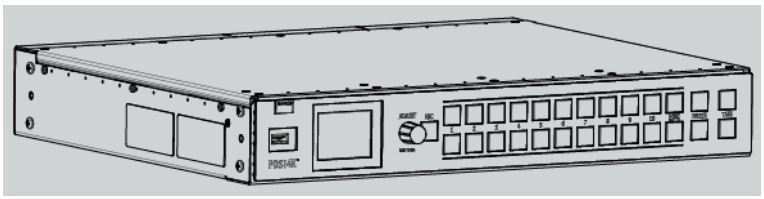
PDS–4K



User's Guide

ENABLING BRIGHT OUTCOMES

BARCO

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Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

FCC responsible: Barco Inc.
3059 Premiere Parkway Suite 400
30097 Duluth GA, United States
Tel: +1 678 475 8000

EMC notices

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GB/T 9254 Class A ITE (Information Technology Equipment)

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Patent protection

Please refer to *www.barco.com/about-barco/legal/patents*

Table of contents

1 Introduction

1.1 About this guide

This manual

This user's guide describes how to install and operate the PDS–4K presentation switcher. The user's guide is designed to be a reference tool in the everyday work of the user with the product. It contains a complete description of the hardware components and the control software. The manual also includes all the necessary instructions on how to upgrade firmware, install spare parts and perform any hardware upgrades.

Barco provides a 3-year parts and labor warranty for all hardware components. Please refer to "Warranty", page 185 for specific details regarding the warranty terms.

Available system documentation

This guide is part of the documentation set describing the PDS–4K product.

Guide	Article number
Quick Start Guide	26-1802004-00
User Guide	R5912621
Service Guide	R5912688 (Available only to Customer Service partners)
Safety Guide	R5912620

A printed copy of the safety guide and the quick start guide is included in the shipping box of the PDS–4K presentation switcher. Please check online for the other documents.

Always check for the latest version of all documents on *www.barco.com*. The latest versions of firmware and software can be found at *www.barco.com* or on *https://fol.barco.com* (Login ID: **folsom**; Password: **folsom**).

1.2 Record of changes

Overview

Revision	Changes
00	Initial version.

1.3 Symbols, pictures and fonts

Symbol overview

The following icons are used in the manual:

	Caution
	Warning
	Info, term definition. General info about the term

	Note: gives extra information about the described subject
	Tip: gives extra advice about the described subject

Picture overview

Images and pictures given in the manual are used as illustration. The content of the images can be slightly different from the reality, e.g. version numbers, device types, installed modules, and the form and position of software windows on screen.

Safety

2

About this chapter

Please read this chapter carefully. It contains important information to prevent personal injury while installing and operating the PDS–4K presentation switcher. Furthermore, it includes several cautions to prevent damage to the device. Ensure that you understand and follow all safety guidelines, safety instructions and warnings mentioned in this chapter before you begin installation. After this chapter, additional “warnings” and “cautions” are given depending on the installation procedure. Read and follow these “warnings” and “cautions” as well.

2.1 General considerations

General safety instructions

- Before operating these devices please read this manual thoroughly and retain it for future reference.
- All warnings in the documentation manual should be adhered to.
- All instructions for operating and use of these devices must be followed precisely.
- All local installation codes should be adhered to.

Notice on safety

This equipment is built in accordance with the requirements of the international safety standards IEC60950-1, IEC62368-1, EN60950-1, UL60950-1 and CAN/CSA C22.2 No.60950-1, which are the safety standards of information technology equipment including electrical business equipment. These safety standards impose important requirements on the use of safety critical components, materials and insulation, in order to protect the user or operator against risk of electric shock and energy hazard and having access to live parts. Safety standards also impose limits to the internal and external temperature rises, radiation levels, mechanical stability and strength, enclosure construction and protection against the risk of fire. Simulated single fault condition testing ensures the safety of the equipment to the user even when the equipment's normal operation fails.

2.2 Important safety instructions

To prevent risk, personal injury, and PDS–4K presentation switcher damage

Please read this chapter carefully. It contains important information to prevent personal injury while installing the PDS–4K presentation switcher. Furthermore, it includes several cautions to prevent damage to the device. Ensure that you understand and follow all safety guidelines, safety instructions and warnings mentioned in this chapter before installing the PDS– 4K presentation switcher. After this chapter, additional “warnings” and “cautions” are given depending on the installation procedure. Read and follow these “warnings” and “cautions” as well.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Only trained technicians may install a PDS–4K presentation switcher.
- Installation of the PDS–4K presentation switcher must be done in a dust free area.
- Only use attachments/accessories specified by the manufacturer.
- CAUTION: Troubleshooting must be performed by a trained technician. To reduce the risk of electrical shock, do not attempt to service this equipment unless you are qualified to do so.
- Refer all servicing to qualified service personnel. Servicing is required when the system has been damaged in any way, such as liquid has been spilled or objects have fallen into the system, or the system has been exposed to rain or moisture, does not operate normally, or has been dropped.
- FRAGILE: The PDS–4K presentation switcher is fragile. Handle the unit with care at all times.
- Do not remove the top cover during normal operation. Removal of the top cover exposes dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.
- During maintenance operations, always switch off the unit and unplug the power cords before removing the cover, unless otherwise stated.
- Always wear a wrist band which is connected to the ground while handling the ESD sensitive parts.
- Wear insulating gloves during the execution of the installation and maintenance actions to avoid short-circuit.
- Be careful never to drop anything into the PDS–4K presentation switcher assembly during the procedure. The fall of a tool or a spare part in the unit could have catastrophic consequences when you will restart the system.
- Be careful to always follow strict procedures during maintenance operations (spare parts replacement).
- This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

- This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.
- Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.
- To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.
- Replace spare parts only with the same or equivalent type recommended by the manufacturer.
- Save the original shipping carton and packing material. They will come in handy if you ever have to ship your equipment. For maximum protection, repack your set as it was originally packed at the factory.
- Rated maximum ambient operating temperature, t_a= 40°C (104°F).
- To avoid explosion, do not operate this product in an explosive atmosphere.

Safety data sheets for hazardous chemicals

For safe handling information on chemical products, consult the Safety Data Sheet (SDS). SDSs are available upon request via *safetydatasheets@barco.com*.

General

3

About this chapter

This chapter is designed to introduce you to the PDS–4K presentation switcher.

3.1 PDS–4K presentation switcher overview

About the PDS–4K presentation switcher

Image 3–1 The PDS–4K presentation switcher

- 4K I/O with full screen mix capabilities
  - Seamless switching
  - Preview and Program
  - Up to 2x 4K destinations + MVR
- Intuitive to set up, operate and monitor
  Change between layouts and sources with 1 press on a button
- External control
  You can remotely control all PDS–4K features from a computer, using the Event Master Toolset (EMTS) GUI.
- Built to survive a long lifetime on the road
  Rugged chassis and designed for frequent transport

3.2 PDS–4K presentation switcher features

Features of the PDS–4K presentation switcher

The PDS–4K presentation switcher has the following features

- Chassis
  - 1.5 RU
  - Single power input
- Control
  - Front-panel control
  - External control with the Event Master Toolset (EMTS) GUI
- Inputs
  - Up to 6x HDMI 2.0 inputs
  - Up to 2x 12G SDI inputs
- Outputs
  - Up to 4x HDMI 2.0 outputs
  - Up to 4x 12G SDI outputs
  - 1x MVR (HDMI 2.0)
- Option card slot for adding audio (de)embedding, passthrough, and 2x DisplayPort inputs (expected Q2 2021)

3.3 Terms and definitions

BG (Background layer)

The Background layer is the lowest layer in a composition. For PDS the background can be either a user selectable matte color or a still store image.

Breakout session/room

A smaller room at a convention or meeting that holds a smaller number of people for a deeper dive into a topic.

A Keynote session is generally in a larger room that holds all the attendees, while breakout sessions are used to focus on topics of interest to the attendees.

DSM (Down Stage Monitor)

A display used by the presenter to help them know either what is coming next, notes to remember, or a duplicate of a program output. Can be anything a presenter needs to support them while on stage.

Full Screen mode

A front panel mode that allows for direct selection of sources for PGM outputs.

Input

Input is the signal coming into a specific input connector.

Mixing PIP

A single opaque image on top of a background that can seamlessly mix between two sources. Requires two scalers.

MVR (Multiviewer)

Shows inputs and outputs of the system. Typically used by an operator of the system. Also has labels on each input or output to indicate how they are used. The under-monitor display (UMD) is where this info is displayed. The UMD may also change color depending on the state of the input or output.

Operator

The person in control of the system. Sometimes the presenter and the operator are the same person.

Option slot

An Input/Output slot used for future upgrade cards: an audio embed/de-embed card, the DP1.2 input card, a network video card, etc.

PAP (Picture-and-Picture)

Two scaled images placed next to each other without overlapping.

PGM (Program)

The live output. Main outputs that drive displays.

PIP (Picture-in-Picture)

An opaque image layered on top of another opaque image.

Presenter

The person on stage during the show. Can be multiple people. Also known as the talent.

PST/CUE (Preset and Cue)

Same as in Event Master.

PVW (Preview)

Shown in the MVR, a look-ahead for what will be transitioned next.

Source

Source is the input file that has sizing, color, and other settings needed to properly set up the scaler to display the source based on user input.

3.4 Unpacking and inspection

General

Before shipment, all the devices were inspected and found to be free of mechanical and electrical defects. As soon as the devices are unpacked, inspect for any damage that may have occurred in transit. Save all packing material until the inspection is completed. If damage is found, file claim with carrier immediately. The Barco Sales and the Service office should be notified as soon as possible.

Unpacking

At delivery, all devices are packed in a shipping case. Place the shipping case of the device on a stable (solid), flat and insulated support during all the unpacking. Open the case from the top. Remove the device that is packaged in an antistatic bag. Check the box content after unpacking.

After unpacking let the device acclimate to the room temperature which must be higher than 0°C (32°F) and lower than 40°C (104°F). Neglecting this may result in startup failure of the device.

When shipping a PDS–4K presentation switcher in a Barco-supplied case, make sure that the rear connector protectors are installed to prevent damage.

Save the original shipping case and packing material, these will be necessary if you ever have to ship your device. For maximum protection, repack your device as it was originally packed at the factory.

Box content

After unpacking a PDS– 4K device, it is recommended that it be checked to see if all accessories were included. The following accessories should be included.

Product	Contains	Accessories included
R9009650 and R9009651	PDS–4K Chassis	PDS–4K HDMI Only and PDS–4K HDMI & SDI
	• 1x 14-9750004-90	• European Power Cord CEE7 (not included with units shipped to China)
	• 1x B1959864	• US Power Cord NEMA 5/15 (not included with units shipped to China)
	• 1x B1959865	• China Power Cord GB 2099 (only included with units shipped to China)
	• R9871179	• ImagePRO–II rear rack support
	• 2x 09-1802019-90	• Rack ears, PDS–4K
	• 2x 09-1802021-90	• Rear connector protectors
	• 4x 13-0211010-90	• SCW PN HD 8-32 X .31 BLK screws for rack ears and rear connector protectors (1x per rack ear and 1x per protector)
	• 4x B366920	• Rubber feet

Product	Contains	Accessories included
	• 4x 13-0210612-90	• Screws to hold the rubber feet in place
	• B5631132	• USB Thumb Drive (Contains Users Guide, System Software and Control GUI)
	• R5912620	• Safety manual
	• 26-1802004-00	• Quick Start Guide
	• 26-0406065-00	• Customer registration card

Mechanical check

This check should confirm that there are no broken parts and the unit is free of dents or scratches. Your Barco Sales representative should be notified as soon as possible if this is not the case.

3.5 Installation requirements

Environmental conditions

The unit must always be mounted in a manner which ensures both air inlets and outlets are free. For installations in environments where the device is subject to excessive dust, it is highly advisable to take measures to prevent the dust from reaching the unit. If this is not a feasible, then the unit should be relocated to a different dust-free location.

It is the customer's responsibility to ensure at all times that the device is protected from the harmful effects of hostile airborne particles in the environment of the device. The manufacturer reserves the right to refuse repair if a device has been subject to negligence, abandon or improper use.

The table below summarizes the physical environment in which the PDS–4K presentation switcher may be safely operated or stored.

Environment	Operating	Non-Operating
Ambient Temperature	0°C (32°F) to 40°C (104°F)	-10°C (14°F) to 60°C (140°F)
Air cleanliness	Clean office environment (equivalent with cleanroom standard ISO 14644-1 ISO Class 9)	n.a.
Humidity	5% to 85% RH Non-Condensed	0% to 95% RH Non-Condensed
Altitude	-60 (-197Ft) to 3000m (9843Ft)[1]	-60 (-197Ft) to 10000m (32810Ft)

Rack-mount installation

The PDS–4K chassis is designed to be rack mounted and is supplied with front rack-mount hardware.

The PDS–4K chassis can also be used in a “tabletop” configuration, without rack mounting.

When rack mounting the PDS–4K chassis, remember the following important points:

- The PDS–4K chassis is 1.5 RU in height.
- The maximum ambient operating temperature is 40°C (104°F).
- Leave at least one inch of space (front and rear) to ensure that the airflow through the fan and vent holes is not restricted.
- When installing multiple units into a rack, distribute them evenly to prevent hazardous conditions that may be created by uneven weight distribution.
- Connect the unit only to a properly rated supply circuit.

1. For PRC (People's Republic of China) the certified altitude is specified on the product label.

- Reliable grounding (earthing) of rack-mounted equipment should be maintained.
- Rack mount the unit from the front rack ears, using four rack screws (not supplied). Threads may be metric or otherwise, depending upon the rack type.

PDS–4K units are shipped with side rails included in the shipping case and not installed onto the chassis. These side rails, when they are properly installed and adjusted, assist with the distribution of chassis (and cable) weight within your rack. Use the following steps to properly adjust the side rails:

1. Measure and install the two supplied mounting brackets on your rear rack rails.

Image 3–2 Mounting bracket

2. Measure the distance between the front and rear rack rails. Remove the mounting screws that secure each side rail to the chassis, and then adjust the spacing of each side rail as necessary. The PDS–4K uses two mounting screws on each side rail.

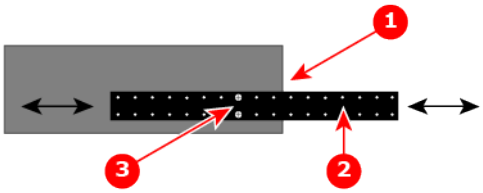

Image 3–3 PDS–4K chassis with side rail and mounting screws

1 Chassis rear
2 Side rail
3 Mounting screws

3. Re-install the mounting screws. When properly adjusted, the end of each side rail will protrude through the slot in the rear mounting bracket, once the chassis is rack mounted.
4. Lift the chassis and—while supporting it—slide the side rails through the slots in the rear mounting brackets.
5. While continuing to support the chassis, install and tighten the two lower screws.
6. Finally, install and tighten the two upper screws in the rack rail.

Site preparation

The environment in which you install your PDS–4K presentation switcher should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

Do not install the device in a site near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust or humidity. Be aware that room heat rises to the ceiling; check that temperature near the installation site is not excessive.

Cable and adapter information

The table below provides information regarding cables used with the PDS–4K. When connecting to a PDS–4K, use high-quality shielded cables.

Cable	Description	Notes
RJ-45 Ethernet cable	For use with external controllers or Web Interface and EMTS GUI	For remote connections; customer supplied
AC power cord	AC Power, 7 foot, 10A	For power connection; 1 cord supplied

Power cord and line voltage selection

The PDS–4K is rated to operate with the following specifications:

- Input Power: 100-240 VAC, 50-60 Hz
- Power Consumption: 2A maximum

The PDS–4K performs line voltage selection automatically. No user controls are required. The AC power cords must be accessible so that they can be removed during field servicing.

WARNING: When used above 230 volts, a UL listed line cord rated for 250 volts at 15 amps must be used and must conform to IEC-227 and IEC-245 standards. This cord will be fitted with a tandem prong-type plug.
The rear panel ON/OFF switch does not disconnect the unit from input AC power. To facilitate disconnection of AC power, the power cord must be connected to an accessible outlet near the unit.
Building Branch Circuit Protection: For 115 V use 20 A. For 230 V use 8 A.

Hardware Orientation

4

About this chapter

This chapter explains the PDS–4K presentation switcher's hardware in detail.

4.1 Front panel

About the front panel

See Image 4–1 for an illustration of the PDS–4K front panel.

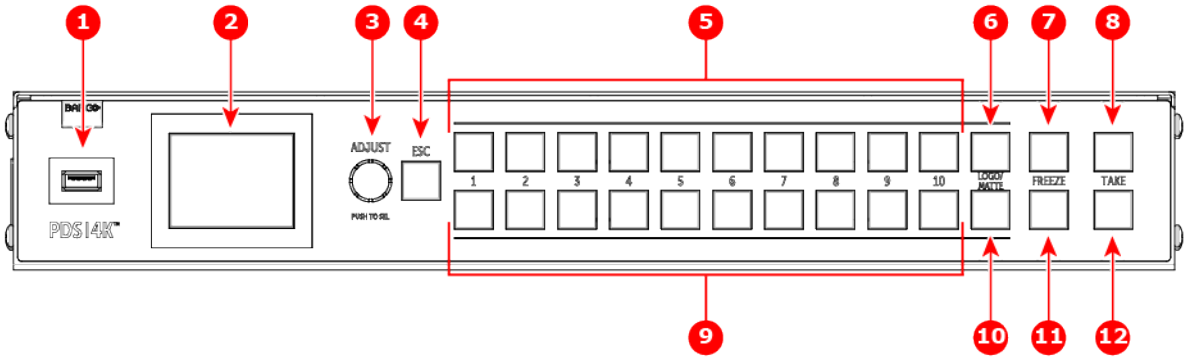

Image 4–1 Front panel

1 USB port
2 Display screen
3 Adjust knob
4 ESC (Escape) button
5 Source buttons, top row
6 Logo / Matte button, top row
7 Freeze button, top row
8 Take button, top row
9 Source buttons, bottom row
10 Logo / Matte button, bottom row
11 Freeze button, bottom row
12 Take button, bottom row

The front-panel controls are used in **Full Screen mode**.

General functions

The USB port, the display screen, the adjust knob, and the ESC button have the same functions in all three modes.

1. USB port
   Use the USB port to import and export PNG images or to perform Backup/Restore operations and firmware upgrades.
2. Display screen
   The LCD color video display shows all PDS–4K menus, sub-menus, and messages.
3. Adjust knob
   - Turn the Adjust knob to scroll up or down through the menus.
     - Turn the knob clockwise to scroll down.
     - Turn the knob counter-clockwise to scroll up.
   - Press the Adjust knob to select menu items.
4. **ESC** (Escape) button
   Press the ESC button to exit a menu without making changes, to cancel an operation, to answer "No" to menu queries, or to return to the Status Menu. Each press takes you back up the menu tree one level.

Full Screen mode

In Full Screen mode, the top row and bottom row each control a separate screen or group of screens. When “Auto Take” is off, selecting a source places that source in PVW for the assigned output. When “Auto Take” is on, selecting a source transitions that source immediately to PGM for the assigned output. Full Screen mode is the default operational mode for the front panel.

The following are descriptions of the front-panel control features in **Full Screen mode**.

1. Source buttons, top/bottom row
   - Use these buttons to select sources for the output that is assigned to the row of buttons.
   - Each button places a source in PVW when “Auto Take” is turned off.
   - Each button transitions a source to PGM when “Auto Take is turned on.
2. **Logo / Matte** button, top and bottom row
   - Use this button to select the Logo or Matte color for the output that is assigned to the source buttons in the top/bottom row.

- This button places a Logo/Matte in PVW when “Auto Take” is turned off.
- This button transitions a Logo/Matte to PGM when “Auto Take is turned on.

3. **Freeze** button, top and bottom row
   - When “Auto Take” is turned off, this button freezes the selected source in PVW for the output assigned in the source buttons of the top/bottom row.
     - The “frozen” source in PVW can then be transitioned to PGM.
     - The PGM source remains “thawed” in PVW after the transition.
   - To thaw a source in PGM, select the source button and press the **Take** button.
   - To thaw the source in PVW, either press the **Freeze** button, select the same source, or select a different source.
   - When “Auto Take” is turned on, this button immediately freezes or thaws the source in PGM.
4. **Take** button, top and bottom row
   - Use this button to transition the source in PVW to PGM for the output assigned in the top/bottom row.
   - Set the duration of the transition in the Output Menu/Trans Time.
   - When “Auto Take” is turned on, this button is disabled, but it still indicates that a transition is taking place by shifting from dim red to bright amber during the transition.

4.2 Rear panel

About the rear panel

There are two models of the PDS–4K presentation switcher. Model 1 has six HDMI 2.0 inputs, four HDMI 2.0 outputs, and one HDMI 2.0 MVR output. Model 2 has six HDMI 2.0 and two 12G-SDI inputs, four HDMI 2.0 and four 12G-SDI outputs, and one HDMI 2.0 MVR output.

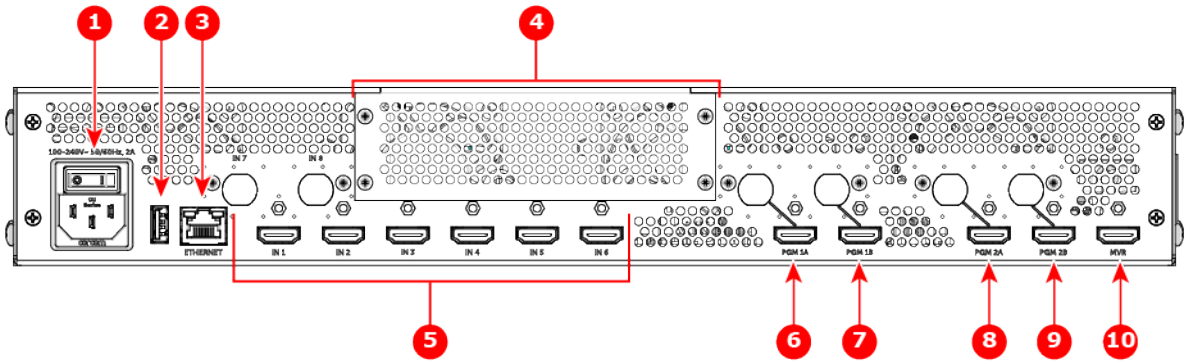

Image 4–2 Rear panel: Model 1: HDMI only

1 Power
2 USB port
3 Ethernet port
4 Option slot
5 Inputs
6 Output 1A (PGM 1A)
7 Output 1B (PGM 1B)
8 Output 2A (PGM 2A)
9 Output 2B (PGM 2B)
10 MVR (Multiviewer) output

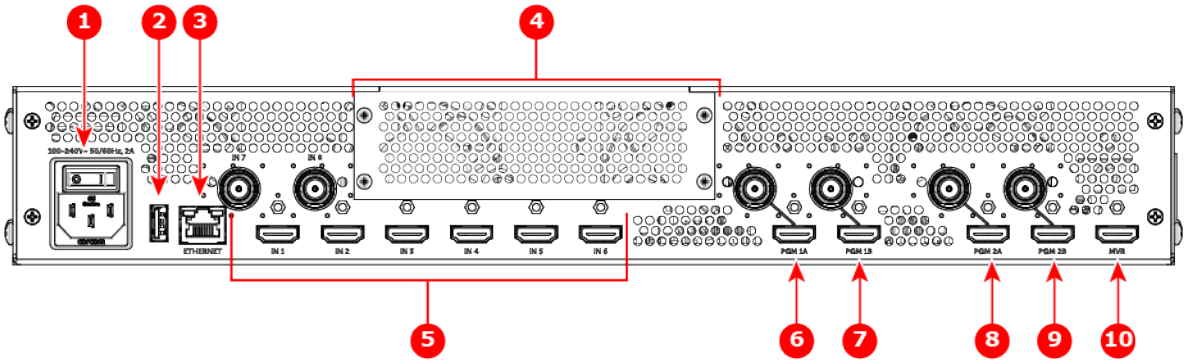

Image 4–3 Rear panel: Model 2: HDMI and SDI

1 Power
2 USB port
3 Ethernet port
4 Option slot
5 Inputs
6 Output 1A (PGM 1A)
7 Output 1B (PGM 1B)
8 Output 2A (PGM 2A)
9 Output 2B (PGM 2B)
10 MVR (Multiviewer) output

Rear-panel description

1. Power
   - Power On/Off switch
   - 100–240V, 50–60Hz, 2A
2. USB port
   Use the USB port to import Stills, to perform Backup/Restore operations and firmware upgrades, or for a Wifi/Bluetooth receiver (for wireless GUI control).
3. Ethernet port
   Use the Ethernet port for external control by connecting to the Event Master Toolset and for firmware upgrade via web app.
4. Inputs
   - Model 1 has six HDMI 2.0 input connectors
   - Model 2 has six HDMI 2.0 and two 12G-SDI input connectors
5. Outputs
   - Model 1 has four HDMI 2.0 output connectors
   - Model 2 has four HDMI 2.0 and four 12G-SDI output connectors
6. MVR (Multiviewer)
   Both models have one HDMI 2.0 MVR output connector.

Specifications of input and output video connections

On the system's rear panel, each of the input and output connectors map to a corresponding Source or Take button on the front panel.

HDMI specifications

- HDMI per 2.0 specification
- Pixel clock up to 600 MHz
  - Max pixel clock at 24 bits/pixel = 600 Mpix/sec
  - Max pixel clock at 30 bits/pixel = 480 Mpix/sec
  - Max pixel clock at 36 bits/pixel = 400 Mpix/sec
- Supported formats:
  - Formats up to 2560x1600@60 and 3840x1200@60 (30 bits)
  - 4K/UHD supported:
    - 3840x2400/ 50/59.94/60 input via 1x HDMI
    - 3840x2160/ 50/59.94/60 input via 1x HDMI
- EDID version 1.3 compatible

- HDCP version 1.4 and version 2.2 compatible

SDI specifications

- Supported formats:

Signal type	Min. BNC connector number	Max channels per card	Standard	Examples
SD	1	4	SMPTE 259M-C	480i, 576i (NTSC/PAL)
HD	1	4	SMPTE 292M	1920x1080 @ 59.94i/50i 1920x1080psf @ 23.98/24/25/29.97/30 720x480 @ 60p/50p
3G	1	4	SMPTE 424M Barcolink	1920x1080 @ 60p/50p 1920x1200 @ 60p/50p
6G	1	1	SMPTE 2081-10	3840x2160 @ 23.98/24/25/29.97/30 4096x2160 @ 23.98/24/25/29.97/30
12G	1	1	SMPTE 2082-10	3840x2160 @ 50/59.94/60 4096x2160 @ 50/59.94/60

5 Setup and operation

About this chapter

This chapter describes how to quickly set up and begin operating your system, follow the steps in this section. Links are provided to the appropriate sections in this guide, if you require more information.

5.1 Rear-panel connections

Rear panel

1. **Connect inputs**—Connect all input sources to the PDS–4K.
2. **Connect outputs**—Connect the output(s) on the PDS–4K to your projector(s) or other target devices. Plug primary displays in to PGM 1A and PGM 2A outputs.
3. **(Optional) Connect Ethernet cable**—Connect an Ethernet cable from the PDS–4K to a computer running the EMTS.
4. **Connect power**—Ensure that power is properly connected to the PDS–4K presentation switcher.
5. **Turn on power**—Turn on power to the PDS–4K, your connected display devices, and to all peripheral equipment.
6. Perform a **Factory** reset.

5.2 Power-up initialization

How to power up the PDS–4K

Connect power to the PDS–4K, then locate the power switch on the rear panel and turn power On. While the system is initializing, the front-panel buttons light up, and the Barco logo is displayed.

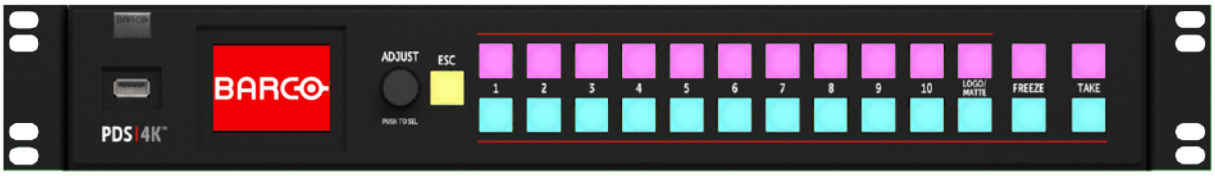

Image 5–1 Barco logo and front-panel buttons

While the unit is initializing, the display shows an “In Progress” screen with the software version, the OS version, and a progress bar, and the top and bottom row buttons are not lit.

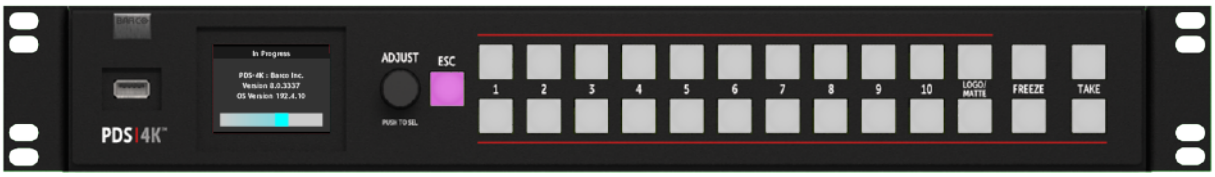

Image 5–2 “In Progress” screen and front-panel buttons

When initialization is complete the PDS–4K displays the status of the system. Different buttons may be lit, depending on the configuration of the system.

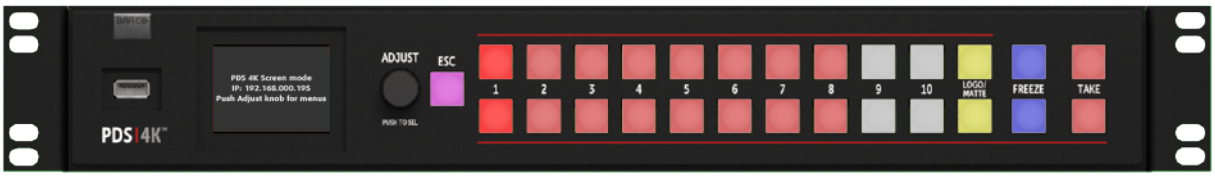

Image 5–3 Status screen and front-panel buttons

The status screen displays the IP address and a message telling the user to push the Adjust knob to access the menus.

5.3 Front-panel operation

Front-panel features

Refer to “Front panel”, page 24 for the location and description of the front-panel features.

The front panel features a menu display that shows menus. An adjust knob and an ESC button to the right of the menu display control menu navigation, selections, and adjustments. The front panel also has two rows of source buttons and the Logo/Matte, Freeze, and Take buttons for each row.

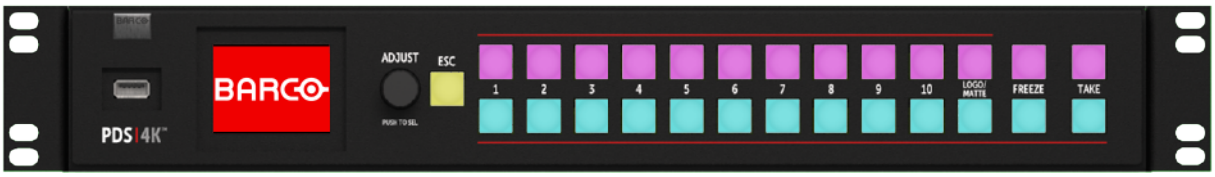

Image 5–4 PDS–4K front panel

Menu display

The menu display is a 45 mm by 35 mm LCD screen that displays the status of the system and the menus and submenus of the system.

At power-up, the menu display first displays the Barco logo and then an “In Progress” screen that shows the firmware version and OS version of the unit. The “In Progress” screen also shows a progress bar.

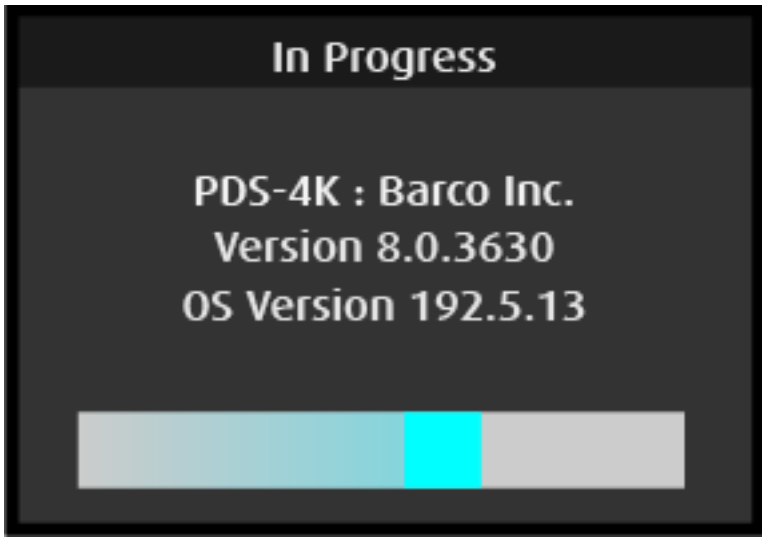

Image 5–5 Initialization “In Progress”

Initialization may take several minutes.

Once the system has powered up, the display screen shows the status of the system.

Image 5–6 Menu display showing Status Menu

Push the Adjust knob to enter the Setup menu.

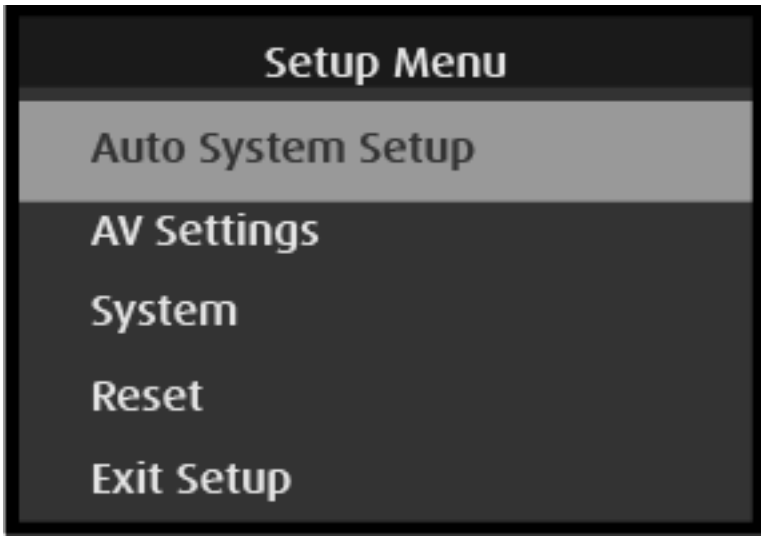

Image 5–7 Setup Menu

Menu display controls

The menu—display controls include the adjust knob and the **ESC** button.

Adjust knob

1. Press the Adjust knob to enter menus on the menu display.
2. Turn the Adjust knob to scroll up or down through the menus.
   - Turn the knob clockwise to scroll down.
   - Turn the knob counter-clockwise to scroll up.
3. Press the Adjust knob to select menu items.

For example, press the **Adjust knob** to enter the Setup menu.

ESC key

The ESC key has two functions:

1. If something is selected, press the **ESC** (escape) key to deactivate a selection. to move back one level in a menu, or to exit a menu.
2. If nothing is selected, press the ESC key to move back up one level in a menu, or to exit a menu.

Selecting **Back** from a menu has the same effect as pressing the ESC key when nothing is selected. Selecting **Back** moves the user back up one level in a menu, or exits the menu.

Front-panel button colors

Blinking green – Source, Cue, or Preset on Preview (PVW).

Bright amber – Source on Program. (PGM. If the PGM source is also on PVW, the button will not flash green.)

Bright red – Loss of signal (on PGM).

Dim red – Loss of signal (not on PGM).

Dim yellow – Valid source.

Dim cyan – Cue.

Dim white – Preset.

Not lit – Unassigned.

Freeze buttons only

Bright blue – A scaler on PVW or PGM is “frozen” on a frame of video.

Dim blue – PVW and PGM scalers are not “frozen.”

5.4 Factory reset

Perform a factory reset

If you are using the PDS–4K for the first time, or if you are using a PDS–4K that has just returned from an event, perform a full factory reset (Reset / Factory) to restore default system configurations.

1. Press the Adjust knob to enter the Setup menu.
2. Turn the Adjust knob to scroll to **Reset**.

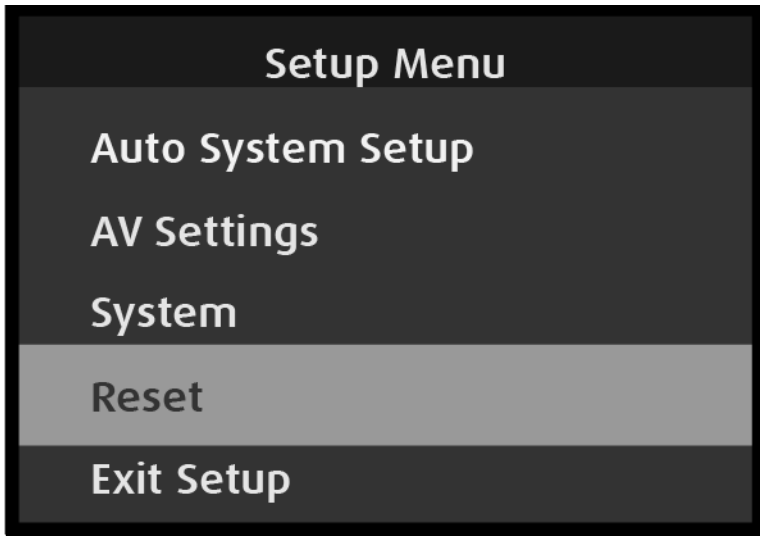

Image 5–8 Setup menu: Reset

3. Refer to “System: Reset menu”, page 149 for instructions on using the Reset menu.

6 Menu orientation

About this chapter

This chapter describes the PDS–4K system menus, including how they are accessed and the functions or parameters that are available. The principal menu trees are presented in block diagram format throughout the chapter.

6.1 Status Menu

General

This section provides information about the Status Menu.

Status Menu

The Status Menu has a single screen that shows the front-panel operation mode, IP address, firmware version, and Barco support URL.

Image 6–1

6.2 Setup Menu and submenus

General

The Setup Menu allows access to all menus other than the Status Menu.

Setup menu tree

Refer to Image 6–2 for an illustration of the Setup Menu menu tree.

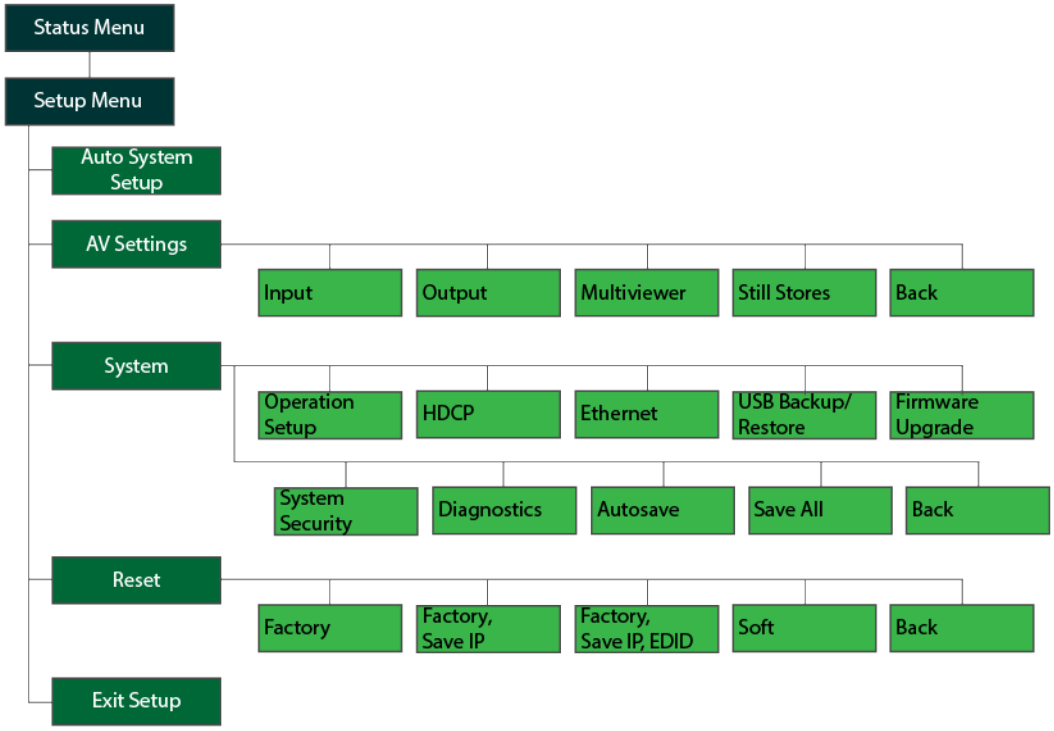

Image 6–2 PDS–4K Setup Menu menu tree

6.3 Setup Menu: Auto System Setup

General

The Auto System Setup menu has no submenus.

Auto System Setup

1. Press the **Adjust knob** to enter the Setup Menu.

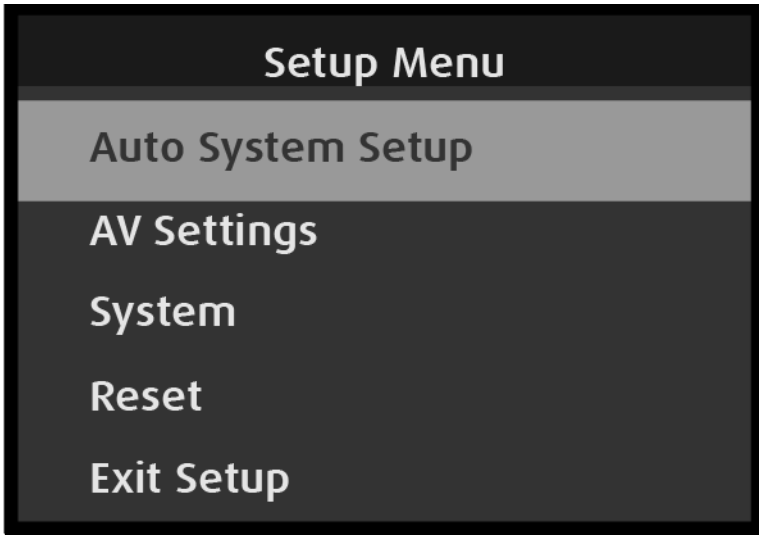

Image 6–3 Setup Menu: Auto System Setup

Auto System Setup is the first submenu of the Setup Menu; it is already highlighted in gray.

2. Select **Auto System Setup**.
   The system displays a warning message.

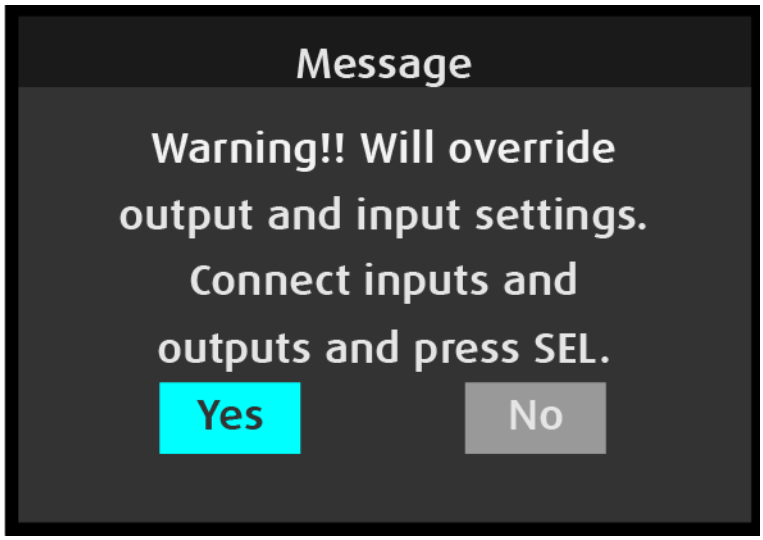

Image 6–4

3. Select **Yes** to begin the auto setup, or select **No** to return to the Setup Menu.

Auto System Setup performs two operations.

- For every destination, the system reads the EDID of the display attached to the primary HDMI output connector and applies the display's preferred format as the format for the destination.
- The system finds the destination with the highest output format and programs the HDMI input's EDID with that format.

Possible errors

The PDS–4K presentation switcher supports displays operating at 50 Hz, 59.94 Hz, and 60 Hz. If a connected HDMI display does not operate at 50 Hz, 59.94 Hz, or 60 Hz, or if no HDMI display is connected to an output, the system displays error messages.

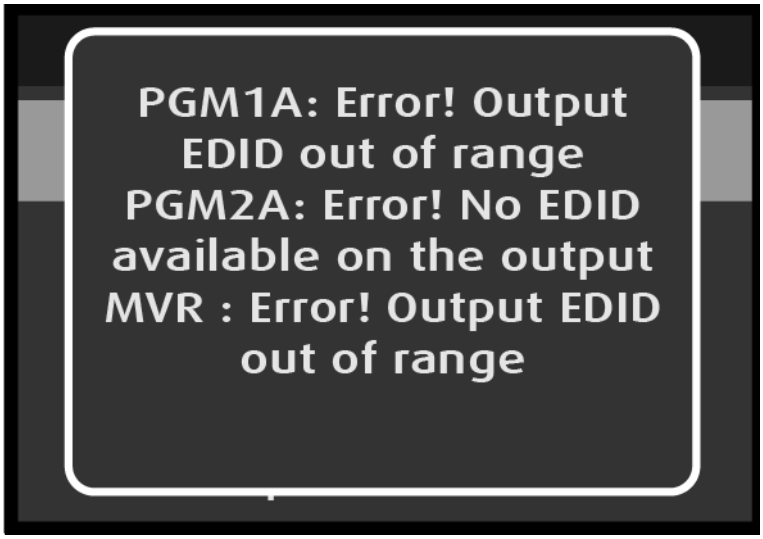

Image 6–5 Sample error messages

In the setup that generated the sample error messages shown in Image 6–5 PGM 1A was connected to a 4K monitor with a refresh rate of 30 Hz, which resulted in an error message of "Output EDID out of range." PGM 2A was not connected to a monitor, which resulted in an error message of "No EDID.".

6.4 Setup Menu: AV Settings

General

The AV Settings menu has the following submenus:

- Input
- Output
- Multiviewer
- Still Stores

Scroll to and select **AV Settings** on the Settings Menu.

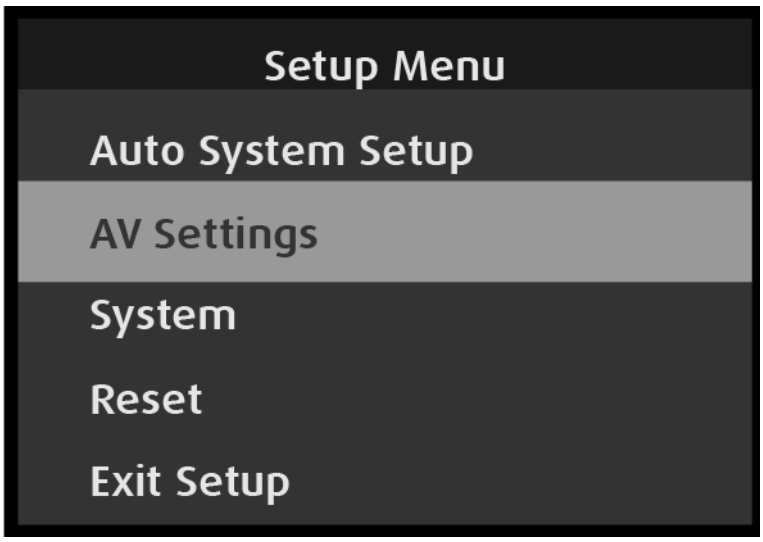

Image 6–6 Setup Menu: AV Settings

AV Settings menu tree

Refer to Image 6–7 for an illustration of the Setup Menu menu tree.

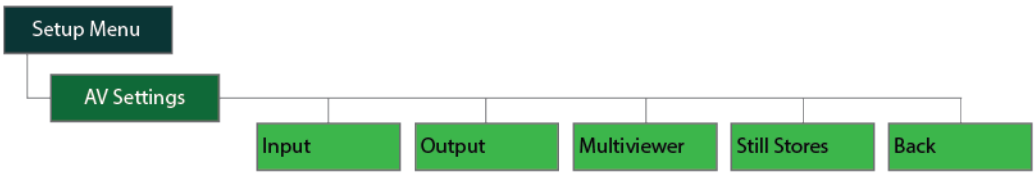

Image 6–7 Settings Menu: AV Settings menu tree

6.5 AV Settings: Input

General

Use the AV Settings: Input menu to set up and use inputs. To enter the Input menu from the AV Setup menu, scroll to and select **Input**.

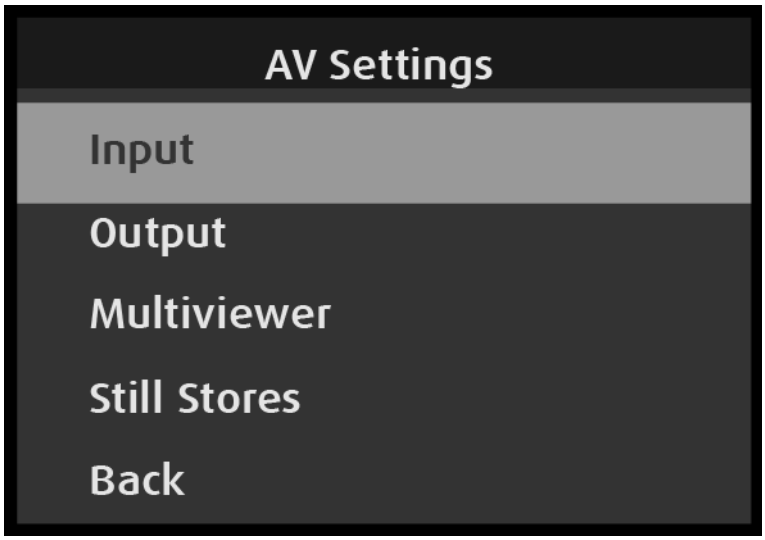

Image 6–8 AV Settings: Input menu

Use the Input menu to adjust all parameters related to inputs.

The Input menu has the following submenus:

- Format
- Format Adjustment
- Adjust Row
- Source Name
- Auto Acquire
- Film Mode
- Sizing & Aspect Ratio
- Color Adjustment
- EDID
- HDCP
- Capture New Still
- Save Input
- Back

AV Settings: Input menu tree

Refer to Image 6–9 for an illustration of the AV Settings: Input menu tree.

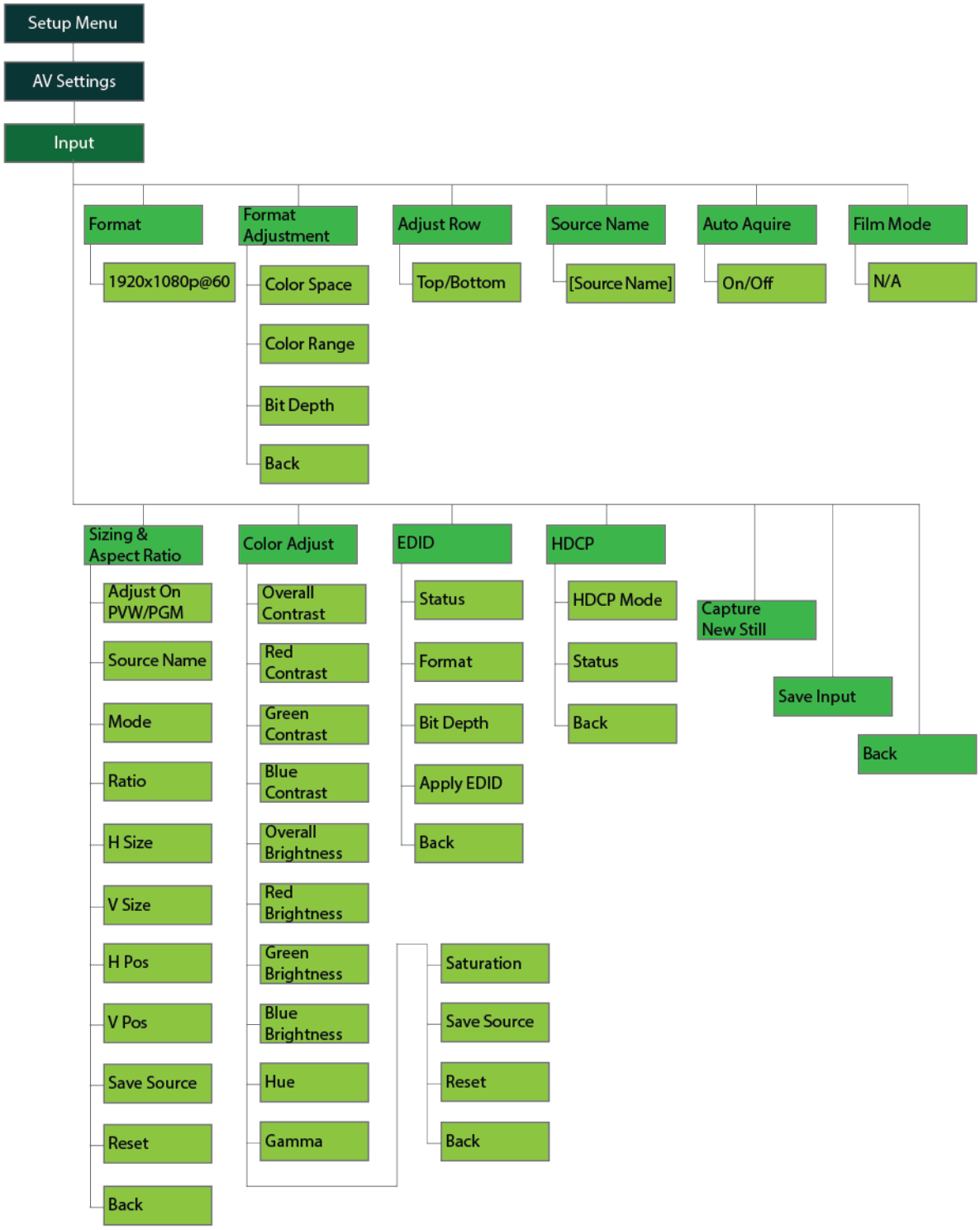

Image 6–9 AV Settings: Input menu tree

Input: Format

1. Select **Format** on the Input menu.

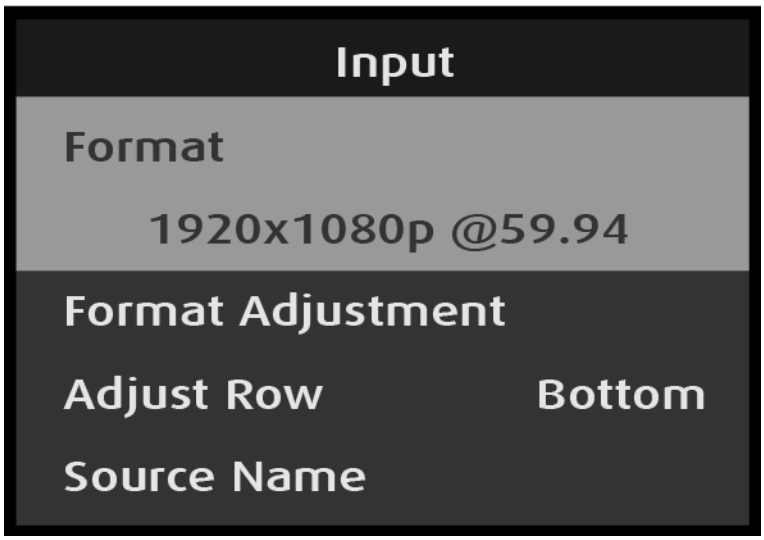

Image 6–10 Input: Format selection

Once **Format** is selected, the highlight bar turns from gray to cyan. Turning the adjust knob scrolls through the available formats.

2. Scroll to and select the desired format.

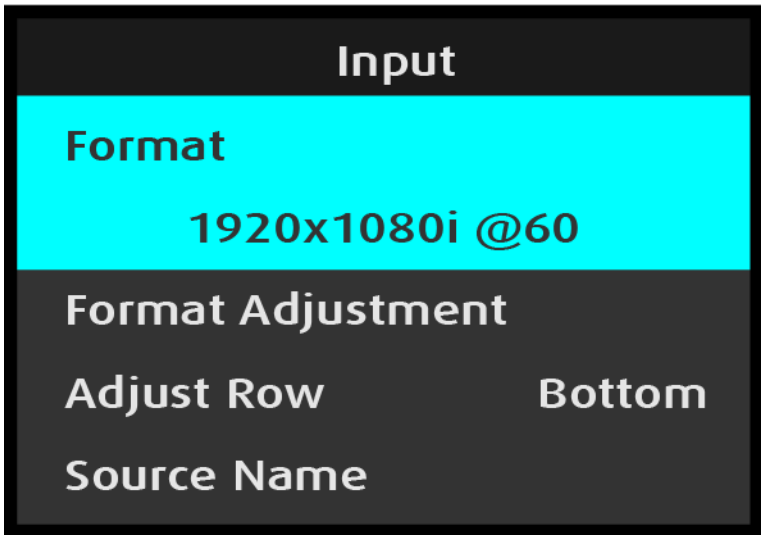

Image 6–11 Input: Format adjustment

Input: Format Adjustment

1. Select **Format Adjustment** on the Input menu

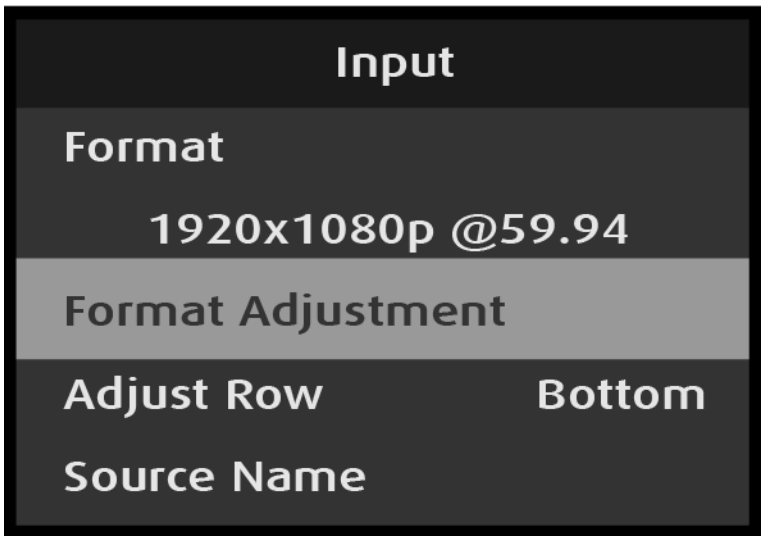

Image 6–12 Input: Format Adjustment selection

2. Scroll to and select **Color Space** on the Format Adjustment menu.

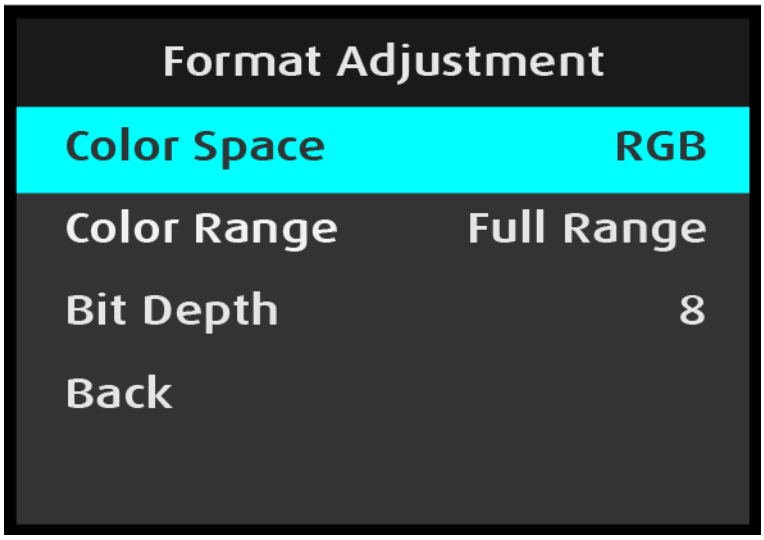

Image 6–13 Format Adjustment: Color Space selection

Once Color Space is selected, the highlight bar turns from gray to cyan.

3. Scroll through the available color spaces and select the desired color space.
   The available color spaces are:
   - RGB
   - SMPTE
4. Scroll to and select **Color Range** on the Format Adjustment menu.

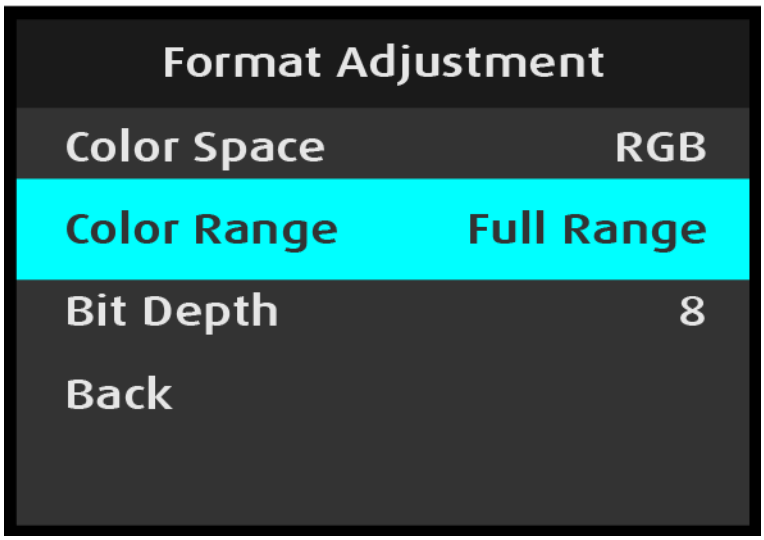

Image 6–14 Format Adjustment: Color Range selection

Once Color Range is selected, the highlight bar turns from gray to cyan.

5. Scroll through the available color ranges and select the desired color range.
   The available color spaces are:
   - Full Range
   - Reduced Range
6. Scroll to and select **Bit Depth** on the Format Adjustment menu.

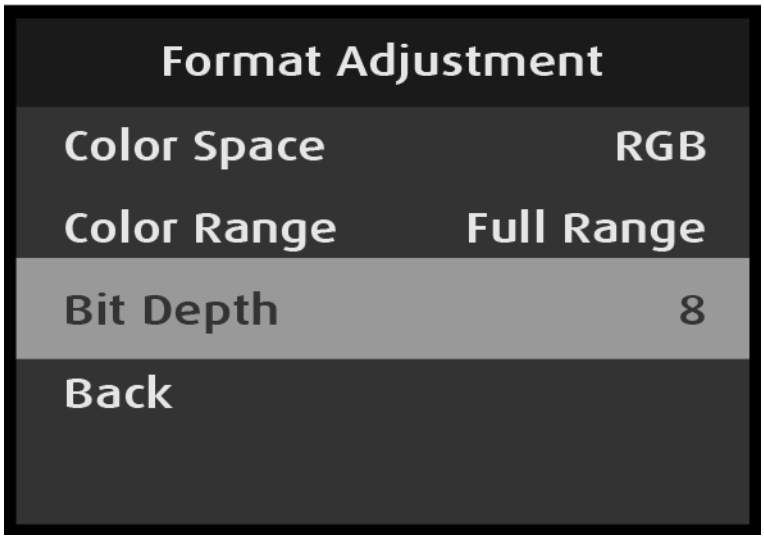

Image 6–15 Format Adjustment: Bit Depth selection

Bit Depth is a status-only selection; it displays the bit depth of the selected input.

Back returns to the Input menu.

Input: Adjust Row

1. Select **Adjust Row** on the Input menu.

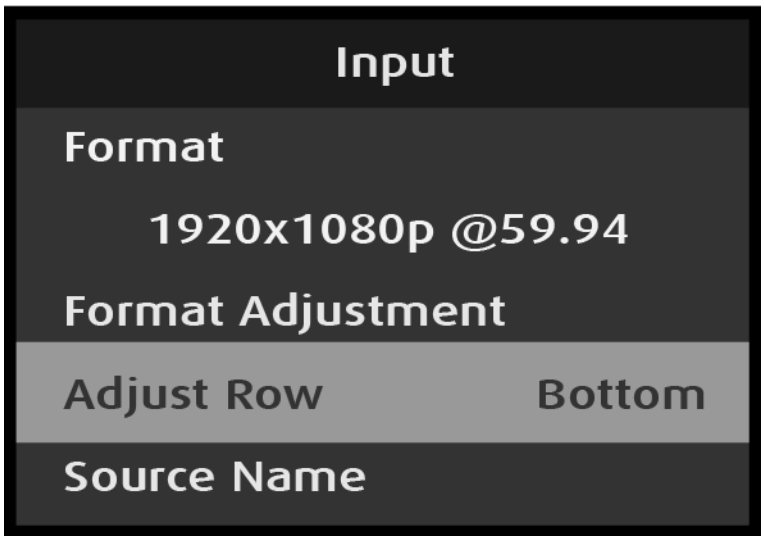

Image 6–16 Adjust Row selection

2. Scroll to and select either **Bottom** or **Top**.

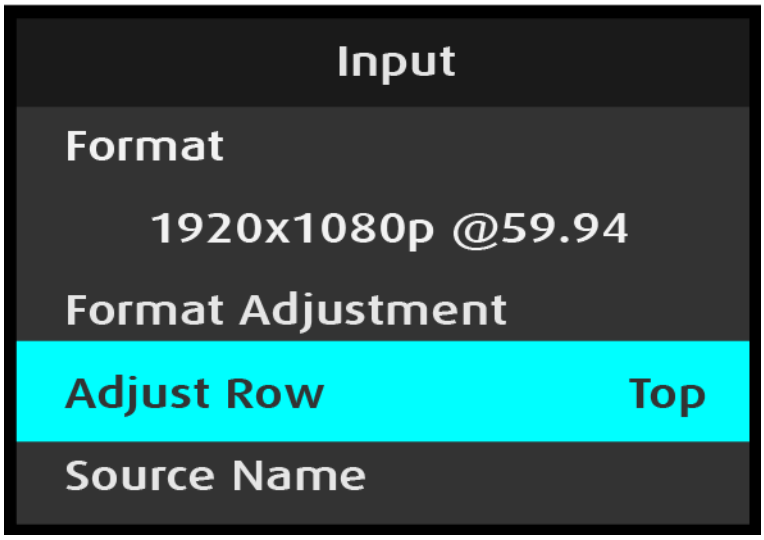

Image 6–17 Adjust Row adjustment

Input: Source Name

1. Select **Source Name** on the Input menu.

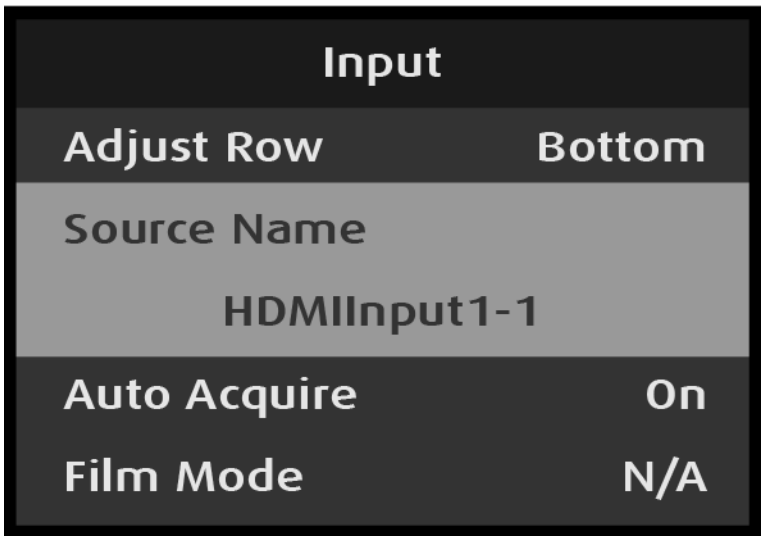

Image 6–18 Input: Source Name selection

Source Name is a status-only selection; it displays the source name of the selected input.

Input: Auto Acquire

1. Select **Auto Acquire** on the Input menu.

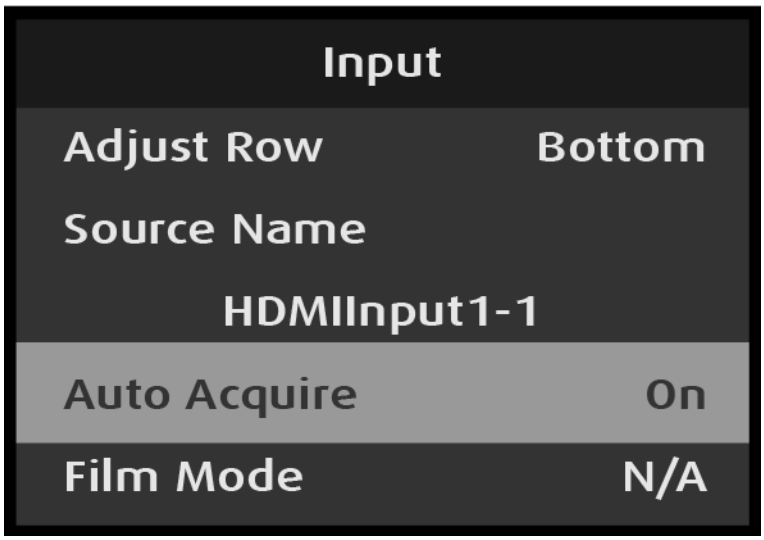

Image 6–19 Auto Acquire selection

2. Scroll to and select either **On** or **Off**.

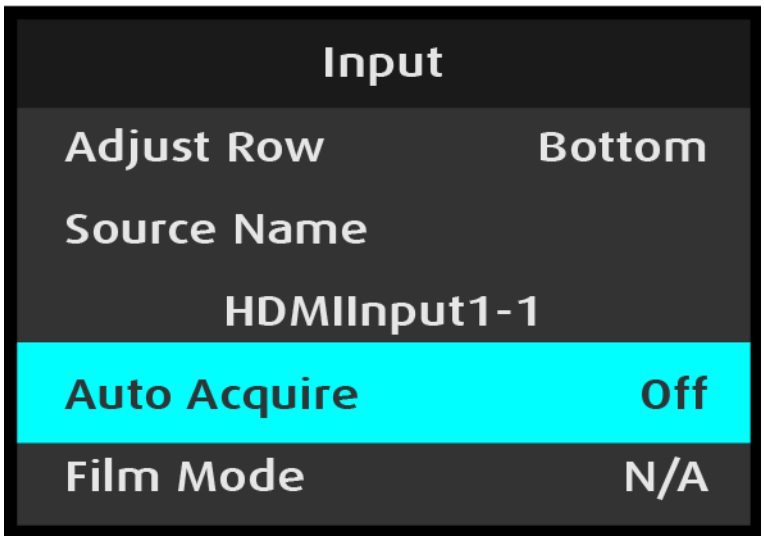

Image 6–20 Auto Acquire adjustment

- If Auto Acquire is **On**, the system detects and acquires the input type and resolution. Default is **On**.
- If Auto Acquire is **Off**, the input format must be selected. The input source must then output the chosen format in order for its signal to be acquired.

Input: Film Mode

1. Select **Film Mode** on the Input menu.

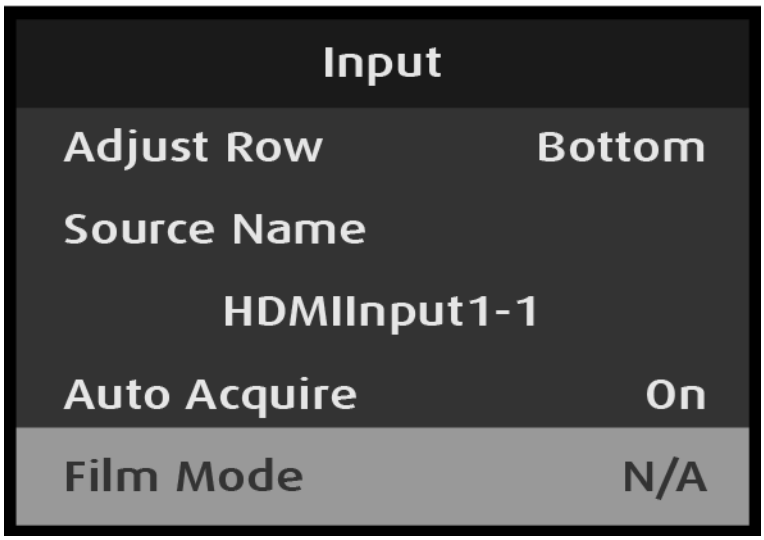

Image 6–21 Film Mode selection

Input: Film Mode is not applicable for progressive input formats and is automatically applied only for interlaced formats.

Input: Sizing & Aspect Ratio

Use the Input: Sizing & Aspect Ratio menu to adjust the aspect ratio, visible size and position of the input source. Use the Input: Sizing & Aspect Ratio menu also to apply these changes to either the preview (PVW) or program (PGM) outputs.

1. Select **Sizing & Aspect Ratio** on the Input menu.

Image 6–22 Input: Sizing & Aspect Ratio selection

The system displays the Sizing & Aspect Ratio menu.

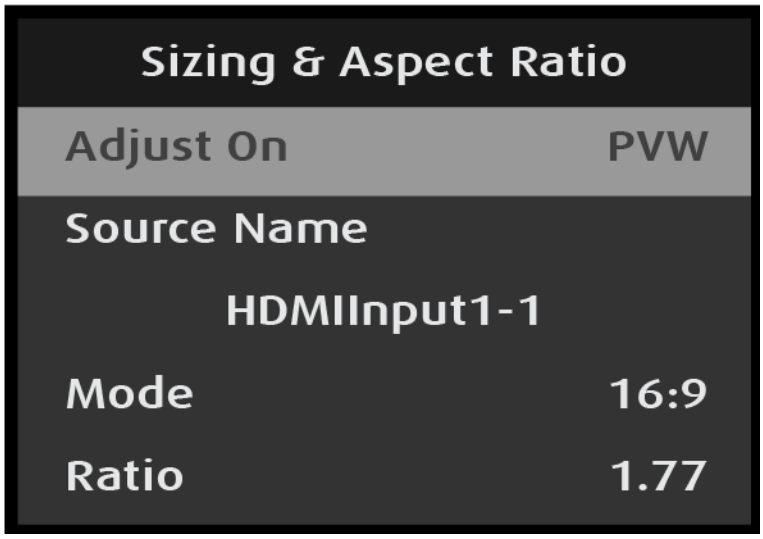

Image 6–23 Sizing & Aspect Ratio menu

Sizing & Aspect Ratio: Adjust On

1. Scroll to and select **Adjust On** on the Sizing & Aspect Ratio menu

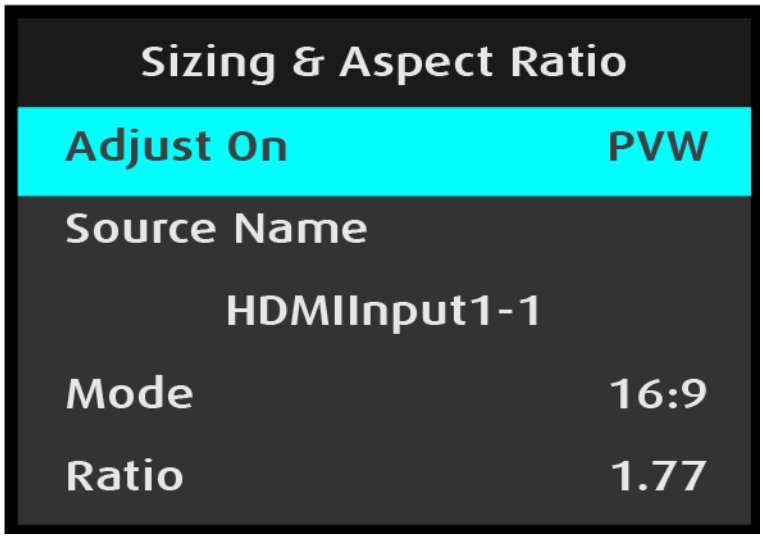

Image 6–24 Adjust On selection

Once Adjust On is selected, the highlight bar turns from gray to cyan.

2. Scroll to and select either **PVW** (preview) or **PGM** (program).

Sizing & Aspect Ratio: Source Name

1. Select **Source Name** on the Sizing & Aspect Ratio menu.

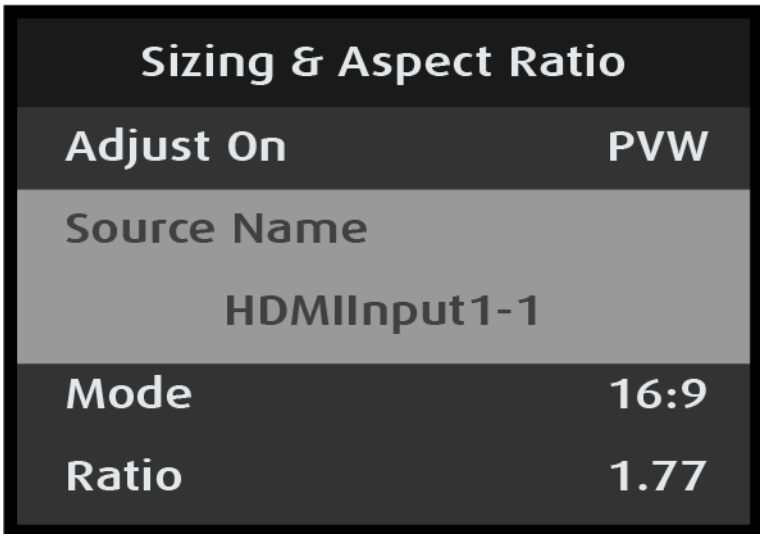

Image 6–25 Sizing & Aspect Ratio: Source Name selection

Source Name is a status-only selection; it displays the source name of the selected input.

Sizing & Aspect Ratio: Mode

1. Scroll to and select Mode on the Sizing & Aspect Ratio menu.

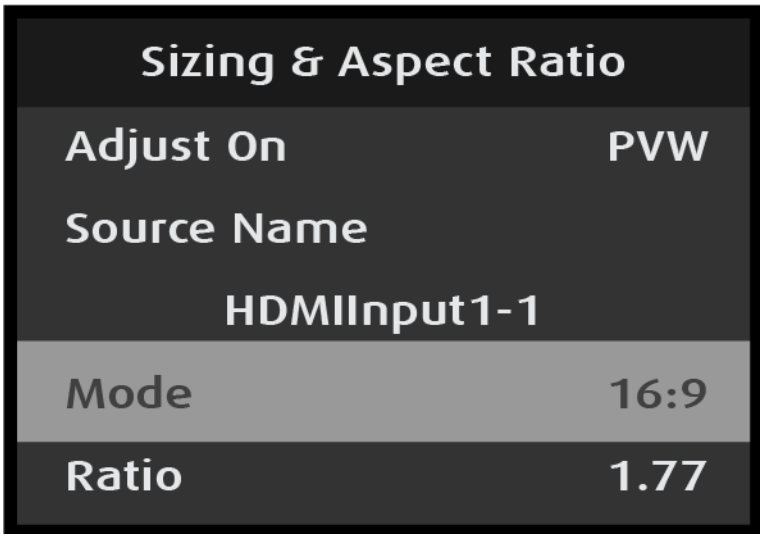

Image 6–26 Sizing & Aspect Ratio: Mode selection

Once Mode is selected, the highlight bar turns from gray to cyan.

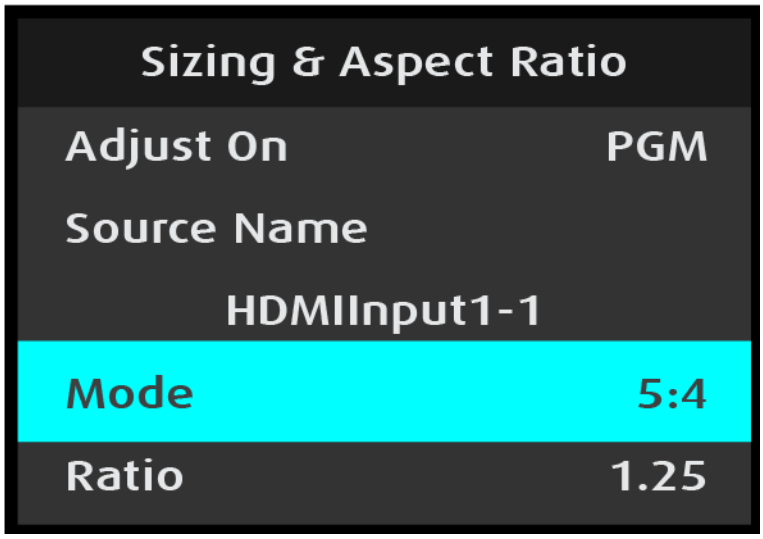

Image 6–27 Sizing & Aspect Ratio: Mode adjustment

The modes are:
- 3:1
- 16:9
- 16:10
- 3:2
- 4:3
- 5:4
- 1:1
- Custom

2. Scroll to and select the desired mode.

Sizing & Aspect Ratio: Ratio

1. Scroll to and select **Ratio** on the Sizing & Aspect Ratio menu to adjust the ratio of the width of the input source to its height.

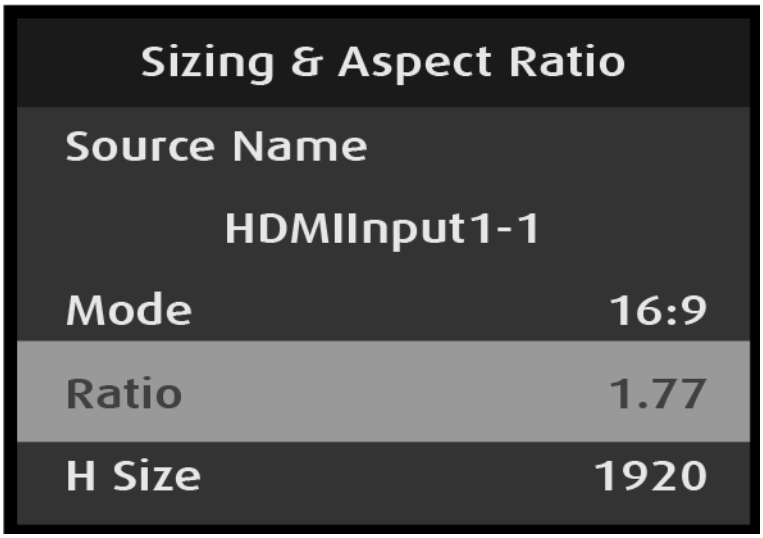

Image 6–28 Sizing & Aspect Ratio: Ratio selection

Once Ratio is selected, the highlight bar turns from gray to cyan.

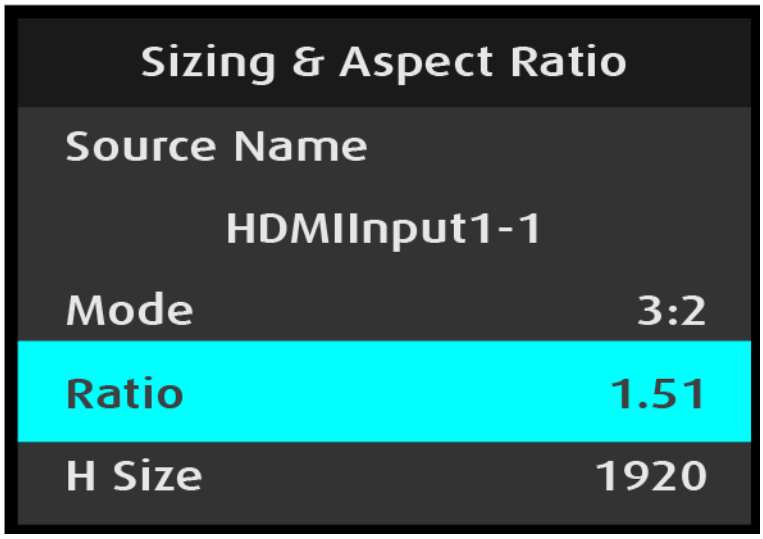

Image 6–29 Sizing & Aspect Ratio: Ratio adjustment

2. Use the Adjust knob to adjust and select the desired ratio.
   Adjusting the Ratio automatically adjusts the Mode. If, for example, Ratio is 1.77, the Mode is 16:9. Turning the adjust knob counter-clockwise, users can adjust the ratio to any custom setting, for example from 2.99 to 1.78. Setting the Ratio to 1.51 sets the Mode to 3:2.
   Setting the ratio to a value that does not match a mode sets the mode to “Custom.”

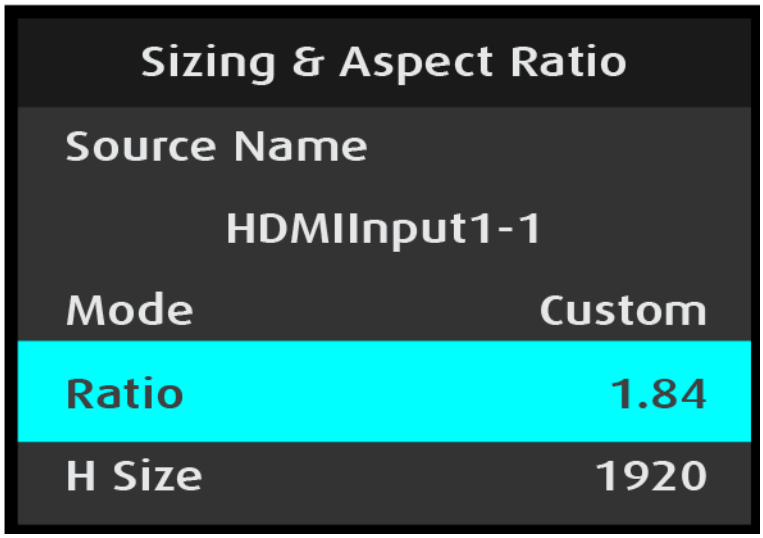

Image 6–30 Aspect ratio adjustment with “Custom” mode

Sizing & Aspect Ratio: H Size, V Size, H Pos, V Pos, Save Source, and Reset

Use the Sizing & Aspect Ratio size and position menus to adjust or reset the size and position of the input source. The adjustment procedure for H Size, V Size, H Pos, and V Pos is the same for all four adjustments. The H Size adjustment is illustrated here.

Reset returns the sizing and position adjustments to their original settings.

1. Select **H Size** from the Sizing & Aspect Ratio menu.

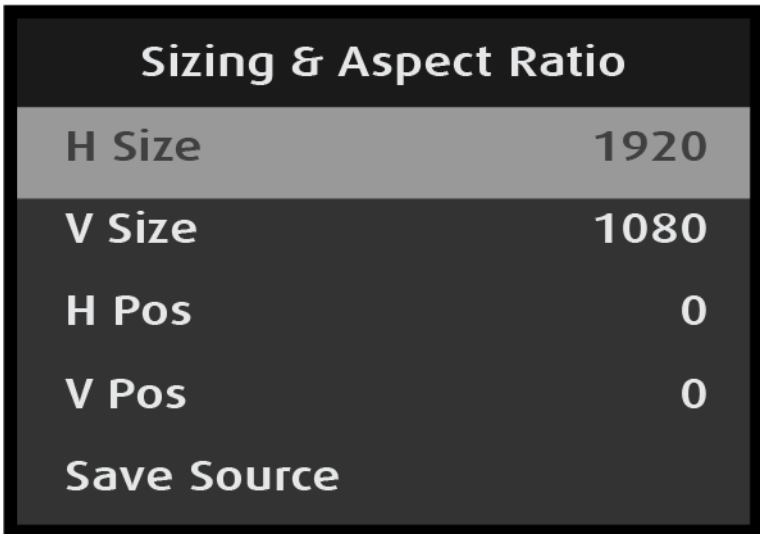

Image 6–31 Sizing & Aspect Ratio: H Size selection

   Once H Size is selected, the highlight bar turns from gray to cyan.
2. Use the Adjust knob to adjust the H-size value.

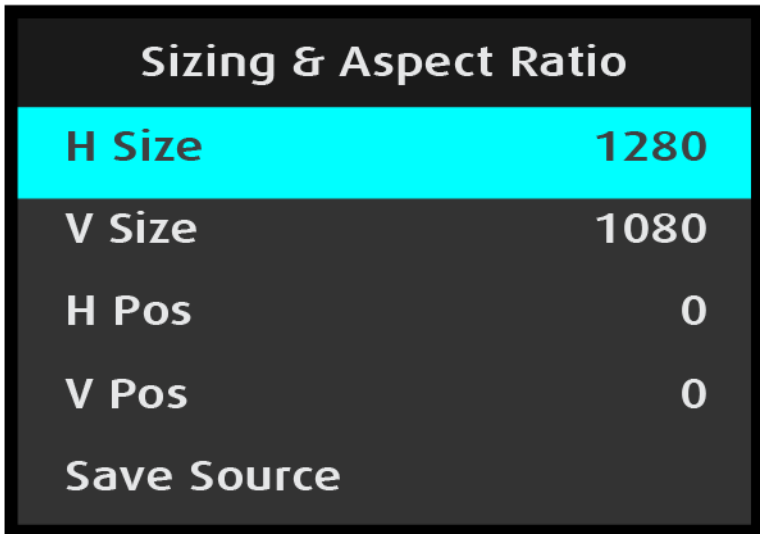

Image 6–32 Sizing & Aspect Ratio: H Size adjustment

V Size, H Pos, and V Pos are updated in the same manner as H Size is updated. Once all updates are made, save the source.

3. Scroll to and select **Save Source**.

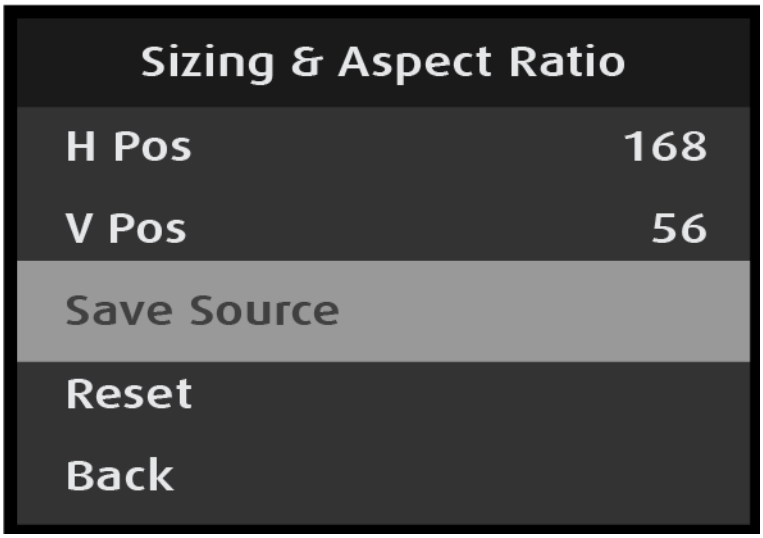

Image 6–33 Sizing & Aspect Ratio: Save Source

The system flashes an “Input/Source is saved” message.

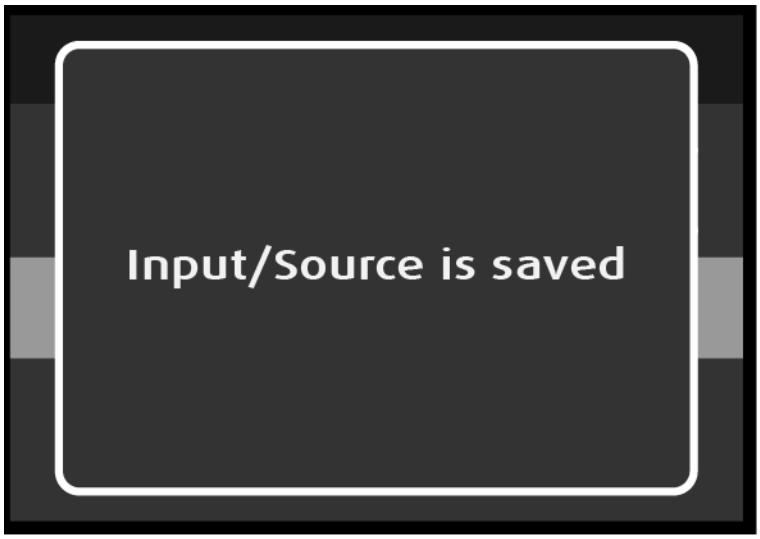

Image 6–34 “Input/Source is saved” message

Reset returns the Sizing & Aspect Ratio adjustments to their original settings, even if the source has been saved.

Back returns to the Input menu.

Input: Color Adjustment

1. Select **Color Adjustment** on the Input menu.

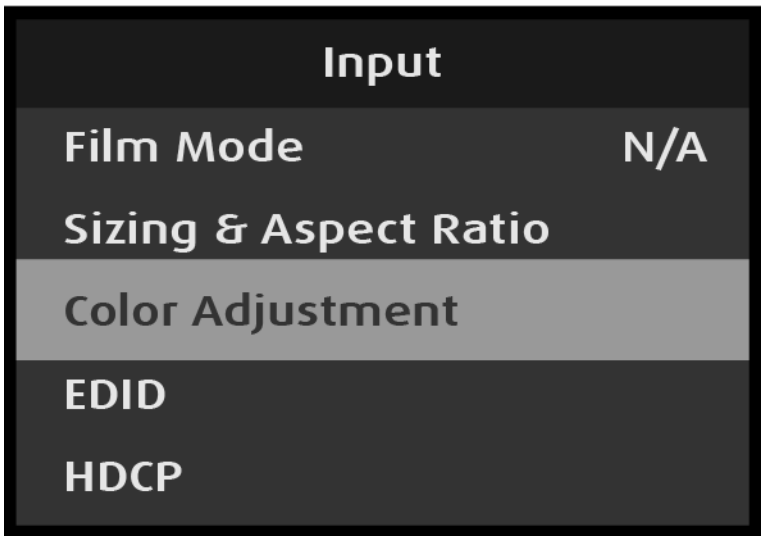

Image 6–35 Input: Color Adjustment selection

Selecting Color Adjustment opens the Color Adjustment menu.
Select Color Adjustment to adjust the following color aspects of the input source:

- **Overall Contrast** – Range: 50 to 150; Default: 100
- **Red Contrast** – Range: 25 to 150; Default: 100
- **Green Contrast** – Range: 25 to 150; Default: 100
- **Blue Contrast** – Range: 25 to 150; Default: 100
- **Overall Brightness** – Range: 50 to 150; Default: 100
- **Red Brightness** – Range: 25 to 150; Default: 100
- **Green Brightness** – Range: 25 to 150; Default: 100
- **Blue Brightness** – Range: 25 to 150; Default: 100
- **Hue** – Range: –90 to 90; Default: 0
- **Gamma** – Range: 0.30 to 3.29; Default: 1.00
- **Saturation** – Range: 0 to 150: Default: 100

The adjustment procedure is the same for all eleven adjustments. The Overall Contrast adjustment is illustrated here.

Save Source saves all adjustments to the source.

Reset returns the color adjustments to their initial settings.

Back returns to the Input menu.

2. Scroll to and select **Overall Contrast** on the Color Adjustment menu.

Image 6–36 Overall Contrast selection

3. Use the Adjust knob to adjust the Overall Contrast value.

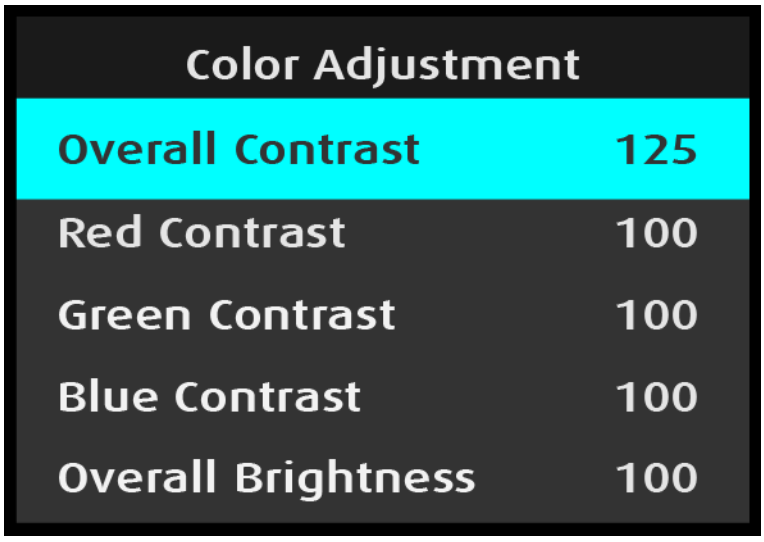

Image 6–37 Overall Contrast adjustment

Once all updates are made, save the source.

4. Scroll to and select **Save Source**.

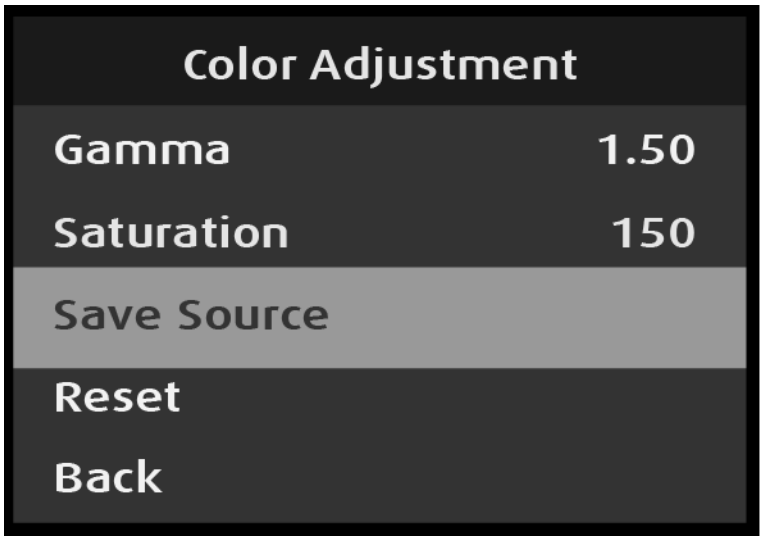

Image 6–38 Color Adjustment: Save Source

The system flashes a “Source is saved” message.

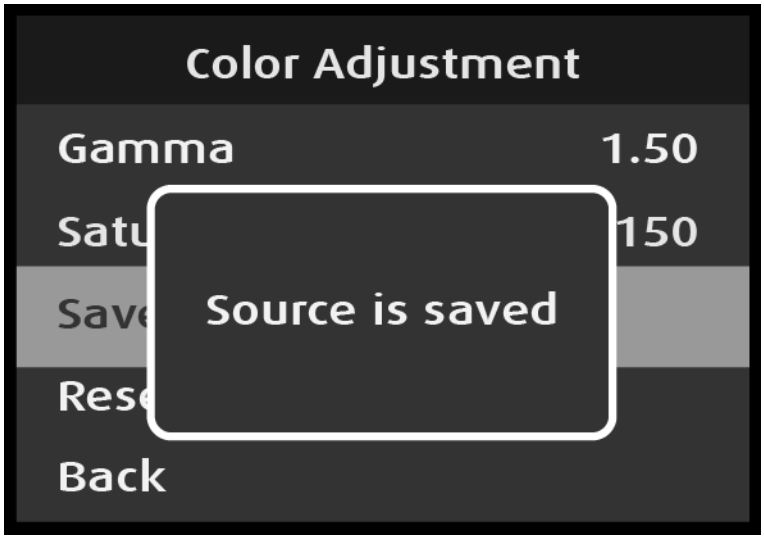

Image 6–39 “Source is saved” message

Reset returns the source settings to their original state, even if the source has been saved.

Back returns to the Input menu.

Input: EDID

Use the EDID menu to set up and apply an EDID for an input.

EDID is not applicable to SDI inputs.

1. Select **EDID** on the Input menu.

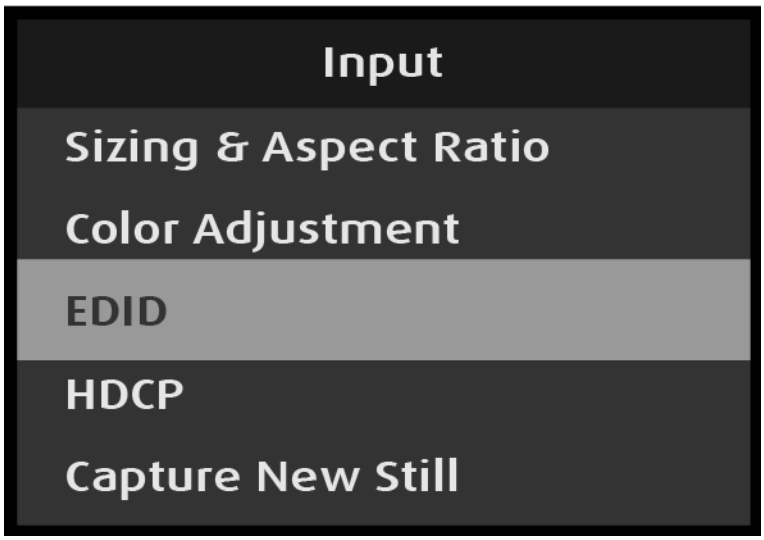

Image 6–40 Input: EDID selection

Selecting EDID opens the EDID menu.

2. Scroll to Status on the EDID menu.

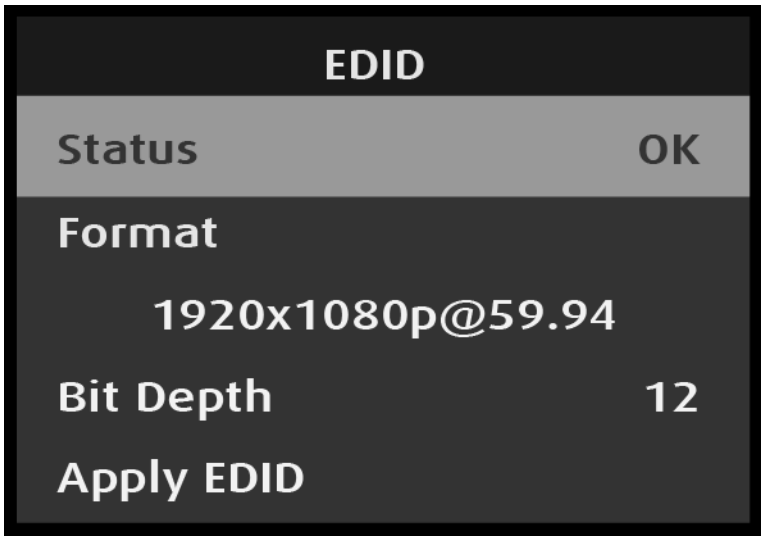

Image 6–41 EDID: Status OK

EDID: Status is a status-only selection; it displays the status of the input selected on the **Adjust Row** and **Adjust On** menus.

3. Scroll to and select **Format** on the EDID menu.

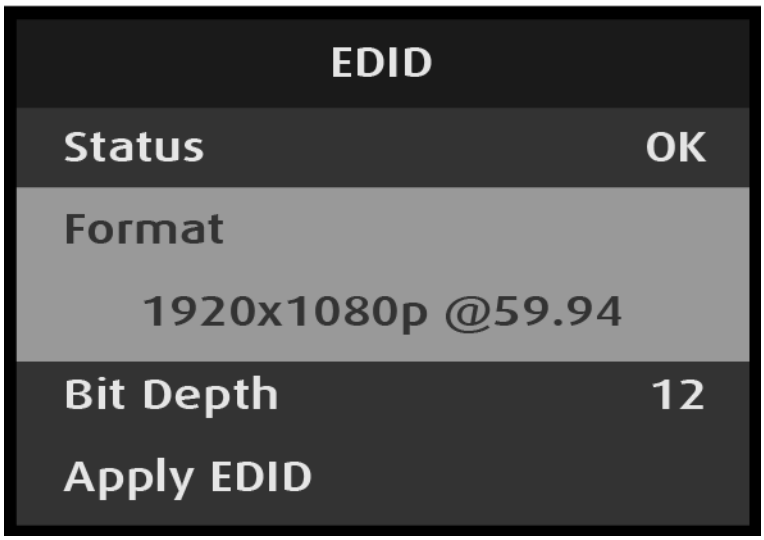

Image 6–42 EDID: Format selection

Once Format is selected, the highlight bar turns from gray to cyan.

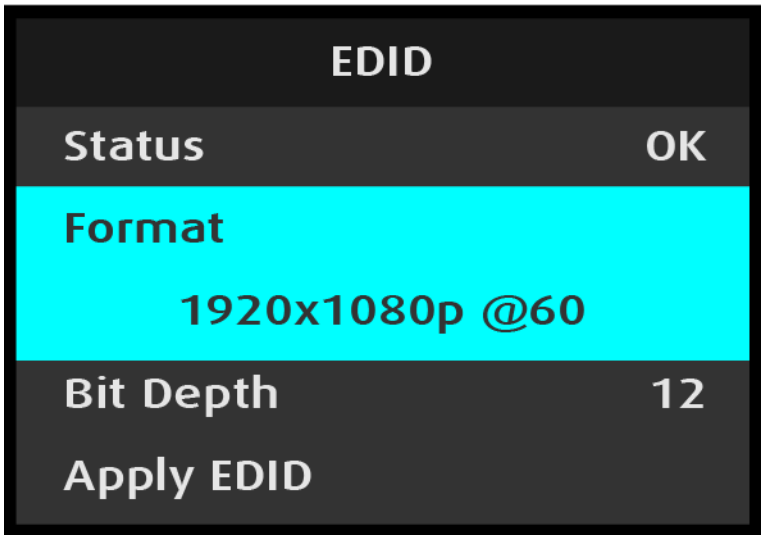

Image 6–43 EDID: Format selection

4. Use the Adjust knob to scroll through and select the desired EDID format from the available formats.
5. Scroll to and select **Bit Depth** on the EDID menu.

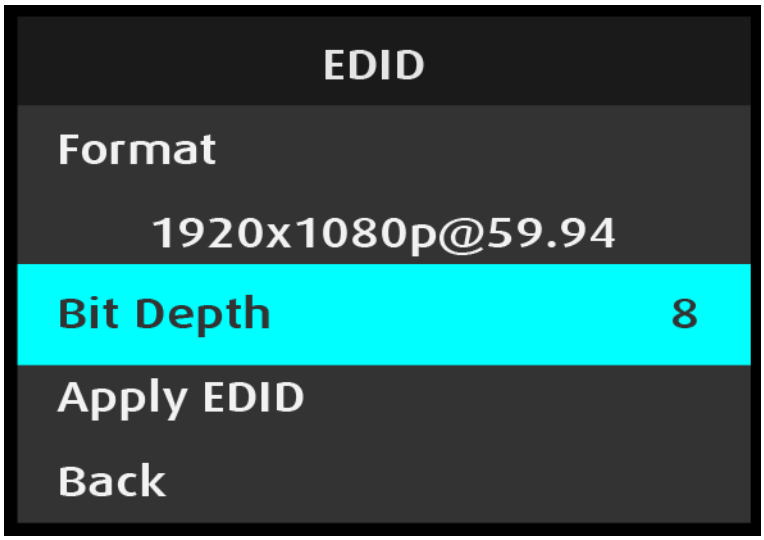

Image 6–44 EDID: Bit Depth adjustment

6. Use the Adjust knob to adjust the bit-depth value.
7. Scroll to and select **Apply EDID** to apply the updated EDID settings to an input, or scroll to and select **Back** to return to the Input menu, without keeping the EDID changes.

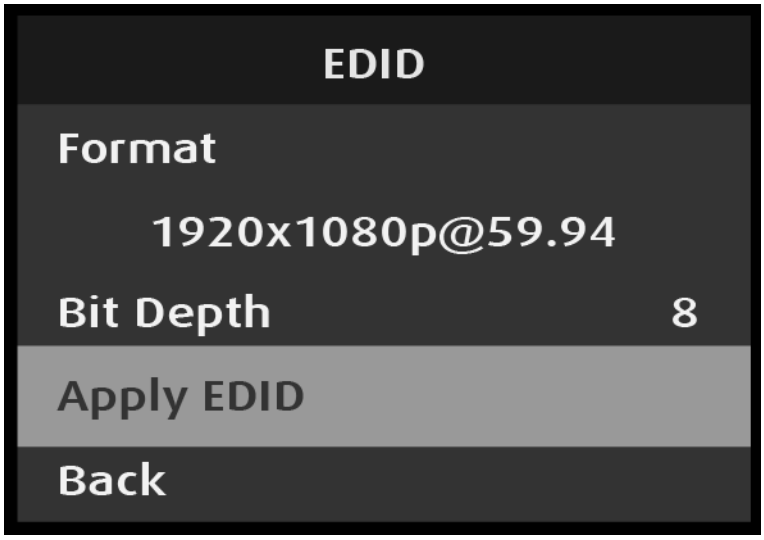

Image 6–45 EDID: Apply EDID selection

The system displays a "New EDID has been applied" message.

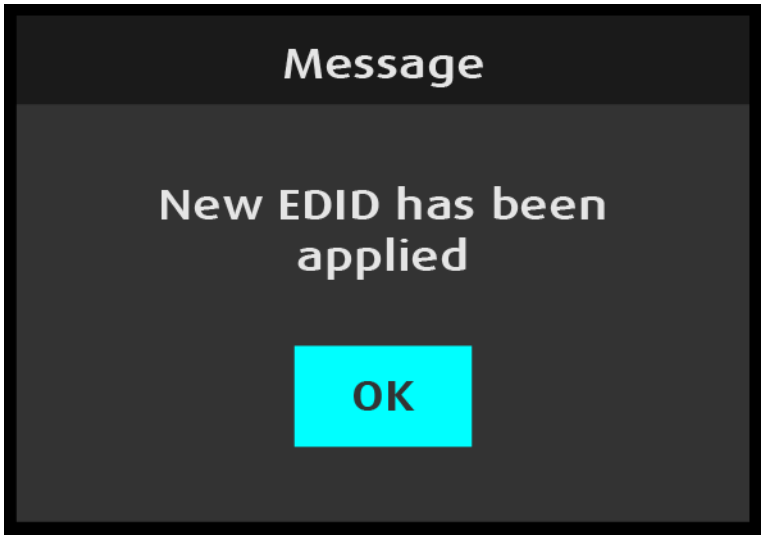

Image 6–46 "New EDID has been applied" message

8. Press the Adjust knob to select "OK."
   The system applies the adjusted EDID.
9. Scroll to and select **Back** to return to the Input menu.

Input: HDCP

The default HDCP mode setting for HDMI is Off.

HDCP Mode is not applicable to SDI inputs.

1. Select **HDCP** on the Input menu to set up and apply HDCP settings for the input.

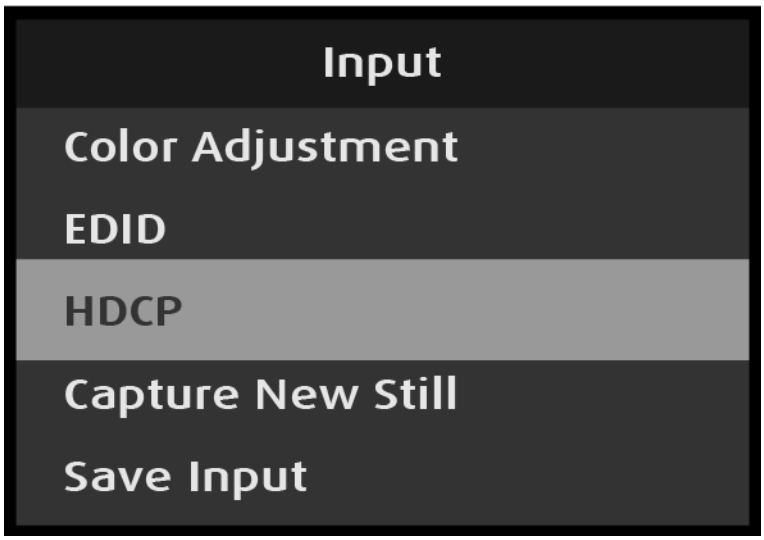

Image 6–47 Input: HDCP selection

2. Scroll to and select **HDCP Mode** on the Input menu.

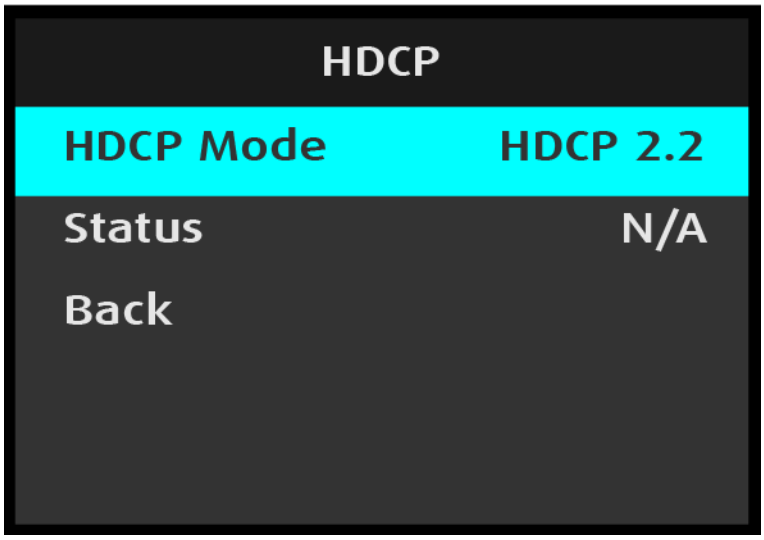

Image 6–48 HDCP Mode adjustment

3. Use the Adjust knob to adjust the HDCP-version value.
   Status shows "N/A" if no HDCP encryption is negotiated on the input, or it shows "OK" and the HDCP type negotiated with the input device.
4. Select **Back** to return to the Input menu.

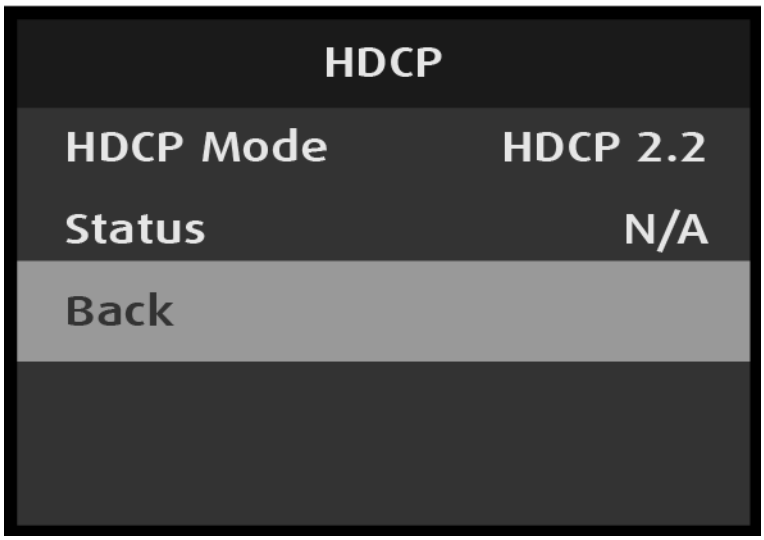

Image 6–49 HDCP: Back—return to Input menu

Input: Capture New Still

1. Scroll to and select **Capture New Still** on the Input menu.

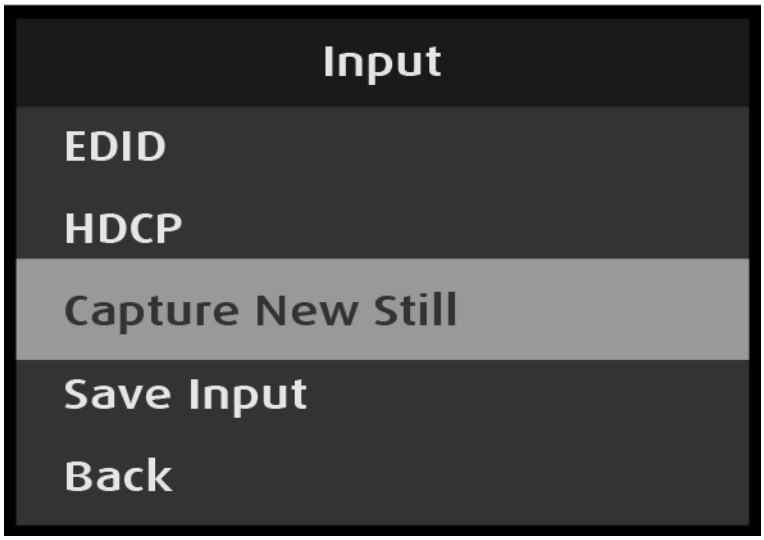

Image 6–50 Input: Capture New Still

2. Press the Adjust knob to capture the new still.
   The system displays a progress screen while it captures the Still.

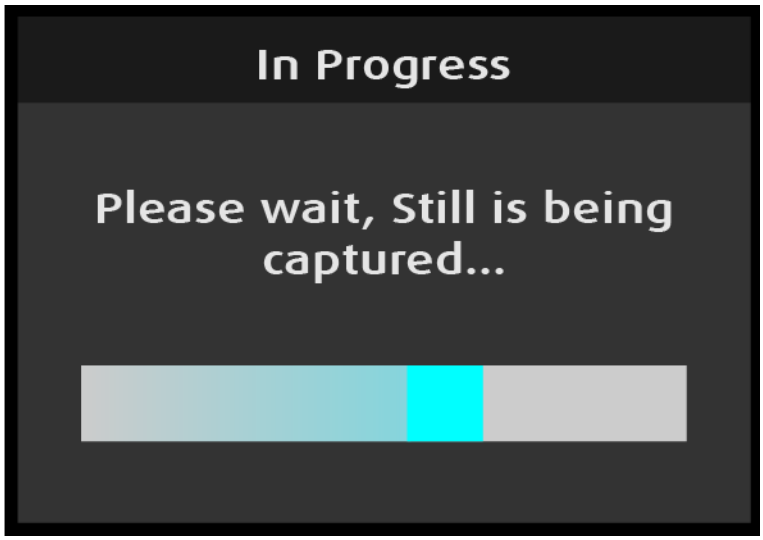

Image 6–51 StillStore in progress

Once the Still is captured, the system returns to the Input menu and displays a message that contains the name of the Still.

Image 6–52 “StillStore is captured” message

The “StillStore is captured” message, with the name of the Still, is displayed only briefly.

Once the Still is captured, the system returns to the Input menu.

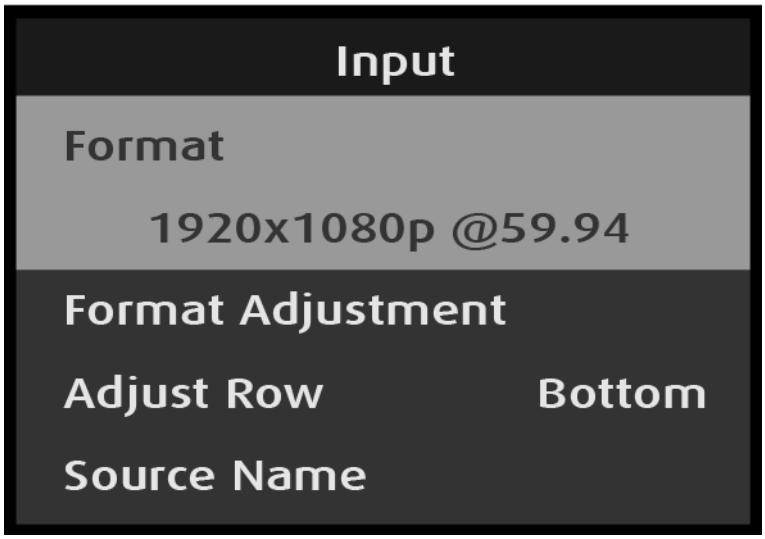

Image 6–53 AV Settings: Input menu

Input: Save Input

1. Scroll to and select **Save Input** on the Input menu.

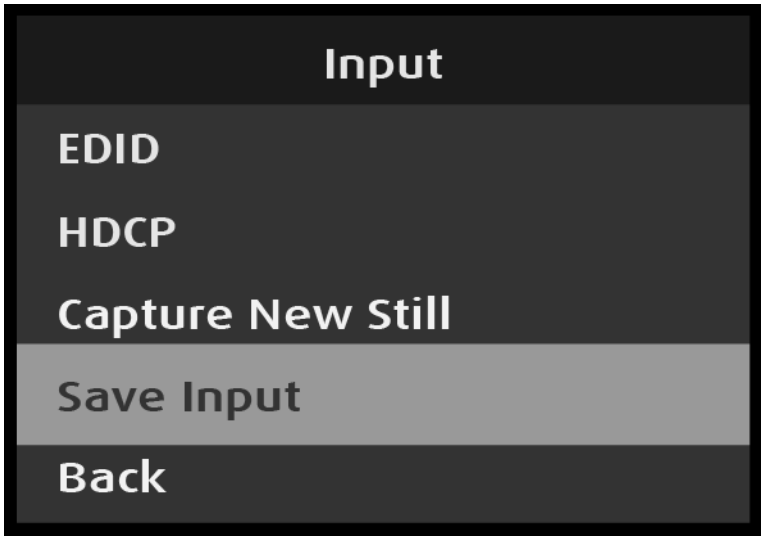

Image 6–54 Input: Save Input selection

   The system displays the following message:
2. Press the Adjust knob to save the input.

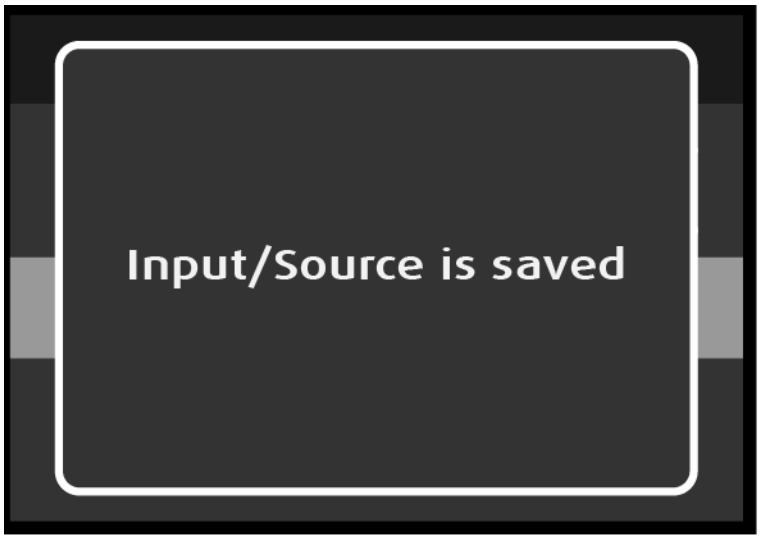

Image 6–55 “Input/Source is saved” message

Once the input is saved, the system returns to the Input menu.

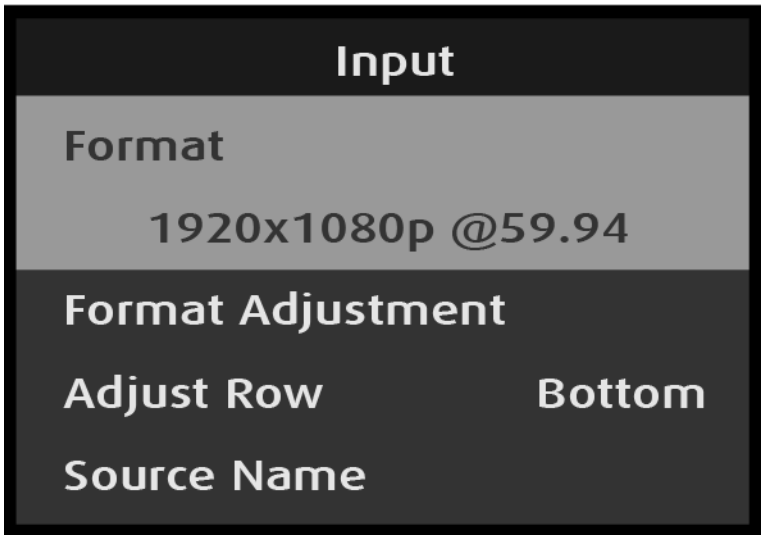

Image 6–56 Input menu

3. Scroll to and select **Back** to return to the Setup menu.

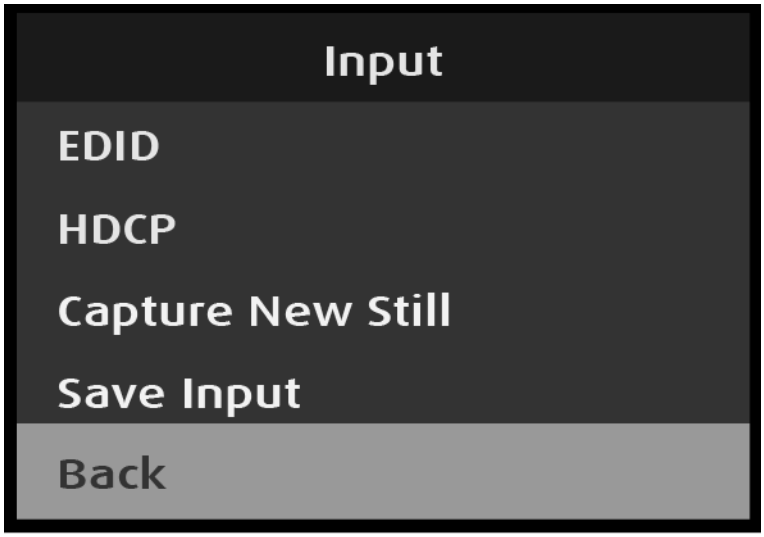

Image 6–57 Input: Back selection

6.6 AV Settings: Output

General

Use the AV Settings: Output menu to set up and use outputs. To enter the Output menu from the AV Setup menu, scroll to and select **Output**.

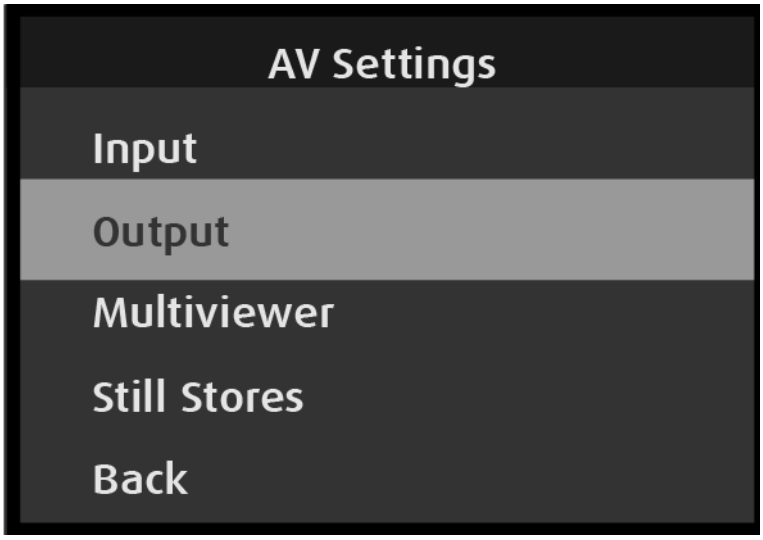

Image 6–58 AV Settings: Output menu

Use the Output menu to adjust all parameters relating to outputs. Using this menu, you can set all of the configuration options for the selected output.

The AV Settings: Output menu has the following submenus:

- Screen
- Format
- Transition Time
- Auto Configure Output Format
- Test Pattern
- Area of Interest
- Color Adjustment
- Logo/Matte
- Background
- HDCP
- Color/Sample/Bit
- SDI Setup
- Back

AV Settings: Output menu tree

Refer to Image 6–59 and Image 6–60 for an illustration of the AV Settings: Output menu tree.

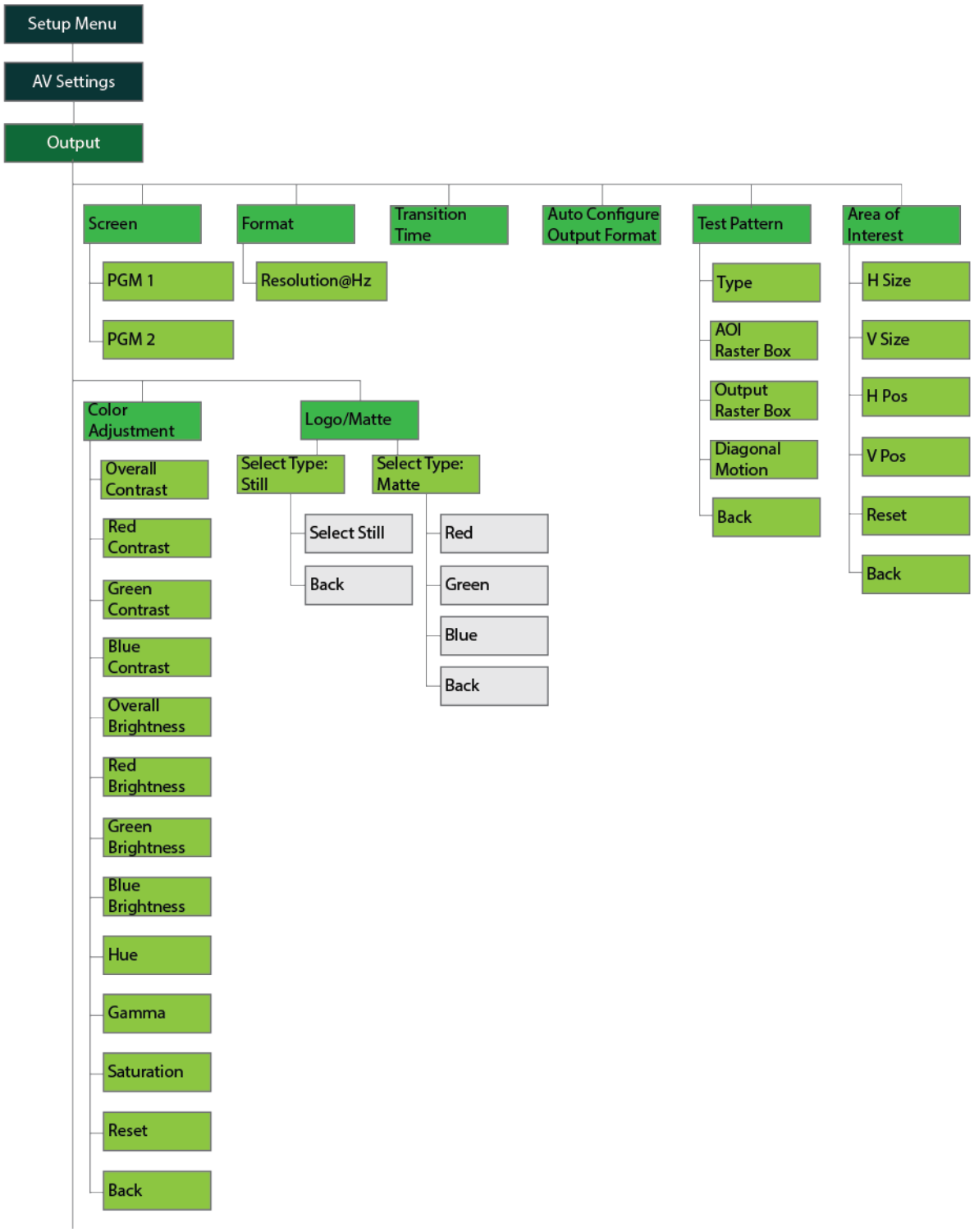

Image 6–59 AV Settings: Output menu tree

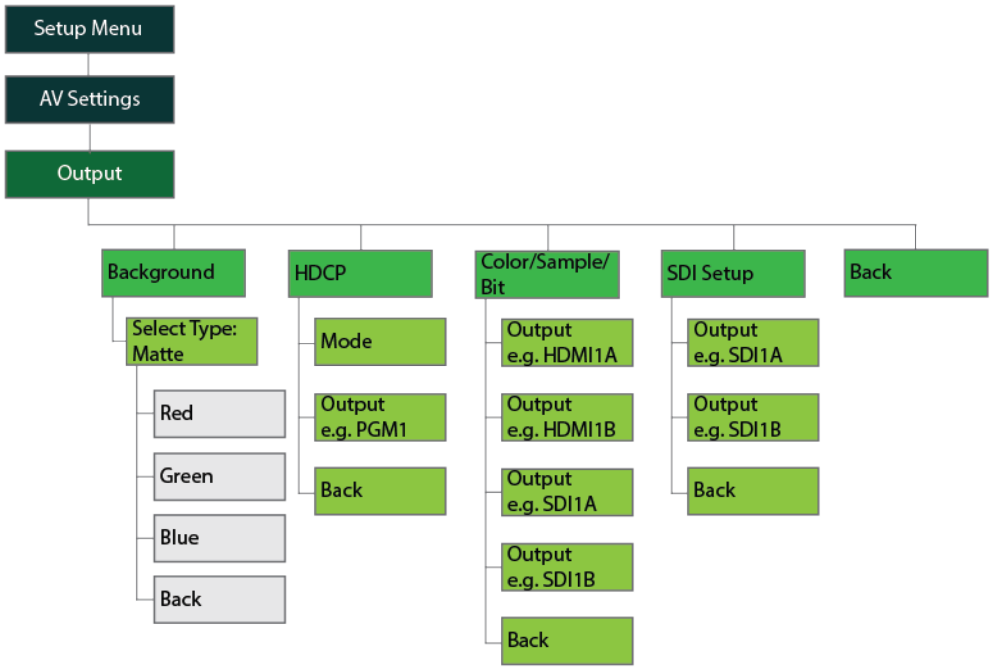

Image 6–60 AV Settings: Output menu tree (continued)

Output: Screen

1. Select **Screen** on the Output menu.

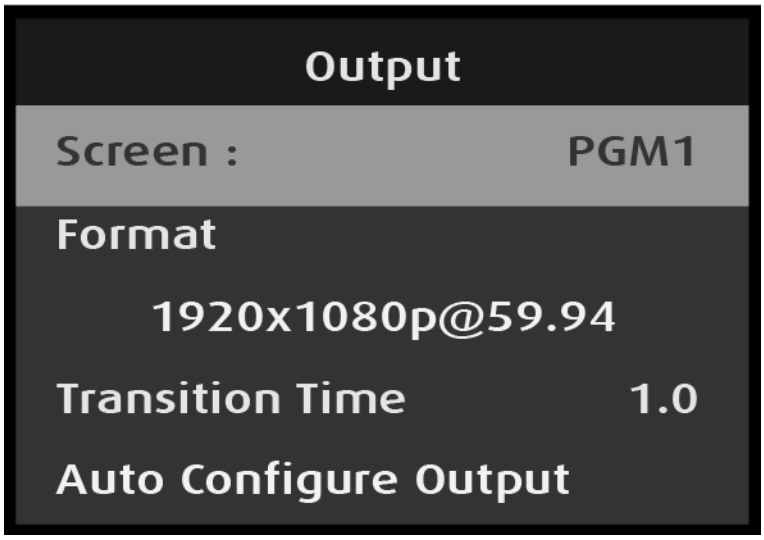

Image 6–61 Output: Screen selection

   Once screen is selected, the highlight bar turns from gray to cyan.
2. Turning the adjust knob scrolls through the available outputs.

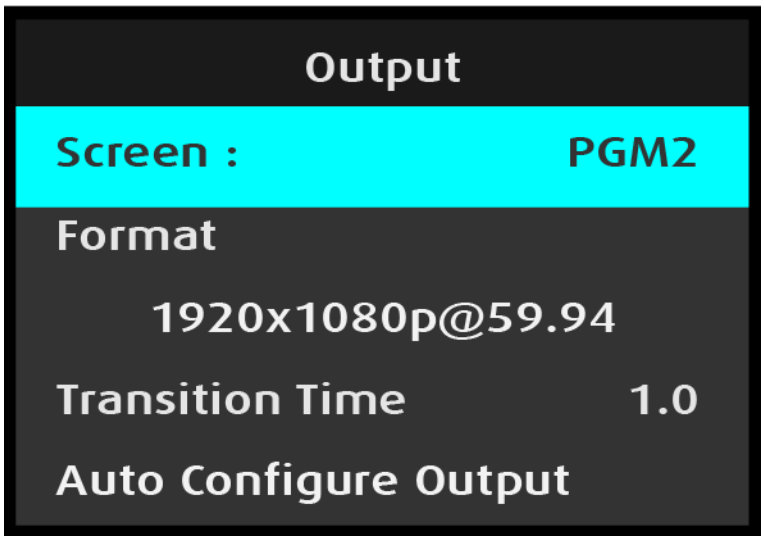

Image 6–62 Output: Screen adjustment

Output: Format

1. Select **Format** on the Output menu.

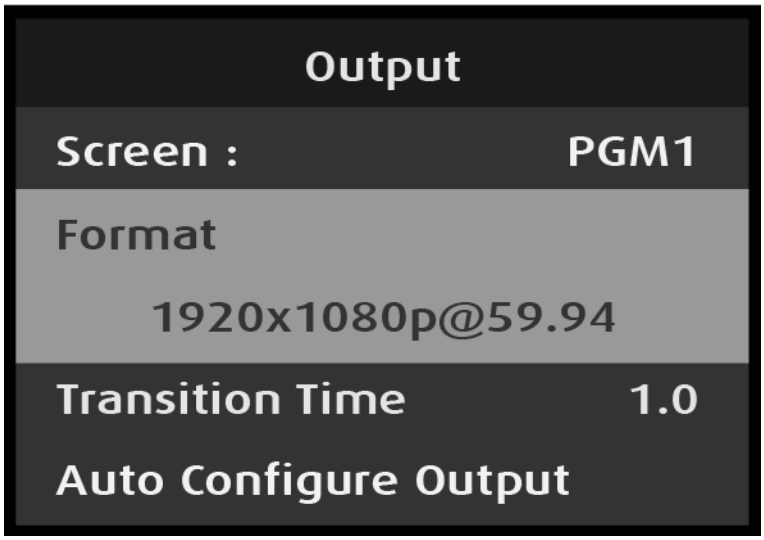

Image 6–63 Output: Format selection

Once Format is selected, the highlight bar turns from gray to cyan.

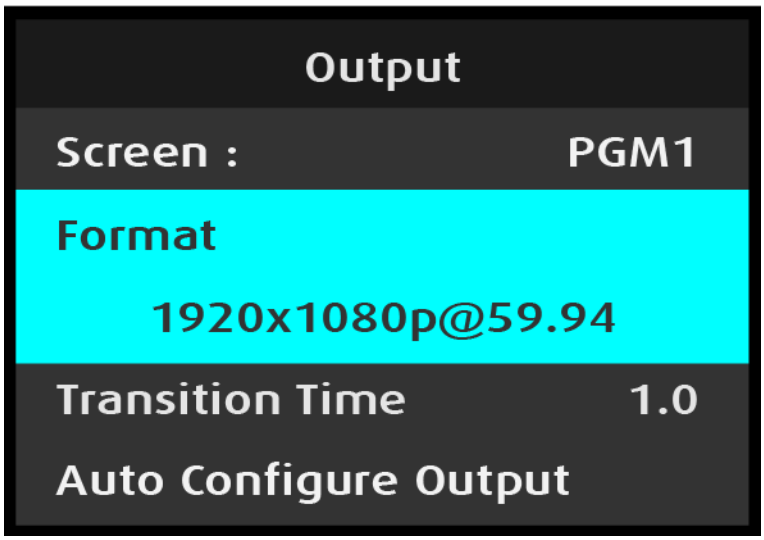

Image 6–64 Output: Format adjustment

2. Turn the **Adjust knob** to scroll through the available formats.

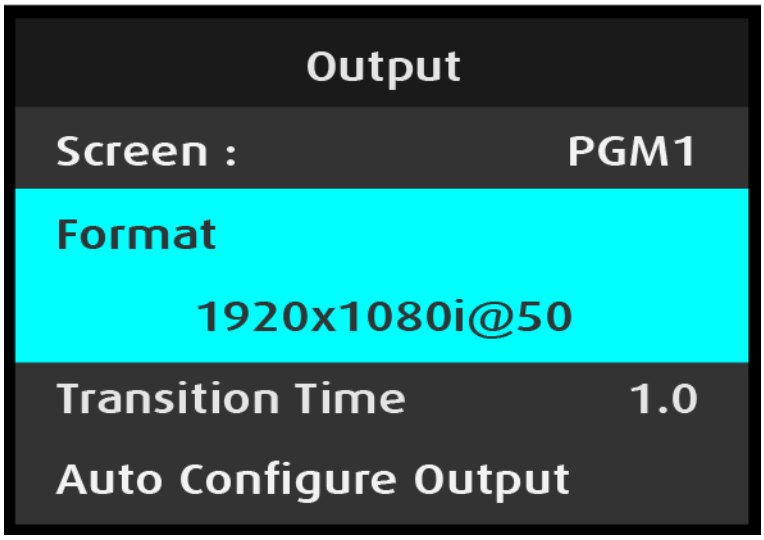

Image 6–65 Adjusting Output Format

3. Press the **Adjust knob** to select the desired output format, when it is displayed.

Output: Transition Time

Use Transition Time to adjust the duration of a transition time in seconds. Value ranges from "0.0" to "12.0." A transition time of "0.0" specifies a **Cut** transition.

1. Select **Transition Time** on the Output menu.

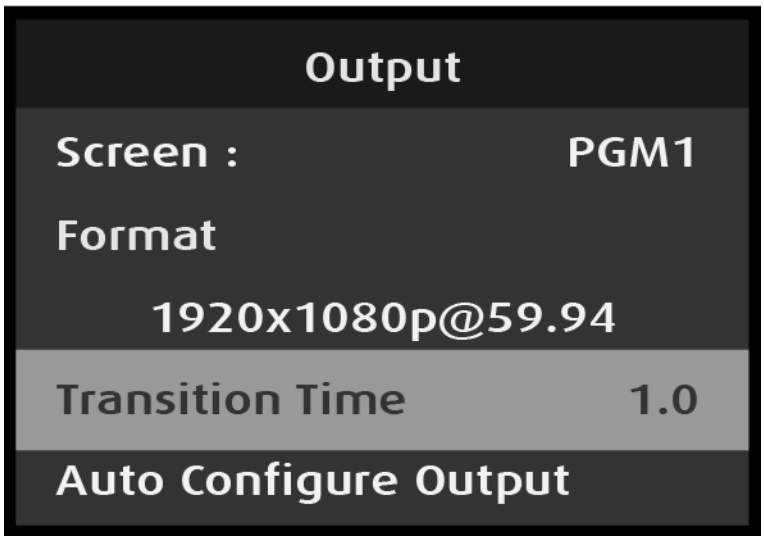

Image 6–66 Output: Transition Time selection

Once Transition Time is selected, the highlight bar turns from gray to cyan.

2. Turn the adjust knob to adjust the transition time.

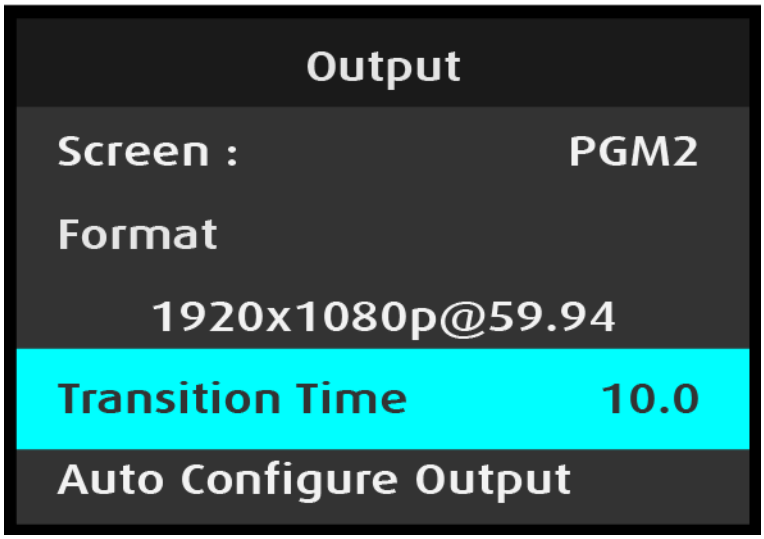

Image 6–67 Output: Transition Time adjustment

The Transition Time is adjusted in tenths of a second.

3. Press the Adjust knob to select the desired transition time, when it is displayed.

Output: Auto Configure Output Format

Use Auto Configure Output Format to automatically detect and acquire the preferred output format for the primary HDMI display.

1. Scroll to and select **Auto Configure Output Format** from the Output menu.

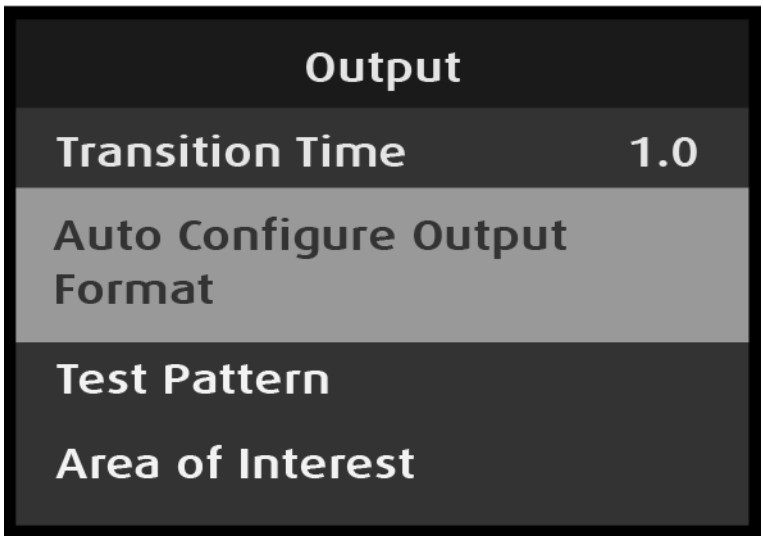

Image 6–68 Output: Auto Configure Output Format selection

Output: Test Pattern

Use Test Pattern to select and adjust output test patterns.

1. Scroll to and select **Test Pattern** on the Output menu.

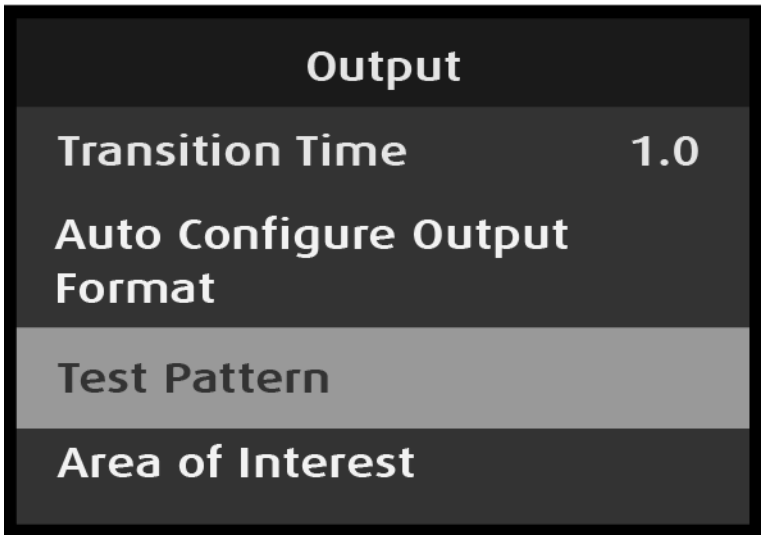

Image 6–69 Output: Test Pattern selection

The system displays the Test Pattern menu.

Test Pattern: Type

Use Type to select the desired test pattern.

1. Scroll to and select **Type** from the Test Pattern menu.
   The system displays the Test Pattern menu.

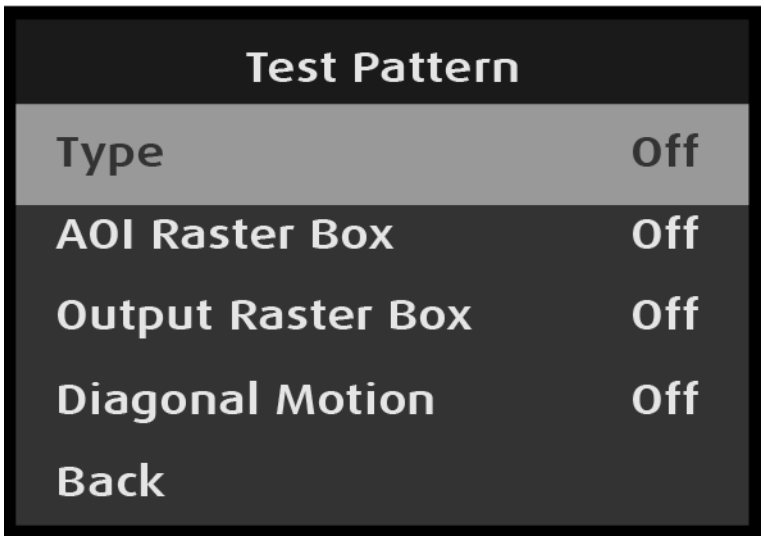

Image 6–70 Test Pattern: Type selection

Once Type is selected, the highlight bar turns from gray to cyan.

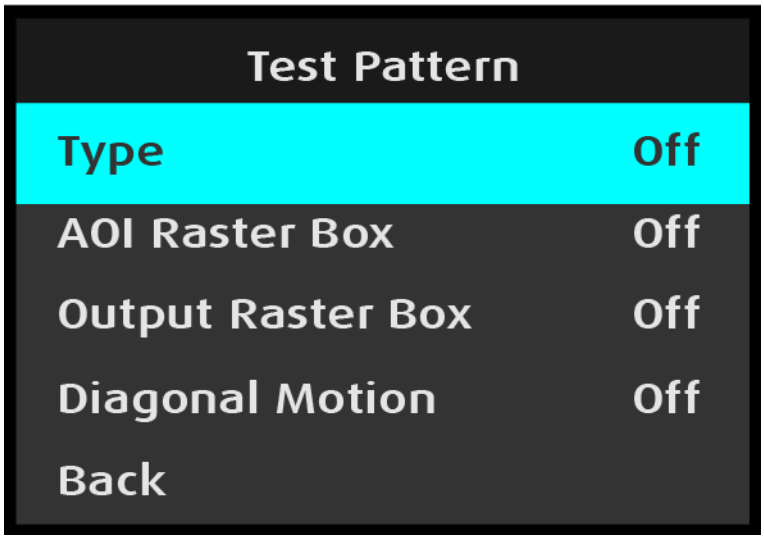

Image 6–71 Test Pattern: Type adjustment

The following test patterns are available:

- Horizontal Ramp
- Vertical Ramp
- 100% Color Bars
- 16x16 Grid
- 32x32 Grid
- Burst
- 75% Color Bars
- 50% Gray
- Horizontal Steps
- Vertical Steps
- White
- Black
- SMPTE Bars
- Circle Alignment
- Red
- Green
- Blue

2. Use the Adjust knob to scroll through and select the desired test pattern.

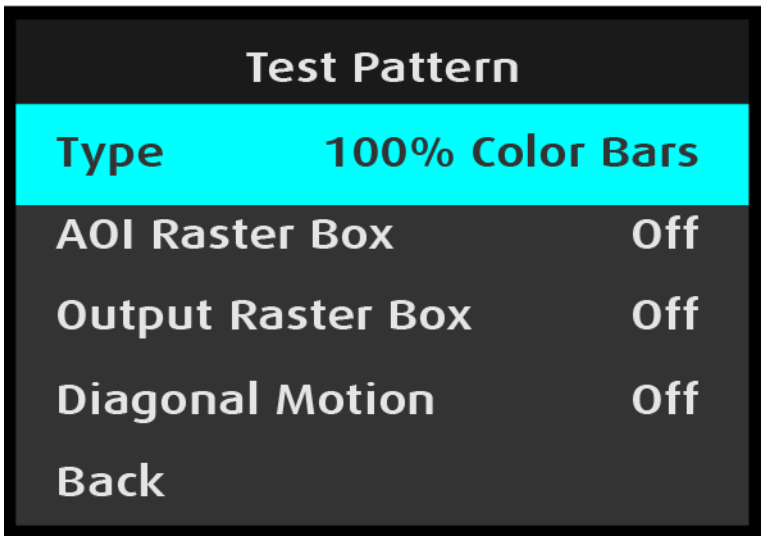

Image 6–72 Selecting test-pattern type “100% Color Bars”

Test Pattern: AOI Raster Box

Use AOI Raster Box to turn On and turn Off a border box around the area of interest (AOI). The AOI raster box is green.

1. Scroll to and select **AOI Raster Box** from the Test Pattern menu.

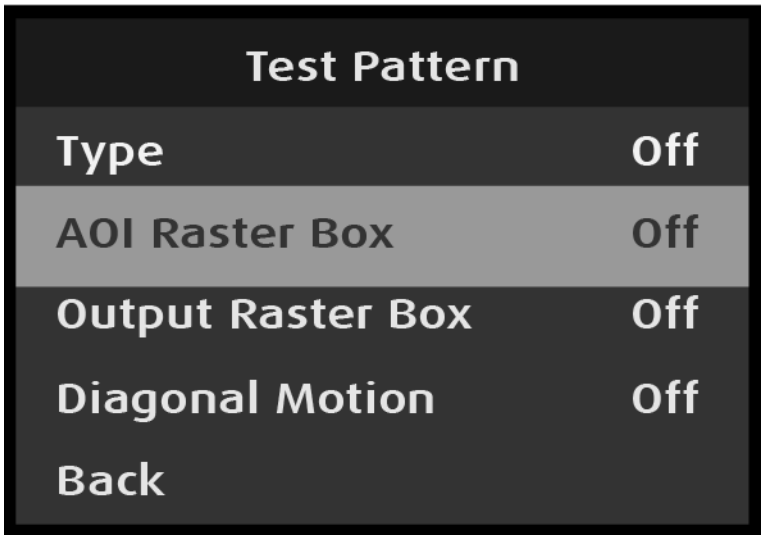

Image 6–73 Test Pattern: AOI Raster Box selection

Once AOI Raster Box is selected, the highlight bar turns from gray to cyan.

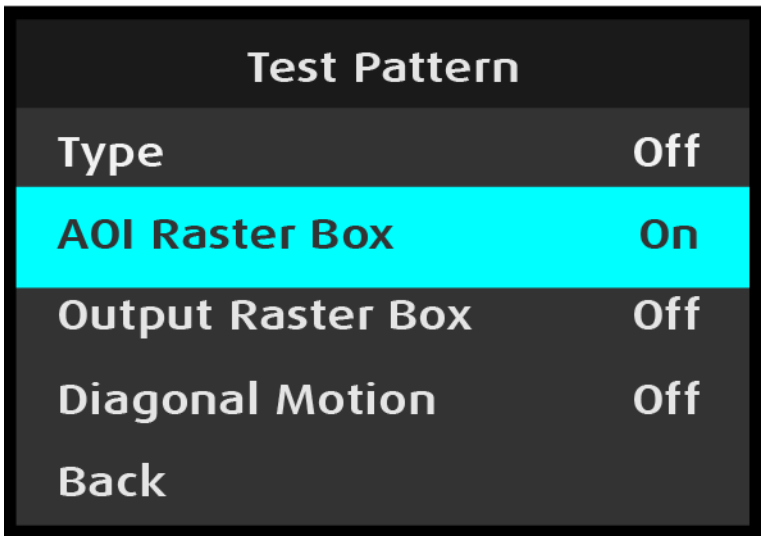

Image 6–74 Test Pattern: AOI Raster Box adjustment

2. Use the Adjust knob to toggle the AOI raster box between **Off** and **On**.

Test Pattern: Output Raster Box

Use Output Raster Box to turn On and turn Off a border box around the entire output. The output raster box is white.

1. Scroll to and select **Output Raster Box** from the Test Pattern menu.

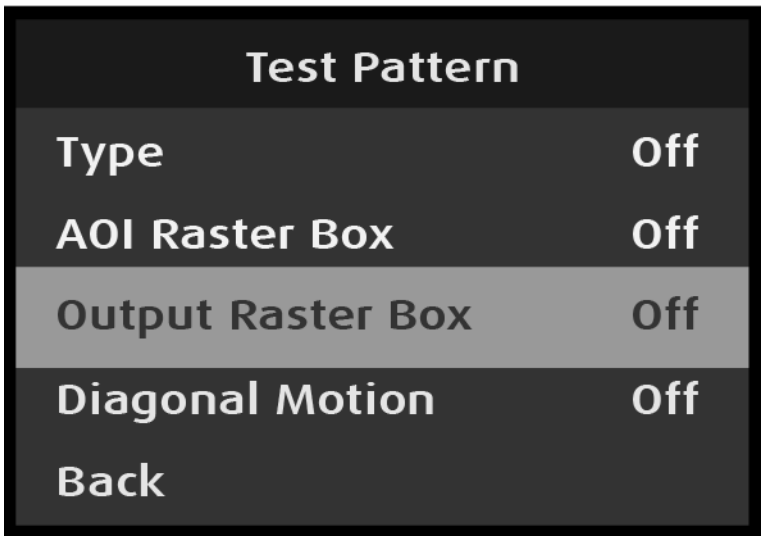

Image 6–75 Test Pattern: Output Raster Box selection

Once Output Raster Box is selected, the highlight bar turns from gray to cyan.

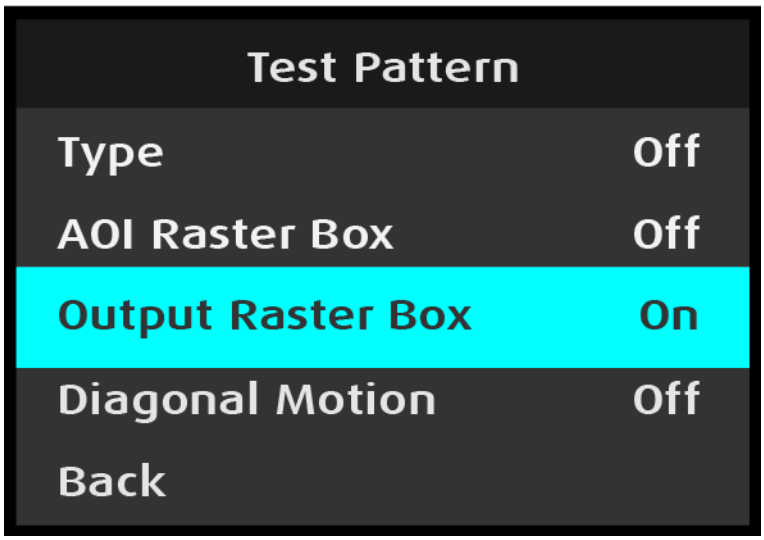

Image 6–76 Test Pattern: Output Raster Box adjustment

2. Use the Adjust knob to toggle the output raster box between **Off** and **On**.

Test Pattern: Diagonal Motion

Use Diagonal Motion to add motion to a test pattern. In most cases the motion is diagonal; in some cases the motion is either horizontal or vertical.

1. Scroll to and select **Diagonal Motion** from the Test Pattern menu.

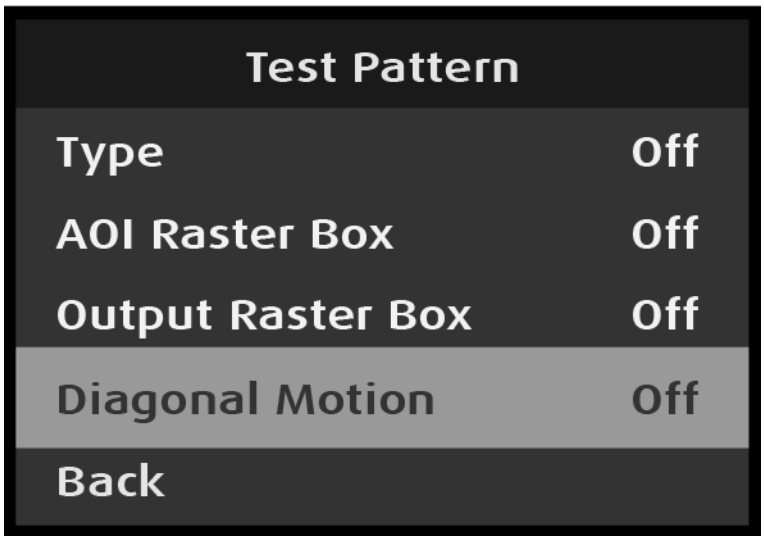

Image 6–77 Test Pattern: Diagonal Motion selection

Once Diagonal Motion is selected, the highlight bar turns from gray to cyan.

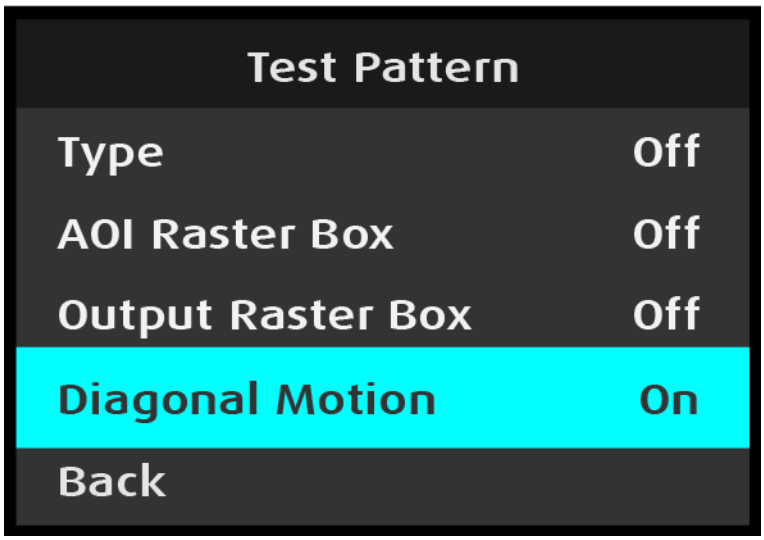

Image 6–78 Test Pattern: Diagonal Motion adjustment

2. Use the Adjust knob to toggle the diagonal motion between **Off** and **On**.

Back returns to the Output menu.

Output: Area of Interest

Use the Area of Interest menu to adjust the H Size, V Size, H Pos, and V Pos of the area of interest (AOI) of the output. The adjustment procedure is the same for all four adjustments. The H Pos adjustment is illustrated here.

1. Select **Area of Interest** on the Output menu.

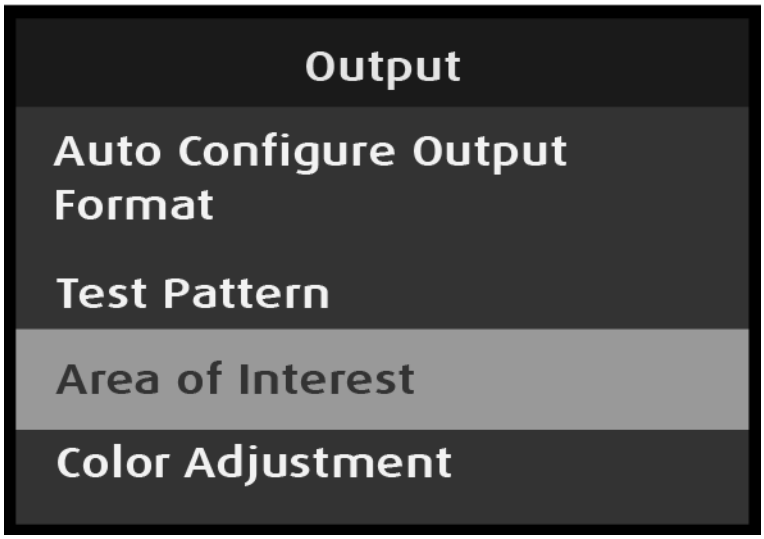

Image 6–79 Output: Area of Interest selection

Selecting Area of Interest opens the Area of Interest menu.

2. Scroll to and select **H Pos** on the Area of Interest menu.

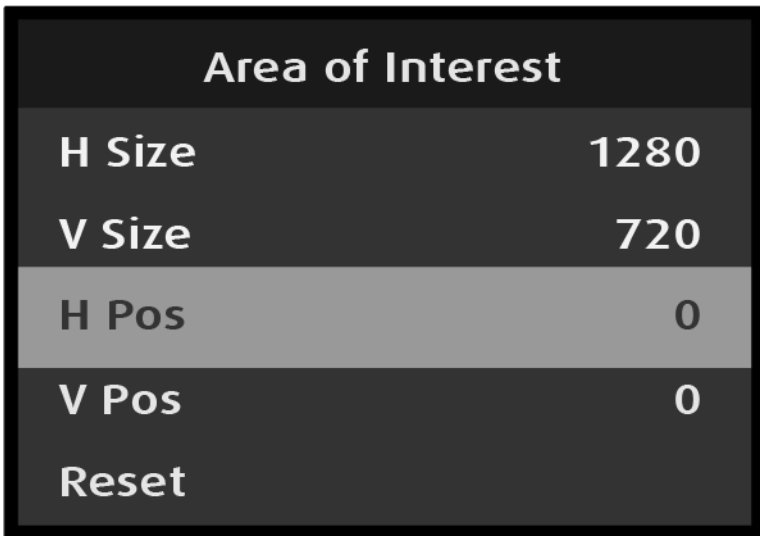

Image 6–80 AOI: H Pos selection

Once H Pos is selected, the highlight bar turns from gray to cyan.

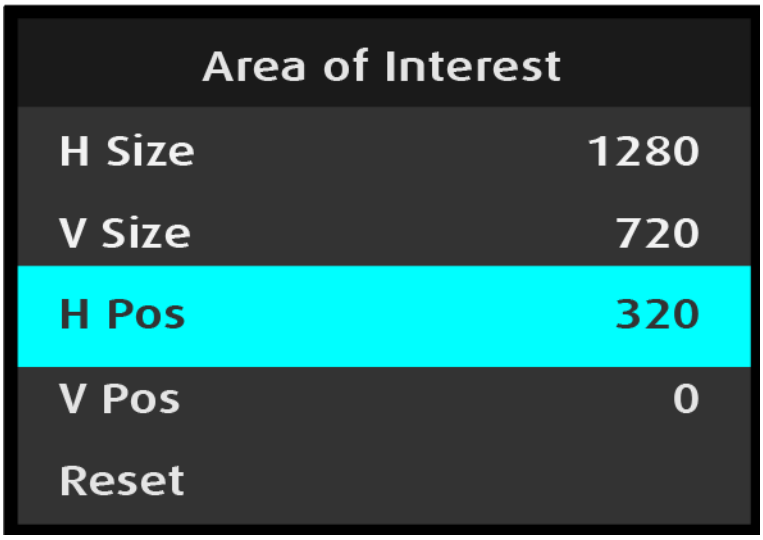

Image 6–81 AOI: H Pos adjustment

3. Use the Adjust knob to adjust the H-position value.
   H Size, V Size, and V Pos are updated in the same manner as H Pos is updated.

Reset returns the AOI adjustments to their initial settings.

Back returns to the Output menu.

Output: Color Adjustment

Output -Color Adjustment works in the same manner as Input -Color Adjustment works, except that Output -Color Adjustment has no “Save Source” option.

1. Select **Color Adjustment** on the Output menu.

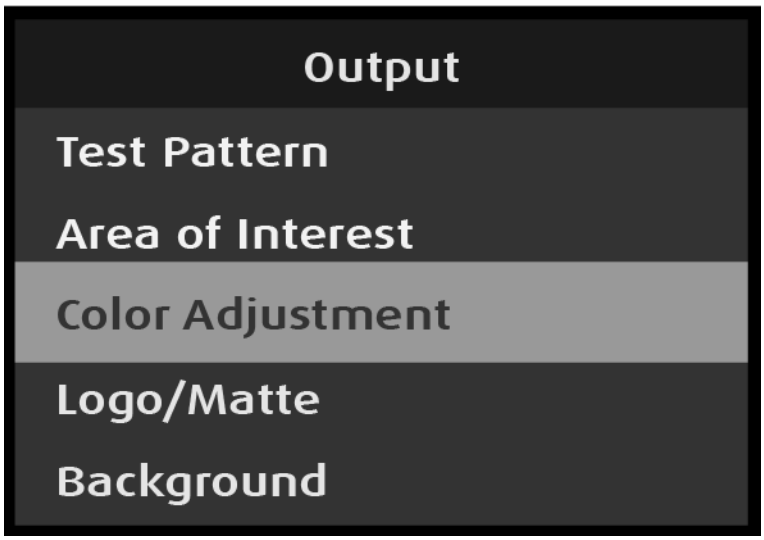

Image 6–82 Output: Color Adjustment selection

Selecting Color Adjustment opens the Color Adjustment menu.
Select Color Adjustment to adjust the following color aspects of the output:

- **Overall Contrast** – Range: 50 to 150; Default: 100
- **Red Contrast** – Range: 25 to 150; Default: 100
- **Green Contrast** – Range: 25 to 150; Default: 100
- **Blue Contrast** – Range: 25 to 150; Default: 100
- **Overall Brightness** – Range: 50 to 150; Default: 100
- **Red Brightness** – Range: 25 to 150; Default: 100
- **Green Brightness** – Range: 25 to 150; Default: 100
- **Blue Brightness** – Range: 25 to 150; Default: 100
- **Hue** – Range: –90 to 90; Default: 0
- **Gamma** – Range: 0.30 to 3.29; Default: 1.00
- **Saturation** – Range: 0 to 150: Default: 100

  The adjustment procedure is the same for all eleven adjustments. The Overall Brightness adjustment is illustrated here.

  Reset returns the color adjustments to their initial settings.

  Back returns to the Input menu.

2. Scroll to and select **Overall Brightness** on the Color Adjustment menu.

Image 6–83 Overall Brightness selection

Once Overall Brightness is selected, the highlight bar turns from gray to cyan.

Image 6–84 Overall Brightness adjustment

3. Use the Adjust knob to adjust the Overall Brightness value.

Reset returns the color adjustments to their initial settings.

Back returns to the Output menu.

Output: Logo/Matte

This section provides information about setting up and using logos and mattes. To enter the Logo menu from the Output menu, scroll to and select Logo/Matte.

Logo/Matte is configured per PGM output. The default setting is “Matte,” and the default matte is “Black.”

1. Scroll to and select **Logo/Matte** to enter the Logo menu from the Output menu.

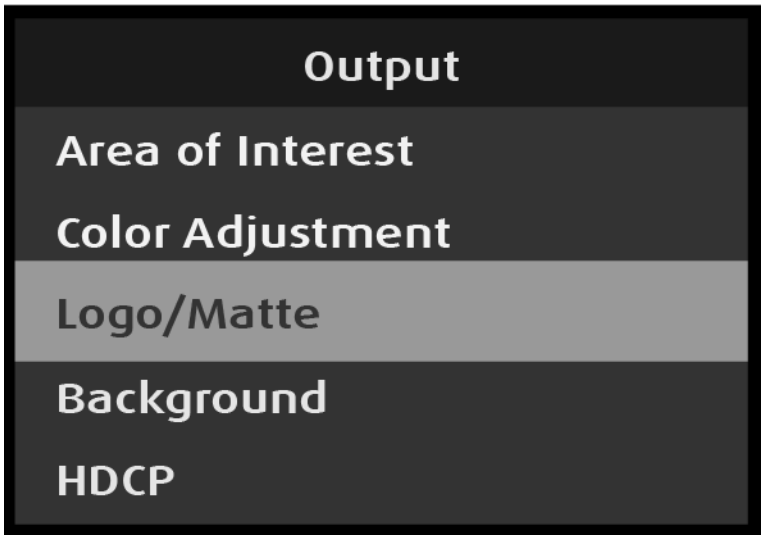

Image 6–85 Output: Logo/Matte menu

2. Select **Select Type** on the Logo/Matte menu.

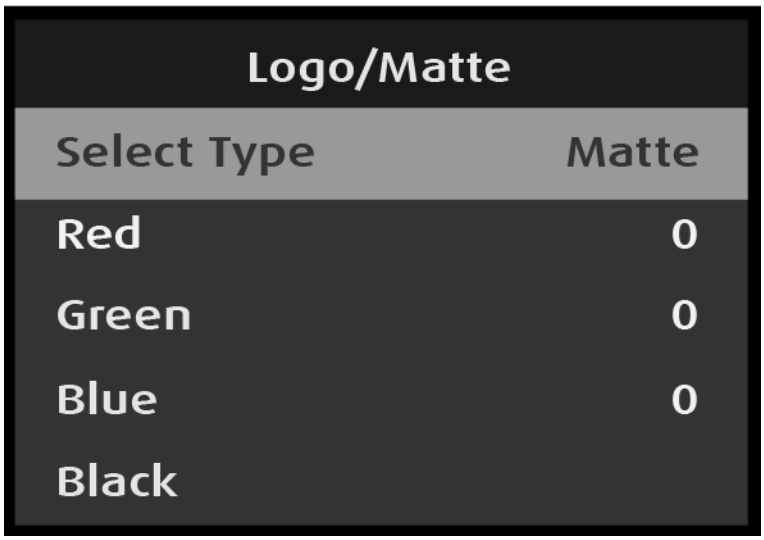

Image 6–86 Logo/Matte: Select Type selection

Once Select Type is selected, the highlight bar turns from gray to cyan.

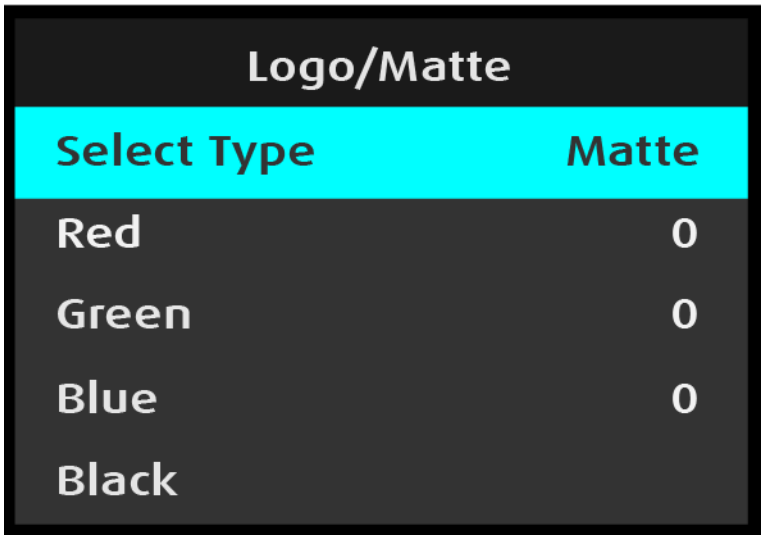

Image 6–87 Logo/Matte: Select Type adjustment

3. Use the Adjust knob to select either **Matte** or **Still**.

Logo/Matte: Matte

If the type is **Matte**, the matte color can be adjusted by using the Red, Green, and Blue selections on the Logo/Matte menu. The Green selection is illustrated here, but the procedure is the same for the Red and Blue options.

1. Select **Green** on the Logo/Matte menu.

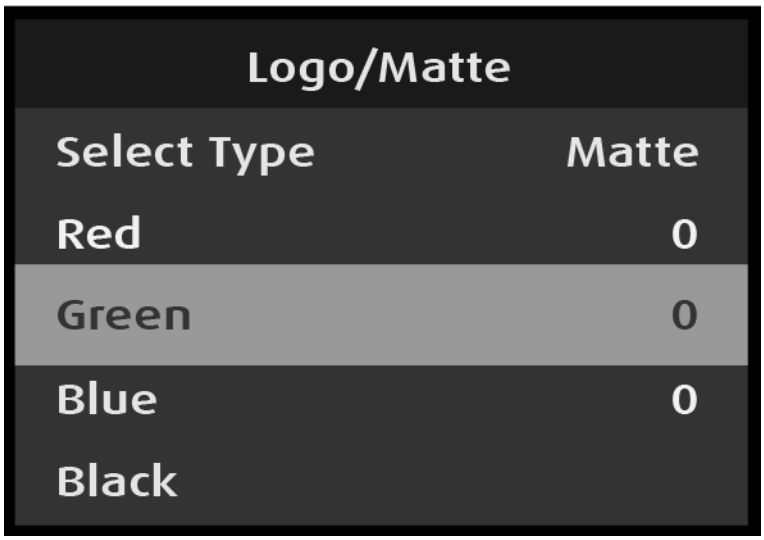

Image 6–88 Logo/Matte: Green selected

Once Green is selected, the highlight bar turns from gray to cyan.

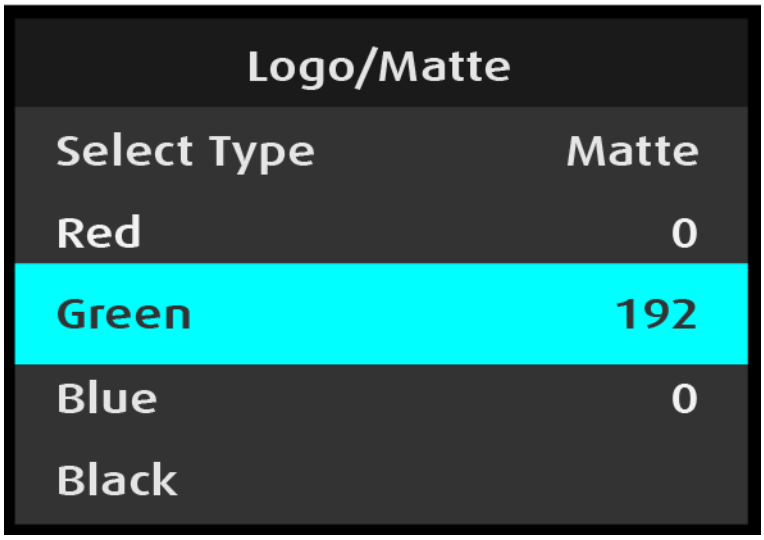

Image 6–89 Logo/Matte: Green adjustment

2. Turn the **Adjust knob** to adjust the value of the green color of the matte.
3. Press the **Adjust knob** to select the value of the green color of the matte.
   Repeat steps 2 and 3 to adjust the values of the red and blue colors, if desired.
4. Once the desired color values have been adjusted, select **Back** to return to the Output menu.

Logo/Matte: Still

If the type is **Still**, any still stored on the system may be selected.

1. Select **Select Still** on the Logo/Matte menu.
   Note that the system displays “None,” unless the system has at least one Still Store image.

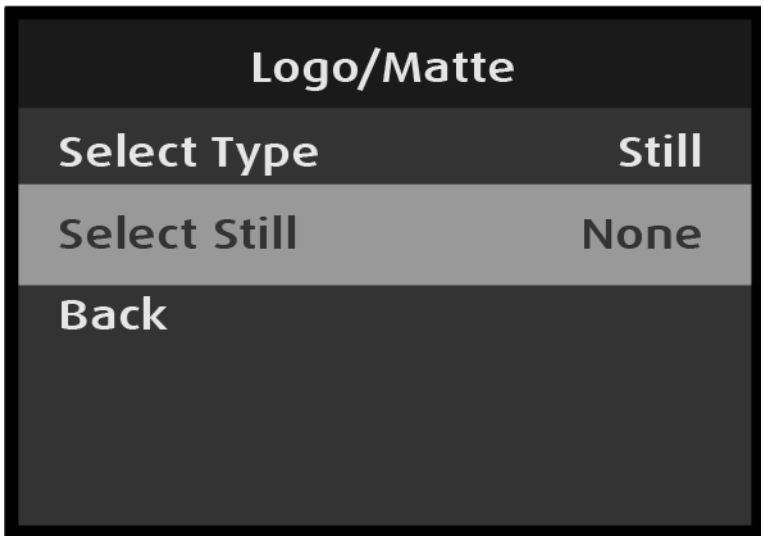

Image 6–90 Logo/Matte: Select Still selection

Once Select Still is selected, the highlight bar turns from gray to cyan.

2. Turn the **Adjust knob** to choose the desired still from among the available stills..

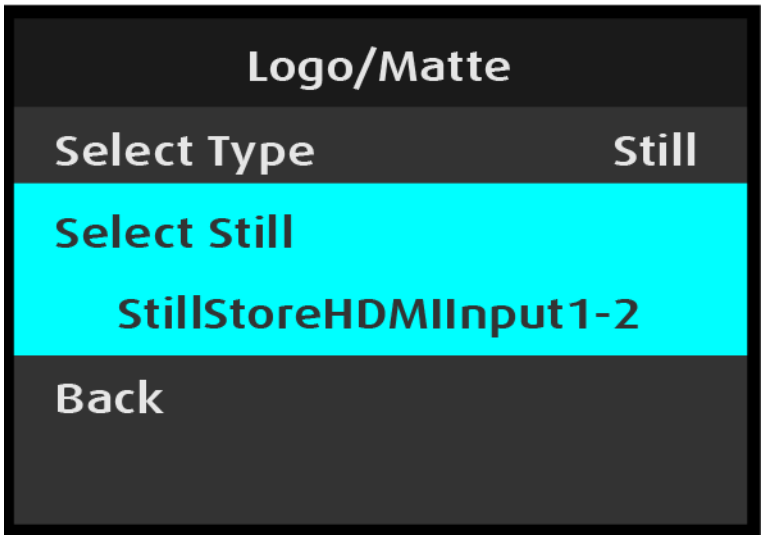

Image 6–91 Logo/Matte: Select Still adjustment

3. Press the **Adjust knob** to select the chosen still.

A still store image used as a logo is shown centered on the output, at its native resolution.
For example, a 1920x1080 still image, when assigned to a PGM output, the resolution of which is 3840x2160, is displayed as centered in the output raster, with the previously assigned matte color filling the remaining pixels of the output raster.
Conversely, a 3840x2160 still image assigned as logo for a 1920x1080 PGM output shows only the center portion of the image, filling the 1920x1080 output raster.

Output: Background

Use the Background menu to adjust the color of the matte used for the background of an output.

1. Select **Background** on the Output menu.

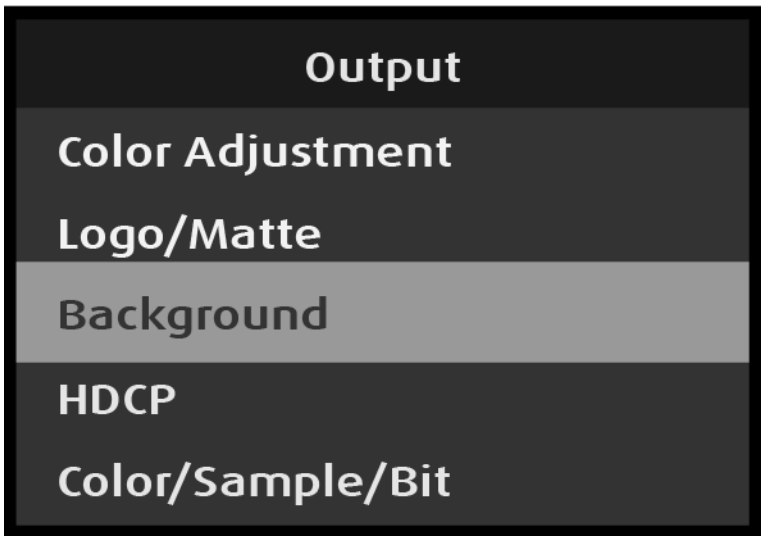

Image 6–92 Output: Background selection

Selecting Background opens the Background menu.

2. Scroll to and select **Select Type** on the Background menu.

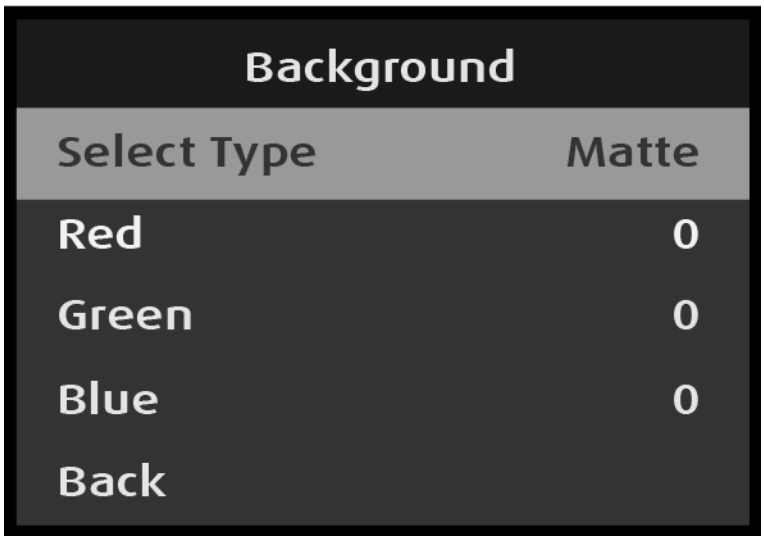

Image 6–93 Background: Select Type selection

Once Select Type is selected, the highlight bar turns from gray to cyan.

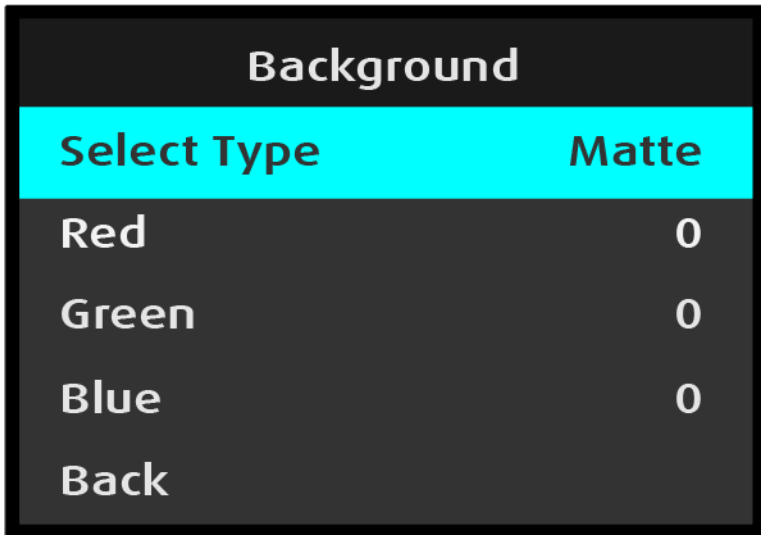

Image 6–94 Background: Select Type adjustment

The matte color can be adjusted by using the Red, Green, and Blue selections on the Background menu. The Green selection is illustrated here, but the procedure is the same for the Red and Blue options.

3. Scroll to and select **Green** on the Background menu.

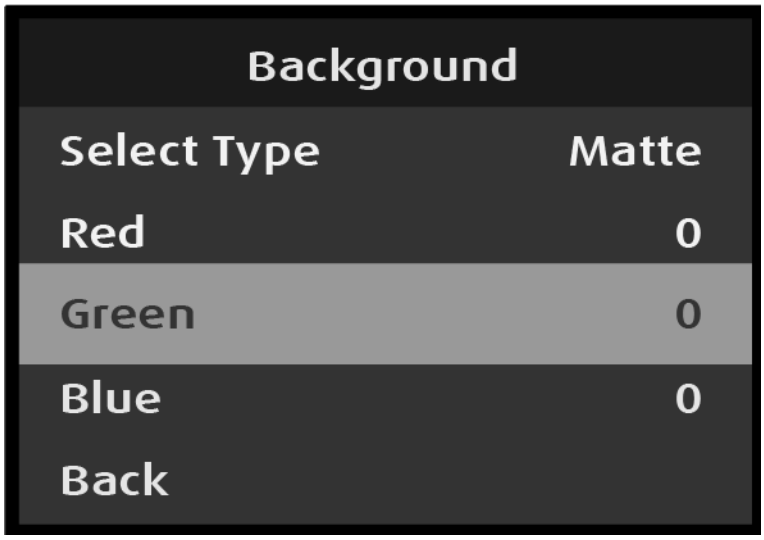

Image 6–95 Background: Green selection

4. Use the Adjust knob to adjust and select the color value.

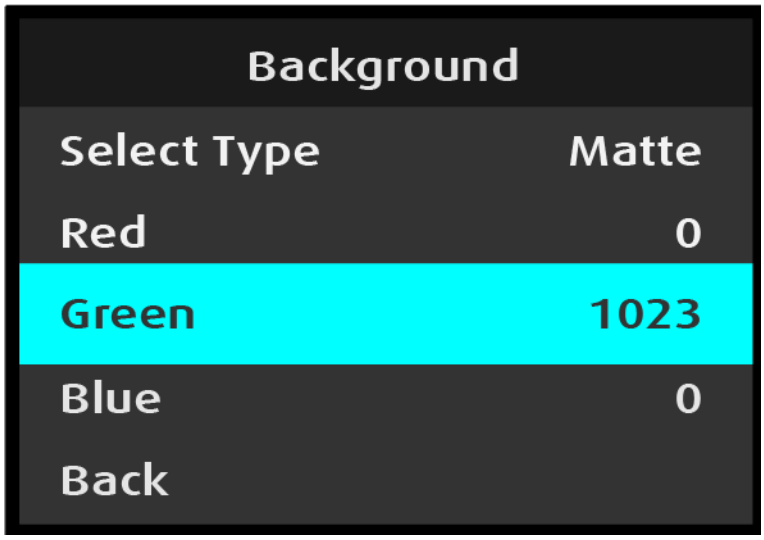

Image 6–96 Background: Green adjustment

The color values range from 0 to 1023.

Select **Back** to return to the Output menu.

Output: HDCP

HDCP Mode enables the HDCP setting for the selected output. The default HDCP mode setting for HDMI is Off.

HDCP Mode is not applicable to SDI outputs.

1. Select **HDCP** on the Output menu to set up and apply HDCP settings for the output.

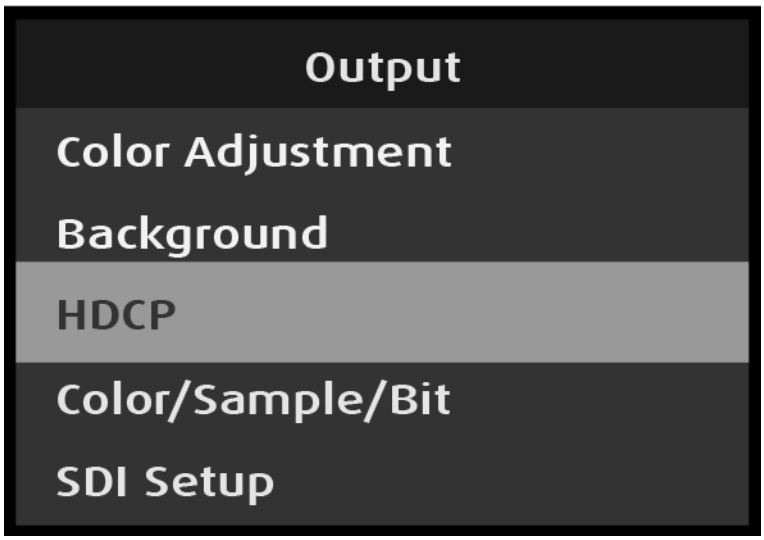

Image 6–97 Output: HDCP selection

2. Scroll to and select **HDCP Mode** on the Output menu.

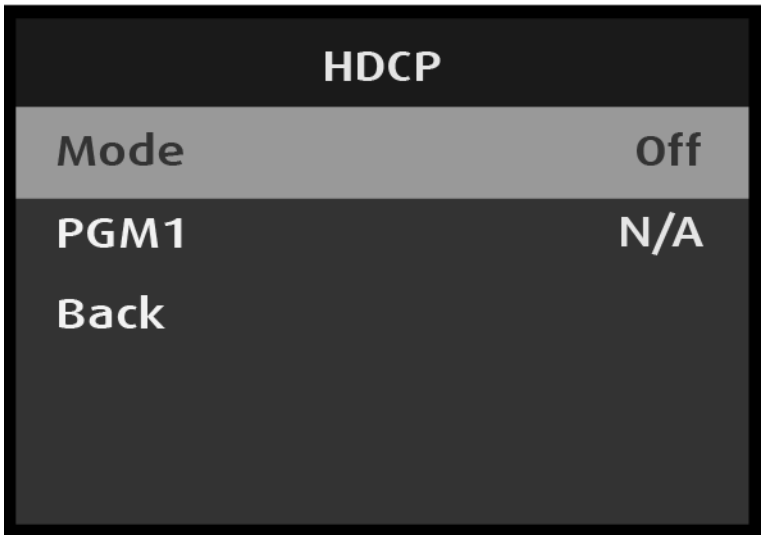

Image 6–98 HDCP: Mode selection

Once Mode is selected, the highlight bar turns from gray to cyan.

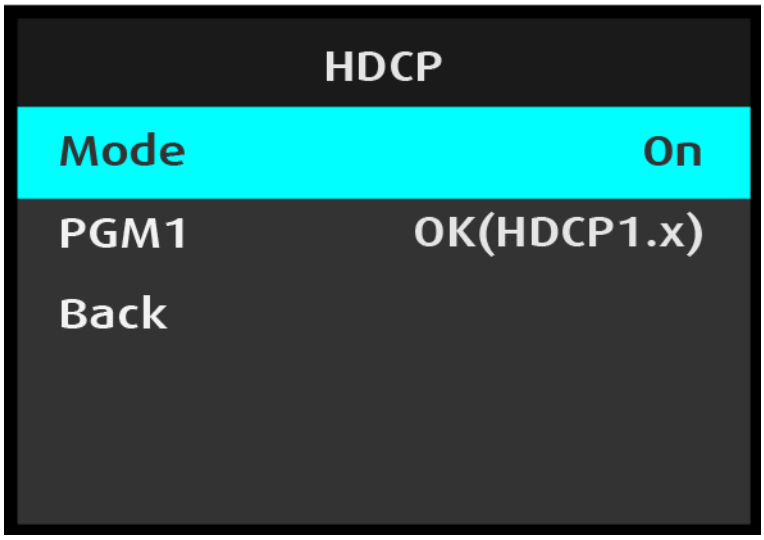

Image 6–99 HDCP: Mode adjustment

3. Use the Adjust knob to turn HDCP **On** or **Off**.
   When HDCP is turned On the system displays the HDCP specification version for the primary output. This is a status-only display; it cannot be selected or adjusted.

Select **Back** to return to the Output menu.

Output: Color/Sample/Bit

Use the Color/Sample/Bit menu to adjust the color space (RGB or YCbCr), sampling rate (4:4:4 – 4:2:2 – 4:2:0), and bit depth (8, 10, or 12) of the output signal.

1. Select **Color/Sample/Bit** on the Output menu.

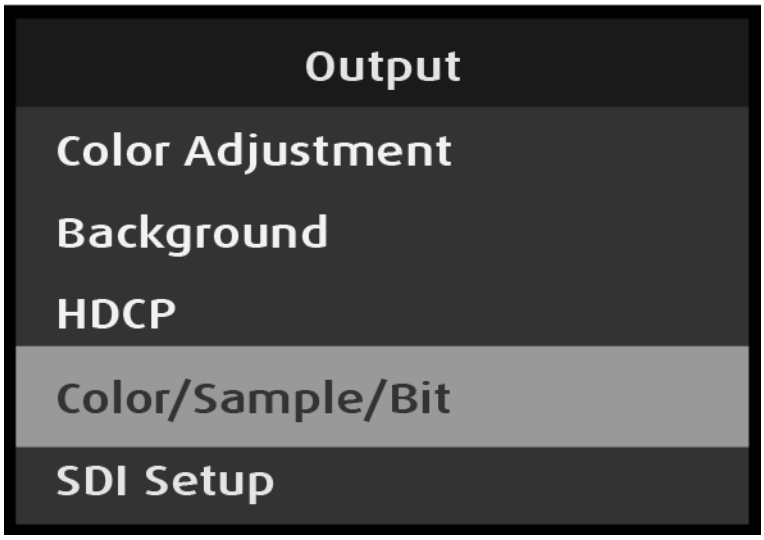

Image 6–100 Output: Color/Sample/Bit selection

2. Scroll to and select the desired output (for example **HDMI1A**).

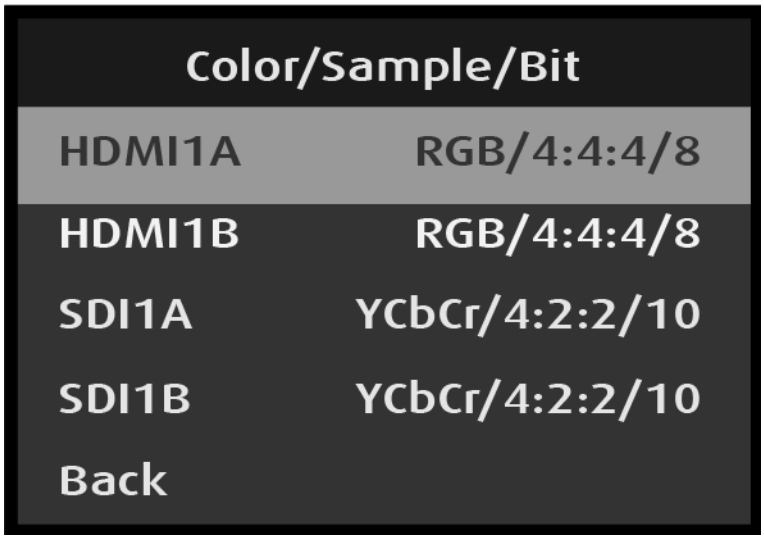

Image 6–101 Color/Sample/Bit: output (HDMI1A) selection

Once the output is selected, the highlight bar turns from gray to cyan.

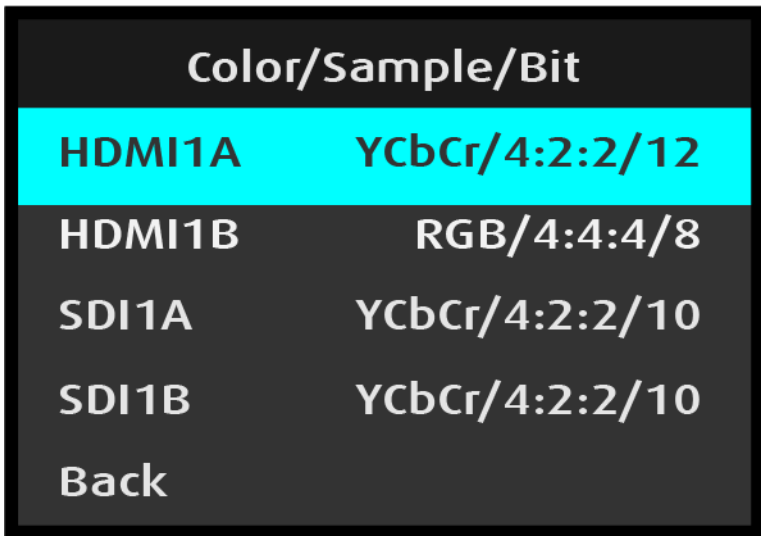

Image 6–102 Color/Sample/Bit: output (HDMI1A) adjustment

3. Use the Adjust knob to scroll through the available Color/Sample/Bit values.

Select **Back** to return to the Output menu.

Output: SDI Setup

This section provides information about setting up SDI outputs.

1. Scroll to and select **SDI Setup** on the Output menu.

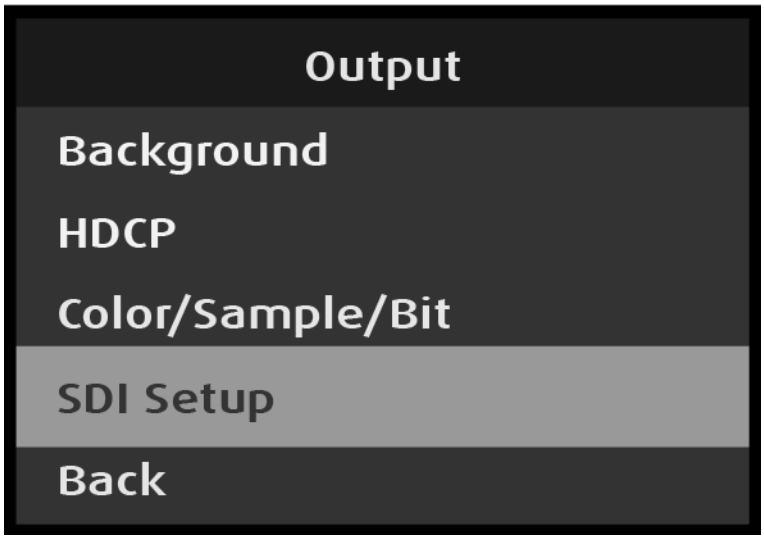

Image 6–103 Output: SDI Setup menu

2. Select the desired output on the SDI Setup menu, for example **SDI1A**.

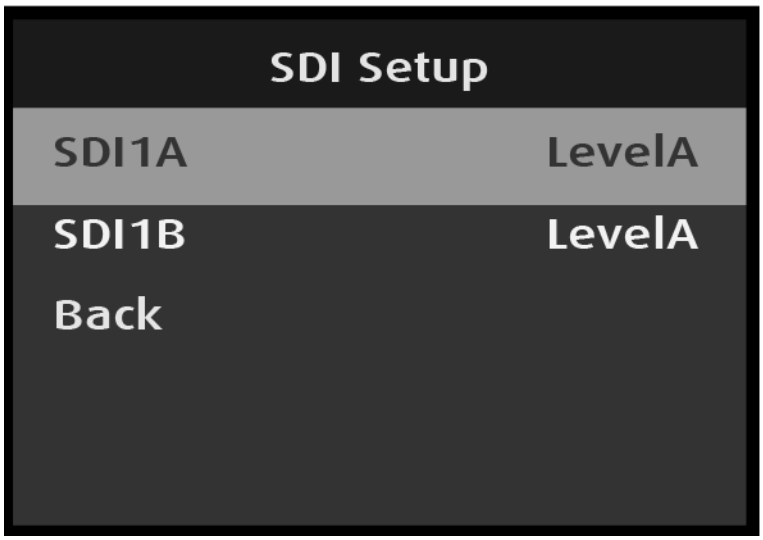

Image 6–104 SDI Setup: SDI output selection

Once the SDI output is selected, the highlight bar turns from gray to cyan.

3. Select either **LevelA** or **LevelB**.

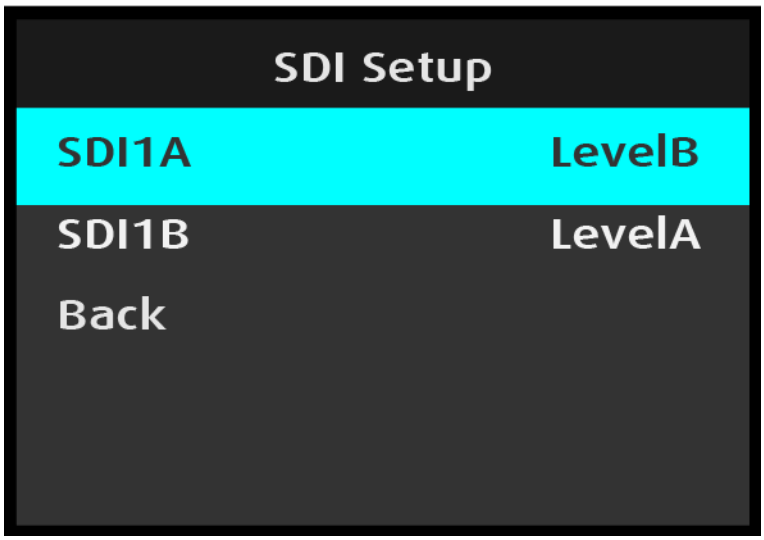

Image 6–105 SDI Setup: SDI output adjustment

4. Select **Back** to return to the Output menu.

6.7 AV Settings: Multiviewer

General

This section provides information about setting up a multiviewer (MVR).

1. Scroll to and select **Multiviewer** on the AV Settings menu.

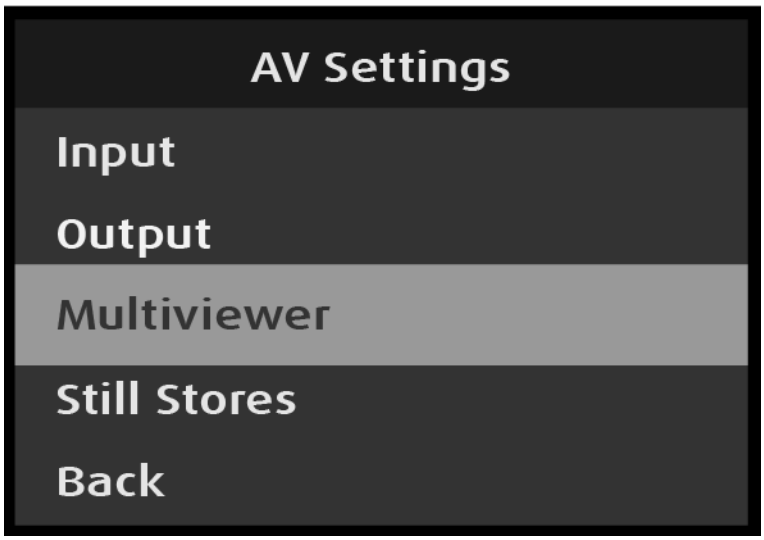

Image 6–106 AV Settings: Multiviewer selection

Multiviewer menu tree

Refer to Image 6–107 for an illustration of the Multiviewer menu tree.

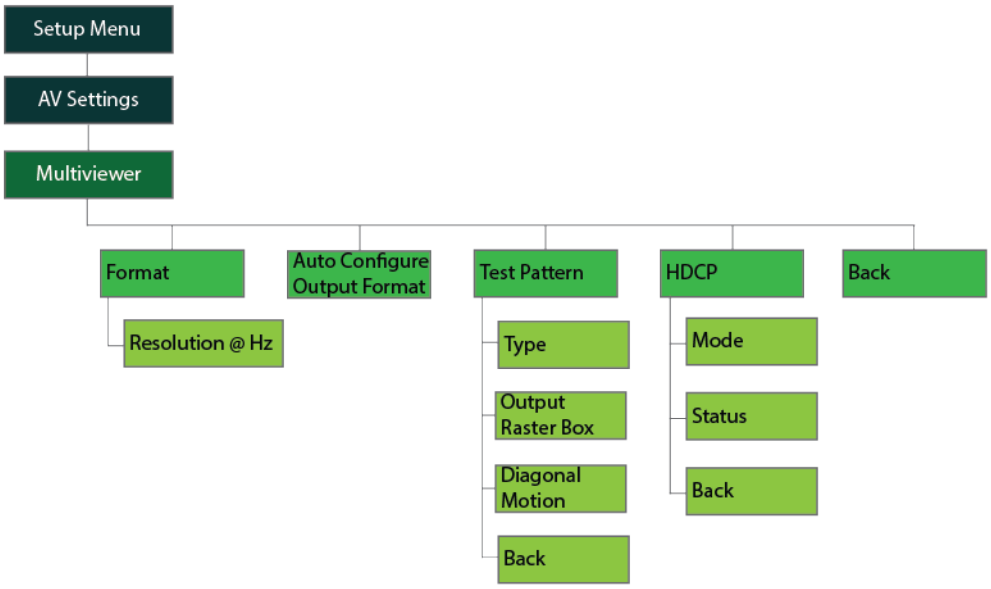

Image 6–107 AV Settings: Multiviewer menu tree

Multiviewer: Format

1. Scroll to and select **Format** from the Multiviewer menu.

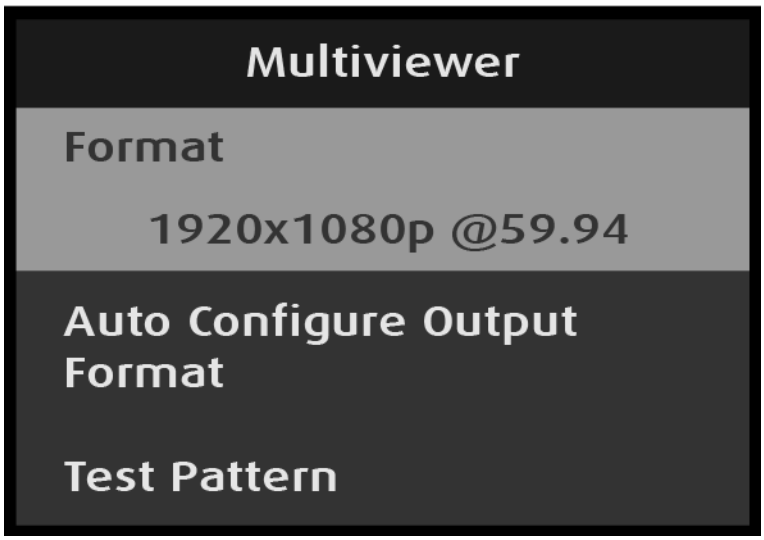

Image 6–108 Multiviewer: Format selection

Once Format is selected, the highlight bar turns from gray to cyan.

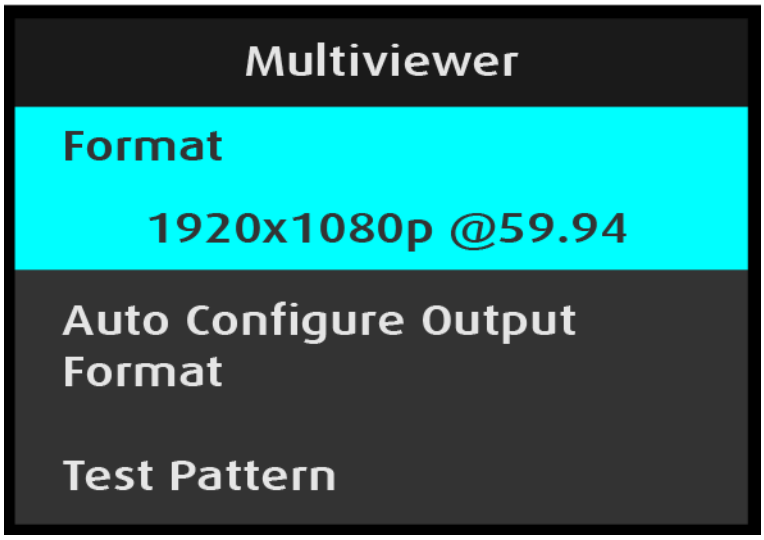

Image 6–109 Multiviewer: Format adjustment

2. Turn the **Adjust knob** to scroll through the available formats.

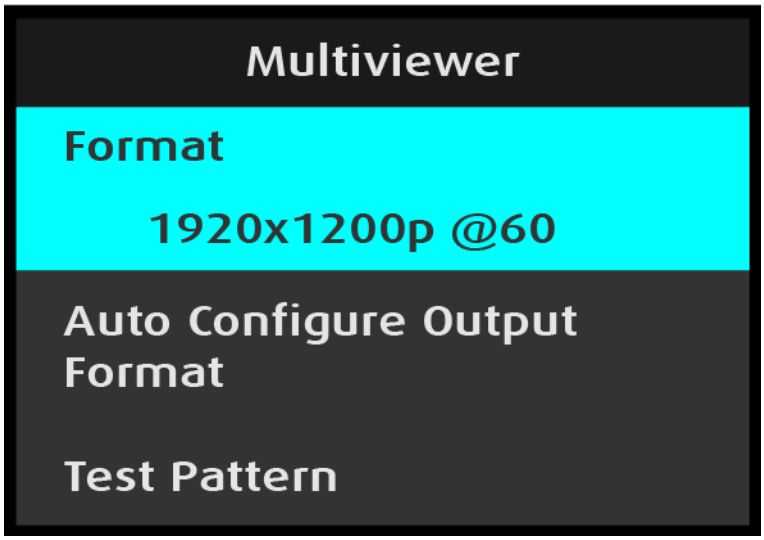

Image 6–110 Adjusting Multiviewer Format

3. Press the **Adjust knob** to select the desired multiviewer format, when it is displayed.

Multiviewer: Auto Configure Output Format

Use Auto Configure Output Format to automatically detect and acquire multiviewer output format.

1. Scroll to and select **Auto Configure Output Format** on the Multiviewer menu.

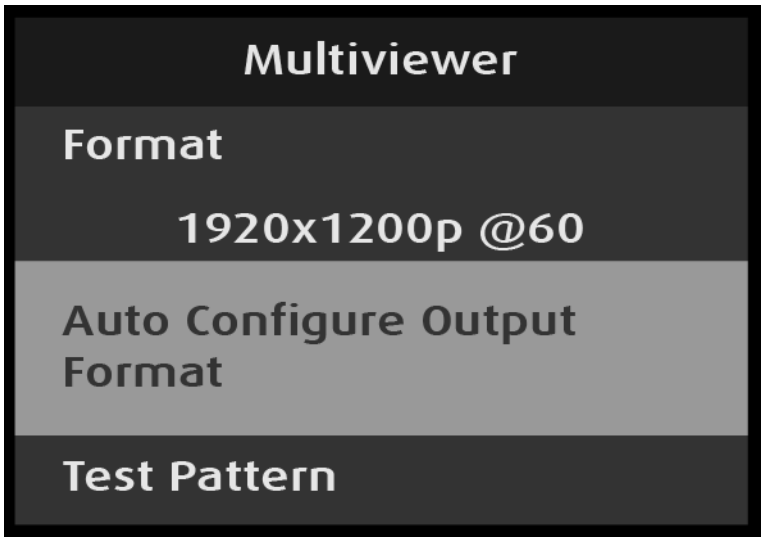

Image 6–111 Multiviewer: Auto Configure Output Format selection

Multiviewer: Test Pattern

Use the Test Pattern to select and adjust multiviewer output test patterns.

1. Scroll to and select **Test Pattern** on the Multiviewer menu.

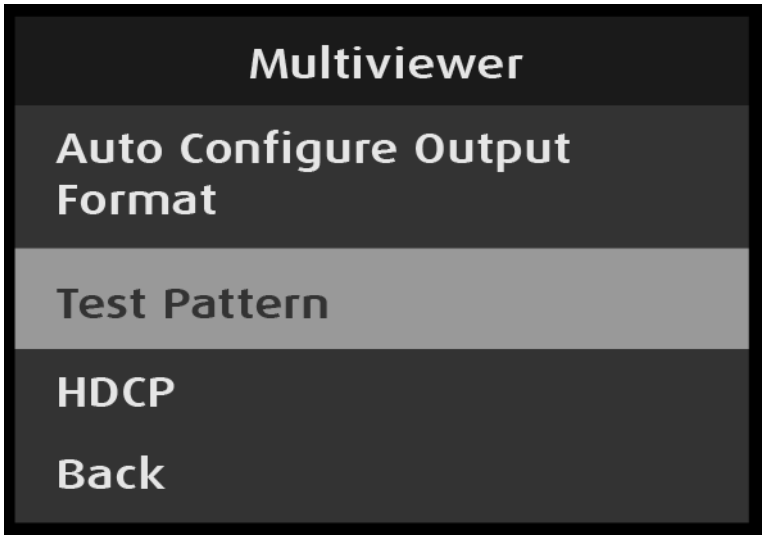

Image 6–112 Multiviewer: Test Pattern selection

Multiviewer: Test Pattern: Type

Use Type to select the desired test pattern

1. Scroll to and select **Type** from the Test Pattern menu.

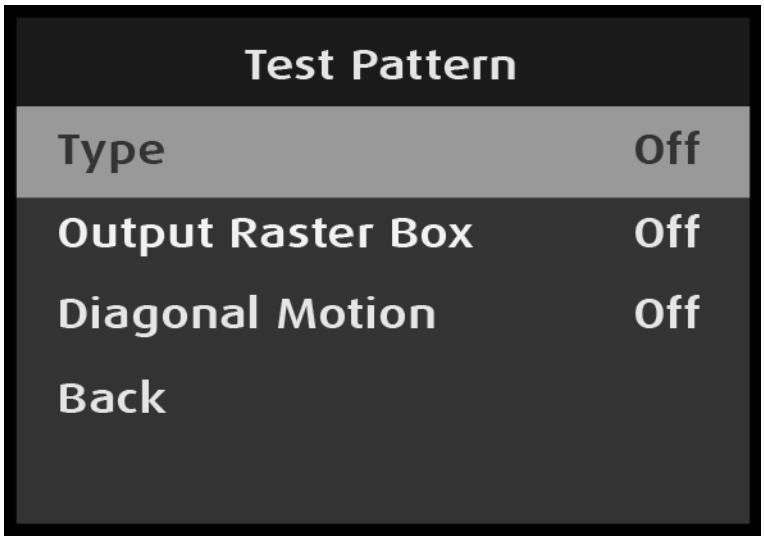

Image 6–113 Multiviewer: Test Pattern: Type selection

Once Type is selected, the highlight bar turns from gray to cyan.

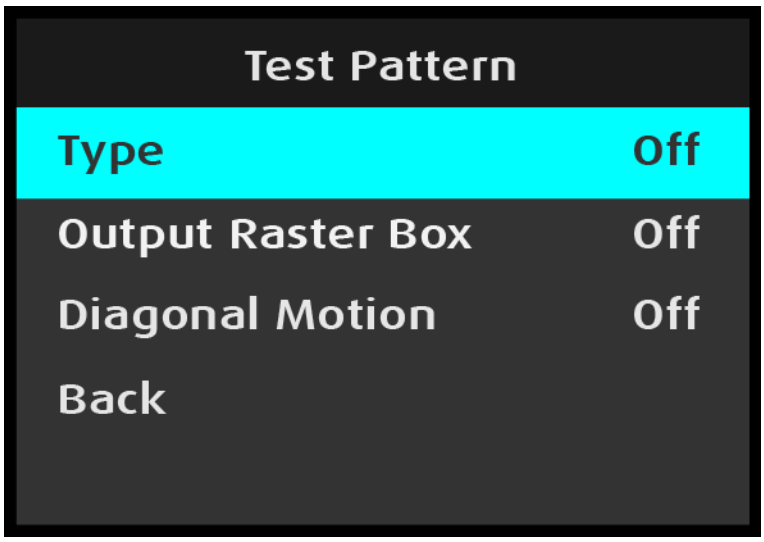

Image 6–114 Multiviewer: Test Pattern: Type adjustment

The following test patterns are available:

- Horizontal Ramp
- Vertical Ramp
- 100% Color Bars
- 16x16 Grid
- 32x32 Grid
- Burst
- 75% Color Bars
- 50% Gray
- Horizontal Steps
- Vertical Steps
- White
- Black
- Red
- Green
- Blue

2. Use the Adjust knob to scroll through and select the desired test pattern.

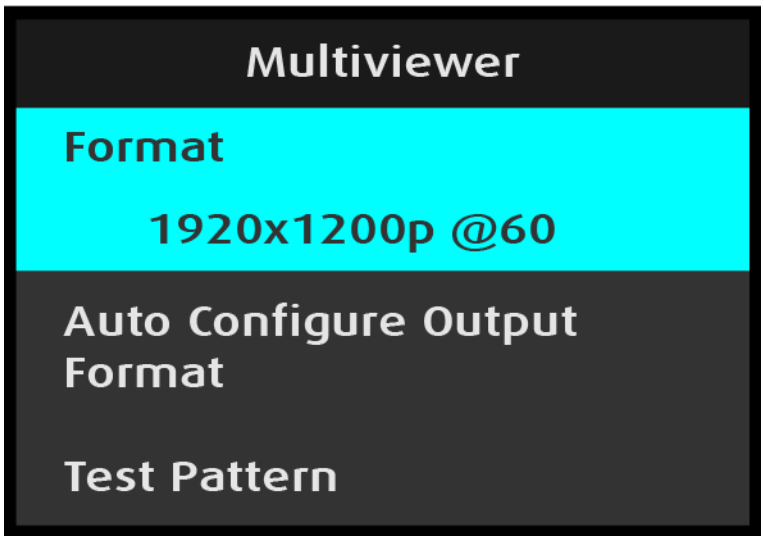

Image 6–115 Selecting test-pattern type “Horizontal Ramp”

Multiviewer: Test Pattern: Output Raster Box

Use Output Raster Box to turn On and to turn Off a border box around the multiviewer output. The output box is white.

1. Scroll to and select **Output Raster Box** from the Test Pattern menu.

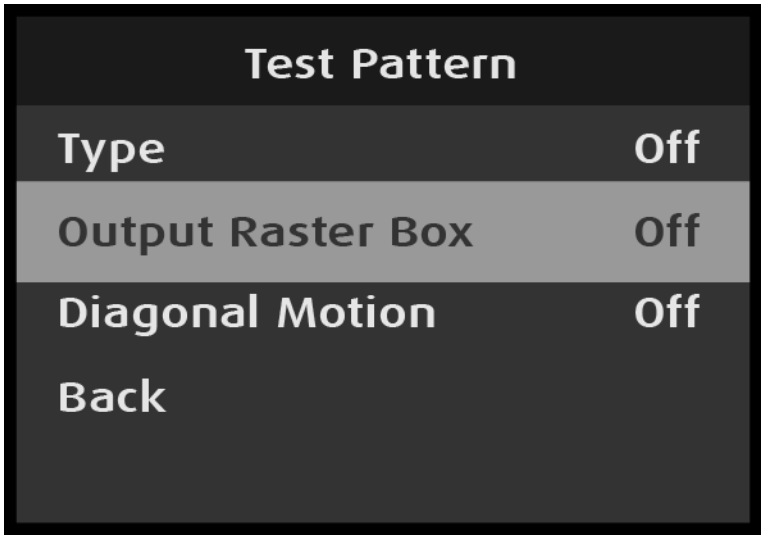

Image 6–116 Test Pattern: Output Raster Box selection

Once Output Raster Box is selected, the highlight bar turns from gray to cyan.

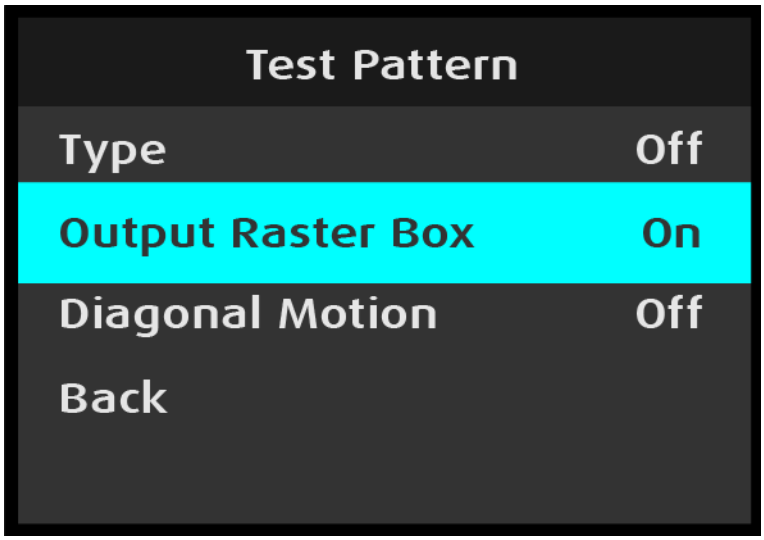

Image 6–117 Test Pattern: Output Raster Box adjustment

2. Use the Adjust knob to toggle the output raster box between Off and On.

Multiviewer: Test Pattern: Diagonal Motion

Use Diagonal Motion to add motion to a test pattern. In most cases the motion is diagonal; in some cases the motion is either horizontal or vertical.

1. Scroll to and select **Diagonal Motion** from the Test Pattern menu.

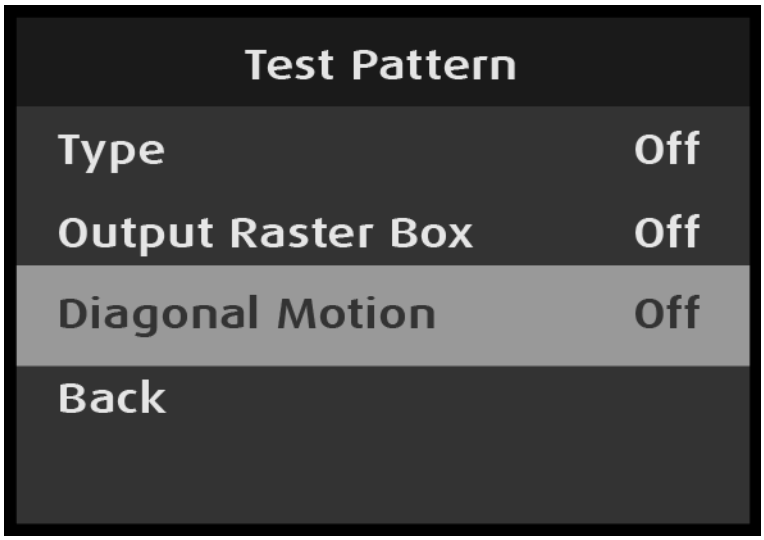

Image 6–118 Multiviewer: Test Pattern: Diagonal Motion selection

Once Diagonal Motion is selected, the highlight bar turns from gray to cyan.

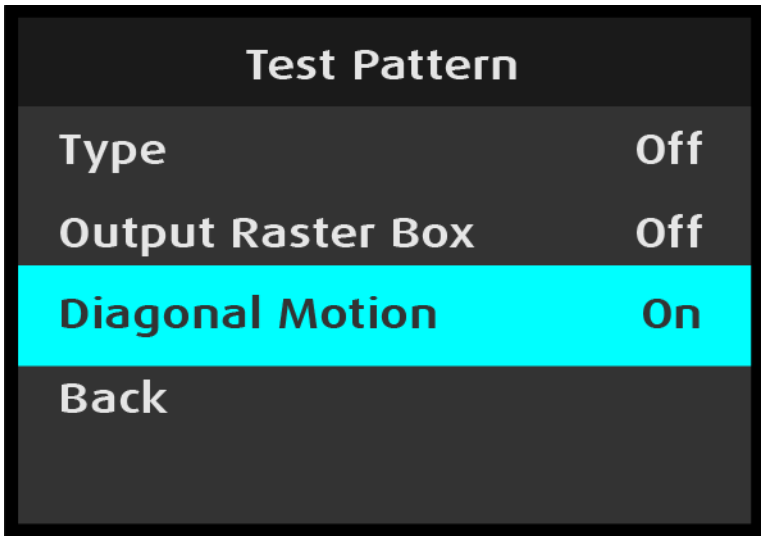

Image 6–119 Multiviewer: Test Pattern: Diagonal Motion adjustment

2. Use the Adjust knob to toggle the diagonal motion between **Off** and **On**.

Back returns to the Output menu.

Multiviewer: HDCP

HDCP Mode enables the HDCP setting for the multiviewer output. The default HDCP mode setting for HDMI is Off.

1. Select **HDCP** from the Multiviewer menu to set up and apply HDCP settings for the multiviewer.

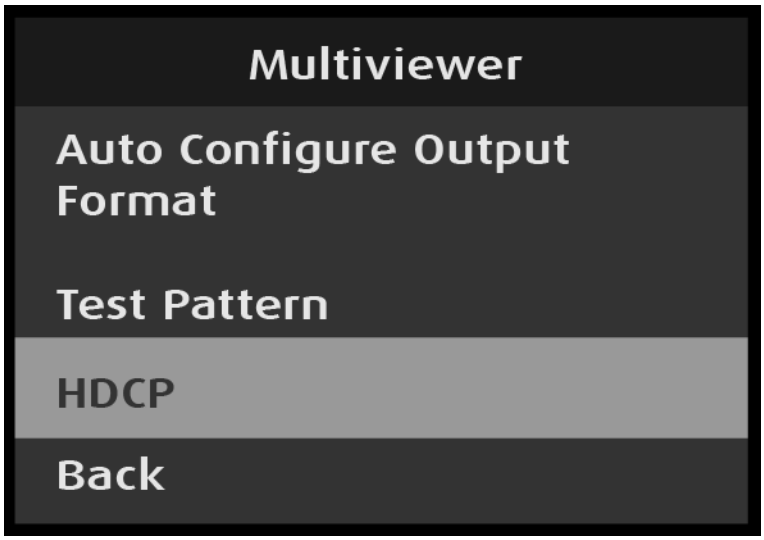

Image 6–120 Multiviewer: HDCP selection

2. Scroll to and select **HDCP Mode** on the Multiviewer menu.

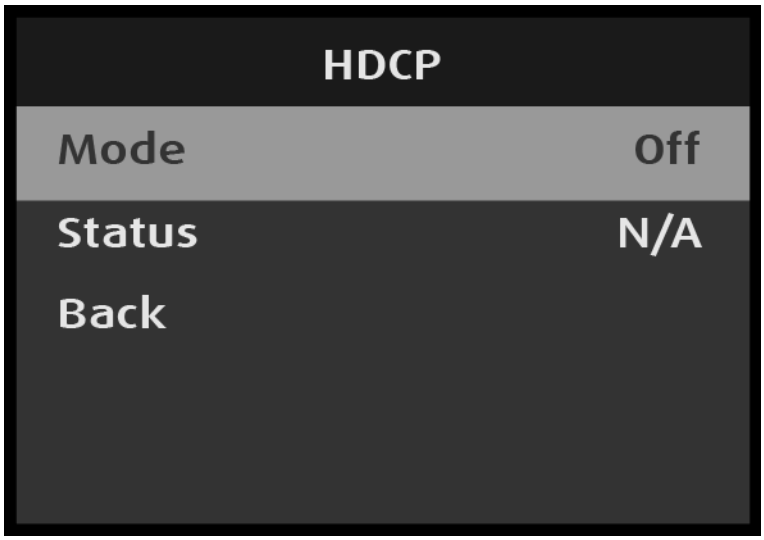

Image 6–121 Multiviewer: HDCP: Mode selection

Once Mode is selected, the highlight bar turns from gray to cyan.

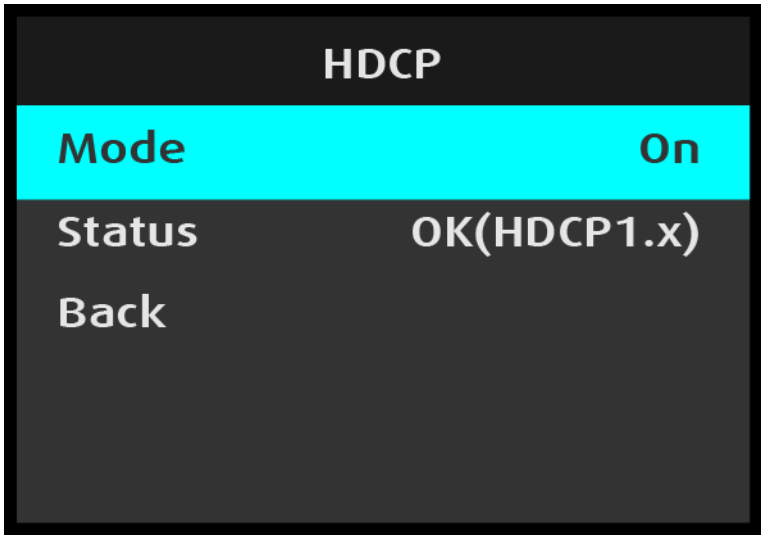

Image 6–122 Multiviewer: HDCP: Mode adjustment

3. Use the Adjust knob to turn HDCP **On** or **Off**.
   When HDCP is turned On the system displays the HDCP specification version for the multiviewer. This is a status-only display; it cannot be selected or adjusted.

Select **Back** to return to the Multiviewer menu.

6.8 AV Settings: Still Stores

General

This section provides information about capturing, naming, and using stills. To enter the Still menu from the Setup menu, scroll to and select **Still**.

1. Scroll to and select Still Stores on the AV Settings menu.

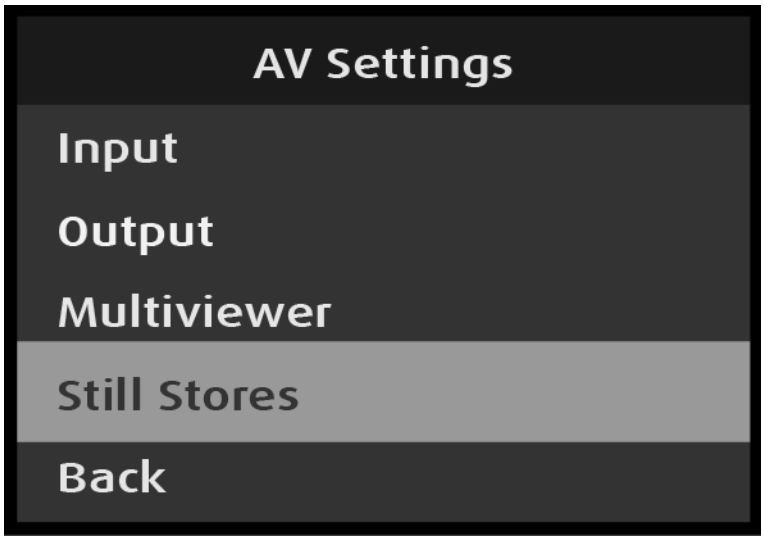

Image 6–123 AV Settings: Still Stores selection

Still Stores menu tree

Refer to Image 6–124 for an illustration of the Still menu tree.

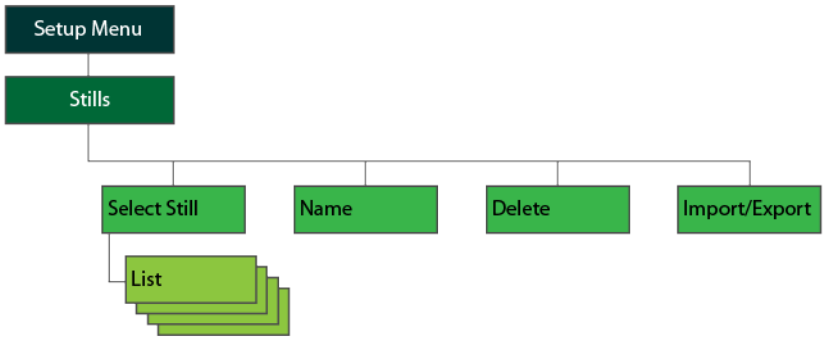

Image 6–124 Stills menu tree

Still: Select Still

To select a still…

1. Select **Select Still** on the Still Stores menu

Image 6–125 Still Stores: Select Still selection

Once Select Still is selected, the highlight bar turns from gray to cyan. Turning the adjust knob scrolls through the available Stills.

Image 6–126 Still Stores: Select Still adjustment

2. Turn the **Adjust knob** to scroll through the available still stores.
3. Press the **Adjust knob** to select the desired still store.

Still Stores: Name

Use Still Stores: Name to rename the selected still.

1. Scroll to and select **Name** on the Still Stores menu.

Image 6–127 Still Stores: Name selection

The system displays the default name of the selected still store.
Once Name is selected, the highlight bar turns from gray to cyan. The first letter of the name is highlighted in green.

Image 6–128 Still Stores: Name adjustment

2. Turn the **Adjust knob** to scroll through the available characters for the first position.
   The available characters are:
   - A – Z
   - a – z
   - 0 – 9
   - - (hyphen)
   - . (period)
   - / (slash)
   - A blank character deletes the space.
3. Press the **Adjust knob** to select the desired character.
4. Repeat steps 2 and 3 as needed to rename the still store.

Image 6–129 Still Stores: Name adjustment (continued-1)

Image 6–130 Still Stores: Name adjustment (continued-2)

5. Select a blank space for the last character of the new name, and press the Adjust knob to select the new name.

Image 6–131

6. Select **Back**, or press the **ESC** button, to return to the AV Settings menu.

Still Stores: Delete Selected

Use Still Stores: Delete Selected (once a still has been selected) to delete a selected still.

1. Scroll to and select **Delete Selected** on the Still Stores menu.

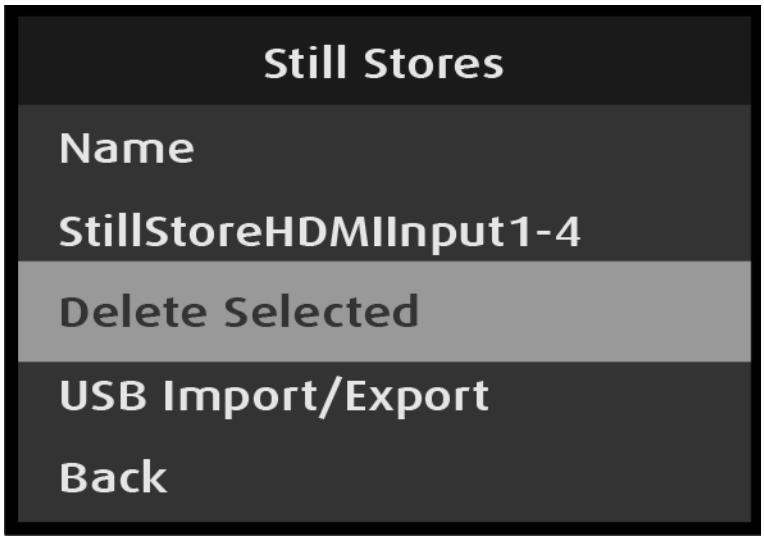

Image 6–132 Still Stores: Delete Selected selection.

Once Delete Selected has been selected, the system displays a message.

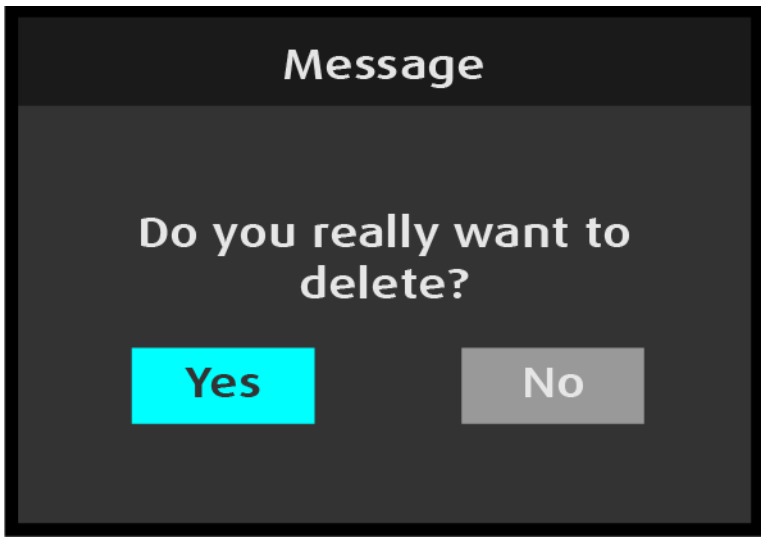

Image 6–133 “Do you really want to delete?” message

2. To delete the selected still store, turn the **Adjust knob** to select “Yes,” and press the **Adjust knob**. (“Yes” is the system default.)
   To **not** delete the selected store and return to the Still Stores menu, turn the **Adjust knob** to select “No,” and press the **Adjust knob**.

Still Stores: USB Import/Export

Use Still Stores: USB Import/Export to import stills from—or export stills to—a USB flash drive.

To import stills from a USB flash drive, the stills must be located in the **Stills\Import** subfolder of the **EM** folder on the USB flash drive. No more than four stills may be imported.

To import Stills from a USB flash drive...

1. Insert the flash drive with the stills to be imported into the unit’s USB port.
2. Scroll to and select **USB Import/Export** on the Still Stores menu.

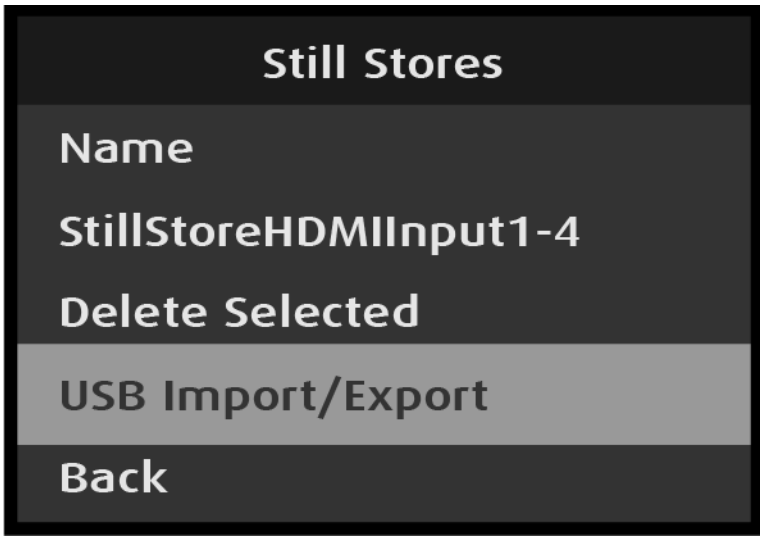

Image 6–134 Still Stores: USB Import/Export selection

If the system detects a USB flash drive, the “USB Detected” line reads “Yes.”

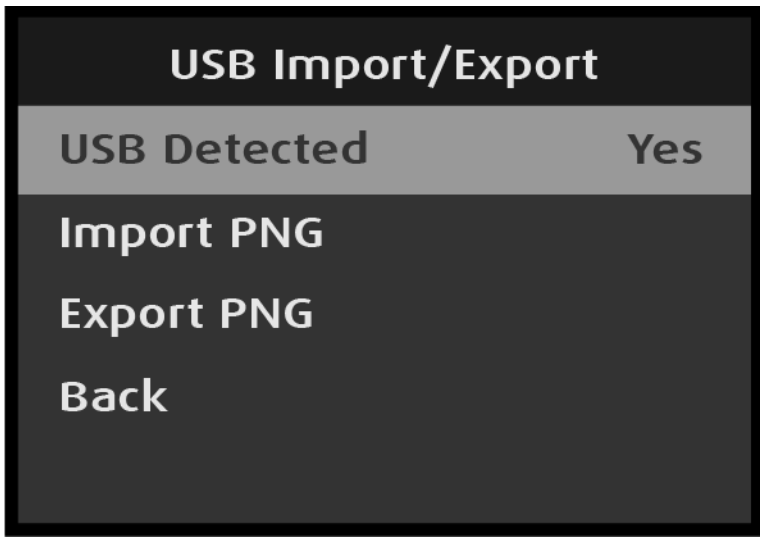

Image 6–135 USB Detected: “Yes”

3. Scroll to and select **Import PNG** on the USB Import/Export menu.

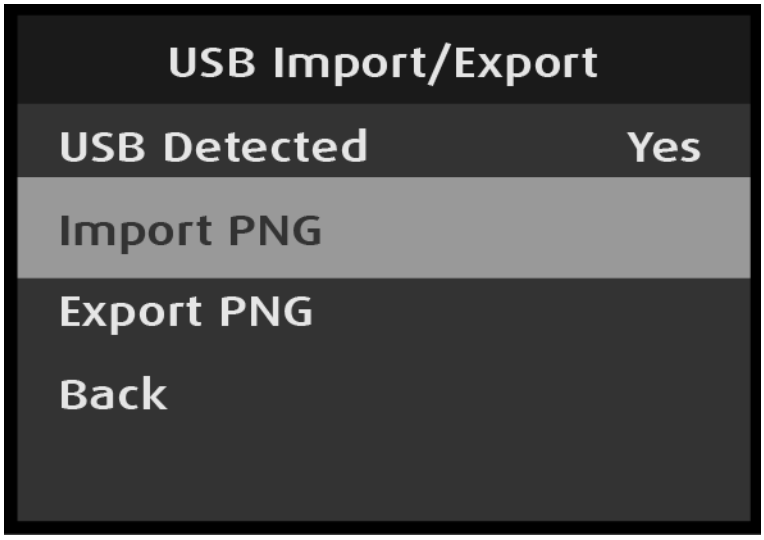

Image 6–136 USB Import/Export: Import PNG selection

While the import is in progress, the system displays the “Importing” message.

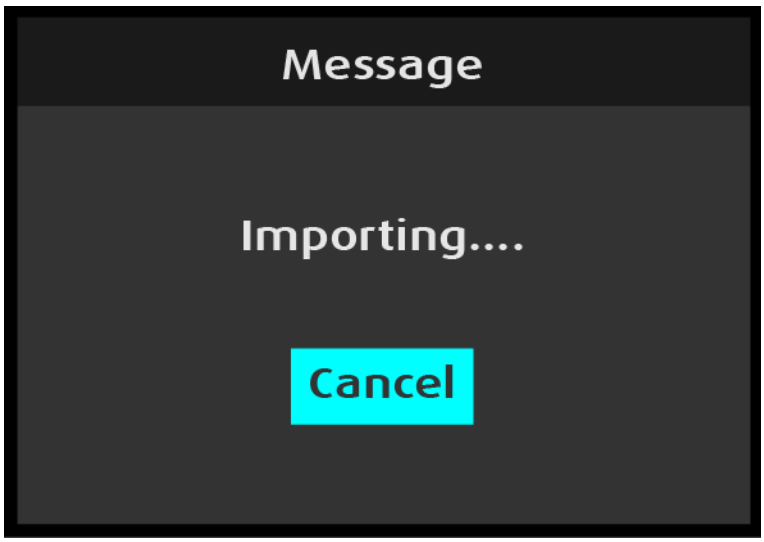

Image 6–137 “Importing” message

Press the Adjust knob to cancel the import.
If the total number of Stills in the system is four (4), the system displays the “Total number of Stills cannot exceed 4” message.

Image 6–138 “Total number of Stills cannot exceed 4” message

Press the Adjust knob to complete the import.

To export Stills to a USB flash drive...

1. Insert the flash drive with the stills to be imported into the unit’s USB port.
2. Scroll to and select **USB Import/Export** on the Still Stores menu.
3. Scroll to and select **Export PNG** on the USB Import/Export menu.

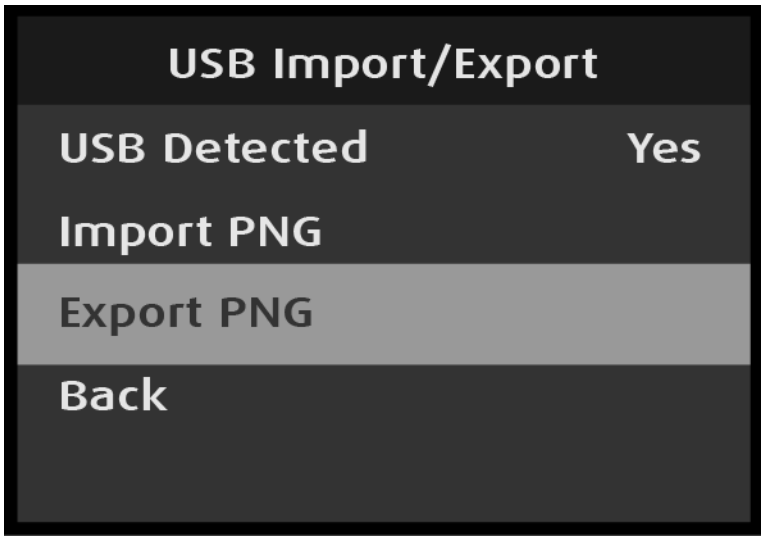

Image 6–139 USB Import/Export: Export PNG selection

While the export is in progress, the system displays the “Please wait” message.

Image 6–140 “Please wait” message

The system places the exported Stills in the **Stills\Export** subfolder of the **EM** folder on the USB flash drive. If the Export subfolder does not already exist, the system creates it.

6.9 Setup Menu: System

General

Use the Setup Menu: System menu to set up and adjust system attributes. To enter the System menu from the Setup Menu, scroll to and select **System**.

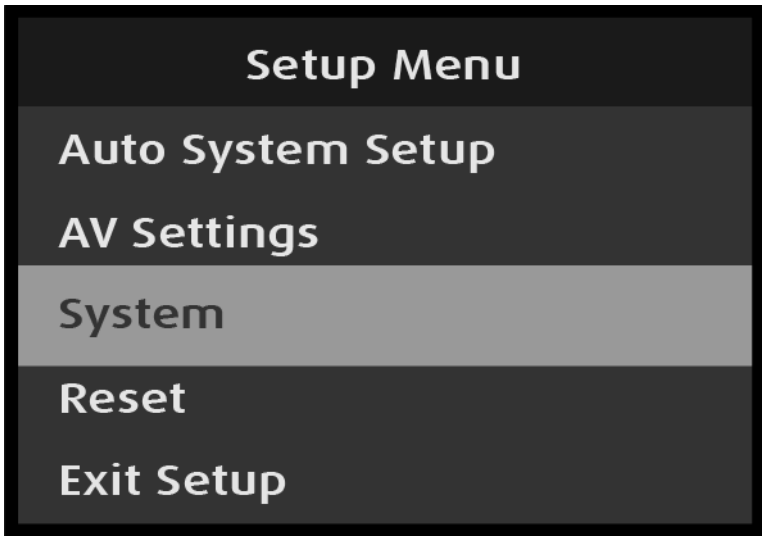

Image 6–141 Setup Menu: System menu selection

Use the System menu to adjust system parameters.

The Setup Menu: System menu has the following submenus:

- Operation Setup
- HDCP
- Ethernet
- USB Backup/Restore
- Firmware Upgrade
- System Security
- Diagnostics
- Autosave
- Save All
- Back

Setup Menu: System menu tree

Refer to Image 6–142 for an illustration of the Setup Menu: System menu tree.

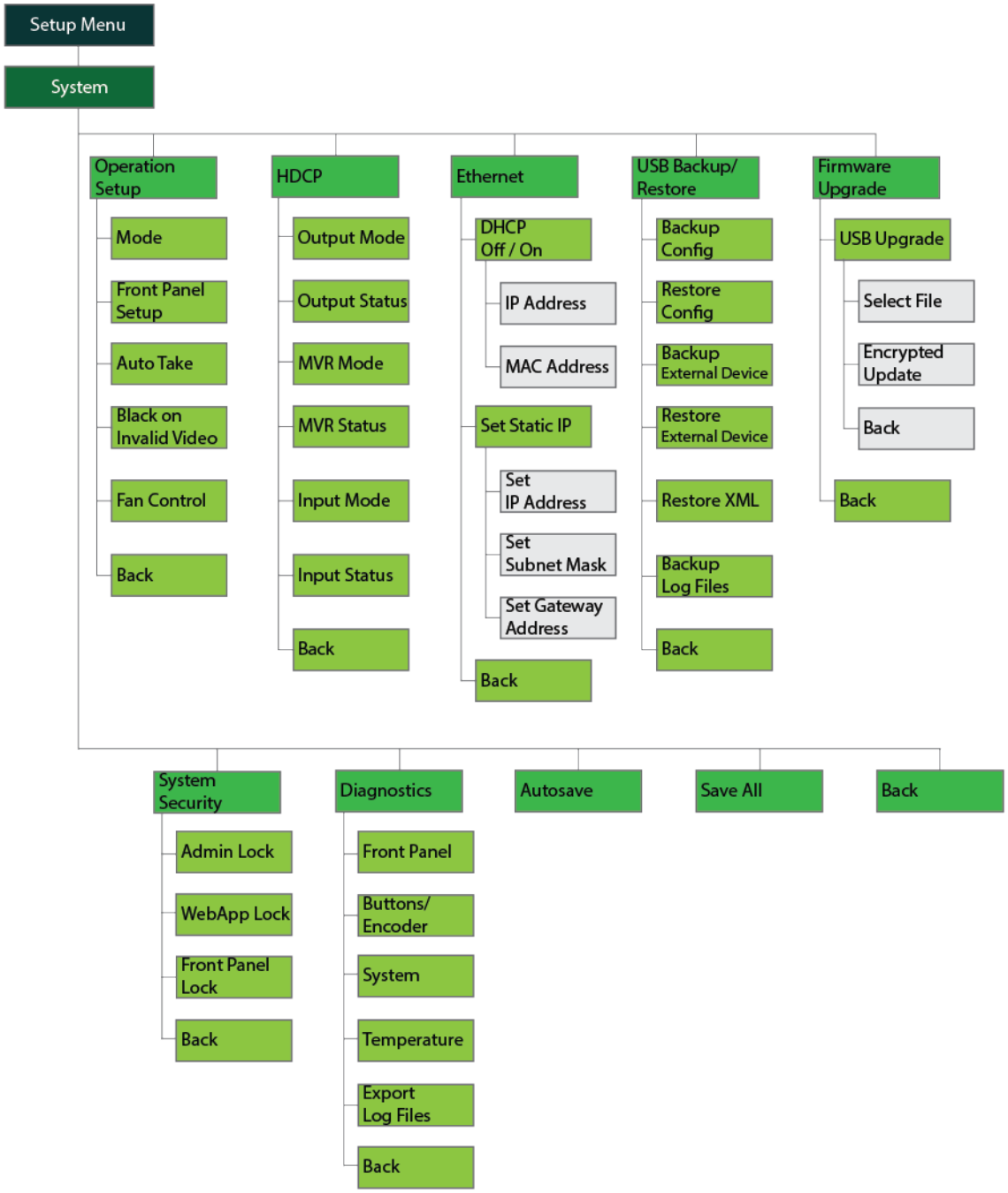

Image 6–142 Setup Menu: System menu tree

System: Operation Setup

1. Select **Operation Setup** on the System menu.

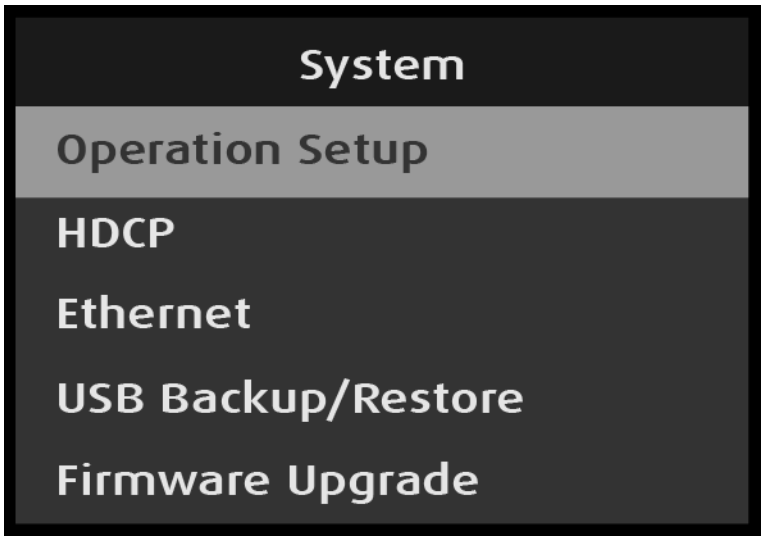

Image 6–143 System: Operation Setup selection

Operation Setup: Mode

Use Operation Setup: Mode to view the output mode.

Operation Setup: Mode is an information only menu display.

1. Select **Mode** on the Operation Setup menu.

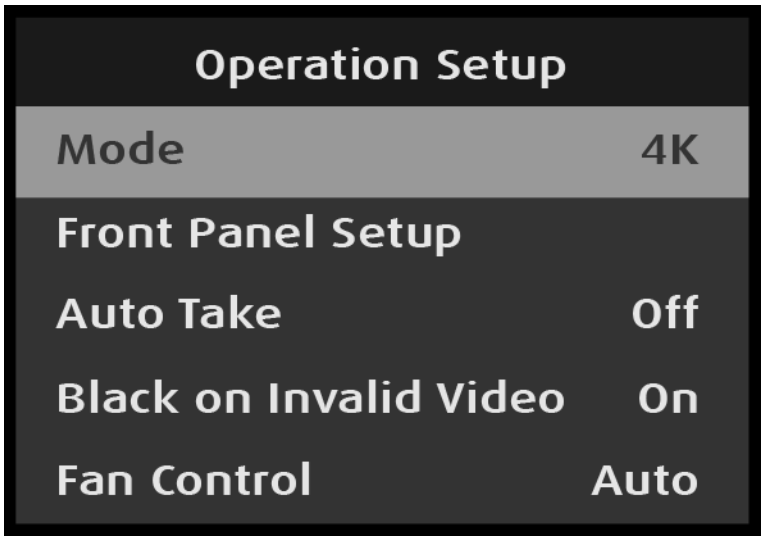

Image 6–144 Operation Setup: Mode selection

Operation Setup: Mode is an information only menu display.

Operation Setup: Front Panel Setup

Use Operation Setup: Front Panel Setup to adjust the operation of the front-panel buttons.

1. Select **Front Panel Setup** on the Operation Setup menu.

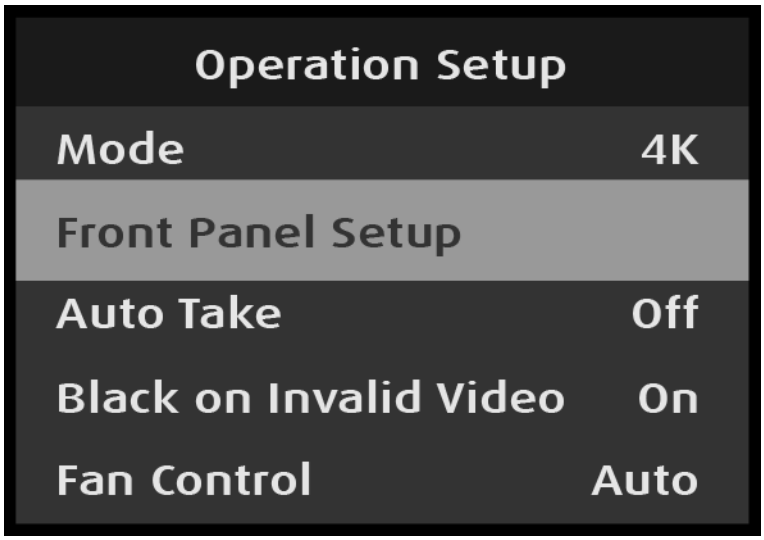

Image 6–145 Front Panel Setup selection

Front Panel Setup: Mode

Use Front Panel Setup: Mode to view the front-panel mode.

Front Panel Setup: Mode is an information only menu display.

1. Select **Mode** on the Front Panel Setup menu.

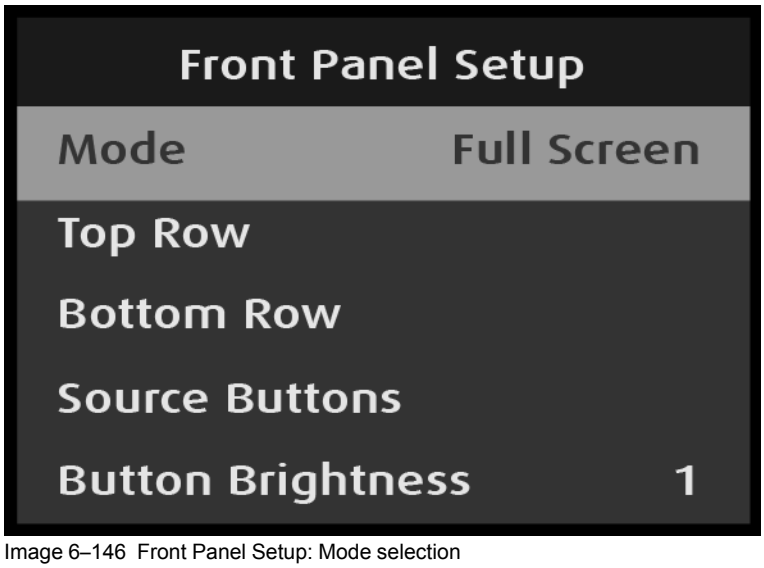

Image 6–146 Front Panel Setup: Mode selection

Front Panel Setup – Top Row

1. Select **Top Row** on the Front Panel Setup menu.

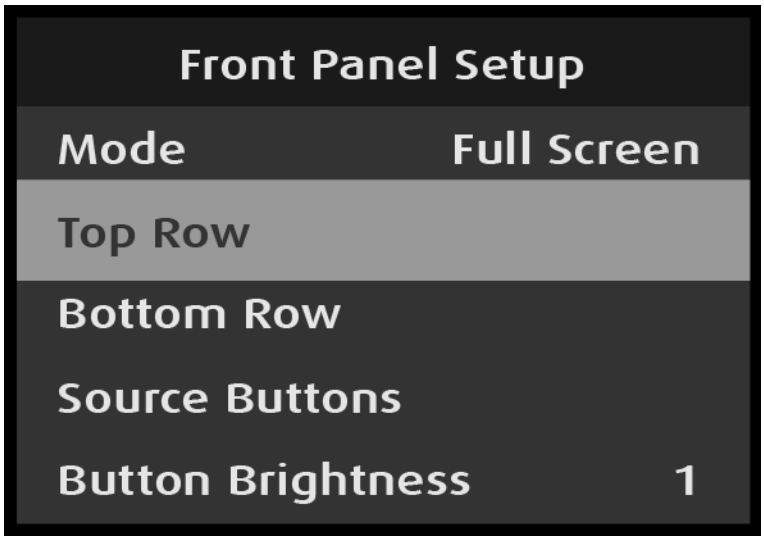

Image 6–147 Front Panel Setup: Top Row selection

Selecting **Top Row** opens the Top Row menu.

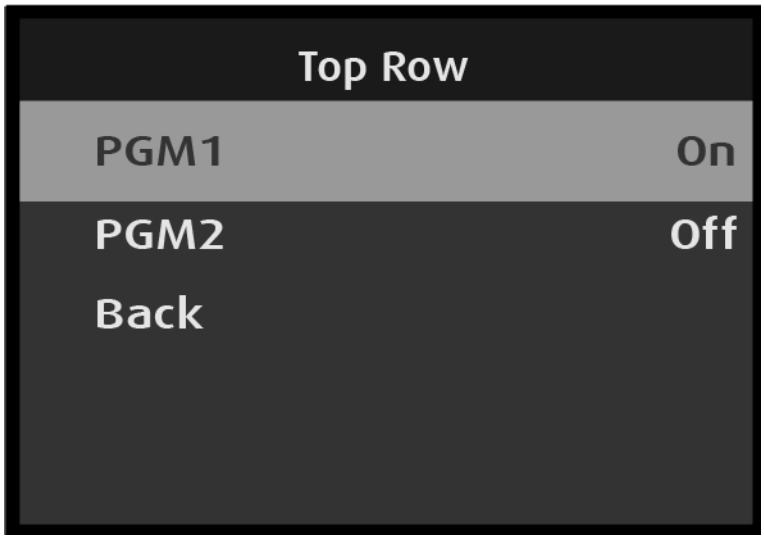

Image 6–148 Top Row menu

2. Select the desired output.
   Once the desired output is selected, the highlight bar turns from gray to cyan. Turning the adjust knob toggles between **Off** and **On**.

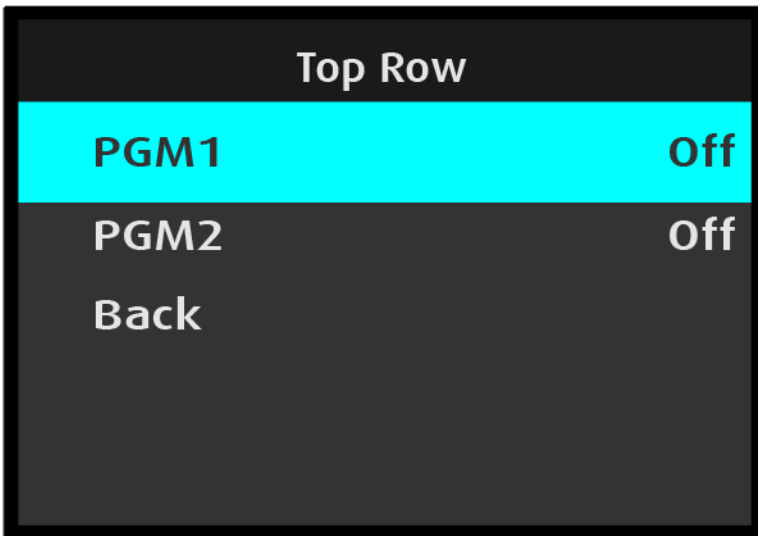

Image 6–149 Top Row: Output adjustment

3. Use the Adjust knob to turn the output control On or Off.
4. Repeat steps #2 and #3 for other desired outputs.

Front Panel Setup – Bottom Row

1. Select **Bottom Row** on the Front Panel Setup menu.

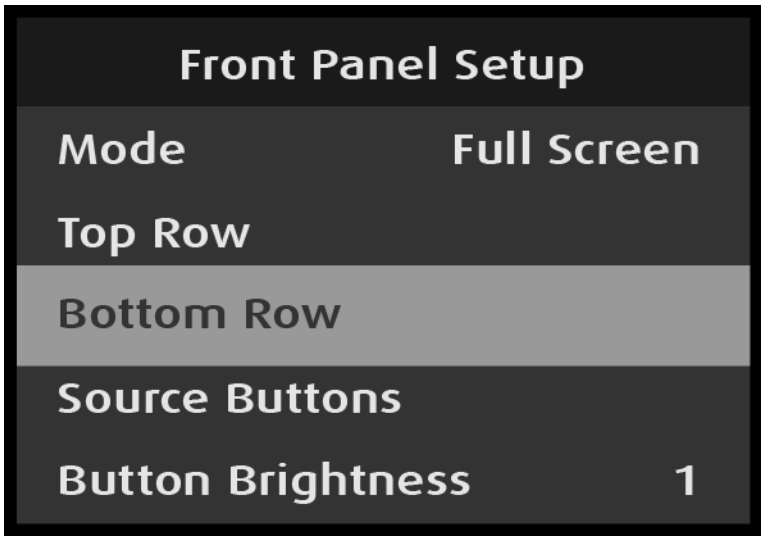

Image 6–150

Selecting **Bottom Row** opens the Bottom Row menu.

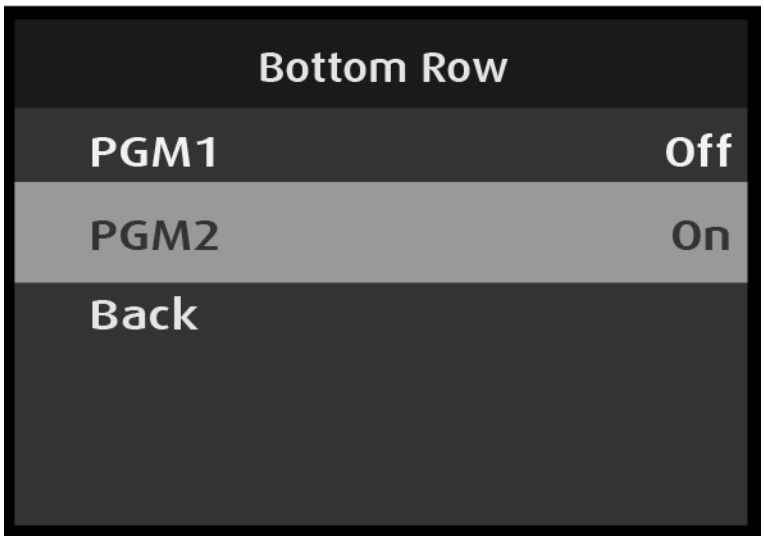

Image 6–151 Bottom Row menu

2. Select the desired output.
   Once the desired output is selected, the highlight bar turns from gray to cyan. Turning the adjust knob toggles between **Off** and **On**.

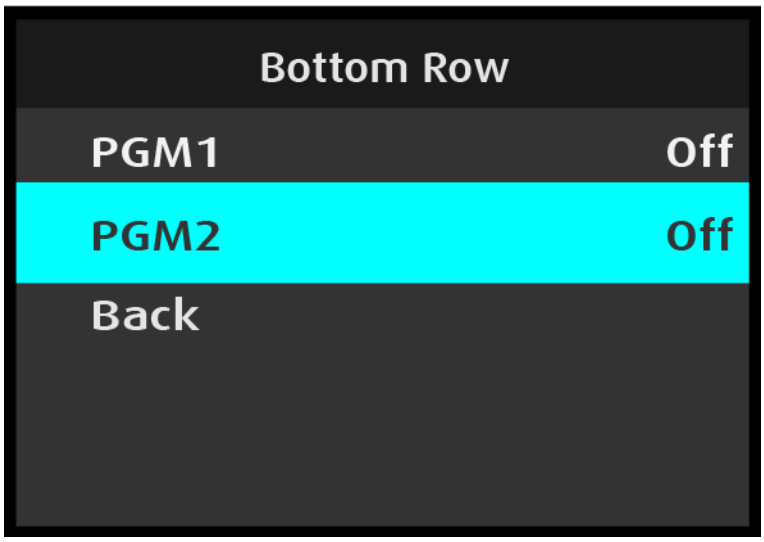

Image 6–152 Bottom Row: Output adjustment

3. Use the Adjust knob to turn the output control On or Off.
4. Repeat steps #2 and #3 for other desired outputs.

Front Panel Setup – Source Buttons

1. Select **Source Buttons** on the Front Panel Setup menu.

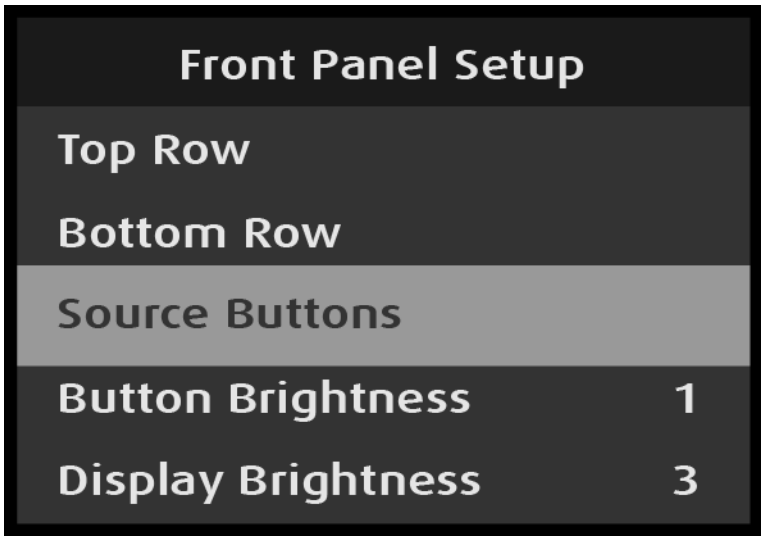

Image 6–153 Front Panel Setup: Source Buttons selection

Source Buttons: Auto Map All Source Buttons

1. Select **Auto Map All Source Buttons** on the Source Buttons menu.

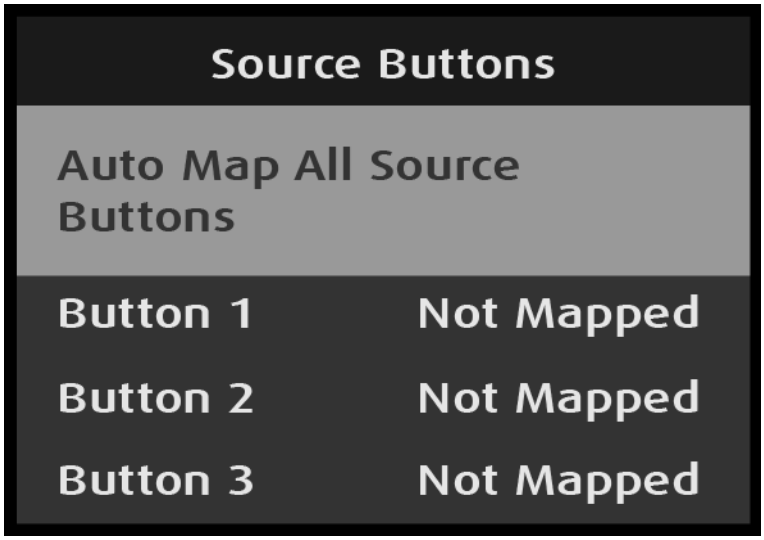

Image 6–154 Source Buttons: Auto Map All Source Buttons selection

Once Auto Map All Source Buttons is selected, the system unmaps all source buttons, and then the system auto maps source buttons 1 through 8. Once these buttons are mapped, the system displays a message.

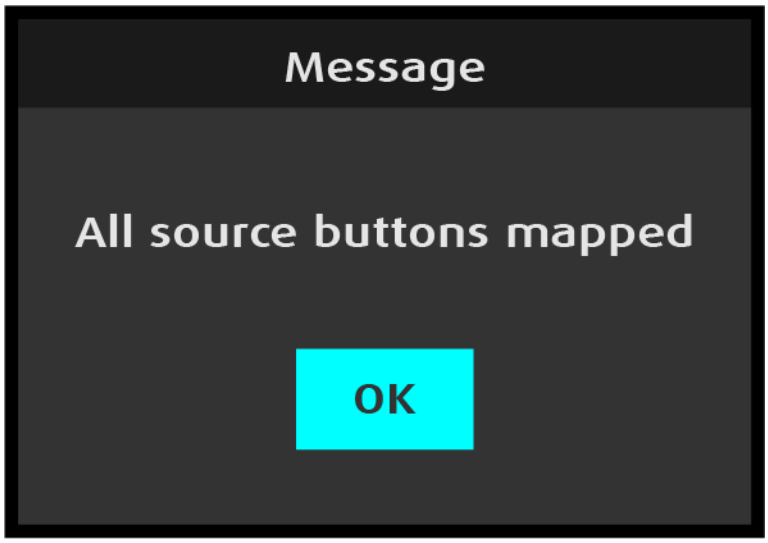

Image 6–155 “All source buttons mapped” message

2. Press the Adjust button to select **OK**.
   The system returns to the Source Buttons menu and displays the inputs that are mapped to the buttons.

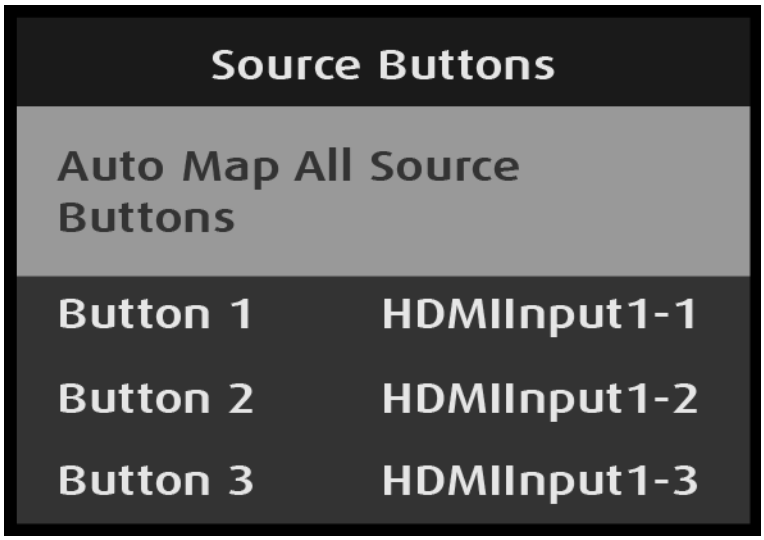

Image 6–156 Source Buttons: Auto Map All Source Buttons mapped

3. Scroll to and select **Back** to return to the Front Panel Setup menu.

Source Buttons: Unmap All Source Buttons

1. Select **Unmap All Source Buttons** on the Source Buttons menu.

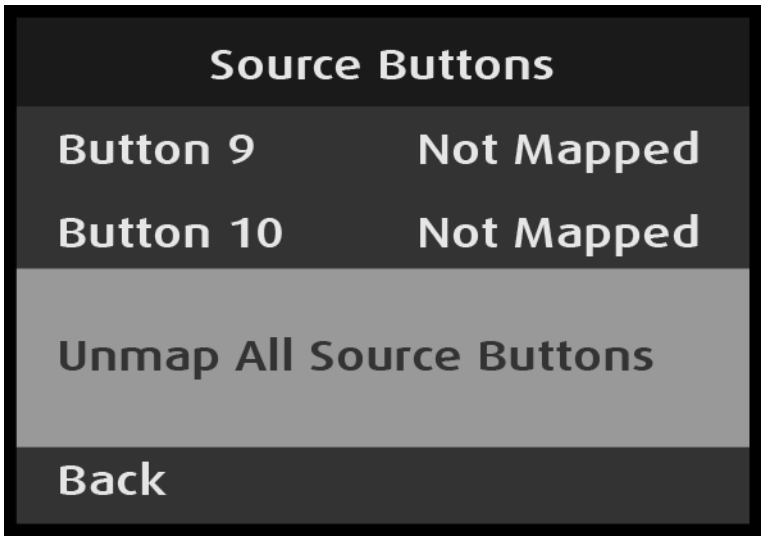

Image 6–157 Source Buttons: Unmap All Source Buttons selection

Once Unmap All Source Buttons is selected, the system unmaps all source buttons. **The system gives no warning message.**

2. Scroll to and select **Back** to return to the Front Panel Setup menu.

Front Panel Setup: Button Brightness

Use Front Panel Setup: Button Brightness to adjust the brightness of the front-panel buttons.

1. Select **Button Brightness** on the Front Panel Setup menu.

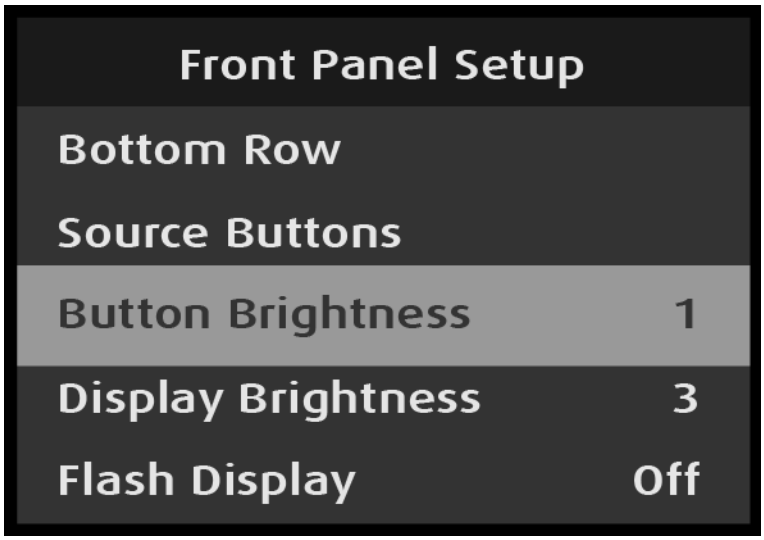

Image 6–158 Front Panel Setup: Button Brightness selection

Once Button Brightness is selected, the highlight bar turns from gray to cyan.

2. Turn the Adjust knob to cycle up and down through the available brightness levels (0 – 6).

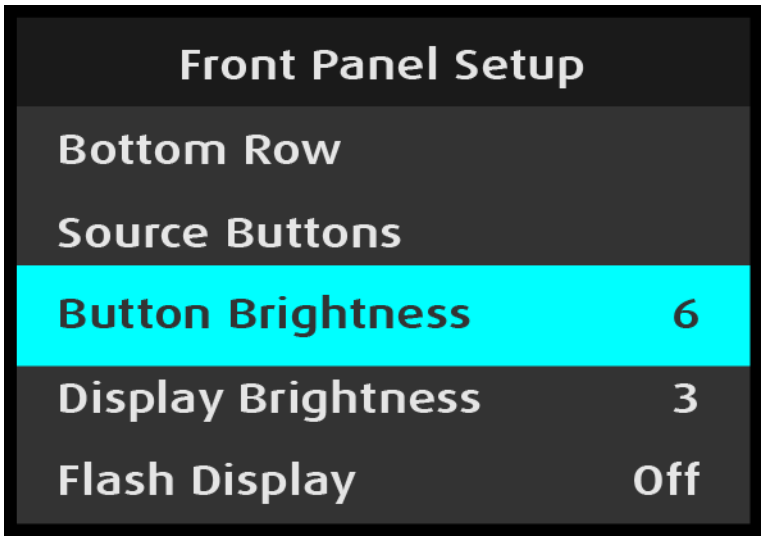

Image 6–159 Front Panel Setup: Button Brightness adjustment

3. Press the Adjust knob to select the desired brightness level.

Front Panel Setup: Display Brightness

Use Front Panel Setup:: Display Brightness to adjust the brightness of the front-panel menu display.

1. Select **Display Brightness** on the Front Panel Setup menu.

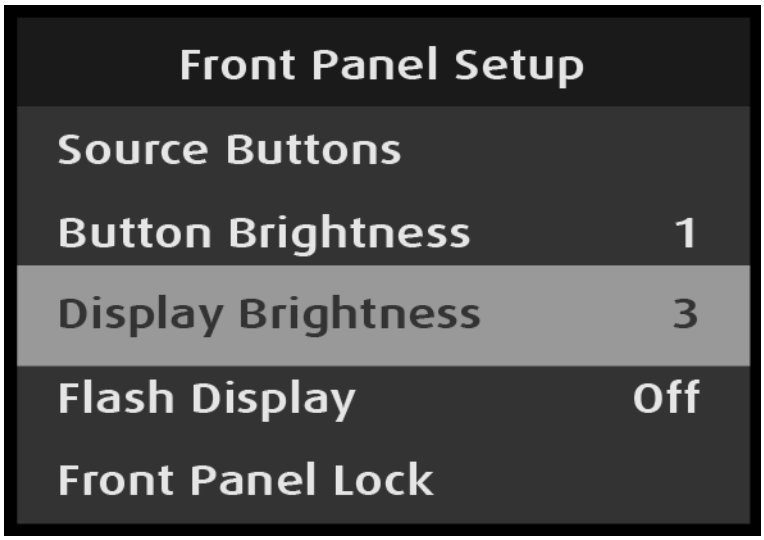

Image 6–160 Front Panel Setup: Display Brightness selection

Once Display Brightness is selected, the highlight bar turns from gray to cyan.

2. Turn the Adjust knob to cycle up and down through the available brightness levels (0 – 6).

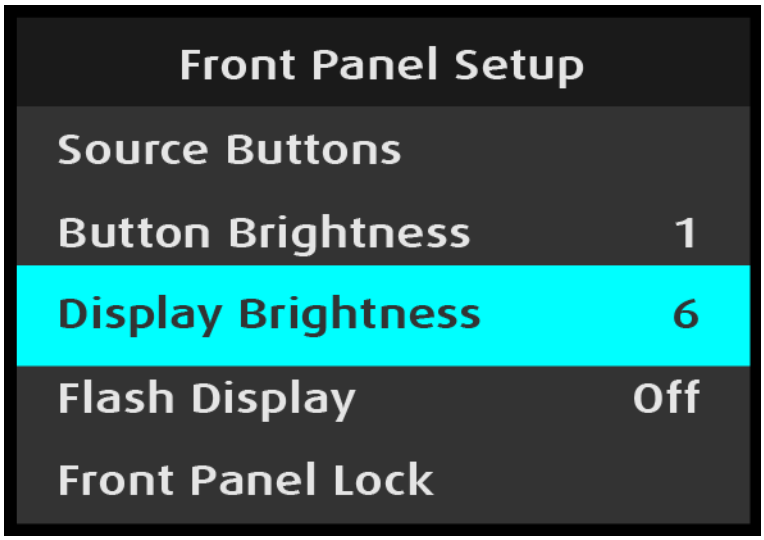

Image 6–161 Front Panel Setup: Display Brightness adjustment

3. Press the Adjust knob to select the desired brightness level.

Front Panel Setup: Flash Display

1. Scroll to and select **Flash Display** on the Front Panel Setup menu to choose between not flashing and flashing the display screen.
   Flash Display Off (not flashing) is the system default.

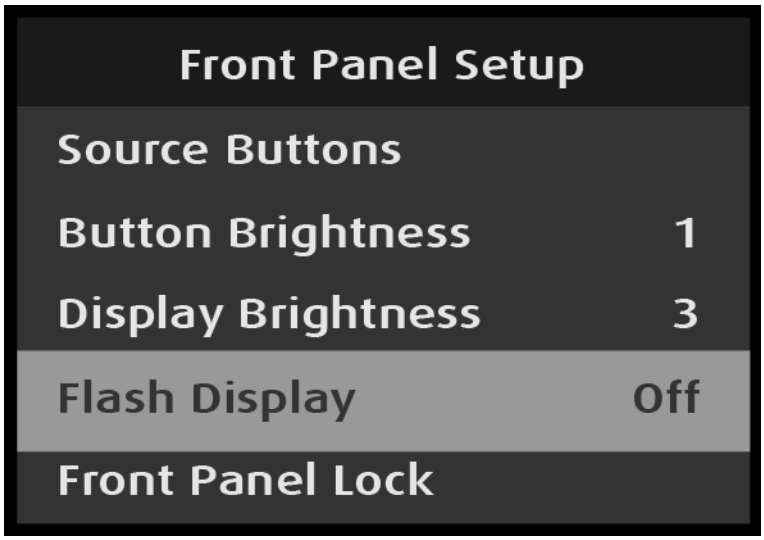

Image 6–162 Front Panel Setup: Flash Display selection

Once Flash Display is selected, the highlight bar turns from gray to cyan.

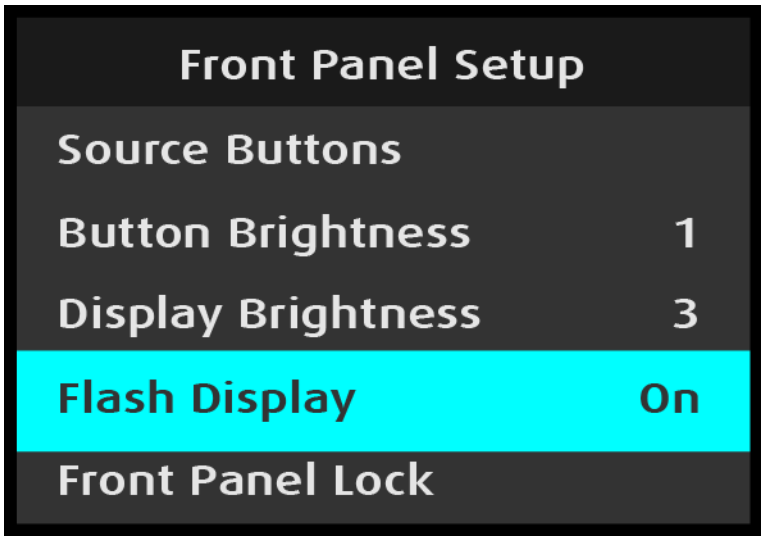

Image 6–163 Front Panel Setup: Flash Display adjustment

2. Scroll between **Off** (default) and **On**, and select the desired setting.
   When Flash Display is set to **On**, the display flashes from dark, to dim, to bright.

Front Panel Setup: Front Panel Lock

Use Front Panel Lock to lock the front-panel buttons.

1. Scroll to and select **Front Panel Lock** on the Front Panel Setup menu.

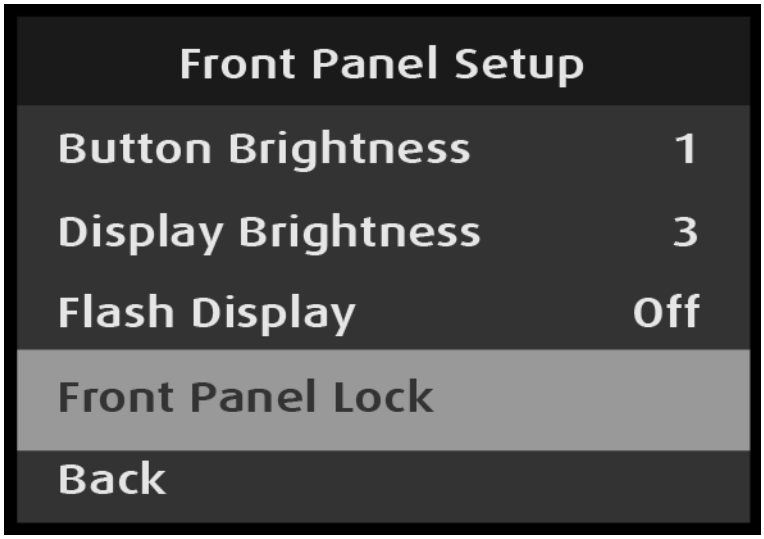

Image 6–164 Front Panel Setup: Front Panel Lock selection

Once Front Panel Lock is selected, the system displays the following message:

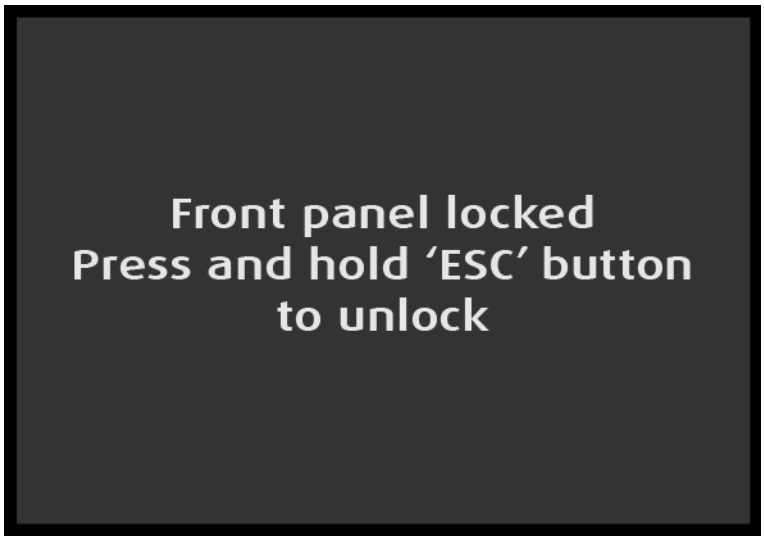

Image 6–165 "Front Panel Locked" message

2. Press and hold the **ESC** button to unlock the front-panel buttons.
   Once the front-panel buttons are unlocked, the system displays the Status menu.

Operation Setup: Auto Take

In Full Screen mode, the top row and bottom row buttons each control a separate screen or group of screens. When "Auto Take" is off, selecting a source places that source in PVW for the assigned output. When "Auto Take" is on, selecting a source transitions that source immediately to PGM for the assigned output. Full Screen mode is the default operational mode for the front panel.

1. Scroll to and select **Auto Take** on the Operation Setup menu.

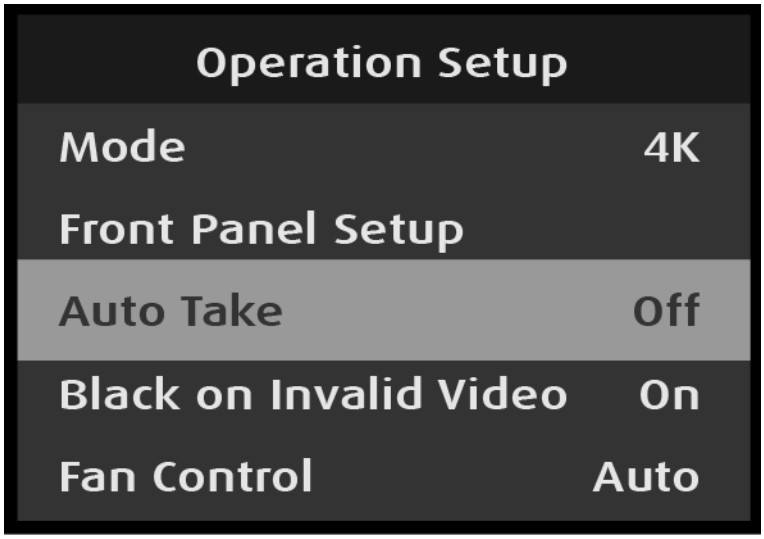

Image 6–166 Operation Setup: Auto Take selection

Once Auto Take is selected, the highlight bar turns from gray to cyan.

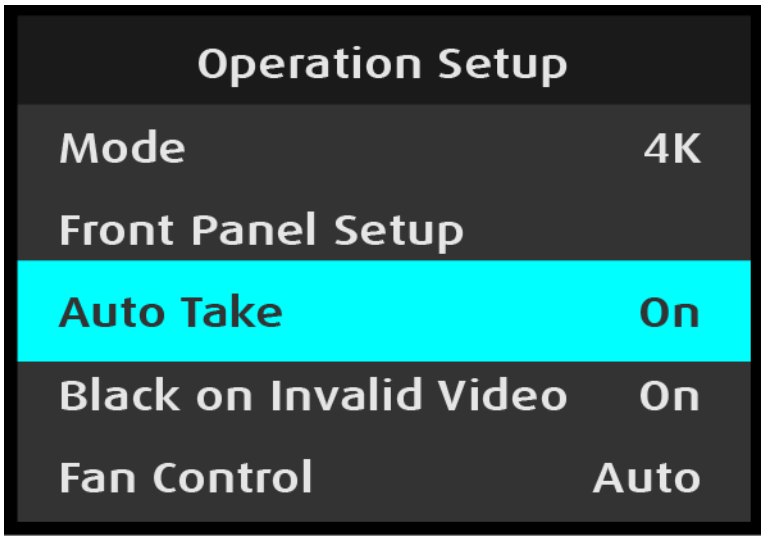

Image 6–167 Operation Setup: Auto Take adjustment

2. Turn the Adjust knob to toggle Auto Take **On** and **Off**.
3. Press the Adjust knob to select the desired Auto Take value.

Operation Setup: Black on Invalid Video

Black on Invalid Video outputs a black screen if the system cannot process the input source (for example if there is a loss of sync). The default setting is **On**. If Black on Invalid Video is set to **Off**, unpredictable output may result.

1. Scroll to and select **Black on Invalid Video** on the Operation Setup menu.

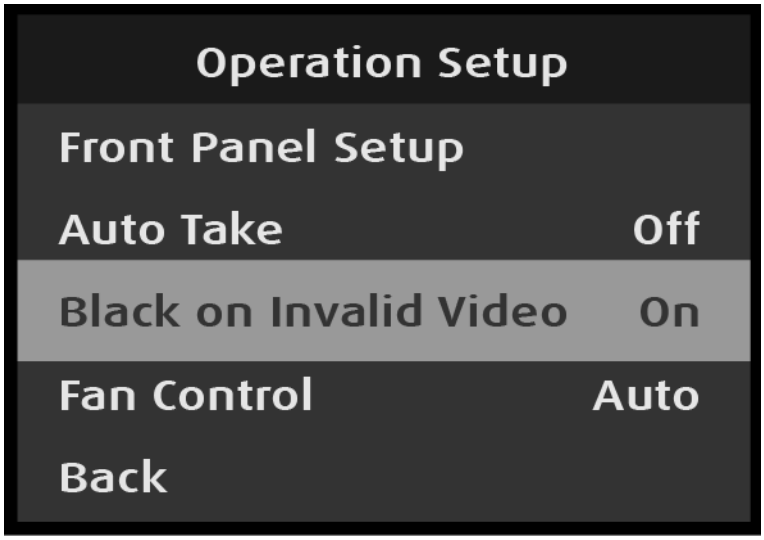

Image 6–168 Operation Setup: Black on Invalid Video selection

Once Black on Invalid Video is selected, the highlight bar turns from gray to cyan.

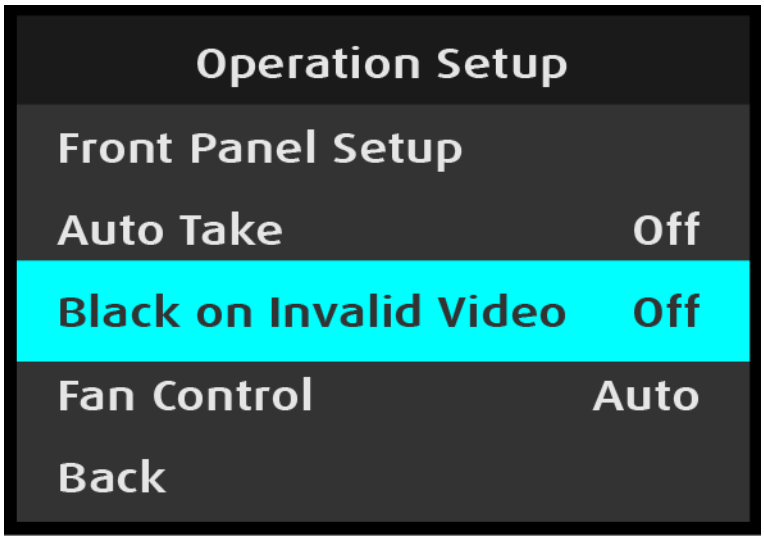

Image 6–169 Operation Setup: Black on Invalid Video adjustment

2. Use the Adjust knob to scroll to and select either **On** or **Off**.

Operation Setup: Fan Control

Use Fan Control to toggle between allowing the system to run the fan (Auto) and running the fan at full speed (Full).

1. Scroll to and select **Fan Control** on the Operation Setup menu.

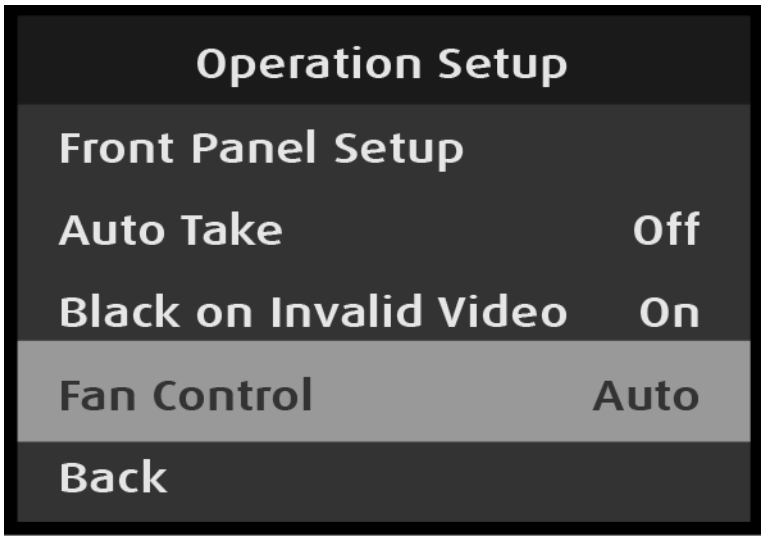

Image 6–170 Operation Setup: Fan Control selection

Once Fan Control is selected, the highlight bar turns from gray to cyan.

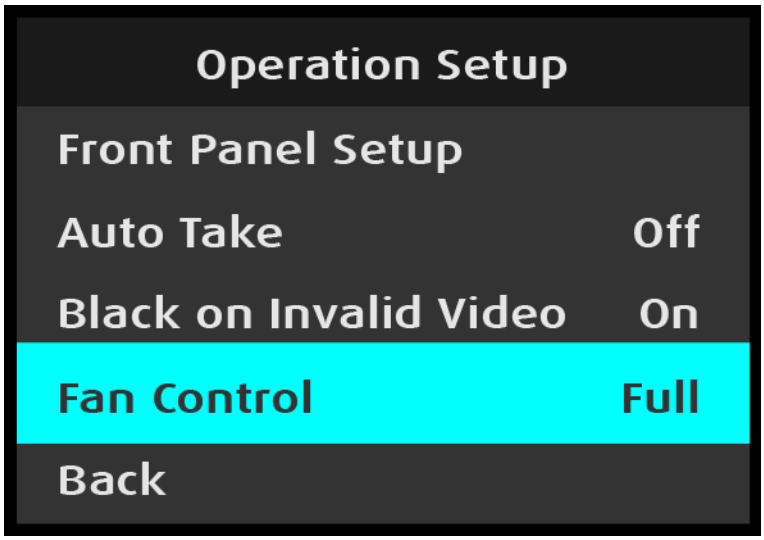

Image 6–171 Operation Setup: Fan Control adjustment

Back returns to the System menu.

System: HDCP menu

Use System: HDCP to query and adjust the HDCP settings for all outputs, MVR output, and all inputs.

1. Scroll to and select **HDCP** on the System menu.

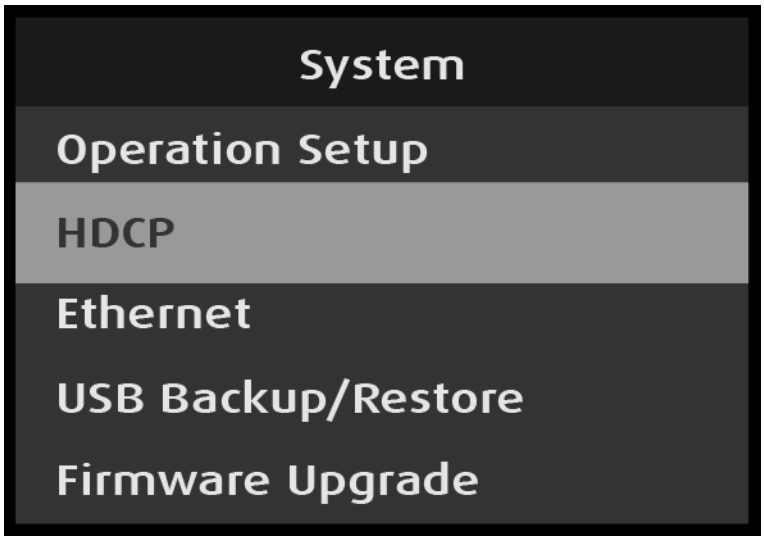

Image 6–172 System: HDCP selection

System: HDCP: Mode and Status

Mode and Status selections work in the same manner for outputs and for MVR output. Mode and Status selections for inputs are slightly different. The procedure for PGM1 output is shown below.

For outputs and MVR output:

1. Scroll to and select **PGM1 Mode** on the HDCP menu.

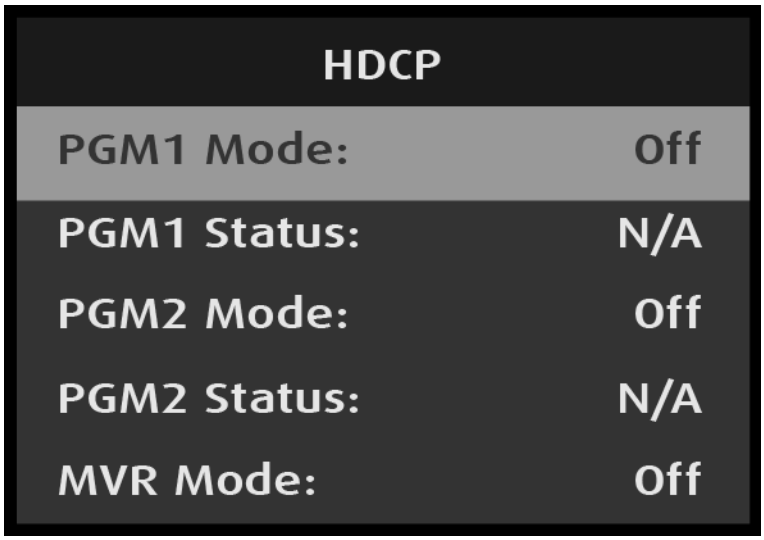

Image 6–173 System: HDCP: Mode selection

Once PGM1 Mode is selected, the highlight bar turns from gray to cyan.

2. Use the Adjust knob to toggle between and select either **Off** or **On**.

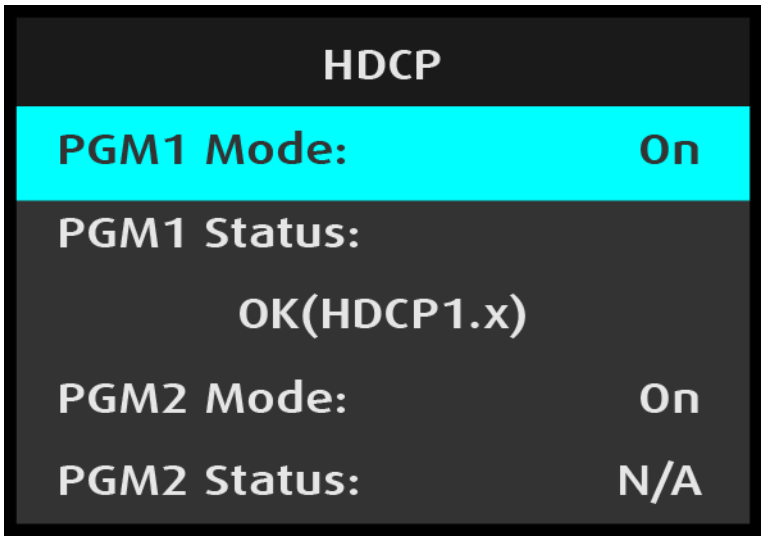

Image 6–174 System: HDCP: Mode adjustment

When PGM1 Mode is set to “On,” the PGM1 Status line displays the HDCP status of the PGM1 output.

For inputs:

1. Scroll to and select **HDMIInput1-1 Mode** on the HDCP menu.

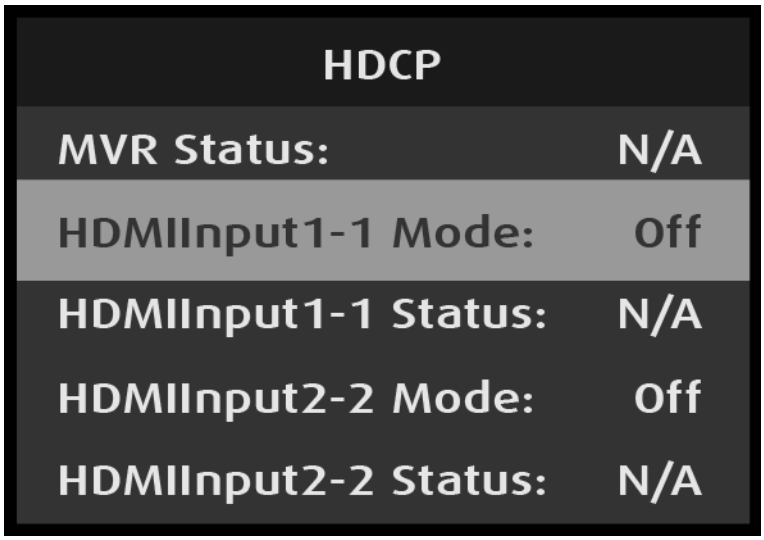

Image 6–175 System: HDCP: Mode selection—input

Once HDMIInput1–1 is selected, the highlight bar turns from gray to cyan.

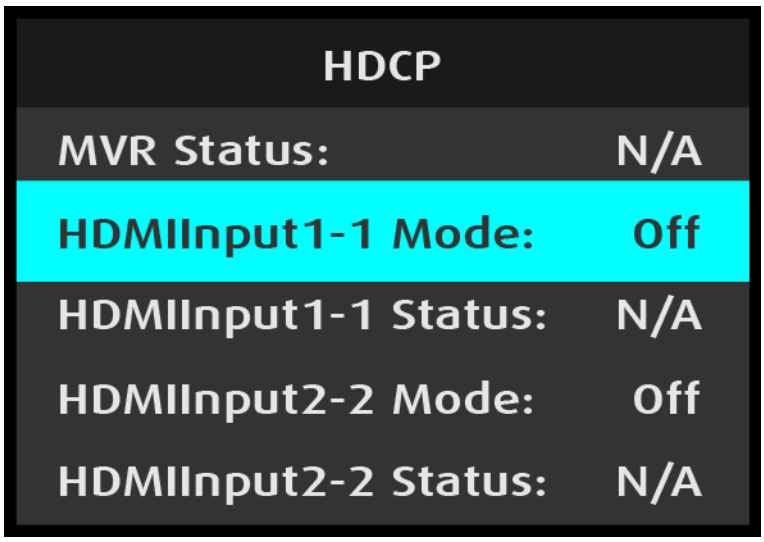

Image 6–176 System: HDCP: Mode adjustment—input

2. Turn the Adjust knob to scroll through the available HDCP settings.

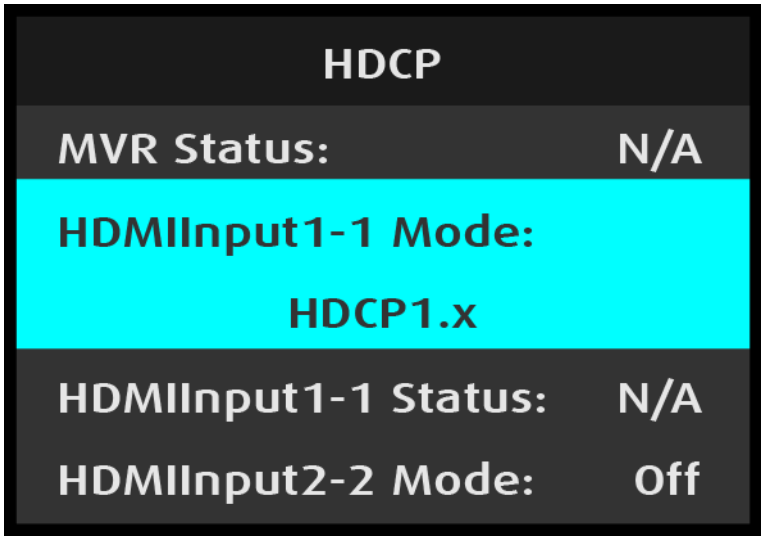

Image 6–177 Adjusting HDCP input value

3. Press the Adjust knob to select the desired HDCP setting.

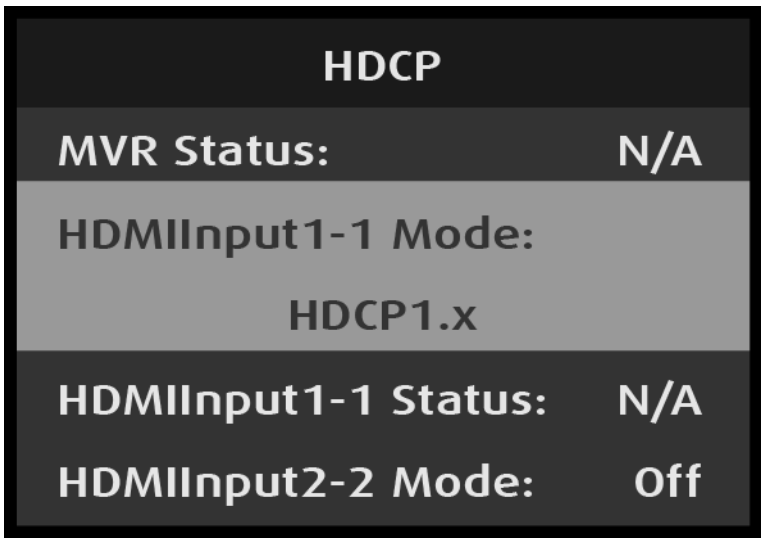

Image 6–178 Selecting HDCP input value

After HDMIInput1-1 Mode is selected, HDMIInput1-1 Status reflects the type of HDCP authentication with the input device, if HDCP authentication is present. If no HDCP authentication is present, the HDMIInput1-1 Status reads "N/A."

System: Ethernet

Use System: Ethernet to adjust the Ethernet parameters of the system. For example, the user can set up a static IP or use DHCP (Dynamic Host Configuration Protocol).

1. Select **Ethernet** on the System menu.

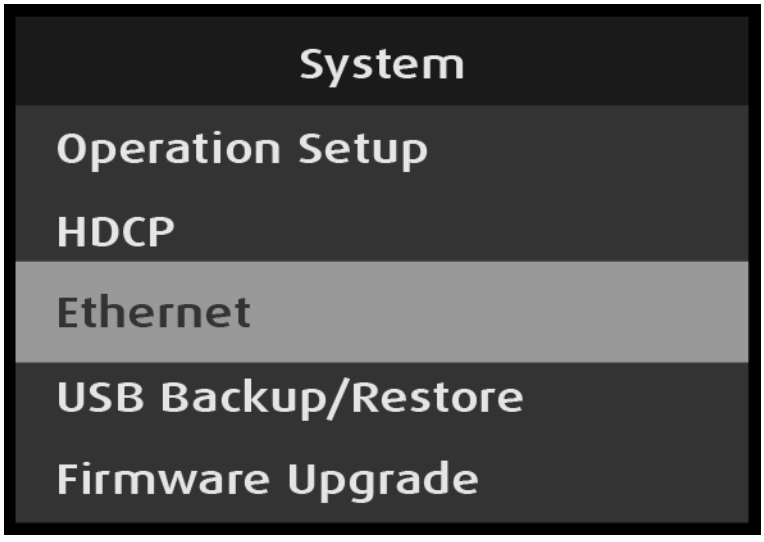

Image 6–179 System: Ethernet selection

2. Scroll to and select the desired Ethernet parameter, for example **DHCP**.

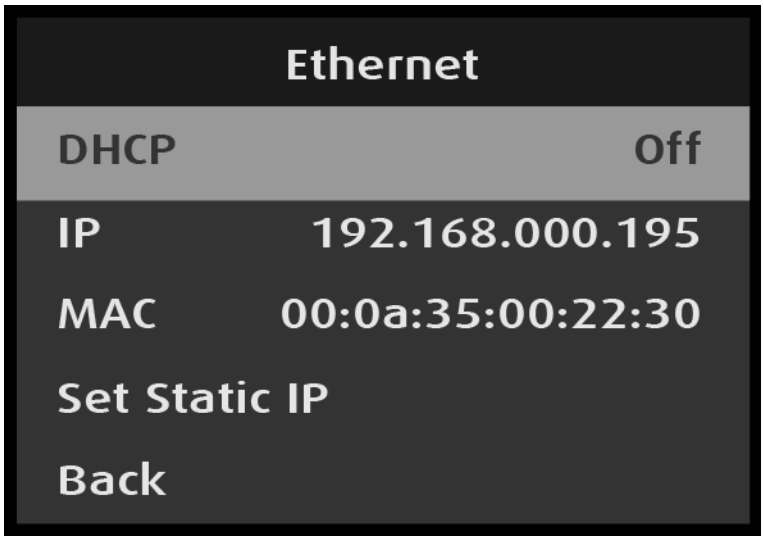

Image 6–180 Ethernet: DHCP selection

Once Ethernet parameter is selected, the highlight bar for that parameter turns from gray to cyan.

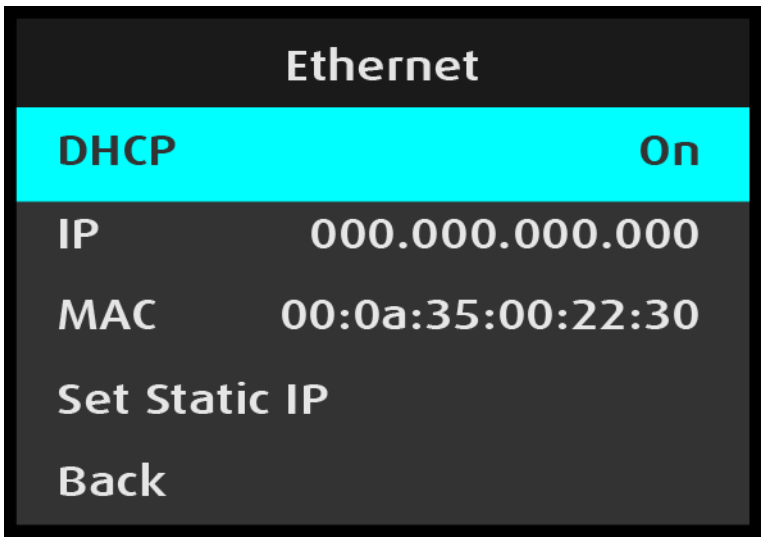

Image 6–181 Ethernet: DHCP adjustment

3. Turn the Adjust knob to toggle between DHCP **Off** and **On**, and press the Adjust knob to select the desired value.
   - **DHCP** allows the operator to choose whether or not to use the Dynamic Host Configuration Protocol.
     The default DHCP setting is **Off**.
     When DHCP is set to **On**, a device can have a different IP address every time it connects to the network.
   - **IP** reports the current IP address of the system.
   - **MAC** reports the current MAC address of the system.
   - **Set Static IP** allows the operator to set the IP Address, Subnet Mask, and Gateway Mask.

To set a static IP address...

1. Select **Set Static IP** from the Ethernet menu.
2. Select **Set IP Address** from the Set Static IP menu

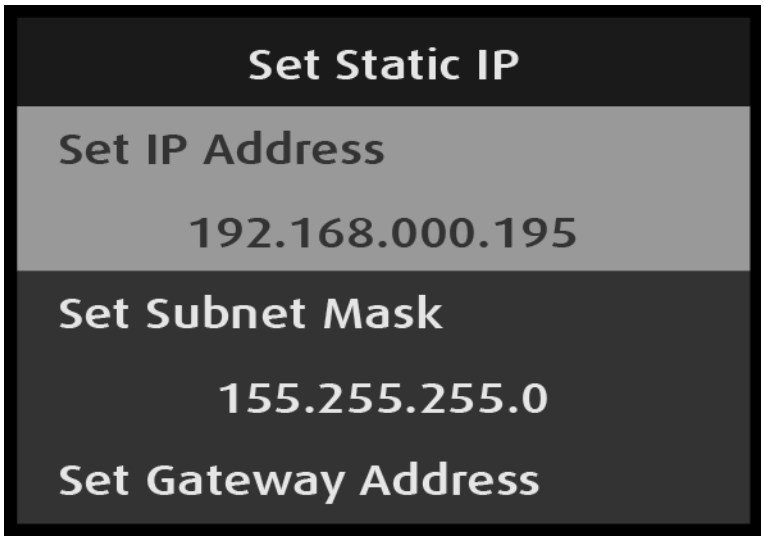

Image 6–182 Set Static IP: Set IP Address selection

Once Set IP Address is selected, the highlight bar turns from gray to cyan, and the first portion of the IP address is highlighted in green.

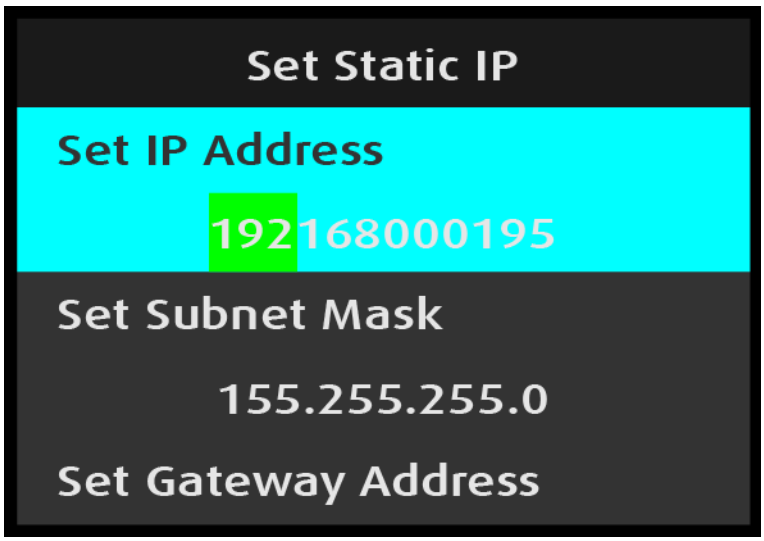

Image 6–183 Set Static IP: Set IP Address adjustment

3. Turn the Adjust knob to adjust the first portion of the IP address, and press the Adjust knob when the desired number is reached.
4. Repeat Step 3 for each portion of the IP address.

The **Subnet Mask** and the **Gateway Address** may be set in the same manner as the **IP Address** is set.

Back returns to the Ethernet menu.

Back again returns to the System menu.

USB Backup/Restore

Use System: USB Backup/Restore to create a system backup file and to restore the system with that backup file.

1. Insert a FAT32-formatted USB drive in the front-panel USB port.
2. Select **USB Backup/Restore** on the System menu.

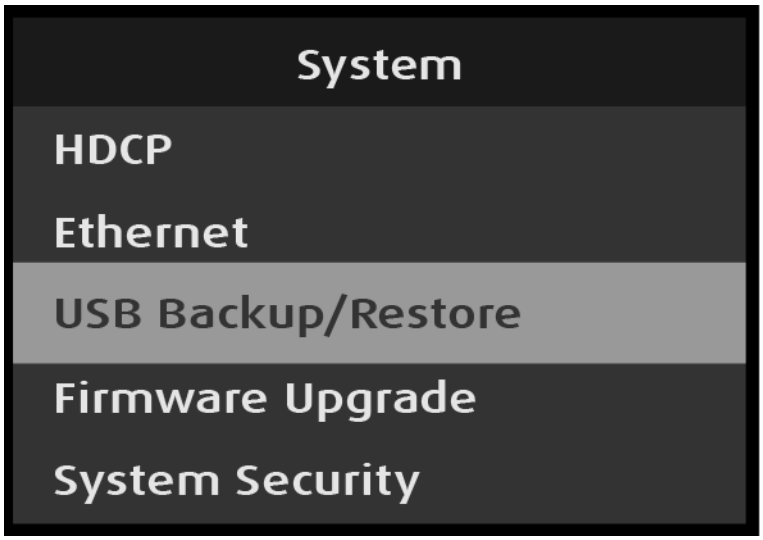

Image 6–184 System: USB Backup/Restore selection

The system detects if a FAT32-formatted USB drive is in the front-panel USB port. If the system detects no USB drive in the USB port, the top line of the USB Backup/Restore menu reads, “USB Detected – No.” If the system detects a USB drive in the USB port, the top line of the USB Backup/Restore menu reads, “USB Detected – Yes.”

Image 6–185 USB Backup/Restore: USB Detected—”Yes”

1. Select **Backup Config** on the USB Backup/Restore menu.

Image 6–186 USB Backup/Restore: Backup Config selection

Once Backup Config is selected, the highlight bar turns from gray to cyan, and the first character of the backup config file name is highlighted in green.

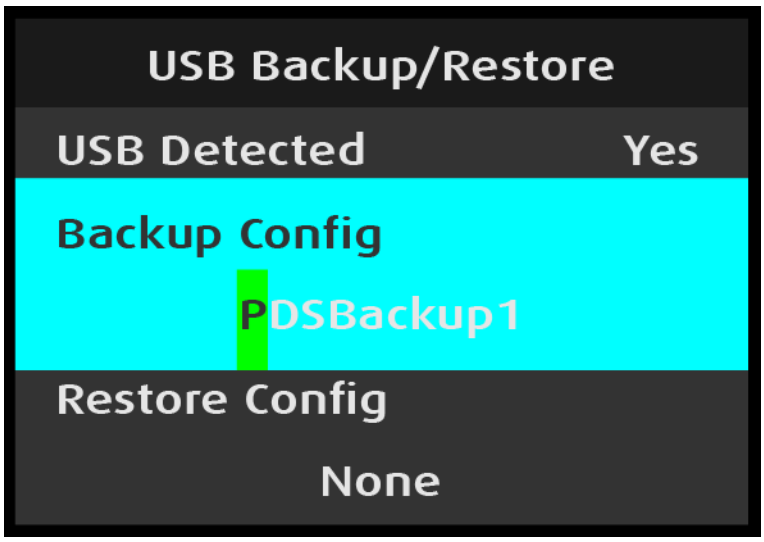

Image 6–187 USB Backup/Restore: Backup Config adjustment

2. Turn the **Adjust knob** to scroll through the available characters for the first position.
   The available characters are:
   - A – Z
   - a – z
   - 0 – 9
   - - (hyphen)
   - . (period)
   - / (slash)
   - A blank character deletes the space.
3. Press the **Adjust knob** to select the desired character.
4. Repeat steps 2 and 3 as needed to rename the backup file.
5. Select a blank space for the last character of the new name, and press the Adjust knob to select the new name.
   The system creates the backup configuration file. While this file is being created, the system displays an “In Progress” message.

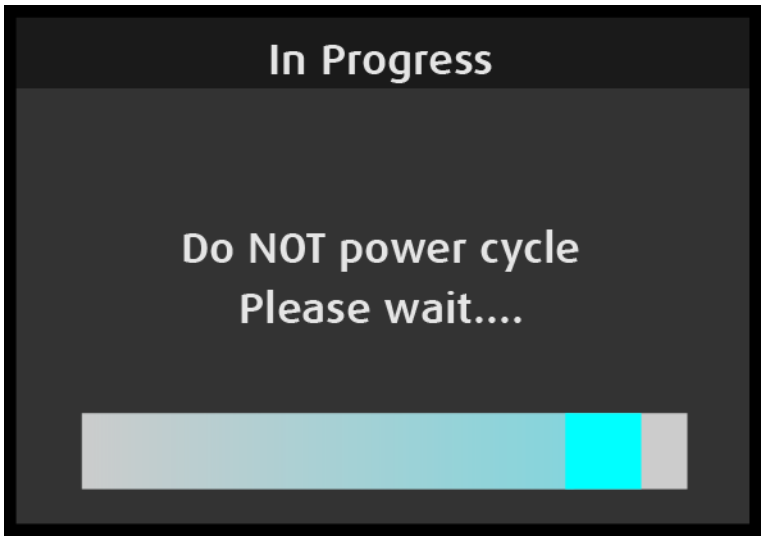

Image 6–188 USB Backup/Restore “In Progress” message

After the backup configuration file is created, the system returns to the USB Backup/Restore menu.

1. Scroll to and select **Restore Config** on the USB Backup/Restore menu.

Image 6–189 USB Backup/Restore: Restore Config selection

   Once Restore Config is selected, the highlight bar turns from gray to cyan.
2. Turn the Adjust knob to scroll through the available backup configuration files on the USB flash drive.

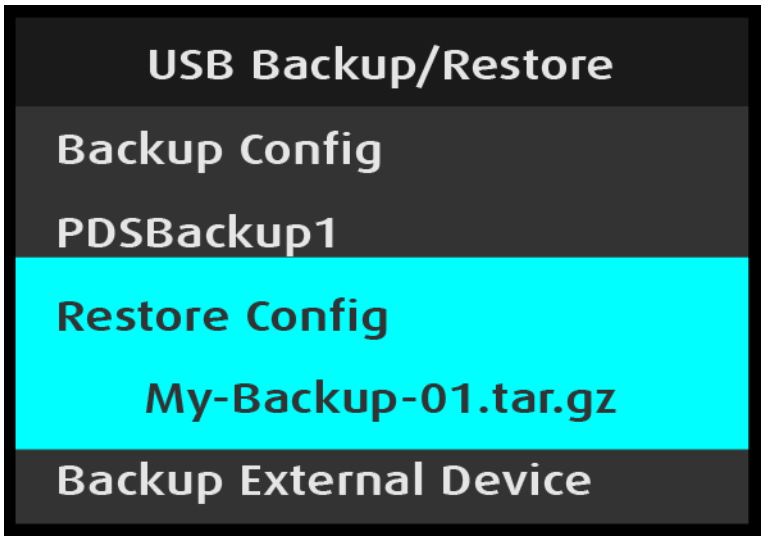

Image 6–190 USB Backup/Restore: Restore Config adjustment

3. Press the Adjust knob to select the desired backup configuration and to start the restore process. The system displays an “In Progress” message.

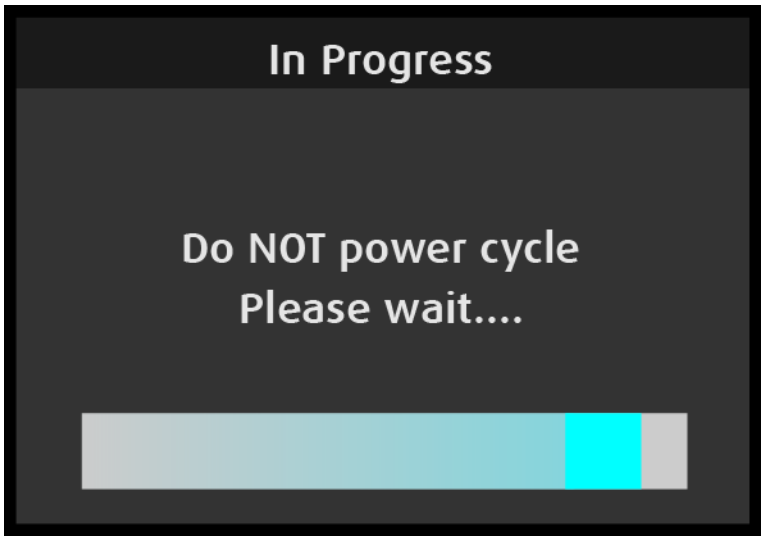

Image 6–191 USB Backup/Restore “In Progress” message

Once the Restore Config process is complete, the system displays a “Restart Unit Now?” message.

Image 6–192 “Restart Unit Now?” message

4. Select “Yes” to restart the unit, or select “No” to return to the USB Backup/Restore menu.

USB Backup/Restore: External Device, XML, and Backup Log Files

External devices, XML, and backup log files are backed-up and restored in the same manner as backup configuration files are backed-up and restored.

System: Firmware Upgrade

Upgrading the firmware through the USB port requires the “pds_update_vp.xx.xx.tar.gz” file to be within a directory named EM on the USB flash drive.

1. Prepare a flash drive with the upgrade file.
2. Perform the firmware upgrade using the USB flash drive.

Prepare a flash drive with the upgrade file

1. Download the software upgrade for free from Barco’s website (URL: *http://www.barco.com*). Click on myBarco and login to get access to secured information. Registration is necessary.
   Note that if you are not yet registered, click on **New to myBarco** and follow the instructions. With the created login and password, it is possible to login where you can download the Event Master series processor software. It is not necessary to install any other software.
2. Unzip directly the software upgrade downloaded from the Barco website to the USB drive. This operation automatically creates a directory named EM with the upgrade file inside (pds_update_vp.xx.xx.tar.gz).

Perform the firmware upgrade using the USB flash drive

1. Insert the flash drive into the unit’s USB port.
2. Scroll to and select **Firmware Upgrade** from the System menu.

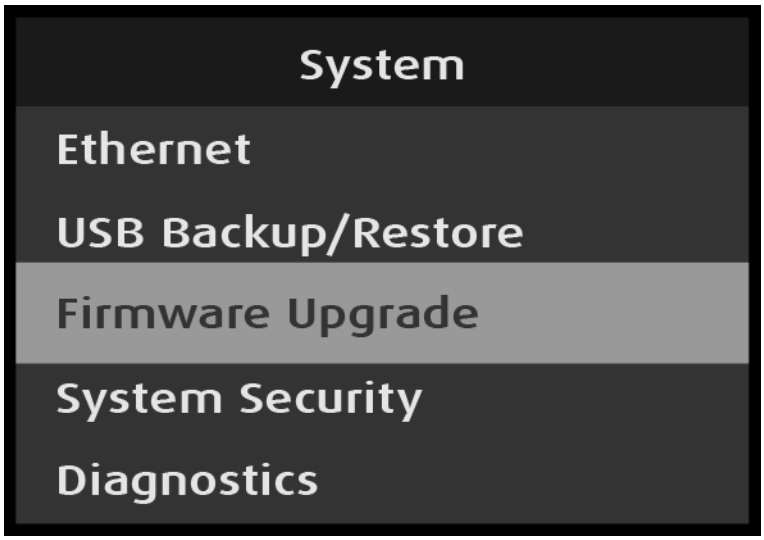

Image 6–193 System: Firmware Upgrade selection

The Firmware Upgrade submenu appears.

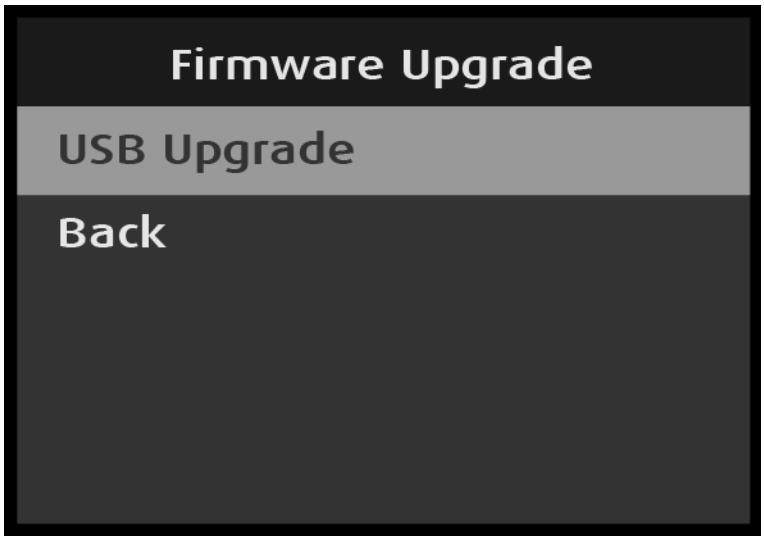

Image 6–194 Firmware Upgrade: USB Upgrade selection

3. Select **USB Upgrade** on the Firmware Upgrade menu.

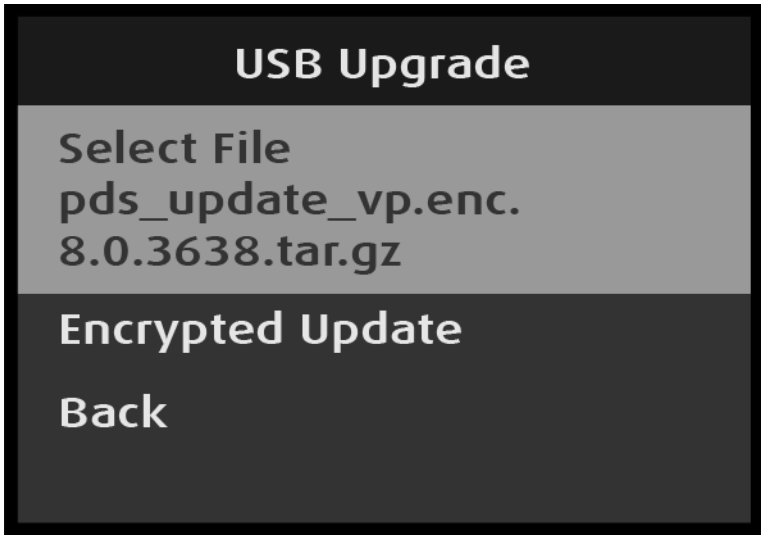

Image 6–195 USB Upgrade: Select File selection

4. Select **Select File** on the USB Upgrade menu.
   If there is more than one firmware update file in the EM directory on the USB flash drive:
   a) Select **Select File** on the USB Upgrade menu.
      Once Select File is selected, the highlight bar turns from gray to cyan.

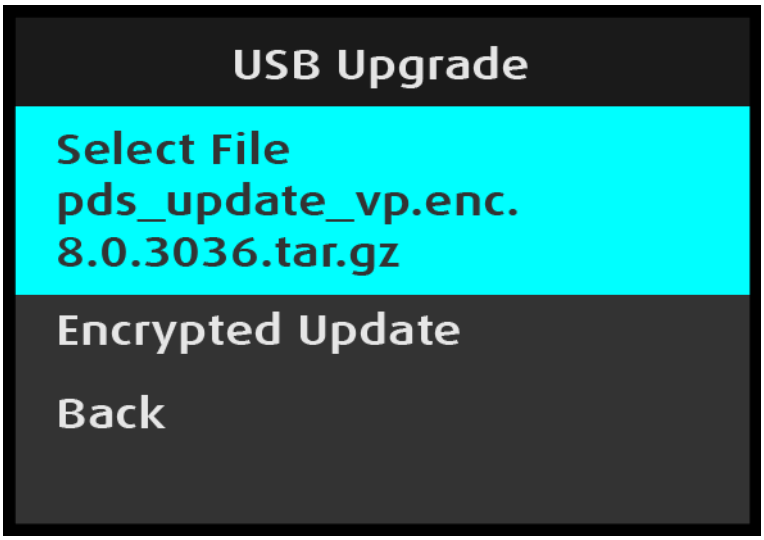

Image 6–196 USB Upgrade: Select File adjustment

b) Turn the Adjust knob to scroll through the available firmware upgrade files.
c) Press the Adjust knob to select the desired firmware upgrade file.

5. Scroll to and select **Encrypted Update** on the USB Upgrade menu.

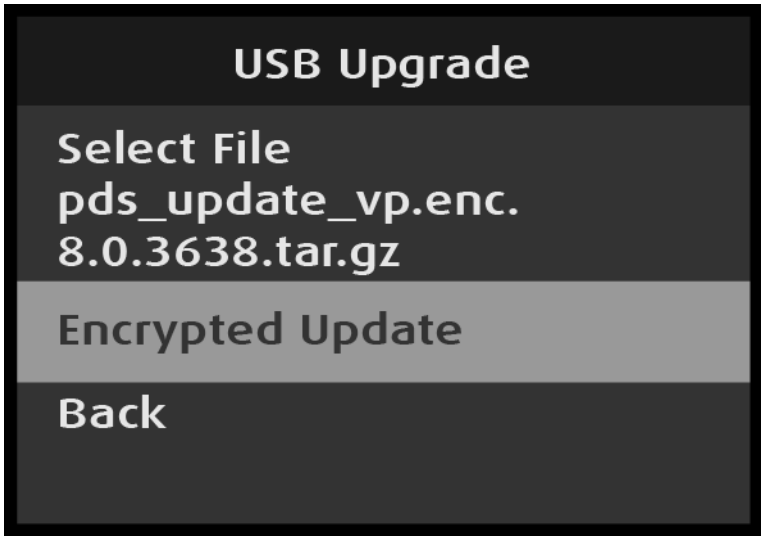

Image 6–197 USB Upgrade: Encrypted Update selection

While the firmware upgrade is in progress, the system displays several messages.

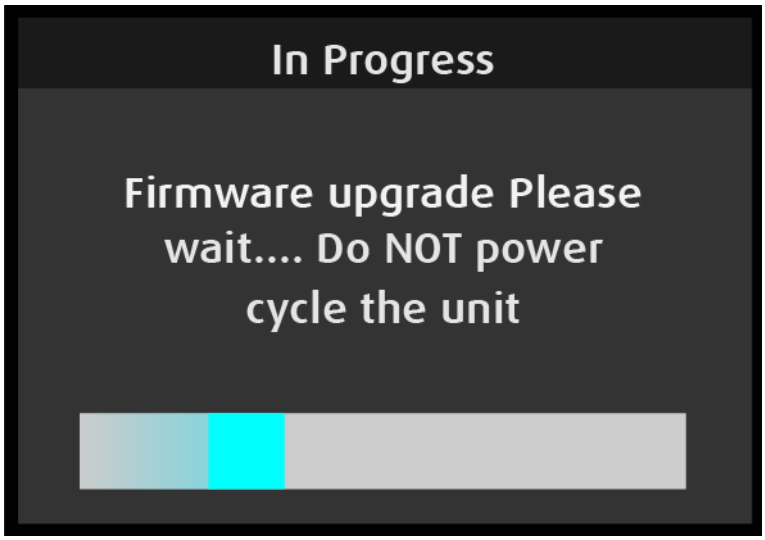

Image 6–198 Firmware upgrade “In Progress” message 1

Image 6–199 “Do NOT power cycle” message

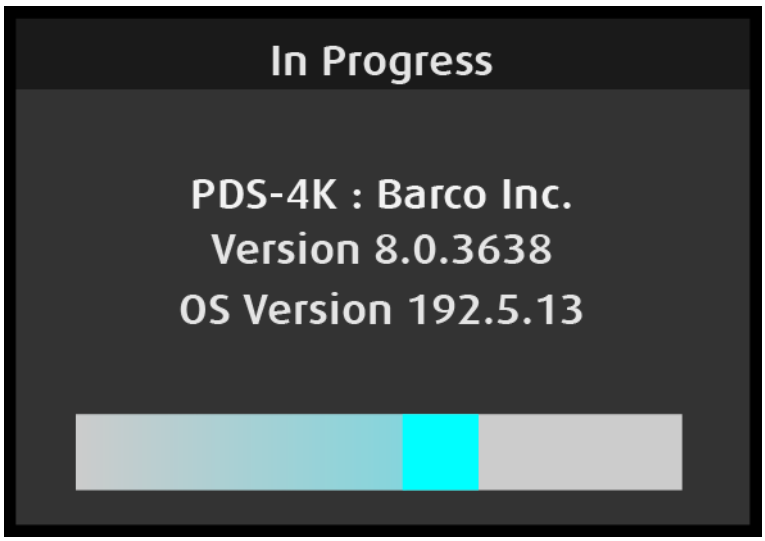

Image 6–200 Firmware upgrade “In Progress” message 2

The firmware upgrade process takes about five minutes. When the firmware upgrade is complete, the system displays the Status menu.

Image 6–201 Status menu after firmware upgrade

System: System Security

Use System: System Security to adjust the Admin Lock, WebApp Lock, and the Front Panel Lock.

1. Select **System Security** from the System menu.

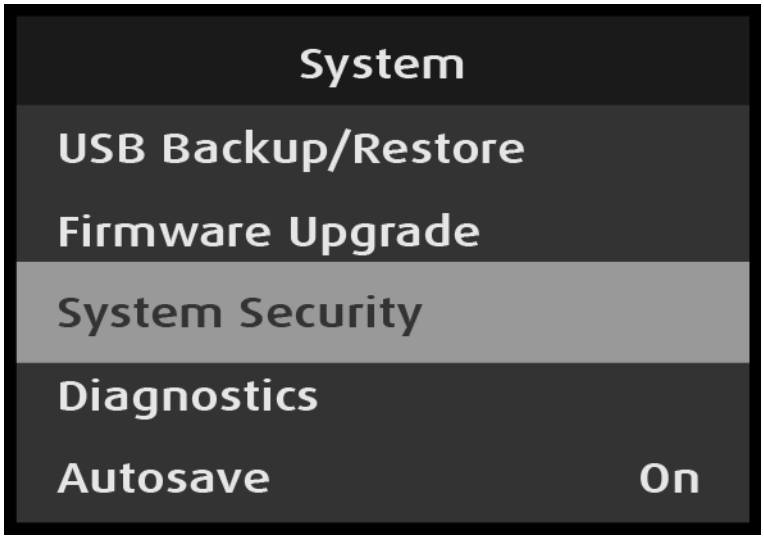

Image 6–202 System menu: System Security selection

Back returns to the System menu.

System Security: Admin Lock

When the Admin Lock is enabled, users are not allowed to delete Inputs, Outputs, Destinations, Presets, User Keys, Cues, or External Devices. Users are allowed operator-level functionality to recall Presets and Cues and to transition.

1. Select **Admin Lock** from the System Security menu.

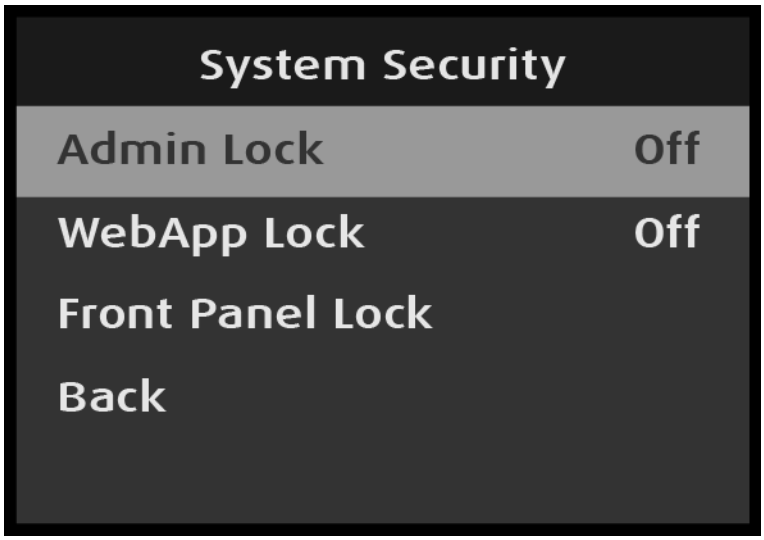

Image 6–203 System Security: Admin Lock selection

Once Admin Lock is selected, the highlight bar turns from gray to cyan.

2. Turn the Adjust knob to toggle Admin Lock between “On” and “Off.”

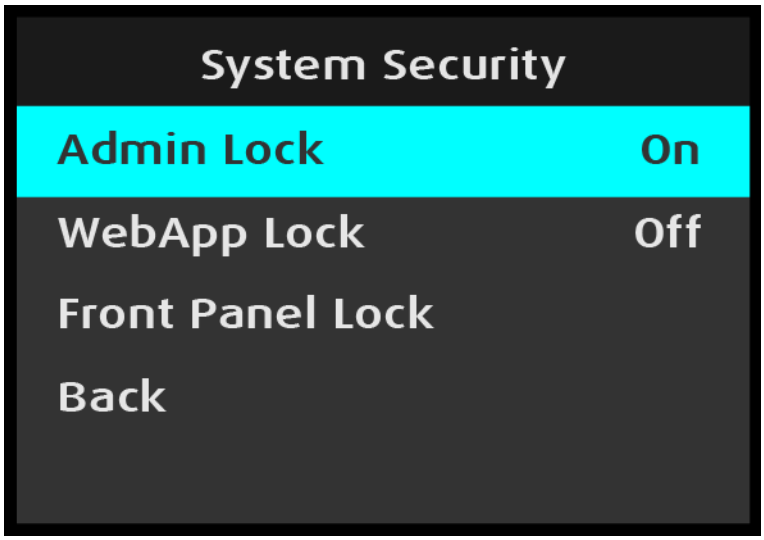

Image 6–204

3. Press the Adjust knob to select either “On” or “Off.”

System Security: WebApp Lock

When the WebApp Lock is off (disabled), the settings page hosted in the PDS–4K is accessible through a web browser, as well as through the Settings menu in the EMTS GUI. When the WebApp Lock is enabled, the WebApp is in read-only mode, and no settings can be changed.

1. Select **WebApp Lock** from the System Security menu.

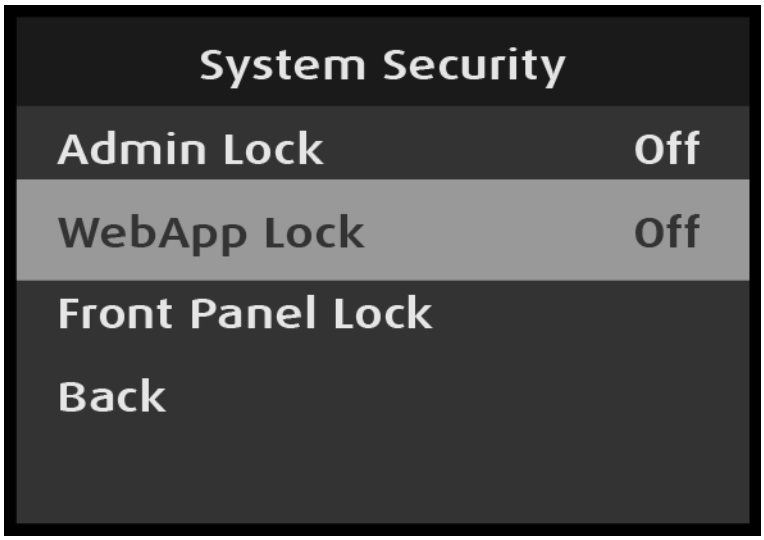

Image 6–205 System Security: WebApp Lock selection

Once WebApp Lock is selected, the highlight bar turns from gray to cyan.

2. Turn the Adjust knob to toggle Admin Lock between “On” and “Off.”

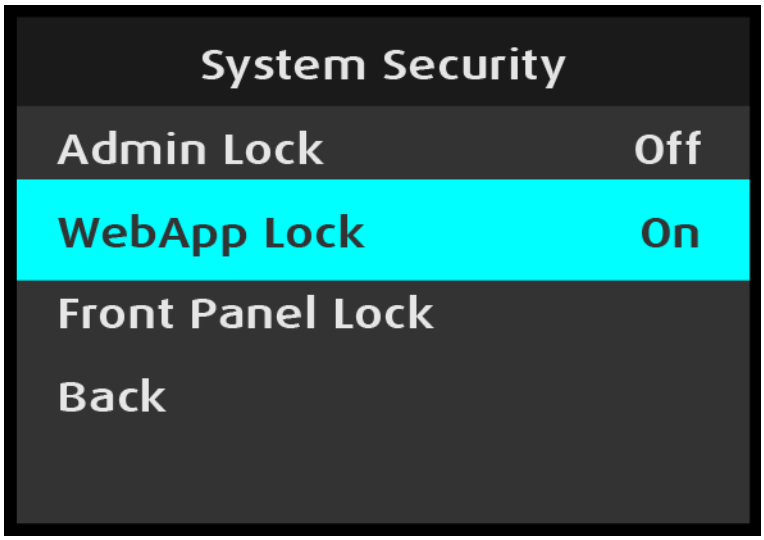

Image 6–206 System Security: WebApp Lock adjustment

3. Press the Adjust knob to select either “On” or “Off.”

System Security: Front Panel Lock

Use Front Panel Lock to lock the front-panel buttons. The user may also access Front Panel Lock through the Operation Setup submenu of the System menu.

1. Select **Front Panel Lock** from the System Security menu.

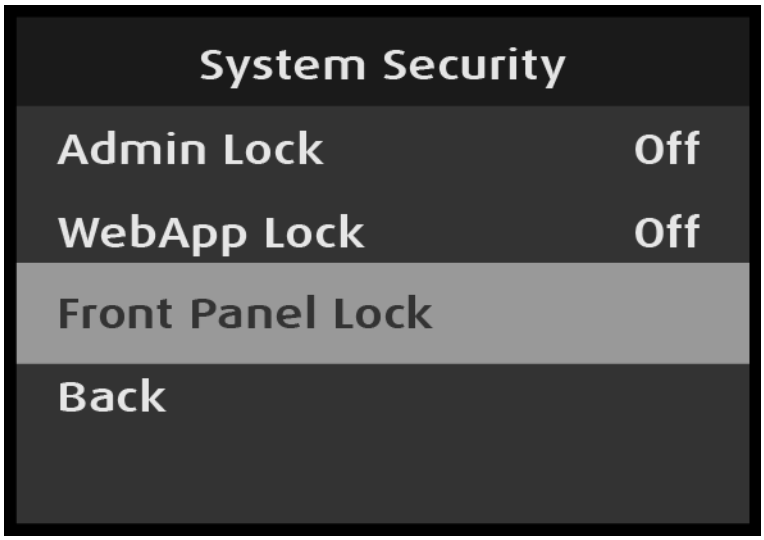

Image 6–207 System Security: Front Panel Lock selection

Once Front Panel Lock is selected, the system displays the following message:

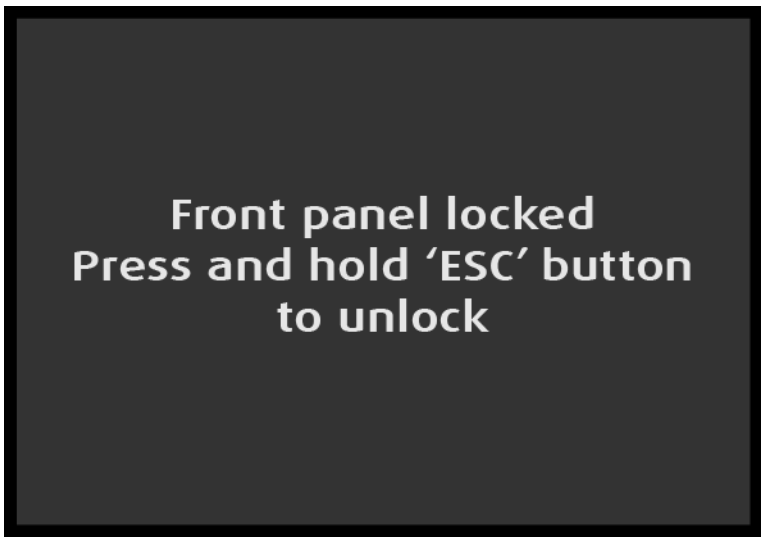

Image 6–208 "Front Panel Locked" message

2. Press and hold the **ESC** button to unlock the front-panel buttons.
   Once the front-panel buttons are unlocked, the system displays the Status menu.

System: Diagnostics

The Diagnostics menu allows an operator to check if the PDS-4K unit is functioning normally. Front panel and system operations can be checked. Various system temperatures can be monitored and backup log files can be saved for customer service troubleshooting.

1. Select **Diagnostics** from the System menu.

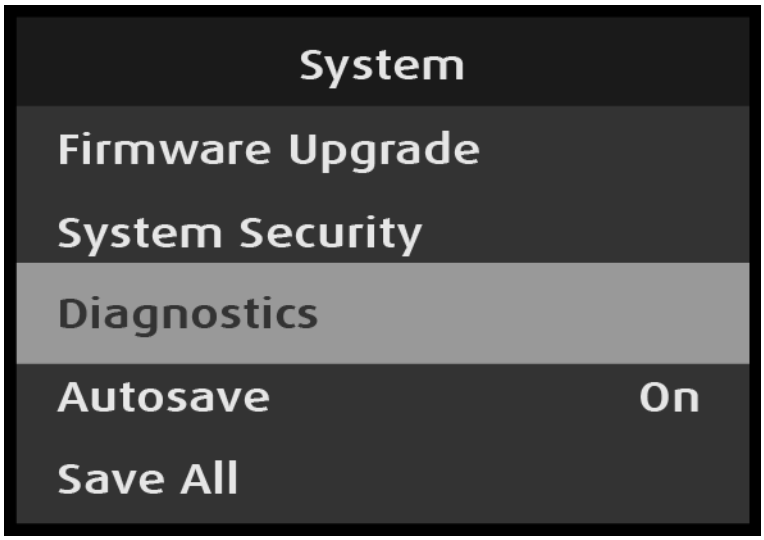

Image 6–209 System menu: Diagnostics selection

2. Scroll to and select the diagnostic to be performed.

Do not perform diagnostics while running a show; the A/V outputs may be disrupted.

Back returns to the System menu.

Diagnostics: Front Panel

1. Scroll to and select **Front Panel** from the Diagnostics menu.

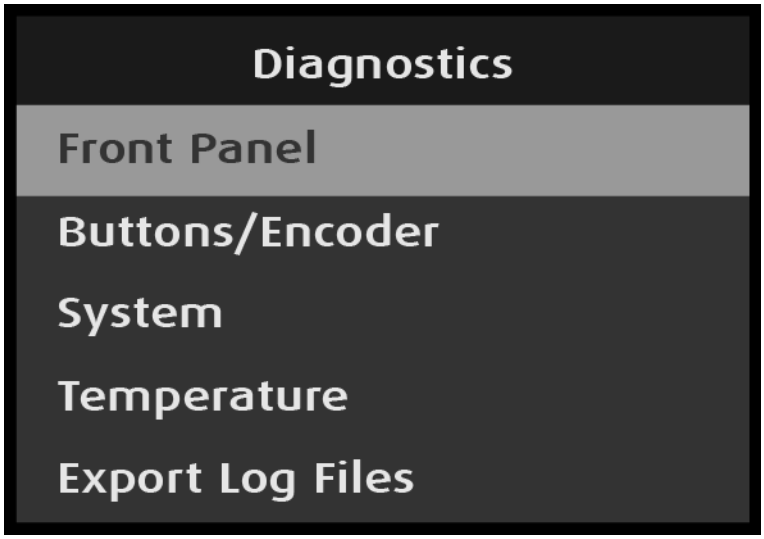

Image 6–210 Diagnostics: Front Panel selected

When Front Panel is selected, the system displays the message “Diagnostics in progress…,” and the menu display and the front-panel buttons flash red, then blue, then green.
When the front-panel diagnostic is finished, the system displays a message.

Image 6–211 “Diagnostics in progress” message

2. Turn the Adjust knob or press any front-panel button, for example Button #1 (the left-most button on the top row).

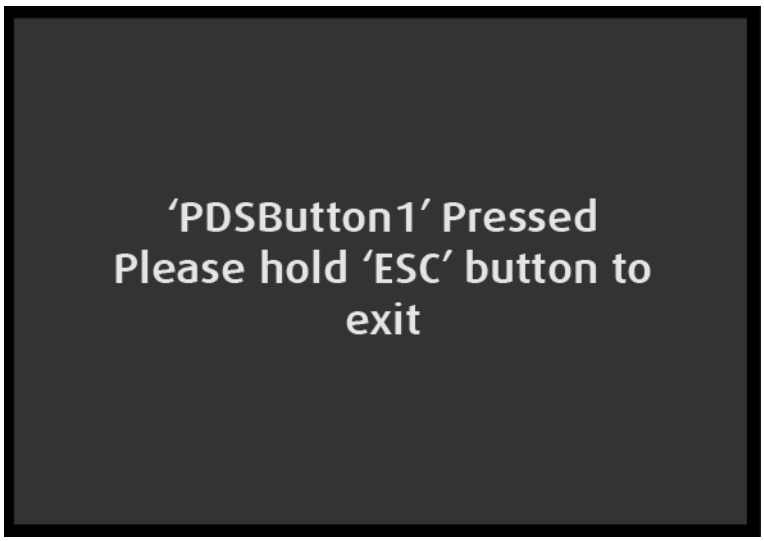

Image 6–212 “’PDSButton1’ Pressed” message

3. Press and hold the **ESC** button to return to the Diagnostics menu.

Diagnostics: Buttons/Encoder

1. Scroll to and select **Buttons/Encoder** from the Diagnostics menu.

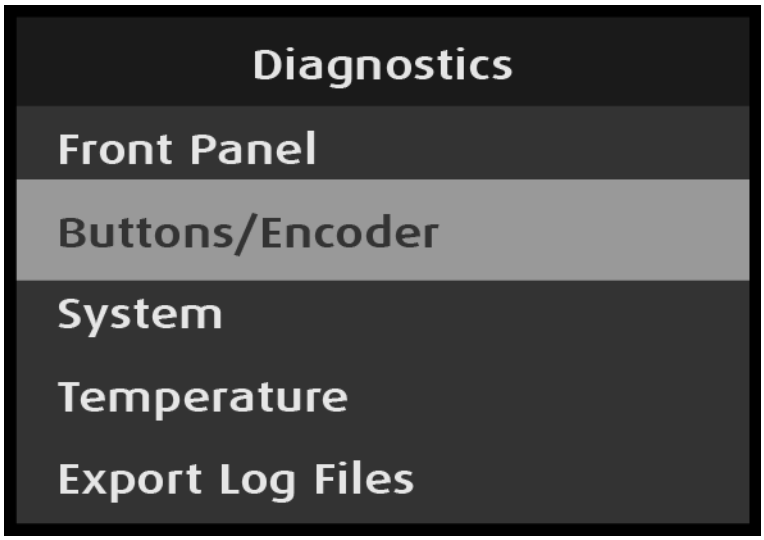

Image 6–213 Diagnostics: Buttons/Encoder selected

When Front Panel is selected, the system displays the message “Diagnostics in progress…”

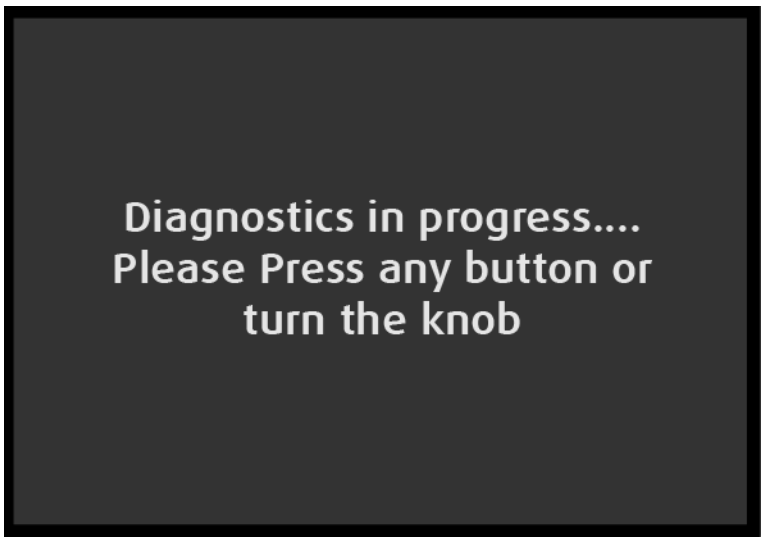

Image 6–214 “Diagnostics in progress” message

2. Turn the Adjust knob or press any front-panel button.
   If, for example, the Adjust knob is turned, the system displays the following message.

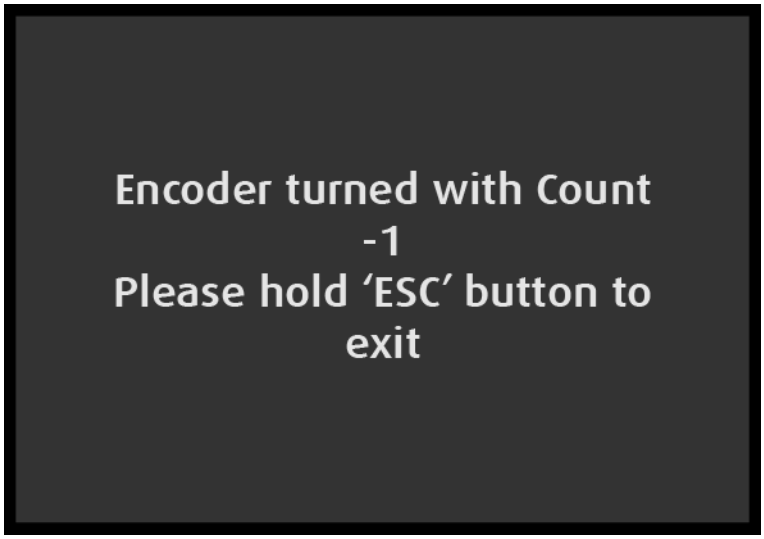

Image 6–215 “Encoder turned” message

3. Press and hold the **ESC** button to return to the Diagnostics menu.

Diagnostics: System

1. Scroll to and select **System** from the Diagnostics menu.

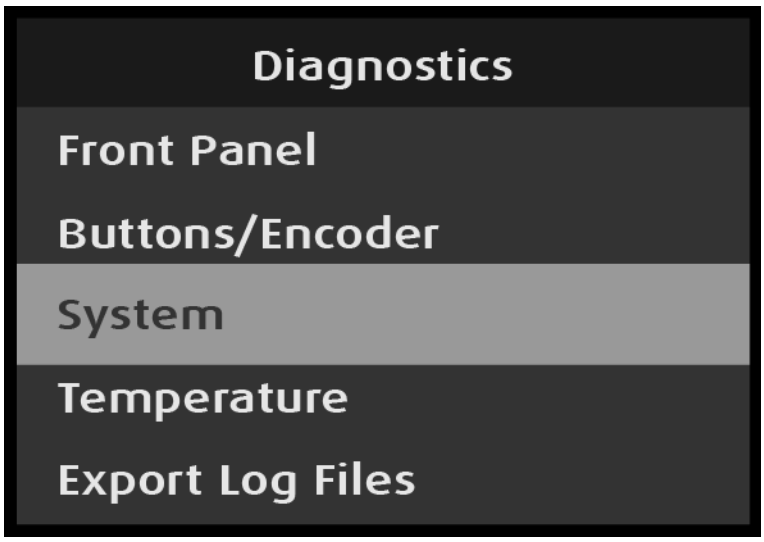

Image 6–216 Diagnostics: System selected

When System is selected, the system displays the “Outputs will be disrupted” warning message.

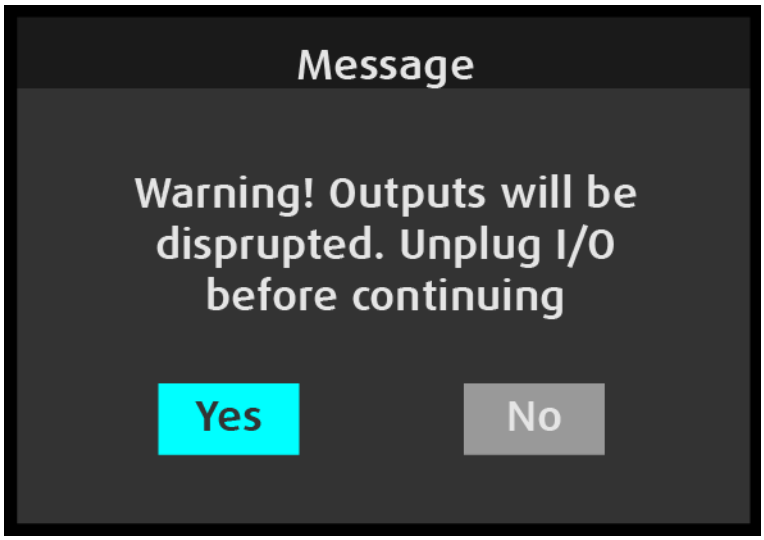

Image 6–217 “Outputs will be disrupted” warning message

2. Disconnect all outputs.
3. Press the Adjust knob to select “Yes.”
   When “Yes” is selected, the system begins the board diagnostic and displays the following message.

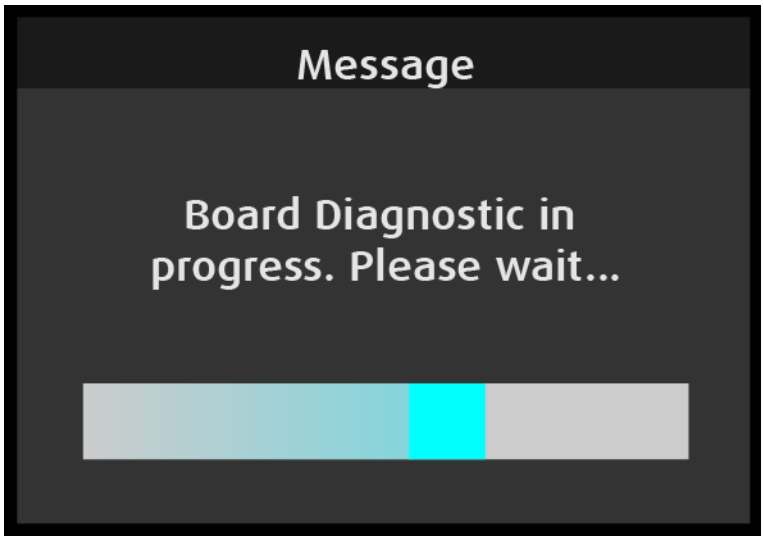

Image 6–218 “Board Diagnostic in progress” message

When the diagnostic has finished, the system displays the result.

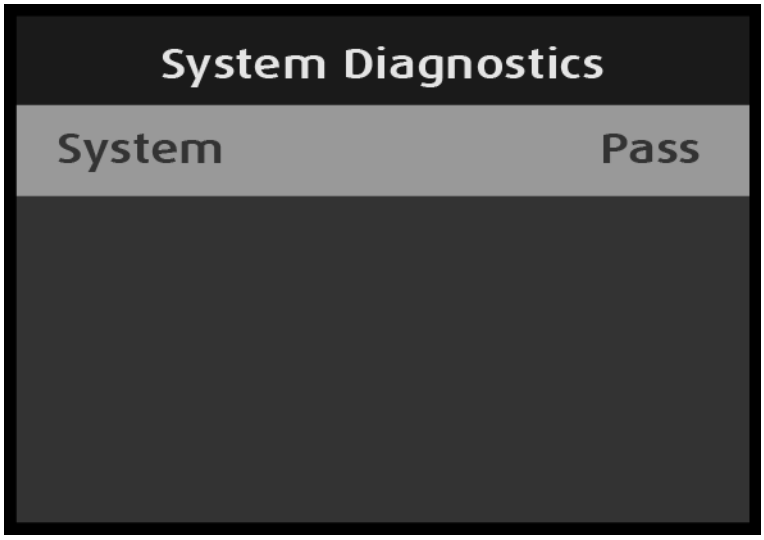

Image 6–219 System diagnostics result: “Pass”

4. Press the **ESC** button to return to the diagnostics menu.
5. Reconnect the outputs.

Diagnostics: Temperature

1. Scroll to and select **Temperature** from the Diagnostics menu.

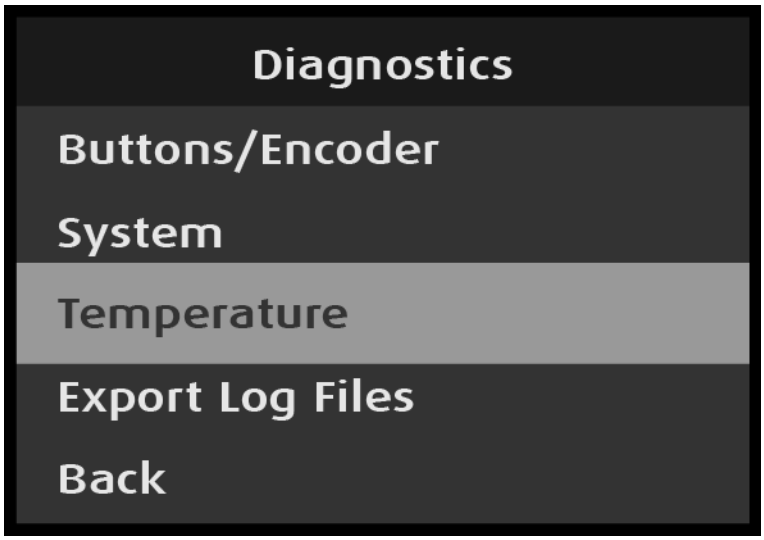

Image 6–220 Diagnostics: Temperature selected

The system performs the temperature diagnostics and displays the results.

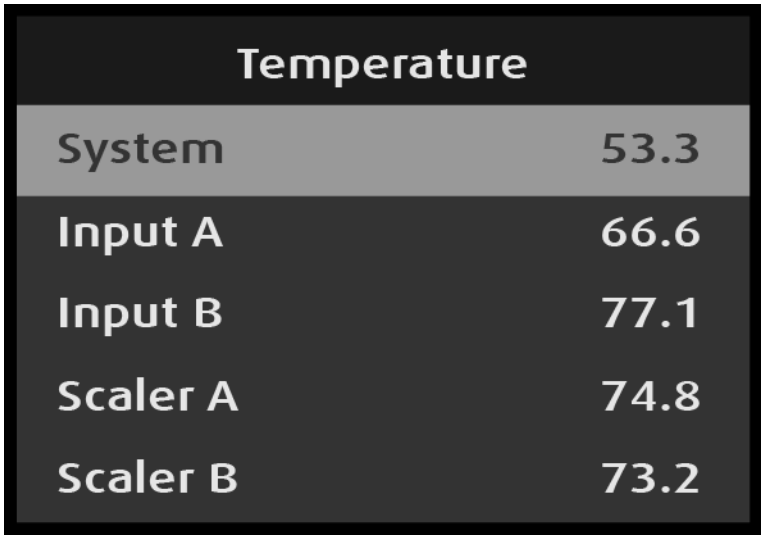

Image 6–221 Temperature diagnostic results

The system displays the temperature results in °C for the following items:
- System
- Input A
- Input B
- Scaler A
- Scaler B
- MVR
- Expansion slot

The system also displays the fan speed as a percentage of maximum fan speed (4250 RPM ±10%).

2. Turn the Adjust knob to scroll through the temperature diagnostic results.

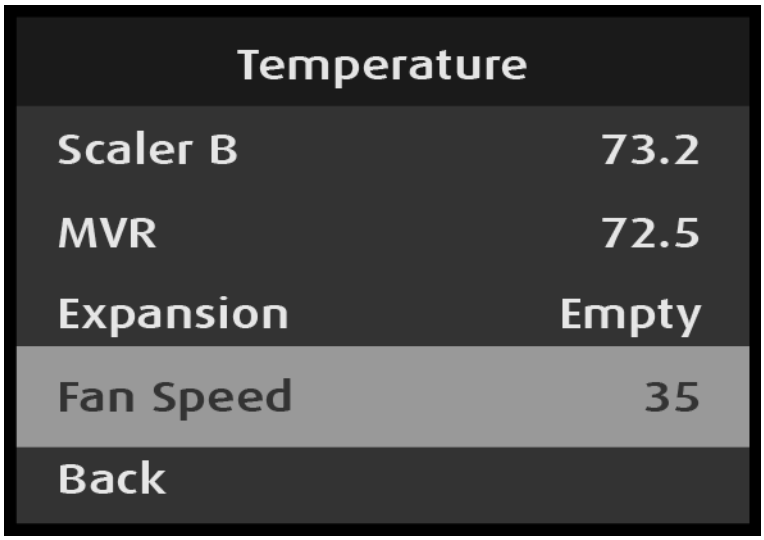

Image 6–222 Temperature diagnostic results showing Fan Speed

Back returns to the Diagnostics menu.

Diagnostics: Export Log Files

1. Insert a FAT32-formatted flash drive in the front-panel USB slot.
   If there is no USB drive in the USB slot when you attempt to export the log files, the system displays the message “Cannot store backup logs. USB is not connected.”
2. Scroll to and select **Export Log Files** on the Diagnostics menu.

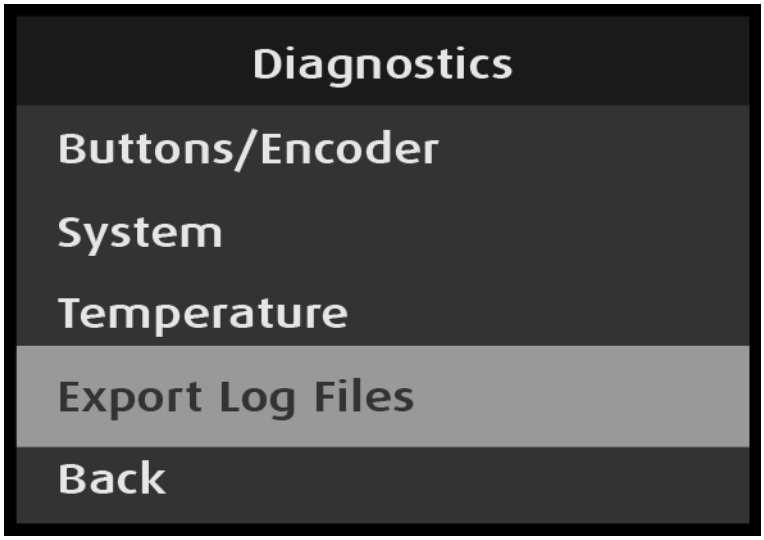

Image 6–223 Diagnostics: Export Log Files selection

When Export Log Files is selected, the system displays the following message.

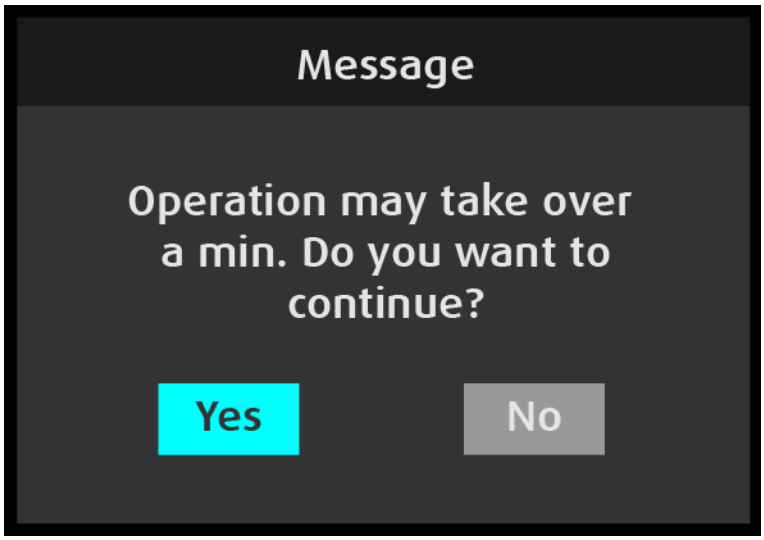

Image 6–224 “Continue operation” message

3. Press the Adjust knob to select “Yes.”
   While the log files are being exported, the system displays the “Do not power cycle” message.

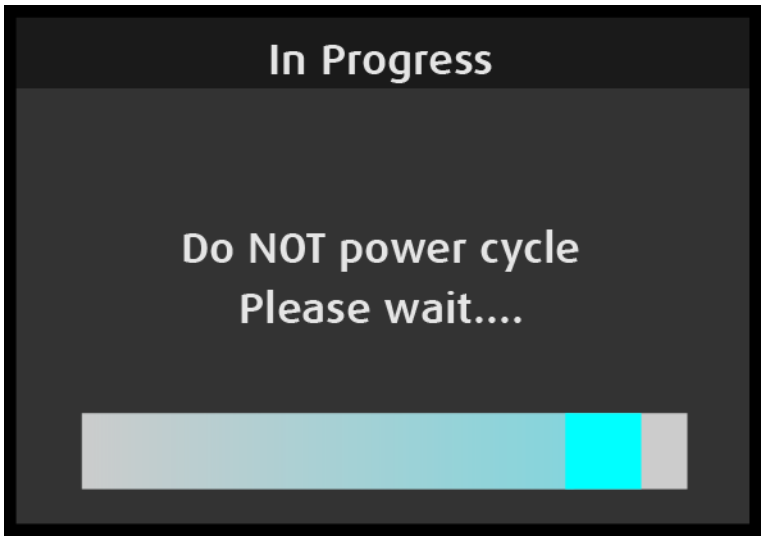

Image 6–225 “Do not power cycle” message

The system creates a log file called PDSLogFiles.tar.gz and places that file in the EM\Backup folder on the USB flash drive. When the log file has been created, the system flashes the following message, then returns to the Diagnostics menu.

Image 6–226 “Backup successful” message

System: Autosave

1. Scroll to and select **Autosave** on the System menu.

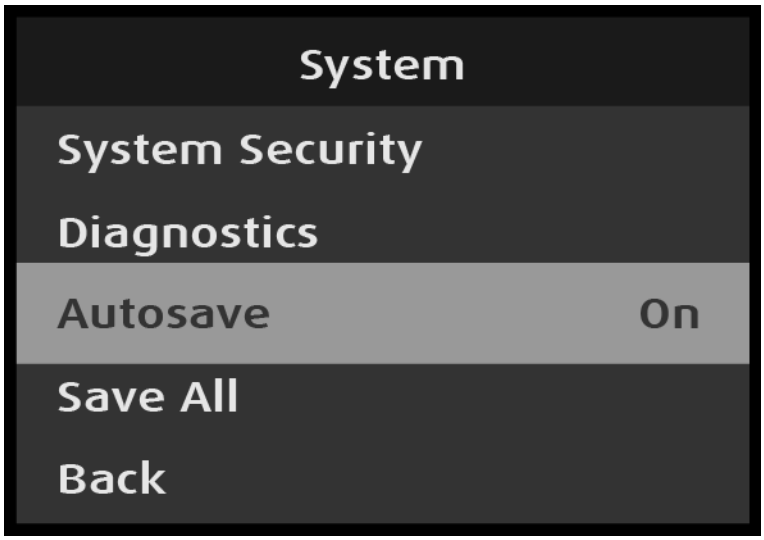

Image 6–227 System: Autosave selection

Once Autosave is selected, the highlight bar turns from gray to cyan.

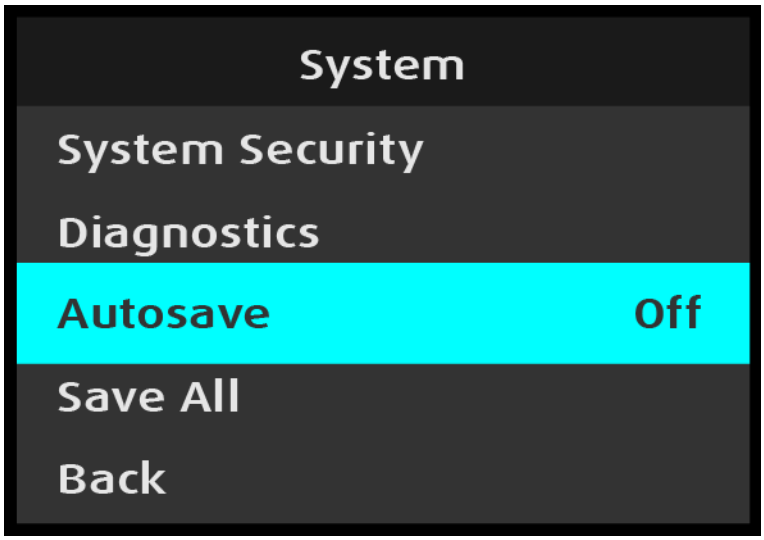

Image 6–228 System: Autosave adjustment

2. Turn the Adjust knob to toggle between “On” and “Off.”
3. Press the Adjust knob to select either “On” or “Off.”

The default selection for **Autosave** is “On.”

System: Save All

Use Save All to save all of the system settings.

1. Scroll to and select **Save All** on the System menu.

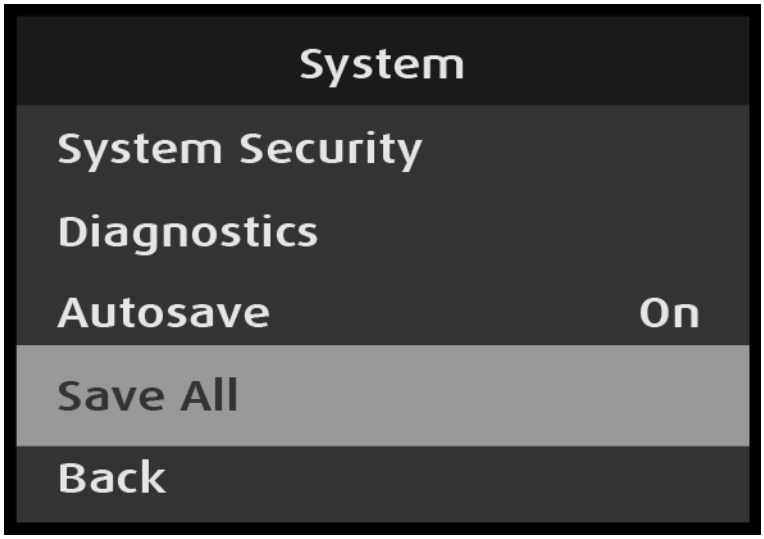

Image 6–229 System: Save All selection

When Save All is selected, the system displays the following message.

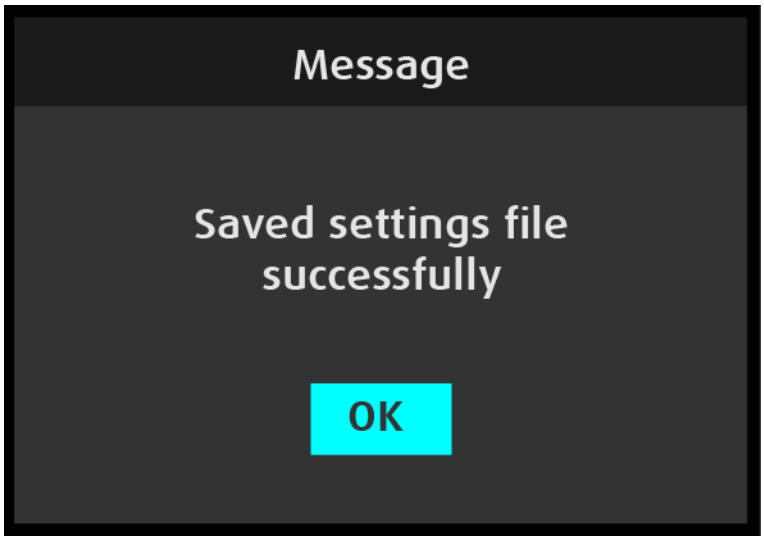

Image 6–230 “Saved settings file successfully” message

2. Press the Adjust knob to select “OK.”
   The menu display returns to the System menu
3. Scroll to and select **Back** to return to the Setup Menu.

6.10 System: Reset menu

General

This section provides information about the Reset menu.

To enter the Reset menu from the System menu, scroll to and select **Reset**.

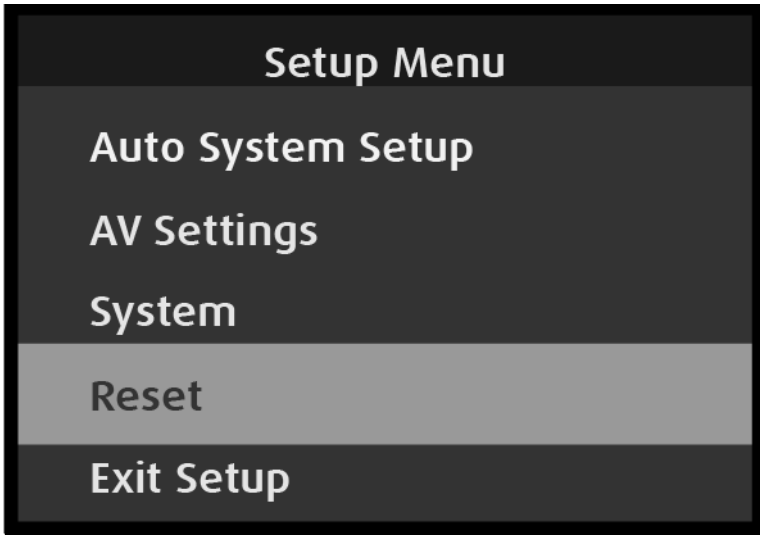

Image 6–231 Setup menu: Reset

Use the Reset menu to perform a factory reset.

Reset menu tree

Refer to Image 6–232 for an illustration of the Reset menu tree.

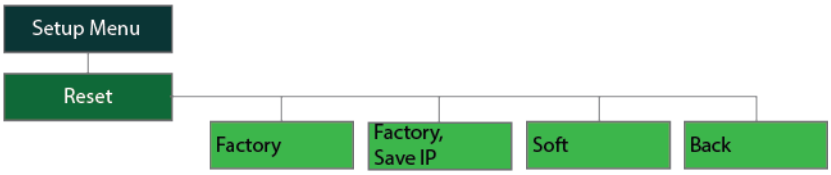

Image 6–232 Reset menu tree

Factory reset

1. Press the adjust knob to select **Reset**.

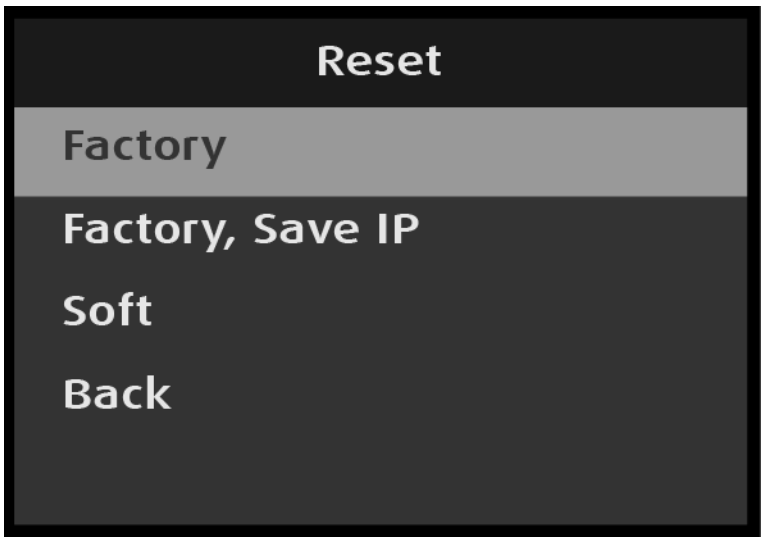

Image 6–233 Reset menu: Factory

2. Select the type of reset to perform, for example, **Factory**.
   - **Factory** restores all default system configurations and deletes all stored still images.
   - **Factory, Save IP** restores all default system configurations, except that it saves the current IP address, and deletes all stored still images.
   - **Soft** performs a system reboot, while maintaining all previously saved system settings.
   - **Back** returns to the Setup Menu.

   The system displays a confirmation message, depending on which reset option was selected.

Image 6–234 Confirmation message for **Factory** reset

3. Select **Yes**.

The system resets, and while resetting it displays an “In Progress” screen, then the Barco splash screen, then it displays another progress screen.

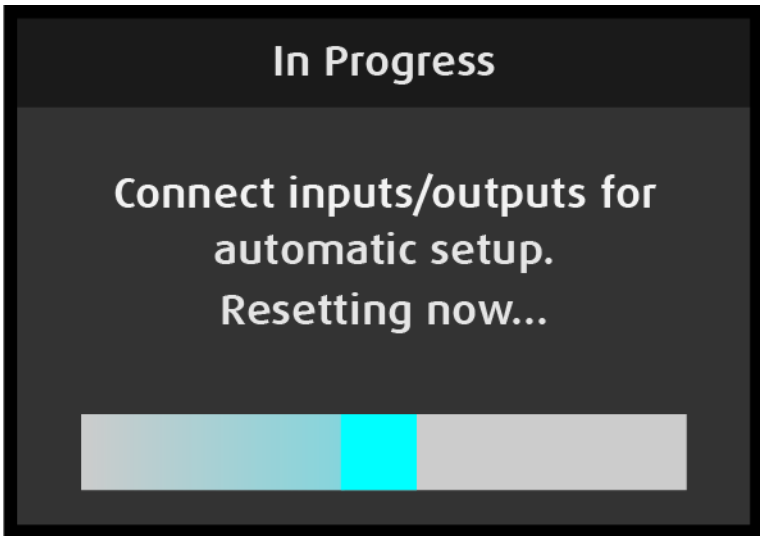

Image 6–235 Reset “In Progress” screen for automatic setup

Image 6–236 Barco splash screen

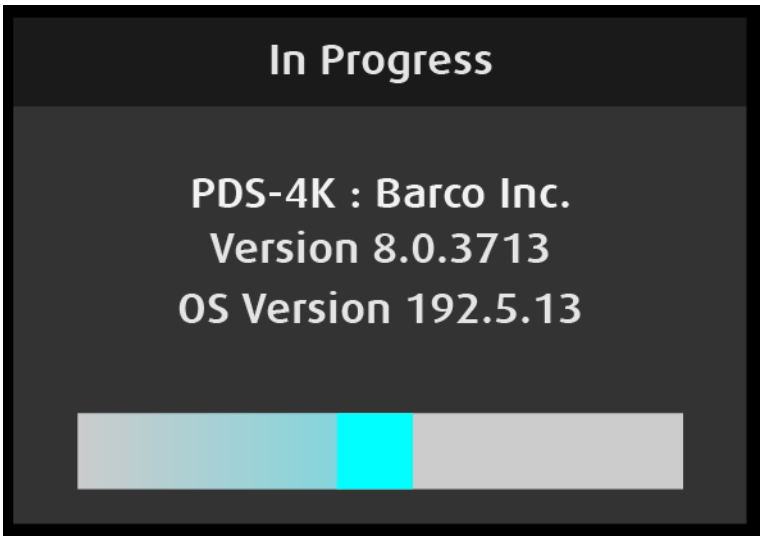

Image 6–237 Second Reset “In Progress” screen

When the system has been reset, the system displays the System Status screen.

Image 6–238 System Status after reset

Event Master Toolset

7

About this chapter

As well as front panel control, the PDS–4K presentation switcher can also be controlled remotely via Event Master Toolset (EMTS), starting with version 8.0. This toolset software release adds control for the PDS–4K.

7.1 Screen layout presentation

General

The user interface is organized around a **menu navigation bar** at the left of the screen and a **working area** in the rest of the screen. The layout of the screens is similar throughout the GUI.

Image 7–1 shows the start-up screen of the Configuration Menu and describes the different components. The screens for the other menus follow the same structure and flow.

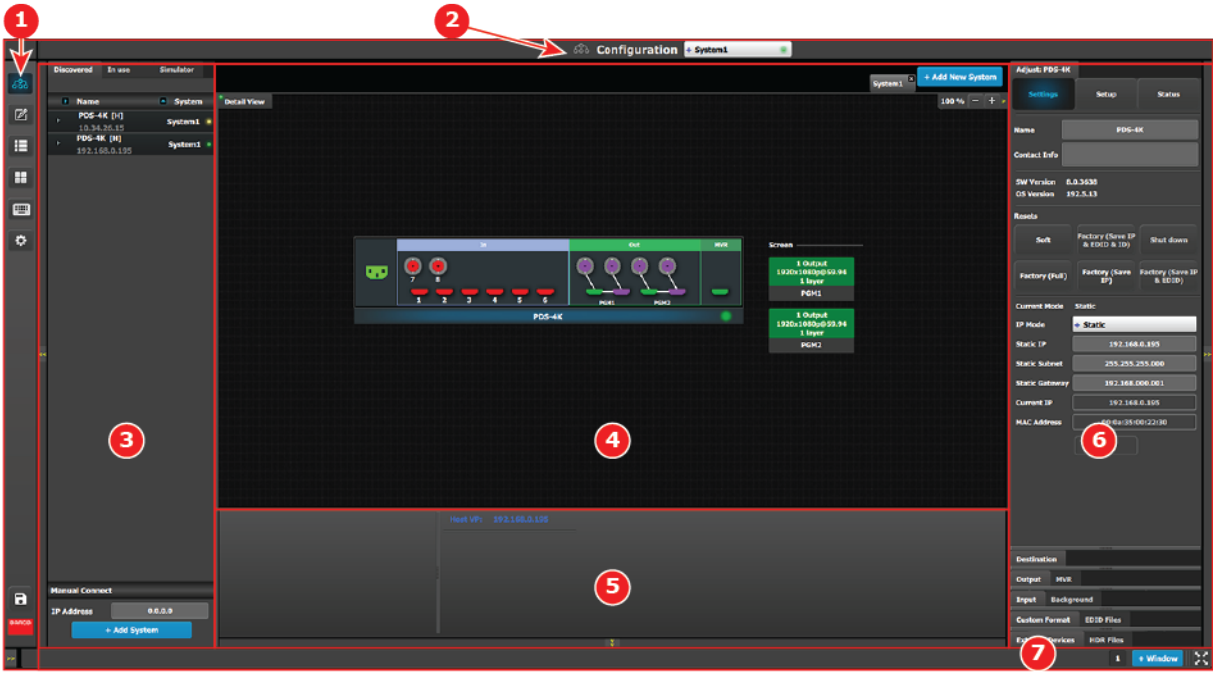

Image 7–1 EMTS GUI orientation

1 **Menu navigation bar** – The menu navigation bar allows the user to choose from among the available menus: Configuration, Programming, Cue, Multiviewer, Controller, or Settings.
2 **Title bar** – The title bar shows the current menu and the currently selected system.
3 **Selection area** – The selection area contains tabs for “Discovered” systems and systems “In use.” It also contains a field for entering IP addresses and a button for adding systems.
4 **Diagram area** – The diagram area contains graphic representations of the system in use.
5 **Modifier area** – The modifier area contains system controls, such as Preset Conflict Mode.
6 **Configuration area** – The Configuration area contains tabs and panels on which users perform all needed adjustments. This area is largely empty until the user selects an item from the Diagram area.
7 **Bottom bar** – The right side of the bottom bar has control for windows and maximizing the screen. The number indicates if this is window 1 or 2; two is the maximum.

7.2 EMTS GUI: Configuration menu

Description

Use the Configuration Menu to add or remove devices to the selected system and to modify the parameters (backgrounds, destinations, inputs, outputs, etc.) of these devices. This page is the first page that appears when you launch the EM GUI software.

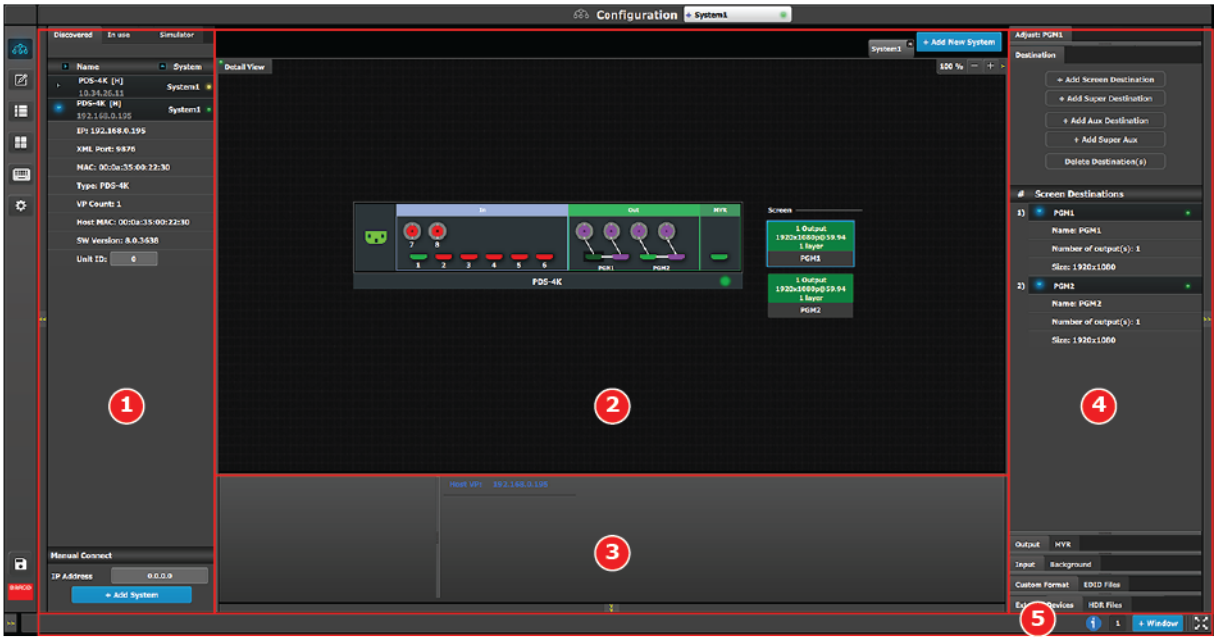

Image 7–2 EMTS GUI: Configuration menu

1	Network resource area	Available resources on the network are listed in this area. There are 2 tabs in this section: • Devices in use in the selected system. • Discovered devices on the local network.
2	System diagram area	The workspace has two different views: System, Detail, and VPU Resource. The selected systems details are graphically represented in this area. To view a different system you select the corresponding tab from the top of the working area.
3	System modifier area	System information (Host VP and Unit ID) is displayed in this area. To view a different system you select the corresponding tab from the top of the working area. This area also includes controls for preset conflicts.

4	Adjustment area	There are several panels in this area: Destination, Output, MVR, Input, Background, Custom Format, EDID Files, External Devices, and HDR Files. Each panel displays the list of items currently defined in the system. The user can also add or delete and define more items. The adjust tab allows the user to adjust variables in each panel. Panels can be dragged up or down to allow faster manipulation.
5	Bottom bar	The right side of the bottom bar has control for windows and maximizing the screen. The number indicates if this is window 1 or 2, two is the maximum.  Click on the information icon to show a list of the last 100 status-bar messages. Add a window by clicking the **+ Window button**. The second window can be used on a separate screen. The out and in arrow button maximizes the interface to the screen, allowing an “OS free” look.

For a more complete description of the Configuration menu of the EMTS GUI, see Chapter 6 of the “*Event Master Devices User’s Guide*” (found at the “Manuals, drawings & documentation” link on the E2 Product Support page at http://www.barco.com/td/R9004799).

7.3 EMTS GUI: Programming menu

Description

Use the Programming Menu to set up an event. Users can define sources from inputs, assign layers and backgrounds into screens and create User keys and presets and more. Once programmed and defined this is where the show is played back as well.

Image 7–3 EMTS GUI: Programming menu

1	Resources area	This area contains the available resources for programming and playback, as inputs and sources. Still images, Screen Destinations (automatically re-inserted into the system), and Background sources (automatically re-inserted into the system) are also available as resources to be used in a PIP or Keying Layer.
2	Workspace / Programming Diagram area	For each destination, the Program and Preview screens can be viewed individually by selecting the corresponding tab at the top of the Programming Diagram area. Program and Preview screens can be viewed individually or simultaneously by selecting the individual Destination tab or the “View All” tab. The space between Program and Preview has Layouts, a function where a certain group of destinations can be laid out in the workspace
3	Workspace / Layer modification area	Layer Alignment adjustments and controls to manage the Preview/Program screens.

4	Adjustment area	The menus in this area provide control of parameters for selected layer and source. These can be modified and managed. This is where creation of User Keys and presets is done
5	Bottom bar	The right side of the bottom bar has control for windows and maximizing the screen. The number indicates if this is window 1 or 2, two is the maximum.  Click on the information icon to show a list of the last 100 status-bar messages. Add a window by clicking the **+ Window button**. The second window can be used on a separate screen. The out and in arrow button maximizes the interface to the screen, allowing an “OS free” look.

For a more complete description of the Programming menu of the EMTS GUI, see Chapter 6 of the “*Event Master Devices User’s Guide*” (found at the “Manuals, drawings & documentation” link on the E2 Product Support page at http://www.barco.com/td/R9004799).

7.4 EMTS GUI: Cue menu

Description

Use the Cue menu to create Cues, and to add Presets, External Device commands, and UI functions such as All Trans and Cut to those Cues. The Cue menu also allows the user to play, pause, or stop a Cue.

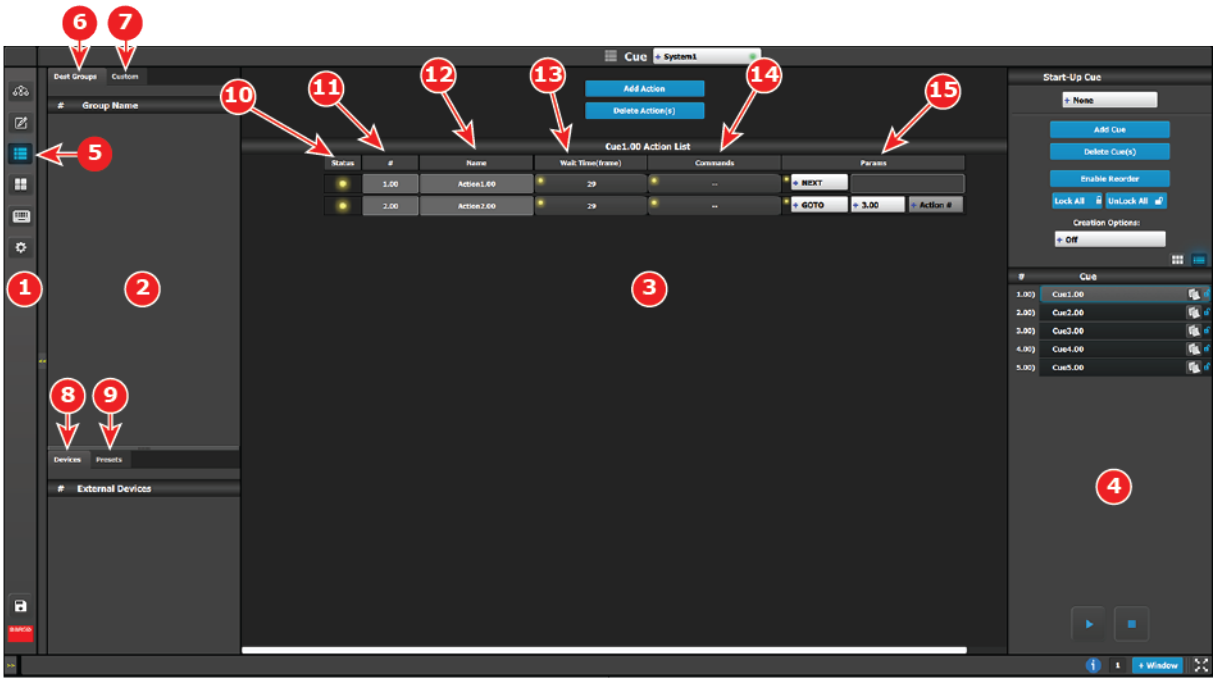

Image 7–4 EMTS GUI: Cue menu

1	Menu navigation bar	The menu navigation bar allows the user to choose from among the available menus: Configuration, Programming, Cue, Multiviewer, Controller, or Settings.
2	Command resource area	The command resource area contains tabs for the Dest Groups, Custom (UI functions), Devices, and Presets available for Cues.
3	Cue Workspace area	The Cue Workspace area allows the user to add a limited list of Actions and to assign names wait times commands, and parameters to the Actions in each Cue.
4	Adjustment area	The adjustment area allows the user to add, delete, lock, unlock, and rename Cues. The adjustment area also allows the user to play, pause, or stop a Cue. •  Play button (Play/Pause) •  Pause button (Play/Pause) •  Stop button
5	Cue icon	Selecting the Cue icon in the menu navigation bar selects the Cue Menu.
6	Dest Groups tab	The Dest Groups tab lists the Destination Groups available to the Cue Menu.
7	Custom tab	The Custom tab lists the UI functions (All Trans, Cut, and Pause) that are available to the Cue Menu.
8	Devices tab	The Devices tab lists the Devices and their commands that are available to the Cue Menu.
9	Presets tab	The Presets tab lists the Presets available to the Cue Menu.
10	Status	The Status LED indicates the status of the cues in a cue list. • Green means that the cue is active, that is the Cue is currently playing or paused. • Yellow means that the cue is ready to play. • Gray (off) means that the cue has finished.
11	# (Syntax number)	Actions can be added, deleted, re-ordered, and re-numbered.
12	Name	Actions can be given meaningful names.
13	Wait Time	The wait time before an Action in a Cue takes place can be adjusted; the default wait time is half of the system's native rate (29 frames in this example).
14	Commands	Commands can be Presets or Custom (UI Functions).
15	Params	The parameters are Next, Pause, Delay, and Goto.

For a more complete description of the Cue menu of the EMTS GUI, see Chapter 6 of the "*Event Master Devices User's Guide*" (found at the "Manuals, drawings & documentation" link on the E2 Product Support page at http://www.barco.com/td/R9004799).

7.5 EMTS GUI: Multiviewer (MVR) menu

Description

Use the Multiviewer menu to display multiple resources (Inputs, Backgrounds, Destinations) on one or two monitors. On the PDS–4K each resource can be used only once in any Multiviewer layout. Multiviewer Menu is the module used to setup the Multiviewer layouts.

Image 7–5 EMTS GUI: Multiviewer Menu

1	Resources area	Lists the resources available to be displayed in the Multiviewer: Inputs, Backgrounds and Program/Preview Destination Outputs.
2	Multiviewer Layout area	The multiviewer outputs are composed, viewed and managed individually or as a group.
3	Modifier area	Alignment adjustments and controls to manage the multiviewer windows.
4	Adjustment area	Color and sizing adjustments for the windows in each PIP, as well as the background color for each MVR output.

For a more complete description of the Multiviewer menu of the EMTS GUI, see Chapter 6 of the "*Event Master Devices User's Guide*" (found at the "Manuals, drawings & documentation" link on the E2 Product Support page at http://www.barco.com/td/R9004799).

7.6 EMTS GUI: Settings menu

Description

The Settings menu provides access to the Event Master series processor web app that is built into the unit. The app provides users with diagnostic reports, includes an FAQ section and contact information and supports system backup / restore and new firmware installation.

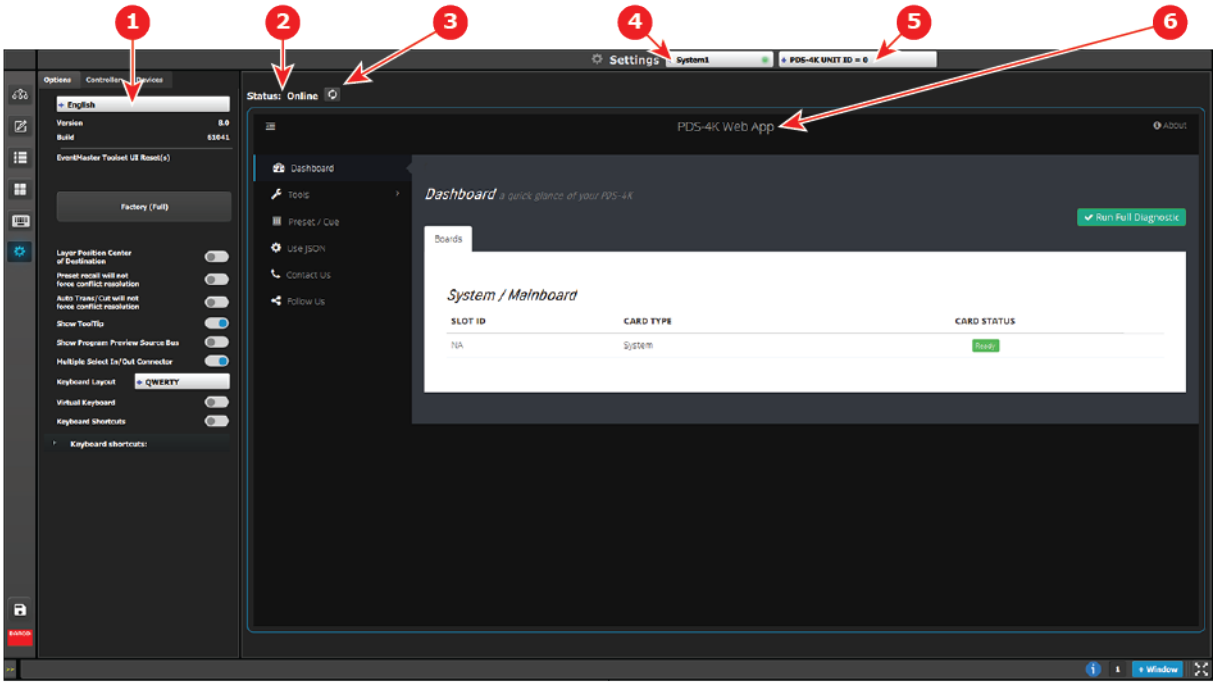

Image 7–6 EMTS GUI: Settings menu

1	Resources area	The Resources area contains the Options, Controller, and Devices tabs. • The Controller tab shows EC series controller settings and is applicable only when an EC series controller is connected on the network or to a computer running the EMTS. • The Devices tabs shows what Barco devices (such as projectors) are detected on the network. • The Option tab allows the user to choose settings concerning the Event Master Toolset Software. Please see the sections below dedicated to these options.
2	Status	Show status: • **Online**: the VP is online and the web application can be reached. • **Web application error**: the VP is online but the web application cannot be displayed. • **Offline** (in red text): the VP is offline.
3	Refresh Web app area button	Similar to web browser, pressing this button will trigger an attempt to refresh / reconnect to the web interface of the selected VP.
4	System select combo box	Informs the users which System is currently being selected. If there is more than one System defined in the UI, this combo box can be used to select between the different Systems.
5	Device select combo box	Informs the user which Device is currently being selected in the current system.
6	Web app area	Main work area where the different menus are displayed.

For a more complete description of the Settings menu of the EMTS GUI, see Chapter 6 of the "*Event Master Devices User's Guide*" (found at the "Manuals, drawings & documentation" link on the E2 Product Support page at http://www.barco.com/td/R9004799).

Specifications

A

About this annex

This annex gives an overview of the specifications of the PDS–4K presentation switcher.

A.1 Specifications of PDS–4K

PDS–4K: Model 1: HDMI - specifications

Input connectors	6x HDMI 2.0
Output connectors	• 4x HDMI 2.0 • 1x MVR (HDMI 2.0)
DP + Audio option card	Option card slot for adding audio (de)embedding, passthrough and DisplayPort.
Composition & switching	• Two (2) non-mixing PIPs per output • Seamless switching between sources and layouts • Ultra-low latency (< 2 frames @ 60Hz)
Control	• Front-panel button interface • EM Toolset (PC, MAC OS)
Dimensions	• **Height:** 2.605” (66.2mm) – without feet • **Width:** 19.06” (484.1mm) – Rack ear to Rack Ear • **Depth:** 16.1 Inches (409mm) – front of knob to back of connector protectors
Weight	13.7 Lbs. (6.21Kg) – without option card
Warranty	3 years parts and labor
Environmental temperature	0°–40° C (32°–104° F)
Environmental humidity	0–95% Non-Condensing

PDS–4K: Model 2: HDMI + SDI - specifications

Input connectors	• 6x HDMI 2.0 • 2x 12G-SDI
Output connectors	• 4x HDMI 2.0 • 4x 12G-SDI • 1x MVR (HDMI 2.0)
DP + Audio option card	Option card slot for adding audio (de)embedding, passthrough and DisplayPort.
Composition & switching	• Two (2) non-mixing PIPs per output • Seamless switching between sources and layouts • Ultra-low latency (< 2 frames @ 60Hz)
Control	• Front-panel button interface • EM Toolset (PC, MAC OS)
Dimensions	• **Height:** 2.605” (66.2mm) – without feet • **Width:** 19.06” (484.1mm) – Rack ear to Rack Ear • **Depth:** 16.1 Inches (409mm) – front of knob to back of connector protectors
Weight	13.7 Lbs. (6.21Kg) – with SDI Mezzanines, without option card
Warranty	3 years parts and labor
Environmental temperature	0°–40° C (32°–104° F)
Environmental humidity	0–95% Non-Condensing

Remote Control Protocol

B

About this annex

This annex lists and provides details for the PDS–4K presentation switcher remote control commands.

B.1 PDS–4K ASCII remote control

General

The user can remotely control the PDS–4K presentation switcher via a telnet connection to the unit's IP address.

How to access the PDS–4K remotely

To access the PDS–4K remote commands, use the following procedure:

1. In a command prompt window, type a telnet command in the following format:

   `> telnet nnn.nnn.nnn.nnn 9878`

   where the n's represent the unit IP address and 9878 is the port.

2. Press **Enter**

   The command prompt appears.

3. At the command prompt, type a specific PDS–4K remote control command and press **Enter**.

ASCII remote commands

This section lists the PDS–4K remote commands, sorted by name.

ATRN

- Description: Performs an Auto Transition on the currently active destinations. The currently selected Effect type, rate and edge width will be used to transition preview to program.
- Command Format: ATRN <transTime>
- Parameters:
  <transTime> (optional)
  Used to specify a transition time (duration of the transition) in seconds. Value ranges from 0 to 12. A 0 specify a cut transition. Any non-zero value (within range) will override the transition time in the controller. If this argument is not specified, the current transition time known by the controller will be used.
- Examples:
  `> ATRN 6`
  (Transition Preview to Program on currently active destinations in six seconds)
  `> ATRN 0`
  (Transition Preview to Program immediately. This is a CUT.)
  `> ATRN`
  (Transition Preview to Program using the transition time set in the controller)
- Query Format: N/A
- Query Response: N/A

PRESET

- Description: Preset Settings. For parameter details, see below.
- Command Format: PRESET
- Parameters:
  -s (save preset, 1-1000)
  -r (recall preset, 1-1000)
  -a (recall preset and auto transition, 1-1000)
- Examples:
  `> PRESET -s 1`
  (Save currently selected destinations to preset 1)
  `> PRESET -r 10`
  (Recall preset 10)
  `PRESET -a 10`
  (Recall preset 10 and auto transition)
- Query Format: N/A

- Query Response: N/A

B.2 PDS–4K JSON RPC remote control

General

JSON (JavaScript Object Notation) is a lightweight format that is used for interchanging data. It is based on a subset of JavaScript language: the way objects are built in JavaScript.

Introduction to JSON

JSON is built on two structures:

- A collection of name/value pairs: In various languages, this is realized as an object, record, struct, dictionary, hash table, keyed list, or associative array.
- An ordered list of values: In most languages, this is realized as an array, vector, list, or sequence.

Here is an example of JSON data:

```
{
      "firstName": "John",
      "lastName": "Smith",
      "address": {
          "streetAddress": "21 2nd Street",
          "city": "New York",
          "state": "NY",
          "postalCode": 10021
      },
      "phoneNumbers": [
          "212 555-1234",
          "646 555-4567"
      ]
  }
```

How JSON interacts with the PDS–4K presentation switcher and Event Master processors

JSON uses JSON RPC (REST based) to interact with the PDS–4K presentation switcher. JSON-RPC is a remote procedure call protocol encoded in JSON.

JSON-RPC works by sending a request to a server implementing this protocol. The client in that case is typically software intending to call a single method of a remote system. Multiple input parameters can be passed to the remote method as an array or object, whereas the method itself can return multiple output data as well.

There are JSON RPCs defined to perform tasks on the PDS–4K presentation switcher. User needs to send JSON request through their application or open source application like Postman.

These applications should send request on IP, where the PDS–4K presentation switcher is running and fixed port 9999 (Webserver of the PDS–4K presentation switcher is running on port 9999).

Use JSON from the web application

To use the JSON APIs from the web application, select the **Settings icon** on the Menu navigation bar, and select **JSONRPC API** from the web app dashboard.

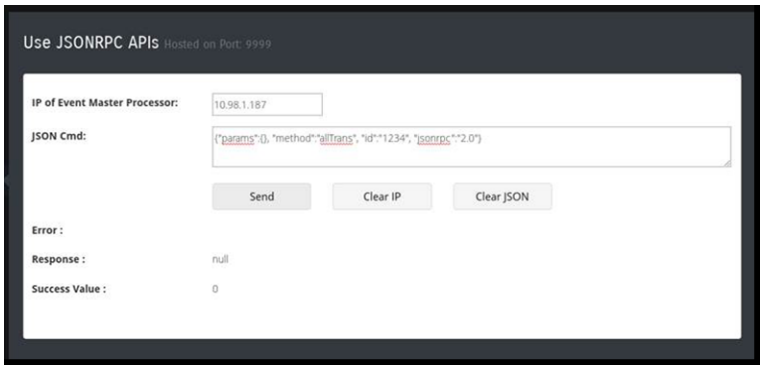

Image B–1 Use JSON from the web application

JSON APIs

Here are some of the JSON APIs defined for controlling the PDS–4K presentation switcher. If you have a host / client Event Master setup, JSON must be sent to the host unit. For all the requests, this section explains the parameter passed or used in the RPC calls. If the params object is blank that means that API doesn't require a parameter.

Requests are case sensitive.

allTrans

- Definition:
  - It executes the "allTrans" command.
- Request:
  - param: `{"transTime": 12}`
    - Float value, will be applied to all armed destinations (optional).
    - Max value is 12.
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{}, "method":"allTrans", "id":"1234", "jsonrpc":"2.0"}`
  - `{"params": {"transTime": 1.1 }, "method":"allTrans", "id":"1234", "jsonrpc":"2.0"}`

cut

- Definition:
  - It executes the "Cut" command.
- Request:
  - params: `{}` - It doesn't require any parameter.
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{}, "method":"cut", "id":"1234", "jsonrpc":"2.0"}`

resetFrameSettings

- Definition:
  - Expose ALL reset types on Event Master processor with different options.
- Request:
  - params: `{"reset":x},`
    "x" can be 0, 1, 2, 3
    - 0: Soft reset.

    - 1: Factory reset.
    - 2: Factory reset (save IP).
    - 3: Factory reset (save IP/EDID).
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{"reset": 0}, "method":"resetFrameSettings", "id":"1234", "jsonrpc":"2.0"}`

powerStatus

- Definition:
  - This queries the power plug status of the Event Master processor.
- Request:
  - params: `{}` - It doesn't require any parameter.
- Response:
  - response: `{FrameId1 :{ PowerSupply1Status":X}}`
    - PwrStatus1 gives the power status of the 1st slot in Event Master processor with frame id FrameId1.
      - 0: Power supply module is not present.
      - 1: Power supply module is present, but there is no power cable.
      - 2: Power supply module is present, and the cable is plugged in, but there is no DC current.
      - 3: Power supply module is present, and everything is OK.
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{}, "method":"powerStatus", "id":"1234", "jsonrpc":"2.0"}`

listPresets

- Definition:
  - This queries the list of Presets on a particular destination or on the system.
- Request:
  - params: `{"ScreenDest":x , "AuxDest":x},`
    "x" can be:
    - –2: Do not include any destinations of this type. (Has priority over particular id, if passed as a parameter.)
    - –1: Do not care (All presets). (Has priority over particular id, if passed as a parameter.)
    - 0–999: want to see the presets with the destination this particular id in it or array of ids. Eg. "ScreenDestination":[{"id": 2}, {"id": 3}]
- Response:
  - response: Array of: `[{"id": 0, "Name": "Preset3.00", "LockMode": 0, "presetSno": 3.00}, {"id": 1, "Name": "Preset4.00", "LockMode": 0, "presetSno": 4.00}]`
    - Response contains the array of presets. Above response contains id, name, lock mode preset serial number of the all the presets.
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{"ScreenDest": 0}, "method":"listPresets", "id":"1234", "jsonrpc":"2.0"}`

listDestinationsForPreset

- Definition:
  - Lists the content of a Preset.
- Request:
  - params: `{"id":x },`
    "x" can be:
    - –1: List all Presets.

    - 0–999: list only that specific Preset.
- Response:
  - response: Array of: `[{"id": 0, "Name": "Preset3.00", "LockMode": 0, "presetSno": 3.00, "ScreenDest":[{"id": 0}, {"id": 3}]}]`
    - Response contains the array of Presets.
  - success: (0=success, anything else is an error)
- Example:
  - `{ "params":{"id": 0}, "method":"listDestinationsForPreset", "id":"1234", "jsonrpc":"2.0"}`

savePreset

- Definition:
  - Creates a Preset on the Event Master processor.
- Request:
  - params: `{"presetName": "NewPreset", "ScreenDestination":[{"id": 2}, {"id": 3}]}`
    - “presetName”—Name of the Preset to save.
    - ScreenDestinations—ScreenDest id for the Preset to be created.
    - ScreenDestination is an optional parameters. If user didn’t provide it, Preset will be saved for selected destinations.
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {"presetName": "NewPreset"}, "method":"savePreset", "id":"1234", "jsonrpc":"2.0"}`
  - `{"params": {"presetName": "NewPreset", "ScreenDestination": {"id": 0}, "method":"savePreset", "id":"1234", "jsonrpc":"2.0"}`

  Key points regarding Preset, which are same for rename, activate, and delete:
  - “id”—id of the preset.
  - “presetSno”—preset serial number. User can provide floating point number if required. Eg. "presetSno": 1.01, "presetSno": 1.00, "presetSno": 1, "presetSno": 1.1, "presetSno": 1.10.
    Kindly note that 1.1 and 1.10 or 1.00 and 1 are same.
  - “presetName”—Name of the preset.

renamePreset

- Definition:
  - Rename a Preset on the Event Master processor. User can rename Preset with id, Preset serial number, or Preset name.
  - Send any one of the parameters to rename Preset.
- Request params:
  - params: `{"id": x, "newPresetName": "NewPresetName"}`
  - params: `{"presetSno": x.y, "newPresetName": "NewPresetName"}`
  - params: `{"presetName": "OldPresetName", "newPresetName": "NewPresetName"}`
    - “newPresetName”—New Preset name to set.
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - {"params": {"id": 0, "newPresetName": " newPresetName "}, `"method":"renamePreset", "id":"1234", "jsonrpc":"2.0"}`
  - {"params": {"presetName": "NewPreset", "newPresetName": "NewPresetName"}, `"method":"renamePreset", "id":"1234", "jsonrpc":"2.0"}`
  - {"params": {"presetSno": 1.00, "newPresetName": " newPresetName "}, `"method":"renamePreset", "id":"1234", "jsonrpc":"2.0"}`

activatePreset

- Definition:
  - Recall a Preset on the Event Master processor. User can recall Preset with id, Preset serial number, or Preset name.
  - Send any one of the parameters to recall Preset.
- Request params:
  - params: `{"id": x, "type": x}`
  - params: `{"presetSno": x.y, "type": x}`
  - params: `{"presetName": "PresetName"}`
    - “type”—0 to recall in preview (default), 1 to recall in program.
      This is not a mandatory parameter but should be given when the user wants to recall a Preset in program.
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {"id": 0, "type": 0}, "method":"activatePreset", "id":"1234", "jsonrpc":"2.0"} //Recall in preview with id 0.`
  - `{"params": {"presetName": "abc" }, "method":"activatePreset", "id":"1234", "jsonrpc":"2.0"} //Recall in preview with preset name "abc".`
  - `{"params": {"presetSno": 1.00, "type": 1}, "method":"activatePreset", "id":"1234", "jsonrpc":"2.0"} //Recall in program with presetSno 1.`

recallNextPreset

- Definition:
  - Recall the next Preset on the Event Master processor.
    No parameter is required.
  - Make sure that the user has at least recalled one Preset. Web app recalls the next Preset from the last Preset recalled.
- Request:
  - params: `{}`
- Response:
  - response: null
  - success: (0=success, anything else is an error)
  - An error is shown if there was no last recalled Preset or if there is no next Preset in the list.
- Example:
  - `{"params": {}, "method":"recallNextPreset", "id":"1234", "jsonrpc":"2.0"}`

deletePreset

- Definition:
  - Delete a Preset on the Event Master processor.
    User can delete Preset with id, Preset serial number, or Preset name.
  - Send any one of the parameters to delete Preset.
- Request:
  - params: `{"id": x}`
  - params: `{"presetSno": x.y}`
  - params: `{"presetName": "PresetName"}`
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {"id": 1}, "method":"deletePreset", "id":"1234", "jsonrpc":"2.0"}`

- `{"params":{"presetSno":1.00}, "method":"deletePreset", "id":"1234", "jsonrpc":"2.0"}`
- `{"params":{"presetName":"Preset 5.00"}, "method":"deletePreset", "id":"1234", "jsonrpc":"2.0"}`

listDestinations

- Definition:
  - This API lists all the destinations with properties such as layers, outputs, id, size, and name.
- Request:
  - params: `{"type":x}`
    - 0—Show all the destinations.
      0 is the default value for the type parameter.
    - 1—Only screen destinations.
- Response:
  - response: Array of : `{"ScreenDestination":[{"id":0, "Name":"Dest1", "HSize":3840, "VSize":1080, "Layers":1,"DestOutMapColl":[{"id":0"DestOutMap":[{"id":0, "Name":"Out1", "HPos":0, "VPos":0, "HSize":1920, "VSize":1080, "Freeze":0},{"id":1, "Name":"Out2", "HPos":1920, "VPos":0, "HSize":1920, "VSize":1080, "Freeze":1}]}]}]}`
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{"type":0}, "method":"listDestinations", "id":"1234", "jsonrpc":"2.0"}`

listSources

- Definition:
  - This API lists all the input sources with properties.
- Request:
  - params: `{"type":x}`
    - 0—Show all the input sources.
      0 is the default value for the type parameter.
- Response:
  - response: Array of : `{"id":0, "Name":"InSource1", "HSize":3840, "VSize":1080, "SrcType":0, "InputCfgIndex":-1, "StillIndex":0, "DestIndex":-1, "UserKeyIndex":-1, "Mode3D":0, "Freeze":1, "Capacity":2, "InputCfgVideoStatus":4}`
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{"type":0}, "method":"listSources", "id":"1234", "jsonrpc":"2.0"}`

listContent

- Definition:
  - This API shows the content of a screen destination.
- Request:
  - params: `{"id":x}`
    - “id”—Screen destination index.
- Response:
  - response: `{"jsonrpc":"2.0","result":{"success":0,"response":{"id":1,"Name":"PGM2","IsActive":1,"BGLyr":[{"id":0,"LastBGSourceIndex":-1,"BGShowMatte":1,"BGColor":{"id":0,"Red":0,"Green":0,"Blue":0}},{"id":1,"LastBGSourceIndex":-1,"BGShowMatte":1,"BGColor":{"id":0,"Red":0,"Green":0,"Blue":0}}],"Layers":[{"id":0,"Name":"LayerA","LastSrcIdx":4,"PvwMode":1,"PgmMode":0,"LinkLayerId":-1,"LinkDestId":-1,"Capacity":4,`

"PvwZOrder":0,"PgmZOrder":0,"Freeze":0,"ScalingMode":0,"Window":[{"HPos":
0,"VPos":0,"HSize":1920,"VSize":1080},{"HPos":0,"VPos":0,"HSize":1920,
"VSize":1080}],"Source":[{"HPos":0,"VPos":0,"HSize":1920,"VSize":1080},
{"HPos":0,"VPos":0,"HSize":1920,"VSize":1080}],"Mask":[{"id":0,"Top":0,
"Left":0,"Right":0,"Bottom":0},{"id":0,"Top":0,"Left":0,"Right":0,
"Bottom":0}]},{"id":1,"Name":"LayerB","LastSrcIdx":5,"PvwMode":0,
"PgmMode":1,"LinkLayerId":-1,"LinkDestId":-1,"Capacity":4,"PvwZOrder":0,
"PgmZOrder":0,"Freeze":0,"ScalingMode":0,"Window":[{"HPos":0,"VPos":0,
"HSize":1920,"VSize":1080},{"HPos":0,"VPos":0,"HSize":1920,"VSize"
:1080}],"Source":[{"HPos":0,"VPos":0,"HSize":1920,"VSize":1080},{"HPos":
0,"VPos":0,"HSize":1920,"VSize":1080}],"Mask":[{"id":0,"Top":0,"Left":
0,"Right":0,"Bottom":0},{"id":0,"Top":0,"Left":0,"Right":0,"Bottom":
0}]}],"Transition":[{"id":0,"TransTime":1,"TransPos":0,"ArmMode":1},
{"id":1,"TransTime":1,"TransPos":0,"ArmMode":0}],"OutputCfg":[{"id":2,
"Name":"HDMI2A","OutputAOI":[{"id":0,"TestPattern":[{"id":0,
"TestPatternMode":0}]}]}]}},"id":"1234"}

- id—index of screen destination.
- Name—Name of ScreenDestination.
- BGLyr—Background layer index, Last source index of background.
  “id”:0 affects the Background in Program. “id”:1 affects the Background in Preview.
- BGShowMatte—This is if BG to be matte or not.
- BGColor—This is background color.
- Layers—Lists layers on screen destination with its properties.
- Transition—This property of screen destination contains the transition time (from time to move from preview to program).
- ScalingMode: 0 = all. 1 = center cut

- success: (0=success, anything else is an error)

- Example:
  - `{"params": {"id": 0}, "method":"listContent", "id":"1234", "jsonrpc":"2.0"}`

activateCue

- Definition:
  - This API provides the option to play/pause/stop a cue.
- Request:
  - params: `{"id": 1, "type": x}, "method":"activateCue", "id":"1234", "jsonrpc":"2.0"}`
    - id – Index of the cue
    - type – (Default is play). x" can be : 0 — Play. 0 is the default value for the type parameter. 1 — Pause, 2 – Stop
  - params: `{"cueName": "Cue1", "type": x}, "method":"activateCue", "id":"1234", "jsonrpc":"2.0"}`
  - params: `{"cueSerialNo": 1.00, "type": x}, "method":"activateCue", "id":"1234", "jsonrpc":"2.0"}`
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {"id": 1}, "method":"activateCue", "id":"1234", "jsonrpc":"2.0"}`
    `//Play – no parame or type 0`
  - `{"params": {"type": 1}, "method":"activateCue", "id":"1234", "jsonrpc":"2.0"}`
    `//Pause – type 1`
  - `{"params": {"type": 2}, "method":"activateCue", "id":"1234", "jsonrpc":"2.0"}`
    `//Stop – type 2`

activateDestGroup

- Definition:
  - Recall a DestGroup on the Event Master processor. User can recall DestGroup with id, DestGroup serial number, or DestGroup name.
  - Send any one of the parameters to recall DestGroup.
- Request:
  - params: `{"id": x}`
  - params: `{"destGrpSno": x.y}`
  - params: `{"destGrName": "GroupName"}`
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {"id": 0}, "method":"activateDestGroup", "id":"1234", "jsonrpc":"2.0"}`
  - `{"params": {"destGrpName": "abc" }, "method":"activateDestGroup", "id":"1234", "jsonrpc":"2.0"}`
  - `{"params": {"destGrpSno": 1.00}, "method":"activateDestGroup", "id":"1234", "jsonrpc":"2.0"}`

listCues

- Definition:
  - This API lists all the cues.
- Request:
  - params: `{}, "method":"listCues", "id":"1234", "jsonrpc":"2.0"}`
- Response:
  - response: Array of cue objects.
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {}, "method":"listCues", "id":"1234", "jsonrpc":"2.0"}`

changeContent

- Definition:
  - This API changes the content of a screen destination by putting background and layers in it.
- Request:
  - params: `{"id":0, "Layers": [{"id":0,"ScalingMode":0]}`
    - id—Screen destination index.
    - scalingMode: 0 = all. 1 = center cut
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{"id":0,"Layers": [{"id":1, ,"ScalingMode":0, "LastSrcIdx":10, "Source":{"HPos":0,"VPos":0,"HSize":1122,"VSize":1122},"PvwMode":1, "PgmMode":0,"Freeze":0}]}, "method":"changeContent", "id":"1234", "jsonrpc":"2.0"}`
  - `{"params":{"id":0, "TestPattern" :5 }, "method":"changeContent", "id":"1234", "jsonrpc":"2.0"}`

listStill

- Definition:
  - This API lists all the stills with properties such as id, Name, H/V size, LockMode, StillState, PngState, File size.
- Request:
  - params: `{}`
- Response:
  - response: Array of : `[{"id":0,"Name":"StillStore1","LockMode":0,"HSize":{"Min":0,"Max":99999,"$t":1920},"VSize":{"Min":0, "Max":99999,"$t":1080}, "StillState":{"Min":0,"Max":4,"$t":3},"PngState":{"Min":0,"Max":2,"$t":0},"FileSize":{"Min":0,"Max":100000,"$t":9331.2}}]`
    - id—Index of still store.
    - Name—Name of still store.
    - LockMode—For future use. Always set to 0.
    - H/V size—Horizontal and vertical size, Min, max and current value. It shows the current value.
    - StillState—This tells user if the still is currently being captured or not, or if it is getting deleted.
    - PngState—The “PNG” for stills are for the thumbnails we capture for the stills.
    - FileSize—Size of the file created in KBs.
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {}, "method":"listStill", "id":"1234", "jsonrpc":"2.0"}`

deleteStill

- Definition:
  - This API deletes a still.
- Request:
  - params: `{"id": x}`
    - id—Index of still.
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{"id": 0}, "method":"deleteStill", "id":"1234", "jsonrpc":"2.0"}`

takeStill

- Definition:
  - This API creates/overwrites a still.
- Request:
  - params: `{ "type": x, "id": y, "file": z}`
    - type—0 for input source, 1 for BG source.
    - Id—Index of the source. If the source id of the destination is provided, no still is created and an error is shown.
    - File—still file id. If you pass “file” : 5, this creates StillStore6.
- Response:
  - response: null
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{"type":0 , "id": 1, "file": 5}, "method":"takeStill", "id":"1234", "jsonrpc":"2.0"}`
    - This creates a still from input source id 1 as StillStore6.

getFrameSettings

- Definition:
  - This API shows system information, including all the frames information.
- Request:
  - params: {}
- Response:
  - {"System":{"id":0,"Name":"System1","FrameCollection":{"id":0,"Frame":
    {"id":"00:0c:29:0e:86:d4","Name":"E2","Contact":"","Version":"4.2.30738",
    "OSVersion":"NA","FrameType":0,"FrameTypeName":"E2","Enet":{"DhcpMode":0,
    "DhcpModeName":"Static","IP":"10.98.0.165","StaticIP":"192.168.000.175",
    "MacAddress":"00:0c:29:0e:86:d4","StaticMask":"255.255.255.000",
    "StaticGateway":"192.168.000.001"},"SysCard":{"SlotState":2,
    "CardStatusID":2,"CardStatusLabel":"Ready","CardTypeID":80,
    "CardTypeLabel":"System","CardID":0},"Slot":[{"Card":{"CardStatusID":2,
    "CardStatusLabel":"Ready","CardTypeID":70,"CardTypeLabel":"Expansion",
    "CardID":"thisissometextforid0"}},{"Card":
    {"CardStatusID":2,"CardStatusLabel":
    "Ready","CardTypeID":70,"CardTypeLabel":"Expansion","CardID":
    "thisissometextforid1"}},{"Card":{"CardStatusID":0,"CardStatusLabel":
    "Not Installed","CardTypeID":255,"CardTypeLabel":"Unknown","CardID":
    "Undefined"}},{"Card":{"CardStatusID":2,"CardStatusLabel":"Ready",
    "CardTypeID":1,"CardTypeLabel":"SDI
    Input","CardID":"thisissometextforid211"}},
    {"Card":
    {"CardStatusID":2,"CardStatusLabel":"Ready","CardTypeID":3,"CardID":
    "thisissometextforid2"}},{"Card":
    {"CardStatusID":2,"CardStatusLabel":"Ready",
    "CardTypeID":0,"CardTypeLabel":"DVI
    Input","CardID":"thisissometextforid4"}},
    {"Card":{"CardStatusID":2,"CardStatusLabel":"Ready","CardTypeID":2,
    "CardTypeLabel":"HDMI/DP Input","CardID":"thisissometextforid5"}},
    {"Card":{"CardStatusID":2,"CardStatusLabel":"Ready","CardTypeID":2,
    "CardTypeLabel":"HDMI/DP Input","CardID":"thisissometextforid7"}},
    {"Card":{"CardStatusID":2,"CardStatusLabel":"Ready","CardTypeID":2,
    "CardTypeLabel":"HDMI/DP Input","CardID":"thisissometextforid8"}},
    {"Card":{"CardStatusID":2,"CardStatusLabel":"Ready","CardTypeID":2,
    "CardTypeLabel":"HDMI/DP Input","CardID":"thisissometextforid9"}},
    {"Card":{"CardStatusID":2,"CardStatusLabel":"Ready","CardTypeID":22,
    "CardTypeLabel":"HDMI Output","CardID":"CardID3"}},{"Card":
    {"CardStatusID":2,
    "CardStatusLabel":"Ready","CardTypeID":22,"CardTypeLabel":"HDMI Output",
    "CardID":"CardID4"}},{"Card":{"CardStatusID":2,"CardStatusLabel":"Ready",
    "CardTypeID":21,"CardTypeLabel":"SDI Output","CardID":"CardID415"}},
    {"Card":{"CardStatusID":2,"CardStatusLabel":"Ready","CardTypeID":40,
    "CardTypeLabel":"MVR","CardID":"CardID15"}},{"Card":{"CardStatusID":2,
    "CardStatusLabel":"Ready","CardTypeID":50,"CardTypeLabel":"VPU Scaler",
    "CardID":"thisissometextforid501"}},{"Card":{"CardStatusID":2,
    "CardStatusLabel":"Ready","CardTypeID":50,"CardTypeLabel":"VPU Scaler",
    "CardID":"thisissometextforid502"}},{"Card":{"CardStatusID":2,
    "CardStatusLabel":"Ready","CardTypeID":50,"CardTypeLabel":"VPU Scaler",
    "CardID":"thisissometextforid503"}},{"Card":{"CardStatusID":2,
    "CardStatusLabel":"Ready","CardTypeID":50,"CardTypeLabel":"VPU Scaler",
    "CardID":"thisissometextforid504"}},{"Card":{"CardStatusID":0,
    "CardStatusLabel":"Not Installed","CardTypeID":255,"CardTypeLabel":

```
"Unknown","CardID":"Undefined"}},{"Card":
{"CardStatusID":2,"CardStatusLabel":
"Ready","CardTypeID":50,"CardTypeLabel":"VPU Scaler","CardID":
"thisissometextforid505"}},{"Card":
{"CardStatusID":2,"CardStatusLabel":"Ready",
"CardTypeID":50,"CardTypeLabel":"VPU Scaler","CardID":
"thisissometextforid506"}},{"Card":
{"CardStatusID":2,"CardStatusLabel":"Ready",
"CardTypeID":50,"CardTypeLabel":"VPU Scaler","CardID":
"thisissometextforid507"}},{"Card":
{"CardStatusID":2,"CardStatusLabel":"Ready",
"CardTypeID":50,"CardTypeLabel":"VPU Scaler","CardID":
"thisissometextforid508"}}]}}}}}
```


    - System—System name and index.
    - FrameCollection—Collection of frames in a system containing frame information.
    - Frame—Contains frame information.
    - Id—Mac Id of the frame.
    - Name—Name of the frame.
    - Contact—Contact information.
    - Version—Current version of the software installed on the frame.
    - OSVersion—Current OS version installed on the frame.
    - FrameType—0: E2, 1:S3, 2: Ex.
    - FrameTypeName—Type of the frame: E2/S3/Ex.
    - Enet—Ethernet settings.
    - SysCard—System card information.
    - Slot—List of Input/Output/Expansion card information.
  - success: (0=success, anything else is an error)
- Example:
  - `{"params":{}, "method":"getFrameSettings", "id":"1234", "jsonrpc":"2.0"}`

Subscription and Un-Subscription

When a subscription is done from a JSON-based application, a notification is sent to the ip port where the application is running when there is change for which the user has subscribed.

Actual notification is sent asynchronously as an HTTP Post, with the following structure: `{result: {method:`

`"notification",notificationType: "ScreenDestChanged",change: { add: [2],`

`remove: [], update: [0, 1, 2] }}}.`

The change field contains the XmlId(s) of the screens that were added/removed or updated.

All subscriptions are lost once the Event Master processor is restarted, and they must be subscribed again if required.

subscribe

- Definition:
  - User can use this API to subscribe to change events in the Event Master processor.
  - Once subscribed, the API sends a notification in the form of an HTTP Post to the Url: http://hostname: port/.
- Request:
  - params: `{"hostname": hostname, "port": port, "notification" : notificationType []}`
    - hostname—Hostname or IP Address to which the notifications are sent.
    - port—TCP port to which the notification are posted.
    - notificationTypes—an array of notifications to which a user wants to subscribe.
      - ScreenDestChanged
      - FrameChanged

    - InputCfgChanged
    - SourceChanged
    - BGSourceChanged
    - PresetChanged
    - StillChanged
    - OutputCfgChanged
- Response:
  - response: `{"method": "subscribe"}`
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {"hostname" : "192.168.247.131", "port": "3000", "notification" : ["ScreenDestChanged"]}, "method":"subscribe", "id":"1234", "jsonrpc":"2.0"}`

unsubscribe

- Definition:
  - User can use this API to remove the subscription for the given hostname, port, and notificationType.
- Request:
  - params: `{"hostname": hostname, "port": port, "notification" : notificationType []}`
    - hostname—Hostname or IP Address from which the subscription is to be removed.
    - port—TCP port.
    - notificationTypes—an array of notifications to which a user wants to subscribe.
      - ScreenDestChanged
      - FrameChanged
      - InputCfgChanged
      - SourceChanged
      - BGSourceChanged
      - PresetChanged
      - StillChanged
      - OutputCfgChanged
- Response:
  - response: `{"method": "unsubscribe"}`
  - success: (0=success, anything else is an error)
- Example:
  - `{"params": {"hostname" : "192.168.247.131", "port": "3000", "notification" : ["ScreenDestChanged"]}, "method":"unsubscribe", "id":"1234", "jsonrpc":"2.0"}`

Environmental information

C

C.1 Disposal information

Disposal Information

Waste Electrical and Electronic Equipment

This symbol on the product indicates that, under the European Directive 2012/19/EU governing waste from electrical and electronic equipment, this product must not be disposed of with other municipal waste. Please dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

For more information about recycling of this product, please contact your local city office or your municipal waste disposal service.

For details, please visit the Barco website at: *http://www.barco.com/AboutBarco/weee*

Disposal of batteries in the product

This product contains batteries covered by the Directive 2006/66/EC which must be collected and disposed of separately from municipal waste.

If the battery contains more than the specified values of lead (Pb), mercury (Hg) or cadmium (Cd), these chemical symbols will appear below the crossed-out wheeled bin symbol.

By participating in separate collection of batteries, you will help to ensure proper disposal and to prevent potential negative effects on the environment and human health.

C.2 RoHS compliance

中国大陆 RoHS (Chinese Mainland RoHS)

根据中国大陆《电器电子产品有害物质限制使用管理办法》（也称为中国大陆RoHS），以下部分列出了Barco产品中可能包含的有毒和/或有害物质的名称和含量。中国大陆RoHS指令包含在中国信息产业部MCV标准：“电子信息产品中有毒物质的限量要求”中。

According to the “Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products” (Also called RoHS of Chinese Mainland), the table below lists the names and contents of toxic and/or hazardous substances that Barco’s product may contain. The RoHS of Chinese Mainland is included in the MCV standard of the Ministry of Information Industry of China, in the section “Limit Requirements of toxic substances in Electronic Information Products”.

零件项目(名称) Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	铅 Pb	汞 Hg	镉 Cd	六价铬 Cr6+	多溴联苯 PBB	多溴二苯醚 PBDE
印制电路配件 Printed Circuit Assemblies	X	O	O	O	O	O
外接电(线)缆 External Cables	X	O	O	O	O	O
散热片(器) Heatsinks	O	O	O	O	O	O
底架	O	O	O	O	O	O

零件项目(名称) Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	铅 Pb	汞 Hg	镉 Cd	六价铬 Cr6+	多溴联苯 PBB	多溴二苯醚 PBDE
Chassis						
电源供应器 Power Supply Unit	X	O	O	O	O	O
风扇 Fan	X	O	O	O	O	O
电池(组) Batteries	X	O	O	O	O	O
螺帽,螺钉(栓),螺旋(钉),垫圈, 紧固件 Nuts, bolts, screws, washers, Fasteners	O	O	O	O	O	O

本表格依据SJ/T 11364的规定编制

This table is prepared in accordance with the provisions of SJ/T 11364.

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下.

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 标准规定的限量要求.

X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572.

在中国大陆销售的相应电子信息产品（EIP）都必须遵照中国大陆《电子电气产品有害物质限制使用标识要求》标准贴上环保使用期限（EFUP）标签。Barco产品所采用的EFUP标签（请参阅实例，徽标内部的编号使用于指定产品）基于中国大陆的《电子信息产品环保使用期限通则》标准。

All Electronic Information Products (EIP) that are sold within Chinese Mainland must comply with the “Marking for the restriction of the use of hazardous substances in electrical and electronic product” of Chinese Mainland, marked with the Environmental Friendly Use Period (EFUP) logo. The number inside the EFUP logo that Barco uses (please refer to the photo) is based on the “General guidelines of environment-friendly use period of electronic information products” of Chinese Mainland.

Turkey RoHS compliance

Türkiye Cumhuriyeti: AEEE Yönetmeliğine Uygundur.

[Republic of Turkey: In conformity with the WEEE Regulation]

C.3 Contact information

Sales and importers

To find your local Barco Sales representative or your local importer, contact Barco directly, or contact one of Barco's regional offices via the contact information given on the Barco web site, www.barco.com.

Factories

Barco Inc.
3000 Technology Road
Angleton, TX 77515
USA

Production date

The month and year of production is indicated on the product ID label on the product itself.

Third Party Software Acknowledgements

D

About this annex

This chapter lists the third-party software components. The third-party software components are reusable software components developed to be either freely distributed or sold by an entity other than the original vendor of the development platform.

D.1 Third Party Software list

List and short description

The products and software applications described in this manual make use of one or more of the following third party software items:

- **Boost**: Boost software is distributed under the Boost Software License, Version 1.0, http://www.boost.org/LICENSE_1_0.txt
- **Qt**: The Qt GUI Toolkit is Copyright (C) 2015 Digia Plc and/or its subsidiary(-ies).
  Contact: Digia Plc (http://www.qt.io/about-us/).
  Qt is available under the LGPL version 2.1 (GNU Lesser General Public License version 2.1).
- **XFree86**: is a trademark of The XFree86 Project, Inc.
- **X11(TM) and X Window System(TM)**: is a trademark of The XFree86 Project, Inc.
- **Xorg**: Xorg is copyright software, provided under licenses that permit modification and redistribution in source and binary form without fee. Xorg is copyright by numerous authors and contributors from around the world. Licensing information can be found at http://www.x.org. Refer to the source code for specific copyright notices.
- **dfu-util**: Licensed under the GNU General Public License, Version 2
  http://www.gnu.org/licenses/old-licenses/gpl-2.0.html
  Source available from http://dfu-util.gnumonks.org/
- **lib-usb-1.0.dll**: Licensed under the GNU GPL Public License Version 2
  A component of MinGW whose license can be found here: http://www.mingw.org/license
- **LPCScrypt and image_manager executables**: are copyright software, provided under license by NXP SEMICONDUCTORS USA, INC. that permit redistribution in binary form without fee as part of supporting software for products using devices manufactured by NXP.
  The source code for the components of the Software and Separate Files are available from NXP and can be obtained from http://www.lpcware.com/lpcxpresso/downloads/source.

Warranty

E

About this annex

This chapter gives an overview of Warranty and conditions of RMA concerning the Event Master devices.

E.1 About Warranty and RMA

Warranty

All video products are designed and tested to the highest quality standards and are backed by a full 3-year parts and labor warranty. Warranties are effective upon delivery date to customer and are non-transferable. Barco warranties are only valid to the original purchaser/owner. Warranty related repairs include parts and labor, but do not include faults resulting from user negligence, special modifications, lightning strikes, abuse (drop/crush), and/or other unusual damages.

The customer shall pay shipping charges when unit is returned for repair. Barco will cover shipping charges for return shipments to customers.

Return Material Authorization (RMA)

RMA Conditions are listed below:

1. Prior to returning any item, you must receive a Return Merchandise Authorization (RMA) number.
2. All RMA numbers must appear on their return-shipping label.
3. RMA numbers are valid for ten (10) days from issue date.
4. All shipping and insurance charges on all RMAs must be prepaid by the customer.

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