

► Kontron User's Guide

► DIMM-PC ADA7

Document Revision 125

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1 User Information

1.1 About This Document

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1.4 Standards

Kontron Embedded Modules GmbH is certified to ISO 9000 standards.

1.5 Warranty

This Kontron Embedded Modules GmbH product is warranted against defects in material and workmanship for the warranty period from the date of shipment. During the warranty period, Kontron Embedded Modules GmbH will at its discretion decide to repair or replace defective products.

Within the warranty period, the repair of products is free of charge as long as warranty conditions are observed.

The warranty does not apply to defects resulting from improper or inadequate maintenance or handling by the buyer, unauthorized modification or misuse, operation outside of the product's environmental specifications or improper installation or maintenance.

Kontron Embedded Modules GmbH will not be responsible for any defects or damages to other products not supplied by Kontron Embedded Modules GmbH that are caused by a faulty Kontron Embedded Modules GmbH product.

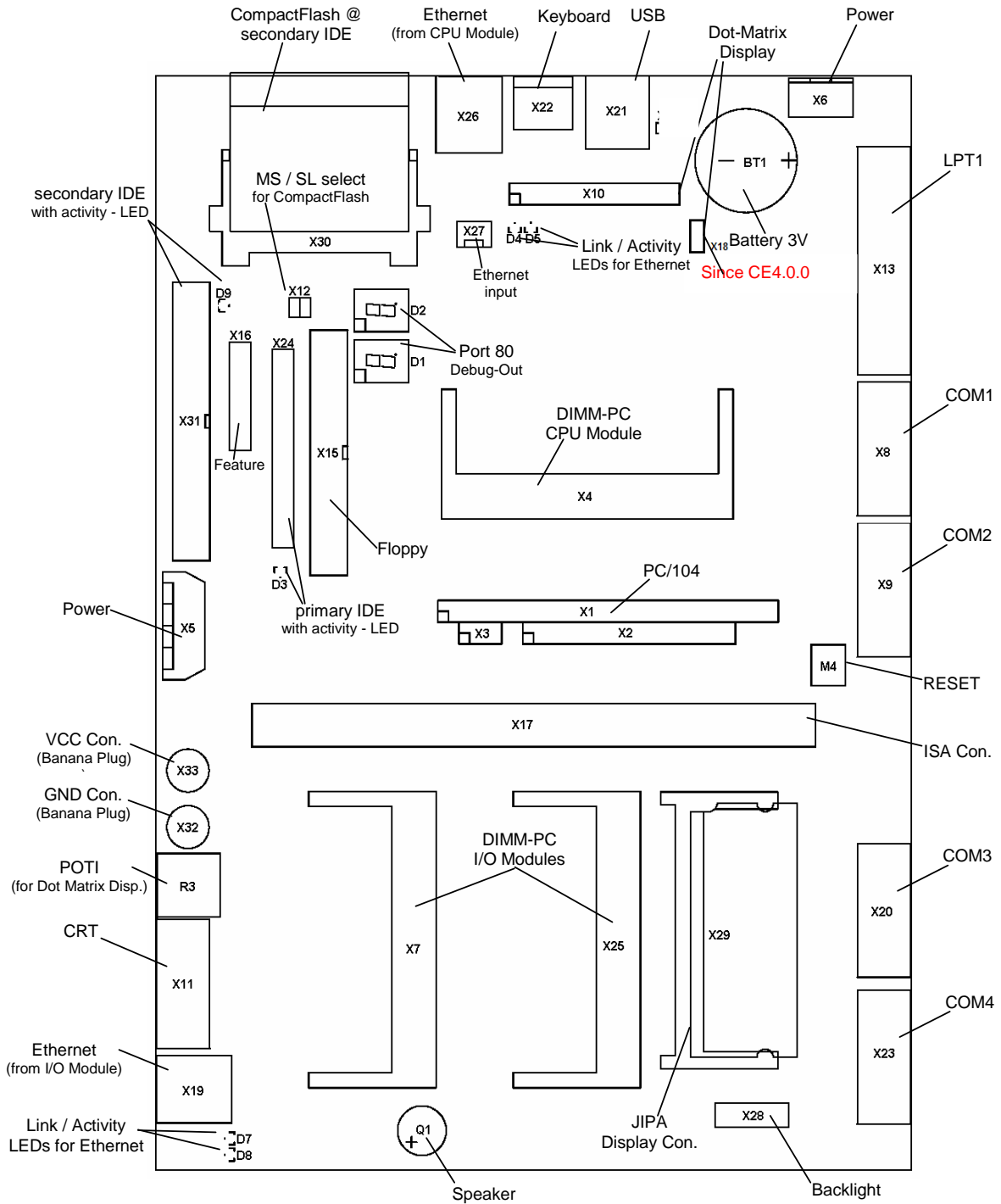
1.6 Technical Support

Technicians and engineers from Kontron Embedded Modules GmbH and/or its subsidiaries are available for technical support. We are committed to making our product easy to use and will help you use our products in your systems.

Before contacting Kontron Embedded Modules GmbH technical support, please consult our Web site at <http://www.kontron-emea.com/emd> for the latest product documentation, utilities, and drivers. If the information does not help solve the problem, contact us by telephone or email.

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2 Connector location



Note: On every through-hole connector, Pin1 is marked with a quadratic pad!

3 Connector Pinout

PIN	PC/104-BUS				PC/104-POWER	primary IDE	secondary IDE	FLOPPY	LPT1
	A(X1)	B(X1)	C(x2)	D(x2)	X3	X24	X31	X15	X13
0			GND	GND					
1	IOCHCK#	GND	SBHE#	MEMCS16#	GND	RESET#	RESET#	GND	STB#
2	SD7	RSTDRV	LA23	IOCS16#	VCC	GND	GND	NC	AFD#
3	SD6	VCC	LA22	IRQ10	CODEPIN	SD7	SD7	GND	PDO
4	SD5	IRQ9	LA21	IRQ11	+12V	SD8	SD8	NC	ERR#
5	SD4	-5V	LA20	IRQ12	-5V	SD6	SD6	GND	PD1
6	SD3	DRQ2	LA19	IRQ15	-12V	SD9	SD9	NC	INIT#
7	SD2	-12V	LA18	IRQ14	GND	SD5	SD5	GND	PD2
8	SD1	/OWS	LA17	DACK0#	VCC	SD10	SD10	FDCIDX#	SLIN#
9	SD0	+12V	MEMR#	DRQ0		SD4	SD4	GND	PD3
10	IOCHRDY	GND	MEMW#	DACK5#		SD11	SD11	FDCMTR0#	GND
11	AEN	SMEMW#	SD8	DRQ5		SD3	SD3	GND	PD4
12	SA19	SMEMR#	SD9	DACK6#		SD12	SD12	NC	GND
13	SA18	IOW#	SD10	DRQ6		SD2	SD2	GND	PD5
14	SA17	IOR#	SD11	DACK7#		SD13	SD13	FDCDSO#	GND
15	SA16	DACK3#	SD12	DRQ7		SD1	SD1	GND	PD6
16	SA15	DRQ3	SD13	VCC		SD14	SD14	NC	GND
17	SA14	DACK1#	SD14	MASTER#		SD0	SD0	GND	PD7
18	SA13	DRQ1	SD15	GND		SD15	SD15	FDCDIR#	GND
19	SA12	REFRESH#	GND	GND		GND	GND	GND	ACK#
20	SA11	SYSCLK				NC	NC	FDCSTEP#	GND
21	SA10	IRQ7				NC	NC	GND	BUSY#
22	SA9	IRQ6				GND	GND	FDCWDAT#	GND
23	SA8	IRQ5				IOW#	/IOW	GND	PE
24	SA7	IRQ4				GND	GND	FDCWG#	GND
25	SA6	IRQ3				IOR#	/IOR	GND	SLCT#
26	SA5	DACK2#				GND	GND	FDCRKO#	VCC
27	SA4	T/C				IOCHRDY	IOCHRDY	GND	
28	SA3	BALE				NC	NC	FDCWPRT#	
29	SA2	VCC				NC	NC	GND	
30	SA1	OSC				GND	GND	FDCRDATA#	
31	SA0	GND				IRQ14	IRQ15	GND	
32	GND	GND				IOCS16#	IOCS16#	FDCHDSEL#	
33						SA1	SA1	GND	
34						NC	NC	DSKCHG	
35						SA0	SA0		
36						SA2	SA2		
37						IDE CS0#	S IDE CS0#		
38						IDE CS1#	S IDE CS1#		
39						HDLED#	S HDLED#		
40						GND	GND		
41						VCC			
42						VCC			
43						GND			
44						NC			

PIN	ISA Slot				JIPA	DOT-MATRIX	Compact Flash
	X17 (A)	X17 (B)	X17 (C)	X17 (D)	X29	X10	X30
1	IOCHCK#	GND	SBHE#	MEMCS16#	LFS	GND	GND
2	SD7	RSTDRV	LA23	IOCS16#	LLCLK	GND	SD3
3	SD6	VCC	LA22	IRQ10	GND	VCC (+5V)	SD4
4	SD5	IRQ9	LA21	IRQ11	GND	VCC (+5V)	SD5
5	SD4	-5V	LA20	IRQ12	SCLKY	VEE (contrast voltage)	SD6
6	SD3	DRQ2	LA19	IRQ15	GND	VEE (contrast voltage)	SD7
7	SD2	-12V	LA18	IRQ14	GND	AFD A#	S_IDECS0#
8	SD1	ZWS#	LA17	DACK0#	BLANK#	AFD A#	GND
9	SD0	+12V	MEMR#	DRQ0	NC	SLIN A#	GND
10	IOCHRDY	GND	MEMW#	DACK5#	NC	SLIN A#	GND
11	AEN	SMEMW#	SD8	DRQ5	P8	INIT A#	GND
12	SA19	SMEMR#	SD9	DACK6#	P9	INIT A#	GND
13	SA18	IOW#	SD10	DRQ6	P0	PD0 A	VCC
14	SA17	IOR#	SD11	DACK7#	P1	PD0 A	GND
15	SA16	DACK3#	SD12	DRQ7	P2	PD1 A	GND
16	SA15	DRQ3	SD13	VCC	P3	PD1 A	GND
17	SA14	DACK1#	SD14	MASTER#	P10	PD2 A	GND
18	SA13	DRQ1	SD15	GND	P11	PD2 A	SA2
19	SA12	REF#			P18	PD3 A	SA1
20	SA11	SYSCLK			P19	PD3 A	SA0
21	SA10	IRQ7			P4	PD4 A	SD0
22	SA9	IRQ6			P5	PD4 A	SD1
23	SA8	IRQ5			P6	PD5 A	SD2
24	SA7	IRQ4			P7	PD5 A	IOCS16#
25	SA6	IRQ3			P12	PD6 A	GND
26	SA5	DACK2#			P13	PD6 A	GND
27	SA4	TC			P14	PD7 A	SD11
28	SA3	BALE			P15	PD7 A	SD12
29	SA2	VCC			P20	VCC (100 OHM)	SD13
30	SA1	OSC			P21	VCC (100 OHM)	SD14
31	SA0	GND			P22	GND	SD15
32					P23	GND	S_IDECS1#
33					GND		GND
34					NC		IOR#
35					NC		IOW#
36					NC		VCC
37					MAD12		IRQ15
38					MAD13		VCC
39					MAD14		MS_SELECT
40					MAD15		NC
41					NC		RSTDRV#
42					GND		IOCHRDY
43					I2DAT		NC
44					I2CLK		VCC
45					NC		NC
46					NC		NC
47					NC		SD8
48					NC		SD9
49					NC		SD10
50					GND		GND
51					VCC		
52					DA_00		
53					NC		
54					NC		
55					VDCLK		
56					VSYN		
57					HSYN		
58					BLUE		
59					GREEN		
60					RED		
61					SW_BACK		
62					VDD_SRC		
63					BACK_SRC		
64					NC		
65					+12V		
66					+12V		
67					VCC		
68					NC		
69					NC		
70					NC		
71					FPVEE		
72					VPANEL		

	ETHERNET (from I/O)	ETHERNET (from CPU)	PS/2 KEYBOARD	POWER	POWER	COM 1	COM 2	COM 3	COM 4
PIN	X19	X26	X22	X5	X6	X8	X9	X20	X23
0									
1	TXD+ IO	TXD+ CPU	KBDATC	VCC	VCC	DCD1# X	DCD2#	DCD3#	485 TX
2	TXD- IO	TXD- CPU	NC	GND	GND	RXD1 X	RXD2 X	RXD3 X	NC
3	RXD+ IO	RXD+ CPU	GND	GND	+12V	TXD1 X	TXD2 X	TXD3 X	485 TX
4	NC	NC	VCC	+12V		DTR1# X	DTR2# X	DTR3# X	NC
5	NC	NC	KBCLKC			GND	GND	GND	GND
6	RXD- IO	RXD- CPU	NC			DSR1# X	DSR2#	DSR3#	485 RX
7	NC	NC				RTS1# X	RTS2# X	RTS3# X	NC
8	NC	NC				CTS1# X	CTS2# X	CTS3# X	485 RX
9						RT1# X	RT2# X	RT3# X	NC
10						SHLDGND	SHLDGN	SHLDGN	SHLDG

	CRT MONITOR	Backlight	LCD Power	Feature Connector
PIN	X11	X28	X18	X16
0				
1	RED	VCC	VCC	/HDLED
2	GREEN	SW_BACK	GND	VCC
3	BLUE	+12V		I2DAT
4	NC	GND		VCC
5	GND	GND		I2CLK
6	GND	NC		GND
7	GND	BACK_SRC		PGOOD
8	GND	DA_00		GND
9	NC	NC		pra. ChipSelect
10	GND	FPBACK		external SMI
11	NC			reserved
12	NC			VCC
13	H-SYNC			reserved
14	V-SYNC			reserved
15	NC			reserved
16	SHLDGND			reserved
17				reserved
18				reserved

To protect the external power lines of peripheral devices the customer has to take care that:

- the wires have the right diameter to withstand the maximum available current
- the enclosure of the peripheral device fulfils the fire protecting requirements of IEC/EN 60950.

4 Features

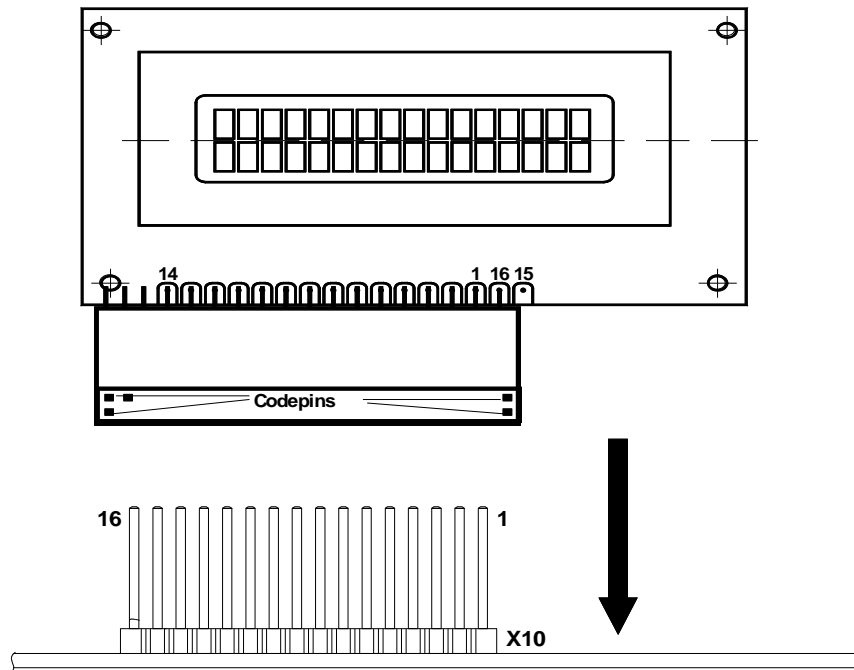
- One slot for DIMM-PC CPU module
- Two slots for DIMM add-on I/O modules
- JIPA socket
- PC/104-slot
- ISA slot
- PS/2 Keyboard-header
- Western socket for Ethernet 10base-T (from DIMM-IO Module)
- Western socket for Ethernet 10base-T and 100base-T (from DIMM-CPU Module)
- 44pos. IDE connector on primary channel (pitch 2,00 mm)
- 40pos. IDE connector on secondary channel (pitch 2,54mm)
- CompactFlash socket on secondary IDE channel (Master/Slave selectable by Jumper)

Note: Some CompactFlash Cards may cause problems when used together with other IDE devices

- 34pos. Floppy-connector (pitch 2,54mm)
- Header for DOT-matrix display
- 7-segment LED displays showing outputs on Debug-Port 80
- Piezo electronic speaker
- Reset-key
- battery (3V CR2032)
- 4pos. power connector, 3pos. power connector with screw-terminals
- Two mounting holes for banana plug connectors (+5V and GND)
- 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

4.1 DOT-matrix-display

A DOT-matrix display can be plugged on the connector X10 as shown 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 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.

Note: You can't 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.

4.2 Mechanical:

Dimensions (LxWxH): Length 256mm, Width 180mm

4.3 Technical data:

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

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

4.4 Electrical characteristics:

Supply Voltage: (*1) +5V
+12V (if LCD backlight is connected)

Supply current: 300mA

Note: depending on connected CPU and extension boards the current drawn will be higher!

**1: To protect the external powerlines of peripheral devices the customer has to take care about:*

- that the wires have the right diameter to withstand the maximum available current*
- that the enclosure of the peripheral device fulfils the fire protecting requirements of IEC/EN 60950.*

Battery voltage for RTC: 3.0 ... 4.2 V

Battery supply current: max. 10 µA

5 Battery Information

English:

CAUTION ! Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Deutsch:

VORSICHT ! Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch den selben oder einen vom Hersteller empfohlenen gleichwertigen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

French:

ATTENTION ! Risque d'explosion avec l'échange inadéquat de la batterie. Remplacement seulement par le même ou un type équivalent recommandé par le producteur. L'évacuation des batteries usagées conformément à des indications du fabricant.

Danish:

ADVARSEL ! Lithiumbatteri – Eksplosionsfare ved fejlagtig Håndtering. Udskifting må kun ske med batteri af samme fabrikant og type. Lever det brugte batteri tilbage til leverandøren.

Finnish:

VAROITUS ! Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan alitevalmistajan suosittelmaan tyyppiln. Havita kaytetty paristo valmistajan ohjeiden mukaisesti.

Spanish:

Precaución ! Peligro de explosión si la batería se sustituye incorrectamente. Sustituya solamente por el mismo o tipo equivalente recomendado por el fabricante. Disponga las baterías usadas según las instrucciones del fabricante.

*Note: The battery of this product is not considered to be accessible by the end user. Therefore the safety instructions are only given in English, German, French, Danish, Finish and Spanish language.
If the battery of this product however is accessible by the end user, it is in the responsibility of the Kontron customer to give the corresponding safety instructions in the required language(s).*

6 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.
12.01.99	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 manual
05.04.02	ADA7K120.DOC	2.0	J. Baumgartner	All infos according to HW Rev. 2.x
24.06.02	ADA7k121.DOC	2.1	J. Baumgartner	security infos added, references to USB removed
11.12.03	ADA7k122.DOC	2.2	D. Gunter	Changed to Kontron logo. Added battery information section.
08.02.07	ADA7K123.DOC	2.3	T. Schertel	Removed X18, Correct title
03.04.07	ADA7K124.DOC	2.4	T. Schertel	X18 add in BOM and moved
07.05.07	ADA7K125.DOC	2.5	M. Unverdorben	Changed to new style