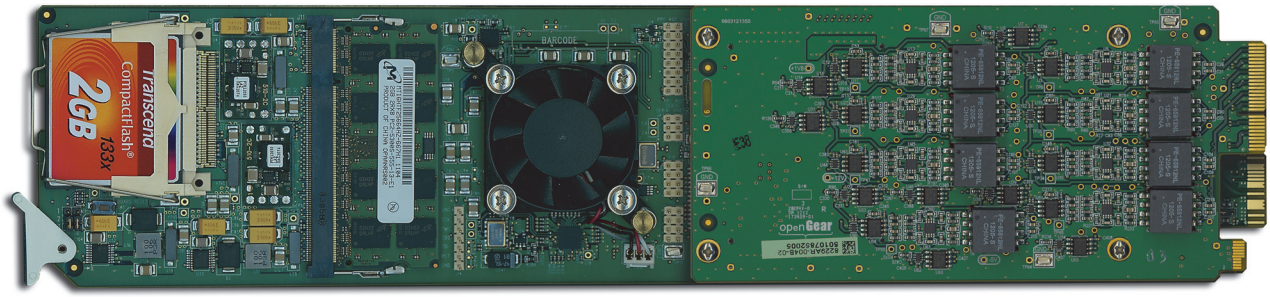
UDC-8625A(-A, -B)

3G/HD/SD SDI Multi-Function Format Converters

User Manual



ROSS
Video Production Technology

UDC-8625A(-A, -B) User Manual

- Ross Part Number: 8625ADR-004-02
- Release Date: February 22, 2013.

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Trademarks

Important Regulatory and Safety Notices to Service Personnel

Before using this product and nay associated equipment, refer to the "**Important Safety Instructions**" listed below to avoid personnel injury and to prevent product damage.

Product may require specific equipment, and/or installation procedures to be carried out to satisfy certain regulatory compliance requirements. Notices have been included in this publication to call attention to these specific requirements.

Symbol Meanings

This symbol on the equipment refers you to important operating and maintenance (servicing) instructions within the Product Manual Documentation. Failure to heed this information may present a major risk of damage to persons or equipment.

Warning — *The symbol with the word "**Warning**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.*

Caution — *The symbol with the word "**Caution**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.*

Notice — *The symbol with the word "**Notice**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, may result in major or minor equipment damage or a situation which could place the equipment in a non-compliant operating state.*

ESD Susceptibility — *This symbol is used to alert the user that an electrical or electronic device or assembly is susceptible to damage from an ESD event.*

Important Safety Instructions

Caution — *This product is intended to be a component product of the DFR-8300 series frame. Refer to the DFR-8300 Series Frame User Manual for important safety instructions regarding the proper installation and safe operation of the frame as well as its component products.*

Warning — *Certain parts of this equipment namely the power supply area still present a safety hazard, with the power switch in the OFF position. To avoid electrical shock, disconnect all A/C power cords from the chassis' rear appliance connectors before servicing this area.*

Warning — *Service barriers within this product are intended to protect the operator and service personnel from hazardous voltages. For continued safety, replace all barriers after any servicing.*
This product contains safety critical parts, which if incorrectly replaced may present a risk of fire or electrical shock. Components contained with the product's power supplies and power supply area, are not intended to be customer serviced and should be returned to the factory for repair. To reduce the risk of fire, replacement fuses must be the same time and rating. Only use attachments/accessories specified by the manufacturer.

Warning — *This product includes an "Ethernet Port" which allows this product to be connected to a local area network (LAN). Only connect to networks that remain inside the building. Do not connect to networks that go outside the building.*

EMC Notices

United States of America
FCC Part 15

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Limited could void the user's authority to operate this equipment.*

CANADA

This Class "A" digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe "A" est conforme a la norme NMB-003 du Canada.

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of CE Directive 93/68/EEC.

INTERNATIONAL

This equipment has been tested to **CISPR 22:1997** along with amendments **A1:2000** and **A2:2002**, and found to comply with the limits for a Class A Digital device.

Notice — *This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.*

Maintenance/User Serviceable Parts

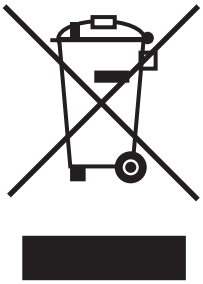
Routine maintenance to this openGear product is not required. This product contains no user serviceable parts. If the module does not appear to be working properly, please contact Technical Support using the numbers listed under the "Contact Us" section on the last page of this manual. All openGear products are covered by a generous 5-year warranty and will be repaired without charge for materials or labor within this period. See the "Warranty and Repair Policy" section in this manual for details.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed out wheelie bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performance of our products.

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Contents

Introduction

In This Chapter

This chapter contains the following sections:

A Word of Thanks

Congratulations on choosing an openGear UDC-8625A(-A, -B) 3G/HD/SD SDI Multi-Function Format Converter. Your card is part of a full line of Digital Products within the openGear Terminal Equipment family of products, backed by Ross Video's experience in engineering and design expertise since 1974.

You will be pleased at how easily your new card fits into your overall working environment. Equally pleasing is the product quality, reliability and functionality. Thank you for joining the group of worldwide satisfied Ross Video customers!

Should you have a question pertaining to the installation or operation of your card, please contact us at the numbers listed on the back cover of this manual. Our technical support staff is always available for consultation, training, or service.

Product Overview

The UDC-8625A series are feature rich 3G[1] / HD / SD SDI converters that support all traditional formats including 1080p, 1080i, 720p, 480i, and 576i. Audio and video synchronization is combined with a signal processor, offering full control of the 16 channels of audio, with gain, invert, shuffle and sample rate conversion. Video processing offers adjustment for luma / chroma gain plus black offset with ANC processing including AFD processing and insertion. Fill around Pillar bar / letter box (Wings) can be inserted from the external fill signal or internally from a logo inserter. A/B inputs can be configured to V-Fade or operate in an auto fail-safe mode selecting the secondary input on failure / absence of the primary input.

Keyer

The UDC-8625A series can be operated as a keyer using the external Key / Fill inputs to key over the Program input. The operation can be extended to allow for mixing of the background with V-Fade transitions behind the keyer by using the second background input.

Logo Inserter

The UDC-8625A series offer internal 2GB storage for logo insertion that supports static and animated playout with support for TGA, GIF, PNG, JPEG, and BMP file formats.

A/B Mixer

For downstream signal mixing, the UDC-8625A series offers a full audio / video mixing engine that can be configured to perform Fade-Fade, Take-Fade, or Fade-Take transitions with selectable rate control.

Combined UDC, Keyer, Logo Inserter, and A/B Mixer

Any combination, as required!

Control

The UDC-8625A series offer complete remote control and monitoring via the DashBoard Control System. Control via the GVG M-2100 automation protocol is also available, which can be used over the serial port (RS-232 or RS-422) or ethernet port (TCP or UDP).

Discrete Audio Processing (UDC-8625A-A and UDC-8625A-B)

The UDC-8625A-A and UDC-8625A-B offer discrete audio processing using an audio daughter card and the 8320AR-052A, 8320AR-053A, or 8320AR-053B rear modules with 8 AES connections. DashBoard enables configuration of the 8 AES I/O as 8 AES inputs, 8 AES outputs, or 4 AES inputs / 4 AES outputs. The UDC-8625A-A and UDC-8625A-B also offer embedding, de-embedding and full discrete audio processing functions.

The UDC-8625A-A unbalanced AES model is available with an 8 DIN rear module (8320AR-053A) or an 8 HD-BNC rear module (8320AR-053B). The UDC-8625A-B provides 8 balanced AES connections via WECO™ terminal blocks on the 8320AR-052A rear module.

1. Not supported on the 8310AR-033 rear module.

Features

The following features are standard on the UDC-8625A series cards:

- Compliance with SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE 272M-A 48kHz 24-bit, and SMPTE 299M-2004 48kHz 24-bit
- Passes SMPTE 291M formatted vertical ancillary data from input to output
- Up/Down/Cross Conversion of all traditional formats: 1080p[1], 1080i, 720p, 480i, and 576i
- Compatible with SmartConversion™
- Automatically detects the incoming video format, and converts to the assigned output format
- Built-in Frame Synchronizer times outputs to a selectable local or frame-wide reference
- Support for SD reference or tri-level sync
- Support for "cascade" output of Wings SDI input
- Additional input for A/B transitions or use as a backup input
- Supports Active Format Description (AFD)
- Flexible aspect ratio control
- Individual Proc Amps for each output
- Output can be dithered and clipped to SMPTE levels
- Provides DTVCC, and NTSC caption processing including frame rate conversion
- External key video and key alpha inputs for keyers
- 2GB animation store for keyers
- Ample input status, and output test pattern and tone generation for easy signal troubleshooting
- 16 channels embedded audio pass through with SRC and gain control
- Reports status and configuration remotely via the DashBoard Control System™
- Compatible with DataSafe™
- Fully compliant with openGear specifications
- 5-year transferable warranty

UDC-8625A-A and UDC-8625A-B Features

In addition to the standard features, the UDC-8625A-A and UDC-8625A-B also provide:

- Eight configurable AES connections
- Simultaneous discrete audio embedding and/or de-embedding
- Full discrete audio processing, delayed relative to the video
- Simultaneous discrete and embedded processing
- *UDC-8625A-A:* Rear module options available with DIN (8320AR-053A rear module) or with HD-BNC (8320AR-053B rear module) connections for AES inputs/outputs
- *UDC-8625A-B:* Rear module available with WECO™ (8320AR-052A) connections for AES inputs/outputs

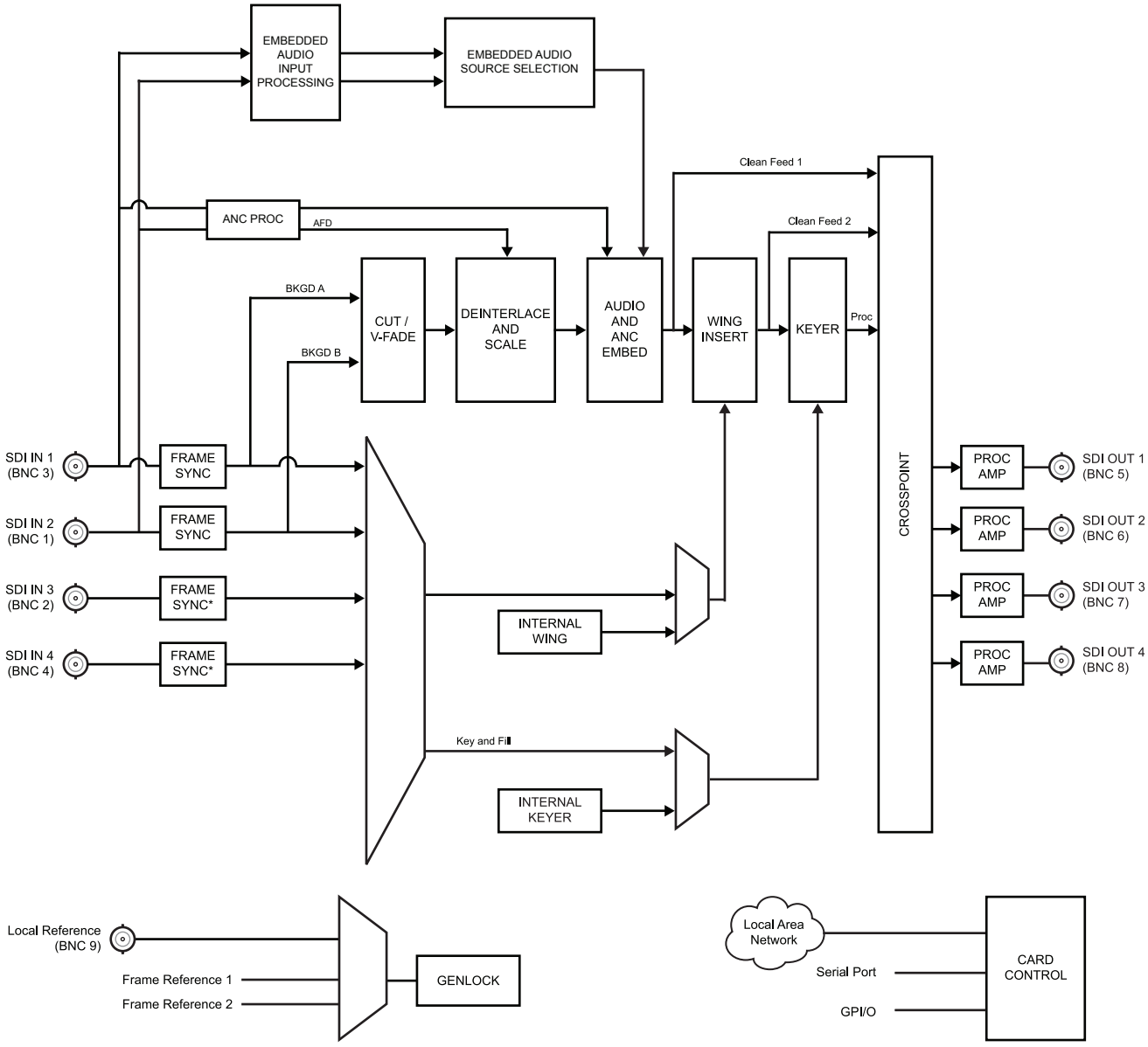
1. Not supported on the 8310AR-033 rear module.

Functional Block Diagrams

This section provides functional block diagrams that outline the workflow of the UDC-8625A series. Note that the number of AES inputs and outputs is determined using the AES IO Config menu in DashBoard.

UDC-8625A Block Diagram

Figure 1.1 outlines the workflow of the UDC-8625A when using an 8310AR-033, 8320AR-033, or 8320AR-052 rear module.

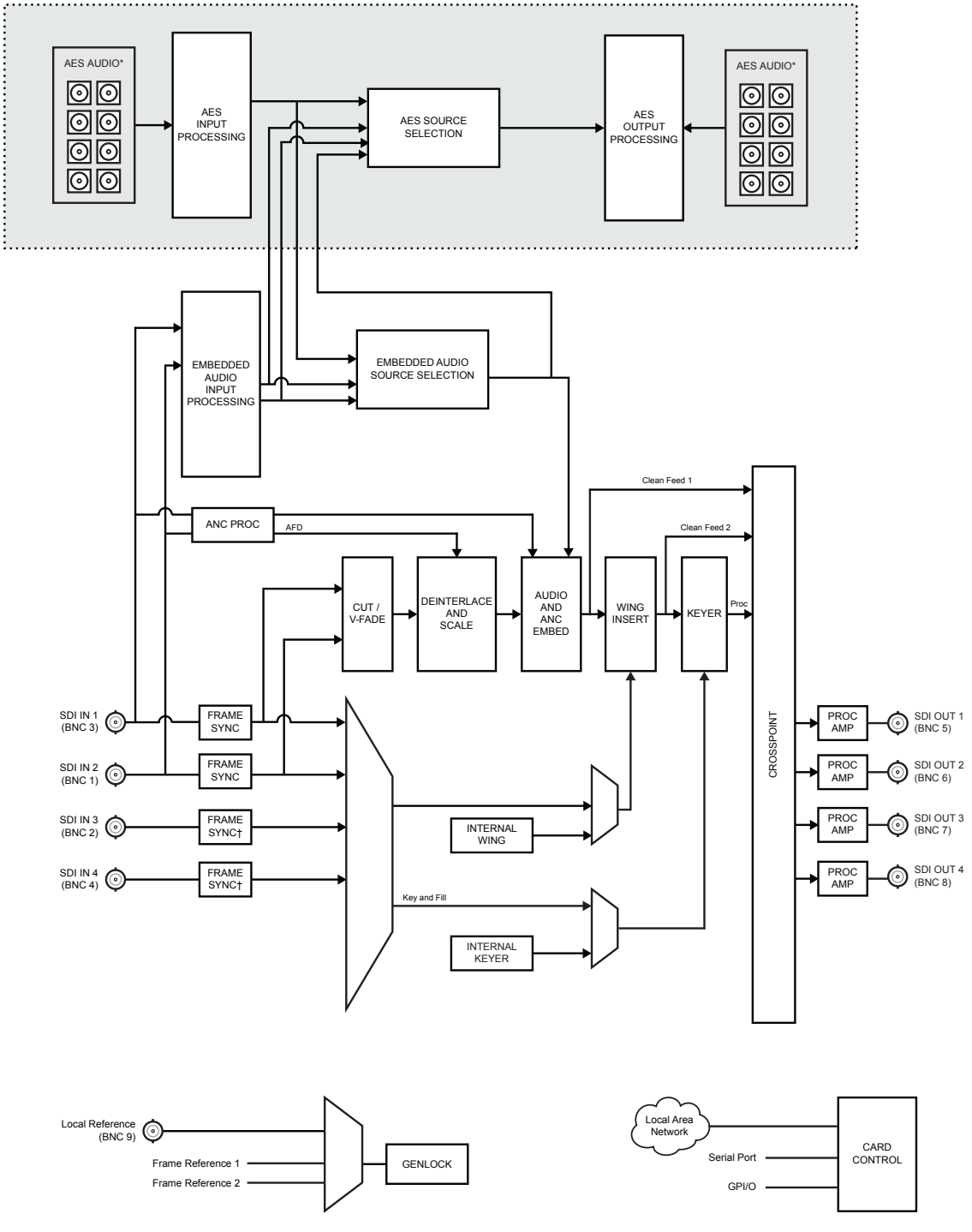


* Frame sync function is always enabled on SDI IN 1 and SDI IN 2. Note that SDI IN 3 and SDI IN 4 are limited to line sync when the output is 3G.

Figure 1.1 *UDC-8625A — Simplified Block Diagram*

UDC-8625A-A and UDC-8625A-B Block Diagram

Figure 1.2 outlines the workflow of the UDC-8625A-A when using the 8320AR-053A Rear Module. When using the 8320AR-053B Rear Module, HD-BNC connectors are available. When using the UDC-8625A-B, the 8320AR-052A Rear Module provides WECO™ connectors.



* When used with the 8320AR-053A rear module. Note that the number of AES inputs and outputs is dependent on how the AES IO Config is set: 8 in and 0 out, 4 in and 4 out, 0 in and 8 out.

† Frame sync function is always enabled on SDI IN 1 and SDI IN 2. Note that SDI IN 3 and SDI IN 4 are limited to line sync when the output is 3G.

Requires the audio daughter card and the appropriate rear module.

Figure 1.2 *UDC-8625A-A and UDC-8625A-B — Simplified Block Diagram*

Format Conversion

The UDC-8625A series provides SD to HD up-conversion, HD to SD down-conversion, and HD to HD cross-conversion. The card converts the incoming video to any supported video format and incorporates a video frame synchronizer to allow the output video to be timed to an external video reference.

The UDC-8625A series can cleanly switch between SDI IN 1 and SDI IN 2 for conversion. The two sources do not have to be the same format. SDI IN 3 and SDI IN 4 do not offer format conversion. Using advanced video de-interlacing algorithms, and full 10-bit processing, format conversion is performed with the highest possible picture quality. As part of the format conversion process, a flexible aspect ratio converter allows the video to be re-sized to a number of standard aspect ratios.

Supported Format Conversions

This section provides a summary of the supported formats for conversion available for the UDC-8625A series. (**Table 1.1**) Note that if an unsupported format is received, an alarm message is displayed in the **Video Processing Output** field of the **Signal** tab.

Table 1.1 Supported Conversion Formats

Input Formats	Output Formats							
	480i 59.94	720p 59.94	1080i 59.94	1080p 59.94 Lvl A	576i 50	720p 50	1080i 50	1080p 50 Lvl A
480i 59.94	✓	✓	✓	✓				
720p 59.94	✓	✓	✓	✓				
1080i 59.94	✓	✓	✓	✓				
1080p 59.94 Lvl A	✓	✓	✓	✓				
576i 50					✓	✓	✓	✓
720p 50					✓	✓	✓	✓
1080i 50					✓	✓	✓	✓
1080p 50 Lvl A					✓	✓	✓	✓

Output Format Reference Compatibility

The UDC-8625A series locks the output video to an external reference. Reference compatibility is shown in **Table 1.2**. A check-mark indicates a supported output reference compatibility.

Table 1.2 Output/Reference Compatibility

Reference	Output							
	480i 59.94Hz	720p 59.94Hz	1080i 59.94Hz	1080p 59.94Hz	576i 50Hz	720p 50Hz	1080i 50Hz	1080p 50Hz
480i 59.94Hz	✓	✓	✓	✓				
720p 59.94Hz		✓		✓				
1080i 59.94Hz	✓	✓	✓	✓				
576i 50Hz					✓	✓	✓	✓
720p 50Hz						✓		✓
1080i 50Hz					✓	✓	✓	✓

User Interfaces

The UDC-8625A series includes the following user interfaces.

DashBoard Control System™

The DashBoard Control System™ enables you to monitor and control openGear frames and cards from a computer. DashBoard communicates with cards in the DFR-8300 series frame through the MFC-8300 series Network Controller Card. This controller card is required in order to use DashBoard to monitor the UDC-8625A series card. The DashBoard software and manual are available for download from our website

Note — *Ross Video recommends using the MFC-8320-N Network Controller Card for optimal performance especially when multiple UDC-8625A series cards are installed in one frame. An MFC-8320-S Controller Card can be used, but you may encounter delays in updating settings in DashBoard and upgrading the card software.*

For More Information on...

- setting up and using the MFC-8320-N, refer to the ***MFC-8300 Series User Manual***.
- the UDC-8625A series menus in DashBoard, refer to "**Appendix A. DashBoard Menus**" on page 7-1.

Card-edge Controls

The front-edge of the card features LED indicators for input status and communication activity. The card-edge also includes a 3-position jumper block used to configure the termination on the local reference input.

For More Information on...

- using the card-edge controls, refer to the section "**Card Overview**" on page 2-3.
- the LEDs, refer to the section "**Card-edge LEDs**" on page 2-4.

SNMP Monitoring and Control

The MFC-8300 Series Network Controller card in the DFR-8300 series frame provides optional support for remote monitoring of your frame and the UDC-8625A series card using Simple Network Management Protocol (SNMP), which is compatible with many third-party monitoring and control tools.

For More Information on...

- enabling SNMP Monitoring and Control for your frame, refer to the ***MFC-8300 Series User Manual***.
- SNMP controls for your card, refer to its Management Information Base (MIB) file.

Documentation Terms and Conventions

The following terms and conventions are used throughout this manual:

- "**Active image**" refers to the portion of the video picture area (production aperture) that is being utilized for output content. Active image excludes letterbox bars and pillarbox bars.
- "**Board**" and "**Card**" refer to openGear terminal devices within openGear frames, including all components and switches.
- "**DashBoard**" refers to the DashBoard Control System™.
- "**DFR-8300 series frame**" refers to all versions of the 10-slot (DFR-8310 series frames) and 20-slot (DFR-8321 series frames) and any available options unless otherwise noted.
- "**DTVCC captions**" refer to CEA-708 captions.
- "**Frame**" refers to DFR-8300 series frame that houses openGear cards.
- "**Input 1**" refers to SDI IN 1.
- "**Input 2**" refers to SDI IN 2.
- "**Input 3**" refers to SDI IN 3.
- "**Input 4**" refers to SDI IN 4.
- "**NTSC captions**" refer to CEA-608-D: Line 21 Data Services captions.
- "**Operator**" and "**User**" refer to the person who uses the UDC-8625A series card.
- "**PAL**" refers to PAL-B, and PAL-G unless otherwise stated.
- "**Production aperture**" refers to the image lattice that represents the maximum possible image extent in a given standard (e.g. the full size of all active pixels and active lines). For example, the 1080i production aperture would be 1920x1080.
- "**System**" and "**Video system**" refer to the mix of interconnected production and terminal equipment in your environment.
- "**UDC-8625A**" refers to the model that does not include discrete audio processing features.
- "**UDC-8625A-A**" refers to the model with discrete audio processing features and eight unbalanced AES I/O.
- "**UDC-8625A-B**" refers to the model with discrete audio processing features and eight balanced AES I/O.
- "**UDC-8625A series**" refers to all models unless otherwise noted.
- The "**Operating Tips**" and "**Note**" boxes are used throughout this manual to provide additional user information.

Installation

In This Chapter

This chapter provides instructions for the basic physical installation of your UDC-8625A series card.

The following topics are discussed:

- Before You Begin
- Card Overview
- Card Installation
- Cabling
- Ethernet Port Cabling
- GPI Cabling

Before You Begin

Before you begin, ensure that you are using DashBoard version 5.0.0 or higher. The DashBoard Control System software and user manual are available to download from the Ross Video website.

Static Discharge

Throughout this chapter, please heed the following cautionary note:

ESD Susceptibility — *Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments such as carpeted areas and when synthetic fiber clothing is worn. Always exercise proper grounding precautions when working on circuit boards and related equipment.*

Unpacking

Unpack each card you received from the shipping container and ensure that all items are included. If any items are missing or damaged, contact your sales representative or Ross Video directly.

Card Overview

This section provides an overview of the controls available on the UDC-8625A series card. **Figure 2.1** is an example of a UDC-8625A card. If you have an UDC-8625A-A or an UDC-8625A-B, an audio daughter card is mounted on the card surface.

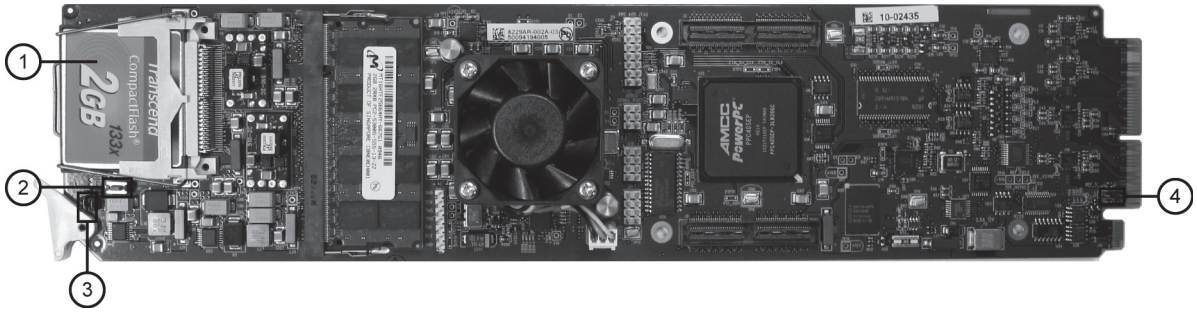


***Figure 2.1** Components*

1) CompactFlash™ Card	3) JP5, JP6
2) Board Reset Button (SW1)	4) Reference Termination (JP7)

1. CompactFlash™ Card

The CompactFlash™ card provides 2GB of flash memory to manage media files, such as stills and animations, for the UDC-8625A series card.

2. Board Reset Button (SW1)

Pressing this button resets the microprocessor and re-initializes the card. This is a hard reset of the card and unsaved settings are not retained. This may cause loss of data and should only be performed as advised by Ross Video Technical Support.

3. JP5, JP6

These jumpers are not yet implemented and must be left in the default position of **Pin 2** (center) and **Pin 3** (bottom).

4. Reference Termination (JP7)

JP7 is a 3-position jumper block used to configure the 75ohm termination on the local reference input on **BNC 9**.

- **Pin 1** (left) + **Pin 2** (center) position — In this position, the reference is terminated with a 75ohm resistor. This configuration is to be used for point-to-point cabling, or on the last card of a daisy chain topology. This is the default position. Refer to **Figure 2.2** for pin positions.

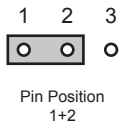


***Figure 2.2** J7 — Default Position*

- **Pin 2** (center) + **Pin 3** (right) position — In this position, the 75ohm termination is removed and the reference is not terminated. This configuration is used in a daisy chain cabling topology where only the last card is to be terminated.

Card-edge LEDs

This section describes the card-edge LEDs. Refer to **Figure 2.3** for LED locations. Note that the Audio Daughter Card is only available on the UDC-8625A-A and UDC-8625A-B.

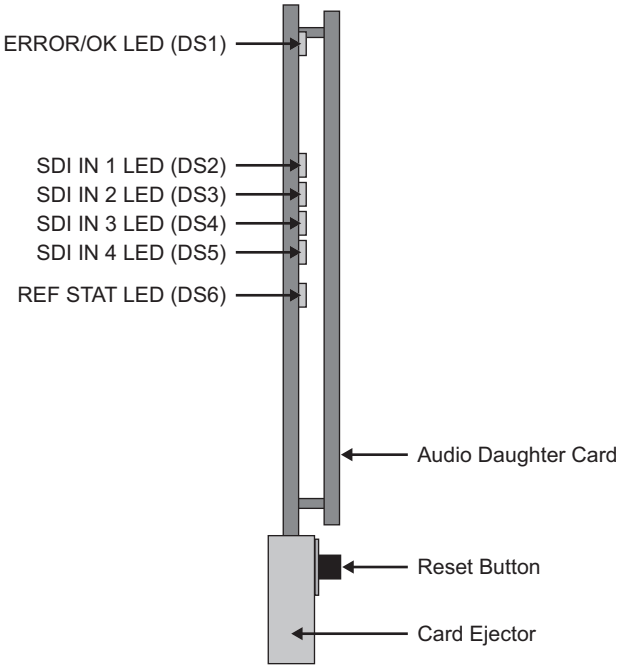


***Figure 2.3** Card-edge LEDs*

Table 2.1 LEDs on the Card-edge

LED	Color	Display and Description
ERROR/OK	Green	When this LED is green, the card is in normal operation with no errors.
	Red	When this LED is red, the card is experiencing internal errors.
	Off	When this LED is off, there is no power to the card.
SDI IN 1	Green	When this LED is green, the SDI IN 1 video input is valid.
	Red	When this LED is red, the SDI IN 1 input is not present or is invalid.
SDI IN 2	Green	When this LED is green, the SDI IN 2 video input is valid.
	Red	When this LED is red, the SDI IN 2 input is not present or is invalid.
SDI IN 3	Green	When this LED is green, the SDI IN 3 input is valid.
	Red	When this LED is red, the SDI IN 3 input is not present or is invalid.
SDI IN 4	Green	When this LED is green, the SDI IN 4 video input is valid.
	Red	When this LED is red, the SDI IN 4 input is not present or is invalid.
REF STAT	Green	When this LED is green, the reference signal is valid.
	Red	When this LED is red, the reference signal is not present or is invalid.

Card Installation

This section provides a brief overview of the physical installation of the UDC-8625A series cards. The procedure for installing a rear module and card is the same regardless of the rear module and frame used. However, the rear module you install depends on the frame and the features you require.

Supported Rear Modules

Note that each rear module accommodates one card and occupies four slots in the frame. For cabling designations, refer to the section "**Cabling**" on page 2-7.

UDC-8625A Rear Modules

The UDC-8625A can be used with the following rear modules:

- **DFR-8310 series frames** — The **8310AR-033** rear module is required. The 8310AR-033 provides four SDI inputs, four SDI outputs, eight GPIOs, a reference input, a serial port, and an ethernet port. The 8310AR-033 includes a bypass relay between SDI IN 1 and SDI OUT 1. Due to this relay, this rear module is not suitable for 3G signals (1080p format).
- **DFR-8321 series frames** — The **8320AR-033** or the **8320AR-052** can be used. Both rear modules provide four SDI inputs, four SDI outputs, eight GPIOs, a reference input, a serial port, and an ethernet port. The 8320AR-033 includes a bypass relay between SDI IN 1 and SDI OUT 1. Due to this relay, this rear module is not suitable for 3G signals (1080p format). The 8320AR-052 rear module should be used in this case, however it does not have a bypass relay.

UDC-8625A-A Rear Modules

When installing the UDC-8625A-A in the DFR-8321 series frames, the following rear modules can be used:

- **8320AR-053A** — This rear module provides one analog reference input, four SDI inputs, four SDI outputs, four GPIOs, eight AES-3id DIN connections, a serial port, and an ethernet port. There is no bypass relay available on this rear module.
- **8320AR-053B** — This rear module provides one analog reference input, four SDI inputs, four SDI outputs, four GPIOs, eight AES-3id HD-BNC connections, a serial port, and an ethernet port. There is no bypass relay available on this rear module.

Note that the DFR-8310 series frame does not support the UDC-8625A-A.

UDC-8625A-B Rear Module

When installing the UDC-8625A-B in the DFR-8321 series frames, the following rear module is used:

- **8320AR-052A** — This rear module provides one analog reference input, four SDI inputs, four SDI outputs, four GPIOs, eight AES/EBU WECO™ connections, a serial port, and an ethernet port. There is no bypass relay available on this rear module.

Note that the DFR-8310 series frame does not support the UDC-8625A-B.

Installing the Card

If the rear module is already installed, proceed to the section "**To install the card in an DFR-8300 series frame**".

To install the rear module in an DFR-8300 series frame

1. Ensure that the DFR-8300 series frame is properly installed. Refer to the ***DFR-8300 Series User Manual*** for details.
2. When installing the rear module, use the following slot combinations:
   - Slots 1, 2, 3, 4
   - Slots 5, 6, 7, 8
   - Slots 9, 10, 11, 12
   - Slots 13, 14, 15, 16
   - Slots 17, 18, 19, 20
3. Remove the Blank Plates from the rear of the selected card frame slots.
4. Seat the bottom of the rear module in the seating slot at the base of the frame's backplane.
5. Align the top hole of the rear module with the screw hole on the top-edge of the frame backplane.
6. Verify that the card aligns with the rear module before fully tightening any of the slot screws.
7. Using a Phillips screwdriver and the supplied screw, fasten the rear module to the backplane. Do not over tighten.
8. Ensure proper frame cooling and ventilation by having all rear frame slots covered with rear modules or Blank Plates.

To install the card in an DFR-8300 series frame

1. Install the card in slot 2, 6, 10, 14, or 18. The slot number is dependent on the slot combinations you installed the rear module in. This allows adequate spacing to avoid damaging the card, the cards installed in the neighboring slots, or both.
2. Hold the card by the edges and carefully align the card edges with the rails in the frame.
3. Fully insert the card into the frame until the card is properly seated in the rear module.
4. Verify whether your rear module label is self-adhesive by checking the back of the label for a thin wax sheet. Remove the wax sheet before applying the label.
5. Affix the supplied rear module label to the rear module face.

Cabling

This section outlines the cabling designations for your card based on the card model and the rear module type you are using.

For More Information on...

- equalization specifications when using Belden 1694A or equivalent coaxial cable for SDI connections, refer to "**Appendix B. Specifications**" on page 8-1.
- configuring your video inputs and outputs in DashBoard, refer to the section "**Configuring the Video Outputs**" on page 3-5, and the section "**On Air Control Menus**" on page 7-29.
- configuring your AES inputs and/or outputs, refer to the section "**Selecting an AES Configuration**" on page 4-2.

UDC-8625A Cabling Overview

This section provides an overview of the UDC-8625A cabling.

8310AR-033 and 8320AR-033 Rear Modules

Refer to **Figure 2.4**, **Figure 2.5**, and the rear module label, for cabling designations.

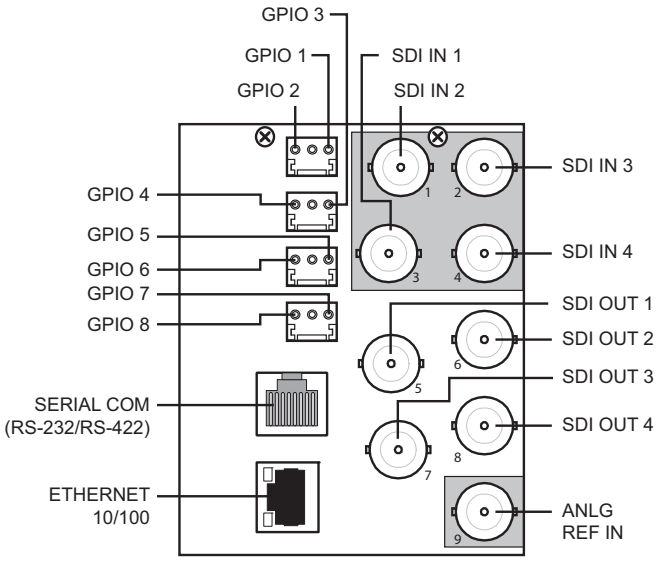


Figure 2.4 *Cable Connections for the 8310AR-033*

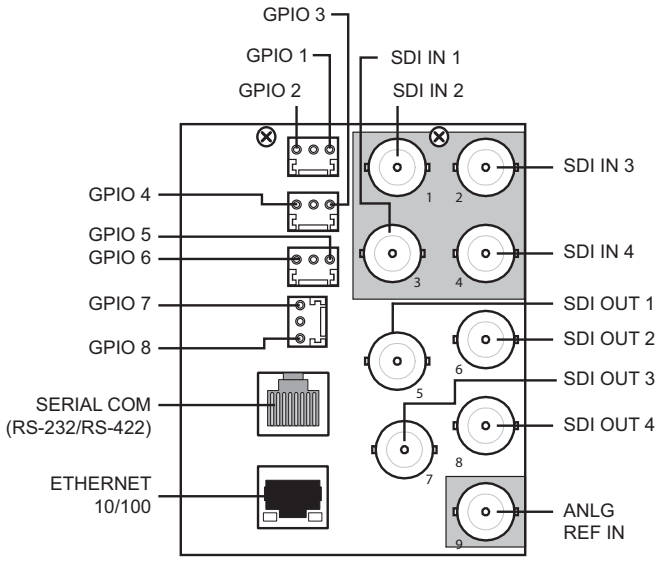


Figure 2.5 *Cable Connections for the 8320AR-033*

8320AR-052 Rear Module

Refer to **Figure 2.6** and the rear module label, for cabling designations.

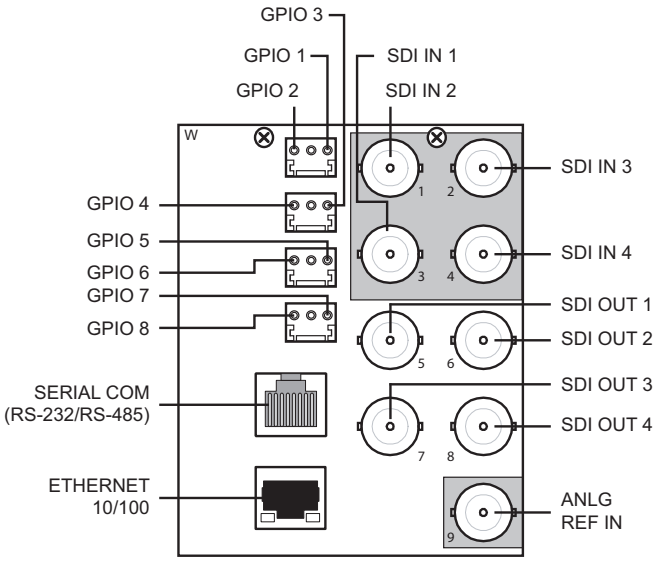


Figure 2.6 *Cable Connections for the 8320AR-052*

UDC-8625A-A Rear Modules

Refer to **Figure 2.4**, **Figure 2.5**, and the rear module label, for cabling designations. Note that when the card is configured as **4 in and 4 out**, the AES 1-4 connections are the inputs and the AES 5-8 connections are the outputs.

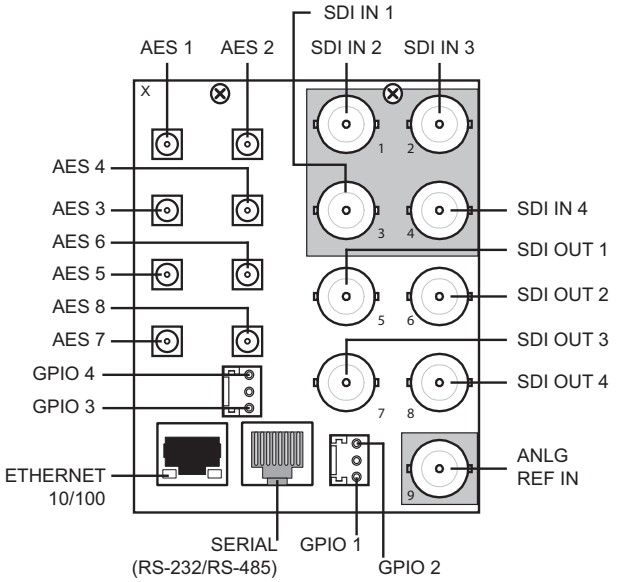


Figure 2.7 *Cable Connections for the 8320AR-053A*

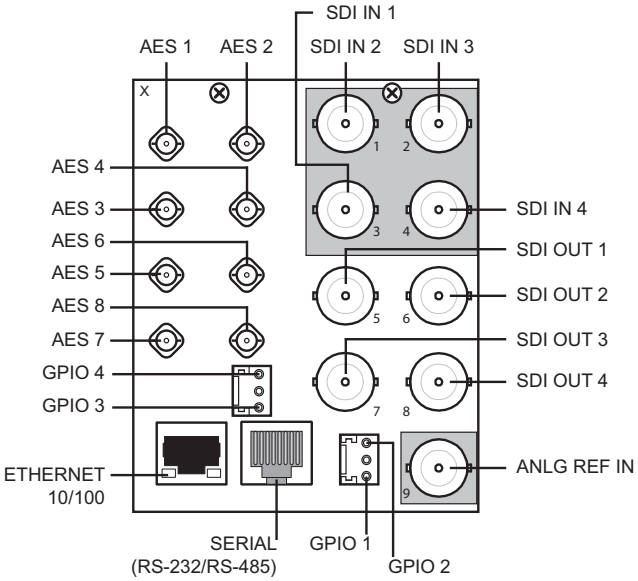


Figure 2.8 *Cable Connections for the 8320AR-053B*

UDC-8625A-B Rear Module

Refer to **Figure 2.9** and the rear module label, for cabling designations. Note that when the card is configured as **4 in and 4 out**, the AES 1-4 connections are the inputs and the AES 5-8 connections are the outputs.

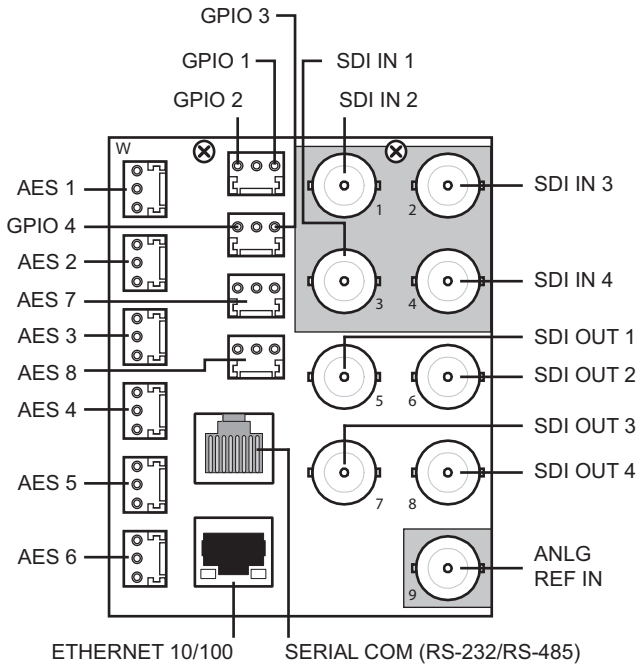


***Figure 2.9** Cable Connections for the 8320AR-052A*

SDI Input Cabling Overview

There are more input functions than there are SDI IN connections. Before cabling the UDC-8625A series card, consider the following functionality and limitations provided in **Table 2.2**.

Table 2.2 Input Designations

Function	SDI IN			
	1[4]	2	3	4
Conversion Source[1]	✓	✓		
Primary Source[1]	✓			
Backup Source[1]		✓		
Relay Source[2]	✓			
Wing Source	✓[5]	✓[5]	✓[3]	✓[3]
Key Video Source			✓[3]	
Key Alpha Source				✓[3]

Table Notes

1. When the Auto Change Over feature is enabled in the On Air Control tab, SDI IN 1 is the primary format conversion source, and SDI IN 2 is the backup format conversion source. When SDI IN 1 is unavailable, the card will automatically switch to SDI IN 2.

When the Auto Change Over feature is disabled, either SDI IN 1 or SDI IN 2 can be used as a format conversion source, and the user can cleanly transition between them.

2. When using the 8310AR-033 or 8320AR-033, the Bypass Relay source will be routed to SDI OUT 1 if the card is unavailable. You may want to provide a valid input of the desired output format on SDI IN 1.
3. SDI IN 3 and SDI IN 4 only provide Line Sync functionality when the output format is 1080p (3G). SDI IN 3 and SDI IN 4 provide Frame Sync capability for other output formats.
4. When using the 8310AR-033 or 8320AR-033, SDI IN 1 and SDI OUT 1 are connected to a Bypass Relay, and do not meet 3G return loss specifications.
5. When using SDI IN 1 or SDI IN 2 for the Wings source, the Wings will be fed from before the format converter. Refer to **Figure 1.1**.

Audio Cabling for the UDC-8625A-A

Both the 8320AR-053A and 8320AR-053B rear modules provide eight unbalanced connections for AES sources. Depending on the rear module type, you will have DIN connections (8320AR-053A) or HD-BNC connections (8320AR-053B). Refer to the section "**UDC-8625A-A Rear Modules**" on page 2-8 for cabling designations.

Audio Cabling for the UDC-8625A-B

The 8320AR-052A rear module provides WECO™ audio terminal blocks with removable connectors. Each connector has locations for the positive, negative, and grounded wires of a balanced AES audio cable.

To wire the AES audio for the UDC-8625A-B

1. Insert an AES audio wire to the designated polarity slot on the connector of the rear module. (**Figure 2.10**)

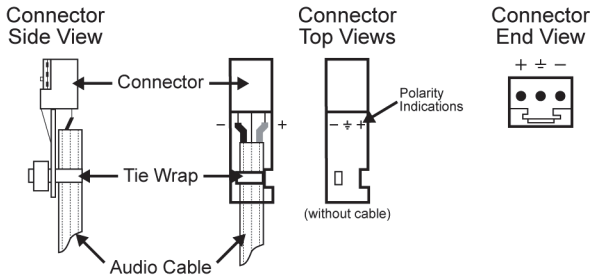


***Figure 2.10** Connector Wiring for Rear Module Input Sockets*

2. Use a tweaker screwdriver to tighten the corresponding capture screw.
3. Repeat steps 1 and 2 for each wire on each connector.
4. Once the cables are wired to the connectors, install the connectors on the terminal blocks for the rear module.

Video Cabling

This section is applicable to all rear module types.

To connect video input and output cables to a rear module

1. Connect the appropriate input video sources to the BNC connectors as follows:
   - Connect the source for **SDI IN 1** to **BNC 3**.
   - Connect the source for **SDI IN 2** to **BNC 1**.
   - Connect the source for **SDI IN 3** to **BNC 2**.
   - Connect the source for **SDI IN 4** to **BNC 4**.
2. Connect the output BNC connectors as follows:
   - Connect **SDI OUT 1** (**BNC 5**) to the destination equipment.
   - Connect **SDI OUT 2** (**BNC 6**) to the destination equipment.
   - Connect **SDI OUT 3** (**BNC 7**) to the destination equipment.
   - Connect **SDI OUT 4** (**BNC 8**) to the destination equipment.

Cabling a Reference Source

Use the following procedure to cable the reference source for your card:

1. If you wish to use the frame reference input, connect the reference input to the **REF1** or **REF 2** input on the DFR-8300 series frame.
2. If you wish to use an local reference input, connect the reference input source to the **REF IN** (**BNC 9**) connector on your rear module.
3. If you are using the local reference input on **BNC 9**, you must also configure **J7** on the card-edge. Choose from the following:
   - **Pin 1** (left) + **Pin 2** (center) position — In this position, the reference is terminated with an 75ohm resistor. This configuration is to be used for point-to-point cabling, or on the last card of a daisy chain topology. This is the default position. (**Figure 2.2**)
   - **Pin 2** (center) + **Pin 3** (right) position — In this position, the 75ohm terminator is removed and the reference is not terminated. This configuration is used in a daisy chain cabling topology where only the last card is to be terminated.

For More Information on...

- configuring your reference source in DashBoard, refer to the section "**Selecting the Reference Source**" on page 3-4.

Power Fail Relay (8310AR-033 and 8320AR-033)

There is a power fail relay from the **SDI IN 1** to **SDI OUT 1** on the 8310AR-033 and 8320AR-033 rear modules only. The purpose of this relay is as follows:

- When the card is removed from the frame, the relay passes video from the SDI IN 1 to SDI OUT 1 of the card. This allows the card to be serviced with minimum interruption to the video signal.
- If the card loses power, or the frame loses power, the video still passes through.
- When the card boots, the relay will be left in Bypass mode until the card can generate a valid output. Once the card is functional, the relay is disabled.

Ethernet Port Cabling

The **Ethernet 10/100** port on the rear module is used to connect to an ethernet network for communications, software upgrades using DashBoard, media file management via an FTP client, and for viewing thumbnails.

This section presents a general overview of the ethernet connection process. The exact steps for connecting your card to your facility via an ethernet network depend on the network requirements of your facility.

Note — *Contact your IT Department before connecting the card to your facility network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP Address, Subnet Mask, and Gateway for the card.*

Ethernet Communication Cabling

In order to properly complete this procedure, you need the following cable:

- **Ethernet Cable** — This is a standard network CAT-5 cable to connect the card to your facility network. You can use a standard straight-through ethernet cable, with no need for a crossover cable as the card includes an Auto-MDIX ethernet PHY that will switch from straight to crossover automatically as needed. Ross Video does not supply this cable.

Use the following method to connect the card to an ethernet network:

- Insert the **Ethernet Cable** into the **Ethernet 10/100** port on the card Rear Module. Refer to **Figure 2.5** for the port location.

For More Information on...

- configuring the ethernet communications for the card, refer to the section "**Ethernet Communication Setup**" on page 3-3.

GPI Cabling

The UDC-8625A series provides up to eight General Purpose Input (GPI) and Tally pins to interface with external equipment. The number of GPI/Tallies available depends on the rear module type and the card model you are using.

The GPI ports are available on 3-pin WECO™ connectors located on the rear module. The 3-pin mating connectors are provided with the rear module.

The default state for the GPI/O contacts is active low signaling. This way, if the card is removed from the DFR-8300 series frame, no external events will be inadvertently asserted by the card. This also means that if a GPI cable is absent from the rear module, no GPI or Tally will be triggered and executed inadvertently by the card.

Ports are user programmable to be either an input (GPI) or an output (Tally). Electrically, the ports are set up for contact closure to ground, with 4.75Kohm pull-up resistor to +5V, so they default to a logical high state.

For More Information on...

- configuring GPIs and Tallies, refer to the section "**Setting up GPI/Tally Communications**" on page 3-7.

GPI/Tally Cabling

This section summarizes the GPI/Tally cabling for the UDC-8625A series cards based on the rear module type.

8310AR-033 and 8320AR-033 Rear Modules

The 8310AR-033 and 8320AR-033 rear modules each provide eight GPI and Tally pins to interface with external equipment. (**Figure 2.11** and **Figure 2.12**)

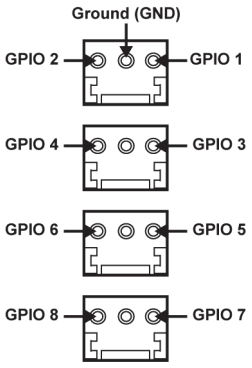


Figure 2.11 *8310AR-033 GPI Connections*

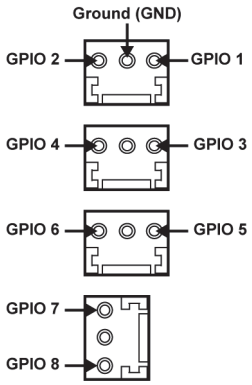


Figure 2.12 *8320AR-033 GPI Connections*

8320AR-052 Rear Module

The 8320AR-052 rear module provides eight GPI and Tally pins to interface with external equipment. (**Figure 2.13**)

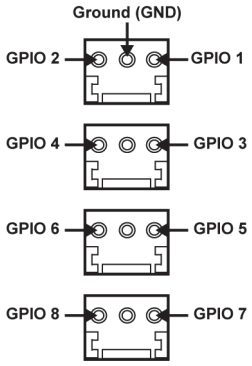


Figure 2.13 *8320AR-052 GPI Connections*

8320AR-052A Rear Module

The 8320AR-052A rear module provides four GPI and Tally pins to interface with external equipment. (**Figure 2.14**)

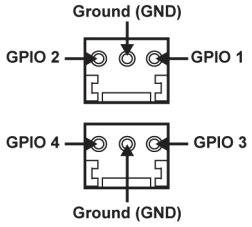


Figure 2.14 *8320AR-052A GPI Connections*

8320AR-053A and 8320AR-053B Rear Modules

The 8320AR-053A and 8320AR-053B rear modules each provide four GPI and Tally pins to interface with external equipment. (**Figure 2.15**)

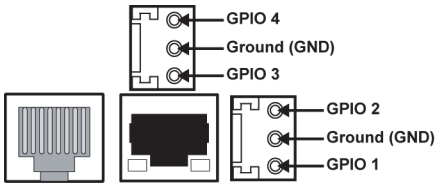


Figure 2.15 *8320AR-053A and 8320AR-053B GPI Connections*

Configuration

In This Chapter

This chapter provides instructions for configuring the UDC-8625A series cards using the options available in the DashBoard Control System™. For information on configuring the AES sources and embedded audio groups, refer to the chapter "**Audio Configuration**" on page 4-1.

The following topics are discussed:

- Using DashBoard
- Ethernet Communication Setup
- Selecting the Reference Source
- Configuring the Video Outputs
- Setting up GPI/Tally Communications
- AFD Overview
- Ancillary Data
- Personality Options
- Software Upgrades
- Loading the Factory Defaults
- Using DataSafe™

Note — *Before proceeding, ensure that you are running DashBoard software version 5.0.0 or higher. You can download the DashBoard Control System software and manual from the Ross Video website.*

Using DashBoard

Before proceeding, ensure that the DashBoard Control System™ is installed on a PC connected to your facility network. The DashBoard software and user manual are available from the Ross Video website.

For More Information on...

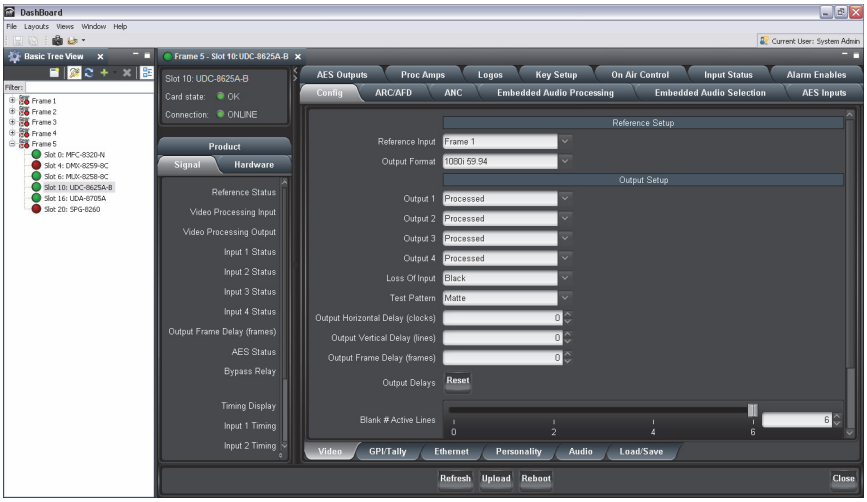
- using DashBoard, refer to the ***DashBoard User Manual***.

To launch DashBoard

1. Ensure that you are running DashBoard software version 5.0.0 or higher.
2. Launch DashBoard by double-clicking its icon on your desktop.
3. Ensure that the DFR-8300 series frame with the UDC-8625A series card(s) is displayed in the Tree View located on the left-side of the DashBoard window. It may take 30 seconds or more to update the Tree View. Consult the ***MFC-8300 Series User Manual*** and ***DashBoard User Manual*** should the Tree View not display the UDC-8625A series card.

To access a card in DashBoard

1. From the **Tree View**, expand the node for the DFR-8300 series frame your cards are installed in. A list of cards installed in the frame is now displayed. In the example below, the node for Frame 5 is expanded to show a list of six cards including the UDC-8625A-B.
2. Double-click the node for a card to display its menus in the **Device View** of DashBoard (right-side of the DashBoard window).



Example of a UDC-8625A-B in DashBoard

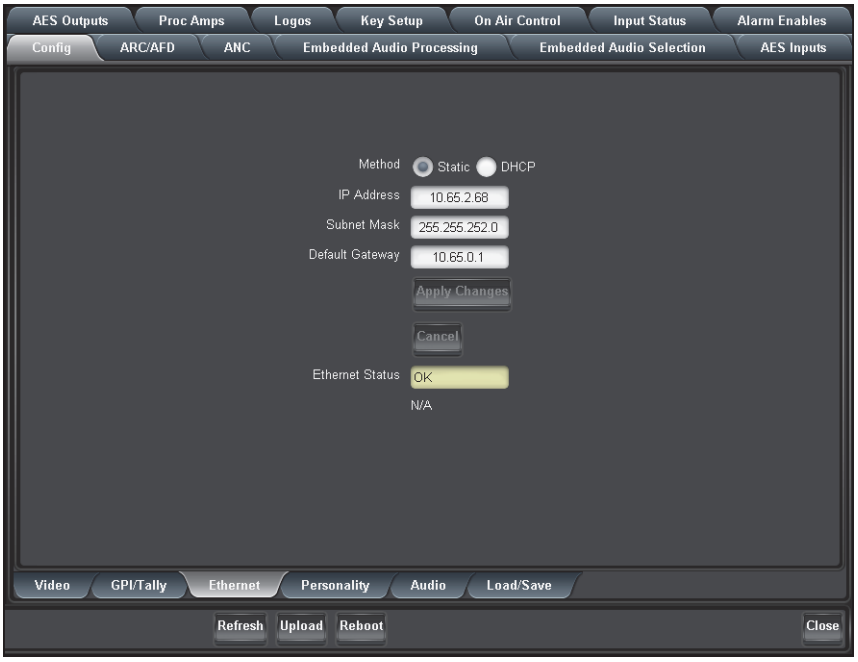
Ethernet Communication Setup

The **Ethernet 10/100** port on the rear module is used to connect to an ethernet network for communications, software upgrades using DashBoard, media file management via an FTP client, and for viewing thumbnails. To use the rear module ethernet port, the card must be configured with valid ethernet settings. The settings can be specified manually (**Static**) or may be obtained automatically from a server on your network (**DHCP**).

Note — *Connect the card to the same network as your DashBoard client computer or to a network that has a route to the network your DashBoard client computer is on. Refer to **Figure 2.5** for the **Ethernet 10/100** port location on the Rear Module.*

To set up ethernet communications for the card

1. From the **Device View**, select the **Config** tab.
2. Select the **Ethernet** tab located at the bottom of the **Config** tab.



Config Tab — Ethernet Tab

3. To obtain network settings automatically, select **DHCP** from the **Method** area.
4. To manually configure the ethernet settings:
   - Select **Static** from the **Method** area.
   - Enter the **IP Address**, **Subnet Mask**, and **Default Gateway** settings for the card.
5. Click **Apply Changes** to save the new settings. Click **Cancel** to revert to the previous settings.

Note — *The **Ethernet Status** field in the **Ethernet** tab displays the current status of your connection. Refer to **Table 7.8** on page 7-11 for a list of the messages.*

Selecting the Reference Source

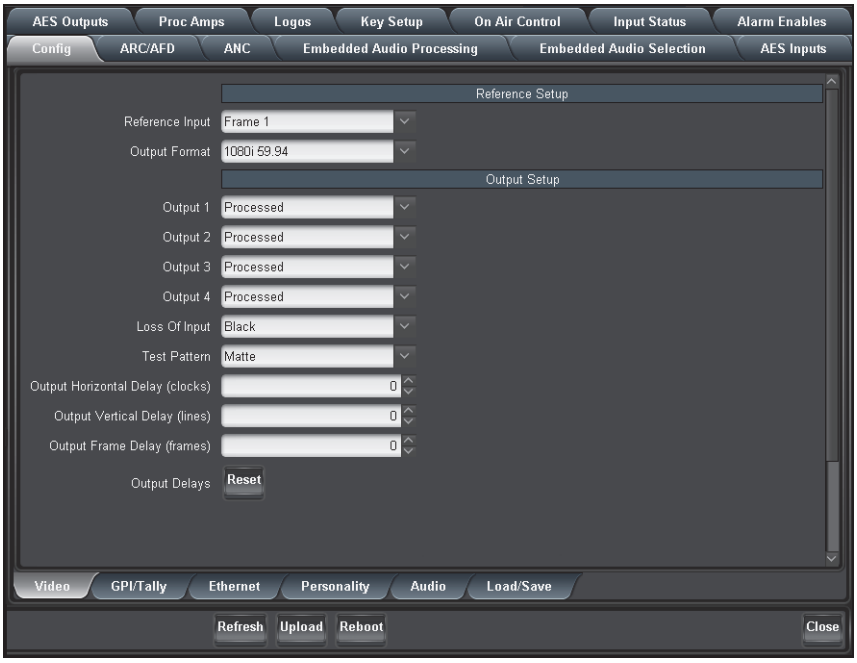
The DFR-8300 series frames support a distributed frame reference, allowing incoming reference signals to feed timing information to all cards in that frame. Thus, a single composite or tri-level sync signal can be used for multiple UDC-8625A series cards. Alternatively, each card accepts a reference signal on the rear module to provide additional system timing flexibility. This section provides information for specifying the reference source for your card.

For More Information on...

- cabling the reference source for your card, refer to the section "**Cabling a Reference Source**" on page 2-11.

To select the reference source for the card

1. From the **Device View** in DashBoard, select the **Config** tab.
2. Select the **Video** tab located at the bottom of the **Config** tab.



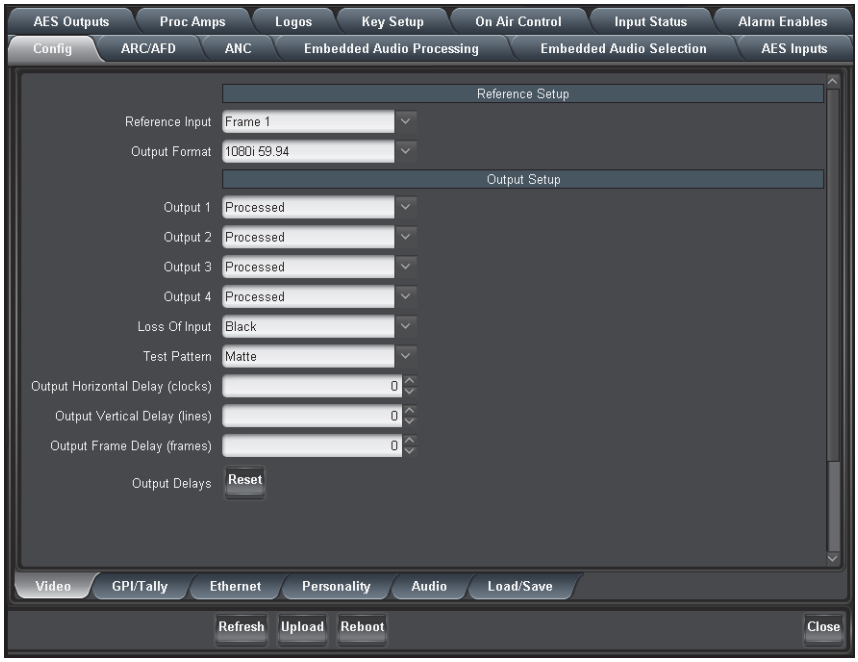
Config Tab — Video Tab

3. Select a reference input from the **Reference Setup** area. Refer to **Table 7.4** on page 7-7 for a list of options.

Configuring the Video Outputs

Use the following procedure to configure your video outputs on the card:

1. From the **Device View** in DashBoard, select the **Config** tab.
2. Select the **Video** tab located at the bottom of the **Config** tab.



Config Tab — Output Setup Area

3. From the **Output Format** menu, select the video format. This specifies the format for all the card outputs. The output must be compatible with the selected reference. Note that the Wings, Key Video, and Key Alpha sources must be the same format as the output format. Refer to **Table 7.4** on page 7-7 for a list of available formats.
4. Configure each output by selecting an option from its **Output** menu:
   - **Processed** — The output is processed, with Wings and key inserted (if selected).
   - **Clean Feed 1** — The output is processed. The keyer and Wings are not included with this output.
   - **Clean Feed 2** — The output is processed, with Wings inserted (if selected). The keyer is not included with this output.
   - **Test Pattern** — Select this option to assign a test pattern to the selected output. You can specify a test pattern to use by selecting an option from the **Test Pattern** menu.
   - **External Wings** — Select this option to output a copy of the Key 1 - Wings source (input 1, 2, 3, or 4). Refer to "**Appendix D. Cascade Feature**" on page 10-1 for details on this feature.
5. From the **Loss Of Input** menu, specify the output during a loss of input, or during a change of input format. Your selection will display until the input signal is stable or returns. Note that the embedded audio will also go silent. Refer to **Table 7.4** on page 7-7 for a list of options.
6. To specify a test pattern for the output, select a type from the **Test Pattern** menu.
7. To adjust the timing (affects all outputs):

- Use the **Horizontal Delay** to specify the horizontal delay in clocks, relative to the selected reference. Refer to **Table 7.4** on page 7-7 for information on the range of delay values on this tab.
- Use the **Vertical Delay** to specify the vertical delay in lines, relative to the selected reference.
- Use the **Frame Delay** to specify the delay in number of frames. Note that the actual processing delay is displayed in the **Output Frame Delay** field of the **Signal** tab.
- Click the **Reset** button to reset to the minimum delay values.

8. From the **Dithering** field, select the type of dithering you want to apply to all the outputs. Refer to **Table 7.4** on page 7-7 for a list of options.
9. Enable the Clip White or Clip Black feature as outlined in **Table 7.4** on page 7-7.
10. If you selected Processed or a Clean Feed in step 4., you can specify the audio group(s) to include in the output of the card as follows:
    - From the **Device View**, select **Config** > **Audio**.
    - From the **Processed Output Audio** area, select the associated group **Enable** box.

For More Information on...

- input status alarms, refer to the section "**Input Status Menus**" on page 7-32.
- enabling alarms, refer to the section "**Alarm Enables Menus**" on page 7-34.
- input status fields in the **Signal** tab, refer to the section "**Signal Tab**" on page 7-2.

Setting up GPI/Tally Communications

This section explains how to configure communications for GPIs and Tallies on the card using the menus and options available in DashBoard. Each of the GPI/O ports can be configured as a GPI or Tally output.

GPI Overview

When configured as a GPI, a port behaves as an input, and can be used to trigger actions such as Cut/Dissolve the Key and/or Background. A push-button switch, or an ON-OFF switch, may be directly connected between the port and the adjacent ground pin. Alternatively, an external device may drive a low level. Minimum pulse duration is 1ms, anything shorter will be filtered out.

Typically, users will configure the GPI for Edge trigger. This means that the action is carried out either on the falling edge (button is pushed), or rising edge (button is released), depending on which Polarity is selected. Alternatively, users may configure the GPI for Level trigger. In this mode, the action is carried out on both the rising and falling edges, so there are effectively two states. The Polarity control can be used to invert the behavior. Regardless of the trigger type, GPI commands may be overridden by other command inputs such as serial protocols.

Edge

This option enables the GPI to act as a latching trigger. Edge triggers are used when you want to toggle between settings. This option enables the GPI to execute a specific function.

- If configured for Falling Edge, the selected function is executed when the GPI input signal transitions from High to Low.
- If configured for Rising Edge, the selected function is executed when the GPI input signal transitions from Low to High.
- Edge triggered GPI signals are sampled once a frame and the associated function is executed only once per frame. The minimum pulse width is 1 millisecond.
- Typically, the edge triggered GPI is driven by external equipment that generates one pulse per event.

Level

Level triggers are used when you want to assert a particular state for a setting. You define the on-air state of the function as being either Level High or Level Low. Therefore, if the on-air state of the Key is defined as Level High for example, when the GPI is a Level High signal, the Key will stay on air. If a Level Low is received, the Key will be taken off air.

- If configured for Active Low, the selected function is executed when the GPI input signal is driven Low.
- If configured for Active High, the selected function is executed when the GPI input signal is driven High.

Tally Overview

When configured as a Tally, a port becomes an output, providing a status indicator. Typically this is used to indicate which input(s) are on-air at any given moment. Each tally output on the card can be configured to be active when any of the four inputs are on air. They can be configured as Active High or Active Low. The Trigger type (Edge or Level) is only relevant for GPI inputs and has no effect on Tally outputs. The tally outputs defaults to a logical high level when inactive. When the tally becomes active, for example the signal is on-air, then the output is driven low.

To set up GPI/Tally communications

1. From the **Device View** in DashBoard, select the **Config** tab.
2. Select the **GPI/Tally** tab located at the bottom of the **Config** tab.
3. To configure a port as a GPI:
   - Assign a transition event to a GPI by selecting an option from the **Function** field next to the GPI in the **GPI/Tally** area. Refer to **Table 7.6** on page 7-9 for a list of options.
   - Select a trigger for the GPI from the **Trigger** column.
   - Select a polarity for the GPI from the **Polarity** column.
4. To configure a port as a Tally:
   - Select what will drive the tally output when the input is on-air by selecting the function next to the **Tally** in the **GPI/Tally** area. Refer to **Table 7.7** on page 7-10 for a list of options.
   - Select the polarity of the tally from the **Polarity** column.

AFD Overview

Active Format Description (AFD) is data that is embedded in the ancillary area to describe the picture format (e.g. 4:3, 16:9) and how it has been converted from one format to another. This information is intended to define how the video of one aspect ratio will display when another aspect ratio is used (SMPTE 2016-1).

The UDC-8625A series card uses the input and output AFD settings to configure the Aspect Ratio Converter (ARC). The UDC-8625A series card uses the AFD to:

- determine where in the coded frame the active content is,
- define the protected area of the active content, and
- determine how to best display the active content in 16:9 or 4:3 format

The protected area is the section of the active content that must be displayed. The unused portion of the image outside this protected area, such as the edges at the sides or the top, can be discarded without affecting the overall content.

Figure 3.1 provides an illustrative example of how an image in a 4:3 coded frame is defined by the applicable AFD Codes.

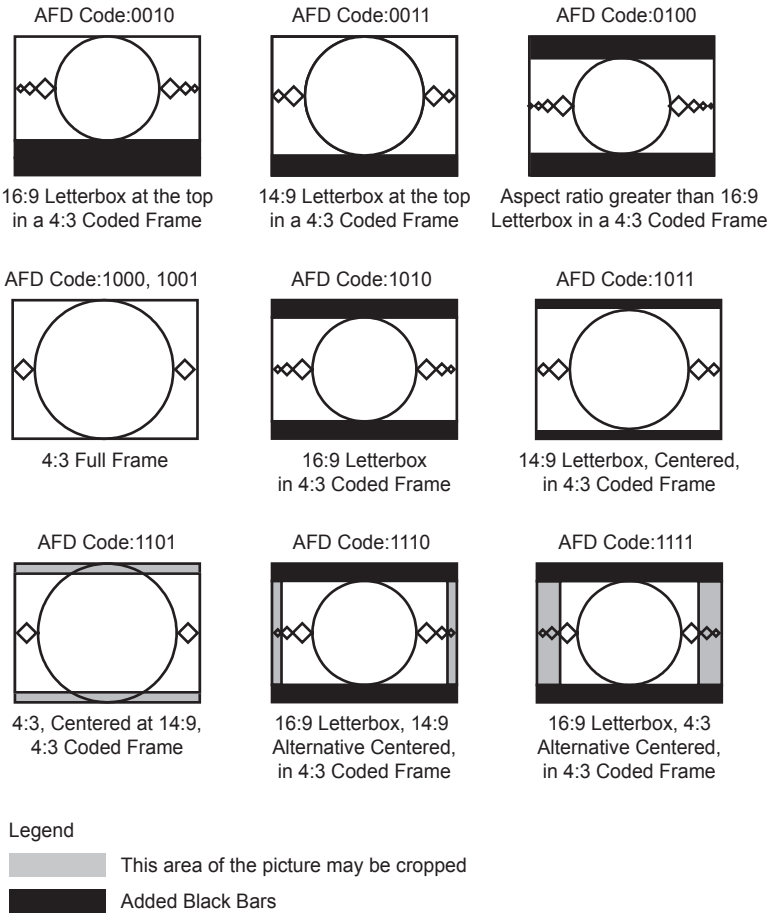


***Figure 3.1** Graphical Example of 4:3 Coded Frame Images*

Figure 3.2 provides an illustrative example of how an image in a 16:9 coded frame is defined by the applicable AFD Codes.

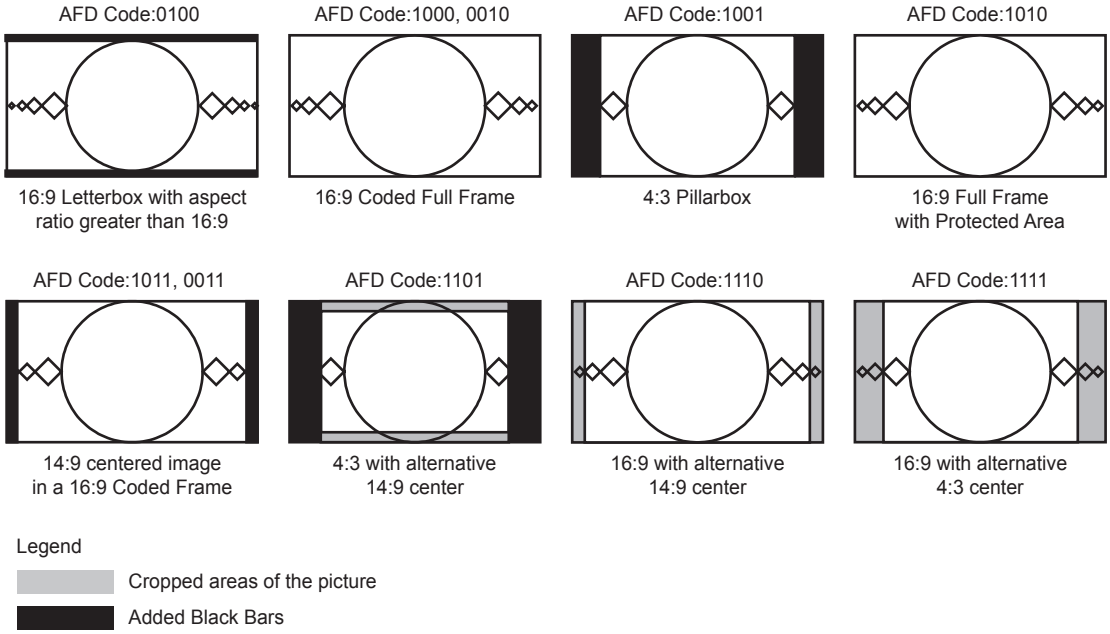


***Figure 3.2** Graphical Example of 16:9 Coded Frame Images*

Auto Output AFD Mode

When the card is configured for Auto Output AFD mode, the output AFD is based on the input AFD Code. Note that only the bold AFD indicate a change in AFD code.

Table 3.1 provides the Output AFD information when the input uses a 4:3 Coded Frame mode.

Table 3.1 Input AFD is 4:3 Coded Frame

Input AFD		Output AFD	
4:3 Coded Frame		4:3 Coded Frame	16:9 Coded Frame
4:3 0010	⇨	4:3 0010	**16:9 1000**
4:3 0011	⇨	4:3 0011	**16:9 1011**
4:3 0100	⇨	4:3 0100	16:9 0100
4:3 1000	⇨	4:3 1000	**16:9 1001**
4:3 1001	⇨	4:3 1001	16:9 1001
4:3 1010	⇨	4:3 1010	**16:9 1000**
4:3 1011	⇨	4:3 1011	16:9 1011
4:3 1101	⇨	4:3 1101	16:9 1101
4:3 1110	⇨	4:3 1110	16:9 1110
4:3 1111	⇨	4:3 1111	16:9 1111

Table 3.2 provides the Output AFD information when the input uses a 16:9 Coded Frame mode.

Table 3.2 Input AFD is 16:9 Coded Frames

Input AFD		Output AFD	
16:9 Coded Frame		4:3 Coded Frame	16:9 Coded Frame
16:9 0010	⇨	**4:3 1010**	16:9 0010
16:9 0011	⇨	**4:3 1011**	16:9 0011
16:9 0100	⇨	4:3 0100	16:9 0100
16:9 1000	⇨	**4:3 1010**	16:9 1000
16:9 1001	⇨	**4:3 1000**	16:9 1001
16:9 1010	⇨	4:3 1010	16:9 1010
16:9 1011	⇨	4:3 1011	16:9 1011
16:9 1101	⇨	4:3 1101	16:9 1101
16:9 1110	⇨	4:3 1110	16:9 1110
16:9 1111	⇨	4:3 1111	16:9 1111

Configuring the Aspect Ratio Conversion

The Aspect Ratio Conversion (ARC) is configured by the AFD settings using the options in the **ARC/AFD** tab in DashBoard. This section summarizes how to configure the ARC. Refer to the section "**Configuring the Force Input Settings**" on page 3-12 for details on configuring the Force Input Settings for AFD.

To configure the SD Blank # Active Lines setting

You can choose to remove encoded signals, like closed caption data and timecode, that may appear at the top of the active video in SD inputs. This procedure only applies to SD inputs with AFD 1000. The remaining lines are processed through the scaler to fill the production aperture, except for SD to SD with no ARC. For SD inputs with an AFD code other than 1000, the AFD specification is adhered to. Note the AFD specification indicates 480i has 480 lines starting at Line 6 (SMPTE 125M allows 480i to have 487 active lines).

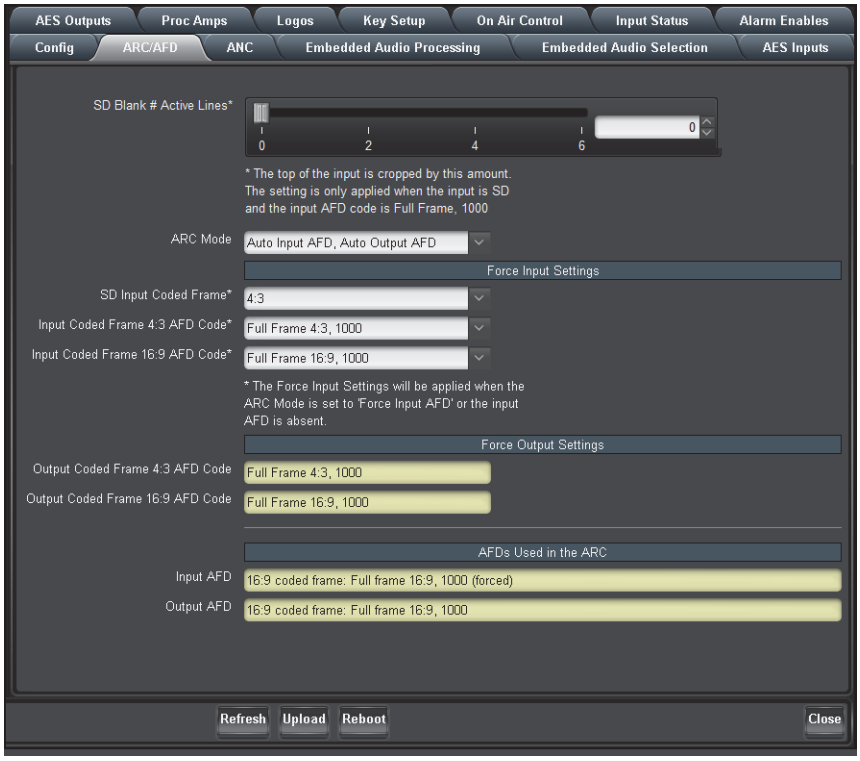
Refer to **Table 3.3** for the first line of processed video.

Table 3.3 Blank Number of Active Lines

Blank Number of Active Lines	First Line of Processed Video			
	525		625	
	F1	F2	F1	F2
0	20	20 (283)	23	336
1	21	20 (283)	24	336
2	21	21 (284)	24	337
3	22	21 (284)	25	337
4	22	22 (285)	25	338
5	23	22 (285)	26	338
6	23	23 (286)	26	339

To remove encoded signals

1. From the **Device View** in DashBoard, select the **ARC/AFD** tab.



ARC/AFD Tab

2. Use the **SD Blank # Active Lines** slider to select the number of lines at the top of the active picture to blank.

To configure the ARC mode

1. From the **Device View** in DashBoard, select the **ARC/AFD** tab.
2. Specify the SD output aspect ratio by selecting an option in the **SD Output Coded Frame** field. Refer to **Table 7.12** on page 7-15 for a list of options.
3. Specify how the card detects and uses AFD by selecting an option from the **ARC Mode** menu. Refer to **Table 7.12** on page 7-15 for a list of options.

Configuring the Force Input Settings

This section outlines how to configure the Force Input Settings when the input AFD is absent or you have chosen the **Force Input AFD** option for the ARC Mode. The **AFDs Used in the ARC** area will display the AFD Code settings.

To configure the Force Input settings

1. From the **Device View** in DashBoard, select the **ARC/AFD** tab.
2. For input 4:3 formats, specify where the active content is displayed by selecting one of the options from the **Input Coded Frame 4:3 AFD Code** menu. Refer to the section, "**AFD Overview**" on page 3-9 for details on the available options.
3. For input 16:9 formats, specify where the active picture is displayed by selecting one of the options from the **Input Coded Frame 16:9 AFD Code** menu. Refer to the section,

"**AFD Overview**" on page 3-9 for details on the available options.

For More Information on...

- ARC example cases, refer to the section "**Appendix C. ARC Setting Examples**" on page 9-1.

Configuring the Force Output Settings

This section outlines how to configure the Force Output Settings when you have chosen the **Force Output AFD** option for the ARC Mode instead of using the automatic behavior described in **Table 3.1** on page 3-10 and **Table 3.2** on page 3-11. The **AFDs Used in the ARC** area will display the AFD Code settings.

To configure the Force Output settings

1. From the **Device View** in DashBoard, select the **ARC/AFD** tab.
2. For output 4:3 formats, specify where the active content is displayed by selecting one of the options from the **Output Coded Frame 4:3 AFD Code** menu. Refer to the section, "**AFD Overview**" on page 3-9 for details on the available options.
3. For output 16:9 formats, specify where the active picture is displayed by selecting one of the options from the **Output Coded Frame 16:9 AFD Code** menu. Refer to the section, "**AFD Overview**" on page 3-9 for details on the available options.

For More Information on...

- ARC example cases, refer to the section "**Appendix C. ARC Setting Examples**" on page 9-1.

AFD and ARC Status

The following fields and tabs provide status information on the ARC and/or AFD:

- **Video Processing Input —** This field in the **Signal** tab indicates the status of the input. Information such as the format, aspect ratio, coded frame, and the detected AFD code (four digit AFD code and whether AFD is enabled) is also displayed. Refer to **Table 7.1** on page 7-2 for details.
- **Video Processing Output —** This field in the **Signal** tab indicates the status of the output AFD, whether it is enabled, the aspect ratio, and the four digit AFD code if the AFD is enabled. Refer to **Table 7.1** on page 7-2 for details.
- The **ARC/AFD** tab includes the **AFDs Used in the ARC** fields. These fields display the Input AFD and Output AFD codes used in the ARC. Refer to **Table 7.12** on page 7-15 for details.
- The **Input Status** tab includes the **AFD** field that indicates whether the AFD Code is present in a specified input. Refer to **Table 7.23** on page 7-32 for details.

Ancillary Data

Ancillary Data (ANC) is the non-video data that can be embedded within the SDI signal, such as audio, audio metadata, timecode, closed caption data, AFD, and payload identification.

There are two areas in which ancillary data may be found:

- **HANC** — ANC packets that are found in the horizontal blanking region.
- **VANC** — ANC packets that are found in the vertical blanking region.

This section outlines how to view incoming status in the **Input Status** and **Input Status:Audio** tabs and configure the UDC-8625A series card to manage HANC and VANC data using the options in the **ANC** tab of DashBoard.

HANC and VANC Status

The **Input Status** tab in DashBoard provides HANC and VANC status details:

- **352M** — This field indicates whether the 352M data is detected on the input, and displays the four bytes.
- **AFD**, **Closed Caption**, **Time Code**, **Audio Metadata**, **Other Packets** — These fields indicate the status of the specified packet, such as whether it is detected or not on the input. For more information, refer to the section "**Input Status Menus**" on page 7-32.
- **Embedded Audio** — This field indicates the information extracted from the channel status, such as PCM/Non-PCM, 20bit or 24bit. If there is PCM data, a level in dB is also displayed. When this field is blank, the packet for the specified group is absent.

HANC Pass Through or VANC Pass Through

The **HANC Pass Through** and **VANC Pass Through** settings only apply when the output and the input have the same format. If the input is not synchronous to the output, entire frames of data are duplicated or dropped as part of the frame sync behavior. This feature will pass the entire HANC and/or VANC region without modification except for very limited error correction to keep the video stream within specification (values of 0x000 or 0x3FF will be clipped if not part of a packet header, and EDH is re-generated).

Note — *If this feature is enabled, and the input format changes, there will be a discontinuity that can cause errors such as the audio to click, audio CRC errors, or closed captioning errors.*

To enable the card to pass through HANC or VANC

1. From the **Device View** in DashBoard, select the **ANC** tab.
2. Toggle the **HANC Pass Through** and/or **VANC Pass Through** button(s) as outlined in **Table 7.13** on page 7-18.
3. If you selected **Disabled**, proceed to the section "**Specific ANC Processing**" on page 3-15 to specify how the HANC and/or VANC data is processed.

Operating Tip — *If you notice that the HANC or VANC is not passed after toggling the **HANC Pass Through** or **VANC Pass Through** buttons to **Enabled**, verify that the card input and output formats match.*

Specific ANC Processing

The remainder of the **ANC** tab controls how ancillary data is inserted in the output when HANC and/or VANC pass through is not enabled. For each packet type the user can control the insertion position.

To configure the processing of specific ANC types

1. From the **Device View** in DashBoard, select the **ANC** tab.
2. For each packet, select how the card processes the ANC data by selecting an option from the **Action** field. Refer to **Table 7.13** on page 7-18 for a list of options.

Note — *It is recommended to set the Time Code and Audio Metadata fields to Disable when converting between interlace and progressive video.*

3. Specify the line to insert the ANC data packet as follows:
   - Use the **Insertion Line** menu to select a line to insert the specified ANC packet on. The default is 12 for each packet. Note that all packets are inserted in VANC, except for timecode in non-SD formats which are inserted in the HANC.
   - Note that if more than one packet is to be inserted in the same line, the packet with the lowest insertion order number will be inserted first.
4. Specify the insertion order for the data packet as follows:
   - Use the **Insertion Order** menu to define the hierarchy of the packets insertion.
   - Note that the lower the number, the higher priority the packet is given. For example, by default, the AFD packet is set to be inserted first (1), and Compressed Audio Metadata is inserted fourth (4).

AFD

When disabled, the aspect ratio conversion still occurs as specified in the **ARC/AFD** tab, but there is no AFD packet inserted in the output. Otherwise it is inserted according to the **ARC/AFD** tab.

Closed Captioning

When disabled, closed captioning (packet and line 21) is not inserted. Otherwise, this section summarizes the closed caption processing of the card.

The UDC-8625A series card:

- ensures continuity of CEA-608 data and/or DTVCC data during frame drop or repeat.
- receives the packet, processes it, and inserts a new packet into the specific line.
- monitors the CDP sequence number of incoming CEA-708 data to detect discontinuities in the DTVCC transport stream, and propagates any sequence-number discontinuity to the outgoing DTVCC data, to alert downstream equipment of the change.

Note that Line 21 may also be treated as part of the input picture, depending on how the **Blank # Active Lines** setting is configured in the **Video** tab of DashBoard.

Captioning Priority

There are three supported types of closed captioning data: native CEA-708, CEA-608 embedded in CEA-708, and CEA-608 from Line 21 (480i inputs only).The order of preference for output CEA-708 data is as follows:

1. CEA-708
2. Up-converted CEA-608 embedded in CEA-708
3. Up-converted CEA-608 from Line 21
4. Null content

The order of preference for output CEA-608 data is as follows:

1. CEA-608 embedded in CEA-708
2. CEA-608 from Line 21
3. Null content

Note that CEA-708 is not down-converted to CEA-608.

The card decodes any CEA-708 caption distribution packets (CDP) from the input video and embeds the same data in the output video. The CDP is re-formatted as required based on the frame rate, to maintain the correct CEA-708 transport channel data rate (9600bps) as specified by SMPTE 334-2. The UDC-8625A series card removes any timecode information in the CDP. If there is no native CEA-708, then CEA-608 is translated to native CEA-708 DTVCC format, and embedded along with the original CEA-608 data in the output CDPs.

- CC1 is translated and encoded as DTVCC Service #1.
- CC3 is translated and encoded as DTVCC Service #2.
- CC2 and CC4 are not translated.
- such translation follows CEA-708-C section 8.11 and supports the standard character sets described in CEA-608-D section 6.4.1.

Timecode

The user can specify whether timecode is passed or disabled:

- If the input is not synchronous to the output, select **Disable** from the **Action** menu of the **ANC** tab.
- If converting between progressive and interlaced, select **Disable** from the **Action** menu of the **ANC** tab.
- When pass is enabled, the timecode will be inserted in VANC for SD outputs, and HANC for all other formats.
- If the input is not synchronous to the output, data will be dropped (but not duplicated[1]) as part of the frame sync behavior.

Compressed Audio Metadata

Compressed Audio Metadata can be passed or disabled as follows:

- If the input is not synchronous to the output, select **Disable** from the **Action** menu of the **ANC** tab.

1. When a frame of video is duplicated, no packet is inserted in the duplicate frame.

- If converting between progressive and interlaced formats, select **Disable** from the **Action** menu of the **ANC** tab.
- If the input is not synchronous to the output, data will be dropped (but not duplicated[1]) as part of the frame sync behavior.

Other Packets

All remaining packets can be passed or disabled. When pass is enabled, the packets will be inserted in VANC on the specified line in the same order as they were received. If they do not fit on the specified line, they will continue on the next line. Approximately up to 250 packets, or 1500 bytes of data, can be passed this way. If the input is not synchronous to the output, data will be dropped (but not duplicated[1]) as part of the frame sync behavior.

1. When a frame of video is duplicated, no packet is inserted in the duplicate frame.

Personality Options

This section outlines how to configure the options available in the **Personality** tab.

Configuring the Transition Buttons

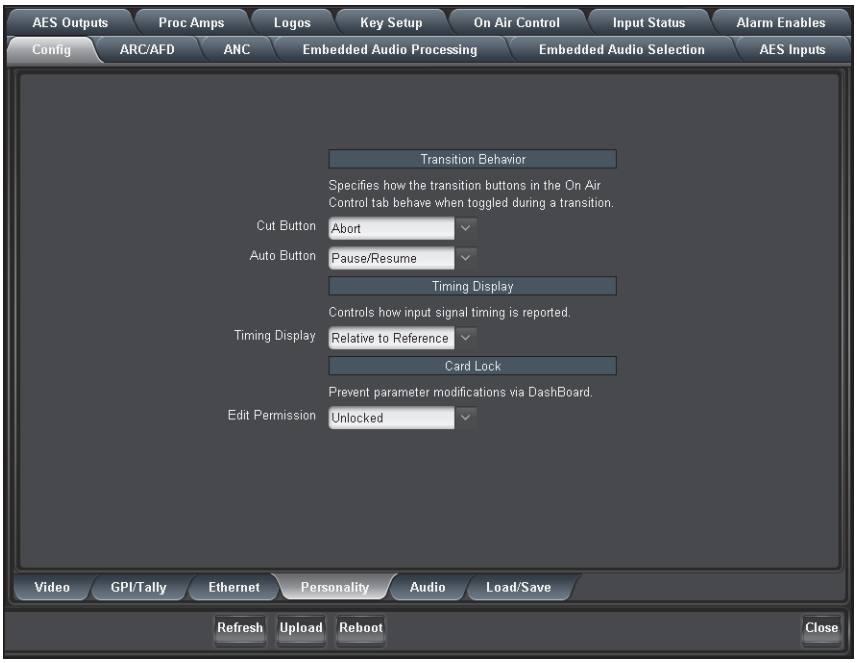
The **Transition Behavior** option enables you to specify how the **Cut** and **Auto** buttons, located in the **On Air Control** tab, behave when toggled during a transition.

For More Information on...

- the behavior options, refer to **Table 7.9** on page 7-12.

To configure the transition buttons

1. From the **Device View**, select the **Config** tab.
2. Select the **Personality** tab located at the bottom of the **Config** tab.



Config Tab — Personality Tab

3. Configure the **Cut** button behavior by choosing an option from the **Cut Button** field.
4. Configure the **Auto** button behavior by choosing an option from the **Auto Button** field.

Configuring the Input Signal Timing Display

The **Timing Display** feature enables you to configure how the input signal timing is reported by DashBoard. This information is displayed in the individual **Input Timing** fields of the **Signal** tab. The timing display reports the delay of the input signals in output format clocks and lines.

To configure the input signal timing for your card

1. From the **Device View** in DashBoard, select the **Config** tab.
2. Select the **Personality** tab located at the bottom of the **Config** tab.

3. Configure how the signal timing by selecting one of the following options from the **Timing Display** menu.

   - **Relative to Reference** — Select this option to display the timing offset values of the SDI inputs relative to the selected reference as follows:
     - › A negative offset value indicates that the SDI signal is earlier than the reference.
     - › A positive value indicates that the SDI signal is later than the reference.
   - **Input to Output** — Select this option to display the timing offset values of the SDI inputs relative to the SDI output of the card as follows:
     - › A negative offset value indicates that the SDI IN signal is earlier than the SDI OUT signal.
     - › A positive value indicates that the SDI IN signal is later than the SDI OUT signal.

Configuring the Edit Permissions

The **Personality** tab in DashBoard enables you to lock the card permissions so that parameters are read-only and cannot be changed.

To configure the card edit permissions

1. From the **Device View**, select the **Config** tab.
2. Select the **Personality** tab located at the bottom of the **Config** tab.
3. Configure the edit permission by choosing an option from the **Edit Permission** menu. Refer to **Table 7.9** on page 7-12 for a list of options.

Software Upgrades

The card can be upgraded in the field via the **Ethernet 10/100** port on the rear module, or via the MFC-8300 series Network Controller card in your frame. The instructions in this section are applicable to both methods. Note that DashBoard version 3.0.0 or higher is required for this procedure.

Important — *Ross Video recommends that you connect and configure the Ethernet 10/100 port on the rear module before upgrading. Without this connection, the upgrade process can take several minutes especially when upgrading multiple cards. Refer to the section "**Ethernet Port Cabling**" on page 2-12 for setup details.*

To upgrade the software on a card

1. Contact Ross Technical Support for the latest software version file.
2. If you are upgrading via the **Ethernet 10/100** port on the rear module:
   - Ensure the ethernet cable is properly connected to the **Ethernet 10/100** port. Refer to the section "**Ethernet Port Cabling**" on page 2-12 for details.
   - Verify that the **Ethernet Status** field in the **Network** tab displays **OK**. Note that if an error is reported in this field, the upgrade is automatically performed via the MFC-8300 series Network Controller card and upgrade times may be affected.
3. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
4. From the **Device View**, click **Upload** to display the **Select file for upload** dialog.
5. Navigate to the ***.bin** upload file you wish to upload.
6. Click **Open**.
7. If you are upgrading a single card, click **Finish** to display the **Uploading to Selected Devices** dialog. Proceed to step 9.
8. If you are upgrading multiple cards:
   - Click **Next >** to display the **Select Destination** menu. This menu provides a list of the compatible cards based on the card selected in step 3.
   - Specify the card(s) to upload the file to by selecting the check box(es) for the cards you wish to upload the file to.
   - Verify that the card(s) you wish to upload the file to. The **Error/Warning** fields indicate any errors, such as incompatible software or card type mismatch.
   - Click **Finish** to display the **Uploading to Selected Devices** dialog.
9. Monitor the upgrade.
   - The **Uploading to Selected Devices** dialog enables you to monitor the upgrade process.
   - Notice that each card is listed in the dialog with a button. This button is replaced with a **Reboot** button once the software file is loaded to that card.

Important — *Avoid clicking the individual **Reboot** buttons until all cards have successfully completed the file upload process and the **OK** button, located in the bottom right corner of the dialog, is enabled.*

   - Click **OK** to re-boot all the cards listed in the **Uploading to Selected Devices** dialog.

- The **Reboot Confirm** dialog displays, indicating the number of cards that will re-boot. Click **Yes** to continue the upgrade process. Note that clicking **Cancel** or **No** returns you to the **Uploading to Selected Devices** dialog without rebooting the card(s).
- The card(s) are temporarily taken offline during the re-boot process. The process is complete once the status indicators for the **Card State** and **Connection** fields return to their previous status.

Troubleshooting

If you encounter problems when upgrading your card software, verify the following:

- Your network settings on the card are valid. Refer to **Table 7.8** for a list of available settings.
- The ethernet cable is properly connected if you are uploading the file via a network connection.
- The file you are attempting to load is a ***.bin** file that is for the card you are upgrading.
- If you are upgrading to version 1.3 or higher from an earlier version, DataSafe will only recall settings for Input 1 on the Embedded Audio Selection and Embedded Audio Processing tabs and apply default values to Input 2. This only occurs until the next reboot of the card, when DataSafe is able to recall the saved settings for each specific Input.

Loading the Factory Defaults

If required, the card menu parameters can be reset to the factory default values using the option available in the **Load/Save** tab.

Note — *Ethernet settings, reference selection, and the output formats are not reset using this method.*

To reset the card to the factory default configuration in DashBoard

1. From the **Device View**, select the **Config** tab.
2. Select the **Load/Save** tab located at the bottom of the **Config** tab.
3. From the **Global Settings** area, click **Load Factory Defaults** to display the **Confirm** dialog.
4. Click **Yes** to load the factory default values for all menu parameters, or **No** to cancel the load and close the dialog.

Using DataSafe™

DataSafe enables you to load and store card parameters automatically, or you can load from and store to a single file in DashBoard. Ensure that you are loading parameters to the same model of card. The DataSafe feature is available for openGear frames using the MFC-8320-N cards only. For details on using the DataSafe feature, refer to the ***MFC-8300 Series User Manual*** and the ***DashBoard User Manual***.

However, the following card parameters are not restored/saved using DataSafe:

- Ethernet setup settings
- Filenames on the CompactFlash™ Card
- Temporary on-air controls, such as fade to black

Audio Configuration

In This Chapter

This chapter provides instructions for configuring the audio features using the menus in DashBoard. Note that the features described in this chapter are not available on the UDC-8625A. You must have an UDC-8625A-A or an UDC-8625A-B for discrete audio processing.

The following topics are discussed:

- Selecting an AES Configuration
- Configuring the AES Inputs
- Configuring the AES Outputs
- Setting up the Embedded Audio

Selecting an AES Configuration

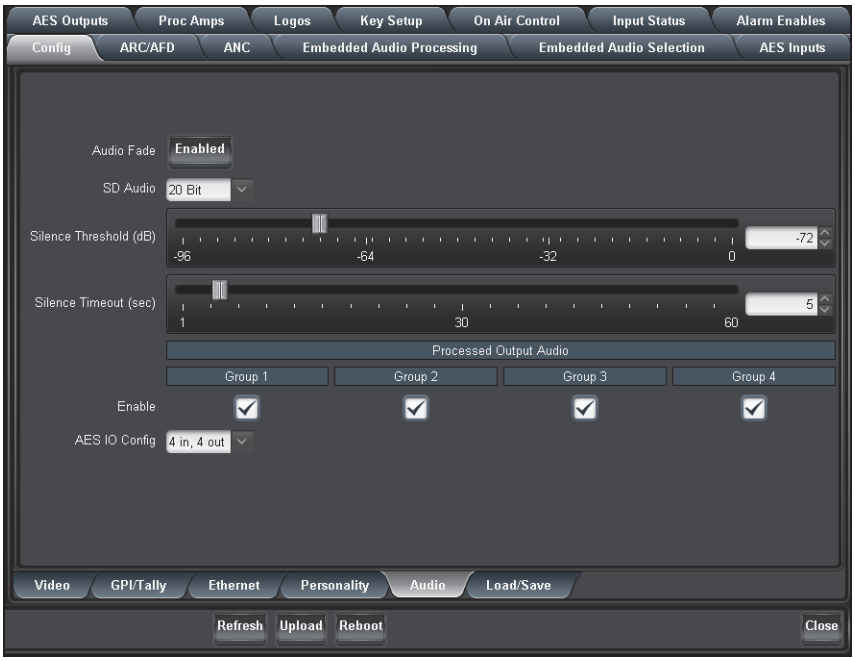
The UDC-8625A-A and UDC-8625A-B enable you to configure the 8 AES inputs/outputs in one of the following configurations: 8 inputs (default), 4 inputs and 4 outputs, or 8 outputs.

For More Information on...

- the menus and parameters available in the **Audio** tab, refer to **Table 7.10** on page 7-13.
- alarm options for AES sources, refer to **Table 7.24** on page 7-34.

To specify the AES configuration

1. From the **Device View**, select the **Config** tab.
2. Select the **Audio** tab located at the bottom of the Config tab.



Config Tab — Audio Tab

3. The silence detect is configured globally with separate threshold and period settings. Set the **Silence Threshold** and **Silence Timeout** values as required. You can monitor the status of the audio using the fields in the **Input Status** tab.
4. Toggle the **Audio Fade** to **Enabled** to allow for clean audio transitions (V-Fade) when performing cuts or transitions in the **On-Air Control** tab. However, it is recommended to disable this feature when passing non-PCM audio such as Dolby®.
5. Specify how the audio is embedded for SD outputs by selecting an option from the **SD Audio** menu.
6. Specify the configuration for your card by selecting an option from the **AES IO Config** menu.
7. If you have selected a configuration with inputs, proceed to the section "**To configure the AES inputs**" on page 4-3.
8. If you have selected a configuration with outputs, proceed to the section "**To configure the AES outputs**" on page 4-4.

Configuring the AES Inputs

This section briefly summarizes how to configure the options in the AES Inputs tab when the AES I/O Config is set to 8 in, 0 out or 4 in, 4 out.

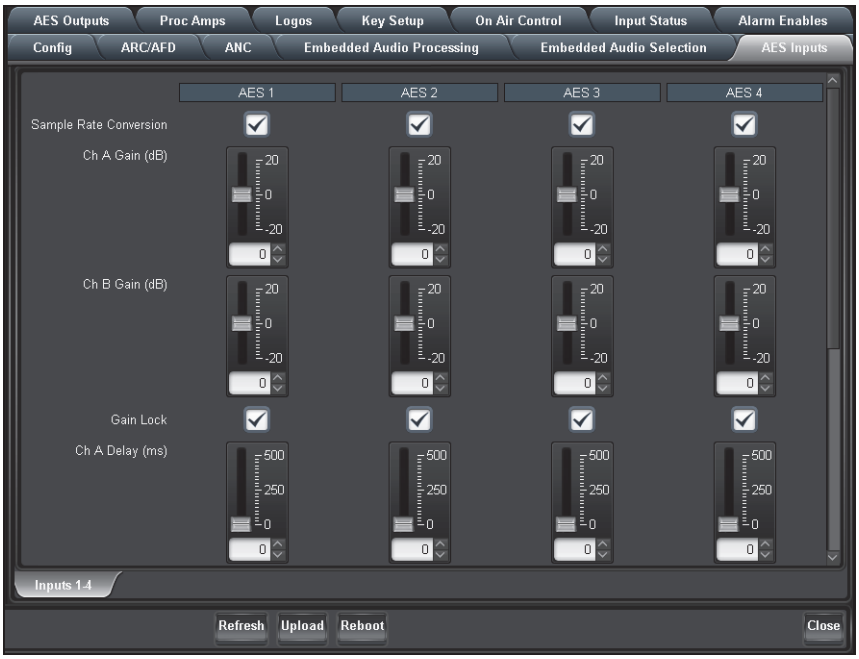
- If the **AES IO Config** is set to **8 in, 0 out** there are two sub-tabs displayed at the bottom of the AES Inputs tab. The first tab enables you to configure AES sources 1-4, while the second tab enables you to configure AES sources 5-8.
- If **AES IO Config** is set to **4 in, 4 out**, there is one sub-tab located at the bottom of the AES Inputs tab. This sub-tab enables you to configure AES sources 1-4.

For More Information on...

- the options available in the AES Inputs tab, refer to **Table 7.16** on page 7-22.

To configure the AES inputs

1. From the **Device View**, select the **AES Inputs** tab.



AES Inputs Tab — AES IO Config Set to 4 in, 4 out

2. If required, select the sub-tab that includes the AES source you wish to configure.
3. To set the gain for a channel of an AES source, use the associated **Ch # Gain** slider to select a value between -20dB and 20dB.
4. To set the delay for a channel of an AES source, use the associated **Ch # Delay** slider to select a value between 0ms and 500ms.
5. To invert a channel of an AES source, select the associated **Ch # Invert** box.
6. To sum the input (A+B/2) of the AES source, select the **Sum** box.
7. Repeat steps 2.- 6. for each AES source you wish to configure.
8. To enable the SRC of the AES source, select the **Sample Rate Conversion** box.

Configuring the AES Outputs

This section briefly summarizes how to configure the options in the AES Outputs tab when the AES I/O Config is set to 0 in, 8 out or 4 in, 4 out.

- If the **AES IO Config** is set to **0 in, 8 out**, there are two sub-tabs displayed at the bottom of the AES Outputs tab. The first tab enables you to configure AES sources 1-4, while the second tab enables you to configure AES sources 5-8.
- If **AES IO Config** is set to **4 in, 4 out**, there is one sub-tab located at the bottom of the AES Outputs tab. This sub-tab enables you to configure AES sources 5-8.

For More Information on...

- the options available in the AES Outputs tab, refer to **Table 7.17** on page 7-23.

To configure the AES outputs

1. From the **Device View**, select the **AES Outputs** tab.

AES Outputs Tab — AES IO Config Set to 4 in, 4 out

2. If required, select the sub-tab that includes the AES source you wish to configure.
3. To specify the channel source of an AES output:
   - Use the associated **Ch# Source Type** and menu to select the source type that is used for the AES output. Note that the parameter selected in this menu determines what is available in the Ch# Source Sel menu.
   - Use the associated **Ch# Source Sel** menu to specify a source.
4. To set the gain for a channel of an AES output, use the associated **Ch # Gain** slider to select a value between -20dB and 20dB.
5. To set the delay for a channel of an AES source, use the associated **Ch # Delay** slider to select a value between 0ms and 500ms.
6. Repeat steps 2.- 5. for each AES output you wish to configure.

Setting up the Embedded Audio

The **Embedded Audio** tabs includes options for enabling sample rate conversion (SRC) of the embedded audio, enabling audio fading, configuring how audio is embedded for SD outputs, and channel mapping. There are two Embedded Audio tabs in DashBoard:

- The **Embedded Audio Processing** tab provides options for processing the incoming embedded audio (Input 1 and/or Input 2).
- The **Embedded Audio Selection** tab provides options for overriding embedded audio with AES for one or both inputs, and to shuffle the embedded channels.

This section briefly outlines how to configure the options in the **Embedded Audio** tabs.

For More Information on...

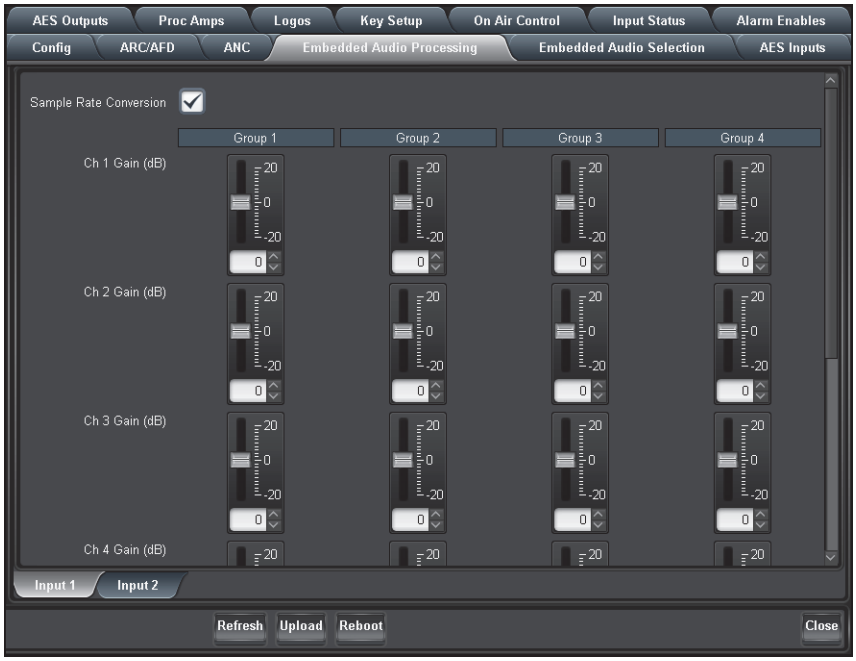
- the options in the **Embedded Audio Processing** tab, refer to **Table 7.14** on page 7-20.
- the options in the **Embedded Audio Selection** tab, refer to **Table 7.15** on page 7-21.
- alarm options for embedded audio, refer to **Table 7.24** on page 7-34.

Processing the Embedded Audio Input

When passing non-PCM data (e.g. Dolby E®), ensure that input and output are synchronous and all audio modifying settings (such as SRC, gain, and invert) are disabled or set to zero (0).

To set up processing of the embedded audio input

1. From the **Device View**, select the **Embedded Audio Processing** tab.



Embedded Audio Processing Tab — Input 1 Selected

2. From the **Embedded Audio Processing** tab, select the sub-tab for the input source you wish to process.
3. To enable the SRC of the embedded audio, toggle the **Sample Rate Conversion** to **On**.

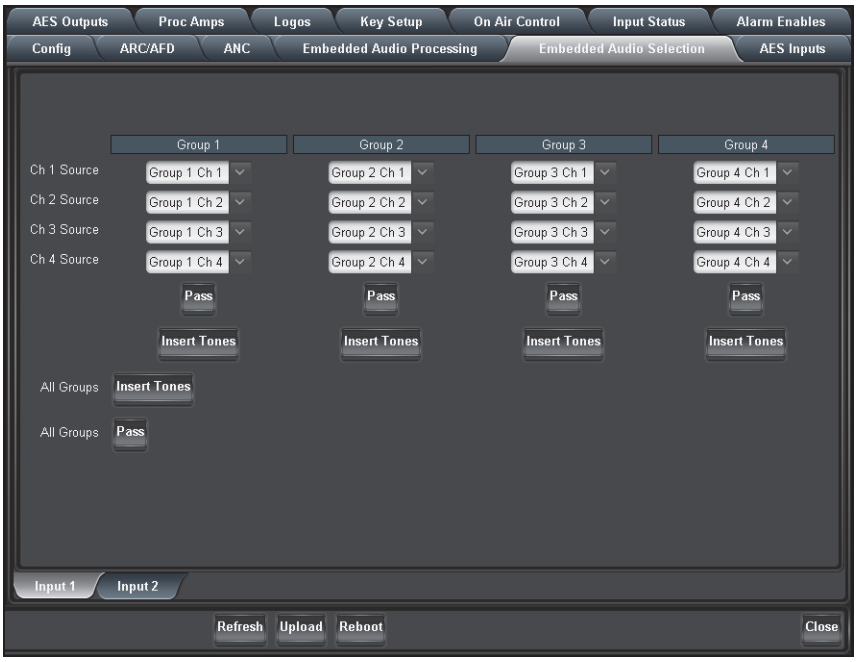
4. To apply a gain to a channel, use the associated **Ch #** slider to select a value between -20dB and 20dB. Repeat for each channel you wish to configure.
5. To invert a channel, select the associated **Ch # Invert** box.
6. If required, repeat steps 2. to 5. for the second input.

Configuring the Audio Groups

The embedded output channels are configured per processed input to allow different audio mapping that will track the currently processed input. For example, you may choose to embed audio from AES inputs when processing Input 1, but pass embedded audio when processing Input 2.

To configure embedded audio for an input source

1. From the **Device View**, select the **Embedded Audio Selection** tab.



Embedded Audio Selection Tab — Input 1 Selected

2. From the **Embedded Audio Selection** tab, select the sub-tab for the input source you wish to configure.
3. To map a channel:
   - From the associated **Ch # Source** menu, select an audio source.
   - If the selected source is not present on the input video, silence is embedded.
4. To reset the settings of a group to pass the input channels to the output channels, click **Pass** for the specific group.

Note — *Channel status bits are only passed when a left/right pair are not separated. Otherwise, a standard channel status will be inserted. When channel status is passed, it may not reflect a change between 20bit and 24bit.*

5. To insert test tones:
   - Click **Insert Tones** to insert test tones into the specified group.

- To insert test tones into all groups, click **Insert Tones** in the **All Groups** area.

6. Repeat steps 3. to 5. for each group/channel pair you wish to configure of the selected SDI input.
7. If required, repeat this procedure for the second SDI input.

Media File Management

In This Chapter

This chapter provides information on managing the images and animations using the DashBoard options available for the UDC-8625A series card.

The following topics are discussed:

- Overview
- Media File Basics
- Loading Media Files

Overview

This section provides a general overview of the media file management features of the UDC-8625A series.

DashBoard enables you to select and configure the two Logo channels that are loaded in the UDC-8625A series card. Each Logo channel allows you to assign a media file to the specified logo, view a thumbnail that represents the media file currently loaded, and adjust on-air properties.

The following tips and restrictions apply when managing your media files:

- Ensure the **Ethernet 10/100** port on the rear module is configured as required.
- Media files, such as stills and animations, are transferred to and from the UDC-8625A series card using FTP protocol. The media files are stored on a CompactFlash™ that is installed on the UDC-8625A series card.
- If you select an image size that is larger than the current video format, only a portion of the image may be displayed.
- When a media file is loaded, metadata such as X/Y position is also loaded, if it exists. Otherwise, default values are used. For animations, parameters are recalled after the last frame is loaded.
- When using Mac OS X™ to transfer files to the CompactFlash™ Card via an FTP server, you may only have read-only access. Refer to your Mac OS X™ documentation for details.

For More Information on...

- cabling the **Ethernet 10/100** port, refer to the section "**Ethernet Port Cabling**" on page 2-12.
- configuring the **Ethernet 10/100** port, refer to the section "**Ethernet Communication Setup**" on page 3-3.

Media File Basics

Media files, such as animations and still images, can be transferred to and from the CompactFlash™ Card using an FTP connection. Once transferred to the CompactFlash™ Card, you use the options in the **Logos** tab to load the files and assign them to a Logo channel.

This section outlines the specifications for media files and provides general information on using the CompactFlash™ Card and an FTP connection.

For More Information on...

- assigning media files to Logo channels, refer to the section "**Loading a Media File**" on page 5-5.

Connection using FTP

You can create an FTP connection to copy still images or animations to and from the CompactFlash™ Card on the UDC-8625A series card. You can also use an FTP client to delete images on the CompactFlash™ Card and re-name images.

To access the UDC-8625A series card via FTP:

- Ensure an ethernet cable is plugged into the UDC-8625A series rear module. Refer to the section "**Ethernet Port Cabling**" on page 2-12 for connection details.
- Have the IP address from the **Config** > **Ethernet** menu of the card.
- Note that the Factory Defaults and DataSafe features do not modify the IP address.

The following information is required to establish an FTP connection:

- **User Name** — **user**
- **Password** — **password**

Connection using RossLinq™

RossLinq enables you to transfer still images directly from XPression™ to an UDC-8625A series card Logo channel. You can transfer files into any of the directories for any of the Logo channels on the card. There are two directories, each corresponding to a specific Logo channel on the card. The file can be a format as listed in **Table 5.1**. Note that the transfer of animations is not supported at this time.

Note — *The RossLinq™ channel in XPression must be set as a passive FTP connection in order to set up communications between XPression and the UDC-8625A series card. Refer to the XPression documentation for details.*

To connect to XPression via RossLinq, you must establish an FTP connection using the following information:

- **IP Address** — Have the IP address from the **Config** > **Ethernet** menu in DashBoard for your card.
- **User Name** — **xpression**
- **Password** — **password**

CompactFlash™ Card

The CompactFlash™ Card is 2GB in size, but the number of files you can store depends on the type of file. The **CF Card Status** field in the **Hardware** tab displays how much space is available on the CompactFlash™ Card.

Notes on using the CompactFlash™ Card

- The UDC-8625A series card can be operated without the CompactFlash™ Card installed, but it is not hot-swappable. Do not insert or remove the CompactFlash™ Card when the UDC-8625A series card is installed in the frame.
- The UDC-8625A series card uses ext3 formatting for the CompactFlash™. It does not support FAT formatted CompactFlash™ cards.

Image Specifications

Media files used on the UDC-8625A series card must meet the specifications outlined in **Table 5.1**. Note that if larger images are used, the images will be clipped to the dimensions listed in **Table 5.1**.

Table 5.1 Media File Specifications

Parameter	Specification
File Type	BMP, GIF, JPG, PNG, TGA
Compression	compressed and uncompressed
Interlaced Formats (1080i, 480i, 576i)	Max. Image Width: 32,768 pixels
	Max. Image Height: dependent on available memory
Progressive Formats (1080p, 720p)	Max. Image Width: 65,536 pixels
	Max. Image Height: dependent on available memory
Animation Maximum Length	10,000 frames

File Naming Specifications

The name can contain letters, numbers, and spaces, but cannot contain symbols such as ! @ # & * ( ) ? / , ‘ “.

If you are naming an animation, each file must be numbered in the sequence that it will play out. The following restrictions apply to file names for animations:

- The file names must be suffixed with an underscore followed by three or more digits, then the period (.), and then the file type suffix.
- Each file in the sequence must have the same numbering scheme, and numbering must be continuous.
- The UDC-8625A series card loads files in numerical order.

The following is an example of a 10-frame animation using a typical numbering scheme:

- DTVB_000.tga
- DTVB_001.tga
- ...
- DTVB_009.tga

Loading Media Files

The UDC-8625A series features two Logo channels (Logos 1 and 2) into which you can load files from the CompactFlash™ Card physically installed on the UDC-8625A series card. Each card has 2GB of DDR, 1.5GB of which is available as playout memory. **Table 5.2** provides an estimation of how many frames (uncompressed) can fit into the playout memory of the UDC-8625A series card.

Table 5.2 Full Frame Animation

Format	Image Size	No Alpha	With Alpha
1080i	1920x1080	297	198
720p	1280x720	668	446
576i	720x576	1486	991
480i	720x486	1762	1174

Loading a Media File

From the **Directory** menu in each **Logos** sub-tab, files may be loaded from the following locations:

- **[RAM CACHE]** — A virtual directory that displays media files that are already loaded in the playout memory. Selecting this directory enables you to quickly access a pre-loaded file from the memory.
- **[ROOT]** — This is the default directory and represents the top-most directory on the CompactFlash™ Card. You can manage files on the CompactFlash™ Card using an FTP connection. Refer to the section "**Media File Basics**" on page 5-3 for details.
- **User created directories** — A list of directories, created by the user with an FTP connection.

To load a media file into a Logo channel

1. From the **Device View** in DashBoard, select the **Logos** tab.
2. From the **Logos** tab, select the tab for the Logo channel you want to load the media file for.
3. If files were added or re-named using an FTP connection, click **Re-scan** to update the list of directories and filenames.
4. Select a media file to load to the Logo channel as follows:
   - From the **Directory** menu, select the directory you wish to load a file from.
   - From the **Filename** menu, select the file.

Note — *If there is insufficient RAM space available to load a new file, an error message displays. In order to make RAM space available, you can set the filename to None. This will replace the logo with black if it is currently on-air, but enables the RAM to be available to load a new file.*

Operation

In This Chapter

This chapter provides a summary of the operational features, such as Proc Amps controls, key setup, and performing transitions.

The following topics are discussed:

- External Key and Internal Key Features
- Key 1 Wings Setup
- Key 2 Setup
- Logo Setup
- Adjusting the Proc Amp Controls
- Performing Transitions

External Key and Internal Key Features

This section provides a brief summary of the External Key and Internal Key features.

External Key Overview

The External Key feature provides the following:

- Both Wings and the Logo can be sourced from SDI inputs.
- If any output is 1080p, the frame sync on **SDI IN 3** and **SDI IN 4** are disabled.
- Key video is required to be on **SDI IN 3**, and unless self keying, the Key Alpha is required to be on **SDI IN 4**.
- The video format of the Wings video input and Key 2 must match the output format selected on the UDC-8625A series card.
- If there is a mismatch between the video format of the Wings or Key 2 video input and the selected output format, an error is indicated in the **Signal** tab of DashBoard and the card-edge, and Black is used instead.

Internal Key Overview

Both Wings and Logo can be sources from the internally stored logo channels (Logo 1 or Logo 2). For information on loading media files to a logo channel, adjusting on-air properties of logo channels, and tips on managing your media files, refer to the chapter "**Media File Management**".

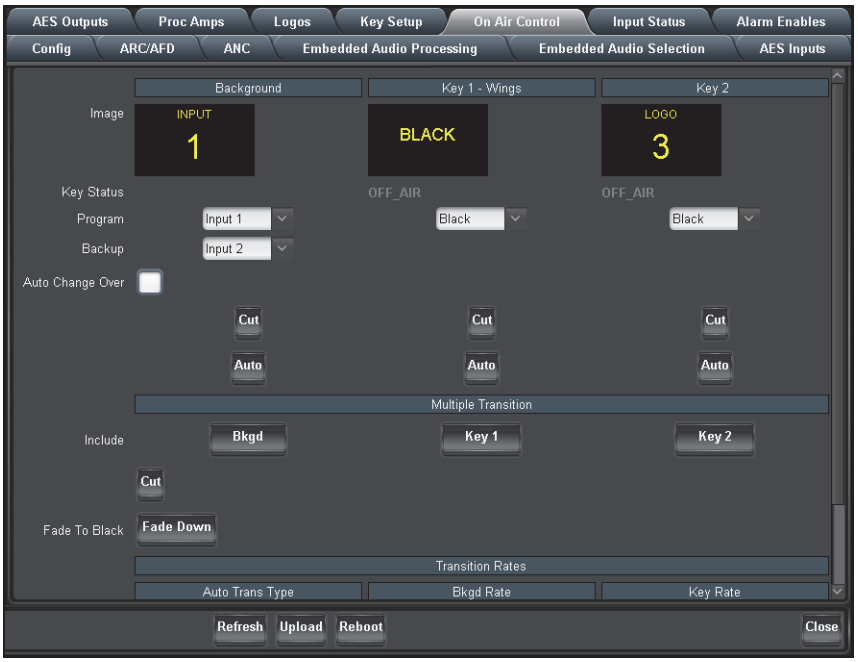
Key 1 Wings Setup

Use the following procedure to set up the Key 1 Wings for your UDC-8625A series card:

1. If using an internal source, configure the logo channels as outlined in the section "**Logo Setup**" on page 6-6.

Note — *Key 1 Wings does not have options in the **Key Setup** tab because the Mask is automatically set according to the aspect ratio conversion.*

2. If using an external source, ensure the video format of the Wings video input matches the output format selected in the **Output Format** field of the **Video** tab.
3. From the **Device View** in DashBoard, select the **On Air Control** tab.



On Air Control Tab

4. Locate the **Key 1** area in the **On Air Control** tab. This area provides the options for configuring the Wings feature of your card output.
5. From the **Key 1 Source** menu, specify a source for the Wings feature. Refer to **Table 7.21** on page 7-29 for a list of options.

Key 2 Setup

This section briefly describes how to set up the second keyer typically used for Logos. Setup can include Key Alphas, Auto Keys, adjusting the clip and gain values, and applying a box mask to Key 2.

Configuring Key 2

Use the following procedure to configure Key 2:

1. If using an internal source, configure the logo channels as outlined in the section "**Logo Setup**" on page 6-6.
2. If using an external source, ensure the video format of the Wings video input matches the output format selected in the **Output Format** field of the **Video** tab.
3. Select a key source for Key 2 as follows:
   - From the **Device View**, select the **On Air Control** tab.
   - In the **Key 2** area, use the **Source** menu to specify a source. Choose from the following:
     - **Black** — Sets the source for the Key 2 to Black.
     - **Input 3** — Sets SDI IN 3 and SDI IN 4 as the source for the Key Video and Key Alpha respectively.
     - **Logo #** — Sets the indicated Logo as the source for Key 2.
4. From the **Device View**, select the **Key Setup** tab.
5. Set the **Key Type** by choosing one of the following from the **Key Type** menu:
   - **Auto Select** — An Auto Select Key is a key in which two video signals are required to insert the key. The Key Alpha is used to cut the hole in the video, and the Key Video is used to fill that hole. Note that the **Key Alpha Type** is automatically set to **Shaped**.
   - **Self** — A Self Key is a key in which the luminance, or brightness, values of the key video are used as the key alpha. Note that the **Key Alpha Type** is automatically set to **Unshaped**.
6. If required, select the key fill from the **Key Alpha Type** menu. Choose from the following:
   - **Unshaped** — Select this option to set the Key Alpha to unshaped. With an Unshaped Key, the Key Alpha luminance value mixes linearly the Key Video with the Background. Shades of gray, in the Key Alpha, are translated into transparency levels. Self Keys are set to **Unshaped** by default.
   - **Shaped** — Select this option to set the Key Alpha to shaped. With a Shaped Key, the Key Alpha cuts a hole in the Background based on the luminance value of the Key Alpha and adds the Key Video to the Background hole. Shaped Key alphas are sometimes used with Character Generators to cut very precise holes for the Key Video fill.

Note — *Ross Video strongly recommends leaving the Clip and Gain values at the default settings to avoid undesirable effects.*

7. Adjust the **Clip** and **Gain** values of the key using the provided sliders. To reset the values to the factory default settings, click **Make Linear**.

8. Adjust the **Transparency** level of the key using the provided slider.
9. To invert the key, select the **Key Invert** box.

Note — *The **Key Invert** feature reverses the polarity of the Key Alpha. A Key Invert can be applied to any key type.*

Masking a Key

The Box Mask uses a simple box shape to mask the key and can be adjusted for size and location, but cannot be rotated. All key types can be masked. Note that this feature is only available for Key 2.

For More Information on...

- the Box Mask options in the Key Setup tab, refer to **Table 7.20** on page 7-28.

To apply a box mask to Key 2

1. From the **Device View**, select the **Key Setup** tab.
2. Set the **Box Mask** by choosing an option from the **Key Type** menu.
3. Adjust the position of the mask using the **Mask Top Edge**, **Mask Bottom Edge**, **Mask Left Edge**, and **Mask Right Edge** sliders.

Logo Setup

The **Logos** tab in DashBoard allows you to adjust the position and play modes of media files.

For More Information on...

- the options in the Logos tab, refer to **Table 7.19** on page 7-26.

To adjust the on-air properties of a media file

1. Load a media file as outlined in the section "**Loading a Media File**" on page 5-5.
2. Adjust the position of a still image in the viewing area of the screen using the **X Position** and **Y Position** sliders.
3. Adjust the characteristics of an animation as follows:
   - Use the **Auto Play** box to set whether the animation automatically starts to play when it is taken on-air.
   - Use the **Looping** box to set whether the animation will start over when it reaches the last frame of the animation.
   - When both **Auto Play** and **Looping** are enabled, the animation begins to play on a transition, and keeps playing in an endless loop.
4. Specify how an image is displayed by selecting an option from the **Play Mode** menu.

Note — *The **Play Mode** feature only applies to Interlaced video formats and has no effect when using Progressive video formats.*

Adjusting the Proc Amp Controls

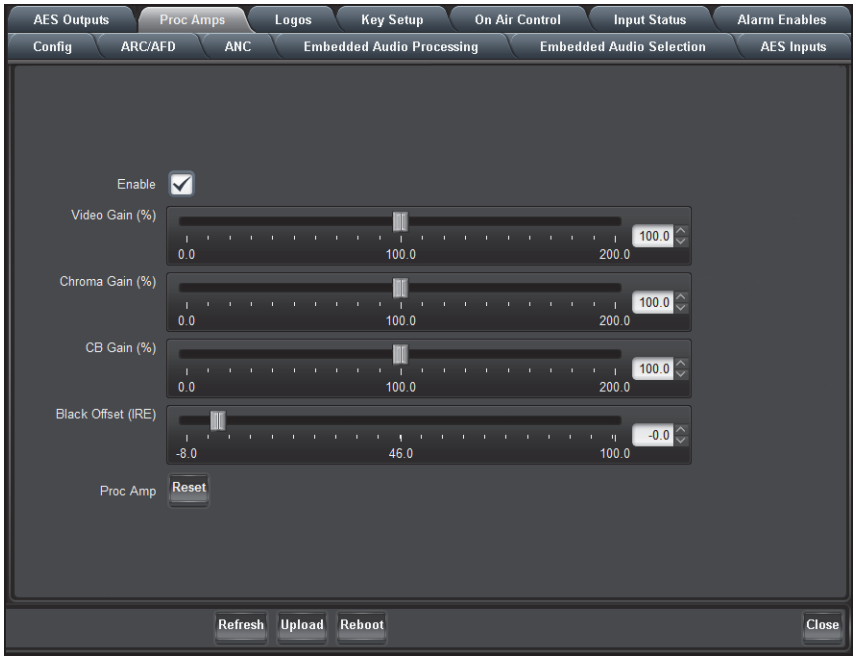
Each output on the card has a Proc Amp that can adjust the black offset, the video gain, the C_r gain, and the C_b gain. This section briefly outlines how to adjust the options available in the **Proc Amps** tab.

For More Information on...

- the options in the Proc Amps tab, refer to **Table 7.18** on page 7-25.

To adjust an output using a Proc Amp

1. From the **Device View,** select the **Proc Amps** tab.



Proc Amps Tab

2. Select the **Out** tab for the output signal you want to adjust. The **Out** tabs are located at the bottom of the **Proc Amps** tab.
3. Select the **Enable** box to ensure the color adjustments are applied. The **Enable** box must be selected in order for any color correction to take effect on the selected output. Note that the Proc Amp controls for applied to outputs that are assigned as an External Wings or Test Pattern.
4. Use the **Video Gain** slider to adjust the video gain. This gain control affects the luminance (Y) and the color difference signals (Cr and Cb).
5. Use the **Chroma Gain** slider to adjust the chrominance video signal components (Cr and Cb) simultaneously.
6. Use the **CB Gain** slider to adjust the Cb component of the chrominance video signal.
7. Use the **Black Offset** slider to adjust the Black Offset you want to apply.

Operating Tip — *To reset the Proc Amps settings to the default values, click **Reset** and then **Yes** in the **Confirm** dialog.*

Performing Transitions

Signal layering is in the following order: format converted source, Key 1-Wings, then Key 2. Note that the format converted source may take the entire active picture area so that Wings are not visible.

The UDC-8625A series also includes an Auto Change Over feature which enables you to select a backup source for the Background should the original source be lost.

For More Information on...

- using the Auto Change Over feature, refer to the section "**Auto Change Over Setup**" on page 6-9.
- triggering transitions via GPIs, refer to the section "**Setting up GPI/Tally Communications**" on page 3-7.

Transitions Setup

This section provides general instructions on setting up the transition options and rates for the card using the options available in the **On Air Control**. Refer to **Table 7.21** on page 7-29 for a list of available transition setup options.

To set up the transition options on the card

1. Set up your Key(s) as required.
2. From the **Device View** in DashBoard, select the **On Air Control** tab.
3. Specify what is on the output background by selecting an option from the **Source** menu in the **Background** area of the tab.
4. Select what the background will transition to by selecting an option from the **Backup** menu in the **Background** area of the tab.
5. If you are using the Auto Change Over feature, configure the settings as outlined in the section "**Auto Change Over Setup**" on page 6-9.
6. Select the source for Key 1-Wings using the **Source** menu provided in the **Key 1-Wings** area. Choose from the following:
   - **Black** — Sets the source for Key 1-Wings to Black.
   - **Input #** — Select this option to assign the specified input source to Key 1-Wings.
   - **Logo #** — Select this option to assign the specified Logo to Key 1-Wings.
7. Select the source for Key 2. Remember that Key 2 is configured using the options in the **Key Setup** tab. Choose from the following:
   - **Black** — Sets the source for Key 2 to Black.
   - **Input 3** — Select this option to assign SDI IN 3 as the source for the key video and SDI IN 4 as the source for the alpha.
   - **Logo #** — Select this option to assign the specified Logo to Key 2.
8. The Background, Key 1-Wings, and Key 2 areas each have independent **Cut** and **Auto** buttons to initiate a transition for each element.
9. If you are performing a transition with multiple keys, toggle the required **Include** button(s) in the **Multiple Transition** area. This area also has a **Cut** button to initiate a transition, and the master **Fade To Black** button to fade all outputs to black.
10. Select an **Auto Trans Type** from the **Transition Rates** area.

Transition Rates

Transition rates set how much time, in frames, the card takes to perform an Auto Transition. You can set rates for the Background and Key transitions using the options in the **On Air Control** tab.

Note — *Transition rates are in frames. The values are not re-calculated when changing formats. For example, if you change an output format from 720p to 1080i, the time (in seconds) to complete the transition doubles.*

To set the Background and Key transition rates

1. From the **Device View** in DashBoard, select the **On Air Control** tab.
2. Set the **Background Transition Rate** as follows:
   - From the **Bkgd Rate** menu, select a transition rate.
   - Specify the rate, in number of frames, as required, in the **Slow Rate**, **Medium Rate** and **Fast Rate** fields.
3. Set the **Key Transition Rate** as follows:
   - From the **Key Rate** menu, select a transition rate.
   - Specify the rate, in number of frames, as required, in the **Slow Rate**, **Medium Rate** and **Fast Rate** fields.

Auto Change Over Setup

The **Auto Change Over** feature enables you to select a backup source for the Background should the original source be lost. In this mode, SDI IN 1 is automatically assigned as the main source and SDI IN 2 as the backup source. If the SDI IN 1 signal is lost, the card switches to the backup source. The output stays on the backup source until the SDI IN 1 source returns for 30 seconds, at which time the card will switch back to the SDI IN 1 source. Note that the Cut and Auto options are disabled in this mode.

To configure and apply the Auto Change Over feature

1. From the **Device View** in DashBoard, select the **On Air Control** tab.
2. Select the **Auto Change Over** box. The **Source** menu is now read-only, displaying Input 1 as the Background source and Input 2 as the Backup source.

Performing a Cut Transition

Before proceeding, verify how the **Cut** button behaves during a transition as set in the **Personality** tab. Note that clicking the **Cut** button while a transition is already in progress can either abort, or instantly finish the transition depending on the option selected in the **Personality** tab. Refer to the section "**Configuring the Transition Buttons**" on page 3-18 for details. The procedures in this section assume that the **On Air Control** tab is already displayed in DashBoard.

To perform a Cut transition between Background sources

1. Select a source for the Background from the **Source** menu in the **Background** area.
2. Select a backup for the Background from the **Backup** menu in the **Background** area.
3. Click **Cut** located below the **Background** thumbnail. The selections for the sources swap.

4. If the two conversion sources are of different formats, the output picture will not be affected. However, the ANC and audio may have errors. The severity of the errors depends on the mismatch (e.g. switching between PCM audio and non-PCM audio).

To perform a Cut transition for Key 1 or Key 2

1. Click the corresponding **Cut** button for the Key located below the applicable thumbnail.
2. The specific Key is transitioned on or off air. The **Key Status** field(s) indicates the on-air status of the key.

To perform a Cut transition between multiple sources

1. Select the sources for the output using the options in the **Source** menus for each Key.
2. From the **Multiple Transition** area, select the **Include** button(s) for any Key or Background sources to be included in the transition.
3. Click **Cut** in the **Multiple Transition** area.

Note — *A cut takes six frames to allow for audio V-Fading. Three frames are used for the audio fade down, the video is then cut, followed by a three frame audio fade up.*

Performing an Auto Transition

The speed at which the Auto transition is performed, in number of frames, is determined by the Transition Rate (Slow, Medium or Fast) set in the **Transition Rate** area.

Note — *Clicking **AUTO** while a transition in progress can either pause, ignore, or reverse the transition depending on the option selected in the **Personality** tab. Refer to the section "**Configuring the Transition Buttons**" on page 3-18 for details.*

To perform an Auto transition on the card

1. From the **Device View** in DashBoard, select the **On Air Control** tab.
2. If required, configure the **Auto** button behavior during a transition as specified in the section "**Configuring the Transition Buttons**" on page 3-18.
3. Ensure the **Auto Trans Type** is set to the desired type in the **Transition Rate** area.
   - If the **Auto Trans Type** is set to **Fade-Fade**, it fades to black then to the next Background source.
   - If the **Auto Trans Type** is set to **Take-Fade**, it cuts to black, then fades up to the next Background source.
   - If the **Auto Trans Type** is set to **Fade-Take**, it fades from one Background source to black and then cuts to the next Background source.
4. If you want to select a different transition rate, set it according to the section "**Transition Rates**" on page 6-9.
5. To perform an Auto Background transition:
   - Click **Auto** located below the **Background** thumbnail.
   - The selections for the Source and Backup menus swap in anticipation of the next transition.
6. To perform an Auto Key transition:

- Click the corresponding **Auto** button for the Key located below the applicable thumbnail.
- The Key is transitioned on or off air. The **Key Status** field(s) indicate the on-air status of the key.

Performing a Fade to Black

The **Fade to Black** feature allows you to fade to black, where the output is faded to black at the Background Rate.

To perform a Fade to Black

1. From the **Device View** in DashBoard, select the **On Air Control** tab.
2. Toggle the **Fade to Black** button in the **Multiple Transition** area. Refer to **Table 7.21** on page 7-29 for details.
   - **Fade Down** — When the button displays this label, clicking it performs an Auto transition to black. The button label changes to **Fade Up**.
   - **Fade Up** — When the button displays this label, clicking it performs an Auto transition from black. The button label changes to **Fade Down**.

Note — *If the **Fade Down/Fade Up** button is clicked while a Fade to Black is in transition, the transition can be paused, ignored, or reversed depending on how the **Transition Behavior** option in the **Personality** tab is configured.*

For More Information on...

- configuring the Transition Behavior option, refer to the section "**Configuring the Transition Buttons**" on page 3-18.

Notes on Transitions with Audio

Keep the following in mind when performing transitions:

- Audio will go through silence when V-Fading video.
- When video performs a cut, then audio performs a one frame fade.
- Audio will go to silence when the video transitions with a Fade to Black.
- Audio will go through silence when changing sources.
- Audio will be mixed and faded at the rate(s) specified in the Transitions Rates area in the On Air Control tab (matches video transition rates).

Appendix A. DashBoard Menus

In This Appendix

This appendix provides a brief summary of the menus available for the UDC-8625A series. Default values are indicated with an asterisk (*).

The following topics are discussed:

- Status Tabs
- Configuration Menus
- ARC/AFD Menus
- ANC Menus
- Embedded Audio Processing Menus
- Embedded Audio Selection Menus
- AES Inputs Menus
- AES Outputs Menus
- Proc Amps Menus
- Logos Menus
- Key Setup Menus
- On Air Control Menus
- Input Status Menus
- Alarm Enables Menus

Note — *Before proceeding, ensure that you are running DashBoard Control System™ software version 5.0.0 or higher. The DashBoard Control System™ software and user manual are available to download from the Ross Video website.*

Status Tabs

This section summarizes the read-only information displayed in the **Status** tabs. The fields in the **Status** tabs vary in severity from green (valid), yellow (caution), to red (alarm). DashBoard reports the most severe alarm for a single field. Alarm colors are noted within the tables as text set in brackets next to the menu parameter name.

Signal Tab

Table 7.1 summarizes the **Signal** tab parameters available in DashBoard.

Table 7.1 Signal Tab Items

Menu Title	Item	Parameters	Description
Signal (Read-only)	Reference Status	No Reference	No signal detected on the selected reference input
		Incompatible: ###	A reference signal is detected but the format is incompatible with the current output mode
		Unlocked: ###	A reference signal is detected but the card is not locked to it
		###	Indicates the reference format detected
	Video Processing Input[a]	Input # - Black	The source of the background on the On Air Control tab is selected as Black
		Input # - Input 1	The source of the background on the On Air Control tab is selected as Input 1
		Input # - Input 2	The source of the background on the On Air Control tab is selected as Input 2
		Format - ### (Green)	Indicates the input signal format
		Format - No Signal (Red)	Indicates the input signal is not detected
		Coded Frame - 16:9	Indicates that the input AFD is detected and its coded frame is 16:9
		Coded Frame - 4:3	Indicates that the input AFD is detected and its coded frame is 4:3
		Coded Frame	A blank field indicates that the input AFD is not detected
		AFD Code - #	Indicates the four-digit AFD code if the input AFD is detected
		AFD Code	A blank field indicates that the input AFD is not detected
		Audio Status - Audio Absent (Yellow)	There is an audio group absent in the input; Input Audio Group # Absent alarm is enabled
		Audio Status (Green)	A blank field indicates that all audio groups in the input are present or the corresponding alarm is disabled

Table 7.1 Signal Tab Items

Menu Title	Item	Parameters	Description
Signal (Read-only)	Video Processing Output[b]	Format #	Indicates the output format
		Conversion errors # (Red)	Indicates an unsupported conversion; output is black. Refer to the section "**Format Conversion**" on page 1-6 for details.
		Output Status - Black	The input is absent and the Loss of Input is set to Black; a red indicator is displayed if the corresponding Input # Loss alarm is enabled
		Output Status - Blue	The input is absent and the Loss of Input is set to Blue; red indicator is displayed if the corresponding Input # Loss alarm is enabled
		Output Status - Freeze	The input is absent and the Loss of Input is set to Freeze; red indicator is displayed if the corresponding Input # Loss alarm is enabled
		Output Status	A blank field indicates correct operation
		Coded Frame - 16:9	The output AFD is enabled and its coded frame is 16:9
		Coded Frame - 4:3	The output AFD is enabled and its coded frame is 4:3
		Coded Frame	A blank field indicates that the output AFD is disabled
		AFD Code - #	Displays the four-digit AFD code if the output AFD is enabled
		AFD Code	A blank field indicates that the output AFD is disabled
		Program Audio missing/async (Yellow)	Indicates that the audio to embed on the Program output is not detected. The Program Source Absent/Async alarm is enabled in the Alarms Enable tab.
		Backup Audio missing/async (Yellow)	Indicates that the audio to embed on the Backup output is not detected. The Program Source Absent/Async alarm is enabled in the Alarms Enable tab.
		Error - Audio Absent (Yellow)	There is an audio group absent in the input and the corresponding alarm is enabled; only applies to inputs that can be selected as conversion sources.
		Error	A blank field indicates correct operation (or no signal)

Table 7.1 Signal Tab Items

Menu Title	Item	Parameters	Description
Signal (Read-only)	Input # Status	Format # (Green)	Indicates the detected input format
		Format # - No Signal (Red)	The input signal is not detected and the corresponding Input # Loss alarm is enabled
		Error - Unsupported (Red)	The input format is incompatible with the output format and the corresponding Input # Loss alarm is enabled
		Error - Incompatible (Yellow)	The input format is incompatible with its selected function (Wings, key video, key alpha) such as the input format does not match output format. If an input is not selected for one of these functions, no error is indicated. The corresponding Input # Loss alarm is enabled.
		Alarm Suppressed	Displayed if one or more of the first three error conditions above exist, but the corresponding alarm is disabled
	Output Frame Delay (frames)	0-3[c]	Indicates the current processing time of the card
	AES Status	OK (Green)	Indicates the status of the audio source. Information reported in this field is dependent on the options configured in the Alarms tab.
		Input Absent (Yellow)	
		Channel Silent (Yellow)	
		Output Source Absent (Yellow)	
	Bypass Relay[d]	Normal (not in bypass) (Green)	SDI IN 1 is available for processing, and SDI OUT 1 is driven by the card
		Active (in bypass) (Red)	SDI IN 1 bypasses the card and is looped passively on SDI OUT 1 through the relay. Note SDI IN 1 cannot be detected by the card in this state.
	Timing Display	Relative to Reference	The **Input Timing** fields display the input signal timing values relative to the selected reference
		Input to Output	The **Input Timing** fields display the input signal timing values relative to the SDI output of the card
	Input # Timing	## Clocks ## lines	Indicates the timing of the specified SDI input to what is selected in the **Personality** tab. The display is in output format clocks and lines.
	Output Timing	## Clocks ## lines	Indicates the relative timing of the output to the selected reference signal

a. This field displays information in the format of <Input #>, <Format>, <Coded Frame>.
b. This field displays information in the format of <Format>, <Output Status>, <Coded Frame>, <AFD Code>.
c. The Output Frame Delay field may display a delay value of 1 even if the Output Frame Delay option in the Video tab is set to 0. This is due to the automatic addition of 1 frame of delay that is required to process the output data.
d. This field is only available when using the 8310AR-033 or 8320AR-033 rear modules.

Hardware Tab

Table 7.2 summarizes the **Hardware** tab parameters available in DashBoard.

Table 7.2 Hardware Tab Items

Menu Title	Item	Parameters	Description
Hardware (Read-only)	HW Status	OK (Green)	Normal operation; no hardware errors and the correct rear module is installed
		Incomp I/O module (Red)	Card is connected to the wrong rear module
		Alarm suppressed (Green)	Rear module is incompatible and the **Incompat Rear Module** alarm is disabled
	Voltage (V)	#	Measured input voltage
	Current (mA)	#	Current consumption in milliAmperes
	Power (W)	#	Calculated power of the card
	FPGA Temp	##C / ##F	FPGA Core temperature. A warning is displayed when the card FPGA Core Temperature reaches 85°C. If the temperature reaches 100°C, the card automatically shuts down to avoid permanent damage and will have to be re-booted, or power cycled, to resume normal operation.
	FPGA Fan	# RPM	Indicates the card fan speed. If the **Stalled Fan** alarm is enabled on the Alarm Enables tab, this field reports when the card fan is not operating correctly
	CPU Usage	x.xx / y.yy / z.zz	Displays the CPU Load average where: • **x.xx** represents in the last minute • **y.yy** represents the last five minutes • **z.zz** represents the last fifteen minutes
	RAM Available	# / ##	CPU Memory Used / Total CPU Memory
	CF Card Status	#.## of # GB used	Displays the amount of space used on the CompactFlash™ card
		Missing	CompactFlash card is not present
		Unreadable	An error occurred such as incompatible CompactFlash card, or the card cannot be read
	Playout RAM	a / b / c / d	Displays RAM memory usage where: • **a** represents the memory in use • **b** represents the memory cache from previously loaded files • **c** represents the memory dedicated to the frame sync buffers and related functions. Note that this memory is unavailable for images and animations. • **d** represents the total playout memory

Product Tab

Table 7.3 summarizes the **Product** tab parameters available in DashBoard.

Table 7.3 Product Tab Items

Menu Title	Item	Parameters	Description
Product (Read-only)	Product	UDC-8625A UDC-8625A-A UDC-8625A-B	Indicates the product name
	Supplier	Ross Video Ltd.	
	Board Rev	##	Indicates the board version of your card
	Serial Number	######	Indicates the serial number of your card
	Rear Module	#	Indicates the type of rear module in the slot
	Software Rev	##.##	Indicates the software and build versions
	Firmware Rev	#.###	Indicates the FPGA version number
	Daughter Card	#	Indicates the daughter card type

Configuration Menus

This section briefly summarizes the sub-tabs available in the **Config** tab.

Video Tab

Table 7.4 summarizes the **Video** set up options available in DashBoard.

Table 7.4 Video Menu Items

Menu Title	Item	Parameters	Description
Reference Setup	Reference Input	Frame 1*	The card uses the reference source connected to the **REF 1** port on the DFR-8300 series frame
		Frame 2	The card uses the reference source connected to the **REF 2** port on the DFR-8300 series frame
		Local	The card uses the external reference source connected to the **REF IN** port (**BNC 9**) on the rear module. You must also configure **JP7** on the card to enable or disable a 75ohm terminator on the external reference input.
Output Setup	Output Format	480i 59.94	Selects the video format for the output signal. Note that a change in video format will not take effect until the reference is compatible.
		720p 59.94	
		1080i 59.94*	
		1080i 59.94 LEVEL A	
		576i 50	
		720p 50	
		1080i 50	
		1080p 50 LEVEL A	
	Output #	Processed*	Specifies to output the processed signal with the Wings and Key
		Clean Feed 1	Specifies to output the processed signal. The Key and the Wings are not applied on this output.
		Clean Feed 2	Specifies to output the processed signal with the Wings. The Key is not applied on this output.
		Test Pattern	Specifies to use a test pattern for the output

Table 7.4 Video Menu Items

Menu Title	Item	Parameters	Description
Output Setup	Output #	External Wings	Selects the external video input being used for the Key 1 - Wings to be passed through to the output with minimal processing. Ensure the input video format is the same as the output video format and that the signals are insync. Refer to the section "**Appendix D. Cascade Feature**" on page 10-1 for details on this feature.
	Loss Of Input	Black*	Sets the output to black when there is a loss of input
		Blue	Sets the output to blue when there is a loss of input
		Freeze	Enables the card to freeze and output the last good frame of video before the loss of input Sets the output to freeze the last valid frame of video if there is a loss of input
	Test Pattern	Matte*	Specifies the type of test pattern to output. Note that the test pattern replaces all of the output picture, including the Wings and key sources, but not the HANC (audio) and VANC.
		Black	
		75% Bars	
		SMPTE Bars	
		100% Bars	
	Output Horizontal Delay (Clocks)[a]	0* to #[b]	Sets the output horizontal delay (in clocks) relative to the selected reference
	Output Vertical Delay (Lines)[a]	0* to #[b]	Sets the output vertical delay (in lines) relative to the selected reference
	Output Frame Delay (Frames)[c]	0* to 2[b] (interlaced format) 0* to 6[b] (progressive format)	Specifies the output delay in number of frames, however the actual processing delay is displayed in the **Output Frame Delay** field in the Signal tab
	Output Delays	Reset[c]	Sets the delay values to 0
	Dithering	Disabled	Dithering feature is disabled
		Enabled low (2bits~0.4%)	Dithering is enabled and set to 2bits
		Enabled med (3bits~0.8%)	Dithering is enabled and set to 3bits
		Enabled high (4bits~1.6%)	Dithering is enabled and set to 4bits
	Clip at Black[d]	Selected	Enables the card to clip to SMPTE black on all outputs
		Cleared*	SuperBlack is passed
	Clip at White[e]	Selected	Enables the card to clip to SMPTE white on all outputs
		Cleared*	SuperWhite is passed

a. This is output to reference, not the total processing delay.

b. The range of values displayed is dependent on the output format you are using. When the output format changes, these values are automatically updated based on the absolute time. Refer to **Table 7.5** for the range of values based on the output format.
c. If the output format is changed, the values are updated. If you are switching from an interlaced format to a progressive format, the values are multiplied by 2. If switching from a progressive format to an interlaced format, the value is divided by 2.
d. Slight deviation into Super White and Super Black may be possible due to color space conversion between SD and other formats.

Output Delay Values

Table 7.5 summarizes the range of values displayed in the Output Horizontal Delay and Output Delay menus based on the output format.

Table 7.5 Range of Values for the Output Delay Settings

Output Format	Output Horizontal Delay (Clocks)	Output Vertical Delay (Lines)
480i	0 to 1715	0 to 524
576i	0 to 1727	0 to 624
720p	0 to 3299	0 to 749
1080i, 1080p	0 to 4399	0 to 1124

GPI Configuration

The menu items available in the **GPI/Tally** tab enable you to configure each GPI.

Table 7.6 GPI Configuration Menu Items

Option Title	Item	Parameter	Description
GPI #	Function	None*	The GPIO port is not configured and the GPI has no effect
		GPI Cut Bkgd	A cut is performed between the Background sources when this GPI input is triggered
		GPI Auto Bkgd	An auto transition is performed between the Background sources when this GPI input is triggered
		GPI Cut Key #	The key is cut on-air or off-air when this GPI input is triggered
		GPI Auto Key #	An auto transition is performed to bring the key on-air or off-air when this GPI input is triggered
		GPI Fade to Black	A fade to black is performed when this GPI input is triggered
	Trigger	Edge*	Performs the function when a transition edge is detected on the GPI input. The Low-to-High or High-to-Low active edge is set by the Polarity control.
		Level	Performs the function when a voltage level is driven on the GPI input. The voltage level High or Low is set by the Polarity control.

Table 7.6 GPI Configuration Menu Items

Option Title	Item	Parameter	Description
GPI #	Polarity	High/Rising	Sets the polarity of the edge or level trigger. In the case of edge trigger, a Low-to-High transition starts the function. In the case of level trigger, a high level starts the function.
		Low/Falling*	Sets the polarity of the edge or level trigger. In the case of the edge trigger, a High-to-Low transition starts the function. In the case of level trigger, a low level starts the function.

Tally Configuration

The menu items available in the **GPI/Tally** tab enable you to configure each Tally.

Table 7.7 Tally Configuration Menu Items

Option Title	Item	Parameter	Description
Tally #	Function	None*	The GPI/O port is not configured and the tally has no effect
		Tally Input #	Configures the selected GPI/O port as an output and reflects the on-air status of the specified input
		Tally Key 1 - Wings	Configures the GPI/O port as an output and reflects the on-air status of the Key 1 video
		Tally Key 2	Configures the GPI/O port as an output and reflects the on-air status of the Key 2 video
	Polarity	High/Rising	When asserted, the Tally output is driven High
		Low/Falling*	When asserted, the Tally output is driven Low

Ethernet Tab

Table 7.8 summarizes the **Ethernet** options available in DashBoard.

Table 7.8 Ethernet Menu Items

Menu Title	Item	Parameter	Description
Ethernet	Method	Static	User manually supplies the network settings
		DHCP*	Automates the assignment of the network settings
	IP Address	##.#.#.###	The IP Address for the card
	Subnet Mask	###.#.#.#	The subnet mask for the card
	Default Gateway	##.#.#.#	The gateway for communication outside of the local area network (LAN)
	Apply Changes		Applies and saves any changes made to the **Ethernet Settings**
	Cancel		Cancels any setting changes and resets the **Ethernet Settings** to the previous values
	Ethernet Status	OK	Ethernet communications for the card are valid
		Link Down	Ethernet communications for the card are invalid. The ethernet cable may be disconnected on the rear module or the Ethernet network may be down.
		No IP Address	The following conditions may be occurring: • The **Method** is set to **DHCP** and the DHCP server is not available • The ethernet cable is disconnected from the card rear module • A valid IP Address is no longer available. The DHCP server may be down or is still powering up after a loss of power.
	##:##:##:##:##:## (read-only)		The MAC Address for the card

Personality Tab

Table 7.9 summarizes the options available in the **Personality** tab.

Table 7.9 Personality Menu Items

Option Title	Item	Parameters	Description
Transition Behavior	Cut Button	Abort*	Select this option to return the transition to the beginning when the **Cut** button is pressed again while a transition is in progress
		Finish	Select this option to instantly finish the transition when the **Cut** button is toggled
		Ignore	Select this option to disregard any successive presses of the **Cut** button until the transition is complete
	Auto Button	Pause/Resume*	Select this option to pause the transition when the **Auto** button is toggled, and resume the transition when the button is pressed again
		Reverse	Select this option to reverse the transition back to the start
		Ignore	Select this option to disregard any successive presses of the **Auto** button until the transition is complete
Timing Display	Timing Display	Relative to Reference*	The **Input Timing** fields in the **Signal** tab display the timing values relative to the reference
		Input to Output	The **Input Timing** fields in the **Signal** tab display the timing values relative to the output
Card Lock	Edit Permission	Unlocked*	Menu options are unlocked and editable from DashBoard
		Locked	All menu items, except this one, are locked and read-only

Audio Tab

Table 7.10 summarizes the options in the **Audio** tab.

Table 7.10 Audio Menu Items

Option Title	Item	Parameter	Description
	Audio Fade	Enabled*	• Card will perform a fade for the embedded audio transition between two sources • When a video cut is performed, a one frame audio frame is performed. Otherwise, audio always follows video. • Recommended when performing Background transitions
		Disabled	• Card will perform a hard cut at the end of the video transition • Select this option when using non-PCM audio data such as Dolby®
	SD Audio	20 bit	Embeds 20bit
		24 bit	Embeds 24bit; lower 4bits will be 0 if they were not in the source
	Silence Threshold (dB)	-96 to 0[a]	Audio below the specified threshold value is considered silent. Note that this value is applicable to all AES sources.
	Silence Timeout (sec)	1 to 60[b]	Audio silent for longer than the specified value raises an alarm. Note that this value is applicable to all AES sources.
Processed Output Audio - Group #	Enable	Selected*	Includes the group in the output of the card that is set to Processed or Clean Feed # in the Video tab
		Cleared	Specified audio group is not included
	AES IO Config	8 in, 0 out*	Card is configured to manage eight AES inputs and no outputs
		4 in, 4 out	Card is configured to manage four AES inputs and four AES outputs. AES connections 1-4 on the rear module are now configured as inputs. AES connections 5-8 on the rear module are now configured as outputs.
		0 in, 8 out	Card is configured to manage no AES inputs and eight AES outputs
		Disabled	Card is not configured for AES signals

a. The default value is -72.
b. The default value is 5.

Load/Save Tab

Table 7.11 summarizes the options in the L**oad/Save** tab.

Table 7.11 Load/Save Menu Items

Menu Title	Item	Parameter	Description
Global Settings	Load Factory Defaults		Resets all DashBoard parameters and values (excluding ethernet, reference, and output format settings) to the factory default values

ARC/AFD Menus

Table 7.12 summarizes the settings for the Aspect Ratio Converter in the **ARC/AFD** tab.

Table 7.12 ARC/AFD Menu Items

Menu Title	Item	Parameters	Description
ARC/AFD	SD Blank # Active Lines	0 to 6*	Selects the number of lines at the top of the production aperture to blank. Only applies to SD inputs. This is used to remove VBI signals from the input picture. Refer to "**Configuring the Aspect Ratio Conversion**" on page 3-11.
	SD Output Coded Frame	4:3*	• Specifies how the SD output will be scaled and the AFD data is coded in the output • Applies only when using SD outputs • HD and 3G outputs always use 16:9
		16:9	
	ARC Mode	Auto Input AFD, Auto Output AFD*	• Card automatically detects and uses the input AFD as defined by SMPTE 2016-1. If the input AFD is not detected, the card applies the settings specified in the Force Input Setting fields. • Card automatically determines the most suitable ARC method for the Output AFD; as defined by SMPTE 2016-1 • This is the recommended setting
		Force Input AFD, Auto Output AFD	• Card ignores any AFD data on the input and applies the settings specified in the Force Input Settings fields • Card automatically determines the most suitable ARC method for the Output AFD as defined by SMPTE 2016-1
		Auto Input AFD, Force Output AFD	• Card automatically detects and uses the input AFD as defined by SMPTE 2016-1. If the input AFD is not detected, the card applies the settings specified in the Force Input Settings fields. • The output AFD is set in the Force Output Settings fields (card applies the settings specified in the Force Output Settings)
		Force Input AFD, Force Output AFD	• Card ignores any AFD data on the input and applies the settings specified in the Force Input Settings fields. • The output AFD is set in the Force Output Settings field (card applies the settings specified in the Force Output Settings)

Table 7.12 ARC/AFD Menu Items

Menu Title	Item	Parameters	Description
Force Input Settings	SD Input Coded Frame	4:3*	• Specifies the aspect ratio for the SD input when the input AFD is forced or the input AFD is absent • HD or 3G inputs always use 16:9
		16:9	
	Input Coded Frame 4:3 AFD Code	Letterbox 16:9, top, 0010	• This setting is only used for 4:3 SD inputs if the ARC Mode is set to Forced Input, or the input AFD is missing • Refer to the section "**AFD Overview**" on page 3-9 for more information
		Letterbox 14:9, top, 0011	
		Letterbox>16:9, center, 0100	
		Full frame 4:3, 1000*	
		Full frame 4:3, 1001	
		Letterbox 16:9, center, 1010	
		Letterbox 14:9, center, 1011	
		Full frame 4:3, alter 14:9, 1101	
		Letterbox 16:9, alter 14:9, 1110	
		Letterbox 16:9, alter 4:3, 1111	
	Input Coded Frame 16:9 AFD Code	Full frame 16:9, 0010	• This setting is only used for 16:9 SD, HD, or 3G inputs if the ARC Mode is set to Forced Input, or the input AFD is missing • Refer to the "**AFD Overview**" on page 3-9 for more information.
		Pillarbox 14:9, center, 0011	
		Letterbox >16:9, center, 0100	
		Full frame 16:9, 1000*	
		Pillarbox 4:3, center, 1001	
		Full frame 16:9, protected, 1010	
		Pillarbox 14:9, center, 1011	
		Pillarbox 4:3, alter 14:9, 1101	
		Full frame 16:9, alter 14:9, 1110	
		Full frame 16:9, alter 4:3, 1111	
Force Output Settings	Output Coded Frame 4:3 AFD Code	Letterbox 16:9, top, 0010	• This setting is only used for 4:3 SD outputs if the ARC Mode is set to Forced Output • Refer to the section "**AFD Overview**" on page 3-9 for more information
		Letterbox 14:9, top, 0011	
		Letterbox>16:9, center, 0100	
		Full frame 4:3, 1000*	
		Full frame 4:3, 1001	
		Letterbox 16:9, center, 1010	
		Letterbox 14:9, center, 1011	
		Full frame 4:3, alter 14:9, 1101	
		Letterbox 16:9, alter 14:9, 1110	
		Letterbox 16:9, alter 4:3, 1111	

Table 7.12 ARC/AFD Menu Items

Menu Title	Item	Parameters	Description
Force Output Settings	Output Coded Frame 16:9 AFD Code	Full frame 16:9, 0010	• This setting is only used for 16:9 SD, HD, or 3G outputs if the ARC Mode is set to Forced Output • Refer to the section "**AFD Overview**" on page 3-9 for more information
		Pillarbox 14:9, center, 0011	
		Letterbox >16:9, center, 0100	
		Full frame 16:9, 1000*	
		Pillarbox 4:3, center, 1001	
		Full frame 16:9, protected, 1010	
		Pillarbox 14:9, center, 1011	
		Pillarbox 4:3, alter 14:9, 1101	
		Full frame 16:9, alter 14:9, 1110	
		Full frame 16:9, alter 4:3, 1111	
AFDs Used in the ARC	Input AFD (read-only)	# Coded frame: AFD code #	Displays the Input AFD used in the ARC
	Output AFD (read-only)	# Coded frame: AFD code #	Displays the Output AFD used in the ARC

ANC Menus

Table 7.13 summarizes the **ANC** options available in DashBoard.

Table 7.13 ANC Menu Items

Menu Title	Item	Parameters	Description
ANC	HANC Pass Through	Enabled	• Pass through HANC data without any modifications (except EDH in SD formats) • Setting should only be applied when the output format is the same format and synchronous to the input
		Disabled*	HANC data is processed as determined in the **ANC** menu
	VANC Pass Through	Enabled	• Pass through VANC data without any modifications • Setting should only be applied when the output format is the same format and synchronous to the input
		Disabled*	VANC data is processed as determined in the **ANC** menu
	Packet Name (read-only)	AFD[a]	Indicates the Ancillary data type. Note that not all types are explicitly listed.
		Closed Captioning[b]	
		Time Code[c]	
		Compressed Audio Metadata[d]	
		Other Packets	
	Action	Disable*[e]	Card does not insert the packet into the output
		Pass	• The card receives and re-inserts the specified packet type into the specific line without modifying the packet contents. • This option is only applicable for timecode, compressed audio metadata, and other packets that the card is not currently able to process.
		Process	• Card receives the packet, processes it, and inserts a new packet into the specific line • Valid only for AFD and Closed Captioning
	Insertion Line	#	Specifies the line to insert the packet

Table 7.13 ANC Menu Items

Menu Title	Item	Parameters	Description
ANC	Insertion Order	#	• Indicates the priority when there are packets on the same line • The packet with a smaller insertion order number (e.g. 1, or 2) will be inserted first when multiple packets are inserted on the same line

a. The DID/SDID for AFD packets are DID:41h, SDID:05h.
b. The DID/SDID for closed captioning packets are DID:61h, SDID:01h.
c. The DID/SDID for timecode packets are DID:60h, SDID:60h.
d. The DID/SDID for compressed audio metadata packets are: DID:45h, SDID:not specified.
e. It is recommended to set the Time Code and Audio Metadata fields to Disable.

Embedded Audio Processing Menus

Table 7.14 summarizes the options in the **Embedded Audio Processing** tab. There are sub-tabs for inputs 1 and 2 so that different settings can be maintained.

Table 7.14 Embedded Audio Processing Menu Items

Menu Title	Item	Parameters	Description
Input #	Sample Rate Conversion	Off	• SRC is not used on an input • Select this option when using non-PCM audio data
		On*	SRC is used on the specified input
Input # - Group #	Ch # Gain (dB)	-20 to 20[a]	• Adjusts the gain of the specified channel of audio • Select 0 when using non-PCM audio data
	Ch # Invert	Selected	Inverts the audio signal of the specified channel
		Cleared*	• Audio signal of the specified channel is not inverted • Use for non-PCM audio data
	Reset		Resets the parameters for the specified audio group only to the default values
	All Groups	Reset	Resets the parameters for all groups of the specified Input to the default values

a. The default value is 0.

Embedded Audio Selection Menus

Table 7.15 summarizes the options in the **Embedded Audio Selection** tab.

Table 7.15 Embedded Audio Selection Menu Items

Menu Title	Item	Parameters	Description
Input # - Group #	Ch # Source[a]	Mute	Mutes the channel on the input
		Group # Ch#*[b]	Embeds the specified Group and Channel pair on the input
		AES # Ch#[c]	Embeds the channel of the selected AES source
		# Hz Tone	Embeds the selected test tone
		# kHz Tone	
	Pass		Resets the specified group settings to pass the default input channels to the output channels
	Insert Tones		Inserts tones into the specified group
	All Groups	Insert Tones	Inserts tones into all channels
		Pass	Resets all group settings to pass the default input channels to the output channels

a. If the selected source is not present, silence is embedded.
b. Default is embedded 1:1 mapping (e.g. G1C1 OUT is mapped to G1C1 IN)
c. Only applicable with UDC-8625A-A or UDC-8625A-B when AES Input is enabled.

AES Inputs Menus

Table 7.16 summarizes the AES inputs setup options available in DashBoard for the UDC-8625A-A and UDC-8625A-B. Note that the number of AES inputs available depends on how the AES IO Config is set (see **Table 7.10**).

Table 7.16 AES Inputs Menu Items

Option Title	Item	Parameter	Description
Input #- # — AES #	Sample Rate Conversion	Selected*	SRC is always used on the specified input
		Cleared	SRC is not used on the specified input. Select this option when using non-PCM audio data.
	Ch # Gain (dB)	-20 to +20[a]	Adjusts the gain of the specified audio channel
	Gain Lock	Selected*	Locks the Gain slider of both channels together. If the values for the two channels are different, that change is maintained when the channels are locked.
		Cleared	Unlocks the Ch # Gain slider
	Ch # Delay (ms)	0* to 500	Adjusts the delay of the specified audio channel
	Delay Lock	Selected*	Locks the Ch Delay slider of both channels together. If the values for the two channels are different, that change is maintained when the channels are locked.
		Cleared	Unlocks Ch # Delay slider
	Ch # Invert	Selected	Inverts the audio signal of the specified channel
		Cleared	The audio signal is not inverted
	Sum	Selected	Both channels will carry the average of the two input channels (A+B/2). When the input is summed, the original signals are no longer available for output.
		Cleared*	Disables this feature
	Input	Reset	Resets the parameters for the selected input to the default values
	All Inputs	Reset	Resets the input parameters to the default values

a. The default value is 0.

AES Outputs Menus

Table 7.17 summarizes the AES Outputs setup options available in DashBoard. The number of AES outputs available depends on how the AES IO Config is set (see **Table 7.10**).

Table 7.17 AES Outputs Menu Items

Option Title	Item	Parameter	Description
Output #-# — AES #	Ch# Source Type	Mute	Specifies the source type for the AES output. Note that the parameter selected in this menu determines what is available in the Ch# Source Sel menu below.
		Tone	
		Input #	
		Processed Output*	
		AES #	
	Ch# Source Sel	#	• Ch # Source Type is set to Mute • The specified AES output is now muted • This field is now read-only
		#Hz Tone	• Ch # Source Type is set to Tone • Assigns the test tone as the source for the specified AES output
		#kHz Tone	
		Group# Ch#*[a]	• Ch # Source Type is set to Input # • Assigns the selected embedded Group and Channel of the SDI input (as specified in the Ch # Source Type) for the AES output
			• Ch # Source Type is set to Processed Output • Assigns the specified embedded Group and Channel of the processed SDI output as the AES output
		Channel #	• Ch # Source Type is set to AES # • Assigns the specified channel of the discrete AES input source selected in the Ch# Source Type menu
	Ch # Gain (dB)	-20 to +20[b]	Adjusts the output gain of the specified audio channel. Note that the gain added to the specified channel is a sum of the gain values selected on the AES Input tab or the Embedded Audio Selection tab, and this tab without exceeding the range of -20 to 20dB.
	Gain Lock	Selected*	Locks the Ch Delay slider of both channels together. If the values for the two channels are different, that change is maintained when the channels are locked.
		Cleared	Unlocks the Ch Delay slider

Table 7.17 AES Outputs Menu Items

Option Title	Item	Parameter	Description
Output #-# — AES #	Ch# Delay (ms)	0* to 500	Adjusts the output delay of the specified audio channel. Note that this value is added to the gain value selected on the AES Inputs tab. It is also added to the value in the Embedded Audio Processing tab if the selected source is an embedded source.
	Delay Lock	Selected*	Locks the Ch Delay slider of both channels together. If the values for the two channels are different, that change is maintained when the channels are locked.
		Cleared	Unlocks the Ch Delay slider
	Output	Reset	Resets the parameters for the selected output to the default values
	All Outputs	Reset	Resets the indicated output parameters to the default values

a. Default mapping is G1C1 to AES 1A, G1C2 to AES 1B, etc.
b. The default value is 0.

Proc Amps Menus

Table 7.18 summarizes the **Proc Amps** options available in DashBoard.

Table 7.18 Proc Amps Menu Items

Menu Title	Item	Parameters	Description
Out #	Enable	Selected*	Enables the Proc Amp using the displayed settings for the selected output
		Cleared	The Proc Amp color correction is not applied to the selected output. Note that the Proc Amp controls are not applied when the output is assigned as an External Wings or Test Pattern.
	Video Gain (%)	0 to 200[a]	Adjusts the output video gain level
	Chroma Gain (%)	0 to 200[a]	Adjusts the card output chroma gain percentage (C_b and C_r simultaneously)
	CB Gain (%)	0 to 200[a]	Adjusts the output C_b gain
	Black Offset (IRE)	-8 to 100[b]	Adjusts the output black level of the card
	Proc Amp	Reset	Resets all Proc Amp controls to the factory default values

a. The default value is 100.
b. The default value is 0.

Logos Menus

Table 7.19 summarizes the **Logos** options available in DashBoard. Each logo has a sub-tab to select which logo is to be modified.

Table 7.19 Logos Menu Items

Menu Title	Item	Parameters	Description
Logo #	Video Image	Displays a thumbnail image	• Displays a small image that represents the currently loaded media file. For animations, the fifth frame is displayed. • Only available when the card Ethernet 10/100 port is connected and properly configured • A black box with text indicates that no image is currently loaded
	Alpha Image	Displays a thumbnail image	• Displays a small image that represents the currently loaded media file on the Alpha channel. For animations, the fifth frame is displayed. • Only available when the card ethernet port is connected and properly configured • A blank area indicates that the current image has no alpha channel
	File (read-only)	###	Indicates the full path of the currently loaded file
	Status (read-only)	Idle	• Displays information about the channel in both the number of frames (integer), and in the number of seconds (fractional) • Any errors during loading are also displayed • When the file(s) have loaded, this field displays the dimensions of the image (e.g. 1920x1080)
		Queued	
		Loading frame X of Y	
		Animation Loaded (#)	
		Single image loaded (#)	
	Selected on (read-only)	###	Indicates all the key(s), or backgrounds, that currently have the media file selected
		None	
	On Air (read-only)	###	Indicates the on-air key(s), or backgrounds, that have this media file selected
	Directory	[RAM CACHE]	• The field displays the directory the currently selected media file is located in • Provides a list of all of the directories on the CompactFlash™ Card
		[ROOT]	
		#[a]	

Table 7.19 Logos Menu Items

Menu Title	Item	Parameters	Description
Logo #	Filename	xxx.yyy XXX_####.TGA [#]	• Animation filenames include an underscore followed by three or more digits. The number of frames, and duration in seconds, is displayed in brackets after the filename. • Updated when a new Directory is selected in the **Directory** menu • Provides a list of all the media files in the currently selected directory. Note that animations appear as a single entry.
		[NONE]	Selecting this option clears the logo channel. This item is automatically selected, without clearing the channel, when the user switches to a new directory.
	File List	Rescan	• Updates the Directory menu options • Updates the Filename menu options
	X Position	## to ##[b]	• Adjusts the position of the image along the X-axis in number of pixels • The range varies depending on the output video format
	Y Position	## to ##[a]	• Adjusts the position of the image along the Y-axis in number of pixels • The range varies depending on the output video format
	Auto Play[c]	Selected*	The animation starts to play when a transition occurs
		Cleared	The animation starts playing as soon as the animation is loaded to the bus
	Looping[b]	Selected*	The animation starts over when it reaches the last frame of the animation
		Cleared	The animation stops when it reaches the last frame of the animation
	Play Mode	Normal*	The entire frame of the image is displayed
		Swap Fields	Field 1 and Field 2 of the image are swapped when they are displayed
		Field 1 Only	Field 1 of the image is displayed
		Field 2 Only	Field 2 of the image is displayed

a. A user created directory.
b. Default value is 0 which represents the top-left corner of the active picture area.
c. This option is only applicable when an animation file is selected.

Key Setup Menus

Table 7.20 summarizes the **Key Setup** tab options available for Key 2 in DashBoard.

Table 7.20 Key Setup Menu Items

Menu Title	Item	Parameters	Description
Key 2	Clip	4 to 1019[a]	Adjusts the luminance level of the key. The lower the threshold setting, the more the Key is visible.
	Gain	0 to 100[b]	Adjusts the softness of the edges of the key
	Clip & Gain	Make Linear	Resets the clip and gain to the default values
	Key Invert	Selected	The polarity of the Key Alpha is inverted
		Cleared*	The Key Alpha is not inverted
	Key Type	Auto Select*	A Key which two video signals (Alpha and Fill) are used
		Self	A Key that uses the luminance values of the key source for the alpha
	Key Alpha Type	Unshaped	The card performs a multiplicative key. The Key Alpha mixes the Key Video with the BKGD.
		Shaped*	The card performs an additive key. The Key Alpha cuts a hole in the BKGD and the Key Video is added to the BKGD.
	Transparency	0 to 100[c]	Adjusts the transparency level of the key. • A value of 0% sets the key to completely opaque. At this value, there is no difference between the original key and the key with the transparency effect applied to it. • A value of 100% sets the key to completely transparent. At this value, the key is not visible on the screen.
	Box Mask[d]	Off*	Disables this feature; a box mask is not applied to the key
		On	Applies the mask to the key (only the portion inside the box is displayed)
		Inverted	Reverses the mask. The portion of the image that was masked is now visible and the portion that was visible is now masked.
	Mask Top Edge	0 to #[e]	Adjusts the location of the top edge of the mask
	Mask Bottom Edge	0 to #[e]	Adjusts the location of the bottom edge of the mask
	Mask Left Edge	0 to #[e]	Adjusts the location of the left edge of the mask
	Mask Right Edge	0 to #[e]	Adjusts the location of the right edge of the mask

a. The default value is 940.
b. The default value is 50.
c. The default value is 0.
d. The values of the Box Mask parameters are set in number of lines and pixels, and are therefore dependent on the video format you are using.
e. The range of values is dependent on the video format.

On Air Control Menus

Table 7.21 summarizes the On Air Control options available in DashBoard.

Table 7.21 On Air Control Menu Items

Menu Title	Item	Parameters	Description
Background	Image	Displays a thumbnail image	Displays a thumbnail image that represents the BKGD source
	Program	Black	Assigns Black as the output
		Input #	• Assigns the selected input source as the BKGD output • Input 1 assigns SDI IN 1 as the BKGD • Input 2 assigns SDI IN 2 as the BKGD
	Backup	Black	Assigns Black as the backup output
		Input #	• Assigns the selected input source as the backup output • Input 1 assigns SDI IN 1 as the BKGD Backup source • Input 2 assigns SDI IN 2 as the BKGD Backup source
	Auto Change Over	Selected	• Enables the Auto Change Over feature where SDI IN 1 is the primary source and SDI IN 2 is the backup source. • If SDI IN 1 is lost, the card automatically switches to SDI IN 2; the card stays on SDI IN 2 until SDI IN 1 returns for 30 seconds, at which time the card switches back to SDI IN 1 • The Cut and Auto buttons are disabled
		Cleared*	Disables this feature; transition control is manual using the Cut and Auto buttons. This setting is recommend when the card is used for SmartConversion™.
	Cut	Cut	Performs an instantaneous transition between the **Source** and the **Backup**. A V-Fade is performed between audio sources.
	Auto	Auto	Performs the transition, as specified in the **Auto Trans Type** menu, between the sources selected in the **Source** and **Backup** areas, at the specified **Bkgd** rate setting
Key #	Image	Displays a thumbnail image	Displays a thumbnail image that represents the Key source
	Key Status (read-only)	ON_AIR	The key is on-air
		OFF_AIR	The key is not on-air

Table 7.21 On Air Control Menu Items

Menu Title	Item	Parameters	Description
Key #	Program	Black	Assigns Black as the Key output
		Input #	Assigns the selected input source as the Key source
		Logo #	Assigns the selected Logo media file as the Key source
	Cut		Performs an instantaneous transition to take the Key on-air or off-air
	Auto		Performs a dissolve to transition the key on or off air. The speed of the transition is controlled by the **Key Rate** setting.
Multiple Transition (using Bkgd Rate)	Include	Bkgd	Does not include the BKGD in the next transition
		Bkgd - Yes	Includes the BKGD in the next transition when the **Cut** button is clicked
		Key #	Does not include the specified key in the next transition
		Key # - Yes	Includes the specified key in the next transition when the **Cut** button is clicked
	Cut		Performs a cut on the selected elements
	Fade to Black	Fade Down*	The output fades to black (both the BKGD and the On Air Key)
		Fade Up	The output fades from black back to its normal state; both the BKGD and the On Air Key are visible (if on-air)
Transition Rates[a]	Auto Trans Type	Fade-Fade	A video V-Fade (through black) is performed for BKGD transitions (including audio)
		Take-Fade*	A cut to black is performed then a fade up to the next BKGD source. A V-Fade is performed for audio transitions.
		Fade-Take	The BKGD fades to black then performs a cut to the next BKGD source. A V-Fade is performed for audio transitions.
	Bkgd Rate	Slow	Sets the BKGD transition rate to Slow
		Medium*	Sets the BKGD transition rate to Medium
		Fast	Sets the BKGD transition rate to Fast
	Key Rate	Same parameters as above[b] but applies to the Key transition rates	
	Slow Rate	1 to 999	Defines the Slow Rate in frames
	Medium Rate	1 to 999	Defines the Medium Rate in frames
	Fast Rate	1 to 999	Defines the Fast Rate in frames

a. Refer to **Table 7.22** for a list of default values for the Slow, Medium, and Fast rates.
b. The default value is Fast.

Default Values for Transition Rates

Table 7.22 summarizes the range of values (in number of frames) for the Slow, Medium, and Fast transition rates based on the output format.

Table 7.22 Default Values for the Transition Rates (Frames)

Output Format	Slow Rate[a]	Medium Rate[b]	Fast Rate[c]
1080i 59.94Hz, 480i 59.94Hz	60	30	15
1080p 59.94Hz, 720p 59.94Hz	120	60	30
1080i 50Hz, 576i 50Hz	50	25	12
1080p 50Hz, 720p 50Hz	100	50	25

a. Default is 2 seconds
b. Default is 1 second
c. Default is 0.5 second

Input Status Menus

Table 7.23 summarizes the **Input Status** read-only information available in DashBoard. Each input has a sub-tab that displays the applicable status information.

Note — *If the output format frame rate is greater than the input frame rate, the fields in this tab may temporarily display "Not Present".*

Table 7.23 Input # Status Menu Items

Menu Title	Item	Parameters	Description
	Input # Status[a]	Format #	Indicates the detected input format
		No Signal (Red)	The input signal is not detected and the corresponding **Input # Loss** alarm is enabled
		Unsupported: Format #	Indicates that the input format is not supported
		Incompatible: Format # (Yellow)	The input format is not compatible with the output, and is currently not in use; the corresponding alarm is enabled
		Alarm suppressed (Green)	The input format is compatible and/or the corresponding alarm is disabled
		Audio Status - Audio Absent (Yellow)	There is an audio group absent in the input and the corresponding alarm is enabled
		Audio Status	A blank field indicates that all audio groups in the input are present or the corresponding alarm is disabled
	CRC Errors	Active:# Full # (SD only)	Displays the count of the CRC errors on the video input. This counter is reset on loss of video, or by user request. The counter is non-latching, and the count can roll over the counter. • For SD formats, it displays both active picture and full frame errors • For HD formats, it displays the total count of errors
		# (HD only)	
	Error Count	Reset	Resets the **CRC Errors** field
HANC (Read-only)	352M	Not Present	352M is not detected on the input
		#	352M is detected and the four bytes are displayed
VANC (Read-only)	AFD[b]	Not Present	AFD Code is not detected in the input
		Coded Frame: AFD Code	AFD Code is detected in the input
	Closed Captioning[c]	Line 21	Line 21 data is detected on the first field; 480i 59.94Hz format only
		Line 284	Line 21 data on the second field is detected; 480i 59.94Hz format only

Table 7.23 Input # Status Menu Items

Menu Title	Item	Parameters	Description
VANC (Read-only)	Closed Captioning[c]	EIA-708 pkt (CEA-608 data)	EIA-708 packet is detected; contains CEA-608 data
		Not Present	No Closed Caption packets are detected
	Timecode[d]	Present	Timecode data is detected on the input
		Not Present	Timecode data is not detected on the input
	Audio Metadata[e]	Present	Audio metadata is detected on the input
		Not Present	Audio metadata is not detected on the input
	Other Packets	#	The packet is detected and its DID and SDID are displayed
		Not Present	No other packets are detected
Embedded Audio (Read-only)	Group # Channel #	PCM	Indicates the embedded audio is a linear PCM sample. This information comes from channel status.
		Non-PCM	Indicates the embedded audio is a non-PCM sample. This information comes from channel status.
		20B	Indicates that the word length of the embedded audio is 20bits
		24B	Indicates that the word length of the embedded audio is 24bits
		#dB	Indicates the audio level
AES Inputs Status - AES # (Read-only)	Ch # Status	No Input	Displays the status of the specified channel input
		PCM	
		PCM-silent	
		Non-PCM	
		Async[f]	
	Word Length	#bit	Displays the word length of the audio in the number of bits
	Emphasis	Present	The incoming AES signal is indicating 50/15 or CCiTT J.17 emphasis
		Not Present	The incoming AES is indicating no emphasis or the emphasis is not indicated
	Sample Rate	#	Displays the sample rate of the AES input

a. This field displays information in the format of <format, audio status>.
b. The DID/SDID for AFD packets are DID:41h, SDID:05h.
c. The DID/SDID for closed captioning packets are DID:61h, SDID:01h.
d. The DID/SDID for timecode packets are DID:60h, SDID:60h.
e. The DID/SDID for compressed audio metadata packets are: DID:45h, SDID:not specified.
f. If the SRC is ON, an Async AES signal is processed to be PCM and indicated as such.

Alarm Enables Menus

Table 7.24 summarizes the **Alarm Enables** options available in DashBoard.

Table 7.24 Alarm Enables Menu Items

Menu Title	Item	Parameters	Description
Hardware Alarm	Incompat Rear Module	Selected*	**Rear Module** field in the Hardware tab reports when a rear module is not compatible with the card
		Cleared	Disables the alarm
	Stalled Fan	Selected*	**FPGA Fan** field in the Hardware tab reports when the fan on the card surface is not operating correctly
		Cleared	Disables the alarm
Signal & Reference Alarms	Reference Error	Selected*	**Reference Status** field in the Signal tab reports when the reference signal is absent; when a reference signal is present, but the frame rate does not match the output format
		Cleared	Disables the alarm
Input #	Absent/Incompatible	Selected*	**Input Status** fields in the Signal and Input Status tabs report a loss of the specified input or the format is incompatible for the specified input
		Cleared	Disables the alarm
	Group # Absent	Selected*	**Input Status** fields in the Signal and Input Status tabs report when the specified group audio is absent; this alarm only applies to the input or the backup input to the card video processing unit
		Cleared	Disables the alarm
	Group # Silent	Selected*	**Input Status** fields in the Signal and Input Status tabs report when the specified group audio is silent; this alarm only applies to the input or the backup input to the card video processing unit
		Cleared	Disables the alarm
Other	Input # Absent/Async	Selected*	**Input Status** field in the Signal tab reports when the video of the specified input is not present or is incompatible. Audio status is not reported.
		Cleared	Disables the alarm

Table 7.24 Alarm Enables Menu Items

Menu Title	Item	Parameters	Description
Embedded Audio Output Alarms	Program Source Absent/Async	Selected*	**Video Processing Output** field in the Signal tab reports when the embedded audio for the Program source (as assigned in the On Air Control tab) is not present or is incompatible
		Cleared	Disables the alarm
	Backup Source Absent/Async	Selected*	**Video Processing Output** field in the Signal tab reports when the embedded audio for the Backup source (assigned in the On Air Control tab) is not present or is incompatible
		Cleared	Disables the alarm
AES Input Alarms[a]	AES # Absent	Selected*	**AES** fields in the Signal and Input Status tabs report when the AES input source is not detected
		Cleared	Disables the alarm
	AES # Silent	Selected*	**AES** field reports when the specified AES source is detected as silent. What the card defines as Silent is defined by the options in the Audio tab.
		Cleared	Disables the alarm
AES Output Alarms[a]	AES # Source Absent	Selected*	**AES** field in the Signal tab reports when the source for the specified AES output is not detected
		Cleared	Disables this alarm
	All Alarms	Set	Enables all alarms
		Clear	Disables all alarms

a. These menu items are not available for the UDC-8625A. The number of AES alarms depends on how the AES IO Config is set.

Appendix B. Specifications

In This Appendix

This appendix provides technical information on the UDC-8625A series. Note that specifications are subject to change without notice.

The following topics are discussed:

- UDC-8625A Technical Specifications
- UDC-8625A-A Technical Specifications
- UDC-8625A-B Technical Specifications

UDC-8625A Technical Specifications

This section includes the technical specifications table for the UDC-8625A.

Table 8.1 UDC-8625A Technical Specifications

Category	Parameter	Specification
Rear Modules	Supported Rear Modules	8310AR-033, 8320AR-033, 8320AR-052
Serial Digital Video Inputs	Number of Inputs	4
	Data Rates and SMPTE Standards Accommodated	480i 59.94Hz (SMPTE 259M)
		576i 50Hz (SMPTE 259M)
		1080i 59.94Hz (SMPTE 292M)
		1080i 50Hz (SMPTE 292M)
		720p 59.94Hz (SMPTE 292M)
		720p 50Hz (SMPTE 292M)
		1080p Level A 59.94Hz (SMPTE 424M)
		1080p Level A 50Hz (SMPTE 424M)
	Impedance	75ohm terminating
	Return Loss (8310AR-033, 8320AR-033)	SDI IN 1: >15dB to 1.5GHz[a]
		SDI IN 2-4: >15dB to 1.5GHz, >10dB to 3GHz
	Return Loss (8320AR-052)	>15dB to 1.5GHz, 10dB to 3GHz
	Equalization (using Belden 1694A cable)	SD: 120m
		HD: 100m
		3G: 50m[a]
Serial Digital Video Outputs	Number of Outputs	4
	Impedance	75ohm
	Return Loss (8310AR-033, 8320AR-033)	SDI OUT 1: >15dB to 1.5GHz[a]
		SDI OUT 2-4: >15dB to 1.5GHz, >10dB to 3GHz
	Return Loss (8320AR-052)	>15dB to 1.5GHz, >10dB to 3GHz
	Signal Level	800mV ±10%
	DC Offset	0V ±50mV
	Rise and Fall Time (20-80%)	SD: 900ps typical
		HD: 150ps typical
		3G: 130ps typical
	Overshoot	<10% typical
Environment	Maximum Ambient Temperature	40°C
Power	Maximum Power Consumption	18W

a. The 8310AR-033 and 8320AR-033 rear modules do not meet 3GHz Return Loss specifications on Input 1 and Output 1.

UDC-8625A-A Technical Specifications

This section includes the technical specifications table for the UDC-8625A-A.

Table 8.2 UDC-8625A-A Technical Specifications

Category	Parameter	Specification
Rear Modules	Supported Rear Modules	8320AR-053A, 8320AR-053B
Serial Digital Video Inputs	Number of Inputs	4
	Data Rates and SMPTE Standards Accommodated	480i 59.94Hz (SMPTE 259M)
		576i 50Hz (SMPTE 259M)
		1080i 59.94Hz (SMPTE 292M)
		1080i 50Hz (SMPTE 292M)
		720p 59.94Hz (SMPTE 292M)
		720p 50Hz (SMPTE 292M)
		1080p Level A 59.94Hz (SMPTE 424M)
		1080p Level A 50Hz (SMPTE 424M)
	Impedance	75ohm terminating
	Return Loss	>15dB to 1.5GHz, >10dB to 3GHz
	Equalization (using Belden 1694A cable)	SD: 120m
		HD: 100m
		3G: 50m
Serial Digital Video Outputs	Number of Outputs	4
	Impedance	75ohm
	Return Loss	>15dB to 1.5GHz, >10dB to 3GHz
	Signal Level	800mV ±10%
	DC Offset	0V ±50mV
	Rise and Fall Time (20-80%)	SD: 900ps typical
		HD: 150ps typical
		3G: 130ps typical
	Overshoot	<10% typical
AES I/O	Number of Inputs/Outputs	8 connections
	AES Standards Accommodated	AES-3id-2001
	Impedance	75ohm
	Minimum Input	30mV
	Maximum Input	2.5Vp-p
	Minimum Audio Delay	2.3ms (SRC is enabled)

Table 8.2 UDC-8625A-A Technical Specifications

Category	Parameter	Specification
AES I/O	Sampling Rate	up to 96KHz
	Equalization	>1000m of Belden 1694A cable
	Return Loss	>27dB 100KHz to 6MHz
	Output Amplitude	1Vp-p ±10%
	Rise and Fall Times	40ns
	Jitter	4.5mUI
	Connector Type	8320AR-053A: DIN
		8320AR-053B: HD-BNC
Environment	Maximum Ambient Temperature	40°C
Power	Maximum Power Consumption	24W

UDC-8625A-B Technical Specifications

This section includes the technical specifications table for the UDC-8625A-B.

Table 8.3 UDC-8625A-B Technical Specifications

Category	Parameter	Specification
Rear Modules	Supported Rear Modules	8320AR-052A
Serial Digital Video Inputs	Number of Inputs	4
	Data Rates and SMPTE Standards Accommodated	480i 59.94Hz (SMPTE 259M)
		576i 50Hz (SMPTE 259M)
		1080i 59.94Hz (SMPTE 292M)
		1080i 50Hz (SMPTE 292M)
		720p 59.94Hz (SMPTE 292M)
		720p 50Hz (SMPTE 292M)
		1080p Level A 59.94Hz (SMPTE 424M)
		1080p Level A 50Hz (SMPTE 424M)
	Impedance	75ohm terminating
	Return Loss	>15dB to 1.5GHz, >10dB to 3GHz
	Equalization (using Belden 1694A cable)	SD: 120m
		HD: 100m
		3G: 50m
Serial Digital Video Outputs	Number of Outputs	4
	Impedance	75ohm
	Return Loss	>15dB to 1.5GHz, >10dB to 3GHz
	Signal Level	800mV ±10%
	DC Offset	0V ±50mV
	Rise and Fall Time (20-80%)	SD: 900ps typical
		HD: 150ps typical
		3G: 130ps typical
	Overshoot	<10% typical
AES I/O	Number of Inputs/Outputs	8 connections
	AES Standards Accommodated	AES-3id-2001
	Impedance	110ohm
	Minimum Input	100mV
	Maximum Input	10Vp-p
	Minimum Audio Delay	2.3ms (SRC enabled)
	Sampling Rate	up to 96KHz

Table 8.3 UDC-8625A-B Technical Specifications

Category	Parameter	Specification
AES I/O	Equalization	>450m of Belden 1492 cable
	Return Loss	>18dB 100KHz to 6MHz
	Output Amplitude	4Vp-p
	Rise and Fall Times	30ns
	Jitter	4.5mUI
	Connector Type	WECO™
Environment	Maximum Ambient Temperature	40°C
Power	Maximum Power Consumption	28W

Appendix C. ARC Setting Examples

In This Appendix

This appendix provides examples of configuring the options in the **ARC/AFD** tab with graphical examples of the input and output images. In the following graphical examples, the black areas represent where the Wings content is inserted.

Note that the configurations presented in this appendix are a subset of possible setups.

The following examples are provided:

- 4:3 SD to HD (Pillarbox)
- 4:3 SD to HD (Zoom)
- 4:3 SD to 16:9 SD (Pillarbox)
- HD to 4:3 SD (Letterbox)
- HD to 4:3 SD (Zoom)

4:3 SD to HD (Pillarbox)

In this example, the input format is SD 4:3 (**Figure 9.1**), and the UDC-8625A series card output format is set to HD (**Figure 9.2**).

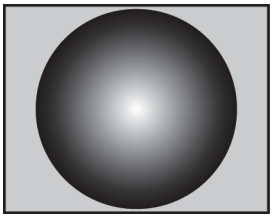


***Figure 9.1** SD 4:3 Input*

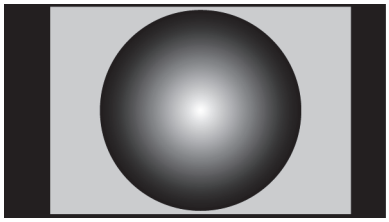


***Figure 9.2** HD 16:9 Pillarbox Output*

Use the settings provided in **Table 9.1** to configure the card for an SD to HD pillarbox conversion. If there is an Input AFD, you may need to use the **Force Input AFD** option (Full Frame 4:3, 1000).

Table 9.1 ARC/AFD Tab Settings

DashBoard Menu Item	Set to
SD Output Coded Frame	N/A
ARC Mode	(Any option)
SD Input Coded Frame	4:3
Input Coded Frame 4:3 AFD code	Full Frame 4:3, 1000
Input Coded Frame 16:9 AFD code	N/A
Output Coded Frame 4:3 AFD code	N/A
Output Coded Frame 16:9 AFD code	Pillarbox 4:3, 1001 or N/A if Auto Output AFD

4:3 SD to HD (Zoom)

In this example, the input is SD 4:3 (**Figure 9.3**), and the UDC-8625A series card output format is set to HD (**Figure 9.4**). The top and bottom of the input image is cropped to produce the zoom effect.

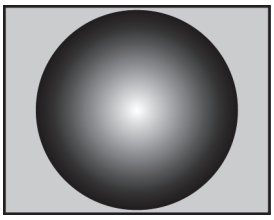


***Figure 9.3** SD 4:3 Input*

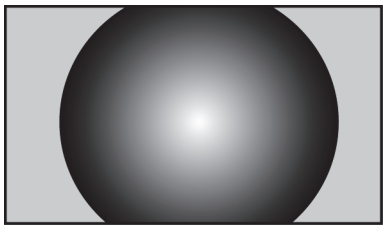


***Figure 9.4** HD 16:9 Zoom Output*

There are two methods presented: changing the input AFD, and changing the output AFD. In either case, if there is an Input AFD, you may need to use the Force Input AFD option (Full Frame 4:3, 1000).

Use the settings provided in **Table 9.2** to configure the card for an SD to HD zoom conversion by changing the output AFD mode.

Table 9.2 ARC/AFD Tab Settings

DashBoard Menu Item	Set to
SD Output Coded Frame	N/A
ARC Mode	Auto Input AFD, Force Output AFD or Force Input AFD, Force Output AFD
SD Input Coded Frame	4:3
Input Coded Frame 4:3 AFD code	Full Frame 4:3, 1000
Input Coded Frame 16:9 AFD code	N/A
Output Coded Frame 4:3 AFD code	N/A
Output Coded Frame 16:9 AFD code	Full Frame, 16:9, 1000

4:3 SD to 16:9 SD (Pillarbox)

In this example, the input is SD 4:3 with no embedded AFD (**Figure 9.5**), and the UDC-8625A series card output format is set to SD 16:9 (**Figure 9.6**). Black bars are added to the sides of the image.

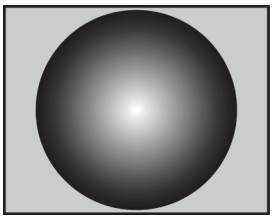


Figure 9.5 *SD 4:3 Input*

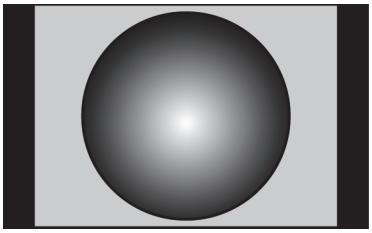


Figure 9.6 *SD 16:9 Output*

Use the settings provided in **Table 9.3** to configure the card for an SD to SD conversion. If there is an Input AFD, you may need to use the Force Input AFD option (Full Frame 4:3, 1000).

Table 9.3 ARC/AFD Tab Settings

DashBoard Menu Item	Set to
SD Output Coded Frame	16:9
ARC Mode	N/A
SD Input Coded Frame	4:3
Input Coded Frame 4:3 AFD code	Full Frame 4:3, 1000
Input Coded Frame 16:9 AFD code	N/A
Output Coded Frame 4:3 AFD code	N/A
Output Coded Frame 16:9 AFD code	Pillarbox 4:3, 1001 or N/A if Auto Output AFD

HD to 4:3 SD (Letterbox)

In this example, the input is HD 16:9 (**Figure 9.7**), and the UDC-8625A series card output format is set to SD 4:3 (**Figure 9.8**). Black bars are added to the top and bottom of the image.

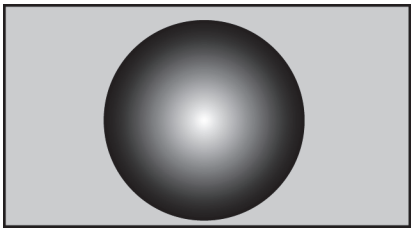


***Figure 9.7** HD 16:9 Input*

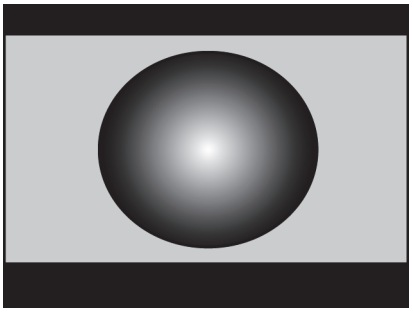


***Figure 9.8** SD 4:3 Letterbox Output*

Use the settings provided in **Table 9.4** to configure the card for an HD to SD letterbox. If there is an Input AFD, you may need to use the Force Input AFD option (Full Frame 16:9, 1000)

Table 9.4 ARC/AFD Tab Settings

DashBoard Menu Item	Set to
SD Output Coded Frame	4:3
ARC Mode	(Any option)
SD Input Coded Frame	N/A
Input Coded Frame 4:3 AFD code	N/A
Input Coded Frame 16:9 AFD code	Full Frame 16:9, 1000
Output Coded Frame 4:3 AFD code	Letterbox, 16:9, 1010 or N/A if Auto Output AFD
Output Coded Frame 16:9 AFD code	N/A

HD to 4:3 SD (Zoom)

In this example, the input is HD 16:9 (**Figure 9.9**), and the UDC-8625A series card output format is set to SD (**Figure 9.10**).

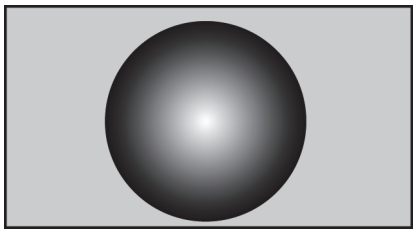


***Figure 9.9** HD 16:9 Input*

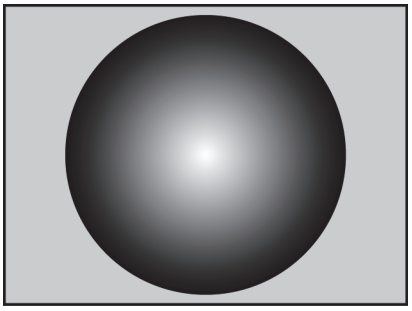


***Figure 9.10** SD 4:3 Zoom Output*

There are two methods presented: changing the Input AFD, and changing the Output AFD. In either case, if there is an Input AFD, you may need to use the Force Input AFD option (Full Frame 16:9, 1000).

Use the settings provided in **Table 9.5** to configure the card for an HD to SD zoom conversion by changing the output AFD mode.

Table 9.5 ARC/AFD Tab Settings

DashBoard Menu Item	Set to
SD Output Coded Frame	4:3
ARC Mode	Auto Input AFD, Force Output AFD or Force Input AFD, Force Output AFD
SD Input Coded Frame	N/A
Input Coded Frame 4:3 AFD code	N/A
Input Coded Frame 16:9 AFD code	Full Frame, 16:9, 1000
Output Coded Frame 4:3 AFD code	Full Frame, 4:3, 1000
Output Coded Frame 16:9 AFD code	N/A

Appendix D. Cascade Feature

In This Chapter

The Cascade feature enables you to specify that an SDI Input selected as the Key 1 - Wings is passed through to an SDI output on the card with minimal processing. This feature is useful when you have multiple UDC-8625A series cards in a frame and want to pass an SDI Wings source from one card to the next card in a daisy-chain configuration.

This appendix presents one possible implementation of the Cascade feature. Your requirements may differ from what is presented here.

The following topics are discussed:

- Cabling for the Cascade Feature
- Configuration in DashBoard

Cabling for the Cascade Feature

This appendix assumes the following equipment is used:

- One DFR-8321 series frame with an MFC-8320-N Network Controller card
- Two UDC-8625A-B cards installed in the frame
- Two 8320AR-052A rear modules installed in the frame

In **Figure 10.1**, the rear module depicted on the left is for the **first** UDC-8625A-B while the rear module on the right is for the **second** UDC-8625A-B. Note that the slots that your rear modules are installed in may differ than what is presented here. Ross Video does not supply the required cables.

Cabling Overview

1. Connect an input video signals to **SDI IN 2** (BNC 1) on the first UDC-8625A-B. For simplicity, **Figure 10.1** depicts only one SDI input, but you may require more. Refer to the section "**UDC-8625A-B Rear Module**" on page 2-9 for specific cabling designations.

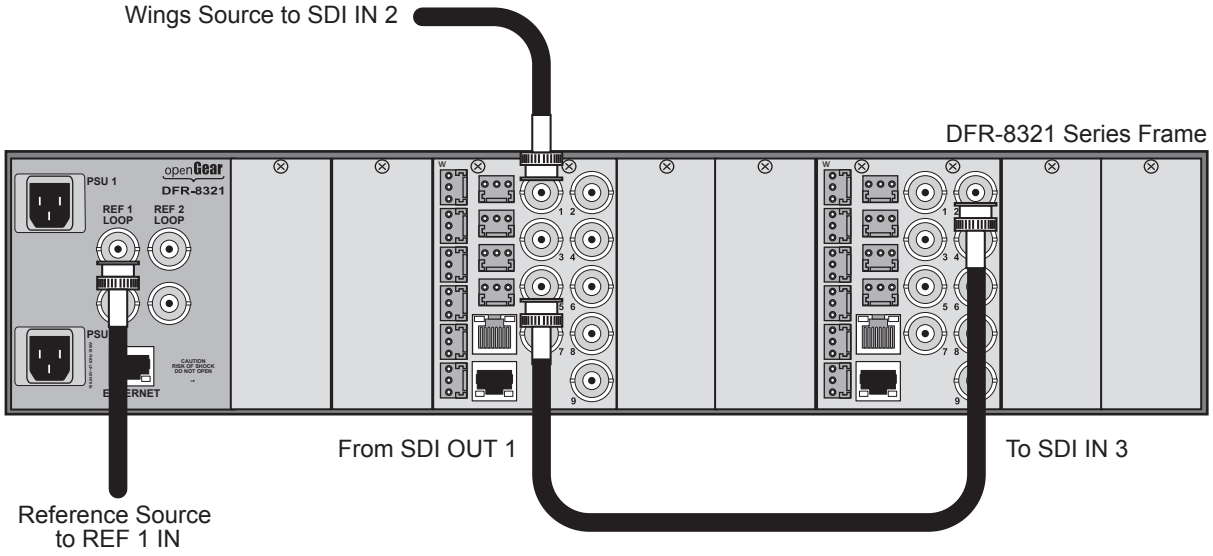


***Figure 10.1** Cabling for the Cascade feature*

2. Connect **SDI OUT 1** (BNC 5) on the first UDC-8625A-B to **SDI IN 3** (BNC 2) on the second UDC-8625A-B.
3. Connect the remainder of the input and output video signals to the rear modules as required.
4. Connect the reference source for UDC-8625A-B cards.

For More Information on...

- additional connections for your card, refer to chapter "**Installation**" on page 2-1.

Configuration in DashBoard

Note that the Cascade feature requires that the input video format be the same as the output video format.

Basic Configuration

For additional configuration details, refer to the chapter "**Configuration**" on page 3-1.

To configure a card

1. Select the **Device View** for one of the UDC-8625A-B cards.
2. Select the **Config** tab.
3. Set up the network connection to your card as outlined in the section "**Ethernet Communication Setup**" on page 3-3.
4. Specify the reference source as follows:
   - Select the **Video** tab.
   - From the **Reference Setup** menu, select **Frame 1**.
5. Repeat steps 1. to 4. for the second UDC-8625A-B.

Setting up the First UDC-8625A-B

This section summarizes how to set up the Cascade feature on the first UDC-8625A-B. For additional configuration details, refer to the chapter "**Configuration**" on page 3-1. Before proceeding, ensure that the External Wings video source is locked to the same reference.

To set up the Cascade feature

1. Select the **Device View** for the first UDC-8625A-B.
2. Configure **SDI OUT 1** as follows:
   - Select **Config** > **Video**.
   - From the **Output Format** menu, select the video format. Ensure that the output is compatible with the selected reference and that the input video source on **SDI IN 2** is the same format as selected in the **Output Format** menu.
   - From the **Output** menu for Output 1, select **External Wings**.
3. Configure the Cascade feature as follows:
   - Select the **On Air Control** tab.
   - Locate the **Key 1 - Wings** area.
   - From the **Key 1 Source** menu, select **Input 2**.

Setting up the Second UDC-8625A-B

This section summarizes how to set up the second UDC-8625A-B to accept the External Wings output on SDI IN 3 from the first UDC-8625A-B.

To set up the second UDC-8625A-B

1. Select the **Device View** for the second UDC-8625A-B.
2. Select **Config** > **Video**.
3. From the **Output Format** menu, select the video format. Ensure that the output is compatible with the selected reference and that the input video source on **SDI IN 3** is the same format as selected in the **Output Format** menu.

Troubleshooting

Note that the source of video cascaded is determined by each upstream card's On Air Control - Key 1 source selection.

If the source format doesn't match, or if the On Air Control - Key 1 source is set to something other than Inputs 1-4, then an internally generated black signal is output.

Switching the source is not timed. Changes between the input sources and black, may cause downstream equipment to temporarily lose lock and/or show corrupt video.

Monitor the Signal Input timing fields on each card to ensure that all signals are synchronous. An asynchronous signal may vertically scroll or glitch if put on-air.

Appendix E. Software Licenses

In This Appendix

This appendix provides third-party software license information for your UDC-8625A series card. This product includes multiple software components which are individually licensed under one or more of the following licenses included in this appendix.

This appendix contains the following sections:

- BSD
- Dual GPL/Free Type
- GPL
- LGPL
- IJG
- MIT
- zlib

BSD

Dual GPL/Free Type

GPL

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zlib

The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files ftp://ds.internic.net/rfc/rfc1950.txt (zlib format), rfc1951.txt (deflate format) and rfc1952.txt (gzip format).

Appendix F. Service Information

In This Appendix

This appendix contains the following sections:

- Troubleshooting Checklist
- Warranty and Repair Policy

Troubleshooting Checklist

Routine maintenance to this openGear product is not required. In the event of problems with your UDC-8625A series card, the following basic troubleshooting checklist may help identify the source of the problem. If the frame still does not appear to be working properly after checking all possible causes, please contact your openGear products distributor, or the Technical Support department at the numbers listed under the "**Contact Us**" section.

1. **Visual Review** — Performing a quick visual check may reveal many problems, such as connectors not properly seated or loose cables. Check the card, the frame, and any associated peripheral equipment for signs of trouble.
2. **Power Check** — Check the power indicator LED on the distribution frame front panel for the presence of power. If the power LED is not illuminated, verify that the power cable is connected to a power source and that power is available at the power main. Confirm that the power supplies are fully seated in their slots. If the power LED is still not illuminated, replace the power supply with one that is verified to work.
3. **Reference Signal Status** — Verify that the reference (blackburst or tri-level) is supplied on one of the available reference inputs. Check the **Reference Status** field in the **Signal** tab in DashBoard.
4. **Input Signal Status** — Verify that source equipment is operating correctly and that a valid signal is being supplied.
5. **Output Signal Path** — Verify that destination equipment is operating correctly and receiving a valid signal.
6. **Unit Exchange** — Exchanging a suspect unit with a unit that is known to be working correctly is an efficient method for localizing problems to individual units.
7. **Re-load the Factory Defaults** — If the card appears to be working and reports no errors, but is not generating an active picture or outputs black, restoring the default factory configuration may fix the problem. Refer to the section "**Loading the Factory Defaults**" on page 3-22 for information.

Warranty and Repair Policy

The UDC-8625A series card is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of FIVE (5) years from the date of shipment from our factory. In the event that your UDC-8625A series card proves to be defective in any way during this warranty period, Ross Video Limited reserves the right to repair or replace this piece of equipment with a unit of equal or superior performance characteristics.

Should you find that this UDC-8625A series card has failed after your warranty period has expired, we will repair your defective product should suitable replacement components be available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the FIVE (5) year warranty period.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits) incurred by the use of this product. Implied warranties are expressly limited to the duration of this warranty.

This user manual provides all pertinent information for the safe installation and operation of your openGear Product. Ross Video policy dictates that all repairs to the UDC-8625A series card are to be conducted only by an authorized Ross Video Limited factory representative. Therefore, any unauthorized attempt to repair this product, by anyone other than an authorized Ross Video Limited factory representative, will automatically void the warranty. Please contact Ross Video Technical Support for more information.

In Case of Problems

Should any problem arise with your UDC-8625A series card, please contact the Ross Video Technical Support Department. (Contact information is supplied at the end of this publication.)

A Return Material Authorization number (RMA) will be issued to you, as well as specific shipping instructions, should you wish our factory to repair your UDC-8625A series card. If required, a temporary replacement frame will be made available at a nominal charge. Any shipping costs incurred will be the responsibility of you, the customer. All products shipped to you from Ross Video Limited will be shipped collect.

The Ross Video Technical Support Department will continue to provide advice on any product manufactured by Ross Video Limited, beyond the warranty period without charge, for the life of the equipment.

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- Product information and pricing
- Technical support
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