



Matrox Corona-II >>

High-quality PCI frame grabber for RGB or monochrome video acquisition with integrated DualHead display.



Key features

- > long PCI form factor
- > captures from interlaced or progressive scan component RGB or single/dual channel monochrome video sources
- > three 10-bit A/D converters¹
- > 24-bit RS-422/LVDS digital interface²
- > acquisition rates of up to 30 MHz analog, 25 MHz RS-422 digital and 40 MHz LVDS digital
- > connect two RGB or up to six analog monochrome video sources
- > configurable LUTs (three 256 x 8-bit or two 1024 x 10-bit)
- > trigger input and timer outputs
- > 32-bit/33 MHz PCI bus-master
- > extensive on-board buffering for reliable capture
- > VGA display at up to 1280 x 1024
- > non-destructive overlay of true-color graphics on live video
- > separate and independent composite Y/C or RGB NTSC/PAL video output
- > power output and RS-232 serial interface
- > available software is sold separately and includes Matrox Imaging Library (MIL)/ActiveMIL, MIL-Lite/ActiveMIL-Lite and Matrox Inspector
- > support for Microsoft® Windows® 2000 and Windows® XP

High-Fidelity Flexible Video Capture and Display

Combining high-fidelity flexible video capture and display on a single PCI board, Matrox Corona-II is an all-in-one solution for imaging OEMs and integrators. Designed to capture from standard or variable, analog or digital² and monochrome or component RGB frame scan sources, it specifically supports capture from interlaced or progressive scan component RGB cameras or single/dual-channel progressive scan monochrome cameras. Coupled to these video capture capabilities is the Matrox G400 graphics controller.

Graphics by Matrox

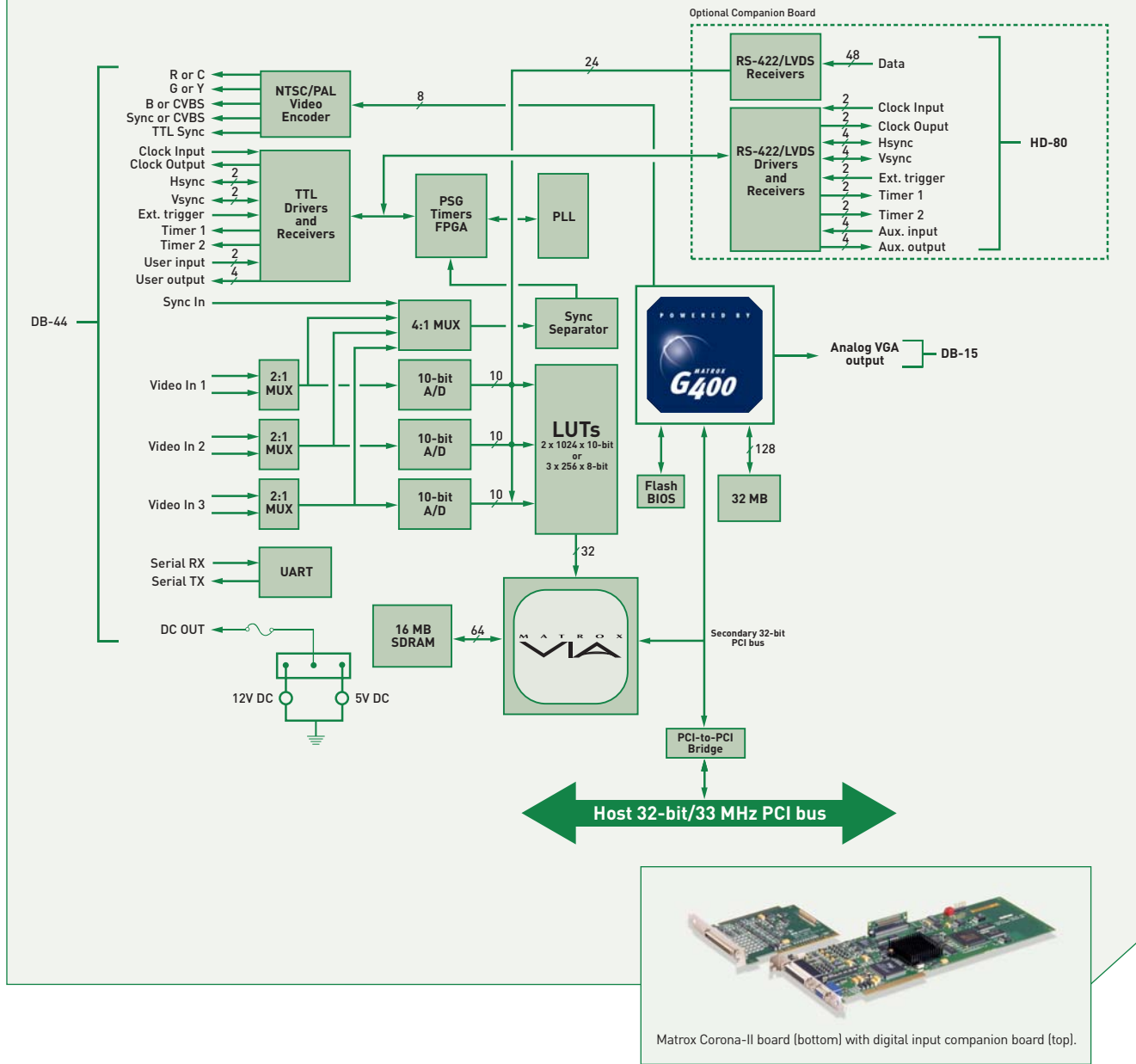
Matrox Corona-II features the award-winning graphics controller from Matrox Graphics Inc., a leader in PC graphics technology. The MGA G400 boasts an impressive set of features including non-destructive graphics overlay on live video, support for video-in-a-window with arbitrary video scaling (up or down) the ability to simultaneously have independent analog VGA and TV outputs.

VIA: Managing acquisition in real time

Video capture to on-board display or host memory is controlled by the Matrox VIA. The VIA is a video interface bridge that manages real-time acquisition into a temporary frame buffer and in parallel, streaming image data over the PCI bus at sustained rates of 130 MB/s without requiring constant host CPU intervention.



Matrox Corona-II



Matrox Corona-II board (bottom) with digital input companion board (top).

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 Corona-II is also supported by Matrox Inspector Windows®-based interactive imaging software.

Display capabilities

Matrox Corona-II supports simultaneous analog VGA output with independent TV output. For example, the analog VGA output can run at 1024 x 768 showing the user-interface and video window, while the TV output runs at NTSC/PAL resolutions showing the contents of the video window in full screen.



Simultaneous analog VGA and TV outputs

Specifications

Acquisition

- monochrome or component RGB, interlaced or progressive scan
- three 10-bit A/D converters¹
- analog sampling rate up to 30 MHz
- SNR of 45.6 dB @ 8-bit and 50.4 dB @ 10-bit^{4,5}
- pixel jitter of ± 1.8 ns to ± 3.2 ns^{4,5}
- variable gain amplifier
- three selectable input low-pass filters with bypass
- adjustable ADC references
- connect and switch between two component RGB or up to six monochrome analog video sources
- 24-bit RS-422/LVDS digital interface² (single 8/10/12/14/16/24-bit or dual 8/10-bit)
- digital acquisition rate up to 25 MHz for RS-422 and 40 MHz for LVDS
- configurable LUTs
 - 3 x 256 x 8-bit
 - 2 x 1024 x 10-bit
- separate pixel clock, hsync, vsync and timer (exposure) in TTL and RS-422/LVDS² signal formats
- trigger input (synchronous and asynchronous to video) in opto-isolated differential, TTL and RS-422/LVDS² signal formats
- video source present and horizontal lock detect logic
- two auxiliary inputs and four auxiliary outputs in TTL and four auxiliary inputs and outputs in RS-422/LVDS² signal formats

RS-232 interface

- supports RX and TX signals
- not visible to OS (programmed through MIL API)

Display

- MGA G400 graphics controller
- 32 MB buffer shared between video and graphics
- simultaneous analog VGA output with independent TV display output
- VGA resolution up to 1280 x 1024 @ 75 Hz
- non-destructive true-color graphics overlay on live video with no host CPU intervention
- TV output capable of CVBS, Y/C or RGB in NTSC/PAL square pixel video formats

Power output

- 5 or 12V DC at 1.0 A
- from PC power supply (not PCI slot)

Host interface

- 32-bit/33 MHz PCI bus master/slave
- up to 130 MB/second sustained
- 16MB SDRAM buffer
- support for packed or planar image data formats
- interrupts for start and end of field, frame and sequence capture
- universal 32-bit card edge connector

Dimensions and environmental information

- 31.4 cm L x 10.7 cm H (12.4" x 4.2") from bottom edge of goldfinger to top edge of board
- 34.1 cm L x 10.7 cm H (13.4" x 4.2") including retainer
- power consumption: 3.3A @ 5V or 16.5W, 500mA @ 12V or 6W, 100mA @ -12V or 1.2W, 23.7W total⁷
- operating temperature: 0° C to 55° C (32° F to 131° F)
- relative humidity: up to 95% (noncondensing)
- FCC class B
- CE class B

Software Environment

- drivers for Microsoft® Windows® 2000 and Windows® XP
- programmed using DLL interface 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
CORONA2	Standard/non-standard analog color/monochrome area scan PCI frame grabber with integrated 32 MB display and video encoder.
COR-DIG-BRD/R	Digital (RS-422) input companion ISA/PCI board.
COR-DIG-BRD/L	Digital (LVDS) input companion ISA/PCI board.

Notes:

1. For 2 x 10-bit monochrome or 3 x 8-bit (RGB) acquisition.
2. Requires separate ISA/PCI companion board.
3. Contact local representative or Matrox Imaging Sales for availability.
4. Results obtained from characterization and not systematic measurements.
5. Worst case across input channel, gain and input filter settings.
6. Depends on horizontal reference and sampling frequency.
7. Under worst case conditions.

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.

Analog input cables

Part number	Description
COR2-44-TO-13	1.8 m (6') input cable, high density DB-44 to thirteen BNCs.
COR2-44-TO-13/O	1.8 m (6') input cable, high density DB-44 to thirteen BNCs and open end to access sync. and control signals (requires customization).

Digital input cables

Part number	Description
DBHD80-TO-OPEN	3 m (10') input cable, high density DB-80 to an open end (requires customization).

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