



# BrightEye

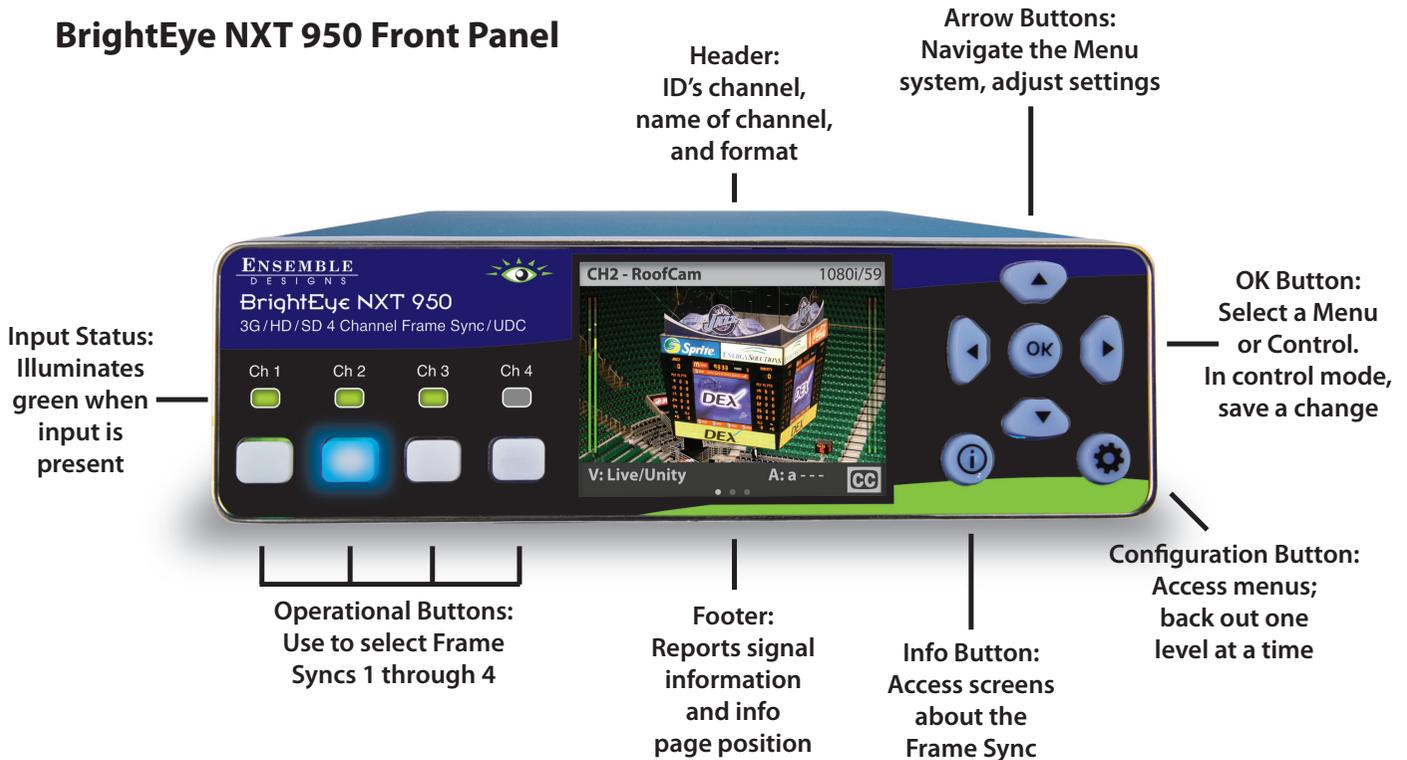
## NXT Frame Synchronizers

### 900 Series Quick Start Guide



- Four independent frame syncs per unit
- Video Proc Amp and Color Correction
- Web Interface with Video Proxies
- Audio Channel Swap and Level Adjust
- Optional SFPs for Fiber I/O
- Monitor Pre- and Post-Processed Signals
- HDMI and HDCP Support
- Automatic Format and Frame Rate Conversion
- Front Panel Live Monitor
- Supports SD to 4K, and Everything In-between

## BrightEye NXT 950 Front Panel



## Front Panel Navigation



Press  to bring up the configuration menus on the front panel screen.

Use the  arrows to scroll through the configuration menus, navigate submenus, or to change the values of a selected setting.

Press  or  to drop down successive levels within a menu.

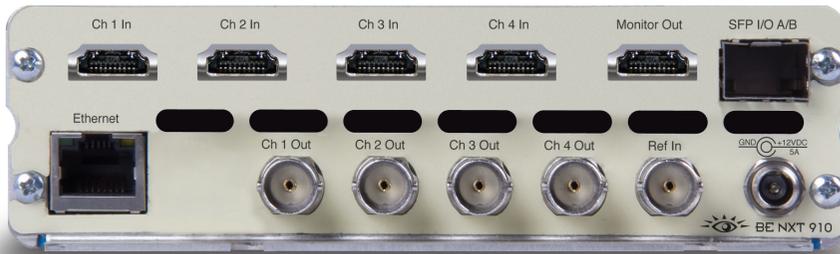
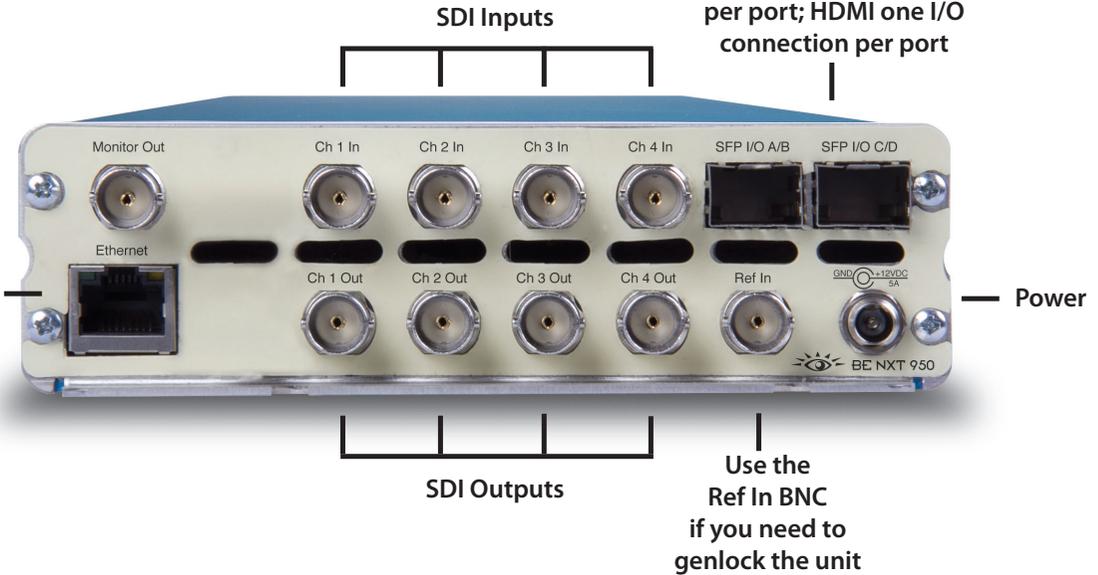
Press  or  to come back up one menu level.

Pressing any operational button—any button to the left of the screen—will take you immediately from configuration mode to the unit's operational mode.

After approximately 30 seconds of inactivity of the configuration controls, the Frame Sync's screen will time out and revert to operational mode.

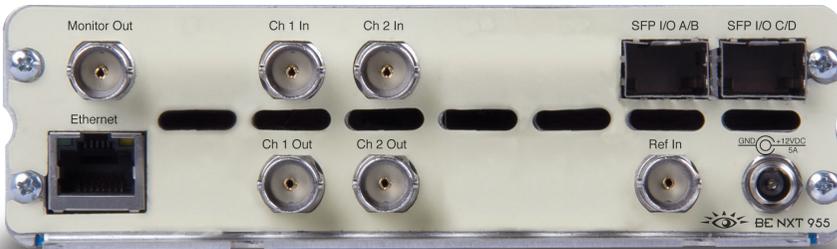
## BrightEye NXT 950 Rear Connectors

**Control Network Ethernet Port**  
For operational control and setup of the Frame Sync from any browser-enabled device



### BrightEye NXT 910 4 Channel HDMI/SDI Frame Sync with HDCP

For seamless support of HDMI sources, the NXT 910 provides HDMI inputs and SDI outputs. Additional I/O options may be added using SFPs.



### BrightEye NXT 955 2 Channel SDI Frame Sync & U/D/C

The NXT 955 is a two channel version of the NXT 950.

## Overview

The BrightEye NXT Frame Syncs pack a lot of features in a tiny package. Frame Synchronization and Format Conversion, with 16 channels of embedded Audio. Each frame sync has independent timing and controls. Each supports automatic input format detection and conversion to the desired output format. Video and chroma gains can be adjusted with the built-in Proc Amp. Use the Color Correction to compensate for input material or to match projectors and monitors. Adjust levels and swap/mix channels in Embedded Audio. Control the Frame Syncs and monitor each channel's input and output from the front panel, or through the web interface.

All NXT Frame Syncs have SFP ports so you can add the I/O interfaces you need. SFP's may be added to provide connections to Fiber, HDMI, Analog Composite, additional SDI, or IP Encapsulated SDI interfaces. The SFP ports can be used as inputs or outputs instead of, or in addition to the BNC or HDMI ports.

### BrightEye NXT 910 4 Channel HDMI/SDI Frame Sync with HDCP

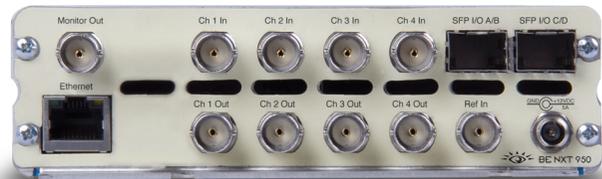
The NXT 910 has four independent frame synchronizers with HDMI inputs and SDI outputs. Additional I/O options can be added using SFPs. The following license options may be added to the NXT 910:

- BENXT-910K-UDC, license key for U/D/C
- BENXT-910K-SC, license key for Crop & Scale



### BrightEye NXT 950 4 Channel SDI Frame Sync & U/D/C

The NXT 950 has four independent SDI frame synchronizers. Additional I/O options may be added using SFPs.



### BrightEye NXT 955 2 Channel SDI Frame Sync & U/D/C

The NXT 955 has two independent SDI frame synchronizers. Additional I/O options may be added using SFPs.



## Getting Started

Setting up your NXT 900 series frame sync is pretty easy. First you'll establish a network connection, and then configure each frame sync.

### A Note on Ventilation

Maintaining proper airflow is required to keep the NXT's internal temperature normal. Air input occurs below the front panel. Air output occurs through the rear panel. If placing the unit on a surface, the four feet must be mounted on its base. If mounted in a rack, the unit must be installed in such a way that the air flow on the front and rear is not restricted. Our BERKMT-Full rack mount kit, designed for this purpose, holds up to 3 NXT units in a 1RU rack.

### 1. Connect Inputs and Outputs as Desired

You may connect your ins and outs to the rear of the unit now if desired. Connections are not required to complete the setup process. If you do connect your I/O's, you will be able see them on the front panel of the unit and in the web user interface.

### 2. Connect Reference If Needed

The BrightEye NXT locks to house reference or to its own internal precision standard. During setup you'll select Internal or External Reference from the Timing & Genlock menu.

### 3. Connect Power Supply

Connect the power supply that is provided with the BrightEye NXT. The boot up process takes approximately one minute.

**Note:** The BrightEye NXT must be powered by its own product-specific power supply that comes with the unit. This is a 5 amp single power supply, Ensemble Designs part number 23600106, order info: BEPS-NXT. DO NOT use a BrightEye Spider power supply (BEPS6) or a BrightEye Individual power supply (BEPS, ED part number 23118900).

### 4. Establish a Network Connection

Your BrightEye NXT Frame Sync has a built-in web server providing control from a web browser. Plug an Ethernet cable into the Control Network Ethernet Port shown on page 3 to connect directly to a computer or to your Ethernet network.

When you initially power up the Frame Sync as received from the factory, it will have the self-assigned static IP address of 192.168.1.101. To change its IP address and network settings, use the Network menu on the front panel display (details are in Step 5). Note that the Frame Sync supports only manual settings. DHCP is not supported.



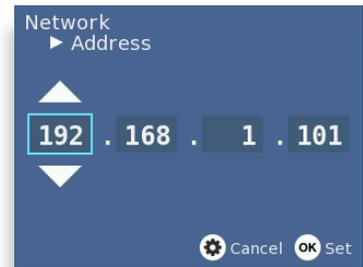
## 5. Set the IP Address from the Front Panel

Press  and use the  arrow to navigate to the **Network** menu.

Press  or  to highlight the **Address** submenu. Press  or  to enter the **Network Address** submenu.

Use the  arrows to modify the IP address and other network settings as needed.

Press  to save the new IP address, or press  to cancel.



## 6. Navigate to the NXT on Your Web Browser

After you have set the unit's IP address to be compatible with your network, you can connect to it with a web browser. Navigate to the BrightEye NXT's new IP address. The Settings page displays.

## 7. Set an Administrative Password if Desired

By default you will have full access to all controls in the Settings arena. To set an administrative password, go to the General menu. Under Admin Password check Required and follow the password setting steps.

## 8. Control Options

The NXT Frame Sync can be configured and controlled from the Settings menus. You may also set up multiple control points that allow access for different operators. You could, for example, set up a control point that allows full access to frame sync 1, but allows only monitoring of frame syncs 2, 3 and 4. If you prefer not to set any Control Points, skip this section and continue on to the "Configuring the Frame Syncs" section on page 8.

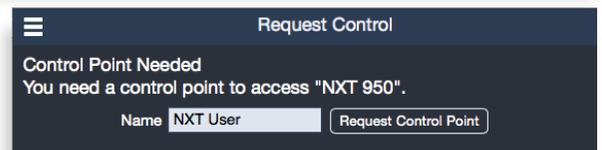


## Requesting a Web Control Point

To establish a Control Point, browse to the NXT Frame Sync's IP address from the computer or device you want a Control Point on. The Control Point Needed screen displays.

Enter the name you want to use for the Control Point; for example, "QC Operator." Click **Request Control Point**. The message "Not Authorized" displays.

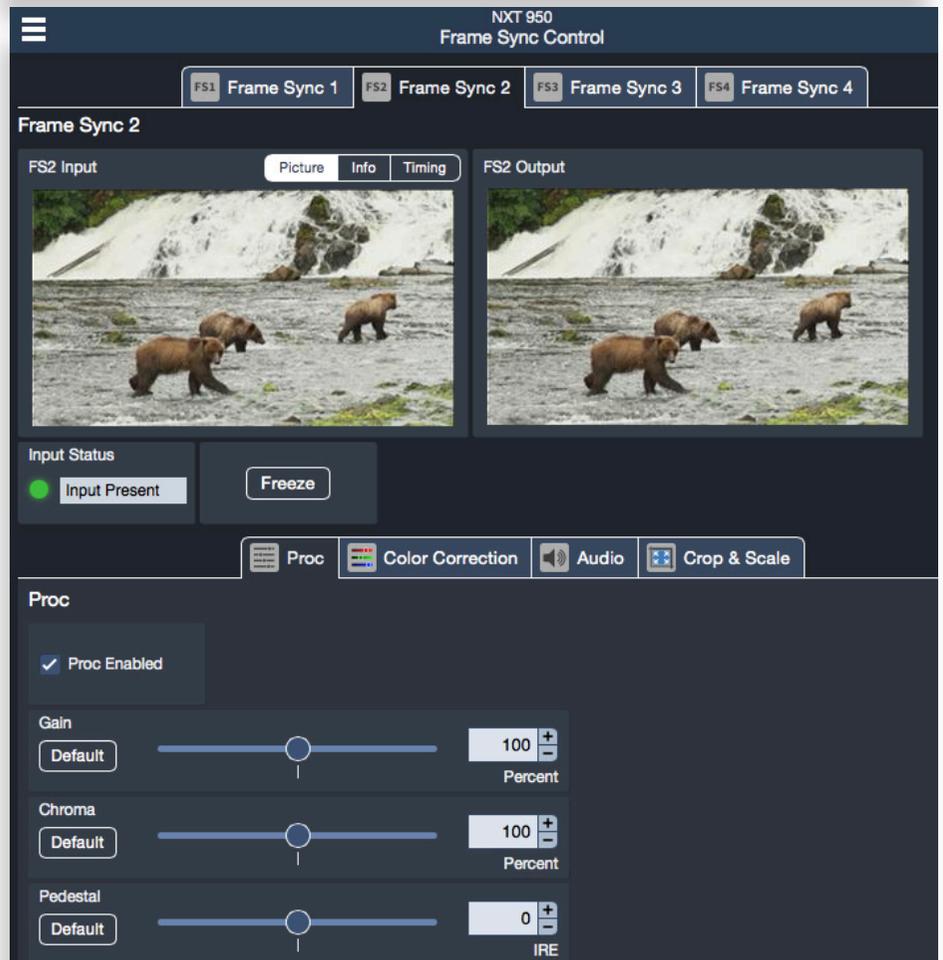
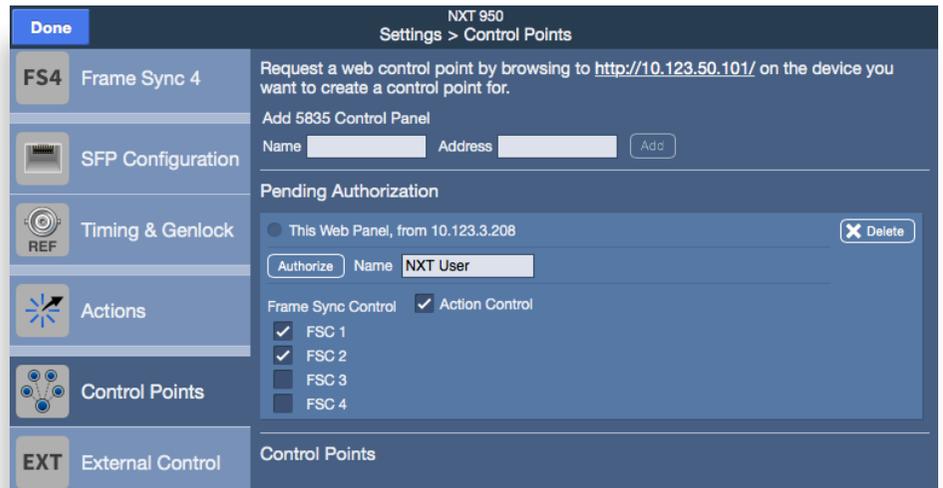
Select **Settings** from the upper left pull-down menu in the browser page. The Settings page displays.



Click **Control Points**. The Settings > Control Points page displays.

The Control Point you just requested will now be shown at the top of the Pending Authorization area. You can rename the Control Point, and choose which Frame Sync Channels the Control Point has control of.

Click **Done**. The Frame Sync Control page displays. You can repeat this process from other browsers or other devices to setup more Control Points.



## Configuring the Frame Syncs

BrightEye NXT Frame Syncs are configured in the Settings page. Each Frame Sync is independently configured from its specific menu (Frame Sync 1 through Frame Sync 4). Input signals will be shown in the left-hand thumbnail. The processed output will be shown in the right-hand side. Frame Sync configurations can be stored with Presets, accessed below the preview thumbnails.

Specific Frame Sync controls are shown in the tabbed panel: Config, Proc, Color Correction, Audio, and Crop & Scale.

The screenshot displays the 'NXT 950 Settings' interface for 'Frame Sync 2'. On the left is a navigation menu with options: Done, General, Network, Front Panel, FS1 Frame Sync 1, FS2 Frame Sync 2 (selected), FS3 Frame Sync 3, FS4 Frame Sync 4, SFP Configuration, Timing & Genlock REF, Actions, Control Points, and EXT External Control.

The main area for 'Frame Sync 2' includes:

- FS2 Input** and **FS2 Output** preview windows showing a blue-tinted video feed of a cave interior.
- Input Status**: A green indicator and 'Input Present' text, with a 'Freeze' button.
- Preset**: A dropdown menu set to 'None' with 'Save', 'Revert', 'Delete', and 'New...' buttons.
- Tabbed Panel**: 'Config' (selected), 'Proc', 'Color Correction', 'Audio', and 'Crop & Scale'.
- Config Section**:
  - Name**: 'Frame Sync', **Standard**: '1080i/59.94'.
  - Input Select**: 'BNC PORT', **V Timing**: 'Default' with a slider set to 0 Lines.
  - H Timing**: 'Default' with a slider set to 0 Clocks.
  - SD > HD Mode**: 'Pillar Box', **HD > SD Mode**: 'Letter Box'.
  - Operator Freeze Control**.

## Config Tab

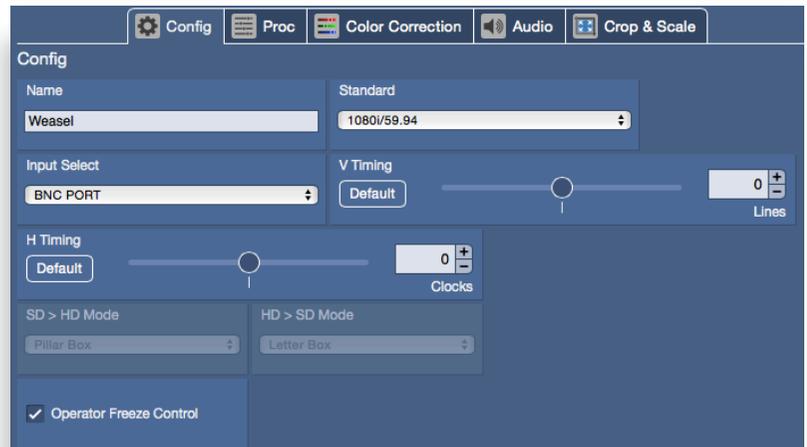
### Chose the Output Standard

In the Frame Sync menu under the Config tab, select the desired output standard. The NXT will automatically up/down or cross convert the input to the output standard selected here. Each of the four frame syncs are individually configured and can have different output standards.



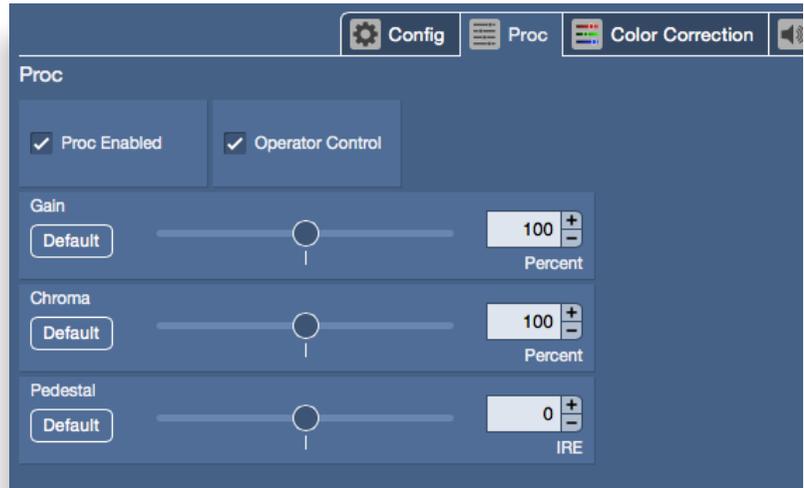
### The Config Tab allows you to:

- Custom name the Frame Sync
- Select the Output Standard
- Change the Input Selection if you are using SFPs
  - Note:** If using SFPs, you will select the SFP Port from the Input Select pulldown here. Then you will need to configure each SFP as an Input or Output in the SFP Config Menu (shown above)
- Adjust the Vertical and Horizontal Timing
- Select Pillar Box or Letter Box when Up or Down conversion is occurring
- Turn operator access to the Config Controls On or Off



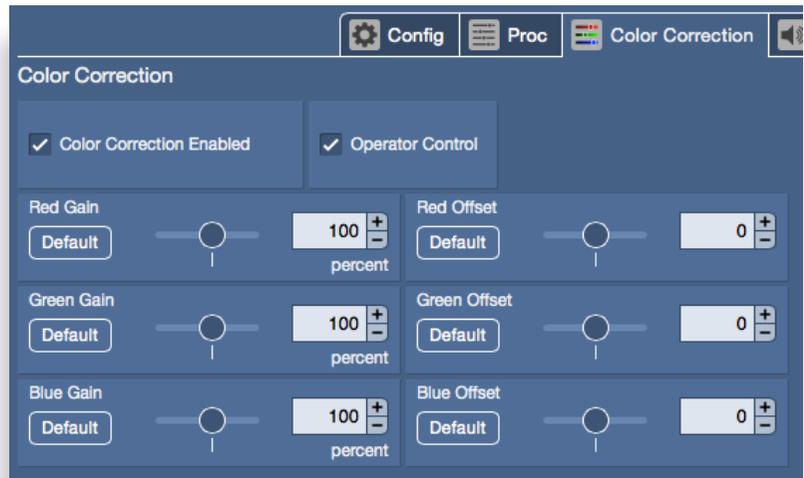
## Proc Tab allows you to:

- Enable or disable the Proc Controls
- Adjust Gain, Chroma and Pedestal
- Turn operator access to the Proc Controls On or Off



## Color Correction Tab allows you to:

- Enable or disable the Color Correction Controls
- Adjust Red, Green and Blue Gain and Offset
- Turn operator access to the Color Correction Controls On or Off



# Audio Tab

Provides agile and complete audio control. Adjust the level of all 16 possible embedded audio channels, and map those channels to produce any combination of swaps and mixes on the output. Audio delay can be adjusted for timing into your processing chain.

Config
Proc
Color Correction
Audio
Crop & Scale

### Audio

Operator Control

#### Level Gain

Ch 1



0 + -

Default

Ch 2



0 + -

Default

Ch 3



0 + -

Default

Ch 4



0 + -

Default

Ch 5



0 + -

Default

Ch 6



0 + -

Default

Ch 7



0 + -

Default

Ch 8



0 + -

Default

Ch 9



0 + -

Default

Ch 10



0 + -

Default

Ch 11



0 + -

Default

Ch 12



0 + -

Default

Ch 13



0 + -

Default

Ch 14



0 + -

Default

Ch 15



0 + -

Default

Ch 16



0 + -

Default

#### Channel Mapping

Input Channels		Group 1				Group 2				Group 3				Group 4				Output Channels
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1																		1
2																		2
3																		3
4																		4
5																		5
6																		6
7																		7
8																		8
9																		9
10																		10
11																		11
12																		12
13																		13
14																		14
15																		15
16																		16

Default

#### Audio Enables

Group 1 On | 
 Group 2 On | 
 Group 3 On | 
 Group 4 On

#### Mode

Ch 1/2 Auto | Ch 3/4 Auto | Ch 5/6 Auto  
 Ch 7/8 Auto | Ch 9/10 Auto | Ch 11/12 Auto  
 Ch 13/14 Auto | Ch 15/16 Auto

#### Delay

Default 0 + - mSec

www.ensembledesigns.com

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## Crop and Scale Tab

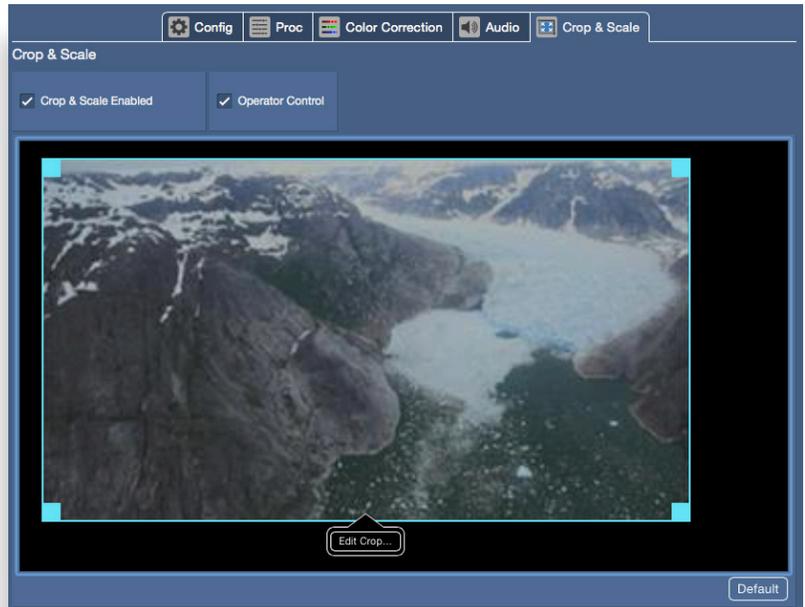
The Crop and Scale feature allows you to position, crop, and scale the input source into the output space.

### Position and Size Controls

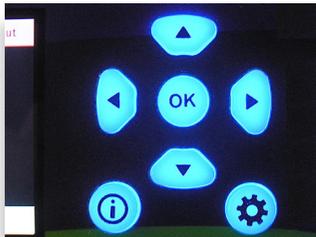
To move or re-size an image, simply click on it. A border with corner tabs will appear around the image. Click anywhere on the image and drag to move it. Use the corner tabs to re-size the image.

### Crop and Zoom Controls

Click the Edit Crop button in the control bar to crop the image and to zoom in and out. In this mode the border will have corner and side tabs, and the zoom slider will be in the control bar. Use the corner and side tabs to define the crop area, and the slider bar to zoom the image in and out. Click Done when finished. When you return to the Position and Size controls, the crop will be maintained when you change the size of the image window.



Superior scaling means that you can zoom in on a small portion of the input signal and the re-sized image will look great. Correct aspect ratio is always maintained when images are re-sized.



### Factory Reset

To reset your BrightEye NXT Frame Sync to factory settings, press and hold both the  and the  while powering up the unit. Wait for the arrows to turn red and blink three times. The unit will then be reset to its factory default settings.

### Training Videos

In addition to this Quick Start Guide, please see our training videos at the links below to learn how to set up and configure your BrightEye NXT Frame Sync. The training videos address initial setup, configuration, operation, and more.

<https://www.ensembledesigns.com/videos/nxt-900-series-setup-config-video>

<https://www.ensembledesigns.com/videos/nxt-900-series-overview-video>

For additional assistance, contact us at +1 530.478.1830 or [service@ensembledesigns.com](mailto:service@ensembledesigns.com). All Ensemble Designs products have a 5-year warranty. Avenue and BrightEye products are designed and built in California at Ensemble Designs. Come visit us!