

# A-8111

## 8-channel, 12-bit, 30KS/s Multi-Function board



### Functional Description

The A-8111 is 12-bit multifunction analog and digital I/O board for the PC/AT compatible computer. The A-8111 provides 8-channel single-ended analog input, 1-channel analog output with 12-bit resolution, 16-channel digital input, 16-channel digital output. The sampling rate of A-8111 is 30K samples/s. It is completely compatible to PCL-711B and ACL-9111.

### Applications

- Laboratory automation
- Sensor interface
- Production test

### Specifications

#### Analog Input

- Number of channels: 8 single-ended
- Resolution: 12-bit
- ADC conversion rate: 30KS/s max
- Input impedance:  $10M\Omega \parallel 6pF$
- Over voltage protection:  $\pm 35V$
- Accuracy: 0.01% of reading
- Linearity:  $\pm 1$  bit
- On chip sample & hold
- Zero drift:  $\pm 25ppm/^{\circ}C$  of FS max
- Input range:  
 $\pm 5V, \pm 2.5V, \pm 1.25V, \pm 0.625V, \pm 0.3125V$

#### Analog Output

- Number of channels: 1 independent
- Type: 12 bit double buffered (AD-7948)
- Linearity:  $\pm 1/2$  bit
- Output range: 0~5V, 0~10V
- Output driving:  $\pm 5$  mA
- Settling time:  $0.6\mu s$  to 0.01% for full scale step

### Features

- 12-bit A/D converter
- 30 KS/s sampling rate(Max.)
- 8 single-ended analog inputs
- A/D trigger modes: software trigger, pacer trigger
- A/D data transfer modes: polling, interrupt
- Software programmable gain: 1,2,4,8
- Bipolar analog input
- One 12-bit analog output
- 16 digital inputs & 16 digital outputs

### Digital I/O

- 16 TTL-level input
- Input low  $V_{IL} = 0.8V$  max;  $I_{IL} = -0.4$  mA max
- Input high  $V_{IH} = 2.0V$  min;  $I_{IH} = 20\mu A$  max
- 16 TTL-level output
- Output low  $V_{OL} = 0.5V$  max;  $@I_{OL} = 8$  mA max
- Output high  $V_{OH} = 2.7V$  min;  $@I_{OH} = 0.4$  mA max

### Timer/Counter

- A/D pacer: cascaded 32-bit counter
- Programmable internal timer: 0.0047Hz~0.5MNz
- Interrupt channel: 2,3,4,5,6,7 software selectable

### General Specifications

- I/O connector: one of 37-pin D-Sub female  
two of 20-pin ribbon male
- Power requirements:

Device	+5V	+12V	-12V
A-8111	320 mA	60 mA	30 mA

- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90%, non-condensing
- Storage temperature: -20 ~ 70°C
- Dimensions: 157 mm x 106 mm

### Ordering Information

#### Standard

**A-8111:** 8-channel 12-bit multi-function board

#### Optional

**DB-8125:** Screw terminal board  
**DN-37:** DIN-rail mounting terminal board  
**DB-37:** Directly connection terminal board  
**DB-16P:** 16-channel isolated digital input board  
**DB-16R:** 16-channel SPDT relay board  
**DN-20:** DIN-rail mounting terminal board  
**ADP-20:** 20-pin extender