PC

Systembaugruppe
D1153 bis 500 MHz

System board D1153 up to
500 MHz

Technisches Handbuch
Technical Manual

A26361-K522-Z122-1-7419

Deutsch

English

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Technical Manual

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Contents

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Introduction

This manual describes the features of the system board as well as the setting options and the extensions that you can make to the system board.

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

You can find more detailed information in the Operating Manual of the device or in the description "BIOS Setup".

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

Notational conventions

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

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

i Supplementary information, remarks and tips follow this symbol.

► Texts which follow this symbol describe activities that must be performed in the order shown.

⏎ This symbol means that you must press the Enter key.

`Texts in this typeface` are screen outputs.

Texts in italics indicate commands or menu items.

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

Important notes

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

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

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

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

Incorrect replacement of the lithium battery may lead to a risk of explosion. It is therefore essential to observe the instructions in the section "Replacing the lithium battery".

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

Compliance was tested in a typical PC configuration.

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

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

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

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

Information on boards

To prevent damage to the system board or the components and conductors on it, please take great care when you insert or remove boards. Take care above all to ensure that extension boards are slotted in straight without damaging components or conductors on the system board, or any other components, for example EMI spring contacts.

Be especially careful with the locking mechanisms (catches, centering pins etc.) when you replace the system board or components on it, for example memory modules or processors.

Never use sharp objects (screwdrivers) for leverage.

Boards with electrostatic sensitive devices (ESD) are identifiable by the label shown.

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

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

Features

The system board for SCOVERY 250 is an IBM PC/AT compatible board with Pentium II processor and PCI bus.

Supported features:

- Intel Pentium II processor with 100 MHz or 66 MHz system frequency for slot 1 processor socket
- 512 Kbyte internal Second Level Cache
- 2 memory banks with DIMM sockets for a maximum memory capacity of up to 256 Mbyte
- Power management
- CPU SMM (System Management Mode), STOP Clock Control
- APM and ACPI compliant BIOS
- ATA compliant energy saving function of the hard disk
- Chipset Intel 82371AB (PIIX4) with PCI Enhanced Local Bus IDE
- PIO Mode 4 , DMA Mode 2
- 1 high speed serial interface (NS16C550 compatible, UARTs with 16 byte FIFOs)
- 1 parallel interface (SPP, EPP and ECP according to IEEE 1284)
- 1 interface for a floppy disk drive
- Soundchip Crystal 4235
- Screen controller ATI Rage LT Pro (AGP) with LCD interface
- LAN Controller Intel 82558
- PS/2 mouse and keyboard port
- Plug and Play (PnP)
- USB port
- 2 PCI slots on the slot board
- Software shutdown for Windows 95

Components on the system board
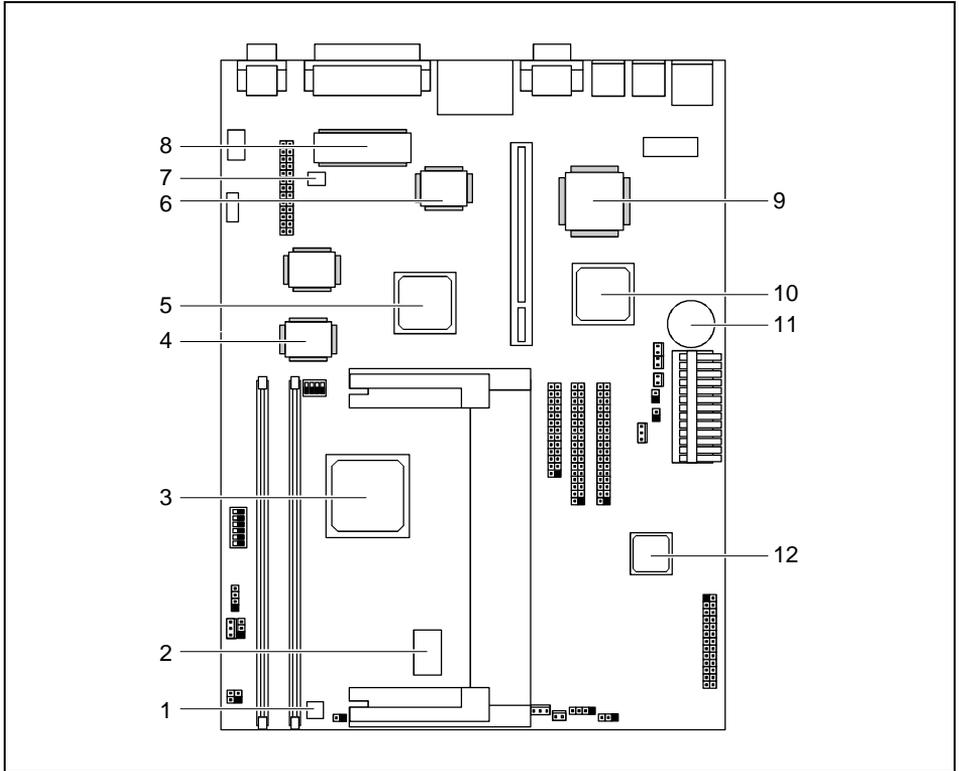
1 = Switching Regulator
2 = CLK Generator
3 = Intel chipset 440BX
4 = SGRAM
5 = Screen controller ATI Rage LT Pro (AGP)
6 = SMC 677

7 = Hardware monitoring
8 = Flash ROM
9 = LAN Controller Intel 82558
10 = Intel PIIX4
11 = Battery
12 = Soundchip Crystal 4235B (ISA)

Ports, connectors and switch blocks
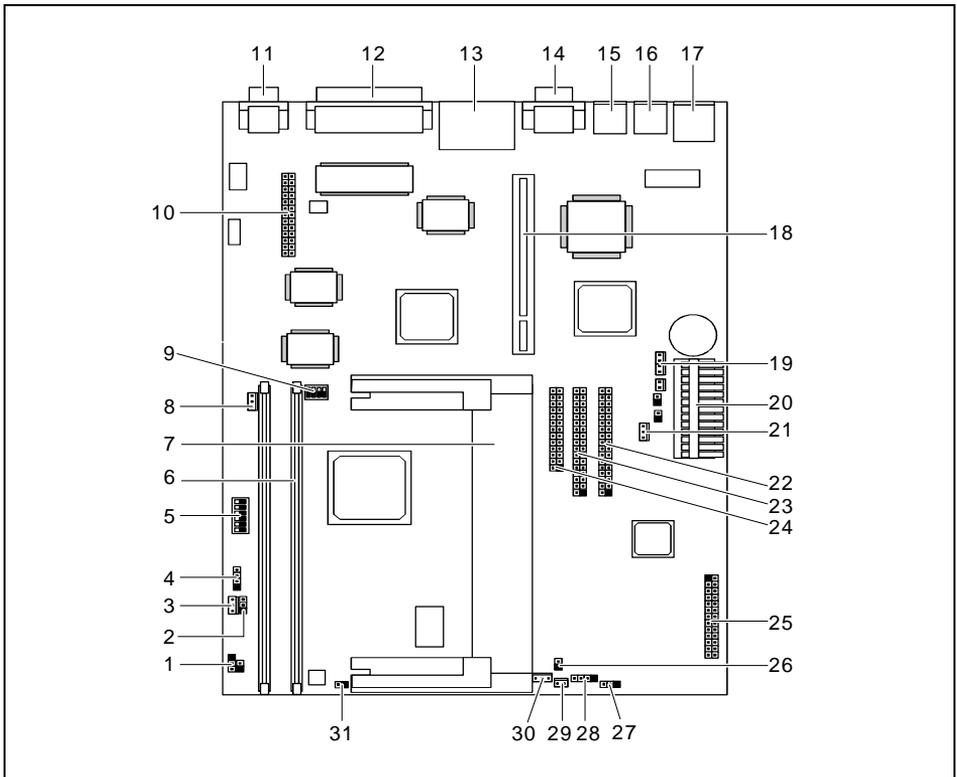
1 = Connector for power-on indicator (JP1)
2 = Connector for Turbo/LAN LED (JP5)
3 = Connector for Wake-on-LAN (CN2)
4 = Connector for Modem-ring-in (CN1)
5 = Switch block 1
6 = 2 DIMM sockets
7 = Pentium II processor for slot I
8 = Connector for voice modem (CN17)
9 = Switch block 2
10 = Connector for LCD interface (CN8)
11 = Monitor port (CN7)
12 = Parallel interface (CN9)
13 = USB port (CN14)
14 = Serial interface 1 (CN13)
15 = Mouse port (CN19)
16 = Keyboard port (CN23)

17 = LAN connector (CN28)
18 = Connector for slot board
19 = Connector for CD-in (CN25)
20 = Connector for power supply (CN26)
21 = Connector for power supply (JP9)
22 = Connector for IDE 2 (CN18)
23 = Connector for IDE 1 (CN16)
24 = Connector for floppy disk drive (CN15)
25 = Connector for audio board (CN29)
26 = Temperature sensor (JP8)
27 = Logo (JPX2)
28 = IDE LED (CNX1)
29 = Fan connector (FN2)
30 = Fan connector (JPX1)
31 = Connector for On/Off switch (JP6)

| **i** | The blackened pin of a jumper or a connector represents pin 1 |
| | The connectors marked do not have to be present on the system board. |

Switch block 1 - Settings and functions

In the following paragraphs the settings and functions of the single switches of switch block 1 are explained (position No. 5 in figure "Ports, connectors and switch blocks"). The default settings are marked with an asterisk *.

Setting the bus frequency - Switch 1

On*   66 MHz Front Side Bus (CPU/DIMM)

Off   100 MHz Front Side Bus

Skipping the password query - switch 2

On   Password query enabled

Off*   Password query disabled

Setting the clock ratio between processor core and bus - Switches 3, 4, 5, 6

Clock ratio	switch 3	switch 4	switch 5	switch 6
3,5	on	off	off	on
4	off	on	on	on
4,5	off	on	off	on
5	off	off	on	on
5,5	off	off	off	on

Switch block 2 - Settings and functions

In the following paragraphs the settings and functions of the single switches of switch block 2 are explained (position No. 9 in figure "Ports, connectors and switch blocks"). The default settings are marked with an asterisk *.

Setting the CRT/LCD display - Switches 1, 2, 3

Indicator	switch 1	switch 2	switch 3
13.3 " Super TFT	off	on	off
14,1 " Super TFT	on	on	off
CRT	off	off	off

Activating/deactivating VGA-IRQ assignment - Switch 4

On*   VGA-IRQ deactivated

Off   VGA-IRQ activated

Possible screen resolution

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

To select the appropriate setting for your monitor, please use the ATI drivers supplied. In Windows 9x you can select your monitor type and the resolution in the "Control Panel" under „Display Properties".

The following table contains the display modes that are supported in a single display configuration (CRT, TFT or DSTN). Please note that specific display devices may not support all modes. The memory configuration is assumed to be 100 MHz SGRAM unless otherwise specified.

Bildschirm-auflösung	Bildwiederhol-frequenz (Hz)	Mindestgröße des erforderlichen Bildschirmspeichers für die angegebenen Farbtiefen (in Bits pro Pixel)			
		8 bpp	16bpp	24 bpp	32bpp
640 x 480	60	2 MByte	2 MByte	2 MByte	2 MByte
640 x 480	72	2 MByte	2 MByte	2 MByte	2 MByte
640 x 480	75	2 MByte	2 MByte	2 MByte	2 MByte
640 x 480	90	2 MByte	2 MByte	2 MByte	2 MByte
640 x 480	100	2 MByte	2 MByte	2 MByte	2 MByte
800 x 600	60	2 MByte	2 MByte	2 MByte	4 MByte
800 x 600	70	2 MByte	2 MByte	2 MByte	4 MByte
800 x 600	75	2 MByte	2 MByte	2 MByte	4 MByte
800 x 600	90	2 MByte	2 MByte	2 MByte	4 MByte
800 x 600	100	2 MByte	2 MByte	2 MByte	4 MByte
1024 x 768	60	2 MByte	2 MByte	4 MByte	4 MByte
1024 x 768	72	2 MByte	2 MByte	4 MByte	4 MByte
1024 x 768	75	2 MByte	2 MByte	4 MByte	4 MByte
1024 x 768	90	2 MByte	2 MByte	4 MByte	4 MByte
1024 x 768	100	2 MByte	2 MByte	4 MByte	4 MByte
1280 x 1024	43	2 MByte	4 MByte	4 MByte	6 MByte
1280 x 1024	60	2 MByte	4 MByte	4 MByte	6 MByte
1280 x 1024	70	2 MByte	4 MByte	4 MByte	6 MByte
1280 x 1024	72	2 MByte	4 MByte	4 MByte	6 MByte
1600 x 1200	60	2 MByte	4 MByte	6 MByte	8 MByte
1600 x 1200	66	2 MByte	4 MByte	6 MByte	8 MByte
1600 x 1200	76	2 MByte	4 MByte	6 MByte	
1600 x 1200	85	2 MByte	4 MByte	6 MByte	

Upgrading main memory

The system board is equipped with two 168 pin sockets with which the main memory can be upgraded to a maximum of 256 Mbyte. These slots are suitable for 16, 32, 8, 64 and 128 Mbyte SDRAM memory modules of the DIMM format. Memory modules with different memory capacities can be combined.

DIMM = Dual Inline Memory Module
SDRAM = Synchronous Dynamic Random Access Memory

> Depending on the processor type SDRAM memory modules must be designed for a clock frequency of 66 MHz or 100 MHz or higher (meets PC100 specification).

Installing memory modules
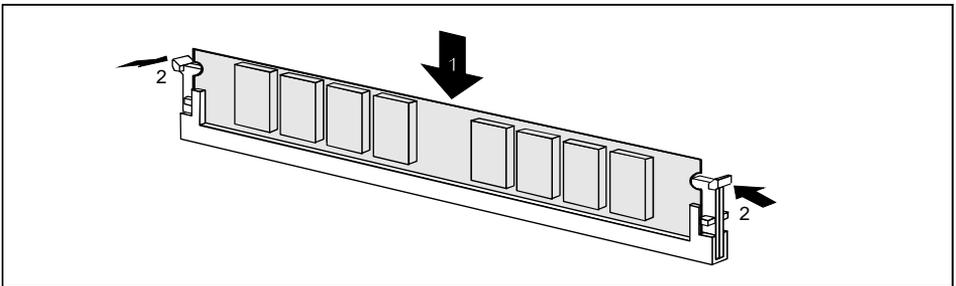
► Flip the holders on each side of the relevant location outwards.

► Insert the memory module into the location (1).

► At the same time flip the lateral holders upwards until the memory module snaps in place (2).

> If you use ECC memory modules, in the *Memory / Cache Options menu* in BIOS Setup set the *Memory Parity Mode* field to *ECC* (see section "Memory Test"). Otherwise set the *Memory Parity Mode* field to *Disabled*.

Removing a memory module
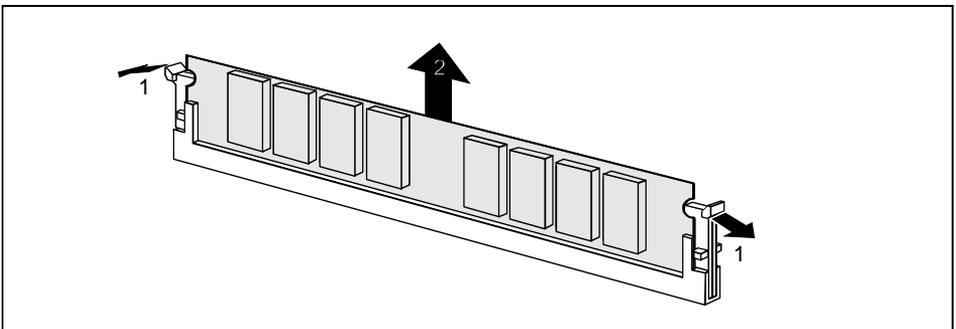
► Flip the holders to the right and left of the location outwards (1).

► Pull the memory module out of its location (2).

Replacing the processor

Removing the Pentium II

► Pull connector JP6 (connector for the On/Off switch, position No. 31 in figure "Ports, connectors and switch blocks"), and remember its plug-in position.

► Pull connectors JP8 and JPX1 (connectors for temperature sensor and fan, position No. 26 and 30 in figure "Ports, connectors and switch blocks"), and remember their plug-in positions.

► Press the clamps (2) on either side of the Pentium II inwards and slide the Pentium II towards the memory banks for roughly one centimeter.

► Lift the processor out of the slot.

Installing the Pentium II
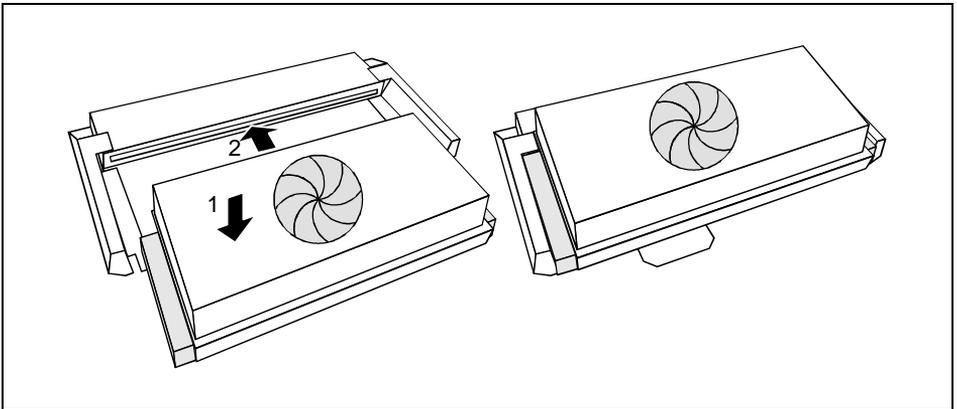
► Insert Pentium II in the holder with the labeled side facing downwards so that a gap of about one centimeter remains between the contacts of the Pentium II and the processor socket (1).

► Push the Pentium II in the holder until the clamps (2) to the left and right snap into place.

► Set the bus frequency of the new Pentium II using switch 1 of the jumper block 1 (position No. 5 in figure "Ports, connectors and switch blocks").

► Plug in connectors JP6 and JPX1 (connectors for temperature sensor and fan, position No. 26 and 30 in figure "Ports, connectors and switch blocks").

► Plug in connector JP6 (connector for the On/Off switch, position No. 31 in figure "Ports, connectors and switch blocks").

Replacing the lithium battery

⚠ Once you have installed the system board, you should remove the battery protection (i.e. the thin plastic plate between battery and contact spring).

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

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

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

Make sure that you insert the battery the right way round. The plus pole must be on the top!
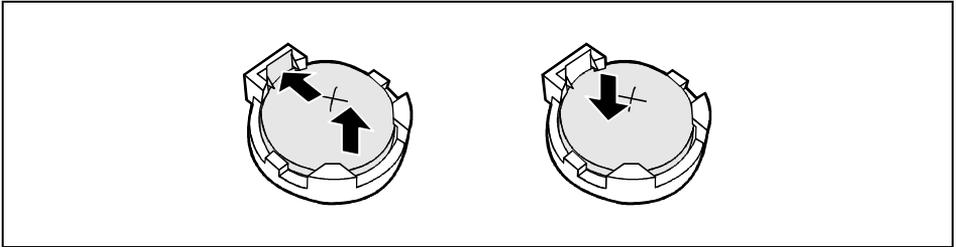
► Press the contact on the side of the battery socket outwards for about one millimeter and remove the battery from its socket (2).

► Press the new lithium battery of the same type in the socket until the contact on the side engages.

Error messages

`Equipment Configuration Error`

► Run *BIOS Setup* to reconfigure the system.

`Memory Error at MMMM:SSSS:OOOOh`
`(R:xxxxh, W:xxxxh)`

► Replace the DRAM chips or the DIMMs.

`PS/2 Keyboard Interface Error`

► Check or replace the keyboard interface circuit.

`PS/2 Keyboard Error or Keyboard Not Connected`

► Reconnect or replace the keyboard.

`PS/2 Pointing Device Error`

► Reconnect or replace the pointing device.

`PS/2 Pointing Device Interface Error`

► Check or replace the pointing device interface.

`Floppy Disk Controller Error`

► Check the floppy drive cable and its connections.
Change the floppy disk controller or disable the onboard controller by installing another add-on board with a controller.

`Floppy Drive A Error`
`Floppy Drive B Error`

► Replace the floppy disk drive.

`Floppy Drive(s) Write Protected`

► Call *BIOS Setup* and set the setting to *Normal*.

`IDE Primary Channel Master Drive Error`
`IDE Primary Channel Slave Drive Error`
`IDE Secondary Channel Master Drive Error`
`IDE Secondary Channel Slave Drive Error`

► Check the HDD cable connections and *BIOS Setup* configuration.
Should the error persist, replace the drive or the system board.

`Hard Disk Drive(s) Write Protected`

► Call *BIOS Setup* and set the setting to *Normal*.

`CPU Clock Mismatch`

► Call the *BIOS Setup*. The message will automatically disappear.

`Real Time Clock Error`

► Check the real time clock circuit or replace the real time clock.

`CMOS Battery Bad`

► Replace the battery.

`CMOS Checksum Error`

► Run *BIOS Setup* to reconfigure the system.

`I/O Parity Error`

► Replace the system board.

`Insert System Diskette and press Enter Key to reboot`

► Check the hard disk(s) configuration and restart the system.

or

► Insert a bootable disk and press the Enter key to restart the system.

`I/O Resource Conflict(s)`

► Try to reset resource assignments.

`Memory Resource Conflict(s)`

► Try to reset resource assignments.

`IRQ Setting Error`

► Run *BIOS Setup* to reconfigure the system.

`Expansion ROM Allocation Fail`

► Change the I/O expansion ROM address.

`Onboard Serial Port IRQ Conflict(s)`

► In *BIOS Setup* change the interrupt assignment for the onboard serial port or disable it.

`Onboard Parallel Port IRQ Conflict(s)`

► In *BIOS Setup* change the interrupt assignment for the onboard parallel port or disable it.

`Onboard Serial Port Conflict(s)`

► In *BIOS setup* change the onboard serial port address in Setup or change the add-on board serial port address.

`Onboard Parallel Port Conflict(s)`

► In *BIOS setup* change the onboard parallel port address or set the parallel port address of the add-on board to others.

`Onboard xxx ... Conflict(s)`

► Try to reassign or disable on-board device resources.

`PnP ISA Card(s) Disabled`

► Check if enough resources are available for the current system configuration.

BIOS Setup

In *BIOS Setup* you can set the system functions and the hardware configuration of the device.

When it is supplied, the device is set to factory default settings. You can change these settings in *BIOS Setup*. Any changes you make take effect as soon as you save the settings and quit the *BIOS Setup*.

> **i** If you repeatedly receive *Run Setup* messages, the battery may be bad. In this case, please contact your sales outlet or our customer service center to change the battery.
>
> Some menu items may not be present on your system.

Calling BIOS Setup

► To call *BIOS Setup* press **Ctrl** + **Alt** + **Esc** during system startup.

> **i** The following figures are examples and may be different on your system.

```
                            Setup Utility

              •      System Information
              •      Product Information
              •      Disk Drives
              •      Onboard Peripherals
              •      Power management
              •      Boot Options
              •      Date and Time
              •      System Security
              •     *Advanced Options


              Load Default Settings
              Abort Settings Change


↑↓←→ = Move highlight bar,                    ↵  = Select
Esc = Exit,                          <F8> = Advanced Menu
```
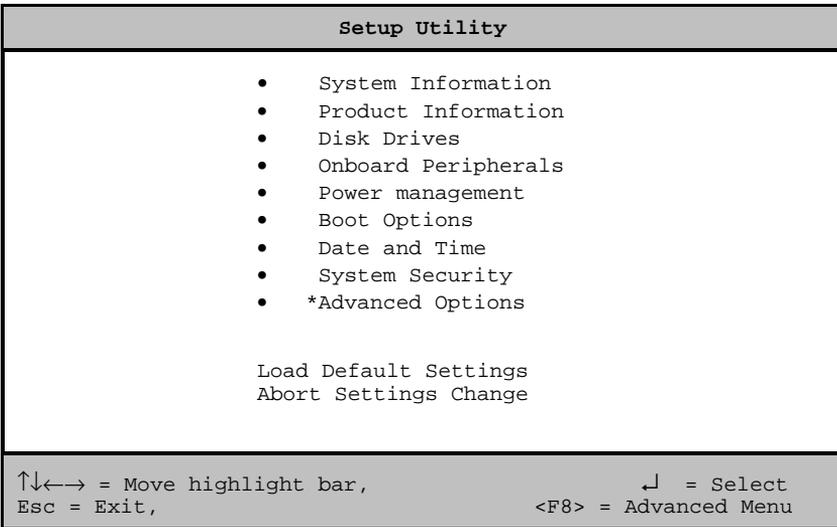
Example for the *Setup Utility* main menu

BIOS Setup supports two user levels: Basic and Advanced. Basic Level allows you to view and change only the basic configuration of your system.

> **i** As an advanced user you can call the Advanced level by pressing **F8** in the main menu. Additional parameters appear. These parameters are marked with asterisk (*) in this manual.

The command line at the bottom of the menus tells you how to use *BIOS Setup*.

► To select an option: move the highlight bar by pressing **↑** or **↓** . After that press the Enter key.

► Press **PgDn** to move to the next page or **PgUp** to return to the previous page.

► To change a parameter setting: press the **←** or **→** key until the desired setting is found.

► Press **Esc** to return to the main menu.

► To exit *BIOS Setup* press **Esc** in the main menu.

System Information

The *System Information* menu displays the standard system functions of the device.

```
 System Information                              Page 1/2

   Processor ........................ Pentium II
   Processor Speed .................. 400 MHz
   Internal Cache  .................. 32 KB,Enabled
   External Cache  .................. 512 KB, Enabled
   Diskette Drive A ................. 1.44 MB, 3.5-inch
   Diskette Drive B ................. 1.44 MB 3.5-inch
 +IDE Primary Channel Master........ Hard Disk, *812 MB
 +IDE Primary Channel Slave......... None
 +IDE Secondary Channel Master ..... IDE CD-ROM
 +IDE Secondary Channel Slave ...... None
  Total Memory ..................... 64 MB
     1st Bank ...................... SDRAM, 32 MB
     2nd Bank ...................... None

  PgDn/PgUp = Move Screen, Esc = Back to Main Menu
```

Example for the *System Information* menu

> **i** All parameters marked with a plus (+) sign will appear only if there is a device connected or installed.

```
 System Information                              Page 2/2

   Serial Port ...................... 3F8h, IRQ 4

   Parallel Port .................... 378h, IRQ 7
   PS/2 Mouse ....................... Installed

   Memory Parity Mode ............... [Disabled]
   USB Host Controller .............. [Enabled]

   PgDn/PgUp = Move Screen, Esc = Back to Main Menu
```

Example for the 2. page of the *System Information* menu

Product Information

The *Product Information* menu displays information on the product designation of the device, the serial numbers of device and system board as well as the system BIOS and DMI BIOS versions.

```
      Product Information                        Page 1/1

   Product Name .............SCOVERY
   System S/N ...............Serial#
   Main Board ID.............98134-1
   Main Board S/N...........0000000000000000
   System Board Version......V3.2
   SMBIOS Version............V2.1
  *System BIOS ID............R04-A1 M1    EN
  *BIOS Release Date........Dec 22, 1998


   <Esc> = Back to Main Menu
```

Example for the *Product Information* menu

Disk Drives

In the *Disk Drives* menu you can make settings for floppy disk drives. To display the submenus for the IDE drive settings you must enter the main menu and switch to Advanced level with **F8**.

```
    Disk Drives                                    Page 1/1

  Diskette Drive A ........ [1.44-MB    3.5-inch]
  Diskette Drive B ........ [   None   ]



 •   *IDE Primary Channel Master

 •   *IDE Primary Channel Slave

 •   *IDE Secondary Channel Master

 •   *IDE Secondary Channel Slave



 ↑↓ = Move Highlight Bar            F1 = Help
 Esc = Exit                         → ← = Change Setting,
```

Example for the *Disk Drives* menu

Diskettes Drives

Select the correct value for the first floppy disk drive (*Drive A*) using the ⊟ or ⊟ key.

IDE Primary/Secondary

In the *IDE Primary Channel Master*, *IDE Primary Channel Slave*, *IDE Secondary Channel Master*, *IDE Secondary Channel Slave* submenus you can make the settings for the IDE drives. The submenus are shown in Advanced level only.

```
   IDE Primary/Secondary
    Channel Master/Slave                           Page 1/1


    Type .......................... [ Auto ]
      Cylinder .................... [ XXXX ]
      Head ........................ [ XXXX ]
      Sector ...................... [ XXXX ]
      Size ........................ [ XXXX ] MB

   Hard Disk Size > 504MB ......... [ Auto ]
  *Hard Disk Block Mode ........... [ Auto ]
  *Advanced PIO Mode .............. [ Auto ]
  *Hard Disk 32 Bit Access ........ [Enabled]
  *DMA Transfer Mode .............. [Disabled]
  *CD-ROM Drive DMA Mode .......... [Disabled]

 ↑↓ = Move Highlight Bar            F1 = Help
 Esc = Exit                         → ← = Change Setting,
```

Example for submenu *IDE Primary/Secondary*

Type

This field is used to specify the type of hard disk drive. *Auto* configures the hard disk automatically. You do not need to select the parameters yourself. If you know your hard disk type, you can enter the setting manually with the *Cylinder, Head, Sector* and *Size* parameters.

Cylinder	Number of cylinders
Head	Number of heads
Sectors	Number of sectors
Size	Size of the hard disk in Mbyte

Hard Disk Size > 504 MB

Auto   Automatically detects the installed hard disk and supports the function if possible.

Disabled   Does not support this function.

Hard Disk Block Mode

This field enhances disk performance depending on the hard disk in use. To display this parameter you must enter the main menu and switch to Advanced level with ⎡F8⎤.

Auto   Automatically detects the installed hard disk and supports the function if possible. If supported data can be transferred in blocks.

Disabled   Does not support this function.

Advanced PIO Mode (Programmed Input Output Mode)

Defines the transfer rate of the IDE hard disk drive. To display this parameter you must enter the main menu and switch to Advanced level with ⎡F8⎤.

Auto   Automatically detects if this function is supported.

Disabled   Does not support this function.

Hard Disk 32-bit Access

This field determines if a 32-bit hard disk access is possible. To display this parameter you must enter the main menu and switch to Advanced level with ⎡F8⎤.

Enabled   Allows the 32-bit hard disk access.

Disabled   Does not support this function.

DMA Transfer Mode

This field specifies the transfer mode for the IDE hard disk drive. To display this parameter you must enter the main menu and switch to Advanced level with ⎡F8⎤.

Auto   Automatically detects if this function is supported.

Disabled   Does not support this function.

CD-ROM Drive DMA Mode

This field specifies the transfer mode for the CD-ROM drive. To display this parameter you must enter the main menu and switch to Advanced level with ⎡F8⎤.

Auto   Automatically detects if this function is supported.

Disabled   Does not support this function.

Onboard Peripherals

In the *Onboard Peripherals* menu you can make the settings for the serial and parallel ports. In the *Onboard Device Settings* submenu you can make settings for specific onboard controller. To display *Onboard Device Settings* you must enter the main menu and switch to Advanced level with **F8**.

```
   Onboard Peripherals                          Page 1/1


   Serial Port .........................[Enabled]
      Base Address .....................[3F8h]
      IRQ ..............................[ 4 ]

   Parallel Port .......................[Enabled ]
      Base Address .....................[378h]
      IRQ ..............................[ 7 ]
      Operation Mode ...................[Bi-direction]
        ECP DMA Channel ................[ - ]


   •   Onboard Device Settings



   ↑↓ = Move Highlight Bar          F1 = Help
   Esc = Exit                       → ← = Change Setting,
```

Example for the *Onboard Peripherals* menu

Parallel Port Operation Mode Settings

This field is used to specify whether the parallel port is to be used as a bi-directional input/output port or just as an output port. *ECP* and *EPP* transfer modes allow faster transfer rates of 2 and 2.4 Mbytes/s. These modes will only work with peripheral devices which support them.

Setting	Function
Standard and Bi-directional	Data can be transferred in both directions across the port.
Enhanced Parallel Port (EPP)	Fast transfer mode (up to 2 Mbytes/s), can output and receive data. The mode requires a peripheral device which supports the EPP transfer mode.
Extended Capabilities Port (ECP)	Fast transfer mode (up to 2.4 Mbytes/s), can output and receive data. The mode requires a peripheral device which supports the ECP transfer mode.

ECP DMA Channel

This item becomes active only if you select *Extended Capabilities Port (ECP)* as the operation mode. It allows you to assign *DMA channel 1* or *DMA channel 3* for the ECP parallel port function (as required in Windows 98).

Onboard Device Settings

To display this parameter you must enter the main menu and switch to Advanced level with [F8].

```
   Onboard Device Settings                          Page 1/1

   Floppy Disk Controller ............. [Enabled ]
   IDE Controller ..................... [Both ]
   PS/2 Mouse Controller .............. [Enabled ]
   USB Host Controller ................ [Enabled ]
     USB Legacy Mode .................. [Disabled]
    Onboard Ethernet Chip ............. [Enabled]

   ↑↓ = Move Highlight Bar            F1 = Help
   Esc = Exit                         → ← = Change Setting,
```

Example for the *Onboard Devices Configuration* submenu

Floppy Disk 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.

Disabled   The floppy disk controller is disabled.

IDE controller

This field allows you to enable and disable the onboard IDE controller.

Enabled   The IDE controller is enabled.

Disabled   The IDE controller is disabled.

PS/2 Mouse Controller

This field is used to enable and disable the built-in PS/2 mouse controller on the system board.

Enabled   The PS/2 mouse controller is enabled.

Disabled   The PS/2 mouse controller is disabled.

USB Controller

Switches the USB controller (Universal Serial Bus) of the system board on or off.

Enabled   The system BIOS determines which system resources (interrupts, addresses) are occupied.

Disabled   The USB controller is disabled.

USB Legacy Mode

Specifies whether the USB keyboard emulation is still active after starting the operating system (in a DOS environment). The *USB Host Controller* entry must be enabled.

Enabled   The function is enabled.

Disabled   The function is disabled.

Onboard Ethernet Chip

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

Enabled   The Ethernet controller is enabled.

Disabled   The Ethernet controller is disabled.

Power Management

In the *Power Management* menu you can set energy saving functions for your system. Programs for power management can change the settings for the energy saving functions.

```
   Power management    Page 1/1


  Power Management Mode ...............[Enabled]
    IDE Hard Disk Standby Timer ......[Off] Minute(s)
    System Sleep Timer ...............[30] Minute(s)
       Sleep Mode ....................[-------]

  Power Switch < 4 Sec.................[Power Off ]
 System Wake-Up Event
    Modem Ring Indicator...............[Enabled]


  ↑↓ = Move Highlight Bar           F1 = Help
  Esc = Exit                        → ← = Change Setting,
```
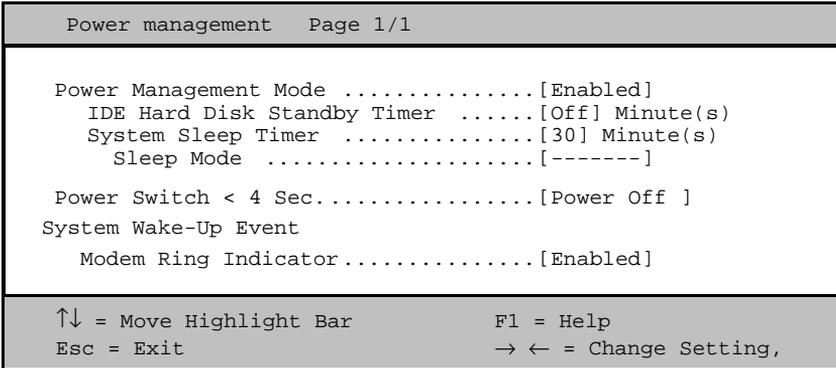
Example for the *Power Management* menu

Power Management Mode

This field defines the extent of the energy saving functions.

Enabled   The functions set in the fields *IDE Hard Disk Standby Timer* and *System Sleep Timer* are effective.

Disabled   The energy saving functions are disabled.

Power Switch < 4 sec

Sets the function of the On/Off switch.

Power Off   Switches the system off, when the On/Off switch is pressed.

Suspend   Switches the system in Suspend mode, when the On/Off switch is pressed.

System Wake-Up Event

Specifies the event which wakes up the system.

Modem Ring Indicator

This field specifies whether the system can be switched on by an incoming message (e.g. via modem, fax or telephone). The signal can be supplied externally via serial port 1 or internally via the Wake-on-LAN or the modem-ring-in connector.

Enabled   The system can be switched on by an incoming message.

Disabled   The system cannot be switched on by an incoming message.

Boot Options

The *Boot Options* menu specifies the settings for the system startup.

```
   Boot Options   Page 1/1


    Boot Sequence
      1ˢᵗ [Floppy Disk]
      2ⁿᵈ [Hard Disk]
      3ʳᵈ [IDE CD-ROM]

  First Hard Disk Drive ..................[IDE]
  Primary Display Adapter ................[Auto ]

  Fast Boot ..............................[Auto ]
  Silent Boot ............................[Enabled ]
  Num Lock After Boot ....................[Enabled ]
  Memory Test ............................[Disabled]
  *Configuration Table ...................[Enabled]
  *Boot from LSA/BootP boot server .......[Disabled]

  ↑↓ = Move Highlight Bar          F1 = Help
  Esc = Exit                       → ← = Change Setting,
```

Example for the *Boot Options* menu

Boot Sequence

This field defines the sequence in which the system BIOS searches the drives for system files to start the operating system. You can change the sequence with the ⬅ and ➡ key.

First Hard Disk Drive

Specifies whether the system is booted from an IDE or an SCSI hard disk drive.

Primary Display Adapter

Primary Display Adapter enables or disables the on-board VGA controller on the system board. If a screen controller board is installed the on-board controller must be disabled.

Fast Boot

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

Auto   The fast self test is performed.

Disabled   When the device is switched on, the complete device configuration is tested.

Silent Boot

With *Silent Boot* you can display or hide the startup messages while the system is booting.

Enabled   Hides the startup messages. The screen remains blank while the system is booting.

Disabled   Displays the startup messages while the system is booting.

Num Lock After Boot

Num Lock After Boot activates the Num Lock function after system startup.

Memory Test

Enabled   The memory test is performed during the self test.

Disabled   The memory test is skipped.

Configuration Table

To display this parameter you must enter the main menu and switch to Advanced level with F8.
The *Configuration Table* parameter allows you to enable or disable the display of the configuration
table after the self test but before booting. The configuration table gives a summary of the hardware
devices and settings that BIOS detected.

Boot from LANDesk Service Agent / Boot over BOOTP

To display this parameter you must enter the main menu and switch to Advanced level with F8.

The *Boot from LANDesk Service Agent / Boot over BOOTP* parameter allows the operating system to be
loaded from a server. This function is used particularly when neither floppy disk nor hard disk drives
are installed, or they have been switched off. Here there are two different boot protocols: *BootP* and
LSA.

Boot from LANDesk Service Agent

Enabled   The *LSA* LAN-BIOS is activated and enables the operating system to be loaded from
                a server via a local network connection with *LSA*.

Disabled   LAN boot is not possible. The LAN-BIOS is not activated.

Boot over BOOTP

Enabled   The *BootP* LAN-BIOS is activated and enables the operating system to be loaded
                from a server via a local network connection with *BootP*.

Disabled   LAN boot is not possible. The LAN-BIOS is not activated.

Date and Time

The *Date and Time* menu indicates the date / the time of the device. The date is entered in the weekday-month-day-year format. The time is entered in the hour-minute-second format. If you want to change the current date set / the current time set, enter the new date in the *System Date* field / the new time in the *System Time* field. Use the ⬅ and ➡ keys.

System Security

The *System Security* menu offers you various options for protecting your system and personal data from unauthorized access. By combining these options, you can achieve optimum protection for your system.

Setup Password

The *Setup Password* menu allows you to install a setup password. The setup password prevents unauthorized callup of the *BIOS setup*.

Setting the Setup password

To set or change the setup/system password, proceed as follows:

► Call *BIOS Setup* and select the *System Security* menu.

► In the *System Security* menu mark the *Setup Password* field and press the ⬅ or ➡ key.

The *Setup Password* screen is displayed.

```
 Setup Password        Page 1/1

  Enter your new Password twice.
  Password may be up to 7 characters long.


  Enter Password ................ [XXXXXXX]
  Enter Password again ........... [XXXXXXX]


  Set or Change Password



 ↑↓ = Move Highlight Bar           F1 = Help
 Esc = Exit
```

► Enter the password in the *Enter Password* field and press the Enter key.

> **i** The password can be at most seven characters long. All alphanumerical
> characters can be used; no differentiation is made between upper-case and lower-
> case.
>
> Passwords are not displayed as they are entered.

► Re-enter the password in the *Enter Password again* field and press the Enter key.

► Confirm the *Set or Change Password* line with the Enter key to save the password.

► Press **Esc** to enter the *System Security* menu.

The *Setup Password* entry is set to *Present*.

► Press **Esc** to return to the main menu.

► Press **Esc** to exit *BIOS Setup*.

► Select *Yes* to save the changes.

The next time you want to call *BIOS Setup*, you must enter your Setup password.

Power-on Password

With the system password you can prevent booting of the operating system. Only those who know the system password can access the system.

You can set the system password in the *Power-on Password* field of the *System Security* menu. Follow the same procedure as in setting the Setup password.

Advanced Options

You can make advanced system settings in the *Advanced Options* menu. To display the *Advanced Options* menu you must enter the main menu and switch to Advanced level with F8.

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

```
        Advanced Options

•     Memory/Cache Options
•     PnP/PCI Options




↑↓ = Move Highlight Bar         F1 = Help
Esc = Exit                      → ← = Change Setting,
```

Example for the *Advanced Options* menu

Memory / Cache Options

Calls the submenu in which you can make the settings for main memory and cache.

```
   *Memory / Cache Options                          Page 1/1

   Internal Cache (CPU Cache) .............[Enabled]

   *External Cache .......................[Enabled]
      *Cache Scheme ......................Write Back

   *Memory at 15MB - 16MB Reserved for ....[System]
   *Memory Parity Mode ...................[Disabled]


   ↑↓ = Move Highlight Bar           F1 = Help
   Esc = Exit                        → ← = Change Setting,
```
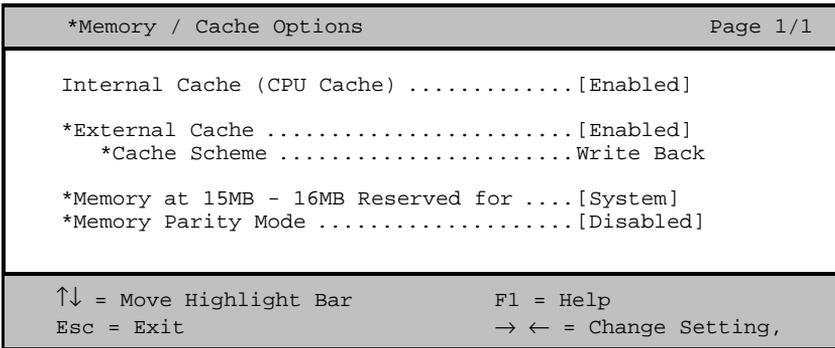
Example for the *Memory / Cache Options* menu

Internal Cache (CPU Cache)

This field switches the internal cache on and off. The cache is a buffer to which parts of the main memory and BIOS can be temporarily copied. The system performance is higher when the cache is switched on.

You must disable the cache, if the access time is too short for older applications.

Select *Enabled*, if you want to switch on the internal cache.

External Cache

This field switches the external cache on and off.

Select *Enabled*, if you want to switch on the external cache.

Cache Scheme [Write Back]

The contents of the memory are mapped in the cache and written in the main memory only as required. Main memory and cache contents are not identical.

Memory at 15MB-16MB Reserved for

Select *Add-on Card*, if the memory region between 15 and 16 Mbyte shall be reserved for a board. Otherwise select *System*.

Memory Parity Mode

Determines whether a parity check is carried out in the case of DRAM modules.

If the system BIOS detects that at least one DRAM module does not have a parity bit, the parity check is generally disabled.

Disabled   No parity check is performed. Use this setting for all non-ECC memory modules.

Parity   The parity check is set in parity mode. A bit corruption is recognized and an error message is issued. This setting is not recommended.

ECC   A bit corruption is corrected (no error message). An error message is issued for two or more bit corruption's. Use this setting for all ECC memory modules.

PnP / PCI Options

Calls the submenu in which you can make the settings for Plug&Play and the PCI bus.

```
    *PnP / PCI Options                              Page 1/1

   *PCI IRQ Setting ...................... [Auto]

                                           INTA INTB INTC INTD
     *PCI Slot 1 ........................ [--] [--] [--] [--]
     *PCI Slot 2 ........................ [--] [--] [--] [--]


   *PCI IRQ Sharing ...................... [Yes]
   *VGA Palette Snoop .................... [Disabled]
   *Graphics Aperture Size .............. [64MB]
   *Plug and Play OS .................... [No]
   *Reset Resource Assignments .......... No

   ↑↓ = Move Highlight Bar           F1 = Help
   Esc = Exit                        → ← = Change Setting,
```

Example for the *PnP / PCI Options* submenu

PCI IRQ Setting

defines the setting of the PCI interrupts.

Select *Auto*, if you use PCI boards supporting plug&play. Otherwise select *Manual*.

PCI Slot 1 / 2 / 3

If *PCI IRQ Setting* is set to *Manual*, you can set the PCI interrupts in this field.

Multifunctional PCI boards or boards with an integrated PCI-to-PCI bridge can use several PCI interrupts (INTA#, INTB#, INTC#, INTD#). Monofunctional PCI boards (default) only use one PCI interrupt (INTA#) per PCI slot.

The PCI interrupts INTA#, INTB#, INTC# and INTD# are available for every PCI slot.

PCI IRQ Sharing

The same interrupt can be assigned simultaneously to several PCI boards.

Select *Yes*, if you want to assign one interrupt to several boards. Otherwise select *No*.

VGA Palette Snoop

Select *Enabled* to activate the Palette Snoop function in VGA boards installed in the device.

Graphics Aperture Size

Sets the size of the graphics aperture when an AGP screen controller is installed. This function expands the available video memory.

4MB/8MB/16MB/32MB/64MB/128MB/256MB
    The size of the graphics aperture is set to the selected value.

Plug & Play OS

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

Yes   The operating system 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.

Reset Resource Assignments

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

Yes   After the system is started, the 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 boards and drives are then initialized with this data. Non-Plug&Play components must be entered manually.(e. g. in Windows 95, ICU).

No   After the system is started, the Plug&Play functionality ascertains the current configuration data and uses this data to initialize the installed boards and drives. The configuration data of non-Plug&Play components are not reset.

Load Default Settings

You need to reload the BIOS default settings every time you make changes to your system hardware configuration (such as memory size, CPU type, hard disk type, etc.); otherwise, BIOS will keep the previous settings.

After selecting *Load Default Settings* the following dialog box appears:
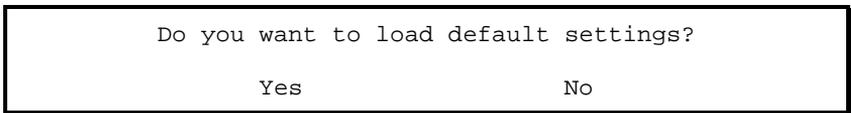
```
        Do you want to load default settings?

             Yes                    No
```

Selecting *Yes* enables BIOS to detect the new default values. Selecting *No* returns you to the main menu without loading the default settings.

Abort Settings Change

After selecting *Abort Settings Change* the following dialog box appears:
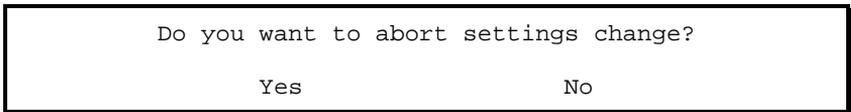
```
        Do you want to abort settings change?

             Yes                    No
```

Select *Yes* to discard all changes. Selecting *No* returns you to the main menu and the changes remain effective.

Exiting Setup

To exit *BIOS Setup* press the [Esc] key in the main menu. Confirm the following dialog box.

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