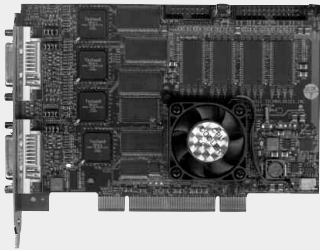




Frame grabbers

Matrox **Morphis DVR-16** >>

Multi-channel video capture / MPEG-4 encoding board for digital video recording applications.



Key features

- > Conventional PCI or x1 PCIe™ short card
- > simultaneously capture from up to 16 independent CVBS video sources
- > accepts NTSC, PAL, RS-170 and CCIR video standards
- > real-time multi-channel MPEG-4 encoder
- > 16 audio inputs¹
- > 20 auxiliary I/Os and RS-485 interface
- > available software is sold separately and includes Matrox Imaging Library (MIL)/ ActiveMIL and MIL-Lite/ActiveMIL-Lite
- > support for Microsoft® Windows® XP and Linux^{2,3}

Highly-integrated design

Matrox Morphis DVR-16 is a cost-effective board for digital video recording (DVR) applications that require real-time capture and simultaneous compression of multiple standard video sources. Compression is performed using MPEG-4, the industry-proven method for minimizing storage and network transmission requirements.

16 video inputs devised for surveillance

Matrox Morphis DVR-16 allows for the simultaneous capture from up to 16 independent standard video sources. Each video input benefits from hardware-based motion, blind and night detection commonly required in security systems. Moreover, the Matrox Morphis DVR-16 also enables simple graphics and text to be superimposed on the captured video.

Real-time multi-channel MPEG-4 encoding with audio

Matrox Morphis DVR-16 features a real-time multi-channel MPEG-4 encoder. MPEG-4 is the ISO/IEC standard developed by MPEG (Moving Picture Experts Group), which provides an optimal compression ratio without compromising quality, ideal for the transmission of video over a medium with restricted bandwidth or for maximizing video storage. The real-time multi-channel MPEG-4 encoder supports 16 CIF⁴ or four full D1⁵ video streams at once. Parameters such as frame rate, resolution, or bit rate can be changed on-the-fly and on a per channel basis without stopping and restarting the encoding. Up to 16 mono audio inputs can also be encoded with the video with a sampling rate of 8KHz or 16KHz.

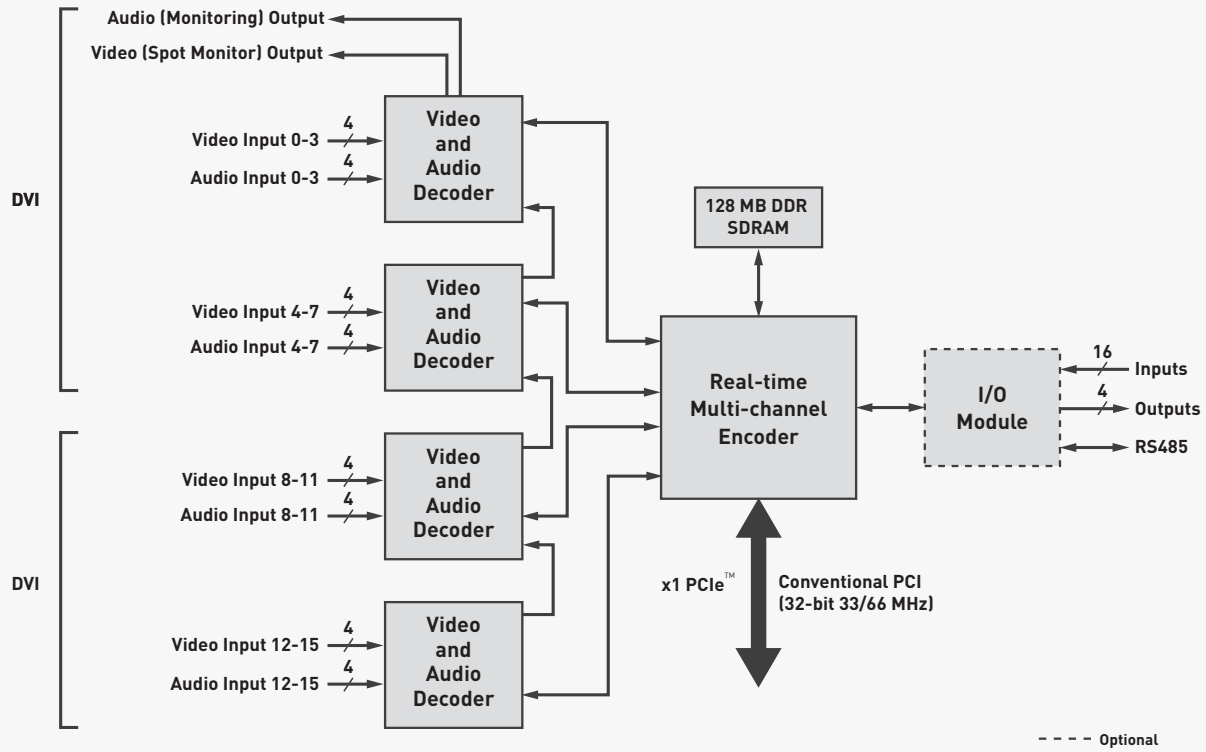
Accessory functionality

In addition to the core video capture and compression functionality, Matrox Morphis DVR-16 incorporates a variety of features to simplify overall integration. These features include a watchdog timer for automatically recovering from application or system failure, auxiliary I/Os that eliminate the need for a third-party I/O board and RS-485 serial port to control cameras with motorized pan, tilt and zoom (PTZ). Also included is an analog spot monitor output to view video inputs individually or as a mosaic, or for the playback of a MPEG-4 stream. Moreover, the Morphis DVR-16 features an analog audio output to monitor any one audio input or for the playback of a MPEG-4 stream.



Preliminary

Matrox Morphis DVR-16



Preliminary

Software

Software support is available for Microsoft® Windows® XP and Linux^{2,3}, and consists of Matrox Imaging Library (MIL)/ActiveMIL or MIL-Lite/ActiveMIL-Lite development toolkits for creating custom applications. MPEG-4 playback is performed through third-party video players.

Third-party A/V playback



MPEG-4 playback is performed through third-party video players.

Specifications

Video capture

- analog composite (CVBS) NTSC/PAL/RS-170/CCIR
- connect and simultaneously capture from up to 16 independent video sources
- Motion, blind, night and video loss detection and event generation
- 64-color graphics/text overlay supporting video blanking

Compression

- MPEG-4 compression
- handles monochrome and color (YUV422) video
- programmable resolution and frame rate
- bit rate control
 - constant
 - variable with maximum rate
 - variable with minimum quality factor
- programmable GOP (Group of Picture)
- real-time performance including four D1 (720 x 480/576) or 16 CIF (352 x 240/288) video streams simultaneously
- interlaced encoding (D1 only)
- mono audio with a sampling rate of 8 kHz or 16 kHz and added to the MPEG-4 stream¹
- MPEG-4 stream compatible with Xvid⁶ codec

A/V output

- analog composite video (spot monitor) output
 - any one video input
 - mosaic of any four or all sixteen video inputs
 - playback of a MPEG-4 stream
- analog audio output
 - monitor any one audio input
 - playback of a MPEG-4 stream

Host interface

- 32-bit 33/66 MHz conventional PCI or x1 PCIe™ host interface
- interrupts for start and end of frame and sequence capture
- digital video (spot monitor) output (over PCI/PCIe™)
 - any one video input
 - mosaic of any four or all sixteen video inputs
 - YUV422 pixel format

Connectors

- Two DVI for composite video input signals, for spot monitor output, and for audio inputs and output
- HD-44 for I/Os and RS-485

Dimensions and environmental information

- MORDVR(16)(E)*: 16.76 cm L x 11.18 cm H (6.6" x 4.4")⁷
- MORDVRIO*: 3.81 cm L x 9.40 cm H (1.5" x 3.7")⁷
- operating temperature: 0° C to 55° C (32° F to 131° F)
- relative humidity: up to 95% (non-condensing)
- FCC class B pending
- CE class B pending
- RoHS-compliant

Software Environment

- host driver for Microsoft® Windows® XP and Linux^{2,3}
- programmed under Microsoft® Windows® using MIL/MIL-Lite ('C' DLLs) with Microsoft® Visual C++® (.NET 2003)
- programmed under Microsoft® Windows® using ActiveMIL/ActiveMIL-Lite (ActiveX controls) with Microsoft® Visual Basic® .NET 2003 or C++® .NET 2003
- programmed under Linux using MIL/MIL-Lite with GNU Compiler Collection (GCC)^{2,3}

Ordering Information

Hardware

Part number	Description
MORDVR16*	Standard analog color/monochrome PCI frame grabber for 16 video inputs and integrated MPEG-4 video encoder.
MORDVR16E*	Standard analog color/monochrome PCIe™ frame grabber for 16 video inputs and integrated MPEG-4 video encoder.
MORDVRIO*	Add-on module for 20 I/Os and RS-485.

Ordered separately:

Software

Part number	Description
MIL LITE 8 WIN	MIL-Lite board control library for Microsoft® Windows® XP (see MIL-Lite brochure for more details).
MIL 8 WIN P or U	Matrox Imaging Library (MIL) for Microsoft® Windows® XP (see MIL brochure for more details).
MIL LITE 8 LNX ^{2,3}	MIL-Lite board control library for Linux (see MIL-Lite brochure for more details).
MIL 8 LNX U ^{2,3}	Matrox Imaging Library (MIL) for Linux (see MIL brochure for more details).

Notes:

1. Only available as part of the MPEG-4 stream.
2. Contact local representative or Matrox Imaging Sales for availability.
3. Contact local representative or Matrox Imaging Sales for supported distribution.
4. Common Intermediate Format (CIF) or 352 x 240 resolution in NTSC and 352 x 288 resolution in PAL.
5. 720 x 480 resolution in NTSC and 720 x 576 resolution in PAL.
6. Available at www.xvid.org
7. Dimension from bottom edge of goldfinger to top edge of board.

Preliminary

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