

ADAM-4501/4501D

**Ethernet-enabled
Communication Controller
with 8 DI/O**

Startup Manual

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE: This equipment is CE certified.

Part No. 2003450100 2nd Edition

Printed in Taiwan March 2006

Contents

Chapter	1	System Requirements.....	1
	1.1	Host Computer Requirements	1
	1.2	ADAM-4500 Series Requirements	1
	1.3	User Manual & Software.....	2
Chapter	2	Hardware Specifications & Installation.....	3
	2.1	Specifications of ADAM-4501/4501D	3
		Figure 2.1: Dry contact wiring for DI channel	4
		Figure 2.2: Wet contact wiring for DI channel	4
		Figure 2.3: Digital output wiring	5
	2.2	Programming Port & Power Wiring.....	5
		Figure 2.4: Programming port & power Wiring.....	5
		Figure 2.5: Programming port configuration Wiring.....	6
		Figure 2.6: Combo cable.....	6
		Figure 2.7: Combo cable configuration wiring.....	6
	2.3	Jumper Settings	7
		Figure 2.8: Jumper locations on the CPU card	7
		Figure 2.9: Watchdog timer setting	8
		Figure 2.10: Battery backup setting.....	8
		Figure 2.11: Programming port / COM4 selectable jumper setting ⁹	8
	2.4	LED Status	9
	2.5	Configure I/O by ADAM-4500 Series Utility.....	10
		Figure 2.12: I/O configuration	10
Chapter	3	Application Execution at Boot up.....	11
		Figure 3.1: Application Execution setting	11

Chapter 1 System Requirements

1.1 Host Computer Requirements

- IBM PC compatible computer with 486 CPU (Pentium is recommended)
- Microsoft Windows 95/98/NT4.0 SP4/2000/XP or higher versions
- Borland C++ 3.0 for DOS
- At least 32 MB RAM
- 20 MB of hard disk space available
- VGA color monitor
- CD-ROM
- Mouse or other pointing devices
- At least one standard RS-232 port (e.g. COM1, COM2)

1.2 ADAM-4500 Series Requirements

- One ADAM-4500 Series main unit, i.e., ADAM-4501, ADAM-4501D
- One ADAM-4501/4501D Series Startup Manual
- One core clamp for power supply connection
- One ADAM Products Utilities CD
- Power supply for ADAM-4500 Series (+10 to +30 VDC unregulated)
- One RS-232 straight through DB-9 cable
- One null modem adaptor or cable with DB-9 connectors

1.3 User Manual & Software

For more detailed information on this product, please refer to the ADAM-4500 Series User Manual on the CD-ROM (PDF format).

CD:\Manual\ADAM 4500 Series\ADAM-4500 series user's manual.pdf

Adobe® Reader® is required for viewing any PDF files. Acrobat Reader can be found on the CD.

CD:\Adobe Reader\

The configuration software can be found on the CD.

CD:\ADAM-4500 Series\Adam-4500 Series Utility.exe

Chapter 2 Hardware Specifications & Installation

2.1 Specifications of ADAM-4501/4501D

- Memory

1.5MB flash memory:

- 256KB system Disk (Drive C: Read Only)
- 256KB flash memory (Accessed by Function LIB)
- 1024KB file system, 960KB for user applications (Drive D: Read/Write)

640KB SRAM

- up to 384KB with battery backup (Accessed by Function LIB)
- Operating System: ROM-DOS (MS-DOS 6.22 Compatible)
- Real-time Clock: yes
- Watchdog Timer: yes
- RS-232 interface: COM1
- RS-485 interface: COM2, COM3
- RS-232/485 interface: Programming Port & COM4 (Select by jumper setting)
- Onboard I/O Capacity:

Digital Input 4 Channels

Dry Contact:

Logic level 0: Close to GND

Logic level 1 : Open

Wet Contact:

Logic level 0: +2 V max.

Logic level 1: 4 V ~ 30 V

Digital Output 4 Channels

Open Collector to +40 V, 200 mA max. Load

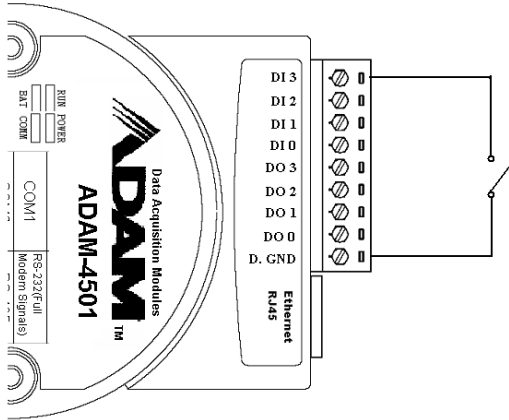


Figure 2.1: Dry contact wiring for DI channel

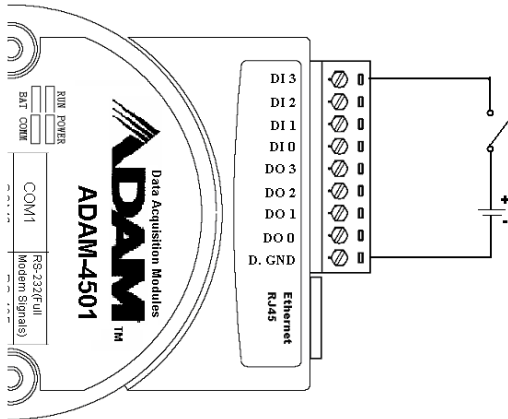


Figure 2.2: Wet contact wiring for DI channel

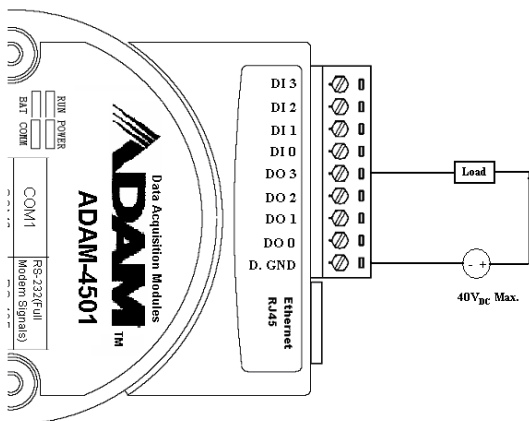


Figure 2.3: Digital output wiring

- Power

Unregulated +10 to +30 VDC

Power consumption: 2.0 W

- Environment

Operating temperature: -10° to 70° C (14° to 158° F)

Storage temperature: -25° to 85° C (-13° to 185° F)

Humidity: 5 to 95 %, non-condensing

2.2 Programming Port & Power Wiring

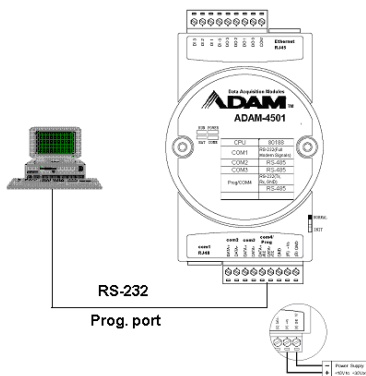


Figure 2.4: Programming port & power Wiring

<u>PC COM port</u>	<u>straight through cable</u>	<u>ADAM-4500 series Prog. port</u>
CD 1		
RX 2	—————	TX
TX 3	—————	RX
DTR 4		
GND 5	—————	GND
DSR 6		
RTS 7		
CTS 8		
RI 9		

Figure 2.5: Programming port configuration Wiring

Notes: We also provide a combo cable with one DB9 female connector and 3 loose wires for program port connection (See photo).

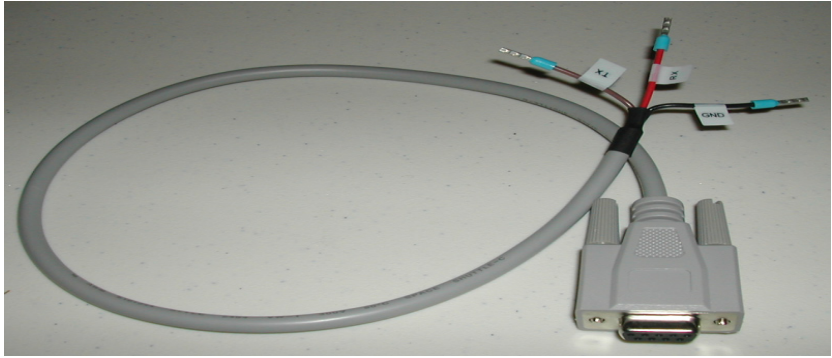


Figure 2.6: Combo cable

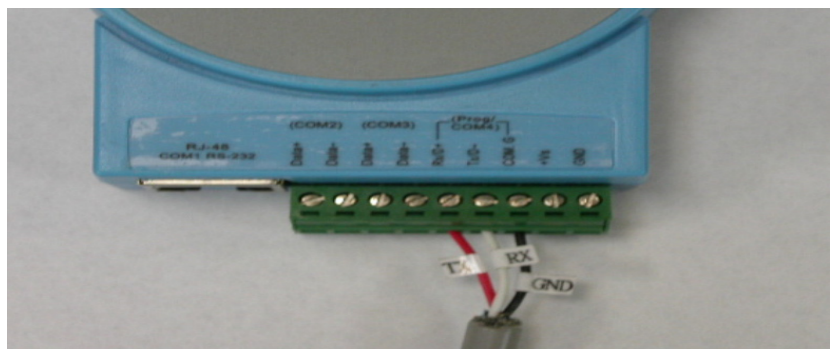


Figure 2.7: Combo cable configuration wiring

2.3 Jumper Settings

There are several jumpers on the CPU card. This gives the system default configuration and there are four major jumpers you need to set according to your options.

JP2 is for the watchdog timer setting

JP5 is for battery power ON/OFF setting

JP6 & JP7 is for COM4 or programming port selection

The following figure shows the location of the jumpers:

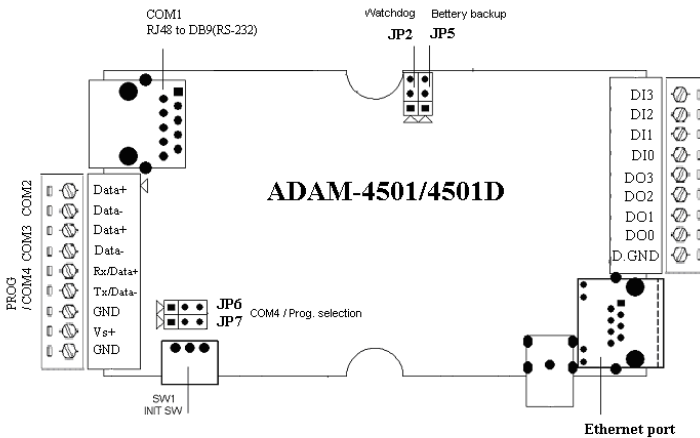


Figure 2.8: Jumper locations on the CPU card

Watchdog timer setting

Jumper JP2 on the CPU card lets you configure the watchdog timer to disable mode, reset mode or NMI (Non-maskable interrupt) mode.

JP2 Watchdog timer

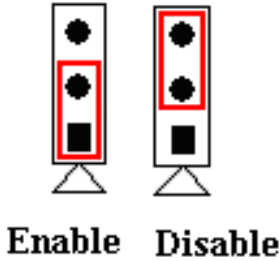


Figure 2.9: Watchdog timer setting

Battery backup setting

Jumper JP5 on CPU card lets you configure the battery backup for SRAM is ON or OFF.

JP5 Battery Backup RAM

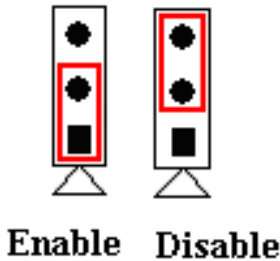


Figure 2.10: Battery backup setting

Programming port / COM4 (RS-232/485) selectable jumper setting

The communication mode of programming port/COM4 is setting by the Jumper 6 & 7. The default setting is RS-232 mode for programming download use.



Figure 2.11: Programming port / COM4 selectable jumper setting

2.4 LED Status

There are four LED lights on the ADAM-4500 series. The LED's indicate operating status, as explained below:

- (1) PWR: power indicator. This LED is on whenever the ADAM-4500 series is powered on.
- (2) RUN: program execution indicator. This LED is regularly blinks whenever the ADAM-4500 series are executing a program.
- (3) COMM: communication indicator. This LED blinks whenever the host PC and the ADAM-4500 series are communicating. Please notice: if the host COM port is connected to the ADAM-4500 series COM1, this LED will normally be off. On the other hand, if the host COM port is connected to the ADAM-4500 series' COM2, this LED will normally be on.
- (4) BATT: battery status indicator. This LED will be on whenever the SRAM backup battery is low.

LED lightColor

PWR Green

RUN RED

COMM Green

BATT RED

2.5 Configure I/O by ADAM-4500 Series Utility

The following steps will use ADAM-4501 as an example to demonstrate how to configure the onboard I/O.

1. Please install the ADAM-4500 series utility then click the “Configure ADAM” button as following. Users can make use of it to test IO channels status.
2. See User manual chapter 3 I/O Configuration and Program Download for the detailed operation.

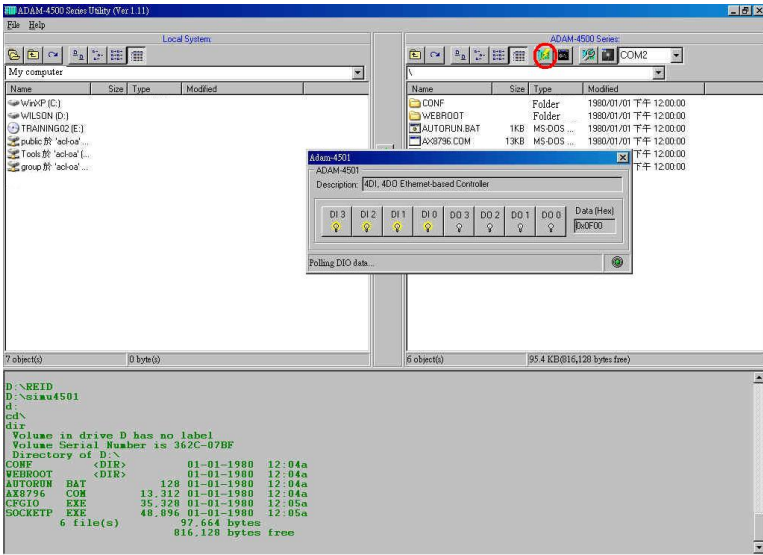


Figure 2.12: I/O configuration

Chapter 3 Application Execution at Boot up

It is easy to execute user's AP, just follow these steps to automatically execute an application after boot up.

1. Please download users AP "SIMU4501.EXE" onto ADAM-4501.
2. Select the file "SIMU4501.EXE" and right-click to choose "Set to AutoRun".
3. Choose ADAM-4500 as below to set this to auto execute when system is booted up

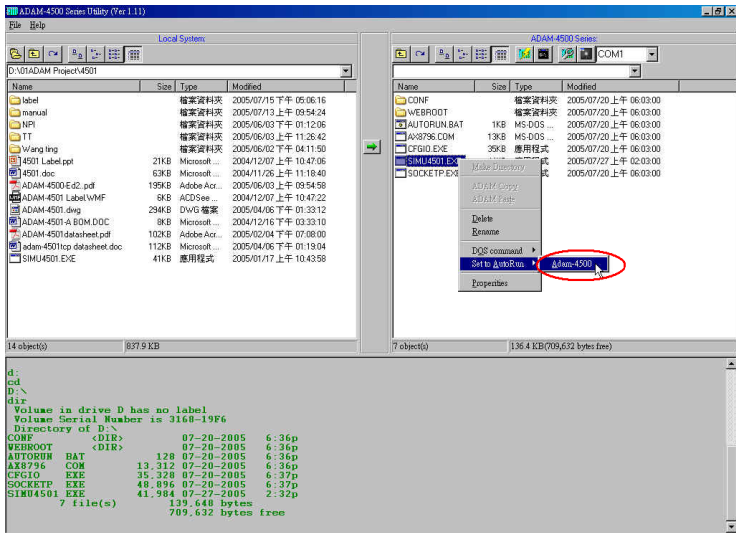


Figure 3.1: Application Execution setting

