-GEN Diskette.

You are now finished with the Method 1 upgrade procedure, and may begin using your system again.

14.2 METHOD 3: SELECTIVE UPGRADE

1. Make sure everyone is logged off the system.
2. Do a full File-Save. See Section 8.2 for instructions.

This step is important in ensuring that you will be able to recover your files in the event of a mishap during the upgrade. Ultimate strongly recommends that you take the time to do this now. Otherwise, you may spend hours trying to recover your files later.

3. Make sure all users are logged off the system. To do so, go to the the main monitor (line 0), and at TCL (>), type:
LOGTO SYSPROG and press RETURN.

Then press RETURN again to go to TCL. Type:

LISTU and press RETURN.

The main monitor (line 0) should be the only terminal logged on. If other users are logged on, make sure they log off before you continue.

4. Make sure there is no diskette in drive A:. Also, complete the printing of any current spool files. (Refer to the System Management and Support Guide if you need information on how to spool the files to tape or diskette.) Be sure to complete this step before proceeding to the next step.
5. At TCL (>), type:
:WARMSTOP and press RETURN.
6. When the :WARMSTOP process is complete, load the diskette labeled "UT.EXE and Utilities" in drive A:.
7. At the C> prompt, type:
COPY A:UT.EXE C: and press RETURN.

The following screen is displayed.

Installing a New Version of the Ultimate Operating System

```
C>COPY A:UT.EXE C:
      1 File(s) copied

C>
```

Then type:

UT and press RETURN.

The following screen is displayed.

```
C>UT

UT LOADED AT X'XXXXX'

This is the Ultimate Operating System
Copyright (c) The Ultimate Corp. 1985

Enter Option:
```

Enter **C** to select Coldstart.

The following screen is displayed.

```
Enter Option: C
MEMORY SIZE = XXX KB

USING DISK C:
02 COMM LINES

LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY
Insert COLD section floppy
Press <CR> when ready
```

Installing a New Version of the Ultimate Operating System

NOTE: If your system does not have a tape drive, the "LOAD ABS [AND FILES] FROM (T)APE OR (F)LOPPY" prompt is not displayed on your screen. If you do have a tape drive, enter **F** and press RETURN to indicate that you will be using an ABS and Files diskette. (Do not load the diskette now.) You are then prompted to "Insert COLD section floppy."

Load your Coldload diskette in drive A:. Then press RETURN.

The following screen is displayed.

```
-----  
| Disc cartridge attached Block size: 500  
| System serial # is presently .....  
| Enter system serial # or <CR> to accept  
|  
-----
```

Enter your system serial number and press RETURN.

For example, enter PA1234 and press RETURN. If the serial number shown is correct, press RETURN to accept it.

Your system serial number is assigned to you by Ultimate. If you do not have one, please call Ultimate's Administration department to get one.

The following screen is displayed.

Installing a New Version of the Ultimate Operating System

```
Disc cartridge attached Block size: 500
System serial # is presently .....
Enter system serial # or <CR> to accept PA1234
System serial # is presently PA1234
Enter system serial # or <CR> to accept
```

Press RETURN if the number is correct.

You may re-enter the correct number if you made a mistake. Press RETURN after you enter the correct number.

The following screen is displayed.

```
System serial # is presently PA1234
Enter system serial # or <CR> to accept
Mount ABS tape and enter number of files to skip, if any:
```

Unload your Coldload diskette from drive A:, and load the diskette labeled "ABS and Files Disk #1." Then press RETURN.

The following screen is displayed.

Installing a New Version of the Ultimate Operating System

Mount ABS tape and enter number of files to skip, if any:

XX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX
XXXX-XXX

Spooler started
Linking workspace for line 0

date time Logon Please:

<<< Welcome to the Ultimate Computer System >>>
<<< Copyright date The Ultimate Corp. >>>
<<< time Release XX Rev XXX date >>>

This is the Cold-Start Procedure
Enter <CR> to continue

Press RETURN.

The following screen is displayed.

date time Logon Please:

<<< Welcome to the Ultimate Computer System >>>
<<< Copyright date The Ultimate Corp. >>>
<<< time Release XX Rev XXX date >>>

This is the Cold-Start Procedure
Enter <CR> to continue

Linking secondary TCL workspaces

X additional task workspaces initialized

time date

Time =

NOTE: If your system has an external clock, you are not

Installing a New Version of the Ultimate Operating System

asked for the time or date.

Enter the time in military format (HH:MM:SS) and press RETURN.

For example, enter 5PM as 17:00:00. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
   time      date  
Time = 17:00:00  
17:00:00      date  
Date =
```

Enter the date in the following format: MM/DD/YY. Then press RETURN.

For example, enter February 3, 1987 as 02/03/87. The following screen is displayed.

```
-----  
This is the Cold-Start Procedure  
Enter <CR> to continue  
  
Linking secondary TCL workspaces  
  
X additional task workspaces initialized  
  
   time      date  
Time = 17:00:00  
17:00:00      date  
Date = 02/03/87  
17:00:00      03 FEB 1987
```

Installing a New Version of the Ultimate Operating System

After the system displays several messages, the following screen is displayed.

NOTE: The system software will not verify at this point.

```
-----  
|                                     |  
|      date      time      Logon please: |  
|                                     |  
|-----|
```

8. Load the diskette labeled "UltiWord and Upgrade" in drive A:.
9. Log on to the SYSPROG account, and go to TCL.
10. Now type:

T-ATT C and press RETURN. Then type:

T-REW and press RETURN.

11. Type **T-FWD 1** and press RETURN.

The following screen is displayed.

```
-----  
|>T-FWD 1 |  
| Block size: 500 |  
| End of file |  
| > |  
|-----|
```

Enter **T-SPACE 2** and press RETURN.

12. When the TCL prompt appears, type:

T-LOAD MD (O and press RETURN.

NOTE: Make sure you enter the letter O, not the number zero.

Installing a New Version of the Ultimate Operating System

The following screen is displayed.

```
>T-LOAD MD (O
Block size: 500

    1 UPGRADE
1 item(s) loaded

>
```

Enter **UPGRADE** and press RETURN.

The following screen is displayed.

```
>UPGRADE

Mount Diskette Labeled "UltiWord and Upgrade" and PRESS RETURN
```

Press RETURN.

A series of system messages will now appear on your screen.

Then the following prompt is displayed.

```
(C)ontinue or (Q)uit?
```

Enter **C** to continue.

The system now upgrades the Master Dictionary of each user account displayed.

When the upgrade is complete, the following screen is

Installing a New Version of the Ultimate Operating System

displayed.

```
*** UPDATE COMPLETE ***  
UPGRADE COMPLETED AT      time      date  
  
>
```

You are now finished with the Method 3 upgrade procedure,
and may begin using your system again.

Glossary

APPENDIX A: GLOSSARY

- :WARMSTOP** A utility used to bring the system down in a controlled manner, ensuring data integrity. A system that was WARMSTOPped may be Warm-started.
- Abort** A system error identified by an abort error message.
- ACC File** An accounting history file that keeps track of the time and date of each logon, and the location of each terminal. This file should be cleared periodically.
- Account-Restore** A method of restoring files from a single account, rather than restoring the entire system. An Account-Restore may be done from a File-Save or Account-Save tape or diskette.
- Account-Save** A method of backing up files from a particular account, rather than backing up the entire system.
- ALL-UPDATE-SAVE** A backup method that allows you to save only those file groups that have been changed since the last File-Save. To restore the system from this backup method, only the most recent full File-Save tape or diskette and the most recent ALL-UPDATE-SAVE tape or diskette are required.
- Alternate Track Table** A record of tracks that have been assigned alternates because of excessive errors. This table is created by the BADSECT Utility.
- BADSECT Utility** A utility that builds an alternate track table in the first two sectors of the Ultimate partition. This utility is also capable of resetting and using certain bad tracks on the hard disk.
- Backups** Tapes or diskettes containing copies of your files. Backups are used to restore your files in case they become lost or destroyed.
- Baud Rate** Speed of transmission.
- Boot** A procedure to initialize or start up a system after it has been powered up.
- Charge Units** Numbers that represent computer usage.

Glossary

- Coldstart** A procedure used to load the MONITOR code into memory, and all virtual system software from the ABS and Files Disk #1 onto your system. This method does not load your files. A Coldstart is normally required if your system fails, or if any maintenance has been performed on your system.
- Connect Time** Amount of time spent on the computer.
- FDISK Utility** A utility used to partition the hard disk into logical sections, so several operating systems may use portions of the media without destroying the data in the adjacent operating systems.
- File-Restore** A procedure used to perform a complete restore of system files and customer files. The restore is done from the most recent File-Save.
- File-Save** A procedure used to back up your entire system. Ultimate recommends that you use this procedure or another backup procedure every day.
- File-Stats** Statistics about your files, generated after each File-Save. This report indicates any Group Format Errors (GFEs) present in your system.
- Format** An unchanging "template" recorded on a hard disk or diskette that divides the disk into a large number of storage locations, each having a unique identifying number.
- FORMAT** This command is used to check the fixed disks or diskettes for track errors. It also constructs a File Allocation Table and a default or root directory.
- Frame** A group of 512 bytes on disk. A frame is the basic storage unit for all data, programs, software, and the operating system.
- Group Format Errors (GFEs)** An error condition that indicates errors in the format of a virtual storage frame of a file. If your system contains GFEs, call Ultimate immediately (see Section 13.2).

Glossary

| | |
|---|--|
| Hang | An error condition caused by various reasons, usually characterized by one or more lines (or the total system) appearing to "freeze." |
| Line-Printer Pages | The number of pages printed during each log-on session. |
| Partition | A logical division in the hard disk. Partitioning the disk allows multiple operating systems to be placed on the fixed disk without overlapping data and program areas. |
| PART-UPDATE-SAVE | A backup method that allows you to save only those file groups that have been changed since the last Update-Save or File-Save. To restore the system from this backup method, the most recent full File-Save tape or diskette and every subsequent PART-UPDATE SAVE tape or diskette are required. |
| Power Conditioner | A unit designed to prevent common electrical disturbances from reaching your computer. |
| Print Overflow Table (POVF) | A pool of available space that contains portions of the file area not allocated to the files. |
| Selective-Restore | A method of restoring individual files or items from a File-Save or Account-Save tape or diskette. |
| T-DUMP | A method of copying single files or individual items from disk to tape or diskette. |
| T-LOAD | A method of restoring files or items that have been T-DUMPed. |
| Uninterruptable Power Supply (UPS) | A unit that can maintain power to your system for 10 minutes to an hour in the event of a power failure. If power is restarted within that time, the system will bring itself back up. |
| Unterminated Cable | Cable that is connected to the communication port of the system, but leads to no device. |
| Update-Save | A backup method that allows you to save only those file groups that have been changed since the last File-Save. |

Glossary

Warmstart

A procedure used to restart a system that was brought down in a controlled manner, and to resume program execution. Is normally used on a system that was :WARMSTOPped.

CRT Configurations

APPENDIX B: CRT CONFIGURATIONS

ADDS 2020 TERMINAL

The ADDS 2020 terminal has the following general features:

1. 80 or 132 column mode
2. Programmable function keys
3. Bi-directional auxiliary port

This terminal operates in the Viewpoint mode, with term type K for Revision 180 and later, and term type V for Revisions prior to 180.

SETUP MODE

To enter the setup mode, press and hold the SHIFT key and then press the SETUP key. A menu of options is displayed. Use the arrow keys and the ENTER key to get to the option you wish to change.

NOTE: The following settings are recommended by Ultimate. Other options may be set later via software. Refer to your ADDS 2020 manual for the correct escape sequences.

COMMUNICATIONS

| | | | |
|------------|---------|--------------|------|
| MODE | FDX | BAUD RATE | 9600 |
| PARITY | NONE | PARITY CHECK | NO |
| DATA BITS | 8 | STOP BITS | 1 |
| X-ON/X-OFF | DC1/DC3 | PACE | 00 |
| TERMINATOR | US/CR | | |

AUXILIARY

| | | | |
|-----------|--------|--------------|---------|
| PRINTER | SERIAL | BAUD RATE | 9600 |
| PARITY | SPACE | PARITY CHECK | NO |
| STOP BITS | 1 | X-ON/X-OFF | DC1/DC3 |
| AUX ECHO | NO | PACE | 00 |

KEYBOARD

| | | | |
|-------------|-------------|-------------|-----------------|
| CASE SELECT | UPPER/LOWER | SPACE CHAR | NON DESTRUCTIVE |
| KEY CLICK | NO | MARGIN BELL | NO |
| MENUS | U.S. | KEYBOARD | U.S. |

CRT Configurations

SCREEN

| | | | |
|----------------|------------|--------------|--------|
| SCREEN TIMEOUT | YES | AUTO WRAP | YES |
| AUTO SCROLL | YES | SCROLL | JUMP |
| CURSOR HOME | UPPER LEFT | COLUMNS | 80 |
| CURSOR | BLOCK | CURSOR BLINK | YES |
| FORE/BACK | WHT/BLK | PROTECT | HLFINT |
| DISPLAY TEST | YES | | |

MODE

| | | | |
|--------------|-----------------|------|----------|
| TERMINAL | VIEWPOINT | MODE | ENHANCED |
| PROGRAM KEYS | USER DEPENDENT* | | |

TABS

User defined for applications. No Ultimate setting.

FUNCTION

Function keys 1-6 and shifted 1-6 are not to be changed. All other function keys are USER definable.

BELL

User defined. No Ultimate setting.

OPTIONS

Not changeable. Hardware set.

NOTE: In the MODE setup, the program keys option may be changed to Terminal Dependent if you wish to have the function keys revert to the default codes at power up. If the program keys are not to be changed, the User Dependent option should be used.

ADDED PRINT @(-n) FUNCTIONS

The following PRINT @(-n) have been added for the ADDS 2020.

@(-70) = 80 column screen display
@(-71) = 132 column screen display

CRT Configurations

ADDS VIEWPOINT/60 TERMINAL

SWITCH SETTINGS

To set up the Viewpoint/60 terminal, you must first enter its setup mode by pressing the SHIFT key and the HOME key. The STATUS line is then displayed on the bottom of the terminal.

Example of status line:

| Bank 1 | Bank 2 | Bank 3 | Bank 4 | |
|------------------|------------|------------|------------|-------|
| SETUP 1=01110111 | 2=11010001 | 3=00000000 | 4=00000000 | VP/60 |

The cursor is set to bank 1. To move the cursor, you must use the cursor control arrows. The UP ARROW will change the status to 1. The LINE-FEED (DOWN ARROW) will change the status to 0. After a selection is made, you must move the cursor to the right or left with the cursor control arrows.

To leave the SET-UP mode, press the HOME key to save your new options. Press the ESC to exit from the SET-UP mode without saving the new options.

The settings for each switch bank appear on the next two pages.

NOTE: Settings with an asterisk (*) are the recommended settings.

NOTE: 0 = OFF
1 = ON

CRT Configurations

Bank number 1

Switch positions 1 through 4 are for the EIA PORT
 Switch positions 5 through 8 are for the AUX PORT

Baud Rates Bit Settings

| | |
|-------|-------|
| 110 | 0000 |
| 150 | 0001 |
| 300 | 0010 |
| 1200 | 0011 |
| 1800 | 0100 |
| 2400 | 0101 |
| 4800 | 0110 |
| 9600* | 0111* |
| 19200 | 1000 |

Bank number 2

| Position | Function | Selection | | | |
|----------|---------------------|-------------|---------|-------------|---------|
| | | Choice 1 | Setting | Choice 2 | Setting |
| 1 | Duplex | Half | 0 | Full | 1* |
| 2 | Video Presentation | Drk Lht | 0 | Lht Drk | 1* |
| 3 | Video Highlight | Half | 0* | Full | 1 |
| 4 | Auto Scroll | Disable | 0 | Enable | 1* |
| 5 | Auto Line Feed | Disable | 0* | Enable | 1 |
| 6 | Display Parity err. | Disable | 0* | Enable | 1 |
| 7 | Parity High Bit | Odd | 00 | Mark | 10 |
| 8 | Parity Low Bit | Even | 01 | Space | 11 |

CRT Configurations

Bank number 3

| Position | Function | Selection | | | |
|----------|---------------------|-------------|---------|-------------|---------|
| | | Choice 1 | Setting | Choice 2 | Setting |
| 1 | Screen Refresh Rate | 60Hz | 0* | 50Hz | 1 |
| 2 | Cursor Suppress | Visual | 0* | Suppressed | 1 |
| 3 | Cursor Format 1 | Block | 0* | Underline | 1 |
| 4 | Cursor Format 2 | Blink | 0* | Steady | 1 |
| 5,6 | Character Case | Upper | 00* | Up Only | 10 |
| | | Lower | 01 | --- | 11 |
| 7,8 | Line Terminator | Cr | 00* | Cr EOT | 10 |
| | | Cr ETX | 01 | No Term. | 11 |

Bank number 4

Should be left at all zeros.

The Viewpoint/60 controls the communication flow to the AUX-PORT by using X/ON-X/OFF and data terminal ready (DTR, pin 20) from the printer. When the terminal's AUX-PORT detects DTR dropped by the printer, it will send an X/OFF character to the system. This will stop data from going to the printer and overflowing its buffer. When DTR is raised, the terminal sends an X/ON signal to the computer and the computer continues sending data.

CRT Configurations

ADDS VIEWPOINT/60+ TERMINAL

SETUP MODE

To enter the setup mode, press and hold the SHIFT key, and then press the HOME key. The following menu is displayed.

MAIN SETUP MENU

==== PLEASE SELECT ONE OF THE FOLLOWING ====

- "C" - adjust contrast
- "F" - program function keys
- "T" - set tab stops
- "P" - select parameters
- "D" - install default values
- "I" - install power up values
- "E" - exit setup menu

Enter C to adjust the contrast of the screen. The following menu is displayed.

CONTRAST

- ARROW UP - increase contrast
- ARROW DOWN - decrease contrast
- HOME - save contrast
- RESET - abort

NORMAL HALF INTENSITY NORMAL | REVERSE | REVERSE HALF INTENSITY

Press the UP ARROW to increase intensity, or press the DOWN ARROW to decrease intensity. Then press HOME to save it and return to the MAIN SETUP MENU. Press RESET to return to the

CRT Configurations

MAIN SETUP MENU.

To program the function keys, enter F at the MAIN SETUP MENU. The following screen is displayed.

| <u>FUNCTION KEYS</u> | | |
|-----------------------|------------------------------------|--------------------|
| <u>OPERATING KEYS</u> | | <u>DESTINATION</u> |
| ARROWS | - cursor movement | 0 = AUX |
| Fn | - function key to edit | 1 = LOCAL |
| RESET | - abort | 2 = EIA |
| ENTER | - exit & update | 3 = LOCAL & EIA |
| HOME | - exit, update & save for power up | |

| <u>EDITING Fx</u> | | |
|-------------------|------|----------|
| DESTINATION | LINK | LINK KEY |
| X | X | Fx |

Enter the key you want to edit. It should appear in the heading EDITING Fx. Then enter the characters you want the function key to represent. Use the ARROWS to move from the editing line to DESTINATION, LINK, or LINK KEY. DESTINATION is the port to which the terminal is going to send the function key values (ex. 0=AUX, 2=EIA, EIA is to the system). LINK allows you to link one function key to another.

Tab stops are not recognized by the system, and it is recommended that you do not use them.

To change parameters, enter P. The following menu is displayed.

CRT Configurations

PARAMETERS

F Duplex
7 EIA baud rate = 9600
7 AUX baud rate = 9600
1 Parity Type = EVEN
0 Line terminator
0 Language
0 Case select
Y Parity check
Y X-ON/X-OFF
N Refresh rate 50Hz
N Key click
Y Cursor blink
Y Cursor block
N Cursor suppress
N Cursor home upper left
N Half intensity background
Y Dark background
Y Auto scroll
N Auto line feed
N Tagged attributes
N Regent 40 mode

2nd PAGE xxxxxxxxxx

OPERATING KEYS

ARROWS - cursor movement
RESET - abort
ENTER - exit & update
HOME - exit & update &
save for power up

The ARROW keys will move you to each parameter. As you reach each parameter, the options for that parameter will appear on the upper right side of the screen. If you wish to change one, just move to that parameter and enter the option. The HOME key will save all the parameters once they are set, so you do not have to reset them.

CRT Configurations

ADDS VIEWPOINT COLOR TERMINAL

The ADDS Viewpoint Color terminal is a high-resolution color terminal that emulates Viewpoint/60. This allows you to add the dimension of color without any software modifications.

There are no switches for selecting the terminal features and operating parameters. All options are selected via the keyboard and are stored in a non-volatile memory. This allows the terminal to be turned off and on while retaining the selected options.

SETUP MODE

To enter the setup mode, press and hold the SHIFT key and press the home key, then release both. A status line should appear at the bottom of the screen.

For example:

```
SETUP 1=01110111 2=11010011 3=00010000 4=00100001
VP/COLOR
```

The 1= means BANK 1, 2= means BANK 2, etc. The cursor is sitting over the first bit in the first bank. The bit is changed to a 1 or 0 by using the UP ARROW key for 1 and the DOWN ARROW or RETURN for 0. The RIGHT ARROW key moves the cursor to the next selection and the LEFT ARROW key moves the cursor back a selection. After all selections have been made, press the HOME key and the new options are saved. If no changes have been made, or you want to exit the setup mode, press the ESC key. Pressing ESC will not save any changes.

NOTE: The asterisk (*) denotes the setting to be used. If there is no asterisk, you may set the option to your preference.

CRT Configurations

BANK 1

Switches 1,2,3, and 4 are for the EIA PORT baud rate settings.

Switches 5,6,7, and 8 are for the AUX PORT baud rate settings.

NOTE: The auxiliary port settings are for Print Local functions only. Refer to your terminal's manual for CPU controlled auxiliary port baud rates.

| Baud Rate | Positions | | | |
|-----------|-----------|-----|-----|-----|
| | 1/5 | 2/6 | 3/7 | 4/8 |
| 110 | 0 | 0 | 0 | 0 |
| 150 | 0 | 0 | 0 | 1 |
| 300 | 0 | 0 | 1 | 0 |
| 1200 | 0 | 0 | 1 | 1 |
| 1800 | 0 | 1 | 0 | 0 |
| 2400 | 0 | 1 | 0 | 1 |
| 4800 | 0 | 1 | 1 | 0 |
| 9600* | 0 | 1 | 1 | 1 |
| 19.2k | 1 | 0 | 0 | 0 |

BANK 2

| Position | Function | Option 0 | Option 1 |
|----------|----------------------|----------------|------------------|
| 1 | Duplex | Half | *Full |
| 2 | X-on/X-off | Disable | *Enable |
| 3 | Second Page Option | *Disable | Enable |
| 4 | Auto Scroll | Disable | *Enable |
| 5 | Auto Line Feed | *Disable | Enable |
| 6 | Display Parity Error | *Disable | Enable |
| 7/8 | Parity | 00 Odd 01 Even | 10 Mark 11 Space |

CRT Configurations

BANK 3

| Position | Function | Option 0 | Option 1 |
|----------|---------------------|-------------------------------|-----------------------------|
| 1 | Screen Refresh Rate | *60Hz | 50Hz |
| 2 | Cursor Suppress | *Visual | Suppress |
| 3 | Reserved | *N/A | N/A |
| 4 | Cursor Format | Blink | Steady |
| 5/6 | Character Case | *00 Upper/Lower 10 Up Only | 01 Lower/Upper 11 N/A |
| 7/8 | Line Terminator | *00 CR 10 CR EOT | 01 CR ETX 11 No Terminal |

BANK 4

| Position | Function | Option 0 | Option 1 |
|----------|------------------|------------------------------|---|
| 1 | Extended Palette | Disable | Enable |
| 2 | Cursor Home | Disable | Enable |
| 3 | Keyclick | Disable | Enable |
| 7 | Regent 40 Comp. | *Disable | Enable |
| 8 | CRT Auto Off | Disable | Enable |
| 4/5/6 | Foreign Language | *000 English 010 Swed/Fin | 001 Ger/Swiss/Dan/Nor 111 Port/Spain |

CRT Configurations

ADDS VIEWPOINT PLUS TERMINAL

Terminal features and operating parameters are selected via the keyboard and are stored in a non-volatile memory. This allows the terminal to be turned off and on while retaining the selected options.

SETUP MODE

To enter the setup mode, press and hold the CTRL key, then press the TAB key twice, then release the CTRL key. The following menu is displayed.

| <u>SETUP MENU</u> | | | |
|----------------------------|----------------------|---------------|---------------------------|
| | <u>MODES</u> | <u>PARITY</u> | <u>PRINT LOCAL STATUS</u> |
| 1 Terminal Mode | 0 = A1 | 0 = Odd | 0 = Print inhibit |
| 8 Main baud rate | 1 = A2 | 1 = Even | 1 = CR/LF |
| 8 Aux baud rate | 2 = 3A | 2 = Mark. | 2 = CR Only |
| 1 Parity | 3 = 3A+ | 3 = Spac. | 3 = None |
| N Display parity error | | | |
| Y Full duplex | <u>SCREEN FORMAT</u> | | <u>LANGUAGE SELECTION</u> |
| Y Auto scroll | 0 = Normal | | 0 = U.S. |
| N Auto line feed | 1 = SS/24 Lines | | 1 = France |
| N Light background | 2 = JS/25 Lines | | 2 = Germany/Switz |
| N Underline cursor | | | 3 = Sweden/Finld |
| N Blinking cursor | | | 4 = Denmark/Norwy |
| N Keyclick | <u>BAUD RATE</u> | | 5 = Spain/Portugl |
| N Screen saver | 0 = 110 | | 6 = U.K. |
| N 50 Hz operation | 1 = 150 | | |
| O Language | 2 = 300 | | |
| N Keycap option | 3 = 600 | | |
| N Disable CTRL-Z (3A/3A+) | 4 = 1200 | | |
| N Space advance (3A Only) | 5 = 1800 | | |
| O Screen format | 6 = 2400 | | |
| Y Xon/Xoff | 7 = 4800 | | |
| 1 Print local status | 8 = 9600 | | |
| N Programmable funct. keys | 9 = 19200 | | |

Cursor UP & Down for select.
Enter parameter changes
Home saves change/exit
ESC exit without saving changes
CTRL-up & Down change contrast.

To change a parameter, move the cursor up or down to the parameter and enter your option. If you want the changes to take effect for the duration of one session, press the ENTER key. The options will only be used until you power off the terminal. To save the options for each time you power on, press the HOME key. To exit from the setup menu without

CRT Configurations

resetting the options, press the ESC key. Use the CTRL-UP and CTRL-DOWN keys to adjust the contrast of the terminal. Terminal features and operating parameters are selected via the keyboard and are stored in a non-volatile memory. This allows the terminal to be turned off and on while retaining the selected options.

CRT Configurations

ADDS VIEWPOINT (VDT) TERMINAL

The following switch settings are required on ADDS Viewpoint (VDT) terminals when using the Ultimate Operating System. The switches are located at the rear of the terminal.

NOTE: 0 = on
1 = off

| <u>SWITCH #</u> | <u>SETTINGS</u> | |
|------------------|--------------------|------------------|
| | <u>Old style</u> | <u>New style</u> |
| 1,2,3 Baud rate | 000 110 baud | 000 110 baud |
| | * 001 150 " | * 001 300 " |
| | * 010 300 " | * 010 1200 " |
| | * 011 1200 " | * 011 1800 " |
| | 100 2400 " | 100 2400 " |
| | 101 4800 " | 101 4800 " |
| | ** 110 9600 " | 110 9600 " |
| | 111 19200 " | 111 19200 " |
| 4 Auto Scroll | 0 - disabled | |
| | ** 1 - enabled | |
| 5 Auto Line Feed | ** 0 - disabled | |
| | 1 - enabled | |
| 6 Line Mode | 0 - half duplex | |
| | ** 1 - full duplex | |
| 7,8 Parity | 00 odd | |
| | ** 01 even | |
| | 10 marking | |
| | 11 spacing | |

* = There is no easy way to determine if you are working with an "Old style" or "New style" VDT. The difference between the two is that one supports 150 baud and the other supports 1800 baud.

** = standard settings

CRT Configurations

If the deflection board for the terminal needs to be replaced, please check the model of the monitor. On the monitor you will see an A or PH5 in the middle of the back of the monitor. An A means you have a Hiatachi and a PH5 means you have an Amperex. Check the chart below to see what part number the terminal can use. The part number on the deflection board is on the back of the board and has the word ADDS in front of it.

| <u>Part number</u> | <u>Monitor type</u> |
|--------------------|---------------------|
| 123-285 Rev J | Both * |
| 123-251 Rev B | Amperex |
| 128-285 Rev K | Hiatachi |
| 128-285 Rev F | Hiatachi |
| 123-285 Rev P | Hiatachi |

* Any board with jumpers works with both monitors

CRT Configurations

VOLKER-CRAIG TERMINAL

The following switch settings are required on Volker-Craig terminals when using the Ultimate Operating System. The switches are located at the rear of the terminal.

| Left Switch Block (SW 1) | Right Switch Block (SW 2) | |
|--------------------------|---|--|
| 1 down ADM-3A mode | baud rate set for 9600 baud for both receive (left 4 SWs) and transmit (right 4 SWs) | |
| 2 up underscore cursor | | |
| 3 down flashing cursor | | |
| 4 up | SEE CHART BELOW: 110 baud 0010 300 baud 0101 1200 baud 0111 2400 baud 1001 4800 baud 1011 9600 baud 1101 NOTE: 0 = OFF (up) 1 = ON (down) | |
| 5 up | | |
| 6 up | | |
| 7 up | | |
| 8 down | | |
| ----- | | |

NOTE: Keyboard switches FULL (upper right) and CAP LOCK (lower left) should both be pressed.

To set the terminal characteristics for a Volker-Craig CRT terminal on a single line, set the term type to U. During a Coldstart, if a Volker-Craig CRT is on line 0, a SET-TERM U is executed, which sets all lines to the the Volker-Craig's terminal characteristics.

CRT Configurations

WYSE WY-50 TERMINAL

The WYSE terminal has a screen width of 80 or 132 columns, and split screen capabilities. Terminal features and operating parameters are selected via the keyboard and are stored in a non-volatile memory. This allows the terminal to be turned off and on while retaining the selected options.

SETUP MODE

To enter the setup mode, press and hold the SHIFT key, and then press the SETUP key. A status line should appear at the top and bottom of the screen.

For example:

Top of screen:

Cursor-keys: select fields SPACE: changes FUNCT: F-Keys ESC:
Default

Bottom of screen:

```
HANDSHAKE=NONE SCREEN=80 CURSOR=BLOCK BLINK?=ON MODE=FDX
```

This is level one of five levels. All parameter fields are dim, except the far left field in the bottom row, which is normal intensity. Normal intensity indicates the active field. Changes may be made to active fields.

Press the SPACEBAR to change the parameter in the active field. Press the RIGHT ARROW key to activate the next field to the right, and press the LEFT ARROW key to activate the next field to the left. The UP ARROW key moves the fields up one level and the DOWN ARROW key moves the fields down one level.

Settings for each field level appear on the next few pages.

NOTE: An asterisk (*) indicates the recommended setting. If there is no asterisk, set the option at your preference.

CRT Configurations

Field level 1

HANDSHAKE = NONE SCREEN = 80 CURSOR = BLOCK BLINK? = ON
MODE = FDX

| PARAMETER | SELECTIONS |
|--------------------------|--|
| Handshake (protocol) | * None (default) X-on X-off DTR Both (X-on/off and DTR) |
| Screen (column/color) | * 80 (default) 132 80 Rev 132 Rev |
| Cursor | Block (default) Line |
| Blink? | On (default) Off |
| Mode | * FDX (default) Block HDX H-BLK |

Field level 2

DATA BIT=8 STOP BIT=1 PARITY BIT=NONE MODEM PORT BAUD
RATE=9600

| PARAMETER | SELECTIONS |
|----------------------|---|
| DATA BIT | * 8 (DEFAULT) 7 |
| STOP BIT | * 1 (DEFAULT) 2 |
| PARITY BIT | * None (default) Odd Even Mark |
| Modem Port Baud Rate | * 9600 (default) |

CRT Configurations

Field Level 3

BLK END=US/CR AUTO NL=ON CR=CR AUTO SCRL=ON AUX BAUD RATE=9600

| PARAMETER | SELECTION |
|------------|-------------------------------|
| BLK END | * US/CR (default) CRLF/ETX |
| AUTO NL | * ON (default) Off |
| CR | * CR (default) CR,LF |
| AUTO SCRL | * On (default) Off |
| AUX BAUD R | 9600 |

Field Level 4

SCRL=JUMP STATUS=ON S.SAVER=OFF PROT=DIM TEST=OFF

| PARAMETER | SELECTION |
|-------------------------------------|--|
| SCRL (scrolling type) | * Jump (default) SM-1 SM-2 SM-3 SM-4 SM-8 |
| STATUS | * On (default) Off |
| S.SAVER (shuts off screen) | Off (default) On |
| PROT (display protect attribute) | Dim (default) Rev Norm |
| TEST (self test) | * Off (default) On |

CRT Configurations

Field Level 5

KEYS?=US/UK RET/ENTER=CR/CR COMPATIBLE MODE=WY50 ENHANCE= OFF

| PARAMETER | SELECTION |
|-----------------------------------|--|
| KEYS? (require special ROMs) | * US/UK (default) German French Spanish Danish |
| RET/ENTER | * CR/CR (default) CRLF/TAB |
| COMPATIBLE MODE | WY50 (default) TVI910 TVI920 TVI925 * ADDSVP HZ1500 |
| ENHANCE (ADDS-VP, HZ1500 CODE) | Off (default) * On |

NOTE: The KEY CLICK status is also saved with the setup. The KEY CLICK may be turned on or off by pressing and holding the SHIFT key, and then pressing the ENTER key.

SAVE SETUP CHANGES

Press and hold the SHIFT key, and then press the SETUP key. The top row should appear as follows, with "Save changes for power-on?" flashing on and off.

Save changes for power-on? Y:yes (no F-keys) A:F-keys also others:no

If you press Y, all changes except those made to the function keys are saved for the next power-on. If you press A, all changes are saved. If you press any key other than Y or A, the terminal will operate with the current parameter changes, but will not save them when power is turned off. The screen will return to its operating mode.

CRT Configurations

WYSE-85 TERMINAL

SETUP

The setup mode is entered by pressing the SET-UP key, which is located in the upper left-hand corner of the keyboard.

Once in the set-up mode, a status lines appear at the top and bottom of the screen. The status line in the top left corner of the screen displays the name of the set-up level currently being monitored. The rest of this status line displays the valid keyboard responses, followed by the action taken when that key is entered. In all levels, the keyboard responses are single key commands.

Example:

The status line for the DIRECTORY level (1st level) is:

```
LEVEL NAME  SETUP-Exit  ENTER-Select  < > New field  ^ v New
level
```

Press the SETUP key to exit the set-up mode.

Press the ENTER key to select the next parameter in the active field. The active field is displayed in reverse video on the bottom status line.

Press the LEFT-ARROW or the RIGHT-ARROW keys to change the active field.

Press the UP-ARROW and DOWN-ARROW keys to select the next and previous levels, respectively.

The status line at the bottom of the screen displays the parameters that can be monitored in this level.

NOTE: This terminal will not send a control underscore to the system because the terminal it emulates does not send that character.

SETTING UP THE WYSE-85 ON REVISION PC112 AND ABOVE

If you are on Revision 150 or above, the Wyse-85 terminal may be set up by entering TERM-INIT from TCL on SYSPROG. You will be prompted for the terminal type, which is "Y" for this terminal. After using this utility, three parameters must be set up from the keyboard set-up mode. They are Handshake, Xmt limit and Fkey limit. Follow the steps below to set up these parameters.

CRT Configurations

1. Press the SET-UP key to enter the set-up mode.
2. Press the DOWN-ARROW key until you reach the Communications-2 level.
3. The active field is the HANDSHAKE field.
4. Press the ENTER key until this field changes to <Both>.
5. Press the LEFT-ARROW to change the active field to XMT LIMIT.
6. Press the ENTER key until this field changes to <150 cps>.
7. Press the DOWN-ARROW until you reach the Send level.
8. Press the RIGHT-ARROW to change the active field to Fkey XMT.
9. Press the ENTER key until this field changes to <150 cps>.
10. Press the SET-UP key to return to the Directory level.
11. Press the RIGHT-ARROW to select the SAVE field.
12. Press the ENTER key to save all changes into memory.

SETTING UP THE WYSE-85 MANUALLY FOR ALL RELEASES

Below is a list of the proper setups for each of the setup levels.

LEVEL NAME: DISPLAY-1

**Columns:80 Controls:Interpret Autowrap:ON Scroll:Jump
Screen:Dark Rows:24**

LEVEL NAME: DISPLAY-2

**Cursor: Blinking Block CRT Saver:ON Width Change Clear:OFF
Status Line:ON**

LEVEL NAME: GENERAL-1

**Mode:VT200 7 bit Pound:# Fkey Lock:OFF Feature Lock:OFF
Newline:OFF Local:OFF**

LEVEL NAME: GENERAL-2

**Keypad:Numeric Cursor Keys:Normal Transfer Term:Cursor
Test:OFF**

LEVEL NAME: COMMUNICATIONS-1

**Transmit:9600 Receive:9600 Data Bits:8 Parity:None Parity
Check:OFF Echo:OFF**

CRT Configurations

LEVEL NAME: COMMUNICATIONS-2

Handshake:Both **Stop Bits:**1 **Port:**EIA data **Disconnect:**2 sec **Xmt Limit:**150 cps

LEVEL NAME: PRINTER-1

Speed:9600 **Data Bits:**8 **Parity:**None **Stop Bits:**1 **Handshake:**Both **Terminator:**None

LEVEL NAME: PRINTER-1

Print:Full Screen **Print:**ASCII **Print Mode:**Normal **PR Receive:**OFF

LEVEL NAME: KEYBOARD-1

Lock:Caps **Keyrepeat:**ON **Keyclick:**OFF **Margin bell:**OFF **Warning Bell:**ON **Break:**ON

LEVEL NAME: KEYBOARD-2

Answerback:OFF **Compose:**ON **X:**BS/DEL **Keyboard:**N. American **Keys:**Typewriter

LEVEL NAME: SEND

Fkeys:Remote **Fkey Xmt:**150 cps **Send:**All **Send Area:** Full Screen **Send Term:** None



Printer Configurations

APPENDIX C: PRINTER CONFIGURATIONS

DEC LETTERPRINTER 210

The Letterprinter 210 is a dot-matrix serial printer with logic-seeking, bi-directional print. It can print at a maximum speed of 240 characters per second in Draft Quality Mode, and at 40 characters per second in Letter Quality Mode. The Letterprinter 210 can be used on the entire Ultimate product line.

SWITCH SETTINGS

Switch banks are located at the back of the printer, along the bottom. There are two banks of switches. They must be set before powering on the printer. The following are the standard switch settings for Ultimate systems.

ULTIMATE PC

Switch Bank A

1 OFF
2 OFF
3 OFF
4 OFF
5 ON
6 ON
7 ON
8 ON

Switch Bank B

1 ON
2 OFF
3 ON
4 ON
5 OFF
6 OFF
7 ON
8 OFF

Printer Configurations

Switch Bank A

| | | |
|-----------------------|---|------------------------|
| 1 Speed Control Line | OFF | Restraint mode |
| | ON | Speed Control mode |
| 2 Modem Control | OFF | No Modem Control |
| | ON | Modem Control |
| 3/4 Paper Fault | OFF/OFF | XOFF Sent |
| | ON/OFF | Break Sent |
| | OFF/ON | Drop DTR |
| | ON/ON | Do Not Connect |
| 5 End of Transmission | OFF | Disconnect on EOT |
| | ON | Ignore EOT |
| 6 XON/XOFF | OFF | Disable XON/XOFF |
| | ON | Enable XON/XOFF |
| 7 Error Processing | OFF | Print Substitute Char. |
| | ON | Print as Received |
| 8 Store Features | Move off, then on, to store settings in memory. | |

Switch Bank B

| BAUD RATE | 1 | 2 | 3 | 4 | 5 |
|-----------|-----|-----|-----|-----|-----|
| 50 | OFF | OFF | OFF | OFF | OFF |
| 75 | ON | OFF | OFF | OFF | OFF |
| 110 | OFF | ON | OFF | OFF | OFF |
| 134.5 | ON | ON | OFF | OFF | OFF |
| 150 | OFF | OFF | ON | OFF | OFF |
| 200 | ON | OFF | ON | OFF | OFF |
| 300 | OFF | ON | ON | OFF | OFF |
| 600 | ON | ON | ON | OFF | OFF |
| 1200 | OFF | OFF | OFF | ON | OFF |
| 1800 | ON | OFF | OFF | ON | OFF |
| 2400 | OFF | ON | OFF | ON | OFF |
| 4800 | ON | ON | OFF | ON | OFF |
| 7200 | OFF | OFF | ON | ON | OFF |
| 9600 | ON | OFF | ON | ON | OFF |

Printer Configurations

DEC LETTERPRINTER 100

SWITCH SETTINGS

There are two sets of internal switches that have to be set. To locate the switches, open the top cover and move the printhead to the right side of the printer. The switches are located on the bottom plate where the printhead was.

There are three styles of switches used in the printers: two types of rocker switches and one slide switch. Refer to the Letterprinter 100 Operators Guide to identify which type your printer has before changing any features. To set a rocker switch, press the side of the switch that corresponds to the desired option. To set a slide switch, push the switch tab to the side that corresponds to the desired option. Note that switch A is on your left and switch B is on your right. Now set the switches according to the following list. (For other settings, refer to the guide supplied by your printer's manufacturer.)

NOTE: L= left R = right

Switch A

| <u>Segment</u> | <u>Option</u> | <u>Feature</u> | <u>Comments</u> |
|----------------|---------------|----------------|-----------------|
| 1 | L | Baud Rate | set for 9600 |
| 2 | R | Baud Rate | set for 9600 |
| 3 | L | Baud Rate | set for 9600 |
| 4 | L | Baud Rate | set for 9600 |
| 5 | R | Baud Rate | set for 9600 |
| 6 | R | Parity | set for space |
| 7 | R | Parity | set for space |
| 8 | R | Data Bits | 7 data bits |

Switch B

| <u>Segment</u> | <u>Option</u> | <u>Feature</u> | <u>Comments</u> |
|----------------|---------------|-----------------|-----------------|
| 1 | R | Restraint Mode | buffer full on |
| 2 | R | Modem Control | no control |
| 3 | R | Paper Fault | paper out |
| 4 | *1 | Paper Fault | |
| 5 | R | Auto Disconnect | off |
| 6 | L | XON/XOFF | on |
| 7 | L | Receiver Error | on |
| 8 | L | Store Features | on *2 |

*1 Set to L if paper feed is from bottom. **NOTE:** You must have the paper out lever engaged to detect paper out. Set to R

Printer Configurations

if paper feed is from back of printer.

- *2 When the switches are set, move this switch from right to left. This will store the selectable features in user permanent memory.

Once you have set the switches, close the top cover, turn on the power, press the CLEAR FAULT key, place the ON-LINE/OFF key in the off (down) position, and then press the SELF TEST key. This will print the status message. Verify the status message with the options listed below, and then press the SELF TEST key and the ON-LINE/OFF key. This will put the printer back online.

BAUD RATE SELECTIONS

Switch A

| <u>Baud Rate</u> | <u>Switch Settings</u> | | | | |
|------------------|------------------------|----------|----------|----------|----------|
| | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> |
| 50 | R | R | R | R | R |
| 75 | L | R | R | R | R |
| 110 | R | L | R | R | R |
| 134.5 | L | L | R | R | R |
| 150 | R | R | L | R | R |
| 200 | L | R | L | R | R |
| 300 | R | L | L | R | R |
| 600 | L | L | L | R | R |
| 1200 | R | R | R | L | R |
| 1800 | L | R | R | L | R |
| 2400 | R | L | R | L | R |
| 4800 | L | L | R | L | R |
| 7200 | R | R | L | L | R |
| 9600 | L | R | L | L | R |

Printer Configurations

DEC LETTERPRINTER 50

The DIGITAL LA50 printer is an 80-column, dot matrix, serial printer.

SWITCH SETTINGS

There are two sets of internal switches for the LA50 printer. The switches are located inside the printer, on the bottom metal plate. It may be necessary to move the print head to the left to access the switches. The following are the standard switch settings for Ultimate systems. The standard switch settings are for 4800 baud and X-ON/X-OFF protocol.

For Ultimate PC Systems

SWITCH ONE (SW1)

: 8 : 7 : 6 : 5 : 4 : 3 : 2 : 1 :
: OPEN : OPEN : OPEN : OPEN : OPEN : OPEN : OPEN : OPEN :

:

SWITCH TWO (SW2)

: 8 : 7 : 6 : 5 : 4 : 3 : 2 : 1 :
: OPEN : CLOSED : CLOSED : CLOSED : CLOSED : OPEN : OPEN : OPEN :

:

SWITCH ONE (SW1)

| <u>BAUD RATE</u> | <u>1</u> | <u>2</u> | <u>3</u> |
|-------------------|----------|----------|----------|
| 4800 | OPEN | OPEN | OPEN |
| 2400 | OPEN | CLOSED | OPEN |
| 1200 | OPEN | CLOSED | CLOSED |
| 600 | CLOSED | OPEN | OPEN |
| 300 | CLOSED | OPEN | CLOSED |
| 200 | CLOSED | CLOSED | OPEN |
| 110 | CLOSED | CLOSED | CLOSED |
| | | | |
| <u>X-ON/X-OFF</u> | <u>6</u> | | |
| ENABLED | OPEN | | |
| DISABLED | CLOSED | | |

Printer Configurations

SWITCH TWO (SW2)

| DATA FORMAT | 4 | 5 | 6 |
|---------------------|--------|--------|--------|
| 7 BITS, ODD PARITY | OPEN | CLOSED | CLOSED |
| 7 BITS, EVEN PARITY | CLOSED | CLOSED | CLOSED |
| 8 BITS, ODD PARITY | OPEN | CLOSED | OPEN |
| 8 BITS, EVEN PARITY | CLOSED | CLOSED | OPEN |
| 8 BITS, NO PARITY | OPEN | OPEN | OPEN |

USING ULTILOT

This printer is compatible with UltiPlot when used as a system printer. The UltiPlot device type is LA100. If using the LA50, you must scale down the size of the UltiPlot chart, because the LA100 prints 132 columns and the LA50 only prints 80 columns. The LA50 printer will not work with UltiPlot when used as a slave printer.

Printer Configurations

EPSON FX-286 PRINTER

The Epson FX-286 is an impact dot matrix, parallel printer, which interfaces with a PC or a parallel auxiliary port on a CRT. It has selectable fonts, which include a near-letter-quality mode, and is capable of 200 characters per second.

POWER ON

The switch is located on the left side of the printer.

SWITCH SETTINGS

There are two banks of switches that are located under the access cover on the right side of the printer.

The following are the recommended settings for Ultimate.

Switch Bank 1

| Switch No. | ON | OFF | FUNCTION |
|---------------|------------|-----------|------------------------|
| 1 | Condensed | *Pica | Print Mode |
| 2 | 0 slashed | *0 | Zero Character |
| 3 | Inactive | *Active | Paper-out-sensor |
| 4 | *Epson | IBM | Printer mode |
| 5 | Emphasized | *Standard | Print mode |
| 6 | *ON | Off | Internal character set |
| 7 | *ON | Off | Internal character set |
| 8 | *ON | Off | Internal character set |

Printer Configurations

Switch Bank 2

| Switch No. | ON | OFF | FUNCTION |
|------------|----------------|-----------|-----------------------|
| 1 | *Active | Inactive | Printer select |
| 2 | Active | *Inactive | Cut sheet feeder |
| 3 | ON | *OFF | Skip-over-perforation |
| 4 | CR & line feed | *CR only | Automatic line feed |

USING THE CONTROL PANEL

The control panel has three buttons, and each button has two functions.

- A. Functions that are active only when the printer is ONLINE are the blue panel functions:

- *ONLINE
- *NLQ - Near letter quality
- *DRAFT - Selects draft typestyle

- B. Functions that are active only when the printer is OFFLINE are the yellow panel functions:

- *OFFLINE
- *FORM FEED - Advances to top of form
- *LINE FEED - Advances paper 1 line at a time

RUNNING THE SELF TEST

With power off, hold down the draft button while you turn the power switch on. The self test will start printing the full character set in draft mode. The self test continues until you shut the power off or the paper-out sensor is triggered. To print the self test in NLQ mode, press the NLQ button when you switch the power on.

Printer Configurations

SELECTING VARIOUS TYPESTYLES USING SELECTYPE

The SelectType feature can produce 9 special typesstyles and skip-over-perforation.

1. Condensed Mode
2. Double-Width
3. Elite
4. Emphasized
5. Italic
6. Double-strike
7. Underline
8. Superscript
9. Subscript
10. Skip-over-perforation

To turn Selectype on:

1. The printer should be ONLINE.
2. Press both the OFFLINE and FORM FEED buttons at the same time.
3. The printer should be in SelectType Mode. If it is, it will beep, the Ready light will go off, and the Online light will be flashing.

After turning Selectype on, follow these steps to select a typesstyle:

1. Choose the typesstyle you want.
2. Press the OFFLINE button the number of times indicated in the mode column. Be sure the printer beeps each time you press the OFFLINE button.
3. Press the FORM FEED button to set the typesstyle.
4. Press the LINE FEED button to turn Selectype off. The control panel returns to its normal functions but the printer is offline.
5. Press the OFFLINE button and you are ready to print.

NOTE: The Printer is initialized when it is turned on. Any previous settings are erased and the printer is reset to its default or preset settings.

Printer Configurations

HONEYWELL L121CQ AND L321CQ PRINTERS

The L121CQ is an 80-column, dot matrix, parallel printer and the L321CQ is a 132-column, dot matrix, parallel printer. Both printers are used on the Ultimate PC and print at 150 characters per second with logic seeking, bi-directional print.

SWITCH SETTINGS

Switch banks are located on the bottom of the inside of the printer. They can be accessed by lifting the cover.

NOTE: The asterisk (*) denotes the switch settings used with the Ultimate system.

Switch Bank 1

| <u>OPTION</u> | <u>ON</u> | <u>OFF</u> |
|--------------------|-------------|--------------|
| 1 DOWN LOAD OPTION | NONE | *DOWN LOAD |
| 2 INTERNATIONAL | SEE TABLE 1 | *SEE TABLE 1 |
| 3 CHARACTER | SEE TABLE 1 | *SEE TABLE 1 |
| 4 SETS | SEE TABLE 1 | *SEE TABLE 1 |

Switch Bank 2

| <u>OPTION</u> | <u>ON</u> | <u>OFF</u> |
|------------------------|-------------|--------------|
| 1 EPSON/IBM MODE | *IBM | EPSON |
| 2 IBM CHARACTER SET | *SET 2 | SET 1 |
| 3 ALWAYS ON | *UNDEFINED | |
| 4 AUTO LINE FEED | AUTO LF | *NO AUTO LF |
| 5 FORMS LENGTH | 12 INCHES | *11 INCHES |
| 6 VERTICAL SPACING | 8 LPI | *6 LPI |
| 7 SELECT PRINT DENSITY | SEE TABLE 2 | *SEE TABLE 2 |
| 8 SELECT PRINT DENSITY | SEE TABLE 2 | *SEE TABLE 2 |

Printer Configurations

TABLE 1

| <u>CHARACTER SET</u> | <u>SW 2</u> | <u>SW 3</u> | <u>SW 4</u> |
|----------------------|-------------|-------------|-------------|
| USA - IBM COMPATIBLE | OFF | OFF | OFF |
| FRANCE | OFF | OFF | ON |
| GERMANY | OFF | ON | OFF |
| UNITED KINGDOM | OFF | ON | ON |
| DENMARK | ON | OFF | OFF |
| SWEDEN | ON | OFF | ON |
| ITALY | ON | ON | OFF |
| SPAIN | ON | ON | ON |

TABLE 2

| <u>PRINT DENSITY</u> | <u>SW 7</u> | <u>SW 8</u> |
|------------------------|-------------|-------------|
| NORMAL | OFF | OFF |
| EMPHASIZED | OFF | ON |
| CORRESPONDENCE QUALITY | ON | OFF |
| COMPRESSED | ON | ON |

To test the printer, hold the form-feed button down while turning on the power to the printer. A test pattern should now print. To stop the test, press the "CQ" button.

Printer Configurations

NEC 3500 LETTER QUALITY PRINTER

SWITCH SETTINGS

The following switch settings should be used for the NEC 3500 35 characters per second printer. The switch settings are located on the logic board inside the rear of the printer. There are three sets of 8 dip switches each. The diagram below shows the order of these switches.



NOTE: 0 = OFF
1 = ON

The following is a description of each switch setting.

SW1

| | | | |
|---|-----------------------|-----|-------------|
| 1 | SPEED | ON | (1200 BAUD) |
| 2 | SPEED | ON | |
| 3 | LOCAL LF | OFF | |
| 4 | AUTO CR | ON | |
| 5 | PARITY ENABLE/DISABLE | OFF | |
| 6 | PARITY EVEN/ODD | ON | |
| 7 | X/ON | ON | |
| 8 | CUT SHEET GUIDE | OFF | |

SW2

| | | | |
|---|----------------------|-----|------|
| 1 | 10/12/15 CPI DEFAULT | OFF | |
| 2 | | OFF | |
| 3 | LF/FF | OFF | (FF) |
| 4 | PAPER OUT DETECT | OFF | |
| 5 | 8/6 LPI DEFAULT | OFF | |
| 6 | PS/STD DEFAULT | OFF | |
| 7 | TEST | ON | |
| 8 | REMOTE/LOCAL DEFAULT | ON | |

Printer Configurations

SW3

| | | |
|---|----------------|-----|
| 1 | NOT USED | OFF |
| 2 | " " | OFF |
| 3 | " " | OFF |
| 4 | " " | OFF |
| 5 | DATA SET READY | ON |
| 6 | DTR=RVC | ON |
| 7 | RVC=-12 | OFF |
| 8 | HAMMER DISABLE | OFF |

Printer Configurations

NEC 5500 SPINWRITER

SWITCH SETTINGS

NOTE: ON is the UP position and OFF is the DOWN position. The "*" indicates the normal switch settings for use with ULTIMATE systems.

Printer Interface Logic Board

The printer cover must be removed. The switches are located on the board in the rear of the printer. Only the first four switches are set:

| SW. | ON | OFF |
|-----|------------------------|---------------------------|
| 1 | Keyboard Enabled (KSR) | * Keyboard Disabled (RD) |
| 2 | * Driver Lock Normal | Driver Lock |
| 3 | Carrier Detect Enabled | * Carrier Detect Disabled |
| 4 | Hammer Driver Enabled | * Hammer Driver Disabled |

Printer Control Panel Board

To locate the switch, lift the printer lid and look behind the front panel cover on the top left side.

| SW. | ON | OFF |
|-----|------------------------------|---------------------------------|
| 1 | Auto Carriage Return | * Auto Carriage Return Disabled |
| 2 | * Clear Individual Tab Stops | Clear All Tab Stops |
| 3 | Break Enabled | * Console Interrupt Enabled |
| 4 | * XON/XOFF Protocol | ETX/ACK Protocol |
| 5 | Reverse Channel High | * Reverse Channel Low |
| 6 | RESERVED...MUST BE OFF | * RESERVED...MUST BE OFF |
| 7 | * ON Baud Rate See Table 1 | |
| 8 | * ON Baud Rate See Table 1 | |

Front Panel Rocker Switch Settings

| | | | |
|--------|------|--------|------|
| TEST | Down | SPEED | High |
| DUPLEX | Full | PARITY | Even |

The rest of the rocker switches are set according to individual specifications.

Printer Configurations

TABLE 1

| 7 | 8 | L | M | H |
|-----|-----|-----|-----|------|
| OFF | OFF | 110 | 150 | 300 |
| OFF | ON | 110 | 200 | 300 |
| ON | OFF | 110 | 300 | 600 |
| ON | ON | 110 | 300 | 1200 |

Switches 7 and 8 on the panel control board set the baud rates that can be selected by the panel rocker switch, labeled L M H.

Printer Configurations

PANASONIC MD 1091

The Panasonic MD 1091 is an 80-column, dot matrix, parallel printer. It prints 120 characters per second, and is used on the Ultimate PC.

SWITCH SETTINGS

Switch banks are located on the bottom of the inside of the printer, below the print assembly. They can be accessed by lifting the cover.

Switch Settings

| | | | | | | | |
|----|----|-----|-----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| on | on | off | off | on | on | on | off |

on = closed
off = open

TESTING THE PRINTER

1. Press the LF control panel button as you turn on the printer power switch.
2. The printer will beep a few times, and then print out a test pattern. After it prints three or more lines, turn off the power to the printer.
3. Compare the printed pattern to the one in your Panasonic Printer manual.

Hardware Configurations

APPENDIX D: HARDWARE CONFIGURATIONS

1.1 HARDWARE SPECIFICATIONS

The Ultimate PC 110, IBM XT (and compatible), and IBM AT (and compatible) are supported by the Ultimate PC/OS. Listed below are the hardware specifications for those systems. The Ultimate 110 PC and IBM XT also support an 8087 mathematics co-processor chip which the Ultimate PC/OS recognizes when doing a Coldstart.

Table D.1 Hardware Specifications

| | IBM AT PC | IBM XT PC | ULTIMATE 110 PC |
|----------------------|-------------------------|-------------------------|---------------------|
| DISKS (2 maximum) | 20, 33 MEG | 10, 15 MEG | 10, 15 MEG |
| ELECTRIC SPECS. | 110-115 VAC 50/60 HZ | 110-115 VAC 50/60 HZ | 115 VAC 47/63 HZ |
| FLOPPY DRIVES | 360K/1.2MEG | 360K | 360K |
| MEMORY | 256K-512K | 256K-512K | 256K-512K |
| MICRO- PROCESSOR | 80286 | 8086 | 8086 |
| Address Bus | 16 bit | 16 bit | 16 bit |
| Data Bus | 16 bit | 8 bit | 8 bit |

Hardware Configurations

1.2 HARDWARE SUPPORTED BY ULTIMATE

The following is a list of the hardware supported by Ultimate.

1.2.1 DISK DRIVES

5 1/4 Inch

10 Meg: 306 Cylinders, 4 Heads
15 Meg: 306 Cylinders, 6 Heads
20 Meg: 615 Cylinders, 4 Heads
33 Meg: 615 Cylinders, 6 Heads

Each track has 17 sectors of 512 bytes.

1.2.2 DISKETTE DRIVES

360K Floppy Diskette Drives

40 tracks, 9 sectors per track

The Ultimate PC/OS stores approximately 332,200 bytes on the diskette used in this type of drive.

(IBM AT and IBM XT)

Quad-density Diskette Drives

80 tracks, 15 sectors per track

The Ultimate PC/OS stores approximately 1,147,000 bytes on the diskette used in this type of drive.

(IBM AT only)

Quad-density (or 1.2 Megabyte) floppy disk drives can be used on IBM AT hardware. This drive allows approximately four times the amount of data to be stored on one diskette.

The following are the requirements for using the quad-density disk drive:

- a. You must have an IBM AT with a floppy drive that supports the quad-density feature.
- b. Your IBM AT must be on DOS 3.0 or higher.
- c. Your IBM AT must be on Ultimate PC/OS Revision 103PC or higher.

NOTE: Only an odd number of the PC/OS Revision will load on the IBM AT (for example, PC113).

Hardware Configurations

- d. Use a quad-density diskette of high quality, because the Ultimate PC/OS cannot handle any bad spots on the diskette.

1.2.3 MONITORS, PRINTERS, AND TERMINALS

| <u>Monitors</u> | <u>Printers</u> | <u>Terminals</u> |
|---------------------|----------------------------------|----------------------|
| Monochrome Text | DEC LA210 | ADDS 2020 |
| Monochrome Graphics | DEC LA100 | ADDS Viewpoint/60 |
| Color Graphics | DEC LA50 | ADDS Viewpoint/60+ |
| | Epson FX-286 | ADDS Viewpoint Color |
| | Honeywell L32ICQ (132-column) | ADDS Viewpoint Plus |
| | Honeywell L12ICQ (80-column) | ADDS Viewpoint (VDT) |
| | NEC 5500 Spinwriter | Volker-Craig |
| | NEC 3500 Letter | Wyse-50 |
| | Quality Printer | Wyse-85 |
| | Panasonic MD 1091 | |

1.2.4 TAPE DRIVES

The Ultimate 110, the IBM AT, and the IBM XT hardware can all use the Alloy ITS-100+ tape controller, which supports a Cipher 1/2" 9 Track Microstreamer Tape Drive.

Hardware Configurations

1.3 FORMATTING DISKETTES

Formatting 360K Diskettes

Use the following instructions to format your 360K diskettes.

1. Load the DOS diskette in drive A:. Then type:

FORMAT A:/4 and press RETURN.

The following are samples of the DOS format screen for DOS 3.1. (Your screens may be different.)

```
A>FORMAT A:/4
Insert new diskette for drive A:
and strike ENTER when ready
```

2. Unload the DOS diskette, and load the 360K diskette you want to format. Then press RETURN to begin formatting.

When the system has finished formatting the diskette, a screen similar to the following is displayed.

```
Formatting...Formatting complete

    362496 bytes total disk space
    362496 bytes available on disk

Format another (Y/N)?
```

3. To format another 360K diskette, load the next diskette in drive A:. Then enter **Y** and press RETURN. You are again prompted to "Insert new diskette in drive A: and strike ENTER when ready." Press RETURN to begin the formatting process.

If you do not want to format another diskette, enter **N** and press RETURN. You are returned to the A> prompt.

Hardware Configurations

Formatting Quad-Density Diskettes

Use the following instructions to format your quad-density diskettes.

1. Load the DOS diskette in drive A:. Then type:

FORMAT A: and press RETURN.

The following are samples of the DOS format screen for DOS 3.1. (Your screens may be different.)

```
A>FORMAT A:
Insert new diskette for drive A:
and strike ENTER when ready
```

2. Unload the DOS diskette, and load the quad-density diskette you want to format. Then press RETURN to begin formatting.

When the system has finished formatting the diskette, a screen similar to the following is displayed.

```
Formatting...Formatting complete

    362496 bytes total disk space
    362496 bytes available on disk

Format another (Y/N)?
```

3. To format another quad-density diskette, load the next diskette in drive A:. Then enter **Y** and press RETURN. You are again prompted to "Insert new diskette in drive A: and strike ENTER when ready." Press RETURN to begin the formatting process.

If you do not want to format another diskette, enter **N** and press RETURN. You are returned to the A> prompt.

Hardware Configurations

1.4 ULTIMATE PC 110 SYSTEM BOARD SWITCH SETTINGS

The switch settings are located inside the PC on the left side of the floppy drive. They tell the system how much memory is available and what type of monitor you are using. They must be set before power up of the PC, or unpredictable results will occur. The switch bank towards the front of the unit is switch bank U131.

Switch Bank U131 Settings

Total System Memory

| SWITCH | 128K | 192K | 256K | 320K | 384K | 448K | 512K | or more |
|--------|------|------|--------|------|------|------|------|---------|
| 1 | on | on | on | on | on | on | on | |
| 2 | off | on | off | on | off | on | off | |
| 3 | on | off | off | on | on | off | off | |
| 4 | on | on | on | off | off | off | off | |
| 5-8 | | *** | ALWAYS | OFF | *** | | | |

Switch Bank U106 Settings

| SWITCH | ALL SYSTEM UNITS |
|--------|------------------|
| 1 | off |
| 2 | on |
| 3 | off |
| 4 | off |

Type Of Monitor Used

| | MONO. TEXT | COLOR OR MONO. GRAPHICS |
|---|------------|-------------------------|
| 5 | off | on |
| 6 | off | off |

Number Of Diskette Drives Installed

| | 1 | 2 | 3 | 4 |
|---|----|-----|-----|-----|
| 7 | on | off | on | off |
| 8 | on | on | off | off |

Hardware Configurations

1.5 CRT CABLE

The Ultimate PC/OS supports two additional serial devices, which may be either printers or terminals. The devices can be connected to the PC serial port(s) by using a cable with an RS232 interface and with the following wiring specifications.

| CRT (male) | CPU (male) |
|------------|----------------------------|
| 1 | 1 shield |
| 2 | 3 pair 1 (one wire) |
| 3 | 2 pair 2 (one wire) |
| 7 | 7 2nd wire from pair 1 & 2 |
| 4 & 5 | 8 \ pair 3 |
| 8 | 4 & 5 / |
| 6 | 20 \ pair 4 |
| 20 | 6 / |

Figure D.1 CRT Wiring Specifications

The cable (Belden 9504 or equivalent) consists of four twisted pairs of #24 stranded gauge wire. Around these four pairs is a foil shield, which has a bare wire wrapped around it. The bare wire is used for the ground connection to pin 1 on both ends of the cable.

If you are using a serial card with a 9-pin serial port, you will need a 9-pin to 25-pin adapter. Below is the configuration for that adapter.

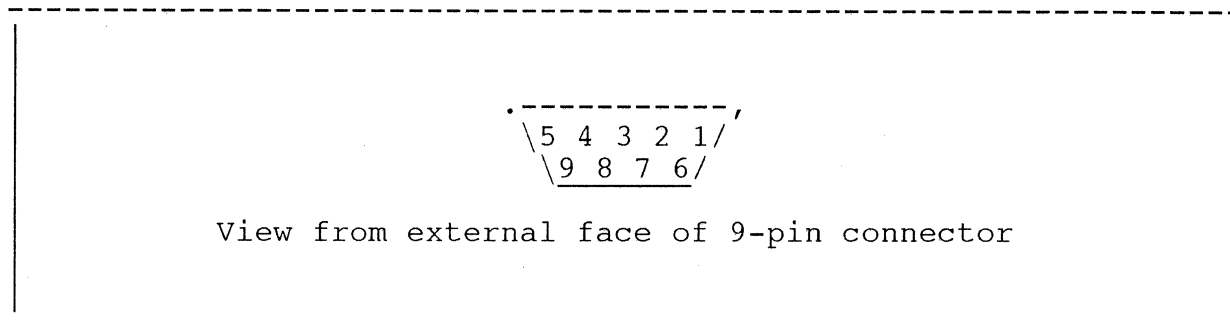


Figure D.2 Connector Layout

Wiring Specifications

Ultimate recommends that you use the following 9-pin to 25-pin conversion cable.

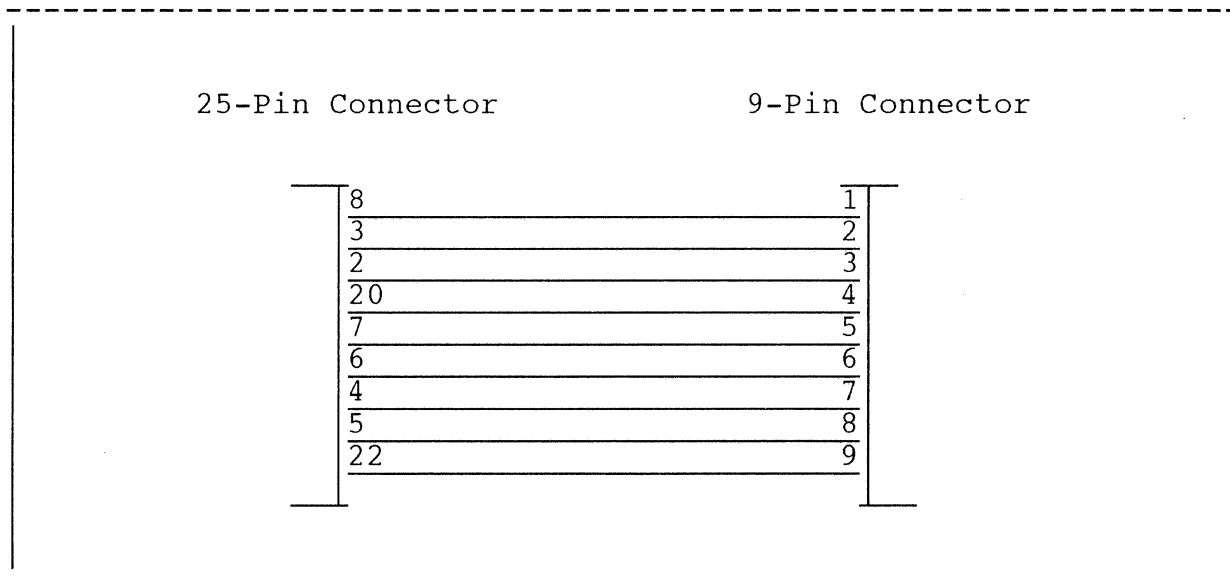


Figure D.3 Recommended Conversion Cable Pin Layout

The conversion cable should be approximately one foot long. It also should be hooked to a standard Ultimate CRT cable. This must be done because the conversion cable shield is not grounded.

When attaching nearby devices, you may also use the following conversion cable. This cable does not have a grounded shield wire.

Hardware Configurations

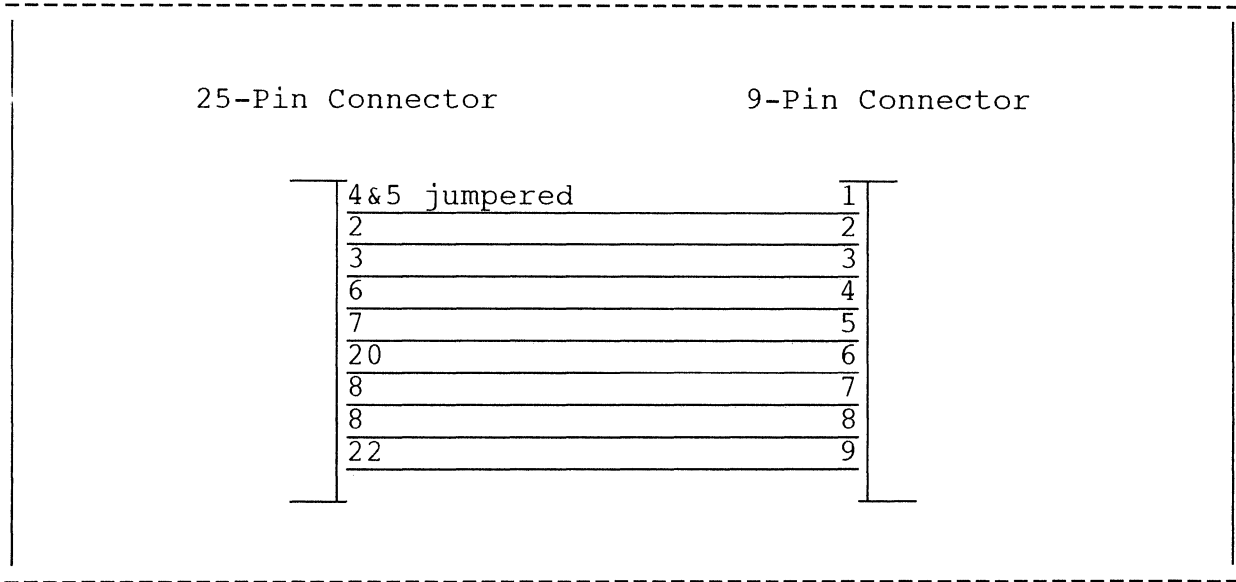


Figure D.4 Alternate Conversion Cable Pin Layout

9-Pin Connector Definitions

- 1 = Carrier Detect
- 2 = Received Data
- 3 = Transmitted Data
- 4 = Data Terminal Ready
- 5 = Signal Ground
- 6 = Data Set Ready
- 7 = Request to Send
- 8 = Clear to Send
- 9 = Ring Indicator

25-Pin Connector Definitions

- 2 = Transmitted Data
- 3 = Received Data
- 4 = Request to Send
- 5 = Clear to Send
- 6 = Data Set Ready
- 7 = Signal Ground
- 8 = Carrier Detect
- 20 = Data Terminal Ready
- 22 = Ring Indicator

Hardware Configurations

Serial/Parallel Port

There are two 4-pin jumpers located at the bottom left corner of the serial/parallel adapter board. They can be pulled up and reversed to change the address of the port. The serial ports 1 and 2 are addressed at locations 3F8 and 2F8, respectively. The parallel ports are addressed at 378 and 278. The diagram below shows that the serial jumper is located on top of the parallel jumper. Each can be individually addressed for port 1 or port 2.

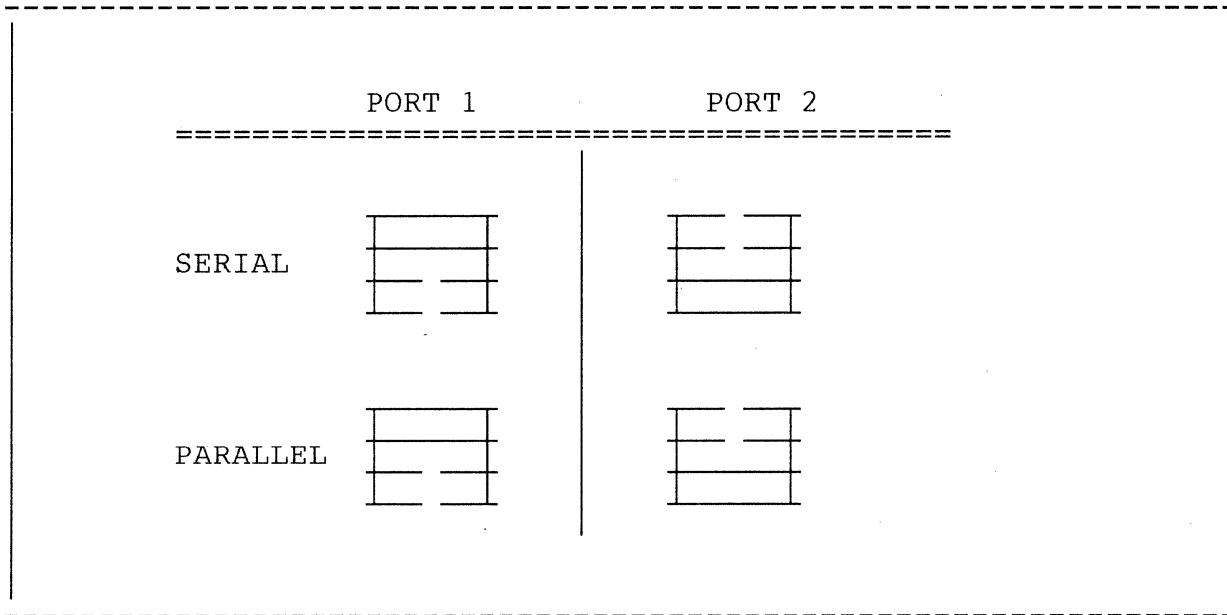


Figure D.5 Jumper Locations

Hardware Configurations

1.6 TAPE CONTROLLER

The Alloy ITS-100+ tape controller is an intelligent interface that allows a Cipher Microstream 9-track tape transport to communicate with the Ultimate PC.

Switch Bank 1

SB1 dip switches are used to define the I/O addressing. The address must be on a 4 byte boundary and must not exceed 03FC hexadecimal.

| addr | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------|-----|-----|----|----|----|-----|----|----|
| 0000 | on | on | on | on | on | on | on | on |
| 0010 | on | on | on | on | on | off | on | on |
| 0100 | on | off | on | on | on | on | on | on |
| 0100 | on | off | on | on | on | off | on | on |
| 0200 | off | on | on | on | on | on | on | on |
| 0210 | off | on | on | on | on | off | on | on |
| * 0300 | off | off | on | on | on | on | on | on |
| 0310 | off | off | on | on | on | off | on | on |

on=Closed
off=Open
*=Recommended address

Figure D.6 Settings For Switch Bank 1

Switch Bank 2

SB2 dip switches are used to define the tape drive compatibility mode of the tape controller. It is the switch bank with 4 dip switches. The required compatibility mode is Cipher F880.

Hardware Configurations

| 1 | 2 | 3 | 4 |
|----|----|----|----|
| on | on | on | on |

on=Closed
off=Open

Figure D.7 Settings For Switch Bank 2

Jumpers

Jumper E5 TO E6 Installed
Jumper E4 TO E5 Removed

Installation

Insert the ribbon cables, with red stripe up, into the 50-pin connectors. Make sure the cable leading to connection P1 on the tape unit is connected to the 50-pin connector closest to the back of the PC. Also make sure the cable leading to connection P1 on the tape unit is connected to the 50-pin connector closest to the front of the PC. The cable connection on connection P1 and P2 should have the red stripe to the right.

Hardware Configurations

1.7 COLOR CONTROLS

On terminals and PC monitors that support color, -30 to -51 are used for predefined background and foreground color combinations. If the color CRT is capable of controlling the background and foreground separately, -52 to -66 allow such control. The PC monitor must be using a terminal type of P to support the color controls. To change your terminal type, go to TCL and type:

TERM P and press RETURN.

To change the color on your monitor, go to TCL. Then, for example, enter `COLOR 43` and press RETURN. This command changes the color on your monitor to a blue background with a magenta foreground.

To change the color for BASIC, go to TCL. Then, for example, enter `PRINT @(-43)` and press RETURN. This command also changes the color on your monitor to a blue background with a magenta foreground.

For all the color choices, see the following table.

Hardware Configurations

Table D.2 Color Settings

| <u>Color Values</u> | <u>Background</u> | <u>Foreground</u> |
|---------------------|-------------------|-------------------|
| @(-30) | BLACK | CYAN |
| @(-31) | BLACK | RED |
| @(-32) | BLACK | BLUE |
| @(-33) | BLACK | GREEN |
| @(-34) | BLACK | MAGENTA |
| @(-35) | BLACK | YELLOW |
| @(-36) | BLACK | WHITE |
| @(-37) | BLUE | RED |
| @(-38) | BLUE | GREEN |
| @(-39) | BLUE | WHITE |
| @(-40) | BLUE | YELLOW |
| @(-41) | BLUE | RED |
| @(-42) | BLUE | CYAN |
| @(-43) | BLUE | MAGENTA |
| @(-44) | WHITE | RED |
| @(-45) | WHITE | GREEN |
| @(-46) | WHITE | BLUE |
| @(-47) | WHITE | CYAN |
| @(-48) | WHITE | MAGENTA |
| @(-49) | WHITE | BLACK |
| @(-50) | RED | WHITE |
| @(-51) | RED | GREEN |
| @(-52) | PRIOR | BROWN |
| @(-53) | PRIOR | WHITE |
| @(-54) | PRIOR | RED |
| @(-55) | PRIOR | MAGENTA |
| @(-56) | PRIOR | YELLOW |
| @(-57) | PRIOR | GREEN |
| @(-58) | PRIOR | CYAN |
| @(-59) | PRIOR | BLUE |
| @(-60) | BROWN | PRIOR |
| @(-61) | WHITE | PRIOR |
| @(-62) | BLACK | PRIOR |
| @(-63) | RED | PRIOR |
| @(-64) | BLUE | PRIOR |
| @(-65) | CYAN | PRIOR |
| @(-66) | MAGENTA | PRIOR |

Storing Diskettes

APPENDIX E: STORING DISKETTES

Because diskettes are delicate and sensitive, you should observe the following rules when you are handling or storing them:

- Keep diskettes in their protective envelopes when you are not using them.
- Do not touch the exposed part of the diskette.
- Do not bend diskettes.
- Never place anything heavy on top of a diskette.
- Do not set diskettes on magnetic devices, such as television sets, electric motors, and computer terminals.
- Store diskettes in an environment that is never warmer than 80 degrees or colder than 40 degrees Fahrenheit.
- Keep diskettes away from sources of moisture and humidity.
- Keep diskettes away from dust, smoke, and other particle matter.



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