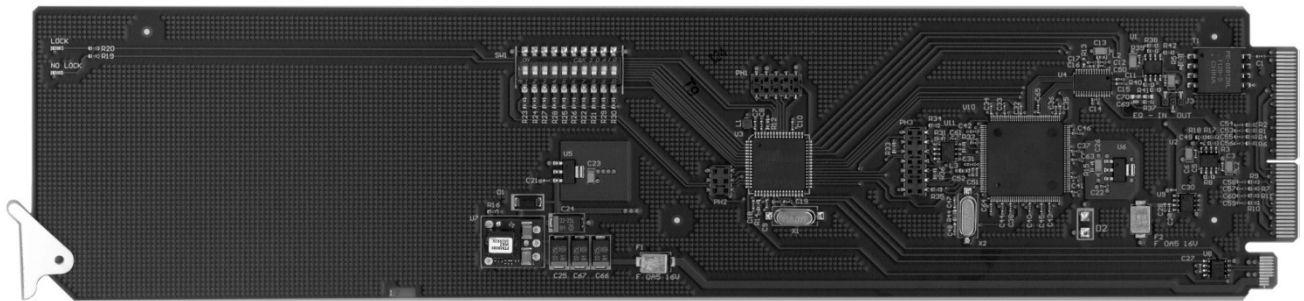# 9913DA-AES75-RG

**75-Ohm (Unbalanced) AES Distribution Amplifier
with Remote Gain Control**

User Manual

open**Gear**

9913DA-AES75-RG User Manual

- Cobalt Digital Part Number: 9913DA-AES75-RG-OM
- Release Date: October 21, 2016.

The information contained in this User Manual is subject to change without notice or obligation.

Copyright

Patents

This product is protected by the following US Patents: 4,205,346; 5,115,314; 5,280,346; 5,561,404; 7,034,886; 7,508,455; 7,602,446; 7,834,866; 7,914,332. This product is protected by the following Canadian Patents: 2039277; 1237518; 1127289. Other patents pending.

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- openGear is a registered trademark of Ross Video Limited.
- DashBoard Control System™ is a trademark of Ross Video Limited.
- Dolby® is a registered trademark of Dolby Laboratories.
- All other product names and any registered and unregistered trademarks mentioned in this manual are used for identification purposes only and remain the exclusive property of their respective owners.

Important Regulatory and Safety Notices

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.

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

Symbol Meanings

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

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

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

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

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

Important Safety Instructions

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

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

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

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.

⚠ **Notice** — *Changes or modifications to this equipment not expressly approved by Cobalt Digital Inc. could void the user's authority to operate this equipment.*

CANADA

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

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

EUROPE

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

INTERNATIONAL

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

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

Maintenance/User Serviceable Parts

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

All openGear products are covered by a generous 5-year warranty and will be repaired without charge for materials or labor within this period. See the "Warranty and Repair Policy" section in this manual for details.

Environmental Information

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

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Cobalt Digital 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.
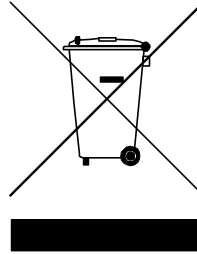
If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Cobalt Digital for more information on the environmental performances of our products.

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Sales@cobaldigital.com
Support@cobaltdigital.com

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Introduction

In This Chapter

This chapter contains the following sections:

- Overview

- Functional Block Diagrams

- User Interfaces

- Documentation Terms and Conventions

A Word of Thanks

Congratulations on choosing the openGear 9913DA-AES75-RG 75-Ohm (Unbalanced) AES Distribution Amplifier with Remote Gain Control. The 9913DA-AES75-RG is part of a full line of Digital Products within the openGear Terminal Equipment family of products.

You will be pleased at how easily your new 9913DA-AES75 fits into your overall working environment. Equally pleasing is the product quality, reliability and functionality. Thank you for joining the group of worldwide satisfied Cobalt Digital customers!

Should you have a question pertaining to the installation or operation of your 9913DA-AES75, please contact us at the numbers listed on the back cover of this manual.

Overview

The 9913DA-AES75-RG is an AES/EBU processing distribution amplifier designed for broadcast use. It provides eight copies of the incoming unbalanced AES-3id signal when used with the RM20-9913DA75-A Full Rear Module or four copies of the incoming signal when used with the RM20-9913DA75-A/S Split Rear Module. The 9913DA-AES75-RG supports audio sampling frequencies from 32kHz to 96kHz. Cable equalization and reclocking techniques enable the 9913DA-AES75 to recover the incoming digital audio signal reliably.

The 9913DA-AES75-RG also includes built-in loudness measurement. The card is capable of reading the ITU1770 LKFS Audio Measurements and displaying the measurement in DashBoard.

The RM20-9913DA75-A/S high density split rear module can accommodate up to two 9913DA-AES75 cards, each configured as a 1x4 DA, accommodating up to 20 channels of distribution per 2RU frame.

Features

The following features make the 9913DA-AES75 the best solution for distributing digital audio signals:

- 1x8 or 1x4 (high density) AES distribution amplifier
- 75ohm unbalanced AES-3id I/O
- Ideal for distributing Dolby® E and Dolby® Digital signals
- Reports the ITU1770 LKFS Audio Measurements in DashBoard
- Cable equalization and data reclocking on the incoming AES/EBU signal
- Supports audio sampling frequencies from 32kHz to 96kHz
- Provides level matching and level control of output signals
- Higher density with up to 20 cards using RM20-9913DA75-A/S Split Rear Modules
- 5 year warranty

Functional Block Diagrams

This section provides functional block diagrams that outline the workflow of the 9913DA-AES75-RG.
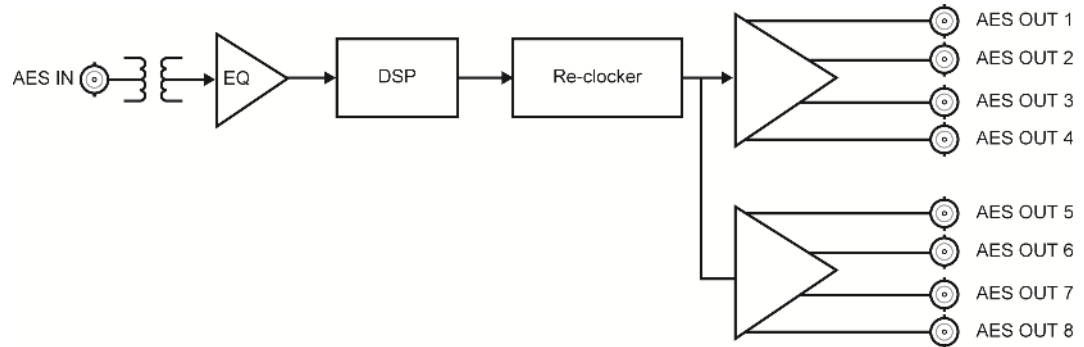
Figure 1.1 *Simplified Block Diagram — RM20-9913DA75-A Full Rear Module*
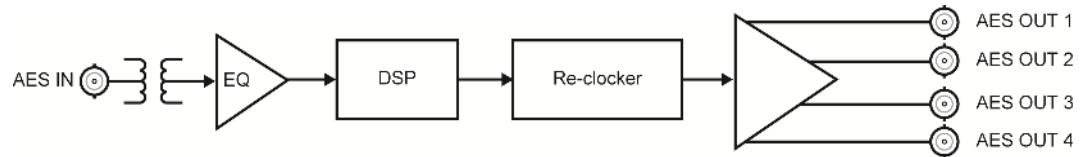
Figure 1.2 *Simplified Block Diagram — RM20-9913DA75-A/S Split Rear Module*

User Interfaces

The 9913DA-AES75-RG offers the following interfaces for control and monitoring.

DashBoard Control System™

The DashBoard Control System™ enables you to monitor and control openGear frames and cards from a computer. DashBoard communicates with other cards in the frame through the Network Controller Card.

For More Information…

- on the menus in DashBoard, refer to the chapter "**DashBoard Menus**".

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

Card-edge Controls

The front-edge of the 9913DA-AES75-RG features LED indicators for the power, video input status and communication activity.

For More Information…

- on adjusting the output levels, refer to the section "**Card Overview**".

- on monitoring the status using the card-edge LEDs, refer to the section "**Control and Monitoring Features**".

Documentation Terms and Conventions

The following terms are used throughout this manual:

- "**Board**", and "**Card**" refer to the 9913DA-AES75-RG card itself, including all components and switches.

- "**DashBoard**" refers to the DashBoard Control System™.

- "**Frame**" refers to the 20-slot frame that houses the 9913DA-AES75-RG card, as well as any openGear frames.

- "**Operator**" and "**User**" refer to the person who uses the 9913DA-AES75-RG.

- "**System**" and "**Video system**" refer to the mix of interconnected production and terminal equipment in which the 9913DA-AES75-RG operates.

- The "**Operating Tips**" and "**Note**" boxes are used throughout this manual to provide additional user information.

Installation

In This Chapter

This chapter provides instructions for installing the Rear Modules for the 9913DA-AES75-RG, installing the card into the frame, cabling details, and updating the card software.

The following topics are discussed:

- Before You Begin

- Installing the 9913DA-AES75-RG

- Cabling for the 9913DA-AES75-RG

- Software Upgrades for the 9913DA-AES75-RG

Before You Begin

Before proceeding with the instructions in this chapter, ensure that your DFR-8300 series frame is properly installed according to the instructions in the *DFR-8300 Series User Manual*.

Static Discharge

Whenever handling the 9913DA-AES75-RG and other related equipment, please observe all static discharge precautions as described in the following note:

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

Unpacking

Unpack each 9913DA-AES75-RG you received from the shipping container, and check the contents to ensure that all items are included. If any items are missing or damaged, contact your sales representative or Cobalt Digital directly.

Installing the 9913DA-AES75-RG

This section outlines how to install a rear module and card in a 20-slot frame. The same procedure applies regardless of the frame or card type.

Rear Modules for the 9913DA-AES75-RG

The Rear Module for the 9913DA-AES75-RG depends on the openGear frame you are installing the card into.

- When installing the 9913DA-AES75-RG in the frames, the **RM20-9913DA75-A** Full Rear Module or the **RM20-9913DA75-A/S** Split Rear Module can be used. When using a Full Rear Module in the frame, use the even numbered slots, such as 2, 4, 6 etc. to ensure that the card aligns with the rear module.

Installing the Rear Module

If the Rear Module is already installed, proceed to the section "**Installing the 9913DA-AES75-RG**".

Use the following procedure to install a Rear Module in a 20-slot frame

1. Locate the card frame slots on the rear of the frame.
2. Remove the Blank Plate from the slot you have chosen for the 9913DA-AES75-RG installation.
3. Install the bottom of the Rear Module in the Module Seating Slot at the base of the frame's back plane. (**Figure 2.1**)
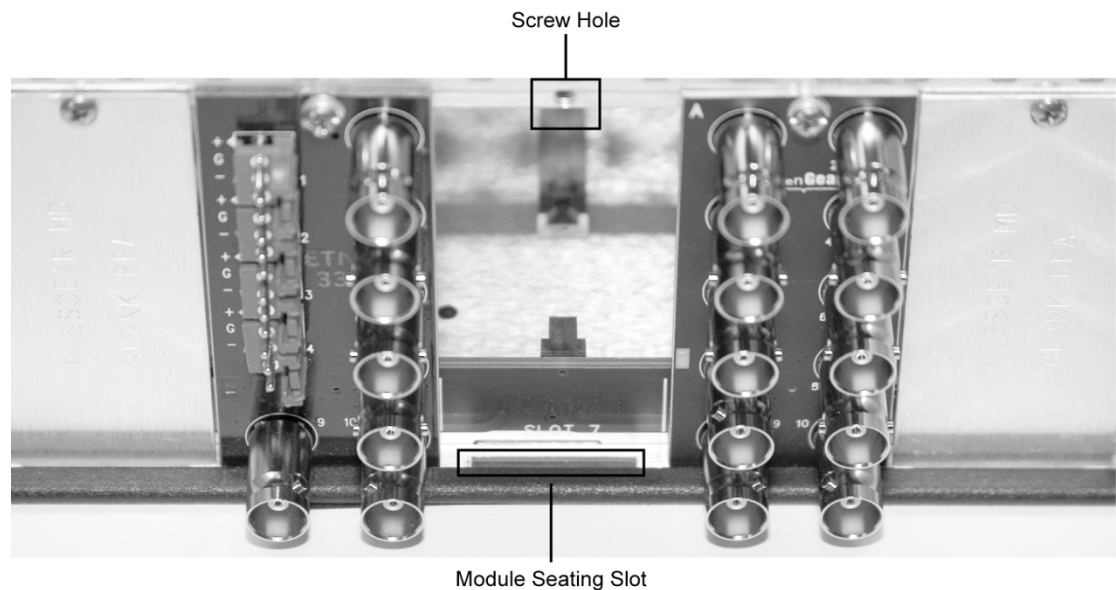
Figure 2.1 Rear Module Installation

4. Align the top hole of the Rear Module with the screw hole on the top-edge of the frame back plane.
5. Using a Phillips screwdriver, and the supplied screw, fasten the Rear Module to the frame back plane. Do not over tighten.

6. Ensure proper frame cooling and ventilation by having all rear frame slots covered with Rear Modules or Blank Plates.

Installing the 9913DA-AES75-RG

Use the following procedure to install the 9913DA-AES75-RG in a DFR-8300 series frame:

1. Locate the Rear Module you installed in the procedure "**Installing a Rear Module**".

2. Hold the 9913DA-AES75-RG by the edges and carefully align the card-edges with the slots in the frame.

3. Fully insert the card into the frame until the rear connection plugs are properly seated on the midplane and rear module.

Cabling for the 9913DA-AES75-RG

This section provides information for connecting cables to the installed Rear Modules. Connect the input and output cables according to the following sections. The inputs are internally terminated in 75ohm and it is not necessary to terminate unused outputs.

Cabling Overview

- **RM20-9913DA75-A** Full Rear Module — Each module occupies two slots and accommodates one card. This rear module provides one AES input and eight AES outputs. (**Figure 2.2**)

- **RM20-9913DA75-A/S** Split Rear Module — Each module occupies one slot and accommodates two cards. This rear module provides one AES input and four AES outputs per card. (**Figure 2.3**)
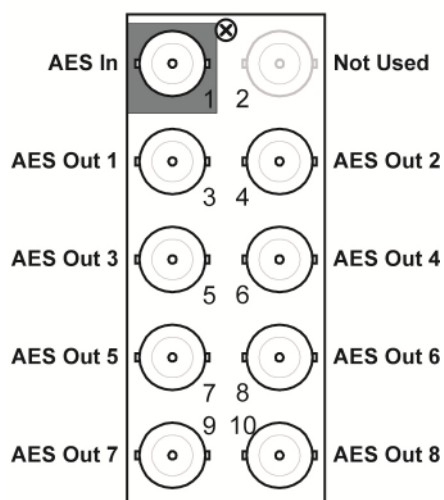

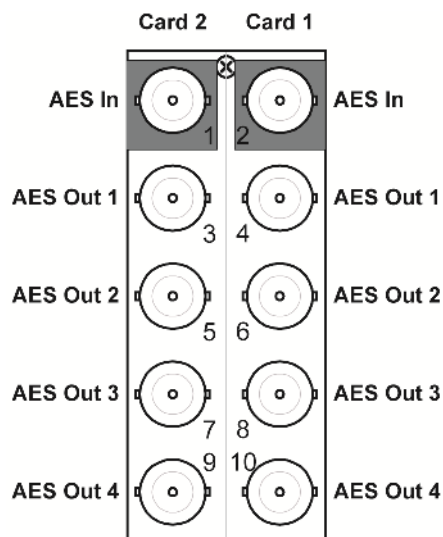*Figure 2.2* Cable Connections for the RM20-9913DA75-A Full Rear Module

Figure 2.3 Cable Connections for the RM20-9913DA75-A/S Split Rear Module

Software Upgrades for the 9913DA-AES75-RG

The card can be upgraded in the field via the Network Controller card in your frame.

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

To upgrade the software on a card

1. If a new firmware version is available, it is posted on our website under Support > Firmware Downloads.

2. Display the **Device View** of the card by double-clicking its status indicator in the **Basic Tree View**.

3. From the **Device View**, click **Upload** to display the **Select file for upload** dialog.

4. Navigate to the ***.bin** upload file you wish to upload.

5. Click **Open**.

6. If you are upgrading a single card, click **Finish**. Proceed to step 8.

7. 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 2.

   ▪ 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.

8. Monitor the upgrade.

   ▪ Monitor the upgrade process bar displayed in DashBoard while the software is upgraded on your card.

   ▪ The card(s) will automatically reboot and 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.

User Controls

In This Chapter

This chapter provides a general overview of the user controls available on the 9913DA-AES75-RG.

The following topics are discussed:

- Card Overview
- Configuring the DIP Switches
- Control and Monitoring Features

Card Overview

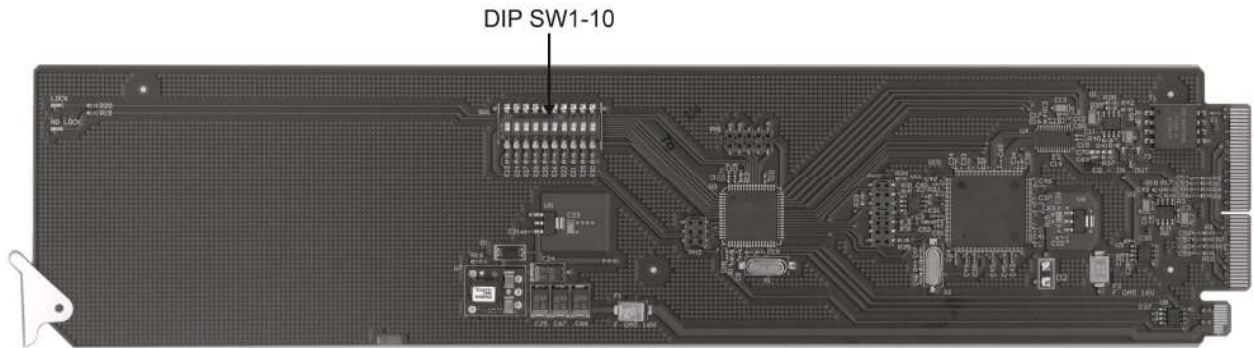This section provides a general overview of the 9913DA-AES75-RG components.

DIP SW1-10

Figure 3.1 *9913DA-AES75-RG — DIP Switch Locations*

SW1 – Remote Control

Use **SW1** to disable remote control of the 9913DA-AES75-RG from DashBoard.

Set **SW1** as follows:

- **ON** — Select this setting to disable remote control from DashBoard. The parameters and settings cannot be changed via DashBoard and must be changed using the card-edge controls. You can still monitor the status of the card using DashBoard.

- **OFF** — Select this setting to control the 9913DA-AES75-RG exclusively from DashBoard. The card-edge controls are ignored. This is the default setting.

SW2 — DIP Switch Control

Use **SW2** to determine whether DIP Switch settings are applied or ignored.

Set **SW2** as follows:

- **ON** — DIP Switch status is reported in DashBoard, and DIP Switch settings are applied. Any parameter adjustments made in DashBoard are ignored.

- **OFF** — DIP Switch status is reported in DashBoard, however DIP Switch settings are ignored. Parameter adjustments made in DashBoard are applied. This is the default setting.

SW3, SW4 — Output Mode Selection

SW3 and **SW4** are used in conjunction to set the output mode of the 9913DA-AES75-RG. Refer to the section "**Setting the Output Mode**" for details.

SW5

This DIP Switch is not implemented.

SW6 – SW10 — Gain Control

These switches are used in conjunction to apply a specific Gain value (dB). Refer to the section "**Specifying the Gain**" for details.

Configuring the DIP Switches

This section provides a brief summary of the DIP Switches of the 9913DA-AES75-RG. Refer to **Figure 3.1** for the DIP Switch locations. **Figure 3.2** shows all the DIP Switches in the **OFF** position.
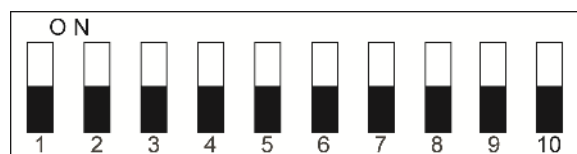
Figure 3.2 DIP Switch — OFF Positions

Enabling Card-edge Control

Ensure that **SW1** is set to **ON** and **SW2** is set to **ON** if you are going to use the card-edge DIP Switches to change settings on the card. You can still monitor the card status in DashBoard.

Setting the Output Mode

SW3 and **SW4** are used in conjunction to set the output mode of the 9913DA-AES75-RG. **Table 3.1** lists the combinations of DIP Switch settings for **SW3** and **SW4**.

Table 3.1 Setting the Output Mode

SW3	SW4	Mode Selected
OFF	OFF	Stereo
OFF	ON	Mono
ON	OFF	Left Only
ON	ON	Right Only

Specifying the Gain

SW6-SW10 are used in conjunction to specify the coarse level gain adjustment applied to the output of the 9913DA-AES75-RG. **Table 3.2** lists the combinations of DIP Switch settings for **SW6**-**SW10**.

Table 3.2 Specifying the Gain

SW6	SW7	SW8	SW9	SW10	Gain (dB)
OFF	OFF	OFF	OFF	OFF	UNITY
OFF	OFF	OFF	OFF	ON	1

SW6	SW7	SW8	SW9	SW10	Gain (dB)
OFF	OFF	OFF	ON	OFF	2
OFF	OFF	OFF	ON	ON	3
OFF	OFF	ON	OFF	OFF	4
OFF	OFF	ON	OFF	ON	5
OFF	OFF	ON	ON	OFF	6
OFF	OFF	ON	ON	ON	7
OFF	ON	OFF	OFF	OFF	8
OFF	ON	OFF	OFF	ON	9
OFF	ON	OFF	ON	OFF	10
OFF	ON	OFF	ON	ON	11
OFF	ON	ON	OFF	OFF	12
OFF	ON	ON	OFF	ON	13
OFF	ON	ON	ON	OFF	14
OFF	ON	ON	ON	ON	15
ON	OFF	OFF	OFF	OFF	UNITY
ON	OFF	OFF	OFF	ON	-1
ON	OFF	OFF	ON	OFF	-2
ON	OFF	OFF	ON	ON	-3
ON	OFF	ON	OFF	OFF	-4
ON	OFF	ON	OFF	ON	-5
ON	OFF	ON	ON	OFF	-6
ON	OFF	ON	ON	ON	-7
ON	ON	OFF	OFF	OFF	-8
ON	ON	OFF	OFF	ON	-9

SW6	SW7	SW8	SW9	SW10	Gain (dB)
ON	ON	OFF	ON	OFF	-10
ON	ON	OFF	ON	ON	-11
ON	ON	ON	OFF	OFF	-12
ON	ON	ON	OFF	ON	-13
ON	ON	ON	ON	OFF	-14
ON	ON	ON	ON	ON	-15

Control and Monitoring Features

This section provides information on the card-edge LEDs for the 9913DA-AES75-RG. Refer to **Figure 3.3** for the location of the LEDs.
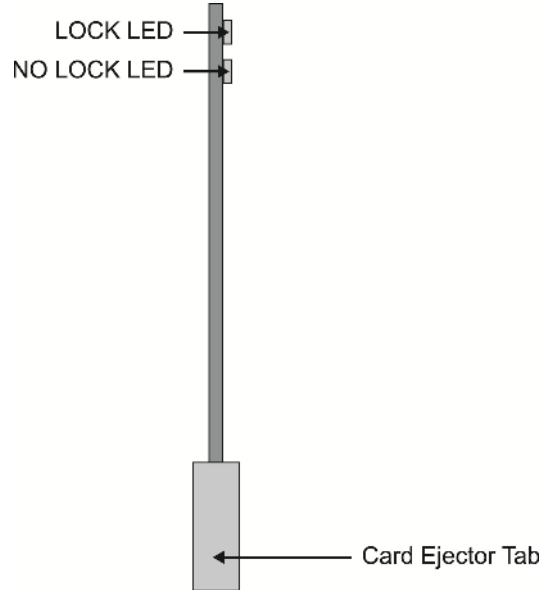
Figure 3.3 Card-edge User Controls

Status and Selection LEDs on the 9913DA-AES75-RG

Basic LED displays and descriptions are provided in **Table 3.3**.

Table 3.3 Selection and Status LED Descriptions

LED	Color	Display and Description
LOCK	Green	When lit, this LED indicates a valid AES/EBU input signal.
NO LOCK	Red	When lit, this LED indicates an invalid AES/EBU input signal.

DashBoard Menus

In This Chapter

This chapter briefly summarize the menus, items, and parameters available from the DashBoard Control System™ for the 9913DA-AES75-RG. Parameters marked with an asterisk (*) are the factory default values.

The following topics are discussed:

- Status Tabs
- Settings Tab

Status Tabs

This section summarizes the read-only information displayed in the Status tabs. The fields in the **Status** tabs vary in severity from green (valid), yellow (caution), to red (alarm). DashBoard reports the most severe alarm for a single field.

Status Tab

Table 4.1 summarizes the read-only information available in the **Status** tab.

Table 4.1 Status Tab

Tab Title	Item	Parameters	Description
Status (Read-only)	AES Audio Status	Locked (Green)	Card is functioning properly and a valid AES Audio signal is present
		Not Locked (Red)	AES audio signal is not present
	LKFS (10Sec)	#	Card reads and reports the ITU1770 LKFS Audio Measurements

Product Tab

Table 4.2 summarizes the read-only information available in the **Product** tab.

Table 4.2 Product Tab

Tab Title	Item	Parameters	Description
Product (Read-only)	Name	AES Processing Distribution Amplifier	
	Product	9913DA-AES75-RG	
	Supplier	Cobalt Digital Inc.	
	Serial Number	#	Indicates the serial number of the board
	Software Rev	#.##	Indicates the software version

Settings Tab

Table 4.3 summarizes the **Settings** options available in DashBoard.

Table 4.3 Settings Menu Items

Tab Title	Items	Parameters	Description
Settings	Mode	Mono	Channel A and B are summed together • Use the CHA Trim Control to alter the gain of the Channel A input • Use the CHB Trim Control to alter the gain of the Channel B input • Note that the STEREO Gain will adjust the output after the channels are summed.
		Stereo	Channel A and B are independent. • Use the CHA Trim Control to alter the gain of Channel A input • Use the CHB Trim Control to alter the gain of Channel B input • Note that the STEREO Gain will adjust the output of both channels
		L Only	Specifies Channel A as the output on both channels. • Use the CHA Trim Control to alter the output gain • The CHB Trim Control has no effect on the output • Note that the STEREO Gain will adjust the output Channel A only.
		R Only	Specifies Channel B as the output on both channels. • The CHA Trim Control has no effect on the output • Use the CHB Trim Control to alter the output gain • Note that the STEREO Gain will adjust the output Channel B only.
	STEREO Gain Control	0 to 100	Specifies the coarse level gain adjustment applied to the output of the card
	CH# Trim Control (dB)	-15 to +15	Alters the input gain for the specified channel. How the Mode is set determines what channels(s) the Trim Control affects.

Specifications

In This Chapter

This chapter provides technical specification details on the 9913DA-AES75-RG. Note that specifications are subject to change without notice.

The following topics are discussed:

- Technical Specifications

Technical Specifications

This section provides the technical specifications for the 9913DA-AES75-RG.

Table 5.1 9913DA-AES75-RG Technical Specifications

Category	Parameter	Specification
AES/EBU Digital Input	Number of Inputs	1
	Standards	AES-3id (SMPTE 276M)
	Sampling Rates	32kHz to 96kHz
	Impedance (transformer balanced)	75ohm
	Connector	BNC
	Input Level	0.2-7V p-p
AES/EBU Digital Outputs	Number of Outputs	R2-3001: 8
		R2S-3001: 4
	Standard	AES-3id (SMPTE 276M)
	Resolution	24Bit
	Return Loss	-25dB
	Impedance	75ohm
	Signal Level	1.0V p-p ±10%
	Rise and Fall Time	30-44ns
	Output Jitter	<5ns
Power	Max. Power Consumption	>2.2W

Service Information

In This Chapter

This chapter 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 9913DA-AES75-RG, the following basic troubleshooting checklist may help identify the source of the problem. If the card still does not appear to be working properly after checking all possible causes, please contact your openGear products distributor, or the Cobalt Digital 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 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. **Re-seat the Card in the Frame** — Eject the card and reinsert it in the frame.

4. **Check Control Settings —** Refer to the Installation and Operation sections of the manual and verify all user-adjustable component settings.

5. **Input Signal Status —** Verify that source equipment is operating correctly and that a valid signal is being supplied.

6. **Output Signal Path —** Verify that destination equipment is operating correctly and receiving a valid signal.

7. **Card Exchange** — Exchanging a suspect card with a card that is known to be working correctly is an efficient method for localizing problems to individual cards.

Warranty and Repair Policy

This product is warranted to be free from defects in material and workmanship for a period of five (5) years from the date of shipment to the original purchaser, except that 4000, 5000, 6000, 8000 series power supplies, and Dolby® modules (where applicable) are warranted to be free from defects in material and workmanship for a period of one (1) year.

Cobalt Digital Inc.'s ("Cobalt") sole obligation under this warranty shall be limited to, at its option, (i) the repair or (ii) replacement of the product, and the determination of whether a defect is covered under this limited warranty shall be made at the sole discretion of Cobalt.

This limited warranty applies only to the original end-purchaser of the product, and is not assignable or transferrable therefrom. This warranty is limited to defects in material and workmanship, and shall not apply to acts of God, accidents, or negligence on behalf of the purchaser, and shall be voided upon the misuse, abuse, alteration, or modification of the product. Only Cobalt authorized factory representatives are authorized to make repairs to the product, and any unauthorized attempt to repair this product shall immediately void the warranty. Please contact Cobalt Technical Support for more information.

To facilitate the resolution of warranty related issues, Cobalt recommends registering the product by completing and returning a product registration form. In the event of a warrantable defect, the purchaser shall notify Cobalt with a description of the problem, and Cobalt shall provide the purchaser with a Return Material Authorization ("RMA"). For return, defective products should be double boxed, and sufficiently protected, in the original packaging, or equivalent, and shipped to the Cobalt Factory Service Center, postage prepaid and insured for the purchase price. The purchaser should include the RMA number, description of the problem encountered, date purchased, name of dealer purchased from, and serial number with the shipment.

Cobalt Digital Inc. Factory Service Center

2506 Galen Drive	Office: (217) 344-1243
Champaign, IL 61821 USA	Fax: (217) 344-1245
www.cobaltdigital.com	Email: info@cobaltdigital.com

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COBALT'S LIABILITY, WHETHER IN CONTRACT, TORT, WARRANTY, OR OTHERWISE, IS LIMITED TO THE REPAIR OR REPLACEMENT, AT ITS OPTION, OF ANY DEFECTIVE PRODUCT, AND SHALL IN NO EVENT INCLUDE SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS), EVEN IF IT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

In Case of Problems

Should any problem arise with your 9913DA-AES75-RG, please contact the Cobalt Digital 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 9913DA-AES75-RG. If required, a temporary replacement module 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 Cobalt Digital will be shipped collect.

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

Notes:

Notes:

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

PHONE	**General Business Office and Technical Support**	217 • 344 • 1243
	Fax	217 • 344 • 1245
E-MAIL		
	Technical Support	Support@cobaltdigital.com
POSTAL SERVICE	**Cobalt Digital Inc.**	2506 Galen Drive Champaign, IL 61821

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