PCI/cPCI-8554

10-CH General Purpose Timers/Counters & 8-CH DIO Card

PCI-8554

cPCI-8554

Introduction

ADLINK's PCI/cPCI-8554 are 10-CH 16-bit timer/counter and digital I/O cards which provides ten independent timer/counters and one cascaded 32-bit timer. The clock source for each timer/counter can be software selected from the cascaded 32-bit timer, external clock source, timer/counter output of the last channel, and the onboard 8 MHz clock. The flexible architecture makes it easy to re-configure the hardware; for example, up to ten timer/counters can be cascaded to form a 160-bit timer/counter. The hardware can also generate interrupts from either the external interrupt sources or the output of the cascaded 32-bit timer.

The programmable de-bounce filters provide eleven channels of glitch-filtered external clock inputs for timer/counters and the external interrupt input. This feature further improves the reliability for counting applications.

The PCI/cPCI-8554 also provides 8-CH TTL digital inputs and 8-CH TTL digital outputs. ADLINK PCI/cPCI-8554 delivers cost-effective and reliable solutions for event counting, frequency measurement, baud-rate generation, watchdog timer, and other industrial applications.

Features

- **Supports a 32-bit 5 V PCI bus (PCI-8554)**
- **3U Eurocard form factor, CompactPCI compliant (PICMG 2.0 R3.0) (cPCI-8554)**
- **Onboard four 8254 programmable timer/counter chips**
- **10-CH independent 16-bit down counters**
- **1-CH 32-bit cascaded timer**
- **Onboard 8 MHz clock source**
- **Four programmable clock sources for each timer/counter**
- **Programmable de-bounce filters for external clock & external interrupt inputs**
- **Programmable interrupt sources**
- **8-CH TTL digital inputs & 8-CH TTL digital outputs**
- **+12 V and +5 V power available on the connector**
- **Onboard resettable fuses for power output protection**
- Operating Systems
  - Windows 7/Vista/XP/2000/2003
  - Linux
  - Windows CE (call for availability)
- Recommended Software
  - AD-Logger
  - VB.NET/VC.NET/VB/VC++/BCB/Delphi
  - DAQBench
- Driver Support
  - DAQPilot for Windows
  - DAQPilot for LabVIEW™
  - DAQ-MTLB for MATLAB®
  - PCIS-DASK for Windows
  - PCIS-DASK/X for Linux

Specifications

General-Purpose Timer/Counters

- Number of channels: 10
- Counter width: 16 bits
- Compatibility: 5 V/TTL
- Base clock available: 8 MHz or external clock up to 10 MHz
- Programmable clock sources
  - cascaded 32-bit timer output
  - external clock
  - timer/counter output of the last channel
  - Onboard 8 MHz clock

Cascaded Timer

- Number of channels: 1
- Counter width: 32 bits
- Compatibility: 5 V/TTL
- Base clock available: 8 MHz, fixed

Programmable De-bounce Filters for External Clocks

- Number of channels: 11
- Filtered inputs: external clock, external interrupt
- Glitch rejection pulse width: 4 periods of the debounce clock
- De-bounce clock: up to 2 MHz, programmable

Interrupt

- Number of interrupt sources: 2
- Sources: external interrupt input and output of counter #12

Digital I/O

- Number of channels: 8 inputs and 8 outputs
- Compatibility: 5 V/TTL
- Data transfers: programmed I/O

General Specifications

- I/O connector: One 100-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	+5 V
PCI-8554/cPCI-8554/cPCI-8554R	350 mA typical

- Dimensions (not including connectors)
  134 mm x 107 mm (PCI-8554)
  160 mm x 100 mm (cPCI-8554/8554R)

Terminal Boards & Cables

- DIN-100S-01

  Terminal Board with One 100-pin SCSI-II Connector and DIN-Rail Mounting (Cables are not included. For more information about mating cables, please refer to P2-59/60.)

Note:
Legacy DIN-502S can be replaced by two DIN-50S-01 and ACL-10252-1 (100-Pin to two 50-Pin Cable, 1 M)

Ordering Information

- **PCI-8554**
  10-CH General Purpose Timer/Counter & 8-CH DIO Card
- **cPCI-8554**
  12-CH 16-Bit Timer/Counter & Digital I/O Card
- **cPCI-8554R**
  12-CH 16-Bit Timer/Counter & Digital I/O Card 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

PCI/cPCI-8554

+12Vout	1	51	GND
+12Vout	2	52	GOUT2
+12Vout	3	53	GIN2
+5Vout	4	54	GND
+5Vout	5	55	GOUT1
+5Vout	6	56	GIN1
GATE12 / N/A*	7	57	E_INT
DI_6	8	58	DI_7
DI_4	9	59	DI_5
DI_2	10	60	DI_3
DI_0	11	61	DI_1
DO_6	12	62	DO_7
DO_4	13	63	DO_5
DO_2	14	64	DO_3
DO_0	15	65	DO_1
GATE11 / N/A*	16	66	ECLK12
GND	17	67	COUT12
GND	18	68	ECLK11
GND	19	69	COUT11
GND	20	70	GND
GND	21	71	COUT10
GND	22	72	GATE10
GND	23	73	ECLK10
GND	24	74	COUT9
GND	25	75	GATE9
GND	26	76	ECLK9
GND	27	77	COUT8
GND	28	78	GATE8
GND	29	79	ECLK8
GND	30	80	COUT7
GND	31	81	GATE7
GND	32	82	ECLK7
GND	33	83	COUT6
GND	34	84	GATE6
GND	35	85	ECLK6
GND	36	86	COUT5
GND	37	87	GATE5
GND	38	88	ECLK5
GND	39	89	COUT4
GND	40	90	GATE4
GND	41	91	ECLK4
GND	42	92	COUT3
GND	43	93	GATE3
GND	44	94	ECLK3
GND	45	95	COUT2
GND	46	96	GATE2
GND	47	97	ECLK2
GND	48	98	COUT1
GND	49	99	GATE1
GND	50	100	ECLK1

* **GATE11 & GATE 12 for cPCI-8554, N/A for PCI-8554**