Model PCI-DIO48 (48S)

PCI Based Digital I/O Cards

CE

Description

The PCI-DIO48 and PCI-DIO48S are 48-bit parallel digital I/O cards designed for use in computers with a PCI bus. They are programmable to either accept inputs or provide latched outputs on two groups of three, eight-bit ports.

Each I/O line is buffered and capable of sourcing 15mA or sinking 24mA of current. Tristate I/O line buffers are configured automatically by hardware logic for input or output according to the programmable peripheral interface chip control register software assignment. Pull-up resistors on the card assure there are no erroneous outputs at power up until the card is initialized by system software.

The distinguishing feature for the PCI-DIO48S model is that the state of all inputs can be monitored and if one or more of the bits change states, a latched interupt request can be generated. Therefore it is not necessary to use software to continuously poll the inputs to detect a change-of-state condition. The change-of-state interrupt is enabled by a software write command to the interrupt enable register. Once latched, the change-of-state interrupt can be cleared by a software write.

I/O wiring connections are through a 50-pin header on the card. Flat ribbon cables can be used to connect these cards to termination panels such as the Industrial Computer Source Model UTB or the Model 2M50FC. This also provides compatibility with I/O mounting racks from Industrial Computer Source, Grayhill, Opto-22 and others.

The PCI-DIO48 & PCI-DIO48S cards use one address space, occupying sixteen consecutive register locations. The operating systems BIOS determines the resources assigned to the cards and can be located anywhere in the 0000 to FFFF hex address range.

Ordering Guide

PCI-DIO48	48 line card, manual, software
PCI-DIO48S	48 line, change-of-state card, manual, software

Features

- **48 Bits of Digital I/O**
- **Interrupt Generation on Input Change of State (48S only)**
- **All 48 I/O Lines Buffered on the Card**
- **I/O Buffers can be Enabled/Disabled Under Program Control**
- **Four & Eight Bit Ports Independently Selectable for I/O**
- **Pull-ups on I/O Lines**
- **+5VDC Supply Available to the User**
- **Compatible with Industry Standard I/O Racks**

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Software

Several programs are supplied with the cards on two 3.5" diskettes. The first diskette called “Product Files” includes: (a) a menu-driven setup program for setting switches and jumpers, (b) software drivers for DOS applications, and (c) sample programs. All high-level DOS Languages have Inport and Outport instructions.

The second diskette is titled “Tools” and contains the following programs:

PCIFind.exe is used with PCI-bus cards in DOS, Windows 3.1, and Windows 95 systems to determine what PCI bus resources are allocated to installed PCI-bus cards. You can use this utility to find out what base addresses and IRQ levels the system has assigned to your cards. (Note: Under WindowsNT, use PCINT to do this task.)

For VisualBASIC 3.0 applications, a utility driver named VBASSEC provides means to write INPORT and OUTPORT statements for reading and writing I/O. This driver also includes PEEK and POKE statements for reading and writing RAM. VBACCES is in DLL form and allows you to access hardware as if the language was designed for it.

For Windows95 applications, a DLL driver named ACCES95 is supplied with the card. It provides a fast, simple way to access memory-mapped I/O devices by means of direct register access using a standard 32-bit DLL calling convention. Sample applications are included in VisualBASIC 4.0, Delphi 2.0, Borland C/C++ 4.0, and Borland C++ Builder 1.0.

For WindowsNT applications there are three programs included on the diskette as follows:

PCINT.SYS includes a kernal mode device driver designed to search for devices on the PCI bus and to add appropriate registry entries as necessary.

PCINT.EXE is an application program that installs the PCINT.SYS driver to determine what resources have been allotted to install PCI-bus devices.

The third file, ACCESNT, is a 32-bit device driver that provides byte, word and dword sized access to I/O (port) memory. Sample applications are included in VisualBASIC 4.0, Delphi 2.0, and Borland C++ Builder 1.0.

Applications

Automatic Test Systems

Laboratory Automation

Robotics

Machine Control

Security Systems/Energy Management

Relay Monitoring & Control

Parallel Data Transfer to PC

Sensing Switch Closures or TTL, DTL, CMOS Logic

Driving Indocator Lights or Recorders

3

PCI-DIO48

Specifications

Digital Inputs	Logic High: 2.0 to 5.0VDC
	Logic Low: -0.5 to +0.8VDC
	Input Load (Hi): 20µA
	Input Load (Lo): -200µA
Digital Outputs	Logic High: 2.5VDC min, source 15mA
	Logic Low: 0.5VDC min, sink 24mA
Power Output	+5VDC from computer bus
	(external 1A fast blow fuse recommended)
Power Requirements	+5VDC @ 200mA typical
Size	7.15" long (181.6mm)
Temperature Range	Operating 0 to 60°C
	Storage -50 to +120°C
Humidity	0 to 90% RHNC

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Document 1730 10/6/98