

**UDC-8625 Series**  
**3G/HD/SD Up/Down/Cross Converter**  
**User Manual**



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## UDC-8625 Series • 3G/HD/SD Up/Down/Cross Converter User Manual

- Ross Part Number: **8625DR-004-01**
- Release Date: March 21, 2011. Printed in Canada.

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

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*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 or injury to persons or equipment.*

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**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.

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**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.

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**Notice** — The symbol with the word “**Notice**” within the equipment manual indicates a 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.

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**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.

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## Important Safety Instructions



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

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**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 cards from the chassis’ rear appliance connectors before servicing this area.

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**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 within 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.*

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**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.*

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## 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 his own expense.



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

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### **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.



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**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.*

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## Maintenance/User Serviceable Parts

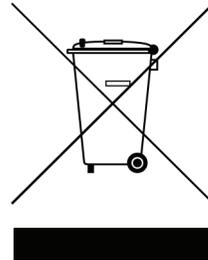
Routine maintenance to this openGear product is not required. This product contains no user serviceable parts. If the module does not appear to be working properly, please contact Technical Support using the numbers listed under the “Contact Us” section on the last page of this manual. All openGear products 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 wheeled 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 performances of our products.

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# Contents

- Introduction** **1**
  - Overview ..... 1-2
  - Features ..... 1-3
  - Functional Block Diagram ..... 1-5
  - Format Conversion ..... 1-6
    - Supported Format Conversions ..... 1-6
  - Output Format Reference Compatibility ..... 1-8
  - Documentation Terms and Conventions ..... 1-9
  
- Installation** **2**
  - Before You Begin ..... 2-2
  - Card Overview ..... 2-3
    - Card-edge LEDs ..... 2-4
  - Card Installation ..... 2-5
    - Installing the Rear Module ..... 2-5
    - Installing the UDC-8625 ..... 2-5
  - Cabling for the UDC-8625 ..... 2-7
    - Input Cabling Overview ..... 2-7
    - Cabling for the Rear Module ..... 2-8
    - Power Fail Relay ..... 2-8
    - Cabling a Reference Source ..... 2-9
  - Ethernet Port Cabling ..... 2-10
    - Ethernet Communication Cabling ..... 2-10
  - Installing a License Key ..... 2-11
    - License Keys Overview ..... 2-11
    - Installing a License Key ..... 2-11
  - SNMP Monitoring and Control ..... 2-13
  
- Configuration** **3**
  - Ethernet Communication Setup ..... 3-2
  - Selecting the Reference Source ..... 3-3
    - Selecting the Reference Source ..... 3-3
  - Configuring the Video Outputs ..... 3-4
  - AFD Overview ..... 3-7
    - Auto Output AFD Mode ..... 3-8
    - Configuring the Aspect Ratio Conversion ..... 3-9
    - Configuring the Force Input Settings ..... 3-10
    - AFD and ARC Status ..... 3-11
  - Ancillary Data ..... 3-12
    - HANC and VANC Status ..... 3-12
    - HANC Pass Through or VANC Pass Through ..... 3-12
    - Specific ANC Processing ..... 3-13
    - AFD ..... 3-13
    - Closed Captioning ..... 3-13
    - Timecode ..... 3-14

Compressed Audio Metadata.....	3-15
Other Packets.....	3-15
Embedded Audio Settings.....	3-16
Enabling SRC for Embedded Audio.....	3-16
SD Audio.....	3-17
Configuring the Audio Groups.....	3-17
Personality Options.....	3-19
Configuring the Transition Buttons.....	3-19
Configuring the Input Signal Timing Display.....	3-20
Configuring the Edit Permissions.....	3-20
Software Upgrades.....	3-21
Loading the Factory Defaults.....	3-23
Using DataSafe™.....	3-24

## **Media File Management 4**

Overview.....	4-2
Media File Basics.....	4-3
Connection using FTP.....	4-3
CompactFlash™ Card.....	4-3
File Naming Specifications.....	4-4
Loading Media Files.....	4-5
Loading a Media File.....	4-5

## **Operation 5**

Licensed Features.....	5-2
External Key License Overview.....	5-2
Internal Key License Overview.....	5-2
Key 1 Wings Setup.....	5-3
Key 2 Setup.....	5-4
Configuring Key 2.....	5-4
Masking a Key.....	5-5
Logo Setup.....	5-7
Adjusting the Proc Amp Controls.....	5-8
Performing Transitions.....	5-10
Overview.....	5-10
Transitions Setup.....	5-10
Auto Change Over Setup.....	5-12
Performing a Cut Transition.....	5-12
Performing an Auto Transition.....	5-13
Performing a Fade to Black.....	5-14

## **Appendix A. DashBoard Menus 6**

Status Menus.....	6-2
Signal Tab.....	6-2
Hardware Tab.....	6-4
Product Tab.....	6-5
Configuration Menus.....	6-6
Video Tab.....	6-6
Ethernet Tab.....	6-8
Personality Tab.....	6-9
Load/Save Tab.....	6-10
ARC/AFD Menus.....	6-11
ANC Menus.....	6-14
Embedded Audio Menus.....	6-15
Proc Amps Menus.....	6-17

Logos Menus.....	6-18
Key Setup Menus.....	6-20
On Air Control Menus .....	6-21
Input Status Menus .....	6-23
Input Status: Audio Menus .....	6-25
Alarm Enables Menus.....	6-26

**Appendix B. Specifications 7**

Technical Specifications.....	7-2
-------------------------------	-----

**Appendix C. ARC Setting Examples 8**

4:3 SD to HD (Pillarbox).....	8-2
4:3 SD to HD (Zoom).....	8-3
4:3 SD to 16:9 SD (Pillarbox).....	8-4
HD to 4:3 SD (Letterbox).....	8-5
HD to 4:3 SD (Zoom).....	8-6

**Appendix D. Service Information 9**

Troubleshooting Checklist.....	9-2
Warranty and Repair Policy.....	9-3



# Introduction

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## In This Chapter

This chapter contains the following sections:

- Overview
- Features
- Functional Block Diagram
- Format Conversion
- Output Format Reference Compatibility
- Documentation Terms and Conventions

## A Word of Thanks

Congratulations on choosing an openGear **UDC-8625 3G/HD/SD Up/Down/Cross Converter**. Your UDC-8625 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 UDC-8625 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 UDC-8625, 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.

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## Overview

The UDC-8625 is a universal cross-converter designed for broadcast use. It can provide various conversions between SD, HD, and 3G.

The UDC-8625 supports all popular standard definition, high definition, and 3G video formats, including 480i, 576i, 720p, 1080i, and 1080p. Up to four groups (16 channels) of embedded 48kHz synchronous audio is also supported. The format of incoming video is automatically detected, simplifying system setup. The UDC-8625 incorporates a video frame synchronizer, allowing the output video to be timed to an external video reference. The reference can come from one of the two frame references or from a dedicated reference input on the rear module.

The UDC-8625 supports format conversion between 480i 59.95Hz, 720p 59.95Hz, 1080i 59.95Hz, and 1080p 59.95Hz Level A. Format conversion between 576i 50Hz, 720p 50Hz, 1080i 50Hz, and 1080p 50Hz Level A is also supported.

There are three card variants: the UDC-8625-D series (down converters), the UDC-8625-U series (up converters), and the UDC-8625-F series (up/down/cross converters). There are software keys to enable additional options such as the External Key feature, and the Internal Key feature.

- **External Key** — This option enables the use of external inputs for the Wings insertion and the logo keyer. Card models with this feature enabled include an “E” in the suffix of the model name (e.g. UDC-8625-DE, UDC-8625-UE, and UDC-8625-FE)
- **Internal Key** — This option adds the internal still and animated sources for the Wings insertion and the logo keyer. Card models with this feature enabled include an “I” in the suffix of the model name (e.g. UDC-8625-DI, UDC-8625-UI, and UDC-8625-FI).

The UDC-8625 is configured and controlled using the DashBoard Control System™.

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## Features

The following features make the UDC-8625 the best solution for multi-format conversion:

- 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 popular formats: 1080p, 1080i, 720p, 480i and 576i (types of available conversion is dependent on the card model)
- 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
- Supports Active Format Description (AFD)
- Additional input for A/B transitions or use as a backup input
- Flexible aspect ratio control (except anamorphic scaling)
- Individual Proc Amp for each output
- Output can be dithered and clipped to SMPTE levels
- Optional external key video and key alpha inputs for keyers (*External Key licensed feature only*)
- Provides DTVCC, and NTSC caption processing including frame rate conversion
- 2GB animation store for keyers (*Internal Key licensed feature only*)
- 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
- Cards may be field upgraded via optional software keys
- Reports status and configuration remotely via the DashBoard Control System™
- Compatible with DataSafe™
- Fits DFR-8321 series frames
- Fully compliant with openGear specifications
- 5-year transferable warranty

## Features by Card Type

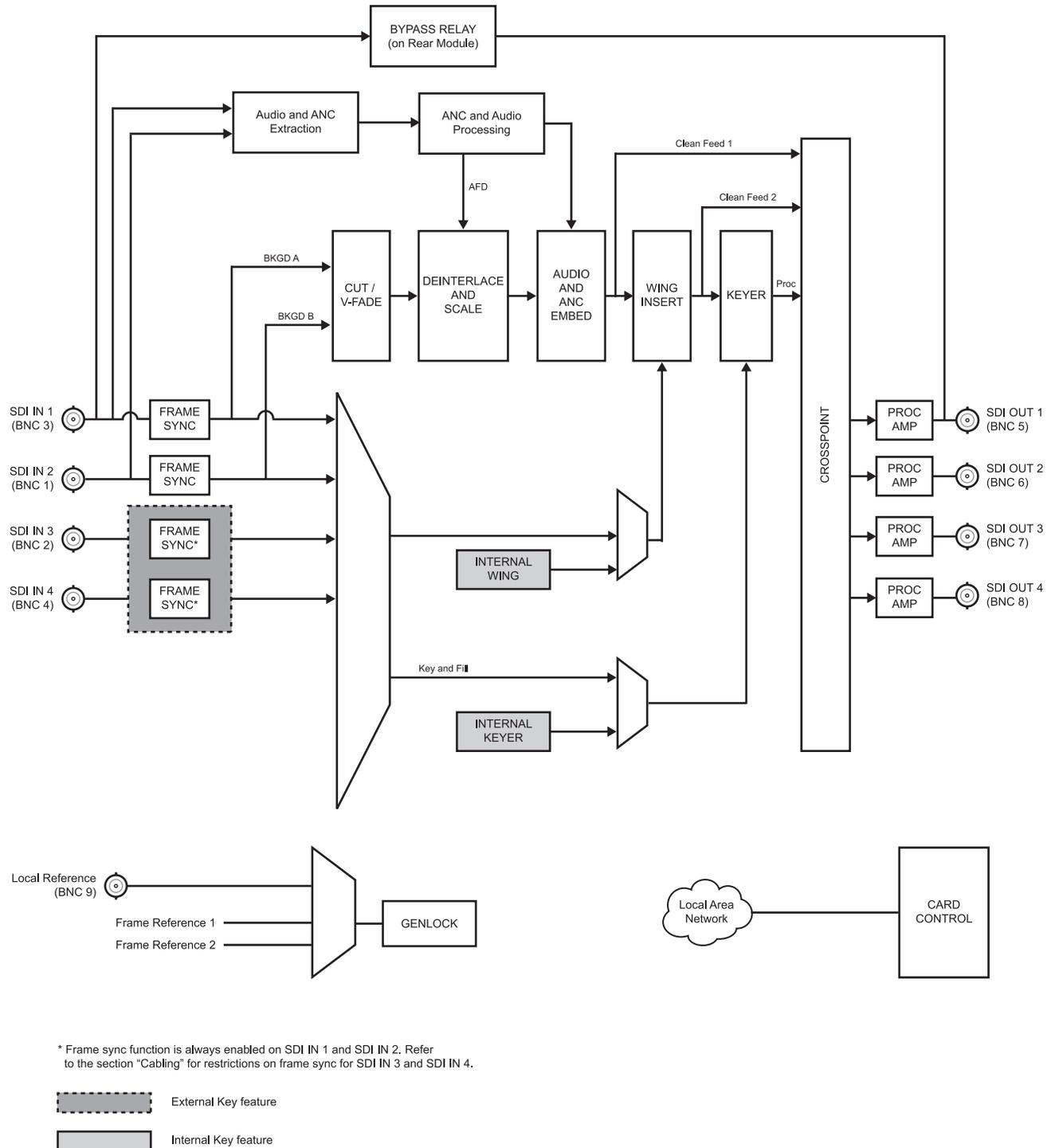
Table 1.1 lists the various card models and what key features are supported on each model type.

**Table 1.1 Features Supported by Each Model**

Model	Supported Features				
	Down Conversion	Up Conversion	Cross Conversion	External Key	Internal Logo
UDC-8625-D	✓				
UDC-8625-DE	✓			✓	
UDC-8625-DI	✓				✓
UDC-8625-DEI	✓			✓	✓
UDC-8625-U		✓			
UDC-8625-UE		✓		✓	
UDC-8625-UI		✓			✓
UDC-8625-UEI		✓		✓	✓
UDC-8625-F	✓	✓	✓		
UDC-8625-FE	✓	✓	✓	✓	
UDC-8625-FI	✓	✓	✓		✓
UDC-8625-FEI	✓	✓	✓	✓	✓

# Functional Block Diagram

This section provides functional block diagram that outlines the workflow of the UDC-8625.



\* Frame sync function is always enabled on SDI IN 1 and SDI IN 2. Refer to the section "Cabling" for restrictions on frame sync for SDI IN 3 and SDI IN 4.

Figure 1.1 UDC-8625 Simplified Block Diagram

## Format Conversion

Depending on the model of UDC-8625 you have, the card provides SD to HD up-conversion (UDC-8625-U and UDC-8625-F series), HD to SD down-conversion (UDC-8625-D and UDC-8625-F series), or HD to HD cross-conversion (UDC-8625-F series).

The UDC-8625 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-8625 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 each model of the UDC-8625. Note that if an unsupported format is received, it is treated as a loss of input and an alarm message is displayed in the **Video Processing Output** field of the **Signal** tab.

#### UDC-8625-F Series

These models perform up/down/cross conversion. The UDC-8625-F series converts the incoming SDI video to any supported video format.

**Table 1.2 UDC-8625-F Series 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					✓	✓	✓	✓

## UDC-8625-U Series

The UDC-8625-U series accepts any input format (SD, HD, and 3G) and generates any output format of a higher resolution. Note that cross conversion, such as 720p to/from 1080i is not supported. The UDC-8625-U series support the following compatible formats.

**Table 1.3 UDC-8625-U Series 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								✓

## UDC-8625-D Series

The UDC-8625-D series accepts any input format (SD, HD, and 3G) and generates any output of a lower resolution. Note that cross conversion, such as 720p to/from 1080i is not supported. The UDC-8625-D series support the following compatible formats.

**Table 1.4 UDC-8625-D Series 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-8625 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 1.5 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					✓	✓	✓	✓

---

# Documentation Terms and Conventions

The following terms and conventions are used throughout this manual:

- All references to the **DFR-8321 series frame** also includes all versions of the 20-slot (DFR-8321 series) frames and any available options unless otherwise noted.
- All references to the **UDC-8625** also includes all versions unless otherwise indicated.
- “**UDC-8625-U Series**” refers to the UDC-8625-U, UDC-8625-UE, UDC-8625-UI, and UDC-8625-UEI.
- “**UDC-8625-D Series**” refers to the UDC-8625-D, UDC-8625-DE, UDC-8625-DI, and UDC-8625-DEI.
- “**UDC-8625-F Series**” refers to the UDC-8625-F, UDC-8625-FE, UDC-8625-FI, and UDC-8625-FEI.
- “**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™.
- “**DTVCC captions**” refer to CEA-708 captions.
- “**Frame**” refers to DFR-8321 series frame that houses the UDC-8625.
- “**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.
- “**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.
- “**Operator**” and “**User**” refer to the person who uses UDC-8625.
- “**System**” and “**Video system**” refer to the mix of interconnected production and terminal equipment in your environment.
- The “**Operating Tips**” and “**Note**” boxes are used throughout this manual to provide additional user information.



# Installation

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## In This Chapter

This chapter provides instructions for the basic physical installation and communications setup of your UDC-8625.

The following topics are discussed:

- Before You Begin
- Card Overview
- Card Installation
- Cabling for the UDC-8625
- Ethernet Port Cabling
- Installing a License Key
- SNMP Monitoring and Control

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## Before You Begin

Before you begin, ensure that you are using DashBoard version 3.0.0 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:



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**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-8625 card.



**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-8625.

## 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 settings are not saved. This may cause loss of data and should only be performed as advised by Ross Video Technical Support.

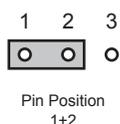
## 3. JP5, JP6

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 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**)

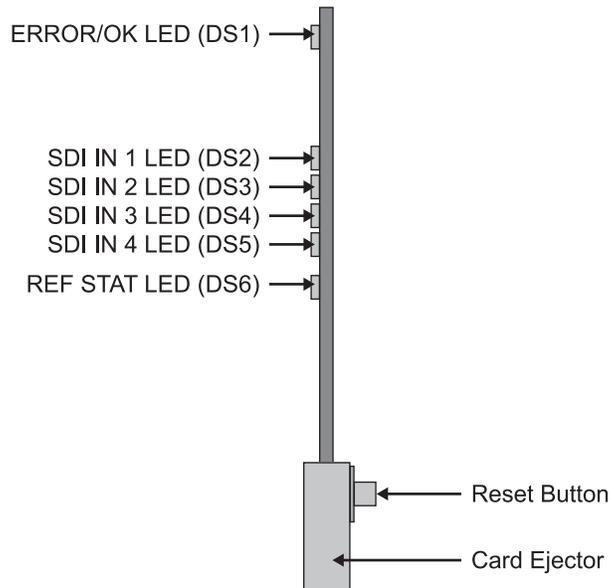


**Figure 2.2** J7 — Default Position

- **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. **Figure 2.3** outlines the locations of the card-edge controls.



**Figure 2.3** Card-edge Controls

**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-8625.



---

**Note** — *The UDC-8625 is not compatible with the DFR-8310 series frames.*

---

## Installing the Rear Module

The UDC-8625 is installed in the DFR-8321 series frame with the **8320AR-033** rear module. If the Rear Module is already installed, proceed to the section “**Installing the UDC-8625**”.

Use the following procedure to install the rear module in an DFR-8321 series frame:

1. Refer to the *DFR-8300 Series User Manual* to ensure that the frame is properly installed.
2. When installing the **8320AR-033** 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.

This completes the procedure for installing a Rear Module in the DFR-8321 series frames.

## Installing the UDC-8625

Use the following procedure to install the card in an DFR-8321 series frame:

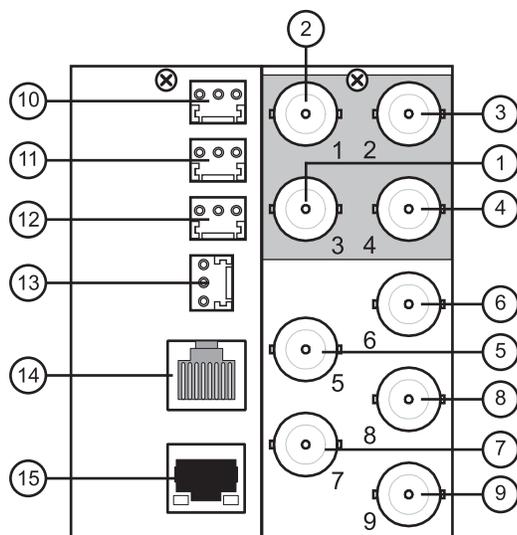
1. Ensure that the DFR-8321 series frame is properly installed.
2. Install the card in slot 2, 6, 10, 14, or 18. The slot number is dependent on the slot combinations you installed the Rear Module in. This allows adequate spacing to avoid damaging the card, the cards installed in the neighboring slots, or both.
3. Hold the card by the edges and carefully align the card edges with the rails in the frame.
4. Fully insert the card into the frame until the card is properly seated in the Rear Module.
5. Verify whether your Rear Module Label is self-adhesive by checking the back of the label for a thin wax sheet. You must remove the wax sheet before applying the label in order that the label can be affixed to the rear module surface.

6. Affix the supplied Rear Module Label to the rear module face.

This completes the procedure for installing the card in an DFR-8321 series frame.

## Cabling for the UDC-8625

The UDC-8625 features four video outputs and four SDI inputs. You can use up to 50m of Belden 1694A or equivalent 75ohm coaxial cable. Refer to **Figure 2.4**, and the Rear Module label, for cabling designations.



**Figure 2.4** Cable Connections for the UDC-8625

1) SDI IN 1	6) SDI OUT 2	11) GPIO Port (Not implemented)
2) SDI IN 2	7) SDI OUT 3	12) GPIO Port (Not implemented)
3) SDI IN 3	8) SDI OUT 4	13) GPIO Port (Not implemented)
4) SDI IN 4	9) REF IN	14) Serial Port (Not implemented)
5) SDI OUT 1	10) GPIO Port (Not implemented)	15) Ethernet 10/100 Port

## Input Cabling Overview

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

**Table 2.2** Input Designations

Function	SDI IN			
	1 <sup>4</sup>	2	3	4
Conversion Source <sup>1</sup>	✓	✓		
Primary Source <sup>1</sup>	✓			
Backup Source <sup>1</sup>		✓		
Relay Source <sup>2</sup>	✓			
Wing Source	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>3</sup>	✓ <sup>3</sup>
Key Video Source			✓ <sup>3</sup>	
Key Alpha Source				✓ <sup>3</sup>

## 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 UDC-8625 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. The 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 provides Line Sync functionality when the output format is 3G, or any input format is 3G. Ensure that no 3G signal is routed to any input if SDI IN 3 and SDI IN 4 are expected to be in frame sync mode.
4. 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 Wings source, the wings will be fed from before the format converter. Refer to **Figure 1.1**.

## Cabling for the Rear Module

Use the following procedure to connect video input and output cables to the 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.

This completes the procedure for connecting video input and output cables to the rear module.

### *For More Information...*

- on configuring your inputs and outputs in DashBoard, refer to the section “**Configuring the Video Outputs**” on page 3-4, and the section “**On Air Control Menus**” on page 6-21.

## Power Fail Relay

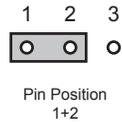
There is a power fail relay from the **SDI IN 1** to **SDI OUT 1** on the rear module. The purpose of this relay is as follows:

- 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.

## 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-8321 series frame.
2. If you wish to use an local reference input, connect the reference input source to the **REF IN (BNC 9)** connector.
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 2.5**)



**Figure 2.5** J7 — Default Position

- **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.

This completes the procedure for cabling the reference source for your card.

### **For More Information...**

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

---

## 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 depends 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 2.4** for the port location.

### ***For More Information...***

- on configuring the ethernet communications for the card, refer to the section “**Ethernet Communication Setup**” on page 3-2.

---

## Installing a License Key

When installing a license key on the UDC-8625:

- You must have DashBoard installed and communicating with the DFR-8321 series frame that houses the card you wish to install the key for.
- Ensure that you are using version 3.0.0 or higher of DashBoard. This information is available by selecting **Help > About DashBoard** from the DashBoard main toolbar.
- The DashBoard software and manual are available from the Ross Video website.

## License Keys Overview

This section provides a brief summary on the types of license keys available for your UDC-8625. Refer to **Table 1.1** on page 1-4 for details on the various card models and what key features are supported on each model type.

### External Key

The **OPT-E-8625** license key enables you to use the SDI inputs for Wings, Key Video, and Key Alpha sources.

### Internal Key

The **OPT-I-8625** license key enables you to use the internally stored content for Wings, Key Video, and Key Alpha sources.

### Conversions

There are three card variants: the UDC-8625-D series (down converters), the UDC-8625-U series (up converters), and the UDC-8625-F series (up/down/cross converters). If you wish to upgrade to a UDC-8625-F, software keys are available to install via DashBoard.

- **OPT-UX-8625** — Use this option to upgrade a UDC-8625-D series card to a UDC-8625-F.
- **OPT-DX-8625** — Use this option to upgrade a UDC-8625-U series card to a UDC-8625-F.

## Installing a License Key

The **Licenses** tab in DashBoard lists the available licensed options available and indicates which licenses are installed on the card. This section provides information on installing a license key.

Use the following procedure to install a license key using DashBoard:

1. Launch DashBoard on your computer.
2. Open a tab in the **Device View** of DashBoard for the card you wish to install the license key for.
3. Display the **Licenses** tab as follows:
  - From the **Device View**, select the **Config** tab.
  - Select the **Licenses** tab located at the bottom of the **Config** tab.
4. Make a note of the licensable feature(s) you wish to install. A list of the available features is provided in the **Licensable Features** area.

5. Contact Ross Video Technical Support using the information found in the section “**Contact Us**”.
  - When you speak to the Technical Support representative, tell them the **Request Code** from the **Setup** tab.
  - You will be given a License Key that must be entered in the **License** field of the **Licenses** tab.
6. Enter the **License Key** in the **License** field of the **Setup** tab.
7. When the installation is complete, verify that the **Setup** tab displays “**Licensed**” in the **License** field.

This completes the procedure for installing a license key using DashBoard.

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## SNMP Monitoring and Control

The MFC-8300 Series Network Controller card in the DFR-8321 series frame provides optional support for remote monitoring of your frame and the UDC-8625 using Simple Network Management Protocol (SNMP), which is compatible with many third-party monitoring and control tools.

Refer to your UDC-8625 Management Information Base (MIB) file for a breakdown of SNMP controls on this card.



# Configuration

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## In This Chapter

This chapter provides instructions for configuring the UDC-8625 using the options available in the DashBoard Control System™.

The following topics are discussed:

- Ethernet Communication Setup
- Selecting the Reference Source
- Configuring the Video Outputs
- AFD Overview
- Ancillary Data
- Embedded Audio Settings
- Personality Options
- Software Upgrades
- Loading the Factory Defaults
- Using DataSafe™



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**Note** — *Before proceeding, ensure that you are running DashBoard software version 3.0.0 or higher. You can download the DashBoard Control System software and manual from the Ross Video website.*

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# Ethernet Communication Setup

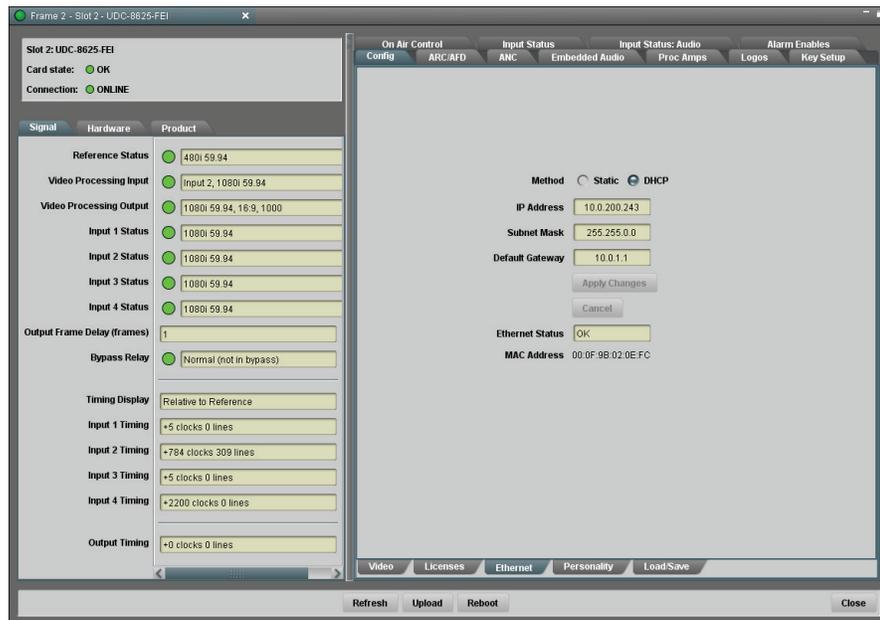
The **Ethernet 10/100** port on the Rear Module is used to connect to an ethernet network for communications, software upgrades using DashBoard, media file management via an FTP client, and for viewing thumbnails. To enable the UDC-8625 ethernet port, the card must be configured with valid ethernet settings. 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 subnet 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 2.4** for the **Ethernet 10/100** port location on the Rear Module.

Use the following procedure to set up ethernet communications for the card:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Display the **Ethernet** tab as follows:
  - From the **Device View**, select the **Config** tab.
  - Select the **Ethernet** tab located at the bottom of the **Config** tab.



Config Tab — Ethernet Tab

3. To obtain network settings automatically, select **DHCP**.
4. To manually configure the ethernet settings:
  - Select **Static** from the **Method** drop-down list.
  - 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.

This completes the procedure for setting up ethernet communications for the card.



**Note** — The **Ethernet Status** field in the **Ethernet** tab displays the current status of your connection. Refer to **Table 6.6** for a list of the messages.

# Selecting the Reference Source

The DFR-8321 series frame supports the distributed frame reference, allowing incoming reference signals to feed timing information to all cards in a frame. Thus, a single composite or tri-level sync signal can be used for multiple UDC-8625 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 UDC-8625.

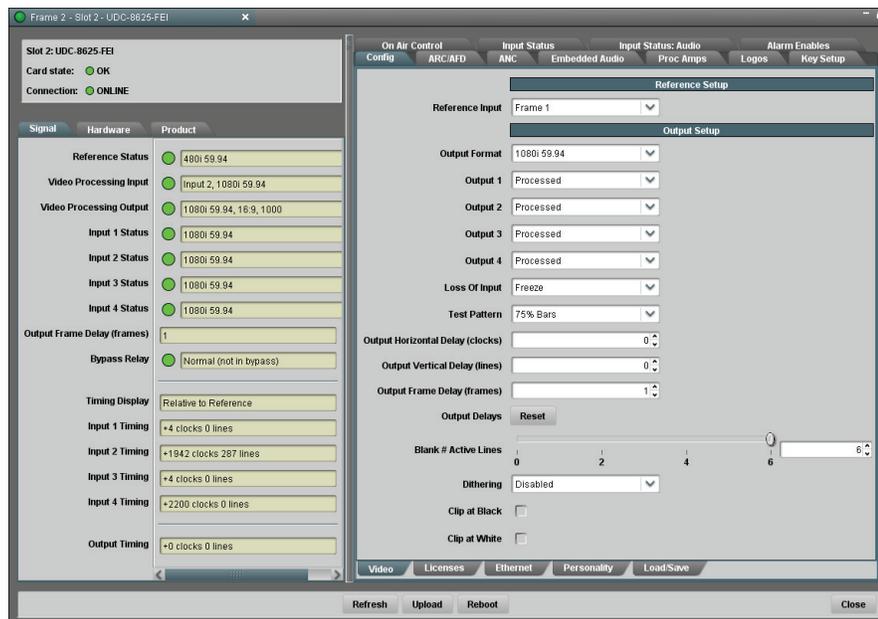
## For More Information...

- on cabling the reference source for your card, refer to the section “**Cabling a Reference Source**” on page 2-9.

## Selecting the Reference Source

Use the following procedure to select the reference source for the UDC-8625:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Display the **Video** tab as follows:
  - From the **Device View**, select the **Config** tab.
  - Select the **Video** tab located at the bottom of the **Config** tab.



Config Tab — Video Tab

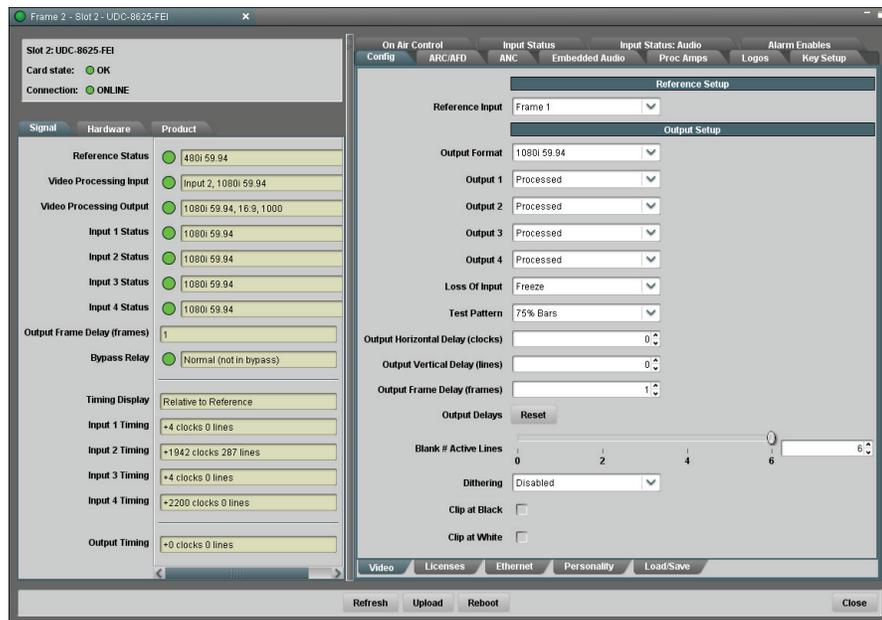
3. Select a reference input from the **Reference Setup** area. Choose from the following:
  - **Frame 1** — Select this option to use the reference source connected to the **REF 1** port on the DFR-8321 series frame.
  - **Frame 2** — Select this option to use the reference source connected to the **REF 2** port on the DFR-8321 series frame.
  - **Local** — Select this option to use the external reference source connected to the **REF IN** port (**BNC 9**) on the rear module. Note that you must also configure **JP7** on the card to enable or disable a 75ohm terminator on the external reference input.

This completes the procedure for selecting the reference source for the UDC-8625.

# Configuring the Video Outputs

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

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Display the **Video** tab as follows:
  - From the **Device View**, select the **Config** tab.
  - Select the **Video** tab located at the bottom of the **Config** tab.



*Config Tab — Output Setup Area*

3. From the **Output Format** field, 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. For a list of available formats, refer to **Table 6.4**.
4. Configure each output:
  - **Processed** — The output is processed, with Wings and key inserted (if selected).
  - **Clean Feed 1** — The output is processed, with Wings inserted (if selected). The keyer is not included with this output.
  - **Clean Feed 2** — The output is processed. The keyer and Wings are 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.
5. From the **Loss of input** field, 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. Choose from the following:
  - **Blue** — Select this option to set the output to blue when there is a loss of input.
  - **Black** — Select this option to set the output to black when there is a loss of input.
  - **Freeze** — Select this option to enable the card to freeze and output the last good frame of video before the loss of input.

6. To specify a test pattern for the output, select a type from the **Test Pattern** field.
7. To adjust the timing (affects all outputs):
  - Use the **Horizontal Delay** to specify the horizontal delay in clocks, relative to the selected reference.
  - Use the **Vertical Delay** to specify the vertical delay in lines, relative to the selected reference.
  - Use the **Frame Delay** to specify the minimum processing delay. 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. To remove encoded signals, like closed caption data and timecode, that may appear at the top of the active video in SD inputs:
  - Use the **Blank # Active Lines** to select the number of lines at the top of the active picture to blank. Only applies to SD inputs. This is used to remove VBI from the input picture. The remaining lines are processed through the scaler to fill the production aperture, except for SD to SD with no ARC.
  - For SD to SD conversions, the UDC-8625 will black the selected lines. Refer to **Table 3.1** for the first line of processed video.

**Table 3.1 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

9. From the **Dithering** field, select the type of dithering you want to apply to all outputs. Choose from the following:
  - **Disabled** — Select this option to disable the Dithering feature.
  - **Enabled low** — Select this option to enable 2 bit dithering.
  - **Enabled medium** — Select this option to enable 3 bit dithering.
  - **Enabled high** — Select this option to enable 4 bit dithering.
10. Enable the Clip White or Clip Black feature as follows:
  - **Clip at Black** — Select this box to enable the card to clip to SMPTE black on all outputs. A cleared box allows super-black.
  - **Clip at White** — Select this box to enable the card to clip to SMPTE white on all outputs. A cleared box allows super-white.

This completes the procedure for configuring the outputs on the UDC-8625.

**For More Information...**

- on input status alarms, refer to the section “**Input Status Menus**” on page 6-23.

- on input audio alarms, refer to the section “**Input Status: Audio Menus**” on page 6-25.
- on input status fields in the **Signal** tab, refer to the section “**Signal Tab**” on page 6-2.

# AFD Overview

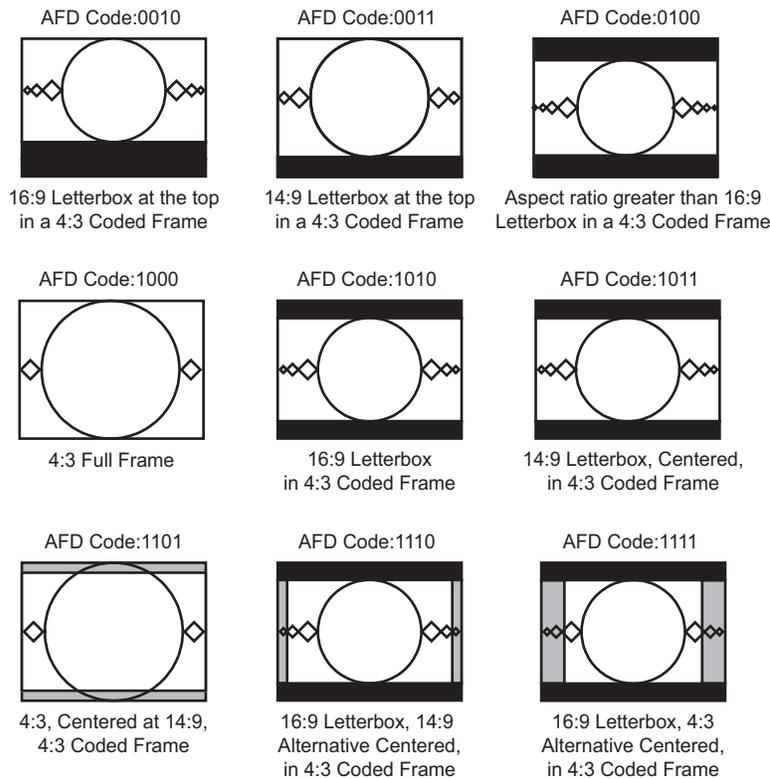
Active Format Description (AFD) is data that is embedded in the ancillary area to describe the picture format (e.g. 4:3, 16:9) and how it has been converted from one format to another. This information is intended to define how the display of video of one aspect ratio will display when another aspect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

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

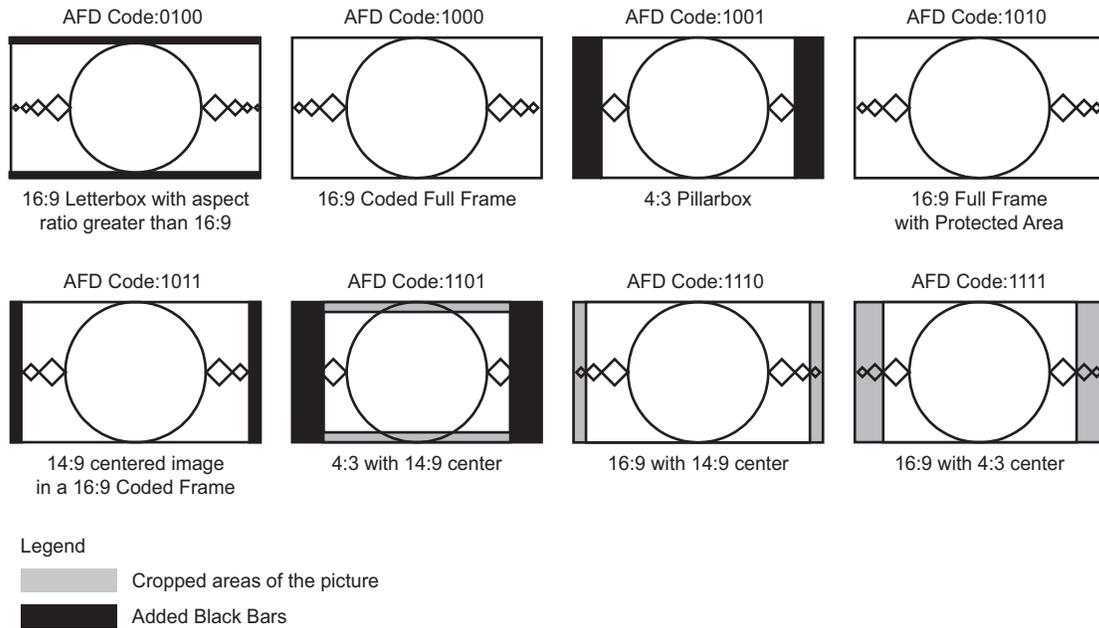


Legend

- Cropped areas of the picture
- Added Black Bars

**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. **Table 3.2** provides the Output AFD information when the input uses a 4:3 Coded Frame mode.

**Table 3.2** Input AFD is 4:3 Coded Frame

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

**Table 3.3 Input AFD is 16:9 Coded Frames**

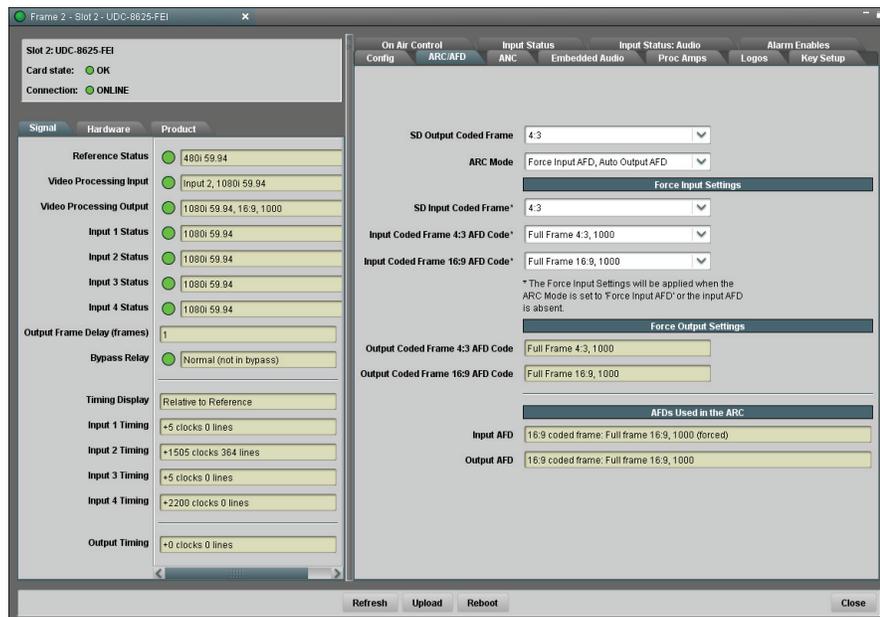
Input AFD		Output AFD	
16:9 Coded Frame		4:3 Coded Frame	16:9 Coded Frame
16:9 0010	⇒	4:3 1010	16:9 0010
16:9 0011	⇒	4:3 1011	16:9 0011
16:9 0100	⇒	4:3 0100	16:9 0100
16:9 1000	⇒	4:3 1010	16:9 1000
16:9 1001	⇒	4:3 1000	16:9 1001
16:9 1010	⇒	4:3 1010	16:9 1010
16:9 1011	⇒	4:3 1011	16:9 1011
16:9 1101	⇒	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. It can be configured using the options in the **ARC/AFD** tab in DashBoard. Use the information in this section to configure the ARC.

Use the following procedure to configure the ARC mode:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Select the **ARC/AFD** tab to display the ARC menus and options.



ARC/AFD Tab

3. Specify the SD output aspect ratio by selecting one of the following options in the **SD Output Coded Frame** field:
  - **4:3** — Select this option to set the aspect ratio of the output to 4:3. Note that only SD outputs may be 4:3.
  - **16:9** — Select this option to set the aspect ratio of the output to 16:9. Note that HD and 3G outputs always use 16:9.
4. Specify how the card detects and uses AFD by selecting one of the following options from the **ARC Mode** menu:
  - **Auto Input AFD, Auto Output AFD** — Card automatically detects and uses the input AFD as defined by SMPTE 2016-1. If the AFD is not present, the **Force Input Settings** are applied. Card also 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 present, the Force Input Settings are applied. The output AFD is set in the **Force Output Settings** fields.
  - **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.

This completes the procedure for configure the ARC mode. Refer to the section “**Configuring the Force Input Settings**” on page 3-10 for details on configuring the Force Input Settings for AFD.

## 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.

Use the following procedure to configure the Force Input settings:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Select the **ARC/AFD** tab to display the ARC menus and options.
3. 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 3-7 for details on the available options.
4. 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 3-7 for details on the available options.

This completes the procedure for configuring the Force Input settings.

### **For More Information...**

- on ARC example cases, refer to the section “**Appendix C. ARC Setting Examples**” on page 8-1.

## 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 3.2** and **Table 3.3**. The **AFDs Used in the ARC** area will display the AFD Code settings.

Use the following procedure to configure the Force Output settings:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Select the **ARC/AFD** tab to display the ARC menus and options.
3. 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 3-7 for details on the available options.
4. 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 3-7 for details on the available options.

This completes the procedure for configuring the Force Output settings.

### *For More Information...*

- on ARC example cases, refer to the section “**Appendix C. ARC Setting Examples**” on page 8-1.

## 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 6.1**.
- **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 6.1**.
- 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 6.9**.
- The **Input Status** tab includes the **AFD** field that indicates when the AFD Code is detected or not in a specified input. Refer to **Table 6.16**.

---

## 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 that 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-8625 to manage HANC and VANC data using the options in the **ANC** tab of DashBoard.

### HANC and VANC Status

The **Input Status** and **Input Status:Audio** tabs in DashBoard provide 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 6-23.
- **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 applies 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.*

---

#### Enabling Pass Through

Use the following procedure to enable the UDC-8625 to pass through HANC or VANC:

1. From the **Device View** of the card, select the **ANC** tab.
2. Toggle the **HANC Pass Through** and/or **VANC Pass Through** button(s) as follows:
  - **Enabled** — The UDC-8625 passes through the HANC and/or VANC data when the input format matches the output format.
  - **Disabled** — The HANC and/or VANC data is processed as determined by the **ANC** menu settings. Proceed to the section “**Specific ANC Processing**” on page 3-13.

This completes the procedure for enabling HANC Pass Through and VANC Pass Through.



---

**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.

Use the following procedure to configure the processing of specific ANC types:

1. From the **Device View**, select the **ANC** tab.
2. For each packet, select how the UDC-8625 processes the ANC data:
  - **Disable** — The UDC-8625 does not insert the packet into the output.
  - **Pass** — The UDC-8625 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 UDC-8625 is not currently able to process.
  - **Process** — The UDC-8625 receives the packet, processes it, and inserts a new packet into the specific line. Valid only for AFD and Closed Captioning.



---

**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).

This completes the procedure for configuring the processing of specific ANC types.

## 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 UDC-8625.

The UDC-8625:

- 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 UDC-8625 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-8625 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

Timecode can be passed or disabled as follows:

- If the input is not synchronous to the output, it should be disabled.
- If converting between progressive and interlaced, it should be disabled.
- 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<sup>1</sup>) as part of the frame sync behavior.

---

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

## Compressed Audio Metadata

Compressed Audio Metadata can be passed, or disabled as follows:

- If the input is not synchronous to the output, it should be disabled.
- If converting between progressive and interlaced formats, it should be disabled.
- If the input is not synchronous to the output, data will be dropped (but not duplicated<sup>1</sup>) 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<sup>1</sup>) as part of the frame sync behavior.

---

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

# Embedded Audio Settings

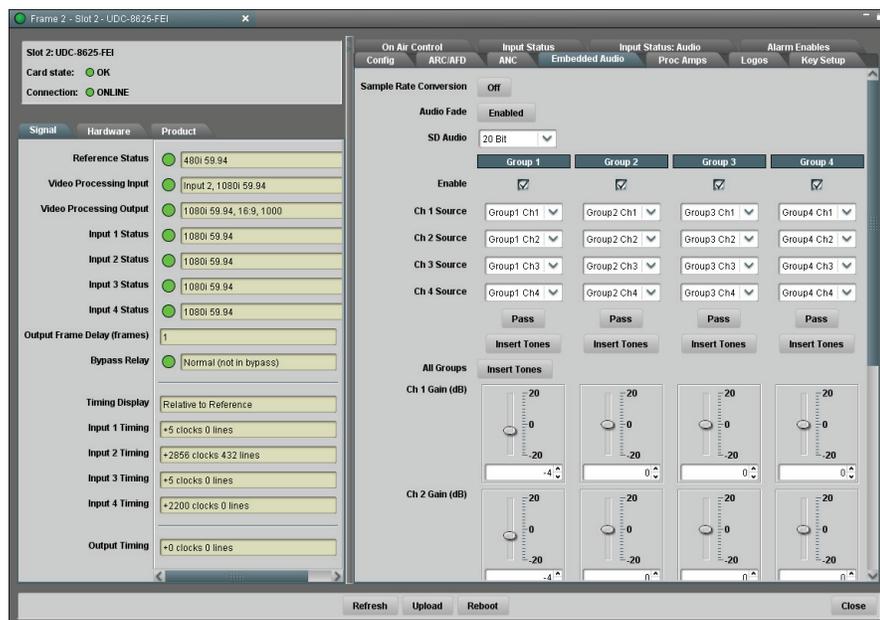
The **Embedded Audio** tab includes options for enabling sample rate conversion (SRC) of the embedded audio, enabling audio fading, configuring how audio is embedded for SD outputs, and channel mapping. You can monitor the status of the embedded audio using the fields in the **Input Status: Audio** tab.

This section briefly outlines how to configure the options in the **Embedded Audio** tab, and set up related alarms.

## Enabling SRC for Embedded Audio

Use the following procedure to enable the SRC of the embedded audio:

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



*Embedded Audio Tab*

2. Toggle the **Sample Rate Conversion** button as follows:
  - **On** — Enables the SRC of the embedded audio for all inputs.
  - **Off** — Disables the SRC of the embedded audio. Inputs must be synchronous to the reference. Select this option when using non-PCM audio data such as Dolby®.

This completes the procedure for enabling the SRC of the embedded audio.

## Enabling Audio Fade

This feature allows for clean audio transitions (v-fade) when performing cuts or transitions in the **On-Air Control** tab. It is recommended to disable this feature when passing non-PCM audio data such as Dolby®.

Use the following procedure to enable the audio fade feature:

1. From the **Device View**, select the **Embedded Audio** tab.
2. Toggle the **Audio Fade** button as follows:
  - **Enabled** — The UDC-8625 performs a V-Fade for the embedded audio transition between two sources. This option is recommended when performing Background transitions.
  - **Disabled** — Disables the audio mixing feature. The UDC-8625 will perform a hard cut at the middle of the video transition. Select this option when using non-PCM audio data such as Dolby®

This completes the procedure for enabling the audio fade feature.

## SD Audio

Use the following procedure to specify how the audio is embedded for SD outputs:

1. From the **Device View**, select the **Embedded Audio** tab.
2. From the **SD Audio** menu, specify how the audio is embedded for SD outputs by selecting one of the following:
  - **20 Bit** — Select this option to embed the audio at a depth of 20 bit.
  - **24 Bit** — Select this option to embed the audio at a depth of 24 bit.

This completes the procedure for specifying how the audio is embedded for SD outputs.

## Configuring the Audio Groups

The UDC-8625 supports channel mapping. Any of the 16 output channels can be selected from any of the 16 input channels. You can choose to pass through embedded audio, insert tone, configure the gain for any channel, and invert the audio of any channels.



---

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

---

Use the following procedure to configure embedded audio:

1. From the **Device View**, select the **Embedded Audio** tab.
2. Enable the embedding of each audio group by selecting the associated **Enable** check box.
3. Assign a source to Channel 1 of Group 1 as follows:
  - From the **Ch 1 Source** menu, select an audio source. You can select Mute (silence), one of the sixteen possible channels from the input video, or test tones. Refer to the section “**Embedded Audio Menus**” on page 6-15 for a summary of the options.
  - The video source from which the audio is extracted is determined by the source selected in the **On Air Control** tab.

- Note that if the selected source is not present on the input video, silence is embedded.
4. Repeat step 3. for each channel of each group you wish to configure.
  5. To reset the settings of a group to pass the input channels to the output channels, click **Pass** for the specific group.
  6. To insert test tones:
    - Click **Insert Tones** for a Group to insert test tones into the specific group.
    - To insert test tones into all groups, click **Insert Tones** in the **All Groups** area.
  7. To set the gain for a channel, use the associated **Ch #** slider to select a value between -20dB and 20dB. Repeat for each channel you wish to configure.
  8. To invert a channel, select the associated **Ch # Invert** check box.
  9. To reset the audio groups to their factory default values, click **All Groups Reset** button.

This completes the procedure for assigning audio channels to a group.



---

**Note** — *When non-PCM audio is present, ensure that the left/right pairs are not separated, the gain is set to 0, and the invert is disabled.*

---

# Personality Options

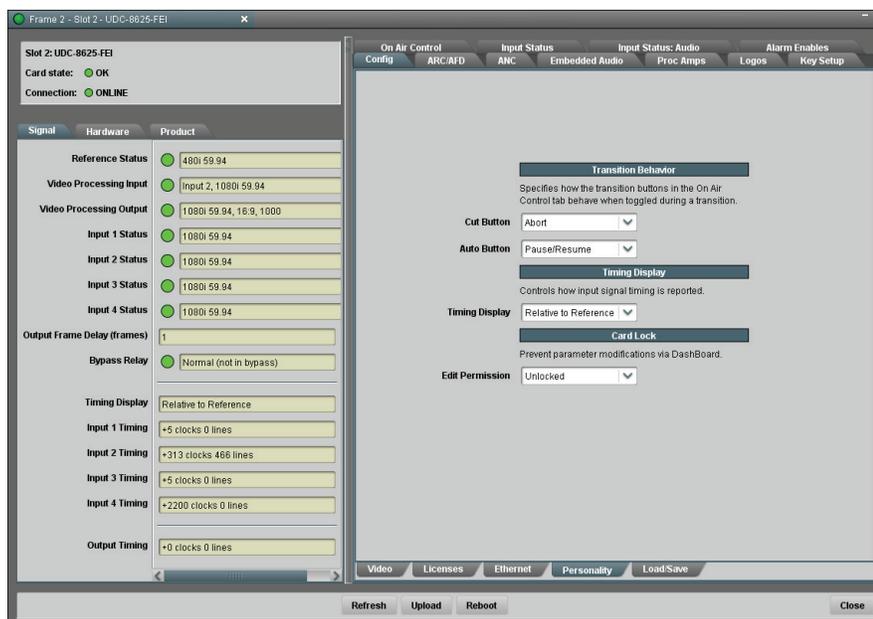
This section outlines how to configure the options available in the **Personality** tab.

## 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.

Use the following procedure to configure the transition buttons:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Display the **Personality** tab as follows:
  - From the **Device View**, select the **Config** tab.
  - 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.
  - **Abort** — Select this option to return the transition to the beginning when the **Cut** button is pressed again while a transition is in progress. This is the default setting.
  - **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.
4. Configure the **Auto** button behavior by choosing an option from the **Auto Button** field.
  - **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.

## 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.

Use the following procedure to configure the input signal timing for your card:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Display the **Personality** tab as follows:
  - From the **Device View**, select the **Config** tab.
  - 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.

This completes the procedure for configuring the input signal timing for your card.

## 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.

Use the following procedure to configure the card edit permissions:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Display the **Personality** tab as follows:
  - From the **Device View**, select the **Config** tab.
  - 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.
  - **Unlocked** — Select this option to enable card parameters to be edited from DashBoard. This is the default setting.
  - **Locked** — Select this option to lock all the card parameters to read-only except the Edit Permission.

This completes the procedure for configuring the card edit permissions.

---

## 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** — *DashBoard version 3.0.0 or higher is required for this procedure.*

---

Use the following procedure 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 2-10 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.

This completes the procedure for upgrading the software on a card.

## Troubleshooting

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

- Your network settings on the card are valid. Refer to **Table 6.6** 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.

---

## 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.*

---

Use the following procedure to reset the card to the factory default configuration in DashBoard:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Display the **Load/Save** tab as follows:
  - From the **Device View**, select the **Config** tab.
  - 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.

This completes the procedure for resetting the card to the factory default settings in DashBoard.

---

## 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. 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*.

DataSafe will work between different models of the UDC-8625 even if different licensed features are installed. For example, you can swap settings from UDC-8625-U to a UDC-8625-F and back to a UDC-8625-U. However, the following card parameters are not restored/saved using DataSafe:

- Licensed feature(s)
- Ethernet setup settings
- Filenames for Key/Logo channels files on the CompactFlash™ Card
- Temporary on-air controls, such as fade to black

# Media File Management

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## In This Chapter

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

The following topics are discussed:

- Overview
- Media File Basics
- Loading Media Files

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## Overview

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

DashBoard enables you to select and configure the two Logo channels that are loaded in the UDC-8625. 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-8625 using FTP protocol. The media files are stored on a CompactFlash™ that is installed on the UDC-8625.
- If you select an image size that is larger than the current video format this may corrupt the video output.
- If the output is 3G, one of the Internal Logos should be limited to half screen width. Failure to do so may corrupt the video output.
- 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 2-10.
- on configuring the **Ethernet 10/100** port, refer to the section “**Ethernet Communication Setup**” on page 3-2.

---

## 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 4-5.

## Connection using FTP

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

To access the UDC-8625 via FTP:

- Have the IP address from Config-Ethernet.
- Ensure an ethernet cable is plugged into the UDC-8625 rear module. Refer to the section “**Ethernet Port Cabling**” on page 2-10 for connection details.
- 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**

## CompactFlash™ Card



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**Note** — *The UDC-8625 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-8625 is installed in the frame.*

---

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



---

**Note** — *The UDC-8625 uses ext3 formatting for the CompactFlash™. It does not support FAT formatted CompactFlash™ cards.*

---

## Image Specifications

Media files used on the UDC-8625 must meet the specifications outlined in **Table 4.1**.

**Table 4.1 Media File Specifications**

Parameter	Specification
File Type	BMP, GIF, JPG, PNG, TGA
Compression	compressed and uncompressed
1080 formats	1920x1080 pixels max. image size
720 formats	1280x720 pixels max. image size
576i	720x576 pixels max. image size
480i	720x486 pixels max. image size
Animation Maximum Length	10,000 frames or until the RAM is full. Refer to <b>Table 4.2</b> .

## 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-8625 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-8625 features two Logo channels (Logos 1 and 2) into which you can load files from the CompactFlash™ Card physically installed on the UDC-8625. Each card has 2GB of DDR, 1.5GB of which is available as playout memory. **Table 4.2** provides an estimation of how many frames (uncompressed) can fit into the playout memory of the UDC-8625.

**Table 4.2 Full Frame Animation**

Format	Image Size	No Alpha	With Alpha
1080i	1920x1080	388	256
720p	1280x720	872	580
576i	720x576	1940	1292
480i	720x486	2300	1532

### 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 4-3 for details.
- **User created directories** — A list of directories, created by the user with an FTP connection.

Use the following procedure to load a media file into a Logo channel:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Select a Logo channel as follows:
  - Select the **Logos** tab in the **Device View**.
  - 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.*

---

This completes the procedure for loading a media file into a Logo channel.



# Operation

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## In This Chapter

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

The following topics are discussed:

- Licensed Features
- Logo Setup
- Adjusting the Proc Amp Controls
- Performing Transitions



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**Note** — *Before proceeding, ensure that you are running DashBoard software version 3.0.0 or higher. The DashBoard Control System software and user manual are available for download from the Ross Video website.*

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# Licensed Features

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

## External Key License Overview

If you have the External Key licensed feature installed on your card, the **Product** field in the **Product** tab displays the card name with the “-E” suffix. For example, UDC-8625-FE would be a up/down/cross-converter with the External Key licensed feature. Refer to the section “**Installing a License Key**” on page 2-11 for details on using license keys.

The External Key licensed feature provides the following:

- Both Wings and the Logo can be sourced from SDI inputs if the External Key licensed feature is installed.
- If any input or output is 3G, 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-8625 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 License Overview

If you have the Internal Key licensed feature installed on your card, the **Product** field in the **Product** tab displays the card name with the “-I” suffix. For example, UDC-8625-FI would be a up/down/cross-converter with the Internal Key licensed feature. Refer to the section “**Installing a License Key**” on page 2-11 for details on using license keys.

Both Wings and Logo can be sources from the internally stored logo channels (Logo 1 or Logo 2) if the Internal Key licensed feature is installed.

### *For More 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**”.



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## 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. Ensure that the External Key (OPT-E-8625) licensed feature and/or the Internal Key (OPT-I-8625) licensed feature installed.
2. If using an internal source, configure the logo channels as outlined in the section “**Logo Setup**” on page 5-7.
3. 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.
4. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
5. Select a key source for Key 2 as follows:
  - From the **Device View**, select the **On Air** 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 Key Video and Key Alpha respectively. Note that a warning message displays if the OPT-E-8625 license key is required.
    - › **Logo #** — Sets the indicated Logo as the source for Key 2. Note that a warning message displays if the OPT-I-8625 license key is required.
  - If the output is 3G, one of the internal Logos should be limited to half-screen width.
6. From the **Device View**, select the **Key Setup** tab.
7. 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 is used as the key alpha. Note that the **Key Alpha Type** is automatically set to **Unshaped**.
8. 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.

---

9. Adjust the **Clip** value of the key as follows:

- Use the **Clip** slider to adjust the luminance level of the key. The lower the threshold setting, the more the Key is visible.
- To reset the Clip and Gain values, press **Make Linear**.

10. Adjust the **Gain** value of the key as follows:

- Use the **Gain** slider to adjust the softness of the edges of the key.
- To reset the Clip and Gain values, press **Make Linear**.

11. Adjust the **Transparency** level of the key as follows:

- Use the **Transparency** slider to adjust the transparency level of the key. The values range as follows:
  - › 0% — The key is completely opaque. At this value, there is no difference between the original key and the key with the transparency effect applied to it.
  - › 100% — The key is completely transparent. At this value, the key is not visible on the screen.

12. To invert the key, select the **Key Invert** checkbox.



---

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

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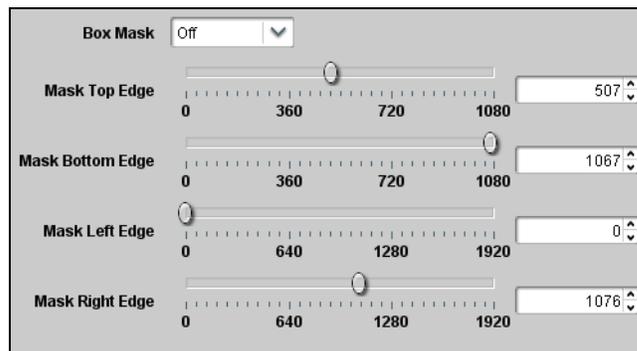
This completes the procedure for configuring a key.

## 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.

Use the following procedure to apply a box mask to Key 2:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. From the **Device View**, select the **Key Setup** tab.



Key Setup Tab — Box Mask Area

3. Set the **Box Mask** by choosing one of the following from the **Key Type** menu:
  - **Off**— Select this option to not apply a mask to the key.
  - **On** — Select this option to apply the mask to the key. The key is masked, only the portion inside the box is displayed.
  - **On Inverted** — Select this option to reverse the mask. The portion outside of the box is displayed.
4. Adjust the position of the mask as follows:



---

**Operating Tip** — *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.*

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- Use the **Mask Top Edge** slider to adjust the location of the top edge of the mask.
- Use the **Mask Bottom Edge** slider to adjust the location of the bottom edge of the mask.
- Use the **Mask Left Edge** slider to adjust the location of the left edge of the mask.
- Use the **Mask Right Edge** slider to adjust the location of the right edge of the mask.

This completes the procedure for applying a box mask to Key 2.

---

## Logo Setup

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

Use the following procedure 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 4-5.
2. Adjust the position of a still image in the viewing area of the screen as follows:



---

**Note** — *You cannot position any portion of an image off-screen. Full screen images cannot have their position adjusted. If the output is 3G, one of the internal Logos should be limited to half screen width.*

---

- **X Position** — Use this option to adjust the horizontal position of the image on the screen.
  - **Y Position** — Use this option to adjust the vertical position of the image on the screen.
3. Adjust the characteristics of an animation as follows:
    - Use the **Auto Play** check box to set whether the animation automatically starts to play when it is taken on-air.
    - Use the **Looping** check 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. Select 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.*

---

- **Normal** — Select this option to use the default playout mode.
- **Swap Fields** — Select this option to have Field 1 and Field 2 of the image swapped when they are displayed.
- **Field 1 Only** — Select this option to have only Field 1 of the image displayed.
- **Field 2 Only** — Select this option to have only Field 2 of the image displayed.

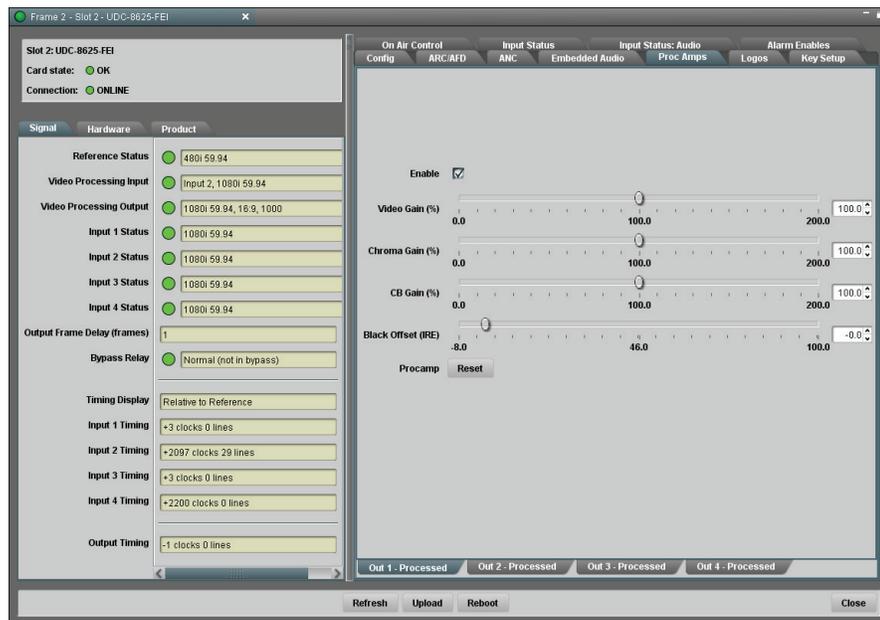
This completes the procedure for adjusting the on-air properties of a media file.

# Adjusting the Proc Amp Controls

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

Use the following procedure to adjust an output using a Proc Amp:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Select an output signal to adjust as follows:
  - Select the **Proc Amps** tab.
  - Select the **Output** tab for the output signal you want to adjust. The **Output** tabs are located at the bottom of the **Proc Amps** tab.



*Proc Amps Tab — Output 1 Enabled*

3. Select the **Enable** check box to ensure the color adjustments are applied. The **Enable** check box must be selected in order for any color correction to take effect on the selected output.
4. Adjust the **Video Gain** as follows:
  - 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. Adjust the **Chroma Gain** as follows:
  - Use the **Chroma Gain** slider to adjust the chrominance video signal components (Cr and Cb) simultaneously.
6. Adjust the **CB Gain** as follows:
  - Use the **CB Gain** slider to adjust the Cb component of the chrominance video signal.
7. Adjust the **Black Offset** as follows:

- Use the **Black Offset** slider to adjust the Black Offset you want to apply.



---

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

---

This completes the procedure for using a Proc Amp.

# Performing Transitions

This section briefly outlines how to configure the transition options and how to perform basic transitions.

## Overview

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-8625 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 5-12.

## Transitions Setup

This section provides general instructions on setting up the transition options for the card using the options available in the **On Air Control** tab such as selecting sources, and configuring transition rates.

Use the following procedure to set up the transition options on the card:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Set up your Key(s) as required.
3. Click the **On Air Control** tab to display the menu options in the **Device View**.



On Air Control Tab — Assigning Sources

4. Select the Background source. This selects what is on the output background. Choose from the following:
  - **Black** — Sets the source for the Background to Black.
  - **Input 1** — Select this option to assign SDI IN 1 as the Background.
  - **Input 2** — Select this option to assign SDI IN 2 as the Background.
5. Select the Background Backup. This selects what the background will transition to. Choose from the following:
  - **Black** — Sets the source for the Background Backup to Black.
  - **Input 1** — Select this option to assign SDI IN 1 as the Background Backup.
  - **Input 2** — Select this option to assign SDI IN 2 as the Background Backup.
6. If you are using the Auto Change Over feature, configure the settings as outlined in the section “**Auto Change Over Setup**” on page 5-12.
7. Select the source for Key 1 Wings. 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). A warning message displays if the OPT-E-8625 license key is required.
  - **Logo #** — Select this option to assign the specified Logo to Key 1 (Wings). A warning message displays if the OPT-I-8625 license key is required.
8. 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. A warning message displays if the OPT-E-8625 license key is required.
  - **Logo #** — Select this option to assign the specified Logo to Key 2. A warning message displays if the OPT-I-8625 license key is required.
9. The Background, Key 1 (Wings), and Key 2 areas each have independent **Cut** and **Auto** buttons to initiate a transition for each element.
10. 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.
11. Select an **Auto Trans Type** from the **Transition Rates** area as follows:
  - **Fade-Fade** — Select this option to fade from one source to black and then fade up to the next source.
  - **Take-Fade** — Select this option to perform a cut to black, then fade up to the next source. This is the default setting.
  - **Fade-Take** — Select this option to fade from one source to black and then cut to the next source.

This completes the procedure for setting up the transition options on the UDC-8625. Next you will set the transition rates.

## 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.*

---

Use the following procedure to set the Background and Key transition rates:

1. 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.
2. 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.

This completes the procedure for setting the Background and Key transition rates.

## 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 UDC-8625 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.

Use the following procedure to configure and apply the Auto Change Over feature:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Select the **On Air Control** tab to display the menu options in the **Device View**.
3. Select the **Auto Change Over** check box. The **Source** menu is now read-only, displaying Input 1 as the Background source and Input 2 as the Backup source.

This completes the procedure for configuring and applying the Auto Change Over feature.

## Performing a Cut Transition

Use the following procedure to perform a Cut transition on the card:



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**Note** — *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 3-19 for details.*

---

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Select the **On Air Control** tab to display the menu options in the **Device View**.
3. If required, configure the **Cut** button behavior during a transition as specified in the section “**Configuring the Transition Buttons**” on page 3-19.

4. To perform a Cut transition between Background sources:
  - Select a source for the Background from the **Source** menu in the **Background** area.
  - Select a backup for the Background from the **Backup** menu in the **Background** area.
  - Click **Cut** located below the **Background** thumbnail.
  - The selections for the sources swap.
  - 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).
5. To perform a Cut transition for Key 1 or Key 2:
  - Click the corresponding **Cut** button for the Key located below the applicable thumbnail.
  - The specific Key is transitioned on or off air. The **Key Status** field(s) indicates the on-air status of the key.
6. To perform a Cut transition between multiple sources:
  - Select the sources for the output using the options in the **Source** menus for each Key.
  - From the **Multiple Transition** area, select the **Include** button(s) for any Key or Background sources to be included in the transition.
  - Click **Cut** in the **Multiple Transition** area.

This completes the procedure for performing a Cut transition on the card.




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**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.

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## 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.




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**Note** — Clicking the **AUTO** button 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 3-19 for details.

---

Use the following procedure to perform an Auto transition on the card:

1. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.
2. Select the **On Air Control** tab to display the menu options in the **Device View**.
3. If required, configure the **Auto** button behavior during a transition as specified in the section “**Configuring the Transition Buttons**” on page 3-19.
4. 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.

5. If you want to select a different transition rate, set it according to the section “**Transition Rates**” on page 5-12.
6. 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.
7. 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.

This completes the procedure for performing an Auto transition on the UDC-8625.

## 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.

Use the following procedure to perform a **Fade to Black**:

1. Display the **Device View** of the UDC-8625 by double-clicking its status indicator in the **Basic Tree View**.
2. Select the **On Air Control** tab to display the menu options in the **Device View**.
3. To perform a Fade to Black, toggle the **Fade to Black** button as follows:
  - **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.*

---

This completes the procedure for performing a **Fade to Black**.

### **For More Information...**

- on configuring the Transition Behavior option, refer to the section “**Configuring the Transition Buttons**” on page 3-19.

# Appendix A. DashBoard Menus

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## In This Appendix

The DashBoard Control System™ enables you to monitor and control openGear frames and cards from a computer. DashBoard communicates with cards in the DFR-8321 series frame through the MFC-8300 series Network Controller Card. This controller card is required in order in order to use DashBoard to monitor the UDC-8625. Refer to the *MFC-8300 Series User Manual* for details.



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

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

The following topics are discussed:

- Status Menus
- Configuration Menus
- ARC/AFD Menus
- ANC Menus
- Embedded Audio Menus
- Proc Amps Menus
- Logos Menus
- Key Setup Menus
- On Air Control Menus
- Input Status Menus
- Input Status: Audio Menus
- Alarm Enables Menus



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**Note** — *Before proceeding, ensure that you are running DashBoard software version 3.0.0 or higher. The DashBoard Control System software and user manual are available to download from the Ross Video website.*

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## Status Menus

This section summarizes the read-only information displayed in the **Status** tabs. The fields in the **Signal** tab 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 6.1** summarizes the **Signal** tab parameters available in DashBoard for the UDC-8625. This tab describes the status of each SDI input.

**Table 6.1 Signal Tab Items**

Menu Title	Item	Parameters	Description	
<b>Signal (Read-only)</b>	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 UDC-8625 is not locked to it	
		###	Indicates the reference format detected	
	Video Processing Input <sup>a</sup>	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 6.1 Signal Tab Items**

Menu Title	Item	Parameters	Description
<b>Signal (Read-only)</b>	Video Processing Output <sup>b</sup>	Format #	Indicates the output format
		Conversion errors # (Red)	Indicates an unsupported conversion; output is black. Refer to the section “ <b>Format Conversion</b> ” on page 1-6 for details.
		OPT-DX-8625 license key required (Red)	Indicates if the conversion requires the OPT-DX-8625 license key is required to perform the conversion; output is black
		OPT-UX-8625 license key is required (Red)	Indicates if the conversion requires the OPT-UX-8625 license key is required to perform the conversion; output is black
		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
	Input # Status	Format #	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.

**Table 6.1 Signal Tab Items**

Menu Title	Item	Parameters	Description
<b>Signal (Read-only)</b>	Input # Status	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)
		Alarm Suppressed	Displayed if one or more of the first three error conditions above exist, but the corresponding alarm is disabled
	Output Frame Delay	0-3 <sup>c</sup>	Indicates the current processing time of the card (in frames).
	Bypass Relay	Green - Normal (not in bypass)	SDI IN 1 is available for processing, and SDI OUT 1 is driven by the card
		Red - Active (in bypass)	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 <b>Input Timing</b> fields display the input signal timing values relative to the selected reference
		Input to Output	The <b>Input Timing</b> 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 <b>Personality</b> 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.

## Hardware Tab

Table 6.2 summarizes the **Hardware** tab parameters available in DashBoard for the UDC-8625.

**Table 6.2 Hardware Tab Items**

Menu Title	Item	Parameters	Description
<b>Hardware (Read-only)</b>	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 <b>Incompat Rear Module</b> alarm is disabled

**Table 6.2 Hardware Tab Items**

Menu Title	Item	Parameters	Description	
<b>Hardware (Read-only)</b>	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.	
	CPU Usage	x.xx / y.yy / z.zz	Displays the CPU Load average where: <ul style="list-style-type: none"> <li>• <b>x.xx</b> represents in the last minute</li> <li>• <b>y.yy</b> represents the last five minutes</li> <li>• <b>z.zz</b> represents the last fifteen minutes</li> </ul>	
	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: <ul style="list-style-type: none"> <li>• <b>a</b> represents the memory in use</li> <li>• <b>b</b> represents the memory cache from previously loaded files</li> <li>• <b>c</b> represents the memory dedicated to the frame sync buffers and related functions. Note that this memory is unavailable for images and animations.</li> <li>• <b>d</b> represents the total playout memory</li> </ul>		

## Product Tab

Table 6.3 summarizes the **Product** tab parameters available in DashBoard for the UDC-8625.

**Table 6.3 Product Tab Items**

Menu Title	Item	Parameters	Description
<b>Product (Read-only)</b>	Product	UDC-8625-#	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

# Configuration Menus

This section briefly summarizes the options and menus available in the **Config** tab.

## Video Tab

**Table 6.4** summarizes the **Video** set up options available in DashBoard.

**Table 6.4 Video Menu Items**

Menu Title	Item	Parameters	Description
<b>Reference Setup</b>	Reference Input	Frame 1*	The card is using the reference source connected to the <b>REF 1</b> port on the openGear frame
		Frame 2	The card is using the reference source connected to the <b>REF 2</b> port on the openGear frame
		Local	The card is using the reference source connected to <b>BNC 9</b> on the rear module
<b>Output Setup</b>	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
	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	Sets the output to freeze the last valid frame of video if there is a loss of input

**Table 6.4 Video Menu Items**

Menu Title	Item	Parameters	Description
Output Setup	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) <sup>a</sup>	0* to # <sup>b</sup>	Sets the output horizontal delay (in clocks) relative to the selected reference
	Output Vertical Delay (Lines) <sup>a</sup>	0* to # <sup>b</sup>	Sets the output vertical delay (in lines) relative to the selected reference
	Output Frame Delay (Frames) <sup>c</sup>	0* to 2 <sup>b</sup> (interlaced format) 0* to 6 <sup>b</sup> (progressive format)	Specifies the minimum processing delay, however the actual processing delay is displayed in the <b>Output Frame Delay</b> field of the Signal tab
	Output Delays	Reset <sup>c</sup>	Sets the delay values to 0
	Blank # Active Lines (SD Inputs only)	0 to 6* <sup>d</sup>	Selects the number of lines at the top of the active picture to blank. Only applies to SD inputs. This is used to remove VBI signals from the input picture.
	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 <sup>e</sup>	Selected	SuperBlack is clipped on the output
		Cleared*	SuperBlack is passed
Clip at White <sup>e</sup>	Selected	SuperWhite is clipped on the output	
	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.
- c. If the output format is changed, the values are updated. If you are switching from an interlaced format to a progress format, the values are multiplied by 2. If switching from a progressive format to an interlaced format, the value is divided by 2.
- d. The Blank Number of Active Lines settings is only applied when an SD input is present.
- e. Slight deviation into Super White and Super Black may be possible due to color space conversion between SD and other formats.

## Licenses Tab

Table 6.5 summarizes the information displayed in the Licenses tab.

**Table 6.5 License Menu Items**

Menu Title	Item	Parameters	Description
Licensable Features	Down/Cross Conversion Request Code	#	Displays the request code when the Full Upgrade feature is not licensed. This field is not displayed when the Full Upgrade feature is licensed.
	Down/Cross Conversion Feature	Licensed (read-only)	The Full Upgrade feature is licensed
		Enter OPT-UX-8625 license key here	The Full Upgrade feature is not licensed for the UDC-8625-D
		Enter OPT-DX-8625 license key here	The Full Upgrade feature is not licensed for the UDC-8625-U
	External Key License Request Code	#	Displays the request code when the External Key feature is not licensed. This field is not displayed when the External Key feature is licensed.
	External Key Feature	Licensed (read-only)	The External Key feature is licensed
		Enter OPT-E-8625 license key here	The External Key feature is not licensed for the card
	Internal Key License Request Code	#	Displays the request code when the Internal Key feature is not licensed. This field is not displayed when the Internal Key feature is licensed.
	Internal Key Feature	Licensed (read-only)	The Internal Key feature is licensed
		Enter OPT-I-8625 license key here	The Internal Key feature is not licensed for the card

## Ethernet Tab

Table 6.6 summarizes the Ethernet options available in DashBoard.

**Table 6.6 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 <b>Ethernet Settings</b>

**Table 6.6 Ethernet Menu Items**

Menu Title	Item	Parameter	Description
Ethernet	Cancel		Cancels any setting changes and resets the <b>Ethernet Settings</b> 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: <ul style="list-style-type: none"> <li>• The <b>Method</b> is set to <b>DHCP</b> and the DHCP server is not available</li> <li>• The ethernet cable is disconnected from the card rear module</li> <li>• A valid IP Address is no longer available. The DHCP server may be down or is still powering up after a loss of power.</li> </ul>
MAC Address (read-only)	###:###:###:###:###:###	The MAC Address for the card	

## Personality Tab

Table 6.7 summarizes the options available in the **Personality** tab.

**Table 6.7 Personality Menu Items**

Menu Title	Item	Parameters	Description
Transition Behavior	Cut Button	Abort*	If a transition is occurring, clicking <b>Cut</b> will return the transition to the beginning
		Finish	If a transition is occurring, clicking <b>Cut</b> will instantly finish the transition
		Ignore	If a transition is occurring, clicking <b>Cut</b> will be ignored
	Auto Button	Pause/Resume*	If a transition is occurring, clicking <b>Auto</b> will pause the transition. Clicking <b>Auto</b> again will resume the transition.
		Reverse	If a transition is occurring, clicking <b>Auto</b> will reverse the transition
		Ignore	If a transition is occurring, clicking <b>Auto</b> will be ignored
Timing Display	Timing Display	Relative to Reference*	The <b>Input Timing</b> fields in the <b>Signal</b> tab display the timing values relative to the reference
		Input to Output	The <b>Input Timing</b> fields in the <b>Signal</b> tab display the timing values relative to the output
Card Lock	Edit Permission	Unlocked*	Menu options are unlocked and editable
		Locked	All menu items, except this one, are locked and read-only

## Load/Save Tab

The menu items available in the **Load/Save** tab enable you to reset menu parameters for the card to the factory default values.

**Table 6.8 Load/Save Menu Items**

Menu	Item	Parameter	Description
<b>Global Settings</b>	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 6.9 summarizes the settings for the Aspect Ratio Converter (ARC) in the ARC/AFD tab.

**Table 6.9 ARC/AFD Menu Items**

Menu Title	Item	Parameters	Description
ARC/AFD	SD Output Coded Frame	4:3*	<ul style="list-style-type: none"> <li>Specifies how the SD output will be scaled and the AFD data is coded in the output</li> <li>Applies only when using SD outputs</li> <li>HD and 3G outputs always use 16:9</li> </ul>
		16:9	
	ARC Mode	Auto Input AFD, Auto Output AFD*	<ul style="list-style-type: none"> <li>Card automatically detects and uses the input AFD. If the input AFD is not detected, the card applies the settings specified in the Force Input Settings menus.</li> <li>Card automatically determines the most suitable ARC method for the Output AFD; as defined by SMPTE 2016-1</li> </ul>
		Force Input AFD, Auto Output AFD	<ul style="list-style-type: none"> <li>Card applies the settings specified in the Force Input Settings menus</li> <li>Card automatically determines the most suitable ARC method for the Output AFD; as defined by SMPTE 2016-1</li> </ul>
		Auto Input AFD, Force Output AFD	<ul style="list-style-type: none"> <li>Card automatically detects and uses the input AFD. If the input AFD is not detected, the card applies the settings specified in the Force Input Settings menus</li> <li>Card applies the settings specified in the Force Output Settings menus</li> </ul>
	Force Input AFD, Force Output AFD	<ul style="list-style-type: none"> <li>Card applies the settings specified in the Force Input Settings menus</li> <li>Card applies the settings specified in the Force Output Settings menus</li> </ul>	
Force Input Settings	SD Input Coded Frame	4:3*	<ul style="list-style-type: none"> <li>Specifies the aspect ratio for the SD input when the input AFD is forced or the input AFD is absent</li> <li>HD or 3G inputs always use 16:9</li> </ul>
		16:9	
	Input Coded Frame 4:3 AFD Code <sup>a</sup>	Letterbox 16:9, top, 0010	The active image is letterbox 16:9 image, at the top of the coded frame
		Letterbox 14:9, top, 0011	The active image is letterbox 14:9 image, at the top of the coded frame
		Letterbox>16:9, center, 0100	The active image is letterbox 16:9 with an aspect ratio greater than 16:9, vertically centered in the coded frame

**Table 6.9 ARC/AFD Menu Items**

Menu Title	Item	Parameters	Description
<b>Force Input Settings</b>	Input Coded Frame 4:3 AFD Code <sup>a</sup>	Full frame 4:3, 1000*	The active image is full frame 4:3 image, the same as the coded frame
		Full frame 4:3, 1001	The active image is full frame 4:3 image, the same as the coded frame
		Letterbox 16:9, center, 1010	The active image is letterbox 16:9 image, vertically centered in the coded frame with all image areas protected
		Letterbox 14:9, center, 1011	The active image is letterbox 14:9 image, vertically centered in the coded frame
		Full frame 4:3, alter 14:9, 1101	The active image is full frame 4:3 image, with alternative 14:9 center
		Letterbox 16:9, alter 14:9, 1110	The active image is letterbox 16:9 image, with alternative 14:9 center
		Letterbox 16:9, alter 4:3, 1111	The active image is letterbox 16:9 image, with alternative 4:3 center
	Input Coded Frame 16:9 AFD Code <sup>b</sup>	Full frame 16:9, 0010	The active image is full frame 16:9 image, the same as the coded frame
		Pillarbox 14:9, center, 0011	The active image is pillarbox 14:9 image, horizontally centered in the coded frame
		Letterbox >16:9, center, 0100	The active image is letterbox image with an aspect ratio greater than 16:9, vertically centered in the coded frame
		Full frame 16:9, 1000*	The active image is full frame 16:9 image, the same as the coded frame
		Pillarbox 4:3, center, 1001	The active image is pillarbox 4:3 image, horizontally centered in the coded frame
		Full frame 16:9, protected, 1010	The active image is full frame 16:9 image, with all image areas protected
		Pillarbox 14:9, center, 1011	The active image is pillarbox 14:9 image, horizontally centered in the coded frame
		Pillarbox 4:3, alter 14:9, 1101	The active image is pillarbox 4:3 image, with alternative 14:9 center
		Full frame 16:9, alter 14:9, 1110	The active image is full frame 16:9 image, with alternative 14:9 center
		Full frame 16:9, alter 4:3, 1111	The active image is full frame 16:9 image, with alternative 4:3 center

**Table 6.9 ARC/AFD Menu Items**

Menu Title	Item	Parameters	Description
<b>Force Output Settings</b>	Output Coded Frame 4:3 AFD Code	Letterbox 16:9, top, 0010	<ul style="list-style-type: none"> <li>• This setting is used for 4:3 SD outputs only and if the ARC Mode is set to Forced Output</li> <li>• The last four digits determine where the content is within the 4:3 area</li> </ul>
		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	
	Output Coded Frame 16:9 AFD Code	Full frame 16:9, 0010	<ul style="list-style-type: none"> <li>• This setting is used for 16:9 SD, HD, or 3G outputs only and if the ARC Mode is set to Forced Output to determine the conversion for the output</li> <li>• The last four digits determine where the content is within the 16:9 area</li> </ul>
		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	
<b>AFDs Used in the ARC</b>	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

- a. This setting is used for 4:3 SD inputs only.
- b. This setting is used for 16:9 SD, HD, or 3G inputs only.

# ANC Menus

Table 6.10 summarizes the ANC menu options available in DashBoard.

**Table 6.10 ANC Menu Items**

Menu Title	Item	Parameters	Description
<b>HANC</b>	HANC Pass Through	Enabled	<ul style="list-style-type: none"> <li>Pass through HANC data without any modifications (except EDH in SD formats)</li> <li>Setting should only be applied when the output format is the same format and synchronous to the input</li> </ul>
		Disabled*	HANC data is processed as determined in the ANC menu
<b>VANC</b>	VANC Pass Through	Enabled	<ul style="list-style-type: none"> <li>Pass through VANC data without any modifications</li> <li>Setting should only be applied when the output format is the same format and synchronous to the input</li> </ul>
		Disabled*	VANC data is processed as determined in the ANC menu
<b>ANC</b>	Packet Name (read-only)	AFD <sup>a</sup>	Indicates the Ancillary data type. Note that not all types are explicitly listed.
		Closed Captioning <sup>b</sup>	
		Time Code <sup>c</sup>	
		Compressed Audio Metadata <sup>d</sup>	
		Other Packets	
	Action	Disable* <sup>e</sup>	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
		Process	Card receives the packet, processes it, and inserts a new packet into the specific line
	Insertion Line	#	Specifies the line to insert the packet
	Insertion Order	#	<ul style="list-style-type: none"> <li>Indicates the priority when there are packets on the same line</li> <li>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</li> </ul>

- a. The DID/EDID for AFD packets are DID:41h, SDID:05h.
- b. The DID/EDID for closed captioning packets are DID:61h, SDID:01h.
- c. The DID/EDID for timecode packets are DID:60h, SDID:60h.
- d. The DID/EDID 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 Menus

**Table 6.11** summarizes the **Embedded Audio Menu** options available in DashBoard. Note that the audio source is determined by the settings in the **On Air Control** tab.

**Table 6.11 Embedded Audio Menu Items**

Menu Title	Item	Parameters	Description
<b>Embedded Audio</b>	Sample Rate Conversion	On <sup>a</sup>	Enables the SRC of the embedded audio (all inputs)
		Off*	<ul style="list-style-type: none"> <li>• SRC is disabled</li> <li>• Select this option when using non-PCM audio data such as Dolby®</li> <li>• Select this option when inputs are known to be synchronous to the reference</li> </ul>
	Audio Fade	Enabled* <sup>a</sup>	<ul style="list-style-type: none"> <li>• Enables audio mixing</li> <li>• Recommended when performing Background transitions</li> </ul>
		Disabled	<ul style="list-style-type: none"> <li>• Disables audio mixing</li> <li>• The card will perform a hard cut at the end of the video transition</li> <li>• Select this option when using non-PCM audio data such as Dolby®</li> </ul>
	SD Audio	Auto	Embeds 20bit or 24bit depending on the audio source, the number of bits, and the input format.
		20 bit	Embeds 20bit
		24 bit	Embeds 24bit; lower 4bits will be 0 if they were not in the source
<b>Group #</b>	Enable	Selected*	The specified audio group is embedded into the output
		Cleared	The specified audio group is not embedded
	Ch # Source	Mute <sup>a</sup>	<ul style="list-style-type: none"> <li>• Selects the source to be embedded in each channel of each audio group</li> </ul>
		Group # Ch#	<ul style="list-style-type: none"> <li>• The audio source is determined by the settings in the On Air Control tab</li> </ul>
		# kHz Tone <sup>a</sup>	<ul style="list-style-type: none"> <li>• If the selected source is not present on the input video, silence is embedded</li> </ul>
	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	

**Table 6.11 Embedded Audio Menu Items**

Menu Title	Item	Parameters	Description
<b>Group #</b>	Ch # Gain (dB)	-20 to 20	<ul style="list-style-type: none"> <li>Adjusts the gain of the specified channel of audio; default is 0.</li> <li>Set this to 0 when using non-PCM audio data</li> </ul>
	Ch # Invert	Selected	Inverts the audio signal of the specified channel
		Cleared*	<ul style="list-style-type: none"> <li>The audio signal of the specified channel is not inverted</li> <li>Use for non-PCM audio data</li> </ul>
<b>Embedded Audio</b>	All Groups	Reset	<ul style="list-style-type: none"> <li>Resets all audio group settings to pass the default input channels to the output channels</li> <li>Automatically enables all groups (check box for each group is now selected)</li> <li>Resets the Gain of all channels to 0dB</li> <li>Clears the invert settings of all channels</li> </ul>

a. Channel Status is overwritten when Mute, test tone, or mixing is enabled.

## Proc Amps Menu

Table 6.12 summarizes the Proc Amps options available in DashBoard.

**Table 6.12 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 is disabled for the selected output
	Video Gain (%)	0 to 200 <sup>a</sup>	Adjusts the output video gain level
	Chroma Gain (%)	0 to 200 <sup>a</sup>	Adjusts the card output chroma gain percentage (C <sub>b</sub> and C <sub>r</sub> simultaneously)
	CB Gain (%)	0 to 200 <sup>a</sup>	Adjusts the output C <sub>b</sub> gain
	Black Offset (IRE)	-60 to 160 <sup>b</sup>	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 Menu

**Table 6.13** summarizes the **Logos** options available in DashBoard. Each logo has a sub-tab to select which logo is to be modified.

**Table 6.13 Logos Menu Items**

Menu Title	Item	Parameters	Description	
<b>Logo #</b>	Video Image	Displays a thumbnail image	<ul style="list-style-type: none"> <li>Displays a small image that represents the currently loaded media file. For animations, the fifth frame is displayed.</li> <li>Only available when the card ethernet port is connected and properly configured</li> <li>A black box with text indicates that no image is currently loaded</li> </ul>	
	Alpha Image	Displays a thumbnail image	<ul style="list-style-type: none"> <li>Displays a small image that represents the currently loaded media file on the Alpha channel. For animations, the fifth frame is displayed.</li> <li>Only available when the card ethernet port is connected and properly configured</li> <li>A blank area indicates that the current image has no alpha channel</li> </ul>	
	File (read-only)	xy [#,#]	<ul style="list-style-type: none"> <li>Indicates the full path of the currently loaded file</li> <li>#,# represents the duration of the file if it is an animation</li> </ul>	
	Status (read-only)	Idle		<ul style="list-style-type: none"> <li>Displays information about the channel in both the number of frames (integer), and in the number of seconds (fractional)</li> <li>Any errors during loading are also displayed</li> <li>When the file(s) have loaded, this field displays the dimensions of the image (e.g. 1920x1080)</li> </ul>
		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]		<ul style="list-style-type: none"> <li>The field displays the directory the currently selected media file is located in</li> <li>Provides a list of all of the directories on the CompactFlash™ Card</li> </ul>	
	[ROOT]			

**Table 6.13 Logos Menu Items**

Menu Title	Item	Parameters	Description
Logo #	Filename	xxx.yyy XXX_####.TGA [#]	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Updated when a new Directory is selected in the <b>Directory</b> menu</li> <li>• Provides a list of all the media files in the currently selected directory. Note that animations appear as a single entry.</li> </ul>
		[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	<ul style="list-style-type: none"> <li>• Updates the Directory menu options</li> <li>• Updates the Filename menu options</li> </ul>
	X Position	## to ## <sup>a</sup>	<ul style="list-style-type: none"> <li>• Adjusts the position of the image along the X-axis in number of pixels</li> <li>• The range varies depending on the output video format</li> </ul>
	Y Position	## to ## <sup>a</sup>	<ul style="list-style-type: none"> <li>• Adjusts the position of the image along the Y-axis in number of pixels</li> <li>• The range varies depending on the output video format</li> </ul>
	Auto Play <sup>b</sup>	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 <sup>b</sup>	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. Default value is 0 which represents the top-left corner of the active picture area.  
b. This option is only applicable when an animation file is selected.

## Key Setup Menus

**Table 6.14** summarizes the **Key Setup** tab options available for Key 2 in DashBoard. Note that the OPT-E-8625 license must be installed in order for the changes to this tab to take effect.

**Table 6.14 Key Setup Menu Items**

Menu Title	Item	Parameters	Description	
Key 2	Clip	4 to 1019 <sup>a</sup>	Adjusts the clip values	
	Gain	0 to 100 <sup>b</sup>	Adjusts the gain values	
	Clip & Gain	Make Linear	Resets the clip and gain values to the default settings	
	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 <sup>c</sup>		Adjusts the transparency level of the key
	Box Mask	Off*		Disables this feature
		On		Applies the mask to the key
		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 # <sup>d</sup>		Adjusts the location of the top edge of the mask
	Mask Bottom Edge	0 to # <sup>d</sup>		Adjusts the location of the bottom edge of the mask
Mask Left Edge	0 to # <sup>d</sup>		Adjusts the location of the left edge of the mask	
Mask Right Edge	0 to # <sup>d</sup>		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 range of values is dependent on the video format.

## On Air Control Menus

Table 6.15 summarizes the On Air Control options available in DashBoard.

**Table 6.15 On Air Control Menu Items**

Menu Title	Item	Parameters	Description
<b>Background</b>	Image	Displays a thumbnail image	Displays a thumbnail image that represents the BKGD source
	Source	Black	Assigns Black as the output
		Input #	Assigns the selected input source as the BKGD output
	Backup	Black	Assigns Black as the backup output
		Input #	Assigns the selected input source as the backup output
	Auto Change Over	Selected	<ul style="list-style-type: none"> <li>Enables the Auto Change Over feature where SDI IN 1 is the primary source and SDI IN 2 is the backup source.</li> <li>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</li> <li>The Cut and Auto buttons are disabled</li> </ul>
		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 <b>Source</b> and the <b>Backup</b> . A V-Fade is performed between audio sources.
Auto	Auto	Performs the transition, as specified in the <b>Auto Trans Type</b> menu, between the sources selected in the <b>Source</b> and <b>Backup</b> areas, at the specified <b>Bkgd</b> rate setting	
<b>Key #</b>	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
		OPT-E-8625 License key is required (Red)	This message is displayed if an external logo is selected but the External Key feature is not licensed on your card
		OPT-I-8625 License key is required (Red)	This message is displayed if an internal logo is selected but the Internal Key feature is not licensed on your card; the keys is taken off-air
	Source	Black	Assigns Black as the Key output
		Input #	Assigns the selected input source as the Key source

**Table 6.15 On Air Control Menu Items**

Menu Title	Item	Parameters	Description
<b>Key #</b>	Source	Logo # <sup>a</sup>	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 <b>Key Rate</b> setting.
<b>Multiple Transition (using Bkgd Rate)</b>	Include	Bkgd	Does not include the BKGD in the next transition
		Bkgd - Yes	Includes the BKGD in the next transition when the <b>Cut</b> 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 <b>Cut</b> 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)	
<b>Transition Rates</b>	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 <sup>b</sup>	
	Slow Rate	1 to 999 <sup>c</sup>	Defines the Slow Rate in frames
	Medium Rate	1 to 999 <sup>d</sup>	Defines the Medium Rate in frames
Fast Rate	1 to 999 <sup>e</sup>	Defines the Fast Rate in frames	

- a. Requires the Internal Key licensed feature.
- b. The default value is Fast.
- c. The default value is 60 frames (2 seconds) when using 59.94Hz formats. When using 50Hz formats, the default value is 50 frames.
- d. The default value is 30 frames (1 second) when using 59.94Hz formats. When using 50Hz formats, the default value is 25 frames.
- e. The default value is 15 frames (0.5 second) when using 59.94Hz formats. When using 50Hz formats, the default value is 12 frames.

# Input Status Menus

**Table 6.16** 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 6.16 Input Status Menu Items**

Menu Title	Item	Parameters	Description	
<b>Input # Status (Read-only)</b>	Input # Status <sup>a</sup>	Format #	Indicates the detected input format	
		No Signal (Red)	The input signal is not detected and the corresponding <b>Input # Loss</b> 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)	# (HD 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. <ul style="list-style-type: none"> <li>• For SD formats, it displays both active picture and full frame errors</li> <li>• For HD formats, it displays the total count of errors</li> </ul>
		Error Count		
	<b>Input # Status - HANC (Read-only)</b>	352M	Not Present	352M is not detected on the input
#			352M is detected and the four bytes are displayed	
<b>Input # Status - VANC (Read-only)</b>	AFD <sup>b</sup>	Not Present	AFD Code is not detected in the input	
		Coded Frame: AFD Code	AFD Code is detected in the input	

**Table 6.16 Input Status Menu Items**

Menu Title	Item	Parameters	Description
<b>Input # Status - VANC (Read-only)</b>	Closed Caption <sup>c</sup>	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
		EIA-708 pkt (CEA-608 data)	EIA-708 packet is detected; contains CEA-608 data
		Not Present	No Closed Caption packets are detected
	Time Code <sup>d</sup>	Present	Timecode data is detected on the input
		Not Present	Timecode data is not detected on the input
	Audio Metadata <sup>e</sup>	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

- a. This field displays information in the format of <format, audio status>.
- b. The DID/EDID for AFD packets are DID:41h, SDID:05h.
- c. The DID/EDID for closed captioning packets are DID:61h, SDID:01h.
- d. The DID/EDID for timecode packets are DID:60h, SDID:60h.
- e. The DID/EDID for compressed audio metadata packets are: DID:45h, SDID:not specified.

---

## Input Status: Audio Menus

**Table 6.17** summarizes the **Input Status: Audio** read-only information available in DashBoard. The information displayed in this tab is determined by the channel status data of the input.

**Table 6.17 Input Status: Audio Menu Items**

Menu Title	Item	Parameters	Description
<b>Embedded Audio - Input # Audio (Read-only)</b>	Group # Channel #	PCM	The embedded audio of the specified group and channel includes a linear PCM sample
		Non-PCM	The embedded audio of the specified group and channel includes a non-PCM sample
		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

# Alarm Enables Menus

Table 6.18 summarizes the Alarm Enables options available in DashBoard.

**Table 6.18 Alarm Enables Menu Items**

Menu Title	Item	Parameters	Description
<b>Signal &amp; Reference Alarms</b>	Input # Loss/Incompatible	Selected*	<b>Input Status</b> field reports a loss of the specified input or the format is incompatible for the specified input
		Cleared	Disables the alarm
	Input Audio Group # Absent	Selected*	<b>Input Status</b> field reports 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
	No/Unlocked/Invalid Reference	Selected*	<b>Reference Status</b> field 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
<b>Hardware Alarm</b>	Incompat Rear Module	Selected*	<b>Rear Module</b> field in the reports when a rear mod module is not compatible with the card
		Cleared	Disables the alarm

# Appendix B. Specifications

---

## In This Appendix

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

The following topics are discussed:

- Technical Specifications

# Technical Specifications

This section includes the Technical Specifications table for the UDC-8625.

**Table 7.1 UDC-8625 Technical Specifications**

Category	Parameter	Specification	
<b>Serial Digital Video Inputs</b>	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		SDI IN 1: 15dB to 1.5GHz
		SDI IN 2-4: >15dB to 1.5GHz 10dB to 3GHz	
Equalization (using Belden 1694A cable)		SD: 120m	
		HD: 100m	
		3G: 50m	
<b>Serial Digital Video Outputs</b>	Number of Outputs	4	
	Impedance	75ohm	
	Return Loss		SDI OUT 1: 15dB to 1.5GHz
			SDI OUT 2-4: >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		
<b>Environment</b>	Maximum ambient temperature	40°C	
<b>Power</b>	Power Consumption	23W	

# 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 may differ from your specific requirements, and this information is provided as examples only.

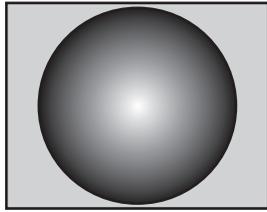
The following examples are provided:

- 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)

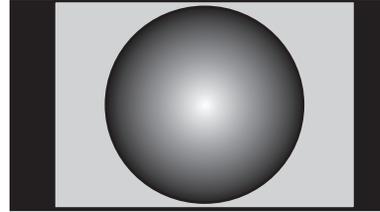
---

## 4:3 SD to HD (Pillarbox)

In this example, the input format is SD 4:3 (**Figure 8.1**), and the UDC-8625 output format is set to HD (**Figure 8.2**).



**Figure 8.1** SD 4:3 Input



**Figure 8.2** HD 16:9 Pillarbox Output

Use the settings provided in **Table 8.1** to configure the UDC-8625 for an SD to HD pillarbox conversion. If there is an Input AFD, you may need to use the **Force Input AFD** option

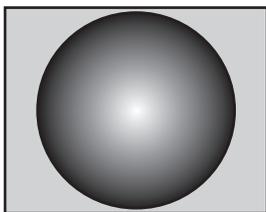
**Table 8.1** ARC/AFD Tab Settings

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

---

## 4:3 SD to HD (Zoom)

In this example, the input is SD 4:3 (**Figure 8.3**), and the UDC-8625 output format is set to HD (**Figure 8.4**). The top and bottom of the input image is cropped to produce the zoom effect.



**Figure 8.3** SD 4:3 Input



**Figure 8.4** 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.

Use the settings provided in **Table 8.2** to configure the UDC-8625 for an SD to HD zoom conversion by changing the output AFD mode.

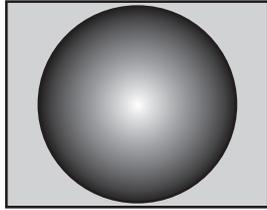
**Table 8.2** ARC/AFD Tab Settings

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

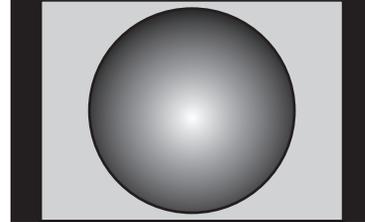
---

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

In this example, the input is SD 4:3 with no embedded AFD (**Figure 8.5**), and the UDC-8625 output format is set to SD 16:9 (**Figure 8.6**). Black bars are added to the sides of the image.



**Figure 8.5** SD 4:3 Input



**Figure 8.6** SD 16:9 Output

Use the settings provided in **Table 8.3** to configure the UDC-8625 for an SD to SD conversion. If there is an Input AFD, you may need to use the Force Input AFD option.

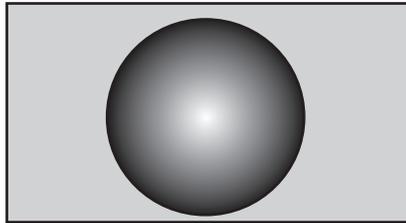
**Table 8.3** ARC/AFD Tab Settings

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

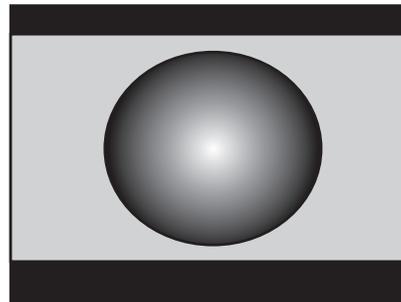
---

## HD to 4:3 SD (Letterbox)

In this example, the input is HD 16:9 (**Figure 8.7**), and the UDC-8625 output format is set to SD 4:3 (**Figure 8.8**). Black bars are added to the top and bottom of the image.



**Figure 8.7** HD 16:9 Input



**Figure 8.8** SD 4:3 Letterbox Output

Use the settings provided in **Table 8.4** to configure the UDC-8625 for an HD to SD letterbox. If there is an Input AFD, you may need to use the Force Input AFD option

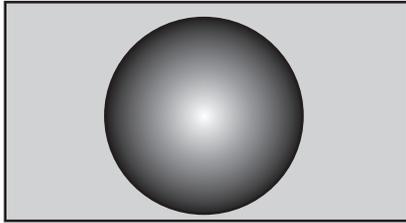
**Table 8.4** ARC/AFD Tab Settings

DashBoard Menu Item	Set to
SD Output Coded Frame	4:3
ARC Mode	N/A
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

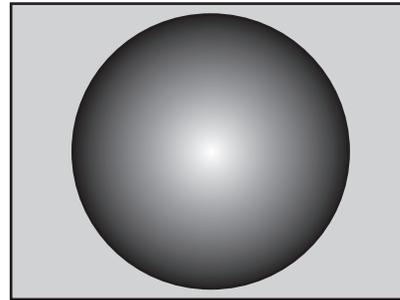
---

## HD to 4:3 SD (Zoom)

In this example, the input is HD 16:9 (**Figure 8.9**), and the UDC-8625 output format is set to SD (**Figure 8.10**).



**Figure 8.9** HD 16:9 Input



**Figure 8.10** 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.

Use the settings provided in **Table 8.5** to configure the UDC-8625 for an HD to SD zoom conversion by changing the output AFD mode.

**Table 8.5** 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	Use the default setting
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. 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-8625, 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 3-23 for information.

---

## Warranty and Repair Policy

The UDC-8625 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-8625 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-8625 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 UDC-8625 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-8625 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-8625, 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-8625. 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.

# Contact Us

**Contact our friendly and professional support representatives for the following:**

- Name and address of your local dealer
- Product information and pricing
- Technical support
- Upcoming trade show information

<b>PHONE</b>	<b>General Business Office and Technical Support</b>	613 • 652 • 4886
	<b>After Hours Emergency</b>	613 • 349 • 0006
	<b>Fax</b>	613 • 652 • 4425
<b>E-MAIL</b>	<b>General Information</b>	solutions@rossvideo.com
	<b>Technical Support</b>	techsupport@rossvideo.com
<b>POSTAL SERVICE</b>	<b>Ross Video Limited</b>	8 John Street, Iroquois, Ontario, Canada K0E 1K0
	<b>Ross Video Incorporated</b>	P.O. Box 880, Ogdensburg, New York, USA 13669-0880

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