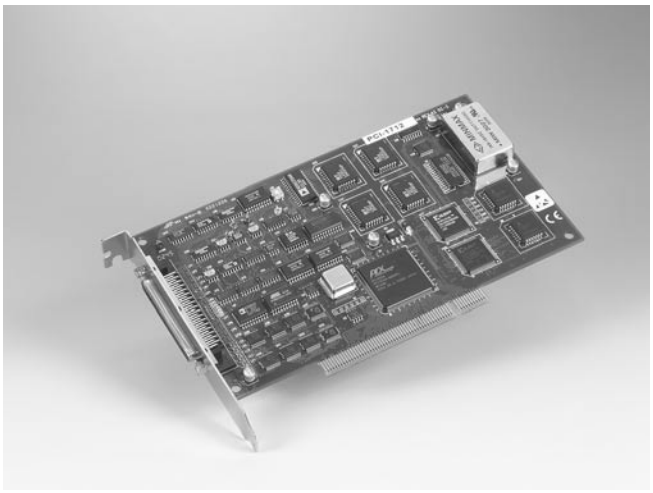
PCI-1712
PCI-1712L

1 MS/s, 12-bit, 16-ch PCI Multifunction Cards



Features

- 16 single-ended or 8 differential or a combination of analog inputs
- 12-bit A/D converter, with up to 1 MHz sampling rate
- Programmable gain
- Automatic channel/gain/SD*/BU* scanning
- Onboard FIFO memory (AI:1024 samples AO:32768 samples)
- Two 12-bit analog output channels with continuous waveform output function (PCI-1712 only)
- 16 digital input and output channels
- Three 16-bit programmable multifunction counter/timers on 10 MHz
- Auto-calibration (AI/AO)
- PCI-Bus mastering data transfer
- Pre-, post-, about- and delay-trigger data acquisition modes for analog input channels
- Flexible triggering and clocking capabilities

Introduction

PCI-1712 and PCI-1712L are powerful high-speed multifunction cards for the PCI bus. They feature a 1 MHz 12-bit A/D converter, an onboard FIFO buffer (storing up to 1024 samples for A/D, and up to 32 K samples for D/A conversion). The PCI-1712 cards provide a total of up to 16 single-ended or 8 differential A/D input channels or a mixed combination, two 12-bit D/A output channels, 16 digital input/output channels, and three 10 MHz 16-bit multifunction counter channels. PCI-1712L is a low-cost version without analog output.

Specifications

Analog Input

- **Channels** 16 single-ended/ 8 differential (SW programmable)
- **Resolution** 12 bits
- **Max. Sampling Rate*** Multi-channel, single gain: 1 MS/s
  Multi-channel, multi gain: 600 kS/s
  Multi-channel, multi gain, unipolar/bipolar: 400 kS/s
- **FIFO Size** 1024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 100 MΩ 10 pF (Off), 100 MΩ 100 pF (On)
- **Sampling Modes** Software, onboard Programmable Pacer or External
- **Trigger Modes** Pre-trigger, Post-trigger, Delay-trigger, About-trigger
- **Input Range** **(V, software programmable)**

Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Bipolar	±10	±5	±2.5	±1.25	±0.625
Accuracy (% of FSR ±1LSB)	0.05	0.03	0.03	0.05	0.1

***Note:**
The sampling rate and throughput depends on the computer hardware architecture and software environment. The rates may vary due to programming language, code efficiency, CPU utilization and so on.

Analog Output (PCI-1712 only)

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** 1 MS/s
- **FIFO Size** 32768 samples
- **Output Range** **(V, software programmable)**

Internal Reference	**Bipolar**	±5, ±10
	Unipolar	0 ~ 5, 0 ~ 10
External Reference		0 ~ +x V @ +x V (-10 ≤ x ≤ 10) -x ~ +x V @ +x V (-10 ≤ x ≤ 10)

- **Slew Rate** 20 V/μs
- **Driving Capability** ±10 mA
- **Output Impedance** 0.1 Ωmax.
- **Operation Mode** Software polling, continuous output, waveform output
- **Accuracy** INLE: ±1 LSB
  DNLE: ±1 LSB (monotonic)

Digital Input

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

Digital Output

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

Pacer/Counter

- **Channels** 3
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Reference Clock** Internal: 10 MHz, 1 MHz, 100 kHz, 10 kHz
  External Frequency: 10 MHz max.

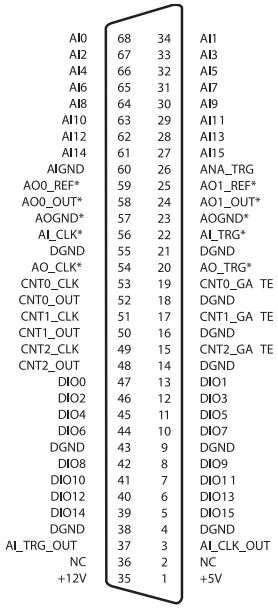
General

- **Bus Type** PCI V 2.2
- **I/O Connector** SCSI-68P female x 1
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: +5 V @ 850 mA, +12 V @ 600 mA
  Max: +5 V @ 1.0 A, +12 V @ 700 mA
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
- **Storing Temperature** -20 ~ 85° C (-4 ~ 185° F)
- **Storing Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)

Ordering Information

- **PCI-1712** 1M S/s, 12-bit high-speed multifunction card
- **PCI-1712L** 1M S/s, 12-bit high-speed multifunction card without AO
- **PCLD-8712** Industrial Wiring Terminal Board for DIN-rail mounting
- **PCL-10168-1** SCSI-68 Shielded Cable, 1 m
- **PCL-10168-2** SCSI-68 Shielded Cable, 2 m
- **ADAM-3968** SCSI-68 wiring terminal, DIN-rail mount

Pin Assignments



*: Pin 20, 22~25, 54, 56~59 are not defined on PCI-1712L