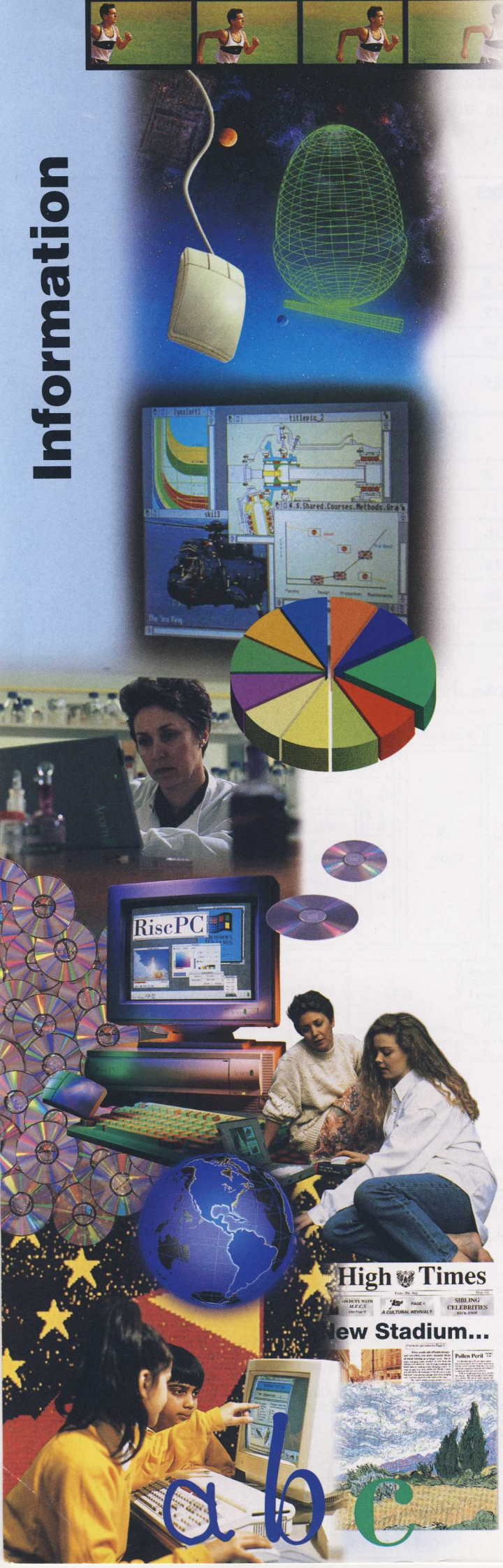# ARM7500

July 1995

Designed by ARM Ltd, this single chip computer combines a CPU, video generator, memory controller and I/O system in one 240 pin monolithic device.

The ARM7500 is almost a Risc PC on a chip. The 7500 includes an ARM7 processor with associated MMU, 8 word write buffer and 4Kbyte cache. There is also a complete video generator chip, similar to VIDC20, and most of the functions of IOMD.

The chip boasts two PS/2 keyboard ports, which can be used for an industry standard PC keyboard and a PS/2 mouse. And there is a four-channel PC joystick interface.
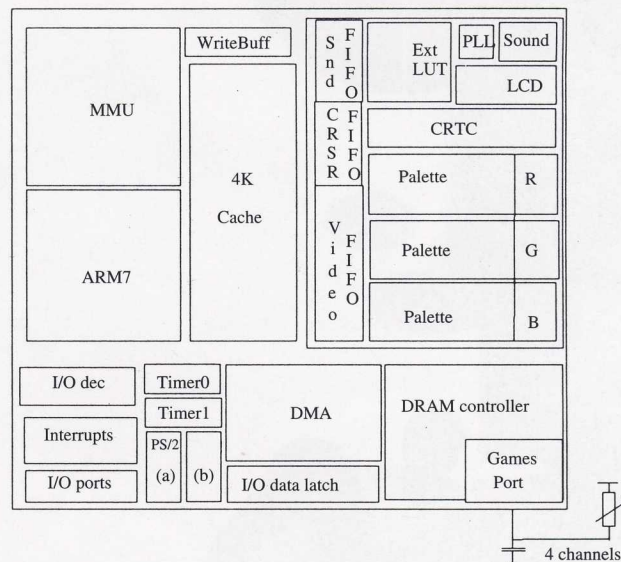
Acorn

Summary of features

- ARM704 CPU with 4Kbyte cache, MMU and 8 word write buffer
- Video generator capable of up to 24-bit colour
- LCD support for mono LCD (built-in greyscaler) and TFT type colour panels
- Stereo sound output, either analogue (8-bit logarithmic) or digital IIS
- DRAM controller, supports four 64Mbyte banks with variable access speed
- Programmable DRAM refresh options
- DMA controller for video, cursor and sound data reads
- Built-in 16-bit I/O bus - expandable to 32-bits
- Four comparator controlled timers to support PC-style joysticks
- Two PS/2-style 'keyboard' ports
- 8-bit general purpose I/O port
- Two timers - IOC compatible
- Power-saving modes - Suspend CPU or Stop clocks
- Optional 16-bit wide data path, for DRAM and ROM
- Support for executing code from 16-bit I/O mapped memory (PMCIA XIP)

The table below shows its performance benchmarks against other Acorn computers and PC competition:

Machine	MIPS	kDhrystones		
		Screen mode		
		0 (480x240)	SVGA 16-col	SVGA 256-col
A4000 12MHz	6	11	7	3
A5000 25MHz	12	22	20	10
A5000 33MHz	15	26	23	13
A7000 ARM7500	25	44	37	28

		VGA 16-col
386 SX - 33	6	11
486 SX/DX - 25	11	19
486 SX/DX - 33	15	26
486 DX2 - 50	19	33
486 DX - 50	20	35
486 DX2 - 66	23	40

The block diagram shows the layout of the ARM7500:

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