

# PCI-9118/L Series

## 16-CH 12/16 Bit Up to 333 kS/s Analog Input Cards

### Features

- Supports a 32-bit 5 V PCI bus
- 12-bit A/D resolution (PCI-9118DG/L & PCI-9118HG/L)
- 16-bit A/D resolution (PCI-9118HR/L)
- Up to 333 kS/s sampling rate (PCI-9118DG/L & PCI-9118HG/L)
- Up to 100 kS/s sampling rate (PCI-9118HR/L)
- 16 single-ended or 8 differential inputs
- 256-configuration channel gain queue
- Onboard 1 k-sample A/D FIFO
- Bipolar or Unipolar analog input ranges
- Programmable gains:
  - x1, x2, x4, x8 (PCI-9118DG/L and PCI-9118HR/L)
  - x1, x10, x100 (PCI-9118HG/L)
- Bus-mastering DMA for analog inputs
- 4-CH TTL digital inputs and 4-CH TTL digital outputs
- Compact, half-size PCB

### Operating Systems

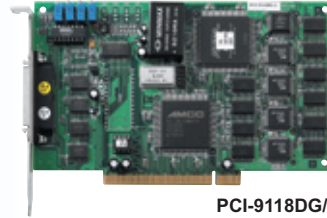
- Windows Vista/XP/2000/2003
- Linux

### Recommended Software

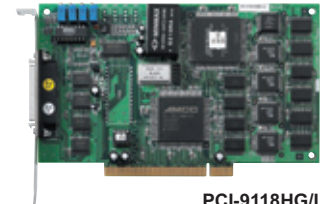
- VB.NET/VC.NET/VB/VC++/BCB/Delphi
- DAQBench

### Driver Support

- DAQPilot for Windows
- DAQ-LVIEW PnP for LabVIEW™
- DAQ-MTLB for MATLAB®
- PCIS-DASK for Windows
- PCIS-DASK/X for Linux



PCI-9118DG/L



PCI-9118HG/L



PCI-9118HR/L

### Introduction

ADLINK PCI-9118/L Series are high-performance data acquisition cards. The PCI-9118/L series are the simplified version of the phase-out PCI-9118. The PCI-9118/L series provides fully compatible functionality as the PCI-9118 series except the analog output function. The PCI-9118DG/L and PCI-9118HG/L feature 12-bit resolution, with sampling rate up to 333 kS/s, while the PCI-9118HR/L, on the other hand, features 16-bit resolution, with sampling rate up to 100 kS/s. The 256-location channel gain queues on PCI-9118/L series cards allow high-speed data acquisition with different gains on each channel and non-sequential order of automatic analog input scanning capability. The onboard 1 k-sample A/D FIFO ensures reliable high-speed data acquisition under Windows operating system. The data can be transferred through bus-mastering DMA with gap-free, continuous high throughput, even for a large amount of data.

ADLINK PCI-9118/L series analog input cards deliver cost-effective and reliable data acquisition capabilities, and are ideal for a broad variety of applications.

### Specifications

#### Analog Input

- Number of channels
  - 16 single-ended or 8 differential
- Channel gain queue size: 256 configurations
- Resolution
  - 12 bits (PCI-9118DG/L and PCI-9118HG/L)
  - 16 bits (PCI-9118HR/L)
- Conversion time
  - 3 μs (PCI-9118DG/L and PCI-9118HG/L)
  - 10 μs (PCI-9118HR/L)
- Maximum sampling rate
  - 333 kS/s (PCI-9118DG/L and PCI-9118HG/L)
  - 100 kS/s (PCI-9118HR/L)
- Input signal ranges: (software programmable)

Device	Gain	Input Range	
		Bipolar	Unipolar
PCI-9118DG/L	1	±5 V	0 to 10 V
	2	±2.5 V	0 to 5 V
	4	±1.25 V	0 to 2.5 V
PCI-9118HR/L	8	±0.625 V	0 to 1.25 V
	1	±5 V	0 to 10 V
PCI-9118HG/L	10	±0.5 V	0 to 1 V
	100	±0.05 V	0 to 0.1 V

#### Accuracy

Device	Gain	Accuracy
PCI-9118DG/L	1	0.008 % of FSR ± 1 LSB
	2	0.01 % of FSR ± 1 LSB
	4	0.02 % of FSR ± 1 LSB
PCI-9118HR/L	8	0.04 % of FSR ± 1 LSB
	1	0.008 % of FSR ± 1 LSB
PCI-9118HG/L	10	0.01 % of FSR ± 1 LSB
	100	0.02 % of FSR ± 1 LSB

- Input coupling: DC
- Overvoltage protection: continuous ±35 V
- Input impedance: 1 GΩ
- Trigger modes
  - software, pacer, and external trigger (5 V/TTL compatible)
- FIFO buffer size: 1 k samples
- Data transfers
  - polling, interrupt, bus-mastering DMA

#### Digital I/O

- Number of channels: 4 inputs and 4 outputs
- Compatibility: 5 V/TTL
- Data transfers: programmed I/O

#### General Specifications

- I/O connector: 50-pin SCSI-II female
- Operating temperature: 0 to 55°C
- Storage temperature: -20 to 80°C
- Relative humidity: 5 to 95%, non-condensing
- Power requirements

Device	+5 V
PCI-9118DG/L	450 mA typical
PCI-9118HR/L	485 mA typical

- Dimensions (not including connectors)  
173 mm x 107 mm

### Pin Assignment

U_CMMD	1	26	(AIH0)	AIO
AI8 (AIL0)	2	27	(AIH1)	AI1
AI9 (AIL1)	3	28	(AIH2)	AI2
AI10 (AIL2)	4	29	(AIH3)	AI3
AI11 (AIL3)	5	30	(AIH4)	AI4
AI12 (AIL4)	6	31	(AIH5)	AI5
AI13 (AIL5)	7	32	(AIH6)	AI6
AI14 (AIL6)	8	33	(AIH7)	AI7
AI15 (AIL7)	9	34	AGND	
N/C	10	35	N/C	
N/C	11	36	N/C	
N/C	12	37	N/C	
+15Vout	13	38	-15Vout	
DGND	14	39	ADGAIN2	
DI1	15	40	DIO	
DI3	16	41	DI2	
DO1	17	42	DO0	
DO3	18	43	DO2	
DOSTB	19	44	EXTTRG	
TGOUT	20	45	SSHO	
ADCHN3	21	46	TGIN	
ADCHN5	22	47	ADCHN4	
ADCHN7	23	48	ADCHN6	
Vcc	24	49	Vcc	
DGND	25	50	DGND	

### Termination Boards

#### DIN-50S-01

Termination Board with one 50-pin SCSI-II Connector and DIN-Rail Mounting (Cables are not included. For information on mating cables, refer to Section 12.)

### Ordering Information

- **PCI-9118DG/L**  
16-CH 12-Bit 333 kS/s Normal-Gain Analog Input Card
- **PCI-9118HG/L**  
16-CH 12-Bit 333 kS/s High-Gain Analog Input Card
- **PCI-9118HR/L**  
16-CH 16-Bit 100 kS/s High-Resolution Analog Input Card

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