# RISC OS

RISC OS provides an intuitive multitasking desktop environment. It is the most popular GUI in British schools, and has been shipped on over 500 ,000 systems worldwide. It has 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.

There is also a Pinboard allowing applications or files to be ' pinned' to the desktop making them easily accessible. An icon bar lets the user control any application which has been loaded and gain access to the installed filing systems. Directories may be opened and modified by clicking and dragging. Service applications are also supplied to change screen mode and monitor memory usage and task activity.

Modularity
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.

The kernel is required for any RISC OS system to work. Unlike other systems it provides many services including a low level graphics library. The kernel provides the backbone for the module system - allocating module memory, software & hardware interrupt despatchers and inter module communication. It also has an application concept which allows non privileged execution - and is further extended by the window manager and taskwindow modules to provide multitasking.
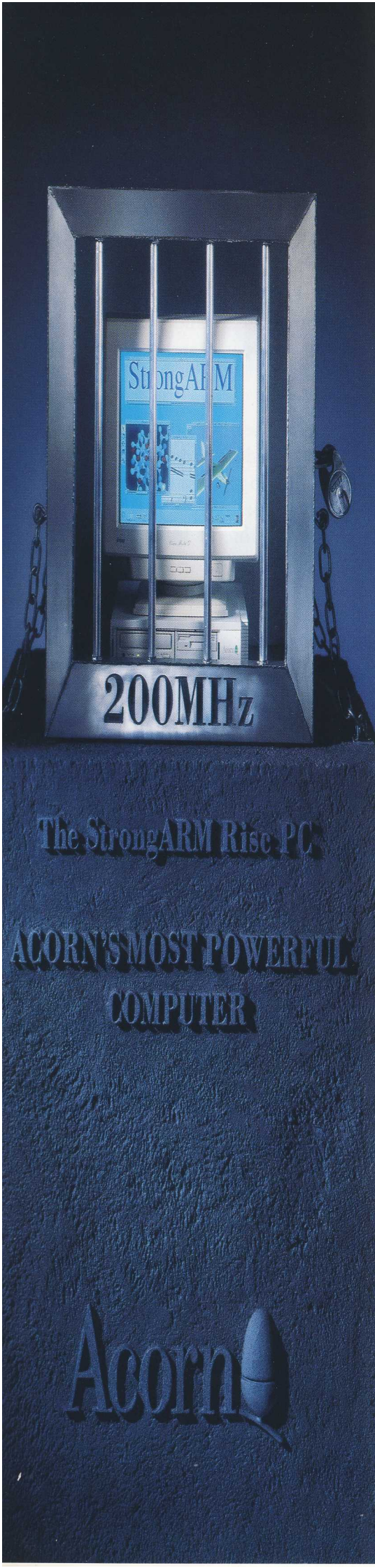
Graphics support

The graphics library supports simple text, bitmaps and primitives. It can cope with bpps from 1 to 32 and can also move or copy blocks of the framebuffer around. Its features can be extended by other modules, for example supporting more bitmap operations. A novel feature is that at run time the pixel depth and resolution may be changed on the fly. Many resolutions are supported (in fact only limited by the hardware) including 'TV' style modes which may be interlaced or have rectangular pixels.

As well as primitives, there is an advanced bitmap system, allowing scaling and rotation of bitmaps. There is also fast JPEG decompression and a vector based drawing system which can also handle beziers. A disc based application also supports conversion between many popular industry standards and the internal bitmap format (called Sprite in RISC OS).

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.

Filing Systems

RISC OS provides a hierarchical modular filing system structure. Thus, at a low-level, it can support SCSI & IDE hard discs, SCSI & ATAPI CD-ROMs, floppy discs and, with third party modules, other SCSI devices (such as tapes). Support also exists for memory based filing systems, which may be resident in RAM, ROM, or both: allowing applications to access their resources easily and quickly. When combined with networking support, NFS, LanManager and a client-server filing system become readily available. Support for DOS (as well as native) formats exists at a high level, and third party software is available allowing access to MAC OS formats. In addition to this, the modular nature of the system allows a simple module to be written, supporting access to physical media using the native file format via the FileCore module. Full flexibility for any underlying filing system and physical media configuration can be obtained conveniently using the FileSwitch module: the hierarchical 'parent' of FileCore.

Multimedia

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.

Printing

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.