



Axeon HD^s

PCI and PCI Express video capture boards

Bus-mastering video acquisition board with HD-SDI and analog camera support

Axeon HD^s is a full-featured video acquisition board for HD-SDI or standard definition analog cameras. Available in high-speed PCI Express format, Axeon HD^s incorporates a digital media processor and on-board frame buffer for reliable capture for the most demanding vision-related application. Axeon HD^s video input circuitry digitizes between multiple component, S-Video, or composite video signals. With plenty of I/O triggers and extensive camera control, Axeon HD^s is the perfect frame grabber for medical imaging applications.

Axeon HD^s Features

- 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
- 64 MB SDRAM Frame Buffer
- SDI and analog SD camera support
- Up to 1080p SDI input support
- 3G-SDI acquisition rates up to 2.97 Gb/sec
- Auto acquisition of SDI inputs
- Video scaling to arbitrarily sized windows
- Up to 3 RGB or YPbPr, 4 S-Video, and 9 composite multiplexed video inputs
- CCIR and square pixel capture resolution
- NTSC and PAL video formats
- General purpose I/O triggers
- 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
- Windows® 8, 7, Vista, and XP drivers
- Linux board drivers and API
- Windows®-based video capture application
- Optional SDK with sample applications

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PCI Express Support

Axeon HD^S is designed with the high-speed PCI Express system interface. PCI Express is the high-performance, next-generation interconnect that increases bandwidth, scalability, and reliability.

Bus-Mastering Performance

Axeon HD^S'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, Axeon HD^S enables maximum flexibility in handling challenging application requirements. Equipped with a 64 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.

3G-SDI Serial Digital Interface

Axeon HD^S supports viewing and capture of the enhanced video quality from SDI sources. SDI is a broadcast quality video transmission standard that allows for the transmission of un-compressed digital video data on a common coax cable at distances up to 300 feet.

High-Quality Video Capture

Axeon HD^S provides high-quality 10-bit capture from up to 3 RGB or YPrPb 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.

Extensive Camera Control

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

dVeloer Foundation Software Developers Kit

dVeloer is a comprehensive software developers kit that supports all dPict Imaging products, allowing for easy porting to new hardware. dVeloer is royalty free and runs under Microsoft Windows 8, 7 and XP as well as Linux 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.

Specifications

Form Factor

- PCI Express x1 connector
- Scatter gather DMA support

Video Inputs

- Standard or high-definition
- RGB/YPrPb component, S-Video, and composite
- HD-SDI support

HD-SDI Video Acquisition

- 3G-SDI data rate support up to 2.97 Gb/sec
- HDTV standard support up to 1080p
- SMPTE 259M: 360 Mb/sec with resolutions up to 960x486 (SDI)
- SMPTE 292M: 1.485 Gb/sec with resolutions up to 1080i (HD-SDI)
- SMPTE 424M: 2.97 Gb/sec with resolutions up to 1080p (3G-SDI)

SD Video Acquisition

- 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 CCIR-601 resolution support

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
- 64 MB SDRAM frame buffer
- Extensive interrupt control for robust capture
- Real-time image flip, mirror, or rotate

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

- 6.60"(length) x 4.20" (height)
- HD-44 connector
- BNC connector (SDI input)
- Operating temperature: 0° C to 70° C
- Relative humidity: 5% up to 95% non-condensing

Available Software Developers Kit

- Supports 32/64-bit Windows® 8, 7 and XP
- Linux board drivers and API
- TWAIN support
- Extensive documentation and sample code
- dPiction Windows-based capture application
- Sample applications with source code

Ordering Information

- Axeon PCI Express: 10042-001
- dVeloer Foundation SDK: 90010