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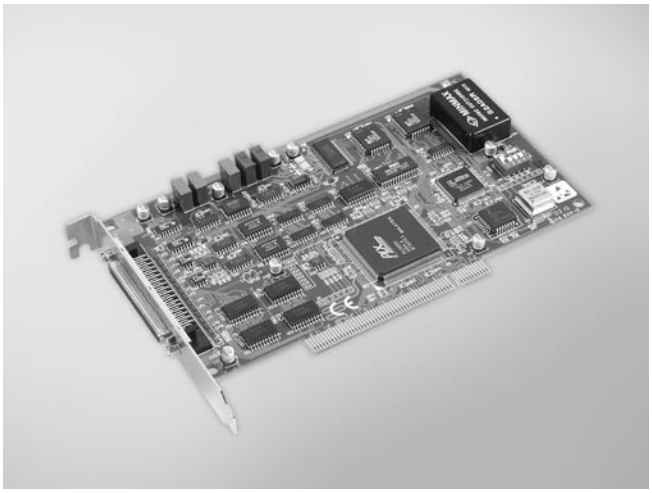
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Find the *Advantech PCI-1710-B* at our website: ***Click HERE***

# PCI-1710/L
# PCI-1710HG/HGL

## 100 kS/s, 12-bit, 16-ch PCI Multifunction Card

## 100 kS/s, 12-bit, 16-ch PCI Multifunction Card with High Gain



## Features

- 16-ch single-ended or 8-ch differential or a combination of analog input
- 12-bit A/D converter, with up to 100 kHz sampling rate
- Programmable gain
- Automatic channel/gain scanning
- Onboard FIFO memory (4,096 samples)
- Two 12-bit analog output channels (PCI-1710/1710HG only)
- 16-ch digital input and 16-ch digital output
- Onboard programmable counter
- BoardID™ switch

## Introduction

The PCI-1710 Series are multifunction cards for the PCI bus. Their advanced circuit design provides higher quality and more functions, including the five most desired measurement and control functions: 12-bit A/D conversion, D/A conversion, digital input, digital output, and counter/timer.

## Specifications

### Analog Input

- **Channels** 16 single-ended/ 8 differential (software programmable)
- **Resolution** 12 bits
- **FIFO Size** 4,096 samples
- **Overvoltage Protection** 30Vp-p
- **Input Impedance** 1 GΩ
- **Sampling Modes** Software, onboard programmable pacer and external
- **Input Range** (V, software programmable)

| PCI-1710/1710L | | | | | |
|---|---|---|---|---|---|
| **Gain** | 0.5 | 1 | 2 | 4 | 8 |
| **Bipolar** | ±10 | ±5 | ±2.5 | ±1.25 | ±0.625 |
| **Unipolar** | N/A | 0 ~ 10 | 0 ~ 5 | 0 ~ 2.5 | 0 ~ 1.25 |
| **Accuracy (% of FSR ±1LSB)** | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 |

| PCI-1710HG/1710HGL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Gain** | 0.5 | 1 | 5 | 10 | 50 | 100 | 500 | 1000 |
| **Bipolar** | ±10 | ±5 | ±1 | ±0.5 | ±0.1 | ±0.05 | ±0.01 | ±0.005 |
| **Unipolar** | N/A | 0 ~ 10 | N/A | 0 ~ 1 | N/A | 0 ~ 0.1 | N/A | 0 ~ 0.01 |
| **Accuracy (% of FSR ±1LSB)** | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 | 0.4 | 0.8 | 0.8 |

- **Maximum Sampling Rate** (S/s, depending on PGIA setting time)

| Model | Gain | Max. Sampling Rate |
|---|---|---|
| PCI-1710/1710L | 0.5, 1, 2, 4, 8 | 100 kS/s |
| PCI-1710HG/1710HGL | 0.5, 1 | 100 kS/s |
| | 5, 10 | 35 kS/s |
| | 20, 100 | 7 kS/s |
| | 500, 1000 | 770 S/s |

### Analog Output (PCI-1710/1710HG only)

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** Static update
- **Output Range** (V, software programmable)

| | | |
|---|---|---|
| **Internal Reference** | **Unipolar** | 0 ~ +5<br>0 ~ +10 V |
| **External Reference** | | 0 ~ +x V @ -x V (-10 ≤ x ≤ 10) |

- **Slew Rate** 10 V/μs
- **Driving Capability** 3 mA
- **Operation Mode** Software polling
- **Accuracy** INLE: ±1 LSB, DNLE: ±1 LSB

### Digital Input

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.<br>Logic 1: 2.0 V min.

### Digital Output

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.<br>Logic 1: 2.4 V min.
- **Output Capability** Sink: 8.0 mA @ 0.8 V<br>Source: -0.4 mA @ 2.0 V

### Pacer/Counter

- **Channels** 1
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 1 MHz


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## Specifications Continued

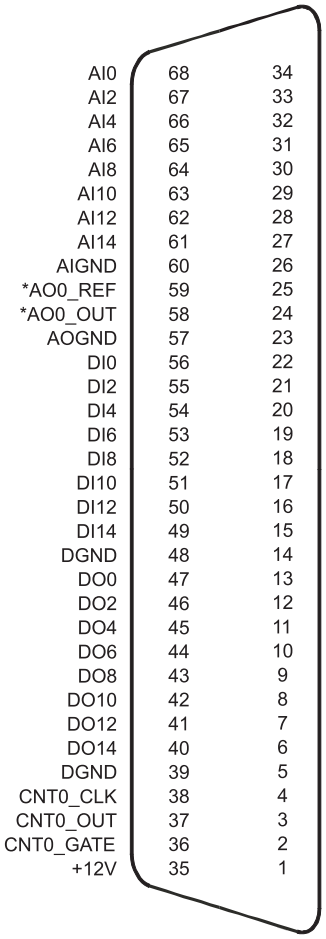
### General

- **Bus Type** PCI V2.2
- **I/O Connector** 1 x 68-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA
  Max: 5 V @ 1.0 A
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
- **Storage Temperature** -20 ~ 70° C (-4 ~ 158° F)
- **Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)

## Ordering Information

- **PCI-1710** 100 kS/s, 12-bit Multifunction Card
- **PCI-1710L** 100 kS/s, 12-bit Multifunction Card w/o AO
- **PCI-1710HG** 100 kS/s, 12-bit High-gain Multifunction Card
- **PCI-1710HGL** 100 kS/s, 12-bit High-gain Multi. Card w/o AO
- **PCLD-8710** DIN-rail Wiring Board w/ CJC
- **PCL-10168-1** 68-pin SCSI Shielded Cable, 1 m
- **PCL-10168-2** 68-pin SCSI Shielded Cable, 2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

## Pin Assignments



| | | | |
|---|---|---|---|
| AI0 | 68 | 34 | AI1 |
| AI2 | 67 | 33 | AI3 |
| AI4 | 66 | 32 | AI5 |
| AI6 | 65 | 31 | AI7 |
| AI8 | 64 | 30 | AI9 |
| AI10 | 63 | 29 | AI11 |
| AI12 | 62 | 28 | AI13 |
| AI14 | 61 | 27 | AI15 |
| AIGND | 60 | 26 | AIGND |
| *AO0_REF | 59 | 25 | AO1_REF* |
| *AO0_OUT | 58 | 24 | AO1_OUT* |
| AOGND | 57 | 23 | AOGND |
| DI0 | 56 | 22 | DI1 |
| DI2 | 55 | 21 | DI3 |
| DI4 | 54 | 20 | DI5 |
| DI6 | 53 | 19 | DI7 |
| DI8 | 52 | 18 | DI9 |
| DI10 | 51 | 17 | DI11 |
| DI12 | 50 | 16 | DI13 |
| DI14 | 49 | 15 | DI15 |
| DGND | 48 | 14 | DGND |
| DO0 | 47 | 13 | DO1 |
| DO2 | 46 | 12 | DO3 |
| DO4 | 45 | 11 | DO5 |
| DO6 | 44 | 10 | DO7 |
| DO8 | 43 | 9 | DO9 |
| DO10 | 42 | 8 | DO11 |
| DO12 | 41 | 7 | DO13 |
| DO14 | 40 | 6 | DO15 |
| DGND | 39 | 5 | DGND |
| CNT0_CLK | 38 | 4 | PACER_OUT |
| CNT0_OUT | 37 | 3 | TRG_GATE |
| CNT0_GATE | 36 | 2 | EXT_TRG |
| +12V | 35 | 1 | +5V |

*: Pins 23~25 and pins 57~59 are not defined for PCI-1710L/1710HGL


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