



# Axeon

PCI and PCI Express video capture boards

## Bus-mastering video acquisition board for general purpose OEM applications

Axeon is a low-cost, full-featured video acquisition board for analog cameras. Available in either PCI or PCI Express formats, Axeon incorporates a digital media processor and on-board frame buffer for reliable capture for the most demanding vision-related application. Axeon's video input circuitry digitizes between multiple component, S-Video, or composite video signals in either square pixel or CCIR-601 resolutions. With plenty of I/O triggers and extensive camera control, Axeon is the perfect frame grabber for cost-effective analog camera applications.

### Axeon Features

- PCI or PCI Express formats
- Bus-mastering video acquisition
- Simultaneous real-time transfer of video to system memory, overlay, or display memory
- TI DM642 Digital Media Processor
- 32 MB SDRAM Frame Buffer
- High-quality 10-bit input digitization
- Smooth interpolated video scaling to arbitrarily sized windows
- Up to 3 RGB or YPbPr, 4 S-Video, and 9 composite multiplexed video inputs
- RGB, YPbPr, S-Video, and composite video output
- CCIR and square pixel capture resolution
- NTSC and PAL video formats
- General purpose I/O triggers
- Programmable LUT
- Packed or planar transfers
- Area of interest transfers to/from system and on-board memory
- On-board microcontroller for robust timing and capture control
- RS-232 serial input and output
- Camera integration support
- 12-volt DC switched output for camera supply
- Real-time image processing
- Windows® 2000, and XP drivers
- Windows®-based video capture application
- DirectShow and TWAIN support
- Optional SDK with sample applications



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## PCI Express Support

Aexeon can be ordered in either PCI or PCI Express system interfaces allowing for system compatibility well into the future. PCI Express is the high-performance, next-generation interconnect that increases bandwidth, scalability, and reliability.

## Bus-Mastering Performance

Aexeon's high speed bus-mastering capability with scatter gather support delivers real-time video data to system or display memory simultaneously, without intervention from the host CPU. Video data formatting and resolution is independent between streams, allowing for maximum bandwidth flexibility.

## Digital Video Processor

By incorporating an on-board video processor, Aexeon enables maximum flexibility in handling challenging application requirements. Equipped with a 32 MB SDRAM frame buffer, the video processor provides smooth interpolated scaling, pixel formatting, interrupt support, hardware overlay, real-time video processing, and video output functionality.

## High-Quality Video Capture

Aexeon provides high-quality 10-bit capture from up to 3 RGB or PrPb component, 4 S-Video, or 9 composite/monochrome video sources in NTSC or PAL format. Video can be captured and stored in either square pixel or CCIR-601 resolutions, and can be scaled to any arbitrary size.

## Video Output

Aexeon also supplies RGB or YPrPb component, S-Video, or composite video outputs in NTSC or PAL format. Video output source data is acquired from on-board memory, making it completely independent of the video input. This allows for video output not only from the currently viewed input video, but also from off-screen system memory. Graphics overlay or image processing functions can be applied to the video image before going to the video output.

## Extensive Camera Control

Interfacing and controlling cameras with Aexeon is painless. Cameras can be accessed through Aexeon's on-board RS-232 serial interface and powered through a fused 12-volt power output. Aexeon has 8 programmable I/O triggers for camera integration or event triggering. Aexeon also incorporates an on-board microprocessor to guarantee accurate synchronization and robust triggering without relying on the host CPU.

## dVeloPer Foundation Software Developers Kit

dVeloPer is a comprehensive software developers kit that supports all dPict Imaging products, allowing for easy porting to new hardware. dVeloPer is royalty free and runs under Microsoft Windows 2000 and XP operating systems. Source code samples and complete documentation are included in Visual C, C#, and Visual Basic .NET to provide insight to various hardware functions. Samples include video-in-a-window, overlay, video buffering, camera control, and more.

## Specifications

### Form Factor

- PCI or PCI Express form factor
- Scatter gather DMA support
- PCI 2.2 compliant, 5V and 3.3V universal slot
- PCI Express x1 connector

### Video Inputs

- Up to 9 composite or monochrome inputs
- Up to 4 S-Video inputs
- Up to 3 RGB or YPbPr component input

### Video Digitization

- NTSC (J, M, 4.43), PAL (B, D, G, H, I, M, N, Nc, 60), and SECAM (B, D, G, K, K1, L) support
- High-quality 10-bit digitization
- Square pixel and ITU-601 resolution support
- Software programmable control of gain, offset, hue, saturation, and sharpness
- EEPROM for storing configuration and calibration settings

### Video Acquisition

- Smooth interpolated scaling to randomly-sized windows
- Bus-mastering video transfers to system memory, overlay, or display memory simultaneously.
- Hardware overlay of graphics over video
- RGB 32/24/16/15/8 and YUV 4:2:2 pixel formats
- Area of interest transfers to on-board and system memory
- 32 MB SDRAM frame buffer
- Extensive interrupt control for robust capture
- Real-time image flip, mirror, or rotate

### Video Output

- Composite, S-Video, and component video output
- Output video can be from video overlay, system memory, or display memory

### I/O Control

- 8 general purpose I/O triggers
- Triggers programmable as input or output

### Camera Control

- On-board microcontroller for reliable capture and control
- RS-232 serial interface
- Camera exposure control
- 12-volt fused DC output for camera power supply

### Physical and Environmental

- 5.00"(length) x 4.20" (height)
- Operating temperature: 0° C to 55° C
- Relative humidity: 5% up to 95% non-condensing
- FCC and CE approved

### Available Software Developers Kit

- Compatible with dVeloPer SDK
- Windows® 2000 and XP DLLs
- DirectDraw and DirectShow support
- TWAIN support
- Extensive documentation and sample code
- dPiction Windows-based capture application
- Sample applications with source code

### Ordering Information

- Aexeon PCI: 10011
- Aexeon PCI Express: 10012
- dVeloPer Foundation SDK: 90010

