

FastVision is for OEMs and End Users who anticipate a demand for diverse I/O requirements, higher bandwidth, complex image and digital signal processing, in a scalable multiprocessor platform. FastVision is a full-length PCI board with up to four AltiVec processors, each with 64–128 MB of dedicated high speed (528 MB/sec) SDRAM and the capability of providing over 2.6-3.6 GFLOPS of computational power. Channel Link, Firewire and 64 bits of I/O provide the basis for high-speed communication with any datasource. Applications include digital communications, medical imaging, semiconductor wafer and mask inspection, radar and sonar signal processing.

FastVision Key Features

- Single slot PCI board for data capture, processing and display
- Full computational power of up to two on-board 450MHz Motorola AltiVec (G4) vector processors, 7.2GOPS (8bit) applied to video stream.
- 64 to 128 MB of distributed SDRAM per processor
- Dual 400Mb/s FireWire (IEEE 1394) controllers, each with two ports
- Two bi-directional Channel Link ports for packet switched inter-card transfers at 1.85 Gbits/sec per port

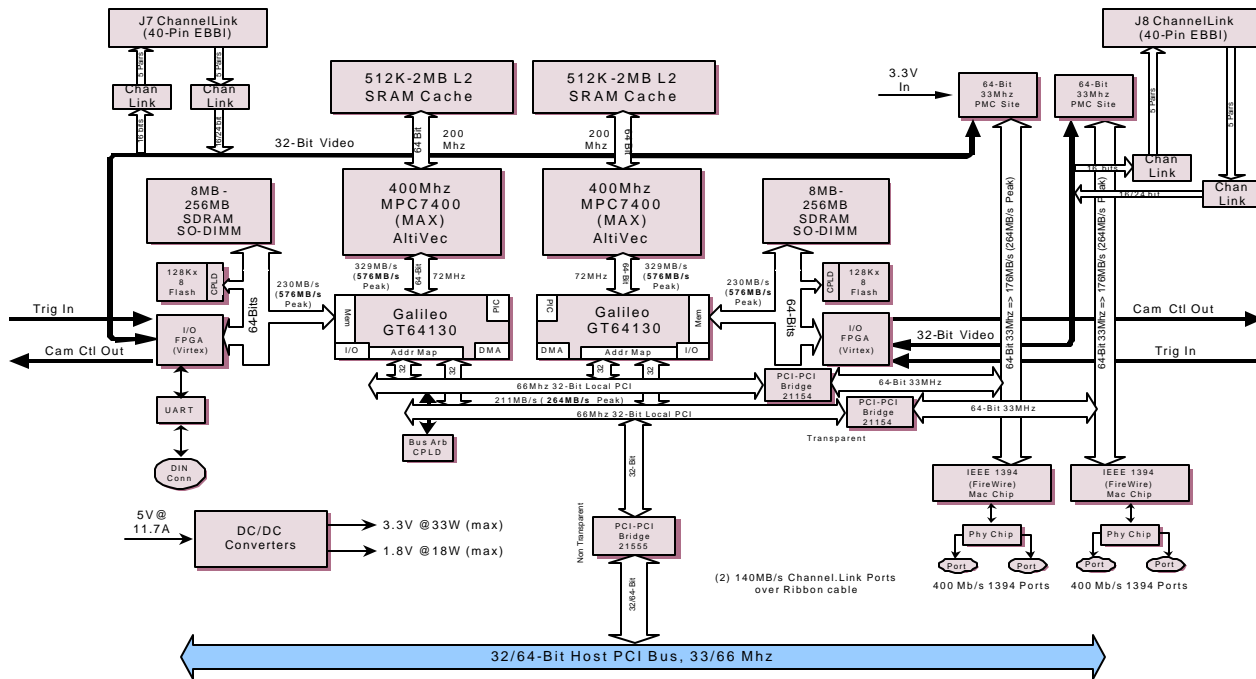
- Two PMC connections provide support for two 32 or one 64 bit (33MHz) PMC modules and supports a 200MB/s Fast Channel interface.
- 33 or 66MHz, 64 or 32 bit primary PCI bus interface with a (non-transparent) bridge to local PCI bus

FastVision™ Daughter-card Features

Two PMC connectors on the back of the FastVision board allow one to increase and expand the computational processing power and I/O capabilities. These PMC connectors are PCI Rev. 2.1 compliant, guaranteeing third-party PMC compatibility.

Alacron has the following daughter-cards available:

- **Fast4:** A PMC board that expands the FastImage PCI Board with up to eight additional TriMedia processors
- **FastI/O:** A PMC daughter-card that lets you add extra I/O ports to your FastImage or FastFrame PCI board
- **FastMem:** A PMC daughter-card with 512 Megabytes of additional memory



PCI / PMC Interface

- Clock rate – 66 or 33 MHz max. for PCI, 33 MHz only for PMC
- Data width – 64 or 32 bits
- Standards compliance – PCI Rev. 2.1
- Peak DMA rate – 132 MB/sec. (PMC)

Camera Control

- Serial port – Asynch. RS-232, 600–19,200 Baud
- Two exposure control outputs
- Two pixel clock inputs
- Four line/frame valid inputs
- Two external trigger inputs
- Power – no camera power provided by card; use an external supply
- RS-422 signaling

IEEE 1394 (Firewire™) Interface

- Dual 400Mbit (IEEE1394) controllers each with two ports
- 32 bit output data width

Channel Link

- Two 66 MHz 28 bit channel link ports for either camera inputs (3) 8 bit taps at 50MHz, or inter-board communication port (100Mb/s).

- Each port as a camera input, bi-directional (one in, one out) inter-board I/O link, or 32 bit bi-directional FastChannel interface

Fast Channel

- 50 MHz 32 bit persistent channels in 4 bit increments for intra- and interboard communication
- Multiple point to point connections via cross bar interconnect
- Data traffic does not affect host CPU or PCI Bus
- Point to Point Connections at up to 320 MB/s

Interfaces via PMC Daughter-card

NTSC/PAL Comp. Video Cap.

- Input levels 1V peak-to-peak nom., 0.3 to 1.2V peak-to-peak max.
- Input impedance – 75Ω
- Channel crosstalk – -50 dB max.
- Resolution – 8 bits
- Formats supported – PAL BGHI, PAL N, PAL M, NTSC M, NTSC N, NTSC 4.43, NTSC-Japan, SECAM

Analog Video Capture (3 channels)

- Input levels 1V peak-to-peak nom., 2.0V peak-to-peak max., 50mV min. sync level when using composite sync
- Input Impedance – 75Ω
- Resolution – 8 bits x 3 channels
- Formats supported – line scan and area scan
- Each input can operate async with an 80 MHz sample rate

Digital Video Capture

- Common mode input range – -5V to +5V (0 to 2.4V with LVDS option)
- Input sensitivity – 250mV differential (100mV with LVDS option)
- Input hysteresis – 50mV typical
- Max. clock rate – 80 MHz
- Max. input data width – 64 bits
- Formats supported – ITU-R BT.656 (4:2:2 interlaced color), 8/10-bit mono. variable/line scan, 8/10-bit raw data, 8/10-bit RGB, 16-bit raw at 20 MHz (40 MB/sec.)
- RS-422, LVDS, PECL signaling