ICP DAS

PEX-D48
PCI Express, 48-ch Digital I/O Board

Features

- PCI Express x1 Interface
- Supports Card ID (SMD Switch)
- Emulates two Industrial-standard 8255 PPI Ports (Mode 0)
- DI/O Response Time approximately 2 µs (500 kHz Max.)
- DO Provides Higher Driving Capability
- One 16-bit Event Counter
- 48 Buffered TTL Digital Input/Output Lines
- Six 8-bit Bi-directional Input/Output Ports
- One 32-bit Programmable Internal Timer
- Pull-high/Pull-low Jumpers for DI Channels
- Four Interrupt Sources

Introduction

The PEX-D48 board utilizes the PCI Express bus and is designed as an easy replacement for the PIO-D48/PIO-D48U/PIO-D48SU series without requiring any modification to either the software or the driver.

The PEX-D48 provides 48 buffered TTL Digital Input/Output lines, which are grouped into six 8-bit bi-directional ports: Port A (PA), Port B (PB) and Port C (PC). Port C can also be split into two nibble-wide (4-bit) segments. All ports are configured as input mode during power-on or after a reset.

The PEX-D48 also includes an onboard Card ID that enables the board to be easily recognized via software if two or more cards are installed in the same computer. The pull-high/low jumpers allow the DI status to be predefined instead of remaining floating if the DI channels are disconnected or line broken.

Software

Drivers

✓	32/64-bit Windows XP/2003/2008/7/8/10	✓ Linux

Sample Programs
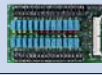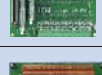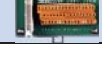
- ✓ DOS Lib and TC/BC/MSC Demo
- ✓ LabVIEW Toolkit
- ✓ VB/VC/Delphi/BCB/VB.NET/C#.NET/VC.NET/MATLAB Demo

Pin Assignments

Pin Assign-ment	Terminal No.	Pin Assign-ment
N.C	01	
N.C	02	20 +5 V
PB_7	03	21 GND
PB_6	04	22 PC_7
PB_5	05	23 PC_6
PB_4	06	24 PC_5
PB_3	07	25 PC_4
PB_2	08	26 PC_3
PB_1	09	27 PC_2
PB_0	10	28 PC_1
GND	11	29 PC_0
N.C.	12	30 PA_7
GND	13	31 PA_6
N.C.	14	32 PA_5
GND	15	33 PA_4
N.C.	16	34 PA_3
GND	17	35 PA_2
+5 V	18	36 PA_1
GND	19	37 PA_0
		CON1

Pin Assign-ment	Terminal No.		Pin Assign-ment
PC_7	01	02	GND
PC_6	03	04	GND
PC_5	05	06	GND
PC_4	07	08	GND
PC_3	09	10	GND
PC_2	11	12	GND
PC_1	13	14	GND
PC_0	15	16	GND
PB_7	17	18	GND
PB_6	19	20	GND
PB_5	21	22	GND
PB_4	23	24	GND
PB_3	25	26	GND
PB_2	27	28	GND
PB_1	29	30	GND
PB_0	31	32	GND
PA_7	33	34	GND
PA_6	35	36	GND
PA_5	37	38	GND
PA_4	39	40	GND
PA_3	41	42	GND
PA_2	43	44	GND
PA_1	45	46	GND
PA0	47	48	GND
+5 V	49	50	GND
			CON2

Hardware Specifications

Programmable DI/O	
Channels	48
Compatibility	5 V/TTL
Digital Input	
Input Voltage	Logic 0: 0.8 V Max. Logic 1: 2.0 V Min.
Response Speed	500 kHz
Digital Output	
Output Voltage	Logic 0: 0.4 V Max. Logic 1: 2.4 V Min.
Output Capability	Sink: 64 mA @ 0.8 V Source: 32 mA @ 2.0 V
Response Speed	500 kHz
Timer/Counter	
Channels	2 (Event Timer x 1/32-bit Timer x 1)
Resolution	16-bit
Reference Clock	Internal: 4 MHz
General	
Bus Type	PCI Express x1
Card ID	Yes (4-bit)
Connectors	Female DB37 x 1 50-pin Box Header x 1
Power Consumption	1500 mA @ +3.3 V 0 mA @ +12 V
Operating Temperature	0°C to +60°C
Humidity	5 to 85% RH, Non-condensing

Ordering Information

PEX-D48 CR	PCI Express, 48-ch Digital I/O Board (RoHS)

Accessories

	CA-3710 CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°)) (RoHS)
	CA-3710D CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°)) (RoHS)
	CA-3715DM-H CR	DB-37 Male-Male Cable, 1.5 M, 180°. (RoHS)
	CA-3730DM-H CR	DB-37 Male-Male Cable, 3.0 M, 180°. (RoHS)
	CA-3750DM CR	DB-37 Male-Male Cable, 5.0 M, 180°. (RoHS)
	CA-4002 CR	37-pin Male D-sub connector with plastic cover (RoHS)
	CA-5002 CR	50-pin flat cable 20 cm (RoHS)
	CA-5015 CR	50-pin flat cable 1.5 M (RoHS)
	CA-SCSI100-15 CR	SCSI II 100-pin & 100-pin Male connector cable 1.5 M (RoHS)
	ADP-37/PCI CR	50-pin connector extender to 37-pin connector (RoHS)

	DB-24P CR	24-channel isolated D/I board (RoHS)
	DB-24R CR	24-channel relay board (RoHS)
	DB-24PR CR	24-channel power relay board (RoHS)
	DB-24POR CR	24-channel of PhotoMos Relay output board (RoHS)
	DB-24SSR CR	24-channel Photo Mos relay output board (RoHS)
	DB-24C CR	24-channel of open-collector output board (RoHS)
	DN-100 CR	I/O Connector Block with DIN-Rail Mounting and 100-Pin SCSI II Connector (RoHS)
	DN-100-CA CR	I/O Connector Block with DIN-Rail Mounting and 100-Pin SCSI II Connector Include one CA-SCSI100-15 cable (RoHS)
	DN-37 CR DN-37-381 CR	I/O Connector Block with DIN-Rail Mounting and 37-Pin D-Sub Connector (RoHS)
	DN-50 CR DN-50-381 CR	I/O Connector Block with DIN-Rail Mounting and 50-Pin Header (RoHS)

PIO-D48U/PEX-D48

CON1 37PIN — CON2 50PIN

Cable (37PIN): CA-3710 (1M), CA-3710D (1M), CA-3715DM-H (1.5M), CA-3730DM-H (3M), CA-3750DM-H (5M)

Cable (50PIN): CA-5002 (20CM), CA-5015 (1.5M)

37PIN — Daughter Boards: DB-24POR, DB-24SSR, DB-24C

50PIN — Daughter Boards: DB-24P, DB-24R, DB-24PR, DB-24POR, DB-24SSR, DB-24C

PIO-D48SU — CON1 (100PIN) — Cable (100PIN): CA-SCSI100-15 (1.5M) — 100PIN — Daughter Boards: DN-100