
Introduction

This description applies for the System board D1034 with PCI bus (Peripheral Component Interconnect).



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

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

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

Notational conventions

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



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



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

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

`Texts in this typeface` are screen outputs from the PC.

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

Texts in italics indicate commands or menu item.

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

Features

- ATX system board
- 64-bit microprocessor Intel Pentium with MMX and with 32 Kbytes internal cache (first-Level Cache, 16 Kbytes data cache, 16 Kbytes address cache) or OverDrive-Processor for Pentium

or

- 64-bit microprocessor Intel Pentium without MMX and with 16 Kbytes internal cache (first-Level Cache, 8 Kbytes data cache, 8 Kbytes address cache) or OverDrive-Processor for Pentium
- The system board supports Pentium MMX™.
- 256 Kbyte or 512 Kbyte pipelined burst second level cache onboard
- Memory configuration on the system board: 8 to 256 Mbyte (SDRAM)
- 2 Mbit Flash BIOS
- 3 PCI, 2 ISA slots and 1 ISA/PCI slot (shared) or 3 PCI and 2 ISA slots
- PCI bus
- IDE hard disk controller connected to PCI bus for up to four IDE drives (e.g. IDE hard disk drives, ATAPI CD-ROM drives), (prepared for ultra DMA33 mode)
- Real-time clock/calendar with integrated battery backup
- Floppy disk controller (up to 2.88 Mbytes format)
- Parallel interface (ECP- and EPP-compatible)
- 2 serial ports (16C550 compatible with FIFO)
- PS/2 mouse port
- PS/2 keyboard port
- Security functions
- Energy saving functions
- Connector for remote-on (fax/modem board), infrared interface

Optional Components

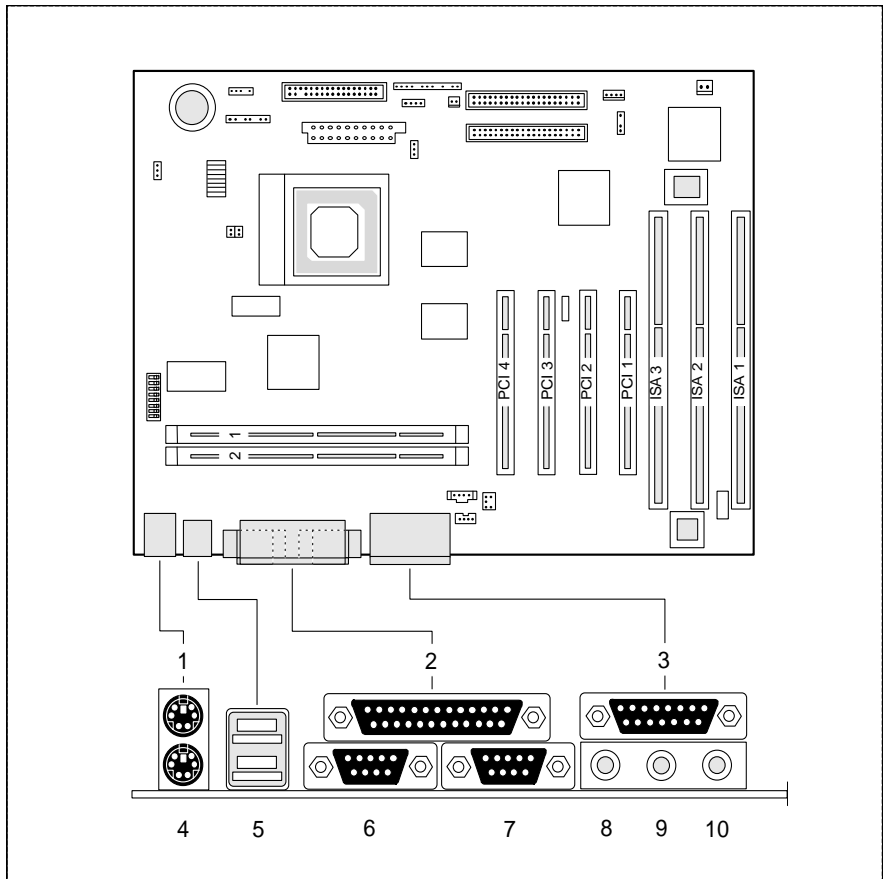
- Prepared for AMD-K5, AMD-K6 or Cyrix M2
- Audio controller on ISA-BUS (PnP) Crystal CS 4238 or CS 4235 Audio Codec, 16 bit stereo; compatible with Soundblaster Pro™, Windows Sound System and MPU 401; 3D audio support (Q-Sound); internal FM synthesis



The audio output can be set in the BIOS Setup in the screen *Advanced/Peripheral Configuration*, menu option *Audio Output* to *Line Level* or *Full Power*. Use *Line Level* if you connect headphones or an active loudspeaker (with amplifier) to the audio output. Use *Full Power* if you use passive loudspeakers.

- Connector for external loudspeaker
- Connector for CD-line in, Game/Midi, Voice-Modem, AUX IN
- Microphone jack
- Audio input (Line in)
- Loudspeaker connector (active / passive)
- Socket for wavetable chip
- Connector for chipcard reader
- USB (Universal Serial Bus)

External ports



- 1 = PS/2 mouse port
- 2 = Parallel port
- 3 = Game/Midi port
- 4 = PS/2 keyboard port
- 5 = USB ports
- 6 = Serial port 1
- 7 = Serial port 2
- 8 = Audio port (Line out)
- 9 = Audio port (Line in)
- 10 = Audio port (Microphone)

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

BIOS-Fax

The system board supports the BIOS-Fax function developed by Siemens Nixdorf. This allows fax reception even if the PC is switched off.

You need a special fax modem kit from Siemens Nixdorf to be able to use this functionality. This kit is available in the following country variants:

Country	Icon
Germany	D
Switzerland (germany)	CH (D)
Austria	A
France	F
England	GB

Please contact your local distributor or SNI sales office to order the fax modem kit.

Installing drivers

The following drivers are recommended for installation from the "Drivers & Utilities" CD:

- "Crystal" audio board (sound card) (for optional audio functions)
- Hard disk controller "PIIX4"
- Software update "DirectX 3.0a"

Important notes

Keep this manual together with your device. If you pass on the device to third parties, you should also pass on this manual.



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

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

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

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

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



This board complies with the requirements of the EEC directive 89/336/EEC with regard to "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 cable for peripherals must be adequately insulated to avoid interference.

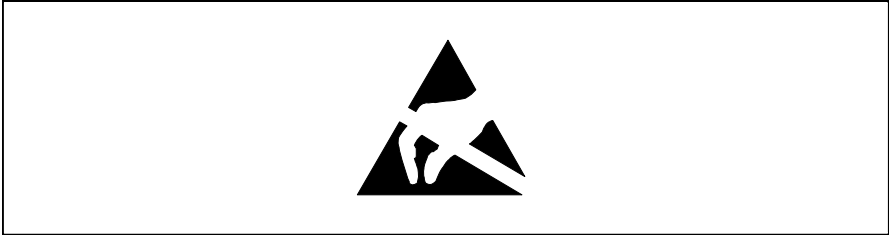


Modules can become very hot during operation. Make sure you do not touch modules when adding components to the system board. There is a danger of burns!



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

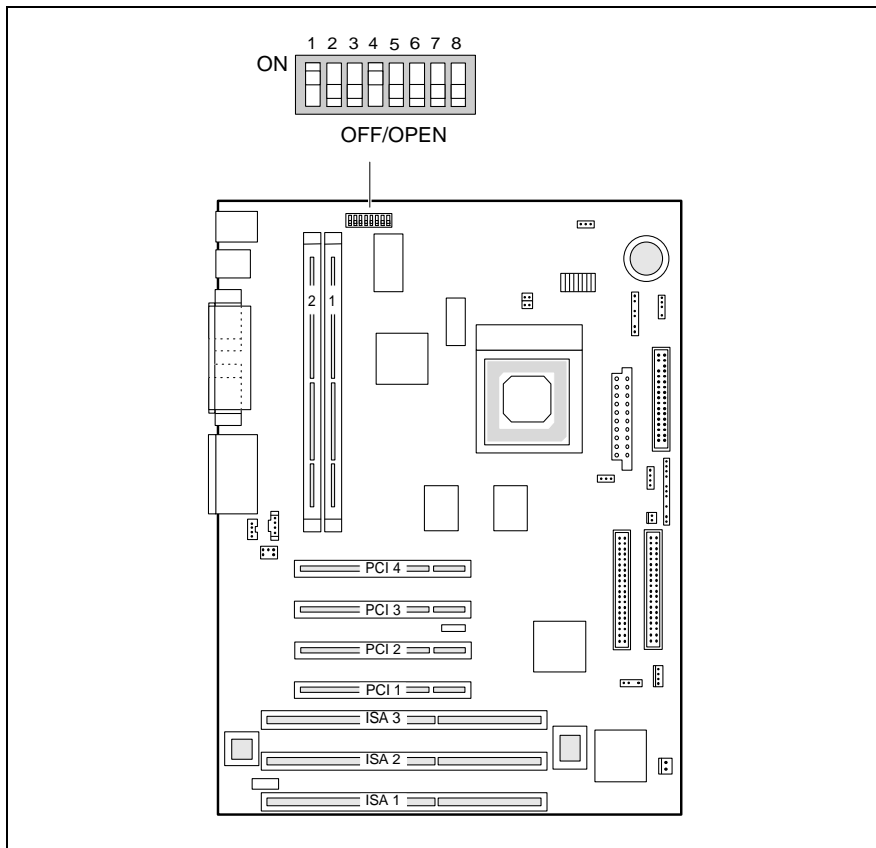
Boards with electrostatic sensitive devices (ESD) may be identified by labels.



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

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

Settings with switch block



Switch 1, 2, 3 and 4 = clock speed
Switch 5 = recovering system BIOS
Switch 6 = must be set to *off*

Switch 7 = reserved
Switch 8 = write protection for floppy disk drive

Clock speed - switch 1, 2, 3 and 4



The switches may only be set as specified in the table below for the particular processor used. Make sure you also check the jumper settings for the processor auxiliary voltage.

Processor	switch 1	switch 2	switch 3	switch 4
90 MHz	off	on	off	off
100 MHz	on	off	off	off
120 MHz	off	on	on	off
133 MHz	on	off	on	off
150 MHz	off	on	on	on
166 MHz	on	off	on	on
200 MHz	on	off	off	on
233 MHz	on	off	off	off
Reserved	off	off	off	off

Recovering System BIOS - switch 5

Switch 5 enables recovery of the old system BIOS after an attempt to update has failed. Memory bank 1 must be populated in order to be able to restore the system BIOS. To restore the old BIOS you need a Flash BIOS Diskette (call customer service).

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

off The System BIOS is started from the system board (default setting).

Skipping the password setting - switch 6

Switch 6 defines whether a set BIOS password is to be taken into account or not.

on The BIOS password is ignored.

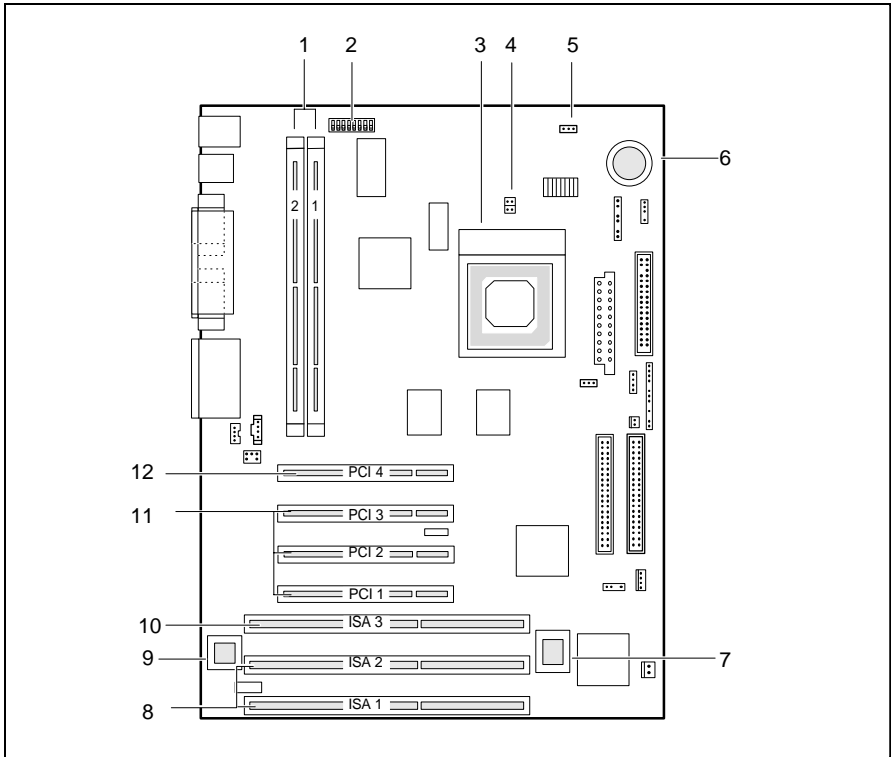
off The BIOS password is taken into account (default setting).

Write-protection for floppy disk drive - switch 8

Switch 8 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).

Add-on modules



- | | |
|--|-------------------------------|
| 1 = Locations 1 + 2 for main memory | 6 = Lithium battery |
| 2 = Switch block | 7 = Flash BIOS |
| 3 = Processor with heat sink | 8 = ISA slots 1 - 2 |
| 4 = Jumper for the supply voltage of an AMD-K5 processor | 9 = Socket for wavetable chip |
| 5 = Jumper for processor core voltage | 10 = ISA slot 3 |
| | 11 = PCI slots 1 - 3 |
| | 12 = PCI slot 4 |

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



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

Upgrading main memory

Two locations (bank 1 and bank 2) are available on the system board for installing memory modules. DIMM modules (dual inline memory module) are used.

A maximum of 256 Mbytes of SDRAM memory modules may be installed.



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

You can only use 66 MHz or faster SDRAM memory modules!

Installing memory modules

- ▶ Flip the retainers to the left and right of the location outward.
- ▶ Insert the memory module into the appropriate location.
- ▶ Press the lateral holders until they snap in place.
- ▶ Press the lateral holders firmly against the location.

Removing a memory module

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

Recommended memory modules

16MB DIMM SDRAM 2Mx64

Producer	Part.-No
SAMSUNG	KMM366S203BTN-G2

32MB DIMM SDRAM 4Mx64

Producer	Part.-No
NEC	MC-454AD644F-A67
SAMSUNG	KMM366S403BTN-G2
SIEMENS	HYS64V4020GU-10
HYUNDAI	HYM7V64400TFG-10

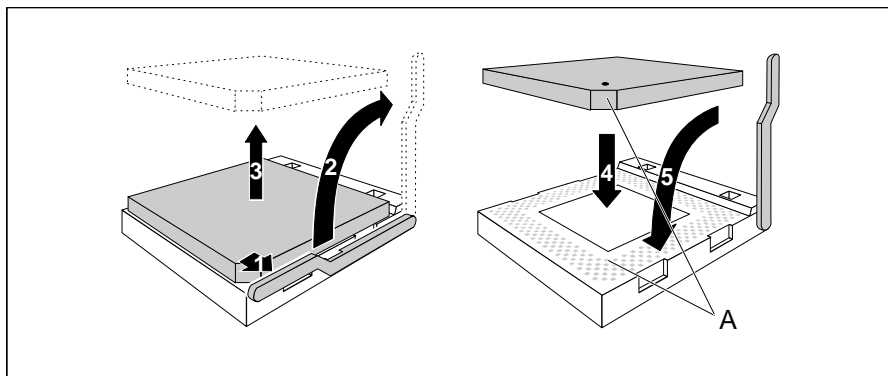
64MB DIMM SDRAM 8Mx64

Producer	Part.-No
NEC	MC-458CB644F-A10
SAMSUNG	KMM366S823AT-G2

128MB DIMM SDRAM 16Mx64

Producer	Part.-No
NEC	MC-4516CD644F-A10
SAMSUNG	KMM366S1623AT-G2

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.
- ▶ Set the switches 1, 2, 3 and 4 depending on the processor which is installed.

Setting the processor core voltage

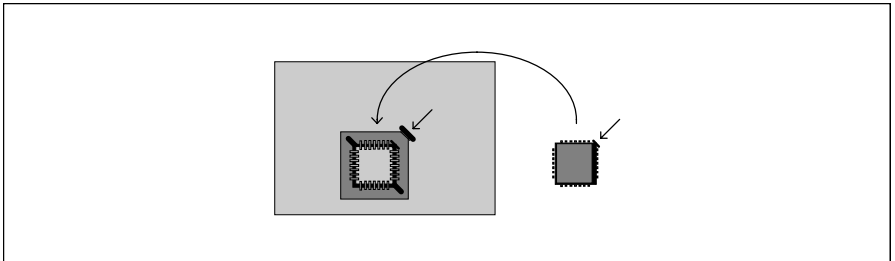


The jumpers may only be set as specified in the table below for the particular processor used!

Processor type	Jumper for processor core voltage	Jumper for the supply voltage of an AMD-K5
Intel	not inserted	not inserted
AMD-K5	not inserted	both inserted
AMD-K6 - 166 AMD-K6 - 200	connected to 1-2	both inserted
AMD-K6 - 233	connected to 2-3	not inserted

Upgrading the wavetable module

If the system board is prepared for upgrading with a single-chip wavetable module (Crystal CS9236), the upgrade is carried out as shown in the figure.



Replacing the lithium battery

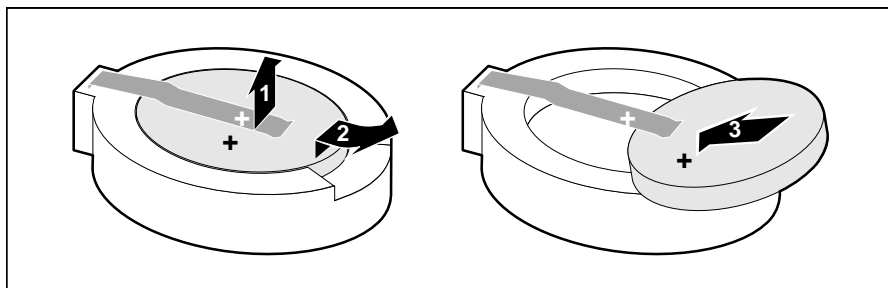


Incorrect replacement of the lithium battery may lead to a risk of explosion.

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.

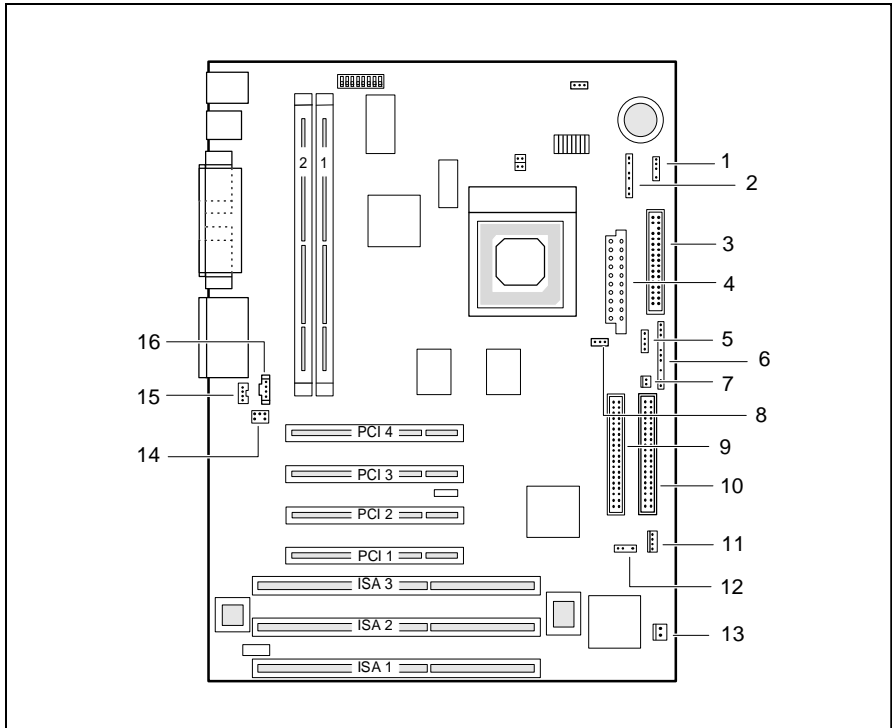
Make sure that you insert the battery the right way round. The plus pole must be on the top!



- ▶ 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).

Connectors and resources

Overview of connections



1 = Infrared interface

2 = RESET switch

3 = Floppy disk drive

4 = Power supply

5 = SCSI LED

6 = LED indicators in front panel

7 = Power on switch

8 = Fan

9 = IDE drives 1 and 2 (primary)

10 = IDE drives 3 and 4 (secondary)

11 = I²C connector

12 = External loudspeaker

13 = Remote on via fax/modem

14 = Voice modem

15 = AUX Line in

16 = CD Line in

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

Resource table

	assigned IRQ	possible IRQ	Possible Address	Possible DMA
Keyboard	IRQ1			
IrDA / COM2	IRQ3		02F8, 03F8 02E8, 03E8	
Serial interface COM1	IRQ4		03F8, 02F8 03E8, 02E8	
Floppy disk drive controller	IRQ6			DMA2
Parallel interface LPT1	IRQ7	IRQ5, IRQ7	0278, 0378	DMA1, DMA3
RTC	IRQ8			
Audio controller Joystick: Base address: MPU 401: Adlib:		IRQ5, IRQ7, IRQ9, IRQ11; IRQ12; IRQ15	0200-0207 0220-022F 0240-024F 0260-026F 0280-028F 0300-0301 0330-0331 0338-038B	DMA1, DMA3, DMA0
USB controller	IRQ11			
Mouse controller	IRQ12			
Numeric processor	IRQ13			
IDE controller 1	IRQ14			
IDE controller 2	IRQ15			

"assigned IRQ" = interrupts assigned as shipped

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

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

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



MPU 401: If you want to use external MIDI devices (for example a MIDI keyboard), you must assign an interrupt for the MPU 401 (MIDI interface). Detailed information is provided in the audio documentation on the driver and utility CD.

Please note that a resource cannot be used by two applications at the same time.

Power supply

For a PC equipped as standard we recommend a 145W power supply with 3.3 V and 5 V auxiliary voltages, e.g.:

Voltage	Max. deviation	Max. current
+ 5 V	+/- 5 %	18 A
- 5 V	+/- 10 %	0,3 A
+ 12 V	+/- 10 %	4,2 A
- 12 V	+/- 10 %	0,4 A
+ 3.4 V	+/- 5 %	10 A
+ 5.0 V (aux)		20 A

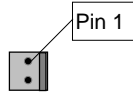
PCI slot configuration and setting

PCI-SLOT	IDSEL	Device number
PCI-SLOT 1	ADR 28	11h
PCI-SLOT 2	ADR 29	12h
PCI-SLOT 3	ADR 30	13h
PCI-SLOT 4	ADR 31	14h

Pin-Assignment

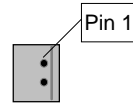
Power ON Switch-Connector

<i>Pin</i>	<i>Signal</i>
1	GND
2	Power-On Pulse (low asserted)



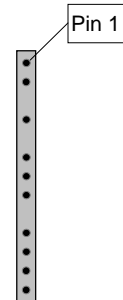
Faxcard-On-Connector

<i>Pin</i>	<i>Signal</i>
1	GND
2	Remote On



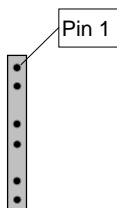
Front Panel Connector 1

<i>Pin</i>	<i>Signal</i>
1	Boot Lock
2	+ Standby LED
3	Key
4	+ Power LED
5	Key
6	- Standby / Power LED
7	n.c.
8	GND
9	Key
10	+ HD LED
11	HD LED
12	HD LED
13	+ HD LED



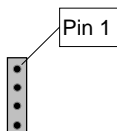
Front Panel Connector 2

Pin	Signal
1	Powergood / Reset
2	GND
3	Key
4	n.c.
5	n.c.
6	Key
7	n.c.
8	GND



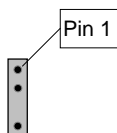
SCSI-LED Connector

Pin	Signal
1	n.c.
2	HD-LED
3	HD-LED
4	n.c.



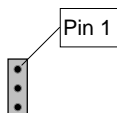
Speaker Connector

Pin	Signal
1	VCC
2	GND
3	Key
4	SPEAKER OUT



FAN Connector (symmetrical)

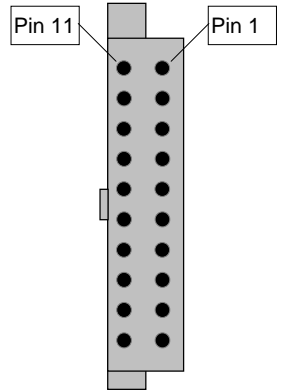
Pin	Signal
1	GND
2	+ 12 V
3	GND



ATX-Power-Supply-Connector

Pin	Signal
11	3.3 V
12	- 12 V
13	GND
14	PS-ON
15	GND
16	GND
17	GND
18	- 5 V
19	5 V
20	5 V

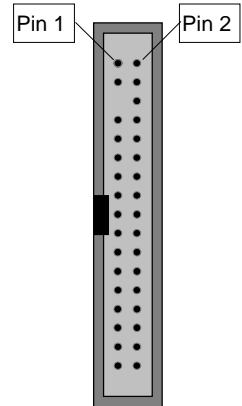
Pin	Signal
1	3.3 V
2	3.3 V
3	GND
4	5 V
5	GND
6	5 V
7	GND
8	Power OK
9	5 V SB
10	12 V



Floppy Connector

Pin	Signal
1	GND
3	GND
5	Key
7	GND
9	GND
11	GND
13	GND
15	GND
17	GND
19	GND
21	GND
23	GND
25	GND
27	GND
29	GND
31	GND
33	GND

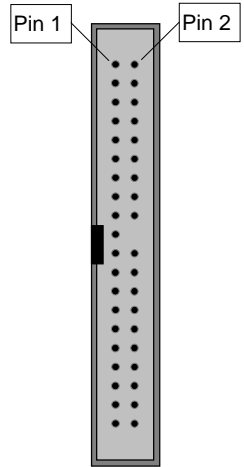
Pin	Signal
2	FDHDIN
4	n.c.
6	n.c.
8	Index
10	Motor Enable A
12	Drive Select B
14	Drive Select A
16	Motor Enable B
18	Step DIR
20	Step Pulse
22	Write Data
24	Write Enable
26	Track 0
28	Write Protect
30	Read Data
32	Side 1 Select
34	Disk Change



PCI-IDE Connector

Pin	Signal
1	Reset Drive
3	Data 7
5	Data 6
7	Data 5
9	Data 4
11	Data 3
13	Data 2
15	Data 1
17	Data 0
19	GND
21	DRQ
23	I/O Write
25	I/O Read
27	IORDY
29	DACK
31	IRQ
33	ADR 1
35	ADR 0
37	Chip Select 1
39	IDE-LED

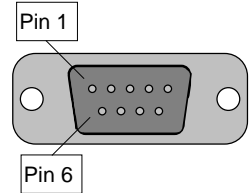
Pin	Signal
2	GND
4	Data 8
6	Data 9
8	Data 10
10	Data 11
12	Data 12
14	Data 13
16	Data 14
18	Data 15
20	Key
22	GND
24	GND
26	GND
28	Cable Select
30	GND
32	n.c.
34	n.c.
36	ADR 2
38	Chip Select 3
40	GND



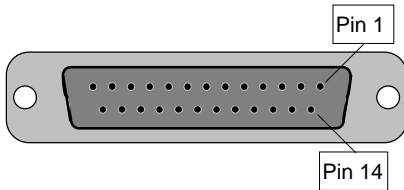
Serial Port 1 (V24) / Serial Port 2

Pin	Signal
1	DCD 1
2	SIN 1
3	SOUT 1
4	DTR 1
5	GND

Pin	Signal
6	DSR 1
7	RTS 1
8	CTS 1
9	RI 1 (Remote On)



Parallel Port

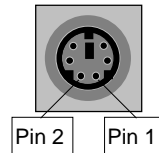


<i>Pin</i>	Signal
1	STROBE
2	LPT DAT 0
3	LPT DAT 1
4	LPT DAT 2
5	LPT DAT 3
6	LPT DAT 4
7	LPT DAT 5
8	LPT DAT 6
9	LPT DAT 7
10	ACK
11	BUSY
12	PEMTY
13	SELECT

<i>Pin</i>	Signal
14	AUTOFD
15	ERROR
16	INIT
17	LPT SEL
18	GND
19	GND
20	GND
21	GND
22	GND
23	GND
24	GND
25	GND

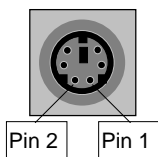
Keyboard Port Connector

<i>Pin</i>	Signal
1	KBD DAT
2	n.c. (optional MOUSE DAT)
3	GND
4	VCC
5	KBD CLK
6	Key ON/OFF (optional MOUSE CLK)



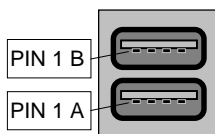
Mouse Port Connector

<i>Pin</i>	Signal
1	MOUSE DAT
2	n.c.
3	GND
4	VCC
5	MOUSE CLK
6	n.c.

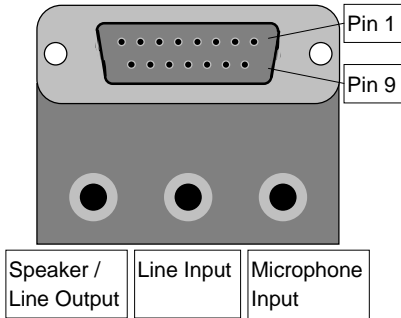


USB Connector A / B

<i>Pin</i>	Signal
1	VCC
2	DATA_NEGATIVE
3	DATA_POSITIVE
4	GND



Audio/Gameport-Connector

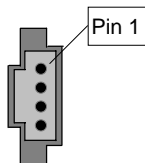


Pin	Signal
1	GAME_VCC
2	JOY_PORT_L<0>
3	XJOY_TIMER_A<0>
4	GND
5	GND
6	XJOY_TIMER_A<1>
7	JOY_PORT_L<1>
8	GAME_VCC

Pin	Signal
9	GAME_VCC
10	JOY_PORT_L<2>
11	XJOY_TIMER_A<2>
12	XMIDI_OUT_H
13	XJOY_TIMER_A<3>
14	JOY_PORT_L<2>
15	XMIDI_EXT_IN_H

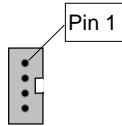
Internal CD-ROM Audio Connector

Pin	Signal
1	Left CD Audio Input
2	GND
3	GND
4	Right CD Audio Input



Internal MPEG Audio Connector

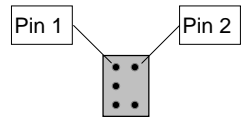
Pin	Signal
1	GND
2	Left MPEG Audio Input
3	GND
4	Right MPEG Audio Input



Internal Voice Modem Connector

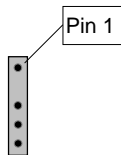
Pin	Signal
1	Speaker Input from MODEM
3	GND
5	Microphone Output to MODEM

Pin	Signal
2	n.c.
4	Key
6	n.c.



Infrared Connector

Pin	Signal
1	VCC
2	Key
3	IRDA_RX
4	GND
5	IRDA_TX



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Systembaugruppe D1034

System board D1034 - PIN-Assignment

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System board D1034

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