

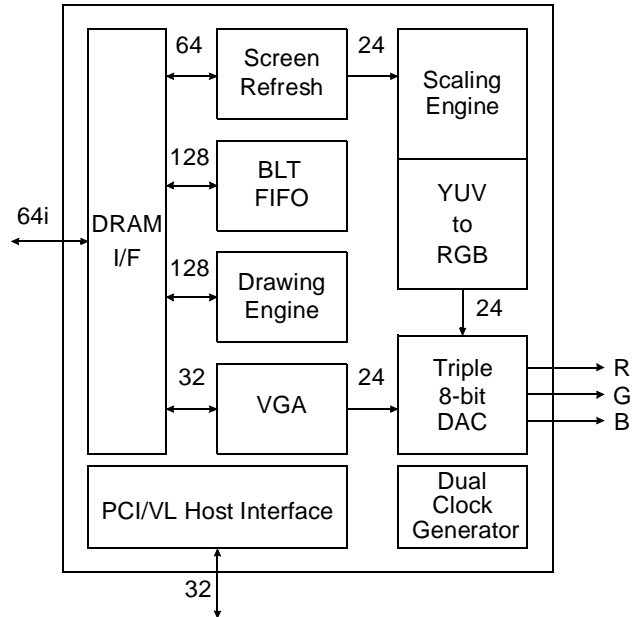


## Features

- ◆ **Fast 128-bit GUI accelerator**
  - Optimized 24- and 32-bit truecolor
  - 256 raster operations
  - Source and destination transparency
- ◆ **No-cost motion video™**
  - Smooth scaling and color conversion
  - 16 step bilinear filter
  - On-chip line buffer
  - DirectDraw/Direct Video/DCI support
  - Graphics and 24-bit video in 1MB buffer
  - Hardware occlusion
- ◆ **Integrated DAC and clock generator**
  - Refresh rates to 120 Hz
  - Gamma correction
- ◆ **BetterHalf™ cost-saving technology**
- ◆ **VESA® standards support**
  - VAFC advanced feature connector
  - DPMS power management
  - DDC 2.0B Bi-directional monitor data
- ◆ **High throughput PCI interface**
  - Zero wait state bursts
  - 66MHz/PCI 2.1 compliant
- ◆ **Fast 64-bit interleaved DRAM interface**
  - 400MB/second peak bandwidth
  - EDO and fast page DRAM
- ◆ **Programmable resolution to 1600×1200**

	<b>256 colors</b>	<b>32K/64K colors</b>	<b>16M colors</b>
<b>1 M</b>	1152×864	800×600	640×480
<b>1.5 M</b>	1152×864	800×600	800×600
<b>2 M</b>	1600×1200	1152×864	800×600
<b>3 M</b>	1600×1200	1152×864	1024×768
<b>4 M</b>	1600×1200	1600×1200	1280×1024

## Block Diagram



## Overview

ProMotion-AT24™ launches Alliance Semiconductor's new Alliance Truecolor family of high-performance MultiMedia User Interface accelerators. It incorporates a powerful Windows graphical user interface accelerator engine, unique motion video acceleration hardware and a high-precision DAC + clock generator, all in a single integrated 208-pin PQFP package. The ProMotion-AT24 family offers pin-compatibility with previous-generation ProMotion-642x controllers.

The chip's 128-bit internal architecture and 64-bit single-cycle interleaved memory bus give the AT24 superior performance in a low-cost DRAM-based accelerator. Proprietary BetterHalf™ technology cuts cost by reducing system memory requirements, enabling 1024×768 accelerated truecolor display with just 3MB standard DRAM.

The chip's advanced multimedia acceleration engine enables high quality motion video playback at no cost premium over graphics-only solutions. The engine includes an on-chip color space converter to accelerate decompression, and a hardware scaler with full bilinear filter and line buffer, to scale smoothly from native size up to full screen at full speed. The engine delivers smooth display of motion video data at 30 fps, at full SIF resolution under DirectDraw™, DirectVideo™, and other interfaces. Supported standards include MPEG-1, Video for Windows™, Indeo™, TrueMotion™, DCI, and other video applications and codecs.



## Software Drivers

- ◆ **Microsoft® Windows95™**
- ◆ **Microsoft DirectDraw™ & DirectVideo™**
  - Codec-neutral, multi-vendor standards
- ◆ **MS Windows™ 3.X with DCI**
  - Flat-model optimized drivers
  - Switch resolutions on the fly
  - Virtual desktop to 1600×1200
- ◆ **Microsoft Video for Windows**
- ◆ **AutoDesk® ADI**
  - AutoCAD®, AutoShade®, 3D Studio
- ◆ **Microstation™**
- ◆ **WordPerfect® 6.0**
- ◆ **OS/2™ Warp, 2.11, 2.1**
- ◆ **Windows NT™**
- ◆ **NeXTStep™**
- ◆ **SCO Open Desktop™**

⇒ *Complete, High-performance, Robust*

## VGA BIOS

- ◆ **Industry standard Phoenix® BIOS**
- ◆ **100% IBM® compatible**
- ◆ **VESA DPMS power management**
- ◆ **DDC 2.0B**
- ◆ **VESA BIOS extensions**

⇒ *Compatible, User-friendly*

## Manufacturing package

- ◆ **Reference PCB designs**
- ◆ **OEM software utilities**
- ◆ **Customer software utilities**

⇒ *Full customer support*

Alliance supports the ProMotion family with high-quality flat-model optimized driver software. ProMotion drivers take full advantage of ProMotion-AT24 hardware and the latest software technology to accelerate real performance of real applications, from word processing and spreadsheets to the most demanding CAD programs and multimedia software.

The ProMotion driver set accelerates all major operating environments, graphics-intensive software, and motion video applications. With 100% VGA and VESA compatibility, ProMotion controllers can also run standard DOS and VBE-compatible applications directly without driver software.

Source code to ProMotion drivers is available to permit customization and differentiation.

ProMotion-AT24 controls an external VGA BIOS ROM for add-in card applications. Binary and source code for the PhoenixView™ BIOS are available from Alliance.

ProMotion reference designs, OEM tools, and application notes reduce time-to-market. Alliance's OEM support and quality standards, developed over years as a high-volume system supplier to the PC industry, meet the strictest requirements.



## No-cost motion video

### ◆ Motion video application explosion

- Entertainment
- Education
- Training
- Communications

### ◆ Specialized requirements

- Color space conversion
- vWindow™ scaling and pixel interpolation
- 3X throughput by off-loading CPU

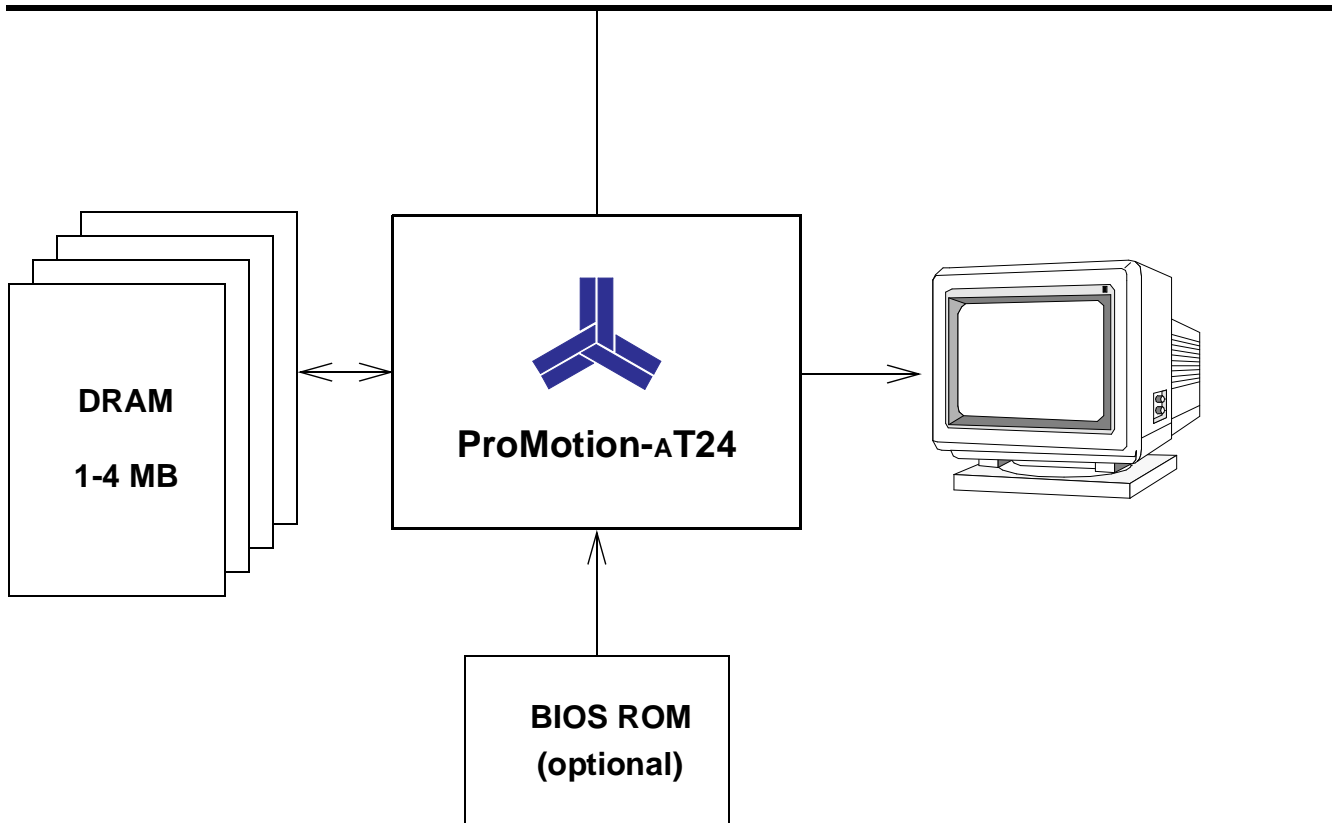
⇒ 30 fps full-screen, full-motion display

Today's shift to multimedia user interface has created a need for motion video acceleration, just as the shift from text-based to graphical user interface created a need for GUI acceleration. As new graphics+video systems enter the market, graphics-only displays are going the way of yesterday's text-only terminals.

Motion video playback requires a small set of specialized operations which are CPU-intensive but can be accelerated with dedicated hardware. For a typical stored-video codec, off-loading color space conversion and scaling from the host CPU can increase throughput threefold, increasing frame rates and eliminating jerky dropped frames. ProMotion provides this acceleration, along with state of the art graphics performance, at no additional cost above graphics-only solutions.

## System Block Diagram

Host bus: PCI/VL





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