Introduction

This technical manual applies for the mainboard D981. 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.
Further information e. g. the complete **technical manual for the D981** and the **reference manual for the BIOS-Setup** are provided on the **„Drivers & Utility“ CD**. For detailed information please look at chapter 3.

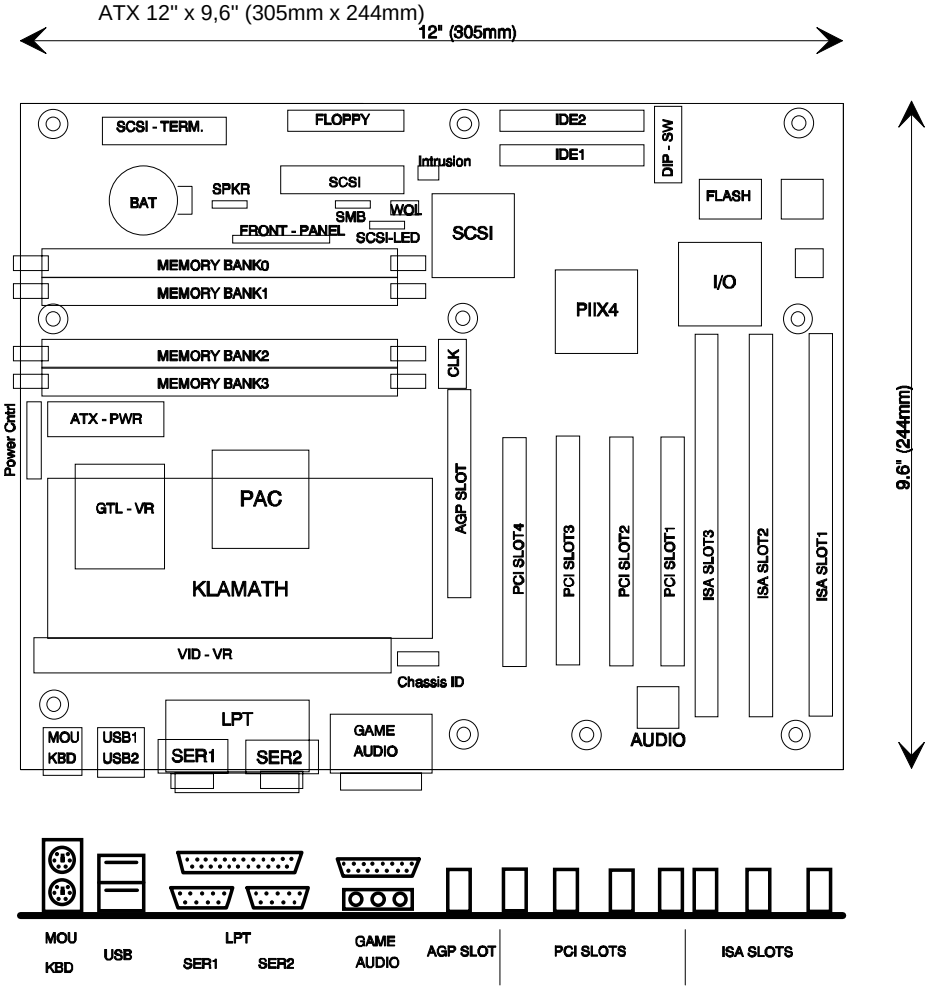
1 Features

Version	**D981-A**	**D981-B**	**D981-E**
Processor	Intel Pentium II 233 - 333 MHz	Intel Pentium II 233 - 333 MHz	Intel Pentium II 233 - 333 MHz
IrDA	√	√	√
Video	–	–	–
Audio	√	√	–
Socket for Wavetable-Upgrade	√	√	–
SCSI	√	–	–
USB	√	√	√
2nd serial Interface	√	√	√
KBD-on	√	√	√
BIOS Fax	–	–	–
Frontpanel II Connector	–	–	√
WOL (Wake on LAN)	√	√	–

2 Mechanics

2.1 Layout

ATX 12" x 9,6" (305mm x 244mm)



CAUTION:

Computer mainboards 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 mainboard and the components on a grounded antistatic pad whenever you work outside the computer

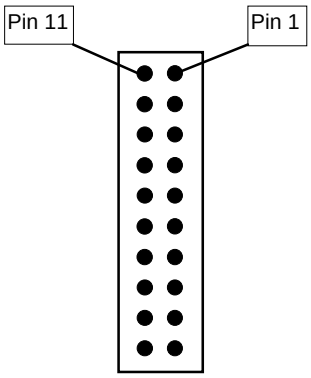
2.2 Assembling Slot 1

Before inserting the CPU, you have to assembly the including retention module. Please be carefully to avoid a damage of the mainboard.

2.3 Connectors, DIP-Switch, Jumpers

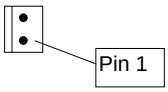
2.3.1 Power-Supply Connector 1

Pin	Signal
1	+ 3.3V
2	+ 3.3V
3	GND
4	+ 5V
5	GND
6	+ 5V
7	GND
8	POWER GOOD
9	+ 5V SB
10	+ 12V
11	+ 3.3V
12	- 12V
13	GND
14	PS ON
15	GND
16	GND
17	GND
18	- 5V
19	+ 5V
20	+ 5V



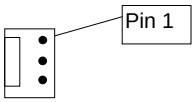
2.3.2 Power ON Switch-Connector

Pin	Signal
1	VCCHELP over 1K
2	Power-On Puls (high Asserted)



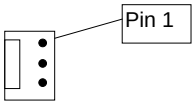
2.3.3 CPU-FAN Connector

Pin	Signal
1	GND
2	FAN Power Supply
3	Sense



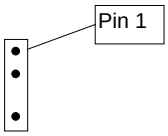
2.3.4 SYS-FAN Connector (optional)

Pin	Signal
1	GND
2	+ 12 V
3	Sense



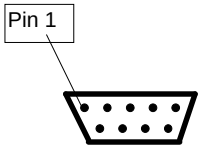
2.3.5 Speaker Connector

Pin	Signal
1	VCC
2	GND
3	Key
4	SPEAKER OUT



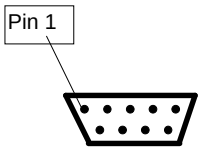
2.3.6 Serial Port 1 (V24)

Pin	Signal	Pin	Signal
1	DCD 1	6	DSR 1
2	SIN 1	7	RTS 1
3	SOUT 1	8	CTS 1
4	DTR 1	9	RI 1 (Remote On)
5	GND		



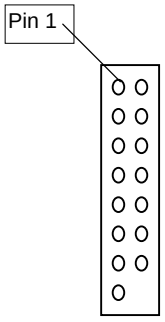
2.3.7 Serial Port 2 (V24)

Pin	Signal	Pin	Signal
1	DCD 1	6	DSR 1
2	SIN 1	7	RTS 1
3	SOUT 1	8	CTS 1
4	DTR 1	9	RI 1
5	GND		



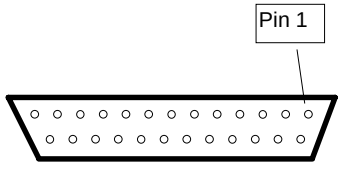
2.3.8 Serial Port1 for Cardreader

Pin	Signal	Pin	Signal
1	DCD 1	2	DSR 1
3	SIN 1	4	RTS 1
5	SOUT 1	6	CTS 1
7	DTR 1	8	PC_ON_Strobe
9	GND	10	VCCHELP
11	EXTSMI	12	VCC
13	RESETDRV	14	GND
15	GND	16	key



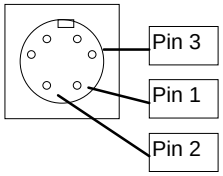
2.3.9 Parallel Port

Signal	Pin	Pin	Signal
STROBE	1	14	AUTOFD
LPT DAT 0	2	15	ERROR
LPT DAT 1	3	16	INIT
LPT DAT 2	4	17	LPT SEL
LPT DAT 3	5	18	GND
LPT DAT 4	6	19	GND
LPT DAT 5	7	20	GND
LPT DAT 6	8	21	GND
LPT DAT 7	9	22	GND
ACK	10	23	GND
BUSY	11	24	GND
PEMTY	12	25	GND
SELECT	13		



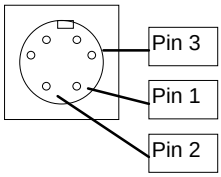
2.3.10 Keyboard Port Connector

Pin	Signal
1	KBD DAT
2	N.C.
3	GND
4	VCC
5	KBD CLK
6	Key ON/OFF



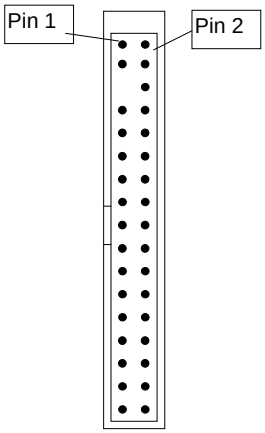
2.3.11 Mouse Port Connector

Pin	Signal
1	MOUSE DAT
2	N. C.
3	GND
4	VCC
5	MOUSE CLK
6	N. C.



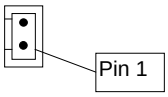
2.3.12 Floppy Connector

Pin	Signal	Pin	Signal
1	GND	2	FDHDIN
3	GND	4	N.C.
5	Key	6	N.C.
7	GND	8	Index
9	GND	10	Motor Enable A
11	GND	12	Drive Select B
13	GND	14	Drive Select A
15	GND	16	Motor Enable B
17	GND	18	Step DIR
19	GND	20	Step Pulse
21	GND	22	Write Data
23	GND	24	Write Enable
25	GND	26	Track 0
27	GND	28	Write Protect
29	GND	30	Read Data
31	GND	32	Side 1 Select



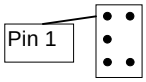
2.3.13 Remote-On-Connector (=FAX On)

Pin	Signal
1	GND
2	Remote On (Low active)



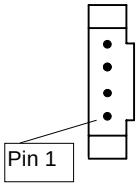
2.3.14 Voice Modem Connector

Pin	Signal	Pin	Signal
1	Series-RC to PCSPK	2	N.C.
3	AGND	4	key
5	Micro to Modem	6	N.C.



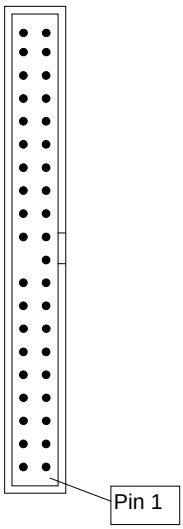
2.3.15 CD IN Connector

Pin	Signal
1	CD IN LEFT
2	GND
3	GND
4	CD IN RIGHT



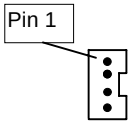
2.3.16 PCI-IDE Connector

Pin	Signal	Pin	Signal
1	Reset Drive	2	GND
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	GND	20	Key
21	DRQ	22	GND
23	I/O Write	24	GND
25	I/O Read	26	GND
27	IORDY	28	N.C.
29	DACK	30	GND
31	IRQ	32	N.C.
33	ADR 1	34	N.C.
35	ADR 0	36	ADR 2
37	Chip Select 1	38	Chip Select 3
39	IDE-LED	40	GND



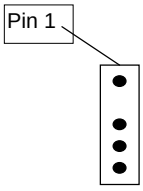
2.3.17 AUX Audio IN Connector (e. g. MPEG, TV-Cards)

Pin	Signal
1	GND
2	MPEG Audio In LEFT
3	GND
4	MPEG Audio In RIGHT



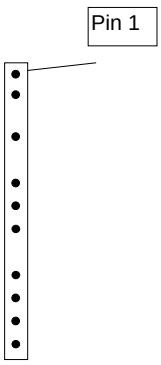
2.3.18 Infrared Connector

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



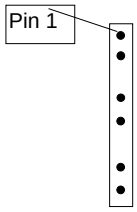
2.3.19 Front Panel Connector 1

Pin	Signal
1	Boot Lock
2	+ Standby LED
3	Key
4	+ Power LED
5	Key
6	- Standby/ Power LED
7	Keylock
8	GND
9	Key
10	+ HD LED
11	HD LED
12	HD LED



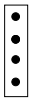
2.3.20 Front Panel Connector 2 (optional)

Pin	Signal
1	Reset (Low asserted)
2	GND
3	Key
4	+ Turbo LED
5	- Turbo LED
6	Key
7	Turbo Switch
8	GND



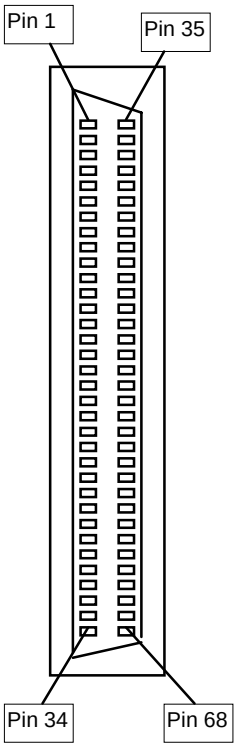
2.3.21 SCSI-LED Connector (symmetrical)

Pin	Signal
1	N.C.
2	SCSI_LED
3	SCSI_LED
4	N.C.



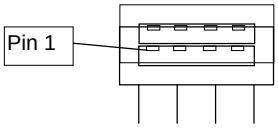
2.3.22 SCSI - Connector (optinal, only D981-A2x)

	Pin-Nr.		
GND	1	35	SCSI_DB_L<12>
GND	2	36	SCSI_DB_L<13>
GND	3	37	SCSI_DB_L<14>
GND	4	38	SCSI_DB_L<15>
GND	5	39	SCSI_PAR1_L
GND	6	40	SCSI_DB_L<0>
GND	7	41	SCSI_DB_L<1>
GND	8	42	SCSI_DB_L<2>
GND	9	43	SCSI_DB_L<3>
GND	10	44	SCSI_DB_L<4>
GND	11	45	SCSI_DB_L<5>
GND	12	46	SCSI_DB_L<6>
GND	13	47	SCSI_DB_L<7>
GND	14	48	SCSI_PAR0_L
GND	15	49	GND
GND	16	50	GND
TERMPWR	17	51	TERMPWR
TERMPWR	18	52	TERMPWR
RESERVED	19	53	RESERVED
GND	20	54	GND
GND	21	55	SCSI_ATN_L
GND	22	56	GND
GND	23	57	SCSI_BSY_L
GND	24	58	SCSI_ACK_L
GND	25	59	SCSI_RST_L
GND	26	60	SCSI_MSG_L
GND	27	61	SCSI_SEL_L
GND	28	62	SCSI_CMD_L
GND	29	63	SCSI_REQ_L
GND	30	64	SCSI_IN_L
GND	31	65	SCSI_DB_L<8>
GND	32	66	SCSI_DB_L<9>
GND	33	67	SCSI_DB_L<10>
GND	34	68	SCSI_DB_L<11>



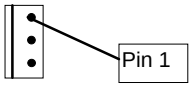
2.3.23 1 or 2 USB Connector

Pin	Signal
1	VCC
2	DATA_NEGATIVE
3	DATA_POSITIVE
4	GND



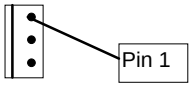
2.3.24 Wake up ON LAN Connector (optional)

Pin	Signal
1	VCCHELP
2	GND
3	LAN_Wakeup



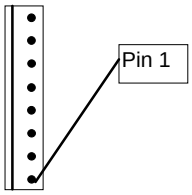
2.3.25 Intrusion Logic Connector (optional)

Pin	Signal
1	GND
2	Chassis Open (low active)
3	Intrusion Logic Presence (low act.)



2.3.26 Power Control Connector (optional)

Pin	Signal
1	Monitor-On
2	SV-Fan-Off-Req (low active)
3	SV-Fan-Full (low active)
4	SV-Fan-Puls
5	SMB-CLK
6	SMB-DATA
7	VCC-EEPROM
8	GND



2.3.27 Configuration SWITCH-Block (DIP-Switch)

for Frequency selection, Flash write, Password clear, Recovery and Floppy write

Function:			SW1 SKP	SW2 RCV	SW3 FWP	SW4 RES	SW5 CF1	SW6 CF2	SW7 CF3	SW8 CF4
Password Skip			On	x	x	x	x	x	x	x
Off			Off	x	x	x	x	x	x	x
Recovery BIOS			x	On	x	x	x	x	x	x
Off			x	Off	x	x	x	x	x	x
Floppy Write Protect			x	x	On	x	x	x	x	x
Off			x	x	Off	x	x	x	x	x
FRACT.	RATIO	Freq. at 66MHz								
2/4	2	133	x	x	x	x	On	On	On	On
2/5	2,5	166	x	x	x	x	On	On	On	Off
2/6	3	200	x	x	x	x	On	On	Off	On
2/7	3,5	233	x	x	x	x	On	On	Off	Off
2/8	4	266	x	x	x	x	On	Off	On	On
2/9	4,5	300	x	x	x	x	On	Off	On	Off
2/10	5	333	x	x	x	x	On	Off	Off	On
2/11	5,5	366	x	x	x	x	On	Off	Off	Off
2/12	6	400	x	x	x	x	Off	On	On	On
2/13	6,5	433	x	x	x	x	Off	On	On	Off
2/14	7	466	x	x	x	x	Off	On	Off	On
2/15	7,5	500	x	x	x	x	Off	On	Off	Off
2/16	8	533	x	x	x	x	Off	Off	On	On
2/3	1,5	100	x	x	x	x	Off	Off	On	Off
Res	-	-	x	x	x	x	Off	Off	Off	On
2/4	2	133	x	x	x	x	Off	Off	Off	Off

On = 1 = Close Off = 0 = Open x = don't care

For use of Pentium II Processors with host bus frequency of 66 MHz only !
Don't use Processor with 100 MHz host frequency !

2.3.28 PCI-SLOT Configuration And Placement

PCI-SLOT	IDSEL	Device Number
PCI-SLOT 1	ADR 25	0eh
PCI-SLOT 2	ADR 27	10h
PCI-SLOT 3	ADR 29	12h
PCI-SLOT 4	ADR 31	14h

2.4 Power Requirements (Power Supply)

Source	Voltage	Max. Variation	Max. Current
SV	+ 5.1 V	+/- 5 %	9,0 A
SV	- 5 V	+/- 5 %	0,0 A
SV	+ 12 V	+/- 10 %	0,3 A
SV	- 12 V	+/- 10 %	0,1 A
on Board	1.8 - 3.5 V	+/- 5 %	14,0 A
SV	+ 3,3 V	+/- 5 %	2,0 A
SV	+ 5.0 V (aux)		10 mA*****

- ATX-compliant
- ***** for Wake up on LAN (WOL) you need a Power Supply with VCC Help = 500mA

3 Installing drivers and utilities; documentation

- Insert the "Drivers & Utilities" CD.
- When the *DeskStart* window appears, select *Explore the CD via HTML*.
- Select the language in which you want to operate the user interface.
- Select *Scenic Pro* and then select f.e. *Windows 95.*

  Here you will find the required drivers, utilities and the additional documentation
- For the following components, install the software offered to you in the HTML interface:
  - Audio board (sound card) "Crystal"
  - Hard disk controller "PIIX4"
  - Software update
  - USB-Support
  - Adaptec-SCSI (only for D981-A1x with onboard SCSI-Controller)

  For more details please the according readme.txt files

4 Upgrades

4.1 Main Memory

Further information is given in the main technical manual.
For correct functionality of the mainboard D981 we recommend the usage of the following DIMM-Modules.
For upgrades of the following list, please ask your local dealer.

16MB DIMM SD-RAM, 2Mx64

Producer	Part.-No
Samsung	KMM366S203BTN-G0 and -G2

32MB DIMM SD-RAM, 4Mx64

Producer	Part.-No
NEC	MC-454AD644F-A67
Siemens	HYS64V4020GU-10
Samsung	KMM366S403BTN-G0 and -G2

32MB DIMM SD-RAM, 4Mx72

Producer	Part.-No
Goldstar	GMM2734233BLTG-10K
Hyundai	HYM7V72A400TFG-10
Siemens	HYS72V4020GU-10
Samsung	KMM374S4030BTN-G2

64MB DIMM SD-RAM, 8Mx64

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

64MB DIMM SD-RAM, 8Mx72

Producer	Part.-No
NEC	MC459CA724F-A10
Samsung	KMM374S823AT-G2

128MB DIMM SD-RAM, 16Mx64

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

128MB DIMM SD-RAM, 16Mx72

Producer	Part.-No
NEC	MC-4516CC724F-A10
Samsung	KMM374S1623AT-G2

4.2 Wavetable-Upgrade

The mainboards D981-A and D981-B are prepared for a single chip wavetable-upgrade with the Crystal CS9236.
To order please ask your local dealer.