PocketIX 2.0 (PIX) Linux Kernel

By PocketIX Software Ltd. • *www.pocketix.com*

Wireless mobile computing is an increasing requirement by companies in all industries. Real mobile platforms for the office will not only decrease costs for maintaining and administrating wired networks, but will also improve the efficiency and safety of businesses. PIX, designed and implemented by PocketIX Software Ltd., provides several powerful functions, such as information protection, PIM, etc., which will greatly help PDA/Handset manufacturer improve their products' capability and functions.

Functional Description

PIX is a small Linux kernel that includes a number of system modules designed to provide a wireless solution (Wireless LAN) for mobile computing for PDAs and mobile phones.The system modules include:

Wireless Connection Module
This module provides support for the Compaq* iPAQ* board, Intel® Pro/Wireless 2011B LAN PC Card (with PCMCIA interface) and other devices. It implements 802.11b protocol and a wireless connection function.

Office Ware Module
This module provides support for Microsoft® Office software, such as Word, Excel, and PowerPoint. Based on this module, end users can use handsets for creating and editing documents.

Network Configuration & Management Module
This module allows end users to easily configure and manage their wired/wireless intranet/LAN with full graphical user Interface.

Ethernet Module
This module provides support for Ethernet, enabling end-users to connect wired LAN (Ethernet) using external Ethernet adaptors.

Power Management Module
This module provides a smart power management/controller. By defining and configuring the power controlling policy, the end-user can easily control handset power to increase up-time.

Information Security Module
This module provides 802.11 security standard and WEP (Wireless Encryption Privacy) 128 bits encryption mechanism. It combines the security module of Linux and JAVA™ to secure and audit all end-users' data and information.

JAVA Module
This module is based on IBM VAME/J9 VM architecture, which supports SUN J2ME, and is particularly suitable for embedded applications. It also helps PDA/Handset manufacturers to implement 'develop once, deploy anywhere and everywhere' to decrease costs for developing application software for their products.

Entertainment Module
This module provides support for various entertainment file standards such as MPEG 1/2/4, MP3, etc.

PIM Module
PIM (Personal Information Management) supports end-users managing their personal information easily, quickly and safely. Its function includes personal address book, personal notes, etc.

Internet App Module
This module provides some application software for Internet applications, such as browsers and e-mail.

Solution Features

In addition to delivering powerful functions for end-users and manufacturers, PIX has given significant thought to scalability, security and availability.

Easy - PIX provides powerful graphical configuration tools, which make the system easy to configure for manufacturers and end- users. In addition, PIX supports Chinese and English handwriting.

Scalability - Because PIX is based on the Linux System, complying with the Open Source Policy, all documents and source code are provided to customers. This will make it easy for customers to design and develop their own applications, and the JAVA module will help them decrease time-to-market.

Wired/Wireless Network Support - Support for 802.11b protocol and wired network (Ethernet, dial-in, etc.) makes it easy for end-users to connect intranet/Internet in their home or office, sharing information and data. Powerful Wireless LAN connection support makes it easy to connect mobile phones to Office LANs.

Security - Combining WEP (128 bits) Linux and JAVA mechanisms for information security, PIX provides a powerful, smart and configurable information security module, including:
- Protection
- Access Control
- Auditor, etc.

Real mobile platforms for the office will not only decrease costs for maintaining and administrating wired network, but also it will improve efficiency and safety of business.

Hardware Architecture

CPU	Intel® SA-1110 microprocessor
Memory	32M RAM, 32M Flash
Board	Compaq iPAQ board
Wireless Adapter	Intel® Pro/Wireless 2011B LAN PC Card

Software Architecture

PIX is a solution that combines PocketIX software, Hard Hat Linux 2.0 from MontaVista and includes:

- Support for Wireless LAN protocols and the Intel® Pro/Wireless 2011B LAN PC Card
- Configuration & Management Module for Wireless LAN
- Information Security Module

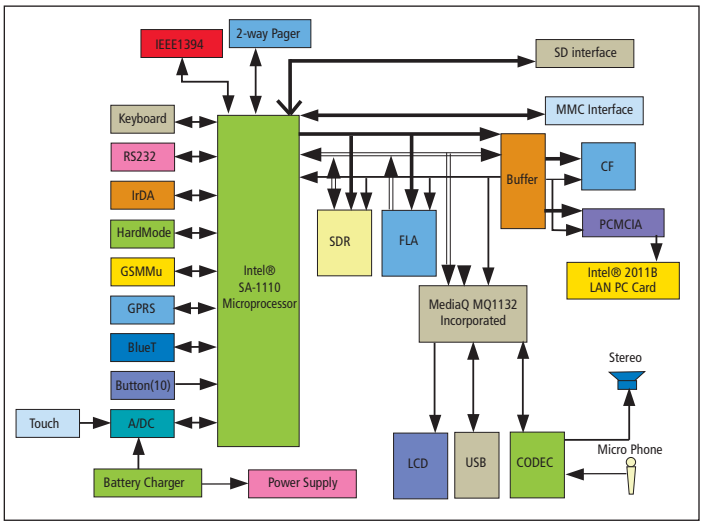

Figure 1. Logical connection between Intel® SA-1110 microprocessor and other devices/chips.

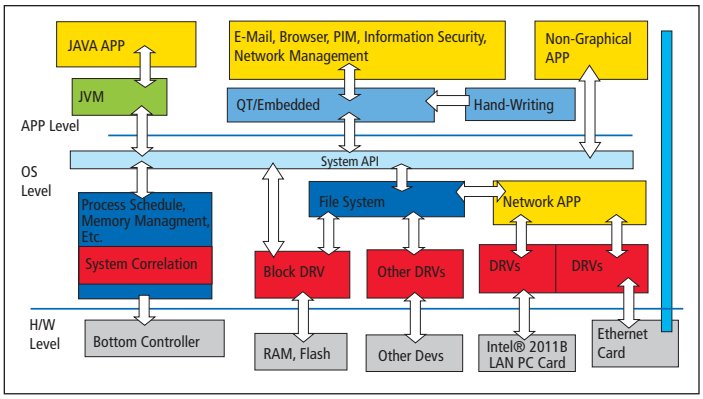

Figure 2. Software Architecture

Wireless Capability

Peer to Peer - Handsets can connect with the PCs/workstations with a Wireless LAN PC Card and by 802.11b protocol.

Peer to Access Point - Handsets can use the wireless LAN Access Point to connect with the wired Intranet. When using the Intel Pro/Wireless 5000 LAN Access Point, the handset supported by PIX can work as a member of the Wireless LAN within in an area of 30 square meters.

Handsets supported by PIX can work in any wireless LAN environment with 802.11b protocol and support all standards of the protocol.

Pocket IX provides industry leading technical support and services for manufacturers of embedded products, helping customers translate technical problems into technical solutions. Pocket IX will continue to keep up with the advancement of technology delivering leading edge products for end users and manufacturers. ❍