Appendix for PC/104-*plus* modules

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1 Introduction

1.1 Introduction of PC/104-plus

PC/104-*plus* is a special bus architecture designed for embedded systems. A third connector opposite the PC/104 connectors supports the PCI bus. Basically the electrical specifications of the PC/104-*plus* bus are compliant with the PCI signals, except 64-bit extensions, JTAG, PRSNT or CLKRUN signals. The mechanical specifications are changed to "module stack", please refer to the figure shown below. According to the specifications of PC/104-*plus*, PC/104-*plus* modules are installed and configured by switching CLK, IDSEL, INT, REQ and GNT signals through multiplexers to the appropriate connections.

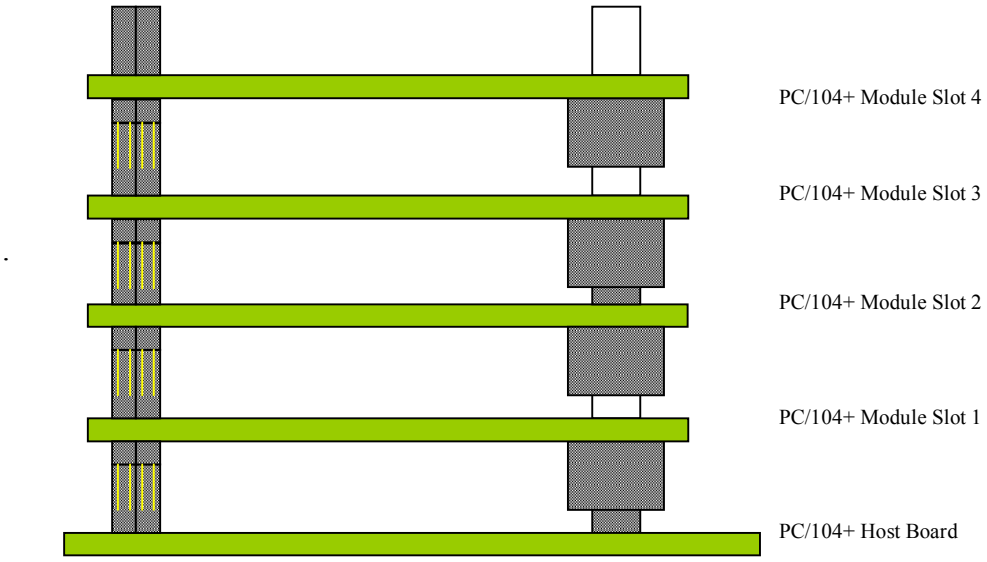


Figure 1 PC/104-*plus* module stack

Rotary switch on PCM-xxxx+ is used for the switching of these signals, please refer to section 2.4 for details in this appendix

1.2 Specifications for PCM-7248+

The specifications of the PCM-7248+ are exactly the same as the PCI-7248. Please refer to section 1.3 of the PCI-7248 manual for detailed information.

1.3 Software support

The software support is exactly the same as PCI-7248. **To install your PCM-7248+, all you need to do is install PCI-7248 driver in ADLINK All-in-One CD**. Please refer to section 1.4 of the PCI-7248 manual and the "***Software Installation Guide***" for the detailed information about how to install the software libraries for DOS, or Windows 95 DLL, or PCIS-DASK for Windows 98/NT/2000.

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2 Installation procedures for PC/104-*plus* DAQ modules:

2.1 what you have

In addition to this appendix, the package includes the following items:

- PCM-7248+ DAQ modules
- Manual & Software Utility CD-ROM

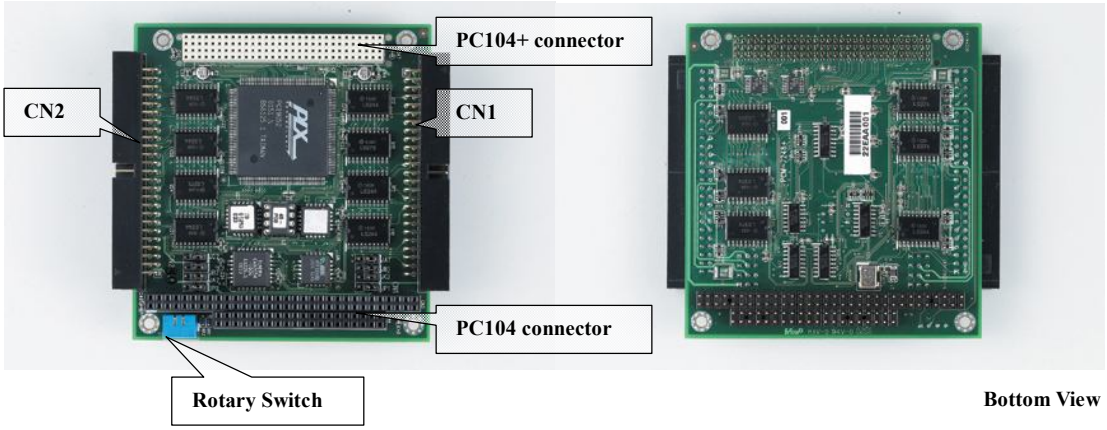
If any of these items is missing or damaged, contact the dealer from whom you purchased the product. Save the shipping materials and carton in case you want to ship or store the product in the future

2.2 unpacking

Your PCM-7248+ card contains sensitive electronic components that can be easily damaged by static electricity

The card should be done on a grounded anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same point as the anti-static mat.

2.3 layout of modules



2.4 PC/104-*plus* configuration

A rotary switch on PCM-7248+ is used to switch the appropriate CLK, IDSEL, INT, REQ and GNT signals from PCI bus. For example, when PCM-7248+ card is plugged as the closest position to PC/104-*plus* motherboard, the switch must be set to 0. For signals stability consideration, please switch the rotary switch to the appropriate position with respect to the module slot. The module stack order is shown in Figure 1. In addition, according to the PC/104-*plus* specification, module slots 3 and 4 share REQ2/GNT2, they cannot both be bus master devices.

Rotary Switch Position	Module Slot	CLK	IDSEL	INT	REQ	GNT
0	1	CLK0	IDSEL0	INTA	REQ0*	GNT0*
1	2	CLK1	IDSEL1	INTB	REQ1*	GNT1*
2	3	CLK2	IDSEL2	INTC	REQ2*	GNT2*
3	4	CLK3	IDSEL3	INTD	REQ2*	GNT2*
4~7(reserved)	--	--	--	--	--	--

Table 1 Rotary switch setting * only for Bus Masters card

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2.5 Connector Pin Assignment

The connector pin assignments of the PCM-7248+ are exactly the same as the PCI-7248. Please refer to section 2.6 of the PCI-7248 manual for detailed information.

Note: Register format, operation theorem and C/C++ Libraries of PCM-7248+ are the same as those of PCI-7248, please refer to chapter 3~5 of PCI-7248 manual for detailed information.

2.6 Jumpers Description

The PCM-7248+ DIO modules are 'plug-and-play', thus it is not necessary to setup the card configurations to fit the computer system. However, to fit users' versatile operation environment, there are still a few jumpers to set the power-on status of ports and the usage of the +12V output pins.

2.6.1 Power-On Status of Ports

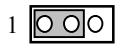
For every port on the PCM-7248 modules, the power-on status is set as input, therefore, the voltage could be pulled high, pulled low, or floating. It is dependent on the jumper setting. Table 2.1 lists the reference number of the jumpers and the corresponding port names.

Jumper	Port Name
JA1	P1A (Port A of CN1)
JB1	P1B (Port B of CN1)
JC1	P1C (Port C of CN1)
JA2	P2A (Port A of CN2)
JB2	P2B (Port B of CN2)
JC2	P2C (Port C of CN2)

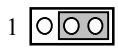
Table 2.1 Jumpers and Port names list

The physical meaning of all the jumpers are identical. The power on status of each port can be set independently. The default is to pull all signals high. The following diagram use JA1 as an example to show the possible configurations.

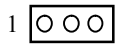
1. Inputs in Port A of CN1 are power-on pulled high. 'H'



2. Inputs in Port A of CN1 are power-on pulled low. 'L'

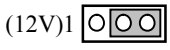


3. Inputs in Port A of CN1 are power-on floating. (The jumper is removed)



2.6.2 12V Power Supply Configuration

The pin 2 and pin 4 of the CN1 ~ CN2 50-pin OPTO-22 connectors can be configured as 12V power supply or ground. Please refer to Figure 2.4 in the PCI-7248 manual for the 12 volts power supply position. JP1~JP2 of the 12V power are for CN1~CN4 respectively. Connections with ground are set as default. The following diagram shows the setting of JP2, connecting the pin 2 and pin 4 of CN2 to ground.



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