SYSTEM BOARD
D1320/D1321/D1322

ADDITIONAL TECHNICAL MANUAL

FUJITSU COMPUTERS
SIEMENS

Are there ...

... any technical problems or other questions you need clarified?

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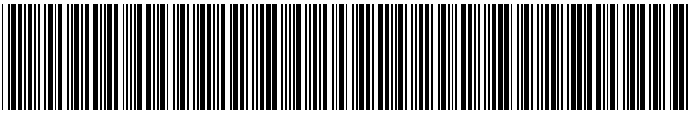


A26361-D1322-Z180-1-7619

System Board D1320/D1321/D1322

Additional Technical Manual

August 2001 edition

Contents

Introduction

Depending on the configuration chosen, some of the hardware components described may not be available on your system board.

You will find further information e. g. in the complete system board Technical Manual and in the "BIOS Setup" description.

Further information regarding drivers is provided on the supplied drivers diskettes or on the "Drivers & Utilities" or "ServerStart" CD. For detailed information please read the "Installing drivers" chapter. The latest BIOS version and drivers can be found on the internet under *http://www.fujitsu-siemens.com/en/service*.

Computer system boards and components contain very delicate IC chips. To protect them against damage caused by static electricity, you must follow these precautions:

- Use a grounded wrist strap.
- Unplug your computer before you remove any part of the casing.
- Place the system board and the components on a grounded antistatic pad whenever you remove them from the computer.

Hold components by the edge, do not touch any pins or connectors on them.

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

Features

The table shows assembly versions of this system board as an example.

Features	D1320-B	D1321-A	D1322-A
Chipset	Intel 845		
Board Size	µ-ATX	µ-ATX	µ-ATX
VGA onboard	-	-	-
Audio onboard (AC '97)	✓	✓	✓
LAN onboard / with Alert-on-LAN	- / -	✓ / -	✓ / ✓
Thermal Management onboard	-	-	✓
System Monitoring onboard	-	-	✓
Fujitsu Siemens Keyboard Power Button Support	-	-	✓
Buzzer onboard / int. Speaker Support	✓ / -	✓ / -	- / ✓

Internal Connectors

DIMM Sockets (SDRAM)	3	3	3
AGP Slot (1/2/4x, 32Bit, 66 MHz, 1.5 V)	1	1	1
PCI Slots (32Bit, 33 MHz, 5 V and 3.3 V)	3	3	3
ISA Slot	-	-	-
ACR Slot	-	-	-
CNR Slot	1	-	-
AMR Slot	-	-	-
IDE Interfaces (Ultra DMA/100)	2	2	2
Floppy Interface (up to 2.88 MB)	1	1	1
CD / AUX Audio Input	1 / 1	1 / 1	1 / 1
Front Panel Audio Output	1	-	-
Wake-on-LAN	1	1	1
Int. Serial Port / with SmartCard Support	- / -	- / -	- / -
Int. USB Connectors with SmartCard Support	-	1	1
Int. USB Connectors* / shared with CNR	2 / 1	2 / -	2 / -

External Connectors

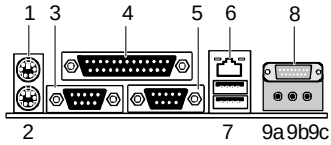
VGA	-	-	-
Audio Mic. / in / out (2 x 0.5 W / 8 Ω)	1 / 1 / 1	1 / 1 / 1	1 / 1 / 1
Game/MIDI	1	1	1
LAN (RJ-45)	-	1	1
PS/2 Mouse/Keyboard	1 / 1	1 / 1	1 / 1
Ext. Serial Port (FIFO, 16550 compatible)	2	2	2
Parallel Port (EPP/ECP)	1	1	1
USB Connectors external	2	2	2

Mechanics

Layout System board D1320 / D1321 / D1322

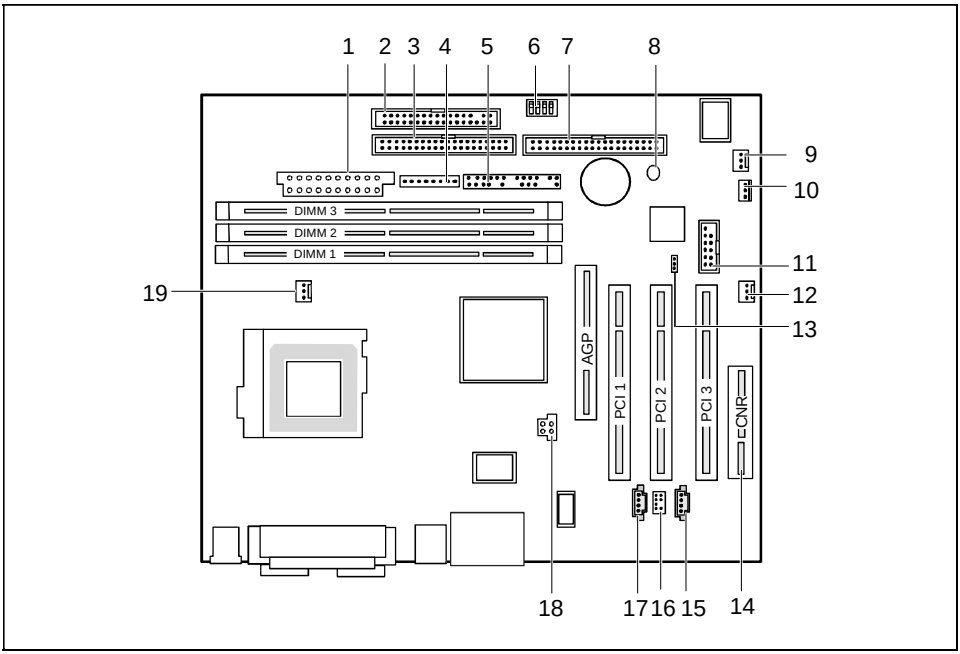
µ-ATX 9.6" x 9.6" (243.84 mm x 243.84 mm)

Some of the following connectors are optional and may therefore not be included on your system board.



1 = PS/2 mouse port
2 = PS/2 keyboard port
3 = Serial port 1
4 = Parallel port
5 = Serial port 2
6 = LAN port
7 = USB ports A and B
8 = Game/Midi port
8a = Audio Line-Out
Headphones
8b = Audio Line-In
8c = Audio Micro-In

The components and connectors marked are not necessarily present on the system board.



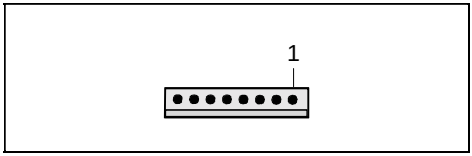
1 = Power supply ATX
2 = Floppy disk drive
3 = IDE drives 3 and 4 (secondary)
4 = Power supply monitoring
5 = Connector for control panel and loudspeaker
6 = Configuration switch
7 = IDE drives 1 and 2 (primary)
8 = Voltage indicator LED
9 = Fan 2
10 = Cover monitoring
11 = USB port C / D 1
12 = Wake On LAN
13 = Jumper USB
14 = CNR slot type A
15 = CD audio input
16 = Audio front panel
17 = AUX audio input
18 = Power supply +12 V
19 = Fan 1 (e. g. for the processor)

The components and connectors marked are not necessarily present on the system board.

Connectors

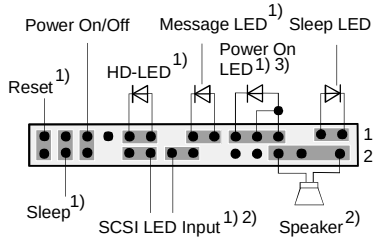
Some of the following connectors are optional!

Power supply monitoring



Pin	Signal
1	Monitor on
2	PS FAN off request (low asserted)
3	PS FAN full on (low asserted)
4	PS FAN pulse
5	SMB CLK
6	SMB DATA
7	VCC EEPROM
8	GND

Front panel connector



1) Cable is not included in the delivery scope.
2) The same interface
3) 2pin or 3pin connector possible

Pin	Signal	Pin	Signal
1	Sleep LED (Cathode)	2	Speaker
3	Sleep LED (Anode)	4	Key
5	Key	6	GND
7	PowerON_LED (Anode)	8[1)]	VCC or GND
9	PowerON_LED (Anode)	10	Key pin
11	PowerON_LED (Cathode)	12	Key pin
13	Message LED (Anode)	14	Key
15	Message LED (Cathode)	16	Not connected
17	Key	18	SCSI LED input (low asserted)
19	HD_LED (Anode)	20	SCSI LED input (low asserted)
21	HD_LED (Cathode)	22	Not connected
23	GND	24	Key
25	Power button (low asserted)	26	GND
27[2)]	reserved	28	GND
29	Reset button (low asserted)	30	GND

1) Pin 8 is connected to VCC if audio is not onboard.
Pin 8 is connected to GND if audio is onboard.

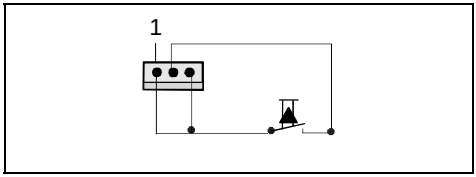
2) The sleep button (optional) functions only for operating systems with APM (not with ACPI).

Fan 2 connector

(system fan - supervised)

Pin	Signal
1	GND
2	+12 V
3	Fan sense

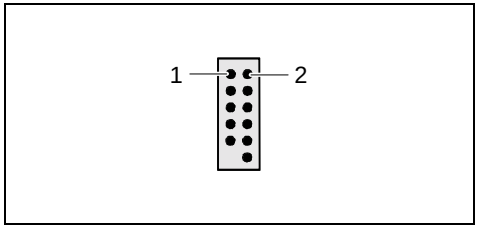
Intrusion connector for case open detect for optional push-button (opener)



Pin	Signal
1	GND
2	Case open (low asserted)
3	Intrusion switch present (low asserted)

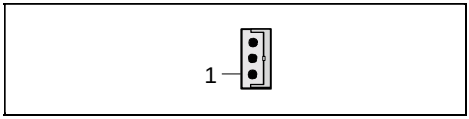
USB port C / D 1 - Dual channel

(internal or external via special wire)



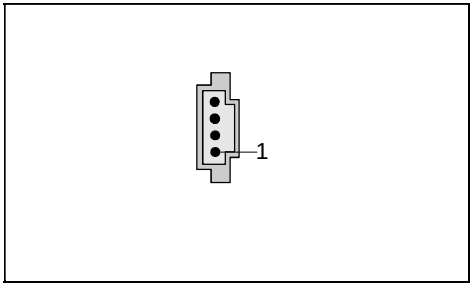
Pin	Signal	Pin	Signal
1	VCC Dual (fused max. 500mA and power supervision with over current detection)	2	Shield GND
3	Data negative	4	GND
5	Data positive	6	Data positive
7	GND	8	Data negative
9	Shield GND	10	VCC Dual (fused max. 500mA and power supervision with over current detection)
11	Key	12	Power supply on (CCR on) (max. 1 second low pulse)

Wake On LAN (WOL) connector



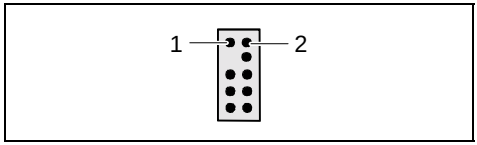
Pin	Signal
1	VCC Auxiliary
2	GND
3	Wake pulse (high asserted)

CD-ROM audio connector (internal)



Pin	Signal
1	Left CD audio input
2	CD GND
3	CD GND
4	Right CD audio input

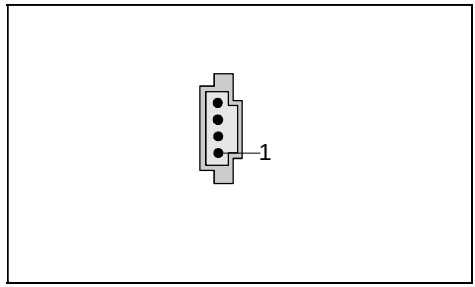
Audio front panel (internal)



Pin	Signal	Pin	Signal
1	Analog GND	2	Micro Input
3	Key	4	12 V
5	Analog GND	6	Analog GND
7	Analog GND	8	Analog GND
9	Left line output*	10	Right line output*

* as stuffing option this can be configured as Headphone Out, but the rear out will in this case be a Line Out only otherwise the rear out is a Headphone Out.

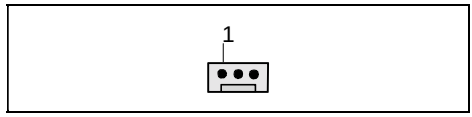
Auxiliary (MPEG, TV) audio connector (internal)



Pin	Signal
1	Left AUX audio input
2	Analog GND
3	Analog GND
4	Right AUX audio input

Fan 1 connector

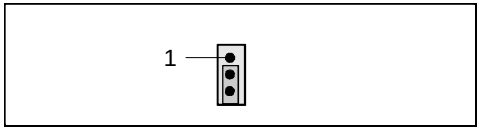
(processor fan - controlled and supervised, only for 3 pin fans)



Pin	Signal
1	GND
2	Controlled fan voltage (0 V / 6...12 V)
3	Fan sense

USB power

USB power jumper



Pin	Signal
1	VCC_DUAL
2	USB power connection
3	VCC

Jumper 2-3	Default setting: The USB interface is only powered in state S0 and S1. Wake up from ACPI S1 state is possible.
Jumper 1-2	If the power supply supports auxiliary voltage the USB interface is permanently powered except when the main supply is plugged off. Wake up from ACPI S1-S4 state is possible. Requirement: Configuration switch USB must be turned *On*.

Configuration

Functions controlled by the configuration switch

Switch	Function	SKP	RCV	FWP	PSS
1	Password skip	on	X	X	X
1	Off	off	X	X	X
2	Recovery BIOS	X	on	X	X
2	Off	X	off	X	X
3	USB wakeup support for port C / D	X	X	on	X
3	Off	X	X	off	X
4	Low auxiliary power supply (<2 A)	X	X	X	on
4	High auxiliary power supply	X	X	X	off

PSS must be switched on for systems with not enough 5 V auxiliary power for all its self powered wake devices (Wake On LAN, USB, PCI) in S3-S4.

Power

Power requirement for onboard components (worst case)

Source	Voltage	Maximum variation	Maximum current	Comment
Main power supply	-12 V	±5 %	0.04 A	
Main power supply	+12 V	±10 %	12 A	
Main power supply	+5.0 V	±5 %	5.2 A	
Main power supply	+3.3 V	±5 %	5.2 A	
Auxiliary power supply	+5.0 V	±5 %	2 A	

Power loadability

Fuse number	Maximum fuse current	Function	Maximum function current
1	750 mA	Keyboard port	Not specified
		Mouse port	Not specified
		Game port	Not specified
		VGA connector	Minimum 50 mA
2	500 mA	Universal serial bus (USB) Port A	500 mA
3	500 mA	Universal serial bus (USB) Port B	500 mA
4	1250 mA	Universal serial bus (USB) Port C	500 mA
		Universal serial bus (USB) Port D	500 mA

Documentation

- ► Insert the "Drivers & Utilities" CD.
- ► If the CD does not start automatically, run the *START.EXE* file in the main directory of the CD.
- ► Select your system board or your device.
- ► Select *Documentation*.
- ► Select - *Technical Manuals*
- ► Select - *Technical Manuals (BIOS)*

i

You may have to install the Acrobat Reader - Software on the CD-ROM (path: utls/acrobat) before reading!

For more details please read the according readme.txt files.

Installing drivers

- ► Insert the "Drivers & Utilities" CD.
- ► If the CD doesn't start automatically call the *START.EXE* file in the main directory of the CD.
- ► If the system board list is displayed select the system board or select under *Driver* the operating system used and the audio and video drivers.

Upgrading main memory

Support:	The system needs at least one module.
Size:	From 32 Mbytes up to 3 GB SDRAM
Technology:	PC133 unbuffered DIMM modules. 168 pin, 3.3 V, 64 bit, 72 bit (with ECC), SDRAM 8 M, 16 M, 32 M, 64M and 128M x 64 bit 8 M, 16 M, 32 M, 64M and 128M x 72 bit
Granularity:	For one socket 32, 64, 128, 256, 512 MB or 1GB Up to 3 double sided PC133 DIMM modules

Troubleshooting

Message BIOS update

The System BIOS provides optimum support for the processor you have chosen. If the message

`BIOS update for installed CPU failed`

appears the microcode required for the processor inserted must still be loaded. Further information on this is available in the "BIOS Setup" manual on the "Drivers & Utilities" CD provided.

The screen stays blank

If your screen stays blank this may have the following cause:

The wrong RAM memory module has been inserted

- ► See the chapter "Main Memory" for information which memory modules can be used.

ACPI S3 (Save-to-RAM) and/or ACPI S4 (Save-to-Disk) doesn't work

This system board is fully compliant for ACPI S3 and S4. Therefore it is PC99 certified by Microsoft.

If you have any problems with ACPI please ensure that all of your components are supporting ACPI S3 and S4.

- – Operating system
- – Hardware and drivers of controllers (e. g. VGA, audio, LAN, SCSI controllers).

For further information please refer to *http://developer.intel.com/technology/iapc/involve.htm* .