



Nexeon HDI

PCI Express Video Capture Boards

High-definition acquisition board with on-board video compression

Nexeon HDI is a full-featured video streaming and capture board for standard and high-definition video inputs. Nexeon HDI supports analog RGB/YCrCb component, S-Video and composite analog inputs as well as digital DVI/HDMI inputs up to 1080p60. Nexeon HDI comes equipped with an integrated Video Processor and plenty of memory for fast and reliable video data transfer to system or display memory.

Nexeon HDI Features

- PCI Express 2.0 interface
- Bus-mastering video acquisition
- RGB/YCrCb component, S-Video or Composite video input support
- HDTV support up to 1080p60
- DVI and HDMI input support
- Real-time hardware video CODEC
- H.264, MPEG 4, and MJPEG compression
- Simultaneous real-time transfer of video to system memory
- TI DM8168 Digital Media Processor
- 1 GB SDRAM Frame Buffer
- Acquisition rates up to 165 MHz
- Video scaling to arbitrarily sized windows
- RGB, YUV, or monochrome pixel formats
- Progressive scan video support
- General purpose I/O triggers
- Packed or planar transfers
- Area of interest transfers to system and on-board memory
- On-board microcontroller for robust timing and capture control
- HDMI video output
- 12-volt DC fused output for camera supply
- Real-time image processing
- Windows® 10, 8, and 7 drivers
- Includes dPiction Windows®-based video capture application
- Optional SDK with sample applications

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PCI Express 2.0 Support

Nexeon HDI is designed with the high-speed PCI Express 2.0 system interface. The second generation interface allows for the Nexeon HDI to transfer data at speeds up to 1GB/sec.

Bus-Mastering Performance

By incorporating a TI DM8168 video processor, Nexeon HDI enables maximum flexibility in handling challenging application requirements. Equipped with a 1 GB DDR3 SDRAM frame buffer, the video processor provides video scaling, pixel formatting, interrupt support, hardware overlay, and real-time video processing without host CPU assistance.

Onboard Video Compression and Playback

Nexeon HDI comes equipped with a real-time hardware CODEC that enable video recording and playback. It supports multiple compression standards, including H.264, MPEG4 or MJPEG. Compressed and uncompressed video data can be transferred to system memory simultaneously.

HD and SD Video Capture with Audio

Nexeon HDI supports simultaneous capture and steaming both standard definition and high definition video and display with audio. Nexeon HDI supports HDTV inputs up to 1080p60 as well as VGA display inputs with aquisition rates up to 165 MHz. Standard definition support includes composite, S-video and component in NTSC and PAL. Audio inputs can be either digital HDMI or analog stereo.

Video Output

Nexeon HDI supports video output of both HD and SD video standards. It can output digital HDMI at resolutions up to 1080p and simultaneous HD or SD analog signals in RGB, S-Video or composite formats.

dVelooper Foundation Software Developers Kit

dVelooper is a comprehensive software developers kit that supports all dPict Imaging products, allowing for easy porting to new hardware. dVelooper is royalty free and runs under Microsoft Windows® 10, 8, and 7 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.

TI Third Party Network

dPict Imaging is a proud member of the TI Third Party Network. By working closely with TI, we can ensure OEM developers the best possible support.



Specifications

Form Factor

- PCI Express 2.0 x4 connector
- Up to 1 GB/sec data transfer

Video Inputs

- Standard or high-definition
- RGB/YCrCb component, S-Video, and composite
- VGA or HDMI input support

HD Video Acquisition

- Up to 165 MHz acquisition rates
- Progressive scan video support
- HDTV standard support up to 1080p60
- Supports VGA display capture up to 1600x1200 @ 60 Hz

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 Processing and Formatting

- Real time onboard video CODEC
- H.264, MPEG4, and MJPEG compression and playback
- Simultaneous viewing and capture of standard definition and HDTV video inputs
- Video scaling to randomly-sized windows
- Simultaneous transfer of compressed and uncompressed video
- 1 GB DDR3 SDRAM frame buffer
- RGB 32/24/16/15/8, YUV 4:4:4 and YUV 4:2:2 pixel formats
- Area of interest transfers to on-board and system memory
- On-board image processing

I/O Triggers and Control

- 4 general-purpose I/O triggers programmable between input and output
- Automatic display mode and sync detection

Audio Recording and Playback

- Real-time recording of analog or digital audio
- HDMI and Line Level In/Out

Physical and Environmental

- 6.875" (length) x 4.20" (height)
- HD-26 Female I/O connector
- 2 HDMI display connectors
- Operating temperature: 0° C to 70° C
- Relative humidity: 5% up to 95% non-condensing

Available Software Developers Kit

- Compatible with dVelooper Foundation SDK
- Supports 32/64-bit Windows® 10, 8 and 7
- Extensive documentation and sample code
- dPiction Windows®-based capture application
- Sample applications with source code

Ordering Information

- Nexeon HDI PCI Express: 11062-001
- dVelooper Nexeon HD SDK: 90018