PAC-4000

Industrial Linux-based Programmable Automation Controller

▸ ATMEL 400MHz AT91SAM9G20 CPU w/ MMU
▸ Linux kernel 2.6.29 with file system
▸ 64MB SDRAM/128MB NAND Flash
▸ 2MB DataFlash for system recovery
▸ On-board real-time clock
▸ 2 x 10/100Mbps Ethernet ports
▸ 2 x RS-232 ports
▸ 2 x isolated RS-485 ports
▸ 2 x USB 2.0 Hosts supporting full speed of 12Mbps
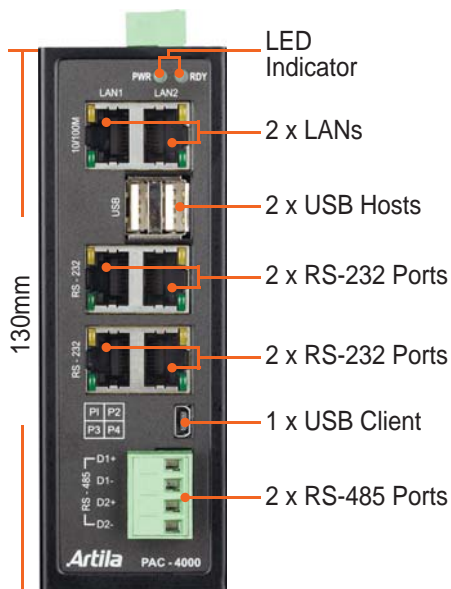▸ 1 x micro SD socket

▸ Small form factor (LxWxH): 130 x 45 x 102.5mm
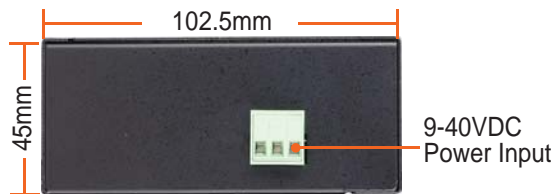▸ Free C/C++ tool chain included for user program

Overview

PAC-4000 is a Linux-based ARM9 DIN-Rail Box Computer. PAC-4000 is powered by 400MHz AT91SAM9G20 ARM Thumb Processor with memory management unit, and equipped with 64MB SDRAM, 128MB NAND Flash, and 2MB DATAFlash. PAC-4000 is also pre-installed with Linux 2.6.29 OS, busybox utility collection, lighttpd Web server, and various hardware device drivers. PAC-4000 comes with two 10/100Mbps Ethernet, two USB 2.0 hosts, two RS-232 ports, and two isolated RS-485 ports. PAC-4000 is a reliable box computer designed for applications where low power consumption and 24/7 non-stop operation are crucail factors. PAC-4000 is ideal for all kinds of industrial applications, including direct digital control, building automation, energy-saving system, and remote device management.

Front View of PAC-4000

- LED Indicator
- 2 x LANs
- 2 x USB Hosts
- 2 x RS-232 Ports
- 2 x RS-232 Ports
- 1 x USB Client
- 2 x RS-485 Ports

Top of PAC-4000

102.5mm
45mm
9-40VDC Power Input

Bottom of PAC-4000

Micro SD Socket

Hardware Specifications

CPU/Memory
CPU: ATMEL 400MHz AT91SAM9G20 w/MMU
SDRAM: 64MB
NAND Flash: 128MB
DataFlash®: 2MB, for system backup

Network Interface
No. of Ports: 2
Type: 10/100Mbps Ethernet, RJ-45 connector
Protection: 1.5KV magnetic isolation

Serial Ports
2 x RS-232 (Port 3 and Port 4)
2 x RS-485 or RS-232 (Port 1 and Port 2)
Protection: 15KV ESD for RS-232
             2500Vrms isolation and 15KV ESD for RS-485
Connector: RJ-45 for RS-232
             Terminal Block for RS-485

Serial Port Parameters
Baud Rate: up to 921.6Kbps
Parity: None, Even, Odd, Mark, Space
Data Bits: 5, 6, 7, 8
Stop Bit: 1, 1.5, 2
Flow Control: RTS/CTS, XON/XOFF, None
RS-485 Direction Control: auto, by hardware

USB Ports
Hosts: Two, USB 2.0 compliant
Client: One, reserved
Speed: low speed (1.5Mbps) and full speed (12Mbps)

SD Socket
MicroSD x 1

General
Watch Dog Timer: Yes
Real Time Clock: Yes, with backup battery
Buzzer: Yes
Power Input: 9-40VDC
Power Consumption: 300mA@12VDC
Dimensions: 130 x 45 x 102.5mm
Operating Temperature: 0 to 70ºC (32 to 158ºF)
Regulation: CE Class A, FCC Class A

Software Specifications

General
OS: Linux, Kernel 2.6.29
Boot Loader: U-Boot 1.1.2
File Systems: UBI, JFFS2, ETX2/ETX3, VFAT/FAT, NFS
Internet Protocol:
TCP, UDP, IPv4, SNMPv1/v2/v3, ICMP, ARP, HTTP, CHAP, PAP, DHCP, NTP, NFS, SMTP, Telnet, FTP, TFTP, PPP, PPPoE
Internet Security: OpenVPN, iptable

Pre-installed Utilities
bash, busybox, sysvinit, wget, ipkg, procps (for webmin), psmics, lighttpd, vsftpd, iptable, ppp, ssh, wireless_tools, util-linux-mount/umount, usbutils, artila utiliy and more

Daemons started by default
ssh (secured shell) with sftp, syslog/klogd (system and kernel log), telnet server (disable root with /etc/securetty), ftp server (vsftp), web server (lighttpd), amgrd (Artila broadcast search daemon)

Package Management & System Administration
Supports ipkg to manage the package installation, upgrade and removal
Supports webmin for Web-based system administration

Tool Chain for Linux
GCC: C/C++ PC cross compiler
GLIBC: POSIX Library

USB Host Drivers
Generic Flash drive
RS-232 adaptors (for Prolific PL-2303 compatibles)
WiFi dongles (for Ralink RT73 compatibles and more)

Ordering Information

PAC-4000	DIN-Rail Mountable Industrial Linux-based ARM9 Programmable Automation Controller with 2 x Ethernet, 2 x RS-232 and 2 x RS-232 or isolated RS-485 Ports