

Acappella

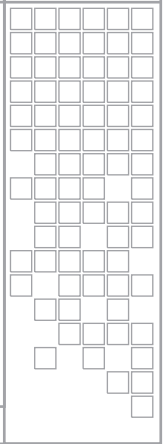
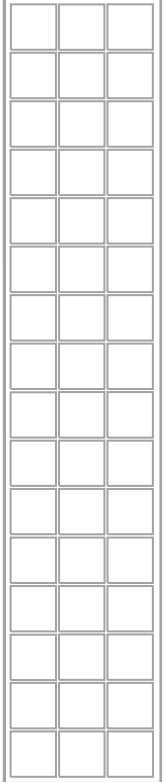
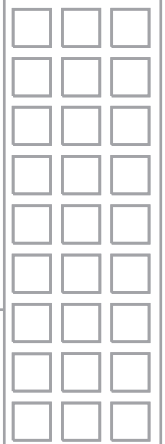
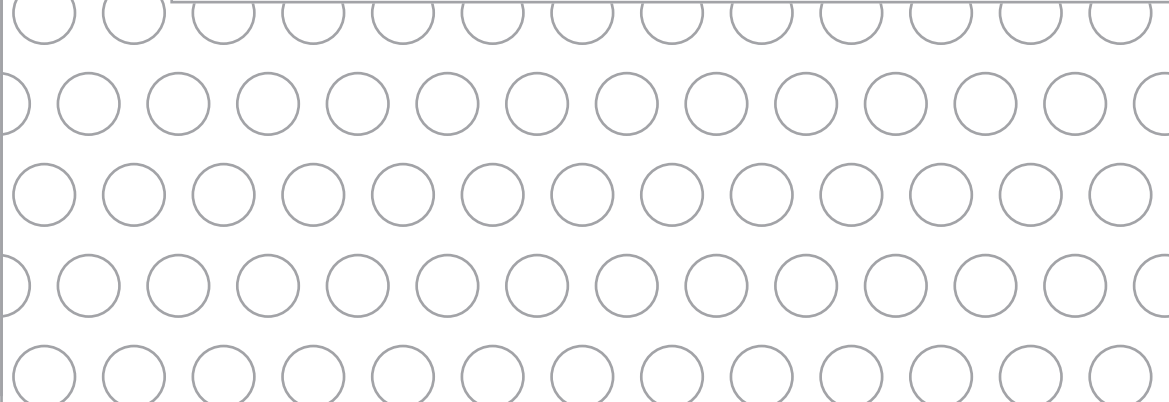
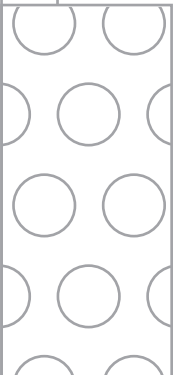
ROUTING SYSTEM

Release Notes



SOFTWARE VERSION 3.2.0

86297180
JANUARY 2009



Contacting Grass Valley

International Support Centers	France 24 x 7	+800 8080 2020 or +33 1 48 25 20 20 +800 8080 2020 or +33 1 48 25 20 20	United States/Canada 24 x 7	+1 800 547 8949 or +1 530 478 4148
Local Support Centers (available during normal business hours)	Asia	Hong Kong, Taiwan, Korea, Macau: +852 2531 3058 Indian Subcontinent: +91 22 24933476 Southeast Asia/Malaysia: +603 7805 3884 Southeast Asia/Singapore: +65 6379 1313 China: +861 0660 159 450 Japan: +81 3 5484 6868		
		Australia and New Zealand: +61 1300 721 495	Central/South America: +55 11 5509 3443	
		Middle East: +971 4 299 64 40 Near East and Africa: +800 8080 2020 or +33 1 48 25 20 20		
	Europe	Belarus, Russia, Tadzikistan, Ukraine, Uzbekistan: +7 095 2580924 225 Switzerland: +41 1 487 80 02 S. Europe/Italy-Roma: +39 06 87 20 35 28 -Milan: +39 02 48 41 46 58 S. Europe/Spain: +34 91 512 03 50 Benelux/Belgium: +32 (0) 2 334 90 30 Benelux/Netherlands: +31 (0) 35 62 38 42 1 N. Europe: +45 45 96 88 70 Germany, Austria, Eastern Europe: +49 6150 104 444 UK, Ireland, Israel: +44 118 923 0499		

Copyright © Thomson Inc. All rights reserved.

This product may be covered by one or more U.S. and foreign patents.

Grass Valley Web Site

The www.thomsongrassvalley.com web site offers the following:

Online User Documentation — Current versions of product catalogs, brochures, data sheets, ordering guides, planning guides, manuals, and release notes in .pdf format can be downloaded.

FAQ Database — Solutions to problems and troubleshooting efforts can be found by searching our Frequently Asked Questions (FAQ) database.

Software Downloads — Download software updates, drivers, and patches.



END-OF-LIFE PRODUCT RECYCLING NOTICE

Grass Valley's innovation and excellence in product design also extends to the programs we've established to manage the recycling of our products. Grass Valley has developed a comprehensive end-of-life product take back program for recycle or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive, the United States Environmental Protection Agency, and U.S. state and local agencies.

Grass Valley's end-of-life product take back program assures proper disposal by use of Best Available Technology. This program accepts any Grass Valley branded equipment. Upon request, a Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent to the requester.

Grass Valley will be responsible for all costs associated with recycling and disposal, including freight. However, you are responsible for the removal of the equipment from your facility and packing the equipment to make it ready for pickup.



For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the U.S. and Canada please call 800-547-8949 or 530-478-4148, and ask to be connected to the EH&S Department. Additional information concerning the program can be found at: www.thomsongrassvalley.com/environment



Contents

- Acappella Release Notes** 5
 - Introduction 5
 - Acappella Version 3.2.0 Overview 6
 - New Features and Enhancements..... 6
 - Software Issues..... 6
 - Using the A84HR-CLP with the Indigo AV Mixer..... 7
 - Input Expansion Option Description 7
 - Installing the HD Expansion Frame 8
 - Router to Switcher Video Connections..... 8
 - Acappella Setup Menus for Indigo Interface..... 10
 - Set Router IP Address 10
 - Set Router Reference Configuration 11
 - Router Video Configuration..... 13
 - Indigo AV Mixer Setup..... 16
 - Indigo Ethernet Address..... 16
 - Acappella Ethernet Address..... 17
 - Inputs..... 18
 - Selecting Aux Sources 19
 - A84HR-CLP Standalone Router Operation..... 20
 - Router Installation..... 20
 - Router Configuration 20
 - Router Reference Configuration Web Page 21
 - Router Video Configuration..... 22
 - Video Frame Sync Configuration Web Page 23
 - Additional Router Configuration 26

Acappella Release Notes

Introduction

Software release version 3.2.0 for the Acappella router enables functionality of a new Acappella frame model, A84HR-CLP. This new frame model provides frame sync capability on destinations DST 1 and DST 2 for applications requiring outputs timed to a single reference.

These release notes are provided in hard-copy with the Acappella frame you have received to explain the new frame sync functionality on this router model that is not currently described in the Acappella router or Indigo AV switcher documentation.

These release notes cover operation of the A84HR-CLP Acappella router used with the following Grass Valley model numbers:

- Acappella A84HR-CLP – 8x4 HD Router with Clean Switch
- INDGO1-HR-8 – Indigo AV Mixer HR Input Expansion Option
- INDGO1-HR-8-UPG – Indigo AV Mixer HR Expansion Upgrade
- INDGO1-SDHR-8-UPG – Indigo AV Mixer HR Expansion Upgrade

Use these release notes in conjunction with the *Acappella Instruction Manual* and the *Indigo AV Mixer User Manual*.

The following sections are included in these release notes:

- [Acappella Version 3.2.0 Overview on page 6](#)
- [Using the A84HR-CLP with the Indigo AV Mixer on page 7](#)
- [A84HR-CLP Standalone Router Operation on page 20](#)

Acappella Version 3.2.0 Overview

New Features and Enhancements

This new frame delivers the following features:

- A Video output module with frame sync capability for destination outputs DST 1 and DST 2 of the Acappella router. These outputs can be timed in reference to the distributed Genlock reference in the frame or from an external reference.
- When used as an option with an Indigo A/V Mixer, provides eight additional HD inputs switchable from the Indigo control panel.
- A new Frame Sync configuration web page accessible with a web browser/NetConfig interface with the following configuration controls for setting parameters for the frame sync function (refer to [Router Configuration on page 20](#) for a complete description of each of these controls):
 - Video Format
 - Test Signal Output
 - Loss of Signal Action
 - Manual Freeze
 - Audio V-Fade
 - Vertical Offset adjustment
 - Horizontal Offset adjustment

Software Issues

The following unresolved software issues should be noted for this release

- The new Acappella A84HR-CLP matrix type is currently not recognized in the Prelude routing control system. This means the drag-n-drop method of configuration cannot be used.

The *Prelude Instruction Manual* explains how to manually configure and add a new matrix to a Prelude router configuration. Please follow these steps with the exception of the choice of matrix type.

Double-clicking on the Matrix-Type cell in the Prelude configuration screen will bring up a list of available known matrix types allowed to be used for configuration. Choose the option **Acappella HD-R**. All other configuration options are described in the *Prelude Instruction Manual*.

Using the A84HR-CLP with the Indigo AV Mixer

This section describes using the A84HR-CLP router as an input expansion option with the Indigo AV switcher. Included here is a complete description of the input expansion option and how to install and operate the system.

Input Expansion Option Description

With this new option, the Indigo AV Mixer now can connect up to eight HD-SDI inputs from the expansion router where only two inputs were previously available. The input expansion is a combination of Indigo's powerful external device controls with a customized version of the Acappella router from Thomson Grass Valley.

Connected to Indigo via Ethernet and standard BNC video cables, the rack-mountable input expansion option provides eight inputs and four outputs. Two of the outputs connect to Indigo and the other two can be used as auxiliary outputs. Because the expansion frame provides a clean switch output, the inputs do not require external timing or synchronization.

With this input expansion you can now cut and mix between eight sources right from the buttons on the Indigo control panel. The operation and video processing capabilities of Indigo, including keys, effects, and scaling remain unaffected.

The HD expansion also offers high-performance digital video and audio processing. Its video processing features include automatic input cable equalization. It also supports the reclocking of a data stream at all standard data rates, including 1.5 Gb/s, eliminating the jitter associated with long cable runs and previously processed signals. If an external reference source is not available, the HD expansion will synchronize all sources with its internal clock.

Designed to maximize uptime, you can add an additional auto-ranging AC power supply for full power redundancy. Each power supply features a removable IEC power cord connection with integrated cord clamps to eliminate accidental unplugging; the cord connection also supports any AC plug end available.

Installing the HD Expansion Frame

The HD expansion ships in its own box. It consists of an Acappella router, these release notes, and a NetConfig software CD. Install the Acappella router according to the instructions given in the *Acappella Instruction Manual* or the *Quick Start Guide* included on the documentation CD or available online.

Note Your Indigo AV Mixer must be running software version 1.2.1.9 or later for this input expansion functionality to work properly.

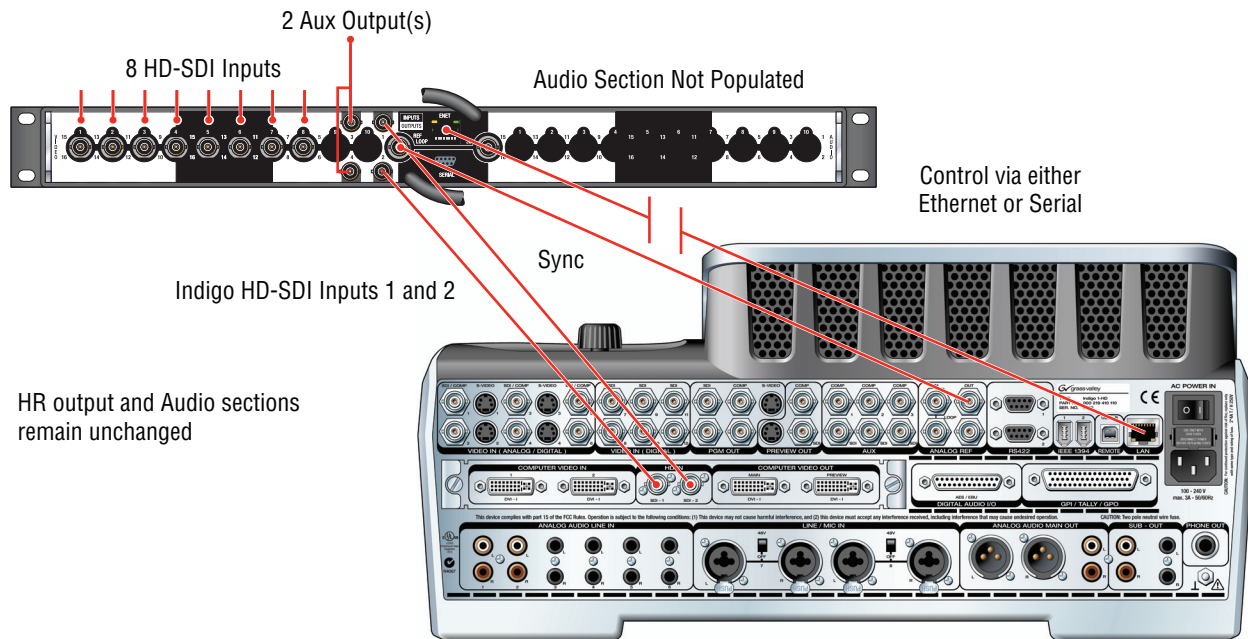
To connect the router to Indigo, you will need BNC video cables, Cat-5 Ethernet cable and an Ethernet switch.

Router to Switcher Video Connections

As illustrated in [Figure 1](#), all HD inputs are connected to the Acappella router. All inputs are HD-SDI. Acappella outputs DST 1 and DST 2 are connected to Indigo HD-SDI inputs 1 and 2.

Note The expansion option does not offer the possibility of connecting both HD-SDI and DVI-I. DVI-I sources would need to be converted externally and connected to Acappella.

Figure 1. Video Connections Between Acappella and Indigo



Reference Connection

Connect the BlackBurst sync signal from Indigo to the REF LOOP BNC, J1. Terminate the other side of the loop with a 75 ohm termination. Using this sync source to reference sources coming into Acappella will eliminate the potential for freeze frame on switching between sources.

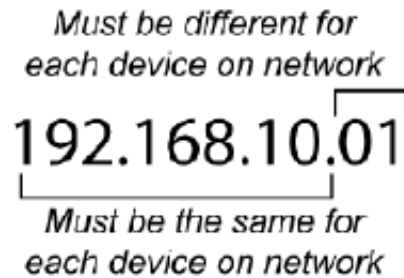
Audio Connections

Indigo does not support embedded HD audio. Audio on the HD sources will be blanked. However, the audio inputs of Indigo can still be used for audio follow video with HD sources and to mix or delay external audio sources.

Ethernet Connections

Indigo and Acappella should be connected via Ethernet. A minimum of four inputs on the Ethernet switch allows an input for Indigo, Acappella, Turbo, and a laptop running NetConfig for device setup. In setting up the devices, remember that each device will need to be set to the same domain for them to communicate as shown in [Figure 2](#).

Figure 2. Ethernet IP Address Requirements



Acappella Setup Menus for Indigo Interface

Install the NetConfig application on a computer using the CD and instructions provided. Connect the computer to the Ethernet switch.

When NetConfig is opened on the computer, it will automatically detect any NetConfig enabled devices on the LAN.

As shown in the illustration in [Figure 3](#), under NetConfig on the far left of the screen, under Device View, select Router, then Acappella. The Acappella Status web page should appear. From the list of links on the left of the web page, select Network Config (shown in [Figure 3](#)).

Set Router IP Address

On the Router Network Configuration web page, select the IP Address box and enter the address you have selected for the Acappella router. Select the **Save New Settings** button. The software will change the IP address of the router to the address you have selected. This same procedure can be repeated in NetConfig for Indigo and Turbo.

Figure 3. Acappella Network Config Screen

Grass Valley - Network Configuration Tool

Configure View About

Discover Set IP Load SW IP View Device View Facility View Inventory Manual Ping Options About Refresh

IP View

Device View

- GenericPC
- Router
 - Acappella
 - Matrix
 - Router
 - A-RF (Acappella)
 - Switcher/Indigo/Mainframe/1
 - Indigo

ACAP_30 Router Network Configuration

[Status](#)
[System Config](#)
[Network Config](#)
[Video Config](#)
[Frame Sync](#)
[Remote Config](#)
[Reference Config](#)
[Factory Default](#)
[Router Applications](#)
[Maintenance](#)

Model: A84HR-CLP
 Description: 8x4x1 Vid w/Clean; Local Panel and Redundant Power
 Location: Modular Lab

Network Parameters

MAC Address: 00-b0-09-00-83-48
 IP Address: 10.16.18.112
 SubNet Mask: 255.255.248.0
 Gateway IP Address: 10.16.16.1
 System Identifier: Default 1 2 3 4 5
 Manual Select
 Matrix Control Port Number: 6050
 System Broadcast Select: Use Broadcast Use Multicast
 Ref Server Multicast Address: 239.255.2.100
 Matrix Status Multicast Address: 239.255.2.200
 Max Router Hops:

Post Save Selection - Force router reset if box checked

Do reset

Changes to above parameters take effect only after 'Save' operation.
 IP addresses and subnet mask take effect only after device reset.

Set Router Reference Configuration

After setting the router IP Address, select the Reference Config link on the left of the web page. The reference from the Indigo AV Mixer must be connected to the router REF LOOP at BNCs J1 or J2 and terminated with a 75 ohm termination or looped to another destination. before configuring the remaining router setup.

The Router Reference Configuration web page is shown in [Figure 4 on page 12](#). The Vertical and Horizontal Offset controls on this web page should be set to specific values when using the input reference from an Indigo AV Mixer.

The setting will depend on the router Reference Input Standard (525 NTSC or 625 PAL) reported on the Router Reference Configuration web page and the video source format on Output 1 and Output 2 you intend to use. The vertical and horizontal offset values for each Reference Input Standard and Output 1 and Output 2 video source format are given below.

525 NTSC Reference

- 1080i 59.94: **Vertical Offset:** 0 lines, **Horizontal Offset:** -1.5 microseconds
- 720p 59.94: **Vertical Offset:** 0 Lines, **Horizontal Offset:** -1.5 microseconds
- SD NTSC 59.94: **Vertical Offset:** 0 Lines, **Horizontal Offset:** -0.3 microseconds

625 PAL Reference

- 1080i 50: **Vertical Offset:** -2 lines, **Horizontal Offset:** +4.1 microseconds
- 720p 50: **Vertical Offset:** -3 Lines, **Horizontal Offset:** -16.6 microseconds
- SD PAL 50: **Vertical Offset:** -2 Lines, **Horizontal Offset:** +5 microseconds

For example, in these release notes, the Reference Input Standard is reported on the Router Reference Configuration web page ([Figure 4 on page 12](#)) as **525 NTSC**. The Detected Sources shown on the Video Frame Sync Configuration web page are reported as **1080i (HD 59.94Hz)** in [Figure 6 on page 14](#).

So in this example, the Vertical Offset control in the Router Reference Configuration web page should be set for **0 Reference lines** and the Horizontal Offset should be set for **-1.5 microseconds** as shown in [Figure 4 on page 12](#).

Figure 4. Router Reference Configuration Web Page

ACAP_30 Router Reference Configuration

Model: [A84HR-CLP](#)

Description: [8x4x1 Vid w/Clean; Local Panel and Redundant Power](#)

Location: [Modular Lab](#)

Video Reference

Reference Input Standard: [525 NTSC](#) [Locked](#) Minimum Maximum

Vertical Offset:

Reference Lines

-15

16

Horizontal Offset:

microseconds

-30.5

30.5

Note: With offsets set to 0, switch occurs with respect to reference input as follows

NTSC Middle of line 10

PAL Middle of line 6

Tri-Level Middle of line 7

Reference Time Server

Broadcast field rate time reference:

Disable Enable

State: [Sleep](#)

Router Video Configuration

Now select the link to the Video Config/Frame Sync web page from the list on the left. This will bring up the Router Video Configuration web page shown in [Figure 5](#).

Figure 5. Router Video Configuration Web Page

ACAP_30 Router Video Configuration

Model: A84HR-CLP
 Description: 8x4x1 Vid w/Clean; Local Panel and Redundant Power
 Location: Modular Lab

Level 1 Video Outputs

Destination	Reclocking Rate	Output	Frame Sync
DST 1	AUTO (default)	1080i (HD 50Hz)	FS-1 Present Configure
DST 2	AUTO (default)	1080i (HD 50Hz)	Configure
DST 3	Auto	270 Mb/s	FS-2 Not Present
DST 4	Auto	1.485 Gb/s	FS-2 Not Present

Note that destinations DST 1 and DST 2 are read-only fields and reported as **Auto (Default)** and the Output column is reporting the present video format on this output. The Frame Sync column will report if the FS-1 function is **Present** or **Not Present**. This information comes from the Video Frame Sync Configuration web page.

Note Frame Sync FS-2 is not active at this time.

Select the **Configure** button in the Frame Sync column (or use the Frame Sync link under the Video Config link on the left) to access the Video Frame Sync Configuration web page shown in [Figure 6 on page 14](#).

Figure 6. Video Frame Sync Configuration Web Page

ACAP_30 Router Video Frame Sync Configuration

Model: [A84HR-CLP](#)

Description: [8x4x1 Vid w/Clean; Local Panel and Redundant Power](#)

Location: [Modular Lab](#)

Frame Sync Module Configuration

Firmware Version: [V1.0.3](#)

Output Rate: Use Reference 59.94Hz 50Hz

Output 1	Output 2
<p>STATUS</p> <p>Detected Source: 1080i (HD 59.94Hz)</p> <p>Total Video Delay: 60.926277 (msec)</p> <p>CONFIGURATION</p> <p>Video Format: <input type="text" value="AUTO (default)"/></p> <p>Test Signal Output: <input type="text" value="None"/></p> <p>Loss of Signal: <input type="text" value="Freeze"/></p> <p>Manual Freeze: <input checked="" type="radio"/> None <input type="radio"/> Frame <input type="radio"/> Field</p> <p>Audio V-Fade: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled</p> <p>Vertical Offset: Lines</p> <div style="border: 1px solid gray; padding: 2px; display: inline-block;"> << < 0 * > >> </div> <div style="border: 1px solid gray; padding: 2px; display: inline-block; margin-top: 2px;"> < _____ > </div> <p style="margin-left: 20px;">0 1125</p> <p>Horizontal Offset: Pixels</p> <div style="border: 1px solid gray; padding: 2px; display: inline-block;"> << < 0 * > >> </div> <div style="border: 1px solid gray; padding: 2px; display: inline-block; margin-top: 2px;"> < _____ > </div> <p style="margin-left: 20px;">0 2200</p>	<p>STATUS</p> <p>Detected Source: 1080i (HD 59.94Hz)</p> <p>Total Video Delay: 60.926277 (msec)</p> <p>CONFIGURATION</p> <p>Video Format: <input type="text" value="AUTO (default)"/></p> <p>Test Signal Output: <input type="text" value="None"/></p> <p>Loss of Signal: <input type="text" value="Freeze"/></p> <p>Manual Freeze: <input checked="" type="radio"/> None <input type="radio"/> Frame <input type="radio"/> Field</p> <p>Audio V-Fade: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled</p> <p>Vertical Offset: Lines</p> <div style="border: 1px solid gray; padding: 2px; display: inline-block;"> << < 0 * > >> </div> <div style="border: 1px solid gray; padding: 2px; display: inline-block; margin-top: 2px;"> < _____ > </div> <p style="margin-left: 20px;">0 1125</p> <p>Horizontal Offset: Pixels</p> <div style="border: 1px solid gray; padding: 2px; display: inline-block;"> << < 0 * > >> </div> <div style="border: 1px solid gray; padding: 2px; display: inline-block; margin-top: 2px;"> < _____ > </div> <p style="margin-left: 20px;">0 2200</p>

For Acappella router operation as an input expansion option with the Indigo AV Mixer, set the CONFIGURATION parameters on the Video Frame Sync Configuration web page to the following:

- Output Rate: **Use Reference**
- Video Format: **AUTO (default)**

Note Before setting this Video Format pulldown, make sure the reference from the Indigo AV Mixer is connected to the router REF LOOP BNC and recognized on the Router Reference Configuration web page ([Figure 4 on page 12](#)). The router must see the reference first before assigning the video standard or no video may appear on the output.

- Test Signal Output: **None**
- Loss of Signal: **Freeze**
- Manual Freeze: **None**
- Audio V-Fade: **Disabled**
- Vertical Offset: **0 Lines**
- Horizontal Offset: **0 Pixels**

Note The above settings are only specific for the interface between Indigo and the A84HR-CLP Input Expansion frame option. For more information on how to use these controls for a standalone router, refer to [Router Configuration on page 20](#).

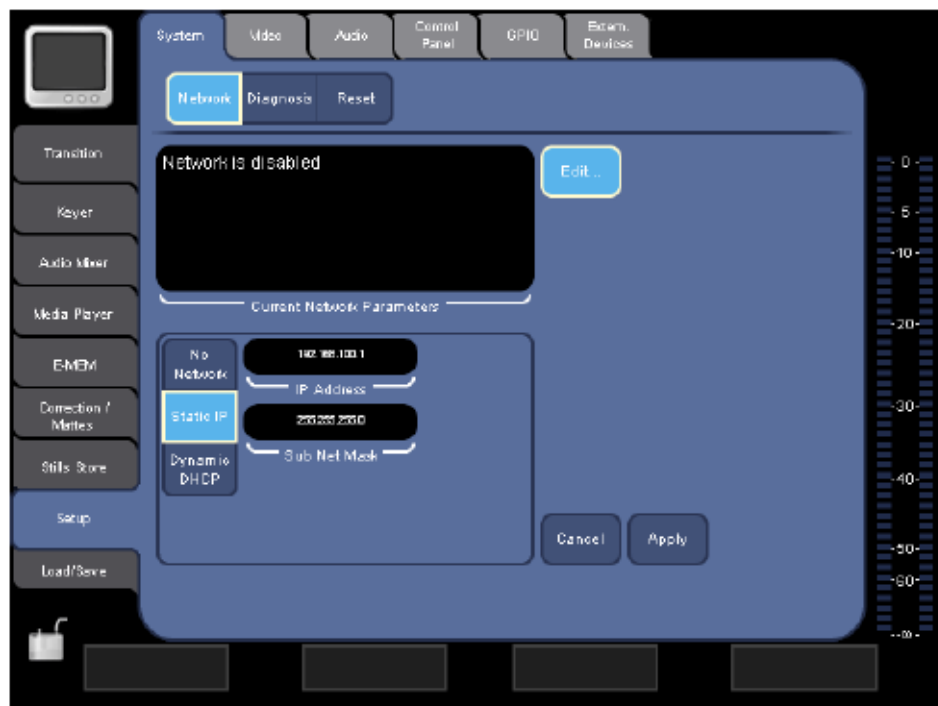
Indigo AV Mixer Setup

Now set up the Indigo AV Mixer to work with the Input Expansion option by setting the controls described below.

Indigo Ethernet Address

To set up the Ethernet address for Indigo without NetConfig, go to the Setup>System>Network menu (Figure 7). Select **Edit** and enter the Ethernet address by touching the black box above IP Address. A dialog box will open that allows you to enter the new address. Select **Apply** to save the new IP address.

Figure 7. Setup>System>Network Menu



Acappella Ethernet Address

To setup the Ethernet address for Acappella, go to the Setup>External Devices>Router menu (Figure 8). If you have used NetConfig to set up the router within the same domain (on the same LAN), select **Discover**. The IP address of the Acappella will appear in the black box beside **Discover**. Select **Connect**.

If you have not used NetConfig to set up Acappella, touch the black box beside **Discover** and manually enter the IP address of Acappella using the dialog box that appears.

Note The IP address must be entered exactly as it is set up in Acappella. Otherwise, the system cannot connect. Manually entering an address forces the system to appear connected, even if the connection is faulty. It is best to use NetConfig to set up the address in Acappella (refer to Figure 3 on page 10) and let Indigo discover it automatically.

Figure 8. Setup>External Devices>Router Menu



Inputs

Once the system is connected both for video (via BNC video cables) and control (via Ethernet), the sources can be assigned to the Indigo ME buttons.

In the Setup>Video>Input menu (Figure 9), check to see that Hi-Res inputs 1 and 2 are set up as SDI HD. If you are using an upscaled source from SD, set Hi-Res input 3 as the upscaled source. Once this is confirmed, go to the Setup>Control Panel>HR Button Assign menu.

Control Panel

In the HR Button Assign menu, you may remap the inputs as you wish. In the 2ME HR Buttons box select input 1, which by default will be **IN01 HR**. In the 2ME HR Sources box select **IN HR Router 01**. Select **Assign**. Continuing to select **Assign** will cause Indigo to advance down the list, reassigning the remaining default settings to router inputs.

Figure 9. Setup>Video>Input Menu



Selecting Aux Sources

Acappella can be used to route auxiliary sources from destination outputs DST 3 and DST 4. You can manually select the Destination (output) button you wish to change on the Acappella panel (Figure 10), then select Source 1-8 to send it to the output.

You may also change aux sources by selecting aux button 1 or 2 on the Indigo control panel (in Hi-Res mode) and then the desired source's ME button.

Figure 10. Acappella A84HR-CLP Router Front Panel



A84HR-CLP Standalone Router Operation

The model A84HR-CLP can also be used as a standalone router with an external reference input for frame syncing two separate destinations (outputs DST 1 and DST 2). If you have purchased the A84HR-CLP for standalone operation (not for use as an Input Expansion option for an Indigo AV Mixer) use the information given below for the new frame sync functionality.

For use with the Indigo AV Mixer as an Input Expansion option, follow the instructions in [Using the A84HR-CLP with the Indigo AV Mixer on page 7](#).

Router Installation

The A84HR-CLP router is 1 RU high and fits into a standard equipment rack with customer-supplied screws. Refer to the *Acappella Instruction Manual* or *Quick Reference Guide* for complete installation information. The front of the router is illustrated in [Figure 10 on page 19](#).

Connect the external frame sync reference you will be using to the REF LOOP at BNCs J1 or J2 and terminate the unused BNC input with a cable looping to another destination or a 75 ohm termination. Use an NTSC with black/burst for reference with 720p, 1080i, and SD at 59.94 Hz. Use a PAL with black/burst reference for 720p, 1080i, and SD at 50 Hz.

Note Make sure the reference is connected and recognized by the router before doing Frame Sync configuration and selecting video formats.

Router Configuration

Standard router configuration is described in the *Acappella Instruction Manual*. These release notes are provided in hard copy as supplemental information for using the frame sync functionality that is not included in the manual. Keep these instructions for reference.

Configure your router according to the manual for Status and Network Config. After setting the Network Config, select the link to the Reference Config web page.

Router Reference Configuration Web Page

On the Router Reference Configuration web page (Figure 11), the Reference Input Standard of the signal connected to the Acappella router REF LOOP will be reported under Reference Input Standard. Make sure the reference is present and correct as reported for your application.

With zero settings for the Vertical and Horizontal Offset on this web page, the router switch point will be that recommended in RP168-2002 for Field 1 and not for Field 2 of the input reference signal. Horizontal and Vertical Offset settings can also be made to the video connected to the frame sync outputs on Output 1 and Output 2 on the Video Frame Sync Configuration web page (Figure 12 on page 22). With zero settings for these frame sync output offsets, each frame sync output will match the reference frame start position.

The Router Reference Configuration Vertical and Horizontal Offset settings will adjust the switch point for input video signals, and also the frame start position of both frame sync output video channels. Further timing adjustment of individual frame sync outputs may be performed on the Frame Sync Configuration web page (Figure 13 on page 24).

Figure 11. Router Reference Configuration Web Page



ACAP_30 Router Reference Configuration

Model: [A84HR-CLP](#)

Description: [8x4x1 Vid w/Clean; Local Panel and Redundant Power](#)

Location: [Modular Lab](#)

Video Reference

Reference Input Standard:	525 NTSC Locked	Minimum	Maximum
Vertical Offset:			
	Reference Lines	-15	16
Horizontal Offset:			
	microseconds	-30.5	30.5

Note: With offsets set to 0, switch occurs with respect to reference input as follows

NTSC Middle of line 10

PAL Middle of line 6

Tri-Level Middle of line 7

Reference Time Server

Broadcast field rate time reference:

Disable Enable

State: [Sleep](#)

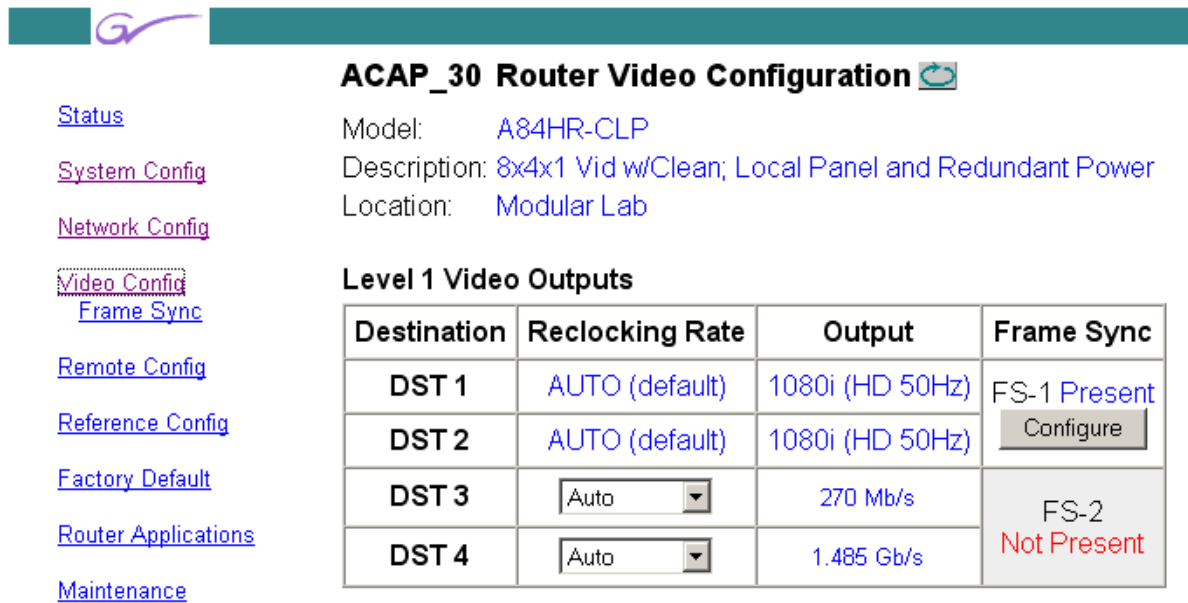
Router Video Configuration

Now select the link to the Video Config web page shown in [Figure 12](#).

Destinations DST 1 and DST 2 are read-only fields and reported as **Auto (Default)** and the Output column is reporting the present video format detected on this output. The Frame Sync column will report if the FS-1 function is **Present** or **Not Present**. All of this information comes from the Video Frame Sync Configuration web page ([Figure 13 on page 24](#)).

Note Frame Sync FS-2 is not active at this time.

Figure 12. Acappella Video Config Web Page



ACAP_30 Router Video Configuration

Model: A84HR-CLP
 Description: 8x4x1 Vid w/Clean; Local Panel and Redundant Power
 Location: Modular Lab

Level 1 Video Outputs

Destination	Reclocking Rate	Output	Frame Sync
DST 1	AUTO (default)	1080i (HD 50Hz)	FS-1 Present
DST 2	AUTO (default)	1080i (HD 50Hz)	<input type="button" value="Configure"/>
DST 3	Auto	270 Mb/s	FS-2
DST 4	Auto	1.485 Gb/s	Not Present

Select the **Configure** button in the Frame Sync column (or use the Frame Sync link under the Video Config link on the left) to access the Video Frame Sync Configuration web page explained next in [Video Frame Sync Configuration Web Page on page 23](#).

Video Frame Sync Configuration Web Page

The new Video Frame Sync Configuration web page is shown in [Figure 13 on page 24](#). Use the instructions below to configure the parameters available on this page. The Output 1 and Output 2 controls are identical in operation.

Output Rate

The Output Rate control allows you to select from three radio button choices:

- **Use Reference** – selecting this choice sets the router to use the external reference connected to the Acappella REF LOOP for the timing reference for Output 1 and Output 2. The reference input standard is reported on the Router Reference Configuration web page ([Figure 11 on page 21](#)).
- **59.94Hz** – select this setting when you want to use the internally generated test signal at a 59.94Hz frame rate.
- **50Hz** – select this setting when you want to use the internally generated test signal at a 50Hz frame rate.

Video Format

Note Before selecting your video format, make sure the frame reference input is connected and recognized by the router. You can check this on the Router Reference Configuration web page ([Figure 11 on page 21](#)).

The video format control provides a pulldown menu to select from one of the following:

- **AUTO (default)** – the video format is automatically detected by the router.
- **SD** – the video format is forced by the module to be SD video (serial digital).
- **720p** – the video format is forced by the module to be 720p video (high definition).
- **1080i** – the video format is forced by the module to be 1080i video (high definition).

Note When forcing the video to a specific format make sure the reference source fed to the router is compatible with this format. Refer to [Router Installation on page 20](#).

Figure 13. Router Video Frame Sync Configuration Web Page

ACAP_30 Router Video Frame Sync Configuration Model: [A84HR-CLP](#)Description: [8x4x1 Vid w/Clean; Local Panel and Redundant Power](#)Location: [Modular Lab](#)**Frame Sync Module Configuration**Firmware Version: [V1.0.3](#)

Output Rate: <input checked="" type="radio"/> Use Reference <input type="radio"/> 59.94Hz <input type="radio"/> 50Hz	
Output 1	Output 2
STATUS	STATUS
Detected Source: 1080i (HD 59.94Hz)	Detected Source: 1080i (HD 59.94Hz)
Total Video Delay: 60.926277 (msec)	Total Video Delay: 60.926277 (msec)
CONFIGURATION	CONFIGURATION
Video Format: <input type="text" value="AUTO (default)"/>	Video Format: <input type="text" value="AUTO (default)"/>
Test Signal Output: <input type="text" value="None"/>	Test Signal Output: <input type="text" value="None"/>
Loss of Signal: <input type="text" value="Freeze"/>	Loss of Signal: <input type="text" value="Freeze"/>
Manual Freeze: <input checked="" type="radio"/> None <input type="radio"/> Frame <input type="radio"/> Field	Manual Freeze: <input checked="" type="radio"/> None <input type="radio"/> Frame <input type="radio"/> Field
Audio V-Fade: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled	Audio V-Fade: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
Vertical Offset:	Vertical Offset:
Lines	Lines
<input type="text" value="0"/> <input type="button" value="<<"/> <input type="button" value="<"/> <input type="button" value="*"/> <input type="button" value=">"/> <input type="button" value=">>"/>	<input type="text" value="0"/> <input type="button" value="<<"/> <input type="button" value="<"/> <input type="button" value="*"/> <input type="button" value=">"/> <input type="button" value=">>"/>
<input type="button" value=" <"/> <input type="button" value="> "/>	<input type="button" value=" <"/> <input type="button" value="> "/>
0 1125	0 1125
Horizontal Offset:	Horizontal Offset:
Pixels	Pixels
<input type="text" value="0"/> <input type="button" value="<<"/> <input type="button" value="<"/> <input type="button" value="*"/> <input type="button" value=">"/> <input type="button" value=">>"/>	<input type="text" value="0"/> <input type="button" value="<<"/> <input type="button" value="<"/> <input type="button" value="*"/> <input type="button" value=">"/> <input type="button" value=">>"/>
<input type="button" value=" <"/> <input type="button" value="> "/>	<input type="button" value=" <"/> <input type="button" value="> "/>
0 2200	0 2200

Test Signal Output

One of two internally generated test signal outputs may be placed on the output with this control for troubleshooting and other purposes. The Output Rate of the test signal must be set as 59.94Hz or 50Hz with the Output Rate control (see [Output Rate on page 23](#)).

The Test Signal Output choices are as follows:

- **None** – no test signal placed on the output.
- **Color Bars** – a 75% color bars test signal will be placed on the output at the frame rate selected in the Output Rate control.
- **Blue Screen** – a 75% blue screen test signal will be placed on the output at the frame rate selected in the Output Rate control.

Loss of Signal

The action of the output signal on loss of signal or sync can be selected from one of the following:

- **Freeze** – the output video will freeze on the last good video frame.
- **Pass** – when sync is lost on the input signal, the signal will continue to be passed to the output.
- **Blue Screen** – upon loss of signal the output video will freeze on the last good frame and display it for one second after which a 75% blue screen will be displayed.

Manual Freeze

A Manual freeze can be performed by the user at any time with this control. Select one of the following to do a manual freeze:

- **None** – no manual freeze.
- **Frame** – freezes the last full frame of video (goes between Field 1 and Field 2). This is the best choice for a progressive video signal (720p).
- **Field** – the recommended setting for a moving interlaced (1080i) video freeze. Provides a cleaner image as it is not switching between fields.

Note The **Field** radio button will be greyed out when a progressive HD signal is present.

Audio V-Fade

When this control is enabled, embedded audio present on the Output 1 and Output 2 video signals will be muted during a switch between the two video inputs eliminating any pops or clicks in the audio.

Vertical and Horizontal Offsets

These controls allow you to adjust the vertical and horizontal offset of the frame sync reference outputs independently. The adjustment parameters for each control are given on the web page for each video format.

Before setting these controls it is important to understand that there is a relationship between these Frame Sync offset controls and the offset controls on the Router Reference Configuration web page. This relationship is described in [Set Router Reference Configuration on page 11](#).

The Vertical and Horizontal Offset controls on the Video Frame Sync Configuration web page have a range of zero to one frame minus one pixel. Depending on the position of the input video with respect to the reference frame start, this offset will cause the electrical delay through the frame sync to wrap around at 2 frames minus 5 lines. The full range of delay control is from one frame minus 5 lines to 2 frames minus 5 lines. With the input video aligned with the reference frame start, and zero frame sync offset, the nominal electrical delay through the sync is one frame period.

Additional Router Configuration

This completes the new router configuration steps involving the new frame sync functionality. Finish router configuration as required according to the *Acappella Instruction Manual*.