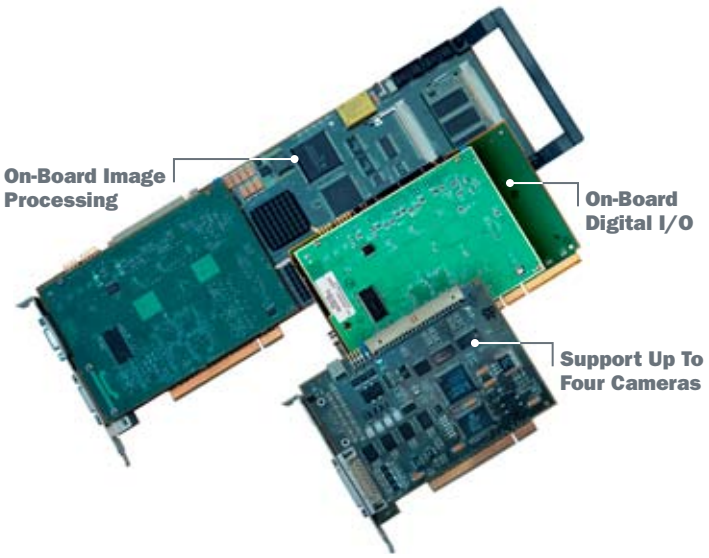
VISIONSCAPE® BOARDS



Scalable PC-Based Machine Vision

Visionscape Boards comprise a scalable line of high performance vision processors and cost-effective frame grabbers. The full product line features the same software environment, as well as an extensive set of intelligent tools. With Visionscape boards, manufacturers can easily address high speed applications requiring multiple cameras or extensive vision processing.

Visionscape Boards: At a Glance

- *Scalable Line of Vision Processors and Frame Grabbers*
- *High Speed, High Resolution Image Processing*
- *Supports Variety of Analog or Digital Cameras*
- *Integrated Digital I/O*

Frame Grabbers: 0XXX

Images captured by analog (interlaced or progressive scan) or digital cameras and processed on host PC CPU

Vision Processors: 4XXX

Images captured by analog cameras and processed on-board (host PC CPU is completely off loaded)

For more information on this product, visit www.microscan.com.

Visionscape Boards: Capabilites

- Barcode and symbol decoding
- Optical Character Recognition
- Image rotation and warping
- Edge enhancement
- Blob analysis
- Object location and orientation
- Optical Character Verification
- Template and pattern recognition
- Calibrated dimensional measurements
- Ball Grid Array inspection
- User-defined expressions and math

Performance and Flexibility

Visionscape boards are designed for extremely fast applications that require multiple camera or high performance image processing. Whether as a standalone or integrated system, installing one or more boards in an industrial PC provides both flexibility and extensibility.

Frame Grabbers

Frame grabbers are used to capture images from a variety of machine vision cameras into the host PC memory. These boards offer on-board dedicated digital I/O for triggering, strobe control and general purpose I/O.

Vision Processors

Vision processors are complete high performance vision systems in a single PCI slot. They feature an on-board CPU, vision acceleration ASIC, memory, and on-board video output; completely off-loading all vision processing operations from the host PC CPU.

Camera Support

Visionscape boards support a variety of analog or digital cameras, as well as special camera features and complex multi-camera applications.

Powerful Software

A powerful software environment ships with all Visionscape boards for fast application development and deployment. Easy set-up and monitoring is enabled without any conventional programming.

Application Examples

Used in all industries where machine vision is applied:

- Automotive
- Packaging inspection in pharmaceutical, food and beverage, and other industries
- Electronics
- Semiconductor packaging (backend production)
- Medical device inspection
- General manufacturing assembly and inspection

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VISIONSCAPE® BOARDS SPECIFICATIONS AND OPTIONS

FRAME GRABBER 0300	FRAME GRABBER 0740	FRAME GRABBER 0800
DESIGN: PCI 2.2-compatible bus board, 5 V, occupies one half-length slot; 5.5 x 4.2" (140 x 107 mm)		**DESIGN:** Universal PCI 2.3-compatible bus board, occupies one half-length slot; 6.6 x 4.2" (168 x 107 mm)
VIDEO INPUT: 4 multiplexed channels; exclusively interlaced cameras with RS-170 or CCIR standard resolution; external camera synchronization	**VIDEO INPUT:** 4 independent channels; simultaneous, asynchronous imaging on all 4 channels; interlaced or progressive scan analog cameras; progressive scan with image sizes up to 2K x 2K; supports shutter, frame-reset, partial-scan cameras as well as double-speed and multiple-speed cameras; supports simultaneous capture by different types of camera on one board; external camera synchronization	**VIDEO INPUT:** 1 CameraLink Base Level channel as standard; high-resolution area scan; line-scan (up to 16K pixels/line); TDI cameras (time delay and integration); 32 MB SDRAM FIFO buffer; 1 tap 8 to 24 bit/pixel or 2 taps 8 to 12 bit/pixel (configurable, taps can be overlapping or consecutive); pixels can be scaled down to 8 places; 20 to 85 MHz pixel cycle
ENCODER INTERFACE: N/A	**ENCODER INTERFACE:** N/A	**ENCODER INTERFACE:** Selection of 3 RS-422 or TTL inputs on the encoder connection or 4 TTL inputs for 24 V sensor inputs; 2 phases for 1x, 2x, 4x spacing plus index input with direction sensing ; 8 bit distributor
VIDEO CONTROL: 4 H_{sync} ; 4 V_{sync} ; 4 injection/blocking (for simultaneous exposure)	**VIDEO CONTROL:** 4 H_{sync} ; 4 V_{sync} ; 4 inputs or outputs for camera control	**VIDEO CONTROL:** 4 LVDS control outputs; Serial LVDS communication; Asynchronous reset, lighting control (PRIN) & ROI capture; Multiple triggering modes

VISION PROCESSOR 4300	VISION PROCESSOR 4740
DESIGN: PCI 2.2-compatible bus board, 5 V, occupies one full-length slot; 12.3 x 4.2" (312 x 107 mm)	
ON-BOARD CPU: High-performance 64-bit MIPS RISC CPU; Real-time multi-tasking VxWorks operating system	
ON-BOARD ASIC: Vision Acceleration ASIC; accelerates all low-level image-processing and analysis functions	
ON-BOARD MEMORY: 128 MB CPU program/data memory, expandable to 384 MB (144-pin PC100 SDRAM SODIMM configuration); 32 MB SDRAM image memory; 32 MB SDRAM VGA display memory	
VIDEO INPUT: Flexible, chained bus-master DMA; DMA to on-board CPU memory, image memory, host PC or video memory; 4 multiplexed channels; exclusively interlaced cameras with RS-170 or CCIR standard resolution; external camera synchronization	**VIDEO INPUT:** Flexible, chained bus-master DMA; DMA to on-board CPU memory, image memory, host PC or video memory; 4 independent channels; simultaneous, asynchronous imaging on all 4 channels; interlaced or progressive scan analog cameras; progressive scan with image sizes up to 2K x 2K; supports shutter, frame-reset, partial-scan cameras as well as double-speed and multiple-speed cameras; supports simultaneous capture by different types of camera on one board; external camera synchronization
VIDEO CONTROL: 4 H_{sync} ; 4 V_{sync} ; 4 injection/blocking (for simultaneous exposure)	**VIDEO CONTROL:** 4 H_{sync} ; 4 V_{sync} ; 4 inputs or outputs for camera control

DIGITAL I/O
- 4 sensor inputs with application-specific reference-voltage thresholds; input range from 5 to 24 V
- 4 flash outputs
- 16 programmable, bidirectional I/O
- Standard 50-pin I/O plug connector for connecting 1 of 2 optional I/O accessory boards
- PC-internal board with 10 I/O for up to 2 cameras
- External I/O board with 16 slots for up to 4 cameras

ANALOG OUTPUT
- Serial 12C bus on board
- 8 analog channels through external I/O board

ENVIRONMENTAL
Operating Temperature: 0° to 50°C (32° to 122°F)
Humidity: 10% to 90% (non-condensing)

SAFETY CERTIFICATIONS
FCC, UL/cUL, CE, CB

ISO CERTIFICATION
Issued by Det Norske Veritas
Cert No. 8446-2007-AQ-USA-ANAB

Warranty–One year limited warranty on parts and labor. Extended warranty available.

MICROSCAN®

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