



Frame grabbers

Matrox Meteor-II/Camera Link®

Low-cost Camera Link® frame grabber for digital area or line scan video acquisition.



Key features

- video capture board for PCI form factor
- captures from Camera Link® area or line scan video sources including multi-tap configurations
- connect and switch between two monochrome, two RGB or one monochrome and one RGB video source
- acquisition rates up to 50 MHz
- configurable LUT (four 256 x 8-bit or two 4K x 12-bit)
- trigger input and timer outputs
- 32-bit/33 MHz PCI bus-master
- real-time transfer to system or VGA memory
- extensive on-board buffering for reliable capture
- supports packed or planar transfers of color or multiple monochrome streams
- available software is sold separately and includes Matrox Imaging Library (MIL)/ActiveMIL, MIL-Lite/ActiveMIL-Lite and Matrox Inspector
- supports Microsoft® Windows® 2000 and Windows® XP

Matrox Meteor-II/Camera Link®

Matrox Meteor-II/Camera Link® is part of the Matrox Meteor-II family of high-performance frame grabbers for cost sensitive applications. It provides a simple standard connection to digital imaging devices using the Camera Link® interface specification. Through a flexible design, the Matrox Meteor-II/Camera Link® supports one, two or four tap monochrome, as well as component RGB, area or line scan video sources.

VIA: At the heart of the Matrox Meteor-II family

Common to all Matrox Meteor-II boards is the custom-designed Matrox Video Interface ASIC (VIA). It is a sophisticated memory controller for managing real-time acquisition into on-board memory with advanced reformatting capabilities and, in parallel, streaming image data out over the PCI bus without requiring constant host CPU intervention.

Real-time capture to system or display

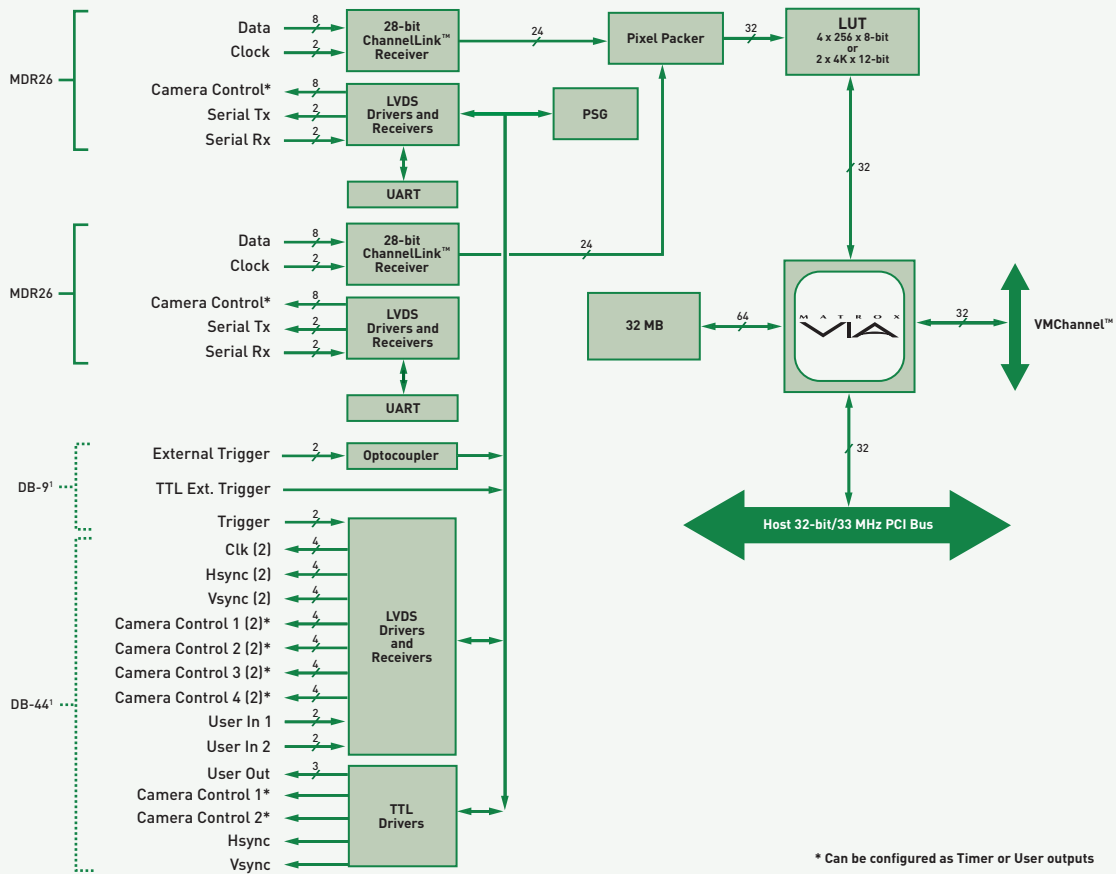
Matrox Meteor-II/Camera Link® can transfer acquired images to either system (host CPU) memory for processing or display (VGA) memory for live video-in-a-window at sustained rates up to 130 MB/second.

Image formatting

Image data can be reformatted in real-time prior to transfer to host system or display. Formatting features include cropping (ROI capture), independent horizontal and vertical sub-sampling from 2 to 16 (by decimation).



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PCI interface

Matrox Meteor-II/Camera Link® features a 32-bit PCI bus master/slave host interface. The bus master mode performs transfers without requiring continuous host intervention. Extensive buffering ensures reliable real-time transfer of incoming image data to host memory even under high bus latency conditions, which typically occurs in systems with concurrent image capture, display, graphics, network access, disk access and general external I/O.

The PCI interface supports image data sub-sampling from 2 to 16 (by decimation) to further reduce required PCI bus bandwidth. The PCI interface also supports packed or planar transfers of color or multiple monochrome streams. Acquisition related events such as start and end of frame/field or sequence capture can be routed to the host CPU as interrupts to optimize concurrent acquisition and processing (double-buffering).

Software

Software support is available for Microsoft® Windows® 2000 and Windows® XP, and consists of Matrox Imaging Library (MIL)/ActiveMIL or MIL-Lite/ActiveMIL-Lite development toolkits for creating custom applications. Matrox Meteor-II/Camera Link® is also supported by Matrox Inspector Window®-based interactive imaging software.

Specifications

Acquisition

- supports two Base (single 8/10/12/14/16-bit or dual 8/10/12-bit monochrome, 24-bit RGB) or one Medium (quad 8-bit monochrome) Camera Link® configurations
- connect and switch between two monochrome, two RGB, or one monochrome and one RGB video source
- supports area or line scan video sources
- acquisition rates up to 50 MHz
- configurable LUT: four 256 x 8-bit or two 4K x 12-bit
- separate LVDS pixel clock, hsync and vsync outputs as well as TTL hsync and vsync outputs¹
- separate LVDS auxiliary inputs (2) and outputs (4) as well as TTL auxiliary outputs (3)¹
- opto-isolated, LVDS and TTL trigger inputs (synchronous and asynchronous to video)¹

RS-232 interface

- not visible to OS (controlled through MIL or Camera Link® APIs)

Formatting (Matrox VIA)

- input cropping (ROI capture)
- independent horizontal and vertical sub-sampling from 2 to 16 (by decimation)
- independent horizontal and vertical zoom of 2 and 4 (by replication)

Host interface

- 32-bit/33 MHz PCI bus master/slave
- up to 130 MB/second sustained
- 32 MB buffer
- supports packed or planar image data formats
- independent horizontal and vertical sub-sampling both from 2 to 16 (by decimation)
- interrupts for start and end of field, frame and sequence capture
- universal 32-bit card edge connector

Dimensions and environmental information

- 17.5 cm L x 10.7 cm H (6.9" x 4.2")²
- operating temperature: 0° C to 55° C (32° F to 131° F)
- relative humidity: up to 95% (non-condensing)
- FCC class A
- CE class A

Software Environment

- drivers for Microsoft® Windows® 2000 and Windows® XP
- programmed using MIL/MIL-Lite (.C DLLs) with Microsoft® Visual C++® (.NET)
- programmed using ActiveMIL/ ActiveMIL-Lite (ActiveX controls) with Microsoft® Visual Basic® .NET or C++® .NET

Ordering Information

Hardware

Part number	Description
METEOR2-CL/32	Camera Link® PCI frame grabber.

Ordered separately:

Software

Part number	Description
MIL LITE 8 WIN	MIL-Lite board control library for Microsoft® Windows® 2000 and Windows® XP (see MIL-Lite brochure for more details).
MIL 8 WIN P or U	Matrox Imaging Library (MIL) for Microsoft® Windows® 2000 and Windows® XP (see MIL brochure for more details).
INSPECTOR 8 P or U ³	Matrox Inspector interactive Windows® imaging software.

Input cable

Camera Link® cable available from camera manufacturer, 3M Interconnect Solutions for Factory Automation (www.3m.com/interconnects/factory) or Intercon 1 (www.nortechsys.com/intercon) in various lengths.

Notes:

1. Present on a separate bracket.
2. Vertical dimensions are from bottom edge of goldfinger to top edge of board. Horizontal dimensions are from edges of the board excluding bracket.
3. Contact local representative or Matrox Imaging Sales for availability.

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