ART2535
User's Manual

Beijing ART Technology Development Co., Ltd.

Contents

Chapter 1 Overview

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.

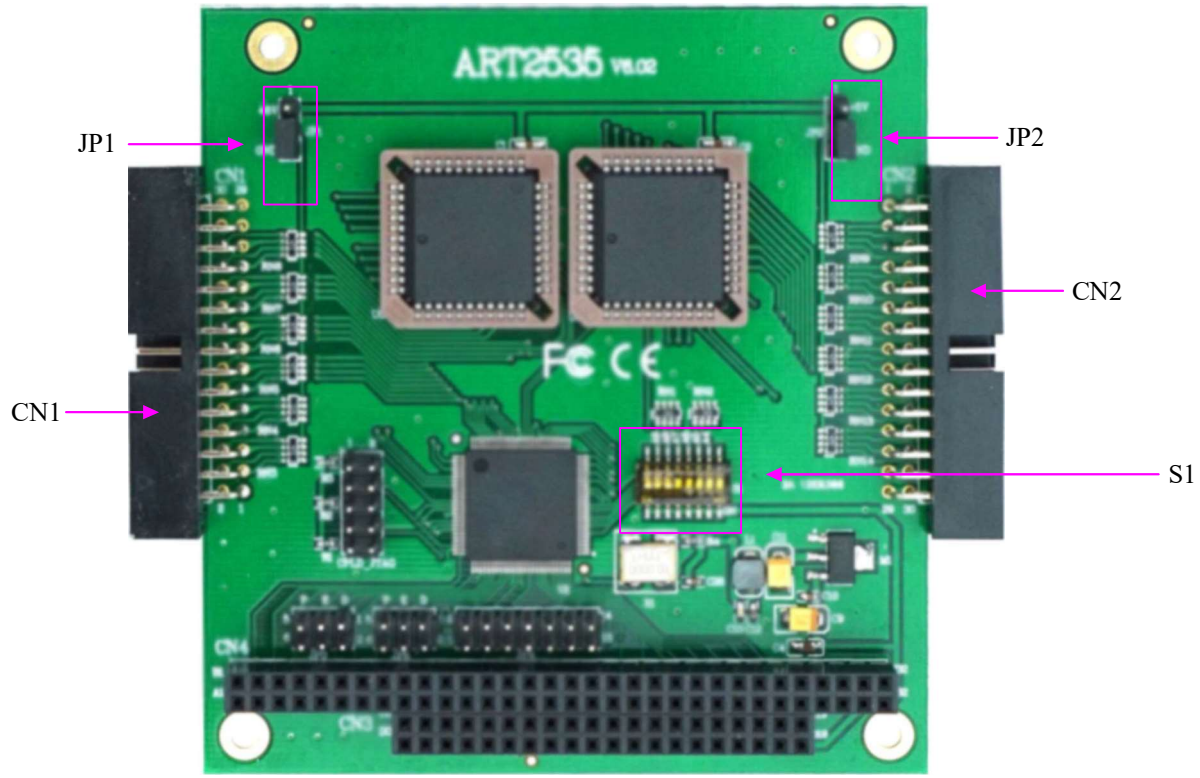
- Art2535 Data Acquisition Board
- ART Disk
  a) user's manual (pdf)
  b) drive
  c) catalog
- Warranty Card

FEATURES

- 48-ch digital input/output
- Input/Output Type: TTL/DTL compatible
- 48-ch can be divided into DIO0~DIO7, DIO8~DIO15, DIO16~DIO23, DIO24~DIO31, DIO32~DIO39, DIO40~DIO47, there are 6 groups, each group can be individually set to input or output.

Chapter 2 Components Layout Diagram and a Brief Description

2.1 The Main Component Layout Diagram



2.2 The Function Description for the Main Component

2.2.1 Signal Input and Output Connectors

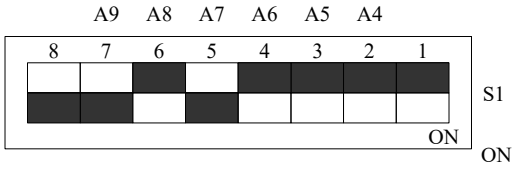
CN1, CN2: digital input/output port

2.2.2 Board Base Address Selection

S1: board base address DIP switches. Board base address can be set to binary code which from 200H to 3F0H be divided by 16, board base address defaults 300H, will occupy the base address of the date of 8 consecutive I/O addresses. Switch No. 2, 3, 4, 5, 6, 7 correspond to address bitsA4, A5, A6, A7, A8, A9 are the base address of selector switch, Switch No.1, 8 are reserved bits.

Board base address selection is as follows: when the S1 switches dial to "ON" that means the high virtual is 1, the switch to the other side means the low virtual value is 0.

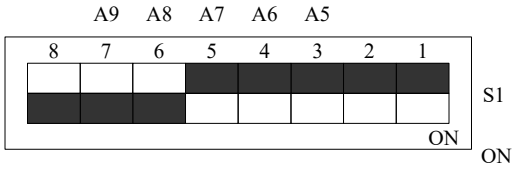
Board base address selection switch S1 shown as following:



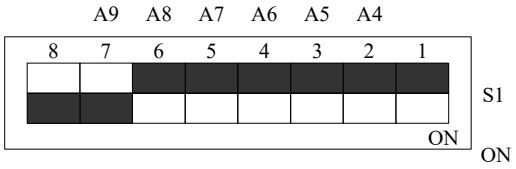
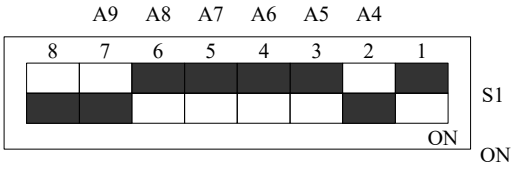
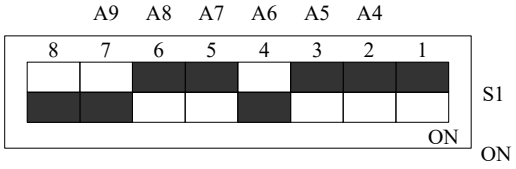
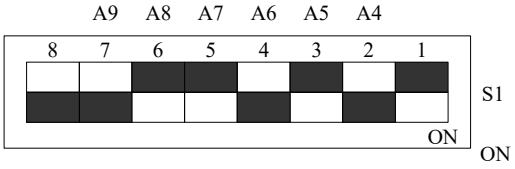
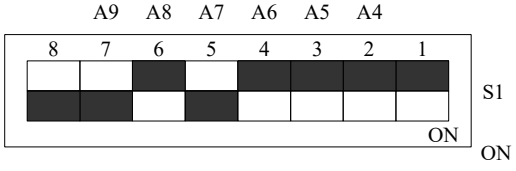
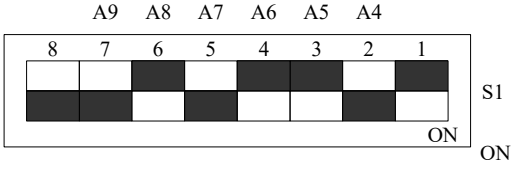
Base address configuration methods

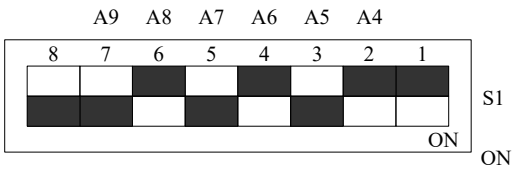
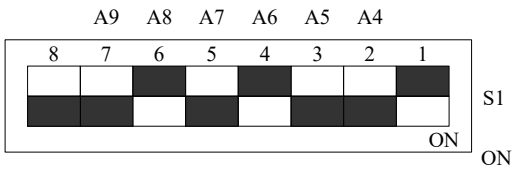
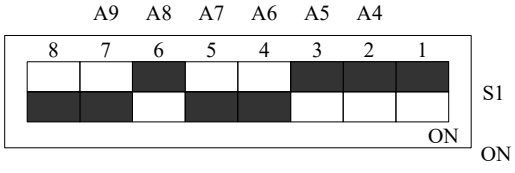
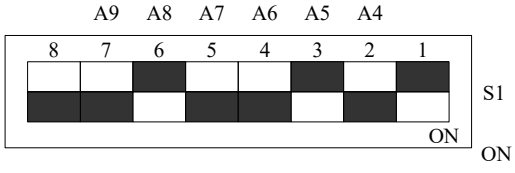
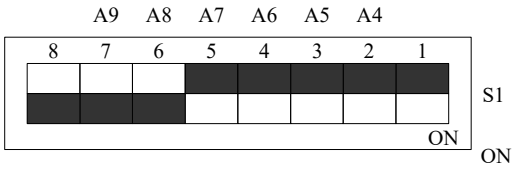
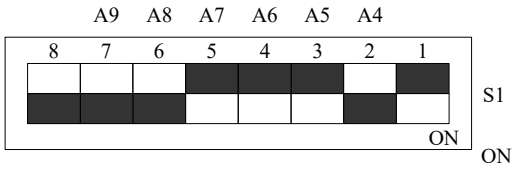
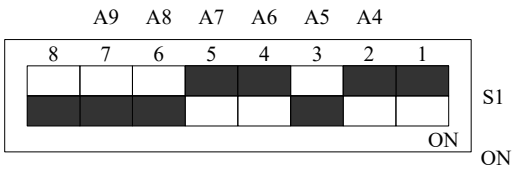
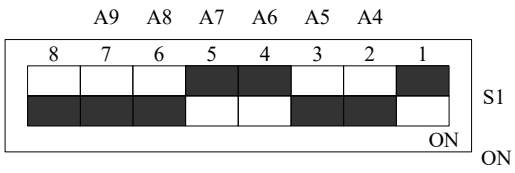
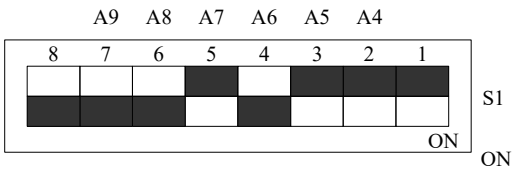
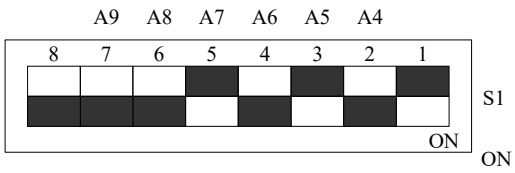
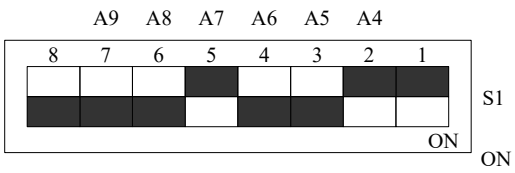
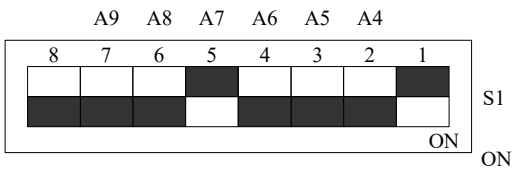
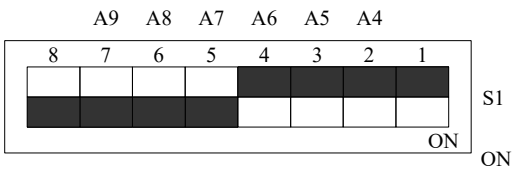
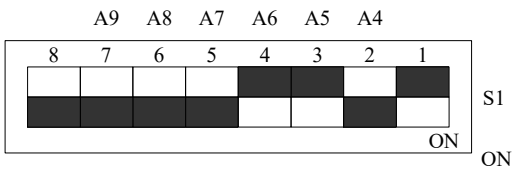
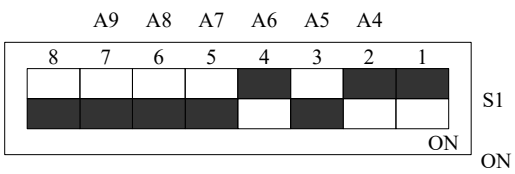
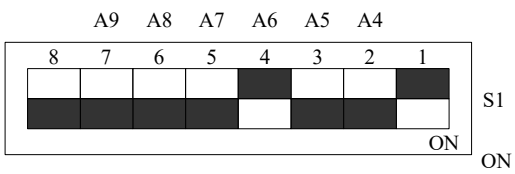
Address bit	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1	A0
X is configurable bit	unused	unused	x	x	x	x	x	x	x	0	0	0
	The third hex bits				The second hex bits				The first hex bits			

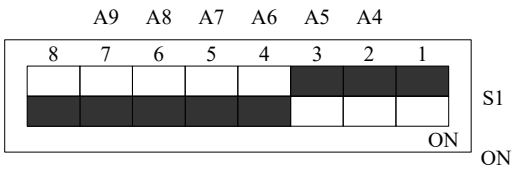
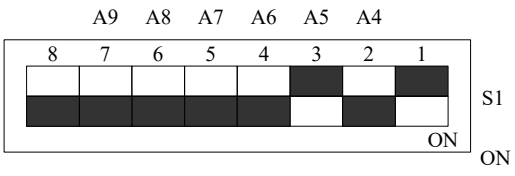
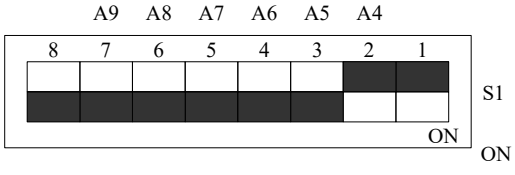
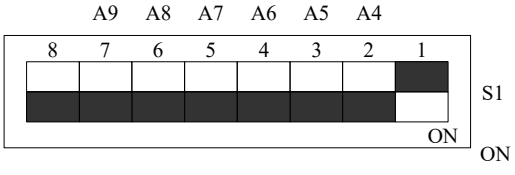
Note: in the table, the bit which is labeled "0"is a fixed value, only the bit that labeled "x" can be changed by the S1
For example, the default base addresses is300H, A8, A9= "ON", shown as the following:



Common base address

Adr	ADDR1	Adr	ADDR1
200H		210H	
220H		230H	
240H		250H	
260H		270H	
280H		290H	

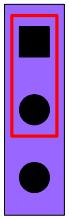
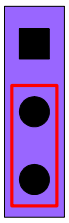
2A0H		2B0H	
2C0H		2D0H	
2E0H		2F0H	
300H		310H	
320H		330H	
340H		350H	
360H		370H	
380H		390H	
3A0H		3B0H	

3C0H		3D0H	
3E0H		3F0H	

2.2.2 Jumper

JP1: the signal default level selection of the digital signal DIO0 ~ DIO23 in input mode.
JP2: the signal default level selection of the digital signal DIO24 ~ DIO47 in input mode.

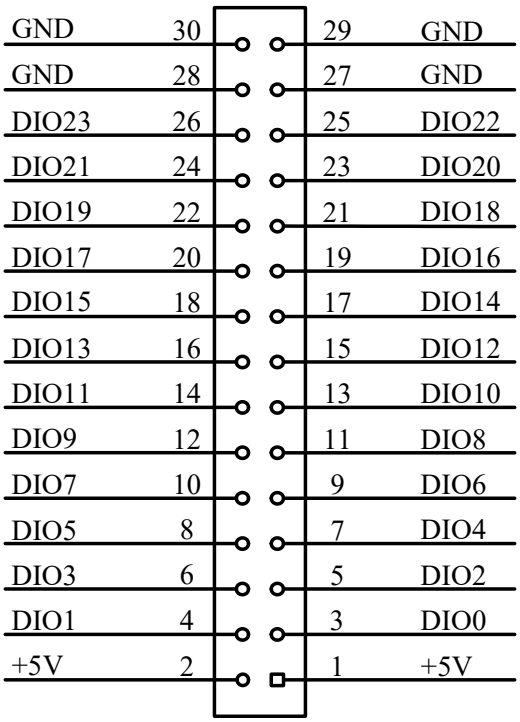
In input mode: When the 1-2 pin of the JP1, JP2 shorted (connect with +5V), the default input is high-level; 2-3 shorted (connect with the ground), the default input is low-level. As follows:

JP1, JP2	Default Input Status
+5V 	High-level
 GND	Low-level

Note: 1) When the I/O port is set to input state, the corresponding jumper must be connect to ground or +5V.
2) When I/O port with an external signal input, the status of the corresponding port with change with the input signal.

Chapter 3 Signal Connectors

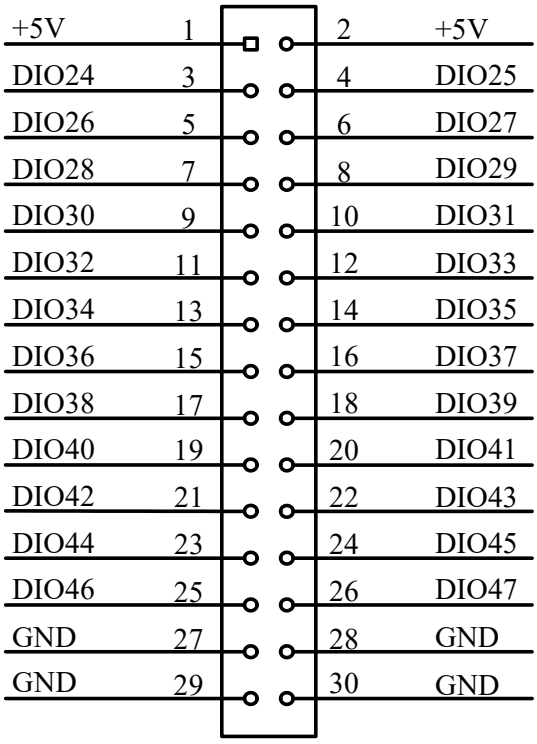
CN1: 30-pin definition



Pin definition

Signal Name	Type	Definition
DIO0~DIO23	Input/Output	Digital input/output port
+5V	PWR	+5V power input
GND	GND	Digital ground

CN2: 30-pin definition

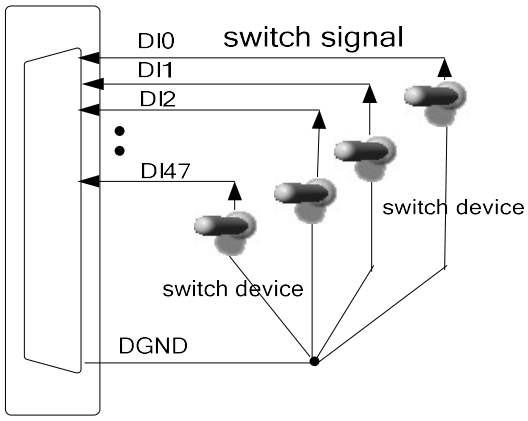


Pin definition

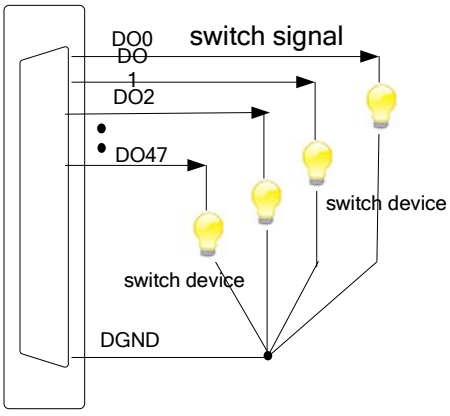
Signal Name	Type	Definition
DIO24~DIO47	Input/Output	Digital input/output port
+5V	PWR	+5V power input
GND	GND	Digital ground

Chapter 4 Connection Ways for Input and Output

4.1 Digital Input Connection



4.2 Digital Output Connection



Chapter 5 Address Allocation Table

Address Assignment = base address + offset address

A9	A8	A7	A6	A5	A4	A3	A2	A1	A0

Offset address A3 ~ A0 are controlled by the software.

Offset address and channel corresponding relation table

Offset Address	Channel
00	D0~D7 channels
01	D8~D15channels
02	D16~D23channels
03	Control D0 ~ D23 input/output state
04	D24~D31channels
05	D32~39channels
06	D40~D47channels
07	Control D24 ~ D47 input/output state
Note: other offset address is invalid.	

Note: if this card base address is 300H, then this card which occupies the valid address is (300~307H). Other PC104 boards cannot use this segment address.

For example

A9	A8	A7	A6	A5	A4	A3	A2	A1	A0
1	1	0	0	0	0	0	x	x	x

Base address is: 0x300 (ART2535 default address is 0x300).

The address is 0x300, then visit D0 ~ D7 channels.

The address is 0x301, then visit D8 ~ D15 channels.

… …

Chapter 6 Notes and Warranty Policy

6.1 Notes

In our products' packing, user can find a user manual, a Art2535 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 Art2535, in order to prevent the IC (chip) from electrostatic harm, please do not touch IC (chip) in the front panel of Art2535 module.

6.2 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.