SYSTEMBAUGRUPPE D1205
SYSTEM BOARD D1205

TECHNISCHES HANDBUCH
TECHNICAL MANUAL

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A26361-D1205-Z120-1-7419

Deutsch

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Systembaugruppe D1205
System board D1205

Technisches Handbuch
Technical Manual

Ausgabe August 2000
August 2000 edition

Contents

Introduction

This Technical Manual describes the system board D1205, which can be equipped with up to four Intel Xeon processors.

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

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

Notational conventions

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

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

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 enter a blank space at this point.

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

`Texts in this typeface` are screen outputs.

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

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 chapter „Add-on modules" - „Replacing the lithium battery".

$C\;\varepsilon$ 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!

ℹ 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

- RCC chipset CNB20HE, CIOB20HE and OSB4 high-end PCI
- two processor slots for Pentium III Xeon processors with 866 MHz or higher, with 133 MHz Front Side Bus
  512 Kbyte second level cache
- 4 PC133 slots (SDRAM memory modules)
- two 64 bit hot-plug PCI slots with 66 MHz
- four 64 bit hot-plug PCI slots with 33 MHz
- one 32 bit PCI slot with 33 MHz
- SCSI-Controller AIC7899 onboard with 2 x Ultra-3-Wide SCSI-LVD (Low Voltage Differential) with 64-Bit and 66 MHz
- Screen controller ATI Rage XL VGA with 32 bit and 33 MHz PCI
- Intel i82559 Ethernet LAN controller with 10/100 Mbit/s
- Server management onboard with Copernicus I
- IDE hard disk controller connected to PCI bus
  ultra DMA33 mode capable, supports PIO modes 0-4
- one external parallel interface (ECP- and EPP-compatible)
- two external serial ports (COM1 and COM2)
- two external and one internal USB port (USB = Universal Serial Bus)
- external CAN bus port
- two external PS/2 interfaces for keyboard and mouse
- system monitoring

Interfaces and connectors
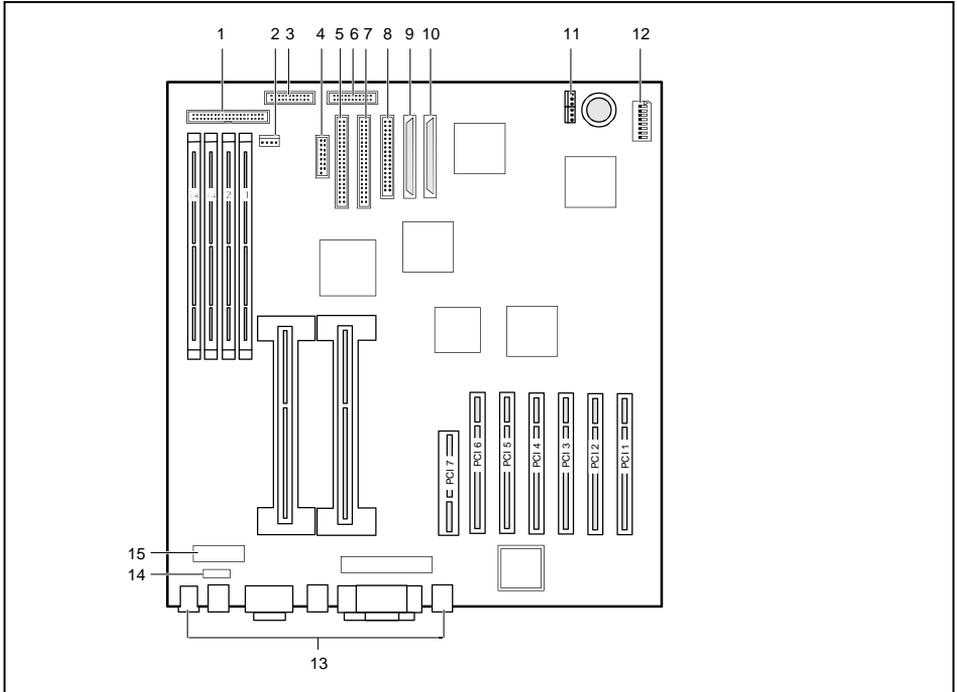
1 = Power supply monitoring
2 = Power supply connector for chipdisk
3 = Power supply I
4 = Internal USB port for chipcard reader
5 = IDE drives (primary)
6 = Power supply II
7 = IDE drives (primary)

8 = Port for floppy disk drive
9 = SCSI channel B
10 = Port for SCSI channel A
11 = Fan connectors 1 and 2 (optional)
12 = Switch block
13 = External ports
14 = CAN port
15 = Internal USB port

External ports
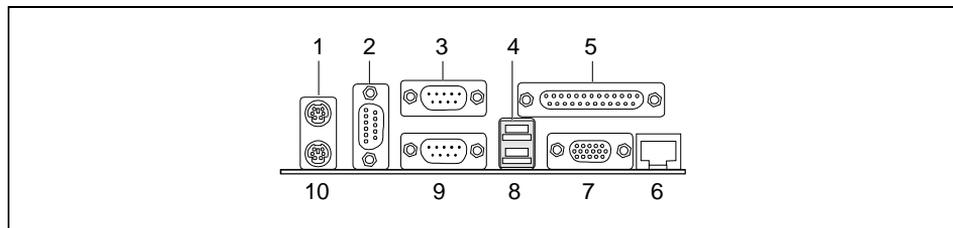
1 = PS/2 mouse port
2 = CAN port
3 = Serial port COM2
4 = USB port 1
5 = Parallel port

6 = LAN port
7 = VGA port
8 = USB port 2
9 = Serial interface COM1
10 = PS/2 keyboard port

If a chipcard reader is installed, no device may be connected to serial interface 2 (COM2).

Please use the current driver from the mailbox for the chipcard reader.

PCI bus resources

PCI slots

The following table shows an overview of the PCI slots:

PCI slot	64bit/32bit	Description	Bus frequency
1	64 bit	64 bit PCI bus slot	66 MHz / 3.3 V
2	64 bit	64 bit PCI bus slot	66 MHz / 3.3 V
3	64 bit	64 bit PCI bus slot	33 MHz / 5 V
4	64 bit	64 bit PCI bus slot	33 MHz / 5 V
5	64 bit	64 bit PCI bus slot	33 MHz / 5 V
6	64 bit	64 bit PCI bus slot	33 MHz / 5 V
7	32 bit	32 bit PCI bus slot	33 MHz / 5 V

PCI IRQ line x - Assignment of the PCI interrupts

PCI IRQ Line x defines which ISA interrupts are used for the separate PCI slots.

If in BIOS Setup the setting *Auto* is enabled the interrupts are assigned automatically and no further settings are necessary.

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.

The same interrupt can be assigned simultaneously to several PCI boards. You should avoid this condition due to reduced performance.

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

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

Disabled   No ISA interrupt is assigned to the PCI interrupt.

3, 4, 5, 7, 10, 11, 12, 14, 15
                The selected ISA interrupt is assigned to the PCI interrupt. You may not select an ISA interrupt that is used by a component on the system board (e.g. controller) or an ISA board.

| **i**	With the *Auto* setting, you can use the *ICU* (*ISA Configuration Utility*) utility to check how the interrupts are assigned.

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.

Screen resolution	Refresh rate (Hz)	Max. number of colors
640x480	60	16.7 mio.
640x480	72	16.7 mio.
640x480	75	16.7 mio.
640x480	90	16.7 mio.
640x480	100	16.7 mio.
800x600	60	16.7 mio.
800x600	70	16.7 mio.
800x600	75	16.7 mio.
800x600	90	16.7 mio.
800x600	100	16.7 mio.
1024x768	60	16.7 mio.
1024x768	72	16.7 mio.
1024x768	75	16.7 mio.
1024x768	90	16.7 mio.
1024x768	100	16.7 mio.
1280x1024	43	16.7 mio.
1280x1024	60	16.7 mio.
1280x1024	70	16.7 mio.
1280x1024	72	16.7 mio.
1600x1200	60	65 535
1600x1200	66	65 535
1600x1200	76	65 535
1600x1200	85	65 535

** The horizontal rate values may have a tolerance range of ±0.3 kHz.

Shaded screen resolutions are not supported by LCD monitors (TFT).

Settings with switches

Settings with switches
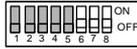
Switch 1 to 5 = must always be set to *Off*   Switch 7 = Skipping password query
Switch 6 = Write protection for floppy disks   Switch 8 = Recovering system BIOS

Write protection for floppy disks - switch 6

Switch 6 is used to define whether floppy disks can be written or deleted in the floppy disk drive. To write and delete floppy disks, the write-protection in *BIOS Setup* must be disabled (in menu *Security*, the field *Diskette Write* must be set to *Enabled*).

on   The floppy disk drive is write-protected.

off   Read, write and delete floppy disks is possible (default setting).

Skipping the password query - switch 7

Switch 7 is used to define whether the password is queried at system startup, if the password protection is enabled in *BIOS Setup* (in *Security* menu , the *Password* field must be set to *Enabled*).

on   The password query is effective.

off   The password query is skipped (default setting).

Recovering System BIOS - switch 8

Switch 8 enables recovery of the old system BIOS after an attempt to update has failed. To restore the old system BIOS you need a Flash BIOS Diskette (please call our customer service center).
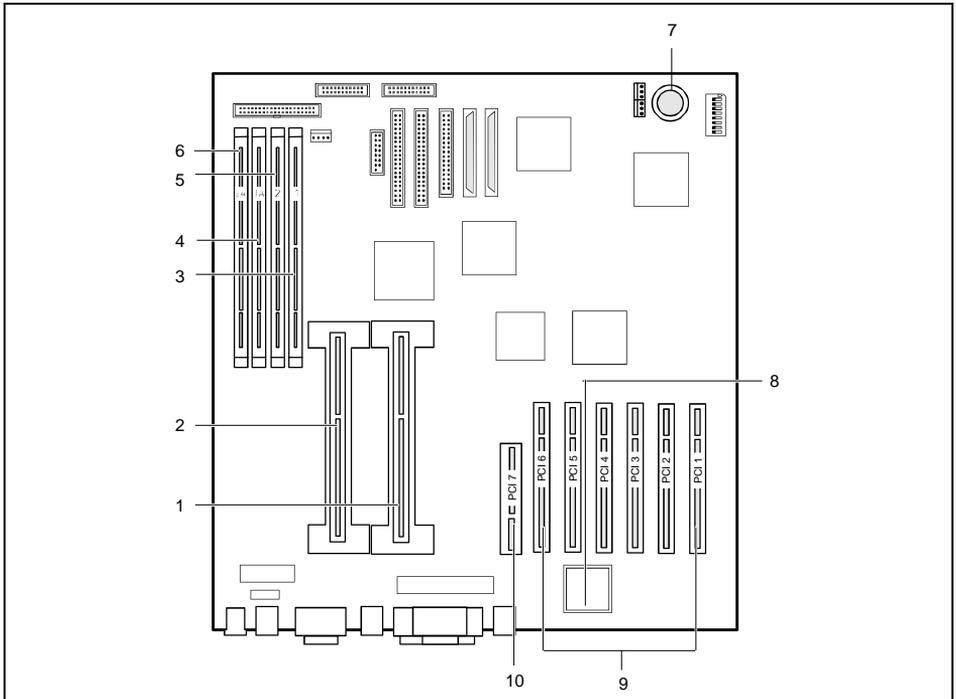
on   The system boots from the "Flash BIOS floppy disk" from Drive A and reprograms the system BIOS on the board.

off   The system is started with the system BIOS from the system board. The system BIOS cannot be reprogrammed (default setting).

Add-on modules

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

1 = Slot for processor 1
2 = Slot for processor 2
3 = Location bank 1 for main memory
4 = Location bank 1A for main memory
5 = Location bank 2 for main memory
6 = Location bank 2A for main memory

7 = Lithium battery
8 = IPSEC accelerator chip (optional)
9 = PCI slots 1 - 6
10 = PCI slot 7

i PCI slots support 3.3 V main and auxiliary voltages.

Slot sequence

- An additional screen controller must always be inserted into PCI slot 7.

- Insert 32 bit / 33 MHz adapter first into PCI slot 7 and then into PCI slots 3, 4, 5, 6.

- Insert 64 bit / 33 MHz adapter first into PCI slots 5, 3, 4, 6 and then into PCI slots 1, 2.

- Insert 64 bit / 66 MHz adapter adapter first into PCI slots 1, 2.

Upgrading main memory

These slots are suitable for 128, 256, 512 and 1024 Mbyte SDRAM memory modules of the DIMM format. The organization in two memory banks 1 and 2 enables fast memory access. The board supports a maximum of 4 Gbytes.

Two identical memory modules must be installed per memory bank. Partial equipping of a memory bank is not possible. The equipping sequence of the memory banks is arbitrary.

⚠️ You may only use buffered 3.3V memory modules. Unbuffered memory modules are not permitted.

SDRAM memory modules must be designed for a clock frequency of 133 MHz (meets PC133 specification).

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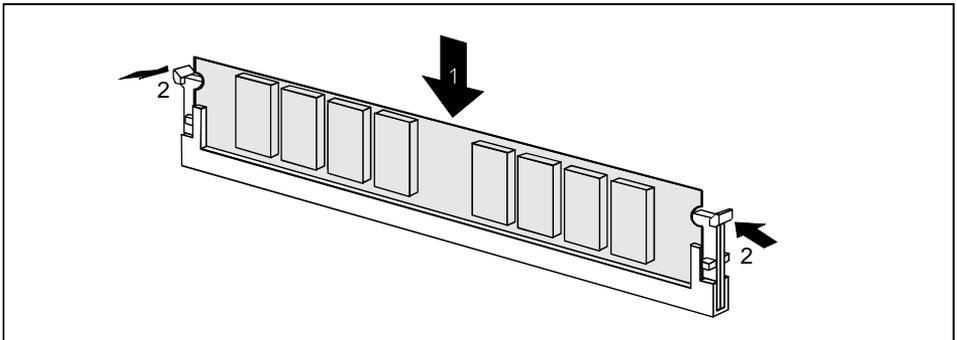
► Flip the holders on each side of the relevant location outwards.

► Insert the memory module in the slot while folding the side holders up until the memory module engages (2).

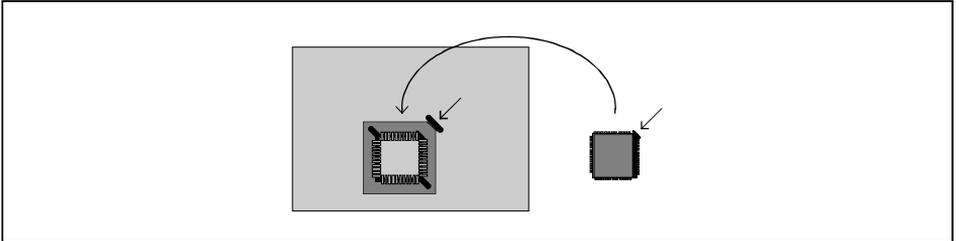**Removing a memory module**
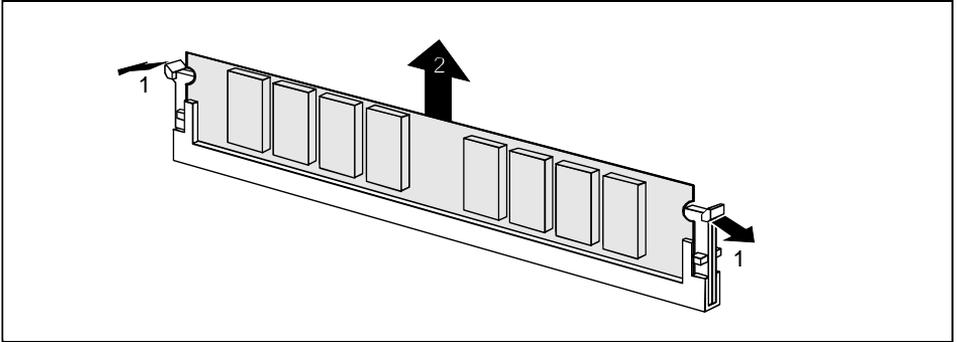
► Flip the holders to the right and left of the location outwards (1).

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

Upgrading the IPSEC accelerator chip

If the system board is prepared for upgrading with an IPSEC accelerator chip (Intel IPSEC), the upgrade is carried out as shown in the figure.

Replacing the lithium battery

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

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

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

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

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

- **VARNING**
  Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

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

- **ADVARSEL**
  Explosionsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.
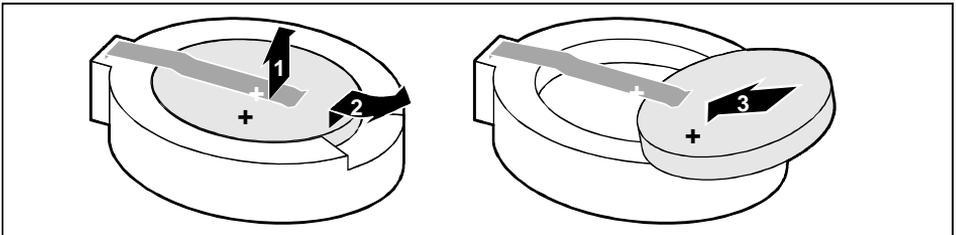
► Lift the contact (1) a few millimeters and remove the battery from its socket (2).

► Insert a new lithium battery of the same type in the socket (3).

Glossary

The technical terms and abbreviations given below represent only a selection of the full list of common technical terms and abbreviations.
Not all technical terms and abbreviations listed here are valid for the described system board.

ACPI	Advanced Configuration and Power Management Interface		ISA	Industrial Standard Architecture
AC'97	Audio Codec '97		LAN	Local Area Network
AGP	Accelerated Graphics Port		LSA	LAN Desk Service Agent
AIMM	AGP Inline Memory Module		MCH	Memory Controller Hub
AMR	Audio Modem Riser		MMX	MultiMedia eXtension
AOL	Alert On LAN		P64H	PCI64 Hub
APM	Advanced Power Management		PCI	Peripheral Component Interconnect
ATA	Advanced Technology Attachment		PXE	Preboot eXecution Environment
BIOS	Basic Input Output System		RAM	Random Access Memory
CAN	Controller Area Network		RAMDAC	Random Access Memory Digital Analog Converter
CPU	Central Processing Unit		RDRAM	Rambus Dynamic Random Access Memory
CNR	Communication Network Riser		RIMM	Rambus Inline Memory Module
C-RIMM	Continuity Rambus Inline Memory Module		RTC	Real Time Clock
DIMM	Dual Inline Memory Module		SB	Soundblaster
ECC	Error Correcting Code		SDRAM	Synchronous Dynamic Random Access Memory
EEPROM	Electrical Erasable Programmable Read Only Memory		SGRAM	Synchronous Graphic Random Access Memory
FDC	Floppy Disk Controller		SIMD	Streaming Mode Instruction (**S**ingle **I**nstruction **M**ultiple **D**ata)
FIFO	First-In First-Out		SMBus	System Management Bus
FSB	Front Side Bus		SVGA	Super Video Graphic Adapter
FWH	Firmware Hub		USB	Universal Serial Bus
GMCH	Graphics and Memory Controller Hub		VGA	Video Graphic Adapter
I²C	Inter Integrated Circuit		WOL	Wake On LAN
IAPC	Instantly Available Power Managed Desktop PC Design			
ICH	I/O Controller Hub			
IDE	Intelligent Drive Electronics			
IPSEC	Internet Protocol Security			