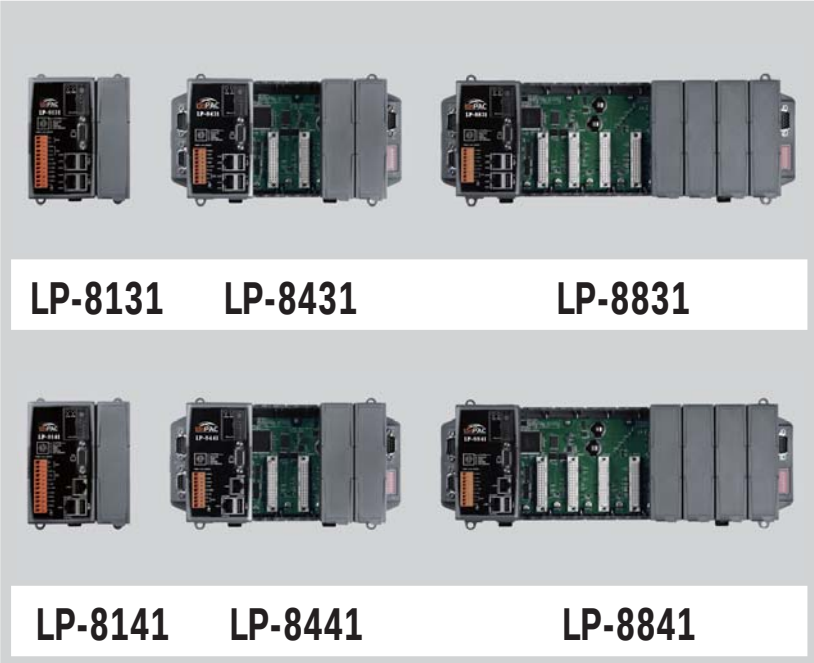


Highlight Information

- Linux kernel 2.6 Inside
- Embedded Service: Web Server, FTP Server, Telnet Server, SSH Server
- Power PXA270 CPU: 32-bit & 520 MHz
- 1/4/8 Slots for High Profile I/O Modules
- Dual 10/100M Ethernet Ports
- 2/4 Serial Ports (RS-232/485)
- Redundant Power Input
- Operating Temperature: -25 ~ +75 °C

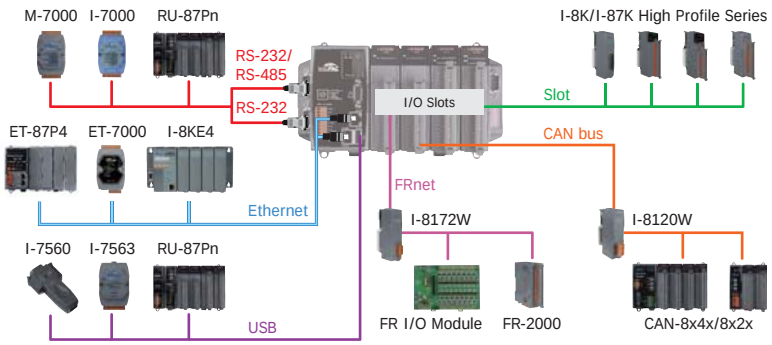
Introduction

LinPAC-8000 is the new generation Linux-based PAC (Programmable Automation Controller) from ICP DAS and is equipped with a PXA270 CPU (520 MHz) running a Linux kernel 2.6 operation system, multiple communication interfaces (VGA, USB, Ethernet and RS-232/485) and 1/4/8 slots for high performance parallel I/O modules (high profile I-8K series) and serial I/O modules (high profile I-87K series).

Main advantage of the LinPAC-8000 is its high quality control system, including its stably properties, open source and the standard LinPAC SDK for Windows and Linux using the GNU C language, JAVA and GUI software. The main purpose of LinPAC-8000 is to allow the numerous enthusiastic Linux users to control their own embedded system easily within the Linux environment.

Applications

Rich I/O Expansion Ability



Features

Software

- OS: Linux kernel 2.6:Open Sourse
- Development Environment
  - Provide LinPAC SDK for Windows and Linux Environment
  - Support for GNU C Language
  - Support for JAVA: JVM, JIOD (Java I/O Driver)
  - Support for GUI: Using GTK + Library
- Support for Server: Web, FTP, Telnet & SSH Server
- Supported Communication
  - Wireless, PPP over Modem, GPRS, Ethernet, Dual LAN
  - VxComm
  - Expansion Serial Ports
  - USB to Serial Converter
  - DCON and Modbus Protocols
  - Built-in Video Program support for USB WebCam
- Protocol: CAN Bus Network, Modbus TCP/RTU, SNMP
- Interpret: Perl, PHP
- Security: Firewall, NAT, VPN, Unique Serial Number

Hardware

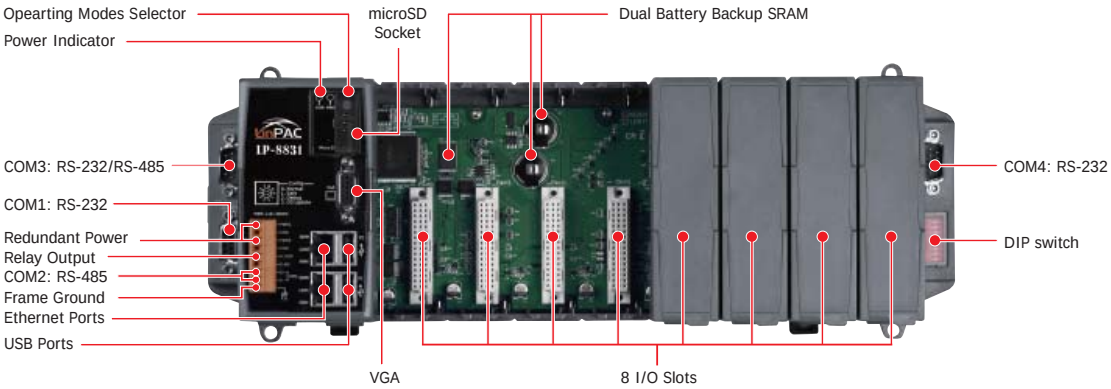
- Powerful CPU Module
- Built-in VGA Port: 640 x 480 ~ 1024 x 768 (for LP-8x31)
- Built-in VGA Port: 640 x 480 ~ 800 x 600 (for LP-8x41)
- 64-bit Hardware Serial Number
- Rich I/O Expansion Ability
- I/O Module Hot Swap Ability
  * Will be available
  (For High Profile I-87K Modules Only)
- 128 MB SDRAM
- Dual Watchdog Timers
- Dual Battery Backup SRAM (512 KB)
- Dual Ethernet Ports
- Redundant Power Inputs
- DIN-Rail or Wall Mounting
- Operating Temperature: -25 ~ +75 °C

Specifications

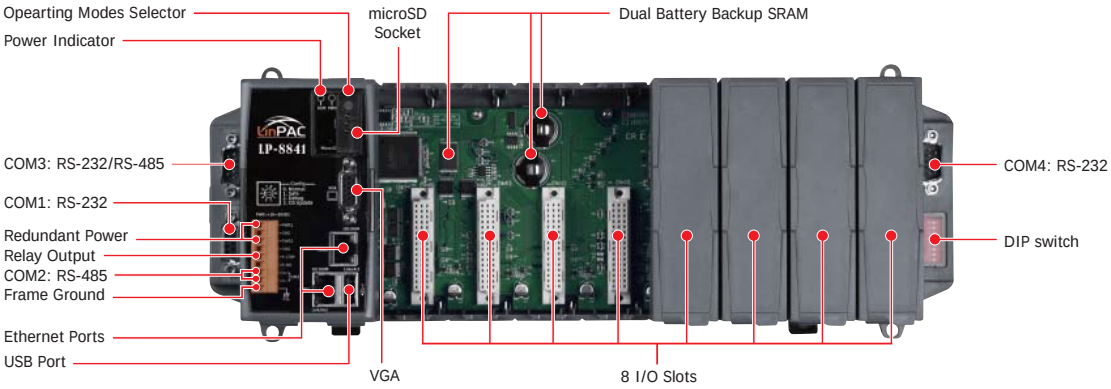
Models		LP-8131	LP-8141	LP-8431	LP-8441	LP-8831	LP-8841
System Software							
OS		Linux kernel 2.6					
Embedded Service		Web Server, FTP Server, Telnet Server, SSH Server					
SDK Provided		Standard LinPAC SDK for Windows and Linux by GNU C language					
CPU Module							
CPU		PXA270 or compatible (32-bit and 520 MHz)					
SDRAM		128 MB					
Dual Battery Backup SRAM		512 KB (for 5 years data retain while power off)					
Flash		128 MB	48 MB	128 MB	48 MB	128 MB	48 MB
EEPROM		16 KB					
		Data Retention: 40 years; 1,000,000 erase/write cycles					
Expansion Flash Memory		microSD socket with one 2 GB microSD card (support up to 16 GB microSDHC card)					
RTC (Real Time Clock)		Provide second, minute, hour, date, day of week, month, year					
64-bit Hardware Serial Number		Yes, for Software Copy Protection					
Dual Watchdog Timers		Yes					
Programmable LED Indicator		1					
Rotary Switch		Yes (0 ~ 9)					
DIP Switch		-		Yes (8 bits)			
VGA & Communication Ports							
VGA	VGA	Yes, with one extra GPU	Yes	Yes, with one extra GPU	Yes	Yes, with one extra GPU	Yes
	Resolution	1024 x 768, 800 x 600, 640 x 480	800 x 600, 640 x 480	1024 x 768, 800 x 600, 640 x 480	800 x 600, 640 x 480	1024 x 768, 800 x 600, 640 x 480	800 x 600, 640 x 480
Ethernet		RJ-45 x 2, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)					
USB 1.1 (host)		2	1	2	1	2	1
COM 0		Internal communication with the high profile I-87K series modules in slots					
COM 1		RS-232 (to update firmware) (RxD, TxD and GND); non-isolated					
COM 2	RS-485	D2+, D2-; self-tuner ASIC inside					
	Isolation	RS-485 (D2+, D2-); 2500 V_{DC}; isolated		3000 V_{DC}			
COM 3		-		RS-232/RS-485 (RxD, TxD, CTS, RTS and GND for RS-232, Data+ and Data- for RS-485); non-isolated			
COM 4		-		RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); non-isolated			
I/O Expansion Slots							
Slot Number		1		4		8	
		(For High Profile I-8K and I-87K Modules Only)					
Hot Swap * Will be available		For High Profile I-87K Modules Only					
Mechanical							
Dimensions (W x L x H)		91 mm x 132 mm x 52 mm		231 mm x 132 mm x 111 mm		355 mm x 132 mm x 111 mm	
Installation		DIN-Rail or Wall Mounting					
Environmental							
Operating Temperature		-25 ~ +75 °C					
Storage Temperature		-30 ~ +80 °C					
Ambient Relative Humidity		10 ~ 90% RH (non-condensing)					
Power							
Input Range		+10 ~ +30 V_{DC}					
Isolation		1 kV					
Redundant Power Inputs		Yes, with one power relay (1 A @ 24 V_{DC}) for alarm					
Capacity		1.0 A, 5 V supply to CPU and backplane, 0.6 A, 5 V supply to I/O expansion slots, 8 W in total		1.1 A, 5 V supply to CPU and backplane, 4.9 A, 5 V supply to I/O expansion slots, 30 W in total		1.2 A, 5 V supply to CPU and backplane, 4.8 A, 5 V supply to I/O expansion slots, 30 W in total	
Consumption		7.3 W (0.3 A @ 24 V_{DC})		9.1 W (0.38 A @ 24 V_{DC})		9.6 W (0.4 A @ 24 V_{DC})	

Appearance

LP-8831



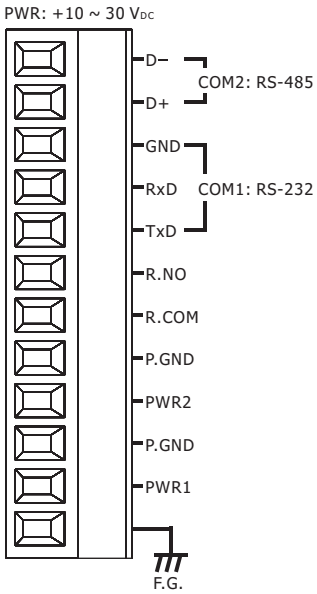
LP-8841



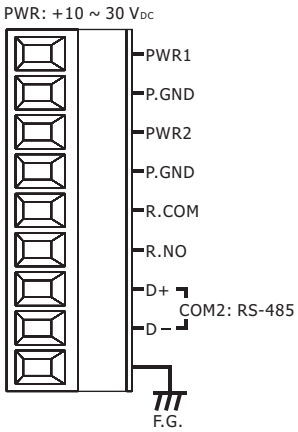
Pin Assignments

Terminal Block

LP-81x1

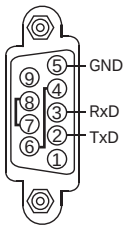


LP-84x1/88x1

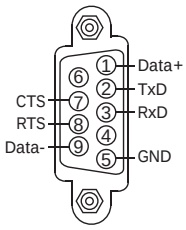


LP-84x1/88x1 COM Port

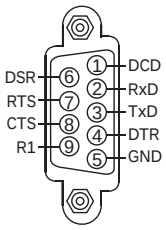
COM1: RS-232



COM3: RS-232/RS-485

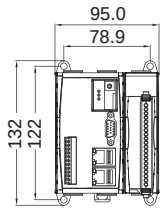


COM4: RS-232



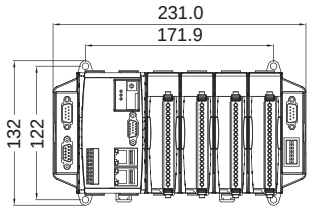
Dimensions (Unit: mm)

LP-8131



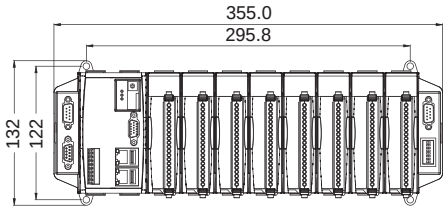
Front View

LP-8431



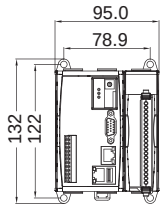
Front View

LP-8831



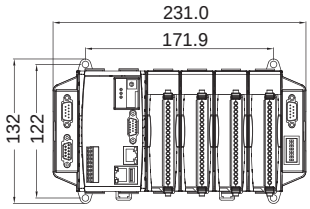
Front View

LP-8141



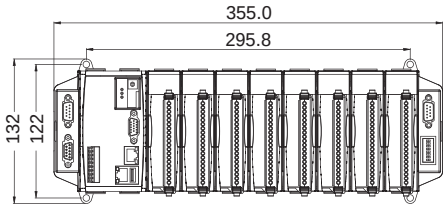
Front View

LP-8441



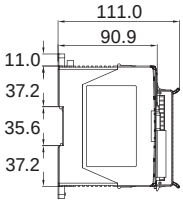
Front View

LP-8841



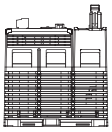
Front View

LP-8x31/8x41



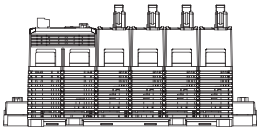
Left Side View

LP-81x1



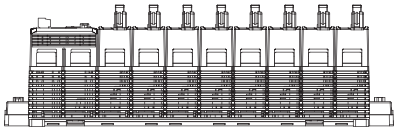
Bottom View

LP-84x1



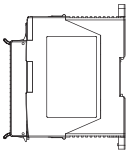
Bottom View

LP-88x1



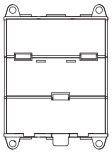
Bottom View

LP-8x31/8x41



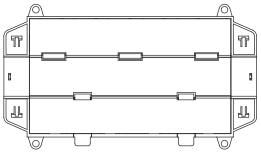
Right Side View

LP-81x1



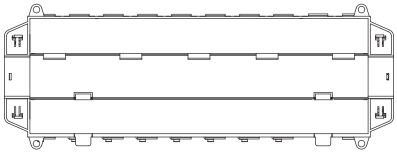
Rear View

LP-84x1



Rear View

LP-88x1



Rear View

Ordering Information

LP-8131-EN	LP-8141-EN	Standard LinPAC-8000 with 1 I/O Slot (English Version of OS)
LP-8431-EN	LP-8441-EN	Standard LinPAC-8000 with 4 I/O Slots (English Version of OS)
LP-8831-EN	LP-8841-EN	Standard LinPAC-8000 with 8 I/O Slots (English Version of OS)

Accessories

DP-660	24 V_{DC}/2.5 A, 60 W and 5 V_{DC}/0.5 A, 2.5 W Power Supply with DIN-Rail Mounting
DP-1200 CR	24 V_{DC}/5.0 A, 120 W Power Supply with DIN-Rail Mounting (RoHS)
MDR-60-24 CR	24 V_{DC}/2.5 A, 60 W Power Supply with DIN-Rail Mounting (RoHS)