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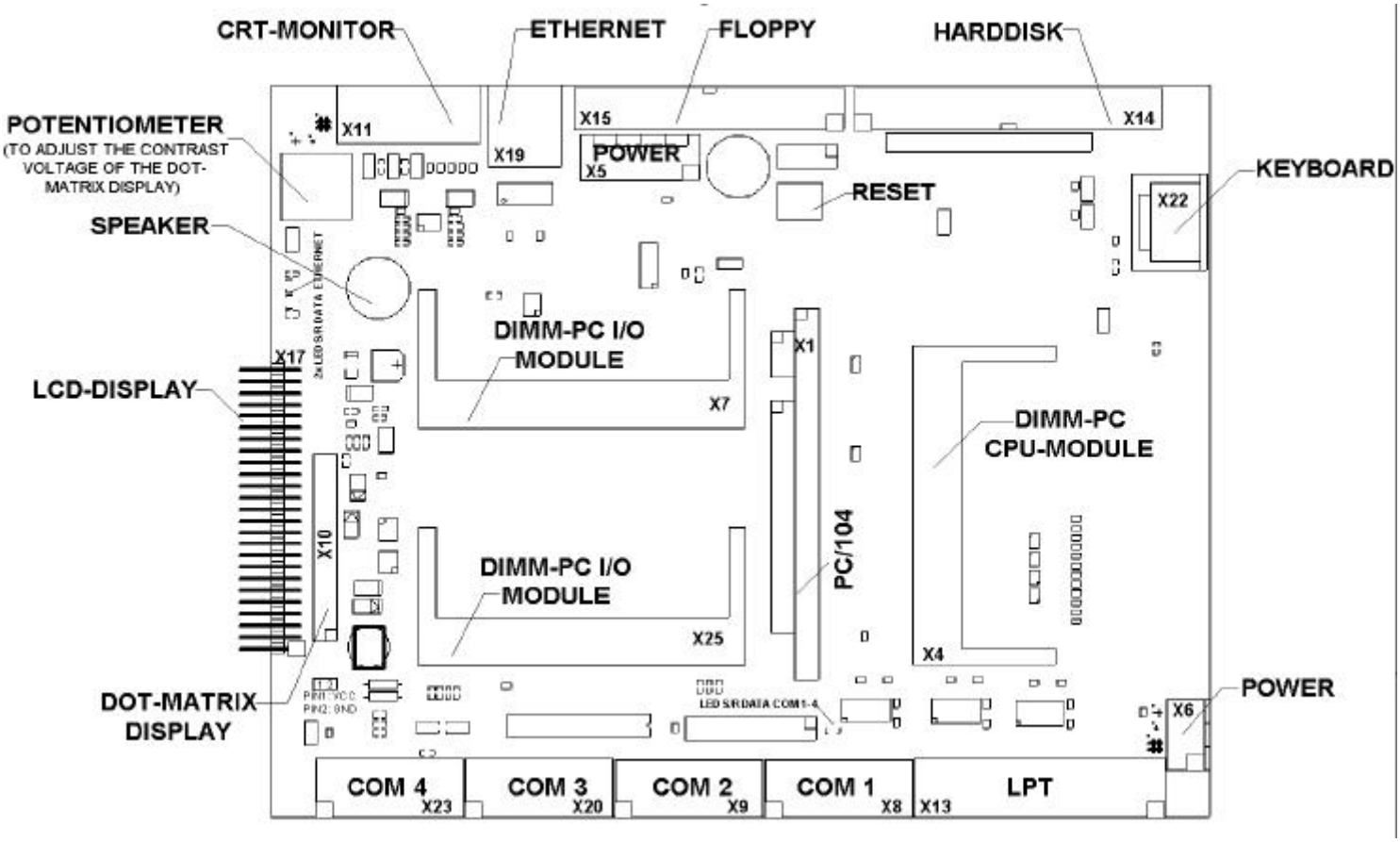
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Short description Rev. 1.4

The following short description is intended to convey a brief overall view of the components. Installation alternatives are depicted herein.

1. Connector location



Pin1 is marked with a quadratic pad!

2. Connector pinout

	PC/104-BUS				PC/104-POWER		IDE	FLOPPY	LPT	LCD DISPLAY
PIN	**A(X1)**	**B(X1)**	**C(X1)**	**D(X1)**	**E(X1)**	**F(X1)**	**X14**	**X15**	**X13**	**X17**
0			GND	GND						
1	/IOCHCK	GND	/SBHE	/MEMCS16	VCC	GND	/RESET	GND	/STB	LFS
2	SD7	RESETDRV	LA23	/IOCS16	+12V	BATT	GND	NC	/AFD	LLCLK
3	SD6	VCC	LA22	IRQ10	-12V	-5V	SD7	GND	PD0	VDCLK
4	SD5	IRQ9	LA21	IRQ11	VCC	GND	SD8	NC	/ERR	FPVEE
5	SD4	-5V	LA20	IRQ12			SD6	GND	PD1	SW_VDD
6	SD3	DRQ2	LA19	IRQ15			SD9	NC	/INIT	GND
7	SD2	-12V	LA18	IRQ14			SD5	GND	PD2	N.C.
8	SD1	/0WS	LA17	/DACK0			SD10	/FDCIDX	/SLIN	UD0 SLD4 G1
9	SD0	+12V	/MEMR	DRQ0			SD4	GND	PD3	UD1 SLD5 G2
10	IOCHRDY	GND	/MEMW	/DACK5			SD11	/FDCMTR0	GND	UD2 SLD6 R0
11	AEN	/SMEMW	SD8	DRQ5			SD3	GND	PD4	UD3 SLD7 R1
12	SA19	/SMEMR	SD9	/DACK6			SD12	NC	GND	LD0 SLD0 B0
13	SA18	/IOW	SD10	DRQ6			SD2	GND	PD5	LD1 SLD1 B1
14	SA17	/IOR	SD11	/DACK7			SD13	/FDCDS0	GND	LD2 SLD2 B2
15	SA16	/DACK3	SD12	DRQ7			SD1	GND	PD6	LD3 SLD3 G0
16	SA15	DRQ3	SD13	VCC			SD14	NC	GND	SUD7 R3
17	SA14	/DACK1	SD14	/MASTER			SD0	GND	PD7	SUD6 R2
18	SA13	DRQ1	SD15	GND			SD15	/FDCDIR	GND	SUD5 G5
19	SA12	/REFRESH	GND	GND			GND	GND	/ACK	SUD4 G4
20	SA11	SYSCLK					NC	/FDCSTEP	GND	SUD3 G3
21	SA10	IRQ7					NC	GND	/BUSY	SUD2 B5
22	SA9	IRQ6					GND	/FDCWD	GND	SUD1 B4
23	SA8	IRQ5					/IOW	GND	PE	SUD0 B3
24	SA7	IRQ4					GND	/FDCWG	GND	R5
25	SA6	IRQ3					/IOR	GND	/SLCT	R4
26	SA5	/DACK2					GND	/FDCTRK0	VCC	GND
27	SA4	T/C					NC	GND		DE
28	SA3	BALE					BALE	/FDCWP		FPVDD
29	SA2	VCC					NC	GND		MOD
30	SA1	OSC					GND	/FDCRD		FPBACK
31	SA0	GND					IRQ14	GND		CONTNEG
32	GND	GND					/IOCS16	/FDCHDSEL		CONTPOS
33							SA1	GND		GND
34							NC	/DCHNG		RFB
35							SA0			GND
36							SA2			GPI
37							/IDE CS0			VDD-SRC
38							/IDE CS1			VBB
39							/HDLED			+12V
40							GND			HSYNC
41										5V
42										BACK_SRC
43										VSYNC
44										SW_BACK
45										EXT_CTRL
46										EXT_ADJ
47										GND
48										PS3
49										PS2
50										PS1

	CRT	ETHER-NET	KEY-BOARD	POWER	POWER	DOT-MATRIX DISPLAY	COM 1	COM 2	COM 3	COM 4
PIN	**X11**	**X19**	**X22**	**X5**	**X6**	**X10**	**X8**	**X9**	**X20**	**X23**
0										
1	RED	TXD+	KBCLK_X	VCC (+5V)	VCC (+5V)	GND	/DCD1_X	/DCD2_X	/DCD3_X	485_TXD+
2	GREEN	TXD-	KBDAT_X	GND	GND	GND	RXD1_X	RXD2_X	RXD3_X	NC
3	BLUE	RXD+	NC	GND	+12V	VCC (+5V)	TXD1_X	TXD2_X	TXD3_X	485_TXD-
4	NC	NC	GND	+12V		VCC (+5V)	/DTR1_X	/DTR2_X	/DTR3_X	NC
5	GND	NC	VCC			VEE (contr. volt.)	GND	GND	GND	GND
6	GND	RXD-				VEE (contr. volt.)	/DSR1_X	/DSR2_X	/DSR3_X	485_RXD+
7	GND	NC				AFD_A#	/RTS1_X	/RTS2_X	/RTS3_X	NC
8	GND	NC				AFD_A#	/CTS1_X	/CTS2_X	/CTS3_X	485_RXD-
9	NC					SLIN_A#	/RI1_X	/RI2_X	/RI3_X	NC
10	GND					SLIN_A#	GND	GND	GND	GND
11	NC					INIT_A#				
12	NC					INIT_A#				
13	H-SYNC					PD0_A				
14	V-SYNC					PD0_A				
15	NC					PD1_A				
16						PD1_A				
17						PD2_A				
18						PD2_A				
19						PD3_A				
20						PD3_A				
21						PD4_A				
22						PD4_A				
23						PD5_A				
24						PD5_A				
25						PD6_A				
26						PD6_A				
27						PD7_A				
28						PD7_A				
29						VCC (100 OHM)				
30						VCC (100 OHM)				
31						GND				
32						GND				

3. Features

- One slot for DIMM-PC CPU module
- Two slots for DIMM add-on I/O modules
- PC/104-slot
- 5pos. Keyboard-header (DIN 41524)
- Western socket for Ethernet 10base-T
- 40pos. IDE connector (pitch 2,54mm)
- 34pos. Floppy-connector (pitch 2,54mm)
- Header for DOT-matrix display
- Piezo electronic speaker
- Reset-key
- 4pos. power connector (X5), 3pos. power connector with screw-terminals (X6) and 2pos. power connector (beside X10)
- LPT port (25pos. DSUB Connector)
- Four serial ports (9pos. DSUB Connector):
  3 x RS232-ports (COM1, COM2, COM3); 1 x RS485-port (COM4)
- 15pos. VGA-header DSUB
- 50pos. header for LCD-displays (pitch 2,54mm)
- Onboard DC/DC converter for positive and negative LCD contrast voltages

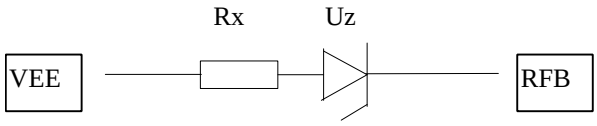
3.1. DC/DC-Converter

Attention: Please note that you must adjust the voltage range to fit your panel by using a zener-diode and a resistor. This two elements determine the voltage range for the flat panel. If you leave away any of the components or if you use incorrect values, the flat panel will probably be destroyed, because 50V are generated onboard in the non regulated mode.

The DIMM-PC/ADA2 has a DC/DC converter for positive and negative LCD contrast voltages onboard. All passive LCD's need an extra LCD (backplane or substrate) voltage either positive (for passive color) or negative (for passive monochrome displays). The onboard converter generates up to +50V and -45V from a single 5 V supply. This means that no 12V supply is required for LCD voltage generation. The range for the panel voltage is set via a resistor and a zener diode mounted on the LCD cable. Therefore a customer does not have to adjust a voltage before connecting a different display .

The LCD contrast can be controlled via special keystrokes, which also allow for contrast enhancement features and panel inversion. This features do not need any software drivers to be installed, because they are provided by the BIOS of the DIMM-PC/VGA1. This is a definitive advantage over other LCD controller boards, as most products on the market need an external LCD voltage converter, which adds additional cabling, converter mounting and cost to the system.

The DC-DC converter may be used for all panels which require a second supply voltage. The converter is able to supply a negative voltage (available on pin VEE) and a positive voltage (available on pin VBB). The output voltage may be changed by the user via keyboard. The output range has to be adjusted before any panel is connected to VEE or VBB pins. Two external components are needed for adjusting: The VEE output is connected to the RFB input via a zener diode and a resistor as shown in the following diagram:



The values for Rx and Uz may be calculated as follows:

$$U_z = \frac{R_{int} * (I_{max} * VEE_{mid} - I_{mid} * VEE_{max})}{VEE_{mid} - VEE_{max} + R_{int} * I_{min}}$$

$$R_x = \frac{R_{int} * (VEE_{mid} - U_z)}{R_{int} * I_{mid} - VEE_{mid}}$$

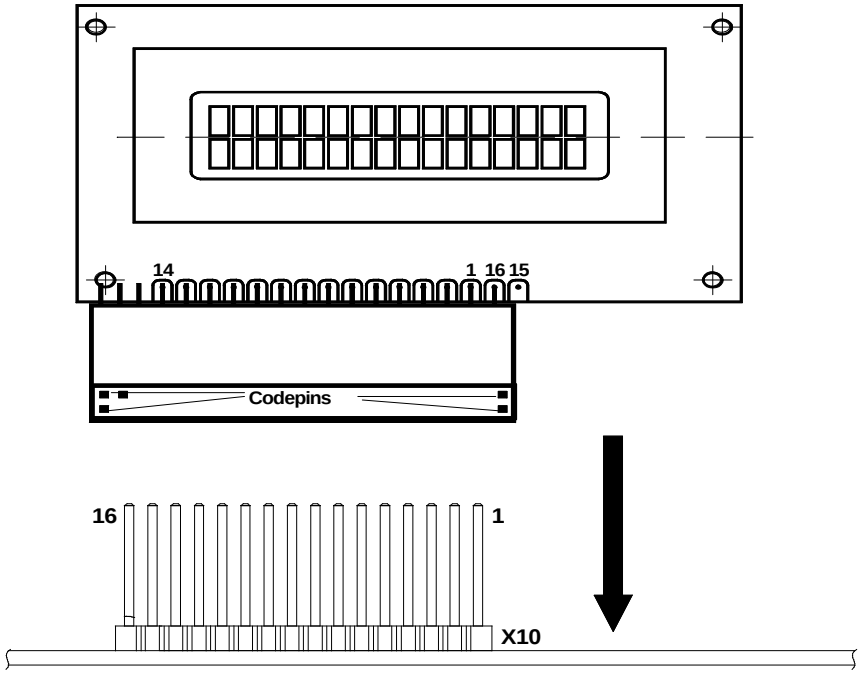
where: R_{int}=3,3MOhm
I_{min}=6,66µA I_{mid}=13,33µA I_{max}=20µA
VEE_{max}= maximum output voltage required
VEE_{mid} = mid range output voltage required

The real output voltage may then be adjusted in 64 steps, where a value of 0 gives the minimum voltage (which has not been calculated here), 32 gives the mid range voltage VEE_{mid} and 63 gives the maximum voltage VEE_{max}.

Information on how to change the output voltage via keyboard can be found in the section "Controlling the DIMM-PC/VGA1 by keyboard" in the manual of the DIMM-PC/VGA1.

3.2. DOT-matrix display

A DOT-matrix display can be plugged on the connector X10 as showing in the following drawing:



The signals for the display are from the LPT-port.

Steps to install the DOT-matrix display:

- Turn on or reboot the system
- Press <DEL> if you are asked to enter setup
- Change the settings for the LPT port into „extended mode“
- Save the settings and start DOS
- Start the program D101LCD (if you use the DIMM-PC D101) or the program D201LCD (if you use the DIMM-PC D201). The correct commando line for the program is:

  D101LCD COPY 16 2 00 40 00 40 or

  D201LCD COPY 16 2 00 40 00 40
- Reboot the system again

Now the display is ready for use. The LCD driving voltage (contrast) can be changed by the potentiometer R3.

Please visit our Homepage (www.jumptec.de) for the programs D101LCD and D201LCD.

Note: You cant use the DOT-matrix display and a printer at the same time. If you want to use a printer please enter setup again and change the settings for the LPT port into „normal“. Now the DOT-matrix display has no function.

3.3. Mechanical:

Dimensions (LxWxH): Length 200mm, Width 160mm

3.4. Technical data:

Surface temperature: operating 0 bis +60°C (corresponding airflow necessary)
storage: -10 bis +85°C

relative humidtiy: operating: 10% bis 90% non condensing
non operating: 5% bis 95% non condensing

4. Document history:

date	Doc. name	doc. rev.	author	Action
16.05.98	ADA7K110.DOC	1.0	F. Krauss	Short description created
26.11.98	ADA7K111.DOC	1.1	F. Krauss	Changed commando line for DOT-matrix display, changed GmbH into AG.
21.09.99	ADA7K112.DOC	1.2	M. Wiesmüller	Layout revised, created new graphics, missing information added.
30.04.99	ADA7K113.DOC	1.3	F: Krauss	Delete all references to a manuel
21.09.99	ADA7K114.DOC	1.4	C. Hoch	Changed pinout connector X1

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