PC/104-PCMCIA-1

Technical Manual

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Preface

Introduction

PCMCIA cards get more and more common because of their small size and ruggedness as well as their low power consumption. There are a variety of PCMCIA cards available, with which you can extend your system. For example network, modem and memory cards. Due to the PC/104 form factor, the PCMCIA module is especially suitable for industrial applications. The PC/104 form factor allows an easy plug in of different extension modules to an existing CPU board.
The PC/104 PCMCIA Module is equipped with a VADEM 469 controller which supports two slots (2 x type I, II or 1 x type III).

Safety Precautions

Since static electricity can damage a board, the following precautions must be taken:

- Usually boards are shipped in anti-static packaging, made of conductive plastic material. Keep the board in this package, until you are ready to install it.
- Wear a grounding wrist strap when handling the board. If none is available, often touch a grounded surface to discharge any static electricity that may have built up in your body.
- Handle the board by the edges and do not touch the connectors.

When assembling a system, ensure that the board is unplugged by turning off the power supply. To be absolutely sure, unplug the power cord.

Do not attempt to service or repair this product yourself. Leave servicing to qualified service personal. If the board does not operate normally, please contact JUMP*tec* GmbH.

Trademarks

All trademarks and registered trademarks mentioned herein are the property of their respective owners. For example:

- MS-DOS Vxx, Windows 3.x, Windows 95 and Windows NT are trademarks of Microsoft Inc.
- PC/104 is a trademark of the PC/104 Consortium.

In this handbook, products are mentioned exclusively for product identification purposes.

Brief Overview

1.1 Specifications

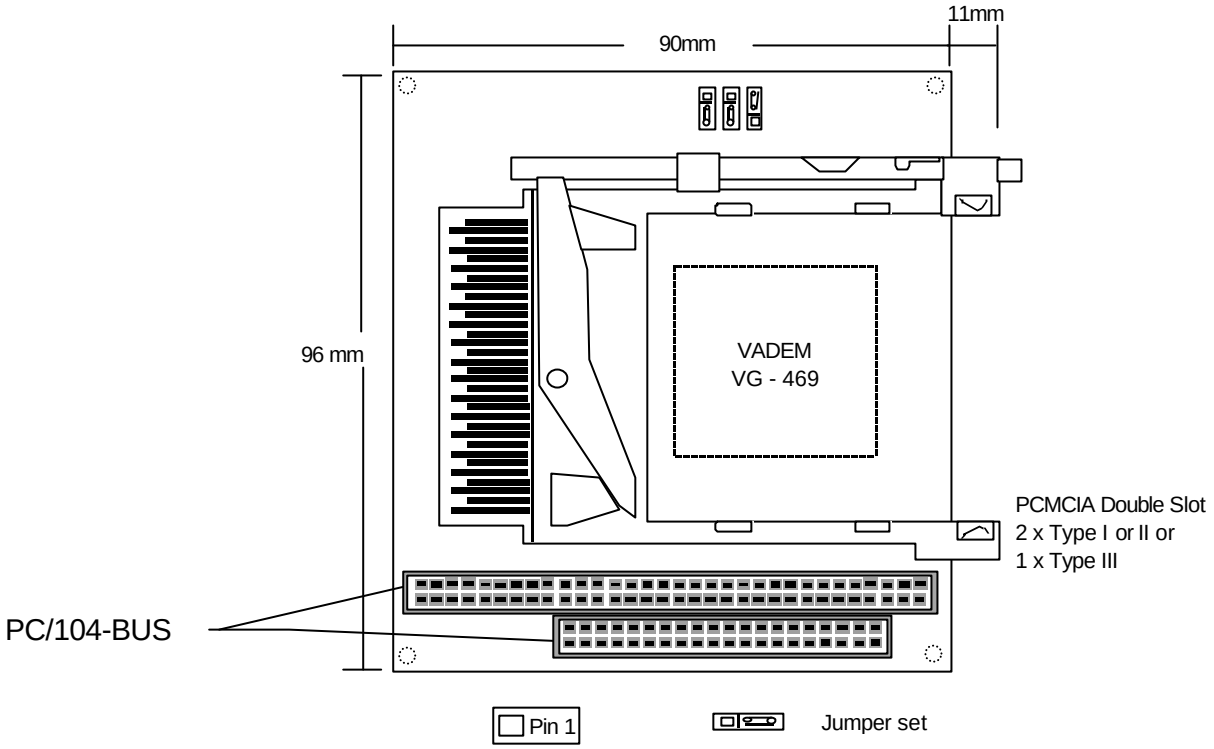
Format:	PC/104 (16 bit)
Dimensions:	90,17 x 95,89 mm , see figure 1
Power supply:	+5V and +12V
Controller:	VADEM controller 469 for 2 x type I, II or 1 x type III
Interface:	PC/104 bus
PCMCIA:	2 slots with eject mechanism
ESD:	ESD connector onboard
Handling temperature:	storage: -20°C up to 85°C operation: 0°C up to 60°C,
Humidity:	not condensing

1.2 Jumper Assignments and Defaults

Jumper	Assignments	Default Settings
JP101	Setting of the I/O address: (1-2) set → I/O address 3E0 (2-3) set → I/O address 3E2	(1-2) set
JP403	Only for 5V PCMCIA cards *****	(2-3) set Do not change!
JP404	- " - *****	(2-3) set Do not change!

*** Note:** 3,3 or 5V power supply can ***only*** be selected, if the LT 11173 is onboard. Than Jumper JP403 and JP404 must be set to (1-2).

1.3 Component Locations



Technical Description

2.1 Pin Assignments

If not specifically indicated otherwise, the pins in dual-array connectors are numbered as indicated below. Pin 1 is identified by a square pad located on the bottom side of the board.

...	3	1
...	4	2

Default Pin Assignment

2.2 block diagram

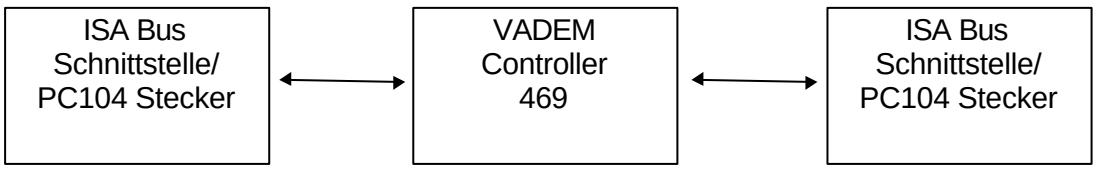


Figure 2: Block Diagram of the **PCMCIA Module**

2.3 PC/104 BUS

The PC/104 Bus has the same specifications as the ISA Bus. The PC/104 Bus enables easy installation of compact expansion cards. Numerous PC/104 cards are readily available on the market.
The PC/104 specifications by the PC/104 consortium contain further information on the PC/104 Standard and installation of expansion modules. These are available from: PC/104, 809 Cuesta Drive, B-175, Mt. View, CA 94040, 415-903-8304.

3. Initial Operation

- Turn off your system and unplug the power cord. Disconnect all cables and carefully remove the system cover.
- Wear a grounding wrist strap when handling the board. If none is available, often touch a grounded surface to discharge any static electricity that may have built up in your body. Be sure that your system is grounded.
- Insert the PC/104 PCMCIA extension module properly into your system and connect them via PC/104 connector. Take care that pin 1 of the PC/104 connectors fit together.

Note: If the PC/104 connectors are plugged together in a wrong way, the board might be destroyed!

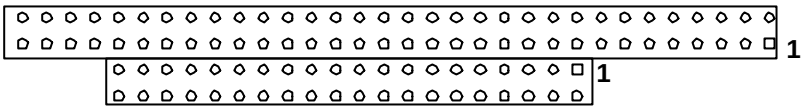
- Mount the PC/104 PCMCIA module on any free slot of your System.
- Put the system cover back and reconnect the cables. Now you can restart your system and install the PCMCIA software.

3.1 Power Supply

The **PCMCIA Module** requires a power supply of only +5V. Than the operating power consumption is 1A. If additional components are connected, their power supply must also be connected (possibly +12V). Than the operating power consumption is 0,5A. The power is supplied by the PC/104 Bus. The pin assignment of the PC/104 connector is described in **Table 1** chapter 3.2.

3.2 Pin Assignment

3.2.1 PC/104 and ISA Bus Connector



The lines C and D (1) of the following table are used for 16 bit applications (AT) and can be absent for 8 bit (XT) modules. Key (2) stands for absent pins. Low Active signals are marked with a star (*).

Pin #	*J1/P1 line A*	*J1/P1 line B*	*J2/P2 (1) line C*	*J2/P2 (1) line D*
1	IOCHK*	GND	GND	GND
2	SD7	RESET	SBHE*	MEMCS16*
3	SD6	+5V	LA23	IOCS16*
4	SD5	IRQ9	LA22	IRQ10
5	SD4	-5V	LA21	IRQ11
6	SD3	DRQ2	LA20	IRQ12
7	SD2	-12V	LA19	IRQ15
8	SD1	SRDY	LA18	IRQ14
9	SD0	+12V	LA17	DACK0*
10	IOCHRDY	Key (2)	MEMR*	DRQ0
11	AEN	SMEMW*	MEMW*	DACK5*
12	SA19	SMEMR*	SD8	DRQ5
13	SA18	IOW*	SD9	DACK6*
14	SA17	IOR*	SD10	DRQ6
15	SA16	DACK3*	SD11	DACK7*
16	SA15	DRQ3	SD12	DRQ7
17	SA14	DACK1*	SD13	+5V
18	SA13	DRQ1	SD14	MASTER*
19	SA12	REFRESH*	SD15	GND
20	SA11	BCLK	Key (2)	GND
21	SA10	IRQ7		
22	SA9	IRQ6		
23	SA8	IRQ5		
24	SA7	IRQ4		
25	SA6	IRQ3		
26	SA5	DACK2*		only PC/104
27	SA4	TC		
28	SA3	BALE		
29	SA2	+5V		
30	SA1	OSC		
31	SA0	GND		
32	GND	GND		

Table 1: Pin assignment: PC/104 and ISA Bus connector
ST501 and ST502

3.2.2 PCMCIA Connector

upper connector

lower connector

Pin#	*Description*	*Pin#*	*Description*	*Pin#*	*Description*
1	GND	24	SA5	47	BSA18
2	SD3	25	SA4	48	BSA19
3	SD4	26	SA3	49	BSA20
4	SD5	27	SA2	50	BSA21
5	SD6	28	SA1	51	CDVCC
6	SD7	29	SA0	52	CDVPP
7	-MCELA	30	SD0	53	BSA22
8	SA10	31	SD1	54	BSA23
9	-MEMR	32	SD2	55	PCMSA24
10	SA11	33	IC3WP	56	PCMSA25
11	SA9	34	GND	57	N.C.
12	SA8	35	GND	58	RSTA
13	BSA13	36	-MCCD1	59	-WAITA
14	BSA14	37	SD11	60	N.C.
15	-MEMW	38	SD12	61	-REGA
16	-IC3RDY	39	SD13	62	IC3BVD2
17	CDVCC	40	SD14	63	IC3BVD1
18	CDVPP	41	SD15	64	SD8
19	BSA16	42	-MCENA	65	SD9
20	BSA15	43	N.C.	66	SD10
21	SA12	44	-IOR	67	-MCCD2
22	SA7	45	-IOW	68	GND
23	SA6	46	BSA17		

Table 2: Pin assignment of the PCMCIA connectors (ST201 and ST301).

Driver Support

On the PCMCIA Market the Hardware is generally developed withot Drivers while Drivers were developed by a software developing Company. This makes the Difference between PCMCIA- and graphic-cards. Most OEMs sell these software in Bundle as Licence. In this Case You as the Customer has to pay a considerable higher Price for the Drive.
PCMCIA-Card Drivers for the PC/104-PCMCIA-1 are available from the respective Manufacturer of the PCMCIA-Card. Controller Drivers are available from the controller Supplier e.g. VADEM. Please contact your local Vadem representation for driver support.

History

File name	last alteration	author	Alteration to revision before
PCM1D110.doc	24.09.1997	JH	created
PCM1D11.doc	12.01.1998	SG	Exchanged Jump to Jumptec
PCM1M112.doc	09.02.1998	JH	Filename corrected and Layout revised
PCM1M113.doc	17.07.2001	BHO	Driver Support area inserted