

cPCI-7300

80 MB/s High Speed 32-CH Digital I/O Module

Features

- 3U Eurocard form factor, CompactPCI compliant (PICMG 2.0 R2.1)
- 32-CH 5 V/TTL digital inputs/outputs
- Up to 80 MB/s transfer rate
- 8, 16 or 32-bit transfers
- 4 auxiliary DI and 4 auxiliary DO
- On-board 64 kB FIFO
- On-board programmable timer pacer clock
- Internal timer/external clock controls input sampling rate
- Timed digital input sampling controlled by internal timer or external clock
- Independent trigger signals to start data acquisition and pattern generation
- Scatter-gather DMA
- Supports handshaking digital I/O transfer mode
- Repeated digital pattern generation from FIFO
- **Operating Systems**
 - Windows 2000/NT/XP/9x
 - DOS
 - Red Hat Linux
 - Windows CE (call for availability)
- **Recommended Software**
 - VB/VC++/BCB/Delphi
 - DAQBench
- **Driver Support**
 - PCIS-DASK for Windows 2000/NT/XP/9x
 - PCIS-DASK/X for Red Hat Linux
 - PCIS-OCX ActiveX controls
 - PCIS-LVIEW/PnP for LabVIEW **NEW!**



Introduction

ADLINK PCI-7300A is an ultra-high speed digital I/O module for PXI/CompactPCI form factor. The device provides of 32 digital input and/or output channels. High performance designs and state-of-the-art technology make this module ideal for a wide range of applications, such as high speed data transfer, digital pattern generation and digital pattern capture applications, and logic analyzer applications. Trigger signals are available to start the data acquisition of pattern generation.

Specifications

Digital I/O (DIO)

- Numbers of Channel: 32 inputs/outputs
 - 16 DI and 16 DO
 - 32 DI
 - 32 DO
- Compatibility: 5 V/TTL
- Digital logic levels
 - Input high voltage: 2-5.25 V
 - Input low voltage: 0-0.8 V
 - Output high voltage: 2.7 V minimum
 - Output low voltage: 0.5 V minimum
- Input load
 - Terminator OFF
 - Input high current: 1 mA
 - Input low current: 20 mA
 - Terminator ON
 - Termination resistor: 111 Ω
 - Termination voltage: 2.9 V
 - Input high current: 1 mA
 - Input low current: 22.4 mA
- Output driving capacity
 - Source current: 8 mA
 - Sink current: 48 mA

Transfer Characteristic

- Transfer mode
 - Bus mastering DMA with scatter-gather
- Data width: 32/16/8 bits (programmable)

Data Transfer count

- 2M double words (8 M bytes) for non-chaining mode DMA
- No limitation for chaining mode scatter-gather DMA
- Max transfer rate
 - DO: 80 MBytes/s, 32-bit output @ 20 MHz
 - DI: 80 MBytes/s, 32-bit input @ 20 MHz

Trigger

- DI_TRG for digital inputs, DO_TRG for digital outputs
- Compatibility: 5 V/TTL
- Trigger types: rising or falling edges
- Minimum pulse width: 32 ns

Clocking mode

- Internal clock
 - Internal clock sources: 20 MHz, 10 MHz, Timer #0 output (digital input pacer) and Timer #1 output (digital output pacer)

- External clock up to 40 MHz
- Handshaking
- Burst handshaking

Programmable Counter

- Base clock: 10 MHz
- Timer #0 as digital input pacer
- Timer #1 as digital output pacer
- Timer #2 as interrupt source

Auxiliary digital I/O

- Number of channels
 - 4-CH digital inputs
 - 4-CH digital outputs
- Compatibility: 5 V/TTL
- Data transfers: programmed I/O

General Specifications

- I/O connector: 100-pin SCSI-II female
- Operating temperature: 0 to 60 °C
- Storage temperature: -20 to 80 °C
- Relative humidity: 5 to 95%, noncondensing
- Power requirements

Power	on-board terminator off	on-board terminator off
+5V	830 mA max.	1.0 mA max.

- Dimensions (not including connectors)
160 mm x 100 mm

Termination Boards

- **DIN-100S**
Termination Board with a 100-pin SCSI-II Connector and DIN-Rail Mounting (Including One 1-meter ACL-102100 Cable)
- **DIN-502S**
Two Pieces of DIN-50S Termination Board (Including One 1-meter ACL-10252 Cable)

Pin Assignment

GND	1	51	PB15
GND	2	52	PB14
GND	3	53	PB13
GND	4	54	PB12
GND	5	55	PB11
GND	6	56	PB10
GND	7	57	PB9
GND	8	58	PB8
GND	9	59	PB7
GND	10	60	PB6
GND	11	61	PB5
GND	12	62	PB4
GND	13	63	PB3
GND	14	64	PB2
GND	15	65	PB1
GND	16	66	PB0
GND	17	67	DO_ACK
GND	18	68	DO_REQ
GND	19	69	DO_TRG
GND	20	70	AUXO3
GND	21	71	AUXO2
GND	22	72	AUXO1
GND	23	73	AUXO0
GND	24	74	TERMPWR
GND	25	75	TERMPWR
GND	26	76	TERMPWR
GND	27	77	TERMPWR
GND	28	78	AUXI3
GND	29	79	AUXI2
GND	30	80	AUXI1
GND	31	81	AUXI0
GND	32	82	DI_ACK
GND	33	83	DI_REQ
GND	34	84	DI_TRG
GND	35	85	PA15
GND	36	86	PA14
GND	37	87	PA13
GND	38	88	PA12
GND	39	89	PA11
GND	40	90	PA10
GND	41	91	PA9
GND	42	92	PA8
GND	43	93	PA7
GND	44	94	PA6
GND	45	95	PA5
GND	46	96	PA4
GND	47	97	PA3
GND	48	98	PA2
GND	49	99	PA1
GND	50	100	PA0

Ordering Information

- **cPCI-7300**
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