

The Atari Abaq - a transputer based workstation

Atari is now shipping prototype versions of its powerful new workstation to software developers. The Atari transputer workstation is based on what is considered to be the worlds fastest processor, the Inmos T800-20 transputer. The T800-20 can deliver 10 million instructions per second (MIP). Atari has combined this processor power with a high resolution graphics subsystem to produce a low cost but high specification general purpose workstation. The workstation has been developed to exploit the potential offered by both both parallel processing and the use of multiple processors. Both these techniques offer tremendous speed and power advantages over current designs.

Specification

Processor

A standard Abaq will have 1 T800-20 running at 20 Mhz. There is room to add a further 4 Farm cards. Additional transputers are connected via one of the 4 transputer links that each transputer has.

Memory

A standard Abaq has 4 Mega bytes of fast dynamic ram.

Video memory

1 mega byte of fast dual port dynamic ram.

Expansion

Expansion is very easy. additional transputers are added by inserting up to 4 Farm cards (a farm is a collection of transputers), each farm card capable of supporting either 1,2 or 4 additional transputers, thus allowing up to 17 transputers to be in place within each Abaq.

Expansion cards being designed are:

Memory expansion Transputer expansion
X25
Auto linking (cross bar)

Farm Cards

Each Farm card will have either 1,2 or 4 transputers, each transputer having its own memory. Current Farm Cards support 4 transputers each having its own 1 Mega byte DRAM, in addition to its own 4K on chip memory. The combination of numbers of transputers and the amount of RAM is flexible.

Video

The Abaq supports the following screen resolutions:

Mode 0 1280 x 960 4 bits per pixel (16 colours from 4096)
Mode 1 1024 x 768 8 bits per pixel (256 colours from 16 million)
Mode 2 640 x 480 8 bits per pixel (256 colours from 16 million)
Mode 3 512 x 480 32 bits per pixel (true colour, each pixell a different colour)

I/O

The current revision 3 development systems are using a standard Atari Mega ST as an intelligent front end. An interface card plugging into the Mega's internal bus, via a link adaptor, enables the Mega ST to communicate directly with the transputer. This link communicates at 20 Mega bits per second.

The final product will still use a 68000 based board as an I/O device, but this will be integrated within the Abaq and will not rely on an additional ST screen. The Abaq will therefore have access to most ST peripherals and interfaces including the following:

Atari Laser Printer, Atari CD ROM, Atari Hard Disc:
Atari 3.5" disc drives, Atari 5.25" disc drives
RS232 interface Parallel interface