

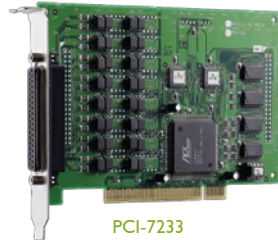
PCI-7230/7233/7234, LPCI/LPCle/cPCI-7230

32-CH Isolated DIO Cards

PCI EXPRESS® **PCI CompactPCI**



PCI-7230



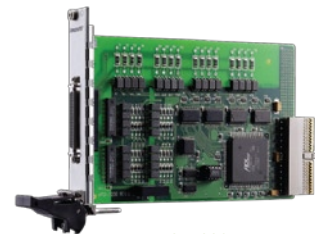
PCI-7233



LPCI-7230



LPCle-7230



cPCI-7230

Features

- Supports a 32-bit 5 V PCI bus (PCI-7230/7233/7234/7234P)
- Supports a 32-bit 3.3 V or 5 V PCI bus (LPCI-7230)
- x1 lane PCI Express Interface (LPCle-7230)
- 3U Eurocard form factor, CompactPCI compliant (PICMG 2.0 R2.1) (cPCI-7230)
- 16-CH isolated digital inputs & 16-CH isolated digital outputs (PCI-7230/LPCI-7230/LPCle-7230/cPCI-7230)
- 32-CH isolated digital inputs (PCI-7233)
- 32-CH isolated digital outputs (PCI-7234/7234P)
- 5000 V_{RMS} optical isolation (PCI-7230 & PCI-7233/cPCI-7230)
- 2500 V_{RMS} optical isolation (PCI-7234/7234P/LPCI-7230/LPCle-7230)
- Sink current up to 500 mA on single isolated output
- Two external interrupt sources (PCI-7230/LPCI-7230/LPCle-7230/cPCI-7230)
- Change-of-state interrupt sources (PCI-7233)
- Compact, low-profile PCI/PCI Express® size PCB (LPCI-7230/LPCle-7230)

Operating Systems

- Windows 7/Vista/XP/2000/2003 Server
- Linux

Recommended Software

- AD-Logger
- VB.NET/VC.NET/VB/VC++/BCB/Delphi
- DAQBench

Driver Support

- DAQPilot for LabVIEW™
- DAQ-MTLB for MATLAB®
- PCIS-DASK for Windows
- PCIS-DASK/X for Linux

Introduction

ADLINK's PCI/LPCI/LPCle/cPCI-723X series are 32-CH isolated input and/or output cards which provide a 2,500 V optical isolation protection. The wide input range of the PCI/cPCI/LPCI/LPCle-7230 and PCI-7233 makes it easy to sense the status of external devices. The non-polarity characteristic is suitable for a wide variety of industry applications. The PCI/cPCI/LPCI/LPCle-7230 and PCI-7234 devices also feature a wide output range from 5 to 35 V, which is suitable for relay driving and industrial automation applications. The PCI-7234P provides current-source output capability. The PCI/cPCI/LPCI/LPCle-7230 and PCI-7233 also provide two interrupt sources on digital input channels. The PCI-7233 also features a change-of-state (COS) function that generates an interrupt when any digital input changes its state.

Specifications

Isolated Digital Input

- Number of channels
 - 16 (PCI-7230/LPCI-7230/LPCle-7230/cPCI-7230)
 - 32 (PCI-7233)
- Maximum input range
 - 24 V, non-polarity
 - PCI-7230/PCI-7233/LPCI-7230/LPCle-7230
- Digital logic levels
 - 0-24 V, non-polarity
 - Input high voltage: 5-24 V
 - Input low voltage: 0-1.5 V
- Input resistance: 1.2 k @ 0.5 W
- Isolation voltage
 - 2500 V_{RMS} (LPCI-7230/LPCle-7230)
 - 5000 V_{RMS} (PCI-7230/PCI-7233/cPCI-7230)
- Interrupt sources
 - Digital input channel 0 and 1 (PCI-7230/LPCI-7230/LPCI-7230/cPCI-7230)
 - Change-of-state (PCI-7233)
- Data transfers: programmed I/O

Isolated Digital Output

- Number of channels
 - 16 (PCI-7230/LPCI-7230/LPCle-7230/cPCI-7230)
 - 32 (PCI-7234)
- Output type: Darlington transistor

- Sink current
 - 500 mA for one channel @ 100% duty (PCI-7230/LPCI-7230/LPCle-7230)
 - 370 mA for all channels @ 10% duty (PCI-7230/LPCI-7230/LPCle-7230)
 - 130 mA for all channels @ 50% duty (PCI-7230/LPCI-7230/LPCle-7230)
 - 500 mA for single channel @ 100% duty (PCI-7234)
 - 500 mA for all channels @ 20% duty (PCI-7234)
- Source current
 - 500 mA for one channel @ 100% duty cycle (PCI-7234P)
 - 260 mA for all channels @ 10% duty cycle (PCI-7234P)
- Power dissipation
 - Max. 1.47 W per chip (8 DO channels) (PCI-7230/PCI-7234P/LPCI-7230/LPCle-7230)
 - Max. 2.25 W per chip (8 DO channels) (PCI-7234)
- Supply voltage: 5-35 V_{DC}
- Isolation voltage: 2500 V_{RMS}
- Data transfers: programmed I/O

General Specifications

- I/O connector
 - PCI-7230/7233/7234/7234P
 - 37-pin D-sub female
 - PCI-7230/LPCI-7230/cPCI-7230
 - One 50-pin SCSI-II female

- Operating temperature: 0°C to 60°C
- Storage temperature: -20°C to 80°C
- Relative humidity: 5% to 95%, non-condensing
- Power requirements

Device	Power Consumption
PCI-7230	+ 5 V @ 150 mA typical (needs external DC power)
PCI-7233	+ 5 V @ 300 mA typical
PCI-7234	+ 5 V @ 180 mA typical (with internal DC-DC power)
PCI-7234P	+ 5 V @ 150 mA typical
LPCI-7230	+ 3.3 V @ 279 mA
LPCle-7230	+ 1.2 V @ 133 mA
cPCI-7230	+ 5 V @ 270 mA typical

- Dimensions (not including connectors)
 - 153 mm X 107 mm (PCI-7230)
 - 158 mm X 107 mm (PCI-7233)
 - 175 mm X 107 mm (PCI-7234 & PCI-7234P)
 - 120 mm X 65 mm (LPCI-7230)
 - 119.9 mm(L) x 68.9 mm(H) (LPCle-7230)
 - 160 mm x 100 mm (cPCI-7230)

Terminal Boards & Cables

PCI-7230/7233/7234/7234P:

■ **DIN-37D-01**
Terminal Board with One 37-pin D-sub Connector and DIN-Rail Mounting (Cables are not included.)

■ **ACLD-9137-01**
General-Purpose Terminal Board with One 37-pin D-sub Male Connector

■ **ACL-10137-1MM**
37-pin D-sub male/male cable, 1 M

LPCI-7230/LPCle-7230/cPCI-7230:

■ **DIN-50S-01**
Terminal Board with One 50-pin SCSI-II Connector and DIN-Rail Mounting (Cables are not included.)

■ **ACL-10250-1**
50-pin SCSI-II cable (mating with AMP-787082-5), 1 M

* For more information on mating cables, please refer to P2-61/62.

Ordering Information

- **PCI-7230**
16-CH Isolated DI & 16-CH Isolated DO Card
- **PCI-7233**
32-CH Isolated DI Card with inversed input logic
- **PCI-7234**
32-CH Isolated DO Card
- **PCI-7234P**
32-CH Isolated DO Card with Source Current Transistor
- **LPCI-7230**
16-CH Isolated DI & 16-CH Isolated DO Low-Profile PCI Card
- **LPCle-7230**
16-CH Isolated DI & 16-CH Isolated DO Low-Profile PCI Express® Card
- **cPCI-7230**
16-CH Isolated DI & 16-CH Isolated DO Module

Pin Assignment

IDI_0	1	20	IDI_1		
IDI_2	2	21	IDI_3		
IDI_4	3	22	IDI_5		
IDI_6	4	23	IDI_7		
IDI_8	5	24	IDI_9		
IDI_10	6	25	IDI_11		
IDI_12	7	26	IDI_13		
IDI_14	8	27	IDI_15		
EICOM	9	28	EOGND		
EOGND	10	29	EOGND		
IDO_0	11	30	IDO_1		
IDO_2	12	31	IDO_3		
IDO_4	13	32	IDO_5		
IDO_6	14	33	IDO_7		
IDO_8	15	34	IDO_9		
IDO_10	16	35	IDO_11		
IDO_12	17	36	IDO_13		
IDO_14	18	37	IDO_15		
VDD	19				

IDO_0	1	20	IDO_1		
IDO_2	2	21	IDO_3		
IDO_4	3	22	IDO_5		
IDO_6	4	23	IDO_7		
IGND	5	24	IDO_8		
IDO_9	6	25	IDO_10		
IDO_11	7	26	IDO_12		
IDO_13	8	27	IDO_14		
IDO_15	9	28	IGND		
IDO_16	10	29	IDO_17		
IDO_18	11	30	IDO_19		
IDO_20	12	31	IDO_21		
IDO_22	13	32	IDO_23		
IGND	14	33	IDO_24		
IDO_25	15	34	IDO_26		
IDO_27	16	35	IDO_28		
IDO_29	17	36	IDO_30		
IDO_31	18	37	IGND		
VDD	19				

IDI_0	1	20	IDI_1		
IDI_2	2	21	IDI_3		
IDI_4	3	22	IDI_5		
IDI_6	4	23	IDI_7		
IGND	5	24	IDI_8		
IDI_9	6	25	IDI_10		
IDI_11	7	26	IDI_12		
IDI_13	8	27	IDI_14		
IDI_15	9	28	IGND		
IDI_16	10	29	IDI_17		
IDI_18	11	30	IDI_19		
IDI_20	12	31	IDI_21		
IDI_22	13	32	IDI_23		
IGND	14	33	IDI_24		
IDI_25	15	34	IDI_26		
IDI_27	16	35	IDI_28		
IDI_29	17	36	IDI_30		
IDI_31	18	37	IGND		
IGND	19				

IDO_0	1	20	IDO_1		
IDO_2	2	21	IDO_3		
IDO_4	3	22	IDO_5		
IDO_6	4	23	IDO_7		
VDD	5	24	IDO_8		
IDO_9	6	25	IDO_10		
IDO_11	7	26	IDO_12		
IDO_13	8	27	IDO_14		
IDO_15	9	28	VDD		
IDO_16	10	29	IDO_17		
IDO_18	11	30	IDO_19		
IDO_20	12	31	IDO_21		
IDO_22	13	32	IDO_23		
VDD	14	33	IDO_24		
IDO_25	15	34	IDO_26		
IDO_27	16	35	IDO_28		
IDO_29	17	36	IDO_30		
IDO_31	18	37	VDD		
IGND	19				

VDD	1	26	VDD		
EICOM	2	27	+5V		
EICOM	3	28	EICOM		
EICOM	4	29	EICOM		
IDO_7	5	30	IDO_14		
IDO_6	6	31	IDO_15		
IDO_5	7	32	IDO_12		
IDO_4	8	33	IDO_13		
IDO_3	9	34	IDO_10		
IDO_2	10	35	IDO_11		
IDO_1	11	36	IDO_8		
IDO_0	12	37	IDO_9		
IDI_3H	13	38	IDI_7H		
IDI_3L	14	39	IDI_7L		
IDI_2H	15	40	IDI_6H		
IDI_2L	16	41	IDI_6L		
IDI_1H	17	42	IDI_5H		
IDI_1L	18	43	IDI_5L		
IDI_0H	19	44	IDI_4H		
IDI_0L	20	45	IDI_4L		
IDI_11	21	46	IDI_15		
IDI_10	22	47	IDI_14		
IDI_9	23	48	IDI_13		
IDI_8	24	49	IDI_12		
EOGND	25	50	EOGND		

VDD	1	26	VDD		
EOGND	2	27	EOGND		
EOGND	3	28	EOGND		
EOGND	4	29	EOGND		
IDO_7	5	30	IDO_14		
IDO_6	6	31	IDO_15		
IDO_5	7	32	IDO_12		
IDO_4	8	33	IDO_13		
IDO_3	9	34	IDO_10		
IDO_2	10	35	IDO_11		
IDO_1	11	36	IDO_8		
IDO_0	12	37	IDO_9		
IDI_3H	13	38	IDI_7L		
IDI_3L	14	39	IDI_7H		
IDI_2H	15	40	IDI_6L		
IDI_2L	16	41	IDI_6H		
IDI_1H	17	42	IDI_5L		
IDI_1L	18	43	IDI_5H		
IDI_0H	19	44	IDI_4L		
IDI_0L	20	45	IDI_4H		
IDI_11	21	46	IDI_15		
IDI_10	22	47	IDI_14		
IDI_9	23	48	IDI_13		
IDI_8	24	49	IDI_12		
EICOM	25	50	EICOM		