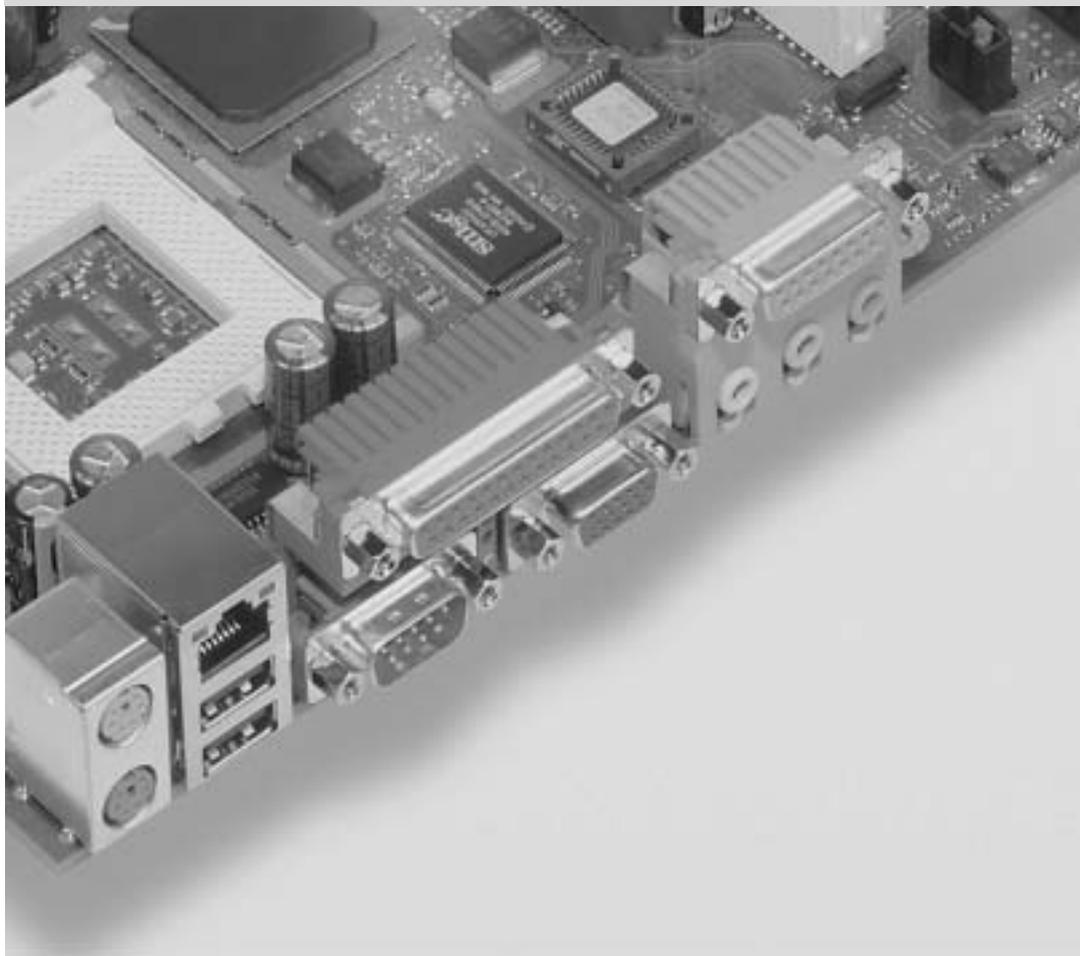


# COMPONENT

.com

Additional Technical Manual

## System board D1421



## Are there ...

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

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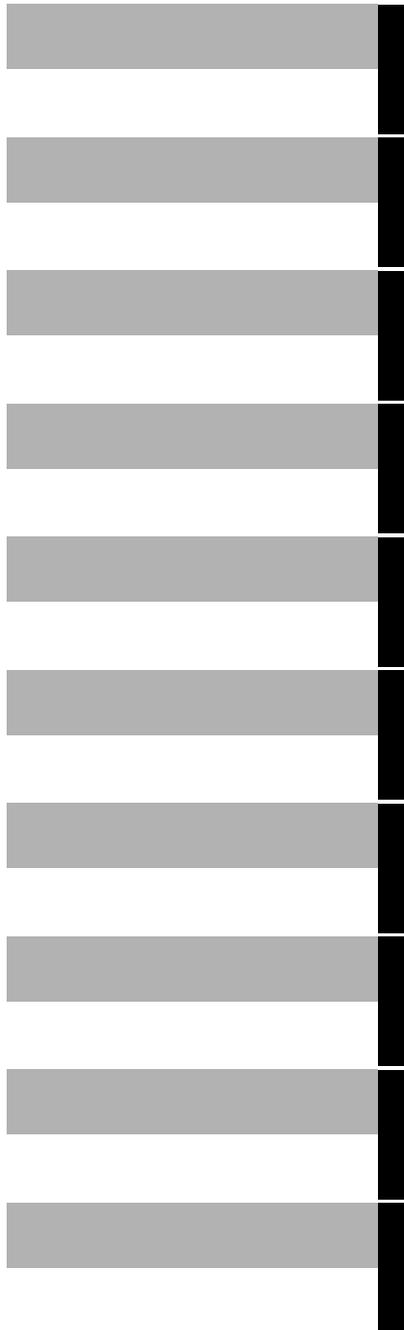


A26361-D1421-Z180-1-7619

# **System Board D1421**

## **Additional Technical Manual**

**April 2002 edition**



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# 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.

**D1421-A**

**Onboard Features**

Chipset	845GL
Board Size	µ-ATX
VGA	✓
Audio	✓
Buzzer / int. Speaker Support	✓ / -
LAN / with Alert-on-LAN	✓ / -
HI-SPEED USB	✓
SmartCard Support (USB / serial)	
Thermal Management	-
System Monitoring	-
Fujitsu Siemens Keyboard Power Button Support	✓

**Internal Connectors**

DIMM Sockets (DDR, PC2100)	2
AGP Slot (4x, 32Bit, 66 MHz, 1.5 V)	-
PCI Slots (32Bit, 33 MHz, 5 V and 3.3 V)	3
CNR Slot	-
IDE Interfaces (Ultra DMA/100)	2
Floppy Interface (up to 2.88 MB)	1
S/PDIF* (digital Audio)	-
CD / AUX Audio Input	1 / 1
Frontpanel Audio (headphone, microphone)	1
Wake-on-LAN	-
USB ports* (2.0, ~480Mb/s)	2
Serial Ports* (FIFO, 16550 compatible)	1
FAN Connectors (PSU / FAN1 / FAN2 / FAN3)	- / 1 / - / -
SMBus Connector* (Case Temperature)	-
Intrusion Connector* (Case Open)	1
Power Connectors ATX / ATX12V / AGP PRO	1 / 1 / -

**External Connectors**

VGA	1
Audio Mic. in / Line in / Line out (2 x 0.5 W / 8 Ω)	1 / 1 / 1
Game/MIDI	-
LAN (RJ-45)	1
PS/2 Mouse/Keyboard	1 / 1
USB Ports (2.0, ~480Mb/s)	2
Serial Ports (FIFO, 16550 compatible)	1
Parallel Port (EPP/ECP)	1

\* for use with internal devices or optional Front- or Rearpanel

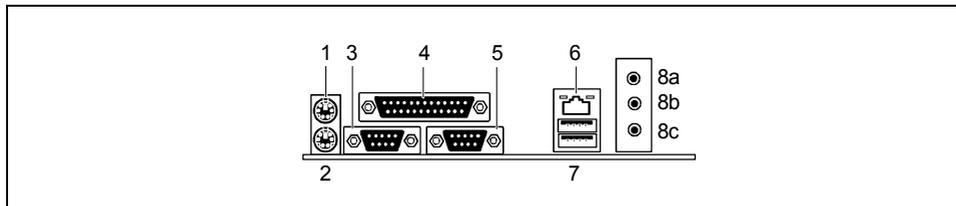
\*\* not supported by standard Power Supplies

## Mechanics

### Layout System board D1421

µATX 9.6" x 9.6" (243.84 mm x 243.84 mm)

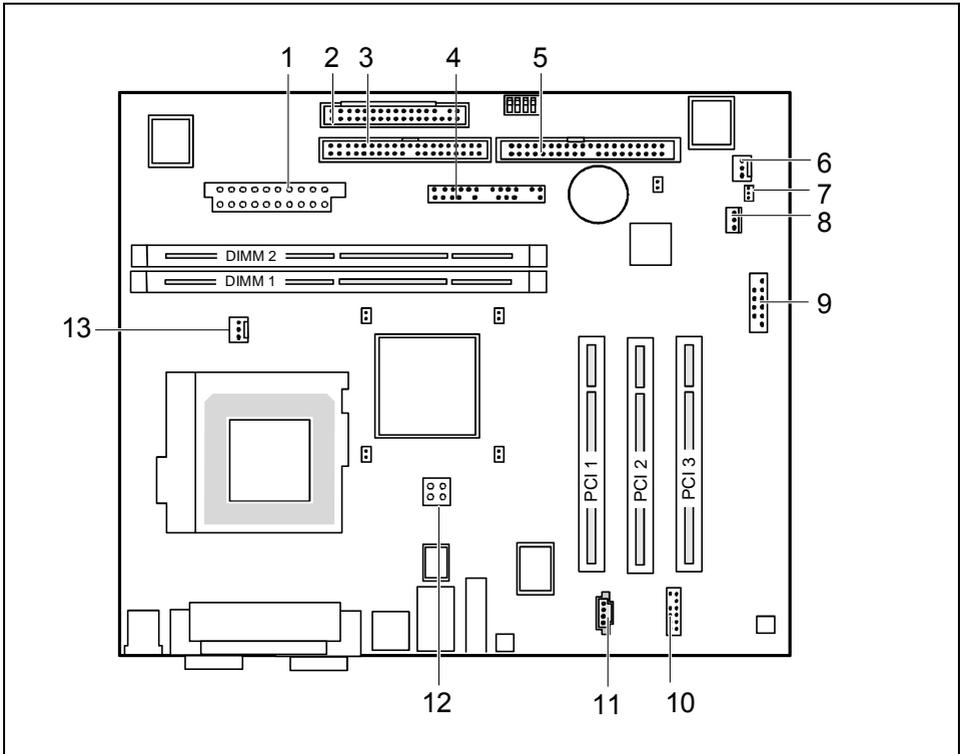
Some of the following connectors are optional and may therefore not be included on your system board.



- 1 = PS/2 mouse port
- 2 = PS/2 keyboard port
- 3 = Serial port
- 4 = Parallel port
- 5 = VGA

- 6 = LAN connector
- 7 = USB ports A and B
- 8a = Audio Line-Out
- 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               | 8 = Intrusion           |
| 2 = Floppy Disk Drive              | 9 = USB ports C / D     |
| 3 = IDE drives 3 and 4 (secondary) | 10 = Audio Frontpanel   |
| 4 = Front panel                    | 11 = CD Audio Input     |
| 5 = IDE drives 1 and 2 (primary)   | 12 = Power Supply +12 V |
| 6 = Fan 2                          | 13 = Fan 1              |
| 7 = OEM LED                        |                         |

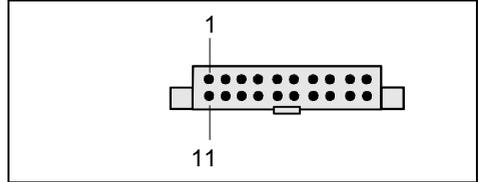
The components and connectors marked are not necessarily present on the system board.

# Connectors



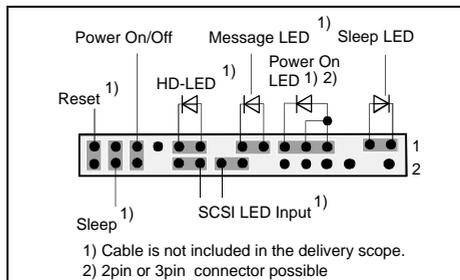
Some of the following connectors are optional!

## Power supply ATX connector



Pin	Signal	Pin	Signal
1	+3.3V(P2V2P)	11	+3.3V(P2V2P)
2	+3.3V(P2V2P)	12	-12V (P12VN)
3	GND	13	GND
4	+5V (VCC)	14	PS on (low asserted)
5	GND	15	GND
6	+5V (VCC)	16	GND
7	GND	17	GND
8	Powergood (high asserted)	18	-5V (5PVN)
9	+5V Auxiliary (VCC Aux)	19	+5V (VCC)
10	+12V (P12VP)	20	+5V (VCC)

## Front panel connector

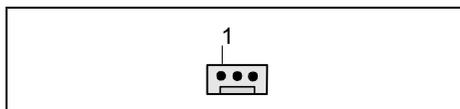


1) The sleep button (optional) functions only for operating systems with APM (not with ACPI).

Pin	Signal	Pin	Signal
1	Sleep LED (Cathode)	2	In case of 'Sound via internal system speaker' support: Speaker negative Otherwise: not connected
3	Sleep LED (Anode)	4	Key
5	Key	6	GND
7	PowerON_LED (Anode)	8	In case of 'Sound via internal system speaker' support: Speaker positive Otherwise: not connected
9	PowerON_LED (Anode)	10	Key pin
11	Sleep LED and 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 <sup>1)</sup>	Sleep button (low asserted)	28	GND
29	Reset button (low asserted)	30	GND

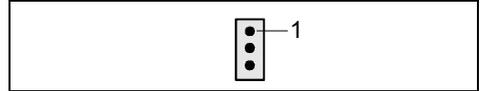
## Fan connector

(system fan - supervised)



Pin	Signal
1	GND
2	Fix Fan voltage (+12 V, max. 1 A)
3	NC

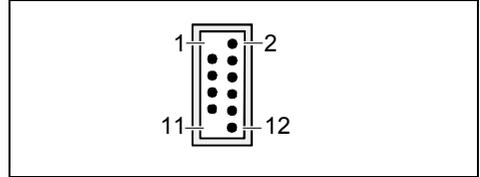
## OEM LED connector



Pin	Signal
1	Power On LED (Anode)
2	Power On LED (Anode)
3	Power On LED (Cathode)

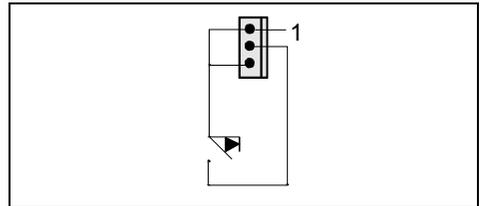
## UBS port C/D - dual channel

(internal or external via special wire)

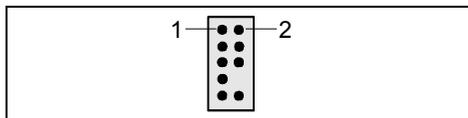


Pin	Signal	Pin	Signal
1	Key	2	Chipcardreader on
3	VCC C	4	VCC D
5	Data negative C	6	Data positive D
7	Data negative C	8	Data positive D
9	GND	10	GND
11	Key	12	not connected

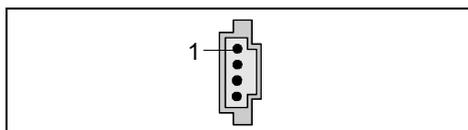
## Intrusion connector for case open detect for optional push-button (opener)



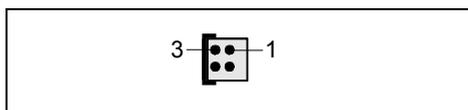
Pin	Signal
1	GND
2	Case open (low asserted)
3	Intrusion switch present (low asserted)

**Audio front panel connector**

Pin	Signal	Pin	Signal
1	Micro input	2	Analog GND
3	Micro bias	4	Analog VCC
5	Right line output	6	Right line return
7	NC	8	Key
9	Left line output	10	Left line return

**CD-ROM audio connector**

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

**Additional power supply**

Pin	Signal	Pin	Signal
1	GND	3	+12V
2	GND	4	+12V

## Configuration

### Functions controlled by the configuration switch

Switch	Function	SKP	RCV
1	Password skip enabled	on	
1	Password skip disabled	off	
2	Recovery BIOS enabled		on
2	Recovery BIOS disabled		off

## Power

### Power requirement for onboard components (worst case)

Source	Voltage	Maximum variation	Maximum current	Comment
Main power supply	+12 V	±5 %	3-6 (8) A	
Main power supply	-12 V	±10 %	0.05 A	
Main power supply	+5.0 V	±5 %	0.9 A	
Main power supply	+3.3 V	±5 %	2.2 (3.4) A	
Auxiliary power supply	+5.0 V	±5 %	0.35 (2) A	

### Power loadability

Fuse number	Maximum fuse current	Function	Maximum function current
1	750 mA	Keyboard port Mouse port VGA connector	Not specified Not specified 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	500 mA	Universal serial bus (USB) Port C	500 mA
5	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)*



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 and can manage two DDR modules.
Size:	From 128 Mbytes up to 2 Gbytes DDR
Technology:	DDR 200 or DDR 266 unbuffered DIMM modules. 184 pin, 2.5 V, 64 bit 4 internal banks required
Granularity:	For one socket 32, 64, 128, 256, 512 or 1024 MB
ECC support:	No
PC 266 support:	Up to 2 double sided DDR-266 DDR-DIMMs.

# 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>.