# ICP DAS

## LP-5231

Linux Based PAC with Cortex-A8 CPU 1 LAN Port

## Features

- Cortex-A8, 1 GHz CPU
- Linux kernel 3.2.14 Inside
- 512 MB SDRAM and 512 MB Flash
- 64-bit Hardware Serial Number
- Hard Real-Time Capability (RTC)
- I/O Expansion Bus
- 10/100/1000M Ethernet Port
- 4 Serial Ports  (RS-232/485)
- Operating Temperature: -25 to +75 ° C

CE  FC  RoHS

## Introduction

The LP-5231 is equipped with a Cortex-A8 CPU (1 GHz) running a Linux operating system (Linux Kernel 3.2.14), a variant of input/output ports (VGA, USB, Ethernet, RS-232/485), and powerful software including development tools. Linux Kernel 3.2.14 is a compact and real-time OS used to quickly create time critical and high performance applications.

Main advantage of the LP-5231 is its high quality control system, including its stability, small core size, optional I/O expansion board, support for Web services (Web/SFTP/SSH server). Using the built-in Flash and microSD, the LinPAC can save application program, image file and data.
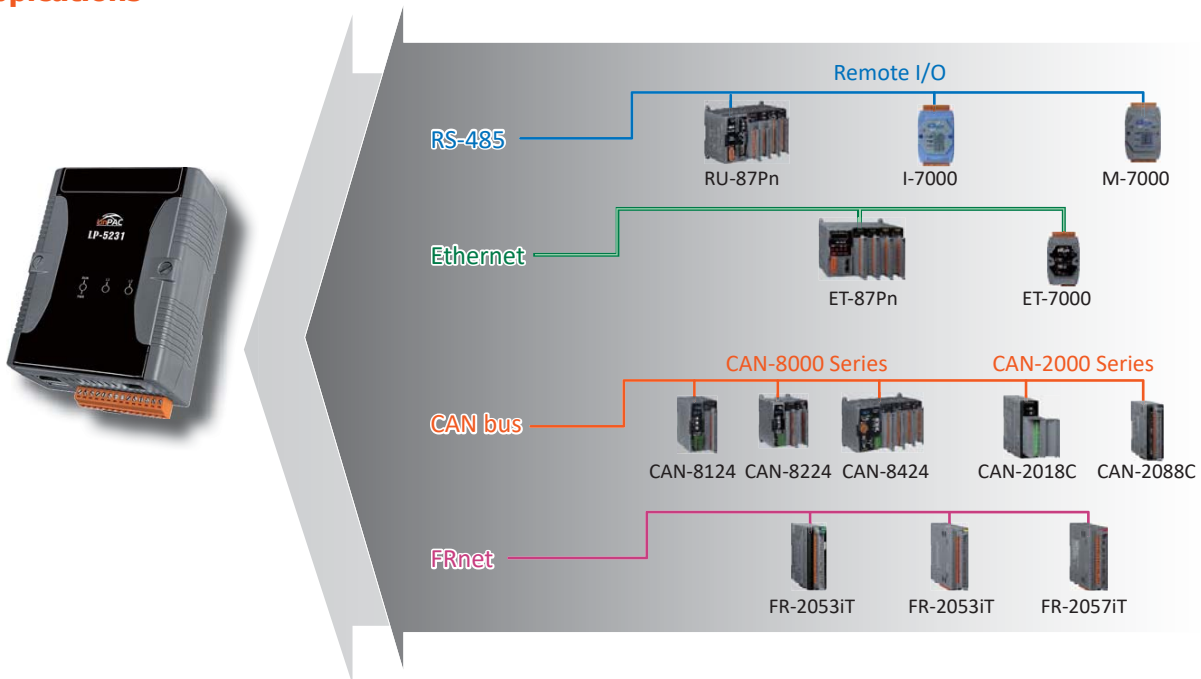
## Linux Kernel OS

Main advantage of the LP-5231 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, GUI software. The main purpose of LP-5231 is to allow the numerous enthusiastic Linux users to control their own embedded system easily within the Linux environment.

- LinPAC SDK for Windows and Linux
- Support for GNU C Language
- Support for GUI: Using GTK + Library
- Support for USB to Serial Converter
- Support for DCON, Modbus and SNMP Protocols
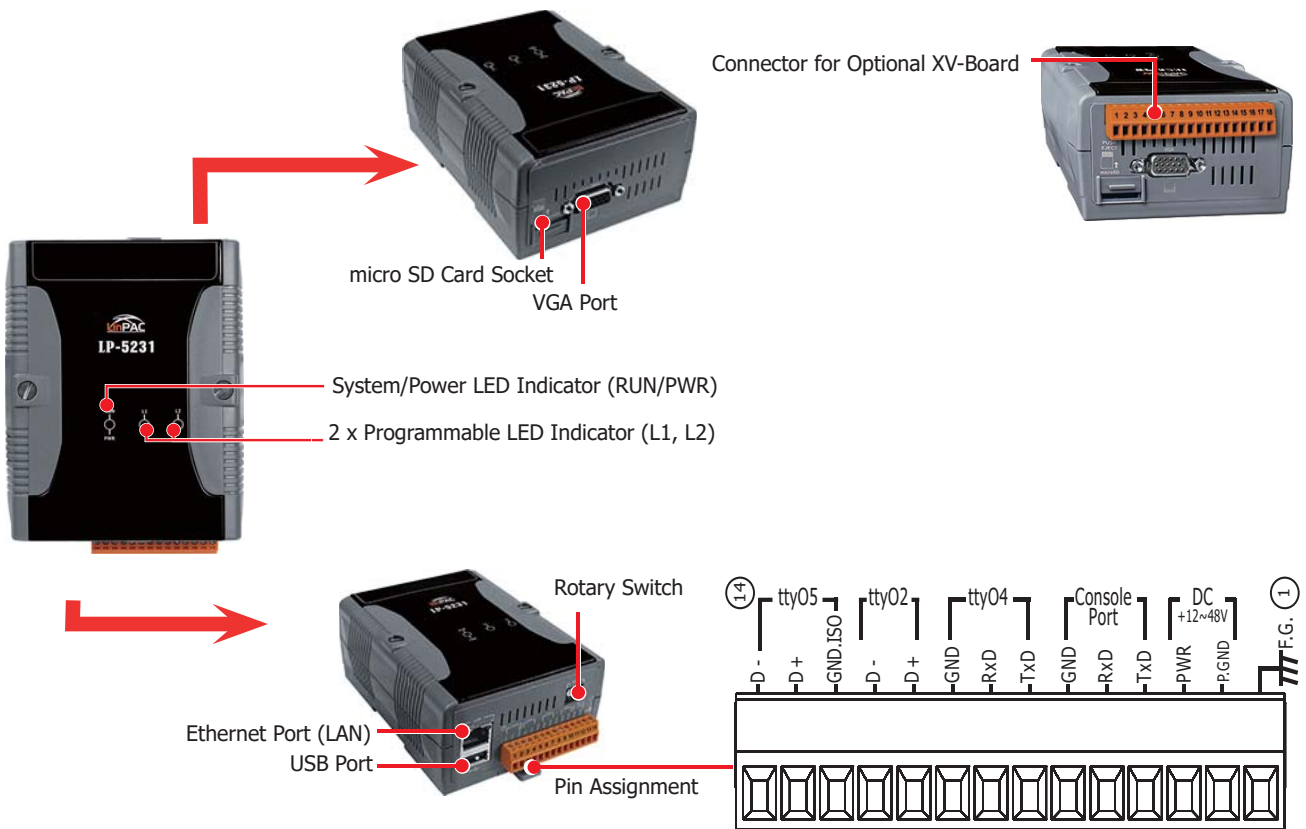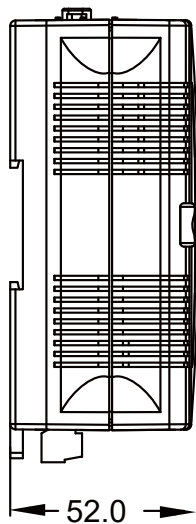
## Appications



Remote I/O

RS-485 — RU-87Pn, I-7000, M-7000

Ethernet — ET-87Pn, ET-7000

CAN bus — CAN-8000 Series: CAN-8124, CAN-8224, CAN-8424 | CAN-2000 Series: CAN-2018C, CAN-2088C

FRnet — FR-2053iT, FR-2053iT, FR-2057iT

## ■ Specifications

| System Software | |
|---|---|
| OS | Linux Kernel 3.2.14 |
| Service | SFTP server, Web server, SSH |
| SDK | LinPAC SDK (GCC based toolchain and LinPAC Libraries) |

| Main Unit | |
|---|---|
| CPU | Cortex-A8, 1.0 GHz |
| SDRAM | 512 MB DDR3 |
| Flash | 512 MB |
| FRAM | 64 KB |
| Storage | 4 GB microSD card (up to 32 GB) |
| RTC (Real Time Clock) | Provide seconds, minutes, hours, dates, day of week, month, year |
| 64-bit Hardware Serial Number | Yes, for software copy protection |
| Watchdog Timer | Dual Watchdog Timer |
| Rotary Switch | 1 x 10 Position (0 ~ 9) |
| LED Indicator | 1 x Power, 1 x Run, 2 x Programmable |
| Buzzer | Yes |

| Display | |
|---|---|
| VGA | Analog RGB, Resolution: Up to 1280 x 1024 |

| I/O Expansion | |
|---|---|
| I/O Type | One optional XV-board |

| Communication Ports | |
|---|---|
| Ethernet | 1 x RJ-45, 10/100/1000M Base-TX  (Auto-negotiating, Auto MDI/MDI-X, LED Indicators) |
| USB | 1 x USB 2.0 (host) |
| Console Port | RS-232 (RxD, TxD and GND); Non-isolated |
| ttyO2 | RS-485 (Data+, Data-); Non-isolated |
| ttyO4 | RS-232 (RxD, TxD and GND); Non-isolated |
| ttyO5 | RS-485 (Data+, Data-); 2500 VDC isolated |

| Mechanical | |
|---|---|
| Casing | Plastic |
| Dimensions (W x L x H) | 117 mm x 126 mm x 58 mm |
| Installation | DIN-Rail, Wall mounting |

| Environmental | |
|---|---|
| Operating Temperature | -25 ~ +75 °C |
| Storage Temperature | -40 ~ +80 °C |
| Humidity | 10 ~ 95 % RH (Non-condensing) |

| Power | |
|---|---|
| Input Range | +12 ~ 48 VDC |
| Consumption | 4.8 W |

## 📁 Appearances



micro SD Card Socket

VGA Port

Connector for Optional XV-Board

System/Power LED Indicator (RUN/PWR)

2 x Programmable LED Indicator (L1, L2)

Rotary Switch

Ethernet Port (LAN)

USB Port

Pin Assignment

| ⑭ | ttyO5 | | ttyO2 | | ttyO4 | | | Console Port | | | DC +12~48V | | ① |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D - | D + | GND.ISO | D - | D + | GND | RxD | TxD | GND | RxD | TxD | PWR | P.GND | F.G. |

## 📁 Dimensions (Units: mm)



52.0

Left Side View

126.0

42.5

91.0
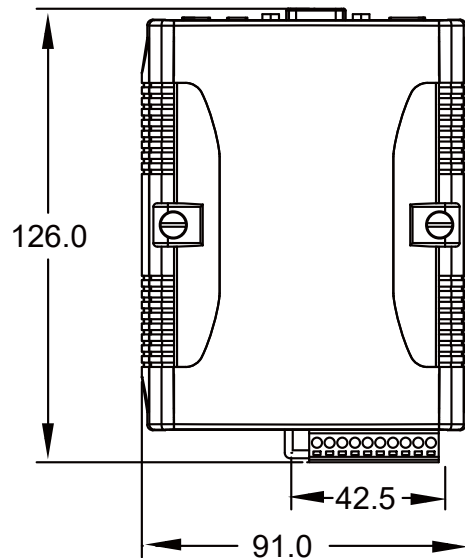
Front View

## 📁 Ordering Information

| LP-5231 CR | Linux Based PAC with Cortex-A8 CPU 1 LAN Port (RoHS) |
|---|---|

## 📁 Accessories

| XV-Board | Add-on I/O Expansion Board |
|---|---|