SIEMENS NIXDORF

PC

System board D842

ISA / PCI

Technical Manual

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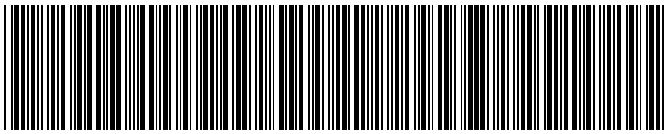
Herausgegeben von/Published by
Siemens Nixdorf Informationssysteme AG
D-33094 Paderborn
D-81730 München

Bestell-Nr./Order No.: ***A26361-D842-Z120-1-7619***
Printed in the Federal Republic of Germany
AG 0496 04/96



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April 1996 edition

Contents

Introduction

This description applies for the system board D842 with PCI bus (Peripheral Component Interconnect).

Notational conventions

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

This indicates instructions which it is essential to observe. Failure to do so may endanger your health, the operational integrity and electrical safety of your PC, or the security of your 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.

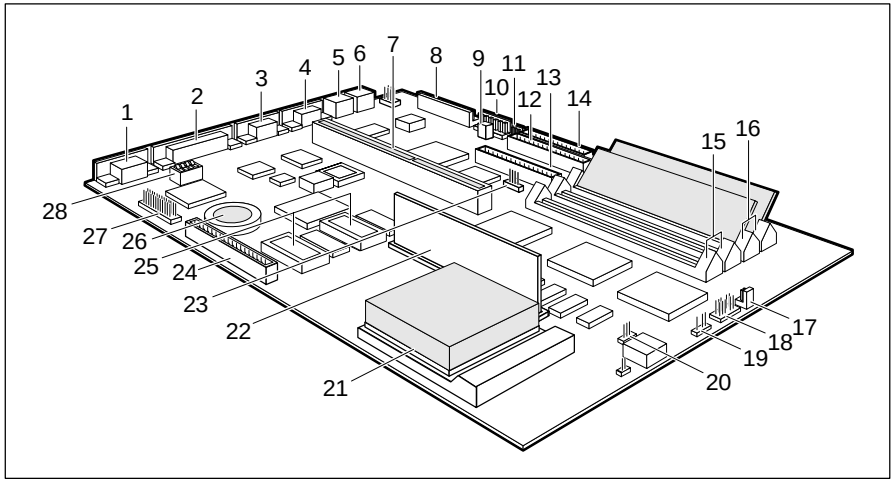
`Texts in this bold typeface` are the entries you make via the keyboard.

Texts in italics indicate commands or menu items.

"Quotation marks" indicate highlighted text and names of chapters.

Features

- 64-bit microprocessor Pentium with 16 Kbyte internal cache (first-level cache; 8 Kbyte data cache, 8 Kbyte address cache) or OverDrive processor for Pentium
- Math coprocessor: integrated in processor
- Memory configuration on system board: 8 Mbyte to 128 Mbyte
- Second-level cache on the system board: 256 Kbyte
- PCI bus
- Disk controller connected to PCI bus for up to four IDE drives (e.g. fast IDE hard disk drives, IDE CD ROM drive)
- Monitor controller connected to PCI bus; graphics processor TSENG ET4000/W32P with Windows accelerator and 1 Mbyte or 2 Mbyte DRAM video memory
- Real-time clock/calendar with integrated battery backup
- 128 Kbyte Flash BIOS
- Floppy disk controller (up to 2.88 Mbyte format)
- Bus interface for platter
- Connector for external loudspeaker
- Connector for external monitor controller (VESA VGA pass-through)
- Imageport connector
- Parallel interface (ECP- and EPP-compatible)
- Two serial interfaces
- PS/2 mouse interface
- PS/2 keyboard interface
- Monitor interface
- Location bank for voltage converter



1 = Monitor interface
2 = Parallel interface
3 = Serial interface 2
4 = Serial interface 1
5 = PS/2 mouse port
6 = PS/2 keyboard port
7 = Bus interface
8 = Connector for power supply 5 V
9 = Connector for remote on
10 = Connector for power supply 3,3 V
11 = Connector for soft-off power supply
12 = Connector 1 for IDE drives 1 and 2 (e.g. hard disk drive)
13 = Connector 2 for IDE drives 3 and 4
14 = Connector for floppy disk drive
15 = Location bank 1 for main memory
16 = Location bank 0 for main memory
17 = Connector for soft-off power switch
18 = Connector for LED indicators
19 = Connector for external loudspeaker
20 = Socket for processor fan
21 = Processor with heat sink
22 = Voltage converter
23 = Connector for LED indicator of SCSI hard disk drive
24 = Imageport connector
25 = Sockets for video memory
26 = Lithium battery
27 = Connector for external monitor controller (VESA VGA pass-through)
28 = Switch block

Possible screen resolution

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

You can use the *REFRATE* program (under Windows 95), the *WDSETUP* program (under MS-Windows) or the *SET-VGA* program (under MS-DOS) to set the screen resolution. Detailed information is provided in the corresponding help.

You may set only those resolutions and refresh rates specified in the "Technical data" section of the monitor description. Otherwise you may damage your monitor. If you are in any doubt, contact your sales office or customer service.

Screen resolution	Refresh rate (Hz)	Horizontal-frequency (kHz)	Max. number of colors
640x350	70	31,3	16
640x350	84	38	16
640x480	60	31,3	16777216
640x480	75	38	16777216
640x480	90	48	65536
720x400	70	31,5	16
720x400	84	38	16
800x600	56	35	16777216 *)
800x600	56	35	65536
800x600	60	38	16777216 *)
800x600	60	38	65536
800x600	75	47	65536
800x600	90	60	256
1024x768	87 interlaced	36	65536 *)
1024x768	87 interlaced	36	256
1024x768	60	49	65536 *)
1024x768	60	49	256
1024x768	70	57	256
1024x768	75	60	256
1280x1024	87 interlaced	49	256 *)
1280x1024	87 interlaced	49	16
1280x1024	60	64	256 *)
1280x1024	75	80	256 *)

*) Only with 2 Mbyte of video memory

Important notes

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

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 section "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. Your vendor or dealer or their authorized representatives will take used batteries back free of charge so that they can be recycled or disposed of in the proper manner.

ADVARSEL

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Lever det brugte batteri tilbage til leverandøren.

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

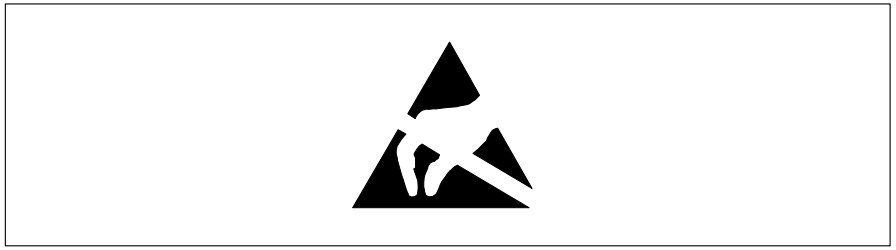
VARNING

Eksplosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkarenfabrikanten. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

Modules with **e**lectrostatic **s**ensitive **d**evices (ESD) may be identified by labels.



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

- When you handle modules fitted with ESDs, 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 modules containing ESDs.
- Always hold modules with ESDs by their edges.
- Never touch pins or conductors on modules fitted with ESDs.

Notes on software

Program with time loops

Problems can occur with programs in which time loops have been implemented through software loops. This applies in particular to older programs which were written for 8 MHz processors.

SCO UNIX on devices with Pentium or OverDrive processor

Please note the following:
If you use one of the processors mentioned above, the Adaptec-SCSI controller cannot be addressed under SCO-UNIX 3.2.4 and ODT 2.0.
To solve this problem, you can order **from SCO** a set of **SLS (Support Level Supplement) floppies** (consisting of 3 floppy disks) under the number **uod361**, free of charge, or contact one of our IT Service Shops.

The problem no longer exists in the new releases of SCO-UNIX 3.2.4.2 and ODT 2.1.
There will be no support for older versions (SCO-UNIX versions lower than 3.2.4 and ODT versions lower than 2.0).

Settings in BIOS Setup

The *BIOS Setup* menu allows you to set your hardware configuration and system functions. In addition, the *BIOS Setup* displays technical information on the PC's configuration.

Pressing the function key F1 provides help information on each entry field.

When it is supplied, the PC is set to factory default settings which you can alter in the *BIOS Setup* menus. Any changes you make take effect as soon as you save the settings and quit the *BIOS Setup*.

The Operating Manual describes how to call the setup menu and change menu entries.

You can select the following settings in the *BIOS Setup*:
Main - system functions
Advanced - advanced system configuration
Security - security features
Power - power-management features
Exit - save and quit

i The various menus are described below with all setting options. Since the setting options depend on your PC's hardware configuration, some of them may not be offered in the BIOS setup.

System settings - Main menu

In the *Main* menu you can set up the following:
– Time (in the field marked *System Time*)
– Date (in the field marked *System Date*)
– Floppy disk drive (in the field marked *Diskette A* or *Diskette B*)
– Hard disk drive (in the submenus of *Hard Disk*)
– System boot (in the submenus of *Boot Options*)
– Display device (in the field marked *Video Display*)


```
        Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
 Main    Advanced    Security    Power    Exit

                                                        Item Specific Help
 System Time:          [07:42:19]                      ----------------------
 System Date:          [02/28/1995]

 Diskette A:           [1.4M]
 Diskette B:           [None]

▶ Hard Disk 1:         540 Mbyte
▶ Hard Disk 2:         None
▶ Hard Disk 3:         None
▶ Hard Disk 4:         None

▶ Boot Options

 Video Display:        [EGA/VGA]

 Base Memory:             640K
 Extended Memory:          15M

F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
ESC Exit    ←→ Select Menu   Enter Execute Command    F7 Previous Values
```

Example for *Main* menu

Time and Date - System Time / System Date

The *System Time* field and the *System Date* field show the time and date respectively according to the PC. The time is shown in the format *hours:minutes:seconds* and the date is shown in the format *month/day/year*. You can move the cursor within the Time and Date fields (e.g. from hour to minute) using the tabulator key.

⚠ If the settings in the *System Time* and *System Date* fields are frequently wrong when you power up the computer, the lithium battery is dead. Change the battery as described in "Add-on modules - Replacing the lithium battery").

Floppy disk drive - Diskette A / Diskette B

These two fields are used to specify the type of floppy disk drive installed.

360K, 720K, 1.2M, 1.4M, 2.8M
The entry depends on the floppy disk drive installed.
(Default entry *Diskette A*: *1.4M*)

None A floppy disk drive is not installed.
(Default entry *Diskette B*: *None*)

Hard disk drives - Hard Disk 1 to Hard Disk 4

call the submenu to make corresponding settings of the IDE hard disk drive.

i You should change the default settings only if you are connecting an additional IDE drive to one of the two IDE connectors.

The maximum transfer rate of two IDE drives connected to the same connector is determined by the slower of the two. Fast hard disks should therefore be connected to the first IDE connector and identified as *Hard Disk 1* or *Hard Disk 2*; slower hard disks or other IDE drives (e.g. CD ROM drives) should be connected to the second IDE connector and identified as *Hard Disk 3* or *Hard Disk 4*.

The following description of the setting options for *Hard Disk 1* also applies to *Hard Disk 2*, *Hard Disk 3* and *Hard Disk 4*. The default settings depend on the installed drive.

```
      Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
  Main

         Hard Disk 1:          540 Mbyte          Item Specific Help

   Autotype Hard Disk:  [Press Enter]

   Type:                [User]  540 Mbyte
   Cylinders:           [ 1046]
   Heads:               [   16]
   Sectors/Track:       [   63]
   Write Precomp:       [None]

   Transfer Mode:       [Standard]
   LBA Translation:     [Disabled]
   PIO Mode:            [Standard]
   32 Bit I/O:          [Enabled]

F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
ESC Exit    ←→ Select Menu   Enter Execute Command    F7 Previous Values
```

Example for the submenu *Hard Disk 1*

Only if you have installed a new IDE hard disk drive, you should mark the *Autotype Hard Disk* field and press Enter. This has the effect of setting the optimum values for the IDE hard disk drive. You can change these values if you set the *Type* field to *User*.

Type - Hard Disk Type

This field is used to specify the type of hard disk drive installed.

None — You cannot change the hard disk parameters (*Cylinders*, *Heads*, *Sector/Track* and *Write Precomp*). Either an IDE drive has not been installed, or the values have been set with *Autotype Hard Disk*.

1 to 39 — The hard disk parameters (*Cylinders, Heads*, etc.) are preset.

Auto — If the hard disk supports this mode, the setup menu reads the hard disk parameters from the disk itself and sets them automatically. You do not need to select the parameters yourself.

User — You can enter the hard disk parameters (*Cylinders*, *Heads* etc.) yourself.
If you have set the hard disk parameters with *Autotype Hard Disk*, you can only reduce the values.

Examples of user-defined entries (IDE drives):

hard disk parameter	hard disk capacity in Mbyte					
	210	270	340	540	850	1024
Cylinders	683	915	904	1046	1654	2097
Heads	16	12	16	16	16	16
Sectors	38	48	46	63	63	63
Write Precomp	None	None	None	None	None	None

Cylinders, Heads, Sectors/Track, Write Precomp - hard disk parameter

These hard disk parameters are set in accordance with the IDE hard disk drive. If you want to change the hard disk parameters manually, set the Type field to *User*.

Transfer Mode

This field specifies the transfer mode for the IDE hard disk drive.

Standard One block is transferred for each interrupt (default entry).

2 Sectors, *4 Sectors*, *6 Sectors*, *8 Sectors*, *16 Sectors*
The set number of blocks (sectors) is transferred for each interrupt.

LBA Translation - Addressing

This field enables and disables the LBA (Logical Block Addressing) mode. LBA mode allows you to install and use hard disks with a capacity of more than 528 Mbytes. If a hard disk supports LBA mode, you can use the full capacity of the IDE hard disk.

The default entry depends on the installed IDE hard disk drive. Change the default entries only if you are installing another hard disk drive.

You may only use IDE drives in the LBA mode selected when they were set up. In other words, if you set up a hard disk with LBA mode *DISABLED*, you may only operate the hard disk with LBA mode *DISABLED*.

Enabled If the hard disk supports LBA and it has a capacity of more than 528 Mbytes, the BIOS translates the hard disk parameters, allowing the disk's full capacity to be used.
If the hard disk does not support LBA, its parameters are not translated.

Disabled The BIOS uses the hard disk parameters and supports a maximum capacity of 528 Mbytes.

PIO Mode - Transfer rate

The PIO (**P**rogrammed **I**nput **O**utput) Mode defines the transfer rate of the IDE hard disk drive.

Standard 0,8 Mbyte/s to 2 Mbyte/s. (default entry)

Fast PIO 1 2 Mbyte/s to 4 Mbyte/s.

Fast PIO 2 4 Mbyte/s to 5 Mbyte/s.

Fast PIO 3 5 Mbyte/s to 10 Mbyte/s.

32 Bit I/O - Bus width for data transfer

specifies the width of data transmission between the processor and the IDE controller.

Enabled The data transfer is 32 bits in width at the PCI bus. This enhances performance (default entry).

Disabled The data transfer is 16 bits in width.

System Startup - Boot Options

calls the submenu in which you can select the settings for system startup of the PC.

```
Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
Main

        Boot Options                          Item Specific Help

POST Error Halt:      [Halt On All Errors]
Quick Boot:           [Disabled]

F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
ESC Exit    ←→ Select Menu   Enter Execute Command    F7 Previous Values
```

Example for submenu *Boot Options*

POST Error Halt - Aborting system startup

defines whether the system startup is to be aborted and the system halted when an error is detected.

Halt On All Errors
: If the self-test detects an error, system startup is aborted after the self-test, and the system is halted (default entry).

No Halt On Any Errors
: The system startup is not aborted. The error is ignored as far as possible.

Quick Boot

can reduce the extent of the self-test and thus accelerate the system startup.

Enabled When the PC is switched on, the quick self-test is carried out, in which the floppy disk drives are not checked.

Disabled When the PC is switched on, the complete PC configuration is tested (default entry).

Type of monitor - Video Display

This field is used to specify the type of monitor connected.

EGA/VGA, Color 80, Monochrome
: Default entry: *EGA/VGA*

Base Memory

This field indicates the size of the available base memory below 1 Mbyte.

Extended Memory

This field indicates the size of the memory above 1 Mbyte.

Making advanced system settings - Advanced menu

Change the default settings only for special applications. Incorrect settings can cause malfunctions.

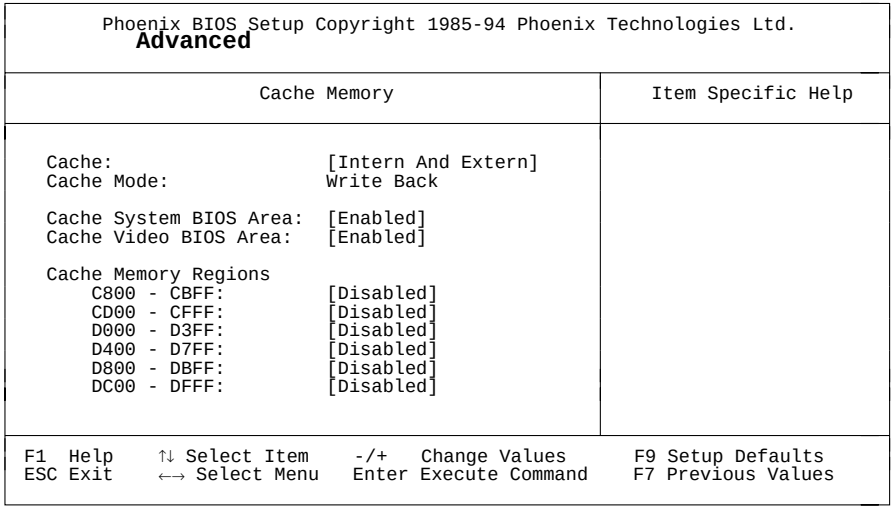
You can make the following system settings in the *Advanced* menu:
- Internal cache and second-level cache (in the *Cache Memory* submenu)
- Copy BIOS sections to the RAM (in the *Shadow Memory* submenu)
- Interfaces and controllers (in the *Peripheral Configuration* submenu)
- PCI functionality (in the *PCI Configuration* submenu)
- Data access to hard disk (in the *Advanced System Configuration* submenu)
- Plug&Play functionality (in the *Plug and Play O/S* field)
- Configuration data (in the *Reset Configuration Data* field)
- Hard disk access (in the *Large Disk Access Mode* field)

```
      Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
  Main    Advanced    Security    Power    Exit

                                                    Item Specific Help
                    Warning!                        ----------------------
  Setting items on this menu to incorrect values
  may cause your system to malfunction.

▶ Cache Memory
▶ Shadow Memory
▶ Peripheral Configuration
▶ PCI Configuration
▶ Advanced System Configuration

  Plug & Play O/S:           [No]
  Reset Configuration Data:  [No]

  Large Disk Access Mode:    [DOS]

F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
ESC Exit    ←→ Select Menu   Enter Execute Command    F7 Previous Values
```

Example for the *Advanced* menu

Cache - Cache Memory

calls the submenu in which you can make the settings for the internal cache (in the processor) and the second-level cache (on the system board).



Example for submenu *Cache Memory*

Cache - cache utilization

This field switches the cache on and off. The cache is a buffer to which parts of the main memory and BIOS can be temporarily copied. The PC's performance is higher when the cache is switched on.
You must disable the cache if:
– the access time is too short for older applications
– you are installing *OS/2 Warp*

Intern Only Only the internal cache is used.

Intern And Extern
Internal (first-level cache) and external cache (second-level cache) are enabled. If there is no external Cache, only the internal cache is used (Default entry).

Disabled Internal (first-level cache) and external cache (second-level cache) are disabled. All cache-related settings are then without effect.

Cache Mode

Condition: The *Cache* field must be set to *Intern Only* or *Intern And Extern*.

Cache Mode sets the mode in which the CPU uses the cache.

In write-back mode the CPU writes information to the cache and the information is only written to main memory if necessary. Memory and cache contents are not identical. In write-back mode the performance is higher than in write-through mode. In write-through mode the processor writes the information to the cache and to main memory. The contents of memory and cache are identical.

Write Back The cache works in write-back mode (fixed).

Cache System BIOS Area / Cache Video BIOS Area

Condition: The *Cache* field must be set to *Intern only* or *Intern and Extern*.

Cache System BIOS Area and *Cache Video BIOS Area* lets you specify the BIOS that should be mapped to the cache. Mapping the BIOS to the cache increases system performance.

Enabled The specified BIOS is mapped to the cache (default entry).

Disabled The specified BIOS is not mapped to the cache.

Cache Memory Regions

Condition: The *Cache* field must be set to *Intern only* or *Intern and Extern*.

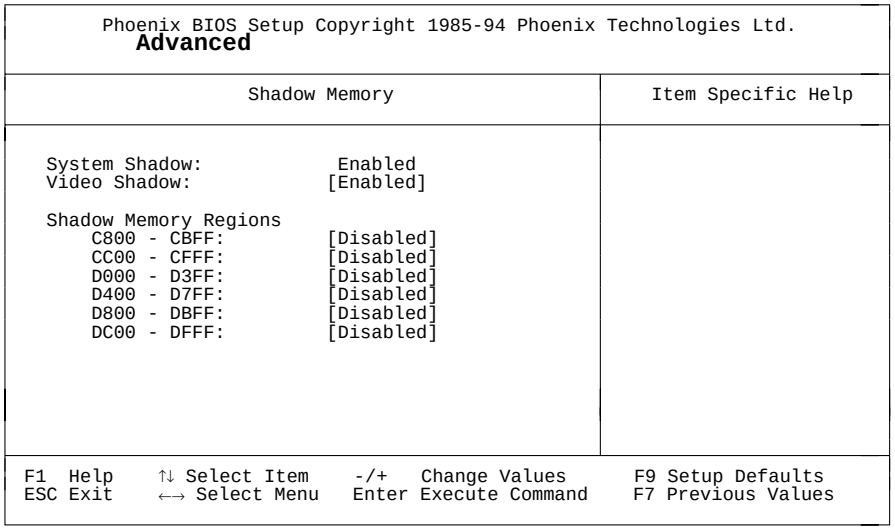
Cache Memory Regions lets you specify the BIOS ROM areas that should be mapped to the cache. Mapping the BIOS ROM areas to the cache increases system performance.

Enabled The relevant ROM area is mapped to the cache.

Disabled The relevant ROM area is not mapped to the cache (default entry).

ROM areas in the RAM - Shadow Memory

calls the submenu in which you can specify which parts of the ROM (Read Only Memory) are to be copied to the faster RAM (Random Access Memory) at system startup.



Example for submenu *Shadow Memory*

System Shadow

This field is always Enabled, because the System BIOS is automatically copied to the faster RAM.

Video Shadow

This field allows you to copy the video BIOS to fast RAM. Copying the video BIOS to fast RAM increases system performance.

Enabled The video BIOS is copied to fast RAM (default entry).

Disabled The video BIOS is not copied to fast RAM. This setting is not effective unless an external monitor controller is used.

Shadow Memory Regions - ROM areas

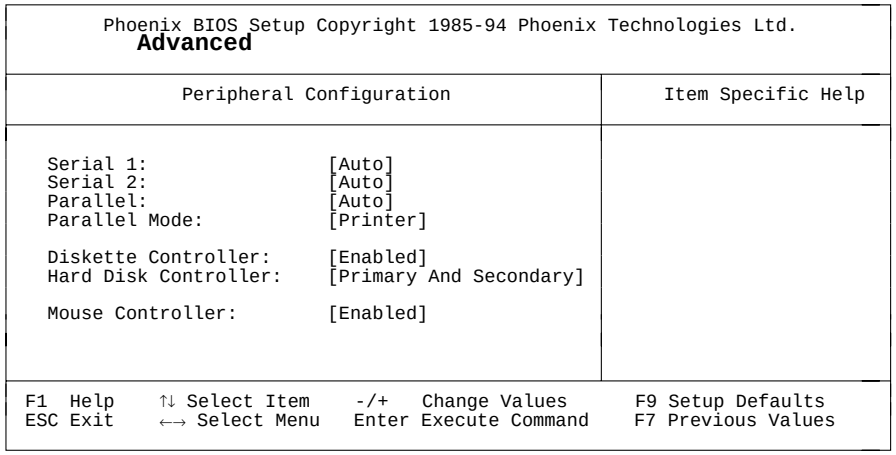
Shadow Memory Regions allows you to copy ROM areas to fast RAM. Copying ROM areas to fast RAM increases system performance.

Enabled The ROM area is copied to fast RAM.

Disabled The ROM area is not copied to fast RAM (default entry).

Peripheral Configuration - Interfaces and controllers

calls the submenu in which you can set the interfaces and controllers.



Example for submenu *Peripheral Configuration*

Serial 1 / Serial 2 - Serial interfaces

This field selects the address and the interrupt used to access the relevant serial interface.

3F8h, IRQ4; *2F8h, IRQ3*; *3E8h, IRQ4*; *2E8h, IRQ3*;
The serial interface is set to the shown address and interrupt.

Auto The serial interface is automatically set to the next available combination (address, interrupt) (Default entry).

Disabled The serial interface is disabled.
No interrupt is used.

Parallel - parallel interface

This field selects the address and the interrupt used to access the parallel interface.

378h, IRQ7; *278h, IRQ5*; *3BCh, IRQ7*
The parallel interface is set to the shown address and interrupt.

Auto The parallel interface is automatically set to the next available combination (address, interrupt) (Default entry).

Disabled The parallel interface is disabled.
No interrupt is used.

Parallel Mode

This field is used to specify whether the parallel interface is to be used as a bidirectional input/output port or just as an output port.
ECP and EPP transfer modes allow faster transfer rates of 2 and 2.4 Mbyte/s.

These modes will only work with peripheral devices which support them. The field *Parallel* must be set to *378h* or *278h*.

Printer The port functions as an output port only (default entry).

Bidirection Data can be transferred in both directions across the port.

EPP Fast transfer mode (up to 2 Mbyte/s), can output and receive data. Requires a peripheral device which supports the EPP (Enhanced Parallel Port) transfer mode.

ECP Fast transfer mode (up to 2.4 Mbyte/s), can output and receive data. Requires a peripheral device which supports the ECP (Enhanced Capability Port) transfer mode.

Diskette Controller

This field is used to enable and disable the built-in floppy disk controller on the system board.
Enabled The floppy disk controller is enabled - IRQ 6 is used. (default entry)

Disabled The floppy disk controller is disabled - IRQ 6 is free.

Hard Disk Controller

This field allows you to enable and disable the built-in IDE hard disk controller. The associated interrupts (IRQ 14 for the first connector, IRQ 15 for the second connector) will only be available if no IDE hard disk drive is physically connected.

Primary The first IDE hard disk controller is enabled (default entry). Two IDE drives (preferably high-speed hard disks) can be attached to the first (primary) connector. IRQ14 is occupied.

Primary And Secondary
Primary and secondary IDE drive controllers are activated (default entry). Up to four IDE drives can be connected. Low-speed drives are preferred for the second (secondary) connector (e.g. CD-ROM). IRQ14 and IRQ15 are occupied.

Disabled The two IDE hard disk controller are disabled.

Mouse Controller

This field is used to enable and disable the built-in mouse controller on the system board.

Enabled The mouse controller is enabled - IRQ 12 is used. (default entry)

Disabled The mouse controller is disabled - IRQ 12 is free.

PCI Configuration

calls the submenu in which you can make the settings for the PCI slots.

```
        Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
           Advanced
-------------------------------------------------------------------------------
               PCI Configuration                     |    Item Specific Help
-------------------------------------------------------------------------------
   PCI Interrupt Mapping IntA#:  [Auto]              |
   PCI Interrupt Mapping IntA#:  [Auto]              |
   PCI Interrupt Mapping IntA#:  [Auto]              |
   PCI Interrupt Mapping IntA#:  [Auto]              |
                                                     |
   VGA Interrupt:                [Enabled]           |
   PCI Parity Checking:          [Enabled]           |
                                                     |
   PCI Device, Slot #1                               |
     Default Latency Timer:      [Yes]               |
     Latency Timer:              [0040]              |
                                                     |
   PCI Device, Slot #2                               |
     Default Latency Timer:      [Yes]               |
     Latency Timer:              [0040]              |
-------------------------------------------------------------------------------
 F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
 ESC Exit    ←→ Select Menu    Enter Execute Command    F7 Previous Values
```

Example for submenu *PCI Configuration*

PCI Interrupt Mapping INTx# - Assignment of the PCI interrupts

defines which PCI interrupt is switched to which ISA interrupt. For the change to take effect, you must switch your PC off and then on again after the Setup BIOS has terminated.

With multifunctional PCI boards, all PCI interrupts can be used. The controllers on the system board do not need any PCI interrupts.

If you use a setting other than *Auto*, the Plug&Play functionality of the system BIOS for PCI boards is deactivated.

The PCI interrupts INTA# and INTB# are assigned as follows:
PCI slot 1 = INTA#, PCI slot 2 = INTB#

Auto The PCI interrupts are assigned automatically in accordance with the Plug&Play guidelines (default entry).

Disabled No PCI interrupt is used for the PCI board in the assigned PCI slot.

IRQ03, IRQ04, IRQ05, IRQ06, IRQ07, IRQ09, IRQ10, IRQ11, IRQ12, IRQ14, IRQ15
The PCI interrupt is switched to the selected ISA interrupt. You may not select an ISA interrupt that is used by a component on the system board (e.g. controller) or an ISA board.

VGA Interrupt

assigns IRQ9 to the monitor controller on the built-in PCI module.

Enabled IRQ9 is assigned to the monitor controller on the built-in PCI module. (Default entry)

Disabled IRQ9 can be used for other add-on modules.

To enable a change to take effect, exit the Setup menu, switch the device off and then back on again.

PCI Parity Checking

specifies wether the PCI bus is to be parity-checked.

Enabled A parity check is performed on each access to the PCI data bus or the PCI address bus. If a bit failure is detected an error message is displayed. (Default entry)

Disabled No parity check is performed on the PCI bus.

PCI Device, Slot #1: Default Latency Timer
PCI Device, Slot #2: Default Latency Timer

specifies the lowest number of clock cycles in which a PCI master module can be active at the PCI bus.

Yes The value predefined by the PCI module is accepted. The entry in the corresponding field for *PCI Device, Slot #n: Latency Timer* is ignored. (Default entry)

No The value predefined by the PCI module is ignored. The value set in the corresponding field for *PCI Device, Slot #n: Latency Timer* determines the number of clock cycles.

PCI Device, Slot #1: Latency Timer
PCI Device, Slot #2: Latency Timer

Requirement: the corresponding field for *PCI Device, Slot #n: Latency Timer* must be set to *No*.

The field specifies the lowest number of clock cycles in which a PCI master module can be active at the PCI bus.

0000h through *0280h* Number of clock cycles (default entry = *0040h*)

Advanced System Configuration

calls the submenu in which you can make additional system settings.

```
Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
   Advanced

Advanced System Configuration          Item Specific Help

Video subsystem:       [Auto]
Hard Disk Read Ahead:  [Disabled]

F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
ESC Exit    ←→ Select Menu   Enter Execute Command    F7 Previous Values
```

Example for submenu *Advanced System Configuration*

Video Subsystem - Monitor controller

defines settings for the monitor controller. If you are using your own monitor controller and are encountering problems, this setting may be the cause.

Auto default entry

3C3h, 46E8h further possible settings

Have settings changed only by a service technician or have the service technician instruct you in how to make changes.

Hard Disk Read Ahead - Hard disk access

specifies the type of hard disk access.

Enabled More data than necessary is read for each hard disk access. The additional data is buffered and is available for the next data access. This enhances the performance of hard disk accesses.

Disabled Only the required data is read for each hard disk access (default entry). You should select this settung if you want install Windows NT or OS/2.

Plug&Play functionality - Plug & Play O/S

defines the Plug&Play functionality. Plug&Play means that inserted modules are automatically recognized and installed if they support Plug&Play.

Yes The operating system (e.g. Windows 95) takes over some of the Plug&Play functions. You should select this setting only if the operating system supports Plug&Play.

No The BIOS takes over the complete Plug&Play functionality (default entry).

Reset Configuration Data

This field specifies whether the configuration data is reset and reinitialized when the PC is started.

YES When the PC is started the old configuration data is reset and the entry in this field is set to *NO*. The new configuration data is determined by means of the Plug&Play functionality. The mounted modules and drives are then initialized with this data. Components which are not Plug&Play must be entered manually.

NO When the PC is started, the Plug&Play functionality ascertains the current configuration data and uses it to initialize the installed modules and drives. The configuration data of non-Plug&Play components is not reset (default entry).

Hard disk access - Large Disk Access Mode

specifies the type of hard disk access for large hard disks (more than 1024 cylinders, 16 heads).

DOS If the operating system uses MS-DOS-compatible hard disk accesses. (default entry)

Other If the operating system uses hard disk accesses which are not MS-DOS-compatible (e.g. Novell, SCO Unix).

Setting up the security features - Menu Security

You can set up the following security features in the *Security* menu:
- Protecting BIOS Setup (in the field marked *Set Setup Password*)
- Protecting BIOS of add-on modules (in the field marked *Set Setup Lock*)
- Protecting system boots (in the field marked *Set System Password*)
- Locking input devices (in the field marked *System Password Mode*)
- Prevention of system boots from floppy disk (in the field marked *System Load*)
- Virus Warning (in the field marked *Virus Warning*)
- Prevention of write operations to floppy disk (in the field marked *Diskette Write*)
- Write protection of System BIOS (in the field marked *Flash Write*)
- Switching off by software (in the field marked *Soft Power Off*)
- Remote Power On (in the field marked *Remote Power On*)

```
      Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
  Main    Advanced    Security    Power    Exit

                                                        Item Specific Help
  Setup Password          Not installed                ----------------------
  System Password         Not installed

  Set Setup Password:     [Press Enter]
  Set Setup Lock:         [Standard]
  Set System Password:    [Press Enter]
  System Password Mode:   [System]

  System Load:            [Standard]
  Setup Prompt:           [Enabled]
  Virus Warning:          [Disabled]

  Diskette Write:         [Enabled]
  Flash Write:            [Enabled]

  Soft Power Off:         [Enabled]
  Remote Power On:        [Enabled]

F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
ESC Exit    ←→ Select Menu   Enter Execute Command    F7 Previous Values
```

Setup Password / System Password

This field indicates whether the appropriate password is installed or not.

Set Setup Password

This field enables you to install the setup password. The setup password prevents unauthorized callup of the *BIOS setup*.
Mark the field and press the Return key. You can then enter and confirm the setup password (see also the PC Operating Manual).

Set Setup Lock

specifies the effect of the Setup Password.

Standard The Setup Password prevents unauthorized calls of the BIOS Setup. (Default entry)

Extended The Setup Password prevents unauthorized calls of the BIOS Setup and locks the keyboard when the PC is initialized.

Set System Password

Requirement: the setup password must be installed.

This field enables you to install the system password. The system password prevents unauthorized access to your system.
Mark the field and press the Return key. You can then enter and confirm the system password (see also the PC Operating Manual).

System Password Mode

specifies the effect of the system password. The setting in this field becomes effective as soon as a system password is installed.

System When the PC is started, the system password enables the operating system to be booted. (Default)

Keyboard When the PC is started, the operating system is booted and the keyboard and mouse are locked. The system password unlocks the keyboard and mouse.
No prompt is displayed.

System Load

This field specifies the drive from which the operating system can be loaded.

Standard The operating system can be loaded from floppy disk or hard disk (default entry).

Diskette Lock The operating system can only be loaded from hard disk.

Setup Prompt

This field specifies whether the message `Press F2 to enter SETUP` is displayed when the PC is rebooted.

Enabled The message `Press F2 to enter SETUP` is displayed when the system is started (default entry).

Disabled The message is not displayed.

Virus Warning

This field checks the boot sectors of the hard disk drive to see if any changes have been made since the previous system startup. If they have been changed and the reason for this is unknown, a program for finding computer viruses should be loaded.

Enabled If the boot sector has been changed since the previous system startup (e.g. new operating system or virus attack), a warning is dispayed. The warning stays on the screen until you acknowledge the changes with *Confirm* or deactivate the function (*Disabled*).

Confirm This entry confirms a required change in a boot sector (e.g. new operating system).

Disabled The boot sectors are not checked (default entry).

Write protection for floppy disk drive - Diskette Write

This field is used to enable and disable floppy disk write-protection.

Enabled Floppy disks can be read, written or deleted, provided switch 4 on the switch block is set to OPEN (default entry).

Disabled Floppy disks can only be read.

Write protection for System BIOS - Flash Write

This field can assign write protection to the System BIOS.

Enabled The System BIOS can be written to or deleted, provided switch 3 on the switch block is set to OPEN (default entry).

Disabled The System BIOS can neither be written to nor deleted.

Soft Power Off

This field specifies whether the PC can be switched off with a program (e.g. *SWOFF*).

Enabled The PC can be switched off with a program (default entry).

Disabled The PC cannot be switched off with a program.

Remote Power On

specifies whether the PC can be switched on from an external device (e.g. fax).

Enabled The PC can be switched on from an external device (default entry).

Disabled The PC cannot be switched on from an external device.

Setting energy saving functions - Power menu

Programs for power management (e.g. *POWER.EXE*) can change the settings for the energy saving functions.

You can set the following functions in the *Power* menu:

- Enabling of APM interface (in the *Advanced Power Management* field)
- Extent of energy saving functions (in the *Power Management Mode* field)
- Standby mode (in the *Standby Timeout* field)
- Hard disk energy saving functions (in the *Hard Disk Timeout* field)
- Processor speed in standby mode (in the *Standby CPU Speed* field)
- Terminate energy saving functions (in the *Wakeup Event* field)

```
        Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
   Main    Advanced    Security    Power    Exit

                                                   Item Specific Help
                                                  -----------------------
   APM                         [Enabled]
   Power Management Mode       [Customize]

   Standby Timeout:            [15 min]
   Hard Disk Timeout:          [15 min]
   Standby CPU Speed:          [Low]

 ► Wakeup Event

   F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
 ESC Exit    ←→ Select Menu   Enter Execute Command    F7 Previous Values
```

Example for submenu *Power*

Enabling the APM Interface - APM

Determines whether an operation system can change the power management settings in the system BIOS.

Enabled The operating system has access to the power management settings and can change these if necessary (default entry).

Disabled Changes can not be made to power management setting by an operating system.

Extent of energy saving functions - Power Management Mode

This field defines the extent of the energy saving functions.

Customize The functions set in the fields *Standby Timeout*, *Hard Disk Timeout* and *Standby CPU Speed* are effective in power management (default entry).

Maximum, *Medium* or *Minimum Power Savings*
These entries call predefined settings, thus determining the extent of energy saving.

Disabled None of the energy saving functions is effective.

Standby mode - Standby Timeout

Requirement: the *Power Management Mode* must be set to *Customize*.

This field defines the amount of time without system activity the PC is to wait before switching to standby mode. In standby mode, the screen is dark and the processor clock is set in accordance with the entry in the *Standby CPU Speed* field. The next *wakeup event* terminates standby mode again.

2 min, *5 min*, *10 min*, *15 min*, *30 min*
Default entry = *15 min*.

Disabled The PC does not switch to standby mode.

Hard disk energy saving functions - Hard Disk Timeout

Requirement: the *Power Management Mode* must be set to *Customize*.

This field defines the amount of time without system activity before the motor of the hard disk drive is switched off. As soon as there is a hard disk access, the motor is switched back on.

2 min, *5 min*, *10 min*, *15 min*
Default entry = *10 min*.

Disabled The PC does not switch off the hard disk drive.

Processor clock - Standby CPU Speed

Requirement: the *Power Management Mode* must be set to *Customize*.

This field specifies the processor's clock speed in standby mode. The entries *High*, *Medium* and *Low* cause programs to run more slowly.

Max Maximum clock speed.

High 1/4 of maximum clock speed.

Medium 1/8 of maximum clock speed (default entry).

Low 1/16 of maximum clock speed, minimum clock speed.

Wakeup Event - Defininig system activities

This field calls the submenu in which you can set the interrupts which are to be evaluated as system activities. When one of these interrupts occurs, the active energy saving mode is terminated.

Enabled The associated interrupt is evaluated as a system activity.

Disabled The associated interrupt has no effect on the active energy saving mode.

Exiting BIOS Setup - Exit menu

In the *Exit* menu, you can save your settings and exit BIOS Setup.

```
      Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.
  Main    Advanced    Security    Power    Exit

                                                    Item Specific Help
  Save Changes & Exit                              ----------------------
  Discard Changes & Exit
  Get Default Values
  Load Previous Values
  Save Changes

F1  Help    ↑↓ Select Item    -/+   Change Values      F9 Setup Defaults
ESC Exit    ←→ Select Menu   Enter Execute Command    F7 Previous Values
```

Example for submenu *Exit*

Save Changes & Exit

saves the settings you have made and exits BIOS Setup.

Discard Changes & Exit

exits BIOS Setup without saving the new settings.

Get Default Values

reverts all settings to the default values.

Load Previous Values

sets the values which were in effect when BIOS Setup was called.

Save Changes

saves the settings you have made.

Second-level cache

The system board includes 256 Kbytes of second-level cache. To ensure optimum benefit from the second-level cache, make the following settings in the *Advanced* menu of BIOS Setup:

In submenu Cache Memory

Cache: *Intern and Extern*

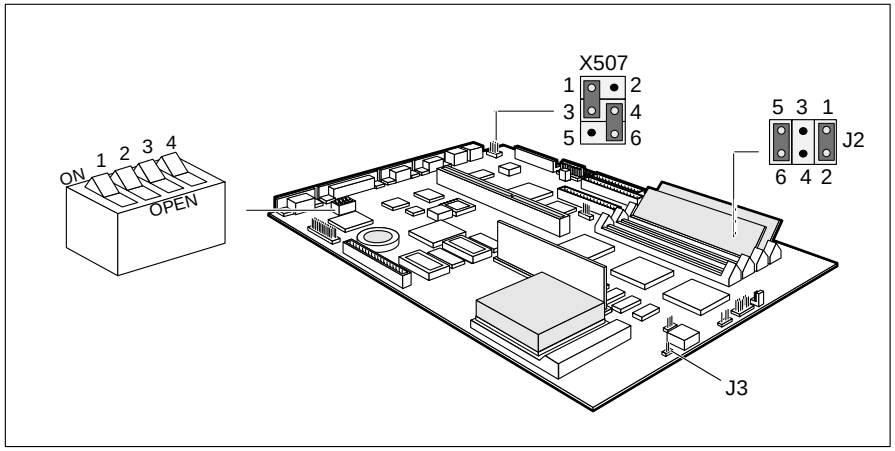
Cache System BIOS Area: *Enabled*

Cache Video BIOS Area: *Enabled*

In submenu Shadow Memory

Video Shadow: *Enabled*

Switch block and jumper settings



Switch 1 = BIOS recovery
Switch 2 = Service (always OPEN)
Switch 3 = BIOS update
Switch 4 = Floppy disk write-protection

X507 = Jumper for keyboard and pointing device

BIOS recovery - Switch 1

Switch 1 enables recovery of the old BIOS after an attempt to update it has failed. To restore the old BIOS you need a Flash BIOS disk (call customer service) and the BIOS updating must be enabled (switch 3 set to OPEN).

ON The system BIOS executes from floppy drive A: and restores the flash BIOS on the system board.

OPEN The system BIOS executes from the system board (default setting).

BIOS update - Switch 3

Switch 3 enables and disables BIOS updating. In addition, when updating the BIOS you must ensure that the *Flash Write* field in the *BIOS-Setup Security* menu is set to *Enabled*.

If you wish to update your system BIOS, please consult our customer service.

ON System BIOS is write protected (BIOS updating disabled).

OPEN BIOS updating is enabled (default setting).

Write protection for floppy disk drive - Switch 4

Switch 4 is used to define whether floppy disks can be written or deleted in the floppy disk drive. To write and delete floppy disks, the field *Diskette Write* in the *BIOS-Setup Security* menu must be set to *Enabled*.

ON Read only floppy disks.

Open Read, write and delete floppy disks (default setting).

Keyboard and pointing device - Jumper

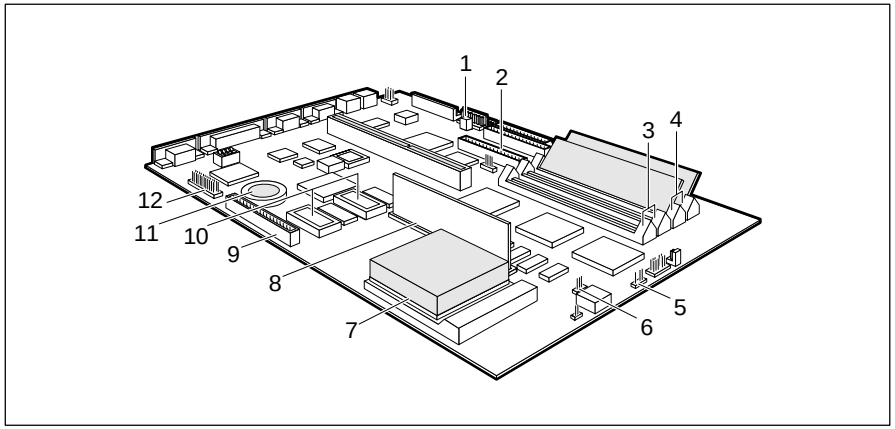
The setting of jumper X507 depends on which keyboard and pointing device you want to use.

1-3 inserted Keyboard (without power switch, with integrated trackball) and mouse.

1-3 and 4-6 inserted
Keyboard (with/without power switch) and mouse (PS/2 default setting).

3-5 and 2-4 inserted
Keyboard (without power switch, with integrated trackball).

Add-on modules



1 = Connector remote power-on
2 = Connector 2 for IDE drives 3 and 4
3 = Location bank 1 for main memory
4 = Location bank 0 for main memory
5 = Connector for external loudspeaker
6 = Connector for processor fan
7 = Socket for processor
8 = Location for voltage converter
9 = Imageport Connector
10 = Socket for video memory
11 = Lithium battery
12 = Connector for external monitor controller (VESA VGA pass through)

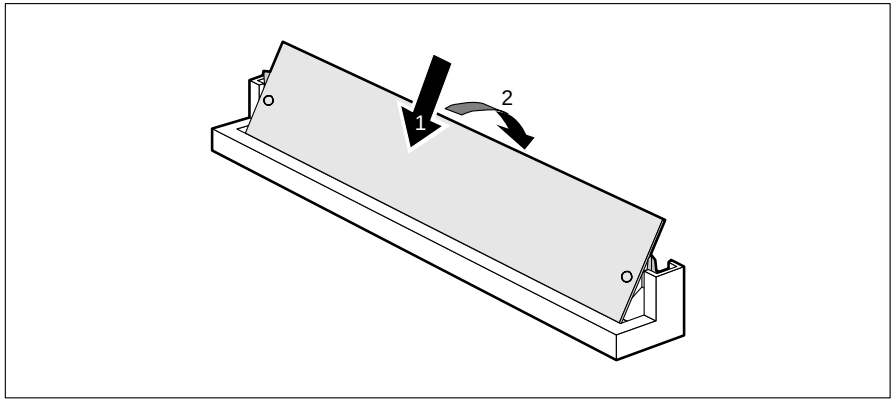
Upgrading main memory

Four locations (bank 0 and bank 1) are available on the system board for installing memory modules. The board supports a maximum of 128 Mbytes. You may use memory modules of 4, 8, 16 or 32 Mbyte.

If you wish to add or remove memory modules, you may have to remove the disk-drive mount (see your PC's technical manual).

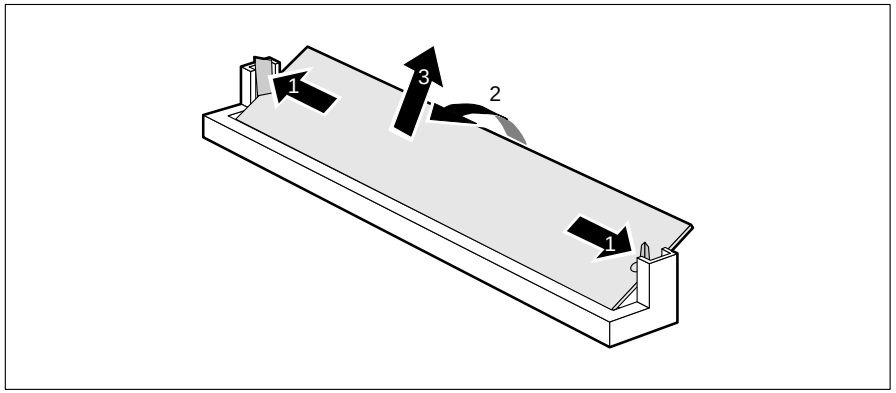
⚠ You may only use fast memory modules (access time = 70ns or less). You must always add memory modules in pairs. In other words, you fit the first pair to bank 0, and the second pair in bank 1. Pairs of memory modules must have the same capacity and the same access time.

Installing memory modules



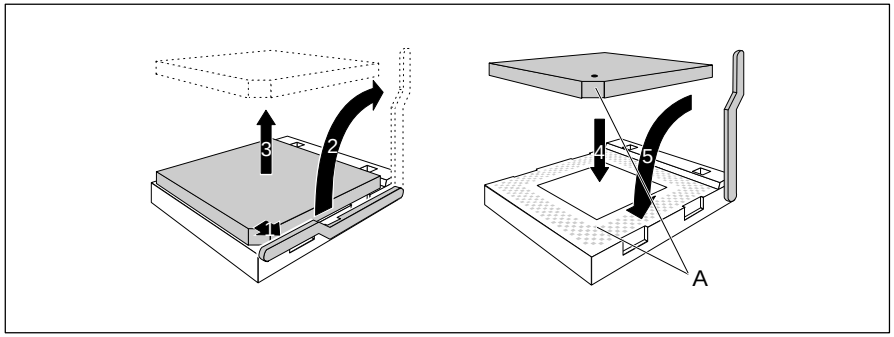
- Insert the memory module at an angle into the appropriate location (1). Ensure that the key notch and the two holes are correctly aligned with the retaining pins.
- Tilt the module down until it snaps into place (2).

Removing a memory module



- Carefully push the retaining clips at each end of the module outwards (1).
- Tilt the memory module forwards (2), and pull it upwards and at an angle out of the mounting location (3).

Replacing the processor



- Push the lever in the direction of the arrow (1) and lift it as far as it will go (2).
- Remove the old processor from the socket (3).
- Insert the new processor in the socket so that the mark on the upper side of the processor matches the mark (A) on the socket (4).

The mark on the processor may be covered by a heat sink. In this case let yourself be guided by the marking in the rows of pins on the underside of the processor.

- Push the lever back down so that it snaps into place (5).

Processor frequence

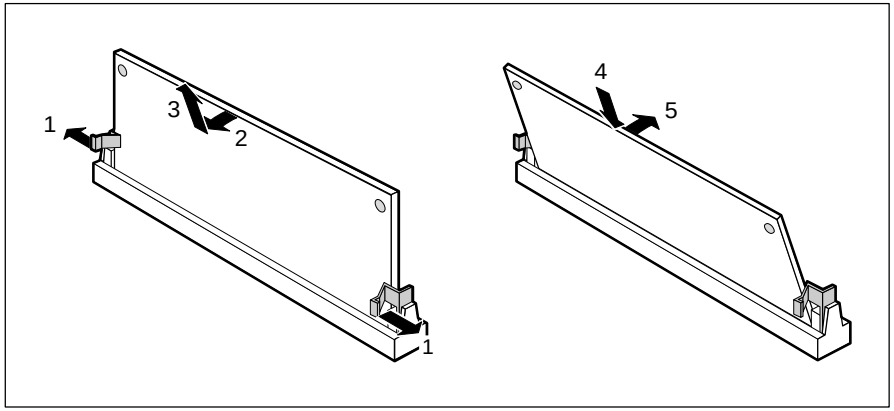
Processor	Jumper 1-2	Jumper 3-4	Jumper 5-6	Jumper J3
75 MHz	inserted	inserted	---	---
90 MHz	inserted	---	inserted	---
100 MHz	---	inserted	---	---
120 MHz	inserted	---	inserted	inserted
133 MHz	---	inserted	---	inserted

--- = not inserted

Make sure that the system board near the processor is marked S26361-D842-B. Note that system boards marked S26361-D842-A may only be operated with 75/90/100 MH processors.
If in doubt, contact our field service department.

If the power consumption of the new processor is different from that of the old processor, you must also exchange the voltage converter.

Replacing the voltage converter



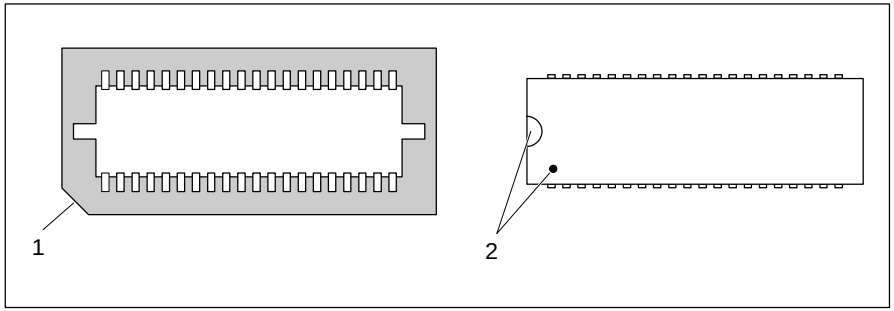
- Carefully push the retaining clips at each end of the voltage converter outwards (1).
- Tilt the voltage converter in the direction of the arrow (2) and pull it at an angle out of the location (3).
- Insert the voltage converter at an angle into the location (4).
  Ensure that the key notch on the voltage converter is correctly aligned with the retaining pins.
- Tilt the voltage converter in the direction of the arrow (5) until it snaps into place.

Upgrading the video memory

If your PC is supplied with a video memory configuration of 1 Mbyte, you may enlarge the video memory up to 2 Mbytes.

Information on which DRAM components (DRAM 256K*16 16ns) you can use is available from your sales office or the customer service.

Note the location of the DRAM chip when you plug in DRAM chip!



- Insert the DRAM component in such a way that the mark on the upper side of the DRAM component (2) matches the position of the mark on the socket (1).

In order to be able to use the screen resolution, refresh rate and number of colors available for a 2-Mbyte video memory, you must set the appropriate screen display (e.g. using *WDSETUP* under MS-Windows or *REFRATE* under Windows 95).

Replacing the lithium battery

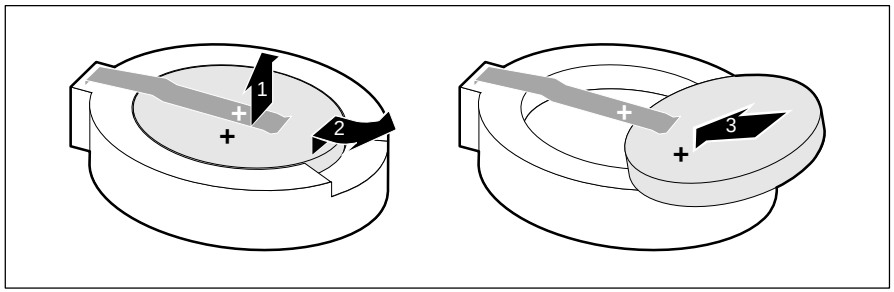
Please note the information provided in the chapter "Important notes" in this manual.

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. Your vendor or dealer or their authorized representatives will take used batteries back free of charge so that they can be recycled or disposed of in the proper manner.

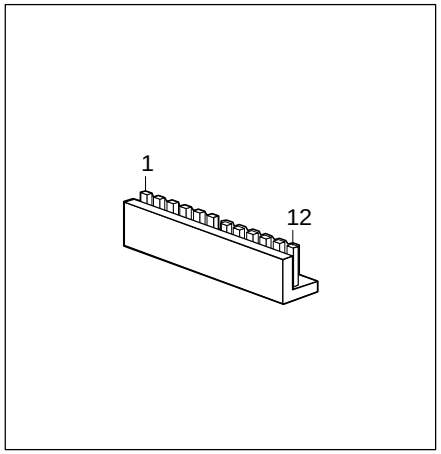
Make sure that you insert the battery the right way round. The plus pole must be on the top.



- 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).

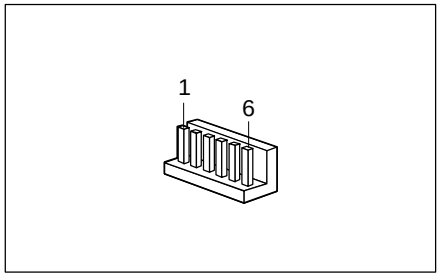
Interface pinouts and interrupts

Connector for 5 V power supply



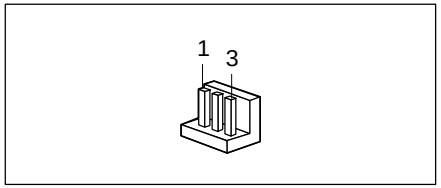
Pin	Meaning
1	Power Good
2	+5V
3	+12 V
4	-12 V
5	0 V
6	0 V
7	0 V
8	0 V
9	-5 V
10	+ 5 V
11	+ 5 V
12	+ 5 V

Connector for 3.3 V power supply



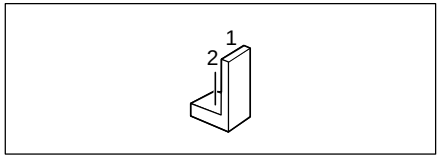
Pin	Meaning
1	0 V
2	0 V
3	0 V
4	+ 3.3 V
5	+ 3.3 V
6	+ 3.3 V

Connector for soft-off power supply



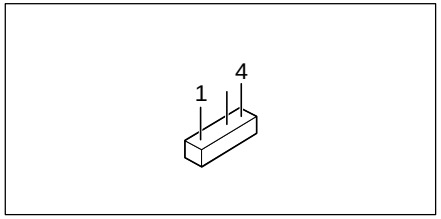
Pin	Meaning
1	+5 V (auxiliary voltage)
2	Power Supply ON
3	0 V

Connector for soft-off power switch



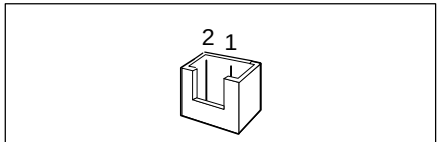
Pin	Meaning
1	+5 V (auxiliary voltage)
2	Power switch input

Connector for external loudspeaker



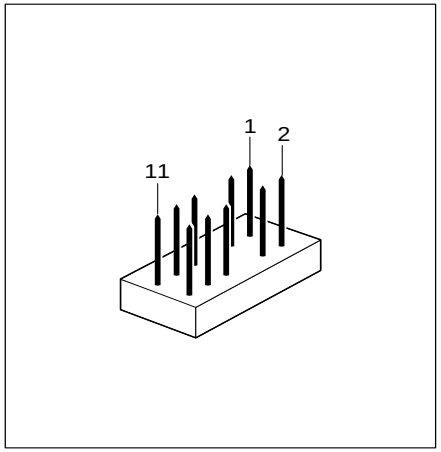
Pin	Meaning
1	loudspeaker
2	coded
3	not used
4	+5 V

Connector for remote power-on



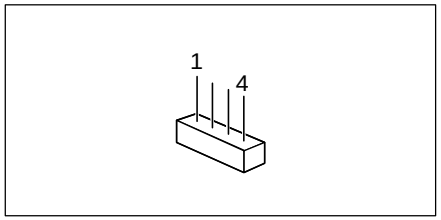
Pin	Meaning
1	0 V
2	Remote power-on

Connector for LED indicators



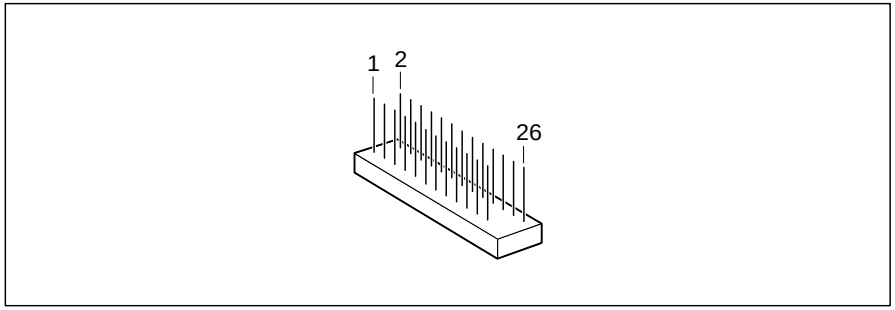
Pin	Meaning
1	System unit ON
2	not used
3	coded
4	not used
5	Reset switch
6	+5 V
7	0 V
8	0 V
9	coded
10	0 V
11	0 V
12	Hard disk drive LED

Connector for SCSI HD LED indicators



Pin	Meaning
1	not used
2	SCSI hard disk LED
3	SCSI hard disk LED
4	not used

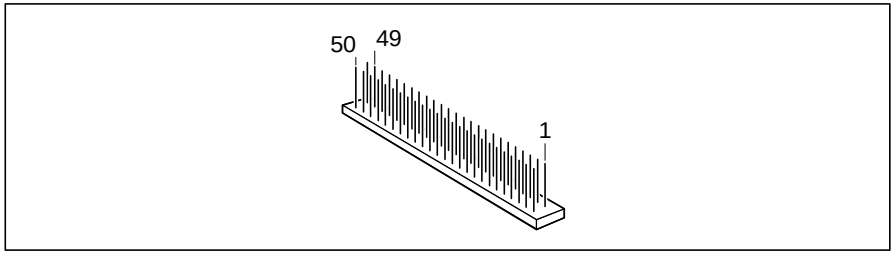
Connector for external monitor controller (VESA VGA pass-through)



Pin	Meaning
1	0 V
2	Data 0
3	0 V
4	Data 1
5	0 V
6	Data 2
7	not used
8	Data 3
9	not used
10	Data 4
11	not used
12	Data 5
13	not used

Pin	Meaning
14	Data 6
15	0 V
16	Data 7
17	0 V
18	Clock
19	0 V
20	Blanking
21	0 V
22	Horizontal Sync.
23	not used
24	Vertical Sync.
25	keyed
26	0 V

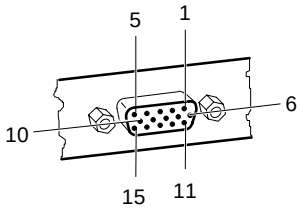
Connector for Imageport



Pin	Meaning
1	+5 V
2	+5 V
3	0 V
4	0 V
5	+12 V
6	0 V
7	Write Request
8	0 V
9	Image Data Mask0
10	not used
11	Image Data 0
12	0 V
13	Image Data 1
14	Image Frame Sync
15	Image Data 2
16	Image Line Sync
17	Image Data 3
18	0 V
19	Image Data 4
20	Image Data Ready
21	Image Data 5
22	0 V
23	Image Data 6
24	Odd Image Data
25	Image Data 7

Pin	Meaning
26	not used
27	Host Data 0
28	0 V
29	Host Data 1
30	Ext. Command
31	Image Write Strobe
32	0 V
33	Reset
34	0 V
35	Host Data 2
36	Host Data 3
37	Host Data 4
38	Host Data 5
39	Host Data 6
40	Host Data 7
41	free
42	free
43	free
44	free
45	free
46	free
47	free
48	free
49	0 V
50	0 V

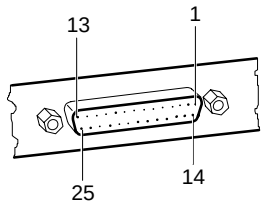
Connector for monitor



Pin	Meaning
1	Red
2	Green
3	Blue
4	Display ID bit 2
5	Ground
6	Red ground
7	Green ground
8	Blue ground

Pin	Meaning
9	keyed (no pin)
10	Sync. ground
11	Monitor ID bit 0
12	Monitor ID bit 1
13	Horizontal-synchronization
14	Vertical synchronization
15	Monitor ID bit 3

Parallel interface



The parallel interface supports three transfer modes: SPP, EPP and ECP. SPP mode (standard parallel port) is the mode traditionally used to drive a printer. The EPP (Enhanced Parallel Port) and ECP (Extended Capabilities Port) modes are transfer modes that allow transfer rates of 2 and 2.4 Mbytes/s. These modes will only work in connection with peripheral devices which specifically support them. The new transfer modes are used among other things for connecting to SCSI or IDE peripherals. The pinouts are different in all three modes.

Pinout in SPP mode

Pin	Signal name	Description
1	STROBE	Data message
2-9	Data Lines 0-7	Data lines 0-7
10	ACKNOWLEDGE	Data acknowledgement
11	BUSY	Not ready to receive
12	PE	End of paper
13	SELECT	Device selection
14	AUTO	Automatic new line
15	ERROR	Device error
16	INIT	Reset/initialize
17	SELECT IN	Printer selection
18-25	GROUND	Ground

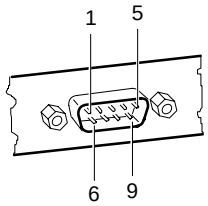
Pinout in EPP mode

Pin	Signal	Signal direction
1	Write	Output
2-9	Data Lines 0-7	Input/output
10	Intr	Input
11	Wait	Input
12	not used	---
13	not used	Input
14	DStrb	Output
15	not used	---
16	not used	---
17	AStrb	Output
18-25	Ground	

Pinout in ECP mode

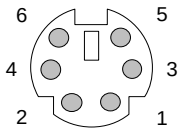
Pin	Signal	Signal direction
1	HostClk	Output
2-9	Data Lines 0-7	Input/output
10	PeriphClk	Input
11	PeriphAck	Input
12	AckReverse	Input
13	Xflag	Input
14	HostAck	Output
15	PeriphRequest	Input
16	ReverseRequest	Output
17	ECP-Mode	Output
18-25	Ground	

Serial interface



Pin	Signal	Meaning
1	DCD	Data Carrier Detect
2	RxD	Receive Data
3	TxD	Transmit Data
4	DTR	Data Terminal Ready
5	Signal Ground	Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	Ri	Ring Indicator

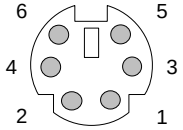
PS/2 mouse port



Pin	Signal
1	Mouse data
2	not used
3	0 V
4	+5 V
5	Mouse clock
6	not used

PS/2 keyboard port

The entries in parentheses are effective if the jumper X507 is inserted on 2-4 and 3-5.



Pin	Meaning
1	Keyboard data
2	not used (Mouse data)
3	0 V
4	+5 V
5	Keyboard clock
6	not used or power on switch (Mouse clock)

Interrupt Request Levels and DMA channels

Interrupt Request Levels and DMA channels are listed below.

Interrupt Request Levels

IRQ0 = timer 0
IRQ1 = keyboard
IRQ2 = interrupt cascading
IRQ3 = serial interface 2 (COM2/COM4)
IRQ4 = serial interface 1 (COM1/COM3)
IRQ5 = free or parallel interface (LPT2)
IRQ6 = floppy disk controller
IRQ7 = parallel interface (LPT1/LPT3)
IRQ8 = real-time clock interrupt
IRQ9 = free or VGA controller
IRQ10 = free
IRQ11 = free
IRQ12 = mouse
IRQ13 = math coprocessor
IRQ14 = IDE disk controller (connector 1)
IRQ15 = IDE disk controller (connector 2)

DMA channels

DMA0 = free
DMA1 = free
DMA2 = floppy disk controller
DMA3 = free/ECP mode
DMA4 = DMA channel cascading
DMA5 = free
DMA6 = free
DMA7 = free

Error messages

This chapter contains error messages generated by the system board.

`nn Stuck Key`
Release the key on the keyboard (nn is the hexadecimal code for the key).

`Diskette drive A error`
`Diskette drive B error`
Check the entry for the diskette drive in the *Main* menu of the *BIOS Setup*.
Check the connections to the diskette drive.

`Extended RAM Failed at offset: nnnn`
`System RAM Failed at offset: nnnn`
`Failing Bits: nnnn`
Switch the PC off and on again. If the message is still displayed, please contact your sales office or customer service.

`Failure Fixed Disk 0`
`Failure Fixed Disk 1`
`Fixed Disk Controller Failure`
Check the entries for the hard disk drive in the *Main* menu of the *BIOS Setup*.
Check the hard disk drive's connections and jumpers.

`Incorrect Drive A - run SETUP`
`Incorrect Drive B - run SETUP`
Correct the entry for the diskette drive in the *Main* menu of the *BIOS Setup*.

`Invalid NVRAM media type`
Switch the PC off and on again. If the message is still displayed, please contact your sales office or customer service.

`Keyboard controller error`
Connect another keyboard. If the message is still displayed, please contact your sales office or customer service.

`Keyboard error`
Check that the keyboard is connected properly.

`Monitor type does not match CMOS - RUN SETUP`
Correct the entry for the monitor type in the *Main* menu of the *BIOS Setup*.

`Operating system not found`
Check the entries for the hard disk drive and the floppy disk drive in the *Main* menu of the *BIOS Setup*.

`Parity Check 1`
`Parity Check 2`
Switch the PC off and on again. If the message is still displayed, please contact your sales office or customer service.

`Previous boot incomplete - Default configuration used`
By pressing function key F2 you can check and correct the settings in *BIOS Setup* . By pressing function key F1 the PC starts with incomplete system configuration. If the message is still displayed, please contact your sales office or customer service.

`Real time clock error`
Call the *BIOS Setup* and enter the correct time in the *Main* menu. If the message is still displayed, please contact your sales office or customer service.

`System battery is dead - Replace and run SETUP`
Replace the lithium battery on the system module and redo the settings in the BIOS Setup.

`System Cache Error - Cache disabled`
Switch the PC off and on again. If the message is still displayed, please contact your sales office or customer service..

`System CMOS checksum bad - run SETUP`
Call the *BIOS Setup* and correct the previously made entries or set the default entries.

`System timer error`
Switch the PC off and on again. If the message is still displayed, please contact your sales office or customer service.

Messages d'erreur

Ce chapitre vous donne les messages d'erreur générés par le BIOS du système.

`nn Stuck Key`
: Libérez la touche du clavier (nn est le code hexadécimal de cette touche).

`Diskette drive A error`
`Diskette drive B error`
: Vérifiez dans le menu Main du *BIOS setup* l'entrée correspondant au lecteur de disquettes. Vérifiez les connecteurs du lecteur de disquettes.

`Extended RAM Failed at offset: nnnn`
`System RAM Failed at offset: nnnn`
`Failing Bits: nnnn`
: Redémarrez votre PC. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

`Failure Fixed Disk 0`
`Failure Fixed Disk 1`
`Fixed Disk Controller Failure`
: Vérifiez dans le menu Main du *BIOS setup* l'entrée correspondant au lecteur de disque dur. Vérifiez les connecteurs et les cavaliers du lecteur de disque dur.

`Incorrect Drive A - run SETUP`
`Incorrect Drive B - run SETUP`
: Entrez dans le menu Main du *BIOS setup* et paramétrez correctement l'entrée correspondant au lecteur de disquettes.

`Invalid NVRAM media type`
: Redémarrez votre PC. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

`Keyboard controller error`
: Connectez un autre clavier. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

`Keyboard error`
: Assurez-vous que le clavier est correctement connecté.

`Monitor type does not match CMOS - RUN SETUP`
: Entrez dans le menu Main du *BIOS setup* et paramétrez correctement l'entrée correspondant au type d'écran.

`Operating system not found`
: Vérifiez dans le menu Main du *BIOS setup* les entrées correspondant au lecteur de disque dur et au lecteur de disquettes.

`Parity Check 1`
`Parity Check 2`
: Redémarrez votre PC. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

`Previous boot incomplete - Default configuration used`
: Appuyez la touche de fonction F2 pour vérifier et corriger les valeurs dans *BIOS Setup*. Si vous appuyez la touche de fonction F1 le PC démarre en configuration incomplète. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

`Real time clock error`
: Appelez le *BIOS setup* et entrez l'heure exacte dans le menu *Main*. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

`System battery is dead - Replace and run SETUP`
: Remplacez la batterie au lithium sur la carte système et procédez à de nouveaux réglages dans le BIOS setup.

`System Cache Error - Cache disabled`
: Redémarrez votre PC. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

`System CMOS checksum bad - run SETUP`
: Appelez le *BIOS setup* et corrigez les réglages effectués en dernier lieu ou activez les réglages standard.

`System timer error`
: Redémarrez votre PC. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

Mensajes de error

Aquí se describen los mensajes de error que son generados por el *BIOS-Setup*.

`nn Stuck Key`
: Desbloquee la tecla del teclado (nn es el código hexadecimal para la tecla).

`Diskette drive A error`
`Diskette drive B error`
: Compruebe en el menú principal del *BIOS-Setup* (programa de instalación del BIOS) el registro para la unidad de disquete. Compruebe las conexiones de dicha unidad.

`Extended RAM Failed at offset: nnnn`
`System RAM Failed at offset: nnnn`
`Failing Bits: nnnn`
: Arranque de nuevo el PC. Si sigue visualizándose este mensaje, diríjase a su distribuidor o a nuestro servicio de postventa.

`Failure Fixed Disk 0`
`Failure Fixed Disk 1`
`Fixed Disk Controller Failure`
: Compruebe en el menú principal del *BIOS-Setup* los registros para la unidad de disco duro. Compruebe las conexiones y puentes enchufables de la unidad de disco duro.

`Incorrect Drive A - run SETUP`
`Incorrect Drive B - run SETUP`
: Defina correctamente el registro de la unidad de disquete en el menú principal del *BIOS-Setup*.

`Invalid NVRAM media type`
: Arranque de nuevo el PC. Si sigue visualizándose este mensaje, diríjase a su distribuidor o a nuestro servicio de postventa.

`Keyboard controller error`
: Conecte otro teclado. Si sigue visualizándose este mensaje, diríjase a su distribuidor o a nuestro servicio de postventa.

`Keyboard error`
: Compruebe si el teclado está conectado correctamente.

`Monitor type does not match CMOS - RUN SETUP`
: Defina correctamente en el menú principal del *BIOS-Setup* el registro para el tipo de pantalla.

`Operating system not found`
: Compruebe en el menú principal del *BIOS-Setup* los registros de la unidad de disco duro y de la unidad de disquete.

`Parity Check 1`
`Parity Check 2`
: Arranque de nuevo el PC. Si sigue visualizándose este mensaje, diríjase a su distribuidor o a nuestro servicio de postventa.

`Previous boot incomplete - Default configuration used`
: Pulsando la tecla **F2** puede verificar y corregir los registros del *BIOS-Setup*. Pulsando la tecla **F1** , el sistema arranca con la configuración incompleta. Si sigue visualizándose este mensaje, diríjase a su distribuidor o a nuestro servicio de postventa.

`Real time clock error`
: Active el *BIOS-Setup* y registre la hora correcta en el menú principal. Si sigue visualizándose este mensaje, diríjase a su distribuidor o a nuestro servicio de postventa.

`System battery is dead - Replace and run SETUP`
: Sustituya la pila de litio en el módulo de sistema y repita las operaciones de ajuste en el *BIOS-Setup*.

`System Cache Error - Cache disabled`
: Arranque de nuevo el PC. Si sigue visualizándose este mensaje, diríjase a su distribuidor o a nuestro servicio de postventa.

`System CMOS checksum bad - run SETUP`
: Active el *BIOS-Setup* y corrija los últimos registros hechos o ajuste los registros estándar.

`System timer error`
: Arranque de nuevo el PC. Si sigue visualizándose este mensaje, diríjase a su distribuidor o a nuestro servicio de postventa.

Messagi di errore

I messaggi di errore emessi dal system BIOS sono descritti qui in seguito.

nn Stuck Key
Liberate il tasto dalla tastiera (nn indica il codice esadecimale del tasto).

Diskette drive A error
Diskette drive B error
Controllate il valore indicato per il drive per dischetti nel *BIOS-Setup* del menu principale. Controllate i collegamenti del drive per dischetti.

Extended RAM Failed at offset: nnnn
System RAM Failed at offset: nnnn
Failing Bits: nnnn
Riavviate nuovamente il PC. Se il messaggio ricompare rivolgeteVi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

Failure Fixed Disk 0
Failure Fixed Disk 1
Fixed Disk Controller Failure
Controllate nel *BIOS-Setup* del menu principale i valori indicati per il drive del disco rigido. Controllate i collegamenti ed i ponticelli del drive del disco rigido.

Incorrect Drive A - run SETUP
Incorrect Drive B - run SETUP
Impostate nel *BIOS-Setup* del menu principale il valore corretto per il drive per dischetti.

Invalid NVRAM media type
Riavviate nuovamente il PC. Se il messaggio ricompare rivolgeteVi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

Keyboard controller error
Collegate un'altra tastiera. Se il messaggio ricompare rivolgeteVi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

Keyboard error
Controllate che la tastiera sia collegata correttamente.

Monitor type does not match CMOS - RUN SETUP
Impostate nel *BIOS-Setup* del menu principale il valore corretto per il tipo di monitor.

Operating system not found
Controllate nel *BIOS-Setup* del menu principale i valori indicati per il drive per il disco rigido e per il drive per dischetti.

Parity Check 1
Parity Check 2
Riavviate nuovamente il PC. Se il messaggio ricompare rivolgeteVi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

Previous boot incomplete - Default configuration used
Riavviate nuovamente il PC. Se il messaggio ricompare rivolgeteVi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

Real time clock error
Richiamate il *BIOS-Setup* ed inserite nel menu principale l'ora esatta. Se il messaggio ricompare rivolgeteVi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

System battery is dead - Replace and run SETUP
Sostituite la batteria al litio dell'unità di sistema ed inserite nuovamente i valori di impostazione nel BIOS-Setup.

System Cache Error - Cache disabled
Riavviate nuovamente il PC. Se il messaggio ricompare rivolgeteVi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

System CMOS checksum bad - run SETUP
Richiamate il *BIOS-Setup* e correggete gli ultimi valori impostati oppure indicati i valori standard.

System timer error
Riavviate nuovamente il PC. Se il messaggio ricompare rivolgeteVi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

Felmeddelanden

Nedan beskrivs de felmeddelanden som system-BIOS matar ut på systemkomponenten.

`nn Stuck Key`
: Frigör den angivna tangenten (nn är tangentens hexadecimalkod).

`Diskette drive A error`
`Diskette drive B error`
: Kontrollera inställningen för diskettenheten i menyn *Main* i *BIOS-Setup-menyn.* Kontrollera diskettenhetens anslutningar.

`Extended RAM Failed at offset: nnnn`
`System RAM Failed at offset: nnnn`
`Failing Bits: nnnn`
: Starta upp PCn på nytt. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

`Failure Fixed Disk 0`
`Failure Fixed Disk 1`
`Fixed Disk Controller Failure`
: Kontrollera inställningarna för hårddisken i menyn *Main* i *BIOS-Setup-menyn*. Kontrollera hårddiskens anslutningar och insticksbryggorna.

`Incorrect Drive A - run SETUP`
`Incorrect Drive B - run SETUP`
: Korrigera inställningen för diskettenheten i menyn *Main* i *BIOS-Setup-menyn*.

`Invalid NVRAM media type`
: Starta upp PCn på nytt. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

`Keyboard controller error`
: Anslut ett annat tangentbord. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

`Keyboard error`
: Kontrolla att tangentbordet är korrekt anslutet.

`Monitor type does not match CMOS - run SETUP`
: Korrigera inställningarna för bildskärmtypen i menyn *Main* i *BIOS-Setup-menyn*.

`Operating system not found`
: Kontrollera inställningarna för hårddisken och diskettenheten i menyn *Main* i *BIOS-Setup-menyn*.

`Parity Check 1`
`Parity Check 2`
: Starta upp PCn på nytt. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

`Previous boot incomplete - Default configuration used`
: Starta upp PCn på nytt. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

`Real time clock error`
: Ropa upp *BIOS-Setup-menyn* och ställ in korrekt klockslag i menyn *Main*. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

`System battery is dead - Replace and run SETUP`
: Byt ut litiumbatteriet på systemkomponenten och genomför inställningarna i *BIOS-Setup-menyn* på nytt.

`System Cache Error - Cache disabled`
: Starta upp PCn på nytt. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

`System CMOS checksum bad - run SETUP`
: Ropa upp *BIOS-Setup-menyn*. Korrigera de senast gjorda inställningarna eller ställ in standardvärdena igen.

`System timer error`
: Starta upp PCn på nytt. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

Foutmeldingen

Vervolgens worden de foutmeldingen beschreven die het BIOS-systeem op de systeembouwgroep geeft.

`nn Stuck Key`
: Laat de toets van het toetsenbord los (nn is de hexadecimale code voor de toets).

`Diskette drive A error`
`Diskette drive B error`
: Controleer in de setup van het *BIOS*, in het menu *Main*, de instelling van het diskettestation. Controleer de aansluitingen van het diskettestation.

`Extended RAM Failed at offset: nnnn`
`System RAM Failed at offset: nnnn`
`Failing Bits: nnnn`
: Start de PC opnieuw. Als de melding opnieuw verschijnt, neem dan a.u.b. contact op met uw dealer of met onze klantendienst.

`Failure Fixed Disk 0`
`Failure Fixed Disk 1`
`Fixed Disk Controller Failure`
: Controleer in de setup van het *BIOS*, in het menu *Main*, de instellingen van de harde schijf. Controleer de aansluitingen en de jumpers van de harde schijf.

`Incorrect Drive A - run SETUP`
`Incorrect Drive B - run SETUP`
: Stel in de setup van het *BIOS*, in het menu *Main*, het diskettestation op de juiste wijze in.

`Invalid NVRAM media type`
: Start de PC opnieuw. Als de melding opnieuw verschijnt, neem dan a.u.b. contact op met uw dealer of met onze klantendienst.

`Keyboard controller error`
: Sluit een ander toetsenbord aan. Als de melding opnieuw verschijnt, neem dan contact op met uw dealer of met onze klantendienst.

`Keyboard error`
: Controleer of het toetsenbord goed is aangesloten.

`Keyboard error nn`
: Laat de toets van het toetsenbord los (nn is de hexadecimale code voor de toets).

`Monitor type does not match CMOS - RUN SETUP`
: Stel in de setup van het *BIOS*, in het menu *Main*, het monitortype op de juiste wijze in.

`Operating system not found`
: Controleer in de setup van het *BIOS*, in het menu *Main*, de instellingen van de harde schijf en het diskettestation.

`Parity Check 1`
`Parity Check 2`
: Start de PC opnieuw. Als de melding opnieuw verschijnt, neem dan a.u.b. contact op met uw dealer of met onze klantendienst.

`Previous boot incomplete - Default configuration used`
: Start de PC opnieuw. Als de melding opnieuw verschijnt, neem dan a.u.b. contact op met uw dealer of met onze klantendienst.

`Real time clock error`
: Roep de setup van het *BIOS* op en stel in het menu Main de juiste tijd in.Als de melding opnieuw verschijnt, neem dan a.u.b. contact op met uw dealer of met onze klantendienst.

`System battery is dead - Replace and run SETUP`
: Vervang de lithiumbatterij op het motherboard en stel de setup van het *BIOS* opnieuw in.

`System Cache Error - Cache disabled`
: Start de PC opnieuw. Als de melding opnieuw verschijnt, neem dan a.u.b. contact op met uw dealer of met onze klantendienst.

`System CMOS checksum bad - run SETUP`
: Roep de setup van het *BIOS* op en corrigeer wat u voor het laatst heeft ingesteld of stel de defaultwaarden in.

`System timer error`
: Start de PC opnieuw. Als de melding opnieuw verschijnt, neem dan a.u.b. contact op met uw dealer of met onze klantendienst.

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