

Quick Start

ICP DAS LinPAC-8X81-Atom

Implement industry control with Linux Technique

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1. Hardware Interface Introduction

1. Powerful CPU Module

Intel Atom Z520 CPU (1.33 GHz)

2. Memory size:

DDR2 SDRAM (1 GB), Built-in Flash Disk (8 GB)

EEPROM (16 KB), CF Card (8 GB)

Dual Battery Backup SRAM (512 KB)

3. VGA Port x 1, USB 2.0 Port x 4

4. Programmable LED indicator x 2

5. Audio with Microphone-In and Earphone-Out

6. 64-bit Hardware Serial Number

7. Dual Watchdog Timers

8. 4/5 Serial Ports (RS-232/RS-485)

9. Dual Giga bit Ethernet Ports (10/100/1000 M)

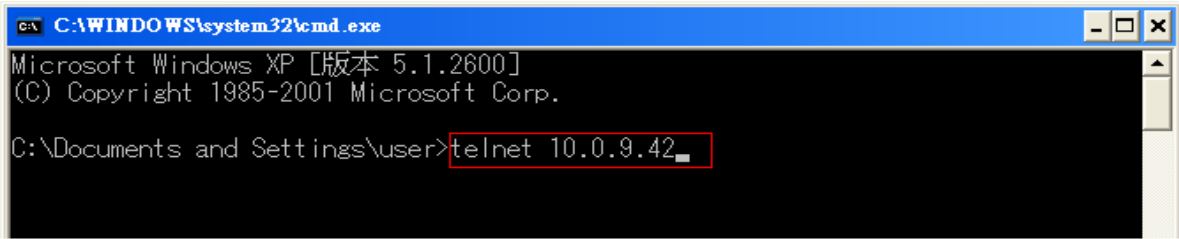
10. Redundant Power Input

11. DIN-Rail or Wall Mounting

12. Operating Temperature: -25 ~ +75 °C

2. LP-8X81-Atom Network Configuration

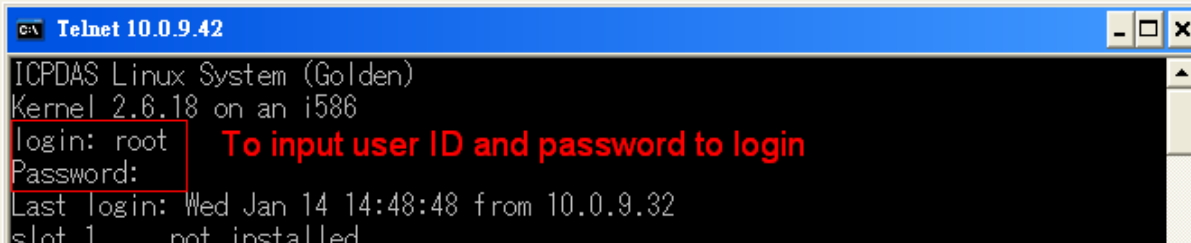
The LP-8X81-Atom network setting includes two ways. One is **DHCP** and the other is “**Assigned Static IP**”. DHCP is the default setting after the LP-8X81-Atom is produced and this way is easy for users. After finishing the LinPAC network setting by DHCP, users can type “**ifconfig**” to see the network setting. Then user can use the command “**telnet**” to connect to LP-8X81-Atom to configure system, check system status and startup/stop system service(please refer to Fig 2-1, 2-2).The default ID is “**root**” and password is “**icpdas**”.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [版本 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\user>telnet 10.0.9.42_
```

Fig 2-1



```
Telnet 10.0.9.42
ICPDAS Linux System (Golden)
Kernel 2.6.18 on an i586
login: root To input user ID and password to login
Password:
Last login: Wed Jan 14 14:48:48 from 10.0.9.32
slot 1 ... not installed
```

Fig 2-2

3. The LinPAC-8X81-Atom SDK Introduction

LP-8X81-Atom SDK” consists of the following major items.

- LinPAC SDK library files
- LinPAC SDK include files
- Demo files

From <http://ftp.icpdas.com/pub/cd/linpac/napdos/lp-8x81/atom/>, you can download the latest version of LP-8X81-Atom SDK and Manual.

4. Instructions for the LP-8X81-Atom

The **i-Talk utility** provides **sixteen instructions** that make it convenient for users to access the modules and hardware in the LP-8X81-Atom and they are placed in the path — **/usr/bin**. The Table. 4-1 describes the functions of i-Talk utility.

Instruction	Function Discription
getlist	List all module name in the LP-8X81-Atom
setdo	Set digital output value to 8k module
setao	Set analog output value to 8k module
getdi	Get digital input value from 8k module
getai	Get analog input value from 8k module
setexdo	Set digital output value to 7k/87k module
setexao	Set analog output value to 7k/87k module
getexdi	Get digital input value from 7k/87k module
getexai	Get analog input value from 7k/87k module
setport	Set port value by offset to a module
getport	Get port value by offset from a module
setsend	Send string from LinPAC COM port
getreceive	Receive string from LinPAC COM port
getsendreceive	Send/Receive string from LinPAC COM port
read_sn	Get Hardware Serial Number of LP-8X81-Atom
rotary_atom_id	Get Hardware Rotary Switch ID of LP-8X81-Atom

Table 4-1

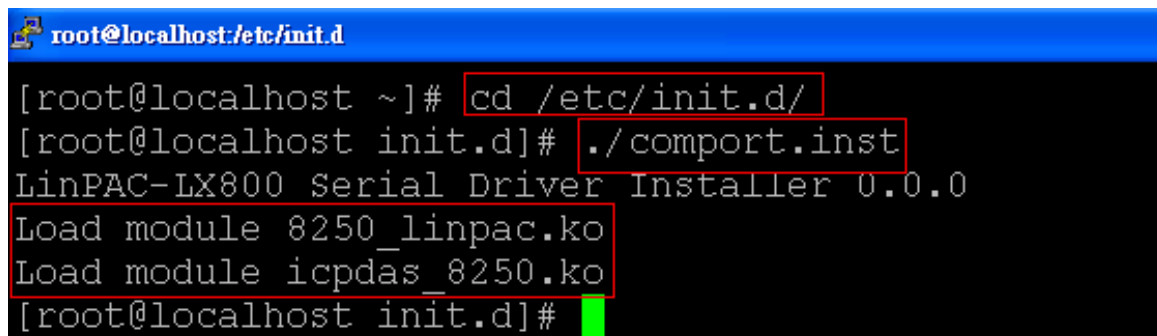
5. Additional Support

In this chapter, ICP DAS provides extra module supported and instructions to enhance LP-8X81-Atom functionality and affinity.

5.1 N-Port Serial Port and Modules Driver Install

The comport Linux driver can be used in LP-8X81-Atom to support serial modules(ex i-8114w) or other serial port COM4 and COM5 . For LP-8X81-Atom Linux OS, the recommended installation and uninstall steps as follows:

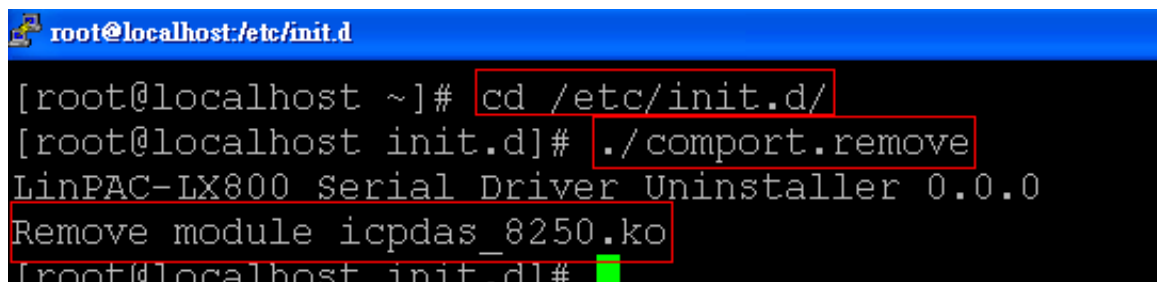
- (1) To type “**cd /etc/init.d/**” and type “**./comport.inst**” to install serial module driver automatically(refer to Fig 5-1).



```
root@localhost:/etc/init.d
[root@localhost ~]# cd /etc/init.d/
[root@localhost init.d]# ./comport.inst
LinPAC-LX800 Serial Driver Installer 0.0.0
Load module 8250_linpac.ko
Load module icpdas_8250.ko
[root@localhost init.d]#
```

Fig 5-1

- (2) To type “**dmesg**” to check the status of installing comport driver.
- (3) If user want to remove the comport driver, user could type “**cd /etc/init.d/**” and type “**./comport.remove**” to remove comport driver automatically(refer to 9-4).



```
root@localhost:/etc/init.d
[root@localhost ~]# cd /etc/init.d/
[root@localhost init.d]# ./comport.remove
LinPAC-LX800 Serial Driver Uninstaller 0.0.0
Remove module icpdas_8250.ko
[root@localhost init.d]#
```

Fig 5-2

5.2 Application Support

There are many applications in the LP-8X81-Atom.

(1) Provide Web Browser

Users can see the Web Page by using the Web Browser built in the LP-8X81-Atom. Just click the icon “firefox” to open the web browser.

(2)Provide Apache Server

The Web Server — “ **Apache Server** “ has been built in the LP-8X81-Atom and it will be started automatically at boot time (default the system wouldn’t startup apache server at boot time, if user want to startup web server at boot time, user can create the S56httpd symbolic link in the directory “/etc/rc5.d” for turn on running program automatically at boot time).

(3)Using “yum” to Install Application

“yum” is software installation tool for Red hat Linux and Fedora Linux. It is a complete software management system. The “yum” is designed to use over network/internet. If you want to install more application, you could use “yum” to install automatically.

Appendix A. Service Information

This appendix will show how to contact ICP DAS when you have problems in the LP-8X81-Atom or other products.

Internet Service :

The [internet service](#) provided by ICP DAS will be satisfied and it includes [Technical Support](#), [Driver Update](#), [OS_Image](#), [LinPAC_SDK](#) and [User’s Manual Download](#) etc. Users can refer to the following web site to get more information :

1. ICP DAS Web Site :

<http://www.icpdas.com/>

2. Software Download :

<http://ftp.icpdas.com/pub/cd/linpac/napdos/lp-8x8x/atom/>

3. E-mail for Technical Support :

service@icpdas.com

Manual Revision :

Manual Edition	Revision Date	Revision Details
v 1.0	2011. 9.26	The first version of user manual.