

# ACL-7120A Series

## 32-CH DIO & Timer/Counter Cards

### Features

- Fully compatible with phased-out ACL-7120 in software and hardware
  - 32-CH TTL digital inputs and 32-CH TTL digital outputs
  - High output driving capacity
  - 3 independent programmable 16-bit down counters
  - One 16-bit event counter for interrupt generation (ACL-7120A/6)
  - One cascaded 32-bit timer with a 4 MHz timebase
  - Clock output: 2 MHz, 1 MHz, 500 kHz, or 250 kHz jumper selectable
  - Multiple selections on frequency divider
  - Breadboard area for customized circuit
  - Internal/external interrupt generation
  - Register structure compatible with Advantech's PCL-720
- **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-7120A series are 32-CH TTL compatible Digital Input/Output and timers/counters cards for PC/AT and compatibles. The device has 32 TTL compatible digital inputs, 32 digital outputs, and 3 or 4 channels with a 16-bit timer/counter. The breadboard area is provided for user circuit designs. There are two versions of the ACL-7120A series: ACL-7120A/3 and ACL-7120A/6. In addition to the functionalities of the ACL-7120A/3, the ACL-7120A/6 device supports one 32-bit timer pacer which can generate interrupt periodically, as well as an event counter for external event counting. ADLINK ACL-7120A devices deliver cost-effective features and are ideal for a broad variety of applications.

### Specifications

#### Digital Output

- Number of channels: 32
- Compatibility: 5 V/TTL
- Digital logic levels
  - Output high voltage: 2.4 V minimum
  - Output low voltage: 0.5 V maximum
- Driving capacity:
  - Source current: 15 mA
  - Sink current: 24 mA
- Data transfers: programmed I/O

#### Digital Input

- Number of channels: 32
- Signal level: TTL compatible
- Digital logic levels
  - Input high voltage: 2-5.25 V
  - Input low voltage: 0-0.8 V
- Loading current: max. 0.2 mA @ 0.4 V
- Data transfers: programmed I/O

#### Timers/Counters

- General-purpose counter (ACL-7120A/3 and ACL-7120A/6)
  - Number of channels: 3
  - Resolution: 16 bits
  - Compatibility: 5 V/TTL
  - Base clock available: internal 10 kHz, 100 kHz and 1 MHz
- Event counter for interrupt generation (ACL-7120A/6)
  - Number of channels: 1
  - Resolution: 16 bits
  - Compatibility: 5 V/TTL
- Timer for interrupt generation (ACL-7120A/6)
  - Number of channels: 1
  - Resolution: 16 bits
  - Compatibility: 5 V/TTL
  - Base clock available: 4 MHz

#### General Specifications

- I/O connector: 20-pin ribbon male x 5
- Operating temperature: 0 to 60 °C
- Storage temperature: -20 to 80 °C
- Relative humidity: 5 to 90%, noncondensing
- Bread Area: plated through-hole
  - Hole size: 1.0 mm
  - Pad size: 1.5 mm
- Dimensions (not including connectors) 194 mm x 114 mm

### Termination Boards

- **ACLD-9185**  
Termination Board with 16-CH Relay Outputs (Including One 1-meter ACL-10120 Cable)
- **ACLD-9182A**  
Termination Board with 16-CH Isolated Digital Inputs (Including One 1-meter ACL-10120 Cable)
- **ACLD-9178**  
General-Purpose Termination Board with Two 20-pin Ribbon Connectors (Including Two 1-meter ACL-10120 Cables)
- **ACLD-9188**  
General-Purpose Termination Board with Two 20-pin Ribbon Connectors and One 37-pin D-sub Connector (Including Two 1-meter ACL-10120 Cables)

### Pin Assignment

CN1:				CN2:			
Digital Output (0-15)				Digital Input (0-15)			
DO_0	1	2	DO_1	DI_0	1	2	DI_1
DO_2	3	4	DO_3	DI_2	3	4	DI_3
DO_4	5	6	DO_5	DI_4	5	6	DI_5
DO_6	7	8	DO_7	DI_6	7	8	DI_7
DO_8	9	10	DO_9	DI_8	9	10	DI_9
DO_10	11	12	DO_11	DI_10	11	12	DI_11
DO_12	13	14	DO_13	DI_12	13	14	DI_13
DO_14	15	16	DO_15	DI_14	15	16	DI_15
GND	17	18	GND	GND	17	18	GND
+5Vout	19	20	+12Vout	+5Vout	19	20	STROBE
CN3:				CN4:			
Digital Output (16 -31)				Digital Input (16 -31)			
DO_16	1	2	DO_17	DI_16	1	2	DI_17
DO_18	3	4	DO_19	DI_18	3	4	DI_19
DO_20	5	6	DO_21	DI_20	5	6	DI_21
DO_22	7	8	DO_23	DI_22	7	8	DI_23
DO_24	9	10	DO_25	DI_24	9	10	DI_25
DO_26	11	12	DO_27	DI_26	11	12	DI_27
DO_28	13	14	DO_29	DI_28	13	14	DI_29
DO_30	15	16	DO_31	DI_30	15	16	DI_31
GND	17	18	GND	GND	17	18	GND
+5Vout	19	20	+12Vout	+5Vout	19	20	STROBE
CN5: Counter							
CLK_2	1	2	CLK_1				
OUT_2	3	4	OUT_1				
GATE_2	5	6	GATE_1				
EVENT	7	8	CLK_0				
GATE_3	9	10	OUT_0				
GATE_4	11	12	GATE_0				
EXTIRQ	13	14	N/C				
N/C	15	16	N/C				
GND	17	18	GND				
+5Vout	19	20	N/C				

### Ordering Information

- **ACL-7120A/3**  
32-CH Digital I/O & 3-CH Timers/Counters Card
- **ACL-7120A/6**  
32-CH Digital I/O & 5-CH Timers/Counters Card