



# BrightEye™



NXT Series

Clean and Quiet Routing Switchers for  
SD, HD and 3 Gb/s SDI, HDMI and Fiber Optic Signals



**ENSEMBLE**  
DESIGNS

# BrightEye NXT 410-H

## Clean HDMI Router with HDCP



### Cleanly Switch HDCP Content

The BrightEye NXT 410-H Clean HDMI + HDCP Router provides clean and quiet switching of HDCP encrypted content to its HDMI output along side SDI and non-encrypted HDMI sources. The BrightEye NXT 410-H lets you dissolve or cut between HDMI sources such as cameras or disk players, traditional SDI sources and HDCP encrypted devices for output to an HDMI display or projector. The router's built-in frame syncs ensure an instantaneous, clean switch or dissolve between every source without flashing or unexpected black displays, even with completely asynchronous sources. Non-HDCP encrypted HDMI and SDI sources can be routed to SDI destinations independently and simultaneously. HDCP encrypted sources cannot be routed to SDI destinations.

### Use Encrypted and Non-Encrypted HDMI Along Side SDI Sources

The ability to use HDMI sources and SDI sources along side one another is perfect for live applications in remote trucks and news vehicles. Devices such as set top boxes and Blu-ray players can be switched and mixed with SDI devices and HDMI cameras to the HDMI output seamlessly and instantaneously.

### Control From Anywhere

The unique web-browser user interface allows control and set-up from virtually anywhere via any web browser enabled device, while front panel controls allow complete configuration and control of the router without the use of a computer. In addition, they can be externally controlled over Ethernet via TCP/IP or with an optional RS-232 adaptor.

### Router Salvos for Multi-Destination Simultaneous Routing

Use salvo memory registers to execute several routes simultaneously. Eight separate salvo registers can be created and then triggered with any web browser enabled device.

### Features

- Cleanly Switch HDCP Encrypted Content
- Router for 3G, HD and SD SDI and HDMI Video
- Dissolve and Cut Transitions
- Direct Take Mode
- LCD Display with Realtime Full Motion Video of Your Sources
- Salvo Registers - Save/Recall from your Tablet or Computer
- System Wide Configuration Registers
- Flexible I/O – You Configure BNCs and SFPs as Inputs or Outputs
- Clean Switching of Video and Embedded Audio
- Audio Level Adjustments
- RS-232 and TCP/IP Interfaces - Use with any 3rd Party Device
- Front Panel and Web-Based Control
- Safe Driving Mode
- Built-in Test Signal Generators
- Compact and Rugged
- Genlockable and Timeable
- 5-Year Warranty and Free Software Upgrades Forever



# BrightEye NXT 410 Clean HDMI Router



## Assignable I/O and Flexible Architecture

- 4 HDMI inputs
- 1 HDMI output
- 2 dedicated SDI inputs
- 2 dedicated SDI outputs
- 1 SDI port that can be configured as an input or output
- 1 SFP cage that can take a single or dual fiber optic SFP or other connectors
- 1 reference input

## Instantaneous HDMI Clean Switching

The new BrightEye NXT 410 Clean HDMI Router cleanly and instantly switches your HDMI sources. The HDMI output switches instantaneously, never a glitch or pop. Feed the NXT 410 with cameras and other HDMI sources and take the output to projectors, flat screens and production equipment. The built-in frame synchronizer provides two clean switched outputs. The HDMI output always clean switches and you can assign the NXT's second clean switch to one of the SDI or SFP outputs. Great for fly packs, video conference rooms and anywhere you need a small router, this new BrightEye has incredible power in a small 1RU high by 1/3 RU wide footprint. The exclusive front panel LCD displays realtime full motion video of your HDMI and SDI router sources.

## Integrate HDMI and SDI I/O

With both HDMI and SDI inputs and outputs, the NXT 410 makes it easy to integrate and switch signals from all types of equipment, regardless of the video format. Cameras with HDMI outputs can be used directly alongside SDI sources, and seamlessly routed to either HDMI or SDI outputs. The SFP (small format pluggable) cage can be populated with dual SFPs that have fiber optic or other connectors, allowing you to determine the best connector for your installation. Adding SFPs gives you true flexibility in combining electrical (BNC), HDMI and fiber optic inputs and outputs.

## Features

- Router for 3G, HD and SD SDI and HDMI Video
- Dissolve and Cut Transitions
- Direct Take Mode
- Salvo Registers - Save/Recall from your Tablet or Computer
- System Wide Configuration Registers
- Flexible I/O – You Configure BNCs and SFPs as Inputs or Outputs
- Clean Switching of Video and Embedded Audio
- Audio Level Adjustments
- RS-232 and TCP/IP Interfaces - Use with any 3rd Party Device
- Front Panel and Web-Based Control
- LCD Display with Realtime Full Motion Video of Your Sources
- Safe Driving Mode
- Built-in Test Signal Generators
- Compact and Rugged
- Genlockable and Timeable
- 5-Year Warranty and Free Software Upgrades Forever



# BrightEye NXT 430

## Clean Router



### New Routing Technology

Introducing the BrightEye NXT 430 2.0 Clean Compact Router for clean, quiet switching and mixing of video and audio sources. The exclusive front panel LCD displays realtime full motion video of your router sources. Great for fly packs, ENG and anywhere you need a small router, this new BrightEye has incredible power in a small 1RU high by 1/3 RU wide footprint – about the size of a CD box set.

### Clean Switch – Use Asynchronous Sources

The BrightEye NXT 430 Compact Router gives you two clean switched outputs. The router's built-in clean switch provides full frame synchronization which means you can switch or dissolve cleanly between asynchronous sources. Wild feeds from cameras, helicopters, and microwaves can be fed to the BrightEye Compact Router for perfect switching. The latest features include variable duration mix transitions, independent audio level adjustments and channel assignment of all 16 audio channels on an input-by-input basis. And, automatic audio cross fade with the video when mix mode is enabled – all without glitch, hitch or pop.

### Fully Featured

The BrightEye NXT 430 has features not found on even larger and more expensive routing solutions. Things like dissolves, audio breakaway mode, direct take for even faster switching in a live environment, programmable router salvo registers, Ethernet and RS-232 control, and Save/Recall of system settings.

### Web Browser Control

The BrightEye NXT 430 has a web server and Ethernet connector built right in. This allows full control and setup from virtually anywhere. An installation such as an ENG truck or flypack can be controlled from the field with any web browser enabled device such as an iPhone or iPad. Multiple users can be authorized to control the router, each with their own source and destination profile to ensure both security and on-air reliability. Even from a mobile device, continuously updating thumbnails of sources and destinations give operators supreme confidence of what they are doing.

### Assignable I/O and Flexible Architecture

You get to configure the number of inputs and outputs; the configuration is changeable on the fly. There are 2 fixed input BNCs, 2 fixed output BNCs and 7 assignable BNCs that you configure either as inputs or outputs. The two SFP (small format pluggable) cages can be populated with dual SFPs that have fiber optic or other connectors, allowing you to determine the best connector for your installation. SFPs, providing four additional ports, give you true flexibility in combining electrical (BNC) and fiber optic inputs and outputs.



## Features

- Router for 3G, HD and SD SDI Video
- Dissolve and Cut Transitions
- Direct Take Mode
- Audio Level Adjustments
- Front Panel and Web-Based Control
- Safe Driving Mode
- Built-in Test Signal Generators
- Compact and Rugged
- Genlockable and Timeable
- Salvo Registers - Save/Recall from your Tablet or Computer
- System Wide Configuration Registers
- Flexible I/O – You Configure BNCs and SFPs as Inputs or Outputs
- Clean Switching of Video and Embedded Audio
- RS-232 and TCP/IP Interfaces - Use with any 3rd Party Device
- LCD Display with Realtime Full Motion Video of Your Sources
- 5-Year Warranty and Free Software Upgrades Forever





# BrightEye NXT 415

## Compact Router

### Economical Routing Technology

For facilities with solid timing infrastructure, the BrightEye NXT 415 is an economical routing solution. Sold without clean switches, this compact routing solution is easy on the eyes as well as the pocketbook. The exclusive front panel LCD displays realtime full motion video of your router sources. Great for QC positions, camera shading stations and anywhere you need a small router, this new BrightEye has incredible power in a small 1RU high by 1/3 RU wide footprint – about the size of a CD box set.

### Compact Yet Fully Featured

The BrightEye NXT 415 also has features not found on even larger and more expensive routing solutions. Things like direct take for even faster switching in a live environment, programmable router salvo registers, Ethernet and RS-232 control, and Save/Recall of system settings.

### Control From Anywhere

Like its siblings, the BrightEye NXT 415 has a web server and Ethernet connector built right in. This allows full control and setup from virtually anywhere. An installation such as an ENG truck or flypack can be controlled from the field with any web browser enabled device such as an iPhone or iPad. Multiple users can be authorized to control the router, each with its own source and destination profile to ensure both security and on-air reliability. Even from a mobile device, continuously updating thumbnails of sources and destinations give operators supreme confidence of what they are doing.

### Assignable I/O and Flexible Architecture

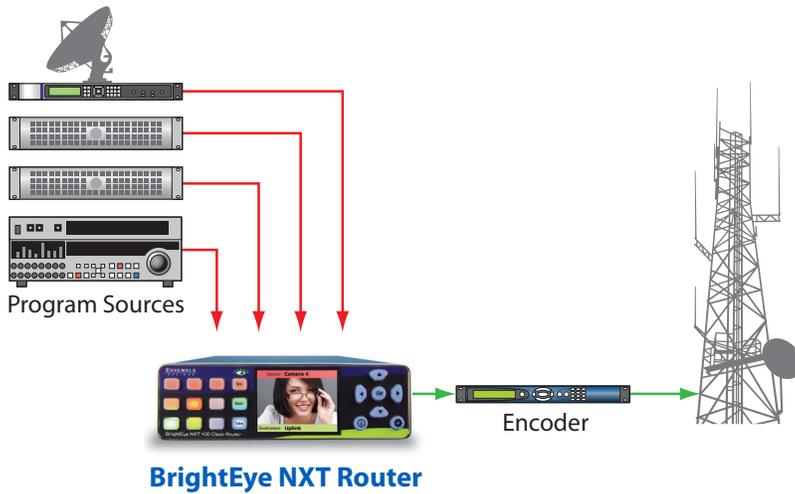
You get to configure the number of inputs and outputs; the configuration is changeable on the fly. There are 2 fixed input BNCs, 2 fixed output BNCs and 7 assignable BNCs that you configure either as inputs or outputs. The two SFP (small format pluggable) cages can be populated with dual SFPs that have fiber optic and other connectors, allowing you to determine the best connector for your installation. SFPs, providing four additional ports, give you true flexibility in combining electrical (BNC) and fiber optic inputs and outputs.

### Features

- Router for 3G, HD and SD SDI Video
- Direct Take Mode
- Salvo Registers - Save/Recall from your Tablet or Computer
- System Wide Configuration Registers
- Flexible I/O – You Configure BNCs and SFPs as Inputs or Outputs
- RS-232 and TCP/IP Interfaces - Use with any 3rd Party Device
- Front Panel and Web-Based Control
- LCD Display with Realtime Full Motion Video of Your Sources
- Safe Driving Mode
- Built-in Test Signal Generators
- Compact and Rugged
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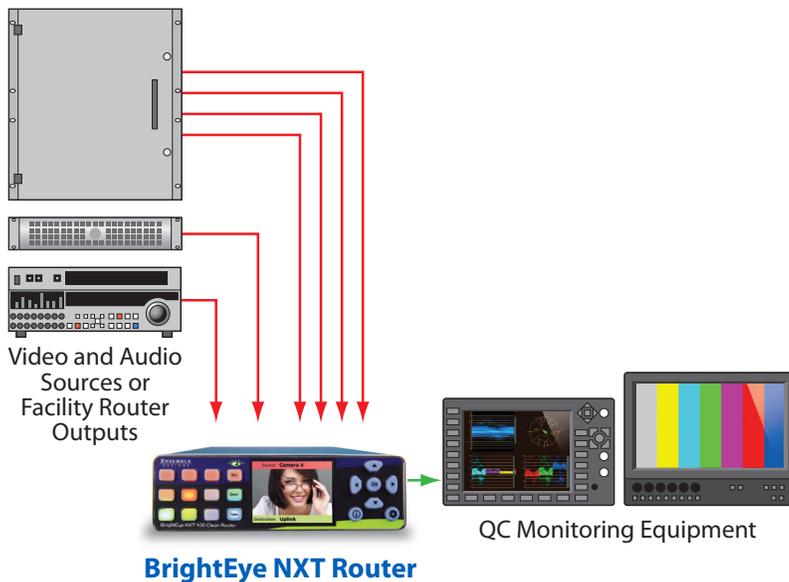


## Mini Master Control



Use the BrightEye NXT Router as a mini master control with cuts and dissolves, on the ground or in the air. Great for helicopters, sports and ENG, the BrightEye NXT Router has built-in frame syncs that let you use sources that don't have a reference. The router's output is clean and quiet, switching seamlessly between sources. Downstream devices such as routers and encoders receive a consistent video input signal.

## Quality Control and Signal Monitoring



QC your ingest sources or set top box feeds with the BrightEye NXT Router. Verify signal presence right on the front panel of the router. The BrightEye NXT's LCD displays full motion, realtime video of your sources. Take the router outputs to scopes and servers. Use the router's built-in web browser and QC your sources remotely, too.

## Multi-Stage Venue

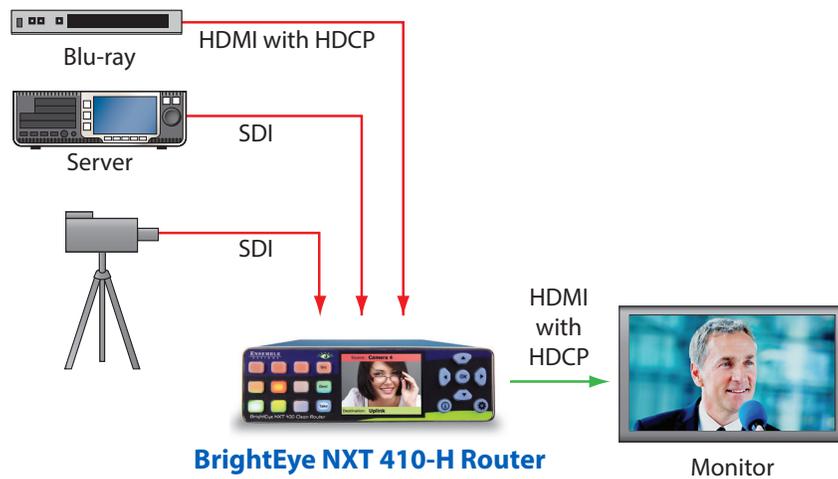


Add more inputs to your production switcher or master control switcher. Feed cameras and other SDI and HDMI sources to a BrightEye NXT 410 Router and take one or more of the router outputs into the production switcher or master control switcher. This is also a great way to integrate HDMI signals into an SDI workflow.



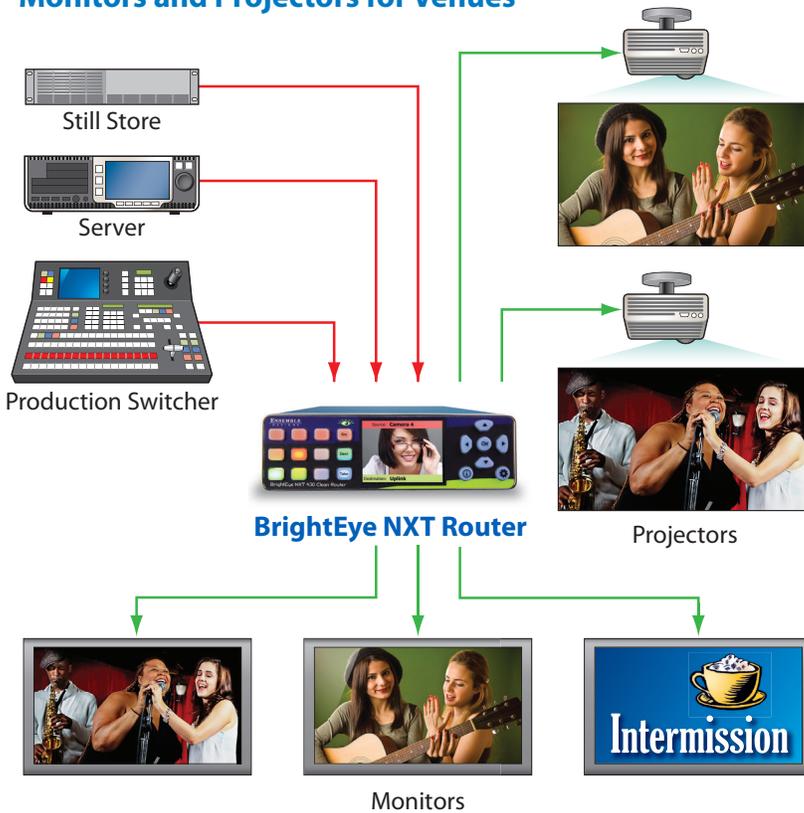


## Multi Format Routing with HDCP Encrypted Devices



Mix or cut between HDMI cameras, SDI video servers, and HDCP encrypted Blu-ray players, and output to a projector or monitor. The BrightEye NXT 410-H Router's HDMI output can be configured to generate HDCP encryption, allowing both encrypted and non-encrypted HDMI and SDI sources to be cleanly switched to the HDMI output.

## Monitors and Projectors for Venues



Use the BrightEye NXT Router for live events and sports to route signals to monitors, switchers and projectors. The router's outputs can be easily configured to be in time with house, even when there are asynchronous sources on the input. Switch seamlessly between fiber optic, HDMI and SDI signals.

## QC Monitoring with HDMI



Bring HDMI and SDI feeds from IRDs and set top boxes in to your BrightEye NXT Router for QC and monitoring. For monitoring HDMI sources that are HDCP encrypted, use the The BrightEye NXT 410-H Clean HDMI + HDCP Router. Use a web browser to log into your BrightEye NXT 410-H remotely to monitor signal health from anywhere.

## Specifications for BrightEye NXT 410 and 410-H Clean HDMI Routers

### Serial Digital Input

Number	Two to Five, configurable, BNC and SFP
Signal Type	270 Mb/s SD SDI, SMPTE 259M 1.485 Gb/s HD SDI, SMPTE 274M, 292M, 296M 2.97 Gb/s HD SDI, SMPTE 424M, 425M
Impedance	75 Ω
Return Loss	>15 dB
Max Cable Length	300 meters for 270 Mb/s 100 meters for 1.485 Gb/s

Automatic Input Cable Equalization

### Reference Input

Number	One
Type	1 V P-P Composite Video, PAL or NTSC or Tri-Level Sync
Impedance	75 Ω
Return Loss	>40 dB

### Serial Digital Output

Number	Two to Five, configurable, BNC and SFP
Type	270 Mb/s SD SDI, SMPTE 259M 1.485 Gb/s HD SDI, SMPTE 274M, 292M, 296M 2.97 Gb/s HD SDI, SMPTE 424M, 425M
Processing	12 and 16 bit
Impedance	75 Ω
Return Loss	>15 dB
Max Cable Length	100 meters for HD 300 meters for SD (Belden 1694A)

### HDMI Input

Number	Four
Type	HDMI 1.3
Format	Supports HDMI signals which map to the video standards listed below

### HDMI Output

Number	One
Type	HDMI 1.3
Format	Follows input

### HDCP (410-H Only)

HDMI output can be configured to generate HDCP encryption. This allows both encrypted and non-encrypted HDMI and SDI sources to be cleanly switched to this output.

### Standards Supported

1080i 50, 59.94 or 60 Hz, SMPTE 274M -4,5,6
720p 50, 59.94 or 60 Hz, SMPTE 296M -1,2,3
1080p 23.98, 24 or 25 Hz, SMPTE 274M -9,10,11
1080p 50, 59.94, 60 Hz, SMPTE 424M, 425M, Level A
1080sF 23.98, 24 or 25 Hz, RP211 -14,15,16
625i 50
525i 59.94

### General Specifications

Size	5.63" W x 1.65" H x 6.75" D (143 mm x 42 mm x 172 mm) including connectors and flange
Weight	1 lb 12 oz
Power	12 volts, 20 watts (100-230 VAC modular power supply)
Temperature Range	0 to 40° C ambient (all specs met)
Relative Humidity	0 to 95%, non-condensing
Altitude	0 to 10,000 ft.

## Specifications for BrightEye NXT 415 and 430 Compact Routers

### Serial Digital Input

Number	Two to Thirteen, configurable, BNC and SFP
Signal Type	270 Mb/s SD SDI, SMPTE 259M 1.485 Gb/s HD SDI, SMPTE 274M, 292M, 296M 2.97 Gb/s HD SDI, SMPTE 424M, 425M
Impedance	75 Ω
Return Loss	>15 dB
Max Cable Length	300 meters for 270 Mb/s 100 meters for 1.485 Gb/s

Automatic Input Cable Equalization

### Reference Input

Number	One
Type	1 V P-P Composite Video, PAL or NTSC or Tri-Level Sync
Impedance	75 Ω
Return Loss	>40 dB

### Serial Digital Output

Number	Two to Thirteen, configurable, BNC and SFP
Type	270 Mb/s SD SDI, SMPTE 259M 1.485 Gb/s HD SDI, SMPTE 274M, 292M, 296M 2.97 Gb/s HD SDI, SMPTE 424M, 425M
Processing	12 and 16 bit
Impedance	75 Ω
Return Loss	>15 dB
Max Cable Length	100 meters for HD (Belden 1694A) 300 meters for SD (Belden 1694A)

### Standards Supported

1080i 50, 59.94 or 60 Hz, SMPTE 274M -4,5,6
720p 50, 59.94 or 60 Hz, SMPTE 296M -1,2,3
1080p 23.98, 24 or 25 Hz, SMPTE 274M -9,10,11
1080p 50, 59.94, 60 Hz, SMPTE 424M, 425M, Level A
1080sF 23.98, 24 or 25 Hz, RP211 -14,15,16
625i 50
525i 59.94

### General Specifications

Size	5.63" W x 1.65" H x 6.75" D (143 mm x 42 mm x 172 mm) including connectors and flange
Weight	NXT 415 1 lb 10 oz NXT 430 1 lb 12 oz
Power	12 volts, 20 watts (100-230 VAC modular power supply)
Temperature Range	0 to 40° C ambient (all specs met)
Relative Humidity	0 to 95%, non-condensing
Altitude	0 to 10,000 ft.