



# Nexeon CL

PCI and PCI Express Acquisition Products

## Low-cost Camera Link® acquisition board for area or line-scan cameras.

Nexeon CL is a low-cost, full-featured video capture board for digital camera solutions with the Camera Link standard. Nexeon CL supports the Base configuration of the Camera Link standard and works with all area and line scan Camera Link® cameras up to 80 MHz. Nexeon CL comes equipped with an on-board DSP and plenty of memory for fast and reliable video data transfer to system or display memory.

## Nexeon CL Features

- PCI or PCI Express interface
- 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
- Supports Camera Link® standard at Base configuration
- Supports area-scan or line-scan cameras
- Acquisition rates up to 80 MHz
- Supports 8/10/12/14/16/24 bit cameras
- Supports Bayer Mode cameras
- Smooth interpolated video scaling to arbitrarily sized windows
- RGB, YUV, or monochrome pixel formats
- General purpose I/O triggers
- Programmable LUT
- Packed or planar transfers
- Area of interest transfers to 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

3815 River Crossing Parkway, Suite 100, Indianapolis, IN 46240  
PH: +1-317-616-3800 FAX: +1-317-616-3330  
Web: [www.dpictimaging.com](http://www.dpictimaging.com)  
Email: [sales@dpictimaging.com](mailto:sales@dpictimaging.com)

**dp dPict**  
IMAGING, INC.

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## PCI Express Support

Nexeon CL 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

Nexeon CL's high speed bus-mastering capability 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 bandwidth flexibility.

## Digital Video Processor

By incorporating an on-board video processor, Nexeon CL 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, and real-time video processing without host CPU assistance.

## High-Quality Video Capture

Nexeon CL provides high-quality capture from Camera Link cameras with the Base configuration at pixel clock rates up to 80 MHz. Nexeon CL supports RGB and monochrome cameras at 8/10/12/14/16/24-bit depths. Nexeon CL's on-board processing also supports Bayer Filter cameras without the use of additional software applications or host CPU usage.

## Camera Link® Interface

Camera Link® is a high-speed digital video interface developed for the scientific and machine vision industries by a consortium of leading camera and image capture companies. It provides a standard interface between Camera Link® devices, making system integration simpler and more cost-effective.

## Extensive Camera Control

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

## 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® 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

### Camera Inputs

- Camera Link® digital camera input
- RGB or monochrome support
- Area scan or line scan camera support
- Bayer camera support

### Video Acquisition

- Supports base Camera Link® specification
- 8/10/12/14/16/24-bit camera support
- Up to 80 MHz acquisition rates
- Software digital control of gain and offset
- EEPROM for storing configuration and calibration settings

### Video Formatting

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

### Camera Control

- On-board microprocessor for reliable capture and control
- RS-232 serial output and input
- Camera exposure control
- Switched and fused camera power

### I/O Triggers

- 4 LVDS differential pairs
- 8 general-purpose I/O triggers
- Programmable between input and output triggers

### 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 dVelooper Foundation SDK
- Windows® 2000 and XP DLLs
- DirectDraw and DirectShow support
- TWIN support
- Extensive documentation and sample code
- dPiction Windows®-based capture application
- Sample applications with source code

### Ordering Information

- Nexeon CL PCI: 11021
- Nexeon CL PCI Express: 11022
- dVelooper Foundation SDK: 90010



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