ACORN RISC TECHNOLOGIES

RISC OS on the StrongARM

- a stable and proven operating environment for Digital Semiconductor's ground breaking StrongARM processor
- rich multimedia environment including full-motion video and audio codecs and anti-aliased fonts
- full featured GUI, I/O support and filing systems (including networked filing systems) available
- high level compilers and development tools available
- low memory footprint, capable of being stored in and running from ROM
- available as whole or in parts for licensing for StrongARM based systems

ART's renowned RISC OS operating system, the most popular OS for ARM processors, has successfully been ported to the Digital Semiconductor StrongARM platform allowing embedded systems designers to build high quality high performance yet low power applications significantly faster than by developing their own code, improving on development cost and time-to-market considerations.

Running under RISC OS at 200MHz the SA-110 delivers 350k Dhrystones per second - a performance of just over 200 Dhrystone MIPS.

The RISC OS operating system is a highly modular system, consisting of a central kernel providing low level facilities and numerous extension modules providing higher level libraries and functions.

As would be expected from a modular system, everything apart from the kernel is replaceable dynamically - even after the operating system has started.

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Designed to be runtime configurable to conserve system memory, RISC OS loads operating system extensions at runtime. These modules provide new functionality for applications as required. This functionality could be anything from a new device driver or video codec. RISC OS is designed as a fully functional ROM-based desktop operating system – however, due to its modular design it may be quickly adapted to fulfil the requirements of other ARM based systems. Examples of this include digital set-top boxes and network computers.

RISC OS has been shipped on over 500 ,000 systems worldwide. The only operating system designed specifically from the ground upwards for the ARM processor, it includes a rich set of graphics, font and multimedia technologies. It also supports a large number of applications from regular productivity tools such as spreadsheet and database applications through to sophisticated multimedia authoring and broadcast quality video editing systems. Its design and implementation make it ideal for embedded multimedia applications.

As a general purpose operating system RISC OS has support for many types of storage devices including SCSI II, PCMCIA, andATAPI/IDE and multiple types of video devices including television, greyscale and colour liquid crystal displays and high resolution colour monitors. Support is also included for input devices such as touch screens, keyboard handlers and mice. This wide-ranging device support allows RISC OS to be rapidly adapted to new types of product. The Anti-twittering software allows extremely stable yet high resolution picture displays to be created using TV display technology.

Acorn Replay is the multimedia architecture for RISC OS. Using Replay on RISC OS, many audio and video codecs may be played through a simple-to-use interface. The RISC OS multimedia pack contains two software video codecs which provide high quality video playback; for example a StrongARM based system can run up to two 25fps movies and one at 12½fps at the same time as a 44kHz 16 bit audio soundtrack.

The Acorn Font Manager can anti-alias fonts from outlines and cache them for later use. This provides high performance high quality text rendering. The anti-aliasing is done in software and provides highly readable text on low resolution devices such as televisions. A particular feature allowing anti-aliasing to an existing screen background colour allows text to be superimposed on high quality pictures in real time without compromising the text quality, making RISC OS particularly suitable for multimedia information delivery systems.

The Acorn Printer Manager provides system-wide support and delivers high quality printing on hundreds of printer types. The colour management and error diffusion technology available in the system provides very realistic images from the cheapest colour printers.

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