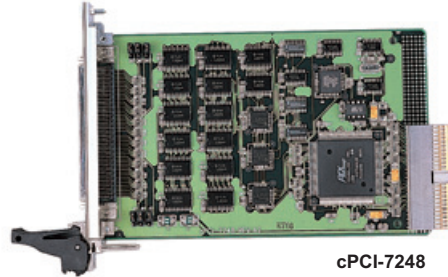# cPCI-7248/7249R
## 48-CH DIO & Timer/Counter Modules

Features

- 3U Eurocard form factor, CompactPCI compliant (PICMG 2.0 R2.1)
- 48-CH digital TTL inputs/outputs
- Emulates 4/2/1 industry standard 8255 PPI (mode 0)
- Buffered circuits for higher driving capability
- Ports are independently configurable as input or output
- External latch signal available for digital inputs
- Output status read back
- Known power-up states
- On-board 8254 timer/counter chip
- 1-CH 16-bit event counter to generate event interrupt
- 1-CH 32-bit timer to generate watchdog timer interrupt
- Multiple programmable interrupt sources
- +12 V and +5 V power available on the connector
- On-board resettable fuses for power output protection
- Rear I/O available on cPCI-7249R

Operating Systems
- Windows 98/NT/2000/XP/2003
- Linux
- DOS
- Windows CE (call for availability)

Recommended Software
- VB/VC++/BCB/Delphi
- DAQBench

Driver Support
- DAQ-LVIEW PnP for LabVIEW
- DAQ-MTLB for MATLAB
- DAQBOY for Windows
- PCIS-DASK for Windows
- PCIS-DASK/X for Linux

cPCI-7248
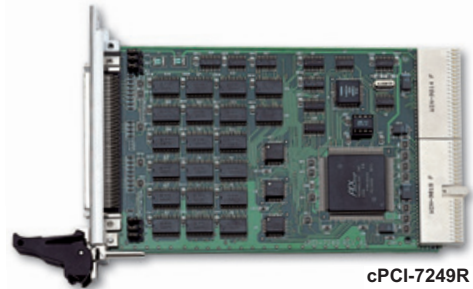
cPCI-7249R

Introduction

ADLINK cPCI-7248 and cPCI-7249R are 48-channel parallel digital input/output (DIO) modules for PXI/CompactPCI form factor. The cPCI-7248 and cPCI-7249R devices emulate mode 0 of the industry standard 8255 Programmable Peripheral Interface (PPI) chips. Each PPI offers three 8-bit ports, Port A, Port B and Port C. The Port C is divided into 2 nibble-wide (4-bit) ports.

The cPCI-7248 and cPCI-7249R devices have programmable timer/counters. One 16-bit counter is available for event counting, while the other 32-bit timer is available for timed interrupt generation. The cPCI-7248 and cPCI-7249R devices provide multiple programmable interrupt sources from DIO channels, as well as the output of the timer. The cPCI-7249R is the extended version of the cPCI-7248, which features one more latch register and rear I/O connectivity.

Specifications

Digital I/O
- Number of channels: 48 inputs/outputs
- Compatibility: 5 V/TTL
- Power-on states: pull-high, pull-low, floating (programmable)
- Digital logic levels
  - Input high voltage: 2-5.25 V
  - Input low voltage: 0-0.8 V
  - Output high voltage: 2.4 V minimum
  - Output low voltage: 0.5 V maximum
- Output driving capacity
  - Source current: 15 mA
  - Sink current: 24 mA
- External digital input latch available on cPCI-7249R
- Data transfers: programmed I/O

Interrupt
- Interrupt #0 sources
  - P1C0
  - P1C3
  - 16-bit event counter
- Interrupt #1 sources
  - P2C0
  - P2C3
  - 32-bit timer (based on 2MHz internal clock)

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

Device	+5 V
cPCI-7248	470 mA typical
cPCI-7249R	700 mA typical

- 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)

Ordering Information

- **cPCI-7248**
  48-CH DIO & Timer/Counter Module
- **cPCPI-7248/6U**
  6U, 48-CH DIO & Timer/Counter Module
- **cPCI-7249R**
  48-CH DIO & Timer/Counter Module with Rear I/O

Note: Rear I/O version can not be used in PXI chassis due to signals conflict with PXI bus

Pin Assignment — cPCI-7248

Signal	Pin	Pin	Signal
P1A0	1	51	EVENT
P1A1	2	52	GND
P1A2	3	53	GND
P1A3	4	54	GND
P1A4	5	55	GND
P1A5	6	56	GND
P1A6	7	57	GND
P1A7	8	58	GND
P1B0	9	59	GND
P1B1	10	60	GND
P1B2	11	61	GND
P1B3	12	62	GND
P1B4	13	63	GND
P1B5	14	64	GND
P1B6	15	65	GND
P1B7	16	66	GND
P1C0	17	67	GND
P1C1	18	68	GND
P1C2	19	69	GND
P1C3	20	70	GND
P1C4	21	71	GND
P1C5	22	72	GND
P1C6	23	73	GND
P1C7	24	74	GND
+5Vout	25	75	+5Vout
P2A0	26	76	GND
P2A1	27	77	GND
P2A2	28	78	GND
P2A3	29	79	GND
P2A4	30	80	GND
P2A5	31	81	GND
P2A6	32	82	GND
P2A7	33	83	GND
P2B0	34	84	GND
P2B1	35	85	GND
P2B2	36	86	GND
P2B3	37	87	GND
P2B4	38	88	GND
P2B5	39	89	GND
P2B6	40	90	GND
P2B7	41	91	GND
P2C0	42	92	GND
P2C1	43	93	GND
P2C2	44	94	GND
P2C3	45	95	GND
P2C4	46	96	GND
P2C5	47	97	GND
P2C6	48	98	GND
P2C7	49	99	GND
+12Vout	50	100	+12Vout

Pin Assignment — cPCI-7249R

Signal	Pin	Pin	Signal
P1A0	1	51	EVENT
P1A1	2	52	GND
PA12	3	53	GND
P1A3	4	54	GND
P1A4	5	55	GND
P1A5	6	56	GND
P1A6	7	57	GND
P1A7	8	58	GND
P1B0	9	59	GND
P1B1	10	60	GND
P1B2	11	61	GND
P1B3	12	62	GND
P1B4	13	63	GND
P1B5	14	64	GND
P1B6	15	65	GND
P1B7	16	66	GND
P1C0	17	67	GND
P1C1	18	68	GND
P1C2	19	69	GND
P1C3	20	70	GND
P1C4	21	71	GND
P1C5	22	72	GND
P1C6	23	73	GND
P1C7	24	74	GND
+5Vout	25	75	+5Vout
P2A0	26	76	GND
P2A1	27	77	GND
P2A2	28	78	GND
P2A3	29	79	GND
P2A4	30	80	GND
P2A5	31	81	GND
P2A6	32	82	GND
P2A7	33	83	GND
P2B0	34	84	GND
P2B1	35	85	GND
P2B2	36	86	GND
P2B3	37	87	GND
P2B4	38	88	GND
P2B5	39	89	GND
P2B6	40	90	GND
P2B7	41	91	GND
P2C0	42	92	GND
P2C1	43	93	GND
P2C2	44	94	GND
P2C3	45	95	GND
P2C4	46	96	GND
P2C5	47	97	GND
P2C6	48	98	GND
P2C7	49	99	EXTCLK
+12Vout	50	100	+12Vout