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# Introduction

This Technical Manual applies for the system board D1081.



This system board is available in different configuration levels. Depending on the hardware configuration of your device, it may be that you cannot find several options in your version of the system board, even though they are described.

You may find further information in the description "BIOS Setup".

Further information to drivers is provided in the readme files on hard disk or on the supplied drivers diskettes or on the "Drivers & Utility" or "ServerStart" CD.

## Notational conventions

The meanings of the symbols and fonts used in this manual are as follows:



Pay particular attention to texts marked with this symbol. Failure to observe this warning endangers your life, destroys the system, or may lead to loss of data.



This symbol is followed by supplementary information, remarks and tips.

- ▶ Texts which follow this symbol describe activities that must be performed in the order shown.
- ␣ This symbol means that you must enter a blank space at this point.
- ⏎ This symbol means that you must press the Enter key.

Texts in this typeface are screen outputs from the PC.

**Texts in this bold typeface** are the entries you make via the keyboard.

*Texts in italics* indicate commands or menu item.

"Quotation marks" indicate names of chapters and terms that are being emphasized.

## Important notes

Store this manual close to the device. If you pass on the device to third parties, you should also pass on this manual.



Be sure to read this page carefully and note the information before you open the PC.

You cannot access the components of the system board without first opening the device. How to dismantle and reassemble the device is described in the Operating Manual accompanying the device.

Please note the information provided in the chapter "Safety" in the Operating Manual of the PC.

Incorrect replacement of the lithium battery may lead to a risk of explosion. It is therefore essential to observe the instructions in the chapter „[Add-on modules](#)“ - „[Replacing the lithium battery](#)“.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer (CR2032).

Do not throw lithium batteries into the trashcan. It must be disposed of in accordance with local regulations concerning special waste.



The shipped version of this board complies with the requirements of the EEC directive 89/336/EEC "Electromagnetic compatibility".

Compliance was tested in a typical PC configuration.

When installing the board, refer to the specific installation information in the Operating Manual or Technical Manual of the receiving device.

Connecting cables for peripherals must be adequately insulated to avoid interference.

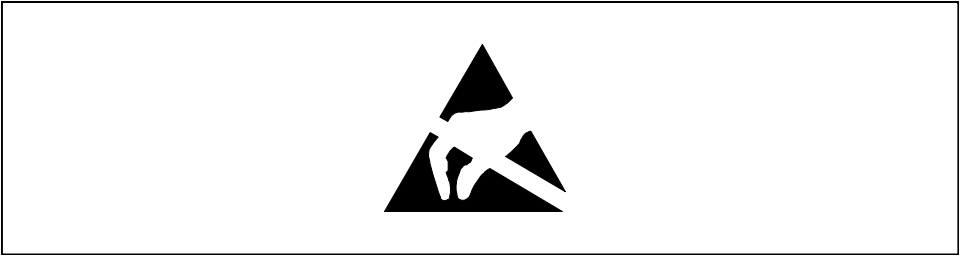


Components can become very hot during operation. Make sure you do not touch components when making extensions to the system board. There is a danger of burns!



The warranty expires if the device is damaged during the installation or replacement of system expansions. Information on which system expansions you can use is available from your sales office or the customer service.

Boards with electrostatic sensitive devices (ESD) may be identified by labels.



When you handle boards fitted with ESDs, you must observe the following points under all circumstances:

- You must always discharge yourself (e.g. by touching a grounded object) before working.
- The equipment and tools you use must be free of static charges.
- Pull out the power plug before inserting or pulling out boards containing ESDs.
- Always hold boards with ESDs by their edges.
- Never touch pins or conductors on boards fitted with ESDs.

## Features

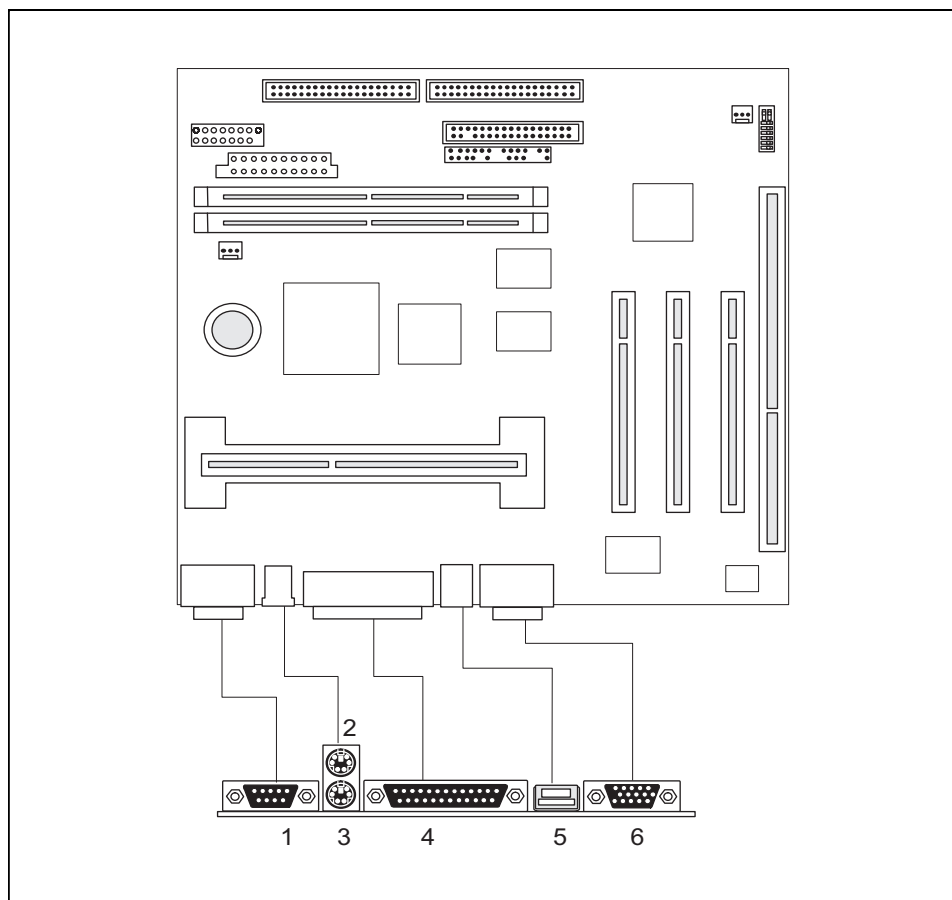
The components and connectors marked do not have to be present on the system board.

- Micro ATX system board
- Intel Pentium II processor with MMX technology for Intel 66 MHz slot 1 processor socket, first-level cache in processor module

or

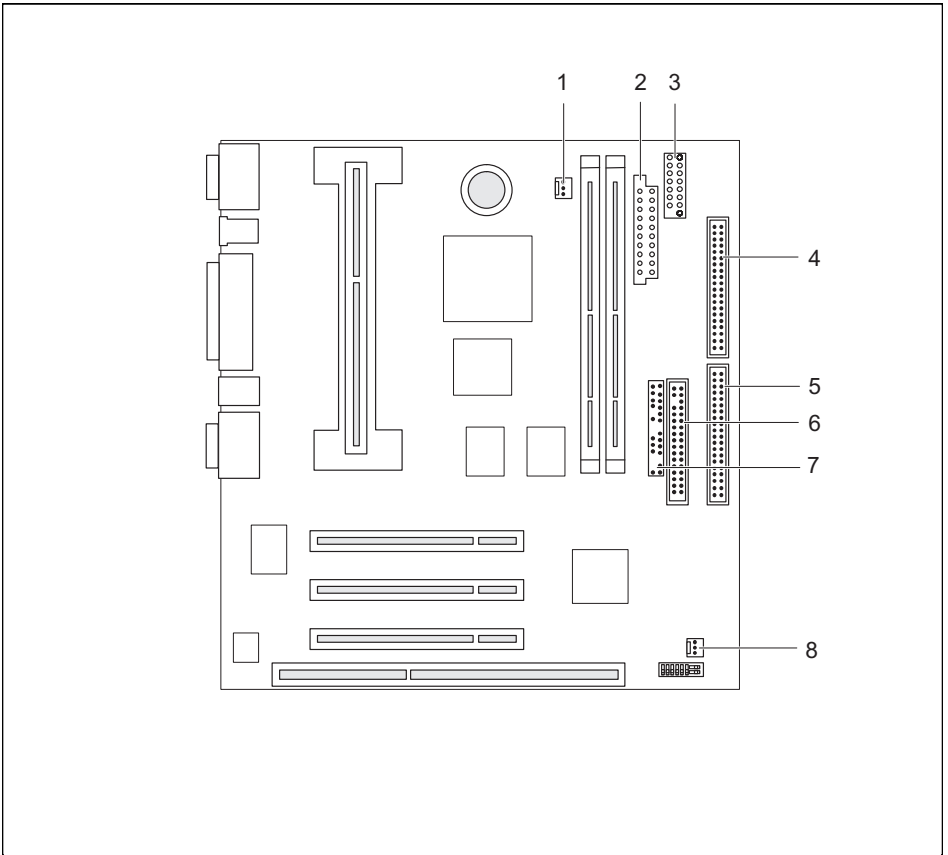
- Intel Celeron processor with MMX technology for Intel 66 MHz slot 1 processor socket, first-level cache in processor module
- 16 to 256 Mbytes main memory (SDRAM memory modules)
- Flash BIOS
- 2 PCI slots, 1 ISA/PCI slot (shared)  
(all PCI slots have bus master capability)
- 2D graphics controller ATI VT4 at PCI bus  
with 200 MHz RAMDAC frequency and 2 Mbyte SGRAM video memory
- IDE hard disk controller connected to PCI bus for up to four IDE drives  
(e.g. IDE hard disk drives, ATAPI CD ROM drives)  
ultra DMA33 mode capable, supports PIO modes 0-4
- Security functions: Floppy disk write-protection
- Floppy disk drive controller (up to 2.88 Mbyte format and floppy tape drive)
- Supports booting from a 120 Mbyte IDE floppy disk drive
- Energy saving functions
- Real-time clock/calendar with integrated battery backup
- Parallel interface (ECP- and EPP-compatible)
- 1 external serial port (16C550 compatible with FIFO)
- 1 internal serial port
- Monitor connector D-SUB (15-pin)
- PS/2 mouse port
- PS/2 keyboard port
- 1 USB port (USB = Universal Serial Bus)

## Interfaces and connectors



1 = Serial port 1  
2 = PS/2 mouse port  
3 = PS/2 keyboard port

4 = Parallel interface  
5 = USB port  
6 = Video connector



1 = Processor fan

2 = Power supply

3 = Serial port 2

4 = IDE drives 3 and 4 (secondary)

5 = IDE drives 1 and 2 (primary)

6 = Floppy disk drive

7 = Connector for control panel and loudspeaker

8 = System fan

The components and connectors marked do not have to be present on the system board.

## Possible screen resolution

Depending on the operating system used the screen resolutions in the following table refer to the screen controller on the system board. If you are using an external screen controller, you will find details of supported screen resolutions in the Operating Manual or Technical Manual supplied with the controller.

To select the appropriate setting for your monitor, please use the ATI-VT4 VGA drivers supplied.

In Windows 95 you can select your monitor type (you should possibly use the standard), refresh rate and the resolution in the *Control Panel* under *Display* in the tabs *MGA settings* or *ATI Adjustments* after these drivers have been installed.

Screen resolution	Refresh rate (Hz)	Horizontal-rate (kHz)	Max. number of colors (2MB)
640x480	120	32 to 64	256
640x480	120	32 to 64	65 K
640x480	120	32 to 64	16,7 mio.
800x600	120	35 to 77	256
800x600	120	35 to 77	65 K
800x600	120	35 to 77	16,7 mio.
1024x768	120	48 to 97	256
1024x768	120	48 to 97	65 K
1152x864	110	55 to 90	256
1152x864	110	55 to 90	65 K
1280x1024	85	64 to 92	256
1600x1200	76	75 to 95	256

64 K: high color (16 bit); 16 million: true color (24 bit)

## Resource table

	assigned IRQ	possible IRQ	Possible Address (hex)	Possible DMA
Keyboard	IRQ1			
Serial interface COM1		3 4	03F8, 02F8 03E8, 02E8	
Serial port COM 2		3 4	02E8, 02F8 03E8, 03F8	
Floppy disk drive controller	IRQ6			2
Parallel interface LPT1		5, 7	0278, 0378, 03BC	0, 1, 3
RTC	IRQ8			
USB controller			PnP	
Mouse controller	IRQ12			
Numeric processor	IRQ13			
IDE controller 1	IRQ14		01F0-01F7	
IDE controller 2	IRQ15		0170-0177	

"assigned IRQ" = interrupts assigned as shipped

"Possible IRQ" = these interrupts can be used for your particular application

"Possible address" = this address can be used for your particular application

"Possible DMA" = these DMAs can be used for your particular application

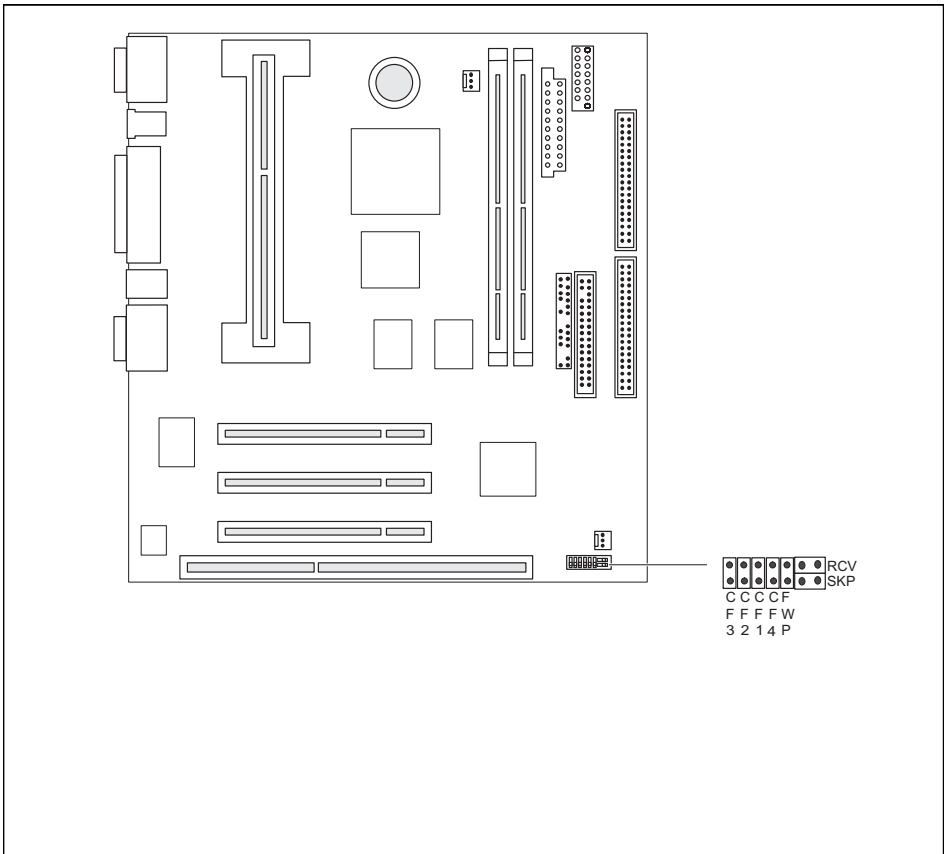
## PCI bus interrupts

The following table shows which PCI bus interrupts on the system board are assigned.

PCI bus slot	PCI bus interrupt	Component on system board:
1	A	
2	B	
3	C	
--	D	USB controller
--	D	Graphics controller



## Jumper settings



Jumper SKP = May not be inserted

Jumper RCV = System BIOS recovery

Jumper FWP = Write protection for floppy disks

Jumpers CF3, CF2, CF1, CF4 = Clock speed

## Recovering System BIOS - jumper RCV

The jumper RCV enables recovery of the old system BIOS after an attempt to update has failed. To restore the old system BIOS you need a Flash BIOS Diskette (please call our customer service).

*inserted* The System BIOS executes from floppy drive A: and the inserted "Flash-BIOS-Diskette" restores the System BIOS on the system board.

*not inserted* Normal operation (default setting).

## Write protection for floppy disk drive - jumper FWP

The jumper FWP is used to define whether floppy disks can be written or deleted in the floppy disk drive. To write and delete floppy disks, the write protection for diskettes in *BIOS Setup* must be disabled (in menu Security, the field Diskette Write must be set to *Enabled*).

*inserted*            The floppy disk drive is write-protected.

*not inserted*      Read, write and delete floppy disks is possible (default setting).

## Clock frequency - jumpers CF1 to CF4



The switches may only be set as specified in the tables below for the particular Pentium II or Celeron used.

This system board you may use only with Pentium II or Celeron processors with a host bus frequency of 66 MHz.

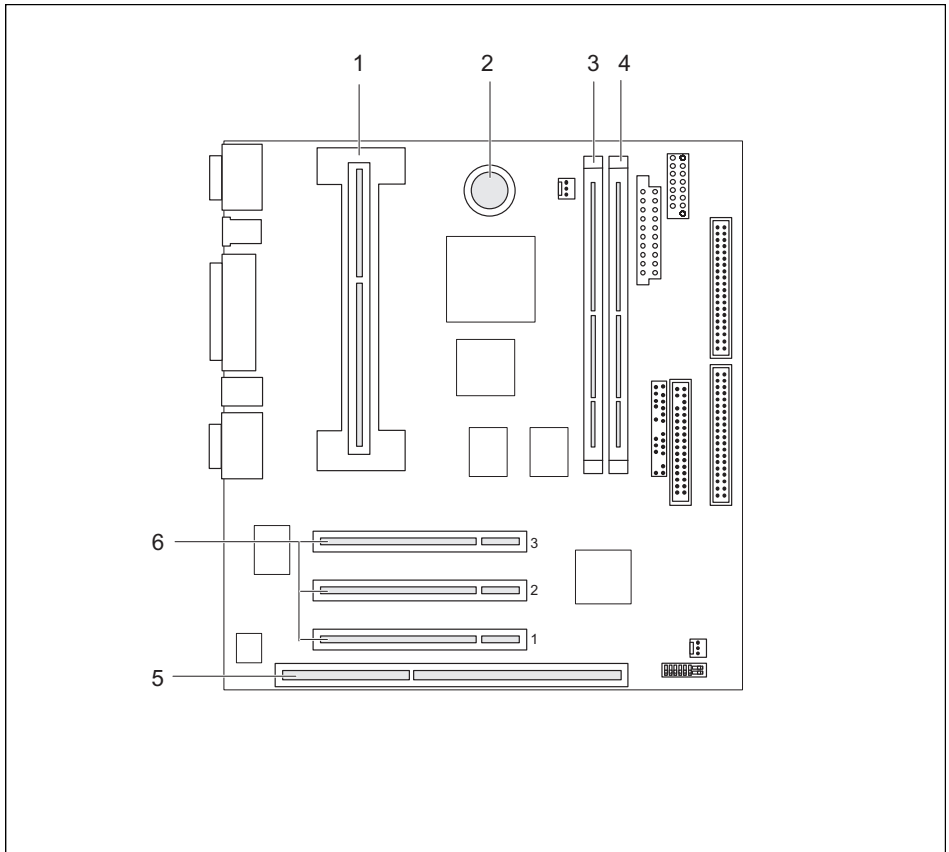
### Pentium II with 66 MHz Host Bus frequency:

Processor	jumper CF3	jumper CF2	jumper CF1	jumper CF4
233 MHz	not inserted	inserted	not inserted	not inserted
266 MHz	inserted	not inserted	not inserted	inserted
300 MHz	inserted	not inserted	not inserted	not inserted
333 MHz	not inserted	not inserted	not inserted	inserted

## Add-on modules



For all steps described in this chapter pull the power plug out of the power outlet!



1 = Slot for processor with heat sink

2 = Lithium battery

3 = Locations bank 2 for main memory

4 = Locations bank 1 for main memory

5 = ISA slot

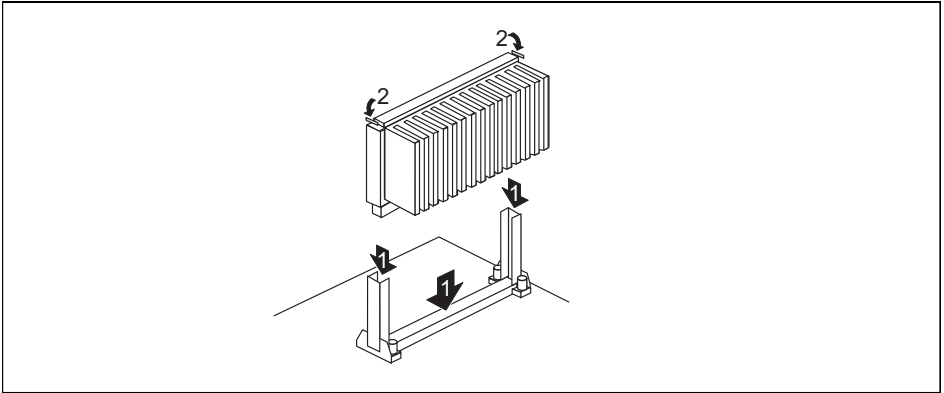
6 = PCI slots 1, 2, 3



All PCI slots have bus master capability.

## Installing/removing the processor

### Installing the Pentium II

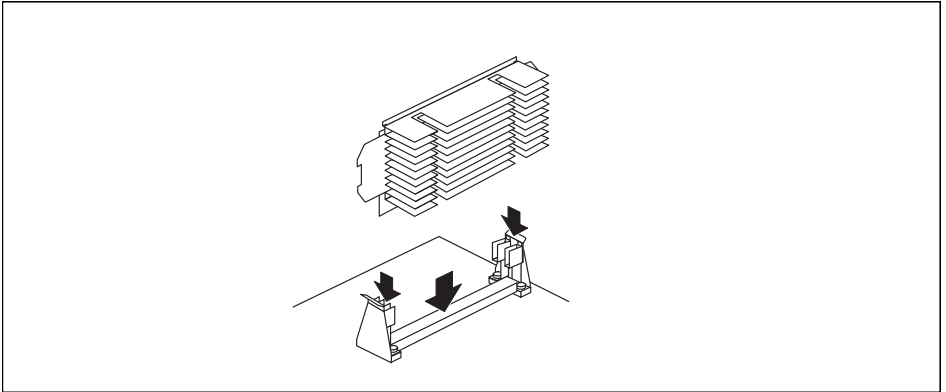


- ▶ Place the Pentium II in the holder (1).
- ▶ Push the Pentium II down in the holder and press it into the slot until the clamps (2) to the left and right snap into place.
- ▶ Set the clock frequency of the new Pentium II using jumpers CF1 to CF4 of the jumper block.
- ▶ If the Pentium II has a fan, attach the associated cable to the connector for the processor fan on the system board.

### Removing the Pentium II

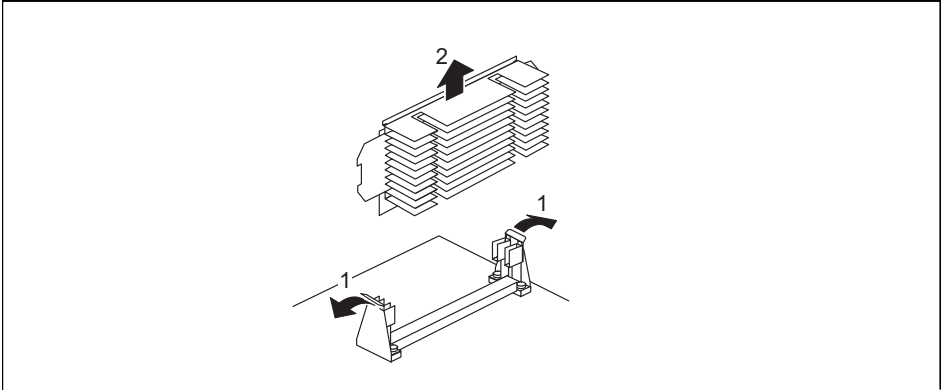
- ▶ If the Pentium II is equipped with a fan, then disconnect the plug connector of the related cable.
- ▶ Press the clamps (2) on either side of the Pentium II inwards and pull the Pentium II up and out.

## Installing the Celeron



- ▶ Place the Celeron in the holder.
- ▶ Push the Celeron down in the holder and press it into the slot until it snaps into place.
- ▶ Set the clock frequency of the new processor using jumpers CF1 to CF4 of the jumper block.
- ▶ If the Celeron has a fan, attach the associated cable to the connector for the processor fan on the system board.

## Removing the Celeron



- ▶ If the Celeron is equipped with a fan, then disconnect the plug connector of the related cable.
- ▶ Press the two side holders somewhat outward while pulling the Celeron upward out of the socket.

## Upgrading main memory

Two locations (bank 1 and bank 2) are available on the system board for main memory. These slots are suitable for 16, 32, 64 and 128 Mbyte SDRAM memory modules of the DIMM format.

The maximum memory configuration is 256 Mbyte, whereby memory modules with different memory capacities can be combined.

DIMM = Dual Inline Memory Module

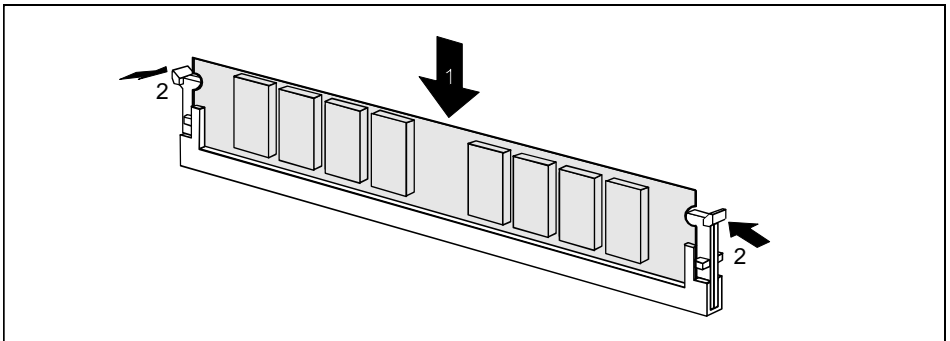
SDRAM = Synchronous Dynamic Random Access Memory



You may only use unbuffered 3.3V memory modules. Buffered memory modules are not permitted.

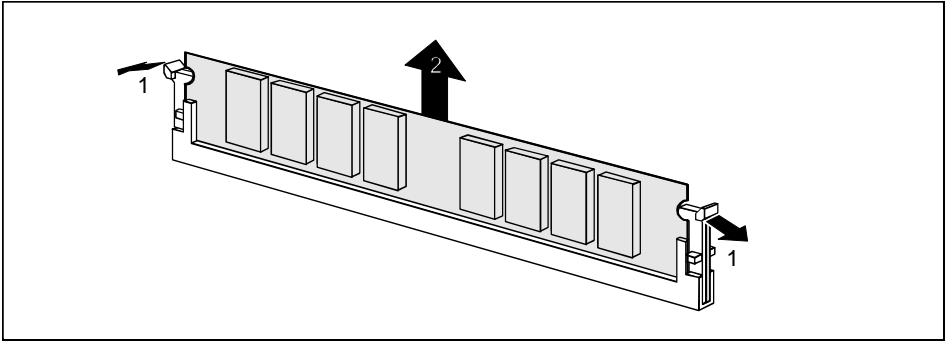
SDRAM memory modules must have a cycle time of 15 ns or less or be designed for a clock frequency of 66 MHz or higher.

## Installing memory modules



- ▶ Flip the holders on each side of the relevant location outwards.
- ▶ Insert the memory module into the location.
- ▶ At the same time flip the lateral holders upwards until the memory module snaps in place.

## Removing a memory module



- ▶ Flip the holders to the right and left of the location outwards.
- ▶ Pull the memory module out of its location.

## Replacing the lithium battery

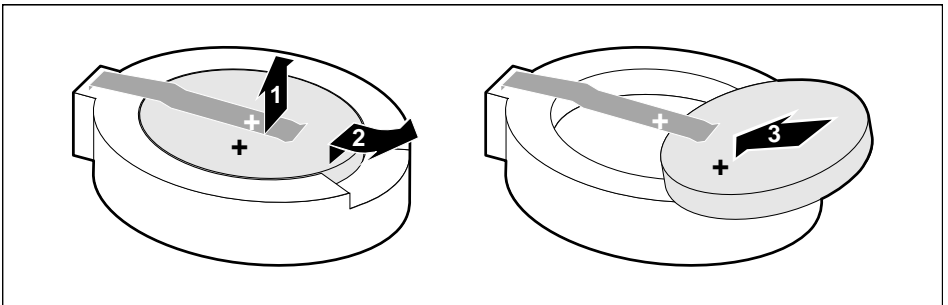


Incorrect replacement of the lithium battery may lead to a risk of explosion.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer (CR2032).

Do not throw lithium batteries into the trashcan. It must be disposed of in accordance with local regulations concerning special waste.

Make sure that you insert the battery the right way round. The plus pole must be on the top!



- ▶ Lift the contact (1) a few millimeters and remove the battery from its socket (2).
- ▶ Insert a new lithium battery of the same type in the socket (3).





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# Contents

Introduction .....	1
Notational conventions .....	1
Important notes .....	2
Features .....	4
Interfaces and connectors .....	5
Possible screen resolution .....	7
Resource table .....	8
PCI bus interrupts .....	8
Jumper settings .....	9
Recovering System BIOS - jumper RCV .....	9
Write protection for floppy disk drive - jumper FWP .....	10
Clock frequency - jumpers CF1 to CF4 .....	10
Add-on modules .....	11
Installing/removing the processor .....	12
Upgrading main memory .....	14
Replacing the lithium battery .....	15

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**System board D1081**

**Technical Manual**

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