



System board D858

ISA / PCI

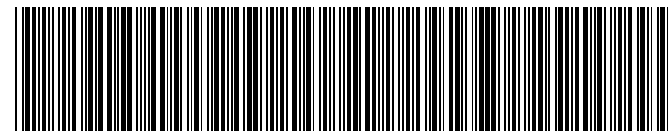
Technical Manual



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System board D858

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Technical Manual

Introduction

Important notes

Settings in BIOS Setup

Jumper settings

Add-on modules

Interface pinouts and
interrupts

Error messages

Index

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Contents

Introduction	1
Notational conventions	1
Features	2
Important notes	5
Notes on software	7
Standard VGA driver	7
Settings in BIOS Setup	9
System settings - Main menu	9
Time and Date - System Time / System Date	10
Floppy disk drive - Diskette A / Diskette B	10
Hard disk drives - Hard Disk 1 to Hard Disk 4	11
System Startup - Boot Options	14
Type of monitor - Video Display	15
Base Memory	15
Extended Memory	15
Making advanced system settings - Advanced menu	16
Cache - Cache Memory	17
ROM areas in the RAM - Shadow Memory	19
Peripheral Configuration	20
PCI Configuration	23
Advanced System Configuration	25
Plug&Play functionality - Plug & Play O/S	25
Reset Configuration Data	26
Hard disk access - Large Disk Access Mode	26
Setting up the security features - Menu Security	27
Setup Password / System Password	27
Set Setup Password	28
Setup Password Lock	28
Set System Password	28
System Password Mode	29
System Load	29
Setup Prompt	29
Virus Warning	30
Diskette Write	30
Write protection for System BIOS - Flash Write	30
Soft Power Off	31
Remote Power On	31

Contents

Setting energy saving functions - Power menu	32
Extent of energy saving functions - Power Management Mode	32
Standby mode - Standby Timeout	33
Hard disk energy saving functions - Hard Disk Timeout	33
Processor clock - Standby CPU Speed	33
Terminating energy saving functions - Wakeup Event	34
Exiting BIOS Setup - Exit menu	34
Save Changes & Exit	34
Discard Changes & Exit	35
Get Default Values	35
Load Previous Values	35
Save Changes	35
Second-level cache	35
Settings with jumper	37
Write protection for System BIOS - jumper 7-8	37
Recovering System BIOS - jumper 11-12	38
Add-on modules	39
Upgrading main memory	40
Replacing the processor	42
Upgrading Second-level Cache	43
Replacing the lithium battery	44
Interface pinouts and interrupts	45
Connector for power supply	45
Connector for soft-off power supply	45
Connector for soft-off switch	45
Connector for device loudspeaker	46
Connector for remote on	46
Connector 1 for LED indicators	46
Connector 2 for LED indicators	47
Connector for CD-ROM/audio input (optional)	47
Soundblaster compatible audio CD-ROM connector (optional)	47
Audio input (optional)	48
Microphone connector (optional)	48
Loudspeaker / headphones connector (optional)	48
Connector for Wave Table board (optional)	49
Game Port / MIDI Port	50
Parallel interface	51
Pinout in SPP mode	51
Pinout in EPP mode	52
Pinout in ECP mode	52

Contents

Serial interface 1	53
Serial interface 2 (optional)	54
PS/2 mouse port (optional)	54
PS/2 keyboard port (optional)	55
Keyboard port (diode socket connector, optional)	55
Interrupt Request Levels and DMA channels	56
Error messages	57
Messages d'erreur	59
Mensajes de error	61
Messagi di errore	63
Felmeddelanden	65
Foutmeldingen	67
Index	69

Introduction

This description applies for the system board D858 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.

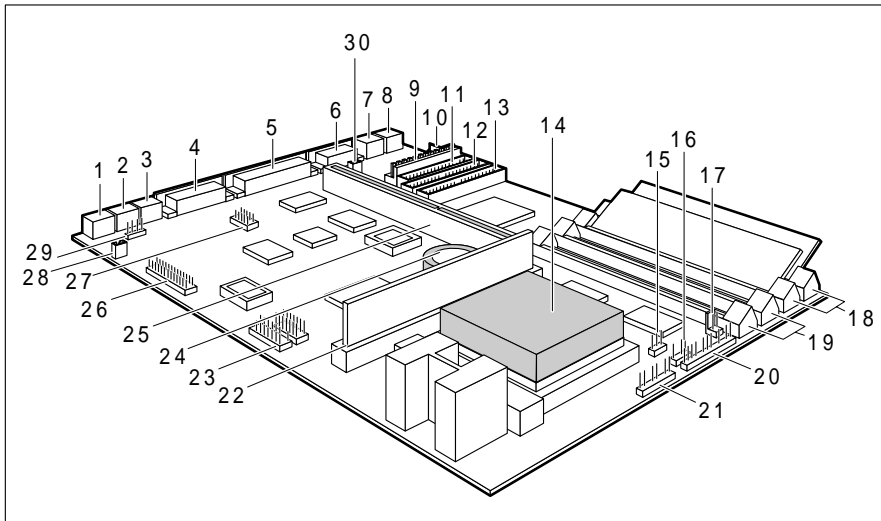
Texts in italics indicate commands or menu items.

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

Introduction

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 to 128 Mbyte
- Second-level cache on the system board: 0, 256 or 512 Kbyte
- PCI bus
- Disk controller connected to PCI bus for up to four IDE drives (e.g. fast IDE hard disk drives, ATAPI CD ROM drives)
- Audio controller
- 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 remote on
- Connector for CD-ROM (audio)
- Connector for processor fan
- Connector for device loudspeaker
- Microphone connector
- Audio input
- Connector for loudspeaker
- Game Port / MIDI Port
- Parallel interface (ECP- and EPP-compatible)
- 1 or 2 serial interfaces
- PS/2 mouse interface (optional)
- Keyboard interface (PS/2- or diode socket connector)



- | | |
|---|--|
| 1 = Microphone connector (optional) | 16 = Connector for device loudspeaker |
| 2 = Audio input (optional) | 17 = Connector for soft-on/off switch |
| 3 = Connector for loudspeaker / headphones (optional) | 18 = Location bank 0 for main memory |
| 4 = Game / MIDI Port | 19 = Location bank 1 for main memory |
| 5 = Parallel interface | 20 = Connector 1 for LED indicators |
| 6 = Serial interface 1 | 21 = Connector 2 for LED indicators |
| 7 = PS/2 mouse interface (optional) | 22 = Location for second-level Cache |
| 8 = Keyboard port | 23 = Connector for compact PC extension (optional) |
| 9 = Connector for power supply | 24 = Lithium battery |
| 10 = Connector for soft-off power supply | 25 = Bus interface |
| 11 = Connector for floppy disk drive | 26 = Connector for Wave Table board (optional) |
| 12 = Connector for IDE drives 1 and 2 (e. g. hard disk) | 27 = Serial interface 2 (optional) |
| 13 = Connector for IDE drives 3 and 4 | 28 = Soundblaster compatible audio CD-ROM connector (optional) |
| 14 = Processor with heat sink | 29 = Connector for CD audio input (optional) |
| 15 = Connector for processor fan | 30 = Connector for remote on |

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.

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

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.

WARNING



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.

Important notes

Modules with electrostatic sensitive devices (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.



Standard VGA driver

If you are using a Matrox Impression VGA board in your PC and want to work with the Windows standard VGA drivers supplied (e.g. for installation), you must set the audio controller entry in the BIOS setup to *Disabled*. If you do not, errors may occur.

When the audio controller is set to *Disabled*, the Game Port is also disabled.

After the VGA driver of the Matrox Impression VGA board has been linked in, you can set the base address of the audio controller.

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.

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

 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*)
- Display device (in the field marked *Video Display*)
- System boot (in the submenus of *Boot Options*)


Settings in BIOS Setup

Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.		Item Specific Help	
Main	Advanced	Security	
Power	Exit		
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:	7M		
F1 Help	↑↓ Select Item		-/+ Change Values
ESC Exit	←→ Select Menu		Enter Execute Command
			F9 Setup Defaults
		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 *hh:mm:ss* (hours:minutes:seconds) and the date is shown in the format *mm/dd/yyyy* (month/day/year).

 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.

 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 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*

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*.



New values may only be defined for unused or newly partitioned hard disks.

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 (e.g. automatically with *Autotype Hard Disk*). 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 (Programmed Input Output) 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 8 Mbyte/s.

32 Bit I/O - Bus width for data transfer

legt die Busbreite für die Datenübertragung zwischen Prozessor und IDE-Controller fest.

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

Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd.			
Main		Item Specific Help	
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)
- Timers for PCI slots (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
Warning! Setting items on this menu to incorrect values may cause your system to malfunction.				Item Specific Help -----
<ul style="list-style-type: none"> ▶ 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 a submenu in which you can make the settings for the internal cache (in the processor) and the second-level cache (on the system module).

Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd. Advanced	
Cache Memory	Item Specific Help
Cache: [Intern And Extern] Cache Mode: Write Back	
Cache System BIOS Area: [Enabled] Cache Video BIOS Area: [Enabled]	
Cache Memory Regions	
C800 - CBFF: [Disabled]	
CC00 - CFFF: [Disabled]	
D000 - D3FF: [Disabled]	
D400 - D7FF: [Disabled]	
D800 - DBFF: [Disabled]	
DC00 - DFFF: [Disabled]	
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→ Select Menu Enter Execute Command F7 Previous Values	

Example for submenu *Cache Memory*

Cache - cache utilization

This field switches the cache (SRAM) 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 (permanently assigned).

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 a 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.

Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd. Advanced	
Shadow Memory	Item Specific Help
System Shadow: Enabled Video Shadow: [Enabled]	
Shadow Memory Regions C800 - CBFF: [Disabled] CC00 - CFFF: [Disabled] D000 - D3FF: [Disabled] D400 - D7FF: [Disabled] D800 - DBFF: [Disabled] DC00 - DFFF: [Disabled]	
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→ Select Menu Enter Execute Command F7 Previous Values	

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 terminal controller is used.

Shadow Memory Regions

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

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

Phoenix BIOS Setup Copyright 1985-94 Phoenix Technologies Ltd. Advanced	
Peripheral Configuration	Item Specific Help
Serial 1: [Auto] Serial 2: [Disabled] Parallel: [Auto] Parallel Mode: [Printer]	
Diskette Controller: [Enabled] Hard Disk Controller: [Primary And Secondary]	
Mouse Controller: [Enabled]	
Audio Controller: [220h] Gameport: [Enabled]	
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→ Select Menu Enter Execute Command F7 Previous Values	

Example for submenu *Peripheral Configuration*

Serial 1 / Serial 2 - Serial interfaces

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

Parallel - parallel interface

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

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.

In addition, LPT1 and LPT2 can be configured for *ECP*, *EPP*, and *ECP and EPP* transfer modes, which allow transfer rates of 2 and 2.4 Mbyte/s. These modes will only work with peripheral devices which also 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 hard disk is physically connected.

Primary The primary IDE hard disk controller is enabled. Two IDE drives (preferably fast hard disks) can be connected to the associated (primary) connector. Interrupt 14 is used.

Primary And Secondary

Primary and secondary IDE hard disk controller are enabled. The maximum of four IDE drives can be connected. Slow drives (e.g. CD-ROM) should be preferably connected to the (secondary) connector.

Interrupts 14 and 15 are used (default entry).

Disabled Both 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.

Audio Controller

sets the base address for the audio controller on the system board or disables the audio controller.

220h, 240h, 260h, 280h

The audio controller is set to the corresponding base address. Simultaneously one of the interrupts IRQ 5, IRQ 7, IRQ 9 or IRQ 10 is used. Which interrupt is used is defined by the audio driver software (default entry).

Disabled The audio controller is disabled, and does not occupy an interrupt.

Game Port

Requirement: The *Audio Controller* field is set to *220h, 240h, 260h* or *280h*.

This field is used to enable and disable the game port on the system board.

Enabled The game port is enabled (default entry).

Disabled The game port is disabled.

PCI Configuration

calls a 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
VGA Interrupt: [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*

VGA interrupt

assigns an available PCI VGA controller to the interrupt.

Enabled IRQ 9 is assigned to the PCI VGA controller (if it exists).

Disabled IRQ 9 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 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]	
F1 Help ESC Exit	↑↓ Select Item ←→ Select Menu -/+ Change Values Enter Execute Command F9 Setup Defaults 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.

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 reinitialized when the PC is started or not.

Yes When the PC is started the old configuration data is reset. The new configuration data is determined by means of the Plug&Play functionality. The mounted modules and drives are then initialized with this data.

No The mounted modules and drives are initialized with the existing configuration data. The data is not updated when the PC is booted (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). The default setting depends on the operating system being used.

DOS If the operating system uses MS-DOS-compatible hard disk accesses.

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 add-on module settings (in the field marked *Setup Password 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 BIOS Setup (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.		Item Specific Help
Main	Advanced	Security
Power	Exit	
Setup Password	Not installed	
System Password	Not installed	
Set Setup Password:	[Press Enter]	
Setup Password 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
ESC Exit	← Select Menu	Enter Execute Command
		F9 Setup Defaults
		F7 Previous Values

Example for menu *Security*

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 user guide).

Setup Password Lock

defines the function of the Setup Password. The setting in this field becomes effective as soon as a Setup Password is installed.

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

Extended The keyboard is locked while add-on modules with a supplementary ROM are initialized. This prevents unauthorized access to the settings of the add-on modules. The keyboard is unlocked again after initialization.

This setting is supplementary to the protection of the BIOS Setup from unauthorized calls.

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 user guide).

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.

<i>System</i>	When the PC is started, the system password enables the operating system to be booted. (Default)
<i>Keyboard</i>	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.

<i>Standard</i>	The operating system can be loaded from floppy disk or hard disk (default entry).
<i>Diskette Lock</i>	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.

<i>Enabled</i>	The message <code>Press F2 to enter SETUP</code> is displayed when the system is started (default entry).
<i>Disabled</i>	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.

<i>Enabled</i>	If the boot sector has been changed since the previous system startup (e.g. new operating system or virus attack), a warning is output on the monitor. The warning stays on the monitor until you acknowledge the changes with <i>Confirm</i> or deactivate the function (<i>Disabled</i>).
<i>Confirm</i>	This entry confirms a required change in a boot sector (e.g. new operating system).
<i>Disabled</i>	The boot sectors are not checked (default entry).

Diskette Write

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

<i>Enabled</i>	Floppy disks can be read, written or deleted, provided jumper FDP on the system board is not inserted (default entry).
<i>Disabled</i>	Floppy disks can only be read.

Write protection for System BIOS - Flash Write

This field can assign write protection to the System BIOS.

<i>Enabled</i>	The System BIOS can be written to or deleted, provided jumper FDP on the system board is not inserted (default entry).
<i>Disabled</i>	The System BIOS can neither be written to nor deleted. BIOS updates from floppy disk are not possible.

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 Der 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 Der 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:

- 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
Power Management Mode	[Customize]	Item Specific Help -----	
Standby Timeout:	[15 min]		
Hard Disk Timeout:	[10 min]		
Standby CPU Speed:	[Medium]		
▶ 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*

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*, *Suspend Timeout*, *Hard Disk Timeout*, *Standby CPU Speed* and *Save to Disk* 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* (interrupt) terminates suspend 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 system activity, the motor is switched back on.

2 min, 5 min, 10 min, 15 min
default entry = 10 min.

Disabled The motor of the hard disk drive is not switched off.

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. With the settings *High*, *Medium* and *Low*, programs execute more slowly.

Max Maximum clock speed.

High 1/4 of maximum clock frequency.

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

Low 1/16 of maximum clock frequency.

Terminating energy saving functions - Wakeup Event

This field calls a 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
Save Changes & Exit Discard Changes & Exit Get Default Values Load Previous Values Save Changes			Item Specific Help -----
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.



If you have set or changed passwords, these remain effective.

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*:

Submenu Cache Memory

Cache: *Intern and Extern*

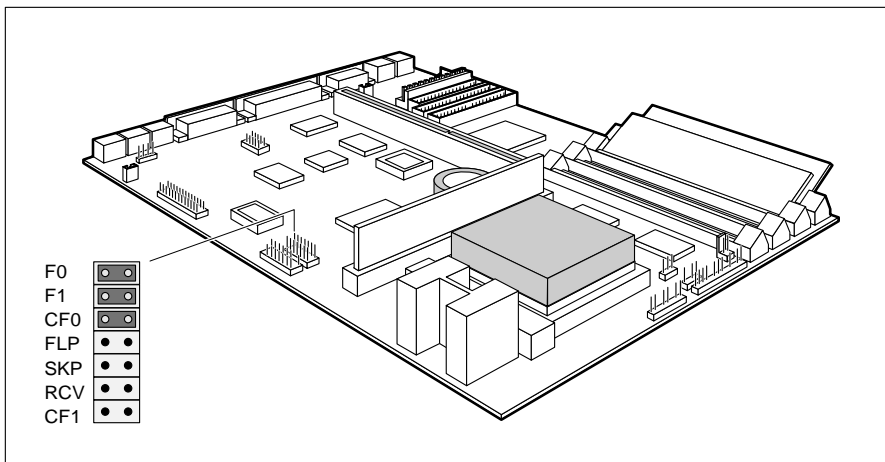
Cache System BIOS Area: *Enabled*

Cache Video BIOS Area: *Enabled*

Submenu Shadow Memory

Video Shadow: *Enabled*

Settings with jumper



F0, F1, CF0, CF1 = Clock speed

FLP = System BIOS write-protection

SKP = do not change

RCV = System BIOS recovery

Write protection for System BIOS - jumper FLP

The jumper FLP of the jumper block enables and disables updates of the System BIOS. Before an update of the System BIOS can be carried out, write protection for the System BIOS must also be disabled in the *BIOS setup* (in the *Security* menu, the *Flash Write* field must be set to *Enabled*).

If you want to carry out an update of the System BIOS, please contact customer service.

FLP inserted The System BIOS is write protected.

not inserted The System BIOS can be overwritten (default setting).

Settings with jumper

Recovering System BIOS - jumper RCV

The jumper RCV enables recovery of the old BIOS after an attempt to update has failed. Write protection for the System BIOS must be disabled in the *BIOS setup* before the System BIOS can be recovered (the jumper FLP must not be inserted). To restore the old BIOS you need a Flash BIOS disk (call customer service).

RCV inserted The System BIOS executes from floppy drive A: and restores the System BIOS on the system board.

not inserted The System BIOS is started from the system module (default setting).

Clock speed - jumper F0, F1, CF0 and CF1

The setting depends on the processor.



The jumpers may only be set as specified in the table below for the particular processor used.

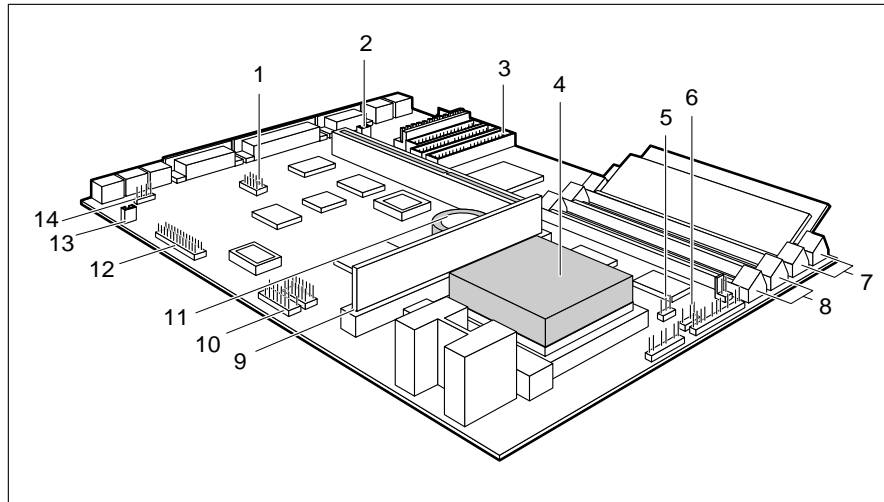
Processor P54C	Jumper F0	Jumper F1	Jumper CF0	Jumper CF1
75 MHz	inserted	inserted	---	---
90 MHz	inserted	---	---	---
100 MHz	---	inserted	---	---
120 MHz	inserted	---	inserted	---
133 MHz	---	inserted	inserted	---
150 MHz	inserted	---	inserted	inserted
166 MHz	---	inserted	inserted	inserted

--- = not inserted



The ex-works settings of the other jumpers of this jumper block may not be changed.

Add-on modules



- | | |
|--------------------------------------|--|
| 1 = Serial interface 2 (optional) | 9 = Location for second-level Cache |
| 2 = Connector for remote on | 10 = Connector for compact PC extension (optional) |
| 3 = Connector for IDE drives 3 and 4 | 11 = Lithium battery |
| 4 = Processor with heat sink | 12 = Connector for Wave Table board (optional) |
| 5 = Connector for processor fan | 13 = Soundblaster compatible audio CD-ROM connector (optional) |
| 6 = Connector for device loudspeaker | 14 = Connector for CD audio input (optional) |
| 7 = Location bank 0 for main memory | |
| 8 = Location bank 1 for main memory | |

Upgrading main memory

Two locations (bank 0 and bank 1) are available on the system board for installing memory modules. The board supports a maximum of 128 Mbyte. 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).

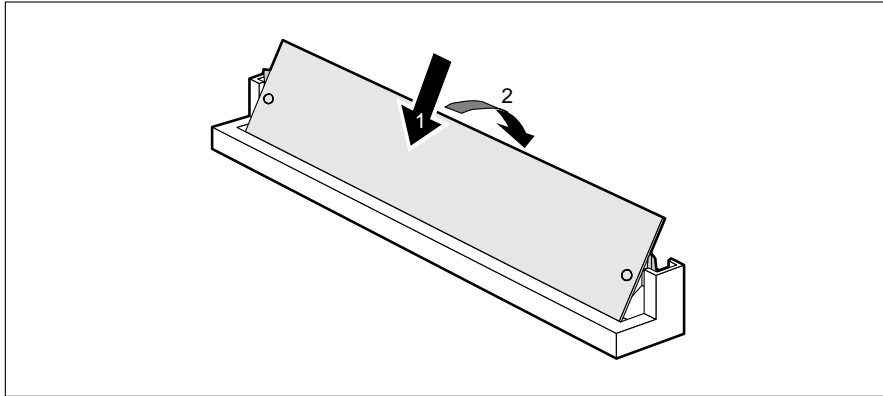


You may only use fast memory modules (access time = 70 ns or less). EDO memory modules (access time = 60) ns can also be used (EDO = Extended Data Out).

You must always add memory modules in pairs. In other words, you fit one pair to bank 0 or bank 1, and the second pair in the other bank. Pairs of memory modules must have the same capacity and the same access time.

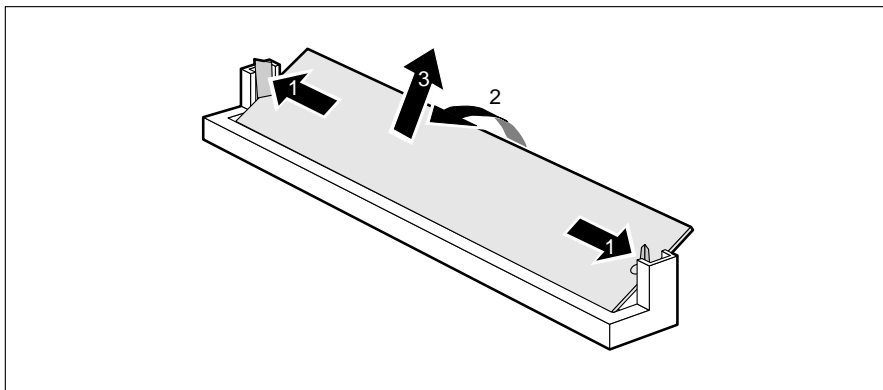
You may use memory modules without parity.

Installing memory modules



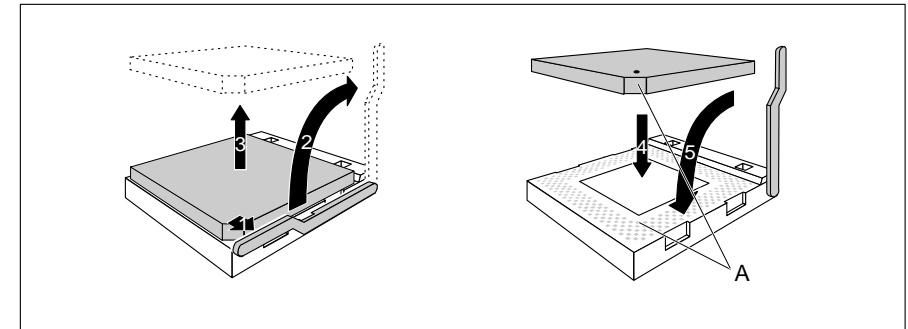
- ▶ Insert the memory module at an angle into the appropriate location (1). Ensure that the key notch and the two holes are correctly aligned with the retaining pins.
- ▶ Tilt the module down until it snaps into place (2).

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).

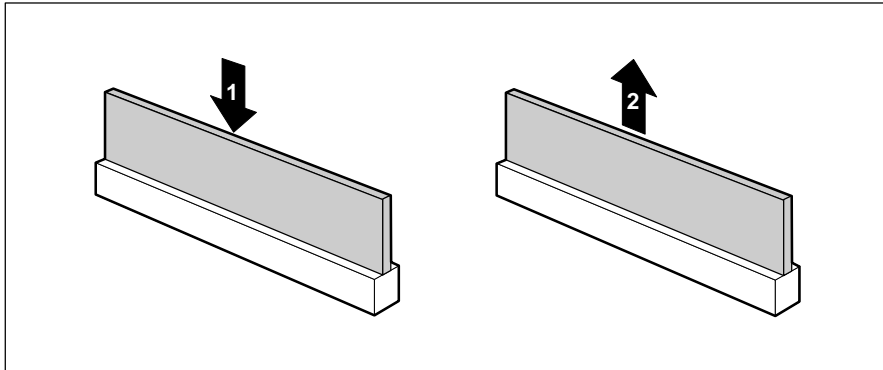


The mark on the processor may be covered by a heat sink. In this case let yourself be guided by the marking in the rows of pins on the underside of the processor.

- ▶ Push the lever back down so that it snaps into place (5).
- ▶ Depending on the processor which you have installed you must insert the jumpers.

Upgrading Second-level Cache

The system board has a socket for second-level cache. You can install a second-level cache module with 256 Kbyte or 512 Kbyte.



1 = Installing second-level cache

2 = Removing second-level cache

Installing second-level cache modules

- ▶ If a second-level cache is already installed, pull it out of the mounting location in the direction of the arrow (2).
- ▶ Insert the new second-level cache module into the mounting location, making sure it snaps into place (1).

i To be able to use the second-level cache, you must set the *Cache* field in the *Advanced / Cache Memory* menu of the *BIOS Setup* to *Intern and Extern*. You can enhance the performance by setting the *Cache System BIOS Area* and *Cache Video BIOS Area* fields in the same menu to *Enabled* and copying ROM sections with *Cache Memory Regions* to the cache.

Removing second-level cache modules

- ▶ Pull the second-level cache module out of the mounting location in the direction of the arrow (2).

Replacing the lithium battery

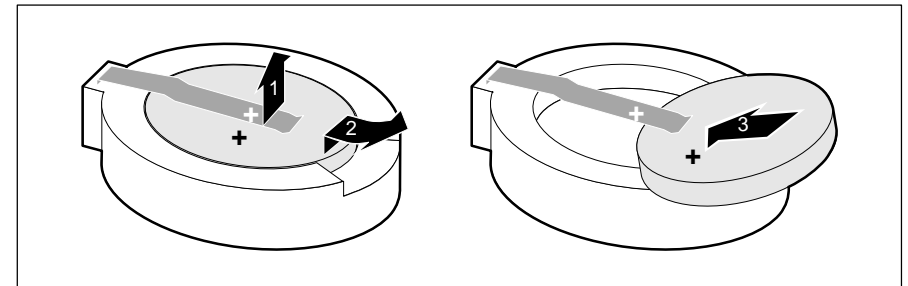


Incorrect replacement of the lithium battery may lead to a risk of explosion.

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. 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.

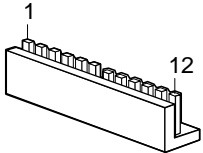


- ▶ Lift the contact (1) a few millimeters and remove the battery from its socket (2).
- ▶ Insert a new lithium battery of the same type in the socket (3).

Interface pinouts and interrupts

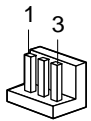
Connector for power supply

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



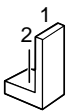
Connector for soft-off power supply

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



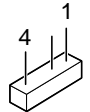
Connector for soft-off switch

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



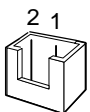
Connector for device loudspeaker

Pin	Meaning
1	+5 V
2	0 V
3	coded
4	loudspeaker signal



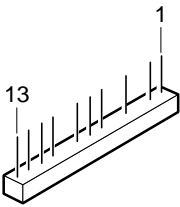
Connector for remote on

Pin	Meaning
1	0 V
2	Remote on

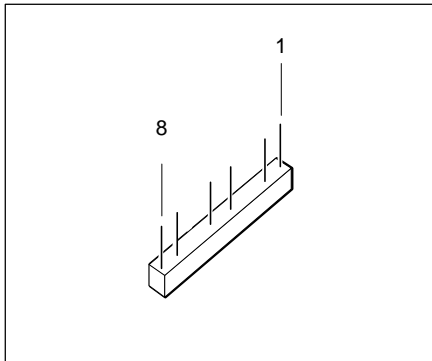


Connector 1 for LED indicators

Pin	Meaning
1	Standby
2	LED (yellow)
3	coded
4	LED operation (green)
5	coded
6	0 V
7	Keylock
8	0 V
9	coded
10	+ 5 V (above 330 Ω)
11 - 12	LED hard disk
13	+ 5 V (above 330 Ω)

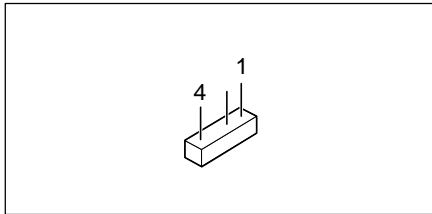


Connector 2 for LED indicators



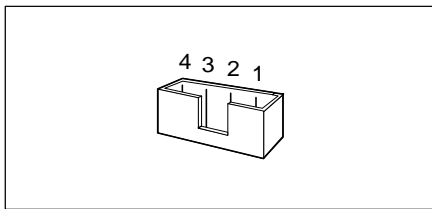
Pin	Meaning
1	Reset
2	0 V
3	coded
4	+ 5 V (above 330 Ω) for Turbo LED
5	Turbo LED
6	coded
7	Turbo switch
8	0 V

Connector for CD-ROM/audio input (optional)



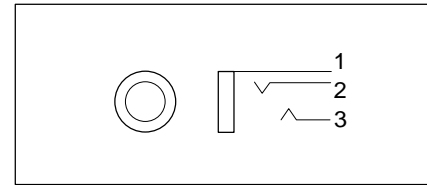
Pin	Meaning
1	Audio input left
2	0 V
3	0 V
4	Audio input right

Soundblaster compatible audio CD-ROM connector (optional)



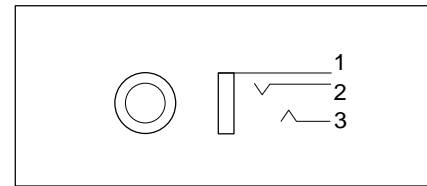
Pin	Meaning
1	0 V
2	CD input left
3	0 V
4	CD input right

Audio input (optional)



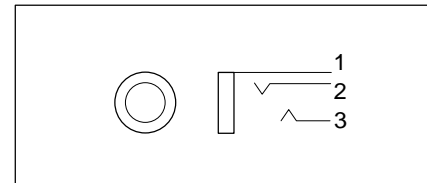
Pin	Meaning
1	0 V
2	Line input right
3	Line input left

Microphone connector (optional)



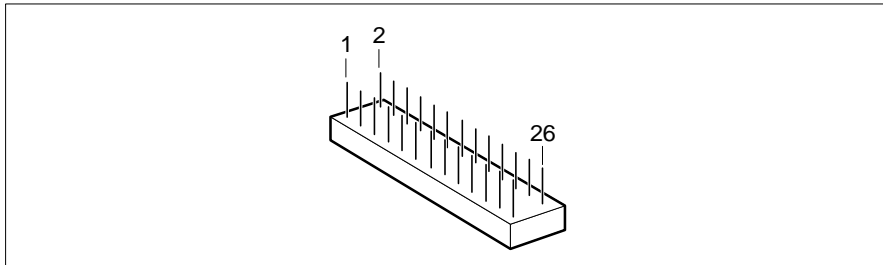
Pin	Meaning
1	0 V
2	+5 V above 4,4 kΩ
3	microphone input

Loudspeaker / headphones connector (optional)



Pin	Meaning
1	0 V
2	Output right
3	Output left

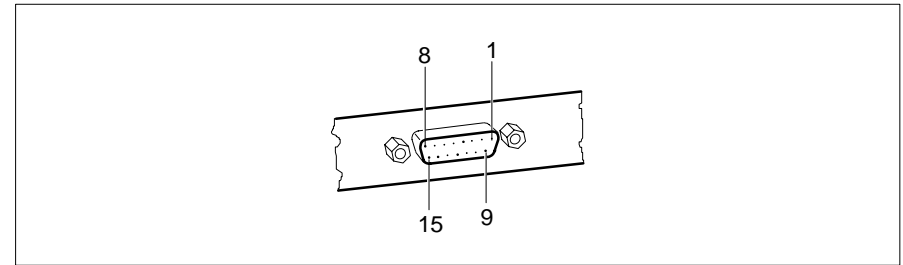
Connector for Wave Table board (optional)



Pin	Meaning	Pin	Meaning
1	0 V	15	0 V
2	free	16	free
3	0 V	17	0 V
4	MIDI output	18	+12 V
5	0 V	19	0 V
6	+5 V	20	Wave audio input right
7	0 V	21	0 V
8	MIDI input	22	-12 V
9	0 V	23	0 V
10	+5 V	24	Wave audio input left
11	0 V	25	0 V
12	free	26	Reset
13	free		
14	+5 V		

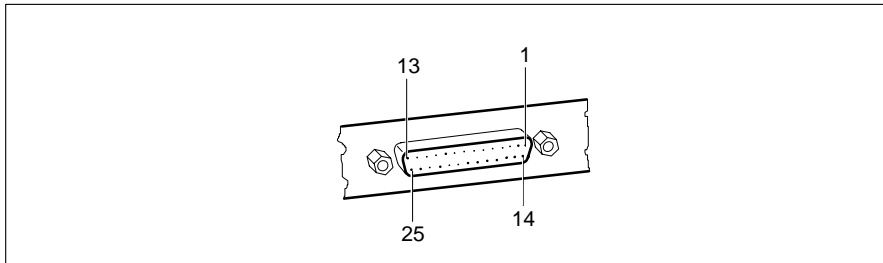


Game Port / MIDI Port



Jack	Signal name	Meaning
1	+5 V	+5 V
2	JOY_PORT_0	Joystick A (switch 1)
3	JOY_TIMER_A0	Joystick A (X coordinate)
4	0 V	0 V
5	0 V	0 V
6	JOY_TIMER_A1	Joystick A (Y coordinate)
7	JOY_PORT_1	Joystick A (switch 2)
8	+5 V	+5 V
9	+5 V	+5 V
10	JOY_PORT_2	Joystick B (switch 1)
11	JOY_TIMER_A2	Joystick B (X coordinate)
12	MIDI_OUT	MIDI output
13	JOY_TIMER_A3	Joystick B (Y coordinate)
14	JOY_PORT_3	Joystick B (switch 2)
15	MIDI_EXT_IN	MIDI output

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

Jack	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

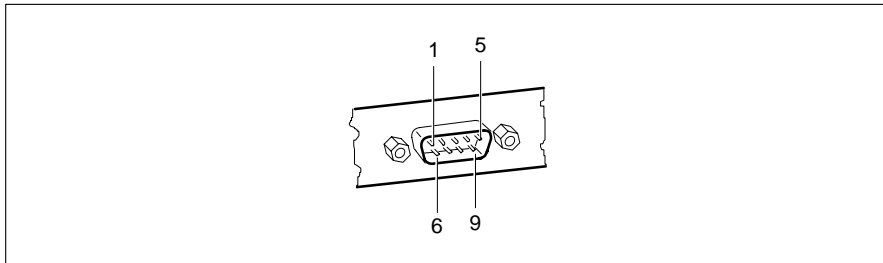
Pinout in EPP mode

Jack	Meaning	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

Jack	Meaning	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	

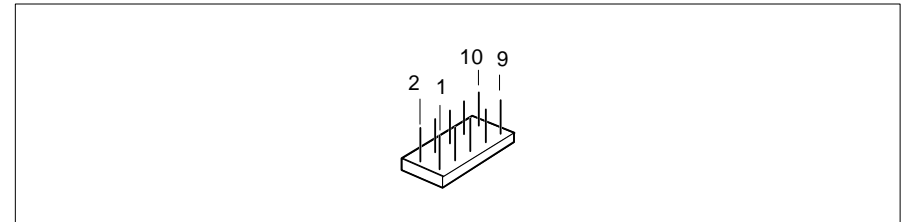
Serial interface 1



Pin	Signal name	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

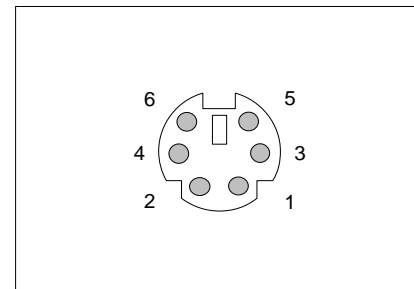


Serial interface 2 (optional)



Pin	Signal name	Meaning
1	DCD	Data Carrier Detect
2	TxD	Transmit Data
3	Signal Ground	Ground
4	RTS	Request to Send
5	Ri	Ring Indicator
6	RxD	Receive Data
7	DTR	Data Terminal Ready
8	DSR	Data Set Ready
9	CTS	Clear to Send
10	Not connected	free

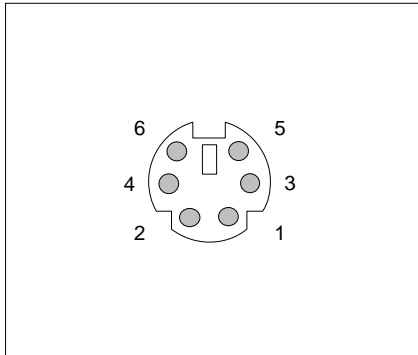
PS/2 mouse port (optional)



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

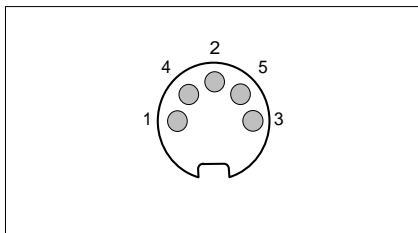
PS/2 keyboard port (optional)

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 keyboard on/off (mouse clock)

Keyboard port (diode socket connector, optional)



Pin	Signal name
1	Keyboard clock
2	Keyboard data
3	0 V
4	+5 V



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 = audio controller or free or parallel interface (LPT2)
- IRQ6 = floppy disk controller
- IRQ7 = parallel interface (LPT1/LPT3) or audio controller
- IRQ8 = real-time clock interrupt
- IRQ9 = audio controller or free
- IRQ10 = audio controller or free
- IRQ11 = free
- IRQ12 = mouse
- IRQ13 = math coprocessor
- IRQ14 = IDE disk controller (connector IDE 1/2)
- IRQ15 = IDE disk controller (connector IDE 3/4)

DMA channels

- DMA0 = free
- DMA1 = audio controller or free
- DMA2 = floppy disk controller
- DMA3 = free/ECP mode of the parallel interface or audio controller
- DMA4 = DMA channel cascading
- DMA5 = audio controller or free
- DMA6 = free
- DMA7 = audio controller or free

Error messages

This chapter contains error messages generated by the system board.

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

Failing Bits: nnnn

System RAM Failed at offset: nnnn

Restart the PC. If the message is still displayed, please contact your sales office or customer service.

Fixed Disk 0 Failure

Fixed Disk 1 Failure

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

Restart the PC. 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.

Keyboard error nn

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

Monitor type does not match CMOS

Correct the entry for the monitor type in the Main menu of the *BIOS Setup*.

Error messages

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

Restart the PC. 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 failure

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 the lithium battery on the system module and redo the settings in the *BIOS Setup*.

System Cache Error - Cache disabled

Restart the PC. If the message is still displayed, please contact your sales office or customer service.

System CMOS checksum bad

Call the *BIOS Setup* and correct the previously made entries or set the default entries.

System timer error

Restart the PC. 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.

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

Failing Bits: nnnn

System RAM Failed at offset: nnnn

Redémarrez votre PC. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

Fixed Disk 0 Failure

Fixed Disk 1 Failure

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.

Keyboard error nn

Libérez la touche du clavier (nn est le code hexadécimal de cette touche).

Monitor type does not match CMOS

Entrez dans le menu Main du *BIOS setup* et paramétrez correctement l'entrée correspondant au type d'écran.

Messages d'erreur

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

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 failure

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.

Shadow RAM Failed at offset: nnnn

Redémarrez votre PC. Si le message réapparaît, adressez-vous à votre revendeur ou à notre S.A.V.

System battery is dead

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

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*.

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

Failing Bits: nnnn

System RAM Failed at offset: nnnn

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

Fixed Disk 0 Failure

Fixed Disk 1 Failure

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.

Keyboard error nn

Desbloquee la tecla del teclado (nn es el código hexadecimal para la tecla).

Monitor type does not match CMOS

Defina correctamente en el menú principal del *BIOS-Setup* el registro para el tipo de pantalla.

Mensajes de error

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 failure

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.

Shadow RAM Failed at offset: nnnn

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

System battery is dead

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

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.

Messaggi di errore

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

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

Failing Bits: nnnn

System RAM Failed at offset: nnnn

Riavviate nuovamente il PC. Se il messaggio ricompare rivolgetevi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

Fixed Disk 0 Failure

Fixed Disk 1 Failure

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.

Keyboard error nn

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

Monitor type does not match CMOS

Impostate nel *BIOS-Setup* del menu principale il valore corretto per il tipo di monitor.

Messaggi di errore

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 failure

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.

Shadow RAM Failed at offset: nnnn

Riavviate nuovamente il PC. Se il messaggio ricompare rivolgetevi al Vostro rivenditore o al nostro servizio di assistenza tecnica.

System battery is dead

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

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.

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

Failing Bits: nnnn

System RAM Failed at offset: nnnn

Starta upp PCn på nytt. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

Fixed Disk 0 Failure

Fixed Disk 1 Failure

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

Korriger 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

Kontrollera att tangentbordet är korrekt anslutet.

Keyboard error nn

Frigör den angivna tangenten (nn är tangentens hexadecimalkod).

Monitor type does not match CMOS

Korriger inställningarna för bildskärmtypen i menyn *Main* i *BIOS-Setup-menyn*.

Felmeddelanden

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 failure

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.

Shadow RAM Failed at offset: nnnn

Starta upp PCn på nytt. Om meddelandet fortfarande visas bör du kontakta din återförsäljare eller vår kundservice.

System battery is dead

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

Ropa upp *BIOS-Setup-menyn*. Korriger 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.

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

Failing Bits: nnnn

System RAM Failed at offset: nnnn

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

Fixed Disk 0 Failure

Fixed Disk 1 Failure

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

Stel in de setup van het *BIOS*, in het menu *Main*, het monitortype op de juiste wijze in.

Foutmeldingen

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 failure

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.

Shadow RAM Failed at offset: nnnn

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

System battery is dead

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

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.

Index

-  1
-  1
- ▶ 1
- └ 1
- 1.2M, Diskette 10
- 1.4M, Diskette 10
- 2.8M, Diskette 10
- 32 Bit I/O 14
- 360K, Diskette 10
- 528 Mbyte hard disk capacity 13
- 720K, Diskette 10

- A**
- Activating Plug&Play 25
- Adding
 - main memory 40
 - second-level cache 35, 43
- Addressing IDE hard disk 13
- Advanced
 - BIOS Setup 16
 - system settings, BIOS Setup 16
 - System Configuration 25
- Audio input 48
- Audio-CD-ROM
 - connector soundblaster compatible 47
 - input connector 47
- Audio Controller 23
- Available
 - base memory 15
 - Extended Memory 15

- B**
- Base Memory 15
- Battery 5
- BIOS recovery 38

- BIOS Setup 9
 - advanced system settings 16
 - energy saving functions 32
 - exiting 34
 - terminating 34
 - Main 9
 - security 27
 - System configuration 9
- BIOS update 37, 38
- Board 3
- Boot
 - Options 14
 - Options, settings 14
 - routine, settings 14, 15
 - sector changes 30
- Booting operating system 29
- Bus width, setting 14

- C**
- Cache 17
 - function 18
 - Memory 17
 - Memory, setting 17
 - Memory Regions 18
 - Mode 18
 - second-level upgrading 35, 43
 - System BIOS Area 18
 - Video BIOS Area 18
 - write access 18
- Capacity IDE hard disk 13
- CD audio input connector 47
- Changes, boot sector 30
- Changing the lithium battery 44
- Channels, DMA 56
- Clock speed, standby function 33
- COM1 pinout 53
- COM2 pinout 54
- Computer viruses 30

Index

- Configuration
 - BIOS Setup 9
 - data, settings 26
 - PCI slot 23
- Configuring
 - serial interfaces 21
 - the interface 21
 - the parallel interface 21
- Connector
 - 1 LED indicators 46
 - 2 LED indicators 47
 - audio CD-ROM input 47
 - CD audio input 47
 - device loudspeaker 46
 - power supply 45
 - remote on 46
 - soft-off power supply 45
 - soft-off-switch 45
 - Wave Table board 49
- Connectors 3
- Controller
 - monitor 25
 - audio 23
 - floppy disk drive 22
 - setting 20
- Courier 1
 - bold 1

- D**
- Date 10
- Deactivating Plug&Play 25
- Default Latency Timer 24
- Device loudspeaker connector 46
- Diode socket connector port pinout 55
- Disable
 - audio controller 23
 - Game Port 23
- Disabling
 - floppy disk controller 22
 - Hard Disk controller 22
 - mouse controller 22
- Discard Changes & Exit 35
- Disk controller, setting 20

- Diskette A 10
- Diskette B 10
- Diskette
 - Controller 22
 - Write 30
 - write-protection 30
- Display, type 15
- DMA channels 56

- E**
- ECP mode, parallel interface 52
- Enable
 - audio controller 23
 - Game Port 23
- Enabling
 - floppy disk controller 22
 - Hard Disk controller 22
 - mouse controller 22
- Energy saving
 - functions, BIOS Setup 32
 - functions, extent 32
 - functions, terminating 34
- Enhance Performance 13
- Enhanced Parallel Port mode parallel interface 52
- Enhancing performance 14, 19, 20
- EPP mode parallel interface 52
- Error messages 57
- ESD modules 6
- Exiting BIOS Setup 34
- Explanation of
 - fonts 1
 - symbols 1
- Extended
 - Capabilities Port mode, parallel interface 52
 - Memory 15
- Extent, energy saving functions 32
- External cache
 - (Second-level Cache) 17
 - write access 18
 - memory, setting 17

F

- F1, function key 9
- Features system board 2
- Felmeddelanden 65
- First-level cache
 - (internal cache) 17
 - setting 17
- Flash
 - BIOS write protection 30
 - Write 30
- Floppy disk controller
 - disabling 22
 - enabling 22
- Floppy disk
 - drive type 10
 - write-protection 30
- Fonts, meanings 1
- Foutmeldingen 67
- Function
 - key F1 9
 - of the Setup-Paßwort 28

G

- Game Port 23
 - disable 23
 - enable 23
 - pinout 50
- Get Default Values 35

H

- Handle modules with ESDs 6
- Hard Disk 11
 - access settings 26
 - capacity 13
 - drive, Transfer Mode 13
 - drive transfer rate 13
 - energy saving functions 33
 - Transfer Mode 13
 - type 11
 - Controller 22
 - Timeout 33
- HD controller, setting 20
- Headphones connector 48

- Help text, invoking 9

I

- IDE hard disk
 - capacity 13
 - drive 11
 - drive transfer rate 13
 - Controller, setting 22
- Important notes 5
- Increasing performance 14, 17, 18, 19, 20, 35, 42, 43
- Installing
 - memory modules 41
 - second-level cache 35, 43
- Interface
 - configuring 21
 - parallel 51
 - pinouts 45
 - serial 53, 54
- Interfaces 3
 - serial 21
 - setting 20
- Internal cache 17
 - write access 18
 - Memory, setting 17
- Interrupt 24, 56
 - Request Levels 56
- Interrupts 45, 56
- Invoking help text 9
- IRQ 56

J

- Jumper 37
 - RCV 38
 - FLP 37
 - BIOS recovery 38
 - write protection System BIOS 37

K

- Keyboard port pinout 55

L

- Large hard disk capacity 13
- Large Disk Access Mode 26
- Latency Timer 24
- LBA Translation 13
- LED indicators
 - connector 1 46
 - connector 2 47
 - pinout 46, 47
- Lithium battery 5
 - changing 44
 - replacing 44
- Loading operating system 29
- Load Previous Values 35
- Location
 - for main memory 3
 - jumper 37
- Loudspeaker connector 48
- LPT1 pinout 51

M

- Main
 - BIOS Setup 9
 - Memory 15, 40
 - memory, location 3
- Meanings of
 - fonts 1
 - symbols 1
- Memory
 - Base Memory 15
 - configuration, second-level cache 35, 43
 - Extended Memory 15
 - main 40
 - Main Memory 15
 - Memory module 40
 - removing 41
 - installing 41
 - Memory, second-level cache 35, 43
 - Memory upgrade 40
 - Mensaje de error 61
 - Menu BIOS Setup 9
 - Message Press F2 to enter SETUP 29

- Messaggio di errore 63
- Microphone connector 48
- MIDI Port pinout 50
- Mode
 - parallel 21
 - System Password Mode 29
- Modules with ESDs 6
- Monitor
 - controller 25
 - type 15
- Mouse Controller 22
 - disabling 22
 - enabling 22
- Mouse port pinout 54
- N**
- NONE, Diskette 10
- Not installed 10
- Notational conventions 1
- Notes on software 7

O

- Operating system
 - loading 29
 - starting 29

P

- Parallel interface
 - configuring 21
 - ECP mode 52
 - EPP mode 52
 - pinout 51
 - SPP mode 51
- Parallel Mode 21
- Parameter, hard disk drive 11
- Password
 - setting system password 27
 - setting the Setup password 27
- Password
 - Setup 28
 - System 28
 - System Password Mode 29

- PCI 1
 - slot, configuration 23
 - slot setting 24
 - Configuration 23
 - Device, Slot #1 24
 - Device, Slot #2 24
- Performance
 - enhance 13
 - increase 14
 - increasing 17, 18, 19, 20, 35, 42, 43
- Peripherals, setting 20
- Peripheral Configuration 20
- Pin assignment
 - keyboard port 55
 - mouse port 54
 - serial interface 54
- Pinout
 - audio CD-ROM input 47
 - audio input 48
 - CD audio input 47
 - COM1 53
 - COM2 54
 - device loudspeaker 46
 - diode socket connector 55
 - Game Port 50
 - headphones connector 48
 - keyboard port 55
 - LED indicators 46, 47
 - loudspeaker connector 48
 - microphone connector 48
 - MIDI Port 50
 - mouse port 54
 - parallel interface 51
 - power supply 45
 - remote on 46
 - serial interface 53, 54
 - soft-off power supply 45
 - soft-off-switch 45
 - Wave Table connector 49
- PIO Mode 13
- Plug&Play
 - settings 25
 - O/S 25
- Port parallel 23
- Ports 3
- POST Error Halt 15
- Power
 - BIOS Setup 32
 - supply connector 45
 - Management Mode 32
- Power Off 31
- Press F2 to enter SETUP 29
- Processor
 - clock, standby function 33
 - internal Cache 17
 - replacing 42
- Programs with time loops 7
- PS/2
 - keyboard port 55
 - mouse port 54

Q

- Quick
 - self-test 15
 - boot 15

R

- Recovering System BIOS 38
- Recovery disk 38
- Reduced self-test 15
- Remote
 - on connector 46
 - Power On 31
- Removing
 - a memory module 41
 - second-level cache 35, 43
- Replacing
 - lithium battery 44
 - processor 42
- Reset Configuration Data 26

S

- Save Changes 35
 - & Exit 34
- Saving settings 34
- Second-level Cache 17, 35, 43
 - write access 18
 - setting 17
- Security BIOS Setup 27
- Self-test, settings 14, 15
- Serial interface interface pinout 53, 54
- Serial 1 21
- Serial 2 21
- Serial interfaces 21

Setting

- Advanced System Configuration 25
 - base address audio controller 23
 - BIOS recovery 38
 - BIOS update 37
 - BIOS Setup 27
 - bus width 14
 - Cache Memory 17
 - configuration data 26
 - controller 20
 - date 10
 - energy saving functions 32, 34
 - hard disk access 26
 - hard disk drive 11
 - hard disk energy saving functions 33
 - IDE hard disk capacity 13
 - IDE hard disk transfer mode 13
 - IDE Hard Disk Controller 22
 - interfaces 20
 - jumper 37
 - monitor type 15
 - mouse controller 22
 - PCI slot 23, 24
 - peripherals 20
 - Plug&Play 25
 - self-test 15
 - serial interfaces 21
 - Setup Password 28
 - standby mode 33
 - system password 27
 - system startup 14, 15
 - System Password 29
 - System Setup Password 28
 - the Setup password 27
 - time 10
 - transfer rate 13
 - write protection System BIOS 37
- Settings**
- BIOS Setup 9
 - saving 34

- Setup 9
- Setup Password 27
 - function 28
 - Lock 28
 - setting 28
- Setup Prompt 29
- Set
 - Setup Password 28
 - System Password 28
- Shadow Memory 19
 - Regions 20
- Signals
 - parallel interface 51
 - serial interface 53, 54
- Slot, PCI configuration 23
- Sockets 3
- Soft-off
 - power supply connector 45
 - switch 45
 - switch connector 45
- Soft Power Off 31
- Soundblaster compatible audio
 - CD-ROM connector 47
- Specifications 2
- SPP modes parallel interface 51
- Standard Parallel Port mode 51
- Standby
 - function, clock speed 33
 - mode setting 33
 - CPU Speed 33
 - Timeout 33
- Starting operating system 29
- SWOFF 31
- Symbols, meanings 1
- System
 - BIOS write protection 30, 37
 - board 3
 - configuration 37
 - configuration BIOS Setup 9
 - Date 10
 - setting Setup password 27
 - setting system password 27
 - startup, settings 14, 15
 - Time 10
 - BIOS 19
 - Configuration, advanced 25
 - Load 29
 - Password 27
 - Password setting 28
 - Password Mode 29
 - Shadow 19
- T
- Technical specifications 2
- Terminating
 - BIOS Setup 34
 - energy saving functions 34
- Test routine, settings 14, 15
- Texts in
 - bold typeface 1
 - italics 1
 - typewriter fonts 1
- Time 10
 - loops 7
- Transfer Mode 13
 - IDE hard disk drive 13
- Transfer rate IDE hard disk drive 13
- Type
 - floppy disk drive 10
 - hard disk 11
 - of monitor 15

- U
- Update BIOS 37, 38
- Upgrading
 - main memory 40
 - processor 42
 - second-level cache 35, 43
- Using cache 18
- V
- V.24 interface pinout 53, 54
- VGA interrupt 24
- Video
 - Subsystem 25
 - Display 15
 - Shadow 19
- Virus Warning 30
- W
- Wakeup Event 34
- Warning, Virus 30
- Wave Table board connector 49
- Write access
 - external cache 18
 - internal cache 18
- Write Back 18
- Write protection
 - floppy disk 30
 - System BIOS 30, 37
- Write Through 18