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Find the *Matrox Meteor2-DIG/4/L* at our website: ***Click HERE***

Frame grabbers

Matrox **Meteor-II/Digital**

Low-cost frame grabber for RS-422/LVDS digital area or line scan video acquisition.



Key features

- video capture board for PCI or PC/104-*Plus*™ form factors
- captures from digital frame and line scan sources including multi-tap configurations
- 32-bit wide RS-422 or LVDS interface
- sampling rates up to 25 MHz for RS-422 and 50 MHz for LVDS
- configurable LUT (four 256 x 8-bit or two 4K x 16-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
- RS-232 serial interface[1]
- programmed using Matrox Imaging Library (MIL) sold separately
- supports 32-bit Microsoft® Windows® XP

Matrox Meteor-II/Digital

Matrox Meteor-II/Digital is part of the Matrox Meteor-II family of high performance frame grabbers for cost sensitive applications. Designed to capture from monochrome and component RGB, and frame/line scan sources in either RS-422 or LVDS differential signaling standards, Matrox Meteor-II/Digital combines extensive functionality with unprecedented value in a frame grabber. OEMs and integrators use this technology to build powerful, yet cost-effective PC-based imaging systems.

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/Digital 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

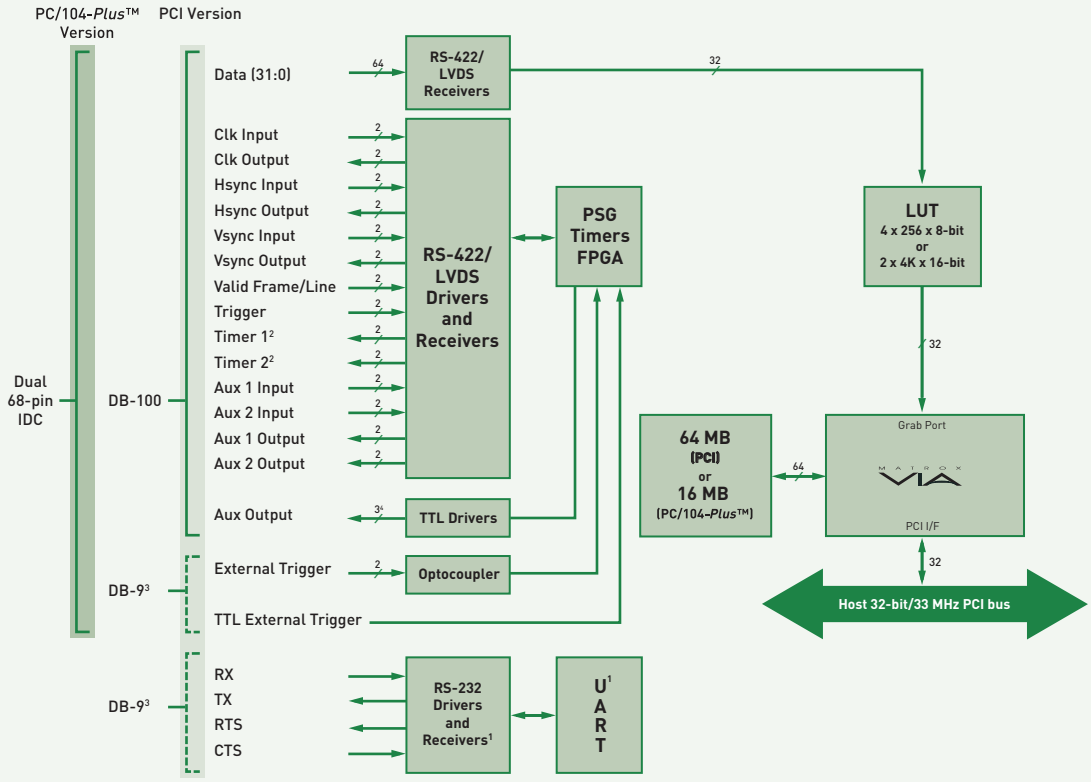
Image data can be reformatted by Matrox VIA in real-time prior to transfer to host system or display. Features of Matrox VIA include cropping (ROI capture), independent horizontal and vertical sub-sampling from 2 to 16 (by decimation), and independent horizontal and vertical zoom of 2 and 4 (by replication).

Matrox VIA can also perform reformatting operations specifically designed for reconstructing images from multi-tap cameras in real-time. Image data is presented simultaneously in either odd/even pixel, odd/even line, opposite scan segments or a combination, and can be reordered into a proper image with little or no host CPU involvement.

MATROX IMAGING

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Matrox Meteor-II/Digital



RS-232 serial interface[1]

Matrox Meteor-II/Digital features an RS-232 serial interface to enable remote programming of a camera (i.e., gain, gamma control, operation mode), motion control unit or PLC.

Simple connection

Matrox Meteor-II/Digital for PCI has a 100-pin external connector for 32-bit digital input along with synchronization and control signals, a 9-pin connector[3] for RS-232 serial interface and a second 9-pin connector[3] for the trigger input. Matrox Meteor-II/Digital for PC/104-*Plus*™ has two 68-pin IDC connectors for 32-bit digital input as well as synchronization and control signals including trigger input.

PCI interface

Matrox Meteor-II/Digital features a 32-bit PCI bus master/slave host interface. The bus master mode performs transfers without requiring continuous host intervention at rates up to 130 MB/second sustained.

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).

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Field-proven application development software

Matrox Meteor-II/Digital is supported by the Matrox Imaging Library (MIL), a comprehensive collection of software tools for developing industrial imaging applications. MIL features interactive software and programming functions for image capture, processing, analysis, annotation, display and archiving. These tools are designed to enhance productivity, thereby reducing the time and effort required to bring your solution to market. Refer to the MIL datasheet for more information.

Specifications

Acquisition

- 32-bit wide interface
  - configurable as 4 x 8-bit, 2 x 16-bit or 1 x 32-bit
- sampling rates up to 25 MHz for RS-422 and 50 MHz for LVDS
- supports monochrome/RGB, frame/line scan sources
- configurable LUT (four 256 x 8-bit or two 4K x 16-bit)
- separate RS-422/LVDS pclk (in and out), hsync (in and out), vsync (in and out), valid input and two timer[2] (exposure) outputs
- two RS-422/LVDS auxiliary inputs, two RS-422/LVDS auxiliary outputs and three TTL auxiliary outputs[4]
- opto-isolated differential and TTL trigger inputs (synchronous and asynchronous to video)

Formatting

- 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)

RS-232 interface[1]

- supports RX, TX, RTS and CTS signals
- not visible to OS (controlled through MIL API)

Host interface

- 32-bit/33 MHz PCI bus master/slave
- up to 130 MB/second sustained
- 64 MB and 16 MB buffer for PCI and PC/104-*Plus*™ versions respectively
- support for 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

- PCI version[5]:
  - 20.3 cm L x 10.67 cm H (8" x 4.2")
- PC/104-*Plus*™ version[6]:
  - 11.56 cm L x 9.6 cm H (4.55" x 3.78")
- 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
- RoHS-compliant

Software Driver

- Matrox Imaging Library (MIL) driver for 32-bit Microsoft® Windows® XP

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Ordering Information

Hardware

Part number	Description
METEOR2DIG64R* (PCI) MET2-DIG+/R* (PC/104-*Plus*™)	Standard/non-standard RS-422 digital RGB/monochrome frame grabber.
METEOR2DIG64L* (PCI) MET2-DIG+/L* (PC/104-*Plus*™)	Standard/non-standard LVDS digital RGB/monochrome frame grabber.

Software

Refer to MIL datasheet.

Input cable

Part number	Description
DBHD100-TO-OPEN (PCI)	3 m (10') input cable, high density DB-100 to open end (requires customization).

68-pin IDC mating connectors included with Matrox Meteor-II/Digital for PC/104-*Plus*™

Notes:

1. RS-232 interface not present on PC/104-*Plus*™ version.
2. Also available in TTL format for PCI version.
3. Present on separate bracket.
4. Two TTL auxiliary outputs on PC/104-*Plus*™ version.
5. Vertical dimensions are from bottom edge of goldfinger to top edge of board. Horizontal dimensions are from edges of board excluding bracket.
6. Vertical and horizontal dimensions are from edges of board.

Corporate headquarters:
Matrox Electronic Systems Ltd.
1055 St. Regis Blvd.
Dorval, Quebec H9P 2T4
Canada
Tel: +1 (514) 685-2630
Fax: +1 (514) 822-6273

For more information, please call: 1-800-804-6243 (toll free in North America) or (514) 822-6020 or e-mail: imaging.info@matrox.com or http://www.matrox.com/imaging

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