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
- On-board 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

PCI-9118DG/L

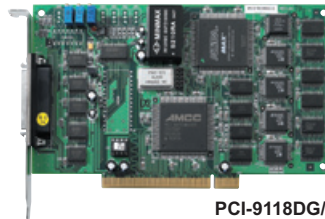**PCI-9118HG/L**

PCI-9118HR/L

Operating Systems
- Windows 98/NT/2000/XP/2003
- Linux
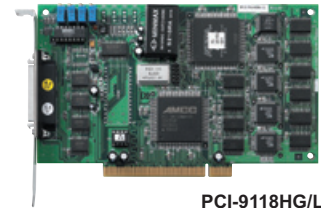- DOS

Recommended Software
- VB/VC++/BCB/Delphi
- DAQBench
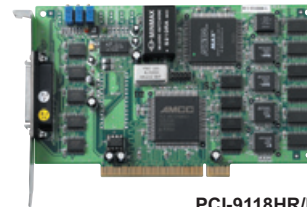- DAQCreator

Driver Support
- DAQ-LVIEW PnP for LabVIEW
- DAQ-MTLB for MATLAB
- DAQBOY for Windows
- PCIS-DASK for Windows
- PCIS-DASK/X for Linux

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 333kS/s, while the PCI-9118HR/L, on the other hand, features 16-bit resolution, with sampling rate up to 100kS/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 on-board 1k-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 PCI-9118HR/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
	8	±0.625 V	0 to 1.25 V
PCI-9118HG/L	1	±5 V	0 to 10 V
	10	±0.5 V	0 to 1 V
	100	±0.05 V	0 to 0.1 V

- Accuracy

Device	Gain	Accuracy
PCI-9118DG/L PCI-9118HR/L	1	0.008 % of FSR ± 1 LSB
	2	0.01 % of FSR ± 1 LSB
	4	0.02 % of FSR ± 1 LSB
	8	0.04 % of FSR ± 1 LSB
PCI-9118HG/L	1	0.008 % of FSR ± 1 LSB
	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: 1k 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%, noncondensing
- Power requirements

Device	+5V
PCI-9118DG/L PCI-9118HG/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) AI0
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	DI0
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**
  Termination Board with a 50-pin SCSI-II Connector and DIN-Rail Mounting (Including One 1-meter ACL-10250 Cable)

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