

# ACL-8454 Series

## 8-CH 16-Bit Counters, 2-CH 32-Bit Timer & Digital I/O Cards

### Features

- 8-CH timers/counters (ACL-8454/12)
  - 4-CH timers/counters (ACL-8454/6)
  - 2-CH cascaded 32-bit timer with 1 MHz base clock (ACL-8454/12)
  - 1-CH cascaded 32-bit timer with 1 MHz base clock (ACL-8454/6)
  - On-board multiple base clocks ranging from 100 kHz to 2 MHz
  - External gate control and clock inputs for each counter
  - Inverted gate signals for 4-CH synchronized frequency measurement
  - Multiple interrupt sources from counter outputs, timer outputs and external interrupt inputs
  - 8-CH TTL digital outputs and up to 16-CH TTL digital inputs
  - Compact, half-sized PCB
- **Operating Systems**
    - Windows 2000/NT/XP/9x
    - DOS
  - **Recommended Software**
    - VB/VC++/BCB/Delphi
    - Turbo C/Borland C
  - **Driver Support**
    - ACLS-LVIEW
    - ACLS-DLL/DLL2
    - DOS library



### Introduction

ADLINK ACL-8454 is a general-purpose timer/counter and digital I/O card. It is a compact-size add-on card for IBM AT compatible PC in control, monitoring and sensing applications. There are two versions of ACL-8454 devices: ACL-8454/6 and ACL-8454/12. ACL-8454/6 has two 8254 chips, resulting in four general-purpose 16-bit counters and one 32-bit timer, while ACL-8454/12 has four 8254 chips, resulting in eight general-purpose 16-bit counters and two 32-bit timer.

The ACL-8454 device features multi-configurations. The counters can be set as independent counters or cascaded counters. The gate control of every counter comes from either external source or internal cascaded counters. The clock source comes from either internal timebase or external inputs, which can be selected by jumper setting. ADLINK ACL-8454 devices deliver cost-effective and reliable analog output capabilities and are ideal for a broad variety of applications.

### Specifications

#### General-Purpose Timers/Counters

- Number of channels
  - 4 (ACL-8454/6)
  - 8 (ACL-8454/12)
- Counter width: 16 bits
- Compatibility: 5 V/TTL
- Base clock available
  - Internal
    - 100 kHz
    - 1 MHz
    - 2 MHz
    - 10 MHz
  - External clock up to 10 MHz
- Timer/counter outputs from the [N-1]th channel (cascading)
- Gate control: counter 1 through 4, programmable
- Gate control source: inverted output from programmable timer

#### Programmable Timers

- Number of channels
  - 1 (ACL-8454/6)
  - 2 (ACL-8454/12)
- Counter width: 32 bits
- Compatibility: 5 V/TTL
- Base clock available: 1 MHz, fixed

#### Digital I/O

- Number of input channels: 16 maximum
- Number of output channels: 8
- Compatibility: 5 V/TTL
- Data transfers: programmed I/O

#### Interrupt

- Sources
  - Internal
    - Counter 6's and counter 12's outputs, pin 14 and 33 (ACL-8454/12)
    - Counter 6's output only, pin 14 (ACL-8454/6)
  - External
    - Counter 10's lock input, pin 13 (ACL-8454/12)
    - External interrupt input, pin 33 (ACL-8454/6)
- Compatibility: 5 V/TTL

#### General Specifications

- I/O connector: 37-pin D-sub female
  - Operating temperature: 0 to 60 °C
  - Storage temperature -20 to 80 °C
  - Relative humidity: 5 to 95 %, noncondensing
  - Power requirements
- | Device      | +5 V           |
|-------------|----------------|
| ACL-8454/6  | 190 mA typical |
| ACL-8454/12 | 250 mA typical |
- Dimensions (not including connectors)  
163 mm x 108 mm

#### Termination Boards

- **DIN-37D**  
Termination Board with a 37-pin D-type Connector and DIN-Rail Mounting (Including One 1-meter ACL-10137 Cable)
- **ACLD-9137**  
General-Purpose Termination Board with a 37-pin D-sub Male Connector
- **ACLD-9138**  
General-Purpose Termination Board with a 37-pin D-sub Connector (Including One 1-meter ACL-10237 Cable)

### Pin Assignment

GND	1	20	GND
ECLK1 (D10)	2	21	(DI4) ExtG1
COUT1	3	22	(DI5) ExtG2
ECLK2 (D11)	4	23	COUT2
ECLK3 (D12)	5	24	(DI6) ExtG3
COUT3	6	25	(DI7) ExtG4
ECLK4 (D13)	7	26	COUT4
ECLK7 (D18)	8	27	(DI12) ExtG7
COUT7	9	28	(DI13) ExtG8
ECLK8 (D19)	10	29	COUT8
ECLK9 (D110)	11	30	(DI14) ExtG9
COUT9	12	31	(DI15) ExtG10
ECLK10 (DI11/INT)	13	32	COUT10
COUT6	14	33	(INT) COUT12
DO0	15	34	DO1
DO2	16	35	DO3
DO4	17	36	DO5
DO6	18	37	DO7
+5Vout	19		

### Ordering Information

- **ACL-8454/6**  
4-CH 16-Bit Counters, 1-CH 32-Bit Timer & Digital I/O Card
- **ACL-8454/12**  
8-CH 16-Bit Counters, 2-CH 32-Bit Timers & Digital I/O Card