apricot

MITSUBISHI ELECTRIC

Contents

Introduction

This guide contains instructions on installing expansion cards, extra memory and processor upgrades in your computer. This document should be your only source of information when installing any of these.

You should read this document before purchasing extra memory or a processor upgrade. If, having read the relevant instructions, you are not confident about installing the upgrade, you may wish to have your supplier or service organisation install it for you.

Before you start installing the upgrade you should be thoroughly familiar with all the relevant instructions in this guide.

Warning

Never carry out any work on the equipment with power applied. Always switch off at the mains, isolate any batteries and remove the power lead from the equipment before starting work.

Anti-static precautions

All electronic components and equipments are sensitive to static electricity. Even small electrostatic discharges can render components useless or severely shorten their working life, therefore you should always take preventive measures.

No work should be carried out on any item unless it is in a Special Handling Area (SHA) as defined in BS CECC 00015:Part 1. In general this involves:

* a common earth point
* an earthed bench or bench mat
* an earthed wrist strap

Note

An antistatic earthing point is provided on the rear panel of the system unit.

Power down procedure

If LOC Technology is in use, a user of appropriate authority must be logged on before the system can be powered down.

1. Push the STANDBY button
2. Confirm by pushing the button under the 'Y' on the LCD display.
3. Isolate the internal UPS battery by setting the BATTERY ISOLATION switch to the '0' position.
4. Unplug the mains power supply.

Power up procedure

1. Ensure that the battery isolation switch is in the '0' position.
2. Plug in the mains power supply.
3. Set the BATTERY ISOLATION SWITCH to the '1' position.
4. Push the POWER button.
5. Perform any required power-on security procedure.

Removing the left side panel

The left side panel (as viewed from the front) is located by three pegs at the front, and secured by two thumbscrews and a keylock at the rear.

The left side panel allows access to the electronics bay where the motherboard and power distribution board are located.

To remove the side panel:

1. Power the system down.

2. Unlock the security lock on the rear panel.

3. Unscrew the two thumbscrews.

4. Swing the rear of the panel away from the system unit until the rear flanges are clear of the system unit.

5. Support the front of the panel and pull it rearwards to free it from the pegs.

CASING SCREWS
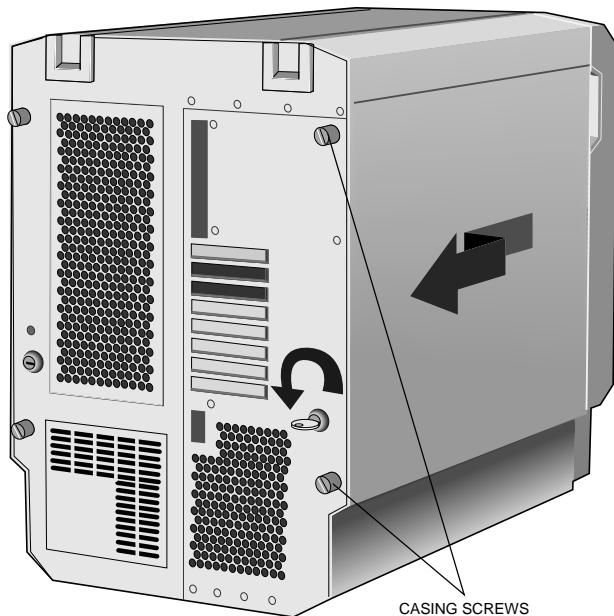
Replacement is simply the reverse of removal.

Adapter cards

Eight 32-bit Micro Channel slots are available on the motherboard for adapter cards. One slot is always occupied by a hard disk controller. Each slot has a blanking plate in the rear panel, and a notch in the bridge assembly at the front of the system unit.

FANS

EXPANSION
SLOTS

BLANKING
PLATE

ADAPTER
CLAMP

ADAPTER SUPPORT
METALWORK
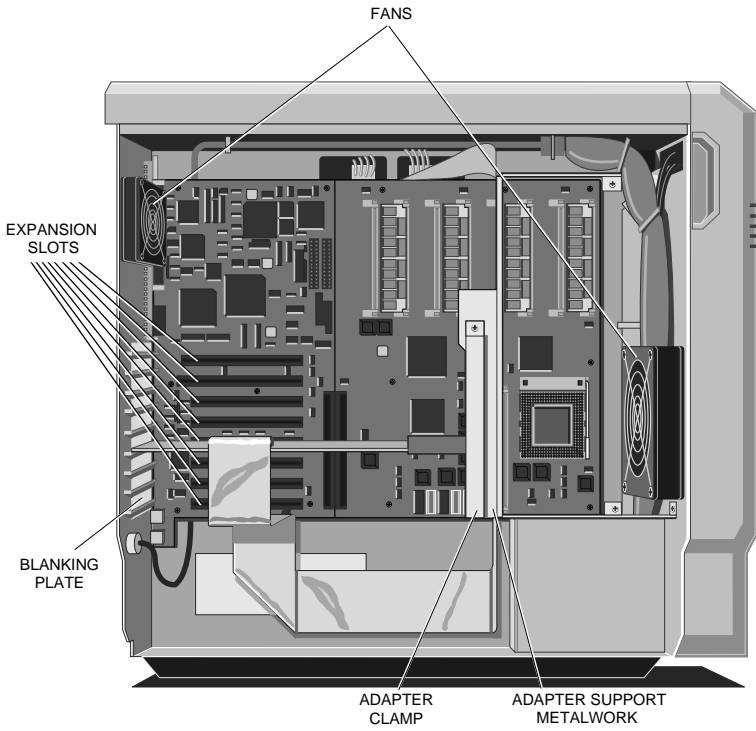
The two slots nearest the top of the system unit (labelled 6 and 1) are both video slots. Slot 6 is fitted with the auxiliary video extensions. Slot 1 is fitted with the matched memory and base video extensions.

Drive controllers must occupy slots 4, 5, 7 and 8. The first controller always occupies slot 4 and the second (if fitted) slot 5.

It is recommended that slots 6 and 1 are left unoccupied (except for video cards), and slot 5 is left unoccupied (except for a second drive controller). Any other adapter cards should be fitted in slots 2, 3, 5 and 8 working down the system unit. Only after all these slots are full should cards other than video adapters or drive controllers be fitted in slots 6, 1 or 7.

To install an adapter card:

1. Power the system down.
2. Remove the left side panel of the system unit.
3. Loosen the thumbscrew at the bottom of the blanking plate for the slot that the adapter is to occupy, and remove the blanking plate.

   Note

   If the thumbscrew is tight it may be necessary to use a screwdriver or coin to release the thumbscrew.

4. Place the adapter card above the required connector making sure that the front edge of the card locates in the appropriate notch in the bridge assembly.
5. Push the card firmly into the connector. Do not use excessive force.
6. Secure the card by tightening the thumbscrew at the bottom of the rear panel of the card.
7. Replace the left side panel.
8. Power the system up with the Reference diskette and reconfigure for the new adapter.

Upgrading memory

The FT//s Pentium motherboard has eight SIMM sockets which support a maximum of 256 Mbytes of RAM. These eight sockets are arranged in two banks of four. If SIMMs are installed in a bank all four SIMMs must be identical.

The eight SIMM sockets are located at the top front of the motherboard as shown in the following illustration.
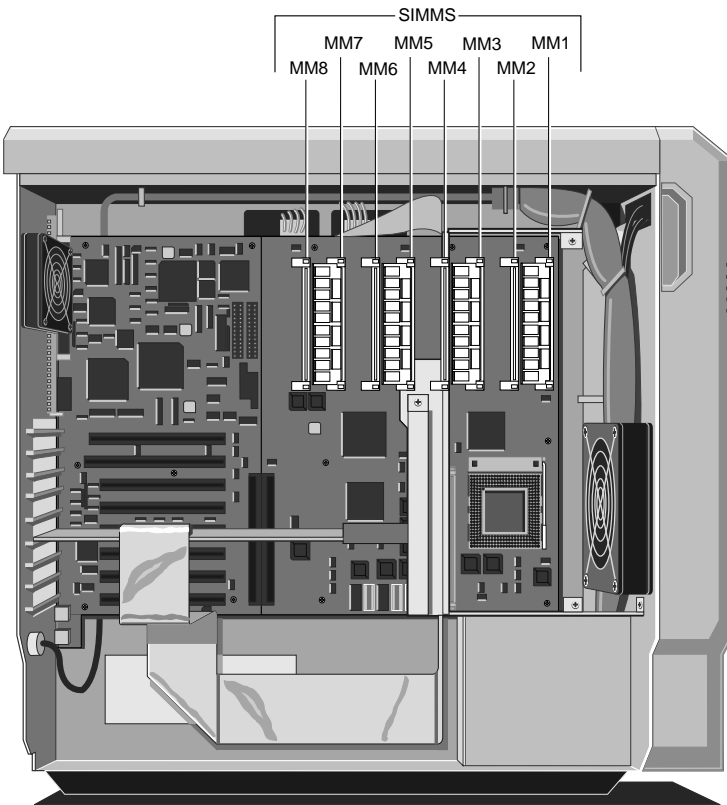
Each of the sockets is identified on the motherboard, from MM1 to MM8. The odd numbered sockets form bank 0, the even numbered ones bank 1.

Apricot supplies and supports upgrades of 16, 32, 64 and 128 Mbyte capacities. The following table lists the possible capacities:

| Bank capacity (Mbytes) | | Total capacity |
Bank 0	Bank 1	(Mbytes)
16	-	16
16	16	32
32	-	32
32	16	48
32	32	64
64	-	64
64	16	80
64	32	96
64	64	128
128	-	128
128	16	144
128	32	160
128	64	192
128	128	256

Note

For all cases the SIMMs in bank 0 could be swapped with those in bank 1 with no adverse affect.

Installing SIMMs

Obtaining access

To obtain access to the SIMM sockets you must remove the left side panel as described in *Removing the left side panel*.

Removing SIMMs

If you wish to install an upgrade in a bank which is already occupied you must first remove the existing SIMMs. For each SIMM in the bank:

1. Lever the metal clips on each end of the socket gently away from the SIMM using your forefingers.

2. Place your thumbs on the top edge of the SIMM and move it gently forwards.
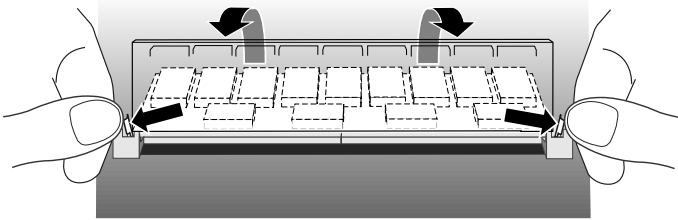
3. When the SIMM has rotated through 20°, taking care to avoid touching any of the components on the SIMM, grip the top corners of the SIMM between thumb and first finger and carefully pull the SIMM out of the socket.
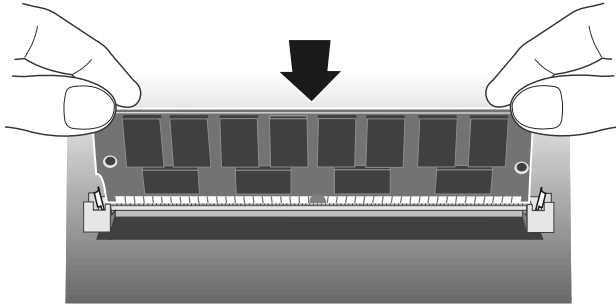
Inserting SIMMs

For each socket in the bank:

1. The SIMM will only install in one orientation. There is a cutout at one end of the SIMM next to the connector strip.

    Hold the SIMM with the cutout at the bottom and the metal connector strip nearest the motherboard.

2. Position the SIMM by the socket with the SIMM tilted slightly towards the rear of the system unit.

3. Lower the SIMM into the socket, and ensure that the SIMM is properly located in the connector.

4. Pushing gently on the top corners rotate the SIMM backwards until it clips into place. Do not use excessive force.

    If the SIMM will not rotate easily remove it and start again.
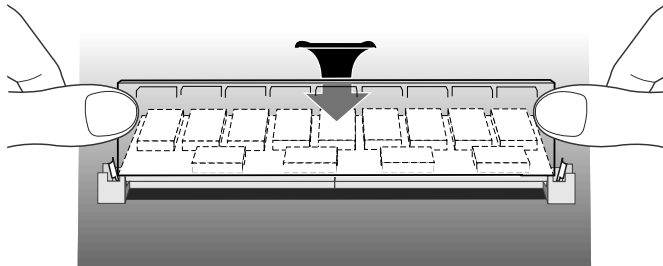
5. If the SIMM is properly located the SIMM should remain in position held by the securing clips, and with a small plastic lug through the holes on either side of the SIMM.

Processor upgrades

The FT//s Pentium motherboard is fitted with a Zero Insertion Force (ZIF) processor socket, ready for higher performance Pentium variants as they become available.

The FT//s Pentium motherboard is ready to accept any processor with a Pentium compatible pinout, and a maximum external clock speed of 60MHz.

Removing the processor

Before installing the upgrade processor you must first remove the existing processor. The processor is at the bottom front of the motherboard in front of the adapter cards. Instructions on locating the socket and removing a processor are given below.

1. Remove the side panel as described in *Removing the left side panel*.

2. Note the position of all adapter cards and adapter cabling.

3. Disconnect all adapter cables and remove the adapters.

4. Identify the processor.
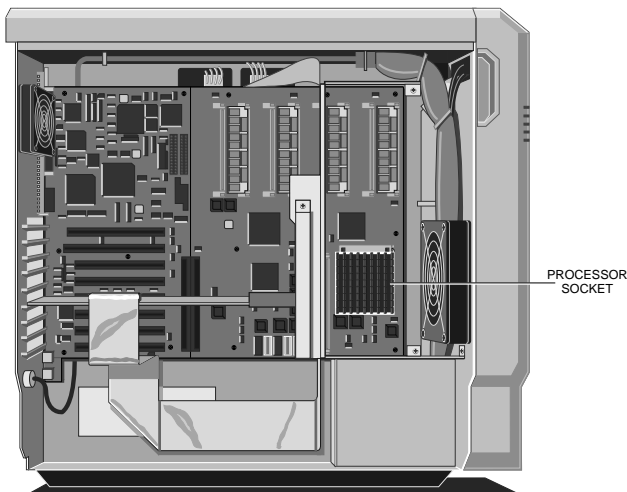
PROCESSOR SOCKET

The processor is installed in a ZIF socket. A lever attached to the socket clamps the processor securely in the socket when it is parallel to the motherboard.

5. Carefully rotate the lever from the secure position until it is perpendicular to the motherboard
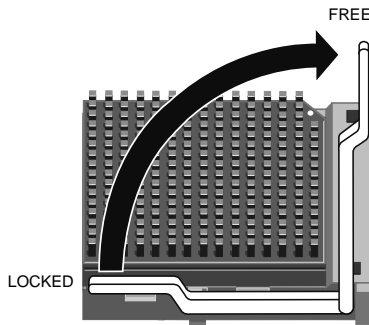
The first and last 15° of movement may require considerable effort. Apply just enough pressure to overcome the resistance offered by the lever.

6. Once the processor is free of its socket lift it out of the system unit and place it on the anti-static foam provided with the upgrade processor.

Installation

You are ready to install your new upgrade processor.

1. The upgrade processor and socket are keyed to ensure that the processor can only be installed in one orientation.

   One corner of the socket has an extra hole inside the others, the processor has a corresponding extra pin. The processor has a small dot of paint on its top surface to indicate the corner with the extra pin. If the processor has a heatsink fitted the paint dot may not be visible. Use the illustration below to help you identify the keyed corner.
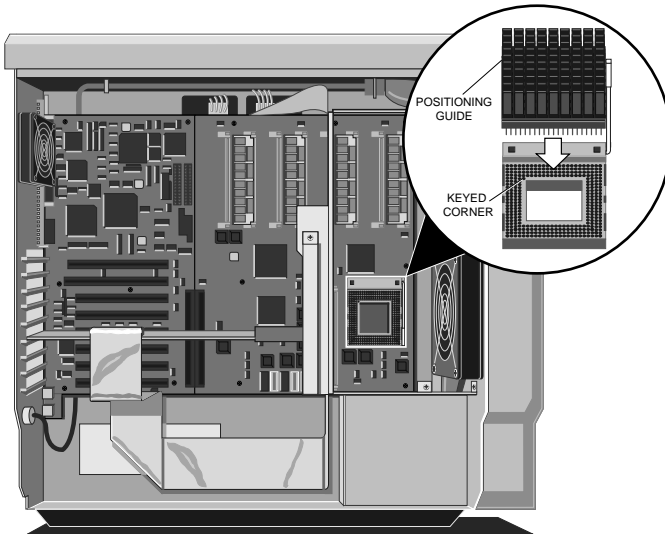
2. Carefully position the upgrade processor above the socket with the positioning guide on the processor over the keyed corner of the socket and the securing lever in the perpendicular position.

PROCESSOR
IN CENTRE
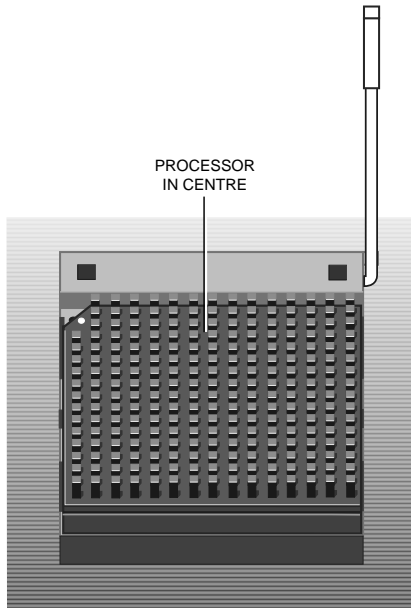
Warning

If the processor is misaligned it will not go into the socket, and any attempt to force it will damage the processor, or the socket, or both.

3. Gently insert the upgrade processor making sure that it is correctly aligned with the socket and that you do not bend or otherwise damage the pins.

4. Once you are certain that all the pins on the processor are in the holes in the socket carefully move the securing lever to the locked position.

    The lever may require a considerable amount of force in order to lock the processor in place. Take care to exert no more force than is necessary.

5. You may now reassemble the system unit.