PCI-1601
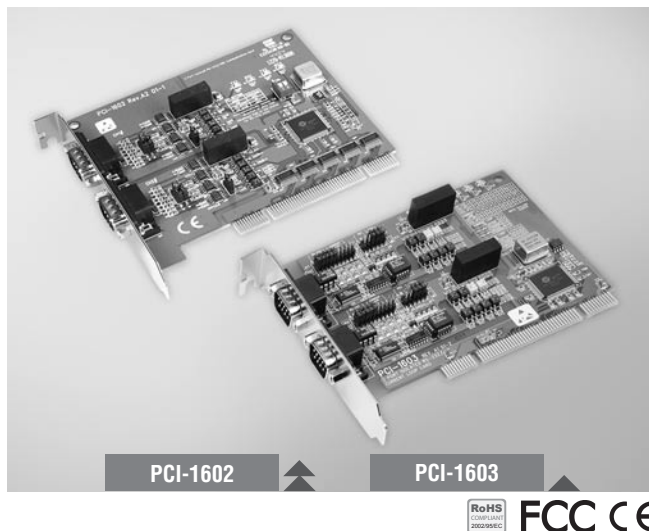# PCI-1602
PCI-1603

2-port RS-422/485 PCI Communication Card

2-port RS-422/485 PCI Communication Card with Isolation Protection

2-port RS-232 Current-loop PCI Communication Card with Isolation Protection

PCI-1602   PCI-1603

RoHS COMPLIANT 2002/95/EC   FCC   CE

Features

- PCI bus 2.2 compliant
- Transmission Speed:
  PCI-1601/PCI-1602: up tp 921.6 kbps
  PCI-1603: RS-232: up to 230.4 kbps
  Current-loop: 57.6 kbps
- 2-port RS-422/485 interface (PCI-1601/PCI-1602)
- 2 independent RS-232 or Current-loop serial ports (PCI-1603)
- I/O address automatically assigned by PCI Plug & Play
- OS support: Windows® 98/ME/2000/XP/XP Embedded/Vista, Windows CE 5.0/6.0, Linux
- Optional EFT protection
- Optional isolation protection for RS-422/485
- Interrupt status register for increased performance
- Space reserved for termination resistors
- Automatic RS-485 data flow control (PCI-1601/PCI-1602)
- Each port can be individually configured to RS-232 or current-loop (PCI-1603)
- Powerful and easy-to use utility (ICOM Tools)
- 16PCI952 FIFO UART (128-byte FIFO)

Introduction

PCI-1601 and PCI-1602 are 2 port RS-422/485 PCI communication cards that are compatible with the PCI 2.1 bus specification. Both cards provide two optional isolated and EFT protected RS-422/485 ports, and come with features such as: high transmission speed of 921.6 kbps, optional EFT & isolation protection, windows utility software and more. The cards also come with high-performance 16PCI952 UART with a 128-byte FIFO to reduce CPU load. This makes the PCI-1601 and PCI-1602 especially suitable for multitasking environments.

PCI-1602 is available with 3,000 V_{DC} optical isolation to protect your PC and equipment against damages from ground loops in harsh environments. To further increase reliability, both boards has EFT protection technology, protecting your system from abrupt high voltages up to 2,500 V_{DC} (PCI-1601B and PCI-1602B). Besides, Advantech also provides a convenient utility program called ICOM Tools, to help test the PCI card performance by analyzing the port status.

PCI-1603 offers a versatile range of high-speed interfacing options. You can switch its ports between the popular RS-232 or noise-resistant current-loop. The card utilizes 16PCI952 UARTs with 128-byte FIFO buffer for faster and more reliable communication, especially under multi-tasking environments such as Windows operating systems. The card utilizes 16PCI952 UART that buffers data into packets before sending it to the bus. This drastically reduces CPU load and avoids data loss when the system is busy and cannot process an interrupt quickly. These FIFO buffers make the PCI-1603 especially suitable for high speed serial I/O under Windows.

Specifications

General

- **Bus Type**   PCI V 2.2
- **Certifications**   CE, FCC class A
- **Connectors**   2 x DB9-M
- **Dimensions**   123 x 92 mm (4.8" x 3.6")

Power Consumption	Typical	Max
PCI-1601	220 mA (+5 V)	270 mA (+5 V)
PCI-1602/PCI-1603	250 mA (+5 V)	300 mA (+5 V)

Current-loop Interface (PCI-1603)

- **Baud-rate**   50 ~ 57600 bps
- **Current Value**   20 mA (Standard)
- **Mode**   Asynchronous, full duplex
- **Signal Driver/Receiver**   6N136
- **Signals**   TxD+, TxD-, RxD+, RxD-
- **Transmission Distance**   1000 m

Communications

- **Communications Controller**   16PCI952
- **Data Bits**   5, 6, 7, 8
- **Data Signals**   RS-422: Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-, GND
  RS-485: Data+, Data-, GND
  RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
  Current Loop: Tx+, Tx-, Rx+, Rx-
- **FIFO**   128 bytes
- **Flow Control**   RTS/CTS. Xon/Xoff
- **IRQ**   Assigned by Plug & Play

- **Parity**   None, even, odd
- **Speed**   PCI-1601/PCI-1602: 50bps ~ 921.6 kbps
  PCI-1603: RS-232: 50bps ~ 230.4 kbps
  Current-loop: 57.6 kbps
- **Stop Bits**   1, 1.5, 2

Protection

- **ESD Protection**   16 kV
- **Isolation Protection**   3,000 V_{DC} (PCI-1602A/B and PCI-1603 for RS-232/current-loop)
- **EFT Protection**   2,500 V_{DC} (PCI-1601B/PCI-1602B only)

Software

- **Bundled Software**   ICOM Tools
- **OS Support**   Windows 98/ME/2000/XP/XP Embedded, Windows CE 5.0/6.0, Linux

Environment

- **Humidity (Operating)**   5 ~ 95 % RH, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature**   0 ~ 65° C (refer to IEC 68-2-1, 2) (32 ~ 149° F)
- **Storage Temperature**   -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1601A**   2-port RS-422/485 PCI Comm Card
- **PCI-1601B**   2-port RS-422/485 PCI Comm Card w/EFT
- **PCI-1602A**   2-port RS-422/485 PCI Comm Card w/Iso
- **PCI-1602B**   2-port RS-422/485 PCI Comm Card w/Iso and EFT
- **PCI-1603**   2-port Iso RS-232/current-loop PCI Comm Card