



# FlashBus<sup>DX</sup>

PCI Video Frame Grabbers with Camera Link™ Interface

## Powerful frame grabbers with Camera Link™ Technology

The FlashBus DX Camera Link is a high-quality, low-cost, digital interface frame grabber designed to capture RGB and monochrome images in real-time to system or display memory. Utilizing the Camera Link specification, the FlashBus DX Camera Link provides a simple, standard interface to digital area scan cameras with the Camera Link interface. The FlashBus DX Camera Link product line was specifically designed for applications requiring very high quality, high-speed image capture such as machine vision, scientific imaging, and medical imaging.

### General Family Specs

#### Real-time Capture

Taking advantage of its high-speed PCI bus-mastering capabilities, the FlashBus DX Camera Link family of products delivers consecutive frames of video in real time into system or display memory without intervention from the host CPU. The FlashBus DX Camera Link family can sustain PCI bus transfers at 100 MB/sec to system memory.

#### Dual Asynchronous Capture

The FlashBus DX Camera Link was designed around a flexible FPGA architecture that provides two video DMA channels. Dual asynchronous capture from two monochrome area scan cameras is possible simultaneously at up to 10-bit pixel depth. Single input capture is provided from 8-, 10-, 12-, 14-, 16-, and 24-bit RGB area scan cameras. Pixel clock rates up to 40 MHz are supported.

#### Programmable Intelligence

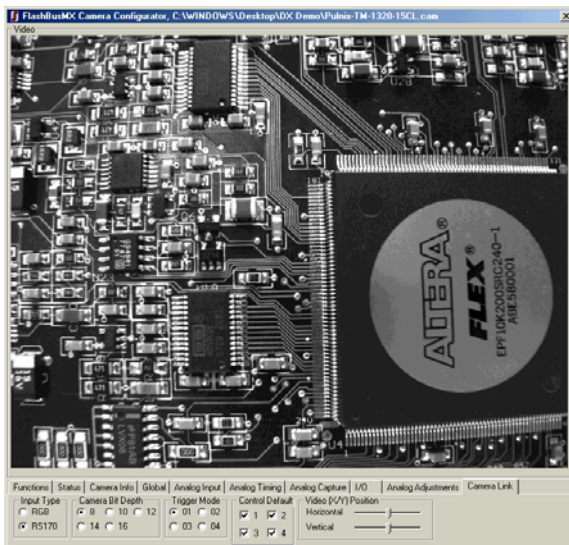
The FlashBus DX Camera Link incorporates on-board intelligence to assure robust triggering and accurate timing. Its camera control interface provides support for asynchronous trigger and long-term exposure functions. The FlashBus DX Camera Link also adds serial communications support, a 0V-10V programmable DAC output, and a 12V DC fused output. These on-board features can be used to provide easy integration of specific camera functions.

### DX-CL

The FlashBus DX-CL is a low-cost, single camera version of the FlashBus Camera Link family with all of the features to make a high-speed, high quality image acquisition application. The FlashBus MX-CL is compatible with 8-, 10-, 12-, 14-, and 16-bit, monochrome and 24-bit RGB area scan cameras with the Camera Link interface.

### DX-CL2

The FlashBus DX-CL2 is a dual camera version equipped with two Camera Link connectors. This allows for two asynchronous Camera Link area scan cameras to be captured simultaneously. Each input can be from either 8 or 10-bit monochrome cameras. Acquisition from a single camera is supported the same as the DX-CL version.



FlashBus Camera Configurator

### Camera Link Interface

Developed by a consortium of camera and frame grabber manufacturers that included Integral Technologies, Camera Link is a high-speed digital video interface that provides for simplified connectivity between digital cameras and frame grabbers. Its standardized cable allows for a quick and low cost method of interfacing any camera to any frame grabber. Camera Link's high-speed serial interface makes it perfect for the for the machine vision, scientific and medical imaging industries.



### Camera Inputs

#### FlashBus DX-CL2

- Supports 8/10/12/14/16/24-bit cameras in single input mode
- Supports two 8/10-bit cameras in dual asynchronous mode

#### FlashBusDX-CL

- Supports 8/10/12/14/16/24-bit cameras

### Acquisition

- High-resolution camera support up to 4K x 4K
- Up to 40 MHz acquisition rates
- Configurable LUT (1024 x 8-bit)
- Programmable digital control of offset and gain
- EEPROM for storing configuration settings

### Video Transfer and Display

- PCI 2.1 compliant with bus-mastering support
- 100 MB sustained PCI throughput
- 32/24/16/15/8-bit VGA modes
- YUV 4:2:2 color space conversion
- Non-destructive overlay support

### External Camera Control

- Asynchronous trigger support
- Long-term integration support
- 12-volt DC fused output at 750 mA
- Optically isolated output trigger for flash control

### External I/O Control

- General purpose I/O control
- 4 on each camera link connector
- 3 via on-board header connector
- Camera Link differential serial support
- On-board DSP
- Programmable DAC output

### Software

- Windows 2000, ME, 9x, NT 4.0, and Linux drivers
- Camera configuration software
- FBG video capture application
- DirectDraw support
- Media Cybernetics Image Pro Plus drivers
- HALCON drivers
- TWAIN drivers
- Video for Windows drivers
- Available Developers Kit with sample code



Flashbus DX is designed and manufactured in the U.S.A.