# SYSTEM BOARD D1192

ADDITIONAL TECHNICAL MANUAL

FUJITSU COMPUTERS SIEMENS

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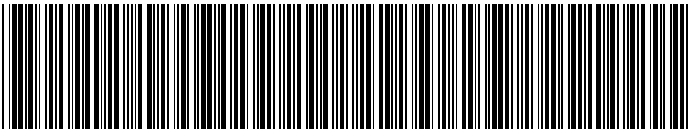

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# System Board D1192

## Additional Technical Manual

**September 2000 edition**

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# Introduction

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

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

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

# Features

| Function | Version D1192-A1X | Function | Version D1192-A1X |
|---|---|---|---|
| Processor socket | PGA 423 | System monitoring | x |
| Processor | Pentium 4 | Thermal Management | x |
| Formfactor | ATX | AOL with onboard LAN | x |
| Front Side Bus in MHz | 100 | Wake On LAN | x |
| Chipset | i850 | Chipcard reader | x |
| Memory sockets | 4 RIMM | Save to Disk (ACPI S4) | x |
| PCI slots | 5 | Save to RAM(ACPI S3) | x |
| AGP slot | 1 | LAN onboard | Ethernet Controller 82550 |
| CNR slot | 1 | Audio onboard | AD1885 |

Computer system boards and components contain very delicate IC chips. To protect them against damage caused from electric static, you have to follow some precautions:

- Unplug your computer when you work inside.
- Hold components by the edge, don't touch their leads.
- Use a grounded wrist strap.

Place the system board and the components on a grounded antistatic pad whenever you work outside the computer.

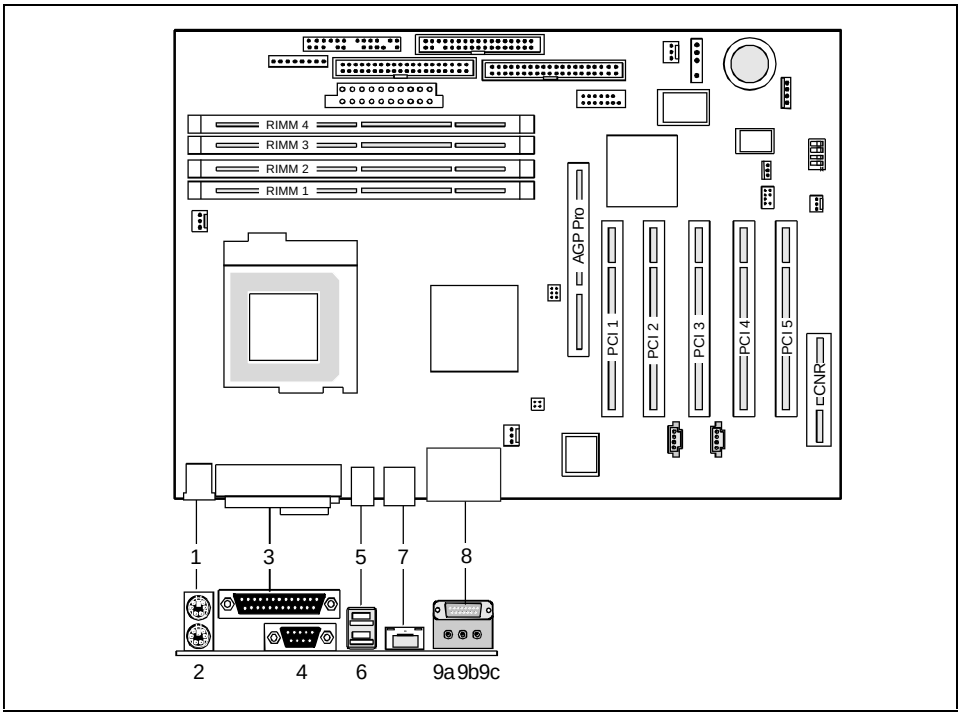
Once you have installed the system board, you should remove the battery protection (i.e. the thin plastic plate between battery and contact spring).

# Mechanics

**Layout**

ATX 12" x 8'' (304.8 mm x 203.2 mm)

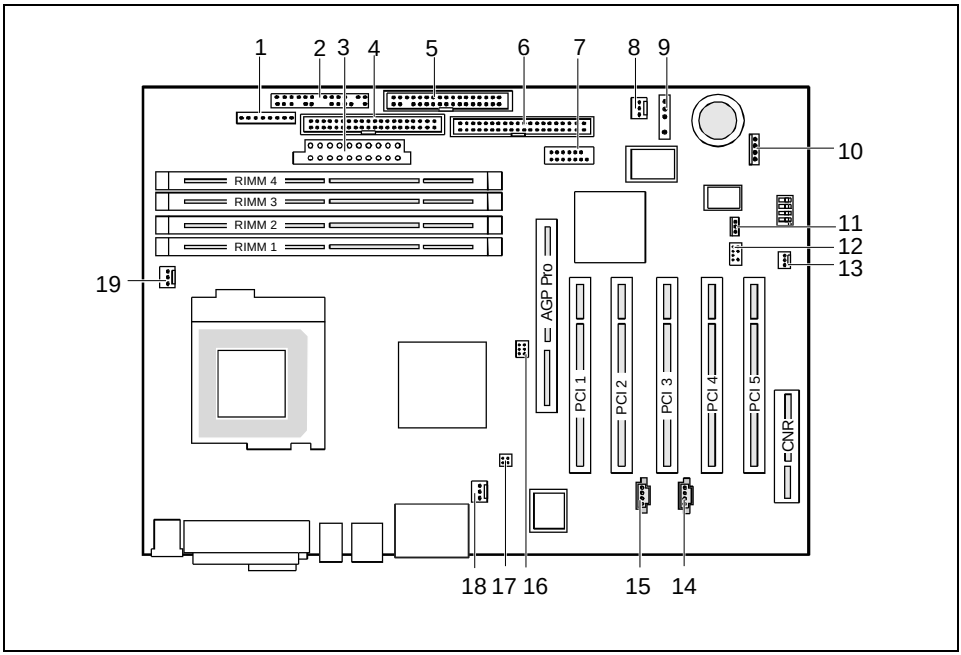
Some of the following connectors are optional and may therefore not be included on your system board.




1 = PS/2 mouse port
2 = PS/2 keyboard port
3 = Parallel port
4 = Serial port 1
5 = USB port 2
6 = USB port 1
7 = LAN port

1 = Game/Midi port
9a = Audio Line-Out
9b = Audio Line-In
9c = Audio Micro-In

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



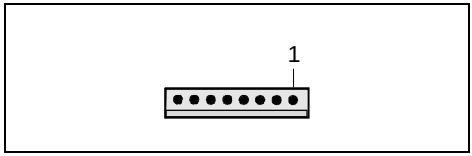

1 = Power supply monitoring
2 = Connector for control panel and loudspeaker
3 = Power supply
4 = IDE drives 3 and 4 (secondary)
5 = Floppy disk drive
6 = IDE drives 1 and 2 (primary)
7 = Serial chipcard reader interface or serial port 2
8 = Fan 2 (AUX)
9 = IrDA
10 = I²C port
11 = Cover monitoring
12 = USB chipcard reader or USB front panel
13 = Wake On LAN (WOL)
14 = CD audio input
15 = AUX audio input
16 = Power supply +3.3 V for AGP Pro
17 = Power supply +12 V
18 = Fan (system)
19 = Fan 1 (for the processor)

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

# Connectors

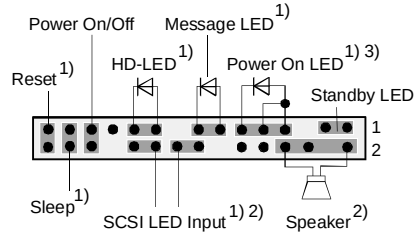
Some of the following connectors are optional!

## Power supply monitoring




| Pin | Signal |
|---|---|
| 1 | AC Outlet on (high asserted) |
| 2 | PS FAN Control (low asserted) |
| 3 | PS FAN full on (low asserted) |
| 4 | PS FAN pulse |
| 5 | SMB CLK |
| 6 | SMB DATA |
| 7 | VCC EEPROM (+3.3 V) |
| 8 | GND |

## Front panel connector



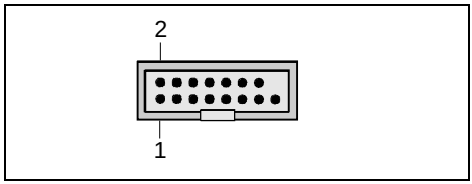

1) Cable is not included in the delivery scope.
2) The same interface
3) 2pin or 3pin connector possible

| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | GND | 2 | Speaker |
| 3 | Standby LED (Anode) | 4 | Key |
| 5 | Key | 6 | GND |
| 7 | PON_LED (Anode) | 8[1)] | VCC or GND |
| 9 | PON_LED (Anode) | 10 | Key pin |
| 11 | PON_LED (Cathode/GND)<br>Standby LED (Cathode/GND) | 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.

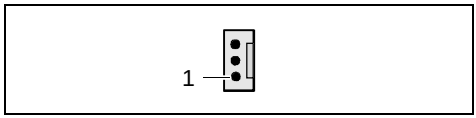
## Serial chipcard reader or internal serial port 2 (COM 2)

external via optional cable



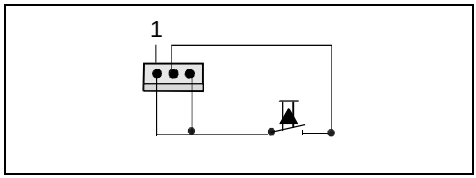

| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | DCD 2 | 2 | DSR 2 |
| 3 | SIN 2 | 4 | RTS 2 |
| 5 | SOUT 2 | 6 | CTS 2 |
| 7 | DTR 2 | 8 | PC_On_Strobe (TTL-Signal, low asserted) |
| 9 | GND | 10 | VCC Auxiliary |
| 11 | Not connected | 12 | VCC |
| 13 | Not connected | 14 | GND |
| 15 | GND | 16 | Key |

## Fan 2 connector (Auxiliary)



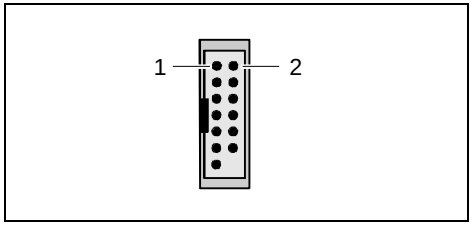

| Pin | Signal |
|---|---|
| 1 | GND |
| 2 | Controlled fan voltage (0 V / 6...12 V) |
| 3 | Fan sense |

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



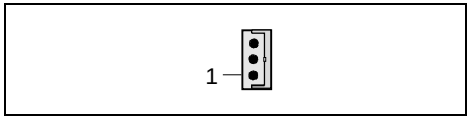

| Pin | Signal |
|---|---|
| 1 | GND |
| 2 | Case open (low asserted) |
| 3 | Intrusion switch present (low asserted) |

## USB chipcard reader



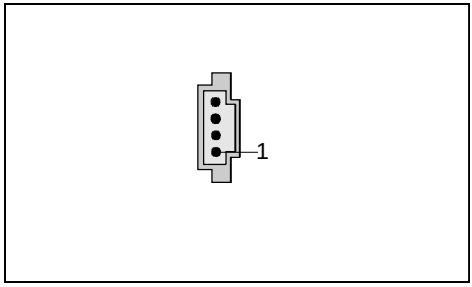

| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | P3V3P_DUAL | 2 | VCC |
| 3 | Data negative up | 4 | Data positive up |
| 5 | Data negative down | 6 | Data positive down |
| 7 | GND | 8 | GND |
| 9 | Chipcard present | 10 | VCC auxiliary |
| 11 | P3V3P | 12 | Power OK (high asserted) |
| 13 | Chipcard reader On (low pulse) | 14 | Key |

## Wake On LAN (WOL) connector



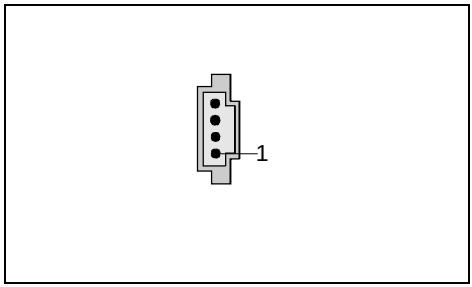

| Pin | Signal |
|---|---|
| 1 | VCC Auxiliary |
| 2 | GND |
| 3 | Wake pulse (high asserted) |

## Auxiliary (MPEG, TV) audio connector (internal)



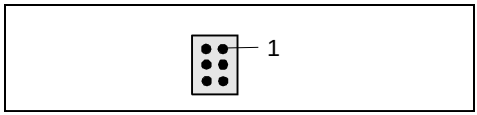

| Pin | Signal |
|---|---|
| 1 | Left AUX audio input |
| 2 | Analog GND |
| 3 | Analog GND |
| 4 | Right AUX audio input |

## CD-ROM audio connector (internal)



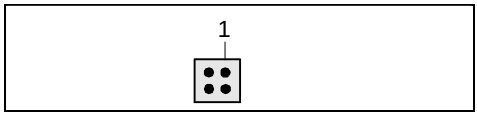

| Pin | Signal |
|---|---|
| 1 | Left CD audio input |
| 2 | CD GND |
| 3 | CD GND |
| 4 | Right CD audio input |

## Power supply +3.3 V for AGP Pro



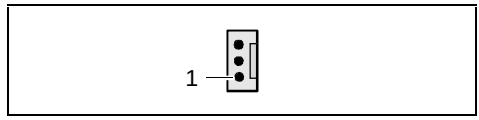

| Pin | Signal |
|---|---|
| 1 | GND |
| 2 | +3.3 V |
| 3 | +3.3 V |
| 4 | GND |
| 5 | GND |
| 6 | +3.3 V |

## Power supply +12 V



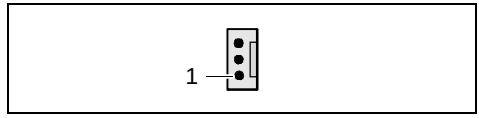

| Pin | Signal |
|---|---|
| 1 | GND |
| 2 | GND |
| 3 | +12 V |
| 4 | +12 V |

### Fan 3 connector (system)




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

### Fan 1 connector (processor)




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

## Configuration

### Functions controlled by the configuration switch

| Function | SKP | RCV | FWP | AUX |
|---|---|---|---|---|
| Password skip | on | X | X | X |
| Off | off | X | X | X |
| Recovery BIOS | X | on | X | X |
| Off | X | off | X | X |
| Floppy write protect | X | X | on | X |
| Off | X | X | off | X |
| Auxiliary Current low (0.7 A) | X | X | X | on |
| Auxiliary Current (2 A) | X | X | X | off |

# Power

## Power requirement

| Source | Voltage | Maximum variation | Maximum current | Comment |
|---|---|---|---|---|
| Main power supply | +5.0 V | ±5 % | 8.0 A | |
| Main power supply | +12 V | ±10 % | 9.0 A | |
| Main power supply | -12 V | ±10 % | 0.5 A | |
| Main power supply | +3.3 V | ±5 % | 3.0 A | |
| Auxiliary power supply | +5.0 V | ±5 % | 2 A | |

For systemboard with processor and memory. Without AGP and PCI cards.

## 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 |
| 2 | 750 mA | Universal serial bus (USB) Port A | 500 mA |
| 3 | 750 mA | Universal serial bus (USB) Port B | 500 mA |
| 4 | 750 mA | Universal serial bus (USB) Port C | 500 mA |
| 5 | 750 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 two modules and can manage at most four RDRAM modules.

Size: From 128 Mbytes up to 2 Gbytes RDRAM

Technology: 184 Pin, 2.5V, 16/18Bit, PC800/PC600 RDRAM
8M, 16M and 32M x 64Bit
8M, 16M and 32M x 72Bit (with ECC)

Granularity: For two sockets 128, 129, 256, 512 Mbyte or 1 Gbyte

You must not combine memory modules from different manufacturer, different types of modules, or modules of different capacities in the same bank. Different memory capacities are permitted in the various banks. Example: 2 x 128 MB in bank 0 and 2 x 64 MB in bank 1 are permissible; 64 MB + 128 MB in bank 0 are not permissible.

**All locations must always** be occupied. Missing memory modules must be replaced with a C-RIMM. This C-RIMM must then be installed in the order of the locations **behind** the RIMM:
Location bank 0 = RIMM
Location bank 1 = C-RIMM.

| **Technology** | **Memory** | | | **Number of RDRAM Chips per channel** |
|---|---|---|---|---|
| | **Net memory** | **Gross memory without ECC** | **Gross memory with ECC** | |
| **[Mbit]** | **[Mbyte]** | **[Mbyte]** | **[Mbyte]** | |
| 64 | 64 | 64 | 72 | 8 |
| | 128 | 128 | 144 | 16 |
| 128 | 64 | 64 | 72 | 4 |
| | 128 | 128 | 144 | 8 |
| | 256 | 256 | 288 | 16 |
| 256 | 128 | 128 | 144 | 4 |
| | 256 | 256 | 288 | 8 |
| | 512 | 512 | 576 | 16 |

# 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* .