Alacron offers two families of processor boards based on Intel's i860 RISC processors: the AL-860 and FT-200. These boards are ideal for accelerating Digital Signal Processing (DSP), graphics and imaging processing applications.

Features

Features common to all Alacron FT-200 boards include:
- Single i860 XR
- Up to 200 MFLOPS / 100 MIPS
- Up to 256 MB Addressable Memory
- FastTrack™ connection to I/O and processor daughter-cards
- Real-time OS
- DOS, Windows, Unix interfaces
- Available for PCI computers

The FT-200s are single or dual 50 MHz i860 XP-based board-level subsystems, available for PCI bus computers. The FT-200 implements a fully symmetric multiprocessing model, sharing addressable memory equally between i860s. The FT-200 has a 200 MB/sec system bus, and with two processors operates at 200 MFLOPS / 100 MIPS. The FT-200 can execute a 1K complex FFT in under 320 microseconds using both i860's, and in 560 microseconds using a single processor. The FT-200's addressable memory is expandable from 8 MB to 256 MB. The FT-200 subsystem provides two FastTrack expansion connectors. These connectors implement Alacron's stackable daughter-card protocol, and together can support a combination of up to six I/O and processor daughter-cards.

FastTrack Interface

Alacron provides a family of I/O expansion boards which mount on the FastTrack connectors of the FT-200. Software drivers are available for all boards.
- High Performance Digital (Camera) Interface
- Digital Framegrabbers
- High Performance Digital I/O Interface

- Video Display Adapter
- FT-2106x-DC 8 SHARC Daughter-cards
- SCSI, VSB, DT-Connect, VISIONbus Interfaces

Heterogeneous Processing & Migration Paths

Alacron's 8 SHARC FT-2106x-DC daughter-card is also compatible with the FT-200's FastTrack expansion interfaces, proving an ideal heterogeneous processing environment, as well as an easy migration path between processor families.

Software Libraries

Alacron's FT-200 computing subsystems are supported by an extensive suite of application specific libraries for image processing, DSP and graphics applications.
- Vector Numerical Library
- Real-time Image Processing Library

FT-200 Architecture

Processing Environments

Alacron's RT operating environment provides several processing models. Applications can run as simple attached processes on the FT-200 processor boards, as stand alone tasks on the host, or as separate tasks on the host and on the FT-200. Alacron's RT supports Microsoft DOS, Windows 3.1, Windows NT, Windows 95/98, Solaris, LynxOS, and VxWorks.

Development Tools

A full suite of ANSI development tools for C and FORTRAN is available. Compilers support general purpose and numerically intensive applications. Profilers and debuggers are available.
Specifications

**FT-200 Multiprocessor Board**

- Processor: Intel i860XP
- Number of i860s: 1 or 2
- Clock speed: 50 MHz XP
- Memory: 8 MB to 256 MB
- External I/O: 160 MB/sec (FT-DT Burst) 158 MB sustained

**Intel i860 CPU**

- Precision: IEEE (754) floating point
- Single (32-bit) precision
- Double (64-bit) precision
- Performance: 100 MFLOPS, 50 MIPS @ 50 MHz
- 3D unit: Z buffering, Pixel interpolation, 3D shading
- MMU: 4K & 4M page sizes
- Data bus: 128-bit Internal, 64-bit External
- Cache: 16 KB data, 16 KB instruction

**FT-200 Board Peak Performance**

- MFLOPS: 200 MFLOPS
- MIPS: 100 MIPS
- 1K complex FFT: < 550 MS, 1K complex 1xP 320 MS 2xP
- 512 image processing
  - 2D real FFT: 0.188 Sec 512x512
  - 3x3 convolution: 51 mSec 512x512

**PCI Interface**

- Bus specification: 8, 16, 32 bit PCI format
- Control registers: I/O Mapped
- Global memory: Memory Mapped
- PCI(global): 132 MB/sec burst memory
- PCI(global): 70 MB/sec sustained memory
- PCI/global: 16 MB/sec random memory

**PCI Electrical and Environmental**

- Power: +5 volts at 5A
- Dimensions: 12.7 x 35.6 x 1.9 cm
- Operating temp.: 0–50 degrees centigrade
- Relative humidity: 95% noncondensing

**FT-I/O Expansion Boards**

Alacron provides a family of I/O expansion boards for the FT-200 family:
- FT-DI: Digital Input/Framegrabber
- FT-DIO: Digital I/O Module
- FT-DT/4: Programmed I/O Interface Module
- FT-DT/IN: DT DMA Input Interface Module
- FT-SCSI: SCSI Bus Interface
- FT-VB: VISIONbus Interface
- FT-VDA: Video Display Adapter