

apricot



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Safety and Regulatory Notices

Read the separate *Power Connection Guide* before using the Apricot FT//e for the first time. Information in the *Owner's Handbook* relating to connection to the AC power supply may not apply outside the United Kingdom.

The Apricot FT//e uses a safety ground and must be earthed. The system unit power cord is its “disconnect device”. Ensure that the FT//e is positioned close to the AC power outlet, and that the plug is easily accessible.

It is imperative that the Apricot FT//e is set to the correct voltage range before use. If not, the machine may be irreparably damaged.

Move the Apricot FT//e to Standby mode, isolate (switch off) the UPS batteries and disconnect the AC power supply before moving the system unit, cleaning the computer, or removing the access panel.

The computer may be easily knocked over if the feet are not fitted.

System processor upgrades, and disk and tape drives, must be installed only by your Apricot supplier or by an authorized Apricot maintainer.

The CD-ROM drive contains a laser system which is harmful to the eyes, and is classified as a CLASS 1 LASER PRODUCT according to IEC 825 *Radiation Safety of Laser Products (Equipment Classification: Requirements & User's Guide)*. Do not attempt to disassemble the CD-ROM drive; if a fault occurs, call an authorized Apricot maintainer. Use the CD-ROM drive only as described in this manual; failure to do so may result in exposure to hazardous radiation.

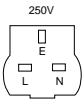
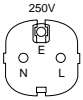




To prevent fire and electric shock, do not expose any part of the system unit to rain or moisture.

When positioning the Apricot FT//e system unit, monitor and keyboard, take into account any local or national regulations relating to ergonomic requirements.

Power cord requirements

The power cord packed with the Apricot FT//e complies with the safety standards applicable in the country in which it is first sold. Use only this power cord; do not substitute a power cord from any other equipment.

If you wish to use the computer in another country, you must ensure that you use a power cord and plug which complies with the safety standards of that country.

Plug	Standard	Countries
	BS1363A	United Kingdom
	SHUCO	Austria, Belgium, Denmark, Finland, France, Germany, Holland, Italy, Norway, Sweden
	SRAF 1962/ DB16/87	Denmark
	NEMA 5-15P	USA, Canada
	ASE 1011	Switzerland
	AS 3112-1981	Australia

The power cord fittings must bear the certification mark of the agency responsible for evaluation.

Refer to your authorized Apricot supplier if you ever require additional power cables.

UK plug wiring instructions

IMPORTANT Power Cable Connections

This equipment is supplied with a mains lead that has a non-removable moulded plug. If the socket outlets are not suitable for the plug supplied with this appliance, it should be cut off and an appropriate three-pin plug fitted.


Note: The plug severed from the mains lead must be destroyed, as a plug with the bared flexible cord is hazardous if engaged in a live socket outlet.

The following wiring information should be employed when adding the replacement plug.

The wires in the mains lead are coloured in accordance with the following code:

Green and Yellow	Earth
Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked with the letter **E**, or by the earth symbol  or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter **N** or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter **L** or coloured red.

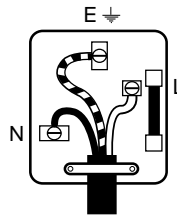
Use a fuse approved by ASTA to BS1362, i.e. carries the  mark.

Always replace the fuse cover, never use the plug with the fuse cover omitted.

Replace with same colour fuse cover only. Replacement fuse covers may be obtained from your dealer.

WARNING - THIS APPLIANCE MUST BE EARTHED

This diagram shows the wiring inside the moulded plug. Use it as a guideline if you need to re-fit a plug of a similar type to the mains lead.



German Acoustic Noise Regulation

Sound power level is less than 70 dB(A) according to DIN 45635 Part 19 (ISO 7779).

Die Deutsche Akoustische Lärm-Regulierung

Der Grad der Klangstärke ist weniger als 70 dB(A) je nach DIN 45635 Teil 19 (ISO 7779).

Bescheinigung des Herstellers/Importeurs

Hiermit wird bestätigt, daß der Apricot FT//e Series in Übereinstimmung mit den Bestimmungen der VDE 0871 B, AMTSBLATT 61/1991, Vfg 243. funkentstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

CLASS 1
LASER PRODUCT TO IEC 825

LASER KLASSE 1
PRODUKT NACH IEC 825

The CD-ROM drive is classified as a CLASS 1 LASER PRODUCT. The CLASS 1 LASER PRODUCT label is located on the rear of the system unit.

Refer to the labels on the rear of your computer to establish which of the following warnings apply.

FCC Class A

Warning - this equipment has been tested and found to comply with the limits for a Class A computing device, pursuant to Subpart J of Part 15 of FCC rules. Only peripherals (computer input/output devices, terminals, printer, etc.) certified to comply with the Class A limits may be attached to this computer. Operation of this equipment in a residential area may cause unacceptable interference to radio and television reception requiring the operator to take whatever steps are necessary to correct the interference.

FCC Class B

Warning - this equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC rules. Only peripherals (computer input/output devices, terminals, printer, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference with radio and TV reception.

Radio and television interference

The computer described in this manual generates and uses radio frequency energy for its operation. If it is not installed and used properly, in strict accordance with the manual, it may cause interference with radio and television reception.

The computer has been tested and found to comply with the RF emission limits for an FCC Class B computing device which is intended to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference with radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- * Move the computer away from the receiver being interfered with.
- * Turn the computer with respect to the receiver.
- * Turn the receiver with respect to the computer.
- * Plug the computer into an outlet that is on a different branch circuit from the receiver.
- * Disconnect and remove any I/O cables that are not being used.
- * Unplug and remove any expansion cards that are not being used, and replace the relevant blanking plates.
- * Make sure that the computer is plugged into a grounded outlet.

If you need additional help, consult your supplier. You may find the following booklet helpful: How to Identify and Resolve Radio-TV Interference Problems. This booklet is available from the US Government Printing Office: Washington DC 20402 - Stock No. 004-000-000345-4.

DOC Class A

The computer described in this manual complies with: Canadian DOC radio interference regulations CRCc 1374 governing Class A digital devices.

DOC Class B

The computer described in this manual complies with: Canadian DOC radio interference regulations CRCc 1374 governing Class B digital devices.



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- Unpacking the Apricot FT//e
- Familiarizing yourself with the Apricot FT//e
- Preparing to install the Apricot FT//e
- Connecting the components
- Using the Reference/SETUP diskette

Read this chapter before unpacking any further. It provides important information to help you site, install and configure your Apricot FT//e.

Unpacking the Apricot FT//e

Unpack the system unit in accordance with any guidance on the packaging, and fit the stabilizing feet according to the diagrams printed opposite.

The computer may be easily knocked over if the feet are not fitted.

On unpacking the computer, you should find:

- * System unit with power cord(s) appropriate for the country of sale.
- * Apricot/Mitsubishi monitor.
- * Keyboard.
- * Reference/SETUP diskette.
- * System documentation.
- * MS-DOS.
- * Driver diskettes as appropriate, to enable you to make use of certain advanced features, such as its high-resolution display capabilities.

Apricot FT//e systems are usually supplied with a mouse, although this is optional.

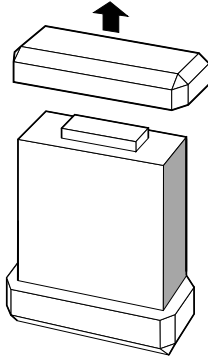
In territories where Apricot markets its own range of monitors, an additional power cord is supplied. This is for use in conjunction with the IEC-to-IEC cord supplied with Apricot monitors. When connected to one end of the IEC-to-IEC cable, it enables the monitor to be powered from an AC power outlet.

More elaborate systems may include hardware options with accompanying installation diskettes and/or additional documentation. Some of these options may have been factory-configured or installed by your Apricot supplier.

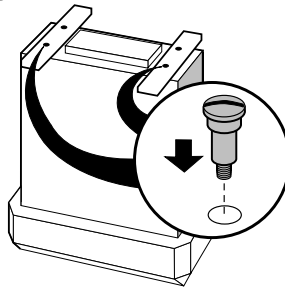
Keep the boxes and packing materials; you will need them again if you have to transport the computer elsewhere. Be sure to fill out the *Warranty* and mail it in.

Make a note of the manufacturer's data recorded on the various components (product codes, serial numbers, etc.) You may need this information if the Apricot FT//e develops a fault.

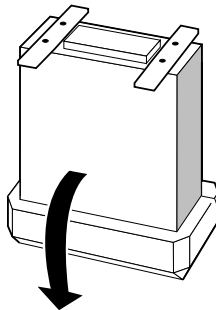
- 1** WITH THE MACHINE INVERTED, REMOVE THE POLYSTYRENE CUSHION TO REVEAL THE BASE OF THE MACHINE



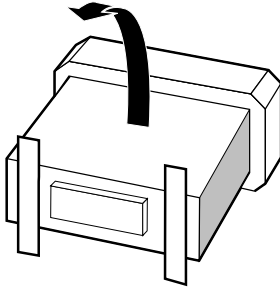
- 2** TIGHTEN THE 4 SCREWS TO FIX THE FEET.



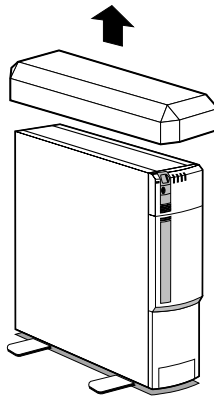
- 3** CAREFULLY LAY THE COMPUTER ON ITS SIDE.



- 4** LIFT THE COMPUTER INTO THE
STANDING POSITION.



- 5** REMOVE THE POLYSTYRENE CUSHION



Familiarizing yourself with the Apricot FT//e

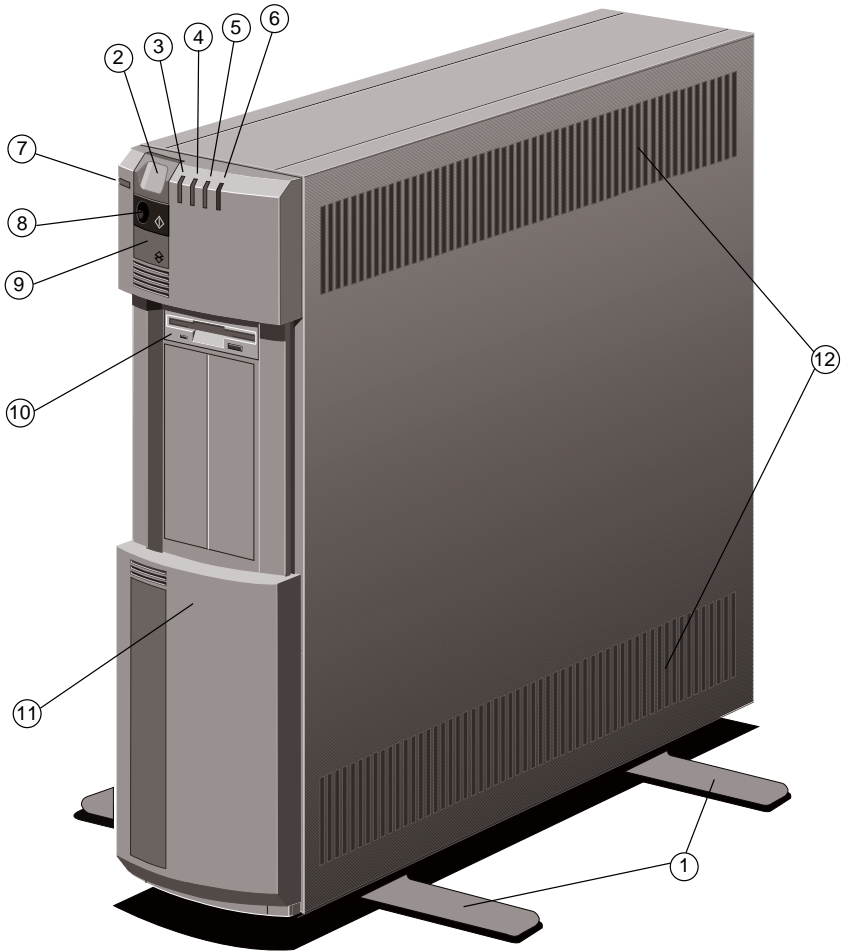
The Apricot FT//e is designed for use as a multiuser host, network server or high-performance workstation.

Read the separate *Power Connection Guide* before using the Apricot FT//e for the first time.

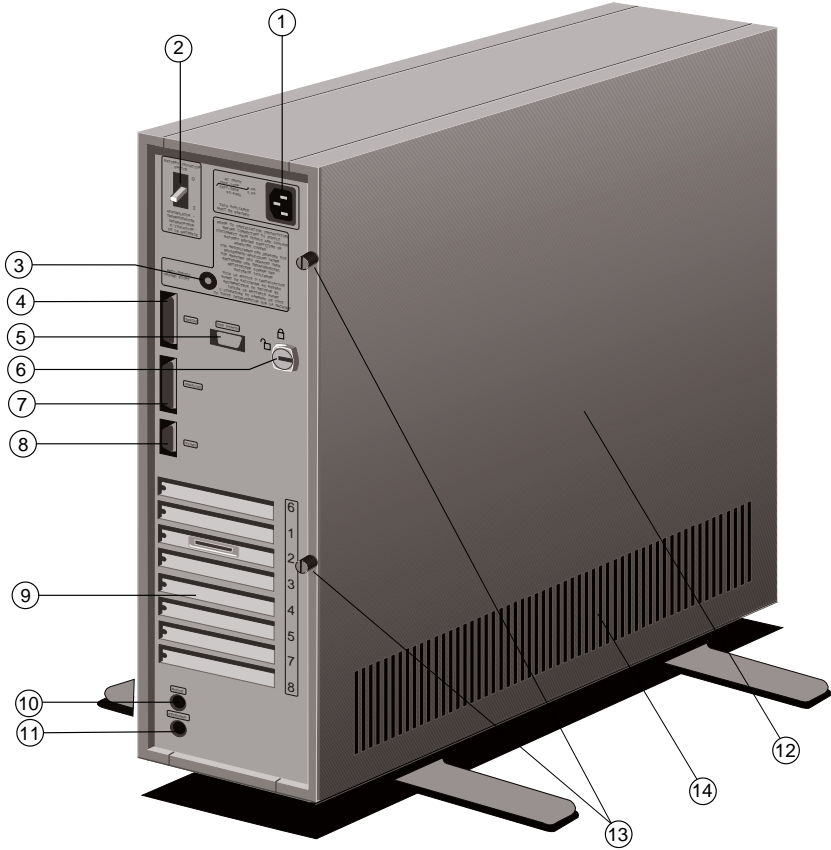
The standard features of the Apricot FT//e range include:

- * Intel microprocessor.
- * IBM PS/2-compatible Micro Channel architecture with eight 32-bit expansion card slots.
- * At least 16 megabytes of random access memory (RAM).
- * Enhanced Video Graphics Array (VGA) controller on the motherboard (up to 1024 x 768 pixels by 256 colours).
- * A Small Computer System Interface (SCSI) controller for hard disks and tape drives.
- * An Uninterruptible Power Supply (UPS) capable of supporting the Apricot FT//e for at least 10 minutes after an AC power failure.
- * Advanced System Controller (ASC) to monitor internal systems independently of the system processor.
- * Integrated security system with dedicated processor on the motherboard.
- * A 1.44 megabyte 3.5" diskette drive.

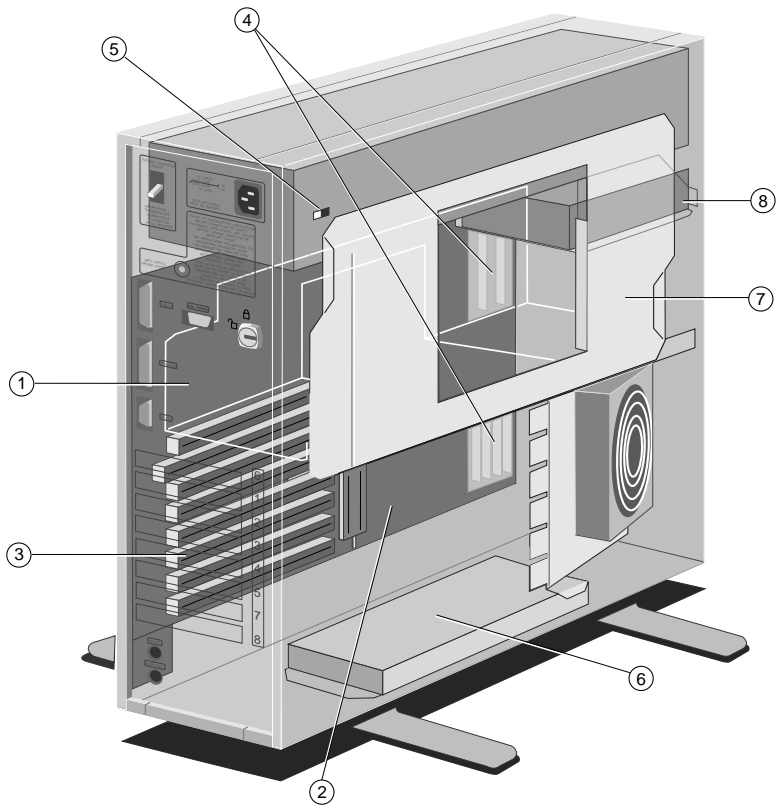
These standard features can be enhanced by more motherboard memory, various hard disk and removable media drives, and expansion cards. These options may be pre-installed at the factory or by your Apricot supplier.



- ① **feet:** fit the feet to stabilize the computer in a tower (upright) orientation.
- ② **POWER button:** press to turn the system on or off. The button can be disabled by Apricot's LOC Technology software, preventing unauthorized access when security is armed.
- ③ **UPS status LED:** flashes green when the UPS batteries are being charged, steady green when the batteries are fully charged, and amber when the batteries are being discharged (that is, when the computer is on battery power).
- ④ **local area network LED:** glows when the computer accesses the network (depending on the network software).
- ⑤ **hard disk drive LED:** glows when any of the hard disk drives are being accessed (depending on the operating system).
- ⑥ **security LED:** glows when Apricot's LOC Technology software is installed and the on-board security system is armed.
- ⑦ **power LED:** glows when the system is being powered either by the AC supply or by the UPS batteries.
- ⑧ **RESET button:** press to reboot the system. The button is recessed within the **infrared sensor**, which detects the coded signals produced by an infrared security card. The button can be disabled by Apricot's LOC Technology software, preventing unauthorized access when security is armed.
- ⑨ **Door button:** opens and closes the door to the front drive bay. The button can be disabled by Apricot's LOC Technology software, preventing unauthorized access when security is armed.
- ⑩ **3.5" diskette drive:** fitted as standard in every FT//e system.
- ⑪ **door (shown open):** door to the front drive bay, which typically houses removable media drives.
- ⑫ **air vents:** do not block these vents or the system will overheat.



- ① **power inlet:** where the AC power cord plugs in.
- ② **battery power switch:** in the Off or "O" position, isolates the UPS batteries (normally kept in the On position except when the access panel is removed).
- ③ **anti-static stud:** for attaching an anti-static wrist strap, earthed bench or bench mat.
- ④ **serial port** (50 baud to 19,200 baud): where an external modem or serial printer signal cable usually plugs in.
- ⑤ **UPS data port:** allows the internal UPS to look like an external UPS to some operating systems (see the section on the UPS in Chapter 2).
- ⑥ **panel lock:** keep the keys for this lock in a secure place.
- ⑦ **parallel port:** where a printer signal cable usually plugs in.
- ⑧ **monitor port:** where a monitor signal cable plugs in.
- ⑨ **blanking plates:** for Micro Channel expansion card slots.
- ⑩ **mouse port:** connect the (optional) Apricot mouse to this port.
- ⑪ **keyboard port:** connect the keyboard to this port.
- ⑫ **access panel:** keep the panel locked in place while the computer is in use.
- ⑬ **thumbscrews:** loosen these to remove the access panel.
- ⑭ **air vents:** do not block these vents or the system will overheat.



- ① **motherboard:** see the label inside the system unit for up-to-date information on the layout of the motherboard.
- ② **processor module:** allows easy processor upgrades.
- ③ **Micro Channel expansion card slots:** eight slots in total, although typically one or two slots may be occupied by SCSI drive controller cards.
- ④ **SIMM sockets:** every FT//e has at least 16 Mbytes of motherboard memory. The maximum memory is model-dependent, see the computer's *Add-on Installation Guide* for more information.
- ⑤ **voltage selection switch:** the FT//e can be set to operate with a 100-120 volt or 220-240 volt AC power supply.
- ⑥ **UPS batteries:** these batteries cut in to maintain power to the system, in the event of a failure in the AC power supply. See "Understanding the UPS" in Chapter 2 for more details.
- ⑦ **drive cradle:** removable cradle which holds disk and tape drives.
- ⑧ **3.5" diskette drive:** fitted as standard in every FT//e system.

Your computer may arrive with expansion cards other than the drive controller cards pre-installed. For an outline of these options, see Chapter 4, "Upgrading the Apricot FT//e".

Instructions for removing the access panel are given in Appendix A, "Inside the Apricot FT//e".

Move the Apricot FT//e to Standby mode, isolate (switch off) the UPS batteries and disconnect the AC power supply before removing the access panel.

Preparing to install the Apricot FT//e

Choosing a site

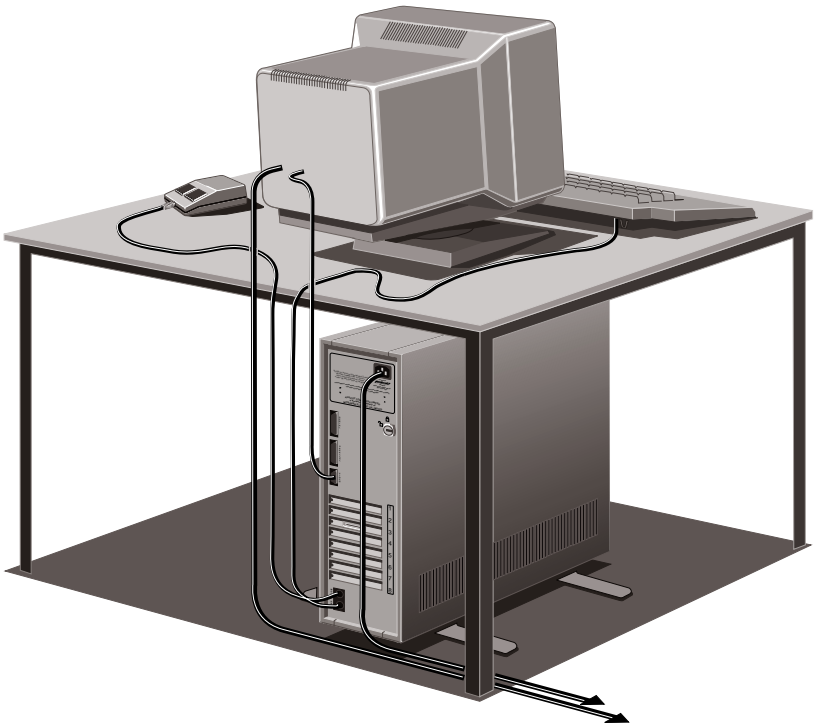
The Apricot FT//e is designed to be used in a tower or desktside (vertical) orientation. Here are a few hints for choosing a suitable site:

- * Put the FT//e on a sturdy level surface.
- * Give the FT//e plenty of room so that air can circulate on all sides.
- * Remember to leave enough room for the door to travel up and down. Don't let anything obstruct its path.



- * Site the FT//e away from excessive moisture, direct sunlight, and extremes of heat and cold. See Appendix B, “Technical information”, for recommended temperature and humidity ranges.
- * Do not allow any cables, particularly the power cord, to trail across the floor where they can be snagged by people walking past.

The Apricot FT//e uses the system unit power cord as its “disconnect device”. Ensure that the FT//e is positioned close to the AC power outlet, and that the plug is easily accessible.



Installing add-on options

If your Apricot FT//e arrived with uninstalled add-on options (such as expansion cards or memory modules) consult the *Apricot FT//e Add-on Installation Guide* for step-by-step instructions for installing them. Expansion cards may also have their own documentation.

Note that some options for which you have installation guides may have already been installed for you at the factory or by your Apricot supplier.

Checking the AC power supply

When your Apricot FT//e is delivered, it is ready for the commercial AC power supply generally available in the country in which it is sold. It has been set for the correct voltage range, and is supplied with an AC power cord and plug which comply with the relevant safety standards.

Before using your Apricot FT//e in a country *other than that in which it was originally sold*, you must check the voltage and frequency of that country's AC power supply, and the type of power cord required there.

Appendix A, "Inside the Apricot FT//e", provides instructions on changing the computer's voltage range setting. Note that the monitor's voltage setting will probably also need adjusting; consult the documentation that accompanies the monitor, or ask your Apricot supplier for help.

The "Safety and Regulatory Notices" section at the very start of this handbook includes advice about suitable power cords.

Connecting the components

Read the separate *Power Connection Guide* before using the Apricot FT//e for the first time.

Having assured yourself that the voltage settings and power cords of both the computer and the monitor are correct:

1. Ensure that the system unit, monitor, peripherals and AC power outlets are switched off.
2. Ensure the battery power switch is in the Off or "O" position.
3. Connect signal, network and power cables to their respective ports and inlets on rear of the FT//e system unit, the monitor, and peripherals.

When you plug the keyboard cable into the rear of the FT//e, be careful not to plug it into the mouse port by mistake.

If you have an Apricot monitor with an IEC-to-IEC power cord, you must use the additional power cable supplied with the FT//e to enable the monitor to be powered from the AC power supply. Connect the IEC-to-IEC cord to the power cable, then plug this cable into the monitor. Finally, plug the combined cable into the power outlet.

Warning

Always connect the combined power cables to the monitor, before plugging it into the power outlet.

4. Connect network and power cables to their respective outlets nearby.
5. If the AC power outlets have switches, set them to their On positions.
6. Set the battery power switch to the On or "I" position. The FT//e can safely be left in this condition, which is called Standby mode, when not being used.

Your Apricot FT//e is now ready to use. Instructions for moving from Standby to AC Operation mode are provided in Chapter 2, "Operating the Apricot FT//e". Note that when you use the FT//e for the first time, the power-on self-test (POST) routine may detect configuration discrepancies, or the computer may fail to find an operating system. These problems can be remedied with the Reference/SETUP diskette.

Using the Reference/SETUP diskette

The Reference/SETUP diskette is used to configure the Apricot FT//e or check the current configuration, to prepare the computer's hard disk(s), and to control certain optional features such as the power-on password.

The *Reference/SETUP Diskette User's Guide* tells you in general terms how to use the diskette. The documentation that comes with some add-on options, or the *Apricot FT//e Add-on Installation Guide*, may offer more specific instructions.

Configuring your computer

To configure a computer means to declare or describe its hardware components: the amount of memory it has, the number of disk drives, what expansion cards are fitted, and so on. Configuring your computer is necessary to ensure that the software you use can recognise and exploit the system's capabilities.

If you plan to use one of Apricot's UPS Software packages, it is particularly important to define the configuration of the computer correctly, especially the number of mass storage devices. This information is used to estimate how long the UPS batteries can support the system during an AC power failure.

The configuration data is kept in a special part of the computer's memory, known as configuration memory or CMOS memory. This memory is sustained by a small battery, so the data is not lost when the computer is switched off.

Preparing your hard disks

Before your computer's hard disks can be used to store the operating system, other system software or application software, they may first need to be prepared using the Reference/SETUP diskette. The necessary preparation can include:

- * Creating tracks and sectors (low level format).
- * Partitioning the hard disk and creating logical drives.
- * Formatting the hard disk (high level format) with one drive being formatted with a bootable partition.
- * Installing an operating system.

Some or all of this preparation may have been done for you at the factory or by your Apricot supplier. If not, follow the instructions given in the *Reference/SETUP Diskette User's Guide*.



Operating the Apricot FT//e 2

- Understanding modes
- Operating the front panel controls
- Understanding the UPS
- Understanding the security features
- Understanding the alarms
- Operating the diskette drive
- Operating a floppy disk drive
- Operating a QIC tape drive
- * Operating the DDS or DDS-DC tape drive
- * Operating the CD-ROM drive
- * Using Apricot Help
- Using the Apricot FT//e abroad

This chapter contains all you need to know for the day-to-day operation of a standard Apricot FT//e system.

Note that, if your FT//e has additional options such as tape drives, you may have separate operating guides for these options.

Understanding modes

The Apricot FT//e has four modes: a passive *Standby* mode, a normal *AC Operation* mode, a backup *UPS Operation* mode, and *Power Down* mode.

Standby mode

In Standby mode the Apricot FT//e is connected to the AC power supply but consumes only the small amount of power needed to keep the UPS batteries charged (provided that the battery power switch is in the On or “I” position). The Apricot FT//e cannot run an operating system or any other software while in this mode. The Apricot FT//e is designed to be kept in Standby mode when not being used.

You can move the Apricot FT//e from Standby to AC Operation mode using the front panel POWER button. See the next section, “Operating the front panel controls”, for more information.

AC Operation mode

AC Operation mode is the Apricot FT//e’s normal operating mode, when it runs from the AC power supply.

You can move the Apricot FT//e back to Standby mode by using the front panel POWER button. If the AC power supply fails, the Apricot FT//e moves automatically to UPS Operation mode, provided that the battery power switch is in the On or “I” position.

UPS Operation mode

UPS Operation mode is the Apricot FT//e's backup operating mode, when it runs from the UPS batteries. The Apricot FT//e switches to battery power immediately and seamlessly in the event of a discontinuity in the AC power supply.

Exactly how long the batteries can support the computer during a particular AC power failure depends on how much charge was in the batteries when the power failed, and on the power demand of the system. These factors depend in turn on the how long the batteries had been charging prior to the failure, and on the computer's configuration (amount of memory, number of disk and tape drives, and so on). For more information, see the section on "Understanding the UPS", later in this chapter.

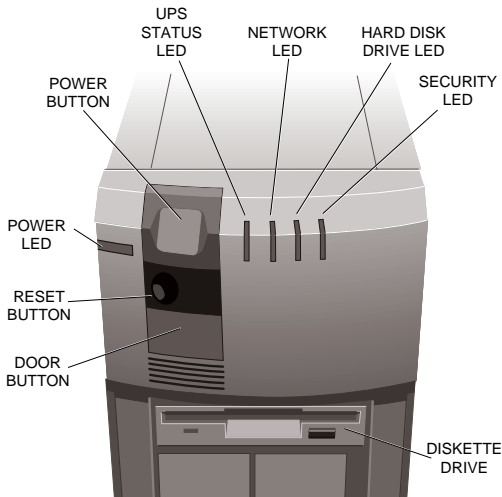
The Apricot FT//e automatically returns to AC Operation mode if AC power is restored. If the UPS batteries become exhausted, the Apricot FT//e moves automatically to Power Down mode. Power Down mode can also be reached manually by using the POWER button.

Power Down mode

The Apricot FT//e is in Power Down mode when neither AC power nor UPS battery power is available (because of power failure, battery exhaustion, or deliberate action by the operator).

The Apricot FT//e automatically returns to Standby mode when AC power is restored.

Operating the front panel controls



The front panel controls are monitored by the Advanced System Controller (ASC), which responds appropriately.

The POWER button

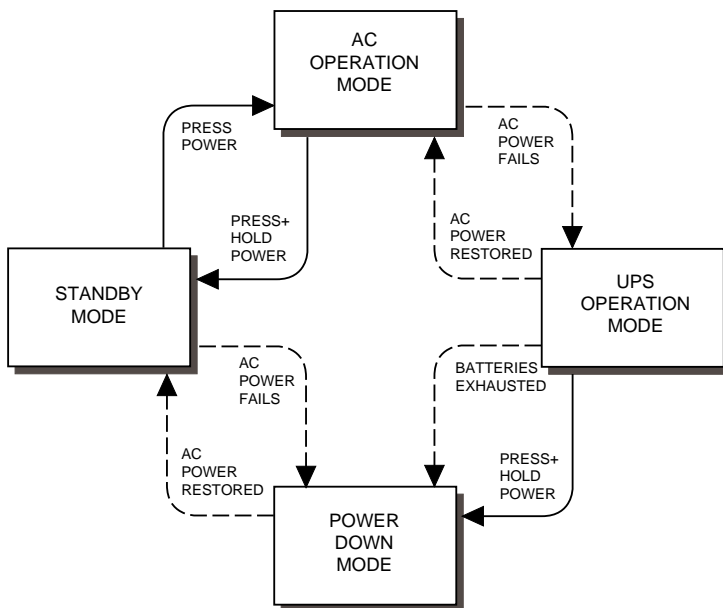
The POWER button starts/stops the FT//e. More precisely, it moves the FT//e between Standby and AC Operation modes (if running on AC power) or from UPS Operation mode to Power Down mode (if running on battery power).

Pressing the POWER button in Standby mode moves the FT//e to AC Operation mode. Note that the computer cannot enter AC Operation mode unless AC power is applied (in other words, the FT//e cannot be powered up from the UPS batteries).

Pressing the POWER button in AC Operation mode moves the FT//e back to Standby mode. To avoid accidental use, the button must normally be held down for a few seconds while the computer sounds confirmatory, high-pitched beeps; when you hear a long, final beep, release the button. The POWER button has no effect if you release it before the final beep. (You can change how long you have to hold down the button, or disable the beeps, using the Reference/SETUP diskette.)

If the AC power supply fails or is disconnected in AC Operation mode, the FT//e moves to UPS Operation mode and draws its power from the internal UPS batteries (provided that they are not isolated and have sufficient charge). Use of the POWER button now puts the FT//e in Power Down mode. As with the move to Standby mode, the button must be held down to take effect.

The following diagram summarizes the use of the POWER button.



You should be careful about resetting the FT//e or moving to an inactive mode (i.e., Standby or Power Down). Do not do so without first exiting from and closing down all applications running on the computer. This is particularly important if the FT//e is acting as a network server or host. Apricot supplies a software enhancement to the operation of the UPS which can make the ASC pause before actioning a reset or mode change request. Ask your Apricot supplier about Server Environment packs which include UPS Software.

The RESET button

The RESET button causes a hard reset of the FT//e, invoking the power-on self-test routine and prompting a re-boot. To avoid accidental use, the switch is recessed within the infrared sensor. The RESET button works only when the FT//e is in AC Operation mode.

Like the POWER button, the RESET button must normally be held down for a few seconds while the computer sounds confirmatory, low-pitched beeps; when you hear a long, final beep, release the button. The RESET button has no effect if you release it before the final beep.

The RESET button can also be pressed briefly while an alarm is sounding, without causing a reboot, to silence the alarm. This works for all except the security-related alarms. See the section on "Understanding the alarms" later in this chapter.






The DOOR button

The DOOR button opens and closes the door to the front drive bay. When closed, the door is locked and cannot be opened manually from the outside. The button works only in AC Operation and UPS Operation modes.

If the door encounters an obstruction when closing, it will stop, open fully, then wait for you to clear the obstruction and press DOOR again. The FT//e will sound a distress tone if the door is impeded (you can disable this tone with the Reference/SETUP diskette).

If the door is open when the RESET button is pressed, it closes automatically (you can change this response with the Reference/SETUP diskette).

If the LOC Technology security system is armed, only privileged users can disarm it to use the POWER, RESET or DOOR buttons. Otherwise, the security violation alarm will sound. See the section on "Understanding the security features" later in this chapter.

LED	Function
<p>power</p> 	<p>Glows when the system is being powered either by the AC supply or by the UPS batteries.</p>
<p>UPS status</p> 	<p>Flashes green when the UPS batteries are being charged, steady green when the batteries are fully charged, and amber when the batteries are being discharged (that is, when the computer is on battery power). See the section entitled “Understanding the UPS” for details.</p>
<p>network</p> 	<p>Glows when the computer accesses the network (depending on the network software). Apricot supplies a netlight utility which works with most types of LAN card. Ask your Apricot supplier for details.</p>
<p>hard disk drive</p> 	<p>Glows when any of the hard disk drives are being accessed (depending on the operating system).</p>
<p>security</p> 	<p>Glows when Apricot LOC Technology software is installed and the on-board security system is armed. See the section entitled “Understanding the security features”.</p>

What happens when the FT//e is switched on

Whenever the FT//e is started or reset, the power-on self-test (POST) routine tests various hardware components (including memory) and checks the computer's configuration. The FT//e then attempts to find an operating system; that is, it attempts to *boot*. It will look for a system diskette, a remote boot device, or a bootable disk partition, usually in that order.

1. The FT//e first checks its diskette and floppy disk drives for a *system diskette* - a diskette bearing at least the rudiments of an operating system. If it finds a system diskette, the FT//e boots from it. If it finds a non-system diskette, the FT//e invites you to replace it and press the F1 key.
2. Some LAN cards can be fitted with a *remote boot device* (typically a programmable read-only memory chip). This allows the FT//e to load its operating system from a network server or multiuser host. The LAN card must be correctly configured to enable the boot ROM, and the server or host must offer a remote boot service.
3. All FT//e systems should include a hard disk with a *bootable partition* containing at least the rudiments of an operating system.

If you have any problems when starting the FT//e, refer to Chapter 5, "Troubleshooting".

Understanding the UPS

The Apricot FT//e has an Uninterruptible Power Supply (UPS) backed by two internal batteries and monitored by the Advanced System Controller (ASC) independently of the system processor.

The UPS batteries are kept charged by the AC power supply, even when the FT//e is switched off, provided that the battery power switch is in the On or "I" position. If the AC power supply fails, the UPS batteries take over immediately. Note that the FT//e cannot be started on battery power.

The time for which the UPS batteries will support the FT//e depends on the number of expansion cards and disk drives in your system. It is vital to specify these aspects of your system's configuration as described in "Using the Reference/SETUP diskette" in Chapter 1. If you don't, the optional UPS Software will not be able to estimate the likely duration of battery time.

If you are not using the optional UPS Software, you should make your own estimate of likely battery life. It is best to simulate a power cut by switching off mains power, and observing (and timing) the system's response. As a guide, a system with three hard disks and four expansion cards should continue to run under battery power for about 15 minutes. Recharging fully afterwards would take 12 hours.

Note that the monitor is powered separately and will not work during an AC power failure unless you equip it with its own external UPS.

Battery power switch

The battery power switch on the rear of the FT//e should normally be kept in the On or "I" position *except when the access panel is removed*. While the switch is in the Off or "O" position, the UPS batteries are "isolated": they are not kept charged and the UPS cannot take over in the event of an AC power failure.

What happens when AC power fails

The time after an AC power failure is divided into three phases: brownout, battery and shutdown.

The brownout phase

The *brownout* phase is the first 15 seconds of a power failure, during which the brownout alarm sounds. If the AC power supply is restored during this period, the system resumes normal operation and the batteries begin to recharge.

The battery phase

If the power failure continues, the UPS enters its *battery* phase, during which the battery alarm sounds periodically to indicate that the system is still running on battery power. If the AC power supply is restored during this period, the system resumes normal operation (although with a reduced battery charge).

The duration of the battery phase (*battery time*) depends on how much charge was in the batteries when the power failed, and on the power requirement of the system. These factors depend in turn on how long the batteries had been recharging prior to the failure, and on the computer's configuration (amount of memory, drives, and so on). Information about the configuration is available in configuration (CMOS) memory and is used by the ASC to estimate the duration of the battery phase.

The shutdown phase

The UPS moves into the *shutdown* phase when it detects that the batteries are almost exhausted or when the estimated battery time expires (whichever comes first). A shutdown alarm sounds. Once into the shutdown phase, the restoration of the AC power supply may not necessarily return the system to normal operation.

Understanding the UPS status LED

The UPS status LED on the FT//e front panel is interpreted as follows:

UPS status	Meaning
off	batteries isolated
flashing green	batteries recharging
green	batteries recharged
amber	batteries discharging
flashing amber	batteries nearly exhausted

In short, a green light indicates that the FT//e is on AC power, an amber light indicates battery power.

The LED flickers briefly when the FT//e is switched on, as the system conducts its power-on self-test (POST) routine. See Chapter 5, “Troubleshooting”, for details.

Enhancing the operation of the UPS

Apricot supplies software packages which enhance the operation of the UPS in a variety of environments, including Novell NetWare, UNIX and OS/2. The capabilities of these packages depend on the environment, but can include:

- * A scripting function with which you can write scripts that specify commands or batch files to be run at each phase of a power failure. Messages can also be sent to the system’s users.
- * A logging function which enters the details of power supply failures in a log file.
- * A reporting function which displays the current status of the UPS (and other conditions monitored by the ASC).

Ask your Apricot supplier for more information about Server Environment packs which include UPS Software.

The UPS data port

Some operating systems include support for an external UPS interfaced by the computer’s parallel, serial or mouse port. The internal UPS in the Apricot FT//e can be made to appear as an external UPS by fitting a special cable from the UPS data port to the parallel, serial or mouse port (as appropriate). Appendix B, “Technical Information”, contains the information needed to make such a cable.

Understanding the security features

The FT//e includes three basic security features:

- * Panel lock and keys.
- * Power-on password.
- * System Identification Number (SIN).

The FT//e also includes sophisticated security hardware which can be exercised by optional Apricot LOC Technology software.

Basic security features

Panel lock and keys

The panel lock gives physical protection to the interior of the system unit. As long as you keep the panel locked and the keys in a safe place, you can control what expansion cards are fitted. You can also be confident that no one can remove valuable items such as hard disk drives.

Remember to make a note of the keys' serial number in case they get lost and need to be replaced.

Power-on password

The power-on password is a security feature which you set using the Reference/SETUP diskette. When it is enabled only users who type in the correct password can successfully start or reset the computer. Like the rest of the configuration data, the password is stored in battery-backed configuration memory. See the *Reference/SETUP Diskette User's Guide* for details.

If the Apricot LOC Technology security system is enabled, the power-on password is effectively made redundant (and is therefore disabled automatically).

System Identification Number (SIN)

Every Apricot FT//e has a unique System Identification Number (SIN) encoded into its hardware. The SIN is also printed on a label stuck onto the motherboard.

You will not normally need to know your computer's SIN. The only time it is needed is in the unlikely event of a failure of the battery which sustains the configuration memory. In this case you will be prompted to enter the SIN the next time you start the FT//e.

The purpose of the SIN is to provide a “safety net” in case the security information stored in configuration memory is accidentally lost or deliberately erased (such a loss is more significant if the LOC Technology system is installed).

Apricot LOC Technology

The Apricot FT//e has an on-board Apricot LOC Technology security system controlled by a dedicated processor. The security hardware is normally disabled; to configure and enable it you will need a LOC Technology software pack. The security configuration is encrypted and held in a separate CMOS chip, away from the FT//e's main configuration data, accessible only by the security processor.

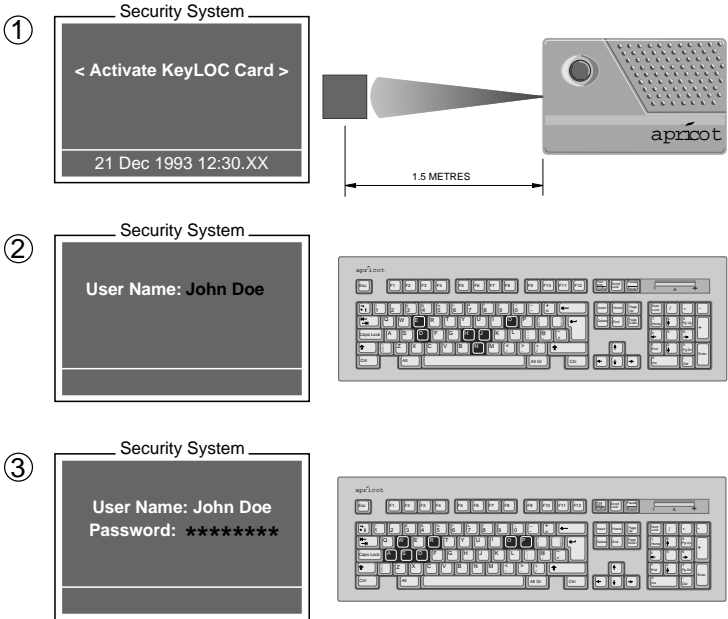
Access and Resource Control

Users of the system are issued with small devices, about the size of credit cards, called KeyLOC cards. Each card is programmed with a unique electronic signature which is transmitted as a coded infrared pulse when a button on the card is pressed. This pulse is detected by the infrared sensor on the FT//e's front panel, and decoded by the security processor.

Once the LOC Technology system has been correctly configured, programmed and enabled, a logon sequence is invoked automatically every time the Apricot FT//e is switched on or reset. The user logging-on is required to identify himself by firing his KeyLOC card and entering a user name and password. All this takes place before the computer boots, and is therefore independent of the operating system.

A specified lockout period is imposed after three invalid logon attempts. A security lockout alarm sounds after five invalid attempts.

The security system can track more than 20 individual users per computer, and recognises several different classes of user, each with different privileges.



Individual users can be forced to change their passwords every few days, and recently-used passwords can be automatically rejected. Logon periods can be defined for each user, for example, from 9:00 to 17:00, Monday to Friday. (The security processor has its own clock, independent of the system processor's clock, for extra protection.)

The system can be configured to define what hardware components each user can and cannot use once logged-on, to the level of individual ports and expansion slots.

LOC Technology and the Apricot FT//e

The LOC Technology system can be “armed” to prevent users tampering with the FT//e. The security LED on the front panel remains lit while security is armed.

If the battery power switch is moved to 'O', or the key is turned in the access panel lock, while security is armed, a security violation alarm sounds. This alarm can be silenced only by an infrared pulse from a suitably-privileged user's security card, which also disarms security.

If the POWER, RESET or DOOR button is pressed while security is armed, the security violation alarm begins to sound (in other respects, the button has no effect). If the button is released within 5 seconds, the alarm stops, but if the button is pressed again (within 30 seconds of the first press) the alarm will restart and can be silenced only by a privileged user. This scheme effectively disables the buttons, but avoids accidental triggering of the alarm.

Unattended Mode

LOC Technology also offers an unattended mode for DOS, Windows, NetWare, OS/2 and UNIX. When the Apricot FT//e needs to be left unattended for a period, the KeyLOC card of an authorized user can be used to blank the screen and disable the keyboard and mouse, but otherwise leave the computer running normally.

Drive Encryption

LOC Technology (Advanced Edition) provides the ability to transparently encrypt and decrypt data on diskette drives and hard disk partitions.

Understanding the alarms

The table below helps you to identify the Apricot FT//e's alarms.

Alarm	Meaning
slow high-pitched beeping	brownout phase of AC power failure
intermittent two-tone beeping	battery phase of AC power failure
continuous descending tone	shutdown phase of AC power failure
fast low-pitched beeping	system overheating
continuous two-tone beeping	security violation

If you hear the system overheating alarm, you should immediately switch off the computer, isolate (switch off) the UPS batteries, and disconnect the AC power supply.

See Chapter 5, "Troubleshooting", for more advice on how you should respond to these alarms.

All alarms, except the security violation alarm, can be silenced by *briefly* pressing the RESET button. The security violation alarm can be silenced only by disarming the LOC Technology system with a pulse from a privileged user's infrared security card.

All these alarms are produced by the Advanced System Controller (ASC) and can be disabled by the Reference/SETUP diskette.

In addition to alarms, the FT//e also produces audible confirmation tones when the POWER and RESET buttons are pressed, and distress tones if door motion is impeded. If suitable UPS Software is installed, the FT//e will also sound a countdown sequence before actioning a reset or mode change. All these "user confirmation" tones can be disabled with the Reference/SETUP diskette.

Operating the diskette drive

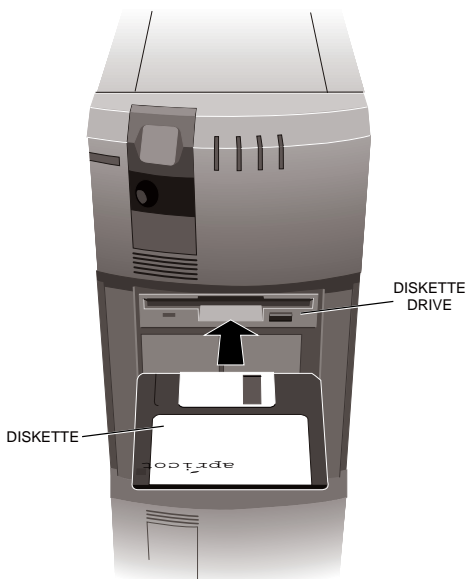
The 3.5" diskette drive can read and write double-sided diskettes with a formatted capacity of either 1.44 Mbytes (if marked "HD" or "high density") or 720 Kbytes (marked "DD" or "double density").

Each diskette has a rigid plastic cover with a metal shutter that guards the disk surface. The drive automatically moves the shutter aside to read the diskette. Never touch the exposed surface under the shutter.

Keep diskettes well away from dust, moisture, magnetic objects, and equipment that generates magnetic fields. Also, avoid extremes of temperature and exposure to direct sunlight. Otherwise, data recorded on the diskette may become corrupted.

Inserting a diskette

Insert the diskette into the slot with the arrowhead on the face of the diskette pointing towards the drive. Push the diskette in until it engages with the drive mechanism.



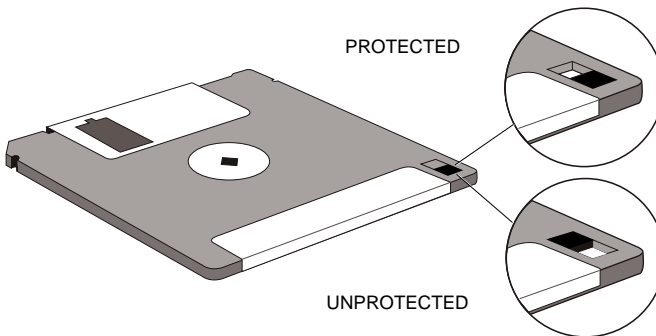
Removing a diskette

Before attempting to remove a diskette, ensure that the drive is not currently in use (the drive's LED must be unlit).

Press the EJECT button. The drive mechanism disengages and the diskette is ejected halfway out of the drive.

Write-protecting a diskette

A diskette can be write-protected by sliding the small tab toward the edge of the diskette to expose the little hole beneath it (as shown below). With the tab in this position, you can read or print files from the diskette, but you cannot create, rename or delete any files.



Operating a floppy disk drive

Your Apricot FT//e may be configured with a 5.25" floppy disk drive. This drive can read and write double-sided disks with a formatted capacity of either 1.2 Mbytes (if marked "HD" or "high density") or 360 Kbytes (marked "DD" or "double density").

Each floppy disk is sealed into a flexible plastic envelope with a long, rounded aperture through which the read/write heads of the disk drive can meet the disk surface. You must never touch the exposed surface of the disk yourself.

Keep floppy disks well away from dust, moisture, magnetic objects, and equipment that generates magnetic fields. Also, avoid extremes of temperature and exposure to direct sunlight. Otherwise, data recorded on the disk may become corrupted.

Inserting a floppy disk

Insert the disk into the drive slot with the read/write aperture foremost. When the disk is fully inserted, turn the locking lever one-quarter turn counterclockwise to engage the drive mechanism.

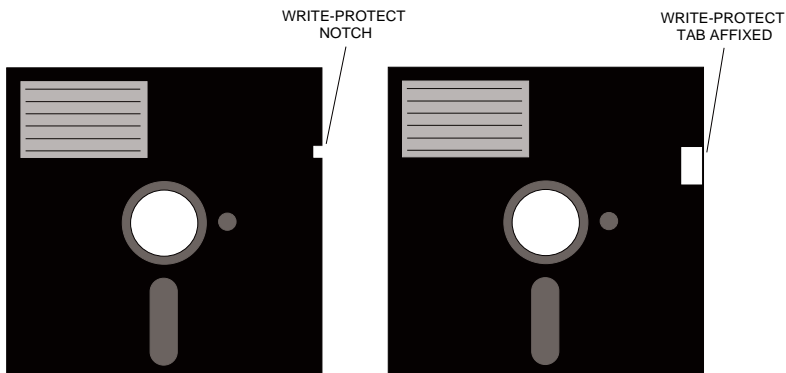
Removing a floppy disk

Before attempting to remove a disk, ensure that the drive is not currently in use (the drive's LED must be unlit).

Turn the locking lever one-quarter turn clockwise to disengage the drive mechanism. The diskette is ejected halfway out of the drive.

Write-protecting a floppy disk

A floppy disk can be write-protected by covering the small notch in the edge of the disk envelope with a self-adhesive tab (such tabs are typically supplied with new floppy disks). With the tab in this position, you can read or print files from the disk, but you cannot create, rename or delete any files.



Operating a QIC tape drive

Your Apricot FT//e may be configured with a QIC tape drive for quarter-inch tape cartridges. The software required to control the QIC tape drive depends on your operating environment; ask your Apricot supplier for details.

Apricot currently supplies 150 Mbyte and 525 Mbyte QIC tape drives. However, these capacities depend on the type of cartridge and the recording format used.

- * The 525 Mbyte drive can use either DC6320 (600 ft, 320 Mbyte) or DC6525 (1000 ft, 525 Mbyte) cartridges and can read and write in QIC-525, QIC-150 and QIC-120 formats.
- * The 150 Mbyte drive can use DC6150 (600 ft, 150 Mbyte) cartridges and can read and write in QIC-150 and QIC-120 formats.

Both drives can also read from (but not write to) a QIC-24 formatted tape.

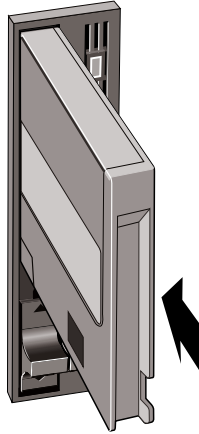
The drive automatically senses the cartridge type and uses the maximum density QIC format possible for that cartridge (thereby giving its nominal capacity) unless the cartridge has already been used in a lower-density format.

Apricot does not supply, support or recommend the use of 1000 ft, 250 Mbyte cartridges with the 150 Mbyte drive. **If you must use 1000 ft cartridges with the 150 Mbyte drive, do not use 600 ft cartridges on the same drive.** The different cartridges produce different patterns of wear on the read/write heads, resulting in increased error rates and reduced head life. Standardize on one length only (preferably 600 ft) to get the best performance from your drive.

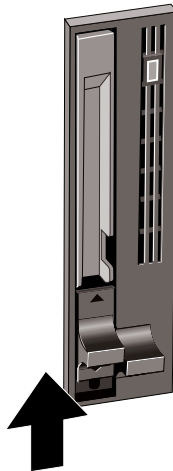
The tape drive can be damaged by incorrect insertion or removal of cartridges, so always observe the following procedures:

Inserting a cartridge

1. Check that the green indicator on the tape drive is not lit. This indicates that the drive is ready to accept a cartridge.
2. Remove the cartridge from its plastic holder.
3. Insert the cartridge as shown below. Push the cartridge gently into the drive as far as it will go.

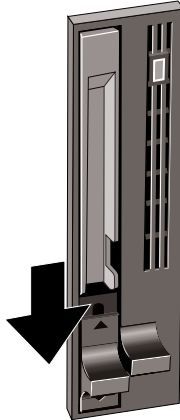


4. Push the control lever up to engage the mechanism.



Removing a cartridge

1. Do not attempt to remove the cartridge while it is being accessed by the computer (that is, while the green indicator is lit).
2. Push the control lever down to release the mechanism.
3. Push the control lever further down (you will feel a slight resistance as you do so) until the cartridge springs a short way out of the drive.



4. Pull the cartridge out of the drive slot.
5. Return the cartridge to its plastic holder. This protects the cartridge and prevents dust from collecting on the surface of the tape.

Write-protecting a cartridge

A cartridge can be write-protected by turning the circular plastic plug in the top left corner of the cartridge so that it points to **SAFE**. The plug can be turned with a screwdriver or the edge of a coin.



SAFE
POSITION



UNSAFE
POSITION

With the plug in this position, data can be read from the tape but not written to it.

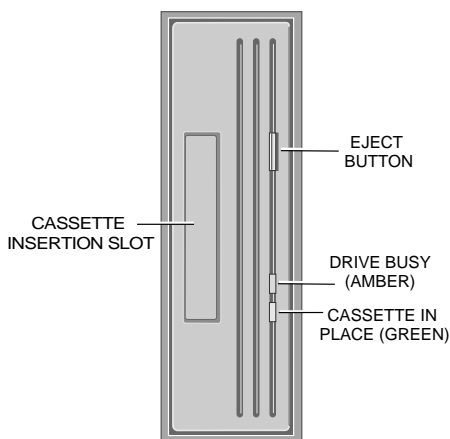
Keep your tape cartridges well away from magnetic objects, and equipment that generates magnetic fields. Avoid extremes of temperature and exposure to direct sunlight, otherwise, the data recorded on the tape may become corrupted.

Operating the DDS or DDS-DC tape drive

Your Apricot FT//e may be configured with a SCSI DDS (Digital Data Storage) or SCSI DDS-DC (Digital Data Storage with Data Compression) tape drive. The software needed to control the drive depends on your operating environment; ask your Apricot supplier for details.

The DDS-DC drive differs from the DDS drive in that it uses a built-in compression algorithm which can typically double, and in some cases quadruple, tape capacity. Data compression and decompression is transparent to the host software.

The DDS-DC drive is illustrated below; the DDS drive is similar except that the LED indicators and EJECT button are in different positions. The way you use the drive and the meaning of the indicators is the same for both types.



The DDS-DC and DDS drives use standard 60-metre or 90-metre digital cassettes bearing the DDS symbol. The DDS-DC drive writes compressed data by default, unless it finds uncompressed data already on the cassette. The drive can also write uncompressed data under software control. When reading a cassette, the DDS-DC drive automatically distinguishes compressed and uncompressed data and either decompresses it or passes it through unaltered as appropriate.

Use only cassettes bearing the DDS symbol; you cannot play audio DAT cassettes with these drives.

The DDS drive has a nominal capacity of 1.3 Gbytes on a 60-metre cassette, with a sustained transfer rate of 183 Kbytes/second.

The DDS-DC drive writing uncompressed data has a nominal capacity of 1.3 Gbytes on a 60-metre cassette or 2.0 Gbytes on a 90-metre cassette, with a sustained transfer rate of 366 Kbytes/second. At a data compression ratio of 4:1 the DDS-DC drive has a nominal maximum capacity of 5.2 Gbytes on a 60-metre cassette or 8.0 Gbytes on a 90-metre cassette; the sustained transfer rate is increased by the same ratio. However, the actual compression ratio and transfer rate achievable in any particular case depend on the characteristics of the data being compressed, and may be higher or lower than these nominal figures.

Interpreting the LED indicators

There are two LED (light-emitting diode) indicators on the drive's front panel. The Cassette in Place (green) and Drive Busy (amber) LEDs show the status of the drive:

Green	Amber	Drive status
On	Off	Cassette inserted
On	On	Cassette inserted: tape being read or written
Flashing slowly	On/Off	Media warning
Flashing rapidly	On	Drive could not write to tape correctly
On/Off	Flashing rapidly	Hardware error or high humidity

Media warning

A media warning, when the Cassette in Place (green) LED flashes slowly, indicates that the tape may be becoming unreliable, although at this point no data has been lost. First, clean the tape head cylinder with the special cleaning cassette available from Apricot, then try the data cassette again. If the warning persists, copy the data onto a new cassette and discard the old one.

A media warning can also indicate that a prerecorded audio DAT cassette has been inserted by mistake.

Drive could not write to tape

If the Cassette in Place (green) LED flashes rapidly, this means that the drive could not write to the tape correctly, and indicates that the tape has become unreliable. Remove the cassette and use another.

Hardware error or high humidity

If the Drive Busy (amber) LED flashes rapidly, this indicates either a hardware error or dew (high humidity). If this happens soon after powering-up the computer, the drive's diagnostic test may have failed, in which case the drive will not operate. Request help from your Apricot supplier or an authorized Apricot maintainer.

If the drive detects high humidity, the tape is automatically ejected. As soon as the drive detects that the humidity is at an acceptable level, it will return to normal operation.

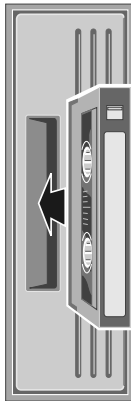
Automatic drive operation

To prolong the life of the tape and the drive mechanism, the drive "relaxes" during periods of inactivity (no read or write operations):

- * After 30 seconds, the capstan and pinch roller are released and tape tension is removed.
- * After 90 seconds, the tape is pulled away from the head cylinder, and the cylinder stops rotating.

Inserting a cassette

Insert the cassette into the slot with the triangular arrowhead on the cassette pointing towards the drive. As the tape is inserted, the drive takes it and automatically loads it into the drive mechanism. A load sequence checks ambient humidity, the tape format and data integrity. Unless the tape is blank the tape log, which contains a history of usage of the tape, is read into the drive's memory.



The drive will automatically format a blank tape when data is first written to it. Remember to allow time for the formatting process when you use a new tape.

Removing a cassette

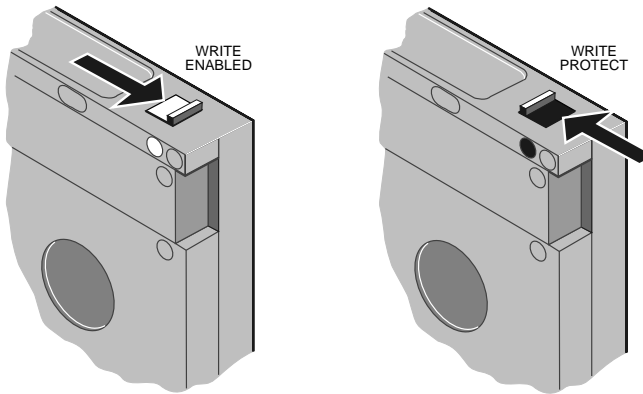
Before attempting to remove a cassette, ensure that the drive is not currently in use (the amber Drive Busy indicator must be unlit).

Press the EJECT button on the front of the drive (depending on your operating environment, the EJECT button may be disabled while the drive is in use). If the tape is write-enabled, a copy of the tape log, held in the drive's memory, is written back to tape. The drive rewinds to the beginning of the tape, unthreads it, and ejects the cassette. Several seconds may pass between the button being pressed and the cassette being ejected, so be careful not to turn off the computer before the operation is completed.

Write-protecting a cassette

A cassette can be write-protected by sliding the white tab on the cassette so that the recess is revealed. In this position, data can be read from the tape but not written to it.

The tape log, which includes a record of data integrity failures, cannot be updated while the cassette is write-protected. It follows that the tape log becomes inaccurate if a cassette is used while write-protected, and the media warning LED status cannot be relied upon to determine if the cassette needs to be copied and replaced.



Keep your cassettes well away from magnetic objects, and equipment that generates magnetic fields. Avoid extremes of temperature and exposure to direct sunlight; otherwise, the data recorded on the tape may become corrupted.

How to prevent the drive ejecting cassettes

Under Xenix, the DDS or DDS-DC tape drive normally ejects the cassette after completing a read/write operation. To prevent this automatic ejection, you need to create a new “no unload on close” device.

1. Discover the major and minor numbers of the existing device by entering:

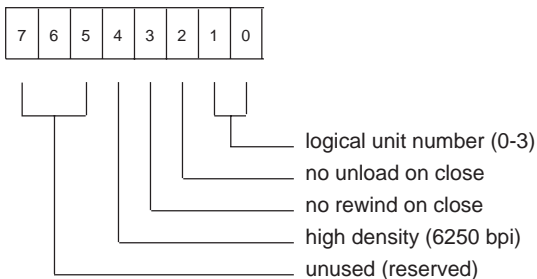
```
l /dev/rct0
```

This produces a display similar to the following:

```
crw-rw-rw 2 root root 11, 0 Dec 7 9: 40 /dev/rct0
```

In this example, the major number is 11, the minor number is 0. The major number for your device might be different as it is dynamically allocated when the tape drive is first installed.

2. The minor number of a SCSI tape device is the decimal value of a byte composed as follows:



Thus the minor number of the new device is the logical unit number of the existing device (typically zero) plus 4 for “no unload on close”.

3. Use these major and minor numbers to create a new device that will not eject the tape, for example:

```
mknod /dev/nurct0 c 11 4
```

4. You can now access the drive using the newly-created device. To make the no-eject device the default device, log in as root and enter:

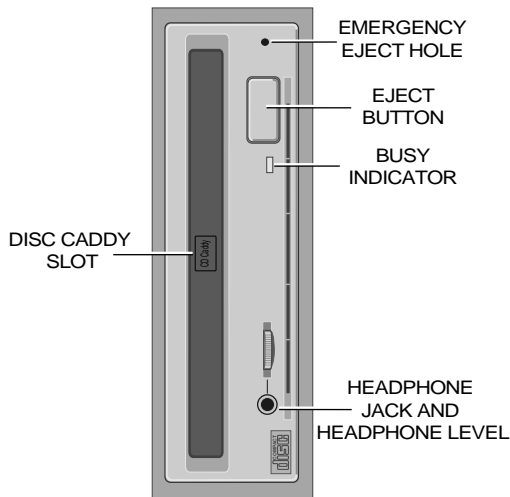
```
mv /dev/rct0 /dev/Erct0  
mv /dev/nurct0 /dev/rct0
```

Operating the CD-ROM drive

Your Apricot FT//e may be configured with a SCSI CD-ROM (Compact Disc ROM) drive. The software required to control the CD-ROM drive depends on the your operating environment; ask your Apricot supplier for details.

With the appropriate software support, the drive can retrieve multimedia data from CD-ROM, CD-ROM XA (Extended Architecture), CD-I (Compact Disc Interactive), CD-I Ready, CD-Bridge and Photo-CD (single and multisession) discs. It can also play commercial audio CDs. By default, the drive spins at double normal speed except when reading audio CDs.

The drive has its own headphone jack with associated volume level control.



Do not attempt to move the computer while a CD is in the drive, especially if the CD is being played at the time.

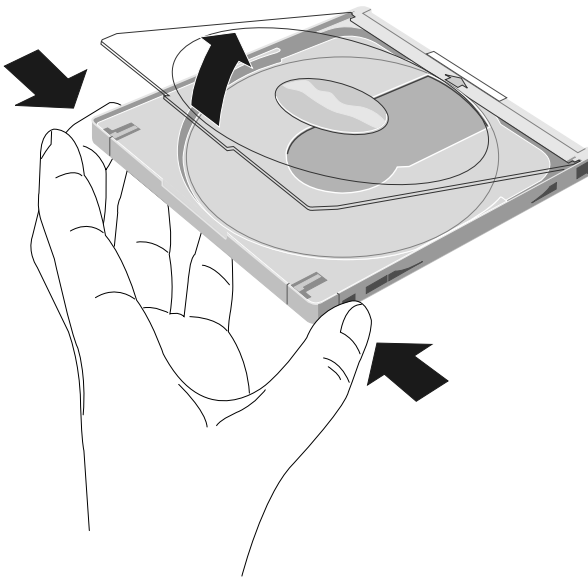
The laser beam inside the SCSI CD-ROM drive is harmful to the eyes. Do not attempt to disassemble the CD-ROM drive. If a fault occurs, call an authorized Apricot maintainer.

Inserting a compact disc

The SCSI CD-ROM drive uses a special removable disc caddy to hold a CD within the drive mechanism. The caddy has a metal shutter that guards the disc's surface; the drive automatically moves the shutter aside to read the disc. One disc caddy is provided free with the drive; more can be obtained from your Apricot supplier. Use only disc caddies supplied by Apricot.

Do not confuse a CD's storage case with a proper disc caddy; if you attempt to insert a disc storage case you will damage the drive.

1. Ensure that the computer is turned on and that the drive is empty (the legend "CD Caddy" should appear on the flap covering of the drive slot).
2. If there is a protective film on the centre of the caddy lid, remove it before using the caddy.
3. To open the caddy, press the tabs on both edges at the end opposite the shutter.



4. Set the disc, with its label upward, in the caddy. Handle the disc only by its edge.
5. Close the lid of the caddy firmly.
6. Insert the caddy into the slot of the drive with the disc's label facing left and the arrow on the caddy pointing towards the drive (that is, shutter end foremost). Push the caddy in until it is completely swallowed up by the drive.

The drive begins reading the disc's table of contents. The drive's activity indicator lights while the table of contents is being read. When the activity indicator goes out, the drive is ready for use.

If the activity indicator remains on, this may indicate that the disc is not properly positioned within the caddy. In this case, press the EJECT button to remove the caddy and try again. If the problem persists, consult your Apricot supplier or an authorized Apricot maintainer.

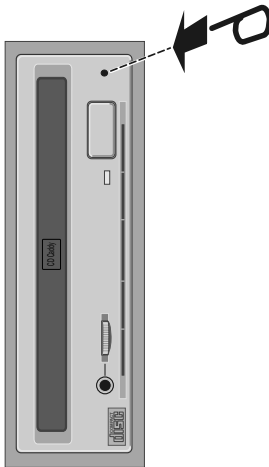
Note too that the software controlling the CD-ROM drive may be able to prevent the insertion of a disc.

Removing a compact disc

1. Ensure that the computer is turned on (otherwise the EJECT button will not work) and that the drive is not currently in use (the drive's activity indicator must be unlit).
2. Press the EJECT button. The drive mechanism disengages and the caddy is partially ejected from the drive.

The EJECT button can be disabled by the software controlling the CD-ROM drive. In this case pressing the EJECT button will have no effect.

To eject the drawer manually (for example, after a power failure) you must first ensure that the computer is turned off. Then insert a thin metal rod (such as an unwound paper clip) into the emergency eject hole and push hard (see below). The rod must be at least 35 mm long.



Caring for compact discs

Keep CDs and caddies well away from dust and moisture. Avoid touching the surface of the disc; for example, when the disc is inside a caddy, do not open the shutter manually and touch the disc. Also, avoid extremes of temperature and exposure to direct sunlight.

Using Apricot Help

Some of the diskettes supplied with your computer will include help files, typically explaining how to install or use the contents of those diskettes. Such diskettes have the words “Apricot Help” printed on the disk label.

Apricot Help may be supplied in various forms, according to the target operating system. The two most common forms are ASCII text files and Microsoft Windows help files.

Viewing text files

ASCII text files, identified by their `.txt` file extensions, can be read by most text editors and wordprocessing programs. Alternatively they can be displayed, one screenful at a time, using the DOS **more** command; for example:

```
more < helpfile.txt
```

Viewing Windows help files

Windows help files can be displayed only by the Microsoft Windows Help program (v3.1 or later).

If your computer has a hard disk on which Apricot has pre-installed either Microsoft Windows or Windows for Workgroups, copies of some Windows help files may already be available as icons in the “Apricot” program group. To view the help file relating to a particular diskette, simply double-click on its icon, or select the icon and press ENTER. For more information about using Help, see your Windows documentation.

If the Windows help file you want to view is not already installed, or if for any other reason you need to view a Windows help file directly from a diskette:

1. Insert the diskette into a suitable drive.
2. Use Windows File Manager to view the contents of the diskette.

3. Choose the help file, identified by its *.hlp* file extension, either by double-clicking on its filename or by selecting the filename with the cursor and then pressing ENTER.

The Windows Help program starts, displaying the first topic in the help file. For more information about using Help, see your Windows documentation.

Alternatively, you can copy the Windows help file from the diskette to a hard disk or network drive, and create a program item for it using Program Manager. The help file can then be viewed at any time simply by double-clicking on its icon. To do this:

1. Insert the diskette into a suitable drive. Copy the Windows help file, and also the *diskhelp.ico* icon file, from the diskette to a hard disk or network drive.
2. Choose **New** from the File menu in Program Manager. Select the **Program Item** option in the New Program Object dialog box, then choose **OK**. The Program Item Properties dialog box appears.
3. In the Description text box, type the title of the diskette from which the help file was copied.
4. In the Command Line text box, type the path and filename of the help file (including its *.hlp* extension).
5. Choose **Change Icon**. The Change Icon dialog box appears. In the File Name text box, type the path and filename of the *diskhelp.ico* icon file. Choose **OK**.
6. In the Program Item Properties dialog box, choose **OK**. The dialog box closes and the Apricot disk help icon appears in the program group.

All the help files provided by Apricot have a version number so you can tell whether you're looking at the most up-to-date version. You can discover the version number of a Windows help file by viewing it with Help and choosing **About Help** from the Help menu.

Using the Apricot FT//e abroad

If you plan to use your Apricot FT//e in a country other than that in which it was originally sold, you should first check the following facts about your destination:

1. The voltage and frequency of the commercial AC power supply.
2. The type of plug required for AC power supply outlets.

The Apricot FT//e can function within two alternative AC power supply ranges:

100 - 120 volts AC, 50 - 60 Hz

220 - 240 volts AC, 50 - 60 Hz

It is imperative that the Apricot FT//e is set to the correct voltage range before use. If not, the machine may be irreparably damaged.

Your FT//e is preset for the voltage range appropriate for the country in which it is first sold. You can change the setting by means of a switch inside the system unit. See Appendix A, "Inside the Apricot FT//e", for further instructions.

The voltage setting of the monitor must always be the same as the voltage setting of the system unit. See the documentation that accompanies the monitor or consult your Apricot supplier to find out how to change the voltage setting.

Make sure that the FT//e and monitor are returned to their original voltage settings when you return home.

Your FT//e comes with a power cord and plug which comply with the safety standards applicable in the country in which it is sold. If you plan to use your computer in another country, you must get a power cord that complies with the safety standards of the destination country. See the "Safety and Regulatory Notices" section at the very start of this handbook for details.

See Chapter 3, "Caring for the Apricot FT//e", for more information about transporting the FT//e.



Caring for the Apricot FT//e 3

- Cleaning the Apricot FT//e
- Maintaining the configuration battery
- Maintaining the UPS batteries
- Transporting the Apricot FT//e

This chapter provides information on how to care for your computer. The Apricot FT//e requires little physical maintenance other than occasional cleaning. But you must take care when transporting it to avoid damage to its sensitive components, particularly the hard disks.

Cleaning the Apricot FT//e

Move the Apricot FT//e to Standby mode, isolate (switch off) the UPS batteries and disconnect the AC power supply, before cleaning the computer.

If you have any problems with the Apricot FT//e which can't be resolved by cleaning it, consult the "Troubleshooting" chapter.

The system unit

Do not use sprays, solvents or abrasives that might damage the computer's finish. Do not use cleaning fluids or sprays near air vents, ports or disk and tape drives.

- * Occasionally wipe the system unit with a soft, slightly damp, lint-free cloth.
- * Occasionally check the door runners for a build-up of dust and fluff which could foul the mechanism.
- * Occasionally clean the air vents on the side of the system unit. Dust and fluff can block the vents and limit the airflow.
- * Occasionally clean the diskette drive using a proprietary head cleaner.

The monitor

Occasionally wipe the monitor with a soft, slightly damp, lint-free cloth. It is best to use an anti-static glass cleaner on the monitor screen. Don't spray glass cleaner directly onto the screen: it could run down inside the case and damage electrical circuits.

The QIC tape drive

You should clean the QIC tape drive after every 8 hours' use, using the special cleaning kit available from your Apricot supplier. Full instructions for cleaning are provided with this kit.

It is also advisable to clean the tape drive after the first use of a new tape.

The keyboard

When necessary, clean the keycaps with a slightly damp cloth and a minimum amount of a non-abrasive cleaning agent.

Take care not to spill any liquid onto the keyboard. Follow these steps if you spill something on the keyboard and it stops working:

1. If the liquid is viscous, unplug the keyboard and call your Apricot supplier or an authorized Apricot maintainer.
2. If the liquid is thin and clear, try unplugging the keyboard, turning it upside down to let the liquid run out, and drying it for 24 hours at room temperature. If it still doesn't work, call your Apricot supplier or an authorized Apricot maintainer.

If a solid object drops between the keys, turn the keyboard upside down and shake it; do not probe between the keys as this may cause damage.

The DDS or DDS-DC tape drive

The read/write heads in the tape drive are protected during normal operation by a built-in cleaning roller. In addition, a special cleaning cassette is available from your Apricot supplier. This cassette should be used:

- * Every 25 operating hours.
- * When a media warning status is indicated.

When you insert the cleaning cassette, the drive recognises it as a cleaning cassette, runs it for about 20 seconds, then ejects it automatically. Each time the cleaning cassette is used the tape advances over an unused portion of the tape. If the drive ejects the cleaning cassette immediately after you insert it, this means that the entire tape has been used and a new cleaning cassette is required. You cannot rewind a cleaning cassette.

Do **not** attempt to use an ordinary audio DAT cleaning cassette. The drive will be unable to recognise it as a cleaning cassette.

The mouse

Dust and dirt may accumulate in the ball tracking mechanism of the mouse. To clean the mouse:

1. Unplug the mouse, turn it upside down and locate the plastic cover that holds the ball in place. Depending on the model, the plastic cover can be removed either by rotating it counter-clockwise or by sliding it forward slightly.
2. Remove the cover and set it aside.
3. Cupping one hand over the underside, turn the mouse back the right way up. The ball will drop into your hand.
4. Blow gently into the mouse to remove any dust that has collected there.
5. Inside the mouse are three plastic rollers. Using a cotton swab moistened with a solvent cleaner, gently wipe off any oil or dust that has collected on the rollers, rotating them to reach all surfaces.
6. Use clear water, or water with a mild detergent, to clean the ball. Then dry it with a clean, lint-free cloth.
7. Put the ball back in its socket and replace the plastic cover. It should click into place.

Maintaining the configuration battery

The Apricot FT//e keeps a record of its current hardware configuration in a CMOS memory chip which is sustained by a small rechargeable battery.

Normally, this battery is kept charged by the AC power supply. If the FT//e is left disconnected for more than three months, the battery will become exhausted and the configuration data will be lost. When the FT//e is next switched on, several error messages will appear including:

Please Reconfigure and Retry
Strike the F1 Key to Continue

Before doing anything, make sure you know the computer's unique System Identification Number (SIN). The SIN is normally to be found printed on a label stuck onto the motherboard, unless you are using the LOC Technology system in which case the label should have been removed and the SIN recorded on a card designed for this purpose. If the SIN label is missing, ask a LOC Technology Master User or LOC Technology Network Security Administrator for help.

1. Press F1 to continue.
2. You may be asked to enter the SIN. Type the SIN and press the ENTER key.
3. Use the Reference/SETUP diskette to reconfigure the hardware.
4. If you were using the LOC Technology system, the security processor will have to be reprogrammed with the lost security configuration and the system re-enabled.
5. Leave the computer turned on for 24 hours to recharge the battery.

If the battery fails completely, and will not recharge, ask your Apricot supplier or an authorized Apricot maintainer for assistance.

Maintaining the UPS batteries

In normal use the UPS internal batteries are kept charged by the AC power supply, even while the FT//e is switched off.

If the FT//e is to be stored without being used for several months, care must be taken to maintain the UPS batteries. In storage, the batteries gradually self-discharge. If this process continues for too long, the capacity of the batteries will be permanently reduced, affecting their ability to support the FT//e through an AC power failure. This deterioration can be prevented by fully recharging the batteries at least once every six months. Simply connect the FT//e to the AC power supply and move the battery power switch to the On or "I" position, and leave it for at least 12 hours.

For safety reasons, while the FT//e is in storage, the battery power switch should be set to the Off or "O" position.

Transporting the Apricot FT//e

Move the Apricot FT//e to Standby mode, isolate (switch off) the UPS batteries and disconnect the AC power supply, before moving the system unit.

Use common sense when handling the FT//e: hard disks in particular can be damaged if the computer is dropped or bumped. Take the following precautions before moving the computer:

1. Back up (copy) the contents of your hard disks onto tape or diskettes.
2. Set the battery power switch to Off. Switch off the FT//e and unplug its power cord from the AC power outlet. Unplug the monitor and any other peripherals.

Don't try to move the computer while it is plugged into the AC power supply or with any other cables, including network cables, still attached.

If you need to transport the FT//e any great distance, use the original packing materials.

If you intend to use your FT//e in another country, see Chapter 2, "Operating the Apricot FT//e", for some important advice.



Upgrading the Apricot FT//e 4

- Choosing an upgrade
- Micro Channel expansion cards
- System processor upgrade
- SIMM memory modules
- Removeable media and hard disk drives

This chapter outlines the ways in which your Apricot FT//e can be upgraded in performance and capabilities. The FT//e has been specifically designed to make such upgrades easy to install.

Choosing an upgrade

Your Apricot FT//e can be upgraded in a variety of ways, according to the model. Typical upgrade options include:

- * Micro Channel expansion cards
- * System processor upgrade
- * SIMM memory modules
- * Disk and tape drives

All of these options are available from your Apricot supplier, whom you should consult for further advice.

Simple step-by-step instructions for installing these options (with the exception of system processor upgrades, disk and tape drives) can be found in the *Apricot FT//e Add-on Installation Guide*.

Read the relevant instructions before deciding on a purchase, to see if you feel confident about performing the installation yourself. If not, ask your Apricot supplier to install the option for you.

System processor upgrades, and disk and tape drives, must be installed only by your Apricot supplier or by an authorized Apricot maintainer.

Micro Channel expansion cards

Expansion cards, sometimes known as expansion boards, options or adapters, are small self-contained circuit boards which extend the capabilities of your computer. Here are just a few examples:

- * A LAN card can provide a connection to a local area network if the FT//e is used as a server.
- * A serial port controller card can provide extra ports for workstations if the FT//e is used as a multiuser host.
- * A graphics card can provide more specialized video functions than those provided by the Enhanced VGA controller on the FT//e motherboard.
- * A modem card can provide a connection to a telephone line.
- * An additional SCSI drive controller card can provide faster disk throughput or disk duplexing.

The Apricot FT//e has eight 32-bit Micro Channel expansion card slots. Typically, at least one slot is occupied by a SCSI drive controller card. Other cards may be pre-installed at the factory or by your Apricot supplier.

Slot 6 is fitted with the auxiliary video extensions. Slot 1 is fitted with the matched memory and base video extensions.

Most 16-bit expansion cards can be installed in 32-bit slots, but consult the installation guide or user's guide that accompanies your card to make sure.

Expansion cards are a relatively cheap way of upgrading your system. Moreover, they are usually quite easy to install, requiring no more than a small screwdriver and a steady hand.

System processor upgrade

The system processor in the Apricot FT//e is mounted on a detachable module to make a processor upgrade that much easier. Depending on what sort of software you use, upgrading the system processor can produce a significant increase in the performance of your FT//e.

Contact your Apricot supplier for the latest information on processor upgrades.

SIMM memory modules

All Apricot FT//e systems have at least 16 Mbytes of random access memory (RAM) on the motherboard. You may need more memory if you wish to run large applications or applications which require large amounts of in-memory data space.

Motherboard memory can be upgraded by the addition of appropriate SIMMs (single in-line memory modules). See the *Apricot FT//e Add-on Installation Guide* for detailed information on the memory upgrade potential of your computer.

Removable media and hard disk drives

All Apricot FT//e systems have a 3.5" diskette drive fitted as standard.

The FT//e has an internal drive cradle, divided into front and rear drive bays, in which various configurations of drives can be installed:

Bay	Alternative configurations
Front	Two half-height 5.25" or 3.5" drives Two one-inch 3.5" drives
Rear	Two half-height 3.5" drives Three one-inch 3.5" drives

Note that the front drive bay configurations are *in addition* to the standard 3.5" diskette drive.

The front drive bay is intended primarily for removable media drives, and is accessed via the drive bay door. The following table shows some of the removable media drives offered by Apricot (all are half-height drives):

Removable media drive	Nominal capacity
5.25" floppy disk drive	1.2 Mbyte
Quarter-inch (QIC) tape drive	150 or 525 Mbyte
DDS (Digital Data Storage) tape drive	1.3 Gbyte
DDS-DC (Data Compression) tape drive	8.0 Gbyte
CD-ROM drive	650 Mbyte

Hard disk drives are available in several capacities, from 200 Mbytes to over 1 Gbyte. Consult your Apricot supplier for up-to-date information.



- Problems when starting the FT//e
- What to do if an alarm sounds
- Troubleshooting charts

This chapter offers advice if you suspect a fault with your Apricot FT//e. If in doubt, move the FT//e to Standby mode, isolate (switch off) the UPS batteries and disconnect the AC power supply, before consulting your Apricot supplier or an authorized Apricot maintainer.

This chapter is concerned only with problems caused by FT//e itself; remember that problems can also arise from other sources such as your network cabling, operating system or application software.

Problems when starting the FT//e

Power-on self-test

Whenever the Apricot FT//e is switched on or reset, the power-on self-test (POST) routine tests various hardware components (including memory) and compares the actual configuration of the machine with that recorded in configuration memory. If a hardware fault or configuration discrepancy is discovered, a message with an error number, such as the following, may be displayed:

Error 161 - Clock timer error

Please Reconfigure and Retry
Strike the F1 key to continue

If you see this message, or one like it, insert the Reference/SETUP diskette in the diskette drive and press the F1 key.

The Reference software displays an explanation of the error message, and may suggest a way to solve the problem. If the solution involves replacing the configuration battery, system board or other system component, **do not do anything yourself** but call your Apricot supplier or an authorized Apricot maintainer and tell them the error number mentioned in the message (e.g. 161).

In the case of an apparent configuration discrepancy, the Reference software gives you the option of automatically reconfiguring the system. You may decline this offer and reconfigure the system manually, if you wish. See the *Reference/SETUP Diskette User's Guide* for more information.

If the FT//e does not recognise the Reference/SETUP diskette, or does not respond when the F1 key is pressed, press the RESET button on the front panel and try again. If this does not work, call your Apricot supplier or an authorized Apricot maintainer.

Beep codes

The FT//e uses special audio beep codes to signal certain hardware faults. If you hear a beep code which is not accompanied by a POST error message (see above), call your Apricot supplier or an authorized Apricot maintainer.

UPS status LED

During the POST testing of the Advanced System Controller (ASC), the UPS status LED glows amber and green (simultaneously) for one second, followed by one second of green (if POST is successful) or one second of amber (if POST finds a fault with the ASC).

Failure to boot

On the completion of POST, the FT//e attempts to boot from all possible sources. This section lists some of the error messages that can be displayed if the FT//e fails to boot.

Non-system disk or disk error
Press the F1 key to continue

The diskette drive contains a non-system diskette. Replace it with a system diskette and press F1.

Diskette read failure
Press the F1 key to continue

The diskette is either not formatted or defective. Replace it with a system diskette and press F1.

No boot sector on fixed disk
Press the F1 key to continue

The hard disk has no active, bootable partition or is not formatted. Insert a system diskette, press F1, and format the hard disk as described in your operating system manuals.

Fixed disk read failure
Press the F1 key to continue

The hard disk may be defective. Press F1 to retry. If the problem persists, insert a system diskette, press F1, back-up the data held on the defective hard disk and try reformatting it.

No boot device available
Press the F1 key to continue

This may indicate a fault in the diskette or hard disk drive, or perhaps a damaged system diskette. Press F1 to retry, using another system diskette if possible. If the problem persists, consult your Apricot supplier or an approved Apricot maintainer.

What to do if an alarm sounds

Don't panic. Use this chart to discover what the alarm means and how you should respond.

Sound	Alarm
Slow high-pitched beeping	Brownout alarm. The AC power supply has failed.
Intermittent two-tone beeping	Battery alarm. FT//e is now running on battery power.
Continuous descending tone	Shutdown alarm. The UPS batteries are almost exhausted.
Fast low-pitched beeping	System overheating alarm.
Continuous two-tone beeping	Security violation alarm. Apricot LOC Technology security system is armed and an unauthorized user has pressed the front panel POWER, RESET or DOOR button, used the battery power switch, or attempted to unlock the access panel.
Continuous two-tone beeping accompanied by a SYSTEM LOCKED message	Security lockout alarm. Apricot LOC Technology is installed and there have been five or more successive invalid attempts to logon.

All alarms, except the security violation and lockout alarms, can be silenced by briefly pressing the RESET button.

	Response
	The brownout alarm should sound for at most 15 seconds. If the AC power supply is restored within this time, the FT//e will automatically resume normal operations. Check to see if the power cord has become unplugged, or if the power has been switched off inadvertently.
	If you have installed a Server Environment pack which includes UPS Software (and programmed it correctly), an orderly shutdown of the computer should proceed automatically. If not, you have between 10 and 25 minutes in which to shutdown the computer manually (assuming the UPS batteries are fully charged).
	You should take immediate action to shutdown the computer (quit all applications, stop all processes and switch off).
	This is potentially a very serious condition. Switch off the computer and the UPS batteries and disconnect the AC power supply. Call an authorized Apricot maintainer.
	The alarm is silenced only when a privileged user logs into the system using his KeyLOC card and/or username and security password.
	The computer will remain locked for between 1 and 59 minutes, depending on the lockout period specified when LOC Technology was installed. The lockout period cannot be circumvented, although the alarm can be silenced by moving the FT//e to Standby mode for the duration of the lockout period.

Troubleshooting charts

The charts on the following pages should help you diagnose and remedy problems with your Apricot FT//e. The charts are organized by hardware component.

Problems with the system unit

Problem	Diagnosis
The FT//e will not start when the POWER button is pressed.	The AC power supply is not switched on.
	The FT//e power cord is loose.
	The fuse in the AC plug has blown.
	The FT//e is running on battery power (the UPS status LED should be amber).
	The power cord is broken inside.
The power-on LED is unlit, although the FT//e is working correctly.	The LED circuitry is faulty.
The door operates intermittently or jams.	There is dirt in the door runners.
The door to the front drive bay does not open/close.	There is a fault in the door mechanism.

Note that, within a chart, the possible diagnoses of a problem are listed in order of decreasing likelihood.

	Remedy
	Switch on the supply at the AC power outlet.
	Push the plugs in firmly at the AC power outlet and at the FT//e power inlet.
	<p>This may be caused by a AC power surge, but is more often a symptom of problems with the FT//e or its peripherals.</p> <p>Isolate the UPS batteries and disconnect the AC power supply. Unplug all peripherals. Try to discover the cause of the fault. Replace the blown fuse with one of the same rating and try again.</p> <p>If the replacement fuse blows, call an authorized Apricot maintainer. If the replacement fuse does not blow, switch off, reconnect a peripheral and switch on. Repeat this procedure for each peripheral in turn.</p>
	The FT//e cannot be started while it is running on the UPS batteries.
	Replace the cord with an identical one obtained from your Apricot supplier or an authorized Apricot maintainer.
	The power-on LED should be lit while the FT//e is plugged into a working AC power supply <i>or</i> while running on the UPS batteries. Call an authorized Apricot maintainer.
	Clean the runners and try again.
	Call an authorized Apricot maintainer.

continued...

Problem	Diagnosis
The network LED does not light while the network is being accessed.	The network LED is not supported by your networking software.
	The LED circuitry is faulty.
Intermittent problems.	A cable or cord may be loose.

Problems with expansion cards

Problem	Diagnosis
A card that was just installed does not seem to work.	The card is installed incorrectly.
	The software that drives or uses the card is configured incorrectly.
	You may have inadvertently loosened other cards or cables inside the FT//e.
	The card is designed only for a 16-bit slot.
	The card is faulty.
	The Micro Channel circuitry is faulty.
A card that used to work does not work now.	You may have inadvertently loosened the card or its cables inside the FT//e.
	The card is faulty.

	Remedy
	Apricot supplies a netlight utility which works with most types of LAN card. Ask your Apricot supplier for details.
	Call an authorized Apricot maintainer.
	Ensure that all cables and cords are tightly connected to the rear of the system unit and any peripherals.

	Remedy
	Read the installation guide or user's guide that accompanies the card very carefully. Make sure that the card's ADF is installed on the Reference/SETUP diskette and that the card has been configured correctly. Use the Reference/SETUP diskette to check that there are no configuration clashes between the card and other cards or FT//e components. If a diskette came with the card, look for a "readme" file which might contain up-to-date installation instructions.
	Sometimes the software that drives or uses an expansion card needs to know the card's configuration settings (set with the Reference/SETUP diskette). Check the documentation that came with the card or the software.
	Isolate the FT//e, open the access panel, and check.
	All the FT//e's slots are 32-bit. Ask your Apricot supplier if the card (or an equivalent) is available in a 32-bit version.
	Contact your supplier.
	Call your Apricot supplier or an authorized Apricot maintainer.
	Isolate the FT//e, open the access panel, and check.
	Contact your supplier.

Problems with the diskette drive

Problem	Diagnosis
A diskette refuses to load into the diskette drive.	You may be inserting the diskette incorrectly.
	Something is stuck in the drive slot (for example, a diskette label).
The drive does not seem able to read a diskette correctly.	The diskette may not have been formatted for your operating system.
	The diskette may have become corrupted by strong magnetic fields, or subjected to extremes of temperature and humidity.
	There may be condensation on the surface of the diskette.
The drive cannot write to a diskette.	The diskette may be write-protected.
	You are attempting to change a file with a "read-only" attribute or for which you do not have the necessary access permissions.

	Remedy
	Insert the diskette metal-shutter end first, with the label side uppermost.
	Do <i>not</i> try to remove the object with tweezers or any similar implement: you will damage the drive. Call an authorized Apricot maintainer.
	Consult your operating system documentation.
	Try a proprietary data recovery utility. Ask your Apricot supplier or an authorized Apricot maintainer for advice.
	A cold diskette brought into a warm room may collect condensation. Wait until the diskette has adjusted to room temperature before using it.
	Slide the small tab on the back of the diskette to cover the hole beneath. Re-insert the diskette and try again.
	File attributes and access permissions may be set by your operating system. Consult your operating system documentation. The Apricot LOC Technology software may also prevent access to the diskette drive by unauthorized users.

Problems with a hard disk drive

Problem	Diagnosis
The hard disk drive LED does not light while a drive is being accessed.	The hard disk drive LED is not supported by your operating system.
	The LED circuitry is faulty.
	The hard disk drive is faulty.
The drive does not seem able to read data correctly.	The disk may not have been formatted for your operating system.
	The disk may have become corrupted by strong magnetic fields, or subjected to extremes of temperature and humidity.
	There may be condensation on the surface of the disk.
The drive cannot write to a disk.	You are attempting to change a file with a “read-only” attribute or for which you do not have the necessary access permissions.

	Remedy
	None
	Call an authorized Apricot maintainer.
	Call an authorized Apricot maintainer.
	Consult your operating system documentation.
	Try a proprietary data recovery utility. Ask your Apricot supplier or an authorized Apricot maintainer for advice.
	A cold system unit brought into a humid room may collect condensation on its hard disks. Wait until the system unit has adjusted to room temperature before using it.
	File attributes and access permissions may be set by your operating system. Consult your operating system documentation. The Apricot LOC Technology software may also prevent access to the drive.

Problems with the monitor

Problem	Diagnosis
There is no display, or the display is poor.	The monitor is not switched on.
	The AC power supply is not switched on.
	The brightness and/or contrast controls need adjustment.
	The monitor screen is dirty.
	The wrong monitor type has been selected.
	The monitor power cord is loose.
	The signal cable between the monitor and the FT//e system unit is loose.
	The fuse in the AC plug has blown.
	The monitor signal cable or power cord is broken inside.
	The monitor is faulty.
A VGA colour monitor displays only in monochrome.	The monitor is in the wrong mode.
	The monitor signal cable was not connected when the FT//e was switched on.

	Remedy
	Switch on the monitor.
	Switch on the supply at the AC power outlet.
	Adjust the controls until an acceptable display appears. Consult the monitor's documentation (if any).
	Clean the monitor as described in Chapter 3, "Caring for the FT//e".
	Reboot the computer and use the Reference/SETUP diskette's internal options configuration menu to select the correct monitor type.
	Push the plugs in firmly at the AC power outlet and at the monitor power inlet. If you are using an IEC-to-IEC cable between the AC power supply and the monitor, push the two cords firmly together.
	Push the plugs firmly into their ports and tighten the securing screws.
	<p>Disconnect the monitor from the AC power supply and unplug the monitor signal cable from the rear panel of the FT//e. Replace the blown fuse with one of the same rating.</p> <p>If the replacement fuse blows, call an authorized Apricot maintainer.</p>
	If possible, replace the signal cable or power cord with an identical one obtained from your Apricot supplier or an authorized Apricot maintainer.
	Call an authorized Apricot maintainer.
	If the monitor has a mode selection switch, try switching modes. Consult the monitor's documentation.
	Press the RESET button on the FT//e front panel to restart the computer.

Problems with the keyboard

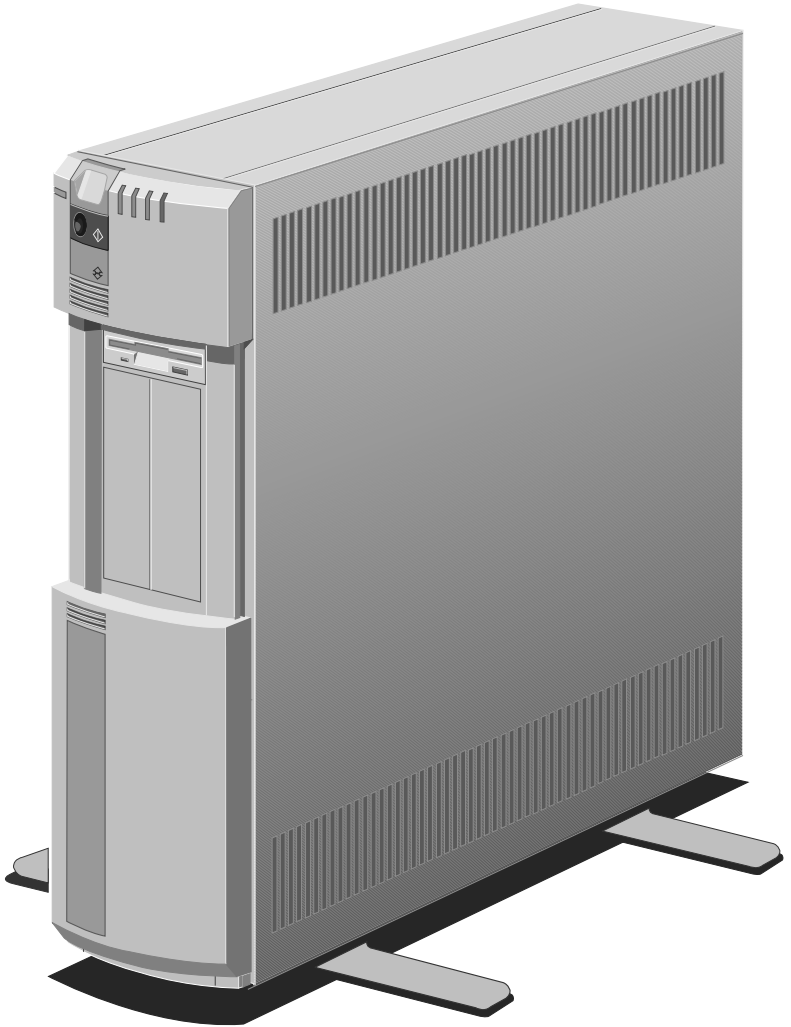
Problem	Diagnosis
The keyboard does not seem to work.	The keyboard is plugged into the mouse port.
	The keyboard signal cable is loose.
	The key functions have been “remapped” by software.
	Some small object has fallen between the keys.
	Liquid has seeped between the keys.
	The keyboard is faulty or the keyboard signal cable is broken inside.
The numeric keypad does not seem to work (instead of numbers you get cursor controls).	The keypad has not been enabled.

Problems with the mouse

Problem	Diagnosis
The mouse does not seem to work, or cursor movement on the screen is erratic	The mouse is plugged into the keyboard port.
	The mouse signal cable is loose.
	The mouse is dirty.
	The mouse device driver is not loaded.
	The mouse is faulty or the mouse signal cable is broken inside.

	Remedy
	This is easily done as the two ports look identical. The keyboard port is the small circular port nearest the bottom of the rear panel.
	Push the plug firmly into the keyboard port.
	Consult your software documentation.
	Unplug the keyboard, turn it upside down and shake it. If you cannot dislodge the object, call an authorized Apricot maintainer.
	If the liquid is viscous, unplug the keyboard and call an authorized Apricot maintainer. If the liquid is thin and clear, try unplugging the keyboard, turning it upside down to let the liquid run out, and drying it at room temperature for 24 hours. If it still doesn't work, call an authorized Apricot maintainer.
	Call an authorized Apricot maintainer.
	Press the NUMLOCK key (in the top left corner of the keypad). The NumLock LED should light.

	Remedy
	This is easily done as the two ports look identical. The keyboard port is the small circular port nearest the expansion slot cover plates.
	Push the plug firmly into the mouse port.
	Clean the mouse as described in Chapter 3, "Caring for the Apricot FT//e".
	A mouse device driver is software which mediates between the mouse and your operating system. This driver must be loaded into the FT//e's memory. Check your operating system documentation to ensure that it is being used correctly.
	Call an authorized Apricot maintainer.



- Anti-static precautions
- Removing the access panel
- Changing the voltage setting

This appendix provides step-by-step instructions for performing housekeeping tasks inside the Apricot FT//e system unit. Note that instructions for installing upgrade options are provided in the *Apricot FT//e Add-on Installation Guide*.

Move the Apricot FT//e to Standby mode, isolate (switch off) the UPS batteries and disconnect the AC power supply before doing any work inside the system unit.

Anti-static precautions

Static electricity can cause permanent damage to electronic components. You should be aware of this risk, and take precautions against the discharge of static electricity into your computer.

Anyone can generate static electricity by moving on a chair, brushing against desks or walls, or simply walking across an ordinary carpet. Items handed from one person to another, or being wrapped or unwrapped, can acquire a static charge. Air conditioning systems can also result in ambient static. Clothing made of synthetic fibres is particularly likely to generate static electricity; this static electricity is often completely unnoticed by the wearer, but can be sufficient to cripple or impair an electronic component.

Your computer is at risk from static discharge while the top cover is off. This is because the electronic components of the motherboard are exposed. Expansion cards, SIMMs and processors are other examples of electrostatic sensitive devices (ESSDs).

All work that involves removing the FT//e's cover must be done in an area completely free of static electricity. Apricot recommends using a Special Handling Area (SHA) as defined by BS CECC 00015:Part 1. This means that working surfaces, floor coverings and chairs must be connected to a common earth reference point, and you should wear an earthed wrist strap and anti-static clothing. It is also a good idea to use an ionizer or humidifier to remove static from the air.


When installing any add-on, be sure you understand what the installation procedure involves before you start. This will enable you to plan your work, and so minimize the amount of time that sensitive components are exposed.

Do not remove the computer's cover, nor the anti-static bag or wrapping of any add-on, until you need to.

Handle static-sensitive items with extreme care. Hold expansion cards and add-on components only by their edges, avoiding their electrical contacts. Never touch the components or electrical contacts on the motherboard or on expansion cards. In general, do not handle static-sensitive items unnecessarily.

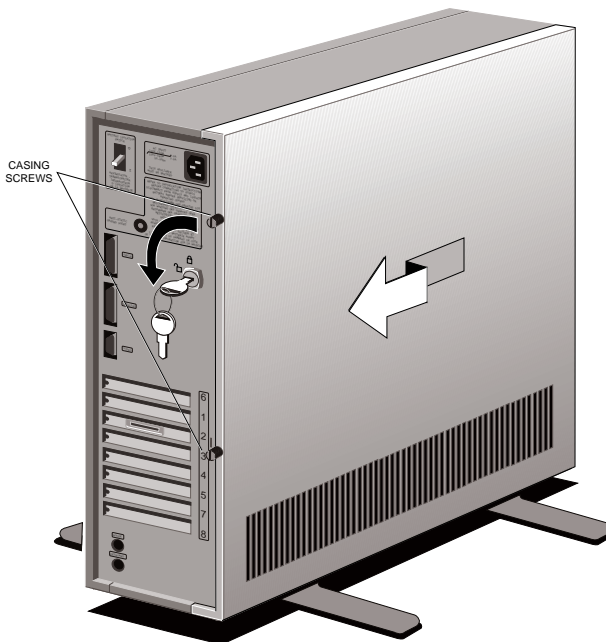
Keep all conductive material, and food and drink, away from your work area and the open computer.

Removing the access panel

1. If Apricot LOC Technology is in force, disarm it (this can be done only by a Master user).
2. Switch off the computer (that is, move it to Standby mode).
3. Set the battery power switch to Off or "0".
4. Unplug the FT//e's power cord from the AC power outlet.
5. Unplug the monitor, attached peripherals or terminals, and the network cable (if any) from system unit.
6. Turn the panel lock key to the  position.
7. Loosen the two thumbscrews.
8. Slide off the panel as shown in the diagram.

Take effective anti-static precautions while the panel is off.

Refitting the access panel is the reverse of removal.



Changing the voltage setting

Move the Apricot FT//e to Standby mode, isolate (switch off) the UPS batteries and disconnect the AC power supply before changing the voltage setting.

The Apricot FT//e can function within one of two alternative AC power supply ranges:

Setting	AC Voltage	Frequency
115V	100 to 120 V	50 to 60 Hz
230V	220 to 240 V	50 to 60 Hz

Your Apricot FT//e arrives preset for the voltage range appropriate for the country in which it is first sold. Follow these instructions if you need to change the voltage setting before using the FT//e in a different country.

1. Switch off the FT//e and the UPS batteries, and disconnect the AC power supply.
2. Remove the access panel as described earlier in this appendix.

The Power Supply Unit (PSU) is the metal-enclosed box at the top of the FT//e interior. The voltage selection switch is located on the side of the PSU.

3. Using the blade of a small screwdriver or similar implement, move the voltage selection switch to its alternate setting.
4. Replace the access panel.



Technical Information

B

- Physical characteristics
- Electrical characteristics
- Tape and CD-ROM drive specifications
- Port characteristics

This appendix provides some technical information about the Apricot FT//e. More detailed information is available in the *Apricot FT//e Hardware Technical Reference*, which can be purchased from your Apricot supplier.

Physical characteristics

Weight and dimensions

System unit

Height:	530 mm
Length:	496 mm
Width:	156 mm
Mass :	10-35 kg ¹

¹ depending on configuration

Temperature and humidity ranges

The Apricot FT//e is designed to operate in a normal office environment, but during storage and transportation the system is more tolerant of environmental factors.

Range	Temperature	Relative humidity with no condensation
Storage/Transport	0 to +60 °C	20% to 80%
Operational	+10 to +35 °C	20% to 80%

Electrical characteristics

Uninterruptible Power Supply (UPS)

PSU: 282 Watt maximum DC output
Batteries: Two 12 V, 5.0 Ah
Lead-acid, gelled-electrolyte.

Voltage ranges

The PSU voltage range is initially set to that appropriate for the country in which the computer is first sold.

Setting	AC Voltage	Frequency
115V	100 to 120 V	50 to 60 Hz
230V	220 to 240 V	50 to 60 Hz

See Appendix A, "Inside the Apricot FT//e", for instructions on changing the voltage setting.

Power cords

The power cord supplied with the Apricot FT//e complies with the safety standards applicable in the country in which it is first sold. If you wish to use the computer in another country, you must ensure that you use a power cord which complies with the safety standards of that country.

Enhanced VGA controller

The on-board video controller with 1 Mbyte video RAM provides enhanced modes for displaying more colours and higher resolution than the VGA standard. Drivers for the enhanced modes, plus additional documentation, can be found on the drivers diskette set provided with the system. See the section on Using Apricot Help in Chapter 2 "Operating the Apricot FT//e" for information on using on-disk documentation.

Note that modes of a resolution higher than 640x480 are not supported by ordinary VGA monitors.

Tape and CD-ROM drive specifications

SCSI DDS tape drive

These specifications apply when a cassette is inserted. Power specifications are measured at the tape drive power connector and are nominal values.

Nominal capacity	60-metre cassette	1.3 Gbyte
Transfer rate	Sustained	183 Kbyte/s (max)
Unrecoverable errors	Less than 1 in 10^{15} data bits	
Recording format	ANSI Digital Data Storage (DDS)	
Power specification	Current (max)	1.35 A @ +12 V dc 0.71 A @ +5 V dc

SCSI DDS-DC tape drive

Performance specifications apply when using data compression. Power specifications are measured at the tape drive power connector and are nominal values.

Nominal capacity	60-metre cassette	1.3 Gbyte (1:1 base) 2.6 Gbyte (2:1 typical) 5.2 Gbyte (4:1 max ¹)
	90-metre cassette	2.0 Gbyte (1:1 base) 4.0 Gbyte (2:1 typical) 8.0 Gbyte (4:1 max ¹)
Transfer rate	Sustained	366 Kbyte/s (typical) 732 Kbyte/s (maximum ¹)
	Burst	5 Mbyte/s (maximum)
Unrecoverable errors	Less than 1 in 10^{15} data bits	
Recording format	ANSI/ECMA Digital Data Storage Data Compression (DDS-DC)	
Power specification	Voltage	+12 V dc + 10% +5 V dc + 7%
	Ripple	+12 V: 100 mVp-p +5 V: 100 mVp-p
	Current (max)	1.40 A @ +12 V dc 1.30 A @ +5 V dc

¹ Nominal maximum only; can be exceeded for highly-compressible data.

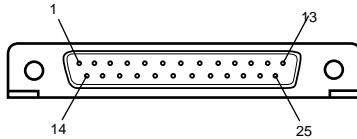
SCSI CD-ROM drive (CDU561)

Discs	Acceptable discs	CD-ROM mode 1 data discs CD-ROM mode 2 data discs CD audio discs Audio-combined CD-ROM discs CD-ROM XA discs CD-I discs CD-Bridge discs
	Disc diameter	12 cm, 8 cm
Transfer rate	Sustained	150 Kbyte/s (normal) 30 Kbyte/s (double)
	Burst	2.1 Mbyte/s 4.0 Mbyte/s (synchronous)
Access time	Full stroke	550 ms (typical/normal) 520 ms (typical/double)
	Average	350 ms (typical/normal) 295 ms (typical/double)
Audio output	Line	0.7 V at 47 kOhm
	Headphone	0.55 V at 32 Ohm
Host interface		SCSI-2
Power specification	Voltage	+5 V dc + 5% +12 V dc + 10%
	Ripple	+5 V: 0.05 Vp-p +12 V: 0.1 Vp-p
	Current (max)	+5 V: 1.6 A at Spin up +12 V: 1.8 A at Spin up
Laser	Type	GaAlAs semiconductor
	Wavelength	780 nm
	Output power	0.6 mW

Port characteristics

Serial port (COM1)

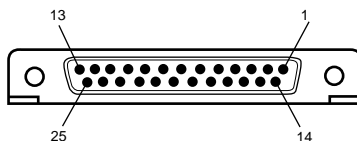
25-way male D-type



Pin	I/O	Function
1	NA	Not connected
2	O	Transmit data
3	I	Receive data
4	O	Request to send
5	I	Clear to send
6	I	Data set ready
7	NA	Signal ground
8	I	Data carrier detect
9	NA	Not connected
10	NA	Not connected
11	NA	Not connected
12	NA	Not connected
13	NA	Not connected
14	NA	Not connected
15	NA	Not connected
16	NA	Not connected
17	NA	Not connected
18	NA	Not connected
19	NA	Not connected
20	O	Data terminal ready
21	NA	Not connected
22	I	Ring indicate
23	NA	Not connected
24	NA	Not connected
25	NA	Not connected

Parallel port (LPT1)

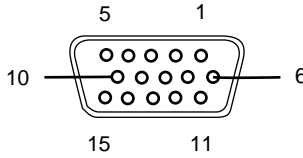
25-way female D-type



Pin	I/O	Function
1	I/O	-STROBE
2	I/O	Data bit 0
3	I/O	Data bit 1
4	I/O	Data bit 2
5	I/O	Data bit 3
6	I/O	Data bit 4
7	I/O	Data bit 5
8	I/O	Data bit 6
9	I/O	Data bit 7
10	I	-ACK
11	I	BUSY
12	I	PE
13	I	SLCT
14	O	-AUTO FEED
15	I	-ERROR
16	O	-INIT
17	O	-SLCT IN
18	NA	Ground
19	NA	Ground
20	NA	Ground
21	NA	Ground
22	NA	Ground
23	NA	Ground
24	NA	Ground
25	NA	Ground

Monitor port (VGA)

15-way female D-type



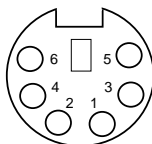
Pin	I/O	Output	Monochrome	Colour
1	O	Red	No pin	Red
2	O	Green	Mono	Green
3	O	Blue	No pin	Blue
4	NA	Reserved	No pin	No pin
5	NA	Digital G	Self test	Self test
6	NA	Red Rtn	Key pin	Red Rtn
7	NA	Green Rtn	Mono Rtn	Green Rtn
8	NA	Blue Rtn	No pin	Blue Rtn
9	NA	Plug	No pin	No pin
10	NA	Digital G	Digital G	Digital G
11	NA	Reserved	No pin	Digital G
12	NA	Reserved	Digital G	No pin
13	O	Hsync	Hsync	Hsync
14	O	Vsync	Vsync	Vsync
15	NA	Reserved	No pin	No pin

Red Rtn, Green Rtn, Blue Rtn = Analog grounds

Digital G = Digital ground for sync returns and self test.

Keyboard and mouse ports

Both the keyboard and mouse ports accept 6-pin miniature DIN connectors. The voltages and signals are the same for both connectors.

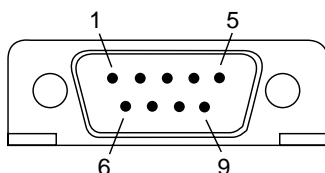


Pin	I/O	Function
1	I/O	Data
2	NA	Reserved
3	NA	Ground
4	NA	+5 Vdc
5	I/O	Clock
6	NA	Reserved

Although the keyboard and mouse ports are physically and electrically compatible, neither the keyboard nor the mouse will operate if plugged into the other's socket.

UPS data port

The UPS data port (9-pin female D-type) carries UPS signals to/from the Advanced System Controller (ASC). Some network operating systems include support for an external UPS interfaced by the computer's parallel, serial or mouse port. The internal UPS in the Apricot FT//e can be made to appear as an external UPS by fitting an appropriate connecting cable from the UPS data port to the FT//e's parallel port (for Banyan VINES), serial port (for LAN Manager) or mouse port (for Novell NetWare).



Pin	I/O	Function
1	NA	Ground
2	O	AC - commercial power
3	O	Low battery warning
4	NA	Ground
5	I	Shutdown
6	NA	Ground
7	NA	Not connected
8	NA	Not connected
9	NA	Not connected

Note

LAN Manager's UPS driver expects the UPS interface signals on the computer's serial (COM1) port. As the serial port levels are RS-232, not TTL, the connecting cable assembly must include a simple level converter.



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3500 PARKSIDE
BIRMINGHAM BUSINESS PARK
BIRMINGHAM B37 7YS.

 MITSUBISHI ELECTRIC