Model Information

Zoom in Picture

Features

- ARM9 166MHz
- 64MB SDRAM, 4MB Flash
- 1 x internal microSD Slot
- 1 x CF-Slot (True IDE mode)
- 2 x USB 2.0 Host
- 2 x Serial Ports RS232/422/485
- 2 x Fast Ethernet Auto-MDI(X)
- 8 x Digital-I/O
- 1 x I²C
- 1 x MiniPCI-Slot for WLAN 802.11b/g
- 1 x miniPCIe-Slot, with SIM-Slot
- 1 x Console Port
- Very small, fanless, low Power
- Ready-to-run full-featured Debian GNU/Linux platform, Kernel 2.6.35
- FTP upload of applications
- RedBoot Boot-Partition
- DIN RAIL mountable
- Starter kits available

Alekto Plus

Quick Link: | Features | Overview | Application | Appearance | System | Digital I/O | Serial Interface | LEDs | Power Requirements | Mechanical | Environmental | Approvals | Software Specifications | Software Development | Device Drivers | Ordering Information |

Overview

The OnRISC Alekto Plus is an ARM9-based RISC industrial embedded computer. The great variety of interfaces like LAN, CF, USB, I²C, serial interface, digital I/O makes it easy to connect various industrial devices to the OnRISC.

Compact dimensions and DIN Rail mounting capability make the OnRISC to a space saving and flexible mounting industrial computer. It is feasible to be installed even in space limited environments. The internal microSD slot protects the system software against accidentally removal. The miniPCI or the miniPCIe slot provide opportunities for wireless communication. For example. WLAN cards are available, and the SIM slot allows to use GSM/3.5G modems.

Due to RISC based architecture the OnRISC has very small power consumption, so fanless heat dissipation is possible. Working in a wide temperature range from -10°C up to 65°C the OnRISC can be applied in under harsh industrial conditions. Therefore the OnRISC is downright designed for industrial automation.

The embedded computer runs full-featured Debian 5.0 GNU/Linux on ARM operating system Kernel 2.6 (Lenny). This system is installable on a microSD card to place in the internal card-reader, or on a CF card.

With Debian's repository database it is easy to install and update the free software on the OnRISC. The OnRISC is capable to act directly as a software development host, WEB, Mail, Print and Database server or as a desktop computer with X11 window manager and many more.

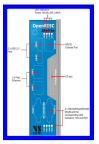
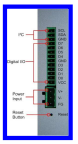
Read the News Article...

Application

- Building automation system
- Automatic warehouse control system
- Self-service banking system (ATM)
- Wafer fabrication system
- Database server
- Small development host
- Remote and distributed serial devices control
- SCADA system
- Industrial / Factory / Laboratory automation
- WEB and Mail server
- Print server
- Small desktop with X11 windows manager and office software

Appearance

There are some appearance images of Alekto Plus


Klick on the thumbnails to enlarge them ...

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System

Processor	ARM9 32-bit RISC CPU, 166MHz
Memory	64MB SDRAM
Flash	4MB BIOS
microSD-Reader	1 x internal as boot device, 7 MB/s SD 2.0 / SDHC
CF-Slot	Type II, True IDE mode (accepts MicroDrives) PIO-0 and PIO-3
LAN	2 x Fast Ethernet Auto-MDI(X)
USB	2 x USB 2.0 as Host
Expansion Slot	miniPCI (for WLAN)
Expansion Slot	Format miniPCI Express, USB 2.0 signals (for WLAN, GPS, GSM/3.5G)
SIM Slot	For GSM/3.5G modems in miniPCIe slot
Console Port	RS232, up to 115200bps
I²C	max. 330kHz
Time	Real time clock with battery backup (CR2032 in clip)
Other	Buzzer, Watchdog Timer

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Digital I/O

Input/ Output	8 Input/Output signals
Signal configuration	Signal direction individually configurable as Input or Output
Electrical	Input: TTL level (0.0 to 0.8V, 2.0 to 5.0V) Output Source: 32mA@TTL High (2.0 to 5.0V) Output Sink: 64mA@TTL Low (0.0 to 0.6V)
IRQ	Maskable IRQ for input signals
Connector type	Terminal block

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Serial Interface

Serial Port	2 x RS232/422/485, software selectable Highspeed UART 16C950, 128 Byte FIFO
Available Modes	RS232 RS422 full duplex RS485 4-wire, full duplex RS485 2-wire, half duplex, with echo RS485 2-wire, half duplex, without echo
Signals RS232	TxD,RxD, RTS,CTS, DTR,DSR, DCD, RI, GND
Signals RS422	Tx+/-, Rx+/-, GND
Signals RS485	2–wire: Data+/-, GND 4–wire: Tx+/-, Rx+/-, GND
RS485 Data Direction Control	by ART (Automatic Receive Transmit control) by RTS

Speed	RS232: up to 500 kbps RS422/485: up to 3.6 Mbps

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LEDs

System	Power (red), WLAN (blue), IDE (yellow), User (green)
LAN	10M/Link, 100M/Link x 2 integrated in RJ45 connector
Serial	TxD, RxD for each port

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Power Requirements

Power Input	9 - 30V DC input
Consumption	max. 1.5A @12V
Connector type	3-pin Power Terminal block

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Mechanical

Dimensions	157×106×53 mm³ (W× L× H) 167×112×53 mm³ including DB9 connectors and Terminal block
Weight	0.35kg
Construction Material	Aluminium, 1mm
Mounting	DIN Rail, Wall mounting

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Environmental

Operating Temp	-10℃ - 65℃
Storage Temp	-20℃ - 85℃

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Approvals

EMC	FCC Class A, CE Class A
Environment	RoHS

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Software Specifications

Linux	Debian GNU/Linux for ARM
Kernel	2.6 (Debian Lenny) Enhanced support for USB Watchdog Timer supported
Bootloader	proprietary BIOS to install and boot OS from CF, microSD, USB Mass Storage Devices or over Network
File System	JFFS2 (on-board flash), ext2 (preinstalled system on CF) and many more choices
Protocol Stacks	ARP, PPP, CHAP, PAP, IPv4, ICMP, TCP, UDP, DHCP, FTP, SFTP, SNMP V1/V3, HTTP, HTTPS, NTP, NFS, SMB, SMTP, POP3, IMAP4, SSH 1.0/2.0, SSL, Telnet, PPPoE, OpenVPN, RFC2217
System Utilities	bash, telnet, ping, ftp, ssh, scp, netcat, socat, vim-tiny, e2progs, reiserfs, fdisk
Supporting Services and Daemons	telnetd: Telnet server daemon vsftpd: FTP server daemon sshd: Secure shell server daemon Apache2: Web server daemon Courier: Mail server daemon Samba: windows share daemon sredird: RFC2217

	pppd: dial in/out over serial port daemon openssl: Open SSL openvpn: virtual private network
Complete Image	Pre-configured OS with applications to install on a 2 GB microSD or CF-card. It consists of tools gcc-3.3, vim-tiny services ssh, telnet, vsftpd (each as server and client) netcat and socat To speed up the boot process other software packages are not started automatically. To enable them please read the manual. Packages are: Samba client and server Apache2 web server Courier mail server NTP client and server sredird RFC2217 server WindowMaker desktop xdm server (X11) AbiWord dillo web browser

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Software Development

On-board Tool Chain	Gcc, Glibc, gdb, vim-tiny editor, gmake (develop on Alekto)
Linux Tool Chain	Gcc, Glibc, gdb, Insight, gmake (develop on a Linux PC)
Kernel	Kernel 2.6 sources
Hardware	Driver sources for Alekto-specific hardware components
BuildRoot	BuildRoot is a set of Makefiles and patches that allows to easily generate a cross-compilation toolchain, a root filesystem and a Linux kernel image for the target. Buildroot can be used for one or more of these options, independently. The benefits are: • No need to supply the toolchain, will be built automatically • Choice between various file systems for the target image • Builds a very small and quick booting system that suits the needs • Drivers compiled as modules will be automatically installed on the file system image • many more …

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Device Drivers

Data Communication	USB (supports USB Mass Storage Devices, USB-to-Serial converters, USB-CAN adapter, Bluetooth) UART 16C950, 128 Byte FIFO, RS232/422/485 I²C WLAN 802.11b/g RaLink cards (RT2561) optional
Others	Digital I/O RTC Buzzer LEDs Watchdog Timer

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Ordering Information

Art.No	6806
Product Name	OnRISC Alekto Plus
	OnRISC Alekto Plus

Packing list	Power supply adapter 12V, 1500mA Adapter cable for console port DVD-ROM-1: Debian on ARM DVD-ROM-2: system images, sources, tools, English documentation

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Full size product image

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Alekto Front View

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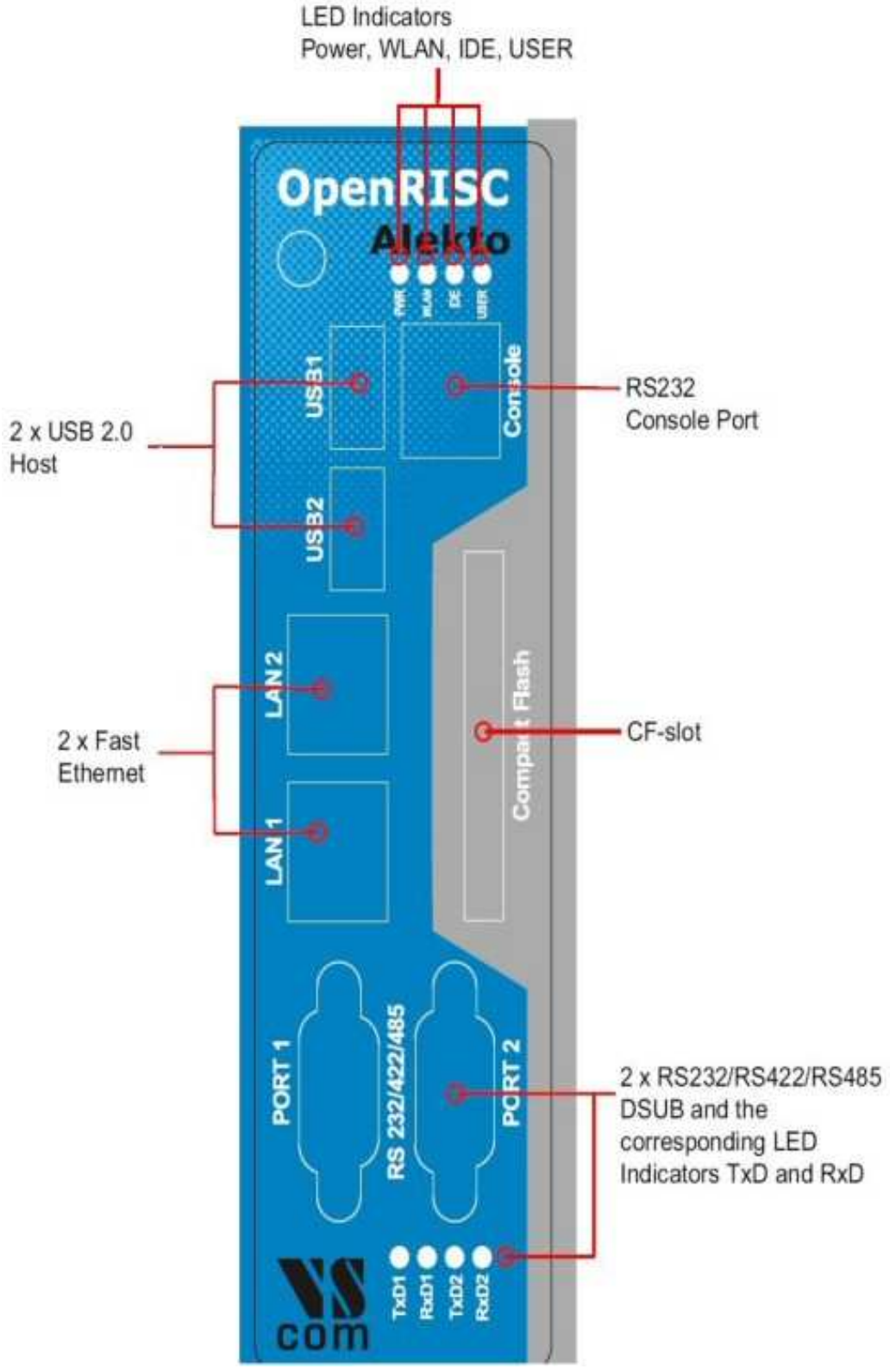

Alekto Top View

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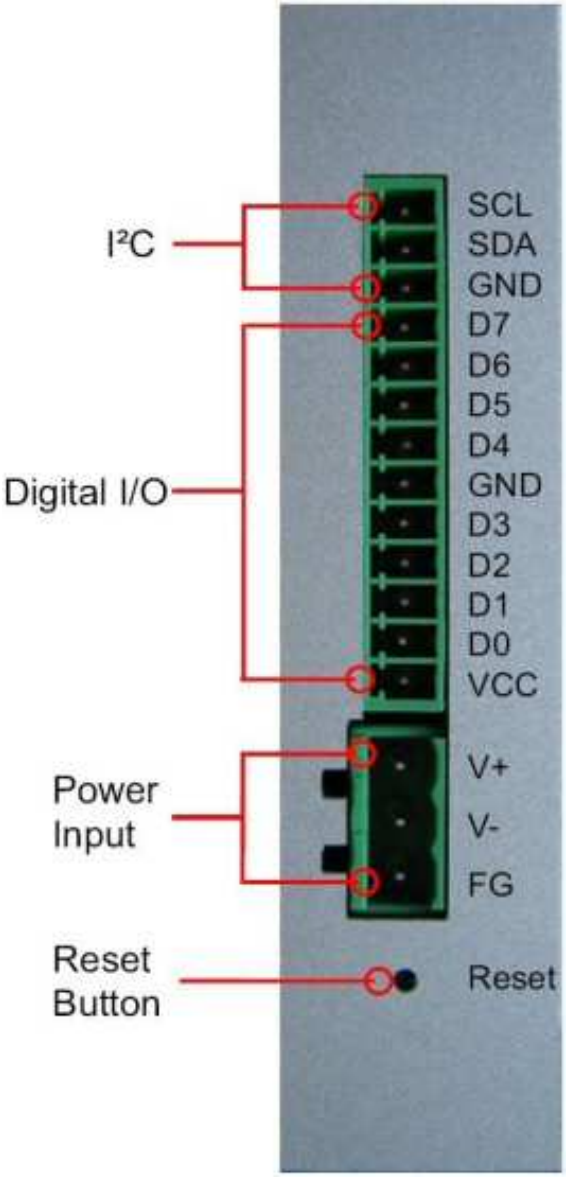

Internal microSD-Reader plus Mini Card with SIM card

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