

0/2/6-slot Linux Based PAC with i5-8365UE CPU Metal Case

Features

- Ubuntu 24.04 with Kernel 6.9
- Intel® Core ™ i5-8365UE Processor (1.6 ~ 4.1 GHz, 4C8T)
- 16 GB DDR4 SDRAM
- 128 GB SSD
- Hard Real-Time Capability (RTC)
- VGA / HDMI Display Output
- 2 10/100/1000M Ethernet Ports
- Redundant Power Input

Introduction

ALX-9000, equipped with the Linux operating system, integrates computing, I/O, and the user interface into a single unit, providing the perfect solution for controllers by combining HMI, data acquisition, and control applications. It is powered by an i5-8365UE CPU, offers 0/2/6 expansion slots, and supports multiple communication interfaces, including Ethernet, VGA, HDMI, USB, RS-232, and RS-485.

The controller's I/O slots support e-9K, I-9K, and I-97K series I/O modules. For remote I/O expansion, Ethernet I/O modules and RS-485 I/O modules can be used. In addition, user applications can be stored on external storage devices such as CFast cards or USB mass storage devices.

The controller is designed with I-7000/I-9K/I-97K/e-9K series I/O modules. The LinPAC SDK provides fast and easy development tools to enhance the convenience of LinPAC I/O applications. Users can develop LinPAC applications with the GNU C programming language. At the same time, the built-in servers and functions further strengthen LinPAC in embedded industrial control applications, enabling users to smoothly complete their design projects through the operation of LinPAC.

Linux Kernel OS

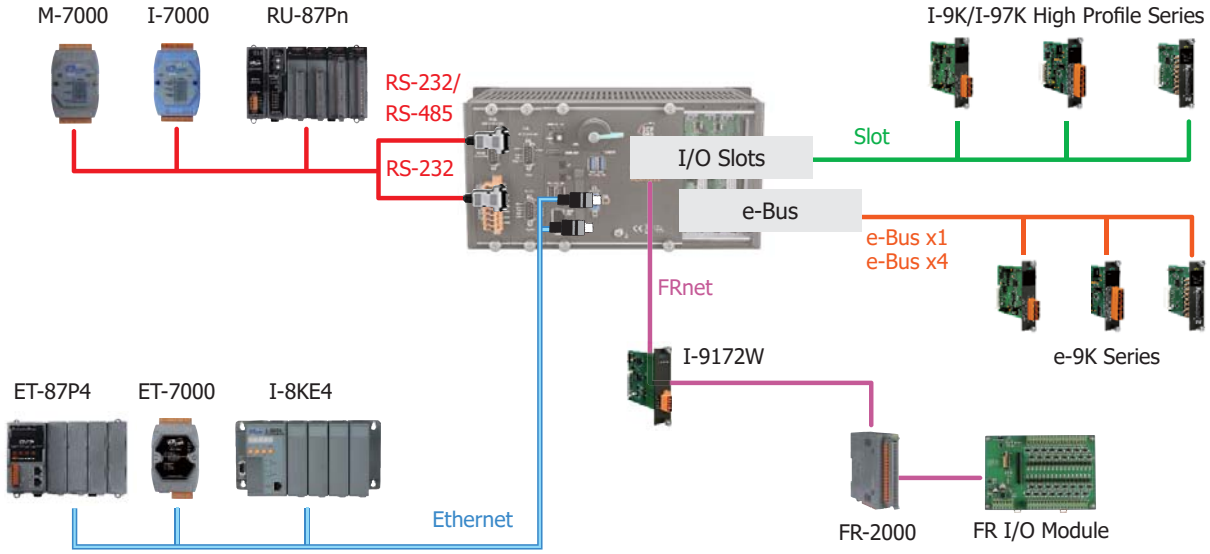


The main advantage of the ALX-9000 lies in its high-quality control system, which includes stable performance, open-source flexibility, and the Linux standard LinPAC SDK and GUI software using the GNU C language.

The primary purpose of the ALX-9000 is to enable Linux enthusiasts to easily control their embedded systems within a Linux environment.

- Support for GNU C Language
- Support for GUI: Using GTK + Library
- Support for USB to Serial Converter
- Support for DCON, Modbus and SNMP Protocols

Applications



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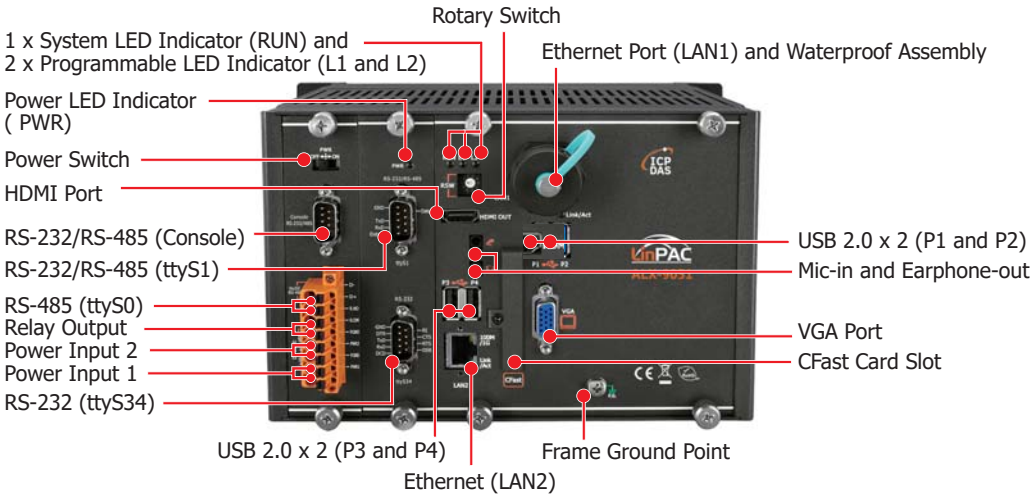
Specifications

Model	ALX-9051	ALX-9251	ALX-9651
System Software			
OS	Ubuntu 24.04		
Embedded Service	SFTP server, Web server, SSH		
SDK Provided	Standard LinPAC SDK for Linux, developed with GNU C language		
CPU Module			
CPU	Intel® Core ™ Whiskey Lake U i5-8365UE Processor (1.6 ~ 4.1 GHz, 4C8T)		
SDRAM	16 GB DDR4 (SODIMM slots with a 16 GB DDR4 x 1)		
MRAM	128 KB		
EEPROM	16 KB		
Storage	1 x 128 GB SSD (SATAIII), 1 x CFast Card Slot		
RTC (Real Time Clock)	Provide second, minute, hour, date, day of week, month, year		
64-bit Hardware Serial Number	Yes, for Software Copy Protection		
Watchdog Timer	Dual Watchdog Timer		
HMI			
Power Switch	Yes		
Rotary Switch	Yes (0 ~ 9)		
Buzzer	Yes		
Programmable LED Indicator	3 (RUN, L1, L2)		
Display			
VGA	1, Resolution: 1920 x 1200 @ 60Hz		
HDMI	1, Resolution: 4096 x 2160 @ 30P		
Graphic Processor	Intel® UHD Graphics 620		
Audio			
Jack	Microphone-in and Earphone-out		
I/O Expansion			
I/O Type	-	e9K, I-9K, I-97K series	
Parallel/Series Bus	-	2	6
e-Bus	-	1 x eBusx1, 1 x eBusx4	2 x eBusx1, 1 x eBusx4
Communication Ports			
Ethernet Port	1 x RJ-45, 10/100/1000 Base-TX (Intel® I219-LM) 1 x RJ-45, 10/100/1000 Base-TX (Intel® I210)		
USB Port	2 x USB 2.0, 2 x USB 3.0		
ttySA0	Internal communication with the I-97K series modules in slots		
Console	RS-232/485 (RxD, TxD and GND for RS-232; Data+, Data- for RS-485); 3000 VDC isolated		
ttyS0	RS-485 (Data+, Data-); 3000 VDC isolated		
ttyS1	RS-232/485 (RxD, TxD, CTS, RTS and GND for RS-232; Data+, Data- for RS-485); 3000 VDC isolated		
ttyS34	RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); 3000 VDC isolated		
Mechanical			
Dimensions (W x L x H)	233 mm x 164 mm x 133 mm	300 mm x 164 mm x 133 mm	422 mm x 164 mm x 133 mm
Installation	DIN-Rail Mounting/Wall Mounting		
Cooling Type	CPU Heat Sink and 180,000 hour long-life fan with Smart Fan function		
Environmental			
Operating Temperature	-25 ~ +60 °C		
Storage Temperature	-30 ~ +80 °C		
Ambient Relative Humidity	10 ~ 90% RH (non-condensing)		
Power			
Input Range	+19 ~ 30 VDC (2 kV Isolated)		
Redundant Power Input	Yes, with one power relay (1A @ 24 VDC) for alarm		
Capacity	80 W supply to CPU and backplane, 40 W supply to I/O expansion slots and USB ports, 120 W in total		
Consumption	30.5 W (Typical) 71 W (CPU Full Load)	31.5 W (Typical) 72 W (CPU Full Load)	32.6 W (Typical) 73 W (CPU Full Load)

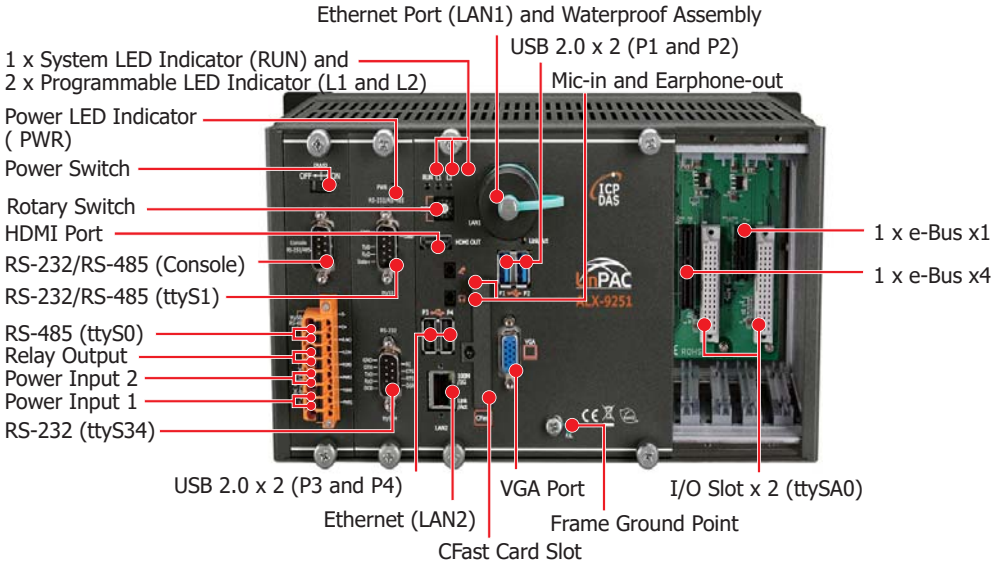
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Appearance

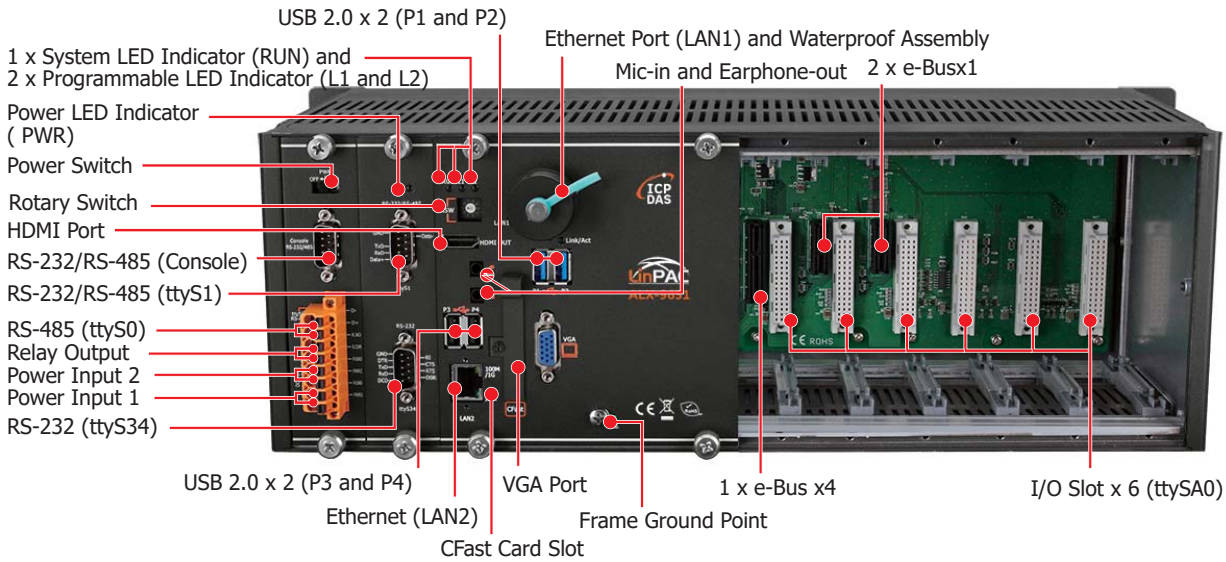
ALX-9051



ALX-9251



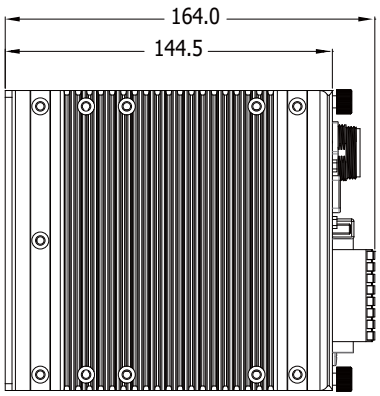
ALX-9651



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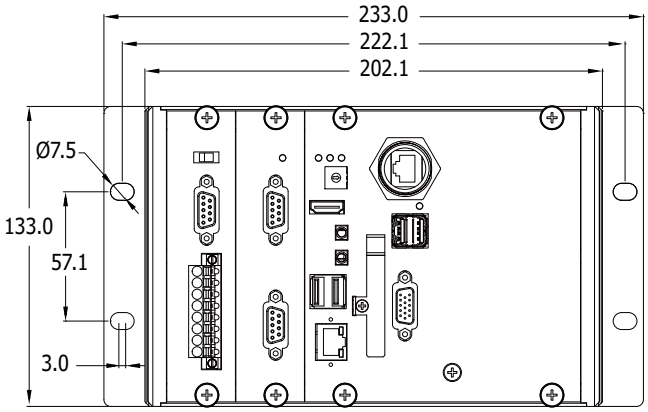
Dimensions (Units: mm)

ALX-9051/ALX-9251/ALX-9651



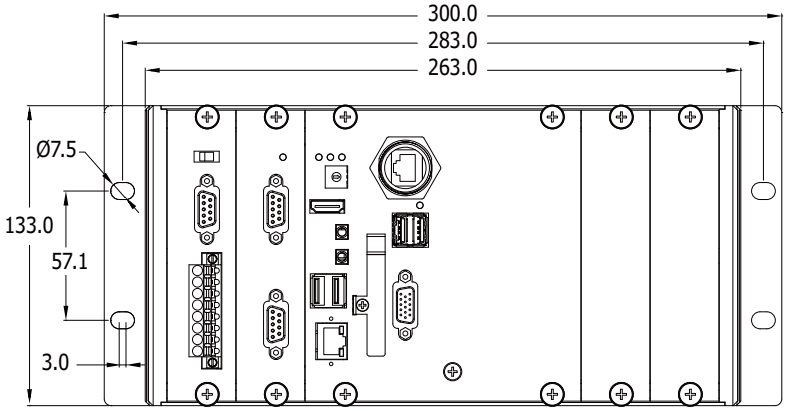
Left Side View

ALX-9051



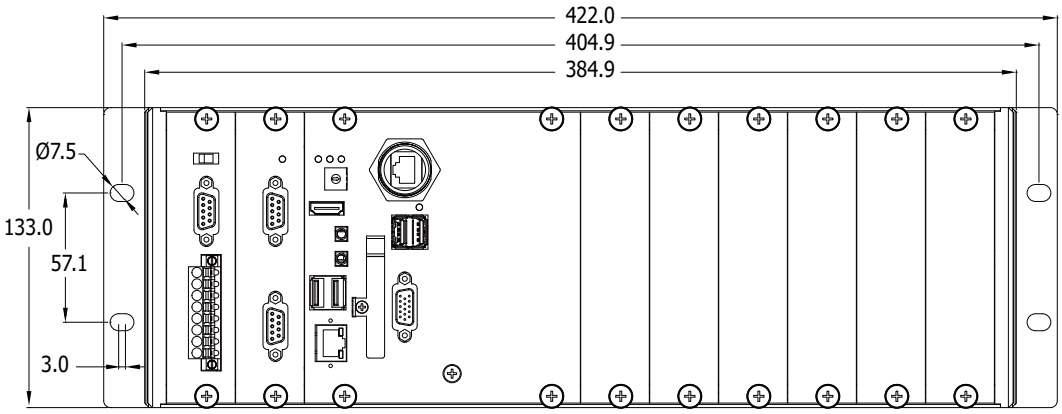
Front View

ALX-9251



Front View

ALX-9651



Front View

Ordering Information

ALX-9051 CR	Linux Standard Metal PAC, equipped with an i5-8365UE CPU (RoHS)
ALX-9251 CR	2-Slot Linux Standard Metal PAC, equipped with an i5-8365UE CPU (RoHS)
ALX-9651 CR	6-Slot Linux Standard Metal PAC, equipped with an i5-8365UE CPU (RoHS)

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