PCH2600

User's Manual

Beijing ART Technology Development Co., Ltd.

Contents

Chapter 1 Overview

PCH2600 is a fiber-optic communication card based on PC104+ bus, can connect with PC104+ interface, receive and send data via optical fiber.

Unpacking Checklist

Check the shipping carton for any damage. If the shipping carton and contents are damaged, notify the local dealer or sales for a replacement. Retain the shipping carton and packing material for inspection by the dealer.
Check for the following items in the package. If there are any missing items, contact your local dealer or sales.

- PCH2600 Data Acquisition Board
- ART Disk
  a) user's manual (pdf)
  b) drive
  c) catalog
- Warranty Card

FEATURES

- Transmission Speed: 200Mbps
- Transmission Distance: up to 30Km
- Support "point to point" transmission mode
- Support full-duplex transmission
- Receive/transmit independently
- Bus Type: PC104+ bus
- FIFO: 4K-byte, 32-bit, 2K receive/transmit independently
- Data Read/Write: program query, DMA mode
- Support Windows 2000/XP/Vista OS
- Prevent signal interference

Specification Parameters

Hardware

- Bus Type: PC104+ bus
- FIFO: 4K-byte, 32-bit
- Data Read/Write: program query, DMA mode
- One PC can connect with four PCH2600

Fiber Optic Interface

- Fiber Optic Interface: SC card
- Fiber Optic Jumper: SC-type jumper
- Transmission Speed: 200Mbps
- Transmission Distance: up to 30Km
- Support "point to point" transmission mode
- Support full-duplex transmission
- FIFO: 2K receive/transmit independently

Software

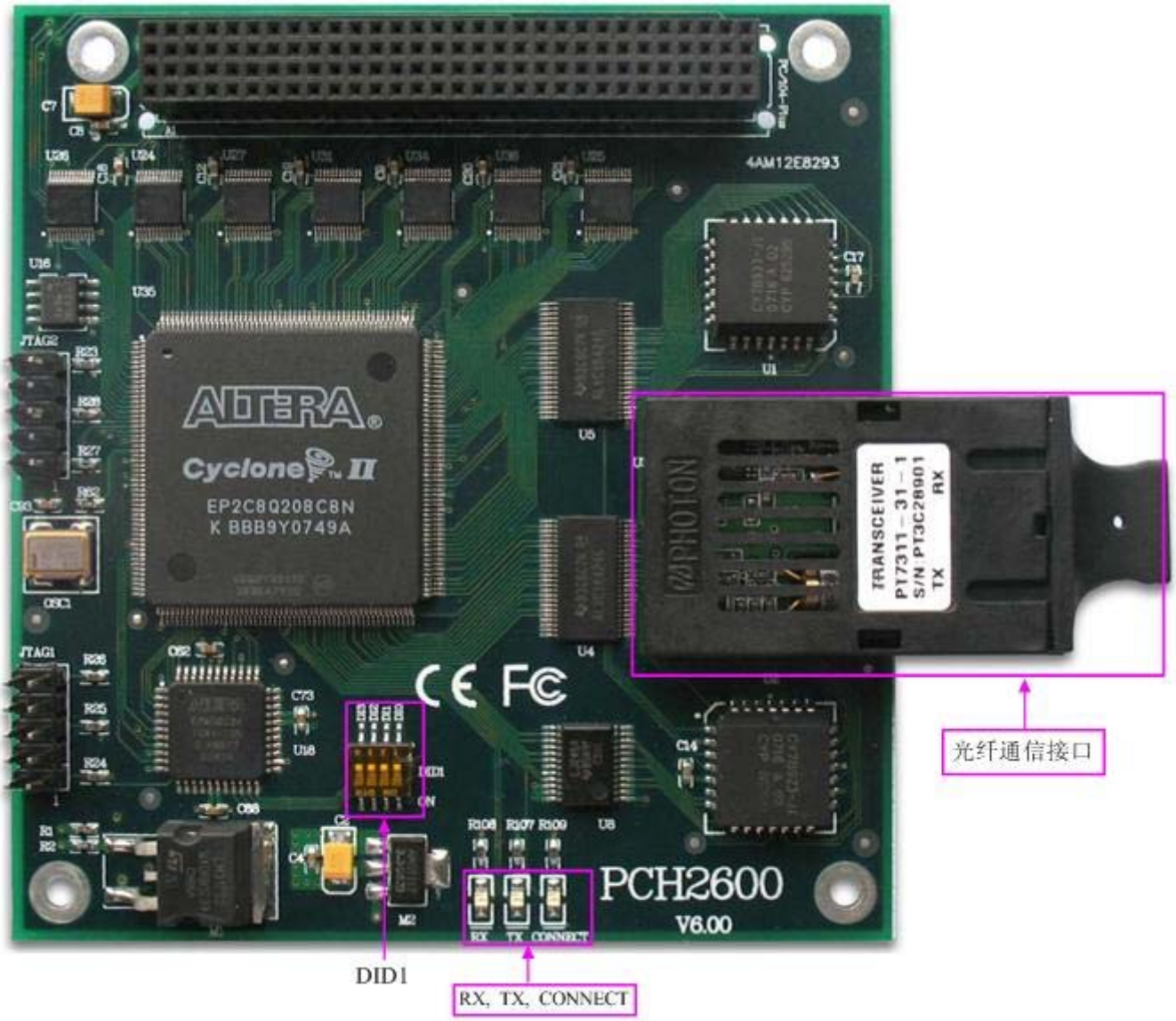
- Support Windows 2000/XP/Vista OS

Working Environment

- Operating Temperature Range: 0℃~50℃
- Relative Humidity: 5~95% RH
- Storage Temperature Range: -20℃~70℃

Chapter 2 Components Layout Diagram and a Brief Description

2.1 The Main Component Layout Diagram



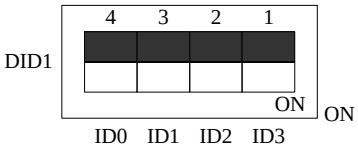
Optical fiber communication interfaces including TX (transmitter) and RX (receiver).

2.2 Physical ID Selection

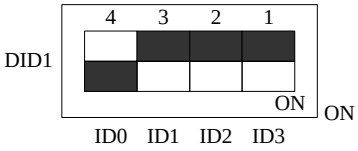
DID1: set the physical ID when install multiple PC104+ boards, the board is inserted in the PC104+ interface is the bottom board, the layer number is 0, the boards up from the bottom to the up, the layer number is 1,2,3. Then the users can easily distinguish and access each card by the hardware configuration and software programming.

The switch No. 1, 2, 3, 4 correspond to ID0, ID1, ID2, ID3 (ID2, ID3 are reserved). Each bit is the binary, switches dial to "ON" that means the 1, the switch to the other side means 0. (When the board left the factory, the test software usually

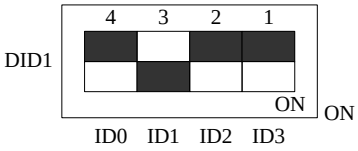
uses the logical ID to management device, so the physical ID is invalid. If you want to use multiple devices in a system, we had better to use physical ID.)



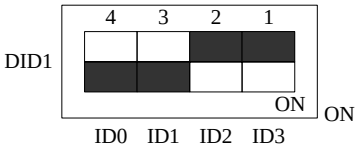
The figure indicates "0000", the physical ID number is 0



The figure indicates "0001", the physical ID number is 1



The figure indicates "0010", the physical ID number is 2



The figure indicates "0011", the physical ID number is 3

Physical ID setting

ID1	ID0	Physical ID（Hex）	Physical ID（Dec）
OFF（0）	OFF（0）	0	0
OFF（0）	ON（1）	1	1
ON（1）	OFF（0）	2	2
ON（1）	ON（1）	3	3

Chapter 3 Optical Fiber Communication

3.1 Optical Fiber Communication Principle

Fiber-optic Communication: is a method of transmitting information from one place to another by sending pulses of light through an optical fiber. The light forms an electromagnetic carrier wave that is modulated to carry information.

The process of communicating using fiber-optics involves the following basic steps: Creating the optical signal involving the use of a transmitter, relaying the signal along the fiber, ensuring that the signal does not become too distorted or weak, receiving the optical signal, and converting it into an electrical signal.

Advantages of Fiber-optic Communication

- Frequency band is wide, and the communication capacity is large
- Low loss, long distance relay
- With anti electromagnetic interference
- No crosstalk, security is good
- High quality communication

The Application of Fiber-optic Communication Card

- Fiber-optic communication system
- Fiber-optic access network
- Fiber-optic data transmission
- Fiber-optic CATV
- Local Area Network (LAN)
- Test equipment
- Fiber-optic sensor

Chapter 4 Notes, Calibration and Warranty Policy

4.1 Notes

In our products' packing, user can find a user manual, PCH2600 module and a quality guarantee card. Users must keep quality guarantee card carefully, if the products have some problems and need repairing, please send products together with quality guarantee card to ART, we will provide good after-sale service and solve the problem as quickly as we can.

When using PCH2600, in order to prevent the IC (chip) from electrostatic harm, please do not touch IC (chip) in the front panel of PCH2600module.

4.2 Warranty Policy

Thank you for choosing ART. To understand your rights and enjoy all the after-sales services we offer, please read the following carefully.

1. Before using ART's products please read the user manual and follow the instructions exactly. When sending in damaged products for repair, please attach an RMA application form which can be downloaded from: www.art-control.com.

2. All ART products come with a limited two-year warranty:

- The warranty period starts on the day the product is shipped from ART's factory
- For products containing storage devices (hard drives, flash cards, etc.), please back up your data before sending them for repair. ART is not responsible for any loss of data.
- Please ensure the use of properly licensed software with our systems. ART does not condone the use of pirated software and will not service systems using such software. ART will not be held legally responsible for products shipped with unlicensed software installed by the user.

3. Our repair service is not covered by ART's guarantee in the following situations:

- Damage caused by not following instructions in the User's Manual.
- Damage caused by carelessness on the user's part during product transportation.
- Damage caused by unsuitable storage environments (i.e. high temperatures, high humidity, or volatile chemicals).
- Damage from improper repair by unauthorized ART technicians.
- Products with altered and/or damaged serial numbers are not entitled to our service.

4. Customers are responsible for shipping costs to transport damaged products to our company or sales office.

5. To ensure the speed and quality of product repair, please download an RMA application form from our company website.

Products Rapid Installation and Self-check

Rapid Installation

Product-driven procedure is the operating system adaptive installation mode. After inserting the disc, you can select the appropriate board type on the pop-up interface, click the button【driver installation】; or select CD-ROM drive in Resource Explorer, locate the product catalog and enter into the APP folder, and implement Setup.exe file. After the installation, pop-up CD-ROM, shut off your computer, insert the PCI card. If it is a USB product, it can be directly inserted into the device. When the system prompts that it finds a new hardware, you do not specify a drive path, the operating system can automatically look up it from the system directory, and then you can complete the installation.

Self-check

At this moment, there should be installation information of the installed device in the Device Manager (when the device does not work, you can check this item.). Open "Start -> Programs -> ART Demonstration Monitoring and Control System -> Corresponding Board -> Advanced Testing Presentation System", the program is a standard testing procedure. Based on the specification of Pin definition, connect the signal acquisition data and test whether AD is normal or not. Connect the input pins to the corresponding output pins and use the testing procedure to test whether the switch is normal or not.

Delete Wrong Installation

When you select the wrong drive, or viruses lead to driver error, you can carry out the following operations: In Resource Explorer, open CD-ROM drive, run Others-> SUPPORT-> PCI.bat procedures, and delete the hardware information that relevant to our boards, and then carry out the process of section I all over again, we can complete the new installation.