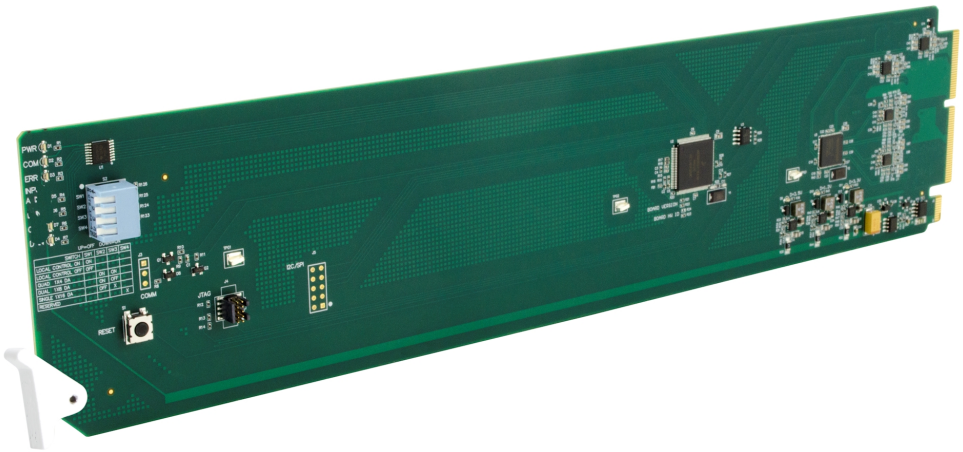
COBALT

9910DA



3G/HD/SD/ASI Multi-Rate DA
with x4 Output Crosspoint

- 9910DA-4Q-3G-RCK (Reclocking)
- 9910DA-2Q-3G-RCK (Reclocking)
- 9910DA-1Q-3G-RCK (Reclocking)
- 9910DA-4Q-3G (Non-Reclocking)
- 9910DA-2Q-3G (Non-Reclocking)
- 9910DA-1Q-3G (Non-Reclocking)

Product Manual

COBALT

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9910DA-3G-OM (V1.7)

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Congratulations on choosing the Cobalt® **9910DA** 3G/HD/SD/ASI Multi-Rate DA with x4 Output Crosspoint. (This manual covers the **9910DA** DA Quad-Channel (**4Q**), Dual-Channel (**2Q**), and Single-Channel (**1Q**) models, each available as Reclocking (**-RCK**) and Non-Reclocking). The 9910DA cards are part of a full line of modular processing and conversion gear for broadcast TV environments. The Cobalt Digital Inc. line includes video decoders and encoders, audio embedders and de-embedders, distribution amplifiers, format converters, remote control systems and much more. Should you have questions pertaining to the installation or operation of your card, please contact us at the contact information on the front cover.

Manual No.:	9910DA-3G-OM
Document Version:	V1.7
Release Date:	June 14, 2021
Applicable for Firmware Version (or greater):	2.1.1
Description of product/manual changes:	- Clarify card-edge local control modes for all model variants including **-1Q** and **-2Q** model variants. - Edit manual to show enhanced rear module labeling views.

Table of Contents

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Chapter 1

Introduction

Overview

This manual provides installation and operating instructions for the 9910DA Multi-Rate DA with x4 Output Crosspoint cards (also collectively referred to herein as the 9910DA).

Note: This manual covers the 9910DA-series, which consists of the:

- **9910DA-4Q-3G-RCK** 3G/HD/SD-SDI Quad-Channel Multi-Rate Reclocking DA with x4 Output Crosspoint (and non-reclocking version **9910DA-4Q-3G**)
- **9910DA-2Q-3G-RCK** 3G/HD/SD-SDI Dual-Channel Multi-Rate Reclocking DA with x4 Output Crosspoint (and non-reclocking version **9910DA-2Q-3G**)
- **9910DA-1Q-3G-RCK** 3G/HD/SD-SDI Single-Channel Multi-Rate Reclocking DA (and non-reclocking version **9910DA-1Q-3G**)

These cards vary primarily as having (or not having) a multi-input crosspoint, and the I/O size of the crosspoint. Where differences exist, the differences are described for each individual model.

This manual consists of the following chapters:

- **Chapter 1, "Introduction"** – Provides information about this manual and what is covered. Also provides general information regarding the 9910DA.
- **Chapter 2, "Installation and Setup"** – Provides instructions for installing the 9910DA in a frame, and optionally installing a 9910DA Rear I/O Module.
- **Chapter 3, "Operating Instructions"** – Provides overviews of operating controls and instructions for using the 9910DA.

This chapter contains the following information:

Manual Conventions

In this manual, display messages and connectors are shown using the exact name shown on the 9910DA itself (for example, connector names are shown like this: **SDI IN A)**

In this manual, the terms below are applicable as follows:

- **Frame** refers to the HPF-9000, oGx, OG3-FR, 8321, or similar 20-slot frame that houses Cobalt® or other cards.
- **Device** and/or **Card** refers to a Cobalt® or other card.
- **System** and/or **Video System** refers to the mix of interconnected production and terminal equipment in which the 9910DA and other cards operate.

Warnings, Cautions, and Notes

Certain items in this manual are highlighted by special messages. The definitions are provided below.

Warnings

Warning messages indicate a possible hazard which, if not avoided, could result in personal injury or death.

Cautions

Caution messages indicate a problem or incorrect practice which, if not avoided, could result in improper operation or damage to the product.

Notes

Notes provide supplemental information to the accompanying text. Notes typically precede the text to which they apply.

Labeling Symbol Definitions

	Important note regarding product usage. Failure to observe may result in unexpected or incorrect operation.
	Electronic device or assembly is susceptible to damage from an ESD event. Handle only using appropriate ESD prevention practices. If ESD wrist strap is not available, handle card only by edges and avoid contact with any connectors or components.
	Symbol (WEEE 2002/96/EC) For product disposal, ensure the following: • Do not dispose of this product as unsorted municipal waste. • Collect this product separately. • Use collection and return systems available to you.

Safety Summary

Warnings

! WARNING ! **To reduce risk of electric shock do not remove line voltage service barrier cover on frame equipment containing an AC power supply. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

Cautions

CAUTION **This device is intended for environmentally controlled use only in appropriate video terminal equipment operating environments.**

CAUTION **This product is intended to be a component product of an openGear® or equivalent frame. Refer to the frame Product Manual for important safety instructions regarding the proper installation and safe operation of the frame as well as its component products.**

CAUTION **If required, make certain Rear I/O Module(s) is installed before installing the 9910DA into the frame slot. Damage to card and/or Rear I/O Module can occur if module installation is attempted with card already installed in slot.**

CAUTION **If card resists fully engaging in rear I/O module mating connector, check for alignment and proper insertion in slot tracks. Damage to card and/or rear I/O module may occur if improper card insertion is attempted.**

9910DA Functional Description

Figure 1-1 shows a functional block diagram of the 9910DA. With the appropriate rear module, the 9910DA can provide up to 16 DA video outputs.

Input/Output Formats

The 9910DA provides the following inputs and outputs:

Note: -**4Q** (Quad) models have four SDI inputs (**SDI IN A** thru **D**)
-**2Q** (Dual) models have two SDI inputs (**SDI IN A** and **B**)
-**1Q** (Single) models has one SDI input (**SDI IN A** only)

- **Inputs:**
  - **3G/HD/SD-SDI IN (A-D)** – four coaxial 3G/HD/SD-SDI / ASI video inputs
- **Outputs:**
  - **3G/HD/SD-SDI IN (1-16)** – up to 16 coaxial 3G/HD/SD-SDI / ASI video outputs. All outputs are non-inverting and can be used as SDI or ASI outputs.

Remote/Local Control

The 9910DA is equipped with card-edge controls that allow limited control such as distribution mode. When card-edge control is enabled, DashBoard™ remote control is disabled (and vice-versa).

Reclock Select (-RCK Models Only)

Reclocking can be individually enabled or disabled for any of the 4-output card DA quadrants. (As shown in Figure 1-1, the card applies its up to four inputs to an output crosspoint block which in turn feeds up to four quad DA quadrant blocks, each with selectable reclock enable/disable.)

9910DA Rear I/O Modules

The 9910DA physically interfaces to system video connections at the rear of its frame using a Rear I/O Module. The full assortment of 9910DA Rear I/O Modules is shown and described in 9910DA Rear I/O Modules (p. 2-7) in Chapter 2, “Installation and Setup”.

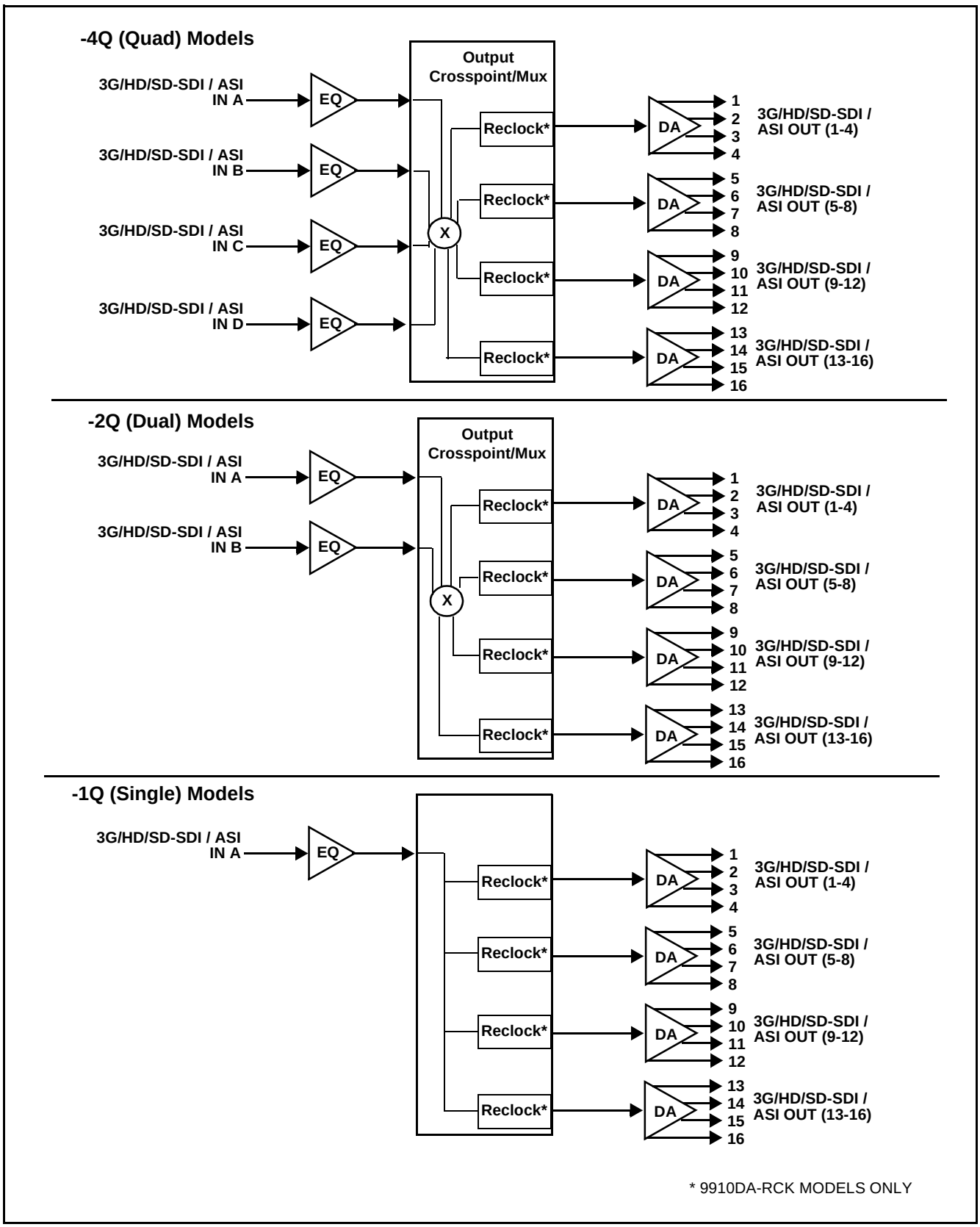

Figure 1-1 9910DA Functional Block Diagram

Technical Specifications

Table 1-1 lists the technical specifications for the 9910DA cards.

Table 1-1 Technical Specifications

Item	Characteristic
Part number, nomenclature	• **9910DA-4Q-3G-RCK** 3G/HD/SD/ASI Quad-Channel Multi-Rate Reclocking DA with x4 Output Crosspoint card • **9910DA-4Q-3G** 3G/HD/SD/ASI Quad-Channel Multi-Rate DA with x4 Output Crosspoint (Non-Reclocking) card • **9910DA-2Q-3G-RCK** 3G/HD/SD/ASI Dual-Channel Multi-Rate Reclocking DA with x4 Output Crosspoint card • **9910DA-2Q-3G** 3G/HD/SD/ASI Dual-Channel Multi-Rate DA with x4 Output Crosspoint (Non-Reclocking) card • **9910DA-1Q-3G-RCK** 3G/HD/SD/ASI Single-Channel Multi-Rate Reclocking DA card • **9910DA-1Q-3G** 3G/HD/SD/ASI Single-Channel Multi-Rate DA (Non-Reclocking) card
Installation/usage environment	Intended for installation and usage in frame meeting openGear™ modular system definition.
Power consumption	< 3 Watts maximum
Installation Density	Up to 10 cards per 20-slot frame
Environmental: Operating temperature: Relative humidity (operating or storage):	 32° – 104° F (0° – 40° C) < 95%, non-condensing
Frame communication	10/100/1000 Mbps Ethernet with Auto-MDIX.
Indicators	Card edge display and indicators as follows: • Status/Error LED indicator • Input Presence LED indicators
3G/HD/SD-SDI / ASI Inputs	(4) 75Ω coaxial inputs; max (A thru D) SDI Formats Supported: SMPTE 259M, SMPTE 292M, SMPTE 424M SDI Return Loss: >15 dB up to 1.485 GHz; >10 dB up to 2.970 GHz
Receive Performance (Cable Length; Belden 1694A)	3 Gbps: 120m 1.485 Gbps: 160m 143-360 Mbps: 400m
3G/HD/SD-SDI / ASI Outputs	(4x4) 75Ω coaxial outputs (16 total) Signal Level: 800 mV nominal Return Loss: >15 dB at 5 MHz - 1.485 GHz Jitter (wideband): HD < 0.2 UI

Warranty and Service Information

Cobalt Digital Inc. Limited Warranty

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.

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- Product information and pricing
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Chapter 2

Installation and Setup

Overview

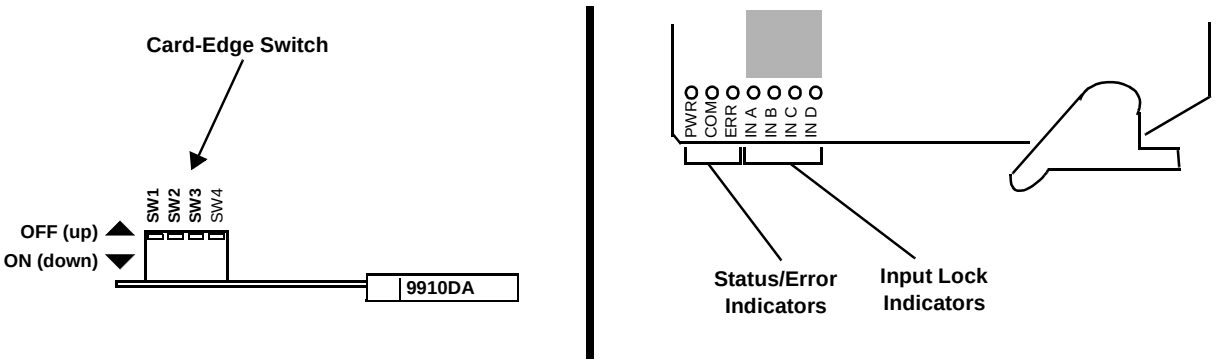
This chapter contains the following information:

Card-Edge Switches and Monitoring

CAUTION

	**This device contains semiconductor devices which are susceptible to serious damage from Electrostatic Discharge (ESD). ESD damage may not be immediately apparent and can affect the long-term reliability of the device.** **Always use proper ESD handling precautions and equipment when working on circuit boards and related equipment.**

Figure 2-1 shows and describes the card-edge switches which can be used to provide limited card control without requiring a remote control connection (local control).



SW1	SW2	SW3	Mode
OFF ON	—	—	Remote Control Local (card-edge) Control
—	ON	ON	Quad 1x4 DA (uses IN A thru IN D) (**-4Q** models only)
—	ON	OFF	Dual 1x8 DA (uses IN A and IN B) (**-4Q** and **-2Q** models only)
—	OFF	—	Single 1x16 DA (uses IN A)

Note: • When using card-edge control, DA modes are limited to inputs listed. When using remote control, inputs to the four quad or dual DA blocks can be sourced as desired and as supported by rear I/O module connector count.

• When using card-edge control, displayed DashBoard routing settings may not reflect actual fixed card-edge routing.

⚠ • SW4 is reserved.

• Setting switch SW1 to **local** locks out remote control of the card.

Figure 2-1 9910DA Card-Edge Switches

Input/Output Routing With Card in Card-Edge (Local) Control Mode

When the card is set for card-edge (local) control, only fixed quad 1x4, dual 1x8 (-**4Q** and **-2Q** models only), and single 1x16 routing is available using dedicated input and output ports. When using any of these fixed modes, the rear I/O module used must be compatible with the mode. (See 9910DA Rear I/O Modules (p. 2-7) for rear module details.) Figure 2-2 shows the fixed routing available using local control and compatible rear modules.

In card-edge (local) control mode, I/O routing is fixed to certain input and output ports. Also, when a mode is selected that uses less than the four maximum inputs (**SDI IN A** thru **SDI IN D**), only certain inputs are available.

The figure below shows I/O routing for the three fixed card-edge DA modes for various rear modules.

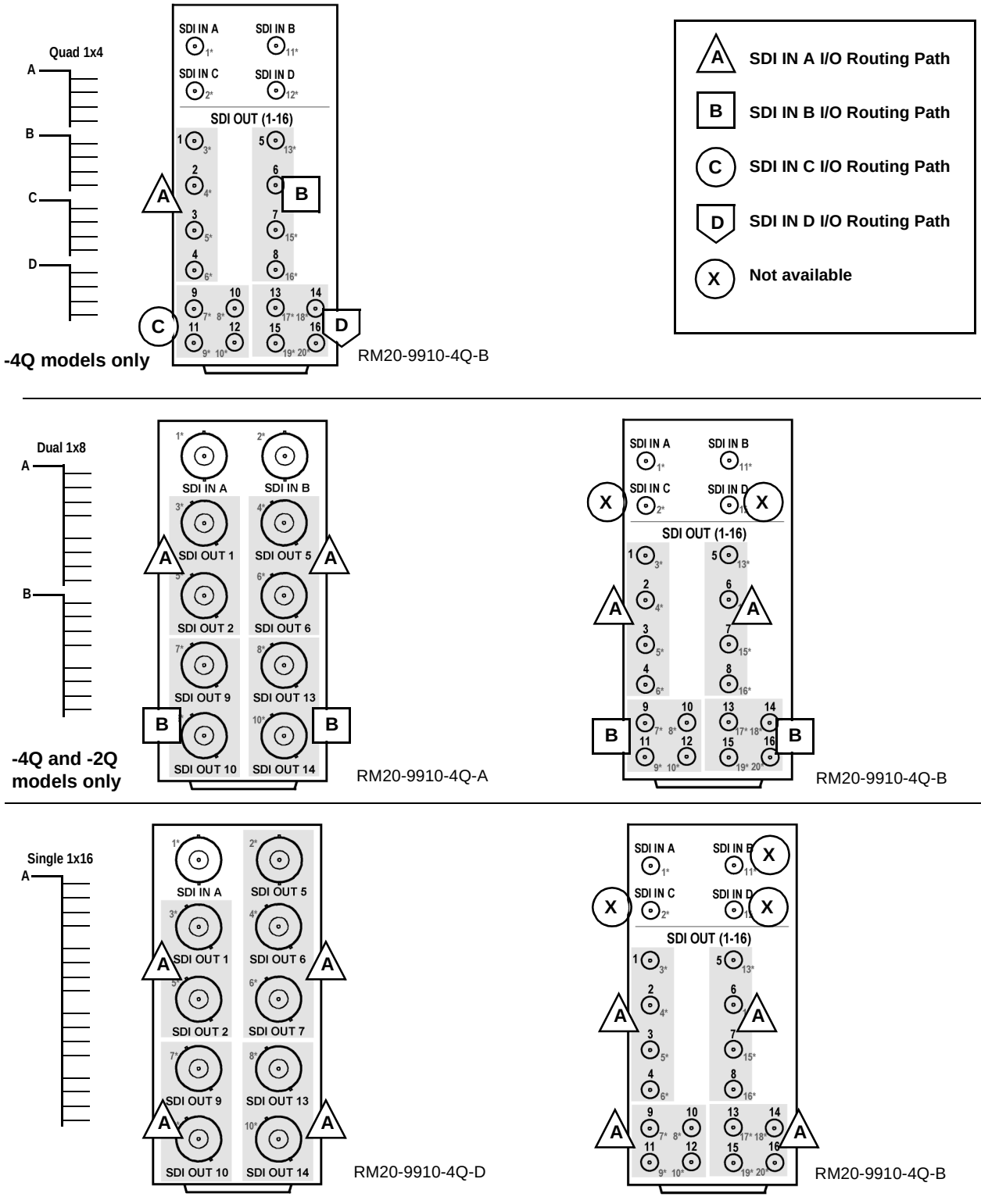


Figure 2-2 Input/Output Routing (Card-Edge (Local) Control Mode)

Installing the 9910DA Into a Frame Slot

CAUTION

This device contains semiconductor devices which are susceptible to serious damage from Electrostatic Discharge (ESD). ESD damage may not be immediately apparent and can affect the long-term reliability of the device.

Avoid handling circuit boards in high static environments such as carpeted areas, and when wearing synthetic fiber clothing. Always use proper ESD handling precautions and equipment when working on circuit boards and related equipment.

Note: **If installing the 9910DA in a slot with no rear I/O module, a Rear I/O Module is required** before cabling can be connected. Refer to Installing a Rear I/O Module (p. 2-5) for rear I/O module installation procedure.

CAUTION

If required, make certain Rear I/O Module(s) is installed before installing the 9910DA into the frame slot. Damage to card and/or Rear I/O Module can occur if module installation is attempted with card already installed in slot.

Note: Check the packaging in which the 9910DA was shipped for any extra items such as a Rear I/O Module connection label. In some cases, this label is shipped with the card and to be installed on the Rear I/O connector bank corresponding to the slot location of the card.

Install the 9910DA into a frame slot as follows:

1. Determine the slot in which the 9910DA is to be installed.
2. Open the frame front access panel.
3. While holding the card by the card edges, align the card such that the plastic ejector tab is on the bottom.
4. Align the card with the top and bottom guides of the slot in which the card is being installed.
5. Gradually slide the card into the slot. When resistance is noticed, gently continue pushing the card until its rear printed circuit edge terminals engage fully into the rear I/O module mating connector.

CAUTION

If card resists fully engaging in rear I/O module mating connector, check for alignment and proper insertion in slot tracks. Damage to card and/or rear I/O module may occur if improper card insertion is attempted.

6. Verify that the card is fully engaged in rear I/O module mating connector.

7. Close the frame front access panel.

8. Connect the input and output cables as shown in 9910DA Rear I/O Modules (p. 2-7).

9. Repeat steps 1 through 8 for other 9910DA cards.

Note: To remove a card, press down on the ejector tab to unseat the card from the rear I/O module mating connector. Evenly draw the card from its slot.

Note: If installing a card in a frame already equipped for, and connected to DashBoard™, no network setup is required for the card. The card will be discovered by DashBoard™ and be ready for use.

Installing a Rear I/O Module

Note: This procedure is applicable **only if a Rear I/O Module is not currently installed** in the slot where the 9910DA is to be installed.

If installing the 9910DA in a slot already equipped with a suitable I/O module, omit this procedure.

Install a Rear I/O Module as follows:

1. On the frame, determine the slot in which the 9910DA is to be installed.

2. In the mounting area corresponding to the slot location, install Rear I/O Module as shown in Figure 2-3.

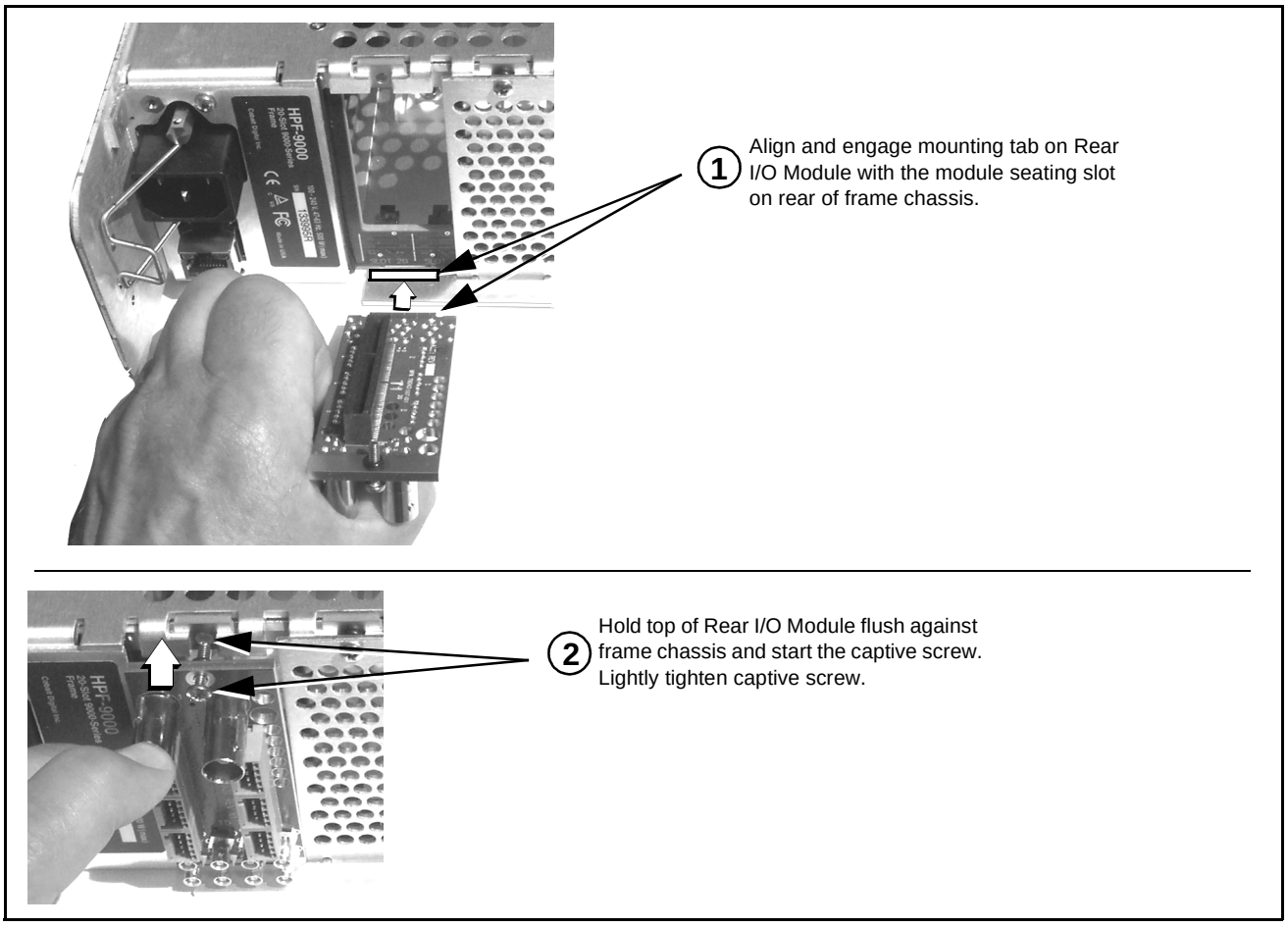


Figure 2-3 Rear I/O Module Installation

9910DA Rear I/O Modules

Table 2-1 shows and describes the full assortment of Rear I/O Modules specifically for use with the 9910DA cards.

Table 2-1 9910DA Rear I/O Modules

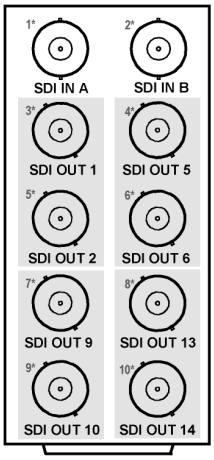
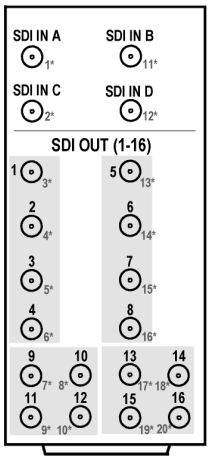
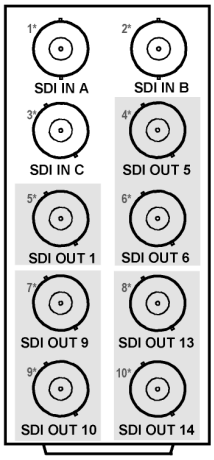
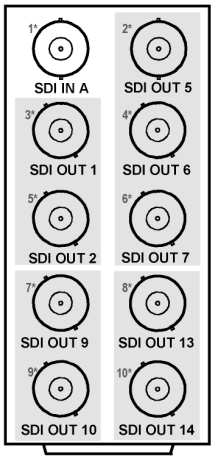
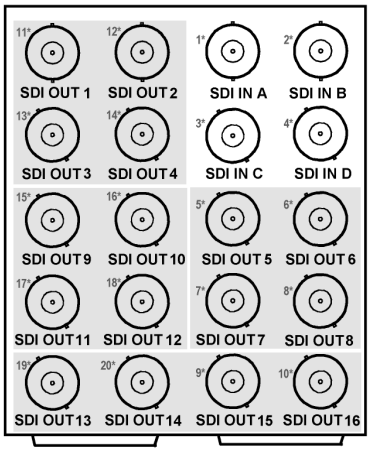
9910DA Rear I/O Module	Description
Note: • Rear I/O Module output designations here correlate to output numbers for four DA quadrants as shown in the card block diagram (for example, SDI OUT 3 in diagrams below is tied to (driven from) DA quadrant "SDI Out (1-4)" in the block diagram; SDI OUT 5 in diagrams below is tied to (driven from) DA quadrant "SDI Out (5-8)" in the block diagram, and so on). As such, SDI outputs within a quadrant group can only be sourced from a particular input at one time (for example, if the card is set to feed SDI IN A to quadrant SDI Out (1-4), the rear module outputs 1 thru 4 will all output SDI IN A). Dissimilar inputs cannot be routed within a quadrant group (for example, SDI OUT 1 sourced from SDI IN A and SDI OUT 2 sourced from SDI IN B). • **SDI IN C** and **SDI IN D** are NC on **-2Q** (Dual-Channel) models. **SDI IN B** thru **SDI IN D** are NC on **-1Q** (Single-Channel) models. • Connector numbers with asterisks (*) here denote the connector generic designation number screened on the rear module PCB.	
RM20-9910-A **Note:** When this rear module is used DashBoard or local control should only be set to use SDI IN A and/or SDI IN B. Either of these inputs can be routed to any of the output quadrant groupings shown (grouping shown in shaded areas). When local control instead of DashBoard is used, input routing to output groups on this rear module is fixed. The outputs shown here are all that is available using this rear module, with these outputs being a reduced subset of the maximum 16 available outputs. (For example, this rear module offers a reduced subset of DA quadrant SDI Out (1-4) (shown in the block diagram) consisting of SDI OUT 1 and SDI OUT 2 only.) See Product Manual for more information. 	Provides the following connections: • Two SDI/ASI video input BNCs (**SDI IN A** and **SDI IN B**) • Eight DA outputs: **SDI OUT 1 / 2** **SDI OUT 5 / 6** **SDI OUT 9 / 10** **SDI OUT 13 / 14**
RM20-9910-B 	Provides the following connections: • Four SDI/ASI video inputs (**SDI IN A** thru **SDI IN D**) • 16 DA outputs (**SDI OUT 1** thru **SDI OUT 16**) **Note:** Available equipped with High-Density BNC (HDBNC) or DIN1.0/2.3 connectors as: RM20-9910-B-HDBNC or RM20-9910-B-DIN, respectively.

Table 2-1 9910DA Rear I/O Modules — continued

9910DA Rear I/O Module	Description
RM20-9910-C **Note:** When this rear module is used DashBoard or local control should only be set to use SDI IN A, SDI IN B and/or SDI IN C. Any of these inputs can be routed to any of the output quadrant groupings shown (groupings shown in shaded areas). When local control instead of DashBoard is used, input routing to output groups on this rear module is fixed. The outputs shown here are all that is available using this rear module, with these outputs being a reduced subset of the maximum 16 available outputs. (For example, this rear module offers a reduced subset of DA quadrant SDI Out (5-8) (shown in the block diagram) consisting of SDI OUT 5 and SDI OUT 6 only.) See Product Manual for more information. 	Provides the following connections: • Three SDI/ASI video inputs (**SDI IN A** thru **SDI IN C**) • Seven DA outputs: **SDI OUT 1** **SDI OUT 5 / 6** **SDI OUT 9 / 10** **SDI OUT 13 / 14**
RM20-9910-D **Note:** When this rear module is used DashBoard or local control should only be set to use SDI IN A. This input can be routed to any of the output quadrant groupings shown (grouping shown in shaded areas). When local control instead of DashBoard is used, input routing to output groups on this rear module is fixed. The outputs shown here are all that is available using this rear module, with the outputs being a reduced subset of the maximum available 16 outputs. (For example, this rear module offers a reduced subset of DA quadrant SDI Out (1-4) (shown in the block diagram) consisting of SDI OUT 1 and SDI OUT 2 only.) See Product Manual for more information. 	Provides the following connections: • One SDI/ASI video inputs (**SDI IN A**) • Nine DA outputs: **SDI OUT 1 / 2** **SDI OUT 5** / **6 / 7** **SDI OUT 9 / 10** **SDI OUT 13 / 14**
RM20-9910-E 	Provides the following connections: • Four SDI/ASI video inputs (**SDI IN A** thru **SDI IN D**) • 16 DA outputs (**SDI OUT 1** thru **SDI OUT 16**)

Chapter 3

Operating Instructions

Overview

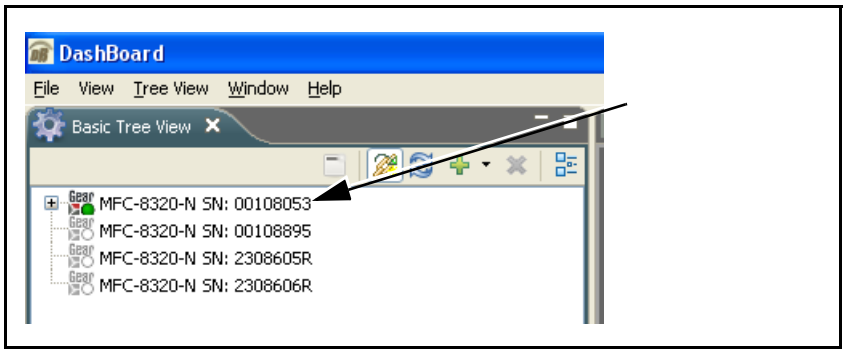
This chapter contains the following information:

Accessing the 9910DA Card via Remote Control

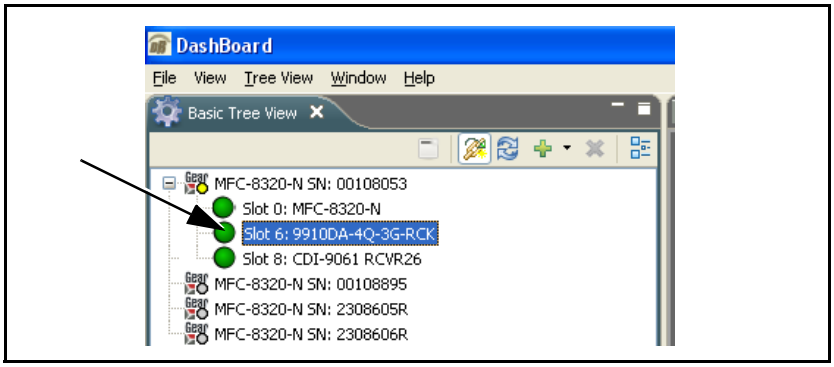
The 9910DA card can be remote monitored via DashBoard™ or Cobalt® Remote Control Panel. Access the 9910DA card using DashBoard™ or Cobalt® Remote Control Panel as described below.

Accessing the 9910DA Card Using DashBoard™

1. On the computer connected to the frame LAN, open DashBoard™.
2. As shown below, in the left side Basic View Tree locate the Network Controller Card associated with the frame containing the 9910DA card to be accessed (in this example, “MFC-8320-N SN: 00108053”).



3. As shown below, expand the tree to access the cards within the frame. Click on the card to be accessed (in this example, “Slot 6: 9910DA-4Q-3G-RCK”).



Checking 9910DA Card Information and Status

The operating status of the 9910DA card can be checked using DashBoard™. Figure 3-1 shows and describes the 9910DA card information screen using DashBoard™.

The **Tree View** shows the cards seen by DashBoard™. In this example, Network Controller Card is hosting a 9910DA-4Q-3G card in slot 18.

Card Status/Info Display
This displays shows the 9910DA operating status.

The **Product Info** sub-tab shows product identification and firmware version and other details.

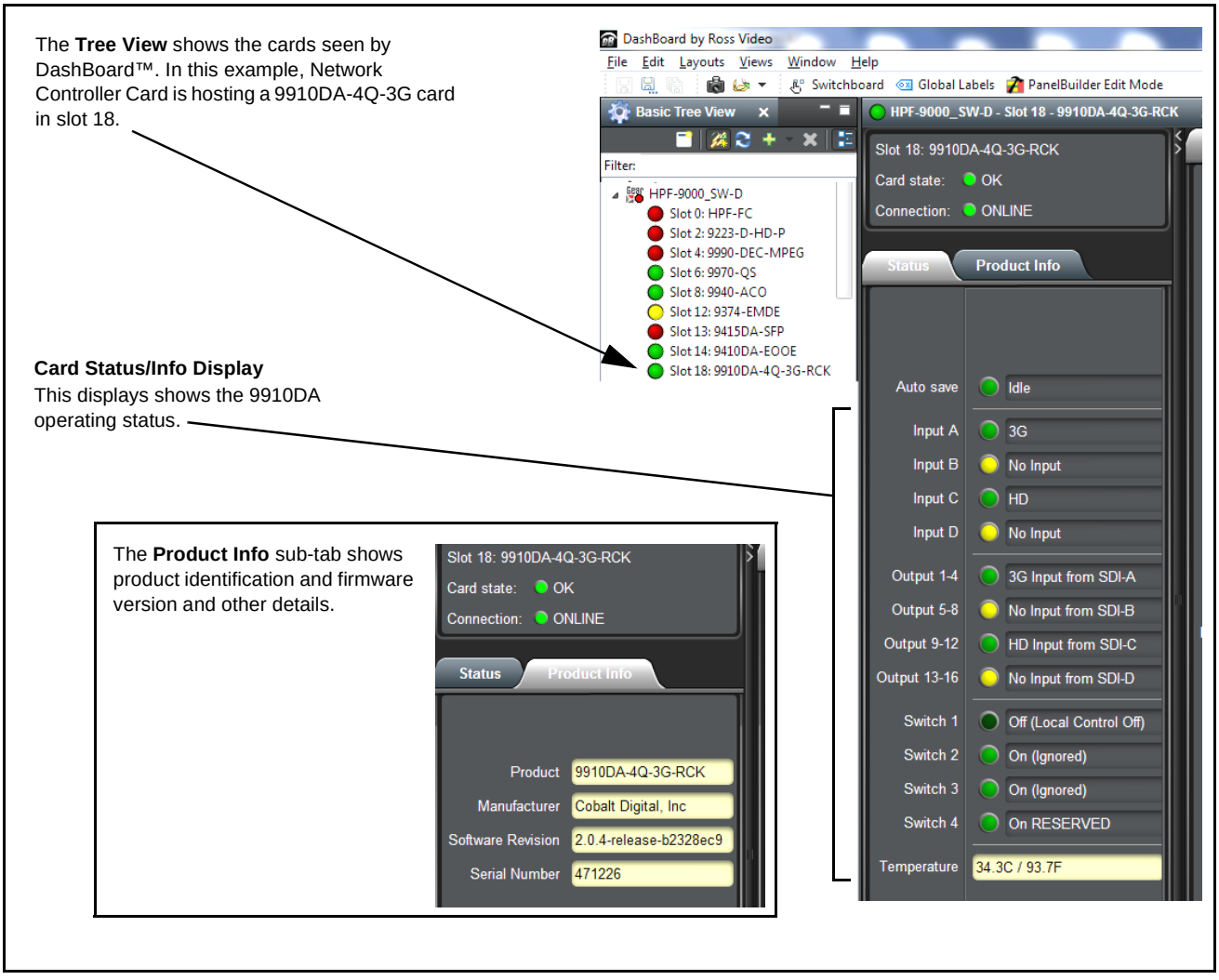


Figure 3-1 9910DA Card Info/Status Utility

9910DA Function Menu List and Descriptions

Table 3-1 individually lists and describes each 9910DA function menu and its related list selections, controls, and parameters. Where helpful, examples showing usage of a function are also provided. Table 3-1 is primarily based upon using DashBoard™ to access each function and its corresponding menus and parameters.

Note: If card edge control is to be used for card DA mode, refer to Card-Edge Switches and Monitoring (p. 2-1) in Installation and Setup, Chapter 2.

Table 3-1 9910-DA-4Q-3G Function Menu List

Output Source	Provides card input-to-output crosspoint routing matrix controls and input failover selection.
Note: 4-channel input (**-4Q** models) controls are shown below. -**2Q** models have only inputs **Input A** and **Input B**. **-1Q** models **do not** have the Output Source tab/page and crosspoint shown here.	
• **Output Source Select**	Selects the input routing for each of the four 4x DA output quadrants. Any of the four 4x DA output quadrants can be sourced from any of the up to four card inputs.

Four columns **Output 1-4** thru **Output 13-16** (corresponding to the four output DA quadrant groups) have buttons which select input routing to each group. (In this example, the four inputs are distributed across the four available output groups.)

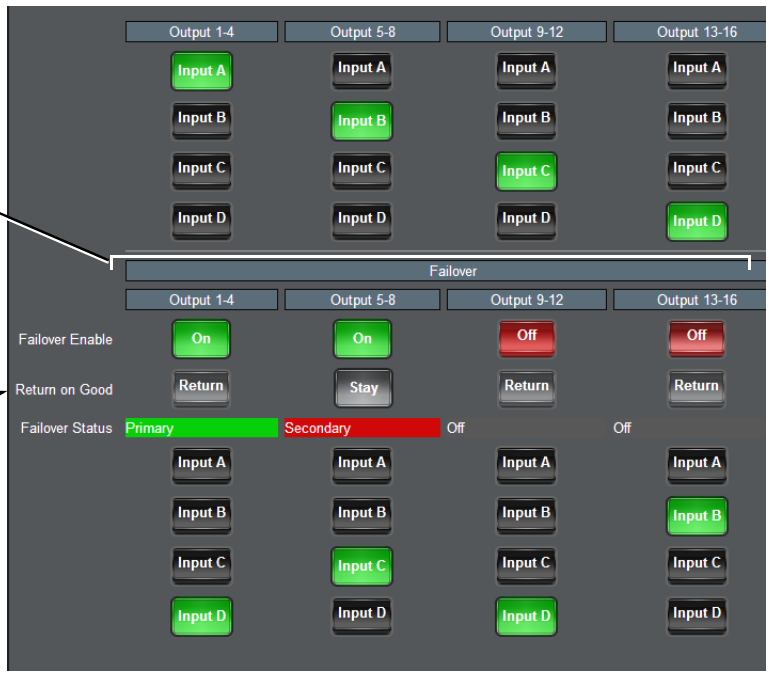
Any input can be applied to **any** output group as desired.

Failover columns allow selecting failover inputs for each output DA group. (In this example, Output group **5-8** has Primary of **Input B**, with failover of I**nput C** selected and in effect).

Failover Status shows whether **Primary** or **Secondary** (failover) input is currently in effect.

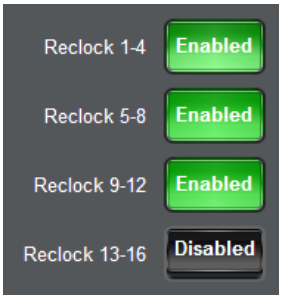
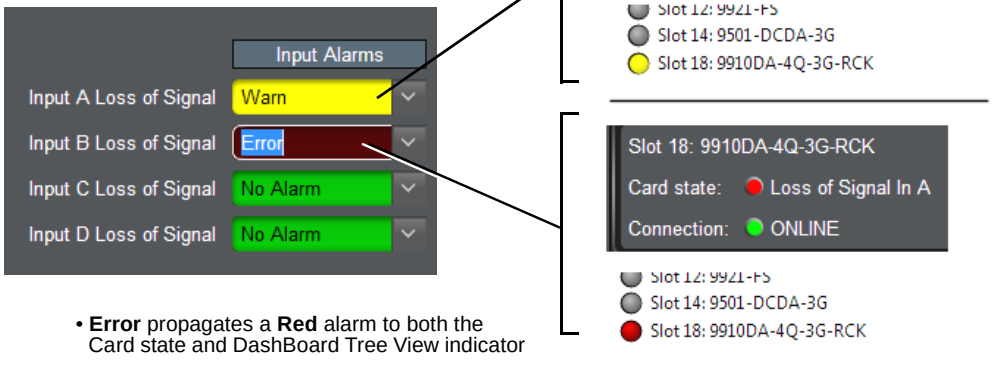
Return on good selects the action taken for the associated output should the selected Primary input again show lock:

- **Return** setting forces the locked Primary input to be unconditionally used again following a failover.
- **Stay** setting forces the Secondary input to be retained as the input even if the Primary input again appears. (This is useful if it's assumed that the Primary input can no longer be "trusted" and it is desired to avoid using the Primary input until further investigated and remedied.)



Note: If **Stay** is selected, it will be necessary to set **Return on good** to **Return** to again allow the Primary input to be used.

Table 3-1 9910-DA-4Q-3G Function Menu List — continued

<table>
<tr><td>Reclock Output</td><td>(-RCK models only) Provides reclock enable/disable for each of the four DA quadrants.</td></tr>
<tr><td>• Reclock Enable/Disable
 
</td><td>Sets reclocking as enabled or disabled for each of the four DA quadrants.
In this example, with the card being used as a quad 1x4 DA with an ASI input feeding quadrant 13-16 with other inputs as SDI, Disabled setting for 13-16 accommodates ASI on this path while providing reclocking for the other paths that are passing SDI.
Note: Reclocking Enabled provides automatic reclocking that sets reclocking automatically for SMPTE 259M, 292M, and 424M SDI signals. Disable setting forces disable regardless of signal detected.
If passing signals such as ASI or MADI, it is recommended to set the path carrying these signal type to Disabled.</td></tr>
<tr><td>Alarms</td><td>For each input, provides independent controls for setting up input LOS alarm propagation to Card state and DashBoard tree view alarm indicators/messages.</td></tr>
<tr><td colspan="2">• Warn propagates a Yellow alarm to both the Card state and DashBoard Tree View indicator
 

• Error propagates a Red alarm to both the Card state and DashBoard Tree View indicator

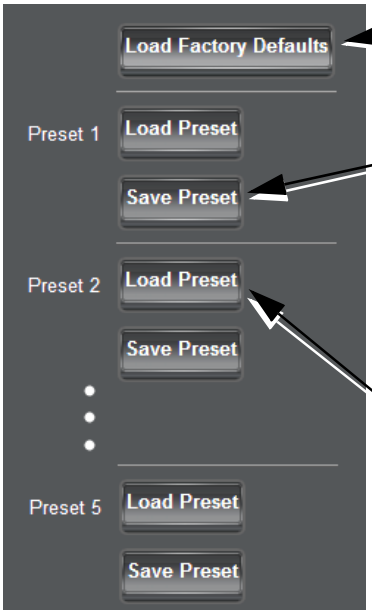
Note: For any unused inputs, set control for No Alarm to avoid nuisance false alarms.</td></tr>
</table>

Table 3-1 9910-DA-4Q-3G Function Menu List — continued

Presets	Allows user control settings to be saved in a Preset and then loaded (recalled) with a one-button press as desired. Presets also provides a one-button restore of factory default settings.

The **Presets** tab offers five presets (**Preset 1** thru **Preset 5**) where unique user custom settings can be saved. Any custom user control settings state can be saved to a preset, including:

- All **Output Source** (crosspoint) tab settings (including Failover routing and actions settings).
- All **Network Settings** tab settings.
- All **Reclock Output** tab settings.
- All **Alarm** tab settings.

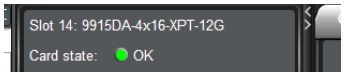


To restore factory defaults from any custom settings or engaged preset, press **Restore Factory Defaults**. (Saved presets can be invoked again if desired by selecting and loading the preset as shown below.)

To save custom settings, press **Save Preset** of the desired preset number to which the states are to be saved. When Save Preset is pressed, a **Confirm** pop-up appears.

To load an already-saved preset, press **Load Preset** of the desired preset number to be loaded. When Load Preset is pressed, a **Confirm** pop-up appears.

Note: • Before saving custom states to a preset, make certain **Card state** indicator on Card Info pane shows green — **OK**. If **Save** is pressed before **OK** (green), intended changes may not be saved to the preset.



- Pressing **Restore Factory Defaults** will restore all basic factory routing (including disabling any failover settings).
- Even if **Restore Factory Defaults** is invoked, any saved preset can be recalled and invoked using the Load Preset function described above.

Troubleshooting

This section provides general troubleshooting information and specific symptom/corrective action for the card and its remote control interface. The card requires no periodic maintenance in its normal operation; if any error indication (as described in this section) occurs, use this section to correct the condition.

DashBoard™ Status/Error Indicators and Displays

Figure 3-2 shows and describes the DashBoard™ status indicators and displays. These indicator icons and displays show status and error conditions relating to the 9910DA card itself and remote (network) communications.

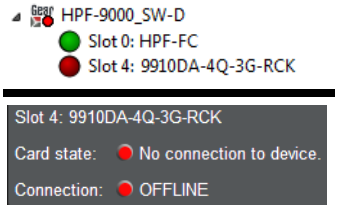
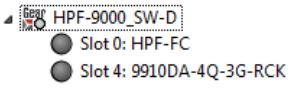
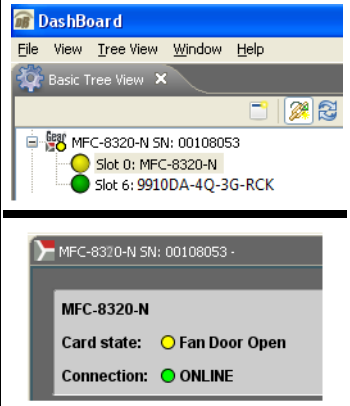
Indicator Icon or Display	Error Description
	Red indicator icon in Card Access/Navigation Tree pane shows card with Error condition (in this example, the Card Access/Navigation Tree pane shows a general error issued by the 9910DA card in slot 4). Specific errors are displayed in the Card Info pane (in this example “No connection to device” indicating 9910DA card is not connecting to frame/LAN).
	Gray indicator icon in Card Access/Navigation Tree pane shows card(s) are not being seen by DashBoard™ due to lack of connection to frame LAN (in this example, both a 9910DA card in slot 4 and the HPF-FC Network Controller Card for its frame in slot 0 are not being seen).
	Yellow indicator icon in Card Access/Navigation Tree pane shows card with Alert condition (in this example, the Card Access/Navigation Tree pane shows a general alert issued by the MFC-8320-N Network Controller Card). Clicking the card slot position in the Card Access/Navigation Tree (in this example Network Controller Card “Slot 0: MFC-8320-N”) opens the Card Info pane for the selected card. In this example, a “Fan Door Open” specific error is displayed.

Figure 3-2 DashBoard™ Status Indicator Icons and Displays

Basic Troubleshooting Checks

Failures of a general nature (affecting many cards and/or functions simultaneously), or gross inoperability errors are best addressed first by performing basic checks before proceeding further. Table 3-2 provides basic system checks that typically locate the source of most general problems. If required and applicable, perform further troubleshooting in accordance with the other troubleshooting tables in this section.

Table 3-2 Basic Troubleshooting Checks

Item	Checks

Verify power presence and characteristics	• On both the frame Network Controller Card and the 9910DA, in all cases when power is being properly supplied there is always at least one indicator illuminated. Any card showing no illuminated indicators should be cause for concern.
	• Check the Power Consumed indication for the 9910DA card. This can be observed using the DashBoard™ Card Info pane.
	  • If display shows **no** power being consumed, either the frame power supply, connections, or the 9910DA card itself is defective.
	  • If display shows **excessive** power being consumed (see Technical Specifications (p. 1-6) in Chapter 1, “Introduction”), the 9910DA card may be defective.

Check Cable connection secureness and connecting points	Make certain all cable connections are fully secure (including coaxial cable attachment to cable ferrules on BNC connectors). Also, make certain all connecting points are as intended. Make certain the selected connecting points correlate to the intended card inputs and/or outputs. Cabling mistakes are especially easy to make when working with large I/O modules.
Card seating within slots	Make certain all cards are properly seated within its frame slot. (It is best to assure proper seating by ejecting the card and reseating it again.)
Check status indicators and displays	On both DashBoard™ and the 9910DA card edge indicators, red indications signify an error condition. If a status indicator signifies an error, proceed to the following tables in this section for further action.
Check card-edge switch settings	Refer to Chapter 2, Setup and Installation. Make certain switches are set for intended control mode (local or remote). If set for local, remote control is locked out.
Troubleshoot by substitution	All cards within the frame can be hot-swapped, replacing a suspect card or module with a known-good item.

9910DA Processing Error Troubleshooting

Table 3-3 provides card processing troubleshooting information. If the card exhibits any of the symptoms listed in Table 3-3, follow the troubleshooting instructions provided.

In the majority of cases, most errors are caused by simple errors where the card is not appropriately set for the signal(s) to be received by the card.

Table 3-3 Troubleshooting Processing Errors by Symptom

Symptom	Error/Condition	Corrective Action
DashBoard™ shows red icon (No Signal) in Card Info pane.	No video input present on a source input	Make certain intended video sources are connected to appropriate card video inputs. Make certain coaxial cable connections between Rear I/O Module for the card and signal source are OK.
Routing not as expected; unexpected sources present on destination outputs.	Failover not set as expected	Failover (when enabled and LOS occurs) may return to desired Primary input source or stay on Secondary input source until forced to use Primary. See Failover Function (p. 3-3) and make certain failover settings are set as desired.
Card will not save presets.	Memory needs reset (rare condition corrected in latest firmware releases)	1. Power-down card (pull from frame enough to access DIP switch). 2. Set SW4 to ON (down) position. 3. Push card back into slot to power-up card again. 4. Immediately (within 3 seconds) set SW4 to OFF (up) position. Card will now save presets.

Troubleshooting Network/Remote Control Errors

Refer to Cobalt® reference guide “Remote Control User Guide” (PN 9000RCS-RM) for network/remote control troubleshooting information.

In Case of Problems

Should any problem arise with this product that was not solved by the information in this section, please contact the Cobalt Digital Inc. Technical Support Department.

If required, a Return Material Authorization number (RMA) will be issued to you, as well as specific shipping instructions. If required, a temporary replacement item will be made available at a nominal charge. Any shipping costs incurred are the customer’s responsibility. All products shipped to you from Cobalt Digital Inc. will be shipped collect.

The Cobalt Digital Inc. 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 product.

See Contact Cobalt Digital Inc. (p. 1-8) in Chapter 1, “Introduction“ for contact information.

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