

# ImagePRO-3G

Advanced multi-format processor

Now with 3G SDI



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
DVI to 3G SDI	3G SDI to DVI

## 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
- Logo frame grab

## Same functionality, now with 3G SDI

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

Incorporating Athena™, Barco's custom-designed 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 3G 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-3G 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

## Technology brief

### Athena™ scaler

Athena™ is a high-performance image processing technology, that provides 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. Horizontal and vertical filtering techniques are used to provide crisp, clean images to support both extreme upconversion and down-conversion operations such as pre-scaling for LED applications.

### What is 3G?

The ImagePRO 3G supports the new SMPTE 424M protocol for SDI inputs and outputs. Previously, HDSDI only supported 1080i @60. 3G SDI provides for the transmission of 1080p HD signals running up to 60 fps signals over a single coaxial cable. Professional grade cable can carry these signals out to 130 meters (425 feet). By supporting progressive HD signals, the ImagePRO can reduce processing latency to only a few milliseconds.

### 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

- 3G/HD/SD SDI input with loop-through
- HDSDI input
- Three universal inputs accept RGBHV/RGBS/RGB 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, 3G/HD/SD SDI
- 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
- Built-in control compatibility with the Encore suite of products.
- 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



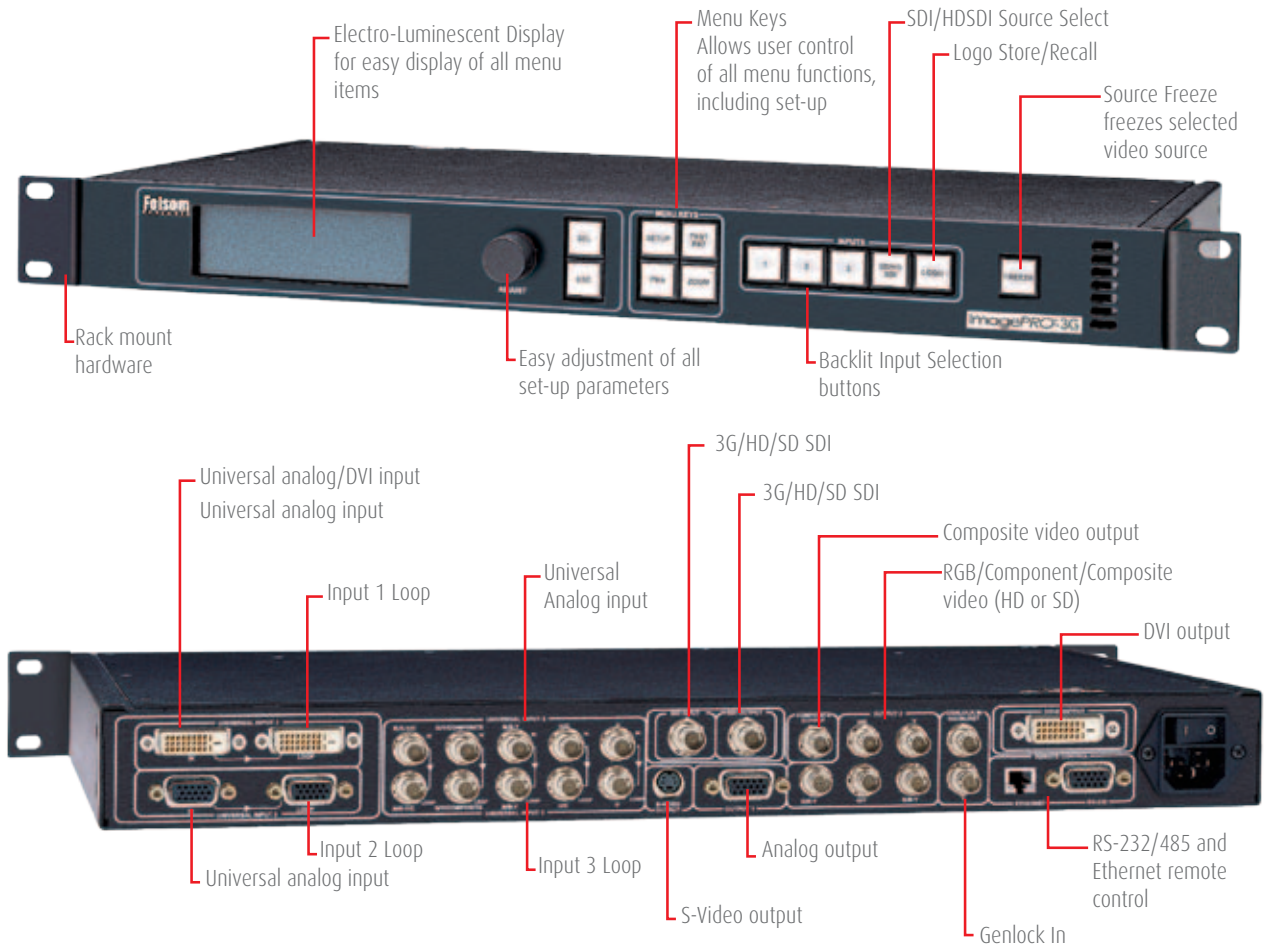
VGA/UXGA



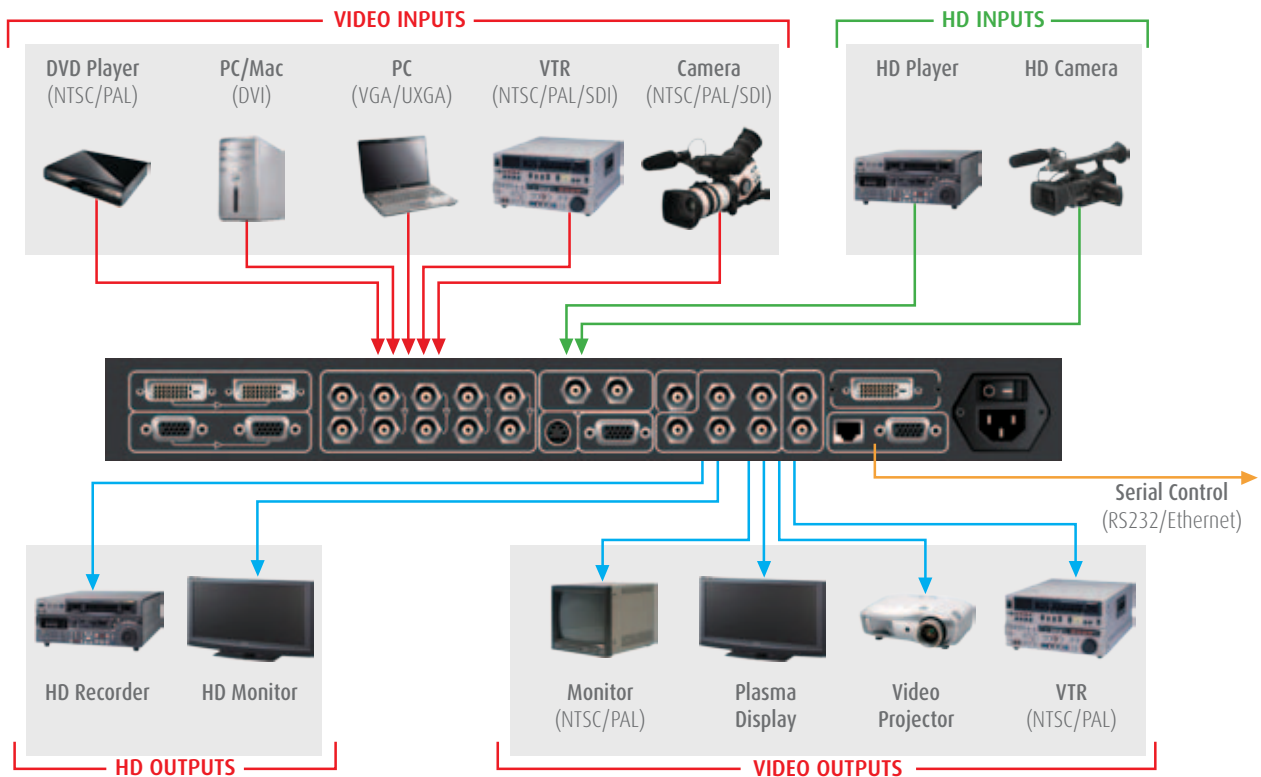
Widescreen/HD



# The ultimate video problem solver



# ImagePRO-3G connectivity diagram



# Specifications

INPUTS	
Universal analog input types	3x high bandwidth video channels support RGBHV/RGBS/RGB 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 3G/HD/SD SDI input on BNC connector.
Digital video (DVI) input	1x input 1 on DVI-I connector supports both universal analog and DVI input with loop-through
SMPTE	SMPTE 424M, 292M, 259M-C
Input definition 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 3G/HD/SD SDI 1x DVI output (DVI-D connector) 1x SMPTE 424M, 292M, 259M-C
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, RGB, 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; built-in compatibility with Encore
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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