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Find the *Barco Folsom ImagePRO* at our website: ***Click HERE***

Image PRO-HD™

Advanced multi-format processor



Convert any video format to any other video format

4:3 to 16:9	NTSC to HDSDI
NTSC to PAL	HDSDI to PAL
HDSDI to SDI	PAL to SDI
UXGA to NTSC	SDI to VGA
HDSDI to NTSC	NTSC to VGA

Applications

- Downconverter
- Upconverter
- Seamless switcher
- Frame synchronizer
- SDTV to HDTV Scaler
- Multi-format synchronizer
- Signal processor
- LED wall processing
- 24 frame per second playback
- Tiled display
- Transcoder
- Scaler
- NTSC/PAL decoder
- NTSC/PAL encoder

The Folsom ImagePRO™ is a powerful all-in-one signal processor that accepts a wide range of video input signals and process them into a number of different signal formats to meet the video requirements of virtually any application.

Incorporating Athena™, Folsom's proprietary image processing technology, the ImagePRO is a high performance video scaler, scan converter, switcher and transcoder in one. The ImagePRO is the ideal solution for converting RGB, HDTV, component, s-video, composite (NTSC, PAL and SECAM), DVI, SDI and HD/SDI into a user selectable video format. ImagePRO supports a wide variety of analog and digital output formats including broadcast and VESA standards along with many native plasma formats. ImagePRO users may also create custom output formats to support unique display requirements.

The ImagePRO-HD has an advantaged feature set that includes: universal inputs, aspect ratio conversion, memory presets, test patterns, vertical lock (Genlock), picture adjustments, motion adaptive de-interlacing, and 3:2 and 2:2 pulldown detection to name a few.

BARCO

Visibly yours

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Technology Brief

Athena™ scaler
Athena™ is a proprietary, high performance image processing technology, providing the highest possible image quality while minimizing processing delays. The architecture supports 1:1 video sampling and processes video at 10-bits per color channel to maintain image fidelity. Proprietary horizontal and vertical filtering techniques are used to provide crisp, clean images to support both upconversion and downconversion operations. The Athena™ scaler also supports special functions such as continuous real-time pan and zoom operations, a wide variety of frame locking options (to eliminate motion artifacts) and adjustable filtering modes.

Motion adaptive de-interlacing
Our motion adaptive de-Interlacing technology optimizes image quality when interlaced images (such as standard NTSC and PAL images) are processed. Image content is analyzed over multiple input fields and filter coefficients are dynamically changed to provide crisp, clean output images without de-interlacing artifacts.

3:2 and 2:2 Pull-down detection
ImagePRO automatically detects whether NTSC or PAL input source material is derived from film or standard video components such as cameras. When film-based source material is detected, a 3:2 pull-down algorithm is activated for NTSC inputs. Similarly, a 2:2 pull-down algorithm is activated if film-based material is input in PAL format. The 3:2 and 2:2 pull-down algorithms insure that frame integrity is maintained during intermediate image processing stages to prevent artifacts and preserve image detail and sharpness.

Aspect ratio conversion and control
Wide-screen formats are becoming increasingly popular. It is often necessary to convert video between formats with different inherent aspect ratios. For example, wide-screen material shot in 16:9 format is often converted for display on a standard television screen with a 4:3 aspect ratio. ImagePRO supports conversion between image formats in all common aspect ratios. In addition, user control of custom aspect ratios is provided.

Pan and zoom
ImagePRO supports flexible pan and zoom operations. The Pan and Zoom controls can be used to see very fine detail in an area of interest of the input image or to compress an input image to form a very small output window.

Genlock/Vertical lock
True blackburst genlock capability with SCH-phase adjustment is provided for the broadcast quality NTSC and PAL output. All output formats including HDTV, may be vertically locked to the blackburst signal. HV Lock capability is provided to allow the output to be locked to externally applied high resolution sync signals. When a non-broadcast output is selected, the Vertical Lock feature can be enabled to lock the output frame rate to the input frame rate or an externally supplied vertical sync. Vertical locking eliminates frame rate conversion problems that would otherwise result in motion artifacts or allows multiple units to have their outputs timed together.

Memory presets
ImagePRO has 64 independent memory presets. The memories save sizing, centering, detail, contrast, and brightness information.

Enhanced digital processing
10-bit processing provides improved signal-to-noise ratio and preserves dynamic range to improve image fidelity. This is especially apparent in dark regions and areas of smooth, slightly varying tonal values.

Standard Features

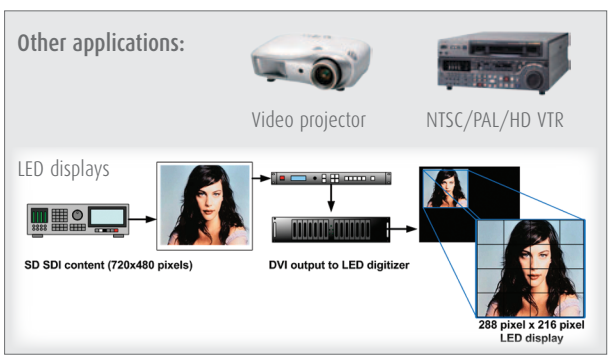
- DVI-I input with loop-through
- HDSDI input
- Three universal inputs accept RGBHV/RGBS/RGsB computer video, component video (SD or HDTV), s-video, or composite video with loop-through
- Outputs: 2x RGB or component video, composite video, s-video, DVI-D, HDSDI
- User-defined aspect ratio conversion and adjustments
- Pan and zoom
- Freeze
- 10-bit processing
- Motion Adaptive and Field to Frame de-interlacing modes
- 3:2 pulldown detection for NTSC and 2:2 film detection for PAL video sources
- Decodes NTSC, PAL and SECAM
- Ethernet for real-time control
- Encodes NTSC and PAL
- Genlock, H/V Lock and VLock
- Executive mode: protects system configuration settings during use
- 64 independent memory presets
- Backed by three-year warranty

Applications


NTSC/PAL Monitor


VGA/XVGA

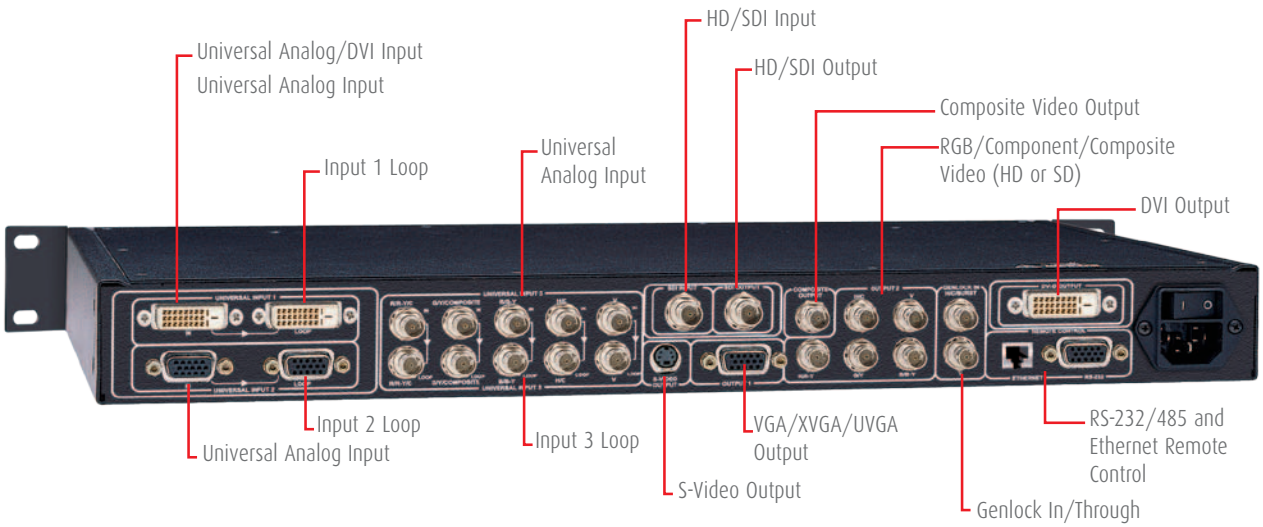

Widescreen/HD



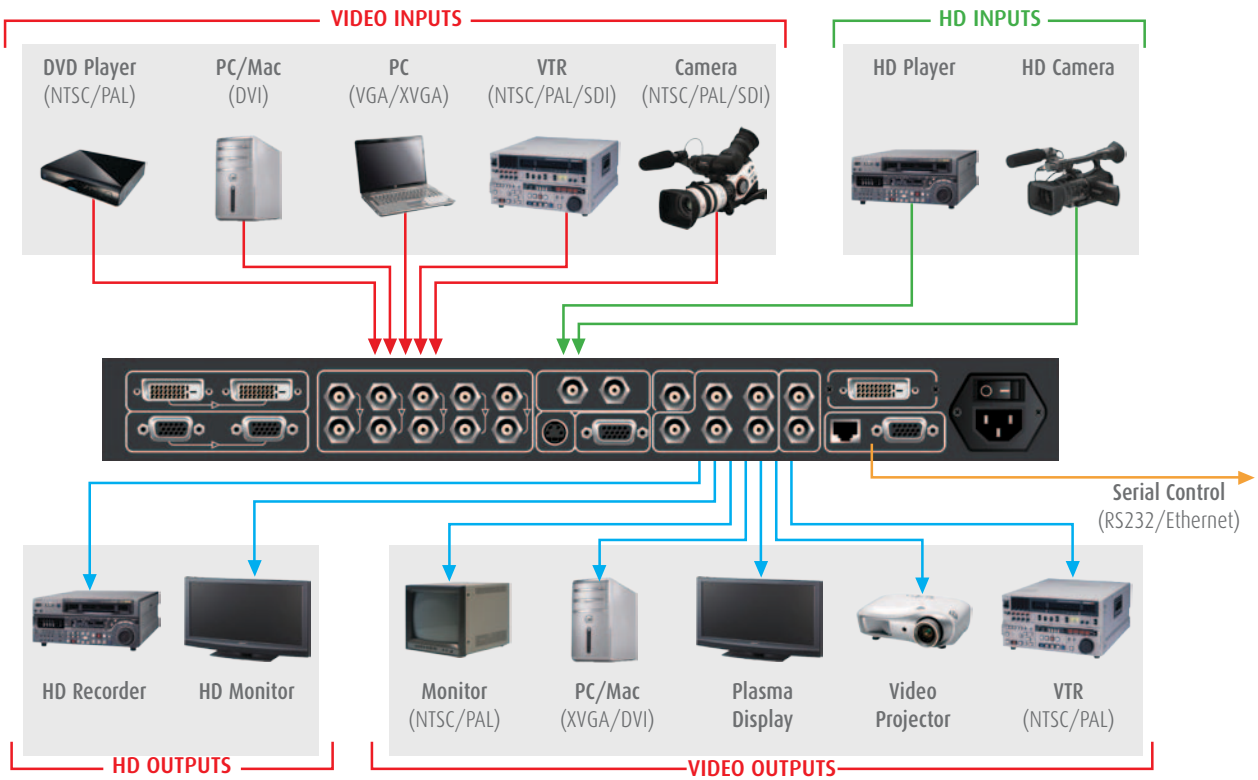
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The must have for your video toolbox





ImagePRO-HD connectivity diagram



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Specifications

INPUTS	
Universal analog input types	3x high bandwidth video channels support RGBHV/RGBS/RGsB computer video, component video (SD or HDTV), S-video, or composite video
Universal analog input connectors	Input 1 on a DVI-I connector, Input 2 a HD-15 connector and Input 3 on a five BNC connectors. All inputs are with buffered loop-throughs
Digital serial video input (SDI)	1x SDI/HDSDI input on BNC
Digital video (DVI) input	1x input 1 on DVI-I connector supports both universal analog and DVI input with loop-through
Input resolution range	640x480 (VGA), 800x600 (SVGA), 1024x768 (XGA), 1280x1204 (SXGA), 1440x900, 1600x1200 (UXGA), 1680x1050, 1920x1200 (WUXGA), 2048x1080 (2K), HDTV 480p, 720p, 1080p, 1080i, 875 RS-343, 525 RS-170
Standard resolution video input	NTSC, PAL or SECAM
Horizontal frequency	15 kHz to 120 kHz
Vertical frequency	25 Hz to 120 Hz
Input termination	75 Ohm
Input sync	Sync-on-Video, Separate C or H/V
External sync (genlock) input	Blackburst, Computer H/V Sync or C-sync, or tri-level at HD on a BNC
OUTPUTS	
	1x RGB or component video (SD or HDTV) (HD-15 connector) 1x RGB or component video (SD or HDTV) or composite video (five BNC connectors) 1x Composite video (BNC connector) 1x S-video (4-pin mini-DIN connector) 1x SD/HD SDI 1x DVI output (DVI-D connector)
Standard resolution video output	NTSC, PAL
High resolution output supported	VGA (640x480), SVGA (800x600), XGA (1024x768), SXGA (1280x1204), UXGA (1600x1200), WUXGA (1900x1200)
	For LCD/plasma displays 1280x768, 1365x768, 1365x1024. HDTV 480p, 720p, 1080p, 1080i. 875 RS-343, 525 RS-170
	User definable video output formats supported
Sync	RGBHV, RGBS, RGsB, TTL level, polarity selectable, HDTV Tri-level sync supported
Output impedance	75 ohm
OTHER	
Remote control	Ethernet connection (with TCP/IP) or RS-232 serial port for real-time control
Dimensions	Height: 1.5"; Width: 17" (43.2 cm) or 19" (48.3 cm) with rack-mount option; Depth: 14"
Weight	9 lbs. (shipping weight: 13 lbs)
Input power	100-240 VAC, 47-63 Hz
Environmental	Temperature: 0-40° C; humidity: 0-95% noncondensing
Warranty	All video products are designed and tested to the highest quality standards and are backed by a full three-year parts and labor warranty.

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Any item contained in this datasheet may change without notice.

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