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 i860-based 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 AL-860 is a single-processor i860 XR-based board-level subsystem, available for PCI bus computers. Using a single 40 MHz i860 XR, the AL-860 executes a 1k complex FFT in 720 microseconds. The AL-860's addressable memory is expandable from 2 MB to 256 MB.

The AL-860 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.

Software Libraries

Alacron's AL-860 computing subsystem is supported by an extensive suite of application specific libraries for image processing, DSP and graphics applications.

- ♦ Vector Numerical Library
- ♦ Real-time Image Processing Library

Processing Environments

Alacron's RT operating environment provides several processing models. Applications can run as simple attached processes on the AL-860 processor boards, as stand alone tasks on the host, or as separate tasks on the host and on the AL-860.

Alacron's RT supports Microsoft DOS, Windows 3.1, Windows NT, Windows 95/98, Solaris, LynxOS, and VxWorks.
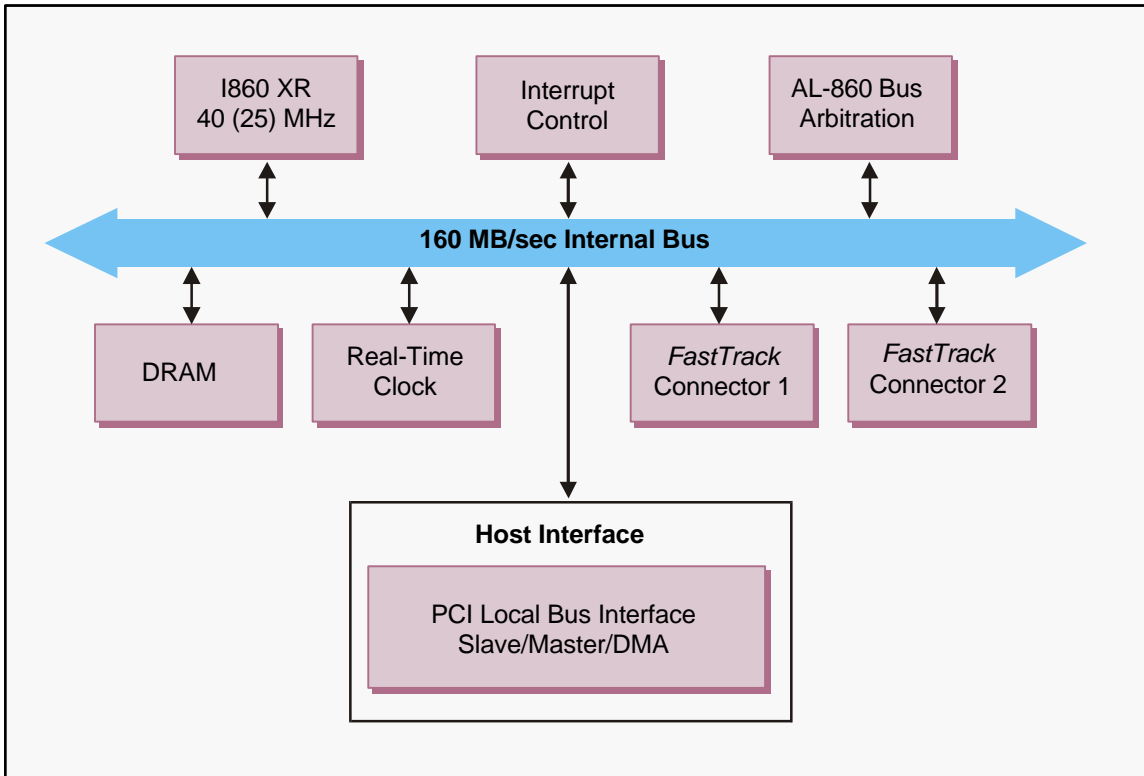
Development Tools

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.

FastTrack Interface

The AL-860 board's two 160 MB/sec FastTrack connectors provide tremendous I/O and expansion flexibility. These connectors implement Alacron's stackable daughter protocol and together can support a combination of up to six I/O and processor daughter-cards.

AI-860 Architecture

Specifications

AI-860 Processor Board

Processor	Intel i860XR
Clock Speed	25 or 40 MHz
Memory....................	2 MB to 256 MB
External I/O	160 MB/sec (1)

Intel i860 CPU

Precision	IEEE (754) floating point Single (32-bit) precision Double (64-bit) precision
Performance............	80 MFLOPS, 40 MIPS @ 40 MHz
3D unit.....................	Z buffering, Pixel interpolation, 3D shading
MMU.......................	4k page sizes
Data bus..................	128-bit internal 64-bit external
Cache......................	8K data, 4K Instruction

AI-860 Peak Performance

MFLOPS..................	80 MFLOPS
MIPS.......................	40 MIPS
1K complex FFT	<720 mSec
2D real FFT	0.330 Sec 512x512
3x3 convolution	66.1 mSec

Notes: (1) burst rate transfers using AL-860-DI daughter-card

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
PCI/global	16 MB/sec random

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	95% noncondensing humidity

FT-I/O Expansion Boards

Alacron provides a family of I/O expansion boards for the AL-860 family. FastTrack interfaces. Software drivers are available for all expansion boards:

- 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