

PDS



User's Guide

- Manual #: 26-1204000-00
- Revision: 01



Copyright

© Barco. June 2013

All rights reserved. No part of this document may be copied, reproduced or translated. It shall not otherwise be recorded, transmitted or stored in a retrieval system without the prior written consent of Barco.

Notice

Barco provides this manual “as is” without warranty of any kind, either expressed or implied, including but not limited to the implied warranties or merchantability and fitness for a particular purpose. Barco may make improvements and/or changes to the product(s) and/or the program(s) described in this publication at any time without notice.

This publication could contain technical inaccuracies or typographical errors. Changes are periodically made to the information in this publication; these changes are incorporated in new editions of this publication.

Federal Communications Commission (FCC) Statement

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

Guarantee and Compensation

Barco provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults Barco must be informed immediately in writing of any complaints.

The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at latest 30 days after the transfer of risks. In the event of justified notice of compliant, Barco can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other services provided by Barco, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of Barco.

If the purchaser or a third party carries out modifications or repairs on goods delivered by Barco, or if the goods are handled incorrectly, in particular if the systems are commissioned operated incorrectly or if, after the transfer of risks, the goods are subject to influences not

agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by Barco either.

The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Trademarks

Brand and product names mentioned in this manual may be trademarks, registered trademarks or copyrights of their respective holders. All brand and product names mentioned in this manual serve as comments or examples and are not to be understood as advertising for the products or their manufacturers.

DisplayPort and the DisplayPort logo are trademarks or registered trademarks of the Video Electronics Standards Association (VESA) in the United States and other countries.

Company Address



Barco Media and Entertainment

11101 Trade Center Drive
Rancho Cordova, California 95670
USA

- Telephone: (916) 859-2500
- Fax: (916) 859-2515
- Website: www.barco.com

Barco N.V.

Noordlaan 5
8520 Kurne
BELGIUM

- Telephone: +32 56.36.82.11
- Fax: +32 56.35.16.51
- Website: www.barco.com

Technical Support (USA)

- Telephone: (866) 374-7878 — 6 a.m. to 10 p.m. (PST), 7 days per week
- E-mail: folsomsupport@barco.com
- Online: www.barco.com/esupport

Technical Support (Europe, Middle East, Asia)

- Telephone: 0800900410
- Online: www.barco.com/support/eSupport.aspx

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels

There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source

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.

Grounding the Product

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 the Proper Power Cord

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.

Use the Proper Fuse

To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an explosive atmosphere.

Terms In This Manual and Equipment Labeling



WARNING

Highlights an operating procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.

Note

Highlights an essential operating procedure, condition or statement.



CAUTION

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



AVERTISSEMENT!

Le point d'exclamation dans un triangle équilatéral signale à alerter l'utilisateur qu'il y a des instructions d'opération et d'entretien très importantes dans la littérature qui accompagne l'appareil.



VORSICHT

Ein Ausrufungszeichen innerhalb eines gleichwinkligen Dreiecks dient dazu, den Benutzer auf wichtige Bedienungs- und Wartungsanweisungen in der dem Gerät beiliegenden Literatur aufmerksam zu machen.



Disposal of the Product (Waste Electrical and Electronic Equipment)

This symbol on the product indicates that, under the European Directive 2002/96/EC 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://www2.barco.com/en/AboutBarco/weee>



Turkey RoHS Compliance

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur
Republic of Turkey: In conformity with the EEE Regulation

中国大陆 RoHS

Chinese Mainland RoHS

根据中国大陆《电子信息产品污染控制管理办法》(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 “China Administration on Control of Pollution Caused by Electronic Information 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	○	○	○	○	○	○
插入式印制电路配件 Plug in Printed Circuit Assembly	○	○	○	○	○	○
外接电(线)缆 External Cables	○	○	○	○	○	○
底架 Chassis	○	○	○	○	○	○
电源供应器 Power Supply Unit	○	○	○	○	○	○
内部线路 Internal wiring	○	○	○	○	○	○
显示(器) Display	○	○	○	○	○	○
散热片(器) Heatsinks	○	○	○	○	○	○
风扇 Fan	○	○	○	○	○	○
光盘说明书 CD Manual	○	○	○	○	○	○
正面(前)面板 Front panel	○	○	○	○	○	○
○: 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 SJ/T 11363-2006 标准规定的限量要求以下。 ○: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.						
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 SJ/T11363-2006 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 SJ/T11363-2006.						

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《电子信息产品污染控制标识要求》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，徽标内部的编号用于制定产品）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 “Electronic Information Products Pollution Control Labeling Standard” 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 “Standard of Electronic Information Products Environmental Friendly Use Period” of Chinese Mainland.

Change History

The table below lists the changes to the PDS User's Guide.

Table 0-1. Change History

Rev	Date	ECP #	Description	Approved By
00	January 3, 2006	599163	Initial release	R. Pellicano
01	June 10, 2013	606851	Revisions for Firmware 3.00	R. Pellicano



Table of Contents

Chapter 1	Introduction	1
	In This Chapter	1
	Chapter Structure	1
	How to Use This Guide	2
	Navigating	2
	Table of Contents and Index	2
	Conventions	2
	About the PDS	3
	Overview	3
	Features	3
	A Word About HDCP	5
	Connectivity Diagram	6
	Application Questions	6
Chapter 2	Hardware Orientation	7
	In This Chapter	7
	PDS Front Panel	8
	Display Section	9
	Inputs Section	10
	Effects Section	11
	Take Button	12
	PDS Rear Panel	13
Chapter 3	Installation	17
	In This Chapter	17
	Safety Precautions	18
	Unpacking and Inspection	18
	Site Preparation	18
	Rack-Mount Installation	18
	Cable and Adapter Information	19
	Power Cord and Line Voltage Selection	19
	Signal Installation	21
	Format Connection Table	22
Chapter 4	Operation	25
	In This Chapter	25
	Control Overview	26
	Power-Up Initialization	26
	Button States	27
	Quick Setup and Operations	27
	Menu Tree	29

Table of Contents

Using the Menu System	30
Quick Function Reference	32
Status Menu	35
Setup Menu	37
Input Menu	38
Input Format	39
Adjust On.	40
Type	40
Colorspace	40
Auto Acquire	41
Aspect Ratio	42
Sizing Adjust	43
Timing Adjust.	44
Contrast	46
Brightness	46
Color Balance	46
Processing	47
About Input Configuration Files	48
Save Config.	48
Reset Config	49
Recall Config.	50
Delete Config.	50
Output Menu	52
Main.	52
Preview Menu (PDS 902 Only)	55
Logo Menu	59
User Preference Menu.	60
Trans Time	60
Auto Acquire	61
Auto Input Cfg	62
Auto Input Save	62
Background	62
HDCP	63
Auto Take	63
Black Auto Take	63
Menu Context	64
Saving System Settings	64
System Menu	65
VFD Brightness	65
Ethernet.	66
Serial Setup.	68
Input EDID.	69
DVI Cable Equal	70
Executive Mode	71
File Association	72
Temperature	73
Diagnostics	73
Save System State	74
Tech Support Menu	75
Factory Reset Menu	75
Firmware Upgrade Menu	76
Using Inputs	77

	Input Selection Rules	77
	Flip-flop Mode	78
	Using Auto Acquire	79
Using the Logo		80
	Saving a Logo	81
	Transitioning to a Logo	81
	Deleting a Logo	82
Using Freeze		83
Using Black.		83
	Black Auto Take Off.	83
	Black Auto Take On.	84
Using Front-Panel Lockout.		85
	Full Lockout Mode	85
Chapter 5	GUI Operations	87
	In This Chapter	87
	GUI Connection and Launch	88
	GUI Operations on a PC.	90
	GUI Operations on a Mobile Device	91
	Multiple Unit Control UI.	92
	Connection to the Multiple Unit Control UI.	92
	Adding Units to the Unit List	93
	Controlling Multiple PDS Units.	94
	Save Setup	94
Chapter 6	Upgrading Firmware	95
	In This Chapter.	95
	Firmware Upgrade Overview	96
	Hardware Requirements.	96
	Firmware Requirements	96
	Downloading Firmware via FTP or Web Site	97
	Via FTP Site.	97
	Via Web Site	97
	Upgrading Firmware Using the USB Port.	98
	Formatting the Flash Drive	98
	Performing the Firmware Upgrade Using the USB Port	99
	Upgrading Firmware Using the Web Upgrade	100
	Checking for Available Firmware Upgrades	100
	Upgrading Firmware Using the Web Interface.	101
	Troubleshooting Ethernet Communication	105
Chapter 7	PDS-902 3G Enhancements	107
	In This Chapter	107
	Overview of Changes	108
	Front and Rear Panel Enhancements	109
	PDS-902 3G Front Panel	109
	PDS-902 3G Rear Panel	110
	Executive Mode	110
	Matte or Logo Backgrounds	110

Table of Contents

Output Display Modes	111
Full Screen Mode	111
PIP Mode	111
PIP Adjustments	112
Selecting a PIP Background	113
Sizing and Positioning a PIP	113
Transitioning a PIP to Program	113
Transitioning a PIP to Full Screen	114
Saving, Recalling, and Resetting PIP Configurations	114
Matrix Mode	114
Input Sizing Adjustments	115
Menu Changes	116
Input Adjustment Options	116
Input Aspect Ratio Maintenance	117
Output Formats	117
SDI Output Type	117
HDCP	118
Analog Computer and Video Source Color Space Detection	118
Input and Output Specifications	119
Input Specifications	119
Output Specifications	120

Appendix A Specifications.....121

In This Appendix	121
Input Specifications	122
Output Specifications	122
Physical and Electrical Specifications	123
Communications Specifications	123
Agency Specifications	123
Pinouts	124
Analog 15-pin D Connector	124
DVI-I Connector	125
Ethernet Connector	126
Serial Connector	127

Appendix B Remote Control.....129

In This Appendix	129
Setting Up For The Encore or ScreenPRO-II Controller	130
Communicating with PDS	131
Command Protocol	132
Command Responses	132
Query Options	132
IBRT	132
Error Codes	134
Error Codes: General Failures	134
Error Codes: No Error	134
PDS Command List	135
Remote Commands	139
Ethernet Commands	139

DHCP	139
EMAC	139
GATEWAY	140
IP	140
SUBNET	140
Input Commands	141
BLKVID	141
CBLEQ	141
EDID	141
EDIDTYPE	141
FREEZE	142
IADJ	142
IADJRST	142
IAR	142
IAUTOACQ	143
IAUTOC	143
IAVAIL	143
IBRT	144
ICDEL	144
ICNT	144
ICPHO	144
ICREC	145
ICRST	145
ICSAV	145
ICSP	146
IHATV	146
IHCROP	146
IHPAN	147
IHPOS	147
IHTOTAL	147
IHUE	147
IMAP	148
IRBRT	148
IRCNT	148
IRES	148
ISAT	149
ISEL	149
ISIZERST	150
ISLICE	150
ISMP	150
ISYNC	150
ITYPE	151
IVATV	151
IVCROP	152
IVPAN	152
IVPOS	152
IVTOTAL	152
PCOMP	152
TAKE	153
Output Commands	154
BLACK	154
OAVAIL	154

Table of Contents

OCSAV	154
OGM	154
ORBM	154
ORES	155
OSRC	155
OSYNC	156
OTPM	156
OTPT	156
System Commands	158
AUTOACQ	158
AUTOCFG	158
AUTOSAVE	158
AUTOTAKE	158
BACKGND	158
BLKTRAN	159
CONMODE	159
CONTEXT	159
DIAG	159
DIAGD	159
ENCOREIP	160
FPUUPDATE	160
ISTAT	160
LCLR	160
LDMP	160
LFEN	161
LINT	161
LOCKOUT	161
OSTAT	161
PREVIEW	161
PROGRAM	162
RESET	162
SAVE	162
SERIAL	162
TEMP	163
TRNTIME	163
UNITID	163
VER	163
VFDBRT	163
LOGO Commands	164
LOGODEL	164
LOGOSAVE	164
LOGOSEL	164
LOGOSTAT	164
Command Updates — Firmware Revision 3.00	165
Revision 3.00 Commands	165
HDCPSTAT	165
IFILL	165
LOGOSEL	166
OSDI	166
OSDISTAT	167
OUTMODE	167
PENDPIP	167

PIPFREEZE 167
PIPFULL 168
PIPHPOS 168
PIPHSIZE 168
PIPISEL 168
PIPREC 169
PIPRST 169
PIPSAV 169
PIPSTAT 169
PIPUNIT 170
PIPVPOS 170
PIPVSIZE 170
RBACKGND 170
Deprecated Command 171
BLKTRAN 171

Appendix C Contact Information173

In This Appendix 173
Warranty 174
Return Material Authorization (RMA) 174
Contact Information 174

Index177

Table of Contents

1. Introduction

In This Chapter

This chapter is designed to introduce you to the PDS User's Guide. Areas to be covered are:

- [Chapter Structure](#)
 - [How to Use This Guide](#)
 - [Conventions](#)
 - [About the PDS](#)
 - [Connectivity Diagram](#)
 - [Application Questions](#)
-

Chapter Structure

The following chapters provide instructions for all aspects of PDS operations:

- Chapter 1, "[Introduction](#)" provides a system overview, a list of features, and a system connectivity diagram.
- Chapter 2, "[Hardware Orientation](#)" on page 7 provides detailed diagrams of the system's front and rear panels.
- Chapter 3, "[Installation](#)" on page 17 provides comprehensive system installation instructions.
- Chapter 4, "[Operation](#)" on page 25 provides a menu tree, plus comprehensive system operating instructions.
- Chapter 5, "[GUI Operations](#)" on page 87 provides launch and operating instructions for the system's web-based GUI.
- Chapter 6, "[Upgrading Firmware](#)" on page 95 outlines procedures for upgrading system software components.
- Chapter 7, "[PDS-902 3G Enhancements](#)" on page 107 describes the latest enhancements to the PDS.
- Appendix A, "[Specifications](#)" on page 121 lists the PDS's specifications.
- Appendix B, "[Remote Control](#)" on page 129 provides information regarding remote control protocol.
- Appendix C, "[Contact Information](#)" on page 173 lists important Barco contact, RMA, warranty and technical support details.

1. Introduction

How to Use This Guide

How to Use This Guide

This section provides important tips for streamlining your use of this User's Guide in its electronic "PDF" form.

Navigating

Use Acrobat Reader's "bookmarks" to navigate to the desired location. All chapter files have the same bookmark structure for instant navigation to any section. Please note:



- Extensive hyperlinks are provided within the chapters.
- Use Acrobat's "**Go to Previous View**" and "**Return to Next View**" buttons to trace your complete navigational path.
- Use the "**Previous Page**" and "**Next Page**" buttons to go to the previous or next page within a file.
- Use Acrobat's extensive search capabilities, such as the "**Find**" tool and "**Search Index**" tool to perform comprehensive searches as required.

Table of Contents and Index

Use the **Table of Contents** bookmarks to navigate a desired topic. Click any item to instantly jump to that section of the guide. You can also use the **Index** to jump to specific topics within a chapter. Each page number in the **Index** is a hyperlink.

Conventions

The following conventions are used throughout this guide:

- The symbol ■ denotes an operations procedure.
- The symbol ▲ denotes an example.
- Entries written in bold-face capital letters denote physical buttons or chassis connectors.
- ▲ Press **LOGO** to...
- The term "**select**" is used as an abbreviation for "scroll to a selected menu line and press the **SEL** button."
- A sequence of menu steps is represented by the menu names, separated by arrows (>).

▲ **INPUT > Input Sizing > H Position**

... indicates the following sequence:

- a. From the **Main Menu**, select **INPUT** to display the **Input Menu**.
- b. Scroll to the **Input Sizing** line and press **SEL** to display the **Input Sizing Menu**.
- c. Scroll to the **H Position** line and press **SEL** to adjust the image's horizontal position.

About the PDS

The following topics are discussed in this section:

- [Overview](#)
- [Features](#)
- [A Word About HDCP](#)

Overview

PDS is a high-quality dual-channel presentation switcher designed to provide true seamless switching between various input sources. The PDS-902 offers all the features of the PDS-901, and it adds a scaled Preview mode that supports sizing and adjusting input layers before taking them to Program. High-quality image scaling is maintained throughout.

PDS offers straightforward and simple operating modes, and is ideal for use in live events, company boardrooms, hotel ballrooms, houses of worship, and in education and training facilities. As the ideal “simple” presentation switcher to learn and operate, PDS provides a full-screen output or PIP capability (with release 3.00 or higher).

PDS accepts analog, DVI, and HD-SDI input sources and converts them to a wide variety of output formats. Output video is provided on analog and DVI connectors simultaneously. PDS also allows you to capture and store up to three images to be used as full-screen logos during the presentation.

Please note:

- To ensure trouble-free orientation, installation and operation of your PDS, please follow all procedures in the following chapters:
 - ~ Chapter 2, “[Hardware Orientation](#)” on page 7.
 - ~ Chapter 3, “[Installation](#)” on page 17.
 - ~ Chapter 4, “[Operation](#)” on page 25.
- For a description of the latest enhancements to the PDS, please refer to Chapter 7, “[PDS-902 3G Enhancements](#)” on page 107.
- Should you have any questions regarding the installation or operation of the PDS system, please consult with the factory. Refer to Appendix C, “[Contact Information](#)” on page 173 for contact details.

Features

The major features of the PDS system are:

- The system supports input and output resolutions up to UXGA, including all HD resolutions up to 1080p, eliminating the need to create custom output formats. NTSC and PAL are supported as inputs only.

Note

Typically, outputs cannot be interlaced. An exception is the SDI output on the PDS 3G series, which supports interlaced outputs.

1. Introduction

About the PDS

- The PDS supports DVI, analog computer and video formats on the DVI-I inputs.
 - ~ HDCP protocol is supported, and the PDS is considered an HDCP repeater in this configuration. Incoming encrypted data is encrypted going out, and all analog outputs, plus the freeze and LOGO store functions are disabled when the PDS processes HDCP content. Refer to the [“A Word About HDCP”](#) section on page 5 for more details.
 - ~ 1080i RGB input is supported on the DVI digital input.
- A **Preview** mode lets you view and adjust layers before moving them to Program.
- The PDS stores and recalls up to three full-screen logos.
- The system provides true seamless switching between all inputs, including one of the three stored full-screen logos.
- An **Auto Take** feature (in the **User Preference Menu**) supports transitioning from one input source to another without pressing **TAKE**.
- The following scaling and de-interlacing features are provided:
 - ~ 10-bit scaling
 - ~ 10-bit 4:2:2 de-interlacer with diagonal filter
 - ~ 150 MHz maximum pixel rate
 - ~ Low video delay: Interlaced sources, 3 fields (max)
- The PDS provides the ability to “auto acquire” input sources. The system monitors inputs at all times, and if a timing change occurs, the system automatically reacquires and displays the source — once the timing has been measured.
- The PDS offers simple and intuitive menus:
 - ~ Presentations can be switched without accessing any setup menus.
- Two front-panel lockout modes enable you to lock out menu access, either completely or partially. The PDS provides an integrated test pattern generator.
- The PDS offers an HD/SD/3G SDI input as standard.
- A built-in web-based GUI enables you to perform all setup and transition functions, just like the front panel.
- The File Association feature provides the ability to save and recall up to 64 input configuration files, and associate each of them with one or more inputs.

A Word About HDCP

The PDS supports High-Bandwidth Digital Content Protection (HDCP), an industry-wide content protection system designed to prevent illegal copying of digital audio and video content across interfaces such as DisplayPort (DP), High-Definition Multimedia Interface (HDMI), and Digital Visual Interface (DVI). HDCP prevents the display of encrypted content on devices that do not support content protection.

The HDCP format was designed by Intel® Corporation, and it uses an “authentication and key exchange” procedure to accomplish the required protection. For proper implementation, products that are compatible with the HDCP format require a secure connection to a compliant display, such as a projector or monitor.

When an HDCP-compliant display is connected to the PDS, an HDCP “session” is created. In this session (which is transparent to the user), “keys” are exchanged between the source device (e.g., a Blu-Ray player) and the HDCP-compliant display. The source device queries the display to ensure that the equipment is HDCP compliant before video is displayed. Non-HDCP equipment such as a PC will work with any DVI-compliant display, but HDCP-compliant equipment shows protected content only on HDCP-compliant displays.

With the HDCP option enabled, the PDS accepts encrypted content from an external source, decrypts the signal for internal processing such as scaling or color balance, then re-encrypts the output video for display. During this process, all PDS output connectors that are not HDCP-compliant are turned off, when the protected content is selected to be shown on those outputs. In addition, if a non-HDCP compliant monitor is connected to the DVI Program output, Preview will show Black for an HDCP source regardless of the HDCP capability of the DVI monitor connected to the Preview output. This is to maintain the true “look-ahead” preview functionality of the PDS.

This feature is available on the PDS DVI input and output connections.

Please note the following important points:

- You can turn the HDCP option on or off. If the option is turned off and the signal is encrypted, the PDS does not send the signal to the output device.

Connectivity Diagram

The figure below illustrates a basic PDS system.

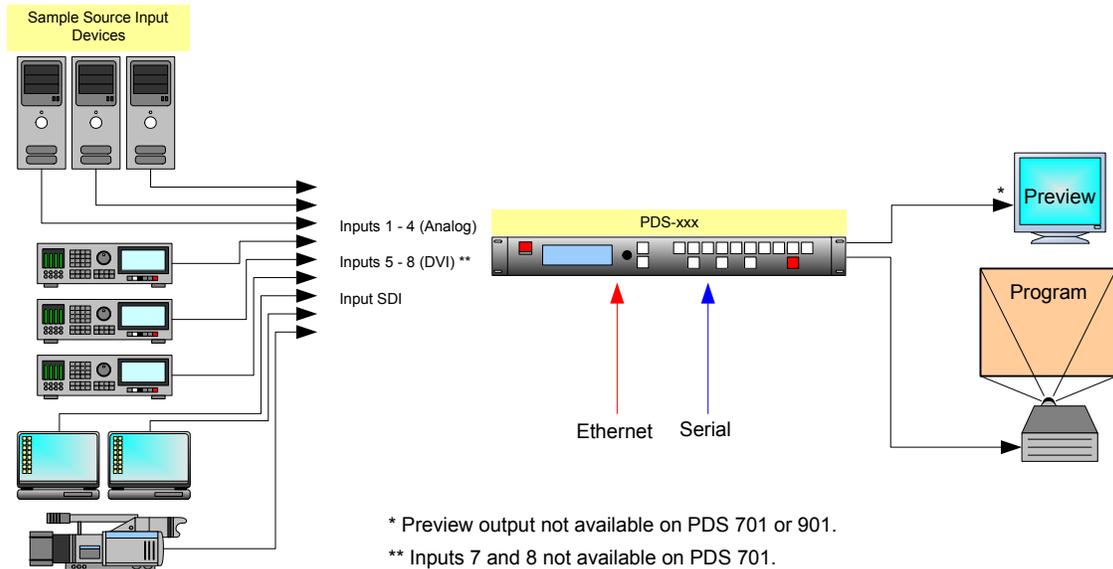


Figure 1-1. Block diagram, PDS system

In the diagram:

- Up to nine sources can be connected to the PDS:
 - ~ 4 x analog inputs (on HD-15 connectors), for a variety of YUV and RGBHV sources, including CVBS and Y/C.
 - ~ 4 x DVI inputs, for computer sources. These four DVI connectors also support analog RGB inputs, and these inputs are universal, and accept all types of sources — just like the four HD-15 connectors. (To connect analog sources, use a customer-supplied **DVI to HD-15** adapter.)
 - ~ 1 x SD-SDI, HD-SDI, or 3G-SDI input.
- The PDS 902 connects to a Preview monitor via analog or DVI.
- The PDS connects to a projector (or other target device) via analog or DVI.

In Chapter 2, refer to the "[Inputs Section](#)" heading on page 10 for details on all inputs.

Application Questions

At Barco, we take pride in offering unique solutions to demanding technical problems. If you have application questions, require further information or would like to discuss your application requirements in more detail, please call (866) 469-8036. Our Customer Support Engineers will be happy to supply you with the support you need. Refer to Appendix C, "[Contact Information](#)" on page 173 for details.

2. Hardware Orientation

In This Chapter

This chapter provides detailed diagrams of the PDS's front and rear panels, along with comprehensive explanations of each.

The following topics are discussed:

- [PDS Front Panel](#)
- [PDS Rear Panel](#)

2. Hardware Orientation

PDS Front Panel

PDS Front Panel

The figure below illustrates the PDS front panel:

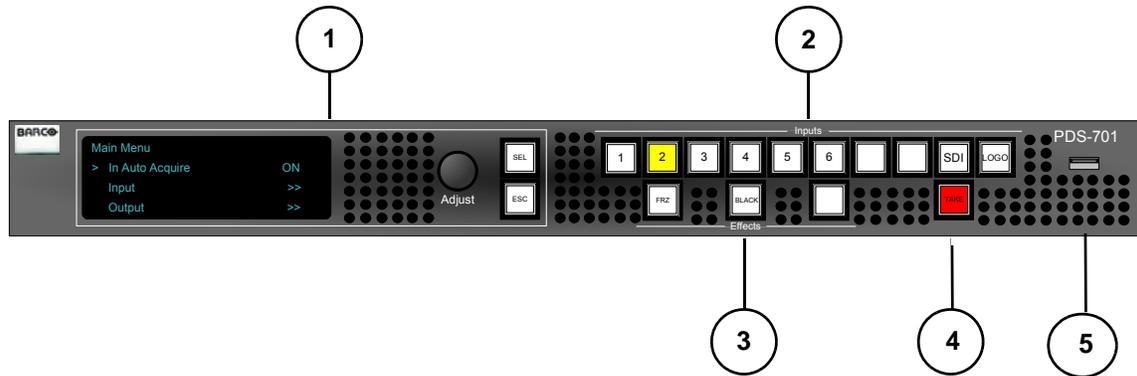


Figure 2-1. PDS Front Panel

1) Display Section	4) Take Button
2) Inputs Section	5) USB Port
3) Effects Section	

Following are descriptions of each front panel section:

1) Display Section

The **Display Section** includes a four-line display, the **ADJUST** knob and two “menu navigation” buttons: **SEL** and **ESC**. Refer to the “[Display Section](#)” heading on page 9 for complete details.

2) Inputs Section

The **Inputs Section** includes ten “source” buttons that enable you to select inputs and a full screen **LOGO**. Refer to the “[Inputs Section](#)” heading on page 10 for complete details.

3) Effects Section

The **Effects Section** provides three buttons that enable you to select the type of effect that you want to perform next. Refer to the “[Effects Section](#)” heading on page 11 for complete details.

4) Take Button

The red **TAKE** button initiates a transition to the selected source. Refer to the “[Take Button](#)” section on page 12 for details.

5) USB Port

The USB port can be used for upgrading system firmware. Refer to the “[Upgrading Firmware Using the USB Port](#)” section on page 98 for details.

Display Section

The figure below illustrates the **Display Section**:

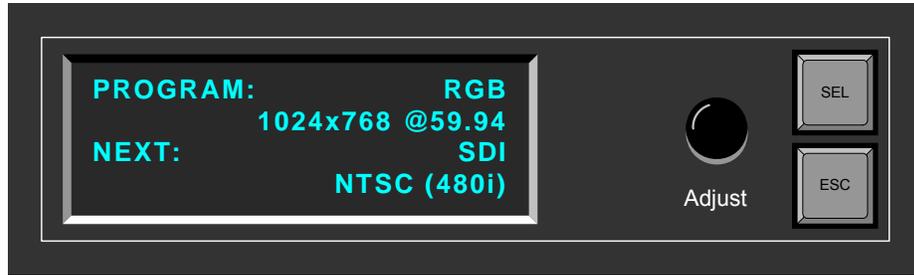


Figure 2-2. Display Section with sample Status Menu

Descriptions of each button and control are provided below:

- The **Menu Display** is a 4-line x 20-character Vacuum Fluorescent Display (VFD) that shows all PDS menus and sub-menus. Brightness is adjustable. The following illustration shows a typical PDS menu.



Figure 2-3. Sample Setup Menu Display

For all setup menus, please note:

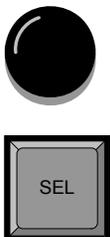
- ~ The top line names the current menu, in all capital letters.
- ~ The navigation cursor (>) in the left-hand column indicates the current line on which action can be taken.
- ~ The double arrow (>>) indicates that a sub-menu is available.

Note

The **Status Menu** layout is different from the “setup” menu display. In Chapter 4, refer to the “[Status Menu](#)” section on page 35 for details.

In Chapter 4, refer to the “[Menu Tree](#)” section on page 29 for additional details on the system’s menu tree.

- **ADJUST** — use the **Adjust Knob** to scroll through all system menus.
 - ~ Turn the knob counter-clockwise (**CCW**) to scroll down.
 - ~ Turn the knob clockwise (**CW**) to scroll up.
- **SEL** — press to enter the setup menu tree (from the **Status Menu**), to enter a sub-menu, change a parameter, accept a parameter, or to answer “**Yes**” to certain menu queries.



2. Hardware Orientation

PDS Front Panel



- **ESC** — press to exit a menu without making changes, cancel an operation, to answer “**No**” to certain menu queries, and to return to the top **Status Menu**. Each press takes you back up the menu tree by one level.

Inputs Section

The figure below illustrates the **Inputs Section**:

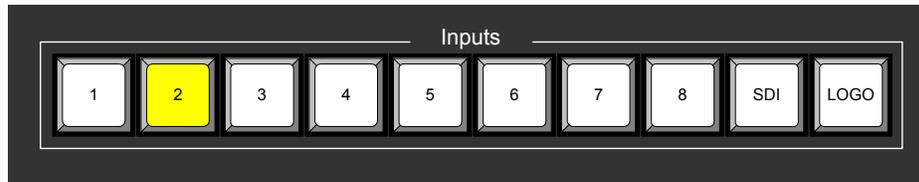


Figure 2-4. Inputs Section

The buttons in the **Inputs Section** enable you to select the source that you want to transition to Program. Each button corresponds to the similarly numbered input connector on the rear panel. You can also select the full screen LOGO as the transition source.

There are three button states:

- **Off** — the input is not selected for a transition.
- **Blinking** — the input is “pending” for the next transition.
 - ~ When a button is blinking **slow**, it is ready to be transitioned to Program.

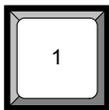
Note

If an input button is blinking slow, and the **Status Menu** shows “**Invalid Signal**,” the system has attempted to acquire the source, but has failed.

- **Lit Solid** — the input is on Program.

In Chapter 4, refer to the “**Flip-flop Mode**” section on page 78 for additional information about button behavior when **TAKE** is pressed.

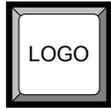
Following are descriptions of each “input” button in the section:



- Buttons **1** through **4** enable you to select physical inputs **1** through **4** (respectively) from the rear panel HD-15 connectors.
- Buttons **5** and **8** enable you to select physical inputs **5** and **8** (respectively) from the rear panel DVI-I connectors. Please note:
 - ~ If a DVI signal is present, the DVI (digital) source is used from the DVI-I connector’s digital pins.
 - ~ If a DVI signal is not present, the selection defaults to the analog signals that are on the DVI-I connector’s analog pins. Note that a customer-supplied **DVI to HD-15** adapter is required to connect to the analog pins.



- The **SDI** button selects the SD-SDI, HD-SDI, or 3G-SDI input source.



- The **LOGO** button selects the stored “full screen” LOGO image for the next transition. If no image is stored, the transition will be to Black. Use the menu to select one of three stored LOGOs for use. In Chapter 4, refer to the [“Using the Logo”](#) section on page 80 for details.

Effects Section

The figure below illustrates the **Effects Section**:

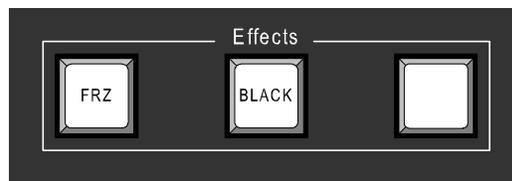


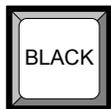
Figure 2-5. Effects Section

The buttons in the **Effects Section** enable you to freeze the selected source on Program and transition to black.

Following are descriptions of each “effects” button:



- The **FRZ** button instantly freezes and unfreezes the current Program source. When the source is frozen, the button is lit solid. In Chapter 4, refer to the [“Using Freeze”](#) section on page 83 for details.



- The **BLACK** button enables you to transition to or from black. The button performs one of two functions, depending on the way the button is defined in the **User Preferences Menu**.
 - ~ If **“Black Auto Take”** is **Off**:
 - Press **BLACK** to pend a transition to or from black. The button blinks to indicate “pending.”
 - Press **TAKE** to perform the transition to or from black.
 - If the transition is **“to”** black, the button lights solid when black is on Program.
 - If the transition is **“from”** black, the button turns off when the selected source is fully on Program.

2. Hardware Orientation

PDS Front Panel

~ If “**Black Auto Take**” is **On**:

- Press **BLACK** to immediately transition to/from black.
 - If the transition is “**to**” black, the button blinks fast during the transition, then lights solid when black is on Program.
 - If the transition is “**from**” black, the button blinks fast during the transition, then turns off when the selected source is on Program.

Important

Regardless of the current **Black Auto Take** mode, if you select (or pend) **BLACK**, the system will not transition to the selected “next” source until black is fully on Program.

In Chapter 4, refer to the “[Using Black](#)” section on page 83 for details.

Take Button



Press **TAKE** to mix the pending (blinking) source to Program, at the current transition rate. Using the **Setup Menu**, you can adjust the transition time from 0 to 12 seconds. If the transition time is set to 0, the transition is a cut. Please note:

- Each time **TAKE** is pressed, the current source on Program and the pending source flip-flop. In Chapter 4, refer to the “[Flip-flop Mode](#)” section on page 78 for additional details.
- The **TAKE** button is also used to transition to/from black, when the “**Black Auto Take**” function is **On** in the **User Preference Menu**.

In Chapter 4, refer to the “[User Preference Menu](#)” section on page 60 for details on the **User Preference Menu**.

PDS Rear Panel

The figures below illustrate the rear panels for PDS-902, PDS-901, and PDS-701:

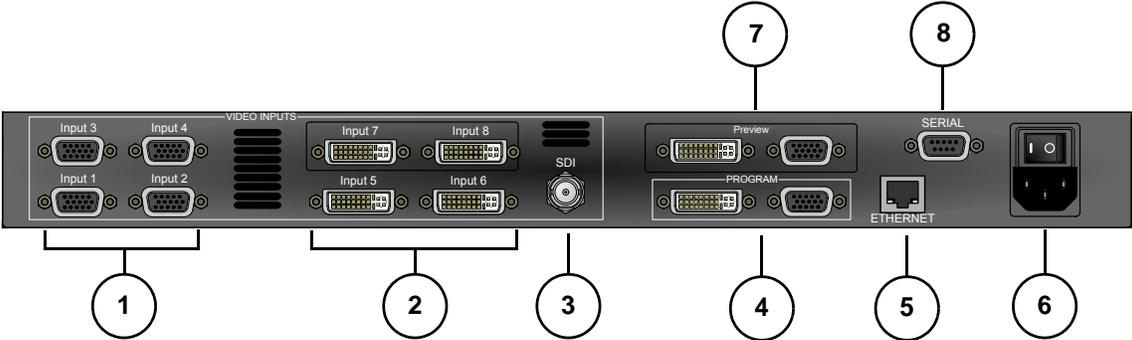


Figure 2-1. PDS-902 Rear Panel



Figure 2-1. PDS-901 Rear Panel



Figure 2-1. PDS-701 Rear Panel

1) Analog Inputs	4) Main Outputs	7) Preview Outputs
2) DVI and Analog Inputs	5) Ethernet	8) Serial
3) 3G/HD/SD SDI Input	6) AC Power	

Following are descriptions of each rear panel connector:

1) Analog Inputs

Four HD-15 connectors are provided for the system's **Analog** inputs. Please note:

- ~ Each input provides 10-bits/color sampling at a maximum 150 MHz.
- ~ Each input supports 1:1 sampling up to 1920x1080@60 Hz. Sources with native pixel rates greater than 150 MHz will be filtered and undersampled at 150 Mhz. These include:
 - 1600x1200@60 (162.0MHz)
 - 1920x1080p@60 (173.0 MHz)

2. Hardware Orientation

PDS Rear Panel

- 1920x1200@60 (193.25 MHz)
- 2048x1080p@60 (183.75 MHz)

~ Composite and S-Video formats are supported.

In Chapter 3, refer to the “[Format Connection Table](#)” section on page 22 for a table of analog inputs that you can connect using a customer-supplied breakout cable. In Appendix A, refer to the “[Analog 15-pin D Connector](#)” section on page 124 for pinouts.

2) DVI and Analog Inputs

Four DVI-I connectors are provided on the PDS-902 and PDS-901, and two on the PDS-701, for both digital and analog inputs.

- ~ Using the connector’s digital pins, an 8-bit digital input is supported.
- ~ Using the connector’s analog pins, RGBHV, analog composite, S-Video, and YUV formats are supported. A customer-supplied breakout cable or **DVI to HD-15** adapter is required for these connections.

In Appendix A, refer to the “[DVI-I Connector](#)” section on page 125 for pinouts.

3) 3G/HD/SD SDI Input

One BNC connector is provided for the SD-SDI, HD-SDI, or 3G-SDI input.

4) Main Outputs

Two connectors are provided for the PDS’s main program outputs. Both outputs have the same resolution, and both can be used simultaneously.

- ~ One DVI-I connector is provided for the system’s digital program output. There are no analog outputs on this connector. In Appendix A, refer to the “[DVI-I Connector](#)” section on page 125 for pinouts.

Note

The DVI-I connector allows you to use both **DVI-D** and **DVI-I** cables as required.

- ~ One HD-15 connector is provided for the system’s analog output. In Appendix A, refer to the “[Analog 15-pin D Connector](#)” section on page 124 for pinouts

5) Ethernet

One RJ-45 connector is provided for 10/100BaseT **Ethernet** communications with the PDS system. The port is used for running the built-in web-based GUI, for diagnostics, or for command-line operations via Telnet (using port 23).

▲ telnet 192.168.0.10 23

In Appendix A, refer to the “[Ethernet Connector](#)” section on page 126 for pinouts.

6) AC Power

One **AC Connector** is provided for connecting PDS to AC. The integral switch turns the chassis on and off. In Appendix A, refer to the “[Physical and Electrical Specifications](#)” section on page 123 for power details.

7) Preview Outputs

Two outputs are provided on the PDS-902 for connecting to the Preview monitor: an HD-15 connector for analog monitors and a DVI connector for digital displays.

8) Serial

2. Hardware Orientation

PDS Rear Panel

One DB-9 connector is provided for **Serial** communications with the PDS system. The port is also used for diagnostics or command-line operations.

2. Hardware Orientation

PDS Rear Panel

3. Installation

In This Chapter

This chapter provides detailed instructions for installing the PDS hardware. The following topics are discussed:

- [Safety Precautions](#)
- [Unpacking and Inspection](#)
- [Site Preparation](#)
- [Rack-Mount Installation](#)
- [Cable and Adapter Information](#)
- [Signal Installation](#)
- [Format Connection Table](#)

3. Installation

Safety Precautions

Safety Precautions

For all PDS installation procedures, observe the following important safety and handling rules to avoid damage to yourself and the equipment:

- To protect users from electric shock, ensure that the power supplies for each unit connect to earth via the ground wire provided in the AC power cord.
- The AC Socket-outlet should be installed near the equipment and be easily accessible.

Unpacking and Inspection

Before opening the PDS shipping box, inspect it for damage. If you find any damage, notify the shipping carrier immediately for all claims adjustments. As you open the box, compare its contents against the packing slip. If you find any shortages, contact your sales representative.

The PDS shipping box contains the PDS unit, a power cord, and a CD. Once you have removed all the components from their packaging and checked that all the components are present, visually inspect the unit to ensure there was no damage during shipping. If there is damage, notify the shipping carrier immediately for all claims adjustments.

Site Preparation

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

Rack-Mount Installation

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

Note

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

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

- Maximum ambient operating temperature for the unit is 40 degrees C.
- 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.

3. Installation

Cable and Adapter Information

- Rack mount each PDS chassis from the front rack ears using four rack screws (not supplied). Rack threads may be metric or otherwise — depending upon the rack type.
- Install the *lower* of the two mounting holes first.

Cable and Adapter Information

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

Table 3-1. PDS System Cables

Cable	Description	Note
Remote Connections		
RJ-45 Ethernet Cable	For use with PDS Web Interface	Customer Supplied
LED Display Connections		
RJ-45 Ethernet Cable, cat5 or better	For connection to your LED display.	Customer Supplied
Power Connections		
AC Power Cord	AC Power, 7 foot, 10A	1 Cord Supplied

Power Cord and Line Voltage Selection

The PDS is rated to operate with the following specifications:

Input Power: 100-240 VAC, 50-60 Hz

Power Consumption: 100 Watts maximum

The PDS 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 the PDS is used in the 230-volt mode, 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.

3. Installation

Cable and Adapter Information



Avertissement La choix de la ligne de voltage se réalise automatiquement par le PDS Transformateur Graphique. On n'a pas besoin du controller usager pour la choix de la ligne de voltage.



Warnung Das PDS gerät mu beim Anschlu an 240V ~ mit einer vom VDE auf 250V/10A geprüften Netzleitung mit einem Schukostecker ausgestattet sein.

Signal Installation

The figure below illustrates a sample PDS system. Use this figure for reference during the signal installation process.

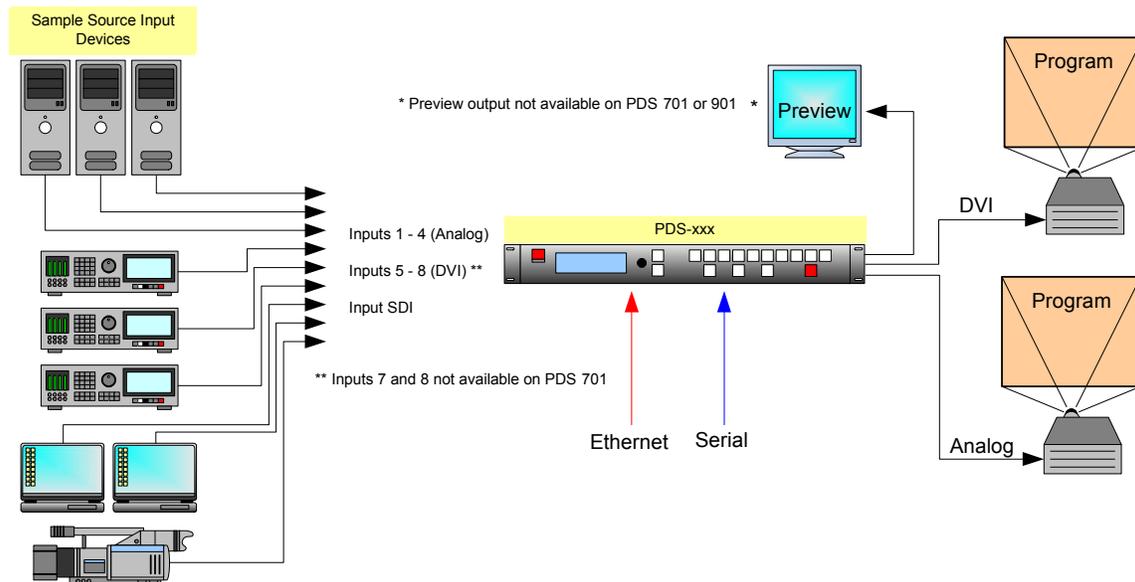


Figure 3-1. PDS System Diagram (sample)

- Use the following steps to install signals to/from the PDS:
 1. **Input connections** — any combination of inputs can be connected.
 - a. As required, connect analog RGBHV sources to **Inputs 1** through **4**. Refer to the [“Format Connection Table”](#) section on page 22 for a table of analog input combinations.
 - b. As required, connect DVI sources to **Inputs 5** through **8** (using the connector’s digital pins). Inputs 7 and 8 are not available on PDS-701.
 - c. As required, connect analog sources to **Inputs 5** through **8** (using the connector’s analog pins). A customer-supplied breakout cable or **DVI to HD-15** adapter is required for this connection. Inputs 7 and 8 are not available on PDS-701.
 - d. As required, connect an HD-SDI or SD-SDI source to **Input SDI**.
 2. **Output connections** — up to three outputs can be connected:
 - a. If you are connecting the PDS to a digital projector (for example) or other target device, connect the **DVI Output** to the projector’s DVI input.
 - b. If you are connecting the PDS to an analog projector (for example) or other target device, connect the **Analog (HD-15) Output** to the projector’s analog input.
 - c. If you are connecting the PDS 902 to a Preview monitor, connect the **Preview DVI or Analog (HD-15) Output** to the monitor.

3. Installation

Format Connection Table

3. **GUI connection** — to configure your system to run from the built-in web-based GUI, perform the following steps:
 - a. Ensure that your PC (or laptop) uses Windows® 7, Windows® 2000, or Windows XP. If using a mobile device, ensure that it uses one of the following operating systems:
 - IOS 4+
 - Android 2.3+
 - Android with Chrome®
 - BB OS 6+
 - BB Tablet OS 1+
 - b. Ensure that your PC (or laptop) has a web browser installed. The following browsers are supported:
 - Internet Explorer® 10+
 - Mozilla Firefox® 14+
 - Google Chrome® Version 19.0+
 - Safari
 - c. Connect the PDS's Ethernet port to a Switch.
 - d. Connect the Switch to your PC (or laptop).

This completes the required “physical” connections. Refer to Chapter 5, “[GUI Operations](#)” on page 87 for installation and operating instructions.

4. **Communications connection** — two methods are available for remote control:
 - a. Connect the PDS's **Ethernet** port to an Ethernet switch, and connect the switch to the other Ethernet devices in your local system. This enables you to communicate with the PDS via Telnet. In Appendix B, refer to the “[Communicating with PDS](#)” section on page 131 for details.
 - b. For a serial remote connection, connect the PDS's **Serial** port to the serial port of a laptop or a PC. In Appendix B, refer to the “[Communicating with PDS](#)” section on page 131 for details.
 - c. This completes system signal installation. Please continue with system setup, menu orientation and operations, as outlined in Chapter 4, “[Operation](#)” on page 25.

Format Connection Table

Use the following table to connect various source formats to the PDS, using the analog HD-15 connectors (on **Inputs 1** through **4**). Please note:

- **RGB format** — typical devices: Computers
- **YUV or YP_bP_r (Betacam) format** — typical devices: DVD player, Betacam deck

Using a customer supplied VGA to 5 x BNC breakout cable, multiple input combinations

3. Installation

Format Connection Table

are possible. Cells with checks denote the connections required for the indicated format.

Table 3-2. Analog Input Combinations using Breakout Cable

Breakout Cable Wire Color	Composite Video	S-Video (Y/C)	YUV (Y _P P _r)	RGB Sync on Green	RGB Comp Sync	RGB Separate H V
R			✓ (P _r)	✓	✓	✓
G	✓	✓ (Lum)	✓ (Lum)	✓	✓	✓
B		✓ (Chrom)	✓ (P _b)	✓	✓	✓
H Sync					✓	✓
V Sync						✓

Please contact **Barco Technical Support** for information on obtaining breakout cables. In Appendix C, refer to the "[Contact Information](#)" section on page 173 for details.

3. Installation

Format Connection Table

4. Operation

In This Chapter

This chapter provides comprehensive menu descriptions and detailed operating instructions for the PDS. The following topics are discussed:

- [Control Overview](#)
- [Power-Up Initialization](#)
- [Button States](#)
- [Quick Setup and Operations](#)
- [Menu Tree](#)
- [Using the Menu System](#)
- [Quick Function Reference](#)
- [Status Menu](#)
- [Setup Menu](#)
- [Using Inputs](#)
- [Using the Logo](#)
- [Using Freeze](#)
- [Using Black](#)
- [Using Front-Panel Lockout](#)

4. Operation

Control Overview

Control Overview

There are several ways to control the PDS:

- The front panel is ideal for all basic operations. Available controls include the **Display Section** and the buttons in the **Inputs Section** and the **Effects Section**.
 - The built-in web-based GUI is ideal for intuitive point-and-click operations. Refer to Chapter 5, “[GUI Operations](#)” on page 87 for additional details.
 - The PDS can also be controlled remotely via **Ethernet** or **Serial** communications. See Appendix B “[Remote Control](#)” on page 129 for additional details.
-

Power-Up Initialization

After connecting power to the PDS, locate the power switch on the back of the chassis, and turn power **ON**. While the system is initializing, the following messages are displayed:

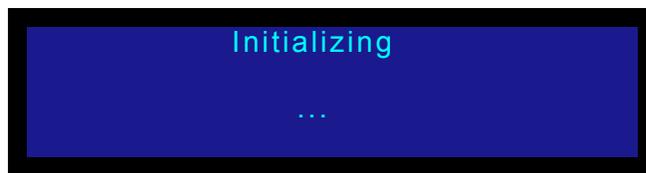


Figure 4-1. System Initialization Message 1 (sample)

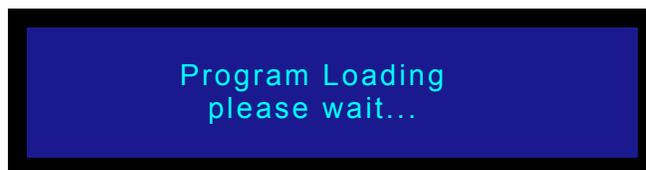


Figure 4-2. System Initialization Message 2 (sample)



Figure 4-3. System Initialization Message 4 (sample)

The “version” line in the above menu shows the software version that is currently installed. This version number changes as software upgrades are released.

When you first start up a PDS that has stored logos, a message like the one in the following

illustration appears during initialization:

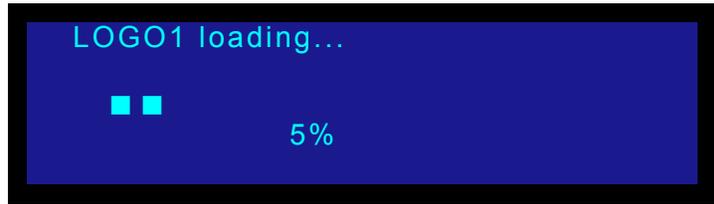


Figure 4-4. Logo Initialization Message (sample)

After system initialization is complete, the **Status Menu** appears.

Button States

Remember that there are three states for the buttons in the **Inputs Section**:

- **Off** — the input is not selected for a transition.
- **Blinking** — the blinking status depends on the type of button:
 - ~ For an **input** button:
 - When blinking **slow**, the input is ready to be transitioned to Program.
 - ~ For an **effect** button (**BLACK**):
 - When blinking **slow**, the button's "auto take" mode is **OFF**, and the effect is pending for the next transition.
- **Lit Solid** — the input or the effect is on Program.

Remember also that when you press **TAKE**, the PDS automatically flip-flops the current source on Program with the "pending" source. Refer to the "[Flip-flop Mode](#)" section on page 78 for additional information.

Quick Setup and Operations

For the optimum speed in setting up and operating your system, use the following steps. For reference, links are provided to the appropriate sections in this guide.

1. **Connect power** — Ensure that power is properly connected to the PDS. (Chapter 3, "[Installation](#)," page 17.)
2. **Connect inputs** — Connect all input sources to the PDS. (Chapter 3, "[Signal Installation](#)," page 21.)
3. **Connect outputs** — Connect the output(s) of the PDS to your projector(s) or other target devices. (Chapter 3, "[Signal Installation](#)," page 21.)
4. **Turn on power** — Turn on power to the PDS, your projector(s), and to all peripheral equipment. (This chapter, "[Power-Up Initialization](#)," page 26.)
5. **Factory reset** — If you are using the PDS for the first time, or if you are using a PDS that has just returned from another event, perform a full factory reset to restore system configurations. (This chapter, "[Factory Reset Menu](#)," page 75.)

4. Operation

Quick Setup and Operations

6. **Launch GUI** — **(Optional)** If you want to run the system from the web-based GUI, ensure that Ethernet is connected between your PC and the PDS, then launch the GUI. (Chapter 5, “[GUI Operations](#),” page 87.)
7. **Set output format** — Set the desired output resolution and frame rate. (This chapter, “[Output Format](#),” page 52.)
8. **Enable test pattern** — Turn on the desired test pattern, verify that you have an image, and make the necessary adjustments. When complete, turn off the test pattern. (This chapter, “[Test Pattern](#),” page 52.)
9. **Save output configuration** — After completing all output adjustments, save the output configuration. (This chapter, “[Save Config](#),” page 54.)
10. **Select and adjust inputs** — As required, select an input, and perform the necessary adjustments. (This chapter, “[Input Menu](#),” page 38.)
11. **Save input configuration** — After completing all adjustments for an input, save the input configuration. (This chapter, “[Save Config](#),” page 48.)
12. **Repeat for each input** — repeat steps 10 and 11 for each input that you have connected to the PDS.
13. **Adjust system parameters** — As required, adjust all desired system parameters such as transition time, display brightness, and all user preferences. (This chapter, “[Trans Time](#),” page 60 and “[System Menu](#),” page 65.)
14. **Save system configuration** — After completing all system adjustments, save the system configuration. (This chapter, “[Save System State](#),” page 74.)
15. **(Optional) Remote Control** — To control the PDS remotely, ensure that Ethernet or Serial communications are connected, then establish communications and issue commands. (Appendix B, “[Remote Control](#),” page 129.)
16. **Ready to roll** — With all output, input and system configurations saved, press the desired input button, and press **TAKE**.

Note

For advanced system operations, specific system “tweaks” and operating descriptions on every feature, please start with the “[Quick Function Reference](#)” section on page 32, and select the function that you wish to perform.

Menu Tree

The figure below illustrates the entire PDS menu tree. Please use this diagram for reference as you learn how to operate the system.

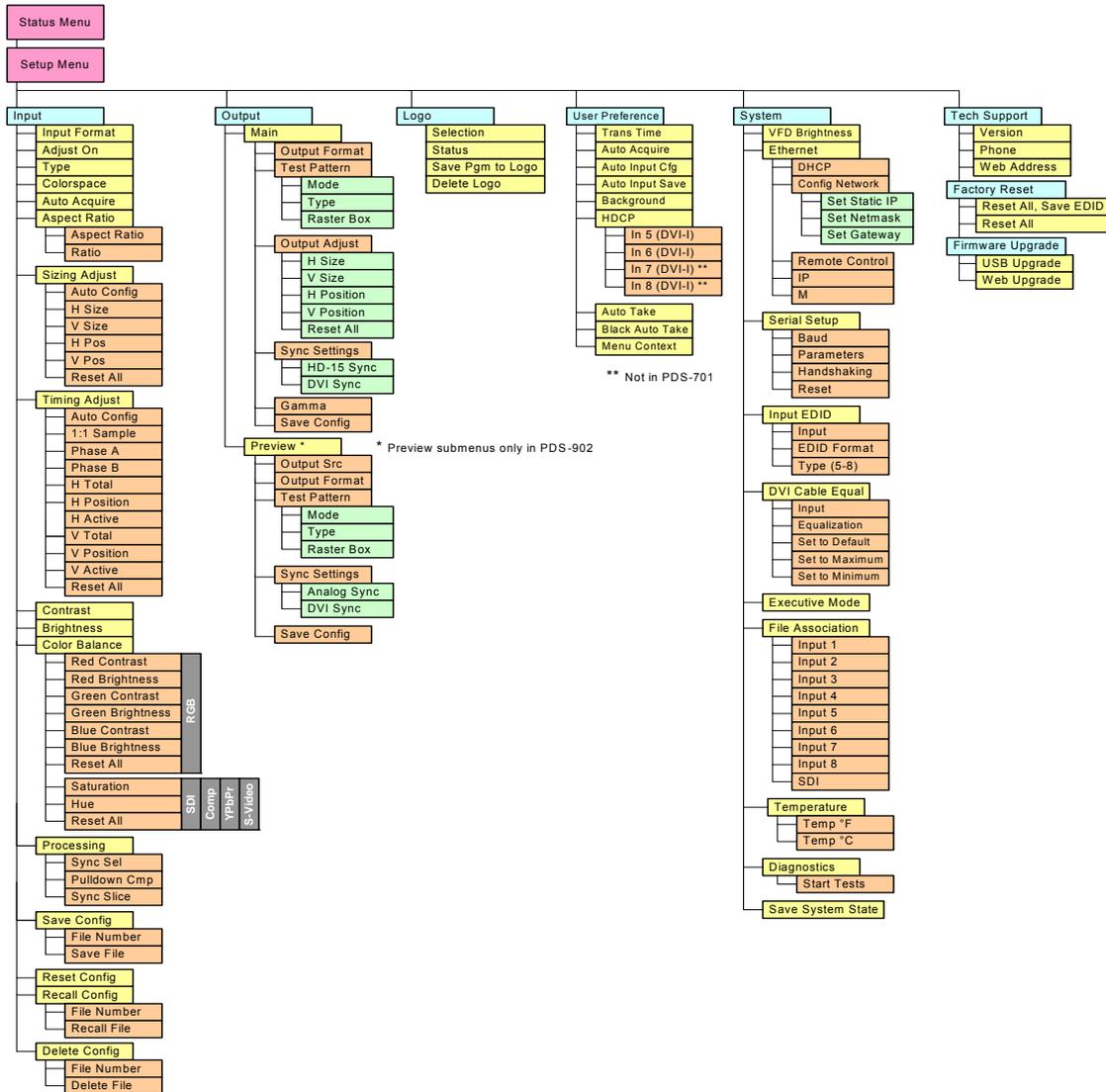


Figure 4-5. PDS Menu Tree

* The “Auto Config” selection in the Sizing Adjust and Timing Adjust menu is only available when an analog input is chosen, except for analog NTSC and PAL.

4. Operation

Using the Menu System

Using the Menu System

This section lists the rules and conventions for using PDS's menu system. For reference, the figure below illustrates the **Setup Menu**:



Figure 4-6. Setup Menu (sample)

For all setup menus, please note the following important menu rules and conventions:

- The top line names the current menu, in all capital letters.
- Subsequent lines typically display two fields:
 - ~ For a listed **function**, the left-hand field names the function, and the right-hand field is the function's current parameter or value.
 - ~ For a listed **sub-menu**, the left-hand field names the sub-menu that you can access, and the right-hand field displays the double arrow (>>), indicating that a sub-menu is available.
- The “navigation” **cursor** (>) in the left-hand column indicates the current line on which action can be taken. This arrow “scrolls” as you rotate the knob.
- Scrolling:
 - ~ Turn the **ADJUST** knob counter-clockwise (**CCW**) to scroll down.
 - ~ Turn the **ADJUST** knob clockwise (**CW**) to scroll up.
- To enter a sub-menu, scroll to the desired line and press **SEL**.

Note

Throughout this chapter, the term “**select**” is used as an abbreviation for “scroll to a menu line and press **SEL**.”

▲ Select the **Input** field to...

- To change a parameter, scroll to the desired line and press **SEL**. The cursor changes to the “edit” cursor (#). Use the **ADJUST** knob to modify the value:
 - ~ Turn the **ADJUST** knob **CW** to increase a value.
 - ~ Turn the **ADJUST** knob **CCW** to decrease a value.
- To accept a parameter or value, press **SEL**. The edit cursor changes back to the navigation cursor.

Note

You must press **SEL** to activate a PDS function.

- In the “edit” mode, to exit (or cancel) without changing the original parameter, press **ESC**.
- To navigate back up the menu structure, press **ESC**. Each press takes you back up the menu tree by one level.

4. Operation

Using the Menu System

- The **SEL** button is also used to answer “**Yes**” to certain menu queries. The **ESC** button is also used to answer “**No**” to certain menu queries.

Note

The display itself is four lines high, and the **ADJUST** knob is used to scroll through the various lines. Throughout this chapter, *entire* menus will be shown for clarity — rather than a series of four-line sections.

- If a value is displayed between brackets, (e.g., **[SMPTE]**) this indicates that the value can not be changed.

4. Operation

Quick Function Reference

Quick Function Reference

Use the following table to quickly access the proper section for a specific function. Both hyperlinks and page numbers are provided.

Table 4-1. PDS Quick Function Reference Table

How to:	Use the Following Section:	Page
Adjust background color	Background	62
Adjust gamma	Gamma	54
Adjust image brightness	Brightness	46
Adjust image color balance	Color Balance	46
Adjust image contrast	Contrast	46
Adjust input processing	Processing	47
Adjust input timing	Sizing Adjust	43
Adjust transition time	Trans Time	60
Associate configuration files to inputs	File Association	72
Check software version	Tech Support Menu	75
Contact Tech Support	Tech Support Menu	75
Delete input configuration	Reset Config	49
Display a test pattern	Test Pattern	52
Display the raster box	Test Pattern	52
Identify button states	Button States	27
Learn the menu tree	Menu Tree	29
Lock out the front panel completely	Full Lockout Mode	85
Lock out the front panel, except inputs	Executive Mode	71
Perform factory reset	Factory Reset Menu	75
Perform quick setup and operations	Quick Setup and Operations	27
Perform system diagnostics	Diagnostics	73
Power up the system	Power-Up Initialization	26
Reset input configuration	Save Config	48
Reset system	Factory Reset Menu	75
Save input configuration	Save Config	48
Save output configuration	Save Config	54
Save system state	Save System State	74
Select inputs	Input Selection Rules	77

4. Operation

Quick Function Reference

Table 4-1. PDS Quick Function Reference Table (Continued)

How to:	Use the Following Section:	Page
Set Auto Input Cfg mode	Auto Input Cfg	62
Set Auto Input Save mode	Auto Input Save	62
Set Auto Take mode	Auto Take	63
Set Black Auto Take mode	Black Auto Take	63
Set color input space	Colorspace	40
Set DVI cable equalization	DVI Cable Equal	70
Set Ethernet parameters	Ethernet	66
Set Auto Acquire mode	Auto Acquire	61
Set input format	Input Format	39
Set input type	Type	40
Set Menu Context mode	Menu Context	64
Set or change multiple input configurations	File Association	72
Set or change a single input configuration	Recall Config	50
Set output format	Output Format	52
Set Preview or Program mode	Adjust On	40
Set Serial port parameters	Serial Setup	68
Set up EDID	Input EDID	69
Set up Logo	Logo Menu	59
Set up sync	Sync Settings	54
Set user preferences	User Preference Menu	60
Set VFD brightness	VFD Brightness	65
Understand auto acquire	Using Auto Acquire	79
Use Black	Using Black	83
Use Freeze	Using Freeze	83
Use HDCP	Using HDCP With PDS, the HDCP mode is essentially automatic. Provided that you connect an HDCP compliant monitor, you can select and switch between unprotected sources and "protected" HDCP sources (e.g., a Blu-Ray player) without restriction.	79
Use inputs	Using Inputs	77
Use the Input Menu	Input Menu	38
Use the Logo	Using the Logo	80
Use the Logo Menu	Logo Menu	59

4. Operation

Quick Function Reference

Table 4-1. PDS Quick Function Reference Table (Continued)

How to:	Use the Following Section:	Page
Use the menu system	Using the Menu System	30
Use the Output Menu	Output Menu	52
Use the Preview Menu	Preview Menu (PDS 902 Only)	55
Use the Setup Menu	Setup Menu	37
Use the Status Menu	Status Menu	35
Use the System Menu	System Menu	65
Use the User Preference Menu	User Preference Menu	60
View chassis temperature	Temperature	73
View Logo status	Logo Menu	59
View software version	Tech Support Menu	75
View Tech Support number	Tech Support Menu	75

Status Menu

The **Status Menu** is the system's top level display, which appears by default after the PDS boots up.

- To return to the **Status Menu** from any point within the **Setup Menu**, press **ESC** repeatedly.
- To display the **Setup Menu** from the **Status Menu**, press **SEL**.

The figure below illustrates a sample **Status Menu**:



Figure 4-7. Status Menu (sample)

The **Status Menu** provides information about the current input on Program (the button that is lit solid), and the input that is *next* to be transitioned to Program (the button that is blinking). The **Status Menu** always updates as “current” and “next” sources change.

Please note:

- If **Menu Context** is **ON** (in the **User Preference Menu**), selecting a different input for the “next” transition automatically displays the **Input Menu**. This menu always reflects the source currently on Program. To return to the **Status Menu**, press **ESC** repeatedly.
- If **Menu Context** is **OFF**, the **Status Menu** remains on display when you select a different input.

In the **Status Menu**, the variable fields are as follows:

- **Program Input Type** — Specifies the type of input signal currently on Program.
- **Program Input Format** — Indicates the current input video format, in the form:

Hact x Vact @ Vr Hz

▲ 1280x1024@60 Hz

If the currently selected input does not have a valid input signal, the **Input Format** field displays **Invalid Signal**.

Please note the following conventions for displaying resolutions:

Table 4-2. Status Menu Conventions

Convention	Description
Hact x Vact @ Vr	No symbols. The current format is an exact match from the table. The format has not been “best guessed” or saved.
Hact x Vact @ Vr	Asterisks. The format has been “best guessed.”
[Hact x Vact @ Vr]	Brackets. The exact table match has been saved.
[*Hact x Vact @ Vr*]	Brackets plus Asterisks. The best guessed format has been saved.

4. Operation

Status Menu

- **Next Input Type** — indicates the next input type on Program, and (if applicable), the system's HDCP status. The following labels can appear:
 - ~ HDCP
 - ~ DVI HDCP is OFF.

Important

The label "DVI HDCP is OFF" will appear for any input in which HDCP has been set to OFF within the HDCP menu under User Preference.

- **Next Input Format** — Indicates the input formats on Program, in the form:

Hact x Vact @ Vr Hz

▲ 1400x1050@59.94 Hz

Setup Menu

After PDS initialization is complete, the **Status Menu** appears. This is the system's top-level menu. Refer to the "[Status Menu](#)" section on page 35 for details.

To display the **Setup Menu** from the **Status Menu**, press **SEL**.

Note

When you make changes to input, output and system parameters, your "configuration" information can be stored in non-volatile memory — provided that you perform a "**Save Config**" operation. In this way, your settings will be recalled automatically each time the unit is turned on. Note that if the "**Auto Input Save**" function is enabled in the **User Preferences Menu**, the system automatically saves inputs.

The figure below illustrates the **Setup Menu**:



Figure 4-8. Setup Menu (sample)

Following are descriptions of each **Setup Menu** function:

- [Input Menu](#)
- [Output Menu](#)
- [Preview Menu \(PDS 902 Only\)](#)
- [Logo Menu](#)
- [User Preference Menu](#)
- [System Menu](#)
- [Tech Support Menu](#)
- [Factory Reset Menu](#)
- [Firmware Upgrade Menu](#)

4. Operation

Setup Menu

Input Menu

From the **Setup Menu**, select **Input** to display the **Input Menu**. The **Input Menu** enables you to set parameters for the selected input on Program.

Important

When **LOGO** is selected, only the **Adjust On** and **Auto Acquire** input menu functions are available for adjustment.

The format of the selected input on Program is shown on the second line.

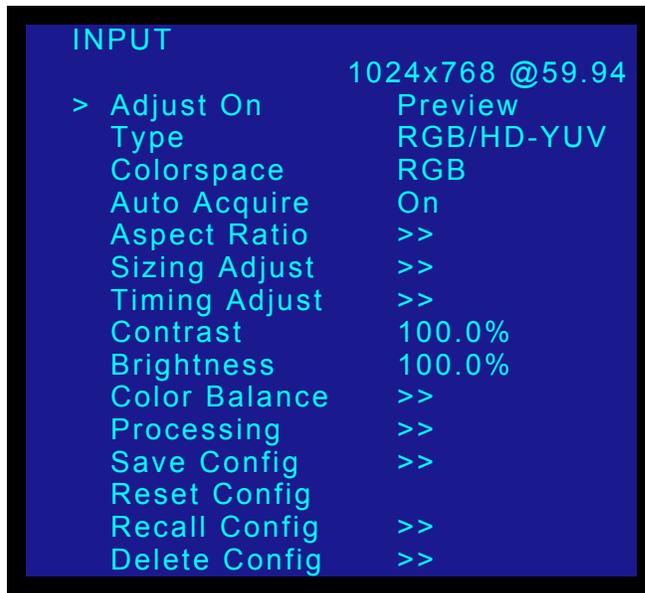


Figure 4-9. Input Menu (sample)

The **Input Menu** can be used in two ways:

- Press an input button *first*, **TAKE** the input to Program, then use the menu to set input parameters.
- While you are already in the **Input Menu**, press a *different* input button and **TAKE** it to Program. The fields update to reflect the values for the new input.

Note

Changing the parameters for one input does not affect the input configuration of the other inputs.

The following sections provide detailed information about **Input Menu** functions:

- [Input Format](#)
- [Adjust On](#)
- [Type](#)
- [Colorspace](#)
- [Auto Acquire](#)
- [Sizing Adjust](#)
- [Contrast](#)
- [Brightness](#)
- [Color Balance](#)
- [Processing](#)
- [About Input Configuration Files](#)
- [Save Config](#)
- [Reset Config](#)
- [Recall Config](#)
- [Delete Config](#)

Input Format

From the **Input Menu**, select the top **Input Format** line to view the “auto-acquired” format for the selected input, or to change the format. The format is shown in the following form:

Hact x Vact @ Vr Hz
▲ 1024x768@59.94

Please note the following important points:

- If you select an input and it does not have a valid signal, “**Invalid Signal**” appears.
 - If an input was previously valid and its signal is lost, the “**Invalid Signal**” message appears.
 - When **Auto Acquire** is **ON** (in the **User Preferences Menu**), the input video format for **non-digital sources** will be detected in the following search order:
 - ~ The saved file as defined in the **File Association Menu**
 - ~ The library of saved configurations for the selected input
 - ~ A best guess (to the closest video format in the library)
- For **digital sources**, when **Auto Acquire** is **ON**, the search order is:
- ~ The saved configuration file as defined in the **File Association Menu**
 - ~ Your library of saved files
 - ~ A direct measurement of the signal
- If the video format is a “best guess” as determined by the “auto acquire” mode, it is displayed (only in the **Status Menu**) within asterisks.
 - ▲ *1024x768@60.11*
 - If you select an input that has been saved (using the **Save Config** function), the video format is displayed (only in the **Status Menu**) within brackets.
 - ▲ [1024x768@59.94] This example is a saved “exact match” from the format table (or library).
 - ▲ [*1024x768@59.90*] This example is a saved “best guess.”
 - When **Auto Acquire** is **OFF**, the system attempts to lock to the signal using the configuration defined in the **File Association Menu** for each input channel. If the input signal is too different from the saved configuration to be usable, the display indicates “**Invalid Signal**.”

4. Operation

Setup Menu

Adjust On

In the **Input Menu**, the **Adjust On** field indicates whether any changes you make using the **Input Menu** will be applied to the Preview or Program source.

For example, if you select Preview, as shown in the illustration below, and change the Background, Color Balance, or other parameters using the **Input Menu**, you can view those changes on the Preview source — while the Program source remains unchanged.

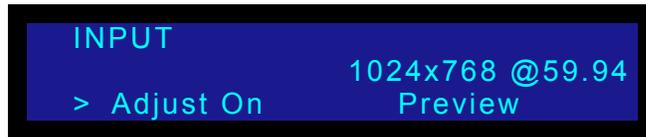


Figure 4-10. Adjust On Field

If both paths are using the same input source, only the selected path is modified.

When **LOGO** is selected, only the **Adjust On** and **Auto Acquire** input menu functions are available for adjustment.

Type

In the **Input Menu**, the **Type** field shows the currently selected input type, and enables you to change the type if required. The available types depend on the selected input:

- For inputs 1 - 4: **CVBS, Y/C, YPBPR, RGB/HD-YUV**
- For inputs 5 - 8 (when Digital): **DVI**
- For inputs 5 - 8 (when Analog): **CVBS, Y/C, YPBPR, RGB/HD-YUV**
- For the **SDI** input: **[SDI]**

Note

The SDI input always shows its type in brackets (e.g., [SDI]), given that this input type cannot be changed.

Colorspace

From the **Input Menu**, select **Colorspace** to change the color space for the selected input on Program. Values depend on the selected input. Please note:

- The default selection for **YP_bP_r** or **YUV** is **SMPTE**.
- The **Colorspace Menu** allows selection between these two values when the input is analog (excluding CVBS, Y/C) or DVI.
- When either the CVBS or Y/C input is selected, only **[SMPTE]** is shown.

- When the following formats are detected as either SD-SDI, HD-SDI, or 3G-SDI, only **[SMPTE]** is shown.

~ NTSC (480i)	~ 1920x1080p @30
~ PAL (576i)	~ 1920x1080sF@23.98
~ 1280x720p @50	~ 1920x1080sF@24
~ 1280x720p @59.94	~ 1920x1080i @50
~ 1280x720p @60	~ 1920x1080i @59.94
~ 1920x1080p @23.98	~ 1920x1080i @60
~ 1920x1080p @24	~ 1920x1080p @50
~ 1920x1080p @25	~ 1920x1080p @59.94
~ 1920x1080p @29.97	~ 1920x1080p @60
~ 2048x1080p @23.98	~ 2048x1080p @24
~ 2048x1080p @25	~ 2048x1080p @29.97
~ 2048x1080p @30	~ 2048x1080p @47.95
~ 2048x1080p @48	~ 2048x1080p @50
~ 2048x1080p @59.94	~ 2048x1080p @60

Auto Acquire

The **Auto Acquire** field is only adjustable between **ON** and **OFF** when **Auto Acquire** is set to **INPUT** in the **User Preference Menu** (refer to the “[User Preference Menu](#)” section on page 60).

When **Auto Acquire** is **ON**, and an input has a saved configuration file, the system attempts to use the saved file. If the input timing matches the timing in the saved configuration file, the saved file is used.

The system always performs a full sync (timing) acquisition on the selected input signal under the following conditions:

- When an input *without* a saved configuration file is selected
- When the input type is changed
- When the input signal’s sync rate is changed
- When an input *with* a saved configuration file is selected, but the input timing is different from the saved configuration

When **Auto Acquire** is **ON**, and the input source is **non-digital**, the system uses the following library search order:

- Saved configuration files defined in the **File Association Menu** for each input channel
- The user’s library of saved files
- A best guess

When **Auto Acquire** is **ON**, and the input source is **digital**, the system uses the following search order:

- Saved configuration files defined in the **File Association Menu** for each input channel
- The user’s library of saved files

4. Operation

Setup Menu

- Direct measurement of the signal

If the input signal's timing is too different from the saved configuration, a good lock may not be possible. In this situation, the “**Invalid Signal**” message is displayed, and the video output will be black. You will also see “**Invalid Signal**” if the configuration file for an input has been deleted.

When **Auto Acquire** is **OFF**, dial in your timing parameters manually.

Please note the following important points:

- It is recommended that you leave the **Auto Acquire** mode **ON**. Then, if the timing changes on any input (whether or not you have a saved config file), you will always get an output image. On the other hand, if the mode is **OFF** and the input timing changes, the output will be black.
- When the **Auto Acquire** mode is **ON**, the PDS automatically detects and acquires the input video type and resolution (in most cases), and limits menu selections to those applicable to the detected video type.
- If you are an advanced user and you know the exact timing parameters for your input(s), you can turn the **Auto Acquire** mode **OFF**, and dial in your timing parameters manually.

Tip

If you have already saved configuration files for your inputs, it is recommended that you turn the **Auto Acquire** mode **OFF**. This provides the fastest transition times. When the mode is **ON**, transition times will be greater, due to the time required to analyze the input timing for each source.

Aspect Ratio

From the **Input Menu**, select **Aspect Ratio** to display the **Aspect Ratio Menu**, which allows you to set a pre-defined or custom ratio for the input.



Figure 4-11. Aspect Ratio Menu (sample)

The following functions are available:

- **Aspect Ratio** — This function allow you to adjust the image to one of the following values: **1:1**, **3:2**, **4:3**, **5:4**, **16:9**, **Custom**.
- **Ratio** — If **Custom** is selected, the **Ratio** line appears:
 - ~ **Adjustment range:** 0.750 to 3.000. The default value depends on the last **Aspect Ratio** selected before **Custom** was chosen.
 - ~ Note that the PDS displays the input video aspect ratio according to the input format detected. For example:
 - ▲ Computer video at 1280x1024@60Hz defaults to 5:4 aspect ratio.
 - ▲ NTSC video defaults to 4:3, HDTV 1080i video defaults to 16:9.

Sizing Adjust

From the **Input Menu**, select **Sizing Adjust** to display the **Sizing Adjust Menu**, which allows for exact positioning of the input's active area.



Figure 4-12. Sizing Adjust Menu (sample)

The following functions are available:

- **Size and Position** — These functions allow you to size the image, and then position it within the selected aspect ratio. The full-screen nature of the final output will be maintained.
 - ~ Select **H Size** to size both the left and right edges simultaneously, removing unwanted left/right input edge pixels from the output “window”. Values are in pixels. The output “window” is maintained in both size and aspect ratio.
 - ~ Select **V Size** to size both the top and bottom edges simultaneously, removing unwanted top/bottom input edge pixels from the output “window”. Values are in lines. The output “window” is maintained in both size and aspect ratio.

Note

For both **H Size** and **V Size**, the function always cuts *into* the visible image, equally on both sides, and never exposes video outside the source's active area. As you size, the PDS scales the input up to fit the selected aspect ratio.

Note

The maximum allowable H/V size is up to 33% of the input's corresponding active area. For example, for a 1280x1024 input, the maximum **H Size** is 422 and the maximum **V Size** is 336.

- ~ Select **H Pos** to pan a “sized” image left and right — within the selected aspect ratio. Values are in pixels. The value reads **[0]** if the image has not been sized horizontally.
- ~ Select **V Pos** to pan a “sized” image up and down — within the selected aspect ratio. Values are in lines. The value reads **[0]** if the image has not been sized vertically.

Note

If both **H Size** and **H Position** are greater than **0**, and **H Size** is adjusted so that it approaches **0**, at a calculated limit, **H Position** automatically adjusts itself to approach **0**. This same rule holds true for **V Size** and **V Position**.

4. Operation

Setup Menu

Timing Adjust

From the **Input Menu**, select **Timing Adjust** to display the **Timing Adjust Menu**, which allows for adjustments to input sampling, sampling phase, pixel counts, and line counts.



Figure 4-13. Timing Adjust Menu (sample)

Note

Timing Adjust Menu settings apply to *analog input sources* only, *except* for NTSC and PAL sources. For all digital sources and analog NTSC or PAL sources, these fields are informational only and will be bracketed.

The following functions are available:

- **Sampling** — Select this function to change the sampling for the selected input. Available values are: **Off** and **On** (default). Please note:
 - ~ When **1:1 Sample** is **On**, the system provides pixel-for-pixel sampling, and generally better image quality.
 - ~ When **1:1 Sample** is **Off**, the system performs multiple samples for every pixel, with a resulting “softer” image.
 - ~ **1:1 Sample** can only be changed for RGB and YP_bP_r analog inputs, except analog NTSC or PAL formats.
 - ~ All other input types have defined sample clocks that are inherently **1:1**. If the input is set to one of the other types, the value is [**On**].
- **Phase A, Phase B** — These two selections are advanced features which enable you to adjust the sample phase of the system’s two scalers. Typically, they do not need to be adjusted. Refer to the “[Adjusting Sample Phase](#)” section on page 45 for instructions.

The six “**Total/Position/Active**” values are initially filled in by the **Auto Config** command, or set to their default values. You can adjust values for Analog RGB or YP_bP_r sources only. Digital and decoded sources show values in brackets.

Please note:

- When **1:1 Sample** is set to **On**, values are the true timing measurements for the analog RGB or YP_bP_r inputs.
- When **1:1 Sample** is set to **Off**, values represent the oversampling factor being used.

For all **Horizontal** “active area” fields, all units are measured in pixels:

- **H Total** — adjusts the total pixel count per line. This value cannot be adjusted if the input type is **DVI / SDI**.

For all **Vertical** “active area” fields, all unit are measured in lines.

- **V Total** — indicates the total line count per frame. This value is measured, and can never be adjusted. Its value will always be shown in brackets.

Adjusting Sample Phase

The PDS has two A-to-D converters, which are referred to as **Phase A** and **Phase B** in the **Timing Adjust Menu**. The sample phase value of each scaler can be changed by the **Auto Config** menu option, or set to the default value of **0** (zero). If required, advanced users can fine-tune the image by adjusting the sample clock phase of each scaler directly — *but only for inputs whose “type” is analog*.

- **Adjustment range:** -16 to 15
- **Default:** 0

Note

Auto Config will only show in the **Sizing Adjust** or **Timing Adjust** menu when the input source is analog, except for analog NTSC or PAL formats.

- Use the following steps to adjust sample clock phase of each scaler, for inputs whose “type” is analog.
 1. From the **Input Menu**, navigate to the **Input Sizing Menu**, and scroll to the **Phase A** or **Phase B** line.
 2. In the **Inputs Section**, select an input whose “type” is analog.
 3. **TAKE** the input to Program. The button lights solid.
 4. Pend the *same input* for the next transition. In this mode, only one button will now be lit solid, and no buttons will be blinking.
 5. On the **Input Sizing Menu**, note that one of the two **Phase** lines will be bracketed, and the other will be unbracketed. When you press **TAKE**, the brackets will switch positions. The un-bracketed line is the active scaler.



Figure 4-14. Timing Adjust Menu, phase indication of active scaler

6. On the selected input, put up a **Burst** pattern. For example, if the source is a computer, use a program such as **DisplayMate**® to generate the pattern.
7. Scroll to the unbracketed **Phase** line, and press **SEL**.
8. Use the **Adjust** knob to tweak the burst pattern for the maximum visual clarity and a minimum amount of visual noise, then press **SEL** to accept the new value.
9. Press **TAKE** to activate the other scaler.
10. Repeat steps 7 and 8 for the other scaler.

4. Operation

Setup Menu

11. Press **ESC** to return to the **Input Menu**.
12. Scroll to the **Save Config** line, and press **SEL** to save the configuration for the selected input.
13. Repeat the entire adjustment procedure from step 1, for all remaining inputs whose “type” is analog — and be sure to save the input configuration each time you complete an adjustment for a selected input.

Contrast

From the **Input Menu**, select **Contrast** to change the contrast of the selected input.

- **Adjustment range:** 75.0% to 125.0%
- **Default:** 100%

Brightness

From the **Input Menu**, select **Brightness** to change the brightness of the selected input.

- **Adjustment range:** 75.0% to 125.0%
- **Default:** 100%

Color Balance

From the **Input Menu**, select **Color Balance** to display one of two available **Color Balance Menus**. The menu that appears depends on the current input's colorspace. See “Colorspace” on page 40. Each menu allows you to adjust the input's color balance parameters.

- [RGB Color Balance Menu](#)
- [SMPTE Color Balance Menu](#)

RGB Color Balance Menu

If the current input's colorspace is set to **RGB**, the **Color Balance Menu** appears:



Figure 4-15. Color Balance Menu (RGB sample)

Each of the individual contrast and brightness settings operates in conjunction with the “global” contrast and brightness settings in the **Input Menu**.

- **Adjustment range** (all values): -25.0% to +25.0%
- **Default** (all values): 0.0%
- Select **Reset All** to set all values back to their default settings.

SMPTE Color Balance Menu

If the current input's colorspace is set to **SMPTE**, the **Color Balance Menu** appears:



Figure 4-16. Color Balance Menu (SMPTE sample)

Please note:

- **Saturation** is measured in percentage.
 - ~ **Adjustment range** (Composite, S-Video, YP_bP_r, SDI): 0% to 150% (100% nominal)
- **Hue** is measured in degrees, and is [N/A] for YP_bP_r and SDI inputs.
 - ~ **Adjustment range**: -90 to +90
- Select **Reset All** to set all values back to their default settings.

Processing

From the **Input Menu**, select **Processing** to display the **Processing Menu**:



Figure 4-17. Processing Menu (sample)

The following functions are available:

- **Sync Selection** — This function applies only to **Analog RGB** inputs. The PDS automatically selects the syncs for digital sources, composite, S-video, and YP_bP_r inputs. For these inputs, the value field indicates **[N/A]**.
The sync choices are **Auto**, **H/V** (horizontal/vertical sync), **CSync** (composite sync) and **SOG** (sync on green).
 - ~ In **Auto** mode, the system finds sync in any of the three possible sources.
 - If one of the sources is chosen, the system uses only that input as a sync source.
 - If the system does not find sync at that source, it acts as if it is in **Auto** mode.
 - ~ The default selection for Analog RGB inputs is **Auto**.
- **Pull-down Compensation** — This function only applies to standard video (component, s-video, composite and SD/HD SDI) inputs. The mode, which detects the 3:2 film pull-down sequence, should be turned **ON** to properly process video derived from film source material.

4. Operation

Setup Menu

~ **Adjustment range:** OFF, ON

~ **Default:** OFF

- **Sync Slice** — This function selects the sync comparator threshold for RGsB (RGB with Sync on Green) or YP_bP_r analog component video sources. When PDS detects Macrovision copy protection on the incoming YP_bP_r NTSC/PAL video, the **Sync Slice** value is automatically repositioned to 60mV to account for the reduced amplitude sync pulse.

~ **Adjustment range:** 8mV to 256mV, adjustable in steps of 8mV

~ **Default:** 128mV

About Input Configuration Files

The PDS supports saving up to 64 input configuration files in non-volatile memory, each of which is available to the nine physical inputs (1 through 8 and SDI).

Input configuration files contain settings that govern everything from pixel resolution to aspect ratio and color balance — any setting you can view or change using the **Input Menu**. By default, an input's configuration file number is the same as the number of the input — Input 1 is assigned to configuration file number 1, and so on. You can set, delete, save, or recall the configuration file for an input. You can associate any number of saved files to any number of inputs.

When you change the configuration file for an input, the timing in the new configuration file must match the input's timing. For example, if the input uses NTSC (720 x 480) timing, that input cannot use a configuration file that uses WXGA (1280 X 768).

When you delete user-defined configuration files, those files are no longer available for use by any input.

For more information about using input configuration files, refer to the following sections:

- [Save Config](#)
- [Reset Config](#)
- [Recall Config](#)
- [Delete Config](#)

Save Config

After you use the **Input Menu** to change one or more input settings, you can save the changes to non-volatile memory by selecting **Save Config**. You can save the changes to the current configuration file for the selected input, or to a different file.

■ To save changes to an input's configuration, use the following procedure:

1. Select **Save Config** from the **Input Menu**. The menu shown in the following illustration appears:



Figure 4-18. Save Config Menu (sample)

2. Select a value for **File Number**, or keep the default file number.

If you save to another configuration file, the **File Association Menu** is updated to associate the new file to the current input. For more information about the **File Association Menu**, refer to the "[File Association](#)" section on page 72.

Important

You can assign a configuration file to more than one input. If you do so, you must exercise caution when deleting the file, because it will be deleted for all inputs.

3. Scroll down to **Save File** and press **SEL**.

A confirmation message is briefly displayed, after which the system returns to the **Input Menu**.



Figure 4-19. Saving Input File message (sample)

If you change a setting in the **Input Menu** and press **ESC** *without* saving changes, your change will not be restored the next time you select the input or power up the system. The system displays the following prompt:

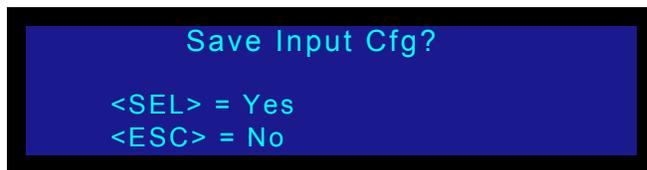


Figure 4-20. Save Input Configuration Prompt (sample)

- Press **SEL** to save changes.
- Press **ESC** to exit without saving.

Reset Config

From the **Input Menu**, select **Reset Config** to remove all user-entered configuration settings from the current input on Program, and restore the input's parameters from the system's internal library values. When you select **Reset Config**, you will be prompted to reset (**SEL**) or continue without resetting (**ESC**).

Note that if the current format was derived as a best guess, those "guess" values are restored when you press **SEL**.

Note

Resetting configuration parameters does not change the configuration file associated with the input — it simply assigns the restored parameters to the existing configuration file. The file number shown in the **File Association Menu** does not change.

4. Operation

Setup Menu

Recall Config

From the **Input Menu**, select **Recall Config** to restore a configuration file that was previously associated with the current input. Using the **Recall Config Menu** shown in the following illustration, you can change from the current configuration file for the input to any saved configuration file:



Figure 4-21. Recall Config Menu (sample)

A number in brackets indicates the only file that is available for recall. If no files are available, a message will be displayed to indicate that there are no saved files.

After you select a file number and choose **Recall File**, press **SEL** to initiate the recall or **ESC** to continue using the current configuration.

When you press **SEL**, if the input timing matches the timing in the recalled input configuration file, the input uses the recalled configuration file immediately. The **File Association Menu** is also updated to reflect your change.

If the input and configuration file timings do not match and **Auto Acquire** is **ON**, an “auto acquire” will be performed. For more information about this function, refer to the [“Using Auto Acquire”](#) section on page 79.

Delete Config

From the **Input Menu**, select **Delete Config** to delete any *saved* configuration file. A deleted configuration file cannot be recalled by any input.

After you delete a configuration file, what happens the next time you select an input that uses the file depends on whether **Auto Acquire** is **ON** (in the **User Preference Menu**). When **Auto Acquire** is **ON** and an input does *not* have a saved configuration file, the PDS does a full sync (timing) acquisition on the selected input signal.

When **Auto Acquire** is **OFF**, the system will use the configuration file defined in the **File Association Menu**, to the greatest extent possible. If the input does not have a saved configuration file, the PDS displays the “**Invalid Signal**” message and the video output is black.

For more information about **Auto Acquire**, refer to the [“Using Auto Acquire”](#) section on page 79 and the [“Auto Acquire”](#) section on page 79.

■ Use the following procedure to delete a configuration file:

1. From the **Input Menu**, select **Delete Config**. The menu shown in the following illustration is displayed:



Figure 4-22. Delete Config Menu (sample)

4. Operation

Setup Menu

The value of **File Number** is set to the current configuration file for the input. You can either delete this file, select another saved configuration file and delete it, or press **ESC** to continue without deleting.

2. Select a file to delete. Then, scroll down to **Delete File** and press **SEL**.

A confirmation message is briefly displayed, after which the system returns to the **Input Menu**:



Figure 4-23. Deleting Input Configuration Message (sample)

Important

You can assign a configuration file to more than one input. If you do so, you must exercise caution when deleting the file, because it will be deleted for all inputs.

4. Operation

Setup Menu

Output Menu

From the **Setup Menu**, select **Output** to display the **Output Menu**.



Figure 4-24. Output Menu (sample)

Following are descriptions of each **Output Menu** function:

- [Main](#)
- [Preview Menu \(PDS 902 Only\)](#)

Main

Following are descriptions of each **Output Menu** function:

- [Output Format](#)
- [Test Pattern](#)
- [Output Adjust](#)
- [Sync Settings](#)
- [Gamma](#)
- [Save Config](#)

Output Format

From the **Output Menu**, select the top **Output Format** line to view or change the current output format. This line indicates the format in the following form:

Hact x Vact @ Vr Hz

The output format for the PDS can be set to any of the progressive outputs.

Note

The output format is not updated until **SEL** is pressed.

Test Pattern

From the **Output Menu**, select **Test Pattern** to display the **Test Patterns Menu**:



Figure 4-25. Test Patterns Menu (sample)

The following functions are available on the menu:

- **Mode** — This function enables or disables the test pattern generator.

- **Type** — This function enables you to select a test pattern. Available choices are:
 - ~ H Ramp
 - ~ V Ramp
 - ~ 100% Col Bars
 - ~ 16 x 16 Grid
 - ~ 32 x 32 Grid
 - ~ Burst
 - ~ 75% Col bars
 - ~ 50% Gray
 - ~ Gray Steps 1
 - ~ Gray Steps 2
 - ~ White
 - ~ Black
 - ~ Red
 - ~ Green
 - ~ Blue
- **Raster Box** — This function enables or disables the raster box on the output.
 - ~ When turned **ON**, the system displays a one-pixel border around the active output area. Note that the raster box includes gaps that enable you to precisely align the input video to fill the output raster.
 - ~ When turned **OFF**, the output is clean, without the border.

Output Adjust

From the **Output Menu**, select **Output Adjust** to scale the entire output to fit the venue's physical setup (e.g., curtains, drapes, and off-axis projection).



Figure 4-26. Output Adjust Menu (sample)

This adjustment must be performed while you view the projector's output on your screen. When you enter this menu, a solid white raster box appears at the size and position specified within the menu. The selected input is temporarily turned off, and the output video is black. As you adjust H and V size and position, the raster box adjusts accordingly. When you exit the menu, the raster box is cleared, and the selected input will be scaled to fit within this exact size and position.

The following functions are available:

- **H Size** — This function adjusts the horizontal size in pixels.
- **V Size** — This function adjusts the vertical size in lines.
- **H Position** — This function is bracketed when H Size is at its maximum setting as governed by the currently selected output format. When you adjust H Size below its maximum value, this field becomes active, enabling you to adjust horizontal position in pixels. Positioning is limited to the overall maximum H Size "space", and the image cannot be moved off screen.
- **V Position** — This function is bracketed when V Size is at its maximum setting as governed by the currently selected output format. When you adjust V Size below its maximum value, this field becomes active, enabling you to adjust vertical

4. Operation

Setup Menu

position in lines. Positioning is limited to the overall maximum V Size “space”, and the image cannot be moved off screen.

- **Reset All**— This function resets H and V Size to the currently selected output format resolution, and H and V Position to [0].

Sync Settings

From the **Output Menu**, select **Sync Setup** to display the **Output Sync Select Menu**:



Figure 4-27. Output Sync Select Menu (sample)

The **Output Sync Select Menu** enables you to independently adjust the output sync polarity of the Analog and DVI outputs. The following functions are available:

- **HD-15 Sync** — This field sets the analog output sync polarity.
 - ~ **Values:** CSync, -H-V, -H+V, +H-V, +H+V
 - ~ **Default:** -H-V
- **DVI Sync** — This field sets the DVI output sync polarity.
 - ~ **Values:** -H-V, -H+V, +H-V, +H+V
 - ~ **Default:** +H+V

Gamma

From the **Output Menu**, select **Gamma** to specify the output Gamma.

- **Adjustment range:** 1.0 to 3.0, in steps of 0.1
- **Default:** 1.0

Save Config

From the **Output Menu**, select **Save Config** to save the current output configuration. A message is briefly shown, after which the system returns to the **Output Menu**.



Figure 4-28. Saving Output Configuration Message

Please note the following important points regarding the output configuration file:

- When you perform the **Save Config** function, all configuration parameters from the **Output Menu** are saved in non-volatile memory. If you *do not* perform the function, output data will not be restored upon the next system power up.

4. Operation

Setup Menu

- If you make a change in the **Output Menu**, and attempt to exit the menu (by pressing **ESC**) *without* saving changes, the system displays the following prompt:

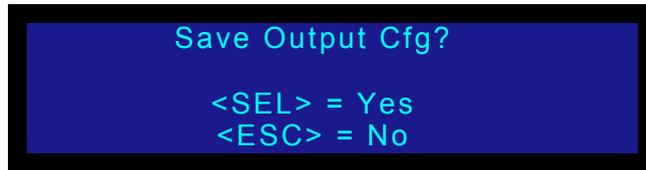


Figure 4-29. Save Output Configuration Prompt

- ~ Select **Yes (SEL)** to save changes.
- ~ Select **No (ESC)** to continue operation without saving the changes.

Preview Menu (PDS 902 Only)

From the **Output Menu**, select **Preview** to configure the PDS's Preview output. The Preview output allows you to view, resize, and otherwise adjust the input source before taking it to Program. You can preview each of the input sources (**1** through **8**, **SDI** and **LOGO**). The input source is scaled to the selectable progressive resolution and output on the DVI Digital and HD-15 analog VGA connectors.

The following illustration shows the **Preview Menu**:

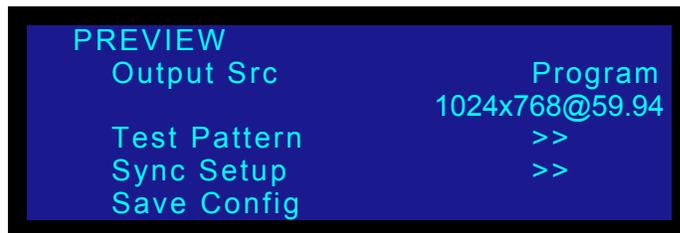


Figure 4-30. Preview Menu (sample)

Note

After you view and adjust a source on the preview monitor, and press **TAKE** to bring it to Program, the preview and Program images exchange positions, or “flip-flop,” as described in the “[Flip-flop Mode](#)” section on page 78. There is a slight delay in the image exchange between the preview output and the Program output. The preview image appears slightly after the Program image.

The following sections provide detailed information about **Preview Menu** functions:

- [Output Src](#)
- [Output Format](#)
- [Test Pattern](#)
- [Sync Settings](#)
- [Save Config](#)

Output Src

In the **Preview Menu**, choose **Output Src** to select the source to be displayed on the preview monitor. The source can be either **Preview** or **Program**.

4. Operation

Setup Menu

- Choose **Preview** to display on the preview monitor the “pending” source.
- Choose **Program** to display on the preview monitor the same source that is on Program.

Output Format

In the **Preview Menu**, the **[output_format]** field displays the format of the output, in the following form:

Hact x Vact @ Vr Hz

▲ 1024x768@59.94

The output format for the PDS can be set to any of the progressive outputs.

Note

The output format is not updated until you press **SEL**.

To make pixel-for-pixel adjustments, set the Preview and Program resolutions to be the same, as shown in the following illustration:

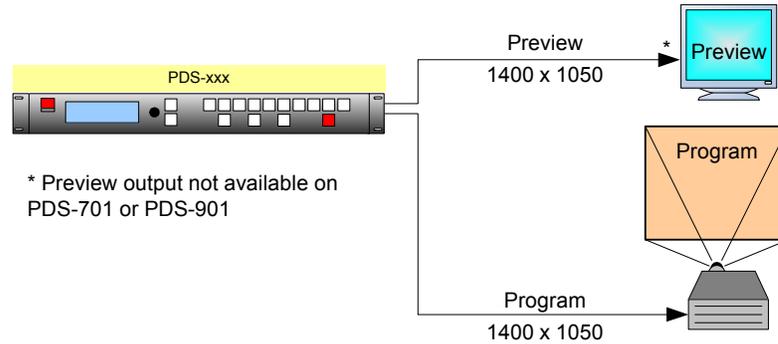


Figure 4-31. Matching Preview and Program Resolutions

If you do not need to make pixel-perfect adjustments to the Preview image, the resolutions of the Preview and Program outputs do not need to be the same, as shown in the following illustration:

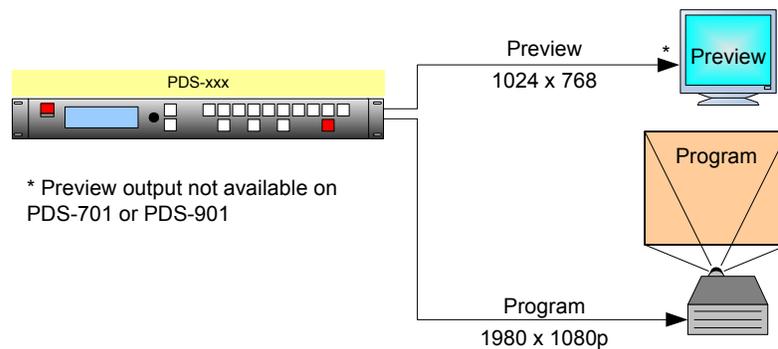


Figure 4-32. Different Preview and Program Resolutions

Test Pattern

In the **Preview Menu**, the **Test Patterns** submenu provides the following options:

4. Operation

Setup Menu

- **Mode** enables or disables the test pattern generator. The values are **ON** and **OFF**.
- **Type** provides a list of the available test patterns. The choices are:
 - ~ H Ramp
 - ~ V Ramp
 - ~ 100% Col Bars
 - ~ 16 x 16 Grid
 - ~ 32 x 32 Grid
 - ~ Burst
 - ~ 75% Col bars
 - ~ 50% Gray
 - ~ Gray Steps 1
 - ~ Gray Steps 2
 - ~ White
 - ~ Black
 - ~ Red
 - ~ Green
 - ~ Blue
- **Raster Box** — This function enables or disables the raster box on the Preview output.
 - ~ When turned **ON**, the system displays a one-pixel border around the active output area. Note that the raster box includes gaps that enable you to precisely align the input video to fill the output raster.
 - ~ When turned **OFF**, the output is clean, without the border.

Sync Settings

From the **Preview Menu**, select **Sync Setup** to independently adjust the output sync polarity of the analog and DVI outputs of the Preview. The **Preview Sync Menu** looks like the one in the following illustration.

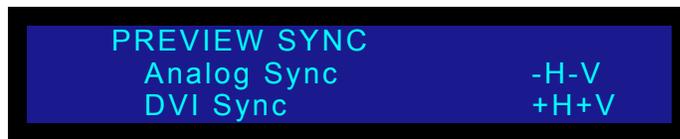


Figure 4-33. Preview Sync Setup Menu (sample)

The selectable values are:

- **Analog Sync** — This field sets the analog output sync polarity.
 - ~ **Values:** -H-V, -H+V, +H-V, +H+V
 - ~ **Default:** -H-V
- **DVI Sync** — This field sets the DVI output sync polarity.
 - ~ **Values:** -H-V, -H+V, +H-V, +H+V
 - ~ **Default:** +H+V

Save Config

After you make changes using the **Preview Menu**, use the **Save** function to store them in non-volatile memory. Your configuration parameters will then persist across power cycles.

If you do not choose **Save** after making changes, you are prompted to do so with a

4. Operation

Setup Menu

message like the one shown in the following illustration.

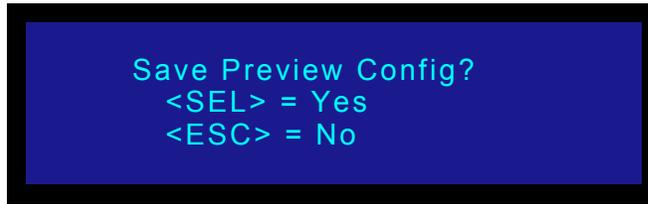


Figure 4-34. Save Preview Configuration Prompt (sample)

- Press **SEL** to save your changes.
- Press **ESC** to continue without saving your changes.

If you do not save your changes, your settings will not be restored the next time the system is powered up or the input is selected.

Logo Menu

A logo is a full-screen video source that, when you transition to it, appears *on top* of all other sources. From the **Setup Menu**, select **Logo** to display the **Logo Menu**, which enables you select, save and delete up to three full-screen logos.



Figure 4-35. Logo Menu (sample)

Following are descriptions of each **Logo Menu** function:

- **Selection** — This field enables you to select the desired Logo.
 - ~ **Selections:** LOGO1, LOGO2 and LOGO3
 - ~ **Default:** LOGO1
- **Status [resolution]** — This field shows the current resolution of the saved Logo, if the output resolution matches the resolution at which the Logo was captured. The field shows [EMPTY] if nothing has been saved at the selected location, or [INVALID [resolution]] — e.g. [INVALID 1600x1200] — if the Logo resolution does not match the current output resolution.
Because the field is not user selectable, all data is shown between brackets.
- **Save Pgm to Logo** — Choose this field and press **SEL** to save the current input (on Program) to the selected Logo memory register. The **Save Pgm to Logo** field does not appear if the Logo is pending or on Program.
- **Delete Logo** — Choose this field and press **SEL** to delete the Logo from the selected memory register. The **Delete Logo** field does not appear if the Logo is pending or on Program.

Refer to the “[Using the Logo](#)” section on page 80 for more information on using Logos.

4. Operation

Setup Menu

User Preference Menu

From the **Setup Menu**, select **User Preference** to display the **User Preference Menu**:



Figure 4-36. User Preference Menu (sample)

The following functions are available:

- [Trans Time](#)
- [Auto Acquire](#)
- [Auto Input Cfg](#)
- [Auto Input Save](#)
- [Background](#)
- [HDCP](#)
- [Auto Take](#)
- [Black Auto Take](#)
- [Menu Context](#)
- [Saving System Settings](#)

Trans Time

From the **Setup Menu**, select **Trans Time** to change the current transition rate that is used when you mix between inputs and when you transition to/from black.

Following are two illustrations of the transition interval:

- **Standard Mix** — When transitioning between inputs and the logo, or transitioning to/from black, the PDS functions as a seamless switcher. The transition interval is defined as the total time required to mix to the new source, or fade to/from black.

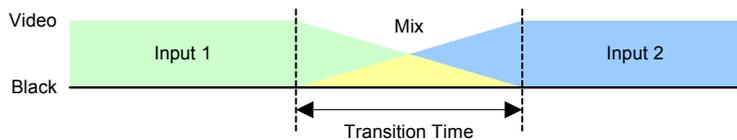


Figure 4-37. Transition interval diagram — mix between sources

Note that transition times are specified for switching applications with **Auto Acquire** turned **OFF**. When **Auto Acquire** is **ON**, the transition time is greater, due to the additional time required to analyze the input video timing.

Transition values are listed below:

- **Adjustment range:** 0.0 - 12.0 seconds (0.0 is a cut)
- **Default:** 1.0 seconds

Auto Acquire

The **Auto Acquire** function enables or disables the **Input > “Auto Acquire”** mode, which acquires a signal for the input. Values for Auto Acquire are: **ALLOFF**, **ALL ON** (default), and **Input**.

When **Auto Acquire** is **ALL ON**, and an input has a saved configuration file, the system attempts to use the saved file. If the input timing matches the timing in the saved configuration file, the saved file is used.

The system always performs a full sync (timing) acquisition on the selected input signal under the following conditions:

- When an input *without* a saved configuration file is selected
- When the input type is changed
- When the input signal’s sync rate is changed
- When an input *with* a saved configuration file is selected, but the input timing is different from the saved configuration

When **Auto Acquire** is **ALL ON**, and the input source is **non-digital**, the system uses the following library search order:

- Saved configuration files defined in the **File Association Menu** for each input channel
- The user’s library of saved files
- A best guess

When **Auto Acquire** is **ALL ON**, and the input source is **digital**, the system uses the following search order:

- Saved configuration files defined in the **File Association Menu** for each input channel
- The user’s library of saved files
- Direct measurement of the signal

If the input signal’s timing is too different from the saved configuration, a good lock may not be possible. In this situation, the “**Invalid Signal**” message is displayed, and the video output will be black. You will also see “**Invalid Signal**” if the configuration file for an input has been deleted.

When Auto Acquire is **INPUT**, Auto Acquire can be adjusted to be **ON** or **OFF** on an Input by Input basis within the Input setup menu.

Please note the following important points:

- It is recommended that you leave the **Auto Acquire** mode **ALL ON**. Then, if the timing changes on any input (whether or not you have a saved config file), you will always get an output image. On the other hand, if the mode is **ALLOFF** and the input timing changes, the output will be black.

4. Operation

Setup Menu

- When the **Auto Acquire** mode is **ALL ON**, the PDS automatically detects and acquires the input video type and resolution (in most cases), and limits menu selections to those applicable to the detected video type.
- If you are an advanced user and you know the exact timing parameters for your input(s), you can turn the **Auto Acquire** mode **ALLOFF**, and dial in your timing parameters manually.

Tip

If you have already saved configuration files for your inputs, it is recommended that you turn the **Auto Acquire** mode **ALLOFF**. This provides the fastest transition times. When the mode is **ALL ON**, transition times will be greater, due to the time required to analyze the input timing for each source.

Auto Input Cfg

The **Auto Input Cfg** function enables or disables the automatic input configuration mode. Values are: **ON** and **OFF** (default).

Note

This is the “automatic” version of the manual **Auto Input Cfg** mode, which is located in the **Input Sizing Menu**. Refer to the [“Sizing Adjust”](#) section on page 43 for details.

- When **ON**, the system automatically finds the first and last pixel on each edge of the selected input, and ensures (to the best possible extent) that the entire image is visible. In addition, the system automatically phases the input to determine the correct sampling phase.

These functions will only be performed under the following conditions:

- ~ When an input *without* a saved configuration file is selected.
 - ~ When the input signal changes sync rates.
 - ~ When an input *with* a saved configuration file is selected, but the input timing is different from the saved configuration.
- When **OFF**, the system uses the last known configuration for each input, to the greatest extent possible.

Auto Input Save

When the **Auto Input Save** mode is enabled, the system automatically saves the selected input after it has been acquired for the first time. If the **Auto Acquire** mode is **OFF**, the field has no effect. The default is **OFF**.

Background

From the **User Preference Menu**, select **Background** to change the system’s background color between “**Black**” and “**Gray**.” This is a global setting.

When set to **Gray**, you can clearly see the edges of an input, particularly when the input’s aspect ratio does not match the output’s aspect ratio. Note that the background selection persists between source changes.

HDCP

The **HDCP Submenu**, shown in the following illustration, lets you set HDCP capability for inputs. For an introduction to HDCP, see “[A Word About HDCP](#)” on page 5.



The HDCP setting is either **ON** or **OFF**. You can set this capability for the following inputs and outputs:

- **In 5 (DVI-I)** — The default setting is **OFF**.
- **In 6 (DVI-I)** — The default setting is **OFF**.
- **In 7 (DVI-I)** — The default setting is **OFF**.
- **In 8 (DVI-I)** — The default setting is **OFF**.

Note

In 7 and In 8 are not available for selection in PDS-701 units.

■ To turn HDCP capability on or off, use the following procedure:

1. On the **Setup Menu**, select **User Preference**.
2. On the **User Preference**, select **HDCP**. The **HDCP Submenu** appears.
3. Select an input or output and turn the **ADJUST** knob once. Then press **SEL**.

Auto Take

The **Auto Take** mode allows you to bring an input source to Program by simply pressing an input button (**1** through **8**, **SDI**, or **LOGO**), and without requiring a Take.

Regardless of your **Auto Acquire** settings, the input button you select blinks slow, to indicate that the system is performing an action such as an auto acquire, file association, or another action. When the system completes its tasks for the input, the button lights solid and the source goes to Program automatically.

- When **ON**, **Auto Take** overrides user preferences for **Black Auto Take**. The value for this menu item is bracketed.
- When **OFF**, the selected input button blinks slow. Press **TAKE** to perform the transition.

Black Auto Take

The **Black Auto Take** function controls the behavior of the **BLACK** button:

- When **ON**, the **BLACK** button transitions the Program output to/from black, as soon as the button is pushed.
- When **OFF**, the **BLACK** button blinks when pressed, to indicate “pending.” Press **TAKE** to perform a transition to/from black.

Refer to the “[Using Black](#)” section on page 83 for details.

4. Operation

Setup Menu

Menu Context

The **Menu Context** function determines the behavior of certain menus when an **Input** or **LOGO** button is pressed. The following conditions apply:

- When **ON**, regardless of the current menu, the **Input Menu** or **Logo Menu** will automatically be displayed when the associated button is pressed.
- When **OFF**, menu context does not change when an **Input** or **LOGO** button is pressed.

Saving System Settings

The **Save System Settings** option on the **User Preference Menu** saves your custom system configuration. For more information about this option, refer to [“Save System State”](#) on page 74.

System Menu

From the **Setup Menu**, select **System** to display the **System Menu**, which enables you to adjust VFD brightness, input configurations, front panel lockout modes, Ethernet parameters and many other “system” related functions:



Figure 4-38. System Menu (sample)

The following sections describe each **System Menu** function:

- [VFD Brightness](#)
- [Ethernet](#)
- [Serial Setup](#)
- [Input EDID](#)
- [DVI Cable Equal](#)
- [Executive Mode](#)
- [File Association](#)
- [Temperature](#)
- [Diagnostics](#)
- [Save System State](#)

VFD Brightness

From the **System Menu**, select **VFD Brightness** to control the intensity of the front panel VFD (vacuum fluorescent display).

- **Adjustment range:** 1 - 8 (1 is the dimmest setting)
- **Default:** 5

Note

It is recommend that you use a low intensity setting to avoid “burn-in” of the display.

4. Operation

Setup Menu

Ethernet

From the **System Menu**, select **Ethernet** to display the **Ethernet Menu**:



Figure 4-39. Ethernet Menu (sample)

The following Ethernet functions are available:

- **DHCP** — DHCP can be turned **OFF** or **ON**.
 - ~ When **OFF**, the **Config Network** field appears, which enables you to manually enter a static IP address, Subnet mask and Gateway.

Note

Always consult with your network administrator to obtain valid IP, subnet mask and gateway addresses.

- ~ When **ON**, the PDS queries the DHCP server for a valid IP address, and the **Config Network** field is hidden.
 - If the PDS finds a DHCP server and receives an IP address, the address is displayed.
 - If a server is not found, an IP address is not assigned. The address display in the menu will be 000.000.000.000.
- **Config Network** — select this function to display the **Config Network Menu**, which enables you to choose the specific Ethernet address you wish to change.



Figure 4-40. Config Network Menu (sample)

- ~ Select **Set Static IP** to display the **Static IP Menu**, which enables you to set a static IP address when a DHCP server is not available. The editing procedure is discussed below.



Figure 4-41. Static IP Menu (sample)

4. Operation

Setup Menu

- ~ Select **Set Netmask** to display the **Netmask Menu**, which enables you to set a netmask. The editing procedure is discussed below.



Figure 4-42. Netmask Menu (sample)

- ~ Select **Set Gateway** to display the **Gateway Menu**, which enables you to set a gateway. The editing procedure is discussed below.



Figure 4-43. Gateway Menu (sample)

- Use the following steps to edit the IP address, Netmask or Gateway. Valid fields range from 000 to 255.
 - Press **SEL** to begin editing. This action highlights the first digit, and displays the carat “^.”
 - Use the **ADJUST** knob to move the carat left and right through the address.
 - When the desired digit is highlighted, press **SEL** to edit the value. The carat changes to the pound sign “#.”
 - Use the **ADJUST** knob to select the desired value (0 - 9).
 - Once the value is selected, press **SEL** to “accept” the new value. The pound sign “#” changes back to the carat “^.”
 - Repeat the process from step **b** for all additional digits that you wish to change.
 - When complete, press **ESC** to display the **Apply Changes Menu**.
 - Select **Yes (SEL)** to apply all changes.
 - Select **No (ESC)** to exit the procedure without saving changes.

In each case, system returns to the root menu.

When Ethernet setup is complete, you can communicate with the PDS via the Ethernet port.

- ~ In Appendix B, refer to the “[Remote Commands](#)” section on page 139 for details on communicating with the PDS via Telnet.
- ~ In Chapter 5, refer to the “[GUI Connection and Launch](#)” section on page 88 for details on running the web-based GUI.

4. Operation

Setup Menu

- **Remote Control** — This function sets up the PDS for remote control.

```
REMOTE CONTROL
> Unit ID           25
  IP      192.168.000.002
  Status           n/a
  Connect          OFF
```

Figure 4-44. Remote Control Submenu (sample)

For complete details, see “[Appendix B](#)” on page 129.

- **IP** — The **IP** line is an information-only line that shows the current IP address in all modes (with DHCP on or off). If an IP address has not been established (no DHCP server found, or the network cable is not connected), the address reads “000.000.000.000.”

Note

The PDS’s default IP address is **192.168.0.10**

- **M** — The **M** line is an information-only line that shows the MAC (hardware) address of the unit’s Ethernet port.

Serial Setup

From the **System Menu**, select **Serial Setup** to display the **Serial Setup Menu**, which enables you to set system RS-232 parameters for the serial port.

```
SERIAL SETUP
> Baud             115200
  Parameters       N81
  Handshaking      ON
  Reset
```

Figure 4-45. Serial Setup Menu (sample)

The following functions are available:

- **Baud** — Use this function to set the baud rate.
 - ~ **Adjustment range:** 9600, 38400, 57600 and 115200
 - ~ **Default:** 115200
- **Parameters** — This function is a combined setting of Parity, Data Bits and Stop bits (in this order).
 - ~ **Adjustment range:** N81, E71, O71, E72, O72
 - ~ **Default:** N81
- **Handshaking** — This is a status field for the hardware flow of the serial port.
 - ~ **Default:** OFF (the only valid value)By default, RTS/CTS and DSR/DTR are ignored.
- **Reset** — Use this function to reset all serial values to their default settings.

Input EDID

From the **System Menu**, select **Input EDID** to display the **Input EDID Menu**, which enables you to update the preferred EDID (Extended Display Identification Data) resolution for the PDS.



Figure 4-46. Input EDID Menu (sample)

Important

This menu is designed for advanced users only. Do not reprogram EDID unless it is necessary.

EDID is a VESA standard data format that contains information about a display device and its capabilities, including the preferred (as well as the allowed) device resolutions.

The PDS's EDID file is stored in non-volatile memory. This file is read by a computer's DVI graphics card during boot-up, when its DVI output is connected to a DVI-I input connector on the PDS system. The PDS must be powered on first for the EDID information to be read.

The following functions are available:

- **Input** — selects the inputs that you wish to program: **ALL**, **1**, **2**, **3**, **4**, **5**, **6**, **7**, or **8**.
- **EDID Format** — displays the current EDID format, and enables you to select a new format to program into memory. Press **SEL** to program the preferred DVI resolution, as defined on the **EDID Format** line.

Note

The PDS can program the EDID EEPROM with the DVI cable connected.

When **SEL** is pressed, the following message is briefly displayed.



Figure 4-47. Programming EDID Message 1

4. Operation

Setup Menu

If the programming is successful, the following message is displayed:

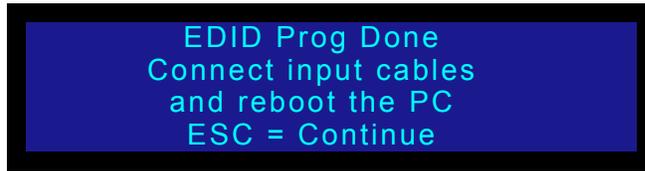


Figure 4-48. Programming EDID Message 2

Note

At this point, reboot the external computer(s) in order for the new EDID information to be read, and the new preferred resolution to become available.

If the EDID programming failed, the following message will be displayed:

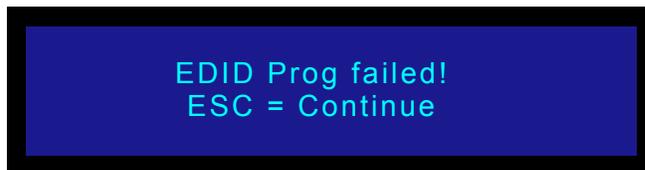


Figure 4-49. EDID Programming Failed Message

If this message persists, please contact customer service for technical support.

- **Type (5 to 8)** — This field applies to inputs **5** through **8** only, allowing you to select between **Digital** or **Analog** EDID for these inputs. Please note:
 - ~ When the **Input** field is set to **5** through **8**, the **Type** field is selectable between **ANALOG** or **DIGITAL**, and the current **Type** is reflected. Changing this field triggers the programming process as soon as **SEL** is pressed, using the currently shown resolution in the **Format** field.
 - ~ When **ALL** is selected in the **Input** field, the **Type** field reflects Input **5**. Any triggering of the programming process changes inputs **5** through **8** to the selected option in this field.

DVI Cable Equal

From the **System Menu**, select **DVI Cable Equal** to display the **DVI Cable Equalizer Menu**, which enables you to adjust input cable equalization parameters for both DVI inputs simultaneously, or individually for inputs **5** through **8**.



Figure 4-50. DVI Cable Equalizer Menu (sample)

The following functions are available:

- **Input** — selects the exact inputs that you wish to set: **ALL** (inputs **5** through **8**), **5** (individually), **6** (individually), **7** (individually), or **8** (individually).

Note

Inputs **5** through **8** do not need to be selected on the front panel for this menu to change, and to apply the equalization settings.

- **Equalization** — The equalization adjustment range is from **0** (short cable equalization) to **15** (long cable equalization). The default value is **12**, which indicates “moderate” equalization.

In general, the default should be adequate for most users, unless cables longer than 5M are used, and unless your signals are running at high pixel clock rates (e.g., UXGA).

- **Set to Default** — sets the Equalization field to the default setting of 12.

Note

Equalization is a subjective “visual” adjustment, which depends on three important factors: cable length, signal quality and cable quality. If you adjust the equalization, optimize the setting for the lowest amount of visual artifacts.

- **Set to Maximum** — sets the Equalization field to the maximum setting of 15.
- **Set to Minimum** — sets the Equalization field to the minimum setting of 0.

Executive Mode

From the **System Menu**, select **Executive Mode** to initiate a limited front-panel lockout. Executive mode enables seamless transitions between input sources *without* the need to press **TAKE**. In Executive lockout mode:

- Button pushes will be ignored for all buttons *except* the nine **input buttons** and **LOGO**. All turns of the rotary knobs will be ignored.
 - To take an input source to Program, press the input or **LOGO** button *without* pressing **TAKE**. The transition is seamless, even if you have **Auto Take** (in the **User Preference Menu**) turned off.
 - All Ethernet and serial communications commands will function normally.
 - All button lights will continue to reflect the proper state of the inputs.
- Use the following steps to enable and disable executive lockout mode:
1. From the **Setup Menu**, choose the **System Menu**.
 2. Select **Executive Mode**. The following submenu appears:

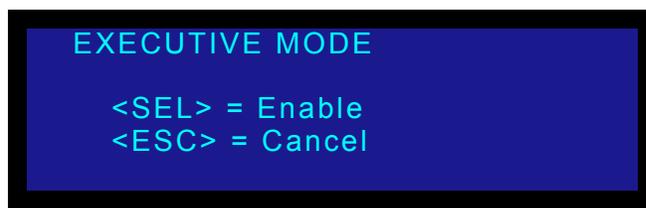


Figure 4-51. Executive Mode Menu (sample)

4. Operation

Setup Menu

3. Press **SEL**. The confirmation message shown in the following illustration appears:



Figure 4-52. Executive Mode Confirmation Message

4. Press an **input button** or **LOGO**.

The button will blink slow to indicate that the input is ready to be taken to Program. The input source signal automatically goes to Program without requiring a Take, regardless of your **Auto Take** setting.

5. To disable the front panel Executive lockout mode, press and hold the **SEL** and **ESC** buttons simultaneously for 3 seconds. When the button combination is detected, the system returns to the menu that was displayed before Executive lockout mode was enabled.

File Association

From the **System Menu**, select **File Association** to display the **File Association Menu**, which enables you to select or change a configuration file for each of nine physical inputs (1 through 8 and **SDI**). The configuration file contains settings that govern everything from pixel resolution to aspect ratio and color balance — any setting you can change using the **Input Menu**. The PDS can store up to 64 input configuration files in non-volatile memory.

Each time you press an input button, the PDS uses the configuration file associated with that input. The file is designated by a number from 1 to 64. The default file for each input is the same as the input number—Input 1 uses configuration file 1, and so on. The default file for the SDI input is 9.

You can view and change the current setting for each input by using the **File Association Menu**, shown in the following illustration:

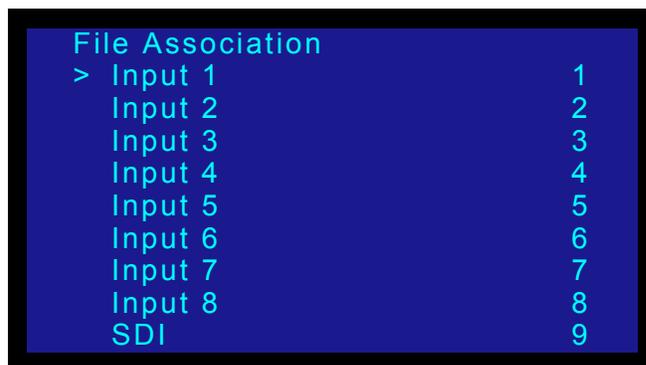


Figure 4-53. File Association Menu (sample)

When you associate a configuration file with a specific input, the file is used by any input source connected to that input.

To change a setting, scroll to an input number and press **SEL**. Choose a new configuration file and press **SEL** again. The change takes effect the next time the input button is pressed.

Refer to the “[About Input Configuration Files](#)” section on page 48 for additional information about setting, recalling, saving and deleting input configuration files.

Temperature

From the **System Menu**, select **Temperature** to display the **System Temperature Menu**.



Figure 4-54. System Temperature Menu (sample)

The **System Temperature Menu** indicates the chassis’ internal temperature in both Celsius and Fahrenheit. When the menu is displayed, temperature values update every 4 seconds.

Note that the PDS measures the internal temperature for an “over-temp” condition every 5 minutes. If the system’s internal temperature exceeds 122° F (50° C), the following message appears:

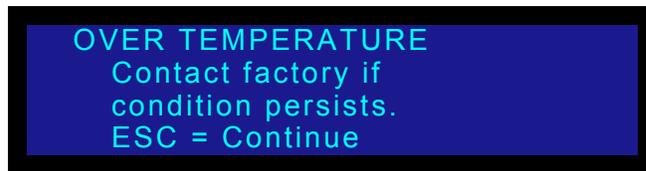


Figure 4-55. Over Temperature Warning

To clear the message and continue operations, press **ESC**.

Note

This message is a warning only, which does not prevent the operation of the PDS. If this message appears, it is recommended that you contact Barco Customer Service.

Diagnostics

From the **System Menu**, select **Diagnostics** to display the **Diagnostics Menu**:

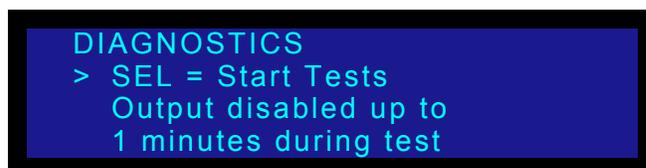


Figure 4-56. Diagnostics Menu

4. Operation

Setup Menu

If you suspect a problem with the PDS, press **SEL** to run a series of internal diagnostic tests. The menu will report back “**PASS**” or “**FAIL**.”

Note

If the menu reports “**FAIL**,” contact Barco Customer Service. In Appendix C, refer to the “[Contact Information](#)” section on page 174 for contact details.

Save System State

From the **System Menu**, select **Save Config** to save all current “system” settings so that they may be restored at power up. A message is briefly shown, after which the PDS returns to the **System Menu**.



Figure 4-57. Saving System Configuration Message

Please note the following important points regarding the system configuration file:

- When you perform the **Save Config** function, all configuration parameters from the **System Menu** are saved in non-volatile memory. If you *do not* perform the function, data will not be restored upon the next system power up sequence.
- This command also saves the current **input** as the default power-up selection.

Note

If you want the PDS to always power up and acquire an input other than input 1, perform the **Save System State** command while the desired input is selected on Program.

- If you *do not* perform the **Save System State** function, data will not be restored upon the next system power up sequence.
- If you make a change in the **System Menu** and attempt to exit the menu (by pressing **ESC**) *without* saving changes, the system displays the following prompt::

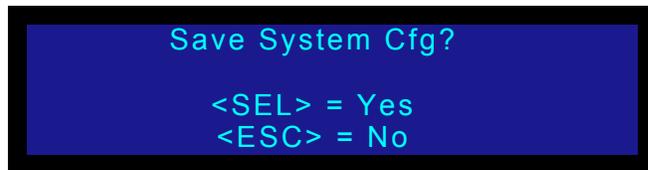


Figure 4-58. Save System Configuration Prompt

- ~ Select **Yes** (**SEL**) to save changes.
- ~ Select **No** (**ESC**) to continue operation without saving the changes.

Tech Support Menu

From the **Setup Menu**, select **Tech Support** to display the **Tech Support Menu**:



Figure 4-59. Tech Support Menu

The **Tech Support Menu** displays the following information:

- **Version** — displays the current version of installed operating firmware. This number changes when you update system software. In Chapter 6, refer to the [“Firmware Upgrade Overview”](#) section on page 96 for update instructions.
- **Phone** — lists the technical support phone number.
- **Website Support Address**— lists the web address for technical support.

Factory Reset Menu

From the **Main Menu**, select **Factory Reset** to display the **Factory Reset Menu**:

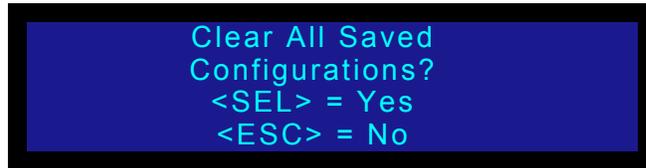


Figure 4-60. Factory Reset Menu

This function enables you to reset the PDS to its factory default condition, in which all user-defined input, output and system configuration files are deleted. When the command is executed, a confirmation menu is shown.

- Press **SEL** to reset the system.
- Press **ESC** to cancel the operation, and return to the **Setup Menu**.

The following attributes constitute a “factory default” condition:

- Input 1 is on Program.
- The **Output** is set to 1024x768@59.94.
- The **Output Raster Box** is **OFF**.
- The **Status Menu** is displayed.
- All menu items are set to their default values (as specified in this chapter).

4. Operation

Setup Menu

- The serial port is set to the following default values:
 - ~ **Baud:** 115200
 - ~ **Parameters:** N81 (No Parity, 8 Data Bits, 1 Stop Bit)
 - ~ **Handshaking:** OFF

Note

When "Reset All, Save EDID" is selected, the unit will return to a default configuration as noted above, with the exception of EDID, which will NOT be changed.

Firmware Upgrade Menu

For details about upgrading firmware, see "[Upgrading Firmware](#)" on page 95.

Using Inputs

This section provides background information and instructions for using inputs. The following topics are discussed:

- [Input Selection Rules](#)
- [Flip-flop Mode](#)
- [Using Auto Acquire](#)
- [Using HDCP With PDS, the HDCP mode is essentially automatic. Provided that you connect an HDCP compliant monitor, you can select and switch between unprotected sources and “protected” HDCP sources \(e.g., a Blu-Ray player\) without restriction.](#)

Input Selection Rules

- To transition an input to Program:
 1. Select the desired input in the **Inputs Section**. Once a button is pressed, it blinks, indicating that the source is “pending.”
 2. Press **TAKE** to transition the input to Program, using the current transition rate (as entered on the **Setup Menu**).

Note

Whenever **TAKE** is pressed, the PDS flip-flops sources in the **Inputs Section**. Refer to the [“Flip-flop Mode”](#) section on page 78 for additional information.

Please note the following important points:

- All input buttons are selectable, whether or not they are physically connected, and whether or not they have valid signals.
 - ~ When a button is blinking **slow**, it is ready to be transitioned to Program.

Note

If an input button is blinking slow and the **Status Menu** shows **“Invalid Signal,”** the system has attempted to acquire the source, but has failed.

- When the **Status Menu** is on and you select an input, one of two actions occur:
 - ~ The **Input Menu** automatically appears if **Menu Context** is **ON** (in the **User Preference Menu**).
 - ~ The **Status Menu** remains on display if **Menu Context** is **OFF**.
- The **“Invalid Signal”** message appears under the following conditions:
 - ~ If you select an input, and it does not have a valid signal.
 - ~ If an input was previously valid and its signal is lost.
 - ~ If the current “user-selected” format does not match the *detected* input signal for the selected input.
- For information about using the system in conjunction with HDCP inputs, refer to the [“Using HDCP With PDS, the HDCP mode is essentially automatic. Provided that you connect an HDCP compliant monitor, you can select and](#)

4. Operation

Using Inputs

[switch between unprotected sources and “protected” HDCP sources \(e.g., a Blu-Ray player\) without restriction.](#)” section on page 79.

Flip-flop Mode

Whenever you press **TAKE** to mix between inputs (including the **LOGO**), the PDS automatically flip-flops inputs. Two actions occur when **TAKE** is pressed:

- The blinking “next” source transitions to Program. Once it is fully on Program, the button lights solid.
- The previous (solid) source on Program automatically becomes the pending “next” source, and the button blinks.

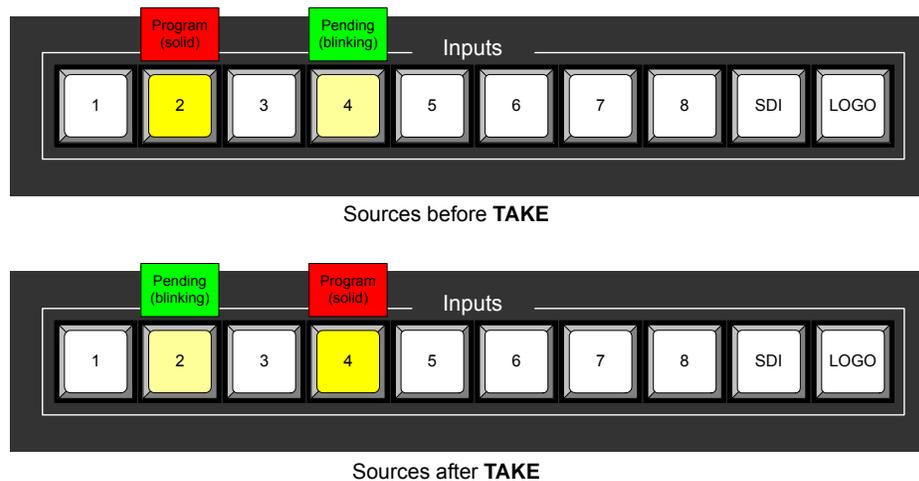


Figure 4-61. Flip-flop mode, before and after TAKE

Repeatedly pressing **TAKE** continues to flip-flop the current and pending sources in this manner. Please note:

- If **Black Auto Take** is **OFF** (in the **User Preference Menu**), you must press **TAKE** to transition to black. If a source is pending, the source flip-flops to Program — after the system is fully in black.
- If **Black Auto Take** is **ON**, simply press **BLACK** to transition to black. If a source is pending, it *remains* pending after the transition. There is no flip-flop.

Using Auto Acquire

Please note the following important points regarding the **Auto Acquire** mode:

- If **Auto Acquire** is **ON** and a valid input is selected that does *not* have a saved **Input Config** file associated with it, the system attempts to acquire the source and save an **Input Config** file. This process *may* take a few moments.

Note

The **Input Config** file will only be saved if the "**Auto Input Save**" mode is **ON** in the **User Preference Menu**.

- If an input is selected that *does* have a saved **Input Config** file associated with it, the (blinking) source will transition to program after **TAKE** is pressed.
- When the system performs an **Auto Acquire** for **Inputs 5** through **8**, the PDS first checks for a DVI signal. If not found, the system looks for a valid analog signal.
- If **Auto Acquire** is **OFF** and a valid input is selected (either with or without a saved **Input Config** file), the system compares the library file to the input's incoming timing.
 - ~ If the timings match, the system transitions to the input after **TAKE** is pressed.
 - ~ If the timings do not match, the "**Invalid Signal**" message appears, and the system transitions to black after **TAKE** is pressed.

Using HDCP With PDS, the HDCP mode is essentially automatic. Provided that you

Note

As a prerequisite, ensure that you have read the "[A Word About HDCP](#)" section in Chapter 1 on page 1 prior to reading this section.

connect an HDCP compliant monitor, you can select and switch between unprotected sources and "protected" HDCP sources (e.g., a Blu-Ray player) without restriction.

- Inputs **1** through **4** (analog) are unprotected sources.
- Inputs **5** through **8** (analog) are unprotected sources.
- Inputs **5** through **8** (digital) are protected when an HDCP source is connected.

Please note the following important points regarding HDCP operations:

- When the input signal is an HDCP source on DVI inputs **5** through **8** and a valid HDCP monitor is connected, the following actions occur:
 - ~ The PDS's analog output is disabled.
 - ~ You cannot store a logo from a "protected" source. However, "unprotected" logos that are already stored in the system can be switched to Program.
 - ~ You cannot use the **FRZ** button.

For the latest HDCP features, refer to Chapter 7, "[PDS-902 3G Enhancements](#)" on page 107.

4. Operation

Using the Logo

Using the Logo

A **logo** is a full-screen video source which, when transitioned to Program, appears on top of all other sources. The PDS can store up to three logos in non-volatile memory.

The PDS enables you to transition to or from a full-screen logo, in the same way that you transition to or from video inputs. When you press **TAKE**, the system transitions the selected logo to or from Program at the current transition rate, and the sources flip-flop in the manner described in the [“Flip-flop Mode”](#) section on page 78.

Please note the following important points:

- A logo will be labeled **INVALID** if it was captured at a resolution that does not match the current output resolution. The resolution at which it was captured will also be displayed — e.g., **[INVALID 1600x1200]**.
- If you scroll to an invalid logo, the **LOGO** button cannot be activated. The following message will appear.



Figure 4-62. LOGO Output Resolution Message (sample)

- If **LOGO** is selected when there are no saved or valid logos, the following message will appear:



Figure 4-63. LOGO Error Message (sample)

- When you first start up a PDS that has stored logos, a message like the one in the following illustration appears during initialization:

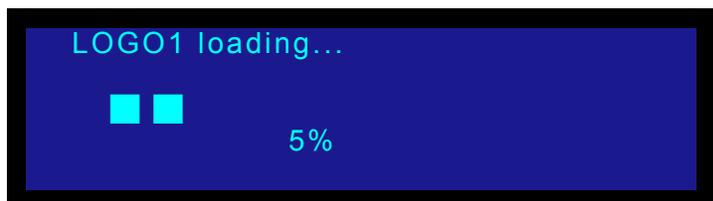


Figure 4-64. LOGO Initialization Message (sample)

Ensure that you are familiar with the **Logo Menu**. Refer to the [“Logo Menu”](#) section on page 59 for details.

Saving a Logo



- Use the following steps to capture and store a logo:
 1. To capture and store a full-screen logo, first select the input that you wish to store, and transition it to Program with a **TAKE**.
 2. From the **Setup Menu**, select **Logo** to display the **Logo Menu**.



Figure 4-65. Logo Menu (sample)

3. In the **Selection** field, press **SEL** and choose the “register” into which you want to save the logo (e.g., LOGO1, LOGO2 or LOGO3). Press **SEL** again.
4. Scroll to the **Save Pgm to Logo** field, and press **SEL** to save the input as a full-screen logo.

Note

When a logo is pending or already on Program, the **Save Pgm to Logo** field does not appear.

5. Repeat steps 1 through 4 to save up to two additional logos.

Important

When a “protected” HDCP source is selected (inputs 5 through 8), you cannot save a logo.

Transitioning to a Logo

- To transition from the source on Program to a saved logo:
 1. With an output source on Program, press the **LOGO** button. Please note:
 - ~ If **Menu Context** is **ON** (in the **User Preference Menu**), the **Logo Menu** automatically appears when the **LOGO** button is pressed.
 - ~ If **Menu Context** is **OFF**, the **Status Menu** (or the current menu) remains on when the **LOGO** button is pressed.

The **LOGO** button blinks “slow” to indicate that a logo is pending, and the **Logo Menu** appears:



Figure 4-66. Logo Menu — Selecting a Logo

4. Operation

Using the Logo

2. Press **SEL** and scroll to select a saved logo.
Logos appear in this list only if their resolution matches the output resolution.
3. Press **TAKE**.

The logo appears on Program and the **LOGO Setup Menu** displays the logo number in brackets, as shown in the following illustration:



Figure 4-67. Logo Menu — Logo on Program

Note

When the system transitions to the logo, the PDS flip-flops sources in the **Inputs Section**. Refer to the [“Flip-flop Mode”](#) section on page 78 for additional information.

Deleting a Logo

- Use the following procedure to delete a saved logo:
 1. In the **Logo Menu**, scroll to Selection and press **SEL**.
 2. Select the logo to delete. Press **SEL**.
The **DELETE LOGO** line displays the logo number you selected.
 3. Scroll to **DELETE LOGO** and press **SEL**. A message like the one in the following illustration appears:

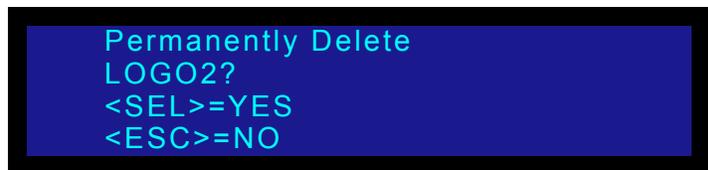


Figure 4-68. Delete Logo Message (sample)

4. Press **SEL** to delete the logo, or **ESC** to continue without deleting.

Using Freeze

You can use the FRZ (Freeze) button to create a still image from a video image, typically for use as a full-screen logo.



- Use the following steps to freeze and un-freeze an input:
 1. Select the desired input and transition it to program with a **TAKE**.
 2. Press **FRZ** to immediately freeze the source. The button lights.
 3. To un-freeze the source, press **FRZ** again. The light turns off.

Important

When a “protected” HDCP source is selected (inputs 5 through 8), you cannot use the **FRZ** button.

Using Black



The **BLACK** button is used to transition the system’s output to/from black, no matter what combination of sources are currently on Program. For example:

- If a *single source* is on Program (e.g., **Input 1**), the system will mix to black at the current transition rate.

When **BLACK** is pressed, one of two different actions can occur, depending on how the “**Black Auto Take**” function is set in the **User Preference Menu**.

- [Black Auto Take Off](#)
- [Black Auto Take On](#)

Note

Refer to the “[User Preference Menu](#)” section on page 60 for details on setting parameters in the **User Preference Menu**.

Black Auto Take Off

When the “**Black Auto Take**” function is **OFF** in the **User Preference Menu**, you must use the **TAKE** button to transition to/from black.

- Use the following steps to transition to/from black, when **Black Auto Take** is **OFF**:
 1. Press **BLACK**. The button blinks to indicate that a transition to/from black is pending.
 2. Press **TAKE**. The system transitions to/from black, at the current transition rate. Please note:
 - ~ If the transition is “to” black, the **BLACK** button lights solid when black is fully on Program.

4. Operation

Using Black

- ~ If the transition is “**from**” black, the **BLACK** button automatically turns off when the selected source is fully on Program.

Important

When the **Black Auto Take** function is **OFF**, if a source is pending when **TAKE** is pressed, that source transitions to Program *after* black is fully reached, and sources flip-flop in the normal manner. If you do not want to transition to a new source, simply press the button that is solidly lit.

Black Auto Take On

When the “**Black Auto Take**” function is **ON** in the **User Preference Menu**, you *do not* need to press **TAKE** to perform a transition to/from black. The transition occurs immediately, once **BLACK** is pressed.

- Use the following steps to transition to/from black, when **Black Auto Take** is **ON**:
 1. Press **BLACK**. The system immediately transitions to/from black, at the current transition rate.

Please note:

- ~ If the transition is “**to**” black, the **BLACK** button blinks during the transition interval, then lights solid when black is on Program.
- ~ If the transition is “**from**” black, the **BLACK** button blinks during the transition interval, then automatically turns off when the selected source is fully on Program.

Important

When the **Black Auto Take** function is **ON**, if a different source is pending when **TAKE** is pressed, that source *remains pending* (blinking) *after* black is fully reached. The system does not transition to the pending source, and sources do not flip-flop. If desired, you can transition to the pending source *underneath* black, by pressing **TAKE** in the normal manner, and then pressing **BLACK** to immediately fade up to the new source.

Using Front-Panel Lockout

The PDS includes two front-panel lockout modes:

- Full lockout mode, which locks the front panel from all source selections
- Executive mode, which locks all front panel selections *except* the nine input buttons (**1** through **8** and **SDI**) and **LOGO**. In Executive mode, the user can transition from one input source to another without pressing **TAKE**.

Full Lockout Mode

In the full lockout mode:

- All button pushes and all turns of the rotary knobs will be ignored.
 - All Ethernet and serial communications commands will function normally.
 - All button lights will continue to reflect the proper state of the inputs.
- Use the following steps to fully lock and unlock the front panel:
1. Press and hold the **SEL** and **ESC** buttons simultaneously for 3 seconds. Once this button combination has been detected, the following display appears:



Figure 4-69. System Message: Lockout Enabled

2. To disable the front panel full lockout mode, press and hold the **SEL** and **ESC** buttons simultaneously for 3 seconds. When the button combination is detected, the system returns to the menu that was displayed before full lockout mode was enabled.

See also “[Executive Mode](#)” on page 71.

4. Operation

Using Front-Panel Lockout

5. GUI Operations

In This Chapter

This chapter provides connection, launch and operating instructions for the system's web-based GUI, which enables you to perform all PDS setup and transition functions, just like the system's "physical" front panel.

The following topics are discussed:

- [GUI Connection and Launch](#)
- [GUI Operations on a PC](#)
- [GUI Operations on a Mobile Device](#)

5. GUI Operations

GUI Connection and Launch

GUI Connection and Launch

- Use the following steps to connect a PC, laptop, or mobile device and launch the GUI:
 1. Ensure that your PC (or laptop) uses Windows® 7, Windows® 2000, or Windows XP. If using a mobile device, ensure that it uses one of the following operating systems:
 - ~ IOS 4+
 - ~ Android 2.3+
 - ~ Android with Chrome®
 - ~ BB OS 6+
 - ~ BB Tablet OS 1+
 2. Ensure that your PC (or laptop) has a web browser installed. The following browsers are supported:
 - ~ Internet Explorer® 10+
 - ~ Mozilla Firefox® 14+
 - ~ Google Chrome® Version 19.0+
 - ~ Safari
 3. Connect the PDS's Ethernet port to a Switch.
 4. Connect the Switch to your PC (or laptop).
 5. Power-up the PDS.
 6. Note the PDS's *current* IP address:
 - a. From the **Status Menu**, press **SEL** to display the **Setup Menu**.
 - b. Select **System** to display the **System Menu**.
 - c. Select **Ethernet** to display the **Ethernet Menu**.
 - d. Make a note of the information on the **IP** line, which shows the current IP address in all modes (with DHCP on or off).

Note

The default IP address is **192.168.0.10**.

7. On your PC (or laptop), open up a web browser.
8. In the browser's address bar, enter the PDS's IP address as shown in the following illustration.



Figure 5-1. Address bar with sample IP address

Note

Avoid using leading zeros in the IP address. If your display panel shows 192.168.000.010, for example, type the address as shown in the preceding illustration, not as shown on the display.

5. GUI Operations

GUI Connection and Launch

- When the PC establishes communications with the PDS, several web pages are downloaded into the PC, and the PDS **Home Page** appears:

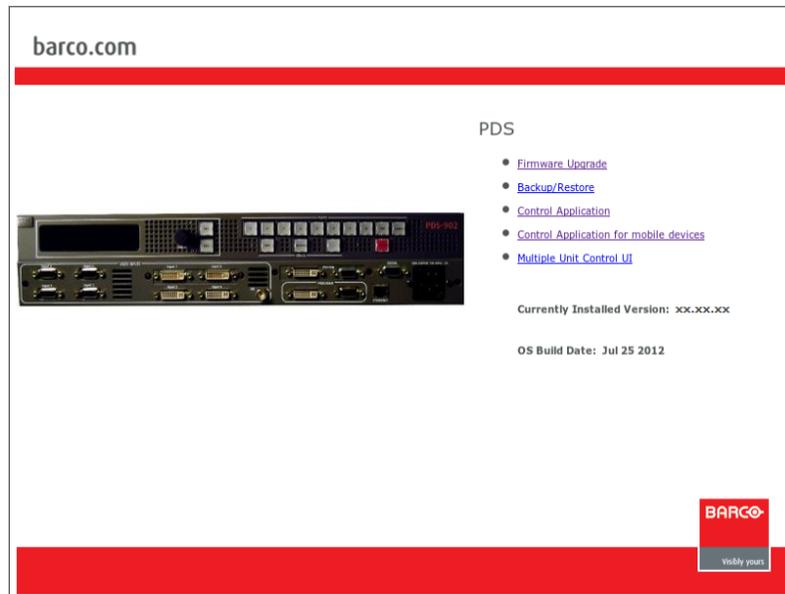


Figure 5-2. PDS Home Page

- Click the **Control Application GUI** link to launch the GUI. The **GUI Status Menu** page appears, as shown below:

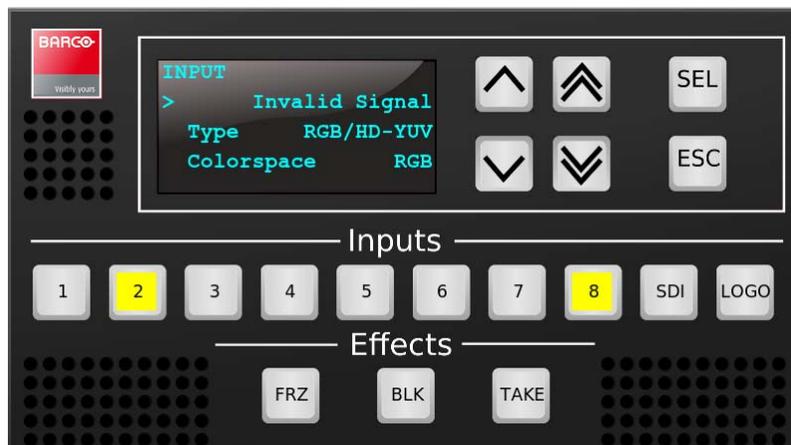


Figure 5-3. PDS GUI Status Menu

- The PDS GUI is now ready for use. Refer to the [“GUI Operations on a PC”](#) section on page 90 for important operating notes.

Note

If you have trouble establishing communications between your PC and the PDS, in Chapter 6, refer to the [“Troubleshooting Ethernet Communication”](#) section on page 105 for instructions.

5. GUI Operations

GUI Operations on a PC

GUI Operations on a PC

The figure below illustrates a sample GUI screen, as seen on a PC:

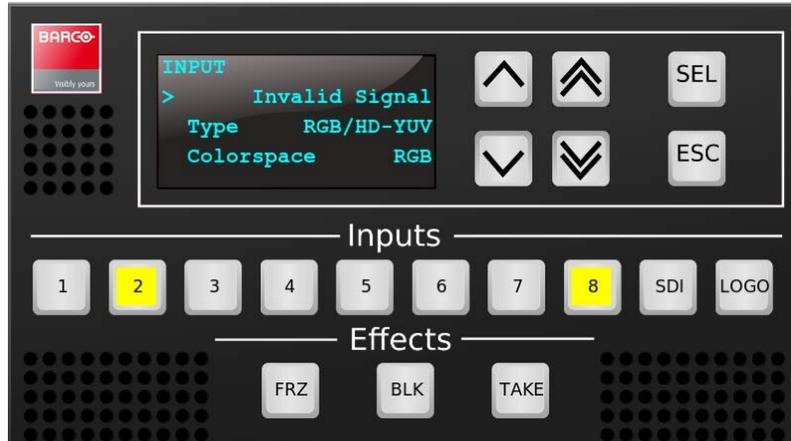


Figure 5-4. PDS PC GUI Setup Menu

Running the PDS GUI is virtually identical to running the system from the physical front panel. The similarities are:

- All control panel sections and menus are the same. In Chapter 4, refer to the [“Using the Menu System”](#) section on page 30 for details.
- All input, transition, and “effect” selection methods are the same. In Chapter 4, refer to the [“Using Inputs”](#) section on page 77 for details.
- All button states are the same. In Chapter 4, refer to the [“Button States”](#) section on page 27 for details.

The differences are:

- “Click” instead of press.
- Use the **Up/Down** arrows in place of the **ADJUST** knob:
 - ~ Click the **Up Arrow** to scroll up the menu tree.
 - ~ Click the **Down Arrow** to scroll down the menu tree.
- All actions taken on the GUI are mirrored on the physical front panel.
- You can not enter or leave the **Front Panel Lockout** mode from the GUI.

The double up/down arrows can be used to make coarse menu adjustments. For example, the “Brightness” field is a percentage, 100.0. The single up/down arrow will adjust this field in 0.1% increments; the double up/down arrow will adjust the field if 4.0% increments.



GUI Operations on a Mobile Device

The figure below illustrates a sample GUI screen, as seen on a mobile device. It has the same controls as those for a PC, described in [“GUI Operations on a PC”](#) on page 90.



Figure 5-5. PDS Cell-Phone GUI Setup Menu

5. GUI Operations

Multiple Unit Control UI

Multiple Unit Control UI

The Multiple Unit Control User Interface (UI) allows an operator to control multiple PDS units on the same network via a web browser, without installing a separate control application. After discovery and setup of the PDS units in the UI, one or more units can be enabled to accept source changes or transitions. After this is done, selection of any input, including Logo or initiation of a transition, will happen on the selected PDS units.

Use the following steps to setup and start using this UI to control multiple PDS units.

Connection to the Multiple Unit Control UI

1. Ensure each PDS unit is connected to the network and configured with a proper Ethernet IP address. Refer to the “Ethernet” section in chapter 4 for more information.
2. Access the PDS Home Page on one of the units. Refer to “GUI Connection and Launch” on page 88.
3. Select “Multiple Unit Control UI” from the PDS Home Page. The PDS Multiple Unit Control UI will appear.



Figure 5-6. PDS Multiple Unit Control User Interface (UI)

Adding Units to the Unit List

1. Select the “Discover” tab (next to the “Edit” tab) in the upper right window of the PDS Multiple Unit Control UI. The PDS Discover Menu will appear.

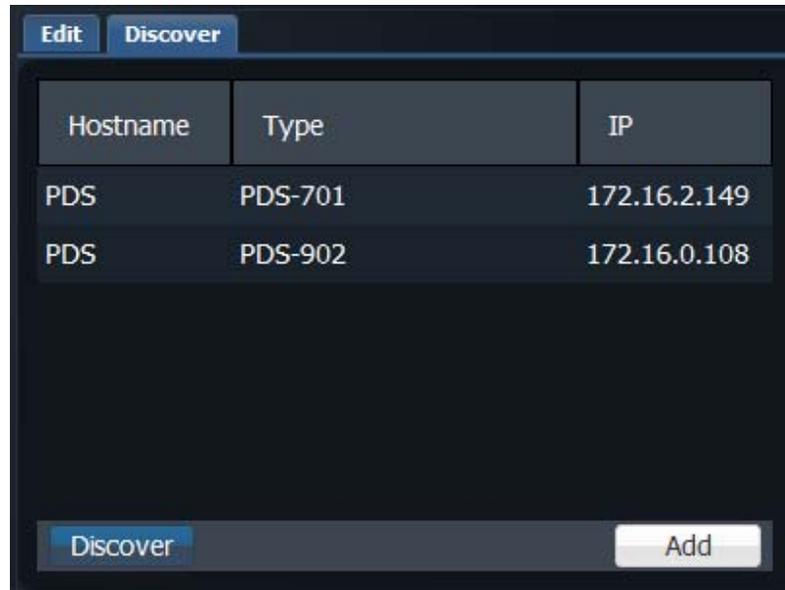


Figure 5-7. PDS Discover Menu

2. Press the “Discover” button in lower left corner of this window. The UI will query the network and find all available PDS units.
3. Highlight one or more units in the list (use CTRL + Left Mouse Click to highlight multiple units) and press “Add” to move them to the “Unit List”.

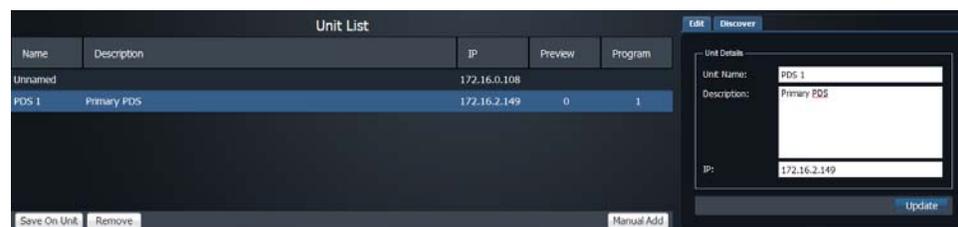


Figure 5-8. PDS Unit List

4. Use the “Edit” window to make changes to the Unit Name, Description or IP Address, as necessary. Then select “Update”. The control section will be displayed.

Note

Units can be manually added by selecting the “Manual Add” button in the lower right corner of the “Unit List” window. Use the “Edit” window to update the Unit Details for these manually added units.

5. GUI Operations

Multiple Unit Control UI

Note

The IP field in the Edit window cannot be updated for PDS units when the Status of that unit is “Connected”.

Controlling Multiple PDS Units



Figure 5-9. Control Section of the PDS Multiple Unit Control UI

The control section of the UI gives the operator control over the multiple PDS units. Each PDS in the unit list is represented with a status window. This window reports the Name of the PDS unit, what source is on Preview and Program, and whether the unit is currently connected to the network.

This control section shows up to four PDS units at any given time. Use the highlighted arrow buttons to scroll to other PDS units if more than four units are currently configured in the Unit List.

Using a mouse or other pointing device, left-click anywhere within a PDS status window to select or deselect that PDS. When selected, the entire window will highlight blue. Unselected PDS units will be grey.

When the desired PDS units are selected, use the mouse to select any of the inputs or Logo in the bus below the status windows. These selections will be made in Preview. Select the TAKE button to initiate a transition of Preview to Program for the selected PDS units.

For the selected PDS units, keyboard shortcuts can also be used to select inputs, Logo, or Take as follows:

Table 5-1. PDS Keyboard Shortcuts for Multiple Unit Control

Keyboard Shortcut	PDS Operation
1 - 8	Selects Inputs 1 – 8
9, S or s	Selects SDI Input
0, L or l	Selects Logo Input
T or t	Selects Take

Save Setup

1. In the middle-left of the PDS Multiple Unit Control UI, click the “Save On Unit” button to save the current Multiple Unit Control UI configuration to the PDS that was used to connect to the Multiple Unit Control UI.

6. Upgrading Firmware

In This Chapter

This chapter provides detailed instructions for upgrading PDS system firmware. The following topics are discussed:

- [Firmware Upgrade Overview](#)
- [Hardware Requirements](#)
- [Firmware Requirements](#)
- [Downloading Firmware via FTP or Web Site](#)
- [Upgrading Firmware Using the USB Port](#)
- [Upgrading Firmware Using the Web Upgrade](#)

6. Upgrading Firmware

Firmware Upgrade Overview

Firmware Upgrade Overview

Firmware files for the PDS are loaded into the hardware at power-up. These files are stored in the unit's onboard flash memory. The PDS's system firmware can be easily upgraded using the steps described in the sections that follow.

Hardware Requirements

The following hardware items are required for upgrading PDS firmware:

- IBM compatible computer with an available Ethernet port
 - Local Ethernet network, including an Ethernet switch
-

Firmware Requirements

The following list outlines firmware requirements for upgrading the PDS's firmware:

- Ensure that your PC (or laptop) uses the Windows® 7, Windows® 2000, or Windows XP operating systems.
- Ensure that your PC (or laptop) has a web browser installed, such as Windows Internet Explorer® or Mozilla Firefox®.
- If using the Safari web browser, ensure that the following is NOT checked under Safari --> Preferences --> General menu:
 - ~ Open "safe" files after downloading.

Firmware files can be downloaded from either the Barco Folsom FTP site or the Barco website, as described in the following ["Downloading Firmware via FTP or Web Site"](#) section.

Downloading Firmware via FTP or Web Site

Two different methods can be used to download PDS firmware:

- [Via FTP Site](#)
- [Via Web Site](#)

Via FTP Site

Barco Folsom's FTP site address is: <ftp.folsom.com>

■ To download firmware from the FTP site:

1. Create a target folder on your PC or USB Flash drive (e.g., PDS).
2. Ensure that your PC is connected to the internet.
3. Log on to the FTP site using one of the following methods:
 - a. If you are using an FTP client such as **Ipswitch WS_FTP Professional**, log on to our site as follows:
 - **FTP Site:** ftp.folsom.com
 - **User name:** anonymous
 - **Password:** your email address
 - ▲ **Example:** johndoe@somecompany.com
 - b. If you are using a web browser, point the browser to:
ftp://ftp.folsom.com

Note

If you are using **Internet Explorer 7** or **8**, after entering the FTP address, click **Page**, and then click **Open FTP Site in Windows Explorer**.

- c. To use Windows Explorer, right-click the **Start** button, then click **Explore**. When the Explorer window opens, enter the FTP site in the address bar.
4. Once logged on, navigate to the following directory:
ftp://ftp.folsom.com/Image Processing/PDS/
 5. Transfer the following file to the target folder on your PC:
PDS_Rev##.##.zip
 6. Go to the folder that was used to save the downloaded file and "unzip" the contents of this file.
 7. Please continue with the "[Upgrading Firmware Using the Web Upgrade](#)" section on page 100 or "[Upgrading Firmware Using the USB Port](#)" section on page 98.

Via Web Site

Barco's web site address is: www.barco.com

■ To download firmware from the web site:

1. Create a target folder on your PC or USB Flash drive (e.g., PDS).

6. Upgrading Firmware

Upgrading Firmware Using the USB Port

2. Ensure that your PC is connected to the internet.
3. On the web, navigate to:
<http://www.barco.com>
4. Navigate to the “PDS Series” home page:
<http://www.barco.com/en/products-solutions/image-processing/presentation-switchers/easy-to-use-digital-switchers.aspx>
5. Navigate to the “Downloads” tab **Flash software**, and download the latest version of code:
PDS Series Software - v###.###.###.###
6. When the **File Download Dialog** appears, click **Save**.
7. When the **Save As Dialog** appears, navigate to the target folder and click **Save**.
8. Go to the folder that was used to save the downloaded file and "unzip" the contents of this file.
9. Please continue with the “[Upgrading Firmware Using the Web Upgrade](#)” section on page 100 or “[Upgrading Firmware Using the USB Port](#)” section on page 98.

Upgrading Firmware Using the USB Port

PDS firmware can be downloaded from the FTP or Web site to a USB memory stick. This involves plugging the USB stick into the PDS, going to a menu in the PDS, and initiating the transfer of the file from the USB stick to the PDS.

First, ensure that your flash drive is formatted to use the FAT32 file system. If necessary, reformat the drive as described in the following section. When the drive is properly formatted, refer to [Performing the Firmware Upgrade Using the USB Port](#) on page 99 for the upgrade procedure.

Formatting the Flash Drive

Ensure that the drive contains no data.



Reformatting the flash drive erases existing data. To avoid losing data, download to a computer or a secure site any files you wish to keep, then format the drive.

- Then use the following procedure to format the flash drive:
 1. Insert the flash drive into a Windows PC or laptop’s USB port.
 2. Select **Start > My Computer**.
 3. On the **My Computer** screen, right-click the drive that represents the flash drive.
 4. Select **Format** from the menu that appears. The **Format Removable Disk** screen appears.
 5. Select **FAT32** as the file system, and **Quick Format** under **Format Options**, as shown in the following illustration.

6. Upgrading Firmware

Upgrading Firmware Using the USB Port

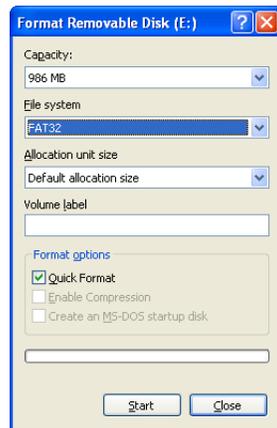


Figure 6-1. Format Removable Disk Window

6. Then click **Start**. A message appears, warning that data will be erased during the formatting process.
 - ~ Click **OK** to continue.
 - ~ Click **Cancel** to halt the process.
7. If you click **OK**, a confirmation message appears after a few seconds. The flash drive is now ready to use.

If you click **Cancel**, you can delete data or download it to the computer, then retry the formatting operation.

Performing the Firmware Upgrade Using the USB Port

Important

After unzipping the firmware upgrade downloaded from the Barco Web Site or FTP site, make sure the PDS_##_##.tar.gz file is in a directory named "PDS" before inserting the USB Flash drive into the PDS's USB port.

- To upgrade the PDS firmware via the USB port, use the following procedure:
 1. Insert the USB Flash drive into the PDS's USB port.
 2. Select **Firmware Upgrade** from the **Setup Menu**. The **Firmware Upgrade Submenu** appears.



Figure 6-2. Code Upgrade Submenu

6. Upgrading Firmware

Upgrading Firmware Using the Web Upgrade

3. Select **USB Code Upgrade**. The menu shown in the following illustration appears.



Figure 6-3. USB Code Upgrade Menu

4. Scroll to the file you want to use, and press **SEL**.
5. Scroll to **Upgrade** and press **SEL** again.

A progress message appears.

Note

Do not remove the flash drive or power down the PDS until the firmware file is uploaded to the PDS.

When the file is loaded, the PDS powers down and reboots.

Upgrading Firmware Using the Web Upgrade

Checking for Available Firmware Upgrades

- To determine whether a new version of the PDS firmware is available, use the following procedure:
 1. Verify that the PDS has internet access. Contact your system administrator if necessary.
 2. Select **Setup > Firmware Upgrade > Web Upgrade**. The submenu shown in the following illustration appears.

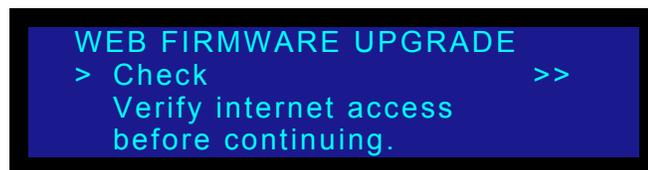


Figure 6-4. Web Firmware Upgrade Submenu

3. Select **Check**.

6. Upgrading Firmware

Upgrading Firmware Using the Web Upgrade

4. A message informs you if a new firmware version is available.

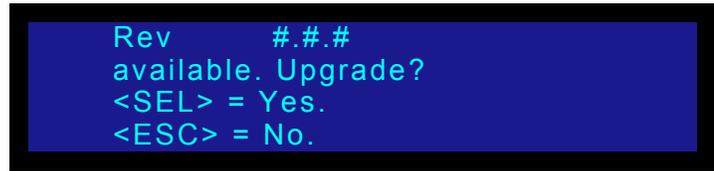


Figure 6-5. Firmware Version-Upgrade Message

5. Press <SEL> to start the upgrade. A message will inform you to "Please wait...".



Figure 6-6. Upgrade Wait Message

6. After the upgrade is finished, the PDS will automatically reboot.



Figure 6-7. Resetting Message

If you are not connected to the internet, a message prompts you to check the connection.

Upgrading Firmware Using the Web Interface

- Use the following steps to upgrade PDS software:
 1. Ensure that your PC (or laptop) uses Windows® 7, Windows® 2000, or Windows XP.
 2. xConnect the PDS's Ethernet port to a Switch.
 3. Connect the Switch to your PC (or laptop).
 4. Power-up the PDS.
 5. Note the PDS's *current* IP address:
 - a. From the **Status Menu**, press **SEL** to display the **Setup Menu**.
 - b. Select **System** to display the **System Menu**.
 - c. Select **Ethernet** to display the **Ethernet Menu**.

6. Upgrading Firmware

Upgrading Firmware Using the Web Upgrade

- d. Make a note of the information on the **IP** line, which shows the current IP address in all modes (with DHCP on or off).

Note

The default IP address is **192.168.0.10**.

6. On your PC (or laptop), open up a web browser.
7. In the browser's address bar, enter the PDS's IP address.



Figure 6-8. Address bar with sample IP address

Note

Avoid using leading zeros in the IP address. If your display panel shows 192.168.000.010, for example, type the address as shown in the preceding illustration, not as shown on the display.

8. When the PC establishes communications with the PDS, several web pages are downloaded into the PC, and the PDS **Home Page** appears:

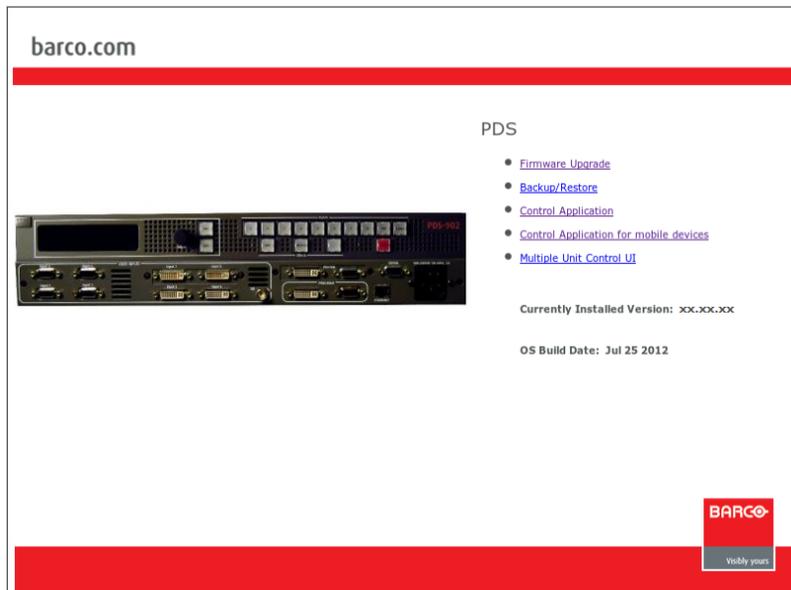


Figure 6-9. PDS Home Page

6. Upgrading Firmware

Upgrading Firmware Using the Web Upgrade

- Click the **Firmware Upgrade** link to continue the upgrade process. The **Select File** page appears, as shown below:

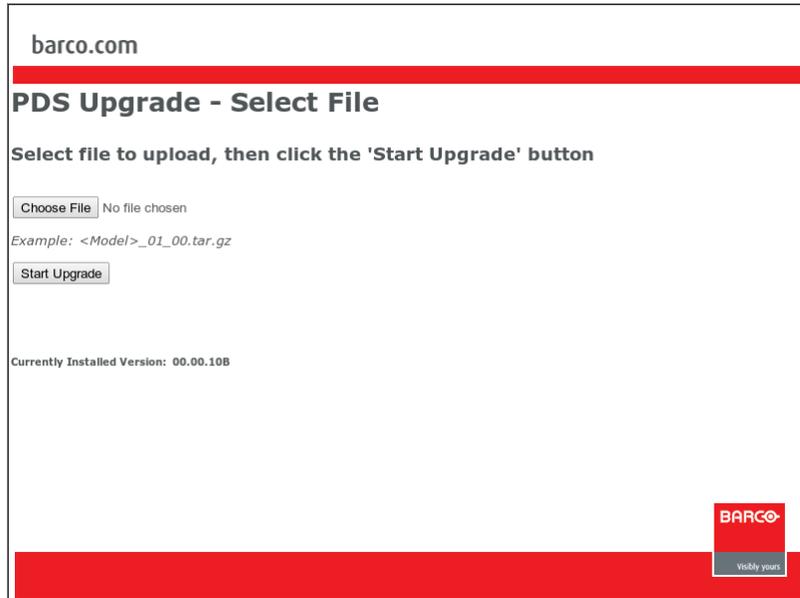


Figure 6-10. PDS Select File Page

- Click the **Browse** button, and navigate to the folder on your PC where you saved the latest version of code.
- In the **Upload Dialog**, select the file:
PDS_##_##.tar.gz
... and click **Open**.
- In the **Select File** page, click **Start Upgrade**.
The **Upload Status** page appears, which provides status during the upload procedure:

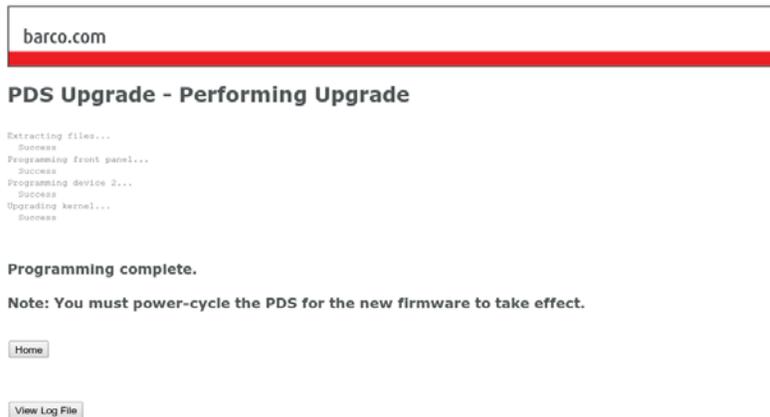


Figure 6-11. PDS Upload Status Page

6. Upgrading Firmware

Upgrading Firmware Using the Web Upgrade

13. When the procedure is complete, you have three options:
 - ~ Click **Home** to return to the PDS **Home Page**.
 - ~ If a problem was encountered during the process, click **View Log File** to display a text-based log of the upload procedure.
 - ~ If the upload was successful, click **Restart** PDS to complete the entire upgrade procedure.
14. Close your browser, and resume operations on the PDS.

Note

Be sure to check the **Software Version Menu** to verify that the system has been updated. From the **Setup Menu**, select **Tech Support** to display the **Tech Support Menu**, which lists the current software version at the top.

Troubleshooting Ethernet Communication

- Use the following steps to determine the IP address of the PDS, and establish proper communications:
 1. Power-up the PDS.
 2. Note the PDS's *current* IP address:
 - a. From the **Status Menu**, press SEL to display the **Setup Menu**.
 - b. Select **System** to display the **System Menu**.
 - c. Select **Ethernet** to display the **Ethernet Menu**.
 - d. Make a note of the information on the **IP** line, which shows the current IP address in all modes (with DHCP on or off).
 3. Attempt to ping the PDS as follows:
 - a. Connect the PDS's Ethernet port to a Switch.
 - b. Connect the Ethernet Switch to your PC.
 - c. Turn on the PC or laptop.
 - d. Open a command prompt window on the PC. Click **Start > Programs > Accessories > Command Prompt**.
 - e. On the command prompt line, type:

```
ping 192.168.0.10
```

... followed by **Enter**.

Note

Use the unit's actual IP address, as determined in step 2 above.

- f. If the computer can successfully communicate with the PDS, you will see a series of "**replies**" from the target IP address. Repeat the upgrade procedure as outlined in the "[Upgrading Firmware Using the Web Upgrade](#)" section on page 100.
- g. If you see a "**Request timed out**" message, the PC is unable to locate the PDS. If this is the case:
 - Check your network connections and settings as described above, or,
 - Contact your network administrator, or,
 - Contact **Technical Support**. In Appendix C, refer to the "[Contact Information](#)" section on page 174 for details.

6. Upgrading Firmware

Upgrading Firmware Using the Web Upgrade

7. PDS-902 3G Enhancements

In This Chapter

This chapter provides information about the enhancements provided with the PDS-902 3G. In addition, it describes the new features available with firmware version 3.00 and higher, which is compatible with the entire PDS family product line. For information about the commands used for firmware version 3.00, refer to Appendix B [Remote Control](#), on page 129.

The following topics are discussed:

- [Overview of Changes](#)
- [Front and Rear Panel Enhancements](#)
- [Executive Mode](#)
- [Matte or Logo Backgrounds](#)
- [Output Display Modes](#)
- [Input Sizing Adjustments](#)
- [Menu Changes](#)
- [HDCP](#)
- [Analog Computer and Video Source Color Space Detection](#)
- [Input and Output Specifications](#)

Note

Unless specified in this chapter, the functionality of the PDS-902 3G is the same as that of earlier models of this system, and as described in earlier chapters of this manual.

7. PDS-902 3G Enhancements

Overview of Changes

Overview of Changes

The following enhancements are provided with the PDS-902 3G and with firmware version 3.00 and higher, which is compatible with the entire PDS family product line.

- The rear panel adds an **HD/SD/3G SDI** output for Program mode.
- The front panel adds the following buttons:
 - ~ **PIP1** and **PIP2** buttons display one or both PIPs on the Preview output, and transition to Program.
 - ~ **LOGO BLACK** transitions to either a logo or black background.
- The PDS-902 3G introduces the following output display modes:
 - ~ Picture-in-picture (PIP) mode supports full-screen output of one or two PIPs over either a matte color or logo background.
 - ~ In Matrix mode, the PDS displays two full-screen sources separately, one in Preview and one on Program, with transitions through black.
- In Preview and on Program, you can select a black, gray, or custom color background. In addition, you can select a logo as the background on Program.
- To enable Executive Mode, you can now use a combination of front-panel buttons, as well as the System menu.
- The PDS series now provides three options for input sizing: Native, Zoom, and Stretch.

Front and Rear Panel Enhancements

This section discusses the new features of the PDS-902 3G front and rear panels.

PDS-902 3G Front Panel

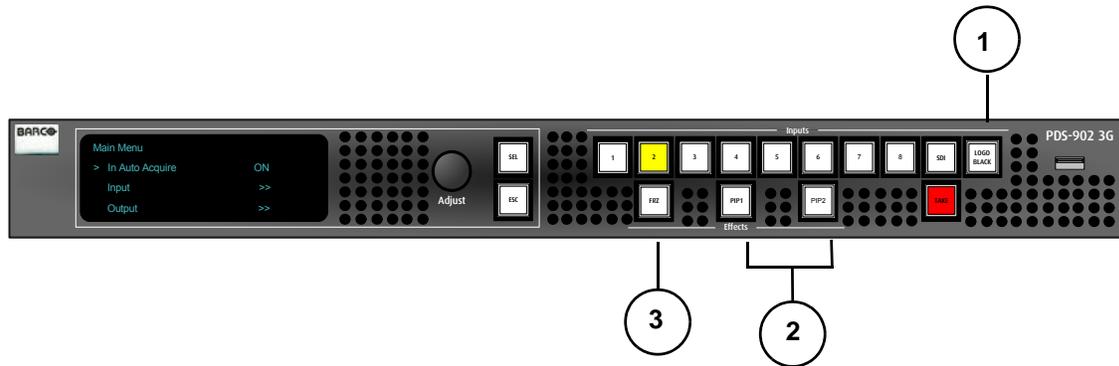


Figure 7-1. Front panel

The front panel of the PDS-902 3G adds two buttons to support PIP functionality. In addition, the **LOGO** and **BLACK** buttons have been combined into a single **LOGO BLACK** button, and the function of the **FRZ** (Freeze) button depends on which output display mode you select.

- 1) The **LOGO BLACK** button uses the system transition rate to transition to a logo or black. If there is no stored logo, the transition is to black.

The factory default setting is to transition only after you press **TAKE**. However, if **Auto Take** feature is **ON**, pressing **TAKE** is not necessary.

~ If **Auto Take** is **ON**:

Press to set up a transition to black or a logo. The button light blinks during the transition, and is lit solid when the transition completes.

~ If **Auto Take** is **OFF**:

Pressing the button sets up the transition. Press **TAKE** to bring the selection to Program.

- 2) The **PIP1** and **PIP2** buttons enable the display of one or two PIPs on the Preview output, and to transition one or both to Program.

~ To display the PIP that is currently offscreen, tap the appropriate PIP button. The button light blinks. Press **TAKE** to transition the PIP onscreen.

~ To hide the PIP that is currently onscreen, tap the appropriate PIP button. The button light blinks. Press **TAKE** to transition the PIP onscreen.

~ To select the input source to pend for a PIP, press and hold a PIP button, then select the input source.

- 3) **FRZ** (Freeze) button functionality is determined by the output display mode:

7. PDS-902 3G Enhancements

Executive Mode

- ~ In Full Screen Mode, press to freeze the current source on Program. The button lights solid. Press again to unfreeze the current source. The button light goes out.
- ~ If the output display mode is Matrix or PIP, press and hold the PIP button and press **FRZ** to enable or disable freezing the source currently in the PIP.

Note:

After upgrading any PDS model to revision 3.00 or higher, the front panel button definition will be as described above.

PDS-902 3G Rear Panel

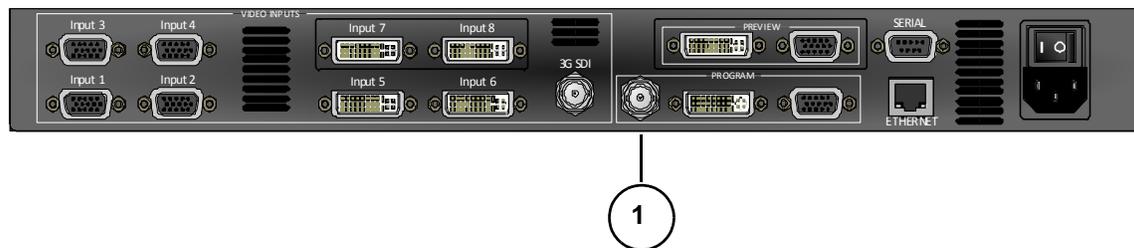


Figure 7-2. Rear panel

- 1) The Program section of the rear panel includes an SD/HD/3G SDI output on a BNC connector. For specifications of this output, refer to [“Input and Output Specifications”](#) on page 119 of this chapter.

Executive Mode

To initiate a limited front-panel lockout, you can enable Executive mode by pressing **ESC** and **Input 1**.

To disable Executive mode, use the same button presses.

For more information about Executive mode, refer to the section [“Using Front-Panel Lockout”](#) on page 110.

Matte or Logo Backgrounds

The PDS-902 3G supports selecting a matte color (black, gray, or a custom color) or a logo as a background. You can select a separate background for the Program and Preview displays. On Program, you can select either a matte background or a logo. In Preview, you can select a matte background.

In the **User Preference Menu**, shown in the following illustration, select either **Pgm Background** or **Pvw Background**. Then select the desired background.



Figure 7-3. Program and Preview background selections

Note

After setting up custom configurations for the PDS, including the system mode, input sizing and output adjustments, you can save your settings by selecting **Save System State** on the **User Preference Menu**. This selection is also available on the **System Menu**, and is described in "[Save System State](#)" on page 74.

Output Display Modes

Three output display modes are available from the **User Preference** menu:

- [Full Screen Mode](#)
- [PIP Mode](#)
- [Matrix Mode](#)

At any time, you can switch between the different modes. You are prompted to confirm the switch before proceeding.

Full Screen Mode

Full screen mode is the main operating mode and the system default setting. In this mode, the Program and Preview sources default to **Input 1**.

PIP Mode

The PDS product line supports displaying one or two PIPs on Program. You can preview and adjust the next PIP state on a Preview monitor. In PIP mode, the Preview output does not display live images. Instead, it shows outlines where the PIPs are located, and each PIP is labeled with the input number.

The front panel of the PDS provides a **PIP1** button and a **PIP2** button. Use these buttons to

7. PDS-902 3G Enhancements

Output Display Modes

display one or both PIPs on the Preview output, and to transition one or both to Program.

From a factory reset or coming from another output display mode, the PIPs are placed in one of two predefined default positions, as shown in the following figure.

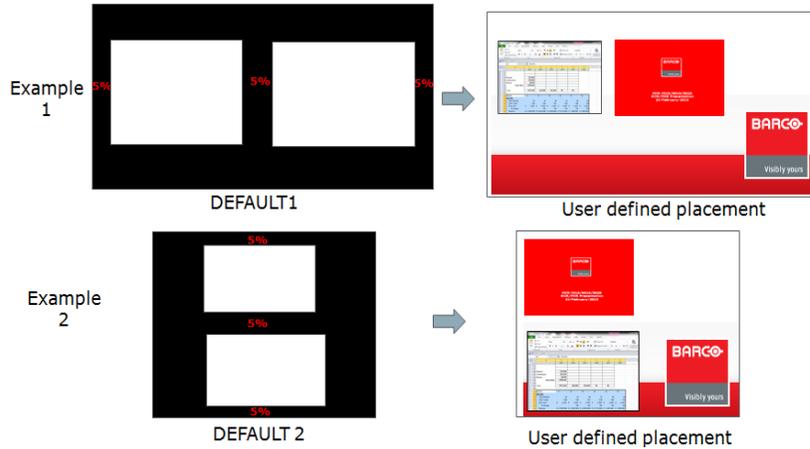


Figure 7-4. Default positioning for PIPs

When the output resolution is 4:3 or 5:4 aspect ratio, the PIPs are displayed in a Top/Bottom configuration. Otherwise, the PIPs are displayed in a Left/Right configuration.

The **PIP1** button is assigned to the left or top PIP. **PIP2** is assigned to the right or bottom PIP.

PIP Adjustments

The **PIP Adjustment Menu** becomes available in the **Setup Menu** when the output display mode is **PIP**, and you press a PIP button. On this menu, you select a PIP and then set various properties for it, including the background color, horizontal and vertical sizing, and positioning. The **Units** option on this menu lets you set the values in either pixels or percentages. You can save the PIP configuration and recall it for later use. Or you can reset the PIP to its default settings.

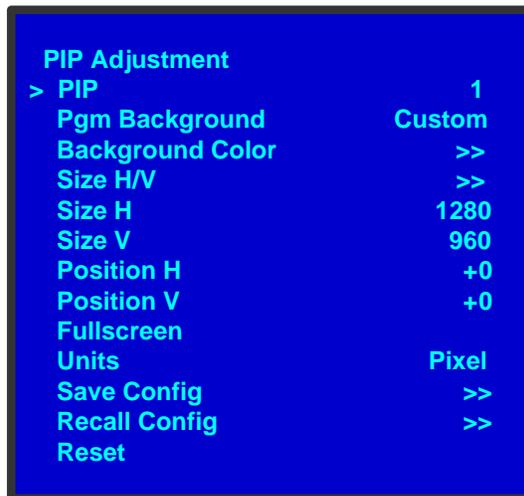


Figure 7-5. PIP Adjustment Menu

In Matrix Mode, the **PIP Adjustment Menu** is not available.

Selecting a PIP Background

On Program, the PIP background can be either a logo or a matte color (black, gray, or a custom color). In Preview, the PIP background can be a matte color (black, gray, or a custom color).

Select a PIP on the **PIP Adjustment Menu**. To change the background of the PIP on Program, select **Pgm Background** and choose either **Custom**, **Black**, or **Gray**. To change the background of the PIP on Preview, select **Background Color** and choose one of the options.

Sizing and Positioning a PIP

In the default positions, the PIPs are sized to be 5 percent from the edge of the output raster and from each other. You can adjust this sizing, and the positioning of each PIP, using the **PIP Adjustment Menu**.

To begin, select the PIP you want to size. All the properties you set apply to the selected PIP. To size a PIP, you can select **Size H/V** to set horizontal and vertical sizing at the same time. Or select **Size H** to set horizontal sizing and **Size V** to set vertical sizing independently.

You can size a PIP in either pixels or a percentage of the total. To change this setting, select **Units** from the **PIP Adjustment Menu**, and select a value.

To position the PIP on the display, first select a PIP on the **PIP Adjustment Menu**. Then select **Position H** or **Position V** and scroll to adjust the position.

Transitioning a PIP to Program

The method you use to transition a PIP from Preview to Program depends on your **Auto Take** setting. For more information about **Auto Take**, refer to the "[Auto Take](#)" section on page 63.

- When **Auto Take** is **ON**: Select the PIP source by pressing and holding **PIP1** or **PIP2**. At the same time, press the desired source button. The source immediately appears on Program after the input selection is made. Selected source buttons are lit solid.
- When **Auto Take** is **OFF**: Select the PIP source by pressing and holding **PIP1** or **PIP2**. At the same time, press the desired source button. The source transitions to Program after you press **TAKE**.

To change two PIP sources simultaneously, press **PIP1** and select the PIP 1 source, then press **PIP2** and select the PIP 2 source. At this point, the pended source buttons blink. Press **TAKE**. The **TAKE** button is lit solid during the transition and is extinguished after the transition completes.

Transitions for each PIP are always performed through the background. If a new source is selected, then the PIP is taken behind the background, and the new source appears in its place.

Note

When two PIPs overlap while a logo is set up on background, any change to one PIP source will force **both** PIPs to dissolve before the changed PIP is restored.

To remove a PIP from Program, press the PIP button, which blinks to show that it is pended

7. PDS-902 3G Enhancements

Output Display Modes

to come down. Press **TAKE** to transition the PIP off Program.

Transitioning a PIP to Full Screen

In the **PIP Adjustment Menu**, you can select either **PIP1** or **PIP2** to go full screen. **PIP1** has a higher Z-order than **PIP2**.

- If PIP1 goes to full screen, the PIP 1 image covers PIP2.
- If PIP2 goes to full screen, PIP1 is on top of PIP2. PIP2 becomes the background.

Saving, Recalling, and Resetting PIP Configurations

After setting up a PIP, you can save the settings to a configuration file, and recall it for later use.

To save a configuration, select **Save Config** on the **PIP Adjustment Menu**. Select **File Number**, assign a number to the configuration file, and press **SEL**. Then scroll to **Save File** and press **SEL** again.

To recall a saved PIP configuration, select **Recall Config** on the **PIP Adjustment Menu**. Select **File Number**, scroll to the number of the file you want, then press **SEL**. Select **Recall File**. This action pends the new configuration assigned to the PIP, including position, size, and input source. Press **TAKE** to place the new configuration on Preview.

Note

If you change settings before pressing **TAKE**, the PIP on Preview reverts to its previous settings.

After saving or recalling a PIP, you can reset its properties to their default settings by selecting the PIP and choosing **Reset** from the **PIP Adjustment Menu**.

Matrix Mode

Matrix Mode allows two full-screen sources to be displayed separately, one on Preview and one on Program, without transitions. Sources are transitioned through black if you select a new source. This mode is ideal for use in conference rooms with Click-Share on one side and Teleconference on the other.

In Matrix Mode, input sources are routed to the Program and Preview outputs independently, as shown in Figure 7-6 on page 114. A source does not need to go through Preview before being routed to Program. Outputs are full-screen images only.

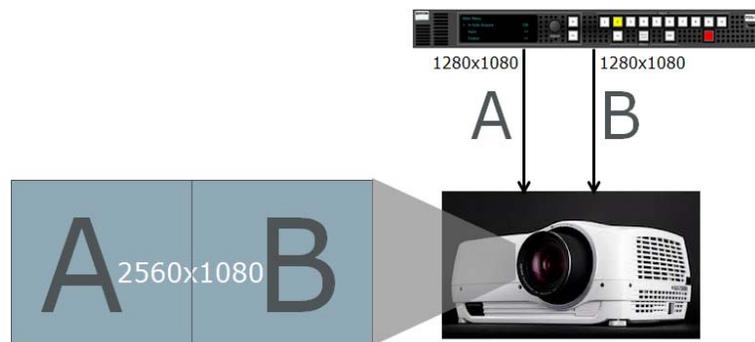


Figure 7-6. Displaying two independent full-screen sources in Matrix Mode

The **PIP1** button is assigned to Preview. **PIP2** is assigned to Program. To use Matrix Mode:

7. PDS-902 3G Enhancements

Input Sizing Adjustments

1. Press and hold a PIP button. Select an input source. The pended input source button blinks.
2. Press **TAKE** to transition to the selected source through black.
A pended source overrides the source on Program.
After you press **TAKE**, there are no pending sources. PIP buttons are lit solid for active PIP sources.
3. Repeat steps 1 and 2 to select and transition the second PIP.

To cancel a pended source, press and hold the appropriate PIP button.

If you select an input source instead of a PIP, that source pends for both PIPs, which can be transitioned on the next Take.

Input Sizing Adjustments

The PDS supports adjusting the input sizing to one of three selections: Native, Zoom, or Stretch. You can save any sizing selection to any input. Select **Input > Sizing Adjust** and choose one of the following options:

- **Native.** The input image is displayed at its original resolution. Native is the default setting. In the example below, a 4:3 input image is displayed on a 16:9 output.



Figure 7-7. An image with native 4:3 input aspect ratio shown in 16:9 output aspect ratio

- **Zoom.** The input fills the output display such that the original aspect ratio is maintained and no background bars are present. In this mode, horizontal or

7. PDS-902 3G Enhancements

Menu Changes

vertical edges of the input video content may be lost. In the following figure, data is lost on the top and bottom edges.



Figure 7-8. An image with 4:3 input aspect ratio zoomed to 16:9 output aspect ratio

- **Stretch.** The image is stretched to fill the screen. The original aspect ratio might not be maintained. In the following figure, the input image is horizontally stretched.



Figure 7-9. An image with 4:3 input aspect ratio stretched to 16:9 output aspect ratio

Menu Changes

To support the latest features of the PDS running firmware version 3.00 or higher, several menu changes have been implemented.

Input Adjustment Options

On the **Input Menu**, the **Adjust On** submenu, shown in the following figure, presents four options for applying changes to Program, Preview, or PIPs.

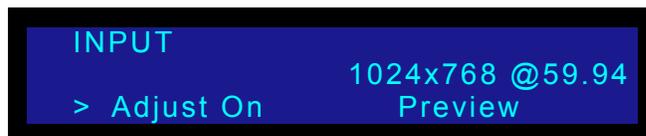


Figure 7-10. Adjust On selection on the Input Menu

You can select two of the following options, depending on the current output display mode:

- **Preview.** Use this option for full-screen output mode.
- **Program.** Use this option for full-screen output mode.
- **PIP 1.** Use this option for Matrix or PIP output modes.
- **PIP 2.** Use this option for Matrix or PIP output modes.

Input Aspect Ratio Maintenance

On the **Input Menu**, the **Sizing Adjust** submenu includes the **H/V Size** option, which maintains the input aspect ratio throughout subsequent sizing adjustments.



Figure 7-11. H/V Size option on the input Sizing Adjust Menu

Output Formats

On the **Output Menu**, the **Output Format** function lists the NTSC, PAL, 1080i and BarcoLink formats. This feature is only available on the PDS 3G series.

Interlaced output formats are available only on the Program BNC connector. When an interlaced output format is selected, the Program DVI and HD-15 connectors output the progressive version of the interlaced format in RGB colorspace.

SDI Output Type

The **SDI Type** selection has been added to the **Output Main Menu**, shown in the following figure. This feature is only available on the PDS 3G series.



Figure 7-12. SDI Type option on the Output Main Menu

- When the output format is not SDI, the setting is **[N/A]**.
- When the output format is an SD-SDI format, the setting is **[SD]**.
- When the output format is an HD-SDI format, the setting is **[HD]**.

7. PDS-902 3G Enhancements

HDCP

- When the output format is 3G, the setting is **Level A** or **Level B**. Level A is the default setting.
- Level B is **not** supported for SMPTE 2K formats.

To support PIP functionality, the **Output Main Menu** does not include the **Output Adjust** feature.

HDCP

The PDS-902 3G, like earlier models in the series, supports the HDCP protocol. Encrypted data coming in is encrypted going out. All analog outputs, Freeze and Logo store options are disabled during the processing of HDCP content.

The **HDCP** submenu, shown in the following illustration, is an option in the **User Preference Menu**. This submenu lets you set HDCP capability for DVI outputs as well as DVI inputs, and read the HDCP status of DVI outputs.

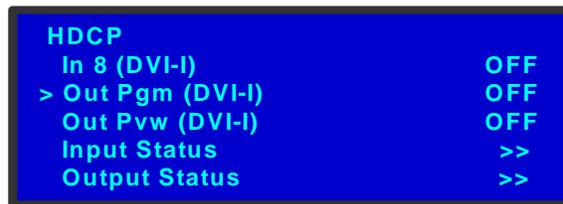


Figure 7-13. HDCP Menu

- For each DVI input and output, the HDCP setting is either **ON** or **OFF**. You can set this capability for the DVI inputs and outputs.
- The **Input Status** option indicates whether protected content is being read by each of the HDCP-capable inputs. Status indicators are:
 - ~ **OK**. A signal with HDCP protected content has been detected.
 - ~ **n/a**. Either no signal is detected, or HDCP protected content has not been detected.
- The **Output Status** option lists the status for each of the HDCP-capable outputs.
 - ~ **OK**. A device is connected and HDCP authentication was successful.
 - ~ **n/a**. Either there is no device connected, or HDCP authentication has failed.

Analog Computer and Video Source Color Space Detection

When the PDS detects 720p or 1080p resolutions on its analog inputs, the connection type (either 5-wire RGBHV or 3-wire YUV) will be determined and the color space for the input will be correct.

Input and Output Specifications

This section describes the input and output enhancements provided by the PDS-902 3G. Unless noted here, the input and output specifications are the same as on previous PDS systems.

Input Specifications

The inputs for the PDS-902 3G are similar to those of earlier models, with the following exceptions:

- The standard 3G/HD/SD SDI input now accepts the BarcoLink format:

~ BarcoLink

- BarcoLink @50 (1920x1200 @50)
- BarcoLink @59.94 (1920x1200 @59.94)
- BarcoLink @60 (1920x1200 @60)

The Barco proprietary BarcoLink technology enables WUXGA (1,920 x 1,200p @ 50/59.94/60 Hz) signals to be transmitted via a single coaxial cable over a distance up to 100 meters. BarcoLink only works between Barco image processing tools and projectors.

Table 7-1. PDS-902 3G Input Specifications

Parameter	Detail	Specification
Inputs 1 - 4	Connector	HD-15 VGA
	Format	RGBHV, YUV, or composite video and Y/C NTSC/PAL
	Sampling	10-bits/color at 165 MHz maximum
		Supports 1:1 sampling up to 1920x1080p @60Hz
		Sources with native pixel rates > 165 MHz will be filtered and undersampled at 165 MHz, including: <ul style="list-style-type: none"> 1600x1200@60 (162 MHz) 1920x1080p@60 (173.0 MHz) 1920x1200@60 (193.25 MHz) 2048x1080p@60 (183.75 MHz)
	EDID	Analog EDID support has been implemented
Inputs 5 - 8	Connector	DVI-I, per DDWG 1.0
	Sampling	1080i RGB input support on DVI digital input (from Turbo iDDR)
	Format (Digital)	8-bit DVI, RGBHV data via analog pins
	Format (Analog)	RGBHV / RGBS / RGSB computer video, YPbPr video (SD or HD), S-video, or composite video
	HDCP hardware support	HDCP version 1.0 compliant
	EDID	Analog EDID support via standard EDID pins used for DVI
Input 9	Connector	BNC

7. PDS-902 3G Enhancements

Input and Output Specifications

Table 7-1. PDS-902 3G Input Specifications

Parameter	Detail	Specification
	Format	SD-SDI per SMPTE 259M-C (NTSC/PAL resolution)
		HD-SDI per SMPTE 292M (HDTV)
		3G-SDI per SMPTE 425
		BarcoLink

Output Specifications

The output specifications for the PDS-902 3G are similar to those of earlier models, with the following exceptions:

- The PDS-902 3G adds a BNC output connector on Program. This connector outputs the following formats:
 - ~ SD SDI per SMPTE 259M-C (NTSC/PAL resolution)
 - ~ HD SDI per SMPTE 292M (HDTV)
 - ~ 3G SDI per SMPTE 425M-2006, 3G, 2.97Gbps and (2.97/1.001) Gbps. All "Mapping Structure 1" formats, Level A or Level B
 - SMPTE 274M-2008
 - 1920 x 1080p/60
 - 1920 x 1080p/59.94
 - 1920 x 1080p/50
 - ~ BarcoLink
 - BarcoLink @50 (1920x1200 @50)
 - BarcoLink @59.94 (1920x1200 @59.94)
 - BarcoLink @60 (1920x1200 @60)

The Barco proprietary BarcoLink technology enables WUXGA (1,920 x 1,200p @ 50/59.94/60 Hz) signals to be transmitted via a single coaxial cable over a distance up to 100 meters. BarcoLink only works between Barco image processing tools and projectors.

Interlaced output formats are available only on the Program BNC connector.

When an interlaced output format is selected, the Program DVI and HD-15 connectors output the progressive version of the interlaced format in the RGB colorspace.

Table 7-2. PDS-902 3G Output Specifications

Parameter	Detail	Specification
Outputs	DVI output	1 x DVI connector on Preview 1 x DVI connector on Program
	RGB output	1 x HD-15 VGA connector on Preview 1 x HD-15 VGA connector on Program
	3G/HD/SD SDI output	1 x BNC connector on Program
	HDCP Encryption	On DVI connectors only

A. Specifications

In This Appendix

This appendix provides detailed technical specifications for the PDS. The following topics are discussed:

- [Input Specifications](#)
- [Output Specifications](#)
- [Physical and Electrical Specifications](#)
- [Communications Specifications](#)
- [Agency Specifications](#)
- [Pinouts](#)

A. Specifications

Input Specifications

Input Specifications

The table below lists PDS input specifications.

Table A-1. PDS Input Specifications

Parameter	Detail	Specification
Inputs 1 - 4	Connector	HD-15 VGA
	Format	RGBHV / RGBS / RGB computer video, YPbPr video (SD or HD), S-video, or composite video
	Sampling	10-bits/color at 150 MHz maximum
		Supports 1:1 sampling up to 1920x1080p @60Hz
	Sources with native pixel rates > 150 MHz will be filtered and undersampled at 150 Mhz, including: <ul style="list-style-type: none">• 1600x1200@60 (162 MHz)• 1920x1080p@60 (173.0 MHz)• 1920x1200@60 (193.25 MHz)• 2048x1080p@60 (183.75 MHz)	
Inputs 5 - 8	Connector	DVI-I, per DDWG 1.0
	Format (Digital)	8-bit DVI, RGBHV data via analog pins
	Format (Analog)	RGBHV / RGBS / RGB computer video, YPbPr video (SD or HD), S-video, or composite video
	HDCP hardware support	HDCP version 1.0 compliant
Input 9	Connector	BNC
	Format	SD-SDI per SMPTE 259M-C (NTSC/PAL resolution)
		HD-SDI per SMPTE 292M (HDTV)
	3G-SDI per SMPTE 425	

Output Specifications

The table below lists PDS output specifications:

Table A-2. PDS Output Specifications

Parameter	Detail	Specification
Outputs	DVI output	1 x DVI connector
	RGB output	1 x HD-15 VGA connector
	HDCP Encryption	On DVI connector only

Physical and Electrical Specifications

The table below lists PDS physical and electrical specifications.

Table A-3. PDS Physical and Electrical Specifications

Parameter	Detail	Specification
Power	Connector	Standard IEC, integral on/off switch
	Power	100-240 VAC, 50-60 Hz
Mechanical	Chassis	H: 1.75 inches (4.4 cm), 1 RU rack mount
		W: 17.00 in. (43.2 cm), 19.06 in. (48.4 cm) with wings
		D: 14.25 in. (36.19 cm)
Temperature		0-40 degrees C
Humidity		0-95% non-condensing
Weight		12.5 lbs (5.67 kg)
Shipping Weight		16 lbs (7.25 kg)

Communications Specifications

The table below lists PDS communications specifications.

Table A-4. PDS Communications Specifications

Parameter	Detail	Specification
Communications	Ethernet	RJ-45, 10/100 Mbps
	Serial	DB-9 Female, DCE, 115k Baud

A. Specifications

Agency Specifications

Agency Specifications

The table below lists PDS agency specifications.

Table A-5. PDS Agency Specifications

Parameter	Detail	Specification
Agency Specifications	EMI/EMC	EN55103-1 E4, EN55103-2, FCC Part 15 Subpart B Class A
	Safety	EN 60950 Class 1

Pinouts

The following topics are discussed in this section:

- [Analog 15-pin D Connector](#)
- [DVI-I Connector](#)
- [Ethernet Connector](#)
- [Serial Connector](#)

Analog 15-pin D Connector

The figure below illustrates the analog 15-pin D connector:

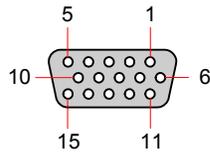


Figure A-1. Analog 15-pin D connector, chassis view

The table below lists Analog 15-pin D connector pinouts.

Table A-6. Analog 15-pin D Connector Pinouts

Pin	Signal	Pin	Signal
1	Red	9	+5V DDC Power
2	Green	10	GND
3	Blue	11	
4		12	DDC Data
5		13	H Sync or C Sync
6	Red return	14	V Sync

Table A-6. Analog 15-pin D Connector Pinouts

Pin	Signal	Pin	Signal
7	Green return	15	DDC Clock
8	Blue return		

DVI-I Connector

The figure below illustrates the DVI-I connector:

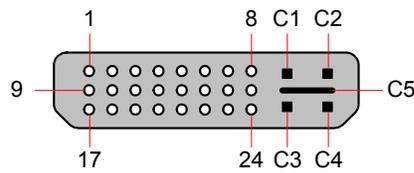


Figure A-2. DVI-I connector

The table below lists DVI-I connector pinouts. Please note:

- T.M.D.S = Transition Minimized Differential Signal
- DDC = Display Data Channel

Table A-7. DVI-I Connector Pinouts

Pin	Signal	Pin	Signal
1	T.M.D.S. Data 2-	13	T.M.D.S. Data 3+
2	T.M.D.S. Data 2+	14	+5V Power
3	T.M.D.S. Data 2/4 Shield	15	ground (for +5V)
4	T.M.D.S. Data 4-	16	Hot Plug Detect
5	T.M.D.S. Data 4+	17	T.M.D.S. Data 0-
6	DDC Clock	18	T.M.D.S. Data 0+
7	DDC Data	19	T.M.D.S. Data 0/5 Shield
8	Analog Vertical Sync	20	T.M.D.S. Data 5-
9	T.M.D.S. Data 1-	21	T.M.D.S. Data 5+
10	T.M.D.S. Data 1+	22	T.M.D.S. Clock Shield
11	T.M.D.S. Data 1/3 Shield	23	T.M.D.S. Clock +
12	T.M.D.S. Data 3-	24	T.M.D.S. Clock -
MicroCross Pins			
C1	Analog Red Video	C4	Analog Horizontal Sync

A. Specifications

Pinouts

Table A-7. DVI-I Connector Pinouts

Pin	Signal	Pin	Signal
C2	Analog Green Video	C5	Analog Common Ground Return
C3	Analog Blue Video		

Ethernet Connector

The figure below illustrates the Ethernet connector:

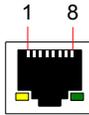


Figure A-3. Ethernet connector

The table below lists Ethernet connector pinouts.

Table A-8. Ethernet Connector Pinouts

Pin	Signal	Wire Color
1	TX Data +	White / Orange
2	TX Data -	Orange
3	RX Data +	White / Green
4		Blue
5		White / Blue
6	RX Data -	Green
7		White / Brown
8		Brown

Serial Connector

The figure below illustrates the DB-9 **Serial** connector.

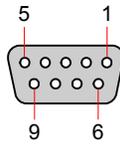


Figure A-4. Serial connector

The table below lists **Serial** connector pinouts.

Table A-9. Serial Connector Pinouts

Pin	RS-232 Signal	Description
1	CD	Carrier Detect
2	TXD	Transmitted Data
3	RXD	Received Data
4	DSR	Data Set Ready
5	GND	Signal Ground
6	DTR	Data Terminal Ready
7	CTS	Clear To Send
8	RTS	Request To Send
9	RI	Unused

A. Specifications

Pinouts

B. Remote Control

In This Appendix

This appendix provides information regarding remote control protocol. The following topics are discussed:

- [Setting Up For The Encore or ScreenPRO-II Controller](#)
- [Communicating with PDS](#)
- [Command Protocol](#)
- [Error Codes](#)
- [PDS Command List](#)
- [Remote Commands](#)
- [Command Updates — Firmware Revision 3.00](#)

B. Remote Control

Setting Up For The Encore or ScreenPRO-II Controller

Setting Up For The Encore or ScreenPRO-II Controller

- The **Barco Remote Control Submenu** sets up the PDS for remote control through a Barco Encore or ScreenPRO-II Controller.



Figure B-1. Remote Control Submenu (sample)

- To connect a PDS to an Encore or ScreenPRO-II Controller, use the following procedure:
 1. On the **Ethernet Submenu**, enable DHCP mode and obtain an IP address for the Encore Controller.
 2. On the **Ethernet Submenu**, select **Remote Control**. The **Barco Remote Control Submenu** appears, as shown in the preceding illustration.
 3. The **Unit ID** defaults to **25**. To change this setting, select **Unit ID** and scroll to another number. Select an ID that is not being used by other devices.
 4. In the **IP** field, scroll through the four fields to enter the IP address of the appropriate controller. When you select IP, the last character in the first field becomes available. Turn the **ADJUST** knob to change the value.

As you continue turning the knob, you can change all three values in this field. Values range from **000** to **255** in all four fields.

Note

The default IP address of the **Encore Controller** is **192.168.0.1**.

The default IP address of the **ScreenPRO-II Controller** is **192.168.0.2**.

5. Press **SEL** to accept your change in the first field. The last character in the next field becomes available.
6. Continue until you have entered the IP address you want. Press **SEL** again.
7. In the **Connect** field, select **ON**. The following message appears:

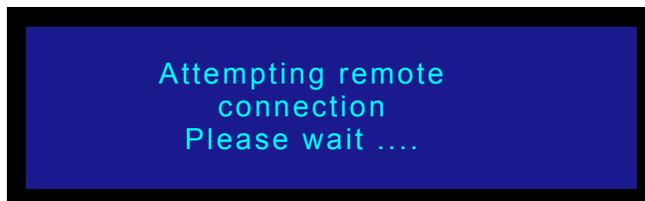


Figure B-2. Remote Connection Message

8. When the connection is established, a confirmation message appears.

Communicating with PDS

- Use the following steps to communicate with the PDS via Telnet:
 1. Connect the PDS's Ethernet port to an Ethernet switch, and connect the switch to your PC or laptop.
 2. Ensure that all Ethernet parameters are properly set up. In Chapter 4, refer to the ["Ethernet"](#) section on page 66 for details.
 3. For Telnet communications, use the PDS's IP address and port 23. On a Microsoft Windows® PC, open a command prompt window and enter the following:

```
> telnet xxx.xxx.xxx.xxx 23
```

To login via Ethernet without requiring a user name or password, telnet to port 3000. Example:

```
> telnet 192.168.0.10 3000
```

4. After you "Telnet" into the PDS, you are presented with the login prompt:

```
Welcome to PDS.  
Login as "user".  
Press <ENTER> for password.
```

- a. Type "user" and press **ENTER** to login.
- b. When prompted for a password, press **ENTER**.

Once you have successfully logged in, the following message appears, along with the command prompt (>):

```
ShellApp waiting for input  
>
```

5. You can now issue commands. Operationally, the telnet window functions in a manner similar to a serial communications session. As required, type **"help"** to see a list of supported commands.

Refer to the ["Remote Commands"](#) section on page 139 for a complete list of commands.

B. Remote Control

Command Protocol

Command Protocol

The PDS's command protocol is compatible with GNU getopt parsing. Every parameter of the command has an option character associated with it. A **<CR>** carriage return (**ASCII 13**) terminates the command.

Note

The order of the option characters in the command does not matter.

▲ Command example:

```
ITYPE -i 2 -t 1<CR>
```

Or

```
ITYPE -t 1 -i 2<CR>
```

Command Responses

A command response is sent after each command is processed. This response consists of the command, followed by the error code, a line feed **<LF>** and a special termination character (**\x4**).

- When a command is successful, the error code is a **0 (eERR_OK)**, or some positive value.
- When a command is not successful, the error code is a negative value. A preliminary list of the error codes is included. Refer to the [“Error Codes”](#) section on page 134 for details.

▲ Command response example:

```
ITYPE -e 0<LF>
```

```
</x4>
```

Query Options

Query type options are available for the commands. The order of precedence for processing query option arguments is help (**--help**), query (**-?**), and list (**--list**). If more than one query option is sent in a command, the option with the highest precedence is processed, and any others are ignored.

Help Query — Commands have a **“help”** query option associated with them, (**--help**). This query lists all option flags and parameters for the command in the following format:

▲ Help option example:

```
IBRT --help<CR>
```

▲ Response:

IBRT

- **Description:** Input Brightness Adjust
- **Command Format:** IBRT -i(input) -b(bright)

- **Parameters:**
 - i(input): Input number, 1-8
 - b(bright): 75.0%-125.0%
- **Query Format:** IBRT i(input) -?
- **Query Response:** IBRT i(input) b(bright) --min 75 --max 125

```
IBRT -e 0 <LF>
```

Current Setting Query — The current setting query option (-?) returns the command with each of the current parameter settings. Commands with minimum and maximum settings for the parameter will have these “min” and “max” values returned with option flags **--min** and **--max**.

- ▲ Query option example:

```
IBRT -i 4 -?<CR>
```

- ▲ Response:

```
IBRT -i 4 -b 100.00 --min 75 --max 125
```

```
IBRT -e 0<LF>
```

```
</x4>
```

Several commands have a list for the associated valid parameter values, such as the format commands. The list of these values can be queried with the list query option (**--list**). The list shows has the numeric value for the parameter, followed by the value text encased in quotes. A colon separates the numeric value from the string.

- ▲ List query option example:

```
ISMP -i 4 --list<CR>
```

- ▲ Response:

```
0: "OverSample"
```

```
1: "1:1"
```

```
ISMP -e 0<LF>
```

```
</x4>
```

B. Remote Control

Error Codes

Error Codes

This section provides PDS error codes:

Error Codes: General Failures

The table below lists general failure codes:

Table B-1. PDS General Error Codes

Code	Description
-9999	Generic fail
-9998	Operation is not applicable in current state
-9997	UI Related... Did not get response from device
-9996	UI Related... Did not get valid response from device
-9995	Timeout occurred
-9994	Parameter / data out of range
-9993	Searching for data in an index, no matching data
-9992	Checksum didn't match
-9991	Version didn't match
-9990	UI Related... Current device interface not supported
-9989	Pointer operation invalid
-9988	Part of command had error
-9987	Buffer overflow
-9986	Initialization is not done (still in progress)

Error Codes: No Error

The table below lists the “no error” code:

Table B-2. PDS “No Error” Code

Code	Description
0	Successful

PDS Command List

The table below lists PDS remote commands.

Note

The following commands are for the PDS-902 and PDS-901 units. For a PDS-701 unit, the input parameter range cannot include inputs 7 or 8.

Table B-3. PDS Remote Commands

Command	Description	Page
Ethernet Commands		
DHCP	Enable/Disable DHCP mode	139
EMAC	Get MAC Address	139
GATEWAY	Set gateway to be used when DHCP is OFF	140
IP	Set Static IP Address to be used when DHCP is OFF	140
SUBNET	Set subnet mask to be used when DHCP is OFF	140
Input Commands		
BLKVID	Puts black into the program input	141
CBLEQ	Set cable equalization	141
EDID	Set Input EDID Resolution	141
EDIDTYPE	Set EDID type	141
FREEZE	Freeze the input on program	142
IADJ	Selects the input path to adjust (preview or program)	142
IADJRST	Reset the input timing parameters to default values for analog.	142
IAR	Adjust Input Aspect Ratio	142
IAUTOACQ	Input Source Acquire Mode	143
IAUTOC	Attempts to detect and adjust input video to the active video area	143
IAVAIL	Query only command for input availability	143
IBRT	Input brightness adjust	144
ICDEL	Delete Input Configuration	144
ICNT	Input contrast adjust	144
ICPHO	Input Phase Adjust	144
ICREC	Recalls saved input configuration for selected input	145
ICRST	Reset Input Configuration to default values	145
ICSAV	Saves Input Configuration	145

B. Remote Control

PDS Command List

Table B-3. PDS Remote Commands (Continued)

Command	Description	Page
<u>ICSP</u>	Input Colorspace Adjust	146
<u>IFILL</u>	Sets the input fill mode	165
<u>IHATV</u>	Input Horizontal Active Adjust	146
<u>IHCROP</u>	Input Horizontal Crop	146
<u>IHPAN</u>	Input Horizontal Pan	147
<u>IHPOS</u>	Input Horizontal Position Adjust	147
<u>IHTOTAL</u>	Input Horizontal Total Adjust	147
<u>IHUE</u>	Input Hue Adjust	147
<u>IMAP</u>	Maps the input file configuration for the selected input	148
<u>IRBRT</u>	Input RGB Brightness Adjust	148
<u>IRCNT</u>	Input RGB Contrast Adjust	148
<u>IRES</u>	Input Resolution Select	148
<u>ISAT</u>	Input Saturation Adjust	149
<u>ISEL</u>	Selects the selected input as the current input to display	149
<u>ISIZERST</u>	Reset the input sizing parameters to default values	150
<u>ISLICE</u>	Input Sync Slice Threshold Adjust	150
<u>ISMP</u>	Adjust Input Sample mode	150
<u>ISYNC</u>	Input Sync Type Adjust	150
<u>ITYPE</u>	Input Type Adjust	151
<u>IVATV</u>	Input Vertical Active Adjust	151
<u>IVCROP</u>	Input Vertical Crop	152
<u>IVPAN</u>	Input Vertical Pan	152
<u>IVPOS</u>	Input Vertical Position Adjust	152
<u>IVTOTAL</u>	Input Vertical Total Adjust. Query-only command.	152
<u>PCOMP</u>	Pulldown Compensation mode adjust	152
<u>TAKE</u>	Take the input currently on preview onto program	153
Output Commands		
<u>BLACK</u>	Set the mixer output to black	154
<u>OAVAIL</u>	Checks availability of the preview output. Query-only command.	154
<u>OCSAV</u>	Save Output Configuration	154
<u>OGM</u>	Set Output Gamma	154
<u>ORBM</u>	Output Raster Box Mode	154
<u>ORES</u>	Output Resolution	155

Table B-3. PDS Remote Commands (Continued)

Command	Description	Page
OSDI	Sets the Output SDI Mode (3G Series only)	166
OSDISTAT	Query only command for the presence of SDI output connector (3G Series only)	167
OSRC	Select the input source for the preview output	155
OSYNC	Output Sync Type Adjust	156
OTPM	Output Test Pattern Mode	156
OTPT	Output Test Pattern Type	156
OUTMODE	Selects the Output Display Mode	167
PIP Commands		
PENDPIP	Pends a change to the PIP mode that will occur on the next Take, or cancels the pending change.	167
PIPFREEZE	Sets the freeze mode of the input of the specified PIP.	167
PIPFULL	PIP is set to full size of output format	168
PIPHPOS	PIP Horizontal Position	168
PIPHSIZE	PIP Horizontal Size	168
PIPISEL	Pends the selected input as the next input for the selected PIP	168
PIPREC	Recalls saved PIP configuration for selected the selected PIP	169
PIPRST	Resets PIP to default location and size based on aspect ratio	169
PIPSAV	Saves the PIP configuration	169
PIPSTAT	Query only command for the status of PIP (disabled or enabled)	169
PIPUNIT	Selects the Unit Mode to be used in the PIP menu for the PIP Size and Position adjustments	170
PIPVPOS	PIP Vertical Position	170
PIPVSIZE	PIP Vertical Size	170
System Commands		
AUTOACQ	Auto Input Acquisition Mode	158
AUTOCFG	Auto Input Configuration Mode	158
AUTOSAVE	Auto Input Settings Save	158
AUTOTAKE	Auto Take Mode	158
BACKGND	Set background color	158
BLKTRAN	Set whether going to black is a direct cut or setup for a take	159, 171
CONMODE	Encore Connect Mode	159
CONTEXT	Set menu context	159
DIAG	Perform a system diagnostic test	159

B. Remote Control

PDS Command List

Table B-3. PDS Remote Commands (Continued)

Command	Description	Page
<u>DIAGD</u>	Display the results of the last performed system diagnostic test	159
<u>ENCOREIP</u>	Encore IP address	160
<u>FPUUPDATE</u>	Request a front panel update	160
<u>HDCPSTAT</u>	Query only command for the input or output HDCP status	165
<u>ISTAT</u>	Query only command for the input status type and format	160
<u>LCLR</u>	Clear the selected log (ram copy, not flash)	160
<u>LDMP</u>	Display the current log messages	160
<u>LFEN</u>	Set the mode for the selected log	161
<u>LINT</u>	Set the time interval for writing the enabled logs to flash	161
<u>LOCKOUT</u>	Control the lockout mode of the front panel	161
<u>OSTAT</u>	Query only command for the output status type and format	161
<u>PREVIEW</u>	Query only command for the input and black button status on preview	161
<u>PROGRAM</u>	Query only command for the input and black button status on program	162
<u>RBACKGND</u>	Sets the RGB component values for the custom background color	170
<u>RESET</u>	Reset unit	162
<u>SAVE</u>	System Save	162
<u>SERIAL</u>	Sets the serial port	162
<u>TEMP</u>	Query only command for the temperature of the unit	163
<u>TRNTIME</u>	Set transition time	163
<u>UNITID</u>	Encore Unit ID	163
<u>VER</u>	Display Version info	163
<u>VFDBRT</u>	Set VFD brightness	163
LOGO Commands		
<u>LOGODEL</u>	Delete the selected logo file	164
<u>LOGOSAVE</u>	Save the image on Program to the selected logo fame store and file	164
<u>LOGOSEL</u>	Logo selection	164 166
<u>LOGOSTAT</u>	The logo format status. This command is a query only.	164

Remote Commands

This section lists PDS remote commands, in the following categories:

- [Ethernet Commands](#)
- [Input Commands](#)
- [Output Commands](#)
- [System Commands](#)
- [LOGO Commands](#)

Ethernet Commands

DHCP

- **Description:** Enables/disables DHCP mode.
- **Command Format:** DHCP -m (mode)
- **Parameters:** -m mode: 0-disable, 1-enable (default: on)
- **Query Format:** DHCP -?
- **Query Response:** DHCP -m (mode) --min 0 --max 1

EMAC

- **Description:** Gets MAC Address.
- **Command Format:** N/A
- **Parameters:** N/A
- **Query Format:** EMAC -?
- **Query Response:** EMAC -a (addr)
- **Response Params:** -a (addr): MAC address formatted xx.xx.xx.xx.xx.xx

B. Remote Control

Remote Commands

GATEWAY

- **Description:** Sets gateway to be used when DHCP is OFF.
- **Command Format:** GATEWAY -s (static addr)
- **Parameters:** s static addr: format will be: xxx.xxx.xxx.xxx
- **Query Format:** GATEWAY -?
- **Query Response:** GATEWAY -a (active addr) -s (static addr)
- **Query Params:** -a (active addr): Active gateway active address

IP

- **Description:** Sets Static IP Address to be used when DHCP is OFF.
- **Command Format:** IP -s (static)
- **Parameters:** -s static addr with format xxx.xxx.xxx.xxx
- **Query Format:** IP -?
- **Query Response:** IP -a (active addr) -s (static addr)
- **Response Params:** -a (active addr): returns active address

SUBNET

- **Description:** Sets subnet mask to be used when DHCP is OFF.
- **Command Format:** SUBNET -s (static addr)
- **Parameters:** -s static address formatted xxx.xxx.xxx.xxx
- **Query Format:** SUBNET -?
- **Query Response:** SUBNET -a(active addr) -s(static addr)
- **Response Params:** -a(active addr): returns active address

Input Commands

BLKVID

- **Description:** Puts black into the program input.
- **Command Format:** BLKVID -m (mode)
- **Parameters:** -m (mode): 0 - off, 1 - on
- **Query Format:** N/A
- **Query Response:** N/A

CBLEQ

- **Description:** Sets cable equalization. Command valid only for DVI input channels.
- **Command Format:** CBLEQ -i(input) -c(cable equalization)
- **Parameters:**
 - i (input): 5-6 (PDS-701) 5-8 (PDS-901 and PDS-902)
 - c (cable equalization): 0 - 15 (Default: 12)
- **Query Format:** CBLEQ -i(input) -?
- **Query Response:** CBLEQ -i(input) -c (cable equalization) --min 0 --max 15

EDID

- **Description:** Sets Input EDID Resolution.
- **Command Format:** EDID -i (input) [-f (format) | -n (index)]
- **Parameters:**
 - i (input) : 1-6 (PDS-701) 1-8 (PDS-901 and PDS-902)
 - f (format): Format string, i.e. "1024x768 @59.94"
 - or
 - n (index): Video format index
- **Query Format:** EDID -i (input) -?
- **Query Response:** EDID -i (input) -f (format)
- **List Format:** EDID -i (input) --list
- **List Response:**
 - 2:"720x480p"
 - 4:"720x576p"
 - 5:"720x576p - 16:9"
 - Etc.

EDIDTYPE

- **Description:** Sets EDID type. This command is valid only for the DVI input channels.
- **Command Format:** EDIDTYPE -i(input) -t(EDID type)

B. Remote Control

Remote Commands

- **Parameters:**
 - i (input): 5-6 (PDS-701) 5-8 (PDS-901 and PDS-902)
 - t (EDID type): 0 - analog, 1 - digital (Default: 1)
- **Query Format:** EDIDTYPE -i(input) -?
- **Query Response:** EDIDTYPE -i(input) -t (EDID type) --min 0 --max 1
- **List Format:** EDIDTYPE -i(input)
- **List Response:**
 - 0:"Analog"
 - 1:"Digital"

FREEZE

- **Description:** Freezes the input on program.
- **Command Format:** FREEZE -m (mode)
- **Parameters:** -m (mode): 0-off, 1-on (Default: off)
- **Query Format:** FREEZE -?
- **Query Response:** FREEZE -m (mode) --min 0 --max 1

IADJ

- **Description:** Selects the input path to be adjusted (preview or program). This command is valid only for the PDS-902.
- **Command Format:** IADJ -p (path)
- **Parameters:** -p (path): 0-preview, 1-program
- **Query Format:** IADJ -?
- **Query Response:** IADJ -p (path)
- **List Format:** IADJ --list
- **List Response:**
 - 0: "Preview"
 - 1: "Program"

IADJRST

- **Description:** Reset the input timing parameters to default values for analog. This command is only available for analog input types.
- **Command Format:** IADJRST -i (input)
- **Parameters:** -i (input): 1 - 6 (PDS-701); 1 - 8 (PDS-901/902)
(5 - 8 only if type is analog)
- **Query Format:** N/A
- **Query Response:** N/A

IAR

- **Description:** Adjust Input Aspect Ratio

- **Command Format:** IAR -i (input) -r (ratio) -c (custom ratio)
- **Parameters:**
 - i (input): 1 - 9
 - r (ratio): 1 - 1:1, 2 - 3:2, 3 - 4:3, 4 - 5:4, 5 - 16:10, 6 - 16:9
 - c (custom ratio): .75 - 3.0
- **Query Format:** IAR -i (input) -?
- **Query Response:** IAR -i (input) -c (custom ratio) --min .75 -- max 3
or
IAR -i (input) -r (ratio) --min 1 -- max 5
- **List Format:** IAR -i (input) --list
- **List Response:**
 - 1:"1:1"
 - 2:"3:2"
 - 3:"4:3"
 - 4:"5:4"
 - 5:"16:10"
 - 6:"16:9"

IAUTOACQ

- **Description:** Input Source Acquire Mode.
- **Command Format:**IAUTOACQ -i(input) -m(mode)
- **Parameters:**
 - i (input): 1 - 9
 - m (mode): 0-off, 1- on
- **Query Format:** IAUTOACQ -i (input) -?
- **Query Response:** IAUTOACQ -i (input) -m (mode) --min 0 --max 1

IAUTOC

- **Description:** Attempts to detect and adjust input video to the active video area. This command is only for analog input types.
- **Command Format:** IAUTOC -i (input)
- **Parameters:** -i (input): 1 - 8 for adjustments (5 - 8 only if itype is analog)
- **Query Format:** N/A
- **Query Response:** N/A

IAVAIL

- **Description:** Query-only command for input availability. This command can be used to identify whether the DVI inputs 7 and 8 are available by querying for input 7 or 8.

B. Remote Control

Remote Commands

- **Parameters:**
 - i (input): 1 - 9
 - m (mode): 0 - input not available, 1 - input available
- **Query Format:** IAVAIL -i (input) -?
- **Query Response:** IAVAIL -i (input) -m (mode)

IBRT

- **Description:** Input Brightness Adjust
- **Command Format:** IBRT -i(input) -b (bright)
- **Parameters:**
 - i (input): 1-9
 - b (bright): 75.0% - 125.0% (Default: 100%)
- **Query Format:** IBRT -i (input) -?
- **Query Response:** IBRT -i (input) -b(bright) --min 75 --max 125

ICDEL

- **Description:** Deletes input configuration.
- **Command Format:** ICDEL -i(input) -f(file)
- **Parameters:**
 - i(input): 1 - 9
 - f(file): 1 - 64. If specified, update the File Association menu to reflect the selected file number. If not specified, use the current file number from the ICREC query.
- **Query Format:** N/A
- **Query Response:** N/A

ICNT

- **Description:** Input Contrast Adjust
- **Command Format:** ICNT -i(input) -c(contrast)
- **Parameters:**
 - i (input): 1-9
 - c (contrast): 75.0% - 125.0% (Default: 100%)
- **Query Format:** ICNT -i(input) -?
- **Query Response:** ICNT -i(input) -c(contrast) --min 75 --max 125

ICPHO

- **Description:** Input Phase Adjust. This command is only valid for analog input types.
- **Command Format:** ICPHO -i(input) -a(ADC) -p(phase)

- **Parameters:**
 - i (input): 1 - 8 (5 - 8 only if itype is analog)
 - a (ADC): A/B (A:ADC A, B:ADC B)
 - p (phase): -16 - 15 (default: 0)
- **Query Format:** ICPHO -i(input) -a(ADC) -?
- **Query Response:** ICPHO -i(input) -a(ADC) -p(phase) --min -16 --max 15

ICREC

- **Description:** Recalls the saved input configuration for selected input. The selected input's IMAP is updated if the -f (file) parameter is specified.
- **Command Format:** ICREC -i (input) -f (file)
- **Parameters:**
 - i (input): 1 - 9
 - f (file): 1 - 64. If specified, update the File Association menu to reflect the selected file number.
- **Query Format:** ICREC -i (input) -?
- **Query Response:** ICREC -i (input) -f (file)
- **List Format:** ICREC -i (input) --list
The list returns all saved input formats.
- **List Response:**
 - 1:"1"
 - 2:"2"
 - .
 - .
 - 64:"64"

ICRST

- **Description:** Reset Input Configuration to the input default values
- **Command Format:** ICRST -i (input)
- **Parameters:** -i (input): 1 - 9
- **Query Format:** N/A
- **Query Response:** N/A

ICSAV

- **Description:** Saves Input Configuration. The input's IMAP is updated if the -f (file) parameter is specified.
- **Command Format:** ICSAV -i (input) -f (file)

B. Remote Control

Remote Commands

- **Parameters:**
 - i (input): 1 - 9
 - f (file): 1 - 64. If specified, update the File Association menu to reflect the selected file number. If not specified, use the current file number from the ICREC query.
- **Query Format:** N/A
- **Query Response:** N/A

ICSP

- **Description:** Input Colorspace Adjust
- **Command Format:** ICSP -i (input) -c (color)
- **Parameters:**
 - i (input): 1 - 9
 - c (color): 0-RGB, 1-SMPTE
- **Query Format:** ICSP -i (input) -?
- **Query Response:** ICSP -i (input) -c (color) --min 0 --max 1
- **List Format:** Each input type will have a different list for colorspace.
ICSP -i (input) --list

IHATV

- **Description:** Input Horizontal Active Adjust. This command is only adjustable for analog input types. Other input types will provide query information only.
- **Command Format:** IHATV -i (input) -a (active)
- **Parameters:**
 - i (input): 1 - 8 for adjustments (5 - 8 only if itype is analog); 1 - 9 for query
 - a (active): In pixels
- **Query Format:** IHATV -i (input) -?
- **Query Response:**
IHATV -i (input) -a (active) --min (active min) -- max (active max)

IHCROP

- **Description:** Input Horizontal Crop
- **Command Format:** IHCROP -i (input) -w (width)
- **Parameters:**
 - i (input): 1 - 9
 - w (width): In pixels
- **Query Format:** IHCROP -i (input) -?
- **Query Response:** IHCROP -i (input) -w(width) --min (pos min) -- max (pos max)

IHPAN

- **Description:** Input Horizontal Pan
- **Command Format:** IHPAN -i (input) -p (pan)
- **Parameters:**
 - i (input): 1 - 9
 - p (pan): In pixels
- **Query Format:** IHPAN -i (input) -?
- **Query Response:** IHPAN -i (input) -p (pan) --min (active min) -- max (active max)

IHPOS

- **Description:** Input Horizontal Position Adjust. This command is only adjustable for analog input types. Other input types will provide query information only.
- **Command Format:** IHPOS -i (input) -p (position)
- **Parameters:**
 - i (input): 1 - 8 for adjustments (5 - 8 only if itype is analog); 1 - 9 for query
 - p (position): In pixels
- **Query Format:** IHPOS -i (input) -?
- **Query Response:**
 - IHPOS -i (input) -p (position) --min (pos min) -- max (pos max)

IHTOTAL

- **Description:** Input Horizontal Total Adjust. This command is only adjustable for analog input types. Other input types will provide query information only.
- **Command Format:** IHTOTAL -i (input) -t (total)
- **Parameters:**
 - i (input): 1 - 8 for adjustments (5 - 8 only if itype is analog); 1 - 9 for query
 - t(total): In pixels
- **Query Format:** IHTOTAL -i (input) -?
- **Query Response:** IHTOTAL -i (input) -t (total) --min (total min) -- max (total max)

IHUE

- **Description:** Input Hue Adjust. This command is only valid for analog, Y/C and CVBS inputs.
- **Command Format:** IHUE -i (input) -h (hue)
- **Parameters:**
 - i (input): 1 - 9
 - h (hue): -90 - +90 (Default: 0)
- **Query Format:** IHUE -i (input) -?

B. Remote Control

Remote Commands

- **Query Response:** IHUE -i (input) -h (hue) --min -90 --max 90

IMAP

- **Description:** Maps the input file configuration for the selected input.
- **Command Format:** IMAP -i (input) -f (file)
- **Parameters:**
 - i (input): 1 - 9
 - f (file): 1 - 64
- **Query Format:** IMAP -i (input) -?
- **Query Response:** IMAP -i (input) -f (file) --min 1 --max 64

IRBRT

- **Description:** Input RGB Brightness Adjust. This command is only valid for formats with the RGB color space.
- **Command Format:** IRBRT -i (input) -r (red) -g (green) -b (blue)
- **Parameters:**
 - i (input): 1 - 8
 - r (red): -25.0% - 25.0% (Default: 0%)
 - g (green): -25.0% - 25.0% (Default: 0%)
 - b (blue): -25.0% - 25.0% (Default: 0%)
- **Query Format:** IRBRT -i input -?
- **Query Response:**
 - IRBRT -i (input) -r (red) -g (green) -b (blue) --min -25 --max 25

IRCNT

- **Description:** Input RGB Contrast Adjust. This command is only valid for formats with the RGB color space.
- **Command Format:** IRCNT -i (input) -r (red) -g (green) -b (blue)
- **Parameters:**
 - i (input): 1 - 8
 - r (red): -25.0% - 25.0% (Default: 0%)
 - g (green): -25.0% - 25.0% (Default: 0%)
 - b (blue): -25.0% - 25.0% (Default: 0%)
- **Query Format:** IRCNT -i (input) -?
- **Query Response:**
 - IRCNT -i (input) -r(red) -g(green) -b(blue) --min -25 --max 25

IRES

- **Description:** Input Resolution Select
- **Command Format:** IRES -i (input) [-f (format) | -n (index)]

- **Parameters:**
 - i (input): 1 - 9
 - f (format): format string, i.e. "800x600 @59.94"
 - or
 - n (index): video format index (see --list)
 - s (status): 0 - valid, non-zero - invalid
- **Query Format:** IRES -i (input) -?
- **Query Response:** IRES -i (input) -f (format) -s (status)
- **List Format:** Each input type has a different list of valid resolutions.
IRES -i (input) --list
- **List Response:** Example for input type of analog:
 - 1:"NTSC (480i)"
 - 2:"720x480p"
 - 3:"PAL (576i)"
 - Etc.

ISAT

- **Description:** Input Saturation Adjust. This command is only valid for the SMPTE color space.
- **Command Format:** ISAT -i (input) -s (sat)
- **Parameters:**
 - i (input): 1 - 9
 - s (saturation): 0 - 150 (Default: 100)
- **Query Format:** ISAT -i (input) -?
- **Query Response:** ISAT -i (input) -s (sat) --min 0 --max 150

ISEL

- **Description:** Selects the specified input as the current input to display. This command will perform the valid sync check, route the input, recall video if saved or acquire source if not saved. Includes the -f (file) parameter option. Also, the IMAP will be updated for the input if the file parameter is specified. The query command returns the input currently on program.
- **Command Format:** ISEL -i (input) -f (file)
- **Parameters:**
 - i (input): 1 - 9
 - f (file): 1 - 64; If specified, updates the File Association menu to reflect the selected file number. If not specified, uses the file number specified in the ICREC query.
- **Query Format:** ISEL -?
- **Query Response:** ISEL -i (input)

B. Remote Control

Remote Commands

ISIZERST

- **Description:** Reset the input sizing parameters to default values
- **Command Format:** ISIZERST -i (input)
- **Parameters:** -i (input): 1 - 6 and 9 (PDS-701); 1 - 9 (PDS-901/902)
- **Query Format:** N/A
- **Query Response:** N/A

ISLICE

- **Description:** Input Sync Slice Threshold Adjust. This command is only valid for analog inputs.
- **Command Format:** ISLICE -i (input) -t (threshold)
- **Parameters:**
 - i (input): 1 - 8 for adjustments (5 - 8 only if itype is analog)
 - t(threshold): 8 - 256mV; +8 increments (default: 128mV)
- **Query Format:** ISLICE -i (input) -?
- **Query Response:** ISLICE -i (input) -t (threshold) --min 8 -- max 256

ISMP

- **Description:** Adjust Input Sample mode. This command is only adjustable for analog input types. Other input types will provide query information only.
- **Command Format:** ISMP -i (input) -s (sample mode)
- **Parameters:**
 - i (input): 1 - 8 for adjustments (5 - 8 only if itype is analog); 1 - 9 for query
 - s (sample mode): 0 - 1:1 sampling off, 1 - 1:1 sampling on (Default: On)
- **Query Format:** ISMP -i (input) -?
- **Query Response:** ISMP -i (input) -s (sample mode) --min 0 -- max 1
- **List Format:** Each input type has a different list of valid sample modes.
ISMP -i (input) --list
- **List Response:**
 - 0:"Off"
 - 1:"On"

ISYNC

- **Description:** Input Sync Type Adjust. This command is only valid for analog input types.
- **Command Format:** ISYNC -i (input) -s (sync)
- **Parameters:**
 - i (input): 1 - 8 (5 - 8 only if itype is analog)
 - s (sync): 0 - auto, 1 - H/V, 2- CSync, 3- SOG (Default: auto)

- **Query Format:** ISYNC -i (input) -?
- **Query Response:** ISYNC -i (input) -s(sync) --min 0 --max 3
- **List Format:** ISYNC -i (input) --list
- **List Response:**
 - 0:"Auto"
 - 1:"H/V"
 - 2:"CSync"
 - 3:"SOG"

ITYPE

- **Description:** Input Type Adjust. This command is only adjustable for the analog inputs. Other inputs will provide query information only.
- **Command Format:** ITYPE -i (input) -t (type)
- **Parameters:**
 - i (input): 1 - 8 for adjustments (5 - 8 only if itype is analog) ; 1 - 9 for query
 - t (type): 1-analog, 2-Y/C, 3-CVBS, 4-SDI, 5-DVI, 6-YPbPr
- **Query Format:** ITYPE -i (input) -?
- **Query Response:** ITYPE -i (input) -t (type)
- **List Format:** Each input type has a different list of valid input types.
ITYPE -i (input) --list
- **List Response:**
 - 1:"RGB"
 - 2:"Y/C"
 - 3:"CVBS"
 - 4:"SDI"
 - 5:"DVI"
 - 6:"YPBPR"

IVATV

- **Description:** Input Vertical Active Adjust. This command is only adjustable for analog input types. Other input types will provide query information only.
- **Command Format:** IVATV -i (input) -a (active)
- **Parameters:**
 - i (input): 1 - 8 for adjustments (5 - 8 only if input is analog); 1 - 9 for query
 - a (active): In lines
- **Query Format:** IVATV -i (input) -?
- **Query Response:** IVATV -i (input) -a (total) --min (active min) -- max (active max)

B. Remote Control

Remote Commands

IVCROP

- **Description:** Input Vertical Crop
- **Command Format:** IVCROP -i (input) -h (height)
- **Parameters:**
 - i(input): 1 - 9
 - h(height): In lines
- **Query Format:** IVCROP -i(input) -?
- **Query Response:** IVCROP -i(input) -h(height) --min (pos min) -- max (pos max)

IVPAN

- **Description:** Input Vertical Pan
- **Command Format:** IVPAN -i (input) -p (pan)
- **Parameters:**
 - i (input): 1 - 9
 - p (pan): In pixels
- **Query Format:** IVPAN -i (input) -?
- **Query Response:** IVPAN -i (input) -p (pan) --min (active min) -- max (active max)

IVPOS

- **Description:** Input Vertical Position Adjust. This command is only adjustable for analog input types. Other input types will provide query information only.
- **Command Format:** IVPOS -i (input) -p (position)
- **Parameters:**
 - i (input): 1 - 8 for adjustments (5 - 8 only if input is analog); 1 - 9 for query
 - p (position): In lines
- **Query Format:** IVPOS -i (input) -?
- **Query Response:** IVPOS -i (input) -p (position) --min (pos min) -- max (pos max)

IVTOTAL

- **Description:** Input Vertical Total Adjust. This command is a query only.
- **Parameters:** -i (input): 1 - 9
- **Query Format:** IVTOTAL -i (input) -?
- **Query Response:** IVTOTAL -i (input) -t (total)

PCOMP

- **Description:** Pulldown Compensation mode adjust.
- **Command Format:** PCOMP -i (input) -m (mode)
- **Parameters:**

-i (input):1 - 9

-m(mode): 0 - off, 1 - on (Default: off)

- **Query Format:** PCOMP -i (input) -?
- **Query Response:** PCOMP -i (input) -m (mode) --min 0 -- max 1

TAKE

- **Description:** Take the input currently on preview onto program.
- **Command Format:** TAKE
- **Parameters:** None

B. Remote Control

Remote Commands

Output Commands

BLACK

- **Description:** Set the mixer to output black.
- **Command Format:** BLACK -m (mode)
- **Parameters:** -m (mode): 0 - off, 1 - on
- **Query Format:** BLACK -?
- **Query Response:** BLACK -m (mode) --min 0 --max 1

OAVAIL

- **Description:** Query-only command used to identify whether the preview output mezzanine is installed
- **Query Format:** OAVAIL -o (output) -?
- **Parameters:**
 - o (output): 1 - DVI, 3 - Preview DVI
 - m (mode): 0 - output not available, 1 - output available
- **Query Response:** OAVAIL -o (output) -m (mode)

OCSAV

- **Description:** Save Output Configuration
- **Command Format:** OCSAV
- **Parameters:** -o output: 1 - DVI, 3 - Preview DVI (PDS-902 only)
- **Query Format:** N/A
- **Query Response:** N/A

OGM

- **Description:** Set Output Gamma
- **Command Format:** OGM -o (output) -g (gamma)
- **Parameters:**
 - o output: 1 - DVI
 - g gamma: 1.0 to 3.0; +0.1 increment (Default: 1.0)
- **Query Format:** OGM -o (output) -?
- **Query Response:** OGM -o (output) -g (gamma) --min 1 -- max 3

ORBM

- **Description:** Output Raster Box Mode
- **Command Format:** ORBM -o (output) -m (mode)

- **Parameters:**
 - o output: 1 - DVI, 3 - Preview DVI (PDS-902 only)
 - m (mode): 0-off, 1-on
- **Query Format:** ORBM -o (output) -?
- **Query Response:** ORBM -o (output) -m (mode) --min 0 -- max 1

ORES

- **Description:** Output Resolution
- **Command Format:** ORES -o (output) [-f (format) | -n (index)]
- **Parameters:**
 - o output: 1 - DVI, 3 - Preview DVI (PDS-902 only)
 - f (format): format string, i.e. "1600x1200 @60"
(Default: 1024x768 @ 59.94)
 - or
 - n (index): video format index (see list response)
- **Query Format:** ORES -o (output) -?
- **Query Response:** ORES -o (output) -f(format)
- **List Format:** ORES -o (output) --list
- **List Response:**
 - 2: "720x480p"
 - 4:"720x576p"
 - 5:"720x576p - 16:9"
 - 6:"640x480 @59.94"
 - 7:"640x480 @60"
 - 8:"640x480 @72"
 - 9:"640x480 @75"
 - 10:"640x480 @85"
 - 11:"800x600 @50"
 - 12:"800x600 @56"
 - 13:"800x600 @59.94"
 - 14:"800x600 @60"
 - 15:"800x600 @72"
 - 16:"800x600 @75"

OSRC

- **Description:** Selects the input source for the preview output (preview or program). This command is only valid for the PDS-902.
- **Command Format:** OSRC -s (source)
- **Parameters:** -s (source): 0-preview, 1-program
- **Query Format:** OSRC -?

B. Remote Control

Remote Commands

- **Query Response:** OSRC -s (source)
- **List Format:** OSRC --list
- **List Response:**
 - 0:"Preview"
 - 1:"Program"

OSYNC

- **Description:** Output Sync Type Adjust.
- **Command Format:** OSYNC -o (output) -s (sync)
- **Parameters:**
 - o output: 1 - DVI, 2- Analog, 3 - Preview DVI, 4 - Preview Analog (3 and 4 are for PDS-902 only)
 - s (sync): 1 = +H+V, 2 = +H-V, 3 = -H+V, 4 = -H-V, 5=CSync for analog only (Defaults: DVI: +H+V, analog: based on Output Format selected)
- **Query Format:** OSYNC -o (output) -?
- **Query Response:** OSYNC -o (output) -s(sync) --min 1 --max 4 (max returned for analog is 5)
- **List Format:** OSYNC -o (output) --list
- **List Response:**
 - 1:"+H+V"
 - 2:"+H-V"
 - 3:"-H+V"
 - 4:"-H-V"
 - 5:"CSync" (returned for analog only)

OTPM

- **Description:** Output Test Pattern Mode
- **Command Format:** OTPM -o (output) - m (mode)
- **Parameters:**
 - o output: 1 - DVI, 3 - Preview DVI (PDS-902 only)
 - m (mode): 0 - off, 1 - on
- **Query Format:** OTPM -o (output) -?
- **Query Response:** OTPM -o (output) - m (mode) --min 0 -- max 1

OTPT

- **Description:** Output Test Pattern Type
- **Command Format:** OTPT -o (output) - t (type)
- **Parameters:** -o output: 1 - DVI, 3 - Preview DVI (PDS-902 only)
- **-t (type):** 1 - H Ramp
 - 2 - V Ramp

3 - 100% Col Bars

4 - 16x16 Grid

5 - 32x32 Grid

6 - Burst

7 - 75% Col bars

8 - 50% Gray

9 - Gray Steps 1

10 - Gray Steps 2

11 - White

12 - Black

13 - Red

14 - Green

15 - Blue

- **Query Format:** OTPT -o (output) -?
- **Query Response:** OTPT -o (output) - t (type) --min 1 -- max 15
- **List Format:** OTPT -o (output) --list
- **List Response:**
 - 1:"H Ramp"
 - 2:" V Ramp"
 - 3:"100% Col Bars"
 - 4:"16x16 Grid"
 - 5:"32x32 Grid"
 - 6:"Burst"
 - 7:"75% Col bars"
 - 8:"50% Gray"
 - 9:"Gray Steps 1"
 - 10:"Gray Steps 2"
 - 11:"White"
 - 12:"Black"
 - 13:"Red"
 - 14:"Green"
 - 15:"Blue"

B. Remote Control

Remote Commands

System Commands

AUTOACQ

- **Description:** Auto Input Acquisition Mode
- **Command Format:** AUTOACQ -m (mode)
- **Parameters:** -m mode: 0-all off, 1-all on, 2-input (Default: all on)
- **Query Format:** AUTOACQ -?
- **Query Response:** AUTOACQ -m (mode) --min 0 --max 1

AUTOCFG

- **Description:** Auto Input Configuration Mode
- **Command Format:** AUTOCFG -m (mode)
- **Parameters:** -m (mode): 0 - off, 1 - on (default: off)
- **Query Format:** AUTOCFG -?
- **Query Response:** AUTOCFG -m (mode) --min 0 -- max 1

AUTOSAVE

- **Description:** Auto Input Settings Save
- **Command Format:** AUTOSAVE -m (mode)
- **Parameters:** -m (mode): 0 - off, 1 - on (default: off)
- **Query Format:** AUTOSAVE -?
- **Query Response:** AUTOSAVE -m (mode) --min 0 -- max 1

AUTOTAKE

- **Description:** Auto Take Mode
- **Command Format:** AUTOTAKE -m (mode)
- **Parameters:** -m (mode): 0 - off, 1 - on (default: off)
- **Query Format:** AUTOTAKE -?
- **Query Response:** AUTOTAKE -m (mode) --min 0 -- max 1

BACKGND

- **Description:** Sets background color.
- **Command Format:** BACKGND -o (output) -b (background)
- **Parameters:**
 - o (output): 1 - Program output; 3 - Preview output
 - b (background): 1-black, 2-gray, 3-logo (for program output if valid), 4-custom (use **RBACKGND** to set custom color)
- **Query Format:** BACKGND -o (output) -?
- **Query Response:** BACKGND -o (output) -b(background) --min 1 --max 4

- **List Format:** BACKGND -o (output) --list
- **List Response:** 1:"Black"
2:"Gray"
3:"Logo" (for program output only)
4:"Custom"

BLKTRAN

- **Description:** Sets whether going to black is a direct transition or requires a TAKE.
- **Command Format:** BLKTRAN -m (mode)
- **Parameters:** -m (mode): 0 - take is required, 1 - do an immediate transition (Default: off)
- **Query Format:** BLKTRAN -?
- **Query Response:** BLKTRAN -m (mode) --min 0 -- max 1

CONMODE

- **Description:** Encore connect mode.
- **Command Format:** CONMODE -m (mode)
- **Parameters:** -m (mode): 0-off, 1- on
- **Query Format:** CONMODE -?
- **Query Response:** CONMODE -m (mode) --min 0 --max 1

CONTEXT

- **Description:** Sets menu context
- **Command Format:** CONTEXT -m (mode)
- **Parameters:** -m (mode): 0 - off, 1 - on
- **Query Format:** CONTEXT -?
- **Query Response:** CONTEXT -m (mode) --min 0 -- max 1

DIAG

- **Description:** Performs a system diagnostic test. The results are logged into a file which may be displayed using DIAGD.
- **Command Format:** DIAG
- **Parameters:** None
- **Query Format:** N/A
- **Query Response:** N/A

DIAGD

- **Description:** Display the results of the last performed system diagnostic test.
- **Command Format:** DIAGD
- **Parameters:** None

B. Remote Control

Remote Commands

- **Query Format:** N/A
- **Query Response:** N/A

ENCOREIP

- **Description:** Set Encore IP Address.
- **Command Format:**ENCOREIP -s(static addr)
- **Parameters:** -s(static addr):format is xxx.xxx.xxx.xxx
- **Query Format:** ENCOREIP -?
- **Query Response:** ENCOREIP -s(static addr)

FPUUPDATE

- **Description:** Requests a front panel update. Front panel menu and key backlights are updated to reflect current system state.
- **Command Format:**FPUUPDATE
- **Parameters:** N/A
- **Query Format:** N/A
- **Query Response:** N/A

ISTAT

- **Description:** Query only command for the input status type and format.
- **Parameters:**
 - i (input): 1 - 6 and 9 (PDS-701); 1 - 9 (PDS-901/902)
 - p (path): 0 - preview, 1 - program
- **Query Format:** ISTAT -i (input) -p (path) -?
- **Query Response:** ISTAT -t "(input type)" -f "(input format)"

LCLR

- **Description:** Clear the selected log (ram copy, not flash).
- **Command Format:** LCLR -l (log)
- **Parameters:** -l (log): 0-combined, 1-debug, 2-warning, 3-error
- **Query Format:** N/A
- **Query Response:** N/A

LDMP

- **Description:** Display the current log messages (ram copy, not flash) for the selected log.
- **Command Format:** LDMP -l (log)
- **Parameters:** -l (log): 0-combined, 1-debug, 2-warning, 3-error
- **Query Format:** N/A
- **Query Response:** N/A

LFEN

- **Description:** Sets the mode for the selected log. When selected, the messages for that log will be written to flash every time interval specified in (LINT).
- **Command Format:** LFEN -l (log) -m (mode)
- **Parameters:**
 - l (log): 0-combined, 1-debug, 2-warning, 3-error
 - m (mode): 0 - disable, 1 - enable
- **Query Format:** N/A
- **Query Response:** N/A

LINT

- **Description:** Sets the time interval for writing the enabled logs to flash.
- **Command Format:** LINT -t (time interval)
- **Parameters:** -t (time interval): 1 - 60 seconds
- **Query Format:** N/A
- **Query Response:** N/A

LOCKOUT

- **Description:** Controls the lockout mode of the front panel. With full lockout mode enabled, all keys and menu will be deactivated. The executive mode will lock out all but the input bus keys (1 through 8, SDI, and LOGO).
- **Command Format:** LOCKOUT -m (mode)
- **Parameters:** -m (mode): 0 - disable, 1 - full lockout, 2 - executive mode
(default: 0 - disable)
- **Query Format:** LOCKOUT -?
- **Query Response:** LOCKOUT -m (mode) -- min 0 -- max 2

OSTAT

- **Description:** Query only command for the output status type and format.
- **Parameters:** -o (output): 1 - DVI, 3 - Preview DVI (PDS-902 only)
- **Query Format:** OSTAT -?
- **Query Response:** OSTAT -t "(output type)" -f "(output format)"

PREVIEW

- **Description:** Query only command for the input and black button status on preview. If the black or scaler path is not present on preview, then these options are not returned.

B. Remote Control

Remote Commands

- **Parameters:**
 - i (input): 1 - 9
 - b: black on preview
 - l: logo on preview
 - a: A or B path of scaler input on preview
- **Query Format:** PREVIEW -?
- **Query Response:** PREVIEW -i(input) -k -b

PROGRAM

- **Description:** Query only command for the input and black button status on program. If the black or scaler path is not present on program, then these options are not returned.
- **Parameters:**
 - i (input): 1 - 9
 - b: black on preview
 - l: logo on preview
 - a: A or B path of scaler input on preview
- **Query Format:** PROGRAM -?
- **Query Response:** PROGRAM -i(input) -k -b

RESET

- **Description:** Reset unit
- **Command Format:** RESET [-f | -s]
- **Parameters:**
 - f : factory reset
 - or
 - s: soft reset
- **Query Format:** N/A
- **Query Response:** N/A

SAVE

- **Description:** System Save
- **Command Format:** SAVE
- **Parameters:** N/A
- **Query Format:** N/A
- **Query Response:** N/A

SERIAL

- **Description:** Sets the serial port.
- **Command Format:** SERIAL -b (baud) -p (parity/etc.) -h (handshaking)

- **Parameters:**
 - b (baud): 0 - 9600, 1 - 38400, 2 - 57600, 3 - 115200 (default: 115200)
 - p (parity/etc): 0 - N81, 1 - E71, 2 - O71, 3 - E72, 4 - O72 (default: N81)
 - h (handshaking): 0 - off, 1 - on (default: off)
- **Query Format:** SERIAL -? - (option letter)
The SERIAL query will return only one option parameter at a time. If no option is specified, an error code will be returned.
- **Query Response:** SERIAL -b (baud) --min 0 --max 3
SERIAL -p (psparity/etc) --min 0 --max 4
SERIAL -h (handshaking) --min 0 --max 1

TEMP

- **Description:** Query only command for the temperature of the unit.
- **Query Format:** TEMP -?
- **Query Response:** TEMP -a (sensor addr) -c (celsius) -f (fahrenheit)

TRNTIME

- **Description:** Set transition time
- **Command Format:** TRNTIME -s (seconds)
- **Parameters:** -s (seconds): 0 - 12.0 (default 1.0)
- **Query Format:** TRNTIME -?
- **Query Response:** TRNTIME -s (seconds) --min 0 --max 12.0

UNITID

- **Description:** Encore unit ID
- **Command Format:** UNITID -i (unit ID)
- **Parameters:** -i (unitID): 1 - 32
- **Query Format:** UNITID -i (input) -?
- **Query Response:** UNITID -i (unitID) --min 1 --max 32

VER

- **Description:** Display Version info
- **Command Format:** VER
- **Parameters:** N/A
- **Query Format:** N/A
- **Query Response:** N/A

VFDBRT

- **Description:** Set VFD brightness
- **Command Format:** VFDBRT -b (brightness) -f

B. Remote Control

Remote Commands

- **Parameters:**
 - b (brightness): 1 - 8 (default: 5)
 - f: Command from front panel
- **Query Format:** VFDBRT -?
- **Query Response:** VFDBRT -b (brightness) --min 1 -- max 16

LOGO Commands

LOGODEL

- **Description:** Delete the selected logo file.
- **Command Format:** LOGODEL -I (logo)
- **Parameters:** -I logo: 1 - 3 (Default: 1)
- **Query Format:** N/A
- **Query Response:** N/A

LOGOSAVE

- **Description:** Save the image on Program output to the selected logo frame store and file.
- **Command Format:** LOGOSAVE -I (logo)
- **Parameters:** -I logo: 1 - 3 (Default: 1)
- **Query Format:** N/A
- **Query Response:** N/A

LOGOSEL

- **Description:** Logo selection
- **Command Format:** LOGOSEL -I (logo)
- **Parameters:** -I logo: 1 - LOGO1, 2 - LOGO2, 3 - LOGO3 (Default: LOGO1)
- **Query Format:** LOGOSEL -?
- **Query Response:** LOGOSEL -I (logo) --min 1 --max 3
- **List Format:** LOGOSEL --list
- **List Response:**
 - 1: "LOGO1"
 - 2: "LOGO2"
 - 3: "LOGO3"

LOGOSTAT

- **Description:** The logo format status. This command is a query only.
- **Parameters:** -I logo: 1 - LOGO1, 2 - LOGO2, 3 - LOGO3
- **Query Format:** LOGOSTAT -I (logo) -?
- **Query Response:** LOGOSTAT -I (logo) -s (status string)

Command Updates — Firmware Revision 3.00

This section describes commands that have been added, and a command that has been removed, in Firmware Revision 3.00.

Revision 3.00 Commands

The following commands have been added or modified for Firmware Revision 3.00:

HDCPSTAT

- **Description:** Query only command for the input or output HDCP status.
- **Parameters:**
 - i (input): 5 - 6; 7 - 8
 - or
 - o (output): 1 - DVI, 3 - Preview DVI
 - m (mode):
 - For input query -
 - 0 - no device is connected or HDCP protected content is not detected.
 - 1 - a signal has been detected and HDCP protected content is detected.
 - For output query -
 - 0 - no device is connected or HDCP authentication has failed
 - 1 - a device is connected and HDCP authentication was successful
- **Query Format:**
 - HDCPSTAT -i (input) -?
 - or
 - HDCPSTAT -o (output) -?
- **Query Response:**
 - HDCPSTAT -i (input) -m (mode) --min 0 --max 1
 - or
 - HDCPSTAT -o (output) -m (mode) --min 0 --max 1

IFILL

- **Description:** Sets the input fill mode
- **Command Format:** IFILL -i (input) -m (fill mode)
 - IFILL -i 1 -m 1 --min 1 --max 3 -e 0
- **Parameters:**
 - i (input): 1-6, 9 (PDS-701); 1 - 9 (PDS-901/902)
 - m (fill mode): 1 - Native, 2 - Zoom, 3 - Stretch

B. Remote Control

Command Updates — Firmware Revision 3.00

(Default: Native)

- **Query Format:** IFILL -i (input) -?
- **Query Response:** IFILL -i (input) -m (fill mode) --min 1 -- max 3
- **List Format:** Each input type has a different list of valid sample modes.
IFILL -i (input) --list
- **List Response:**
 - 1:"Native"
 - 2:"Zoom"
 - 3:"Stretch"

LOGOSEL

- **Description:** Logo selection
- **Command Format:** LOGOSEL -l (logo)
- **Parameters:** -l (logo) 0-Black, 1-LOGO1, 2-LOGO2, 3-LOGO3 (Default: LOGO1)
- **Query Format:** LOGOSEL -?
- **Query Response:** LOGOSEL -l (logo) --min 1 --max 3
- **List Format:** LOGOSEL --list
- **List Response:**
 - 0: "BLACK"
 - 1: "LOGO1"
 - 2: "LOGO2"
 - 3: "LOGO3"

OSDI

- **Description:** Sets the Output SDI Mode. The mode can only be changed for the 3G formats (1080p @50, 59.94, 60). The options for the 3G formats are 3G Level A and 3G Level B.
- **Command Format:** OSDI -o (output) - m (mode)
- **Parameters:** -o (output): 1 - SDI
-m (mode): 0 - SD or N/A, 1 - HD, 2 - 3G Level A, 3 - 3G Level B
- **Query Format:** OSDI -o (output) -?
- **Query Response:** OSDI -o (output) - m (mode) --min 2 -- max 3
- **List Format:** OSDI -o (output) --list
- **List Response:** 0:"SD" or 0:"N/A"
 - 1:"HD"
 - 2:"3G Level A"
 - 3:"3G Level B"

OSDISTAT

- **Description:** Query only command for the presence of SDI output connector
- **Query Format:** OSDISTAT -?
- **Query Response:** OSDISTAT -s (SDI output count)

OUTMODE

- **Description:** Selects the Output Display Mode. (Matrix mode is only available on PDS-902 systems.)
- **Command Format:** OUTMODE - m (mode)
- **Parameters:** -m (mode): 1 - fullscreen, 2 - pip, 3 - matrix
- **Query Format:** OUTMODE -?
- **Query Response:** OUTMODE - m (mode) --min 1 -- max 3
- **List Format:** OUTMODE --list
- **List Response:**
 - 1:"FullScreen"
 - 2:"PIP"
 - 3:"Matrix"

PENDPIP

- **Description:** A value of 1 pends a change to the PIP mode (enabled to disabled or disabled to enabled) that will occur on the next TAKE command. A value of 0 cancels the pended change to the PIP mode.

When pending a change, the **PIP** button blinks to denote a pending change to the PIP. When changing from enabled to disabled, the PIP raster outline is removed and the next TAKE will bring the PIP down from Program. When changing from disabled to enabled, the PIP raster outline will be shown and the next TAKE will bring the PIP up to Program.

If **AutoTake** is enabled, then the PIP mode will change without having to send a TAKE command. The query returns whether there is a PIP mode change pended. This is intended as an internal command for the front panel but could be used externally as well.

- **Command Format:** PENDPIP -p(pip) -m(mode)
- **Parameters:**
 - p (pip): 1- Pip 1, 2 - Pip 2
 - m (mode): 0 - nothing pended
 - 1 - pend PIP mode change and update on next TAKE
- **Query Format:** PENDPIP -p (pip) -?
- **Query Response:** PENDPIP -p (pip) -m (mode)

PIPFREEZE

- **Description:** Sets the freeze mode of the input of the specified PIP.
- **Command Format:** PIPFREEZE -p (pip) -m (mode)

B. Remote Control

Command Updates — Firmware Revision 3.00

- **Parameters:**
 - p (pip): 1 - Pip 1, 2 - Pip 2
 - m (mode): 0 - off, 1 - on (Default: off)
- **Query Format:** PIPFREEZE -p (pip) -?
- **Query Response:** PIPFREEZE -p (pip) -m (mode) --min 0 --max 1

PIPFULL

- **Description:** PIP is set to full size of output format
- **Command Format:** PIPFULL -p (pip)
- **Parameters:** -p (pip): 1 - PIP 1, 2 - PIP 2

PIPHPOS

- **Description:** PIP Horizontal Position
- **Command Format:** PIPHPOS -p (pip) -o (offset from center)
- **Parameters:**
 - p (pip): 1 - PIP 1, 2 - PIP 2
 - o (offset): Horizontal offset from center of output in pixels or percent based on PIPUNIT setting
- **Query Format:** PIPHPOS -p (pip) -?
- **Query Response:**
PIPHPOS -p (pip) -o (offset) --min (offset min) --max (offset max)

PIPHSIZE

- **Description:** Pip Horizontal Size
- **Command Format:** PIPHSIZE -p (pip) -w (width)
- **Parameters:**
 - p (pip): 1 - Pip 1, 2 - Pip2
 - w (width): In pixels or percent based on PIPUNIT setting
- **Query Format:** PIPHSIZE -p (pip) -?
- **Query Response:**
PIPHSIZE -p (pip) -w (width) --min (width min) --max (width max)

PIPISEL

- **Description:** Pends the selected input as the next input for the selected PIP. If AutoTake is enabled, then the input is taken up without having to send a TAKE command. The query returns the pending input for the PIP. If an input is not pending, a value of 0 is returned.
- **Command Format:** PIPISEL -p(pip) -i(input)
- **Parameters:**
 - p (pip): 0 - All Pips, 1- Pip 1, 2 - Pip 2
 - i (input): 1-6 and 9, 10 (PDS-701); 1 - 10 (PDS-901/902)

- **Query Format:** PIPSEL -p (pip) -?
- **Query Response:** PIPSEL -p (pip) -i (input)

PIPREC

- **Description:** Recalls saved PIP configuration for selected the selected PIP. The PIP configuration is pended for the specified PIP. If AutoTake is enabled, then the input and PIP size and position are taken up without having to send a TAKE command.
- **Command Format:** PIPREC -p(pip) -f(file)
- **Parameters:** -p(pip): 1 - PIP 1, 2 - PIP 2
-f(file):1 - 10
- **Query Format:** PIPREC -p(pip) -?
- **Query Response:** PIPREC -p(pip) -f(file)
- **List Format:** PIPREC -p(pip) --list
- **PIPREC Response:**
1:"1"
2:"2"
.
.
10:"10"

PIPRST

- **Description:** PIP Reset to default location and size based on aspect ratio
- **Command Format:** PIPRST -p (pip)
- **Parameters:** -p (pip): 1 - PIP 1, 2 - PIP 2

PIPSAV

- **Description:** Saves the PIP configuration.
- **Command Format:** IPSAV -p (pip) -f (file)
- **Parameters:** -p (pip): 1 - PIP 1, 2 - PIP 2
-f (file) : 1 - 10
- **Query Format:** N/A
- **Query Response:** N/A

PIPSTAT

- **Description:** Query only command for the status of PIP (disabled or enabled)
- **Parameters:**
-p (pip): 1 - Pip 1, 3 - Pip 2
-m (mode): 0 - Pip disabled/not active, 1 - Pip enabled/active
- **Query Format:** PIPSTAT -p (pip) -?
- **Query Response:** PIPSTAT -p (pip) -m (mode)

B. Remote Control

Command Updates — Firmware Revision 3.00

PIPUNIT

- **Description:** Selects the Unit Mode to be used in the PIP menu for the PIP Size and Position adjustments.
- **Command Format:** PIPUNIT - m (mode)
- **Parameters:** -m (mode): 0 - percentage, 1 - pixels
- **Query Format:** PIPUNIT -?
- **Query Response:** PIPUNIT - m (mode) --min 0 -- max 1
- **List Format:** PIPUNIT --list
- **List Response:** 0:"Percent"
1:"Pixel"

PIPVPOS

- **Description:** PIP Vertical Position
- **Command Format:** PIPVPOS -p (pip) -o (offset from center)
- **Parameters:**
 - p (pip): 1 - PIP 1, 2 - PIP 2
 - o (offset): Vertical offset from center of output in pixels or percent based on PIPUNIT setting
- **Query Format:** PIPVPOS -p (pip) -?
- **Query Response:**
PIPVPOS -p (pip) -o (offset) --min (offset min) --max (offset max)

PIPVSIZE

- **Description:** PIP Vertical Size
- **Command Format:** PIPVSIZE -p (pip) -h (height)
- **Parameters:**
 - p (pip): 1 - PIP 1, 2 - PIP2
 - h (height): In pixels or percent based on PIPUNIT setting
- **Query Format:** PIPVSIZE -p (pip) -?
- **Query Response:**
PIPVSIZE -p (pip) -h (height) --min (height min) --max (height max)

RBACKGND

- **Description:** Sets the RGB component values for the custom background color.
- **Command Format:** RBACKGND -r (red) -g (green) -b (blue)
- **Parameters:** -r (red): 0 - 255
-g (green): 0 - 255
-b (blue): 0 - 255
- **Query Format:** RBACKGND -?
- **Query Response:** RBACKGND -r(red) -g(green) -b(blue) --min 0 --max 255

Deprecated Command

The following command has been removed for firmware version 3.00:

BLKTRAN

B. Remote Control

Command Updates — Firmware Revision 3.00

C. Contact Information

In This Appendix

The following topics are discussed in this Appendix:

- [Warranty](#)
- [Return Material Authorization \(RMA\)](#)
- [Contact Information](#)

C. Contact Information

Warranty

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)

In the unlikely event that a product is required to return for repair, please call the **Technical Support / Customer Service** direct line, and ask to receive a Return Merchandise Authorization number (RMA).

- (866) 374-7878

RMA Conditions are listed below:

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

Contact Information

Barco Media and Entertainment

11101 Trade Center Drive
Rancho Cordova, California 95670
USA

- Telephone: (916) 859-2500
- Fax: (916) 859-2515
- Website: www.barco.com

Sales Contact

- Direct: (916) 859-2505
- Toll Free: (888) 414-7226
- E-mail: folsomsales@barco.com

C. Contact Information

Contact Information

Barco N.V.
Noordlaan 5
8520 Kuurne
BELGIUM

- Telephone: +32 56.36.82.11
- Fax: +32 56.35.16.51
- Website: www.barco.com

Technical Support (USA)

- Telephone: (866) 374-7878 — 6 a.m. to 10 p.m. (PST), 7 days per week
- E-mail: folsomsupport@barco.com
- Online: www.barco.com/esupport

Technical Support (Europe, Middle East, Asia)

- Telephone: 0800900410
- Online: www.barco.com/support/eSupport.aspx

C. Contact Information

Contact Information

Index

Numerics

10/100BaseT	14
1-1 Sampling	44
3-2 film pulldown	47

A

AC	
connector	14
Acrobat usage	2
navigating and searching	2
Adapter information	19
Address	
MAC	68
Address, company	iii
ADJUST	
knob	8, 9
using knob	30
Adjust	
analog input sources	43
background color	62
brightness	46
color balance	46
colorspace	40
contrast	46
hue/saturation color balance	47
input format	39
input type	40
output format	52
output gamma	54
processing	47
raster box	53, 57
RGB color balance	46
sample phase	45
test pattern	52
timing	43
transition time	60
VFD brightness	65
Adjust On	40
Agency specifications	123
Analog	
15-pin D connector pinouts	124

inputs	13, 14
output	14
sync	57
Application questions	6
Aspect Ratio	42
Asterisks	35, 39
Auto	
black, take	63
input config	62
input save	62
sync	47
take	63
Auto acquire	
mode	61
understanding	79
Auto take	
off	63
off, black	83
on	63
on, black	84
AUTOACQ (command)	158
AUTOCFG (command)	158
AUTOSAVE (command)	158
AUTOTAKE (command)	158

B

BACKGND (command)	158
Background color, adjust	62
Barco	
sales contact information	174
technical support information	iii, 175
Baud	68
Best guess format	39
Black	
auto take	63
auto take off	83
auto take on	84
background	62
button	11
using	83
BLACK (command)	154
Black Auto Take	

off	11
on	12
Blinking (button)	10, 27
BLK, using	83
BLKTRAN (command)	159
BLKTRAN command	171
BLKVID (command)	141
Block diagram	6
BNC breakout cable	22
Brackets	31, 35, 39
Brightness	46
VFD	65
Button	
BLACK	11
FRZ	11
input	10
LOGO	11
SDI	11
states	27
TAKE	8, 12
Button state	
blinking	10, 27
lit solid	10, 27
off	10, 27
Buttons	
PIP1	109, 111, 114
PIP2	109, 111, 114

C

Cable	
equalization	70
Cable information	19
CBLEQ (command)	141
Change history	viii
Chapter structure	1
Chassis	18
Chassis internal temperature	73
Color	
background	62
balance	46
Colorspace	40
Command	
AUTOACQ	158
AUTOCFG	158
AUTOSAVE	158
AUTOTAKE	158
BACKGND	158
BLACK	154
BLKTRAN	159, 171
BLKVID	141
CBLEQ	141
CONTEXT	159, 160, 163
DHCP	139
DIAG	159
DIAGD	159

EDID	141
EDIDTYPE	141
EMAC	139
FREEZE	142
GATEWAY	140
HDCPSTAT	165
IADJ	142
IAR	142
IAUTOACQ	143
IAUTOC	143
IAVAIL	143
IBRT	144
ICDEL	144
ICNT	144
ICPHO	144
ICREC	145
ICRST	145
ICSAV	145
ICSP	146
IFILL	165
IHATV	146
IHCROP	146
IHPAN	147
IHPOS	147
IHTOTAL	147
IHUE	147
IMAP	148
IP	140
IRBRT	148
IRCNT	148
IRES	148
ISAT	149
ISEL	149
ISLICE	150
ISMP	150
ISTAT	160
ISYNC	150
ITYPE	151
IVATV	151
IVCROP	152
IVPAN	152
IVPOS	152
IVTOTAL	152
LCLR	160
LDMP	160
LFEN	161
LINT	161
LOCKOUT	161
LOGODEL	164
LOGOSAVE	164
LOGOSEL	164, 166
LOGOSTAT	164
OAVAIL	154
OCSAV	154
OGM	154
ORBM	154
ORES	155

OSDI	166
OSDISTAT	167
OSRC	155
OSTAT	161
OSYNC	156
OTPM	156
OTPT	156
OUTMODE	167
PCOMP	152
PENDPIP	167
PIPFREEZE	167
PIPFULL	168
PIPHPOS	168
PIPHSIZE	168
PIPISEL	168
PIPREC	169
PIPRST	169
PIPSAV	169
PIPSTAT	169
PIPUNIT	170
PIPVPOS	170
PIPVSIZE	170
PREVIEW	161
PROGRAM	162
protocol	132
RBACKGRND	170
remote	139
RESET	162
responses	132
SAVE	162
SERIAL	162
SUBNET	140
TAKE	153
TEMP	163
TRNTIME	163
VER	163
VFDBRT	163
Command list	135
Communicating with PDS	131
Communications	
connections	22
specifications	123
Company address	iii
Components, front panel	8
Config	
network	66
save system	74
Configuration	
delete input	50
recall input	50
reset input	49
save input	48
configuration files	41, 61
Configuration files, selecting	72–73
Connection, format table	22
Connectivity diagram	6
Connector	
AC	14
analog 15-pin D pinouts	124
DVI-I pinouts	125
Ethernet	14
Ethernet pinouts	126
rear panel	13
CONTEXT (command)	159, 160, 163
Context, menu	64
Contrast	46
Control overview	26
Conventions	2
menu system	30
status menu	35
Copyright	ii
CSync	47
Cursor	9
edit	30
navigation	30
Custom aspect ratio	42
D	
Data bits	68
Delete	
input configuration	50
LOGO	59
DHCP	66, 139
server	66
DHCP (command)	139
DIAG (command)	159
DIAGD (command)	159
Diagnostics menu	73
Diagram	
connectivity	6
system	21
Display	9
brightness	65
section	8, 9
Documentation conventions and symbols	2
Double arrow	9
Download software	97, 98, 100
via FTP site	97
via web site	97
DVI	
cable equalization	70
cable equalizer menu	70
inputs	14
output	14
sync	54, 57
DVI-I	
connector pinouts	125
connectors	14

E

EDID	
format	69
input	69
type (7, 8)	70
EDID (command)	141
EDIDTYPE (command)	141
Edit cursor	30
Effects section	8, 11
Electrical specifications	123
EMAC	139
Equalization	71
set to default	71
set to maximum	71
set to minimum	71
Error codes	134
general failures	134
no error	134
ESC	10
using	30, 31
Ethernet	
address	66
connection	22
connector	14
connector pinouts	126
Menu	66
troubleshoot connection	105
Executive mode	
enabling	110
Extended Display Identification Data	69

F

Factory	
default	75
reset	75
reset menu	75
FCC statement	ii
Features, PDS	3
File Association	
menu	4, 72
Flip-flop mode	78
Format	
asterisks	39
best guess	39
brackets	39
connection table	22
input	39
output	52
Freeze	11
using	83
FREEZE (command)	142
Front panel	
components	8

display section	8
full lockout mode	85
Front panel, PDS-902 3G	109
FRZ	
button	11
in Full Screen Mode	110
in Matrix Mode	110
in PIP Mode	110
using	83
FTP site	97
Full lockout mode	85
Function, quick reference table	32

G

Gamma	54
Gateway	
menu	67
set	67
GATEWAY (command)	140
Gray background	62
Guarantee and compensation	ii
GUI	
connection and launch	88
connections	22
differences from physical control panel	90
how to connect and launch	88
operation	87
operations	90, 91
similarities to physical control panel	90
status menu	89
up/down arrows	90
web-based	4

H

H	
position	43
size	43
Handshaking	68
Hardware	
installation	17
orientation	7
requirements, upgrading software	96
HD-15 connectors	13
HDCP	5
compliant monitor	79
protocol	4
status	36
using	79
HDCPSTAT command	165
History, change	viii
Home Page	102
Horizontal active area	45

- How hot is my system73
- How to
 - adjust sample phase45
 - capture and store a LOGO81
 - communicate with PDS131
 - connect and launch the GUI88
 - delete configuration files50
 - download software from FTP site97
 - download software from website97
 - edit IP address67
 - enable/disable executive lockout71
 - freeze and un-freeze an input83
 - install signals to/from PDS21
 - lock/unlock front panel85
 - power up26
 - transition inputs to Program77
 - transition to a saved logo81
 - transition to/from black, auto take off83
 - transition to/from black, auto take on84
 - troubleshoot Ethernet connection105
 - upgrade software via Ethernet101
 - use menu system30
 - use the setup menu37
 - use this guide2
- Hue47
- Hue/Saturation color balance menu47
- Hyperlinks2

- I

- IADJ (command)142
- IAR (command)142
- IAUTOACQ(command)143
- IAUTO (command)143
- IAVAILABLE (command)143
- IBRT (command)144
- ICDEL (command)144
- ICNT (command)144
- ICPHO (command)144
- ICREC (command)145
- ICRST (command)145
- ICSAV (command)145
- ICSP (command)146
- IFILL command165
- IHATV (command)146
- IHCROP (command)146
- IHPAN (command)147
- IHPOS (command)147
- IHTOTAL (command)147
- IHUE (command)147
- IMAP (command)148
- In Auto Acquire39, 61
- Input
 - auto config62
 - auto save62
 - buttons10
 - colorspace40
 - configuration file48
 - connections21
 - delete configuration50
 - DVI cable equalizer71
 - format35, 39
 - format, next36
 - menu38
 - previewing55
 - processing47
 - recall configuration50
 - reset configuration49
 - save configuration48
 - SDI14
 - selection rules77
 - specifications122
 - type35, 40
 - type, next36
- Inputs
 - analog13, 14
 - DVI14
 - protected and unprotected79
 - section8, 10, 12
 - source signals3
 - using77
- Inspection18
- Installation
 - hardware17
 - rack-mount18
 - safety precautions18
 - signals21
 - site preparation18
 - unpacking and inspection18
- Introduction to
 - PDS1
- Invalid signal39, 42, 61
- IP
 - address66
 - address, port 23 (Telnet)131
- IRBRT (command)148
- IRCNT (command)148
- IRES (command)148
- ISAT (command)149
- ISEL (command)149
- ISLICE (command)150
- ISMP (command)150
- ISTAT (command)160
- ISYNC (command)150
- ITYPE (command)151
- IVATV (command)151
- IVCROP (command)152
- IVPAN (command)152
- IVPOS (command)152
- IVTOTAL (command)152

L

LCLR (command)	160
LDMP (command)	160
LFEN (command)	161
LINT (command)	161
List, commands	135
Lit solid (button)	10, 27
LOCKOUT (command)	161
LOGO	
button	11
delete	59
how to capture and store	81
in executive lockout mode	71
save	59
setup menu	59
status	59
transitioning to	81
using	80
LOGODEL (command)	164
LOGOSAVE (command)	164
LOGOSEL (command)	164, 166
LOGOSTAT (command)	164

M

MAC Address	68
Macrovision copy protection	48
Main outputs	14
Menu	
Adjust On	40
context	35, 64
diagnostics	73
display	9
DVI cable equalizer	70
Ethernet	66
Executive Mode	71
factory reset	75
File Association	41, 61
File Recall	72–73
gateway	67
GUI status	89
hue/saturation color balance	47
input	38
input file association	4, 72
LOGO setup	59
netmask	67
output	52
Preview	55
RGB color balance	46
rules and conventions	30
serial setup	68
set static IP	66
setup	37
status	35

Sync Setup	57
system	65
system temperature	73
tech support	75
test pattern	52
timing adjust	43
tree	29
usage, rules	30
user preference	60
value in brackets	31

Menus

PIP Adjustment	112
----------------	-----

Mode

flip-flop	78
test pattern	52

N

Navigation cursor	9, 30
Netmask	
menu	67
set	67
Network config	66
Notice	ii

O

OAVAIL (command)	154
OCSAV (command)	154
Off (button)	10, 27
OGM (command)	154
Operation	25
GUI	90, 91
quick setup	27
Operators safety summary	iv
ORBM (command)	154
ORES (command)	155
Orientation, hardware	7
OSDI command	166
OSDISTAT command	167
OSRC (command)	155
OSTAT (command)	161
OSYNC (command)	156
OTPM (command)	156
OTPT (command)	156
OUTMODE command	167
Output	
analog	14
connections	21
DVI	14
format	52
format (Preview)	56
gamma	54
main	14

R

Raster Box	53, 57
Ratio, aspect	42
RBACKGND command	170
Rear panel connectors	13
Rear panel, PDS-902 3G	110
Recall	
input configuration	50
Reference, quick function table	32
Remote control protocol	129
RESET	162
Reset	
all	47
config	49
factory	75
input configuration	49
serial parameters	68
Resolutions, input and output	3
Restart	104
Return material authorization	174
RGB color balance menu	46
RMA	174
RoHS Compliance	
Chinese Mainland	vi
Turkey	v
Rules, input selection	77

S

Safety	
precautions	18
summary	iv
Sales contact information	174
Sample phase, adjust	45
Saturation	47
Save	
config	48, 54, 74
input configuration	48
input, auto	62
LOGO	59
Preview configuration	57
system config	74
system state	74
SAVE (command)	162
Scaling and de-interlacing	4
SDI	
button	11
input	14
Section	
display	8, 9
effects	8, 11
inputs	8, 10, 12
SEL	9
using	30, 31

Select file page	103
Selection, input rules	77
Serial	
communications	15
connection	22
connector	14
connector pinouts	127
setup	68
setup menu	68
SERIAL (command)	162
Set	
gateway	67
netmask	67
static IP	66
Setup	
menu, using	37
serial	68
Signal installation	21
Site preparation	18
Size	42, 43
Software	
downloading	97, 98, 100
requirements, upgrading	96
upgrade overview	96
upgrading	95
version	26, 75
SOG	47
Specifications	121
agency	123
communications	123
electrical	123
input	122
output	122
physical	123
pinouts	124
Standard mix	60
Static IP	66
menu	66
Status	
HDCP	36
LOGO	59
menu	35
menu, conventions	35
menu, input format	35
menu, input type	35
menu, next input format	36
menu, next input type	36
Status menu, GUI	89
Stop bits	68
SUBNET (command)	140
Support, technical information	iii, 175
Symbols	2
Sync	
analog	57
auto	47
CSync	47
DVI	54, 57

- selection 47
 - setup (Preview outputs) 57
 - slice 48
 - SOG 47
 - Sync Setup menu 57
 - System
 - config, save 74
 - diagram 21
 - menu 65
 - temperature menu 73
- T**
- Table
 - format connections 22
 - quick function reference 32
 - TAKE
 - button 8, 12
 - command 153
 - Tech support
 - menu 75
 - phone 75
 - software version 75
 - Technical support information iii, 175
 - Telnet 14
 - using 131
 - TEMP (command) 163
 - Temperature 73
 - over-temp condition 73
 - Test pattern
 - generator 4
 - menu 52
 - mode 52
 - raster box 53, 57
 - type 53
 - Timing
 - 1-1 sampling 44
 - adjust menu 43
 - Trademarks iii
 - Trans time 60
 - Transition time 60
 - Transitioning
 - automatically 63
 - to a saved logo 81
 - Tree, menu 29
 - TRNTIME (command) 163
 - Troubleshoot Ethernet connection 105
 - Type
 - input 40
 - test pattern 53
- U**
- Understanding auto acquire 79
- Unpacking 18
 - Up/Down arrows 90
 - Upgrade
 - software 95
 - Upload
 - dialog 103
 - status page 103
 - User preference
 - auto input save 62
 - auto take 63
 - menu 60
 - menu context 64
 - Using
 - auto acquire 61
 - black 83
 - BLK 83
 - ESC button 30, 31
 - freeze 83
 - HDCP 79
 - inputs 77
 - LOGO 80
 - SEL button 30, 31
 - setup menu 37
- V**
- V
 - position 43
 - size 43
 - total 45
 - Vacuum Fluorescent Display 9
 - VER (command) 163
 - Version, software 75
 - Vertical active area 45
 - VFD 9
 - brightness 65
 - VFDBRT (command) 163
- W**
- Warranty 174
 - Web site 97
 - WEEE product disposal v

