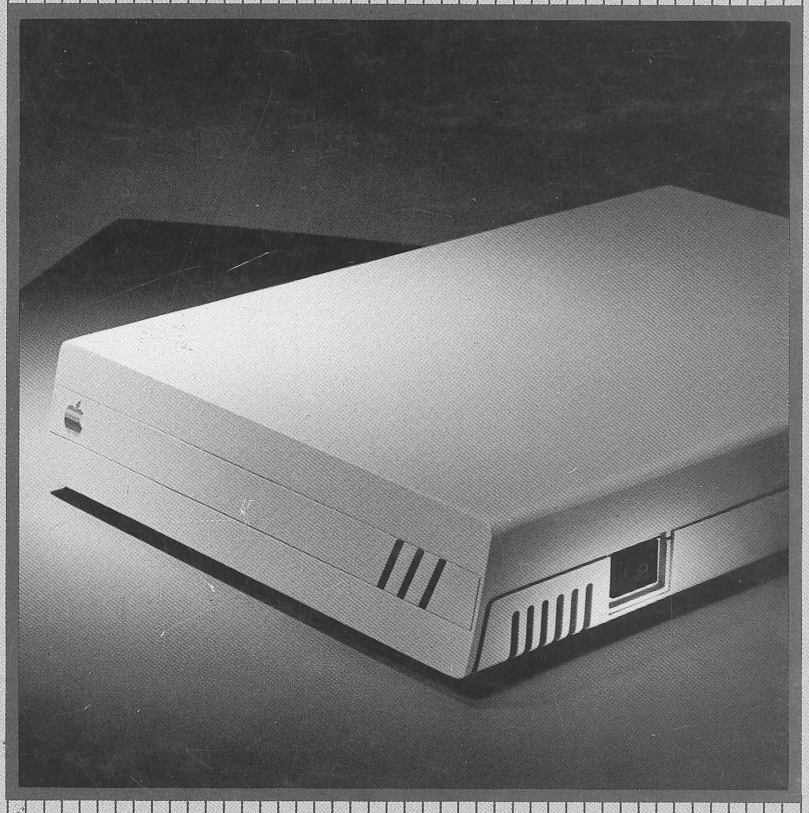
Apple

AppleLine User's Manual



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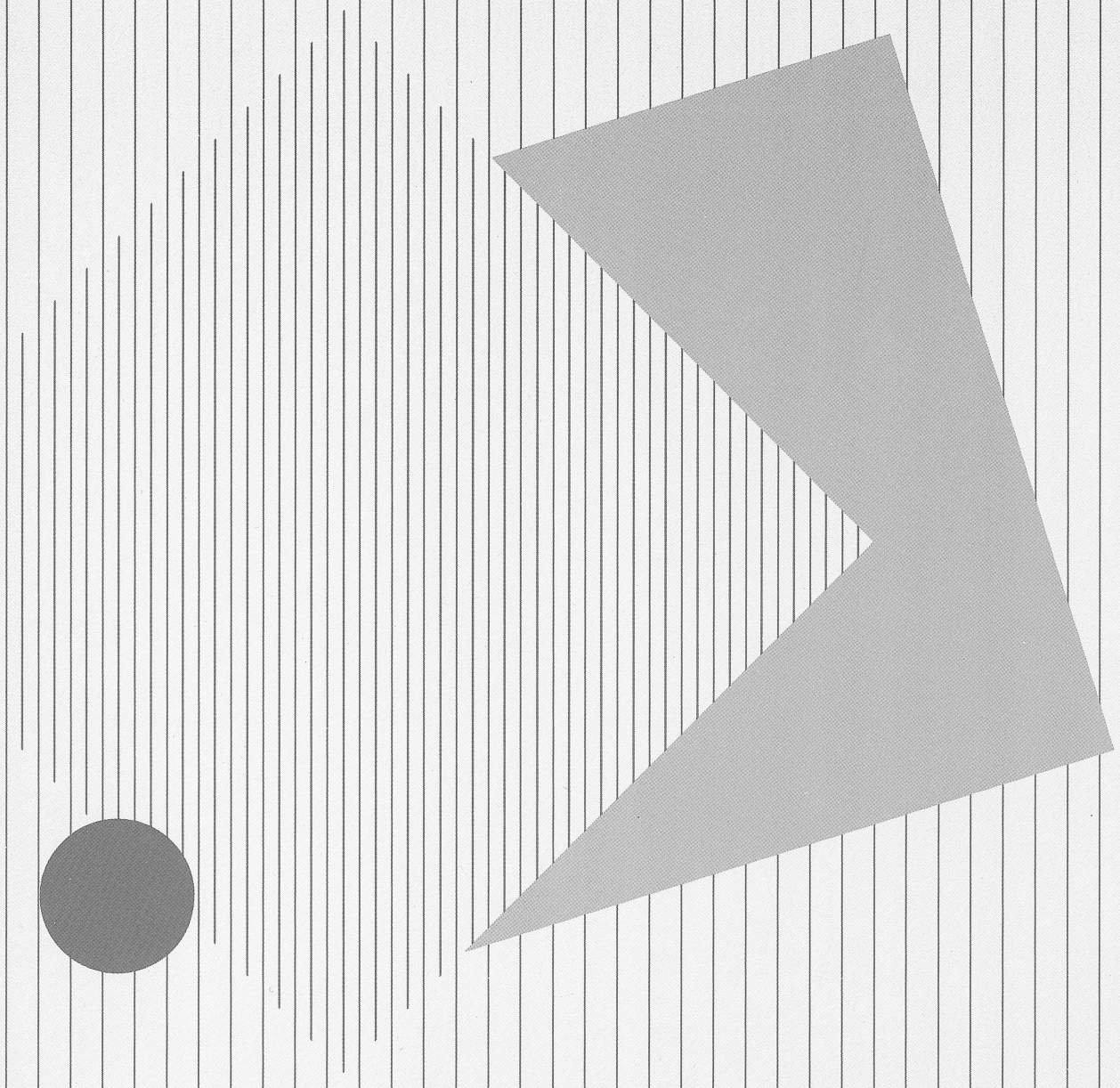
Apple

AppleLine User's Manual

Part I: Reference



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About This Manual

The *AppleLine™ Owner's Manual* is really three books in one, separated by cardboard dividers. This front section is the first one you should read. It tells you what your AppleLine does, and how to install, test, and operate it.

The second and third sections comprise **Part II** of this manual, and describe how to marry the AppleLine to your specific Apple computer model. You will need to refer to the appropriate Part II when you reach the last stages of installing your AppleLine, before you begin operation.

If your computer is a Macintosh: Part II of this manual is included in the *MacTerminal* manual.

What's Inside

This manual is designed to put the facts you need at your fingertips, where you can find them easily. Here is a summary of its contents:

- Chapter 1, **Getting Acquainted,** explains what your AppleLine does. It also contains pictures of the unit with its parts labeled, and describes your AppleLine's controls and indicator lights.
- Chapter 2, **Installing Your AppleLine,** tells you how to find a suitable location for your AppleLine and how to start hooking it up. The last part of the hook-up procedure is covered in Part II of this manual.
- Chapter 3, **Passwords and Communication Parameters,** describes how you get your AppleLine ready to work for you by sending it certain information from your Apple keyboard.
- Chapter 4, **Testing and Maintenance,** specifies tests that you can perform to verify that your AppleLine is working correctly, and tells you how to keep it that way.

- Chapter 5, **Using Your AppleLine,** explains how to operate the unit from the keyboard of your Apple computer. Additional information is included in Part II.
- **Part II for the Apple III** is a continuation of Part I of the AppleLine User's Manual written specifically for Apple III computer users.
- **Part II for the Lisa Computer** is a continuation of Part I of the AppleLine User's Manual written specifically for Lisa computer users.
- Appendix A, **Specifications,** is written for technical specialists who need a summary of the AppleLine's electronic and physical characteristics.
- Appendix B, **Connecting Cables,** specifies the kinds of cables you need to hook up your AppleLine.
- A **Glossary** is included at the end, so you can quickly look up any words that are not familiar to you.

What To Read

You should read Chapters 1 and 2 in Part I first, to become familiar with your AppleLine and learn how to hook it up to the IBM computing system. Following that you should read the Part II that applies to your Apple computer. Part II tells you the following:

Contents of Part II

- How to hook your AppleLine up to your computer, completing its installation.
- How to set up your communications program to work with the AppleLine.
- How to use the keyboard and controls of your computer to produce the same results as if it were an IBM 3278-2 terminal.
- How to save the information that you receive from the IBM mainframe.

You may not need to read all of this manual. For some tasks you can skip certain parts. Here is a chart that shows which chapters pertain to each activity:

Task	Part I					Part II	
	1	2	3	4	5	1	2
Installing your AppleLine	●	●	●	●		●	
Using your AppleLine	●				●		●
Changing passwords			●		●		
Testing your installation				●			

Further Information

This manual is written with the assumption that you are already familiar with operating your Apple computer. If this is not the case, you should read your Apple's *Owner's Guide* before proceeding.

Other publications that may help you work with your AppleLine are these:

- The user's guide for the terminal program you are using: *Apple Access 3270 User's Manual*, *LisaTerminal* manual, or *MacTerminal* manual
- *Apple Modem 300/1200 User's Manual*
- *3278 Display Station Operator's Guide* (IBM No. GA27-2890)
- *An Introduction to the IBM 3270 Information Display System* (IBM No. GA27-2739)

Optional Publications

- *IBM 3270 Information Display System 3274 Control Unit Description and Programmers Guide* (IBM No. GA23-0061)
- *IBM 3270 Information Display System Data Stream Programmer's Reference* (IBM No. GA23-0059)
- *IBM 3270 Information Display System Configurator* (IBM No. GA27-2849)
- *IBM 3270 Information Display System Character Set Reference* (IBM No. GA27-2837)
- *IBM 3270 Information Display System Library User's Guide* (IBM No. GA23-0061)

Aids to Understanding

If you don't understand a technical term in the manual, look it up in the Glossary found in the back of this manual. Definitions for most such items can be found in the marginal notes, the Glossary, or both. In addition, watch for these visual aids:

Gray Boxes: Gray boxes contain incidental information that you may find useful.

Warning

Warning boxes caution you about things that might hurt you or your Apple equipment or software.

```
Screen boxes represent information as it will
appear on your computer's display screen.
```

Captions, definitions, and other short items appear in marginal notes like this.

Getting Acquainted

This chapter introduces you to the AppleLine. It tells you what it does and helps you find its controls and indicator lights.

What the AppleLine Does

You are already familiar with using your Apple system as a personal computer. By adding the AppleLine, you give your Apple a new capability: you can now use it to communicate with an IBM mainframe computer.

When you tell it to do so, the AppleLine makes your Applescreen and keyboard act like an IBM 3278-2 Terminal configured with a 75 or 87 keyboard, connected to an IBM 3274/3276 Control Unit. This gives you the freedom to choose among these basic functions:

- You can still use your Apple as a personal computer, with all its present capabilities.
- At any time you can switch to using your Apple as if it were a 3278-2 terminal; it will be able to communicate with an IBM mainframe computer.
- With the proper software, you can transfer data between your Apple personal computer and an IBM mainframe computer.

The AppleLine lets your Apple talk to IBM

This flexibility adds new power to your Apple computing tools. At the office, for example, you can switch back and forth between personal computer applications and IBM jobs. At home, you can use your Apple computer to communicate remotely, over telephone lines and a pair of *asynchronous modems*, with an IBM mainframe at your office. You get all the convenience of Apple computing combined with the power of a large mainframe system.

Asynchronous: Having a variable time interval between characters. A mode of data transmission which provides framing information on a character-by-character basis.

Modem: Short for "modulator-demodulator"; a device that allows computing equipment to exchange data over telephone lines.

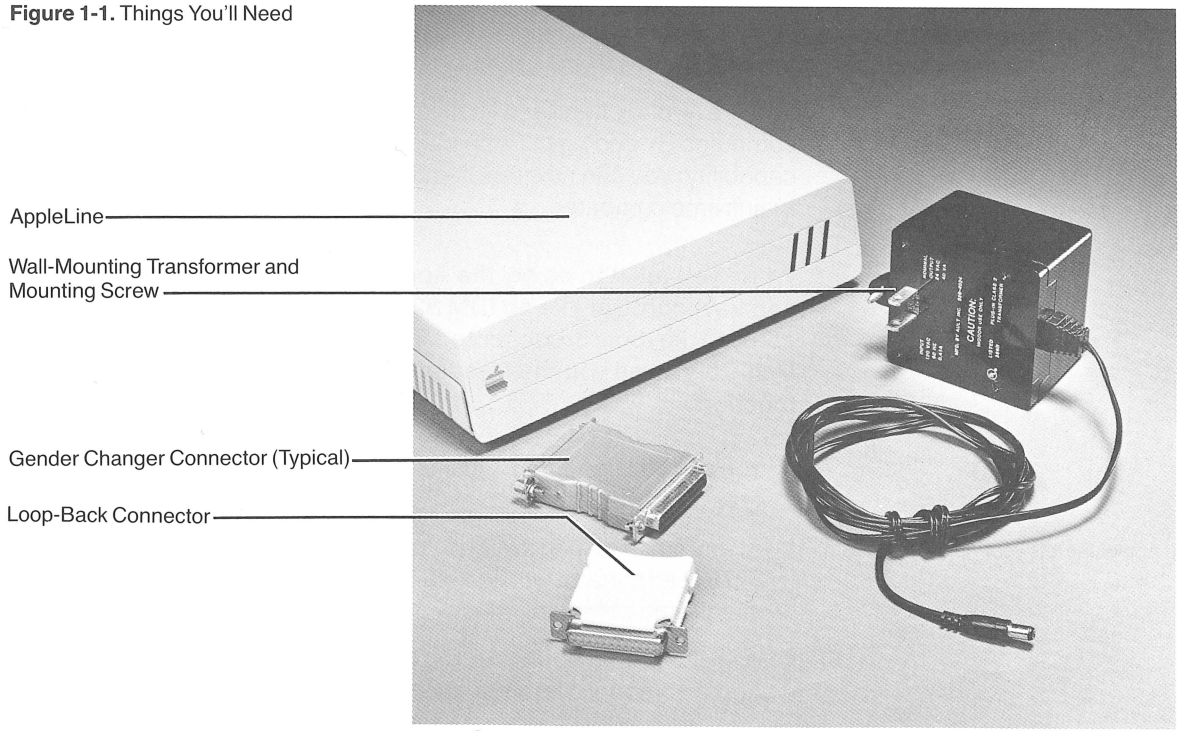
Names of Parts

In addition to your AppleLine and an Apple computer, you'll need the items listed below and shown in Figure 1-1.

Inventory of equipment

- Communications software (not supplied)
- Interface cable (not supplied, see Appendix B)
- Wall-mounting **transformer unit** and mounting screw
- **Gender changer** connector
- **Loop-back connector**
- Small flat-blade screwdriver (not supplied)

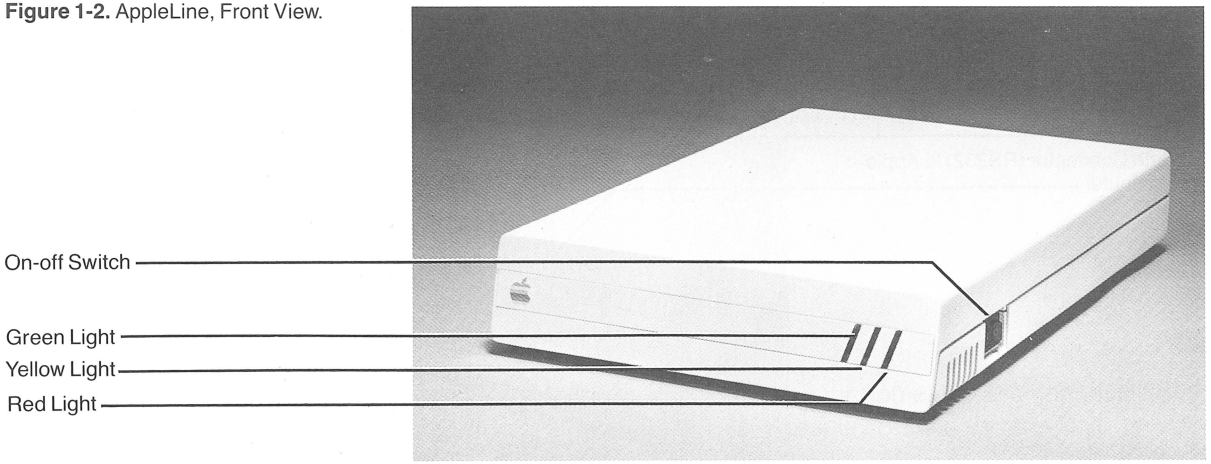
Figure 1-1. Things You'll Need



These pieces of equipment are described in the rest of this manual. If any items are missing, contact your Apple dealer.

Figure 1-2 shows you a front view of the AppleLine unit; Figure 1-3 shows you a rear view. The parts you need to know about are labeled.

Figure 1-2. AppleLine, Front View.



Here is a short description of the parts labeled in Figures 1-2 and 1-3.

On-Off Switch

The **on-off switch** controls all power to the unit. If it is switched off you cannot use your AppleLine but you can continue to use your Apple computer. It is **off** when the end marked "0" is pressed in; it is **on** when the end marked "1" is pressed in. When it is on, you will hear a low hum from your AppleLine's cooling fan.

Indicator Lights

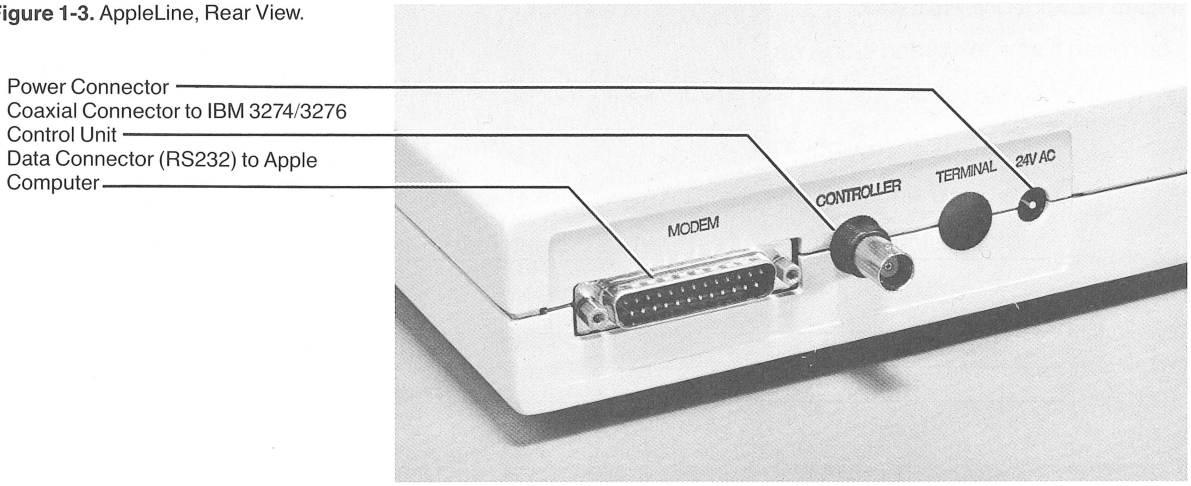
Three colored lights become visible, when they are lit, on the front of the AppleLine. When they are dark they are hidden behind the front panel strip. They tell you when certain events are occurring.

The **green** light blinks when your AppleLine is switched on and working properly. This tells you that its internal circuits are OK.

The **yellow** light tells you the communication status of your AppleLine. When you call it up, the yellow light blinks once a second; when a good connection is established, it glows steadily.

The **red** light tells you if something is wrong. It blinks once if there is a temporary communication problem. It will glow steadily if there is an equipment failure.

Figure 1-3. AppleLine, Rear View.



Connectors

On the back panel of your AppleLine are three connectors:

- A socket for the cable that is part of the AC transformer unit.
- A socket for a coaxial cable to the IBM 3274/3276 Control Unit.
- A socket for the serial cable to your Apple computer.

The use of these connectors is explained more fully in Chapter 2.

Installing Your AppleLine

This chapter tells you how to install your AppleLine and connect it to an IBM 3274 Control Unit or 3276 Display Station/Control Unit.

Part II, located near the back of this manual, tells you how to hook up and use your AppleLine with your specific model of Apple computer.

Installing your AppleLine requires these basic procedures:

Installation steps

- Choosing a location for your AppleLine and planning its communication links with your Apple and with the IBM 3274 Control Unit or 3276 Display Station/Control Unit.
- If necessary, configuring the IBM system to accept a 3278-2 type terminal with either a 75 or 87 keyboard.
- Connecting your AppleLine to power, to the IBM equipment, and to your Apple computer.

Choosing the AppleLine Location

The AppleLine unit is normally connected both to your Apple computer and to an IBM Model 3274 Control Unit (with a Type A Terminal Adapter) or 3276 Display Station/Control Unit (or equivalent), which is part of an IBM mainframe system. In planning its installation, you must usually choose one of two options:

- Place the AppleLine next to your Apple computer and connect it to the IBM Control Unit by a coaxial cable; or
- Place the AppleLine at a location that is distant from your Apple computer but convenient to the IBM Control Unit. In this case your Apple and the AppleLine must communicate over a telephone circuit, using a pair of asynchronous modems.

By The Way: Apple makes both 300 baud and 1200 baud modems which are asynchronous and will work perfectly in this capacity.

Location factors

The unit must be located in a clean, indoor environment, and have a source of AC power nearby. It is designed to rest on a flat horizontal surface. Do not place it on a carpet or other uneven surface that might impede the flow of air through the louvers on the bottom of its case.

This section describes the two types of hook-up that result when the AppleLine unit is installed next to your Apple and when it is installed away from your Apple.

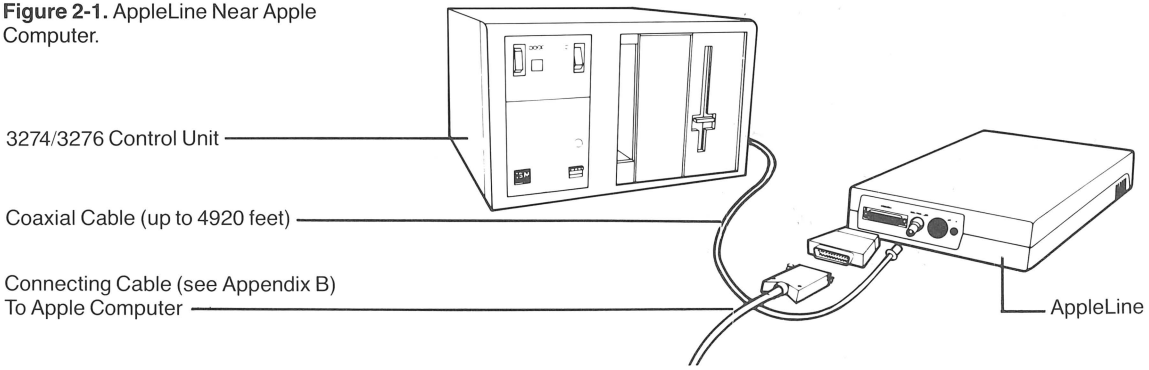
Installing the AppleLine Near Your Apple

Your AppleLine connects to your Apple computer with a cable (or two cables end to end) having a maximum total length of 5 meters (16 feet). If necessary, you can plug the Gender Changer included in your AppleLine package into the AppleLine to convert its connector from pin-type to socket-type. For connecting cable requirements and a list of standard Apple cables you can use, see Appendix B.

BNC Connector: A special type of circular plug with a twist-on bayonet shell, used with coaxial cable.

The IBM 3274 Control Unit is housed in a cabinet; the IBM 3276 Display Station/Control Unit is a desk-top terminal. Either one connects to the AppleLine unit with a coaxial cable terminating in a *BNC connector*. This cable may be up to 1,500 meters (4,920 feet) long. A typical hook-up is diagrammed in Figure 2-1.

Figure 2-1. AppleLine Near Apple Computer.

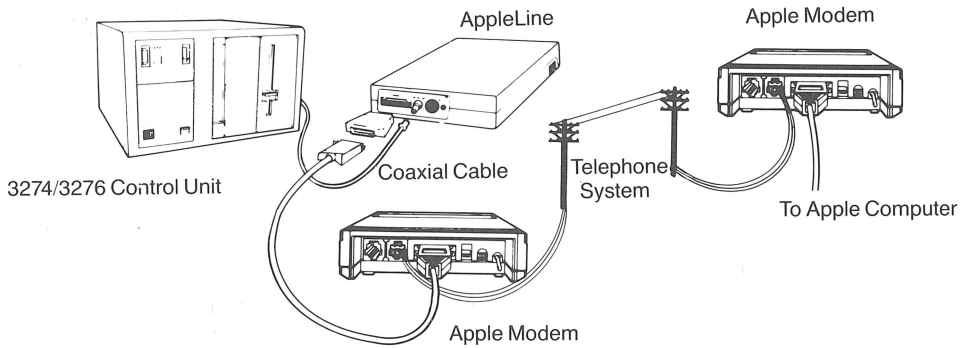


If you are installing your AppleLine at the office, you may already have a coaxial cable connection from the IBM computer center right at your desk. If not, check with your mainframe service representative or data processing specialist for the best way to acquire such a connection.

Installing the AppleLine Away From Your Apple

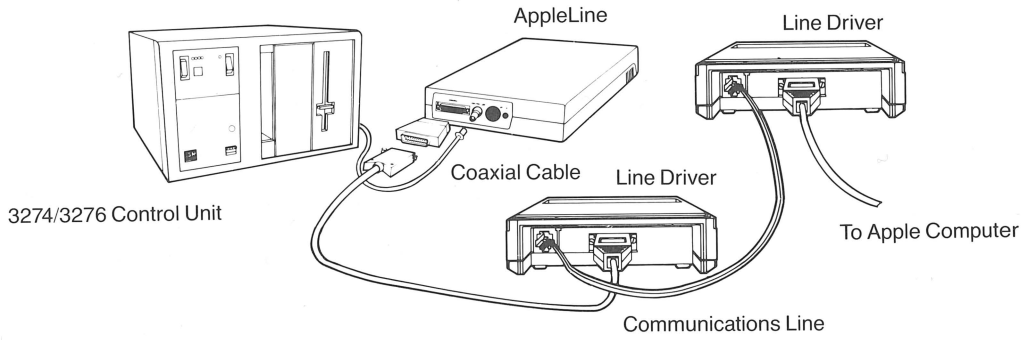
If your AppleLine and your Apple computer must be more than 5 meters away from each other (in order for the AppleLine to reach the IBM Control Unit), then they cannot be connected with ordinary cable. They must communicate by means of telephone lines and a pair of asynchronous modems, like the Apple Modems, (diagrammed in Figure 2-2) or a pair of line drivers (short haul modems) as diagrammed in Figure 2-3.

Figure 2-2. AppleLine Remote From Apple Using Telephone Lines



For instructions on hooking up and operating Apple Modems, consult the *Apple Modem 300/1200 User's Manual*.

Figure 2-3. AppleLine Remote From Apple Using Line Drivers



Configuring the IBM System

If your AppleLine is replacing a working 3278-2 terminal installation configured with a 75 or 87 keyboard, the IBM system should not require reprogramming to accept it. After installing the AppleLine, you can use the same routines and passwords on your Apple as you previously used on the 3278-2 terminal.

If your AppleLine constitutes a new terminal for the IBM system, you should talk to the personnel in charge of the IBM equipment. Explain that your AppleLine emulates a 3278 Display Unit, Model 2. The host computer personnel may need to reconfigure the IBM Network Control Program (NCP) to add your equipment. After the host has been reconfigured, the host computer personnel will assign you a user ID and password for entry into the IBM system, and will explain any special operating procedures you need to know in order to use it.

Procedures at the IBM end

At this time you can also describe how you plan to install your AppleLine, and discuss any problems about coaxial cables or telephone lines with the appropriate people.

Completing the Hook-Up

Before trying to hook up your AppleLine or turn it on, you should have completed the procedures described in the previous parts of this chapter:

- Deciding on a location for your AppleLine and acquiring all the necessary communication facilities.
- If necessary, working with the IBM computer personnel to configure the mainframe to accept your AppleLine.

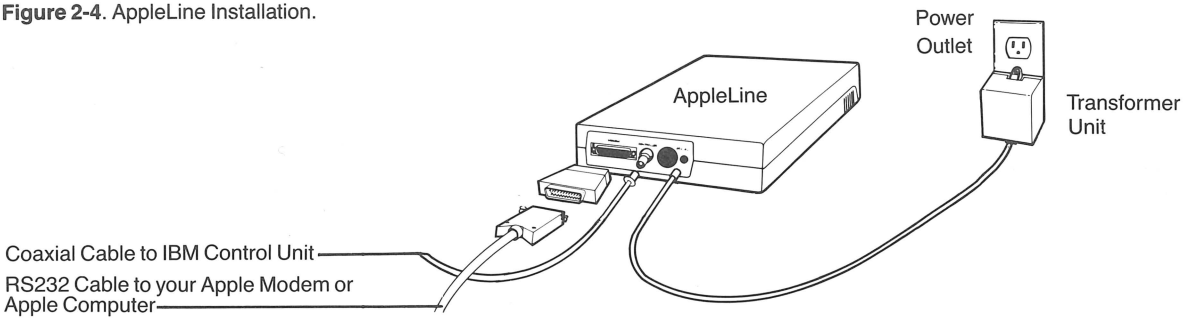
Summary of hook-up steps

When these tasks are finished, you are ready to complete the hook-up. It consists of three steps:

1. Connecting your AppleLine to power.
2. Connecting your AppleLine to the IBM Control Unit.
3. Connecting the AppleLine to your Apple computer.

Steps 1 and 2 are described below. Step 3 is described in Part II of this manual. Figure 2-4 is a block diagram of how the parts of your AppleLine installation should be arranged.

Figure 2-4. AppleLine Installation.



The Power Connection

Your AppleLine operates on 24 volts AC, which is provided by a separate plug-in transformer. The transformer unit is a small cubical box included in your AppleLine package, with a six-foot wire that connects it to the AppleLine. It has two flat prongs that plug into a standard AC outlet.

Warning

Before plugging in the transformer to AC power, verify that its input rating is the same as your local power. Its input voltage and frequency are listed to the left of its plug-in pins. For use in North America, this should read "120 VAC 60 HZ."

Follow this procedure to hook your AppleLine up to AC power:

1. Turn its switch OFF ("0" end in, "1" end out).
2. Plug the end of the wire from the transformer unit into the socket marked "24V AC" on the back panel of your AppleLine.
3. Find a convenient wall outlet within six feet of your AppleLine.
4. Remove the center screw that holds the cover plate on the outlet. Do not remove the cover plate.
5. Plug the prongs on the transformer unit into the outlet. If the outlet is a double one, plug the transformer unit into the lower socket so that the body of the transformer hangs below the outlet.
6. Insert the screw that came with the transformer unit through its mounting ear and into the hole in the center of the outlet's cover plate. Run the screw down firmly but not too tightly.

Installing the transformer

When your AppleLine is switched off, the transformer will continue to consume a small amount of power — about as much as an electric clock. When your AppleLine is switched on, it consumes a maximum of 50 watts of power.

The IBM Connection

Your AppleLine communicates with the IBM 3274 (with a Type A Terminal Adapter) or 3276 Display Station/Control Unit by means of a coaxial cable (similar to that used in cable television systems). The coaxial cable terminates in a BNC connector, which plugs directly onto the back of your AppleLine unit.

Warning
If such a cable and connector is not already supplied to your AppleLine's location, ask a mainframe computer technician to install one. Unless you are experienced in mainframe computer installations do not try to rig it up yourself.

Hooking up to the coaxial cable

To hook your AppleLine up to the IBM coaxial cable, plug the BNC connector on the end of the cable onto the connector marked CONTROLLER on the back panel of your AppleLine. See Figure 2-3. Align the two slots with the side pins, push the connector down, and secure it by twisting it one-quarter turn clockwise.

The Apple Connection

Instructions for hooking your AppleLine up to your Apple computer are given in Part II of this manual, Chapter 1. **Read that chapter now, and complete its instructions before proceeding further.**

Reminder: There are *two* Part II sections at the back of this manual — one for Apple III users and one for Lisa computer users. Read only the section which pertains to *your* computer. If your computer is a Macintosh, Part II of this manual is included in the *MacTerminal* manual.

Passwords and Communication Parameters

This chapter tells you how to enter certain information into your AppleLine's memory, using its built in **supervisor program**, so that it knows how to recognize you and communicate with your Apple computer. Before following the instructions in this chapter, you must have completed the following:

- Installed your AppleLine and connected it to the IBM Control Unit, as described in Chapter 2.
- Connected your AppleLine to your Apple computer, as described in Part II, Chapter 1.
- Followed the procedure given in Part II, Chapter 1, for gaining access to your AppleLine's supervisor program for the first time.

At this point your Apple computer's monitor screen should be displaying the supervisor menu shown in Table 3-1.

Table 3-1. Supervisor Menu

A - Display terminal type and modem settings
B - Modify terminal type and modem settings
C - Change USER or SUPERVISOR passwords
D - Logoff and hang up modem
E - Logoff and return to logon screen

Nonvolatile Memory: A type of memory that will retain information even when the power is switched off.

If you are installing your AppleLine, your final task is to use the supervisor program to tell your AppleLine how you want it to behave. The AppleLine supervisor program helps you by asking you a series of questions. You type replies on your Apple keyboard; it stores the replies in your AppleLine's *nonvolatile memory*. This stored information is of two kinds:

Password: A string of characters you must type on your keyboard before the AppleLine will respond to your commands.

Communication Parameters: Information that tells your AppleLine how to talk to your Apple.

- *Passwords* that allow your AppleLine to recognize you, while prohibiting others from using your AppleLine to communicate with the IBM Control Unit.
- A set of *communication parameters* that tells your AppleLine exactly how you want it to communicate with your Apple.

Other Passwords and Communication Parameters: This chapter discusses only the ways that your AppleLine and your Apple computer communicate with each other. A complete AppleLine installation involves other systems, including data transmission facilities and the mainframe computing system, each of which may have its own passwords and parameters. For information about these other systems, consult the appropriate computer operators or instruction manuals.

The AppleLine Supervisor Program

The supervisor program is built into your AppleLine; you don't need to load it from a disk. It has these functions to help you store password and parameter information in your AppleLine's memory:

- It tells you what communication parameters are currently stored.
- It helps you change them and store the new version.
- It allows you to create new passwords.

What the AppleLine supervisor program does

Using the Supervisor Program

The first time you gain access to your AppleLine's supervisor program you must follow the special procedure given in Part II, Chapter 1, sending the autobaud message and the default supervisor password `APPLES`.

After the first time you gain access to the supervisor program by following the normal log-on procedure described in Chapter 5, using the new supervisor password that you assigned the first time.

Either way — the first time or later times — your AppleLine begins its supervisor program by displaying the menu shown in Table 3-1. Underneath this menu, AppleLine displays the message

```
Your selection [logoff and return to logon
screen]:
```

Choosing a supervisor task

Notice that it has already picked one possible choice — logoff and return to logon screen. If you want to do this, just press RETURN. Otherwise, type the letter that is displayed in front of the choice you want. For example, if you want to modify the terminal type or modem settings, press B RETURN on your Apple keyboard.

The specific jobs you can do with your AppleLine's supervisor program are described below.

Displaying the AppleLine's Settings

From the supervisor menu, when you press A RETURN to `Display terminal type and modem settings`, your AppleLine displays a list of its communication parameter settings. The first time you use the supervisor program, these will be the default values shown in Table 3-2. Later, they will be whatever values you have created by using the supervisor's "Modify settings" command.

Table 3-2. Default Supervisor Settings.

Current terminal type is "VT100".
Current BAUD RATE is "9600".
Current data PARITY is "Even".
AUTOBAUD is "Enabled".
SPEED INDICATOR is "Disabled".
Current MODEM type is "Local connect".
Current AUTO LOGOFF is "Disabled".

Modifying the AppleLine's Settings

From the supervisor menu, when you press B RETURN to `Modify terminal type and modem settings` your AppleLine starts running through the settings of all its communication parameters. For each one, it asks you whether or not you want to change the existing value. For an explanation of all these parameters and a discussion of your possible choices of settings, see the section "Communication Parameters" later in this chapter.

Wherever AppleLine asks you

```
Is this correct?[Y]
```

you can press RETURN to retain the existing setting. If you want to change the setting, follow this procedure:

1. Type N RETURN for "No." AppleLine responds by displaying a list of all your possible choices.
2. Type the letter that appears to the left of the choice you want, followed by RETURN.
3. AppleLine responds by changing the setting and asking you if the new value is correct.
4. Press RETURN to accept the new setting. If you made a mistake, press N RETURN to make another choice.

Changing Passwords

From the supervisor menu, when you press C RETURN to `Change USER or SUPERVISOR passwords` your AppleLine responds by giving you an opportunity to change its passwords. In each case, it will ask you for a new password and then repeat what you have typed to make sure that it is correct. For the rules governing password creation and use, see the section "Passwords" later in this chapter.

If you forget a password: Once you have entered a password into your AppleLine's memory, there is no way to make your AppleLine tell you what it is. If you forget a password you can either use the supervisor program to enter a new one, or you can force your AppleLine to return to its default password settings by the procedure described below under "Unlocking the Supervisor."

Exiting the Supervisor Program

From the supervisor menu, when you press either D RETURN to `Logoff and hang up modem` or E RETURN to `Logoff and return to logon screen` your AppleLine responds by quitting the supervisor program. At this time it asks you if you want to save the current values of its passwords and communication parameters (including any changes you have just made). If you want your AppleLine to use these values henceforth, press Y and RETURN for yes. If you press N and RETURN for no, your AppleLine will forget any changes you made to its passwords or communication parameters during your current session with the supervisor program.

If after typing Y and pressing RETURN to save the changes, the AppleLine responds by displaying the following message:

```
** Non-volatile memory has failed. **
** Parameters may not be correct.  **
```

Saving new passwords and communication parameters

Try saving the changes again. To do this press N and RETURN for no, when you are asked if you really want to leave the supervisor program. AppleLine will return to the supervisor menu. Try the procedure again. If the error message is displayed again, your AppleLine needs service. Contact your Apple dealer for assistance.

If you typed D RETURN as your selection from the supervisor menu, your AppleLine completes the session by terminating communication with your Apple computer. If you typed E RETURN, it returns to the beginning of the log-on procedure.

In either case, your AppleLine first asks you if you really want to leave the supervisor program. Type RETURN to say yes. If you press N RETURN for no, AppleLine will return to the supervisor menu.

Passwords

The AppleLine memory holds one **supervisor password** and four **user passwords**. These passwords control the user's access to the AppleLine according to the following rules:

Rules for using passwords

- An operator who knows the supervisor password can use your AppleLine's supervisor program, and hence can change any of the supervisor or user passwords and modify the AppleLine's settings.
- An operator who knows any one of the user passwords but does not know the supervisor password can use your AppleLine to communicate with the IBM mainframe, but cannot change the passwords or modify the AppleLine's settings.
- An operator who does not know any of the passwords cannot use your AppleLine at all.

Default Passwords

The first time you use your AppleLine, it recognizes the supervisor password `APPLES` and these four user passwords:

```
APPLE1
APPLE2
APPLE3
APPLE4
```

Because these codes are the same for every AppleLine manufactured, you will normally want to use the supervisor program to change the passwords.

Warning
Since an operator can gain access to the AppleLine by entering either the supervisor password or any one of the four user passwords, **you must change them all** to achieve security.

Password Formation Rules

An AppleLine password may be a real word, someone's name, a number, or a meaningless string of characters. However, it must obey these rules:

- It must be at least 3 characters long and not more than 8.
- It may contain any combination of upper or lower case letters, numerals, and punctuation marks.
- It may not contain any control characters (TAB, ESCAPE, etc.)
- If the supervisor password is the same as any of the user passwords, the supervisor becomes inaccessible; see below, "Locking the Supervisor."

Here are some examples of valid passwords:

Dept 275	MARSON	#32
(A21xm3$!	0510414	Sesame

Note: When interpreting a password, AppleLine does not distinguish between capital and lower case letters. For example, it treats "Sesame" and "SESAME" as identical.

Locking the Supervisor

Making the supervisor program inaccessible

In certain circumstances you may wish to make the supervisor program inaccessible. To do this, just change the supervisor password so that it is identical to one of the user passwords. Because AppleLine looks first for a user password when you log on, it will never recognize the combination you type as the supervisor password.

Unlocking the Supervisor

If the AppleLine's supervisor program becomes inaccessible, either because you have locked it as just described or because you have forgotten the supervisor password, you can unlock it. Here is what to do:

If you forget your passwords, return your AppleLine to its default settings.

1. Turn your AppleLine's power switch OFF.
2. Unplug the cable that goes to your Apple computer or modem.
3. Insert in its place the loopback plug that is included in your AppleLine package.

4. Turn the power switch ON. Wait until your AppleLine's yellow light starts blinking.
5. Remove the loopback plug (with the power still on).
6. Wait five seconds. Turn the power switch OFF.
7. Reconnect the cable that goes to your Apple computer or modem.
8. Turn the power switch back ON.
9. Perform the entire procedure listed in Part II, Chapter 1 of this manual under "Entering Passwords and Communication Parameters."

Note: To prevent unauthorized persons from performing this procedure, keep your loopback plug in a secure place.

The forgoing procedure changes the supervisor password back to `APPLES` and the four user passwords back to `APPLE1` through `APPLE4`. It also resets all the communication parameters to their default values. These settings are listed in Table 3-2. This is why you need to complete this routine by entering new passwords and communication parameters, as if you were setting up your AppleLine for the first time.

Communication Parameters

Your AppleLine is capable of communicating with your Apple computer in a variety of ways. You can change its behavior by changing its communication parameters, using the supervisor program as explained earlier. Your choices are described in the rest of this section.

Terminal Type

This entry tells your AppleLine what type of equipment you have. You have these choices:

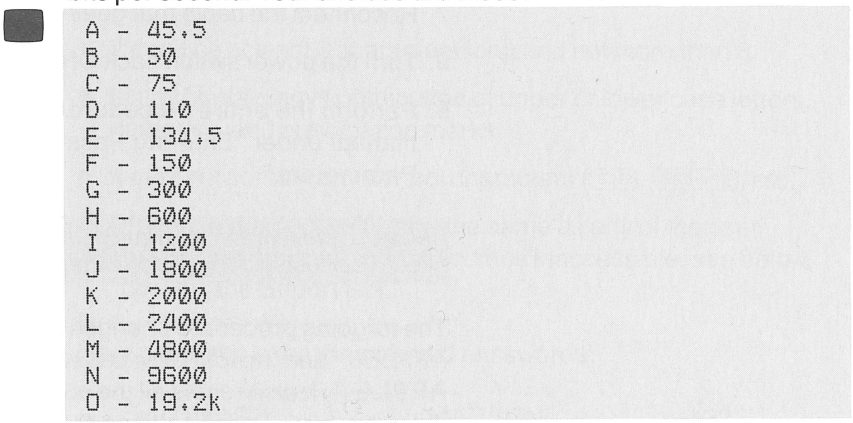
The settings you can choose

```
A - LisaTerminal
B - MacTerminal
C - Access 3270
D - VT100
```

Type the appropriate letter for the communication program you are using, followed by RETURN.

Baud Rate

This entry tells your AppleLine the speed at which it must communicate with your Apple. The speed is measured in *baud*, or bits per second. Your choices are these:



Usual baud rate is 9600 for a direct connection

A speed of 9600 baud is the normal setting for this parameter when a direct (local) connection is used (press N RETURN). However, you may need to set it to a slower rate if your AppleLine communicates with your Apple through a modem that cannot handle 9600 baud (the most common speeds are 1200 or 300 baud). In any event, it should be the same as the transmission speed you specified when you configured the communication program in your Apple computer (see Part II of this manual, Chapter 1).

Parity

The parity setting activates an automatic error-checking routine, designed to detect mistakes in data transmission. If such a mistake occurs, the AppleLine rejects the faulty part of the message and blinks its red light (see Chapter 1, "Indicator Lights"). There are several ways to check parity:

Usual parity setting: even

If you set your AppleLine to one of the first four choices, you must make sure that your Apple is configured the same way (see Part II of this manual, Chapter 1). The most common choice is **even** parity. If you set it to the last choice (no parity) your AppleLine will communicate with your Apple regardless, but will not check for parity errors.

Autobaud Option

Your AppleLine's **autobaud** feature allows it to detect the rate at which your Apple or Apple Modem is actually transmitting data, and set its internal baud rate to the same figure. You can have it either way:

```
A - Disabled
B - Enabled.
```

Autobaud usually disabled

If your AppleLine's autobaud feature is enabled, then the first message you send it from your Apple must begin with the character or characters given in Part II of this manual, "The Autobaud Message." The AppleLine uses this message to determine the incoming transmission rate. It can accept any rate from 45.5 to 19200 baud. In an installation where your AppleLine is always connected to the same Apple computer, it maybe more convenient to set them both to the same baud rate and disable the autobaud feature.

Speed Indicator Option

Some makes of modem have a feature by which they automatically set the baud rate of the AppleLine to 1200 baud. This is called the **speed indicator**. You tell your AppleLine whether or not it is communicating with such a modem by this choice:

```
A - Disabled
B - Enabled.
```

Speed indicator usually disabled

The Apple Modem 300/1200 does not use this feature; if your AppleLine uses one you should select (A) (RETURN).

Modem Type

Some modems (including the Apple Modem 300/1200) automatically answer when called; others require that the operator manually answer the phone. Your AppleLine finds out what type of communication link exists between it and your Apple computer, by giving you this choice:

```
A - Auto-answer
B - Manual-answer
C - Local connect.
```

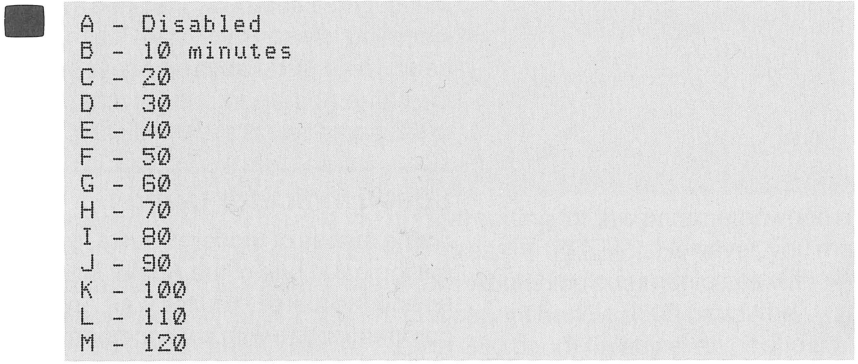
With an Apple Modem, choose A; with other modems, choose A or B; with a direct connection or lease line, choose C.

If your Apple computer and your AppleLine are hooked directly by a connecting cable, choose Local Connect ((C) (RETURN)). If they communicate through an Apple Modem 300/1200, or another modem with the automatic answering feature, choose Auto-answer

(A RETURN). If they communicate through a modem that you control manually, choose Manual-answer (B RETURN).

Automatic Logoff

Sometimes if you are busy you may forget to log off your AppleLine when you are through using it, needlessly tying up the communication channel. To help you avoid this problem, the AppleLine has an **automatic logoff** feature. You can choose how many minutes of inactivity it will tolerate before automatically terminating communication with your Apple:



Set automatic logoff to suit your operating habits

This time period starts whenever you stop using your Apple keyboard, and begins again if you touch any key. If you have set a time limit, your Apple will beep every 5 minutes to remind you that your AppleLine is still logged on.

During the logon procedure, your AppleLine sets the automatic logoff time to 1 minute. If you do not finish logging on in this time, it starts the logon procedure again from the beginning.

Testing and Maintenance

This chapter describes AppleLine's internal diagnostic tests, by which you can detect potential problems with the unit. At the end, it contains a brief section on maintenance.

External Tests: IBM systems can be programmed to perform certain tests on Model 3278-2 Display Stations, a description of which is beyond the scope of this manual. The AppleLine is designed to respond to these tests as if it and its attached Apple computer were such a Display Station.

Internal Tests

Your AppleLine contains built-in circuits and programs that perform three different tests:

Kinds of built-in tests

- The loop-back test.
- The automatic self-test.
- The character generation test.

Loop-Back Test

This is one test that you can perform without connecting your AppleLine to either your Apple or the IBM system. It verifies that the major memory, processing, and data transmission circuits in your AppleLine are working. Do this:

How to do the loop-back test

1. Turn your AppleLine's power switch OFF.
2. Unplug its connection to your Apple computer.
3. Replace the plug that went to your Apple with the **loop-back plug** that's included in your AppleLine package.
4. Turn the power switch ON.
5. Your AppleLine's yellow light should blink slowly to indicate that it is OK.

The foregoing procedure changes the supervisor password back to APPLES and the four user passwords back to APPLE1 through APPLE4. It also resets all the communication parameters to their default values. These settings are listed in Table 3-2. This is why you need to complete this routine by entering new passwords and communication parameters, as if you were setting up your AppleLine for the first time.

Automatic Self-Test

As long as it is connected to your Apple and its power is turned on, your AppleLine automatically and repeatedly performs a test of its circuits and memory. It signals that everything is OK by blinking its green light once a second.

Character Generation Test

When your Apple computer is hooked up to your AppleLine, you can perform its character generation test. Here's how to do it:

How to do the character generation test

1. Log onto your AppleLine, using the user password. See Chapter 5 for log-on instructions.

2. Press ESCAPE followed by CONTROL-V on your Apple keyboard. (Refer to the reference card in the back of this manual for help in locating these keys.) Your AppleLine will respond by sending repeated lines of alphabets, as shown below.

```
01234567890:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]^_ abcdefghijklmnopqrstuvwxy{ }~
12345678901:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]^_ abcdefghijklmnopqrstuvwxy{ }~?
23456789012:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]^_ abcdefghijklmnopqrstuvwxy{ }~?@
34567890123:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]^_ abcdefghijklmnopqrstuvwxy{ }~?@A
45678901234:;<=>?@ABCDEFGH                         opqrstuvwxy{ }~?@AB
56789012345:;<=>?@ABCDEFGHI  Press RETURN to leave test pattern  pqrstuvwxy{ }~?@ABC
67890123456:;<=>?@ABCDEFGHIJ                       qrstuvwxy{ }~?@ABCD
78901234567:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]^_ abcdefghijklmnopqrstuvwxy{ }~?@ABCDE
89012345678:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]^_ abcdefghijklmnopqrstuvwxy{ }~?@ABCDEF
90123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]^_ abcdefghijklmnopqrstuvwxy{ }~?@ABCDEFG
01234567890:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]^_ abcdefghijklmnopqrstuvwxy{ }~?@ABCDEFGH
```

3. When you are finished testing, press RETURN.

This test verifies that your AppleLine is communicating correctly with your Apple.

Maintenance

Your AppleLine is designed to be inherently trouble-free. Since it is controlled entirely by signals from your Apple keyboard, there is no need to open the case for maintenance.

Keep your AppleLine away from steam and chemical fumes.

Your AppleLine's plastic case protects it adequately from dust and foreign objects, but has little effect against liquids and vapors. Spilling any liquid inside the AppleLine, or exposing it to aerosols or chemical fumes, including steam from a coffee maker, can ruin it.

Cleaning

To clean the outside of your AppleLine, just wipe it with a dry cloth. For stubborn fingerprints, wring a damp cloth dry and add a drop of liquid soap to the cloth. Avoid the vent holes as you wipe it clean.

Warning

Never use household cleansers, ammonia, or solvents such as cleaning fluid on your AppleLine — they can deteriorate the plastic cover.

Using Your AppleLine

You control your AppleLine entirely from your Apple keyboard. You type certain commands and it replies with questions or helpful messages. This chapter tells you what to type on your keyboard and how to interpret the messages that the AppleLine places on your monitor screen.

The On-Off Switch. You can either leave your AppleLine switched on all the time, or turn it on only when you want to use it. Just make sure that it is on all the time you are controlling it from your keyboard.

Logging On

Logging on refers to the process of establishing communication between your Apple keyboard and a separate device. Before you establish communication with the IBM computer, you may have to log onto several different devices:

1. Access your AppleLine through one of the following means:

- If your Apple computer communicates with the AppleLine through a modem, you may have to perform a "call up" procedure as described in your modem's manual.
- If you are reaching your AppleLine and the IBM installation through a public data transmission network, you may have to perform a "call up" procedure using your modem and then log onto the network as described in its user's manual.
- If your Apple computer is connected to the AppleLine by means of a direct connection, skip to step 2.

2. When you reach your AppleLine, with or without the preceding step, log onto it using one of the user passwords.
3. After your AppleLine connects you to the IBM system, you usually need to log onto it, as advised by your host computer's personnel, before the IBM mainframe will give you access to its programs, files, etc.

Different logon procedures

These logon procedures are normally different and usually require you to type different identifications and passwords. The logon procedure for your AppleLine is covered in this chapter; for the logon procedures for other devices, including the IBM mainframe, consult the appropriate instruction manuals or the host computer's personnel.

Logon Procedures In General

The purpose of a logon procedure is to allow you to start up a piece of remote equipment, while at the same time preventing unauthorized persons from doing the same thing. It usually involves a sequence of steps such as the following:

How to log on

1. You begin the process by starting up a communications program (Access 3270, Lisa Terminal, MacTerminal, or VT100 Emulation) on your Apple computer. This tells the remote device that you want to talk to it.
2. The device responds by displaying a message on your monitor screen. It identifies itself and asks you to send a user identification word and/or a password. (For a discussion of passwords, see Chapter 3).
3. You type the required words on your keyboard.
4. After verifying your identification and password, the device displays a new message indicating that it is now ready.

AppleLine Logon Procedure

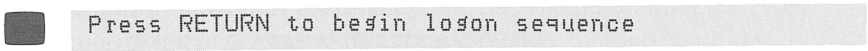
If you have used your AppleLine's supervisor program, as described in Chapter 3, then you are already familiar with AppleLine's logon procedure. Just follow the same steps but enter the user password instead of the supervisor password.

If you have not worked with the AppleLine before, and want to use it to communicate with a mainframe computer, follow this procedure to get started:

Logging onto your AppleLine

1. Start up your Apple computer's communication program. If you are not sure how to do this, consult its user's manual.
2. If your computer is connected to the AppleLine through a pair of modems and telephone lines, follow the procedure to call it up.

3. As soon as you establish communication with the AppleLine (which may require that you type the Autobaud message), it responds by displaying an identification heading on your monitor screen, followed by the line



4. Press (RETURN). The AppleLine replies by asking you for your user password:

5. Type your user password. Normally this will be a special sequence of characters, previously entered into the AppleLine memory by means of the supervisor program (see Chapter 3). If no special password has been established, type APPLE1.
6. When the AppleLine recognizes your password, the screen will go blank and then a new message will appear on it, transmitted from the IBM mainframe. You are now ready to log onto the IBM system.
7. If the AppleLine does not recognize your password, it will ask you to enter it again. After three attempts, the AppleLine will ignore further password attempts for 20 seconds.

Using Your Apple Like an IBM Terminal

Your Apple acts like a 3278-2 terminal

After you have successfully logged onto the AppleLine, it will put you in communication with the IBM system. Now you can start using your Apple keyboard and monitor screen as if they were the keyboard and screen of an IBM Model 3278-2 terminal. The **Operator Information Area**, by which the IBM system informs you of its status, will appear as the bottom line on your (24 line by 80 column) Apple screen. (To see the the twenty fifth line of the IBM 25 line by 80 column display, press the (ESCAPE) key twice.)

Special IBM Keys

The Model 3278-2 terminal has keys with special labels on them ("ATTN," "SYS REQ," etc.) which do not exist on your Apple keyboard. However, all their functions are still available. To achieve the same result with your Apple as you would by pressing these keys on a 3278-2 terminal, you use a combination of keystrokes. These combinations are listed in Part II of this manual, Chapter 2. This information is also shown pictorially on a removable reference card at the back of this manual.

For Information about the meaning and use of all the special keys on the IBM 3278-2 terminal, see the IBM *3278 Display Station Operator's Guide*.

Other Keys and Functions

If you wish to have the AppleLine repaint the information displayed on your Apple Computer's screen, press ESCAPE and then press C .

See Part II of this manual, Chapter 2, for information about:

Further information in Part II

- The Apple equivalents of the operator controls present on the 3278-2 terminal.
- How to exchange files between your Apple and the IBM mainframe.

To send ordinary text to the IBM system, use the regular letter, number, and punctuation keys on your Apple keyboard.

Logging Off

After you finish your work session with the IBM mainframe, you should log off the various devices in the communication link that you originally created.

Note: Many devices, including the AppleLine, will automatically perform the logoff procedure for you if you haven't used them for a certain number of minutes (see Chapter 3, "Automatic Logoff"). However, this feature is designed to prevent the communication system from becoming clogged with abandoned data links, not to save you the trouble of logging off. Relying on it to log off for you can lead to problems.

Normally, you log off the active devices in your communication link in the reverse order from logging on:

Terminating your work session

- Log off from the IBM mainframe.
- Log off from the AppleLine.
- If you are using a public communication service (such as a telephone data network), log off it.
- If you are communicating through a modem, tell it to "hang up."
- Exit the communication program in your Apple computer.

These logoff procedures are normally different and usually require you to type different messages on your Apple keyboard. The logoff procedure for your AppleLine is covered in this chapter; for the logoff procedures for other devices, including the IBM mainframe, consult the appropriate instruction manuals or computer operators.

AppleLine Logoff Procedures

There are three different logoff procedures you can use to terminate a work session with your AppleLine, depending on what you have been doing and what you want to do next.

If you have been working with the mainframe and want to quit, just break off communication with your AppleLine. It will automatically reset itself, ready for the next logon procedure. How you break off communication depends on how your AppleLine is connected:

- If the AppleLine is connected directly to your Apple computer, simply quit the communication program you have been using. If you are not sure how to do this, consult the user's manual for your communication program.
- If it is connected through a pair of asynchronous modems like the Apple Modems, tell the modem connected to your Apple computer to "hang up"; the modem at the other end will then disconnect itself from your AppleLine.

If you have been working with the mainframe and want to switch to your AppleLine's supervisor program, log off the mainframe first and then press ESCAPE and then hold down CONTROL and press Z . (Refer to the reference card in the back of this manual for help in locating these keys.) Your AppleLine will display the message

```
AppleLine User Logged OFF
```

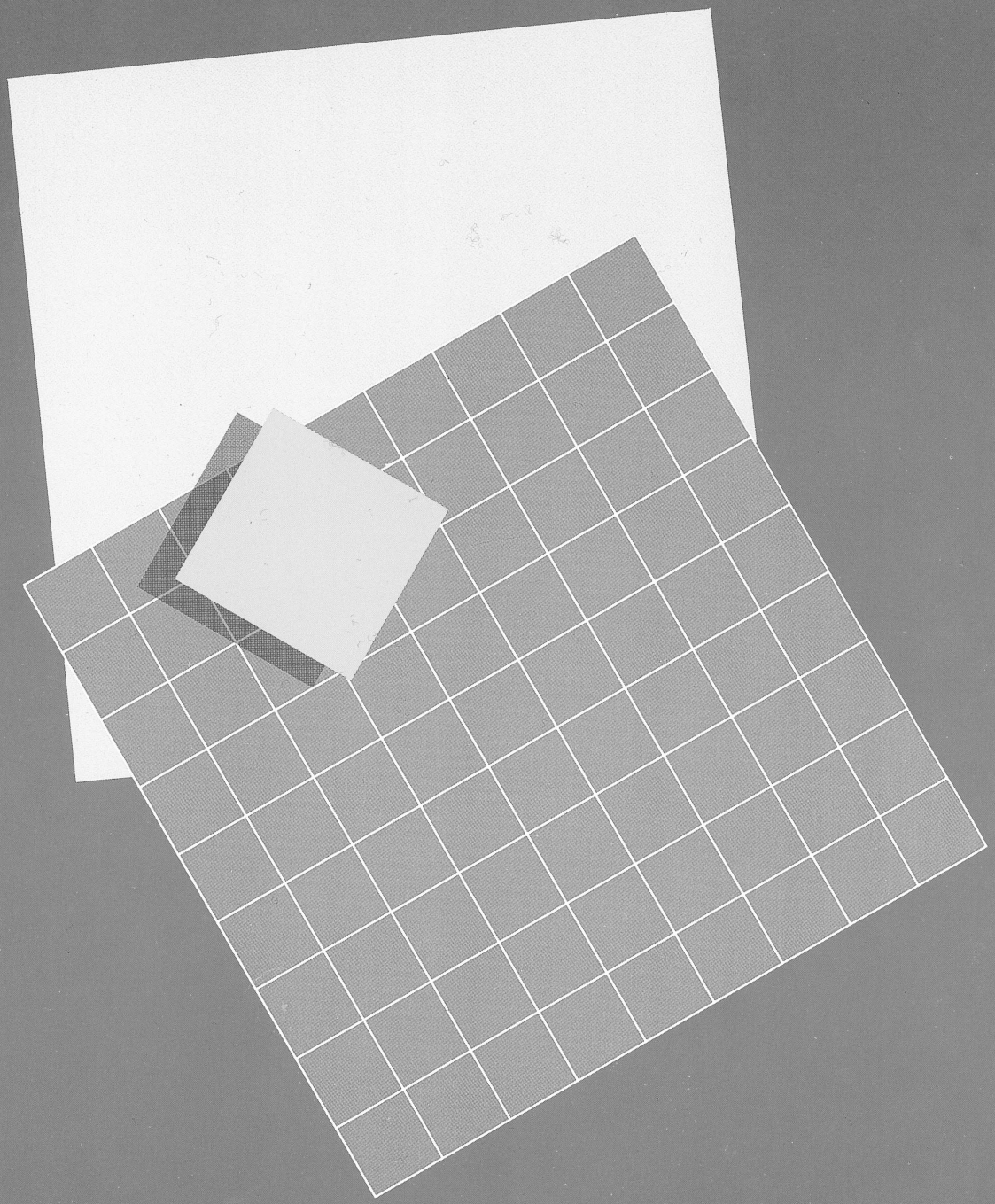
but will not discontinue communication. Twenty seconds later, it will automatically return to the start of its logon sequence. At this point you can log back on the AppleLine with the supervisor password.

If you have been working with your AppleLine's supervisor program, follow the procedure described in Chapter 3, "Exiting the Supervisor Program." You have a choice of either quitting completely or returning to the beginning of the AppleLine logon procedure. If you choose the latter, you can then enter your user password and start working with the IBM system.

Apple III

AppleLine User's Manual

Part II: Guide to Apple III



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Apple III Supplement, Introduction to Part II

Information for Apple III Users

This section is a continuation of Part I of the AppleLine User's Manual. It is written specifically for Apple III users.

You should read Chapters 1 and 2 in Part I first, to become familiar with your AppleLine and learn how to hook it up to the IBM computing system. Then you should read this section. It tells you the following:

Contents of this volume

- How to hook your AppleLine up to your Apple III computer, completing its installation.
- How to use the ACCESS 3270 program with your AppleLine.
- How to use the keyboard and controls of your Apple III computer to produce the same results as if it were an IBM 3278-2 terminal.
- How to save the information that you receive from the IBM mainframe.

If your computer is not an Apple III: You can skip this part of the book. You will not be able to use this part of this book to complete your AppleLine installation or make it work. If your computer is a Lisa, refer to the next part of this manual to continue your installation. If your computer is a Macintosh, Part II of this manual is included in the *MacTerminal* manual. Otherwise, ask your Apple dealer for the version of AppleLine User's Manual, Part II that applies to your Apple computer.

The Materials You Need

In addition to the AppleLine unit and associated equipment described in Part I of this manual, you need the following items to complete your installation:

- An Apple III or Apple III Plus computer.
- The Apple ACCESS 3270 program disk and User's Manual.
- A connecting cable to connect your AppleLine to your Apple computer or modem. See Appendix B for details.

Completing Your Installation

The discussion in this chapter assumes that you have already completed the procedures in Chapter 2 of Part I of this manual. Before you start using your AppleLine with your Apple III computer, you must do three more things:

- Configure your Apple computer's ACCESS 3270 program to communicate correctly with your AppleLine.
- Complete the installation of your AppleLine.
- Use your AppleLine's supervisor program to enter its passwords and communication parameters.

This chapter tells you how to perform these procedures.

Configuring Your ACCESS Program

Changing your ACCESS 3270 set-up menu

ACCESS 3270 is a communication program that you run on your Apple III computer. It has a **set-up menu**, which allow you to change the ways that it makes your Apple III communicate with the AppleLine. To use the ACCESS 3270 set-up menu, type ⓐ-Ⓢ while ACCESS 3270 is in Terminal mode.

Further Information: If you are not familiar with using the Apple ACCESS 3270 program, take time now to look at your *ACCESS 3270 User's Manual*, particularly the section entitled "The Set-Up Menu" in Chapter 3.

If your AppleLine and Apple computer are directly connected, change the ACCESS 3270 communication parameters to the following values to achieve optimum communication between them:

- Full duplex
- No wraparound
- Speed: 9600

If your system includes a modem that cannot transmit data at 9600 baud, set ACCESS's speed to a rate it can handle (usually 1200 baud). When you change your AppleLine's communication parameters as described in Part I, Chapter 3, set it to the same speed.

After you have changed these set-up values, store them on the ACCESS disk by typing CONTROL-S. That way, ACCESS 3270 will return to this set-up every time you start it up.

Note: You can also use Apple ACCESS III with your AppleLine. However, Access III has limitations in keyboard use when compared with Access 3270. For example, the Apple III keyboard equivalents for IBM 3278-2 functions listed in the next chapter, *Using Your Apple III*, and on the reference card at the back of this manual, will not work. If you use Access III with the AppleLine, set the following additional communication parameters:

- Do NOT send LF after CR
- Enable XON/XOFF
- Parity: EVEN

Completing the Hook-Up

Chapter 2 in Part I of this manual describes how to install your AppleLine and connect it to the IBM system. Assuming you have done this, you can now hook it up to your Apple III computer. There are two procedures, depending on whether your AppleLine is located next to your Apple or communicates with it by modem.

Test each step of your installation: It is a good practice to test the system each time you complete the connection of a new unit in the system. This is particularly true when the system is complex, as in the case of a modem connection to the AppleLine. As installation of each new unit is completed, switch on the system and check to see that the completed part of the system functions as expected.

Direct Connection

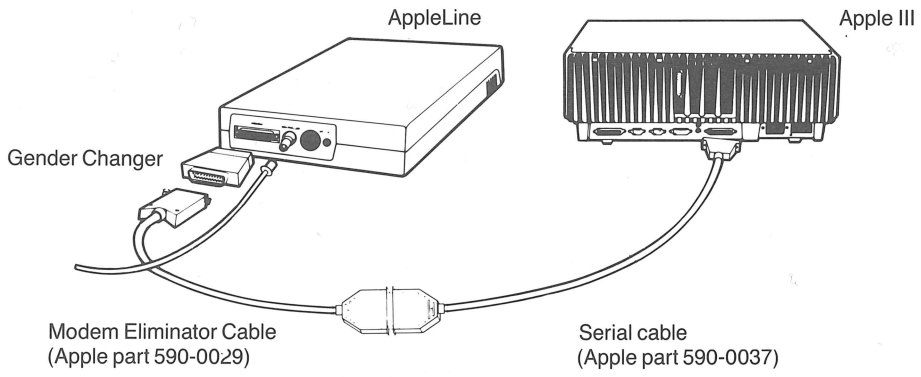
To make a direct connection between your Apple III computer and your AppleLine, you need a connecting cable assembly, which may consist of two cables plugged end-to-end. Appendix B at the end of this manual describes the cable assembly requirements.

Making a direct hook-up

The connecting cable assembly has a pin-type (male) connector at one end and a socket-type (female) connector at the other. Here's how to install it:

1. Turn OFF both your AppleLine and your Apple III.
2. Plug the socket end of the connecting cable assembly into the connector marked MODEM on the back of your AppleLine. See Figure 1-1.
3. Plug the pin end of the connecting cable assembly into the socket marked RS232C on the back of your Apple III.
4. If the cables you are using have small screws in the ears on their connectors, tighten these screws into the corresponding holes on their mating sockets. This will prevent the connectors from becoming loose.

Figure 1-1. Direct Connection

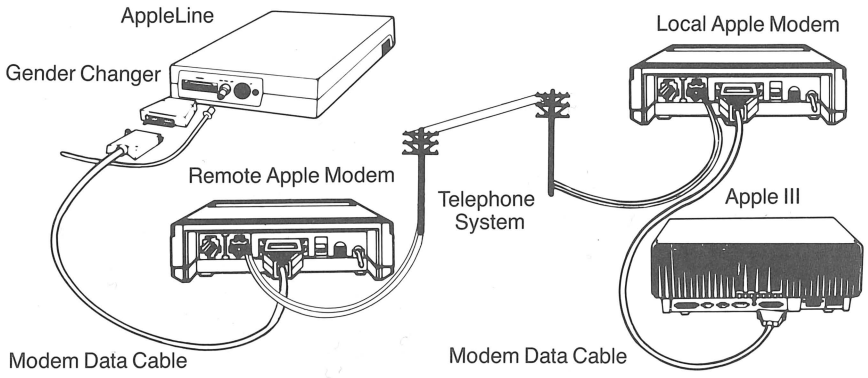


Modem Connection

To establish distant communication between your Apple III and your AppleLine, you need a pair of Apple Modem 300/1200 units connected to the telephone system or other data transmission

means. Figure 1-2 is a schematic diagram of the resulting hook-up. For a description of how to install Apple Modems and obtain telephone service for them, consult the *Apple Modem 300/1200 User's Manual*.

Figure 1-2. Modem Connection



The two connecting cables you need come packed in the accessory kits with the two Apple Modem 300/1200 units. In addition, you need the Gender Changer that was packed with your AppleLine.

Hooking up via Apple Modems

To make the hook-up at your Apple III's location:

1. Turn OFF the Apple Modem and your Apple III computer.
2. Plug the small end of one Modem Data Cable into the data connector on the back of the local Apple Modem.
3. Plug the large end of this cable into the socket marked RS232C on the back of your Apple III.
4. If the cables you are using have small screws in the ears on their connectors, you can tighten these screws into the corresponding holes on their mating sockets. These screws will prevent the connections from coming loose.
5. Turn ON your Apple Modem and Apple III, and run the modem *self-test* to check your installation.

The modem self-test procedure is described in the *Apple Modem 300/1200 User's Manual*

Here's how to make the hook-up at the mainframe's location:

1. Turn OFF your AppleLine and the Apple Modem.
2. Plug the Gender Changer into the connector marked MODEM on the back of your AppleLine.
3. Plug the large end of the other Modem Data Cable into the Gender Changer.
4. Plug the small end of this second cable into the data connector on the back of the remote Apple Modem.
5. If the cables you are using have small screws in the ears on their connectors, you can tighten these screws into the corresponding holes on their mating sockets. These screws will prevent the connections from coming loose.
6. Turn ON your AppleLine and the Apple Modem.

Entering Passwords and Communication Parameters

After your AppleLine is hooked up and working, the first thing you should do is enter certain information into its memory. Doing this requires two procedures:

1. Sending the **autobaud message**.
2. Using the **supervisor program**.

These procedures are explained below.

The Autobaud Message

The first time you use your AppleLine, you must tell it what data transmission rate your Apple computer is using. You do this by sending it a special message which it can analyze to determine the rate. The autobaud message consists of a break followed by enter. Here's how to send this message to your AppleLine:

1. Turn on both your AppleLine and your Apple computer.
2. Start up the program ACCESS 3270 in your Apple computer.
3. If your computer is connected to your AppleLine through Apple Modems, follow the procedures required to establish communication. See the *Apple Access 3270* manual and the *Apple Modem 300/1200 User's Manual*.
4. Before typing anything else, press ⌘-B (which sends a break) and then press ENTER. This is the autobaud message.

5. Your AppleLine will respond by displaying an identification line across the top of your screen, followed by this message:

```
Press RETURN to begin logon sequence.
```

6. Press RETURN.

   Your AppleLine will reply with this prompting message:

```
Enter password:
```

Default Password: A universal access code that AppleLine automatically uses until a personalized code word is substituted. See Chapter 3, Part I, "Unlocking the Supervisor" for information on resetting the default passwords.

7. Type APPLES and press RETURN.

   This is the default password to the AppleLine's supervisor program. Your AppleLine will reply with this prompting message:

```
AppleLine has been reset to "factory" settings.
Please logon as AppleLine SUPERVISOR using the
supervisor password "APPLES" to set AppleLine
to your particular configuration.

A terminal type must be selected before you
continue.

 Possible selections:

  A - LisaTerminal
  B - MacTerminal
  C - Access 3270
  D - VT100

      Your selection [LisaTerminal]:
```

8. Press C and RETURN.

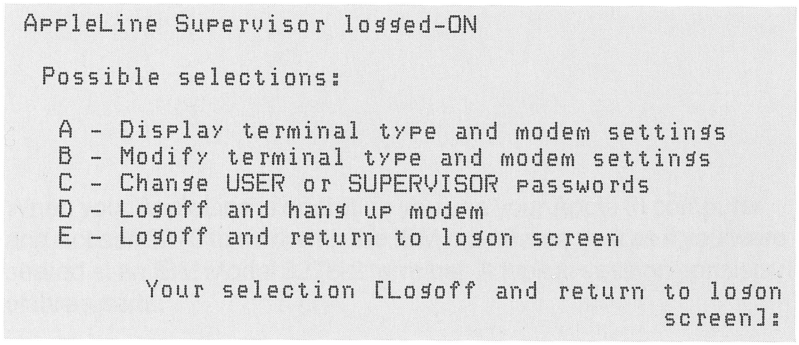
   This tells the AppleLine that you are using Access 3270 to communicate with it. Your AppleLine will reply with this prompting message:

```
Current terminal type is "Access 3270". Is this
correct [Y]?
```

9. Press RETURN.

Default: A value, action, or setting that is automatically used by a computer system when no other explicit information has been given.

Pressing RETURN accepts the default response shown inside the brackets (in this case the default is Y, which stands for yes). Your AppleLine will reply with this prompting message:



You are now ready to use your AppleLine's supervisor program. Turn back to Chapter 3 in Part I of this manual for a description of what the supervisor program does and how to use it.

Using Your Apple III

When your AppleLine is operating you use your Apple III computer and Access 3270 to work with the IBM mainframe, just as if you were seated at an IBM Model 3278-2 terminal. A typical session consists of three parts:

A typical work session

1. Setting up communication between your Apple and the IBM system by a series of log-on procedures.
2. Working with the IBM system, by typing messages on your Apple keyboard and reading IBM's replies on your Apple monitor screen.
3. Terminating communication between your Apple and the IBM system by a series of log-off procedures.

The first and third tasks, logging on and logging off, are described in Part I of this manual, Chapter 5. The second task, using your Apple III controls and keyboard to work with the IBM system, is covered in this chapter.

Terminal Controls

The IBM Model 3278-2 terminal has the following controls:

- An **on-off** switch.
- Knobs to vary the **brightness** and **contrast** of the screen image.
- A knob to change the **volume** of the audible alarm.
- A **normal/test** switch that changes the mode of operation of the whole unit.
- A **dual case/mono case** switch that determines whether your typing will appear as upper and lower case letters, or capitals only.

Some of the equivalent controls on your Apple III are different. For example the equivalent to the Dual Case/Mono Case Switch on the IBM 3278-2 is labelled Alpha Lock on your Apple III keyboard. The Apple III controls are described in your *Apple III Owner's Guide* and the *Monitor III Owner's Manual*.

The Apple Monitor Display

When you are using your Apple III to communicate with an IBM mainframe, the screen display looks very much like the screen on an IBM 3278-2 terminal. Nevertheless, you may notice these differences:

- The main area of the Apple III screen presents data from the mainframe in the usual 80-column format. However, the main area is only 23 lines long, instead of 24.
- IBM's **Status Information Area** appears as the bottom line (line 24) of the Apple III display. Press the ESCAPE function key twice to display all the information that would normally be displayed on the twenty-fifth line of an IBM 3278-2 on your twenty-fourth line. The entire twenty-fifth line will be displayed for a short time.
- The appearance of the iBM status symbols on the status line will be different on your Apple III.
- The appearance of the IBM cursor may be different on your Apple III.

These differences may or may not be apparent, depending on how the IBM program is constructed.

The Apple III Keyboard

When you type ordinary letters, numbers, and punctuation marks on your Apple keyboard, most IBM programs understand them in the normal way. They are exactly equivalent to the letters, numbers, and punctuation marks on the IBM 3278-2 keyboard. However, there are other keys on the 3278-2 keyboard that have special markings on them (such as SYS REQ and ATTN) which identify the special functions they perform.

Special IBM keys

Further Information: For the meaning and use of these special IBM commands consult the appropriate IBM manuals, particularly the *3278 Display Station Operator's Guide.*

To type these special functions on your Apple keyboard, you press certain combinations of standard keys. Table 2-1 lists the combinations used with Access 3270. They are arranged in the order

that their functions are described in the IBM *3278 Display Station Operator's Guide*. To keep things simple, Table 2-1 uses the following conventions and abbreviations:

- [k] means that you press one of the keys on the numeric keypad (to the right of the Apple keyboard). For instance, [SHIFT]-[k][6] tells you to hold down [SHIFT] while pressing [6] on the numeric keypad once.
- [CONTROL] means that you hold down the [CONTROL] key (on the left side of your Apple keyboard) while pressing some other key. For instance, [CONTROL]-[A] tells you to hold down [CONTROL] while pressing [A] once.
- [Apple] means that you hold down the [Apple] key (in the lower left corner of your Apple keyboard) while pressing some other key. For instance, [Apple]-[1] tells you to hold down [Apple] while pressing [1] once.

Table 2-1. Apple III Keyboard Equivalents for IBM 3278-2 Functions

IBM Keys	Apple Keystrokes	IBM Keys	Apple Keystrokes
DUP	[SHIFT]-[k][6]	PF22	[Apple]-[k][0]
FIELD MARK	[CONTROL]-[W]	PF23	[Apple]-[k][.]
PA1	[SHIFT]-[k][1]	PF24	[Apple]-[k][-]
PA2	[SHIFT]-[k][2]	NEW LINE	[RETURN]
PF1	[Apple]-[1]	TAB	[TAB]
PF2	[Apple]-[2]	BACK TAB	[Apple]-[TAB]
PF3	[Apple]-[3]	HOME	[SHIFT]-[k][8]
PF4	[Apple]-[4]	LEFT CURSOR	[←]
PF5	[Apple]-[5]	RIGHT CURSOR	[→]
PF6	[Apple]-[6]	UP CURSOR	[↑]
PF7	[Apple]-[7]	DOWN CURSOR	[↓]
PF8	[Apple]-[8]	ATTN	[CONTROL]-[\]
PF9	[Apple]-[9]	SYS REQ	[SHIFT]-[k][.]
PF10	[Apple]-[0]	CURSR SEL	[ESCAPE][T]
PF11	[Apple]-[-]	CLEAR	[SHIFT]-[k][7]
PF12	[Apple]-[=]	ERASE INPUT	[SHIFT]-[k][5]
PF13	[Apple]-[k][7]	ERASE EOF	[SHIFT]-[k][4]
PF14	[Apple]-[k][8]	PRINT	[CONTROL]-[P]
PF15	[Apple]-[k][9]	IDENT	[CONTROL]-[V]
PF16	[Apple]-[k][4]	TEST	[CONTROL]-[G]
PF17	[Apple]-[k][5]	RESET	[SHIFT]-[k][9]
PF18	[Apple]-[k][6]	DEV CNCL	[CONTROL]-[L]
PF19	[Apple]-[k][1]	INSERT	[SHIFT]-[k][0]
PF20	[Apple]-[k][2]	DELETE	[SHIFT]-[k][-]
PF21	[Apple]-[k][3]	ENTER	[ENTER]

For Your Convenience: A copy of Table 2-1 is printed on a tear-out card in the back of this book. You can remove it and post it near your Apple, for ready reference.

Warning

If you are using Access 3270 to communicate with your AppleLine, you may find that some of the commands do not work as described in the *Apple Access 3270* manual and on the help screens of your Access 3270 program. For example, to send the ATTENTION command while the AppleLine is configured for Access 3270, press CONTROL-\ rather then pressing ⓐ-B as described on the help screens of your Access 3270 program.

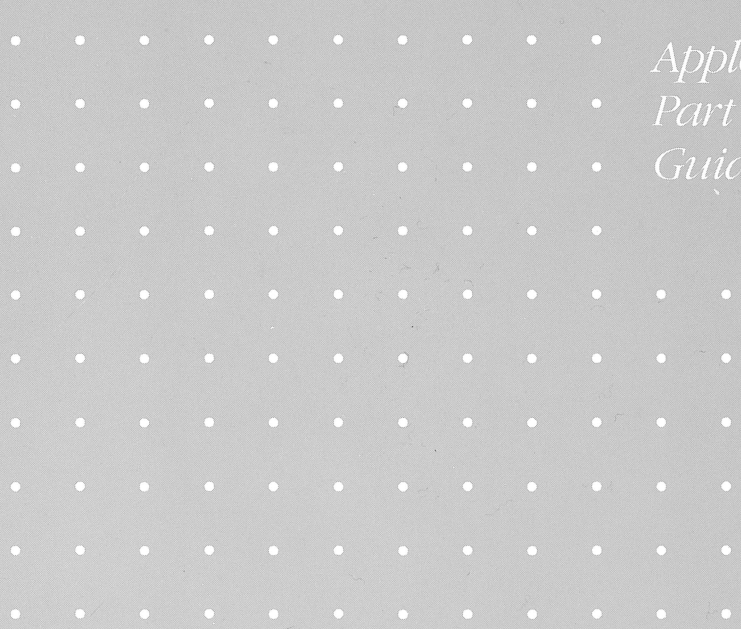
Recording Information From a Mainframe

ACCESS 3270 offers a set-up function by which you can designate the pathname of an Apple III file to be used for recording incoming data. Before trying to transmit a file from the IBM mainframe, you should use this to determine its destination in your Apple system. See your *ACCESS 3270 User's Manual* for details.

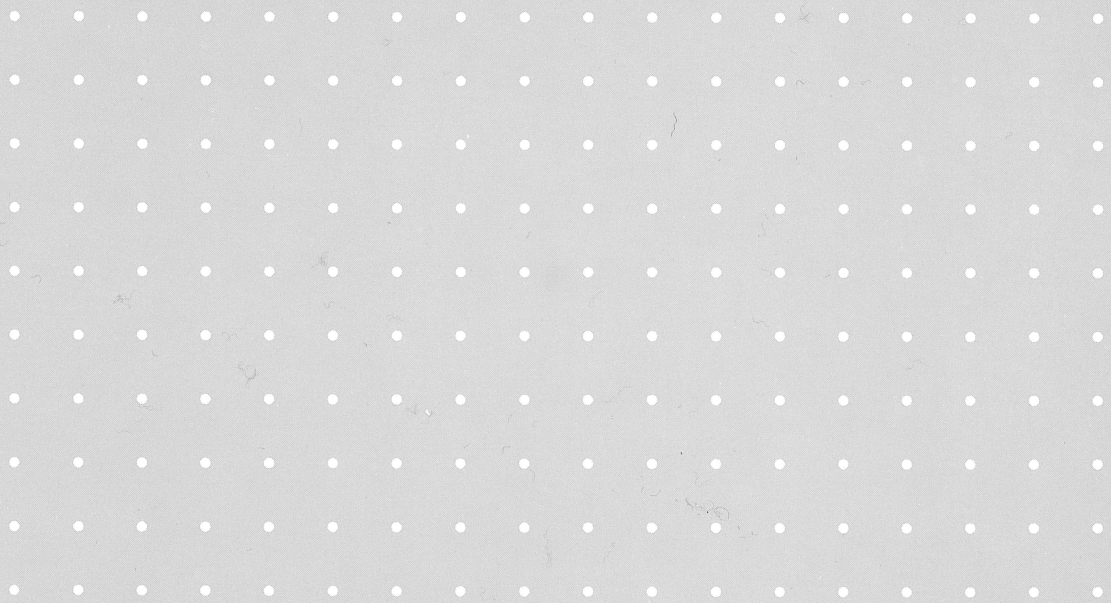
Next, you must make sure that the IBM program is prepared to transmit a file to a remote terminal. If you have any doubt about the procedure to follow, consult the host computer personnel. Assuming that your Apple III is communicating with the mainframe and that the mainframe is ready to transmit a file, do this:

Receiving a file

1. Press ⓐ-R. This turns on the ACCESS 3270 recording function.
2. Type the commands required to start the IBM system transmitting a file. The Operator Status Line at the bottom of your screen should tell you when the IBM system has finished its transmission.
3. Press ⓐ-R again. This turns off the ACCESS 3270 recording function.



AppleLine Part II: Guide to Lisa



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The Materials You Need

In addition to the AppleLine unit and associated equipment described in Part I of this manual, you need the following items to complete your installation:

- A Lisa computer.
- The LisaTerminal program and User's Manual.
- A connecting cable to connect your AppleLine to your Lisa. See Appendix B for details.

Completing Your Installation

The discussion in this chapter assumes that you have already completed the procedures in Chapter 2 of Part I of this manual. Before you start using your AppleLine with your Lisa computer, you must do three more things:

- Configure your LisaTerminal program to communicate correctly with your AppleLine.
- Complete the installation of your AppleLine.
- Use your AppleLine's supervisor program to enter its passwords and communication parameters.

This chapter tells you how to perform these procedures.

Configuring Your LisaTerminal Program

The LisaTerminal set-up menu

LisaTerminal is a communication program that you run on your Lisa computer. It has a **set-up menu**, which allow you to change the ways that your Lisa communicates with the AppleLine.

Further Information: If you are not familiar with using LisaTerminal, take time now to look at your *LisaTerminal* manual, particularly Chapter 3, "LisaTerminal Setup Characteristics."

If your AppleLine and Apple computer are directly connected, change the LisaTerminal communication parameters to the following values to achieve optimum communication between them:

- Full duplex
- No wraparound
- Speed: 9600 baud
- Do NOT send LF after CR
- Enable XON/XOFF
- Parity: EVEN

If your system includes a modem that cannot transmit data at 9600 baud, set LisaTerminal's speed to a rate it can handle (usually 1200 baud). When you change your AppleLine's communication parameters as described in Part I, Chapter 3, set it to the same speed.

Completing the Hook-Up

Chapter 2 in Part I of this manual describes how to install your AppleLine and connect it to the IBM system. Assuming you have done this, you can now hook it up to your Lisa computer. There are two procedures, depending on whether your AppleLine is located next to your Lisa or communicates with it by modem.

Test each step of your installation: It is a good practice to test the system each time you complete the connection of a new unit in the system. This is particularly true when the system is complex, as in the case of a modem connection to the AppleLine. As installation of each new unit is completed, switch on the system and check to see that the completed part of the system functions as expected.

Direct Connection

To make a direct wire connection between your Lisa and your AppleLine, you need a connecting cable assembly, which may consist of two cables plugged end-to-end. Appendix B describes the cable assembly requirements.

Making a direct hook-up

The connecting cable assembly has a pin-type (male) connector at one end and a socket-type (female) connector at the other. Here's how to install it:

1. Turn OFF both your AppleLine and your Lisa computer system.

2. Plug the socket end of the connecting cable assembly into the connector marked MODEM on the back of your AppleLine. See Figure 1-1.

3. Plug the pin (male) end of this cable into the socket labelled A (the RS232C serial interface port) on the back of your Lisa. Although the cable will also work on the socket labelled B—and the software can be configured for either socket—the standard procedure is to use the A socket.

By The Way: Serial A is the preferred socket for hooking up communications hardware, because the LisaTerminal program defaults to Serial A each time you restart the system. By using the A socket, you save the trouble of repeatedly changing your Configuration menu.

4. If the cables you are using have small screws in the ears on their connectors, you can tighten these screws into the corresponding holes on their mating sockets. These screws will prevent the connections from coming loose.

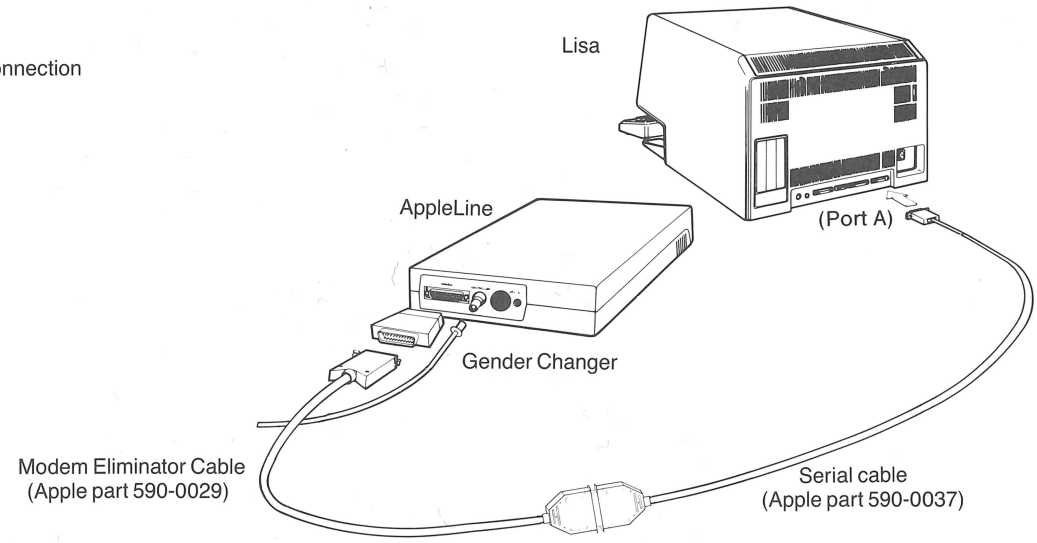
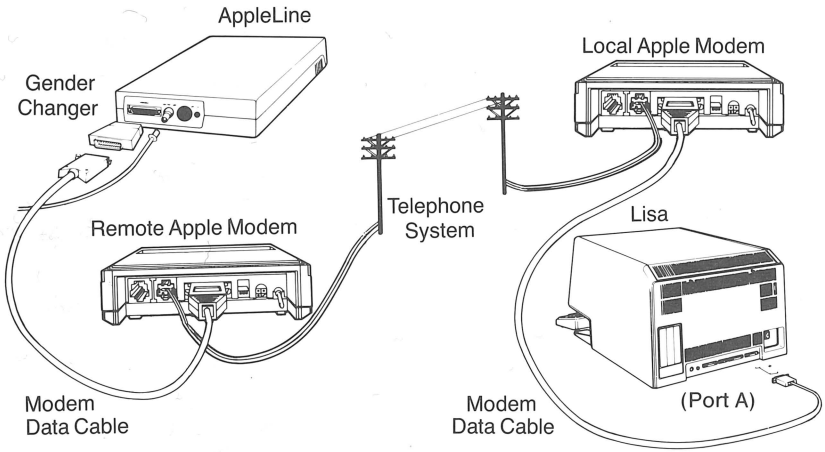


Figure 1-1. Direct Connection

Modem Connection

To establish distant communication between your Lisa computer and your AppleLine, you need a pair of Apple Modem 300/1200 units connected to the telephone system or other data transmission means. Figure 1-2 is a block diagram of the resulting hook-up. For a description of how to install Apple Modems and obtain telephone service for them, consult the *Apple Modem 300/1200 User's Manual*.

Figure 1-2. Modem Connection



Hooking up via Apple Modems

The two connecting cables you need come packed in the accessory kits with the two Apple Modem 300/1200 units. In addition, you need the Gender Changer that was packed with your AppleLine.

To make the hook-up at your Lisa computer's location:

1. Turn OFF the Apple Modem and your Lisa computer system.
2. Plug the small end of one Modem Data Cable into the data connector on the back of the local Apple Modem.
3. Plug the large end of this cable into the socket labelled A (the RS232C serial interface port) on the back of your Lisa. Although the cable will also work on the socket labelled B—and the software can be configured for either socket—the standard procedure is to use the A socket.

By The Way: Serial A is the preferred socket for hooking up communications hardware, because the LisaTerminal program defaults to Serial A each time you restart the system. By using the A socket, you save the trouble of repeatedly changing your Configuration menu.

4. If the cables you are using have small screws in the ears on their connectors, you can tighten these screws into the corresponding holes on their mating sockets. These screws will prevent the connections from coming loose.
5. Turn ON your Apple Modem and Lisa computer system, and run the modem *self-test* to check your installation.

The modem self-test procedure is described in the *Apple Modem 300/1200 User's Manual*

To make the hook-up at the mainframe's location:

1. Turn OFF your AppleLine and the Apple Modem.
2. Plug the Gender Changer into the connector marked MODEM on the back of your AppleLine.
3. Plug the large end of the other Modem Data Cable into the Gender Changer.
4. Plug the small end of this second cable into the data connector on the back of the remote Apple Modem.
5. If the cables you are using have small screws in the ears on their connectors, you can tighten these screws into the corresponding holes on their mating sockets. These screws will prevent the connections from coming loose.
6. Turn ON your AppleLine and the Apple Modem.

Entering Passwords and Communication Parameters

After your AppleLine is hooked up and working, the first thing you should do is enter certain information into its memory. Doing this requires two procedures:

1. Sending the **autobaud message**.
2. Using the **supervisor program**.

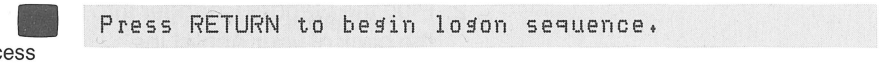
These procedures are explained below.

The Autobaud Message

The first time you use your AppleLine, you must tell it what data transmission rate your Lisa is using. You do this by sending it a special message which it can analyze to determine the rate. The autobaud message consists of a break followed by enter. Here's how to send this message to your AppleLine:

1. Turn on both your AppleLine and your Lisa computer.
2. Select the LisaTerminal program.

3. If your Lisa is connected to your AppleLine through Apple Modems, follow the procedures required to establish communication. See the *Apple Modem 300/1200 User's Manual*.
4. Before typing anything else, press the break key (the key labeled ENTER on your Lisa's main keyboard, to the right of the space bar) then press the other RETURN key. This is the autobaud message.
5. Your AppleLine will respond by displaying an identification line across the top of your screen, followed by this message:



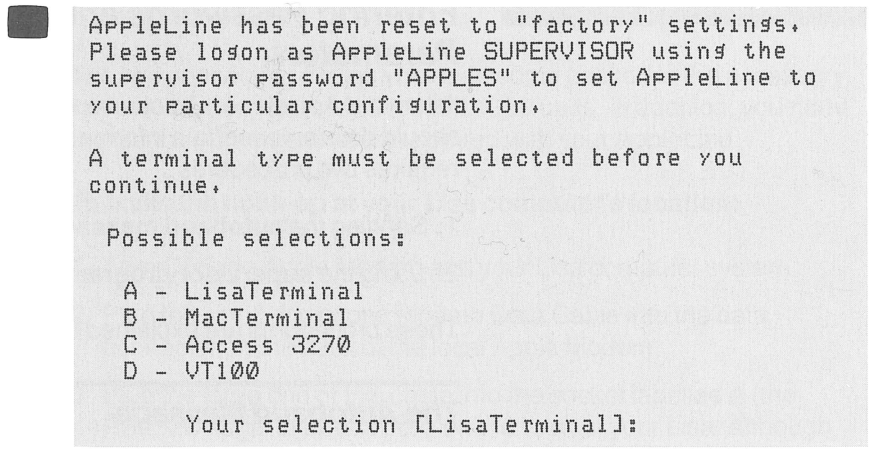
Default Password: A universal access code that AppleLine automatically uses until a personalized code word is substituted. See Chapter 3, Part I, "Unlocking the Supervisor" for information on resetting the default passwords.

6. Press RETURN.

   Your AppleLine will reply with this prompting message:

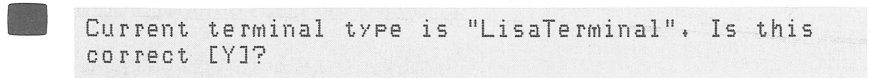
7. Type Apples and press RETURN.

   This is the default password to the AppleLine's supervisor program. Your AppleLine will reply with this prompting message:



8. Press A and press RETURN.

   This tells the AppleLine that you are using LisaTerminal to communicate with it. Your AppleLine will reply with this prompting message:



9. Press RETURN.

Default: A value, action, or setting that is automatically used by a computer system when no other explicit information has been given.

Pressing RETURN accepts the default response shown inside the brackets (in this case the default is **Y**, which stands for yes). Your AppleLine will reply with this prompting message:


```
AppleLine Supervisor logged-ON

 Possible selections:

  A - Display terminal type and modem settings
  B - Modify terminal type and modem settings
  C - Change USER or SUPERVISOR passwords
  D - Logoff and hang up modem
  E - Logoff and return to logon screen

        Your selection [Logoff and return to logon
                                          screen]:
```

You are now ready to use your AppleLine's supervisor program. Turn back to Chapter 3 in Part I of this manual for a description of what the supervisor program does and how to use it.

Using Your Lisa

When your AppleLine is operating you use your Lisa to work with the IBM mainframe, just as if you were seated at an IBM Model 3278-2 terminal. A typical session consists of three parts:

A typical work session

1. Setting up communication between your Lisa and the IBM system by a series of log-on procedures.
2. Working with the IBM system, by typing messages on your Lisa keyboard and reading IBM's replies on your Lisa screen.
3. Terminating communication between your Lisa and the IBM system by a series of log-off procedures.

The first and third steps, logging on and logging off, are described in Part I of this manual, Chapter 5. The second step, using your Lisa controls and keyboard to work with the IBM system, is covered in this chapter.

Terminal Controls

The IBM Model 3278-2 terminal has the following controls:

- An **on-off** switch.
- Knobs to vary the **brightness** and **contrast** of the screen image.
- A knob to change the **volume** of the audible alarm.
- A **normal/test** switch that changes the mode of operation of the whole unit.
- A **dual case/mono case** switch that determines whether your typing will appear as upper and lower case letters, or capitals only.

Some of the equivalent controls on your Lisa are different. For example the equivalent to the Dual Case/Mono Case Switch on the IBM 3278-2 is labelled CAPS LOCK on your Lisa keyboard. The Lisa controls are described in your *Lisa Owner's Guide* in Section D, "Desktop Manager's Reference Guide."

The Lisa Screen Display

When you are using your Lisa to communicate with an IBM mainframe, the screen display looks very much like the screen on an IBM 3278-2 terminal. Nevertheless, you may notice these differences:

- The main area of the screen presents data from the mainframe in the usual 80-column format. However, the main area is only 23 lines long, instead of 24.
- IBM's **Status Information Area** appears as the bottom line (line 24) of the Lisa display. Press the ESCAPE function key twice to display all the information that would normally be displayed on the twenty-fifth line of an IBM 3278-2 on your twenty-fourth line. The entire twenty-fifth line will be displayed for a short time. (Stretch the document to its fullest extent to see this area.)
- The appearance of the IBM status symbols on the status line will be different on your Lisa computer.
- The appearance of the IBM cursor may be different on your Lisa screen.

These differences may or may not be apparent, depending on how the IBM program is constructed.

The Lisa Keyboard

When you type ordinary letters, numbers, and punctuation marks on your Lisa keyboard, most IBM programs understand them in the normal way. They are exactly equivalent to the letters, numbers, and punctuation marks on the IBM 3278-2 keyboard. However, there are other keys on the 3278-2 keyboard that have special markings on them (such as SYS REQ and ATTN) which identify the special functions they perform.

Special IBM keys

Further Information: For the meaning and use of these special IBM commands consult the appropriate IBM manuals, particularly the *3278 Display Station Operator's Guide.*

To type these special functions on your Lisa keyboard, you press certain combinations of standard keys. Table 2-1 lists these combinations, arranged in the order that their functions are described in the IBM *3278 Display Station Operator's Guide*.

Two function keys, CONTROL and ESCAPE, referred to in Table 2-1, are not labeled as such on your Lisa keyboard. The LisaTerminal program redefines the ⌘ key located to the left of the space bar as a CONTROL key and the ` key located in the upper left corner of the keyboard as an ESCAPE key. Refer to the *LisaTerminal* manual, Appendix 4 for additional information.

In the following table, CONTROL means that you hold down the ⌘ key while pressing some other key. For instance, CONTROL-U tells you to hold down CONTROL (⌘) while pressing U once. ESCAPE means that you press the ` key and then press some other key. For instance, ESCAPE 1 tells you to press ESCAPE (`) once and then press 1 once.

Table 2-1. Lisa Keyboard Equivalents for IBM 3278-2 Functions

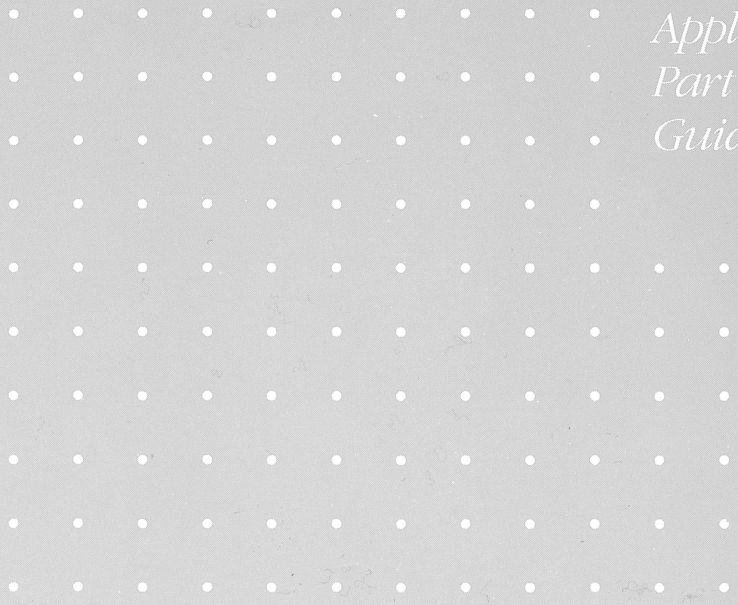
IBM Keys	Apple Keystrokes	IBM Keys	Apple Keystrokes
DUP	CONTROL-U	PF22	ESCAPE)
FIELD MARK	CONTROL-Y	PF23	ESCAPE _
PA1	ESCAPE [	PF24	ESCAPE +
PA2	ESCAPE]	NEW LINE	RETURN
PF1	ESCAPE 1	TAB	TAB
PF2	ESCAPE 2	BACK TAB	CONTROL-K
PF3	ESCAPE 3	HOME	CONTROL-/
PF4	ESCAPE 4	LEFT CURSOR	CONTROL-←
PF5	ESCAPE 5	RIGHT CURSOR	CONTROL-→
PF6	ESCAPE 6	UP CURSOR	CONTROL-↑
PF7	ESCAPE 7	DOWN CURSOR	CONTROL-↓
PF8	ESCAPE 8	ATTN	CONTROL-A
PF9	ESCAPE 9	SYS REQ	CONTROL-B
PF10	ESCAPE 0	CURSR SEL	CONTROL-D
PF11	ESCAPE -	CLEAR	CONTROL-E
PF12	ESCAPE =	ERASE INPUT	CONTROL-L
PF13	ESCAPE !	ERASE EOF	CONTROL-F
PF14	ESCAPE @	PRINT	CONTROL-P
PF15	ESCAPE #	IDENT	CONTROL-V
PF16	ESCAPE $	TEST	CONTROL-T
PF17	ESCAPE %	RESET	CONTROL-R
PF18	ESCAPE ^	DEV CNCL	CONTROL-X
PF19	ESCAPE &	INSERT	CONTROL-]
PF20	ESCAPE *	DELETE	CONTROL-_
PF21	ESCAPE (	ENTER	ENTER

For Your Convenience: A copy of Table 2-1 is printed on a tear-out card in the back of this book. You can remove it and post it near your Lisa, for ready reference.

Copying and Pasting Information

Receiving a file

You can copy information that you have received from an IBM mainframe and paste it to LisaWrite. See your *LisaTerminal* manual for details.



AppleLine
Part II:
Guide to Macintosh

If your computer is a Macintosh: Part II of this manual is included in the *MacTerminal* manual.

Appendixes

71 A Technical Specifications
73 B Connecting Cables

Technical Specifications

Apple Model Number	A9M0307
Function	Asynchronous protocol converter between IBM and Apple equipment
IBM Interface	Type A coaxial cable attached device, in accordance with "IBM 3274, 3276 Control Unit to Device Product Attachment Information" document
Apple Interface	EIA Standard RS232C
Terminal Types	Access 3270 Access III (VT100 Emulation) LisaTerminal MacTerminal
Apple Interface Options	ASCII code 7 or 8 data bits 1 or 2 stop bits odd, even, mark, space, or no parity
Apple Interface Data Rates	45.5, 50, 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600, or 19200 baud
Apple Communication Mode	Full duplex
Apple Interface Protocol	VT100 emulation, using XON/XOFF

Connectors: IBM	Female BNC (coaxial cable) connector
Apple	Shielded female DB-25 connector Pin designations: see Table A-1
Buffer Capacities: Command	15 characters
Screen	3840 characters
Power: US	95 to 132 VAC, 58 to 62 Hz
European 220 V	198 to 242 VAC, 48 to 52 Hz
European 240 V	216 to 264 VAC, 48 to 52 Hz
Maximum Power Dissipation	50 watts
Temperature: Transit	-40°C (-4°F) to +65°C (149°F) for 72 hours
Storage	-40°C (-4°F) to +47°C (116.6°F) for 6 months
Operating	+10°C (50°F) to +40°C (104°F)
Humidity	20% r.h. to 95% r.h. non-condensing over temperature range of +25 to +40°C (77 to 86°F)
Vibration	3-200 Hz at acceleration of 0.5 G

Table A-1. Apple Interface Pin Designations

Pin	Code	Function
1	SNG	Shield ground
2	TXD	Transmitted data
3	RCD	Received data
4	RTS	Request to send
5	CTS	Clear to send
6	DSR	Data set ready
7	GND	Signal ground
8	DCD	Data carrier detect
9-11	NC	No connection
12	CH	Data signal rate selector
13-19	NC	No connection
20	DTR	Data terminal ready
21	NC	No connection
22	CE	Ring indicator
23-25	NC	No connection

Connecting Cables

This appendix tells you how to acquire the correct cable assembly to connect your AppleLine to your Apple computer.

Cable specifications

The connecting cable you use must meet these specifications:

- It must not be more than 5 meters (16 feet) long.
- It must be shielded, and the shield must be connected to Pin 1.
- One end must bear a male (pin type) DB-25 connector.
- The other end must bear a female (socket type) DB-25 connector.
- The wiring between the two connectors must be pin-for-pin, except for Pins 2, 3, 4, 5, 6, and 20. The cable wiring is specified by the wiring list shown in Table B-1.

You can either purchase standard cables from your Apple dealer or have a custom cable made. These options are discussed below.

Standard Cabling

Check with your Apple dealer to see what cables are currently available. One combination you can use for the Apple III and Lisa computers consists of three parts:

- The Gender Changer that is packed with your AppleLine unit.
- An Apple Modem Eliminator cable Model 590-0029.
- An Apple serial cable Model 590-0037.

You can plug these three items together in any order. The result is a cable assembly about 7 feet long that conforms to the specifications required for connecting your AppleLine to your Apple computer.
For an Apple Macintosh computer only one cable is needed. Use Apple serial interface cable Model 590-0199.

A Custom Cable

Some computer dealers and electronic supply stores are able to fabricate custom connecting cables. Any such modem eliminated serial cable should meet the specifications listed at the beginning of this Appendix. Its pin connections must be as shown in Table B-1.

Table B-1. Connecting Cable Wiring List

MALE DB-25	PIN		PIN	FEMALE DB-25
SGND	1	——	1	SGND
GND	7	——	7	GND
TXD	2	——	3	RCD
RCD	3	——	2	TXD
TRS	4	——	8	DCD
CTS	5	——	4	RTS
DCD	8	——	5	CTS
DSR	6	——	20	DTR
DTR	20	——	6	DSR

Glossary

Asynchronous Having a variable time interval between characters. A mode of data transmission which provides framing information on a character-by-character basis.

Autobaud Feature An optional function of the AppleLine that allows it to adjust itself automatically to the data transmission rate of your Apple computer.

Baud A measure of the rate at which a computing device transmits data, equal to the potential number of bit transitions per second.

BNC Connector A special type of plug installed on the end of a coaxial cable (see below).

Coaxial Cable A special type of wire capable of transmitting high-speed computer messages over long distances.

Communication Parameter A quantity that describes some characteristic of the way a computing device communicates with other computing devices.

Communications Controller In IBM terminology, one of a series of devices that control the transmission of data into and out of mainframe computers.

Configure To modify the way software behaves by storing choices in memory.

Control Characters ESCAPE, TAB, RETURN, ENTER, and all keyboard characters entered while holding down either the CONTROL key, ⌥ key, or ⌘ key.

Control Unit In IBM terminology, a device that controls the operation of other devices (e.g. a cluster of Display Stations).

Data Base A collection of computer records containing information that is organized according to some plan.

Default A value, action, or setting that is automatically used by a computer system when no other explicit information has been given. For example, a prompt (question) is displayed on the screen along with a preprogrammed response (default response). If you press RETURN rather then typing your own response, the computer will automatically use the preprogrammed response.

Default Password The password that AppleLine automatically uses when you have not set any other or if the default settings have been reset (see Chapter 3, Part I, *Unlocking the Supervisor* for information on resetting the default passwords).

Diagnostic Test A test that determines whether or not your AppleLine is working correctly.

Display Station In IBM terminology, a monitor screen for viewing data, usually with an attached keyboard.

Emulate Of a computer device, to imitate the behavior of a different device ("with AppleLine, your Apple system *emulates* an IBM 3278 Terminal").

Host, or **Host Computer** The mainframe computer, frequently located at a remote site, that receives information from and sends data to terminals over telecommunications lines.

Information Display System In IBM terminology, an integrated group of display stations and controllers that display data and accept keyboard inputs from many users.

Load (a program) To bring a program from disk or other memory into the main area of your computer, ready for use.

Log Off To perform the sequence of keyboard entries that breaks off communication with a computer device.

Log On To perform the sequence of keyboard entries (such as typing passwords) necessary to establish communication with a computer device.

Loopback Plug A special plug included with your AppleLine, used for testing and for resetting the supervisor program.

Mainframe, or **Mainframe Computer** Any large non-portable computer, such as one that performs the central operations of an IBM data processing system.

Menu A screen listing of the functions or options available to the user of a program.

Modem A device that allows a computer to exchange data with other devices over telephone lines or other general-purpose communication circuits.

Monitor A device, similar to a television screen, for viewing computer data.

Nonvolatile Memory A type of memory that will retain information even when the power is switched off.

Operating System A computer or computer device's most fundamental program, which allows other programs to operate.

Parameter A quantity that measures some characteristic of the behavior of a computing device.

Parity A means for detecting errors in data communication by adjusting each word at the time of transmission to a fixed pattern. In *odd parity,* for example, an extra bit in each word is set to 0 or 1 so that the total number of 1 bits in the word is always *odd*

Password A string of characters that you must type on your keyboard before a computing device will respond to your commands.

Speed Indicator An optional function of the AppleLine that allows it to adjust its transmitting speed automatically to the highest speed of a modem to which it is connected.

Supervisor Password A password that the user must type on the Apple keyboard before using the AppleLine supervisor program.

Supervisor Program Software built into the AppleLine that allows the user to change its passwords and communication parameters.

Terminal A combined monitor screen and keyboard, used to exchange data with a mainframe computer.

User ID A string of characters that identifies a particular user to a computer.

User Password A secret word or string of characters that a user must type on the Apple keyboard before the AppleLine will communicate with a mainframe computer.

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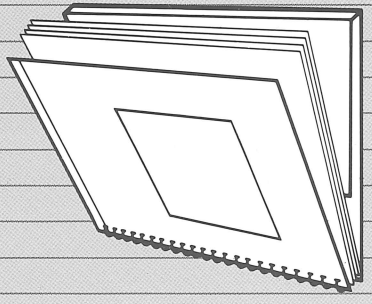

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