Lemonix™

## Real Time Operating System based on Linux kernel 2.6.X

Features

Built on Linux 2.6.x Kernel
Fast Booting Support
Real Time Support
Low Power Management
Multi Media File System Support
Kernel Level RTP/RTCP Communication
Various Device Driver Support
Flash File System (FFS)
Multi Media File System (MMFS)
Journeling File System Support
Embedded GUI Support
Java Class Library
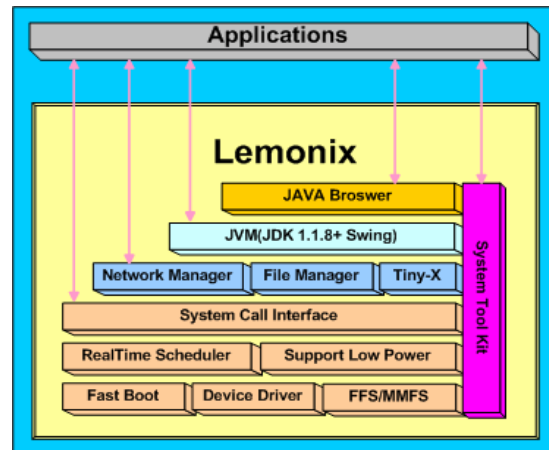
Lemonix is a Real Time Linux built on Linux kernel 2.6.x. Standard Linux kernel 2.6.x has been revised to support Real Time capability while retaining the stable traits and merits of Linux kernel 2.6.x.

Standard Linux kernel is based on traditional Unix's monolithic kernel which emphasizes Throughput over Response Rate which highly characterizes Real Time capabilities.

On Lemonix, Response Rate has been radically improved to support Real Time features by redesigning Linux 2.6.x kernel's lock mechanism. Task structures were improved as of this process, and standard Linux 2.6.x kernel was successfully revised to a preemptive kernel.

Also, Lock Break Method was applied to prevent delays in Response Rate due to long locked regions in the kernel providing task's preemption in long lock regions.

Preemptive Kernel Support

Lemonix's distinctive lock mechanism provides preemptive kernel with improved task structure.

Real Time Support

Under 37 us of Response Latency Rate is guaraneteed by applying Lock Break Methods in kernel's long spinlock regions enabling task's preemption.

Eclipse based IDE Support

LemonIDE, a GUI IDE built on Eclipse platform with remote debugging & monitoring features, is available for an easier & faster implementation of the target system.

POSIX Compatibility

Compatible with standard Linux Kernel. C/C++ codes programed on standard Linux can be reused with Lemonix.

Based on stable Linux 2.6.x kernel

Multi Media File System Support

To cope with large sized multi media files, disk I/O requests has been categorized as realtime requests and non-realtime requests providing most fitted services to according classes.

Journeling File System Support

Journeling File System keeps logs of recently updated metadata. This feature is used to maintain file system's integrity in case of abnormal system shutdown. Embedded systems are vulnerable to abnormal terminations and maintaining file's integrity with Journeling File Systems is essential.

Various Device Driver

Supports various device drivers including serial driver, usb, ext2, ext3, mtd and jffs2

Flash File System (FFS)

· Quicker mount time and Improved Garbage collection algorithm
· Effective data recovery support on power failure
· Equalized Deletion Support

Embedded GUI Support

· Embedded Graphic/Windows System
· Development Support
· GUI builder supported for applications

Java Class Library

Java Class Library support including lang, io, util,net

Optimized footprint support

Operable under small sized memory through optimized memory management

Compiler

. Eclipse based IDE, LemonIDE® Support
· GNU C/C++ 4.1.1
· ARM-Linux Cross Compiler

Host System

· Linux Installed System
· Virtual Utility aided installation possible in Windows Environment

Development Hosts

· Fedora Core 4, 5, 6
· Redhat 9.0
· Redhat Enterprise Linux
· Ubuntu Linux 6.x, 7.x
· Debian 4.0
· SUSE Linux
· CentOS 4.5
· Asianux

Target System

· Eddy-CPU v2.0
· Eddy-S1/PIN v2.0
· Eddy-S1/DB9 v2.0
· Eddy-S1/DB9-PoE v2.0
· Eddy-WS1/PIN v2.0
· Eddy-WS1/DB9 v2.0
· Eddy-WS1/TTL v2.0

Hardware Support

· ARM 9 core

Ordering Information

Lemonix is a Linux 2.6.x based Operating System that runs on Eddy Series and is not sold separately.

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