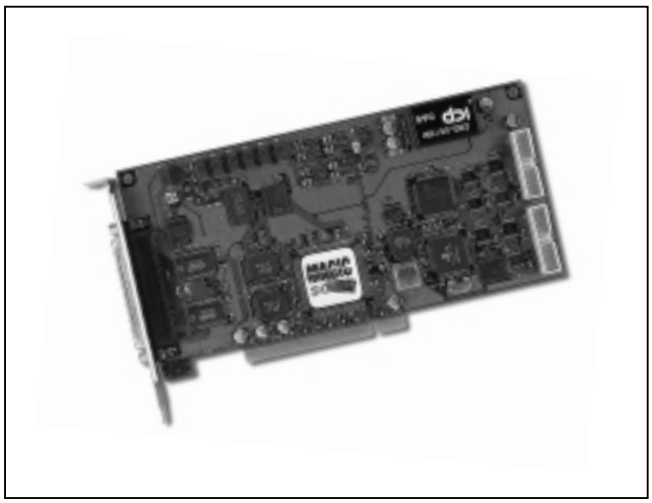
PCI-1602F/1602 Series

200KS/s 16 bit High Performance Analog and Digital I/O Board
100KS/s 16 bit High Performance Analog and Digital I.O Board



Functional Description

The PCI-1602F/1602 series is a family of high performance data acquisition boards for the PCI bus. It features a continuous, 200KHz / 110KHz, gap-free data acquisition under DOS and Windows. The PCI-1602 family has the same hardware architecture as PCI-1802L. The PCI-1602F/1602 series provide 32 single-ended or 16 differential inputs. Like the PCI-1802 family, the PCI-1602F/1602 series features " Magic Scan " function, M-function, X-function, and Continuous Capture function. Please refer to PCI-1802 for more details of "Magic Scan" .

Features

- PCI bus
- PCI-1602F :16-bit 200KHz A/D converter
- PCI-1602 :16 bit 100KHz A/D converter
- PCI-1602F,PCI-1602
  32 single-ended/ 16 differential inputs, 2K word FIFO buffer, PCI-1602F can be upgrade to 8K word
- The sampling rates of single channel or multiple channels is 200 K /100K samples/s
- Three different external trigger : post-trigger, pre-trigger, middle trigger
- 16 digital input / 16 digital output channels
- programmable low gain: 1, 2, 4, 8.
- Internal / external trigger
- Two 12-bit independent programmable DAC.; 2 MHz throughput per channel max.
- 2.7 M word / high speed data transfer rate.
- Half size board

Applications

- High speed data acquisition system
- Process monitor and control
- Vibration analysis
- Digital pattern generator from
- digital I/O port
- System Identification
- Continuous data acquisition

Specifications

- **Analog Input Specifications**

  Channels: 32 single-ended/ 16 differential
  Resolution : 16 bits
  PCI-1602F :Conversion rate : 200 KS/s max.
  PCI-1602 :Conversion rate : 100 KS/s max.
  Input Impedance : 10,000 MΩII6pF
  Over Voltage Protection : +/-35V
  A/D converter: +/-1.5LSB (Max. INL)
  On chip sample & hold

- **PCI-1602F,PCI-1602 Input Range**

  Bipolar : +/-10V,+/-5V,+/-2.5V,+/-1.25V

Gain	Bipolar(V)	PCI-1602F Max. Switching Fequency	PCI-1602 Max. Switching Fequency
1	±10	200K/s	100K/s
2	±5	200K/s	100K/s
4	±2.5	200K/s	100K/s
8	±1.25	200K/s	100K/s

- **D/A Outputs**

  Channels : 2 independent
  Type : 12-bit double buffered
  Linearity : 0.006% FS
  Settling time : 0.4 μS
  Output range :
  Internal reference -5V~5V or -10V~10V(bipolar)
  Output Driving : +/- 5mA

- **Digital I/O**

  Inputs : 16-channels ;TTL levels
  Outputs : 16-channels ;TTL levels ;

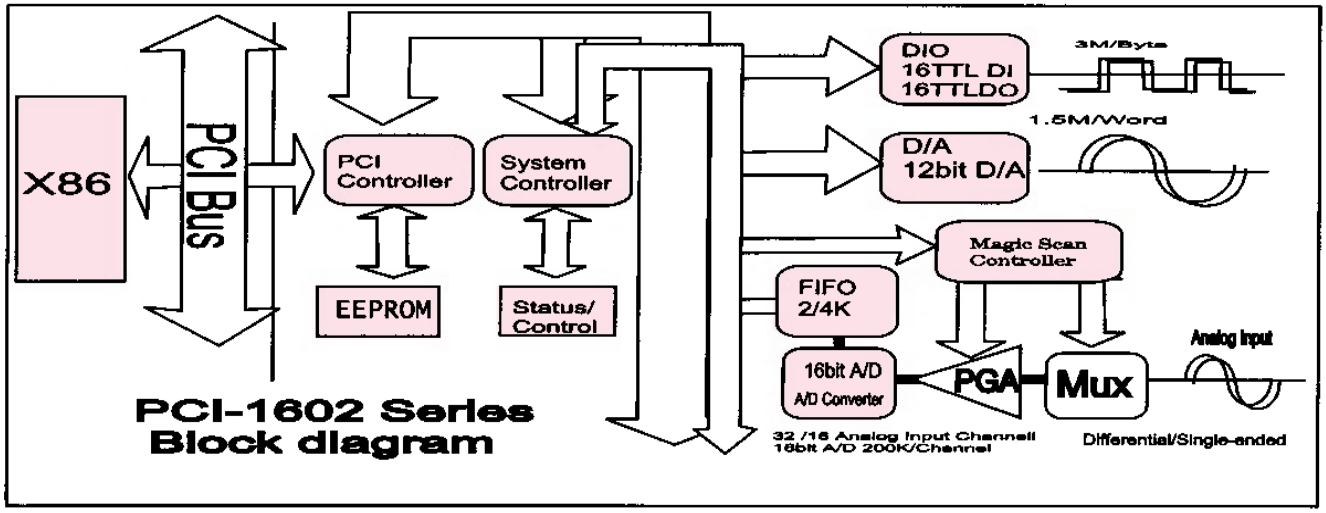
- **Timer**

  Internal pacer timer : 16 bit , 8MHz input
  Pacer timer for external trigger : 16 bit , 8MHz input
  Machine independent timer : 16 bit ,
  8MHz input

- **Power Requirements : +5V, 350mA(max)**
- **General Environmental**

  Operating temp.: 0-50°C
  Storage temp.: -20°C to 70°C
  Humidity : 0 to 90% non-condensing
  Dimensions: 190 mm x 105 mm

PCI-1602F/PCI-1602 Series



M_function

M_Function is used to support simultaneous gap-free A/D, D/A at full rated throughput. The user can use the D/A channel to send out the pre-defined signal pattern to the external device and measure the output signal simultaneously. The M_function can be executed under DOS, Windows 3.1, Windows 95, Windows NT. Some programming language(VC/C++, BC++, VB, Delphi) and package (LabVIEW) can call the M_function . It is a cost-effective tool for system identification. The user doesn't have to use expensive signal analyzer. Refer to EP001 application note for detail

Continue Capture Function

The PCI-180X/1602/1202 provides different continuous capture functions.

- 1.Continuous Capture at Low speed . The acquired data can be display at the monitor simultaneously. No storage is required. Therefore the user can monitor the data continually.
- 2.Continuous Capture at high speed. The acquired data should be saved into the DRAM of PC. The capture period should be limited to the Memory size
- 3.Continuous Capture at high speed. The acquired data should be saved into the SRAM card of PC. The capture period should be limited to the Memory size. The user should have to calculate the memory size according to the sampling rates and the capture period. The Continue Capture function can be executed under DOS, Windows 3.1, Windows 95, Windows NT. Continuous Capture function can support multiple boards.

- **FIFO Size & Trigger mode**
  Refer to PCI-1800 for more details.

Software

- PCI-1602 Development Toolkit for DOS
- PCI-1602 Development Toolkit for Win95
- PCI-1602 Development Toolkit for WinNT

Order Description

- PCI-1602F/2K: 200KS/s 16-bit Analog and Digital I/O Board (2K word FIFO)
- PCI-1602F/8K: 200KS/s; 16-bit Analog and Digital I/O Board (8K word FIFO)
- PCI-1602: 100KS/s; 16-bit Analog and Digital I/O Board (2K word FIFO)

Options

- DB-1825 : Screw terminal board with bread area for filter circuitry added for the PCI-1602F/1602
- DN-37 : I/O connector block with DIN-Rail Mounting
- DB-37: Direct connect 37-pin termination board
- DB-16P: 16 Channel isolated digital input Board
- DB-16R: 16 Channel SPDT relay board
- ADP-20/PCI: 20-pin Extender
- PCI-1602 LabVIEW Development Toolkit for Win95
- PCI-1602 LabVIEW Development Toolkit for WinNT

PCI-1602F/1602 Pin Assignments