

ScreenPRO-II™



High-Resolution Seamless Switcher

The ScreenPRO-II Seamless Switcher is a high-resolution multi-layer video display system that combines seamless switching with a variety of creative video effects. The result is a versatile video production tool for both live event staging and fixed installation applications.

To produce its array of effects, ScreenPRO-II uses five image layers: one unscaled background, two scaled inputs (for PIPs or Keys), one unscaled downstream key (DSK), plus a full-screen Logo that uses captured frame grabs as sources. With this creative palette at your fingertips, you can transition backgrounds, transition PIP (Picture-in-Picture) windows, perform wipes, dissolves and keys, fly PIPs and Keys on and off screen, and so much more.

The system's flexibility is remarkable — using the mixer's two scaled inputs, you can mix within a PIP, or display two independent PIPs (or Keys) over a background. In addition, two unscaled high-resolution inputs enable you to transition seamlessly between backgrounds, or use a background plus a high-resolution DSK.

With ScreenPRO-II, the term "seamless" goes far beyond the system's ability to create clean, glitch-free switches between inputs. With a typical single-format switcher (such as an all-SDI system), "seamless" is easy — because input timing is uniform. However, when multi-format and multi-resolution sources are connected simultaneously, the clean switching challenge arises, and that is precisely where ScreenPRO-II shines.

Whether it's RGB, composite, component, SD-SDI, HD-SDI, or computer resolutions up to UXGA, ScreenPRO-II's twin Athena scalars enable you to seamlessly cut, wipe, dissolve and move — without restriction.

BARCO

Visibly yours

Features

Superior video processing

- Support for input and output resolutions up to UXGA, including all HD resolutions up to 2048x1080p
- 10-bit processing, with 1:1 pixel sampling
- Motion adaptive de-interlacing (SD & HD)
- 3:2 and 2:2 pull down detection
- Image cropping and aspect ratio correction

Models / Internal Routers

- Basic model includes internal 8 x 2 analog video router (for selecting scaler inputs), plus two DVI-D inputs for unscaled backgrounds and DSK
- HD model includes basic components (as above), plus internal 2 x 2 HD-SDI/SD-SDI router

System capabilities

- Athena proprietary high-performance scaling
- Multiple output synchronization modes: free-run or vertically locked to NTSC/PAL black burst, CSync or HD tri-level sync
- 3RU rack-mount chassis
- Low video delay — less than 3 input fields (60ms @ 50Hz, 50ms @ 60Hz)

Channel capabilities

- Two independent PIP windows (scaled), or 1 PIP with seamless transitions within
- Two unscaled high resolution background channels provide video underneath PIPs and Keys. Dissolve or cut between background channels.
- One unscaled high resolution DSK channel, independent of the PIP/Key processing channels

PIP effects

- Full range of transitions, such as cuts, wipes and dissolves
- Smooth PIP moves, on and off screen, with keyframe-controlled sizing and positioning
- Adjustable PIP aspect ratio
- Adjustable PIP borders, including drop shadows and soft edge

Keying effects

- Luminance keys
- Invert keys (key source luminance video inverted)
- Color keys (using absolute luminance values of Red Green and Blue)

Advanced features

- Switchable basic and advanced operating modes
- Programmable mattes
- Dynamically re-assignable mixer layers: In Mix mode, a mixer's two layers are tied together. In Split mode, the two layers are independent.
- Three internal frame stores are standard, in which you can store three frame grabs. With the optional Enhanced Output Card (EOC) installed, you can store 100 frames. Frame grabs can be used as backgrounds, DSK sources and Logos.
- Z-order control for assigning overlay priorities to PIPs or Keys. Complete lookahead preview

Multi-screen Flexibility

Using the optional **ScreenPRO-II Controller**, users can simultaneously (or individually) control up to four ScreenPRO-II switchers from a compact and versatile control surface. With easy setup and intuitive operations, the ScreenPRO-II Controller enhances PIP and KEY placement, source switching, and overall layer control.

The ScreenPRO-II Controller also includes many features not available on the individual ScreenPRO-II units, including 36 presets, a 3-axis Joystick for easy PIP placement, key "cut and fill" mode, and a T-Bar for smooth manual transitions. In addition, a tally option is available for triggering up to eight tallies on cameras (or other devices), and the option also includes a keyboard input for labeling frame grabs.

As the perfect companion to the ScreenPRO-II Controller, **BlendPRO-II** adds blending capability for up to four ScreenPRO-II seamless switchers. This system enables you to create widescreen blends across two, three, or four projectors — complete with data doubling (for the overlapped regions) as well as edge-feathering. The amount of data overlap and edge-feathering are user-programmable via the ScreenPRO-II Controller.

Using the **Encore Presentation System**, one or more standalone ScreenPRO-II units can be controlled as unique "destinations" within Encore's dynamic event control environment. Two different Encore controllers are available:

- The compact model SC supports 24 inputs, up to 6 destinations, and stores up to 64 presets.
- The flagship model LC supports 64 inputs, up to 32 destinations, and stores up to 900 presets.

Both Encore Controller models support most ScreenPRO-II functions, and include a 3-axis Joystick and a T-Bar for manual transitions.



ScreenPRO-II Controller

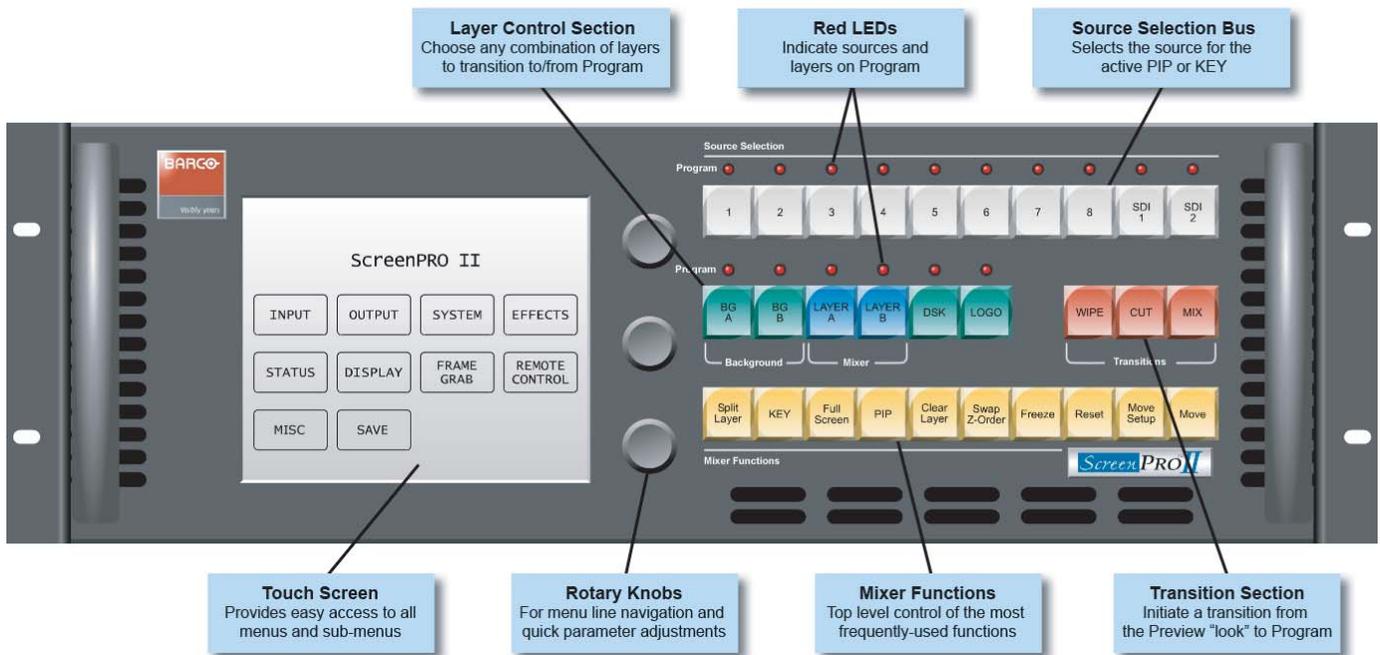


BlendPRO-II

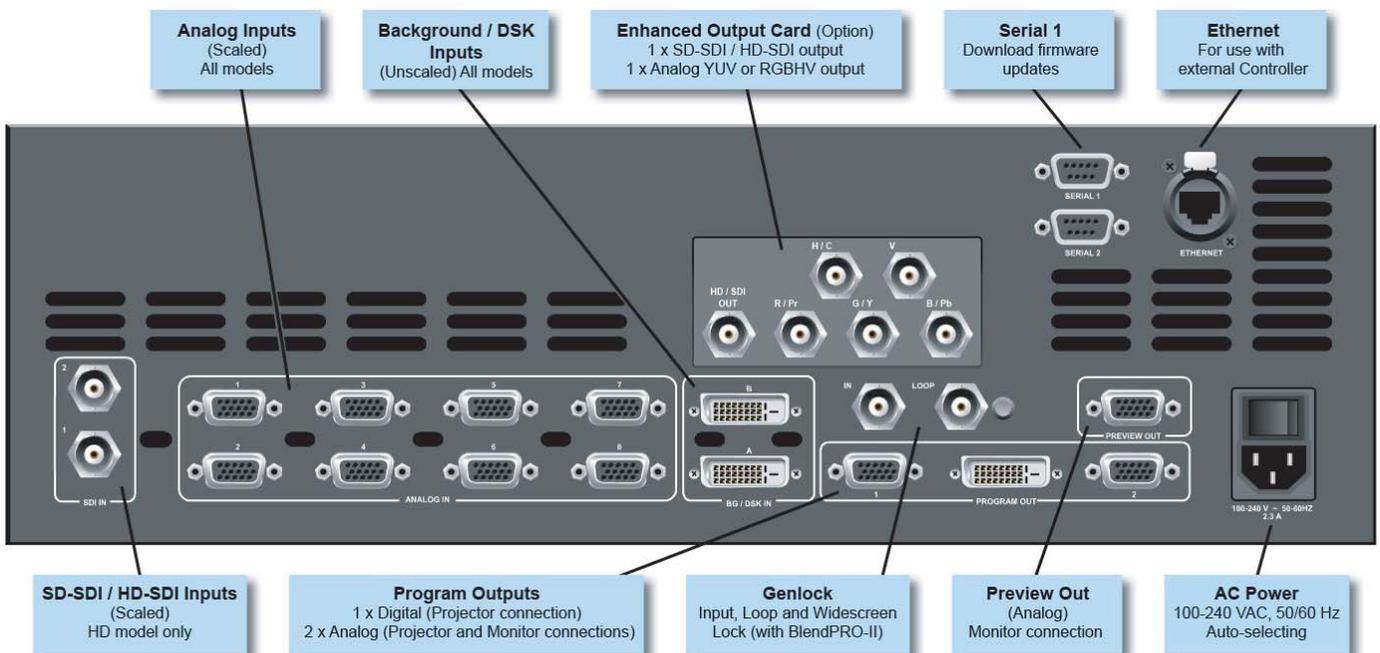


The Encore System Controller SC

ScreenPRO-II Front Panel

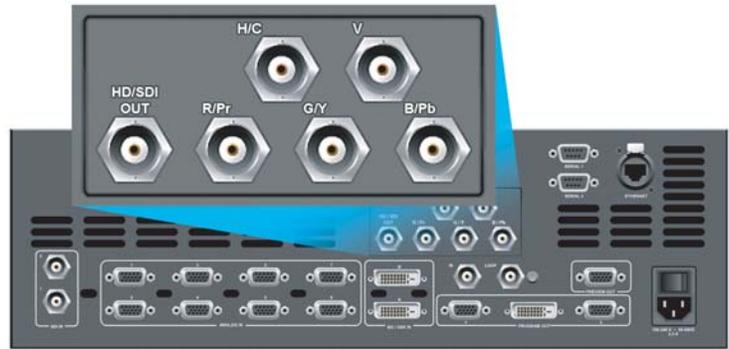


ScreenPRO-II Rear Panel



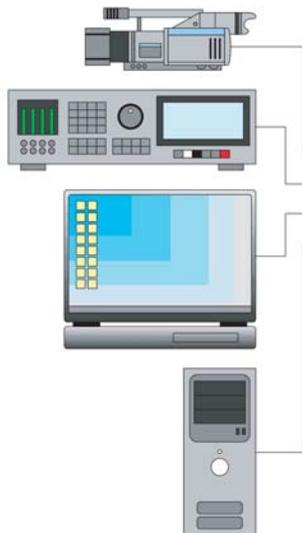
Enhanced Output Card

The **Enhanced Output Card (EOC)** is a factory-installed option that provides additional video outputs at the same (or different) resolutions than the system's main Program and Preview outputs. These outputs can be used as record feeds, for remote monitoring, or even as the main projector feed. The option also expands ScreenPRO-II's frame grab capabilities up to 100 frames

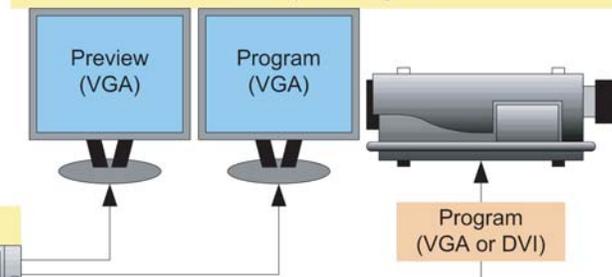


Flexible Input Configuration

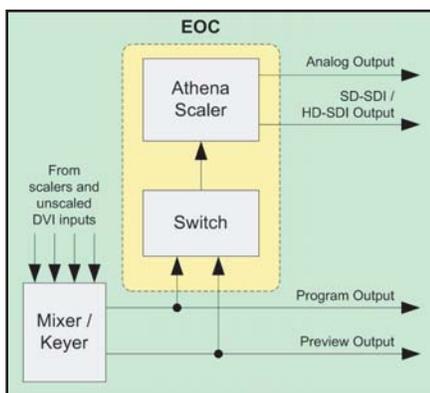
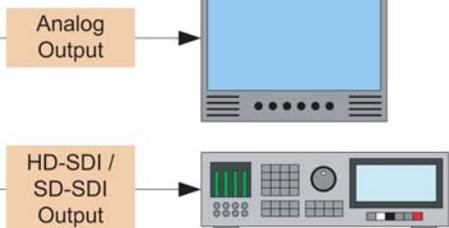
- Up to 8 x Analog
- Up to 2 x SD-SDI / HD-SDI
- Up to 2 x DVI



Standard Output Configuration



Optional EOC Output Configuration



The EOC, which employs a separate Athena scaler for the optimum in image quality, derives its inputs from either the main ScreenPRO-II Program or Preview output. On the EOC connector panel, one BNC is provided for the HD/SDI output, and five BNCs are provided for analog output. Both outputs are active simultaneously — depending on the selected output resolution (see the **Specifications** page for a complete list).

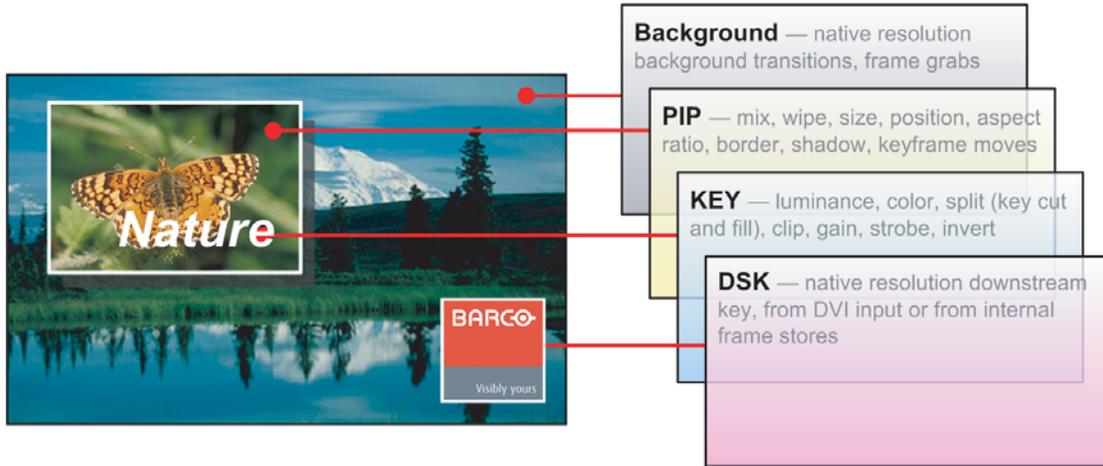
The EOC option operates in two different modes:

- In the **primary output mode**, the EOC outputs the selected format at the same resolution as the main Program and Preview outputs, with no delay.
- In the **auxiliary mode**, the EOC outputs a different resolution than the main outputs, with a frame of delay.

Creating effects with ScreenPRO-II

With ScreenPRO-II, creating effects for live events and presentations is easy and intuitive — using the following “layered” building blocks:

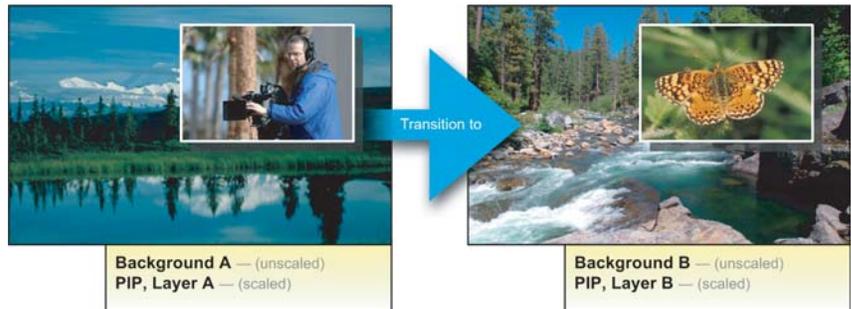
- **Two unscaled transitioning backgrounds**, at the native resolution of your projector. These backgrounds also provide your frame grab sources.
- Two scaled layers, assigned as either **PIPs**, **Keys**, or one of each. With PIPs, you control the size, position, aspect ratio, border, shadow and more. With Keys, you control the clip, gain, mode (luminance, color, or split), and special effects such as strobe and invert.
- A **DSK**, at the native resolution of your projector. Use a DVI input as the key source, or use a frame grab from the system’s internal frame stores.



Examples of ScreenPRO-II’s creative transition capabilities

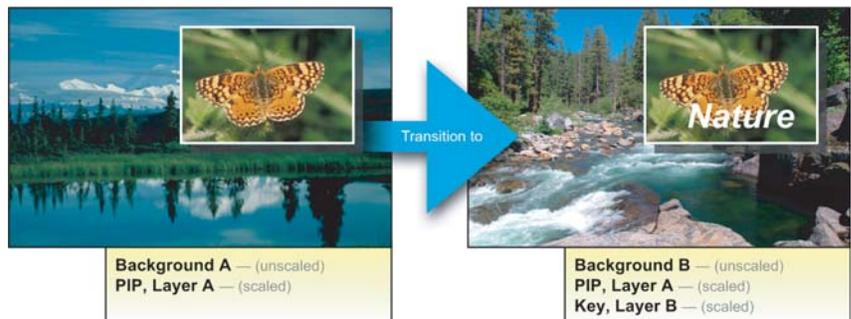
Transitioning inside a PIP

Background A and Layer A (with source 1 inside) transitions to Background B and Layer B (with source 2 inside). Both PIPs are perfectly co-located.



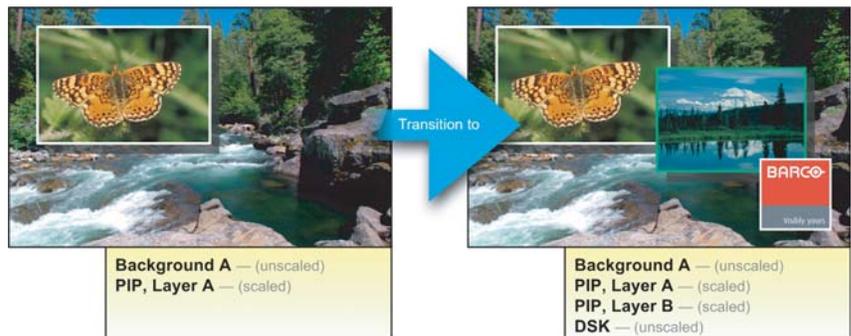
Transitioning Keys and Backgrounds

Background A and Layer A transitions to Background B and Layer A (plus a new key from Layer B).



Transitioning a PIP and the DSK

Background A and Layer A transitions to Background A and Layer A (plus a new Layer B PIP and the DSK).



ScreenPRO-II Specifications

INPUTS

Input Types	<ul style="list-style-type: none">• Analog inputs (8 each): RGBHV/RGBS/RGSB computer video, YPbPr video (SD or HD), S-video, or Composite video on HD-15 connectors• (Optional) SD-SDI and HD-SDI input (2 each): per SMPTE 259M-C (NTSC/PAL resolution) SMPTE 292M (HDTV) on BNC connector
Input Resolutions	<ul style="list-style-type: none">• NTSC/PAL• Computer Resolutions: VGA (640x480) through UXGA (1600x1200), 1900x1200• HDTV Resolutions: up to 1920x1080 (720p, 1080i, 1080p)• 2048x1080p (Digital cinema format)
Frame Lock Input	NTSC/PAL black burst, CSync or HD tri-level sync

UNSCALED BACKGROUND / DSK CHANNEL INPUT

Un-Scaled Background/DSK Channel Inputs	<ul style="list-style-type: none">• DVI inputs (2 each): Digital DVI per DDWG 1.0 on DVI-I connector
Background/DSK Input Resolutions	<ul style="list-style-type: none">• Computer Resolutions: VGA (640x480) through UXGA (1600x1200)• HDTV Resolutions: progressive up to 1920x1080 (1080p), RGB colorspace• 2048x1080p (Digital cinema format)• Plasma Display Resolutions

OUTPUTS

Analog Outputs	RGBHV/RGBS/RGSB (non-interlaced) on HD-15 connectors (Preview and two Program monitor/projector outputs)
Digital Output	Digital DVI per DDWG 1.0 on DVI-I connector (one Program output)
Output Resolutions	<ul style="list-style-type: none">• Computer Resolutions: VGA (640x480) through UXGA (1600x1200)• HDTV Resolutions: progressive up to 1920x1080 (1080p), RGB colorspace• 2048x1080p (Digital cinema format)• Plasma Display Resolutions
EOC Output Resolutions (optional)	<ul style="list-style-type: none">• NTSC (480i), PAL (576i)• 800x600, 1024x768, 1280x1024, 1600x1200• 1280x720p @25, 29.94, 30• 1920x1080i @50, 59.94, 60• 1920x1080p @25, 29.94, 30

USER CONTROL

Front Panel Control	Intuitive front panel user interface incorporates lighted push buttons and LCD touchscreen. Control functions common with the Encore Presentation System.
Remote Control	The unit may be controlled from a computer or external controller via LAN or an RS-232 serial link
Control functions include:	<ul style="list-style-type: none">• Source input configuration• Output format selection• Test pattern selection• Video source selection for PIPs or Keys• Transition effect selection and control• Video effect selection (PIP size/position, Keying, Borders, etc.)

PHYSICAL / ELECTRICAL

Mechanical	<ul style="list-style-type: none">• 3 RU rackmount chassis• H: 5.25 inches (13.34 cm), W: 17.00 inches (43.18 cm), D: 15.00 inches (38.10 cm)• Weight: 22 lbs (9.98 kg)
Power	<ul style="list-style-type: none">• 100-240 VAC - 50/60 Hz, auto-selecting, 1.0A maximum