Technical Reference

J Series
Serial API Commands

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Content

Communicating with J Series

Understand the information and procedures for communicating with J Series from a remote location.

Connection and use of serial commands

Once you have connected your computer to either the RS232 IN or RS422 IN port (depending on which standard is supported by your computer) or to the Ethernet port on a projector, you can remotely access projector controls and image setups, issue commands or queries, and receive replies.

Use these bi-directional messages to:

- Control multiple projectors
- Obtain a projector's status report
- Diagnose performance problems

Refer to the User Manual provided with the projector for all cable requirements and other connection details.

> Some commands are operational only when projector is powered up.

Correct command formatting

Add a space between the code and the number when entering commands.

For example, PXT50 can be entered as PXT 50. To increase or decrease a value in some commands, enter n for the next value and p for the previous value. For example:

```
(OVS0): OFF
(OVS1): ZOOM
(OVS2): CROP
```

If the current over scan (OVS) setting is off (OVS n), the command OVS p sets the value to zoom.

Understanding message format

Commands sent to and from J Series are formatted as simple text messages consisting of a three letter command code, an optional four letter subcode, and optional data.

Source	Format	Function	Example
From controller	(Code Data)	SET (set contrast to 50)	(CON500) or (CON 500)
	(Code+Subcode Data)	SET (set source 1 name to "VGA BOX 1")	(SNS+SRC1 "VGA BOX 1")
	(Code ?)	REQUEST (what is current contrast?)	(CON?) or (CON ?)
	(Code+Subcode ?)	REQUEST (what is light sensor calibration?)	(LLC+STAT?)
From projector	(Code Data)	REPLY (contrast is 50)	(CON!50)
	(Code+Subcode Data)	REPLY (light sensor is calibrated)	(LLC+STAT!1)

When a parameter for a specific source is being accessed, the four letter subcode is added on to the command code. A number of optional features (message acknowledges, checksums, and network addressing) can be included.

Generally, most commands include 0 or 1 data fields or parameters. Where applicable, a message may expand to include additional parameters of related details.

The smallest step size for any parameter is always 1. For some controls (such as Size) the value displayed on the screen has a decimal point (for example, 0.200 to 4.000). In this case, the values used for the serial communications is an integer value (for example, 200 to 4000), not the decimal value seen on the screen.

Available message types

Message type	Description
Set	A command to set a projector parameter at a specific level, such as changing the brightness.
Request	A request for information, such as what is the current brightness setting.
Reply	The projector returns the data in response to a request or as confirmation of a command.

Message structure

Understand the components of an ASCII command.

Regardless of message type or origin, all messages use the same basic format and code. Opening and closing round brackets (parentheses) surround each message.

Message element	Description
Parentheses	Commands are enclosed by parentheses ().

Message element	Description
	If a start character is received before an end character of the previous message, the partial (previous) message is discarded.
Prefix characters (optional)	Acknowledges the projector has responded or increases message integrity when added before the three-character function code. • Number symbol (#)—Request a full acknowledgment. A full acknowledgment sends an echo of the message as a reply from the projector when it finishes processing the command. Do not include a full acknowledgment in a request message. • Dollar sign ($)—Request a simple acknowledgment. • Ampersand (&)—Allow a checksum to be put as the last parameter in the message for verfication at the projector.
Function code	The primary projector function being queried or modified. Each function code is represented by a three-character, upper or lower case ASCII code (A-Z). The function code appears after the first parenthesis. If a command does not include a subcode, a space between the function code and the first parameter (or special character) is optional.
+subcode	The secondary projector function being queried or modified. Each subcode is represented by a four-character, upper or lower case ASCII code (A-Z and 0-9). The subcode appears after the function code, and it is separated from the function code with a plus symbol (+). If a subcode is not included, the plus symbol is not required. If a command includes a subcode, a space between the subcode and the first parameter (or special character) is optional.
Request and reply symbols	The question mark symbol (?) appears after the function code when the controller requests projector information. An exclamation mark (!) appears after the function code when the projector responds to a request. Do not include a question or exclamation mark when creating a SET command.
Projector numbers (optional)	To control a selected projector or controller within a group, include its assigned number or address just before the three-character ASCII function code.
Other special functions (optional)	To add functionality to the current message, include one or more of the following special characters between the function code/subcode and the first parameter. If more than one, add them in any order. C = Control class inquiry D = Default value/text E = Enables control inquiry G = Accesses group inquiry H = Returns the help text for a control L = Return a list of options for list controls M = Finds minimum/maximum adjustments (such as range) N = Returns the name of the control T= Returns the type of control (such as slidebar and so on)

Message element	Description
Data	The value for a given projector state, such as on or off, appears in ASCII-decimal format directly after the request/reply symbol. Add an optional space after the symbol—such as before the data—in a set message, but data in replies follow the exclamation mark (!) symbol without a space. Note the following about data: • All values returned by the projector (reply messages) have a fixed length, regardless of the actual value. For a specific parameter, the length is always the same (for example, contrast is always returned as three characters, projector number is always returned as five characters). The minimum parameter size is three characters. Values less than the predefined size are padded with leading zeros as needed. Parameters which have negative signs are zero padded after the negative sign, and have one less digit to make space for the sign. • If entering a negative number, type a space between the code/subcode and the value. For example (CRM3) and (CRM 3) can both be used when the number is positive; however, (CRM -2) is acceptable, but (CRM-2) is not. • Data in set messages to the projector do not require padding with zeros. • Within each message, multiple parameters of data must be separated by one space character. • Text parameters such as channel names are enclosed in double quotes following the data, as in Name.
Text parameters	Most data is a numerical value, however, some messages also require text. For example, a channel naming message typically includes a text-based name—enclose this text in double quotation marks, as in "Tilt the Wagon". Use all characters as required except for the *special characters* (on page 12)—these require a twoc haracter combination.

Special characters for text

To use special characters in the serial API commands, you must use a two-character combination.

Special character	Two-character combination	Description
"	\"	Double quotation mark
\	\\	Backslash
(	\(	Left bracket
)	\)	Right bracket
Line break	\n	New line —If the text can be displayed on more than one line, this sets the line break.
Send arbitrary code	\h##	Sends one arbitrary code defined by the two hexadecimal digits ##.

Sample messages and their meaning

For a more detailed understanding of messages and their meaning, review the provided sample messages.

Sample messages for a single projector

Messages can be sent and received for a single projector.

Message format	Function	Example
(Code Data)	SET (set contrast of main image to 500)	`(CON500)`
(Code+Subcode Data)	SET (set contrast of PIP image to 500)	`(BDR+PRTA 500)`
(Code?)	REQUEST (what is current contrast?)	`(CON?)`
(Code+Subcode?)	REQUEST (what is contrast of PIP image?)	`(BDR+PRTA?)`
(Code!Data)	REPLY (contrast is 64)	`(CON!64)`
(Code+Subcode!Data)	REPLY (PIP contrast is 64)	`(BDR+PRTA!005 "57600")`
($Code Data)	SET AND ACKNOWLEDGE MESSAGE (message processed?)	`($CON64)`
(&Code+Subcode Data Checksum)	SET WITH CHECKSUM	`(&CON64 240)`

Sample messages for a specific projector within a network with one controller present

Messages can be sent and received for a specific projector within a network with one controller present.

Message format	Function	Example
(Dest Addr Code Data)	SET (turn projector #5 on)	(5pwr1)
($Dest Addr Code Data)	SET AND ACKNOWLEDGE MESSAGE (message processed?ffr55)	($5pwr1)

Sample messages for a specific projector within a network with multiple controllers present

Messages can be sent and received for a specific projector within a network with multiple controller present.

Message format	Function	Example
(Dest Addr Src Code?)	REQUEST (get contrast from projector #5 to controller #2)	(5 2con?)

Message format	Function	Example
($Dest Addr Src Code Data)	SET AND ACKNOWLEDGE MESSAGE (is message from controller #2 processed by projector #5)	($5 2con?)
(Dest Addr Src Code!Data)	REPLY (from projector #5 to controller #2: contrast is 64)	(002 005con!064)

What is sent in a message

Although you send and read messages as strings of ASCII characters, the actual message travels as a sequence of bytes.

Each character in this sequence requires one byte. The following example illustrates a lamp limit is 2000 hours reply from the projector.

ASCII =	(	L	P	L	!	2	0	0	0	)
HEX =	0x28	0x4	0x50	0x28	0x21	0x32	0x30	0x30	0x30	0x29

Maximizing message integrity

For additional reassurance and/or maximum message integrity, insert one or two special characters.

Message requirement	Description
Acknowledgments	For assurance from J Series that a set message has been processed, request an acknowledgment.
	The acknowledgment is returned after the message has been received and fully executed by J Series (such as in the case of a source switch it is not sent until the switch is complete). If the message cannot be executed for some reason (such as invalid parameters, time-out, and so on) a NAK is returned instead (not-acknowledge). Requesting an acknowledgment serves no purpose when included in a request message, as the acknowledgment is redundant to the actual reply from J Series. However, if requested, the dollar sign ($) acknowledgment from J Series follows the reply.
	There are two types of acknowledgments:
	• Simple Acknowledgments—Insert a dollar sign ($) character just after the start code bracket. This only returns a $. This only returns a dollar sign ($) on success, or a caret (^) on failure (NAK).
	• Full Acknowledgments—Insert a hash (#) character just after the start code bracket. This returns the message sent, as a reply.
	This is a quick way to confirm success with set messages and is useful with long distance communication links or where the projectors and/or images are not visible from the controller. Acknowledgments can also be a type of flow control.
Checksums	For maximum message integrity, add a checksum character ampersand (&) just after the start code bracket. You must also include the correct checksum total (0-255) just before the end code bracket. Make sure to add a space before the calculated checksum to separate it from the last data parameter:

Message requirement	Description

	The checksum is the low byte of the sum of the ASCII values of all characters between the start bracket and the beginning of the checksum, but not including either. It does include the space in front of the checksum.
	
	Calculate the checksum for the above set contrast to 64 command as follows:
	
	CHECKSUM EXAMPLE = & + c + o + n + 6 + 4 + 'space'
	
	    = 26h+63h +6Fh +6E h +36h +$34h +$20h
	
	    = 01F0h
	
	    = F0h when only the low byte is used
	
	    = 240
	
	The projector collects all of the message bytes as defined in the first byte of the message, then creates its own checksum value for comparison with the checksum included in the controller's message. If the values match, the message is considered to have been correctly received; otherwise, the message is discarded.
	
	Note the following:
	
	• h indicates a hex number.
	
	• If a request message has a checksum, so does the reply.
	
	• If using both acknowledge and checksum, either character can occur first.

Error messages

If a command cannot be performed, a descriptive error identifying the problem appears.

For example, the following message indicates a syntax error:

```
(ITP) – (65535 00000 ERR00005 "ITP: Too Few Parameters")
```

Descriptive error

The following error codes indicate a problem if a command cannot be performed.

Error code	Description	Error code	Description
3	Invalid parameter	105	Disabled control
4	Too many parameters	106	Invalid language
5	Too few parameters	107	Exceeded list size
6	Channel not found	110	Communication timeout
7	Command not executed	111	Communications failure
8	Checksum error	112	Failed to set hardware
9	Unknown request	113	Bad file
10	Error receiving serial data	114	Memory failure
101	Control not found	115	Not implemented

Error code	Description	Error code	Description
102	Subcontrol not found	116	Invalid security
103	Wrong control type	117	Invalid access group
104	Invalid value	118	System busy - Try again later

Accessing specific channels or inputs

For several commands (for example, ASR–Auto Channel Select) you can direct the message to particular channel, input or image.

To do this, include a subcode after the function code.

You can set parameters from a specific channel or input if that parameter is stored separately for each channel or input. This function cannot be used for parameters that are specified for the projector as a whole such as projector address. The serial commands listed in the document specify which subcodes are applicable to each function.

The picture-in-picture and secondary images refer to the image on the secondary image path. Depending on your projector model type, either picture-in-picture or secondary commands are applicable to the image. However, for serial commands, PIIP and SECD can be used interchangeably as shown within this document.

Example

Enable Auto Channel Select for the channel being used by the main image: `(ASR 1)`
Enable Auto Channel Select for the channel being used by the main image: `(ASR+MAIN 1)`
Enable Auto Channel Select for the channel being used by the picture-in-picture image: `(ASR+PIIP 1)`
Enable Auto Channel Select for the channel being used by the secondary image: `(ASR+SECD 1)`
Enable Auto Channel Select for channel 3:   `(ASR+C003 1)`
Set the bottom blanking value on slot 1 input 2 to value 30:   `(BBL+IN12 30)`

Flow control

Normally messages can be sent to the projector before processing of earlier messages is complete—J Series stores messages in a buffer until ready to process. However, if a series of messages is sent, J Series may not be able to process them as fast as they arrive and the buffer becomes full.

If this happens, J Series sends the 13h (Xoff) code to instruct the controller (or any devices preparing to transmit) to cease transmission. At this point, the controller must respond immediately and send no more than 10 extra characters or they may be lost (such as, J Series can accommodate the receipt of

up to 10 more bytes after it sends 13h (Xoff)). When the buffer is once again available, J Series sends a 11h (Xon) command to resume transmission.

> Xon and Xoff controls apply to both directions of communication. J Series does not send more than three characters after it has received a 13h (Xoff) code.

Network operation

Up to 1000 projectors can be linked together in a chain with the OUT port on one connected to the IN port on the next.

A controller connected to the IN port on the first projector can control them all, either by broadcasting messages which have no address and are thus seen by all projectors, or by directing messages to specific projector addresses.

Examples

Command	Message from controller	Reply from projector
Turn Projector #5 on.	(5pwr1)	{none}
What is the contrast level in Projector 30?	(30con?)	(CON!127)
Return Contrast from Projector #30 to Controller #2.	(30 2con?)	(00002 00030con!127)

Message for a specific projector

To work with a specific projector in a group, the projectors must first be assigned a unique ID— either a projector number or an Ethernet IP address.

Insert the number of the target projector between the starting bracket and the three-character ASCII code.

```
( Addr    Code    Data )
```

Each projector compares the message address with its own address and, if matching, responds and processes the message. If the address does not match, the message is passed on until it reaches the intended projector.

Message for the projector from a specific controller

Although messages without an address are always broadcast, you can also broadcast by including the reply destination address 65535.

This ensures that replies go to a specific controller address rather than being broadcast. The projector also includes its address.

```
( Dest    Src    Code    Data )
```

Message for the specific projector from a specific controller

If you have more than one controller on a network, ensure to include both a source address and a destination address.

With a single controller on the network, its address is never required. Place the source address between the destination address and three-character code, including a space before and after as shown.

Replies from a projector do not contain an address unless the request message includes both a destination address and a source address—such as, a reply to a request having only a destination address does not have any source address.

```
( Dest    Src    Code    Data )
```

Description of control types

Three types of controls exist for the serial commands: subclasses, control groups, and access levels.

Subclasses

- **Power down**—Accessible when the projector is in standby power mode (such as power off) as well as when powered on.
- **Power up**—Only accessible when the system electronics are fully powered (not necessarily lamp on).

Control groups

- **Unsaved**—Not saved to flash. The settings are not maintained between power sessions.
- **Saved**—Saved to flash. The settings are persistent between power sessions.
- **Preference**—Transferable from one projector to another, for example: NET+SUB0 (projector subnet).
- **Configuration**—Projector-specific settings and are non-transferable between projectors, for example: NET+ETH0 (projector IP address).
- **Channel**—Settings are specific to a particular input signal, for example: BRT (signal brightness).
- **Option card**—Settings are specific to a particular option card type/slot combination.

Access levels

Indicates at what level the command is available.

- **Operator**—Operator level log in.
- **Advanced**—Advanced operator level log in
- **Admin**—Administrator level log in
- **Service**—Service level log in

Serial API commands

The J Series commands can be used to modify product settings.

ACE–Auto Color Enable

Automatically selects Color Enable based on the control being adjusted.

If enabled, the projector can automatically change the color enable control when the user is using the on-screen display interface to adjust controls such as input levels, odd pixel, and brightness uniformity. This is an unsaved control, which can only be set when the projector is powered on and only affects the operation of the on-screen menus.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ACE <0	1>	Enables or disables the auto color controls.	0 = Disables Auto Color 1 = Enables Auto Color

Examples

Disable Auto Color:
(ACE 0)

Enable Auto Color:
(ACE 1)

ACO–Adaptive Contrast

Dynamically expands the contrast of the output image producing vibrant images with seamless response to scene changes and fades.

The adaptive contrast function implements a dynamic non-linear mapping between the input and output contrast levels based on frame-by-frame luminance histogram measurement of the input image.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ACO+INxy <value>	Sets the adaptive contrast for slot x, input y.	0 to 15
ACO+MAIN <value>	Sets the adaptive contrast for main video.	
ACO+PIIP <value>	Sets the adaptive contrast for the picture-in-picture video.	
ACO+SECD <value>	Sets the adaptive contrast for the secondary video.	

Examples

Set adaptive contrast for main image to 50% strength:

```
(ACO 8)
```

ACT–Active Window

Defines the input active window in pixels.

The production aperture is available for analog sources only, but not for decoded analog signals. The aperture is set once on every auto setup or on new signal detection when a channel for that signal is not present. The aperture defines the maximum window blanking controls can be opened up to, relative to the active portion of the signal.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ACT+INxy <value>	Sets the adaptive contrast for slot x, input y.	—
ACT+MAIN <value>	Sets the adaptive contrast for main video.	—
ACT+PIIP <value>	Sets the adaptive contrast for picture-in-picture video.	—
ACT+SECD <value>	Sets the adaptive contrast for secondary video.	—

Examples

Return the active window for the main video: `(ACT?)`
Return the active window for the picture-in-picture video: `(ACCT+PIP?)`
Return the active window for slot 1, input 2: `(ACT+IN12?)`

ADR–Address

Sets or queries the device address.

This command also helps to identify where a response or asynchronous message originates from. Generally, this command is used for projectors that are daisy-chained together using the RS232 style communication.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Down
- **Access Level:** Operator

Commands

Command	Description	Values
ADR <value>	Sets the projector address to <value>.	0 to 999 65535 = Reserved broadcast address

Examples

Set all devices to address 0: `(65535 ADR 0)`
Set first device at address 0 to address to 5:

(0 ADR 5)	

Query address for all devices and return results to address 1001:

(65535 1001ADR?)

Result:

(01001 00005ADR!005)

AGC–Automatic Gain Control

Enables or disables the automatic gain control.

Using this command the decoder can automatically track the sync amplitude of the incoming signal. Turn this command off if you experience strange color artifacts, indicating an incompatibility between the source and the AGC.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator (Read-only)

Commands

Command	Description	Values
AGC+INxy <value>	Sets the automatic gain control for slot x, input y to the specified state of either enable or disable.	—
AGC+MAIN <value>	Sets the automatic gain control for the main image.	—
AGC+PIIP <value>	Sets the automatic gain control for picture-in-picture video.	—
AGC+SECD <value>	Sets the automatic gain control for secondary video.	—

Examples

Return the current AGC state on main video:

(AGC?)

Return the current AGC state on picture-in-picture video:

(AGC+PIIP?)

Return the current AGC state on slot 1 input 2:

(AGC+IN12?)

Enable AGC on main video:

(AGC 1)

Disable AGC on main video:

(AGC+MAIN 0)

Enable on picture-in-picture video:
(AGC+PIIP 1)

AIC–Auto Input Cycling

When enabled, the system continually searches for the next valid signal when no signal is present or when loss of sync occurs on the current user selected input.

In the case of multiple signals to choose from, the order is based on slot, followed by inputs on that slot.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
AIC <0 | 1>	Enables or disables auto input cycling.	0 = Disables auto input cycling 1 = Enables auto input cycling

Examples

Disable auto input cycling:
(AIC 0)

Enable auto input cycling:
(AIC 1)

AIL–Auto Input Level

Continuously monitors the input signal levels of the analog inputs and make adjustments as needed

When the projector detects a level that would lead to the crushing of black or white levels, the input offset or gain are adjusted to compensate. If the input signal is not being crushed, the projector does nothing. Only use the Auto Input Level feature when the current source requires further input level adjustment. At least 12 consecutive white pixels must be in the image to use Auto Input Levels. The monitor period runs for 10 seconds after being issued. Auto setup or source switching stops the level period.

To use this command, turn it on, wait for the black level and drive values to stabilize, and turn it off or wait for the 10 seconds.

When Auto Input level is turned off, the current drive and black level values are maintained. This command only applies to analog BNC or Dual DVI cards.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
AIL+MAIN <value>	Performs auto input level on the main image.	—
AIL+PIIP <value>	Performs auto input on picture-in-picture or secondary image.	—
AIL+SECD <value>	Performs auto input on secondary image.	—

Examples

Perform auto input level on the main image: `(AIL 1)`
Perform auto input level on the picture-in-picture image: `(AIL+PIIP 1)`

ALT–Active Loop-Through

Ensures that video signals continue to be looped out when the projector enters standby power mode in situations where a Twin HDMI Input card is used to loop signals out to another projector.

When the projector is in standby mode (and this feature is enabled), limited channel control is available—inputs can be switched, can perform Auto Setup, and some limited input settings can be modified.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
ALT <0	1>	Enables or disables active loop-through.	0 = Disables standby active loop-through 1 = Enables standby active loop-through

Examples

Get the current standby active loop-through setting:
`(ALT?)`
Enable standby active loop-through:
`(ALT 1)`
Disable standby active loop-through:
`(ALT 0)`

APJ–Active Projector

Enables or disables temporarily the IR and wired keypad inputs to a specific projector in a network of projectors.

When a projector is disabled, the only key that works is PROJ. The next time the projector is powered up again, it reverts to fully enabled. The built-in keypad is always fully functional. This command does not overwrite the Front IR, Back IR and Wired Keypad settings.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
APJ <0 | 1>	Enables or disables IR remote control access to the projector.	0 = Disables IR remote control to the projector 1 = Enables IR remote control to the projector

Examples

Is the projector IR remote control active or not:
`(APJ?)`
Projector is active (IR remote control is enabled):
`(APJ 1)`
Projector is not active (IR remote control is enabled):
`(APJ 0)`

APR–Aperture

Sets the diameter of the light path.

This command trades off between contrast and brightness. Larger values increase contrast and decrease brightness. This is done in the optical path rather than electronically which is how the Contrast and Brightness controls function.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
APR <value>	Opens and closes the aperture.	—

Examples

Set aperture to full closed:
(APR 17)
Set aperture to full open:
(APR 0)

APW–Auto Power On

Automatically changes from Standby mode to Power On mode when the AC switch is turned on, if an AC interruption has occurred in the previous power cycle.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
APW <0 | 1>	Automatically powers up the projector to the on state.	0 = Disables auto power up 1 = Enables auto power up

Examples

Projector remains in Standby mode until the user presses the power key: `(APW 0)`
Projector auto powers up when AC power is switched on if it was in a powered on state (such as not in Standby mode) when the AC power was powered off in the previous power cycle: `(APW 1)`

ARO–Aspect Ratio Overlay

Enables or disables the aspect ratio layer over image layer.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ALT <0 | 1>	Enables or disables the aspect ratio overlay.	0 = Disable the aspect ratio overlay 1 = Enables the aspect ratio overlay

Examples

Turn on Aspect Ratio Overlay: `(ARO 1)`
Turn off Aspect Ratio Overlay: `(ARO 0)`

ASH–Auto Shutdown

Moves the projector to power saving mode if no activity has been detected within a set period of time.

If the projector remains in power saving mode for an additional time-out period the projector automatically goes to standby. Any activity during power saving mode or standby cancels Auto Shutdown and returns the projector to normal operation.

Parameters

- **Control group:** Saved
- **Subclass:** Power Down

- **Access level:** Operator

Commands

Command	Description	Values
ASH <0 | 1>	Enables or disables the Auto Shutdown mode.	0 = Turns off Auto Shutdown mode 1 = Turns on Auto Shutdown mode
ASH+SBTO <value>	Sets the uninterrupted time-out period that must elapse before projector enters Standby mode (the second time-out period or Standby time-out).	—
ASH+ALTO <value>	Sets the uninterrupted time-out period that must elapse time of activity loss until Auto Shutdown is activated (the first time-out period or Activation time-out).	—

Examples

Turn on Auto Shutdown mode: (ASH 1)
Turn off Auto Shutdown mode: (ASH 0)
Set standby time-out to 10 minutes: (ASH+SBTO 10)
Set source activity loss time-out to 10 minutes: (ASH+ALTO 10)

ASR–Auto Channel Select

Select the channel memory best suited to the input signal.

If the current channel does not support Auto Channel Select, the projector does not attempt to select a new channel when the signal changes. If the current channel does support Auto Channel Select, upon signal detection, an existing channel is chosen. If a match is not found, a new channel is created.

Parameters

- **Control group:** Channel
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ASR+C0xx	Enables or disables Auto Channel Select on the specified channel.	xx = Channel number from 01 to 99
ASR+MAIN <value>	Enables or disables Auto Channel Select on the channel being used by main.	—
ASR+PIIP <value>	Enables or disables Auto Channel Select on the channel being used by picture-in-picture.	—
ASR+SECD <value>	Enables or disables Auto Channel Select on the channel being used by secondary.	—

Examples

Get Auto Channel Select state for channel being used by main:

(ASR?)

Get Auto Channel Select state for channel being used by main:

(ASR+MAIN?)

Get Auto Channel Select state for channel being used by picture-in-picture:

(ASR+PIIP?)

Enable Auto Channel Select for the channel being used by main:

(ASR 1)

Enable Auto Channel Select for the channel being used by picture-in-picture:

(ASR+PIIP 1)

Disable Auto Channel Select for the channel being used by main:

(ASR+MAIN 0)

Disable Auto Channel Select for channel 1:

(ASR+C001 0)

ASU–Auto Setup

Automatically readjusts various video controls for the active video source to produce an optimal image on screen.

If main and picture-in-picture/secondary video are using the same channel, the Auto Setup acts on both, regardless of the sub-code being used.

In some cases for analog video, the user can select the format that best suits the source. This selection helps the auto setup get the correct settings for the tracking and phase controls for analog sources containing the same number of active lines but with different aspect ratios.

Note the following:

- All digital and decoder option cards do not support options for auto setup as digital hardware provides enough information to perform the correct auto setup.

- Analog PC graphics sources (four/five-wire sync) present a list of formats based on the current active lines detected in the video.

- Analog video sources (three wire sync on green) always have the options standard and advanced. Video sources use a look up table to determine their format based on video standards. The advanced auto setup selection measures the start pixel and start line whereas standard uses the table values as is.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ASU	Performs auto setup on the active video source.	—
ASU+MAIN	Performs a standard auto setup on the main video.	—
ASU+PIIP	Performs a standard auto setup on the picture-in-picture video.	—
ASU+SECD	Performs a standard auto setup on the secondary video.	—
ASU+FRZE <value>	Hides temporary image artifacts that may appear during the auto setup procedure.	0 = Disables freezing the image during auto setup 1 = Freezes the image during auto setup

Examples

Perform auto setup on the main video: `(ASU)`
Freeze image during auto setup: `(ASU+FRZE 1)`
Disable image freezing during auto setup: `(ASU+FRZE 0)`
Perform standard auto setup on main video: `(ASU+MAIN)`
Perform standard auto setup on the picture-in-picture: `(ASU+PIIP)`

BBL–Bottom Blanking

Sets the number of lines to turn to black at the bottom of the image to blank out any unwanted data near the bottom edge of the image.

A positive amount of blanking makes the image smaller. A negative amount of blanking makes the image larger. Negative blanking is only applicable for analog signals, when the auto setup cannot set the image size correctly.

Christie does not recommend using negative blanking, but to run auto setup again, ensuring that the content has active pixels on each edge of the image. For negative blanking, the image size can only be increased to the limit of the sync.

The maximum amount of bottom blanking allowed is half the image height minus 10.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
BBL+INxy	Sets the bottom blanking for slot x, input y.	—
BBL+MAIN <value>	Sets the bottom blanking for the main image.	—
BBL+PIIP <value>	Sets the bottom blanking for the picture-in-picture image.	—
BBL+SECD <value>	Sets the bottom blanking for the secondary image.	—

Examples

Returns the bottom blanking value on main video: `(BBL?)`
Returns the bottom blanking value on picture-in-picture video: `(BBL+PIIP?)`
Returns the bottom blanking value on slot 1 input 2:   `(BBL+IN12?)`
Set bottom blanking to 40 on main video: `(BBL 40)`
Set bottom blanking to 40 on main video: `(BBL+MAIN 40)`
Set bottom blanking to 40 on picture-in-picture video: `(BBL+PIIP 40)`
Set bottom blanking to 40 on slot 3 input 2:

```
(BBL+IN32 40)
```

BDR–Baud Rate

Sets the baud rate for a serial communications port.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Down
- **Access Level:** Advanced

Commands

Command	Description	Values
BDR+PRTA <value>	Sets the baud rate for the RS232-IN port.	0 = 1200
BDR+PRTB <value>	Sets the baud rate for the RS232-OUT port.	1 = 2400
BDR+PRTC <value>	Sets the baud rate for the RS422 port.	2 = 9600
		3 = 19200 (Default for RS422)
		4 = 38400
		5 = 57600
		6 = 115200 (Default for RS232 IN and RS232 OUT)

Examples

Get the baud rate:

```
(BDR+PRTA?)
```

Result:

```
(BRD+PRTA! "115200")
```

Set baud rate on port A to 115200 bits per second:

```
(BDR+PRTA 6)
```

BGC–Base Gamma Curve

Selects a gamma correction curve.

You can select from a standard table or an arbitrary gamma table that has been downloaded into the projector, using separate software. The standard tables are:

- 2.22 table—Simple power curve.
- Standard table—Modified 2.22 curve with an optimized linear portion in the low end of the curve. This is the same as selecting a custom table and setting the function to be 2.22 and the slope to be 1.0.

Selecting Gamma Function from the list enables the Gamma Function and Gamma Slope controls.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
BGC+INxy <value>	Sets the base gamma curve for slot x, input y.	0 = Standard
BGC+MAIN <value>	Sets the base gamma curve for main video.	1 = 2.22
BGC+PIIP <value>	Sets the base gamma curve for picture-in-picture.	2 = Gamma Function
BGC+SECD <value>	Sets the base gamma curve for the secondary video.	

Examples

Set main video to the standard base gamma table: (BGC 0)
Set main video to the standard base gamma table: (BGC+MAIN 0)
Set slot 3, input 2 to the standard base gamma table: (BGC+IN32 0)

BGF–Base Gamma Function

Defines the gamma power curve to be used when the gamma table value is set to Gamma Function.

This command, combined with Gamma Slope setting, determines the gamma table to be used. The curve is generally a power curve with a small linear segment at the bottom defined by the slope.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
BGF+INxy <value>	Sets the base gamma curve for slot x, input y.	100 to 300

Command	Description	Values
BGF+MAIN <value>	Sets the base gamma curve for main video.	where 100 is 1.0 linear and 300 is a 3.00 power curve
BGF+PIIP <value>	Sets the base gamma curve for picture-in-picture video.	
BGF+SECD <value>	Sets the base gamma curve for secondary video.	

Examples

Set the base Gamma Function to 1.0 for main video: (BGF 100)
Set the base Gamma Function to 3.0 for main video: (BGF+MAIN 300)
Set the base Gamma Function to 2.22 for slot 3, input 2: (BGF+IN32 222)

BGS–Base Gamma Slope

Defines the slope to be used for the base custom gamma table in the small linear section at the bottom of the curve.

Use this slope to bring the low level blacks in the image in or out, and defines the custom gamma table when combined with the gamma function.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
BGS+INxy <value>	Sets the base gamma curve for slot x, input y.	50 to 200 where 50 is a slope of 0.5 and 200 is a slope of 2.00
BGS+MAIN <value>	Sets the base gamma curve for main video.	
BGS+PIIP <value>	Sets the base gamma curve for picture-in-picture video.	
BGS+SECD <value>	Sets the base gamma curve for secondary video.	

Examples

Set the base gamma slope to 1.0 for main video:
`(BGS 100)`
Set the base gamma slope to 2.0 for main video:
`(BGS+MAIN 200)`
Set the base gamma slope to 1.5 for slot 3, input 2:
`(BGS+IN32 150)`

BKY–Broadcast Key Mode

Identifies whether all key presses received by the projector are relayed to all other projectors on the network.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
BKL <0 | 1>	Enables or disables the Broadcast Key mode.	0 = Disables the Broadcast Key mode 1 = Enables the Broadcast Key mode

Examples

Get the current Broadcast Key mode:
`(BKY?)`
Enable Broadcast Key mode:
`(BKY 1)`
Disable Broadcast Key mode:
`(BKY 0)`

BLB–Blue Black Level

Compensates for relative variations in the black levels between red, green, and blue.

This command is available on all cards expect the video decoder. The correct setting achieves maximum contrast without crushing white or black. When the drive and black level controls are set correctly for a signal, the Comprehensive Color Adjustment (including color temperature) works as expected. Do not use the drive and black level controls.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
BLB+INxy <value>	Sets the blue black level on slot x, input y to the specified value.	-225 to 255
BLB+MAIN <value>	Sets the blue black level on the main video to the specified value.	
BLB+PIIP <value>	Sets the blue black level on the picture-in-picture video to the specified value.	
BLB+SECD <value>	Sets the blue black level on the secondary video to the specified value.	

Examples

Returns the current blue black level value on the main video: (BLB?)
Returns the current blue black level value on the picture-in-picture video: (BLB+PIIP?)
Returns the current blue black level value on slot 1 input 2: (BLB+IN12?)
Set the blue black level to 128 on the main video: (BLB 128)
Set the blue black level to 128 on the main video: (BLB+MAIN 128)
Set the blue black level to 100 on the picture-in-picture video: (BLB+PIIP 100)
Set the blue black level to 100 on slot 3 input 2: (BLB+IN32 100)

BLD—Blue Drive

Compensates for different amounts of attenuation between the red, green, and blue in the signal.

This command is available on all cards expect the video decoder. The correct setting achieves maximum contrast without crushing white or black. When the drive and black level controls are set correctly for a signal, the Comprehensive Color Adjustment (including color temperature) works as expected. Do not use the drive and black level controls to setup a specific color temperature as this requires separate color temperature adjustments to be made for each source.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
BLD+INxy <value>	Sets the blue drive on slot x, input y to the specified value.	-225 to 255
BLD+MAIN <value>	Sets the blue drive on the main video to the specified value.	
BLD+PIIP <value>	Sets the blue drive on the picture-in-picture video to the specified value.	
BLD+SECD <value>	Sets the blue drive on the secondary video to the specified value.	

Examples

Return the current blue drive value on the picture-in-picture video: (BLD+PIIP?)
Return the current blue drive value on the slot 1 input 2: (BLD+IN12?)
Set the blue drive to 128 on the main video: (BLD 128)
Set the blue drive to 128 on the main video: (BLD+MAIN 128)
Set the blue drive to 100 on the picture-in-picture video: (BLD+PIIP 100)
Set the blue drive to 100 on slot 3 input 2: (BLD+IN32 100)

BOG–Blue Odd Pixel Gain

Adds an offset to input blue gain settings on the analog input card.

This command is used to compensate for differences between the A to D converter used to sample even pixels, and the c used for odd pixels. A value of 0 is the null position and both A to D converters are set to exactly the same value.

Parameters

- **Control Group:** Option
- **Subclass:** Power Up

- **Access Level:** Operator

Commands

Command	Description	Values
BOG+SLx0 <value>	Sets the blue gain offset for the second A to D.	—

Examples

Set a blue gain offset to -10 on slot 1:
```
(BOG+SL10 –10)
```

BOO–Blue Odd Pixel Offset

Adds an offset to input blue black level settings on the analog input card.

This command compensates for differences between the A to D converter used to sample even pixels, and the converter used for odd pixels. A value of 0 is the null position and both A to D converters are set to exactly the same value.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
BOO+SLx0 <value>	Sets a blue black level offset for the second A to D.	—

Examples

Set the blue black level offset to -10 on slot 1:
```
(BOO+SL10 –10)
```

BRT–Brightness

Adjusts the offset applied to the input signal.

This command has the same effect as adjusting the input levels, except that it operates on all three colors and can be used to make quick adjustments. For precise control, use the input level adjustments.

- If the setting is too high, black portions of the image are displayed as dark grey, making the image appear washed-out.

- If the setting is too low, dark greys are displayed as deep black and detail is lost in the darkest parts of the image. This condition is known as crushing. When adjusting, start from a lower setting and adjust upwards until just above the point where black is crushed.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
BRT+INxy <value>	Sets the brightness on slot x, input y to the specified value.	-1000 to 1000
BRT+MAIN <value>	Sets the brightness on the main video to the specified value.	
BRT+PIIP <value>	Sets the brightness on the picture-in-picture to the specified value.	
BRT+SECD <value>	Sets the brightness on the secondary video to the specified value.	

Examples

Return the current brightness value on the main video: (BRT?)
Return the current brightness value on the picture-in-picture video: (BRT+PIIP?)
Return the current brightness value on slot 1 input 2: (BRT+IN12?)
Set the brightness to 500 on the main video: (BRT 500)
Set the brightness to 500 on the main video: (BRT+MAIN 500)
Set the brightness to -250 on the picture-in-picture video: (BRT+PIIP –250)
Set the brightness to 100 on slot 3 input 2: (BRT+IN32 100)

BRU–Brightness Uniformity

Enables or disables brightness uniformity and adjusts its output based on the current lamp mode.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
BRU+SLCT <0 | 1>	Enables or disables brightness uniformity.	0 = Disables brightness uniformity 1 = Enables brightness uniformity
BRU+CRSA <0 | 1>	Enables or disables the BRU coarse adjustment.	0 = Disables the BRU coarse adjustment 1 = Enables the BRU coarse adjustment
BRU+UITL <value>	Gets or sets the percent of gain at the top left corner.	—
BRU+UIML <value>	Gets or sets the percent of gain at the left side.	—
BRU+UIBL <value>	Gets or sets the percent of gain at the bottom left corner.	—
BRU+UITR <value>	Gets or sets the percent of gain at the top right corner.	—
BRU+UIMR <value>	Gets or sets the percent of gain at the right side.	—
BRU+UIBR <value>	Gets or sets the percent of gain at the bottom right corner.	—
BRU+UIH1 <value>	Gets or sets the percent of gain at the left turn point.	—
BRU+UIH2 <value>	Gets or sets the percent of gain at the right turn point.	—
BRU+UI1P <value>	Gets or sets the position of the left turn point.	—
BRU+UI2P <value>	Gets or set the position of the right turn point.	—
BRU+GAIN <value>	Gets or sets the overall gain.	—
BRU+UIRT	Restores all parameters to the factory default for the current lamp.	1

Examples

Get current state of brightness uniformity: `(BRU+SLCT?)`
Enable brightness uniformity: `(BRU+SLCT 1)`
Check if Coarse Adjustment is enabled or not: `(BRU+CRSA?)`
Enable the Coarse Adjustment mode: `(BRU+CRSA 1)`
Get current gain at top left corner: `(BRU+UITL?)`
Set gain at top left corner to 0.8: `(BRU+UITL 80)`
Get current gain at left edge: `(BRU+UIML?)`
Set gain at left edge to 1.0: `(BRU+UIML 100)`
Get current gain at bottom left corner: `(BRU+UIBL?)`
Set gain at bottom left corner to 0.8: `(BRU+UIBL 80)`
Get current gain at top right corner: `(BRU+UITR?)`
Set gain at top right corner to 0.8: `(BRU+UITR 80)`
Get current gain at right edge: `(BRU+UIMR?)`
Set gain at right edge to 0.8: `(BRU+UIMR 80)`
Get current gain at bottom right corner: `(BRU+UIBR?)`
Set gain at bottom right corner to 0.8: `(BRU+UIBR 80)`
Get current gain at left turn point: `(BRU+UIH1?)`
Set gain at left turn point to 0.8: `(BRU+UIH1 80)`

Get current gain at right turn point: `(BRU+UIH2?)`	
Set gain at right turn point to 0.8: `(BRU+UIH2 80)`	
Get current position of left turn point: `(BRU+UI1P?)`	
Locate left turn point pixel 375 from the left edge: `(BRU+UI1P 375)`	
Get current position of right turn point: `(BRU+UI2P?)`	
Locate right turn point pixel 900 from the left edge: `(BRU+UI2P 900)`	
Reset all BRU parameters for current lamp mode: `(BRU+UIRT 1)`	
Get current overall gain: `(BRU+GAIN?)`	
Set overall gain to 1.000: `(BRU+GAIN 1000)`	

CCD–Output Color Default

Specifies the default color adjustment to use for new channels on all new sources.

Override the command for any specific channel.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
CCD <value>	Applies a default table to use while running auto setup when a YNF/CPF filter is not in place.	—
CCD+DYNF	Applies a default table to use while running auto setup when a YNF/CPF filter is in place.	—

Examples

Make new channels using the MAX drive table, while running auto setup and YNF is out:
`(CCD 0)`

CCI—Interpolated Color

Generates an output color map based on interpolating the values for the standard color temperatures.

You can adjust the color temperature of the image. The selected output color table must be on Color Temperature to enable this command.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
CCI+INxy <value>	Sets the interpolated color temperature for slot x, input y.	3200K to 9300K
CCI+MAIN <value>	Sets the interpolated color temperature for the main video.	
CCI+PIIP <value>	Sets the interpolated color temperature for picture-in-picture video.	
CCI+SECD <value>	Sets the interpolated color temperature for secondary video.	

Examples

Set the interpolated color temperature to 9300K for the main video:
`(CCI 0930)`

CCS—Select Output Color

Selects which of several predefined and four user-defined color maps to use for a specific input signal.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
CCS+INxy <value>	Selects the color temperature for slot x, input y.	0 = MaxDrives—Turns off all color adjustments allowing the projector to run at maximum brightness
CCS+MAIN <value>	Selects the color temperature for the main video.	2 = Color Temperature—Specifies a color temperature between 3200 and 9300 based on the setting of the Color Temperature control. Color temperature is expressed in degrees Kelvin [3200, 5400, and so on]. Lower numbers give a reddish white, higher numbers appear bluish. There are four standard settings:
CCS+PIP <value>	Selects the color temperature for picture-in-picture video.	
CCS+SECD <value>	Selects the color temperature for secondary video.	• 9300K—Close to the white of many computer monitors
		• 6500K—Standard for color video, in both standard and high definition forms
		• 5400K—Standard for graphics and black-and-white video
		• 3200K—Useful if the projected image is to be filmed or shot as part of a studio set illuminated with incandescent lights. For all color temperatures, the color primaries (red, green and blue) are unchanged and reflect the native colors of the projector.
		3 = SD Video—Adjusts the color of red, green and blue, as well as the color of white. Optimized for SD video
		4 = HD Video—Adjusts the color of red, green and blue, as well as the color of white. Optimized for HD video
		5 = User 1—Selects a user defined set of color adjustments
		6 = User 2—Selects a user defined set of color adjustments
		7 = User 3—Selects a user defined set of color adjustments
		8 = User 4—Selects a user defined set of color adjustments
		The four user defined settings are defined in the Configuration menu.

Examples

Set the color temp setting to max drives for the main video:

```
(CCS 0)
```

Serial API commands

CHA–Channel

Changes the current channel.

Switching channels switches to the appropriate option card/input. If the signal signature in the channel does not match the signal on the channel's input, the channel change switches to the auto-channel or to the channel defined for the signal signature on the channel's input. This command fails if the data in the channel file does not match the current system hardware.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
CHA+COPY <value>	Makes a copy of a channel and assigns it a unique number (optionally, specifies a new channel number).	1 to 99
CHA+DLET <value>	Deletes a channel.	
CHA+MAIN <value>	Sets the channel being used by main video.	
CHA+PIIP <value>	Sets the channel being used by picture-in-picture or the secondary video.	
CHA+SECD <value>	Sets the channel being used by picture-in-picture or the secondary video.	
CHA+INFO <value>	Displays the information on the current channel.	

Examples

Get the current active channel:

```
(CHA?)
```

Select a Four-Port input configuration using slots 1 and 2:

```
(CHA 1)
```

Set the main video to channel 10:

```
(CHA 10)
```

Set the picture-in-picture video to channel 99:

```
(CHA+PIIP 99)
```

Make a copy of channel 1, using the next free channel number:

```
(CHA+COPY 1)
```

Make a copy of channel 1, and copy to channel 20 (fails if 20 already exists):

```
(CHA+COPY 1 20)
```

Delete all unlocked channels:
```
(CHA+DLET 0)
```

CLE—Color Enable

Allows the three primary colors (red, green, and blue) to be turned on or off separately.

Use this command to look at the colors one at a time or in pairs when doing convergence, light measurements, and so on.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
CLE <color>	Enables specific colors in the video path.	0 = White (all colors on) 1 = Red 2 = Green 3 = Blue 4 = Yellow (red and green on) 5 = Cyan (green and blue on) 6 = Magenta (red and blue on)

Examples

Display the red portion of image only:
```
(CLE 1)
```

Display the green and blue portion of image only:
```
(CLE 5)
```

Display the image normally (all primaries):
```
(CLE 0)
```

CLP—Clamping

Generates a clamping pulse for all analog signals that defines where in the signal a black reference can be found.

The Clamp Location sets the clamping pulse to one of three possible locations: tip, back porch, and tri-level.

- For most signals the correct position is back porch, just after the sync pulse.

- If the signal has no back porch and no sync pulse in the R, G, or B signals, clamping can occur at the front or tip of the sync pulse.
- For HDTV signals (1080i & 720p) the clamp must be moved past the positive pulse of the tri-level sync pulse, so the tri-level option is correct.
- For most signals, back porch is correct.
- Sync tip is needed only if the back porch is too small.
- For many signals, this command has no effect.

Change this setting only if the image appears unusually dim, has horizontal streaks, or shows significant color drift.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
CLP+INxy <value>	Sets the black level clamping for slot x, input y.	0 = Back porch
CLP+MAIN <value>	Sets the black level clamping for the main video.	1 = Sync tip
CLP+PIIP <value>	Sets the black level clamping for picture-in-picture video.	2 = Tri-level
CLP+SECD <value>	Sets the black level clamping for secondary video.	

Examples

Set the black level clamping for the main video to sync tip: `(CLP 1)`
Set the black level clamping for the main video to sync tip: `(CLP+MAIN 1)`
Set the black level clamping for slot 3 input 2 to sync tip: `(CLP+IN32 1)`

CLR–Color

Adjusts the saturation (amount) of color in a video image.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
CLR+INxy <value>	Sets the color saturation for slot x, input y.	0 to 1000
CLR+MAIN <value>	Sets the color saturation for the main video.	
CLR+PIIP <value>	Sets the color saturation for picture-in-picture video.	
CLR+SECD <value>	Sets the color saturation for secondary video.	

Examples

Return the current color saturation value on the main video: (CLR?)
Return the current color saturation value on the picture-in-picture video: (CLR PIIP?)
Return the current color saturation value on slot 1 input 2: (CLR IN12?)
Set the color saturation value to 500: (CLR 500)
Set the color saturation to 500 on the main video: (CLR MAIN 500)
Set the color saturation to 250 on the picture-in-picture video: (CLR PIIP 250)
Set the color saturation to 100 on slot 3 input 2: (CLR IN32 100)

CON–Contrast

Sets the image contrast by adjusting the gain applied to the input signal.

This command has the same effect as adjusting the input levels, except that it operates on all three colors and can be used to make quick adjustments. For precise control, the input level adjustments must be used.

- If the setting is too high, bright portions of the image not quite at peak white are displayed as peak white and detail is lost in the brightest parts of the image. This condition is known as crushing.
- If the setting is too low, the image is dimmer than it needs be.

Start from a lower setting and adjust upwards until just below the point where white is crushed.

Parameters

- **Control Group:** Input

- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
CON+INxy <value>	Sets the contrast for slot x, input y.	0 to 1000
CON+MAIN <value>	Sets the contrast for the main video.	
CON+PIIP <value>	Sets the contrast for picture-in-picture video.	
CON+SECD <value>	Sets the contrast for secondary video.	

Examples

Return the current contrast value on the main video: (CON?)
Return the current contrast value on the picture-in-picture video: (CON PIP?)
Return the current contrast value on slot 1 input 2: (CON IN12?)
Set the contrast to 500 on the main video: (CON 500)
Set the contrast to 500 on the main video: (CON MAIN 500)
Set the contrast to 250 on the picture-in-picture video: (CON PIIP 250)
Set the contrast to 100 on slot 3 input 2: (CON IN32 100)

CRM–Chroma/Luma Delay

Adjusts the time delay between the chroma and the luminance signals in decoded signals.

Changes to the delay eliminate shadows occurring with adjacent colors. It is only useful for video images processed by decoder cards.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
CRM+INxy <value>	Sets the luma delay for slot x, input y.	-3 to 3 pixels
CRM+MAIN <value>	Sets the luma delay for the main video.	
CRM+PIIP <value>	Sets the luma delay for picture-in-picture video.	
CRM+SECD <value>	Sets the luma delay for secondary video.	

Examples

Returns the current luma delay on the main video: (CRM?)
Returns the current luma delay on the picture-in-picture video: (CRM PIIP?)
Returns the current luma delay on slot 1 input 2:   (CRM IN12?)
Set the luma delay to 3 pixel on the main video: (CRM 3)
Set the luma delay to 3 pixel on the main video: (CRM MAIN 3)
Set the luma delay to 3 pixel on the picture-in-picture video: (CRM PIIP 3)
Set the luma delay to -3 pixel on slot 3 input 2:   (CRM IN32 –3)

CSP–Color Space

Specifies which color space the input signal uses.

This command determines how the color components are decoded for accurate color in the display. Color space control only applies to analog input signals. Although the proper color space is normally determined automatically by the projector, you can override the setting.

- Use RGB unless you are using component video.
- Use YPbPr(SDTV) for most video sources.
- Use YPbPr(HDTV) for high definition signals.

> When certain RGB signals are first connected, the projector may not initially recognize them as RGB and may incorrectly decode their color information as YPbPr(SDTV). These signals can include: RGB signals in NTSC, PAL, SECAM frequency ranges, Scan-doubled sync-on-green, or Scan-quadrupled sync-on-green. For these signals change the Color Space to RGB, then define a new channel for future use.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
CSP+INxy <value>	Sets the color space on slot x, input y.	0 = RGB
CSP+MAIN <value>	Sets the color space on the main video.	1 = YPbPr (SDTV)
CSP+PIIP <value>	Sets the color space on picture-in-picture video.	2 = YPbPr (HDTV)
CSP+SECD <value>	Sets the color space on secondary video.	

Examples

Return the current color space value on the main video: (CSP?)
Return the current color space value on the picture-in-picture video: (CSP+PIIP?)
Return the current color space value on slot 1 input 2: (CSP+IN12?)
Set the color space to YPbPr(SDTV) on the main video: (CSP 1)
Set the color space to YPbPr(HDTV) on the main video: (CSP+MAIN 2)
Set the color space to YPbPr(SDTV) on the picture-in-picture video: (CSP+PIIP 1)
Set the color space to YPbPr(SDTV) on slot 3 input 2: (CSP+IN32 1)

DED—Dual DVI EDID Type Selection

Sets the preferred EDID Timings on the Dual DVI input card.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
DED+SLxy <value>	Sets the EDID timings for slot to the specified type.	0 = Default 1 = 3D 2 = Custom

Examples

Return the current EDID type on slot 1 input 2: `(DED+SL12 ?)`
Set the EDID type to 1 (3D) on slot 3 input 1: `(DED+SL31 1)`

DEF–Factory Defaults

Resets J Series to its factory default values.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Admin

Commands

Command	Description	Values
DEF 111	Restores all settings to the factory defaults. To prevent accidental use of this command, the number 111 must follow the command.	—

Examples

Reset J Series to factory defaults:
`(DEF 111)`
Result:
`(65535 00000 FYI00919 "All settings have been restored to their factory defaults. Reboot is required to take effect.")`

DEQ–DDIC Equalization Level

Sets the DDIC equalization level.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Admin

Commands

Command	Description	Values
DEQ+SLx0 <value>	Sets the equalization level on slot x to the specified level.	0 = Auto 1 = High (suitable when using longer DVI cables) 2 = Low (suitable when using shorter DVI cables

Examples

Return the current equalization level on slot 1: (DEQ+SL10?)
Set the equalization level to 2 (Low) on slot 3: (DEQ+SL30 2)

DLG–Data Logging

Sets data logging level.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
DLG <value>	Selects the data logging level.	0 = Minimal logging of activities—Logging system errors, warnings and events, for example power on/off, lamp on/off, user login/logout

Command	Description	Values
		1 = Normal logging—Most activities logged such as errors, warnings, events, and other info
		2 = Debug logging—All activities are logged

Examples

Get the current logging level:
`(DLG?)`

Set the current logging level to Normal:
`(DLG 1)`

DMX–DMX/ArtNet

Sets options for the DMX interface.

A user can select whether they want to receive data from both the DMX input card (inserted into the card cage in one of the input slots), or using ArtNet, an Ethernet-based DMX protocol which monitors UDP port 6454.

The input termination (2 Watt, 120 Ohm) is required on the last DMXC card in a loop-through configuration (such as only on the last projector). Termination may be either by hardware (by plugging in a termination dongle, and so on) or software, but should not be both.

Christie recommends hardware termination because software termination is only in place when the projector has power. If the network must be terminated without power to the last projector, use a hardware terminator.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
DMX <value>	Selects the source of the DMX/ArtNet input.	0 = DMX Input Card and ArtNet—Monitors for data on both the DMX input card (if plugged in) and ArtNet. If the DMX card is actively receiving data, ArtNet is ignored.
		1 = DMX Input Card Only—Monitors only the DMX card for input
		2 = ArtNet Only—Monitors only ArtNet for input
		3 = Disabled—Disables both interfaces
DMX+CHAN <value>	Sets the base channel for the DMX device.	—

Command	Description	Values
	If multiple projectors are on a single subnet/universe, the first projector would use base channel 0. If using the basic template (20 channels), the second projector should use base channel 21. The DMX specification supports overlap but Christie does not recommend this. The base channel setting must allow enough space for the channels required by the selected template. If the basic template is selected, the base channel may be in the range 1 to 492. If the advanced template is selected, the base channel may be in the range 1 to 448.	
DMX+PERS <value>	Sets the DMX template. A template represents a set of channels the application monitors for changes.	0 = Show—A minimal template composed of controls most likely to be used while a show is running 1 = Setup—Contains all of the show controls plus additional controls used for setting up a show 2 = Zap—Special template which uses locks for critical functions (cannot be used with an all-slider type board
DMX+TERM <value>	Switches termination resistance in/out of the circuit. If software termination is used on the DMX input card, enable this command. If not enabled, use a physical terminator. You may need to clear this setting upon card removal. By default software termination is disabled.	—
DMX+UNVS <value>	Specifies which universe the projector belongs to, so it can filter out all other data packets. The universe applies to ArtNet only and does not apply to the DMXC input card.	—
DMX+SUBN <value>	Sets the subnet for this projector. This is not to be confused with a subnet mask. A subnet identifies a set of universes. The subnet and universe in combination uniquely identify the channels a projector is listening on. The subnet applies to ArtNet only and does not apply to the DMXC input card.	—
DMX+FLTR <value>	If you have a noisy analog to digital converter in your DMX/ArtNet device (output oscillates between two values), this filter can be used to eliminate the input noise at the cost of fine control resolution in some controls.	0 = Default

Command	Description	Values
	Christie does not recommend using this feature unless you experience problems with your DMX input.	

Examples

Ignore ArtNet traffic, use only the DMX interface: `(DMX1)`
Set the base channel to 50 (such as listen to data starting at channel 50): `(DMX+CHAN 50)`

DRK—3D Dark Interval

Controls the time between frames when no image is being projected to the screen.

Used for 3D applications to determine the time that the shutter mechanism has to open or close between fields. Increasing this command reduces the peak brightness of the image. Keep at default value of zero for all other applications.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
DRK+MAIN <value>	Sets the 3D dark interval for the main image.	—
DRK+INxy <value>	Sets the 3D dark interval for slot x, input y.	—

Examples

Return the 3D dark interval value on the main video: `(DRK?)`
Return the 3D dark interval on slot 1 input 2: `(DRK+IN12?)`
Set the 3D dark interval to 0 on main video: `(DRK 0)`
Set the 3D dark interval to 5.00 milliseconds on the main video: `(DRK+MAIN 500)`

Set the 3D dark interval to 3.00 milliseconds on slot 1 input 2:

```
(DRK+IN12 300)
```

DTL—Detail

Adjusts the sharpness of the image.

The sharpness detail enhancement applied is based on adaptive horizontal, vertical, and diagonal large edge and small edge enhancement processes. Setting detail above the halfway-point can introduce noise in the image; lower settings can improve a noisy signal. This command does not take effect unless the minimum change required in the (DTT) control is reached.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
DTL+INxy <value>	Sets the detail for slot x, input y.	50 = mid-point
DTL+MAIN <value>	Sets the detail for the main video.	
DTL+PIIP <value>	Sets the detail for picture-in-in-picture video.	
DTL+SECD <value>	Sets the detail for the secondary video.	

Examples

Set the detail to mid-point for the main video:

```
(DTL 50)
```

DTO—Detail Overshoot

Minimizes ringing on the enhanced edges detail and texture effects.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
DTO+INxy <value>	Sets the detail overshoot for slot x, input y.	50 = mid-point
DTO+MAIN <value>	Sets the detail overshoot for the main video.	
DTO+PIIP <value>	Sets the detail overshoot for picture-in-picture video.	
DTO+SECD <value>	Sets the detail overshoot for the secondary video.	

Examples

Set the detail overshoot to mid point for the main video:

`(DTO 50)`

DTT–Detail Threshold

Selects a filter sensitivity to noise and sets the minimum change required before the detail (DTL) function is activated.

A higher value may improve noisy sources especially for higher settings of detail. Images can be sharpened without increasing the background noise.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
DTT+INxy <value>	Sets the detail threshold for slot x, input y.	—
DTT+MAIN <value>	Sets the detail threshold for the main video.	—
DTT+PIIP <value>	Sets the detail threshold for picture-in-picture video.	—
DTT+SECD <value>	Sets the detail threshold for the secondary video.	—

Examples

Set the detail threshold to mid point for the main video:

`(DTT 50)`

EBB–Black Level Blending

Selects the black level blend to use on the projector.

Black level blending is the process of modifying the pixels in the bright overlapping areas that result from the overlapping of two or more images. Correct adjustment eliminates uneven black levels by matching up black area hues with a target area hue (the intersection of the center lines), and adjusting the overlap edges surrounding the target area. Use the black test pattern to perform this function.

Parameters

- **Control group:** Configuration
- **Subclass:** Preference
- **Access level:** Operator

Commands

Command	Description	Values
EBB+SLCT <value>	Enables or disables black edge blending mode or chooses a saved Twist black level blending present.	0 = Disables black edge blending 1 = Enables black edge blending
EBB+CNTV <value>	Changes edge blending black level in the center zone.	—
EBB+TOPV <value>	Changes edge blending black level in the top zone.	—
EBB+LFTV <value>	Changes edge blending black level in the left zone.	—
EBB+RHTV <value>	Changes edge blending black level in the right zone.	—
EBB+BTMV <value>	Changes edge blending black level in the bottom zone.	—
EBB+TLTV <value>	Changes edge blending black level in the top left zone.	—
EBB+TRTV <value>	Changes edge blending black level in the top right zone.	—
EBB+BLTV <value>	Changes edge blending black level in the bottom left zone.	—
EBB+BRTV <value>	Changes edge blending black level in the bottom right zone.	—
EBB+LFTW <value>	Changes edge blending black level width of the left zone.	—
EBB+RHTW <value>	Changes edge blending black level width of the right zone.	—

Command	Description	Values
EBB+TOPW <value>	Changes edge blending black level width of the top zone.	—
EBB+BTMW <value>	Changes edge blending black level width of the bottom zone.	—
EBB+RSTD <value>	Resets all black level blending parameters to the default values.	—

Examples

Get the black level blend width of right zone: `(EBB+RHTW?)`
Set the black level blend offset of center zone to 100: `(EBB+CNTV 100)`
Set the black level blend width of left zone to 200: `(EBB+LFTW 200)`

EBL–Edge Blending

Controls edge blending settings so that any of the four edges can be blended with an adjacent projector to achieve an overlapped and seamless image.

Parameters

- **Control group:** Configuration/Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
EBL+SLCT <0 | 1>	Enables or disables standard edge blending mode, or choose a saved Twist blending preset.	0 = Disables standard edge blending mode 1 = Enables standard edge blending mode
EBL+LFTW <value>	Changes edge blending width of the left edge.	—
EBL+LFTM <value>	Changes edge blending curve midpoint of the left edge.	—
EBL+LFTS <value>	Changes edge blending curve slope at the midpoint on the left edge.	—
EBL+RHTW <value>	Changes edge blending width of the right edge.	—

Command	Description	Values
EBL+RHTM <value>	Changes edge blending curve midpoint of the right edge.	—
EBL+RHTS <value>	Changes edge blending curve slope at the midpoint on the right edge.	—
EBL+TOPW <value>	Changes edge blending width of the top edge.	—
EBL+TOPM <value>	Changes edge blending curve midpoint of the top edge.	—
EBL+TOPS <value>	Changes edge blending curve slope at the midpoint on the top edge.	—
EBL+BTMW <value>	Changes edge blending width of the bottom edge.	—
EBL+BTMM <value>	Changes edge blending curve midpoint of the bottom edge.	—
EBL+BTMS <value>	Changes edge blending curve slope at the midpoint on the bottom edge.	—
EBL+STDC <value>	Change the standard blending curve.	—
EBL+OVLP <0 | 1>	Enables or disables edge blending overlap control. This makes the active portion of the Blend zone obvious and is intended to make setup easier.	0 = Turns off edge blending overlap control 1 = Turns on edge blending overlap control
EBL+RSTA <value>	Resets all edge blending parameters to default values.	—
EBL+RSTC <value>	Resets all advanced edge blending parameters to default values.	—
EBL+FILT <value>	Adjusts to reduce saccadic eye-motion artifacts, sometimes noticeable in blend regions.	—
EBL+DTHF <value>	Applies the Eye-Motion Filter to the entire screen, rather than applying just to the edge blending regions.	—

Examples

Get the edge blending left width:

`(EBL+LFTW?)`

Set the edge blending left width:

`(EBL+LFTW 100)`

Set the blending top edge slope to be 1.5. Only works with standard curve type 1 (fifth order):

`(EBL+TOPS 150)`

Set the blending curve to be a cosine curve. Default is a fifth-order curve:

(EBL+STDC 1)
Use the standard edge blending mode: (EBL+SLCT 1)
Enable the edge blending overlap mode: (EBL+OVLP 1)

EME–Error Message Enable

Enables the displaying of error messages and determines to which interface the messages are sent.

Error messages can be turned off or displayed on the screen, sent out the serial port, or both. This setting does not affect messages for invalid user entries, for which error messages are always displayed.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
EME <value>	Selects interfaces to receive error messages.	0 = Off 1 = Screen 2 = Serial ports 3 = All

Examples

Get the current state: (EME?)
Direct error messages to the screen: (EME 1)

ESC–Edit Secondary Channel Setting

Allows the user to independently control primary and secondary channel settings, or to use the same setting for both links in Interleaved 3D mode.

By default, this command is disabled, meaning any settings applied to the primary input are also applied to the secondary input. In this case, the secondary channel settings cannot be set directly by the user. When enabled, the secondary channel settings become editable.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ESC <value>	Sets primary/second channel independence for Interleave 3D mode.	0 = Disable 1 = Enable

Examples

Enable editing of secondary channel/input settings:
```
(ESC 1)
```

FAD–Fade Time

Controls the amount of time it takes to fade between images on a source switch.

It also fades in the picture-in-picture and on-screen display, if possible.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
FAD <value>	Sets the amount of time to fade, in hundredths of a second.	0 to 150 where: 0 = Off 150 = 1.5 seconds 1 = 10 minutes

Examples

Fade out for one second:
```
(FAD 100)
```

FAS–Fan Assist Switch

Enables or disables fans operating at maximum speed during a thermal over-temp condition.

Parameters

- **Control group:** Saved
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
FAS <0 | 1>	Enables or disables the maximum fan operation.	0 = Disables the maximum fan operation 1 = Enables the maximum fan operation

Examples

Turn on fan assist: (FAS 1)
Turn off fan assist: (FAS 0)

FCS–Lens Focus Position Adjustment

Moves the focus motor to a specified position.

The range may change after running the Lens Calibration function, which determines the full range allowed by the hardware.

Parameters

- **Control group:** Configuration
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
FCS <position>	Adjusts the lens focus to the specified position.	-1200 to 1200

Examples

Move lens focus to position 500:
`(FCS 500)`

FIL–Filter

Applies an internal Low Pass Filter to the current input signal before the A/D conversion in analog cards, removing high frequency noise from input signals.

HDTV is typically used for 720p and 1080i video sources. The high bandwidth filter should be used for 1080p or higher frequency sources.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
FIL+INxy <value>	Sets the filter for slot x, input y.	0 = Off
FIL+MAIN <value>	Sets the filter for the main video.	1 = HDTV-High Bandwidth
FIL+PIIP <value>	Sets the filter for picture-in-picture video.	2 = HDTV 3 = EDTV
FIL+SECD <value>	Sets the filter for the secondary video.	4 = SDTV

Examples

Set the filter for the main video to HDTV:
`(FIL 2)`
Set the filter for the main video to HDTV:
`(FIL+MAIN 2)`
Set the filter for slot 3 input 2 to HDTV:
`(FIL+IN32 2)`

FLE–Frame Lock Enable

Enables or disables Frame Lock, which controls the output frame timing based on the input signal.

When enabled, output image frames are locked to the input if possible. When locked, the output is always locked to the primary input, never the picture-in-picture image. This control must be set to locked if a 3D-stereo signal is used.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
FLE <0 | 1>	Enables or disables the Frame Lock.	0 = Disables the Frame Lock 1 = Enables the Frame Lock

Examples

Get the Frame Lock status: FLE?
Disable Frame Lock: FLE 0
Enable Frame Lock. FLE 1

FLW–Serial Flow Control

Sets the flow control for a serial communications port.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Advanced

Commands

Command	Description	Values
FLW+PRTA <value>	Sets the mode on port A (RS232 In).	—
FLW+PRTB <value>	Sets the mode on port B (RS232 Out).	—
FLW+PRTC <value>	Sets the mode on port C (RS422).	—

Examples

Get flow control: (FLW+PRTA?)

Result:
`(FLW+PRTA!001 "Software")`

Set no flow control on port A:
`(FLW+PRTA "NONE")`

Set flow control on port A to software:
`(FLW+PRTA "SOFTWARE")`

FMD–Film Mode Detect

Enables or disables film motion detection.

This command is only available for interlaced or segmented frame sources.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
FMD+INxy <value>	Sets the film mode for slot x, input y.	0 = Disabled
FMD+MAIN <value>	Sets the film mode for the main video.	1 = Auto
FMD+PIIP <value>	Sets the film mode for picture-in-picture.	2 = PsF
FMD+SECD <value>	Sets the film mode for the secondary video.	

Examples

Enable auto film mode detect for main video:
`(FMD 1)`

FRD–Frame Delay

Sets the delay between the input signal timing and the output signal timing.

The minimum latency can vary based on the amount of scaling applied to the image. When using keystone or warping, additional latency is required depending on the amount of warp. This command is only available when the input signal is frame locked. In free run mode, or in cases where the signal cannot be frame locked, the minimum latency defined by the scaling keystoned/warp is applied to the signal.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
FRD <value>	Sets the amount of delay, measured in 1/1000ths of a frame.	1000 to 3000 2000 = 2 frames (Default)

Examples

Set the frame delay to 1.5 frames: `(FRD 1500)`

FRF–Free Run Frequency

Sets the output video vertical frequency.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
FRF <value>	Sets the output vertical frequency, used when running in Free Run mode.	—

Examples

Get the free run frequency: `(FRF?)`
Set the free run frequency to 50 Hz: `(FRF 5000)`

FRZ–Image Freeze

Freezes the active video or test pattern to allow a detailed examination of a single frame of an otherwise moving image.

Switching channels/inputs automatically changes the projector to unfrozen.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
FRZ+MAIN <0 | 1>	Freezes or un-freezes the main image.	0 = Unfreezes the main image 1 = Freezes the main image
FRZ+PIIP <0 | 1>	Freezes or un-freezes the picture-in-picture.	0 = Unfreezes the picture-in-picture 1 = Freezes the picture-in-picture
FRZ+SECD <0 | 1>	Freezes or un-freezes the secondary image.	0 = Unfreezes the secondary image 1 = Freezes the secondary image

Examples

Freeze the main image:
```
(FRZ+MAIN 1)
```

FTB–Fade to Black

Fades the image to or from black over the time period specified.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
FTB <value>	Sets the image intensity.	0 to 1000 0 = 0% image (black)

Command	Description	Values
		1000 = 100.0% image
FTB+TIME <value>	Sets a fade time in milliseconds.	0 to 1000
FTB+SLCT <0 | 1>	Selects a fade.	0 = Fades to black 1 = Fades back to image

Examples

Set the image intensity to 50.0%: (FTB 500)
Set the fade time to three seconds: (FTB+TIME 3000)
Fade to black over the time specified: (FTB+SLCT 0)
Restore image over the time specified: (FTB+SLCT 1)

GAM–Gamma Power ValueGamma Correction

Corrects ambient conditions affecting the display.

The Gamma control affects the shape of the curve determining what grey shades are displayed for a given amount of signal input between minimum (black) and maximum (white). This is done by performing a linear transform from the user selected gamma setting.

The normal point is 0, meaning the selected gamma table is used unaltered. If there is a lot of ambient light, the image can become washed out, making it difficult to see details in dark areas. Increasing the gamma correction setting can compensate for this by transforming the curve towards a gamma of 1.0. Decreasing the value transforms the gamma towards a gamma of 3.0.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
GAM <exponent>	Sets the exponent for the Power Law function used for the gamma transfer function. This command is only available if video electronics are on. (Saved value)	—

Examples

Returns the current gamma curve: `(GAM?)`
Set the gamma to 1.0 curve: `(GAM 100)`

GIA–Analog BNC Grounded Input Selection

Sets the input signal grounding method to single-ended or differential.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
GIA+SLxy <value>	Sets the input signal grounding method for the specified slot and input.	0 = Differential (Default) 1 = Single-ended

Examples

Return the current grounding method of slot 1 input 1:   `(GIA+SL11?)`
Set the grounding on slot 3 input 1 to single-ended: `(GIA+SL31 1)`

GID–Video Decoder Grounded Input Selection

Sets the input signal grounding method to single-ended or differential.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
GID+SLxy <value>	Sets the input signal grounding method for the specified slot and input.	0 = Differential (Default) 1 = Single-ended

Examples

Returns the current grounding method of slot 1 input 6: `(GID+SL16?)`
Set the grounding on slot 3 input 1 to single-ended: `(GID+SL31 1)`

GIO–General Purpose Input/Output

Controls or monitors the state of the General Purpose inputs and outputs.

The strings have one character for each hardware connector pin, and from left to right, correspond to the pin numbers 2, 3, 4, 6, 7, 8, 9 (pin 1 is 12V and pin 5 is ground—they cannot be read, set, or configured).

A low state (or value of 0) is read on an input pin if the circuit attached to the pin is open. A high state (or value of 1) is read on an input pin if the circuit attached to the pin is shorted to ground. This corresponds to a switch closing event.

Parameters

- **Control group:** Configuration
- **Subclass:** Power Down
- **Access level:** Advanced

Commands

Command	Description	Values
GIO+CNFG <value>	Sets the direction for the individual pins to inputs or outputs.	—
GIO+STAT <value>	Gets the state of all inputs or set the state of all outputs.	—

Examples

Get the status of all the inputs (all inputs are low):
`(GIO+STAT?)`
Result:
`(GIO+STAT!"0000000")`

Set the status of the General Purpose outputs – 2 high, 3 no change, 4 low, 6 high, 7 low, 8 low, 9 low:

`(GIO+STAT "HXLHLLL")`
Pulse the first three pins (physical connector pins 2, 3 and 4) for 500 microseconds: `(GIO+STAT "HHHXXXX" 500)`
Pulse pin 6 in a low/high/low pattern and pin 7 high/low/high for 1000 microseconds: `(GIO+STAT "XXXHLXX" 1000)`
Set the pins 2, 3 and 8 to input, 4, 6, 7 and 9 to output (letter O, not zero):   `(GIO+CNFG "IIOOOIO")`
Set the pins 2, and 3 to output, ignore the rest (letter O, not zero):   `(GIO+CNFG "OOXXXXX")`

GMS–VDIC Grouped-Inputs Mode

Selects a mode to group the last three BNC connectors (input 4/5/6) on a video decoder input card.

Parameters

- **Control group:** Option
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
GMS+SLx0 <value>	Sets a grouping mode for the last three BNC connectors on the video decoder card in the selected list.	0 = Three CVBS sources 1 = One SVideo Source and one CVBS source 2 = One YPrPb (component) source

Examples

Get the current mode setting: `(GMS+SL10?)`
Use three BNC connectors for the CVBS source: `(GMS+SL10 0)`
Use three BNC connectors for one SVideo and one CVBS source: `(GMS+SL10 1)`
Use three BNC connectors for one YPbPr (component) source: `(GMS+SL10 2)`

GNB–Green Black Level

Compensates for relative variations in the black levels between red, green, and blue.

This command is available on all cards expect the video decoder. The correct setting achieves maximum contrast without crushing white or black. When the drive and black level controls are set correctly for a signal, the Comprehensive Color Adjustment (including color temperature) works as expected. Do not use the drive and black level controls.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
GNB+INxy <value>	Sets the green black level on slot x, input y to the specified value.	-225 to 225
GNB+MAIN <value>	Sets the green black level on the main video to the specified value.	
GNB+PIIP <value>	Sets the green black level on the picture-in-picture video to the specified value.	
GNB+SECD <value>	Sets the green black level on the secondary video to the specified value.	

Examples

Return the current green black level value on the main video: (GNB?)
Return the current green black level value on the picture-in-picture video: (GNB+PIIP?)
Return the current green black level value on slot 1 input 2:   (GNB+IN12?)
Set the green black level to 128 on the main video: (GNB 128)
Set the green black level to 128 on the main video: (GNB+MAIN 128)
Set the green black level to 100 on the picture-in-picture video: (GNB+PIIP 100)
Set the green black level to 100 on slot 3 input 2:   (GNB+IN32 100)

GND–Green Drive

Compensates for different amounts of attenuation between the red, green, and blue in the signal.

Available on all cards expect the video decoder. The correct setting achieves maximum contrast without crushing white or black. When the drive and black level controls are set correctly for a signal, the Comprehensive Color Adjustment, including color temperature, works as expected. The drive and black level controls should not be used to setup a specific color temperature as this requires separate color temperature adjustments to be made for each source.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
GND+INxy <value>	Sets the green drive on slot x, input y to the specified value.	-225 to 225
GND+MAIN <value>	Sets the green drive on the main video to the specified value.	
GND+PIIP <value>	Sets the green drive on the picture-in-picture to the specified value.	
GND+SECD <value>	Sets the green drive on the secondary video to the specified value.	

Examples

Return the current green drive value on the main video: (GND?)
Return the current green drive value on the picture-in-picture video: (GND+PIIP?)
Return the current green drive value on slot 1 input 2:   (GND+IN12?)
Set the green drive to 128 on the main video: (GND 128)
Set the green drive to 128 on the main video: (GND+MAIN 128)
Set the green drive to 100 on the picture-in-picture video: (GND+PIIP 100)
Set the green drive to 100 on slot 3 input 2:   (GND+IN32 100)

GOG–Green Odd Pixel Gain

Adds an offset to input green gain settings on the analog input card.

This command compensates for differences between the A to D converter used to sample even pixels, and the one used for odd pixels. A value of 0 is the null position in which both A to D converters are set to exactly the same value.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
GOG+SLx0 <value>	Sets a green black level offset for the second A to D.	—

Examples

Set a green black level offset to -10 on slot 1:
```
(GOG+SL10 –10)
```

GOO–Green Odd Pixel Offset

Adds an offset to input green black level settings on the analog input card.

This command compensates for differences between the A to D converter used to sample even pixels, and the one used for odd pixels. A value of 0 is the null position in which both A to D converters are set to exactly the same value.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
GOO+SLx0 <value>	Sets a green black level offset for the second A to D.	—

Examples

Set a green black level offset to -10 on slot 1:
`(GOO+SL10 –10)`

HDC–DHDIC Dual-Link Configuration

Selects whether to use the two inputs as separate inputs, or combined as a dual-link.

Select Automatic to let the card decide, based on the input signal. If the card cannot determine this, it assumes two single links.

Parameters

- **Control group:** Option
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
HDC+SLx0 <value>	Sets single/dual-link mode for the DHDIC.	0 = Automatic 1 = Two single links 2 = Dual link

Examples

Get the current dual-link mode for DHDIC on slot 1:
`(HDC+SL10?)`
Use automatic detection for DHDIC on slot 1:
`(HDC+SL10 0)`
Use two single links for DHDIC on slot 4:
`(HDC+SL40 1)`
Use dual-link for DHDIC on slot 1:
`(HDC+SL10 2)`

HIS–Lamp History

Retrieves a history of lamps installed in the projector, including the currently installed lamp.

Each entry indicates lamp identification as well as various usage statistics collected while the lamp was installed.

Parameters

- **Control group:** Configuration
- **Subclass:** Power Down
- **Access level:** Status

Commands

Command	Description	Values
HIS <value>	Retrieves the lamp history for the lamps that have been installed in both lamp positions. The format for each entry is: (HIS!AAA BBB "C" "D" "E" "F" GGG HHH "I"):	A = List index B = Lamp number C = Serial number D = Install date
HIS+LMP1	Retrieves the lamp history for the lamps installed in position 1. The format for each entry is: (HIS!AAA BBB "C" "D" "E" "F" GGG HHH "I"):	E = Uninstall date F = Lamp type G = Total number of strikes H = Number of failed strikes I = Hours in (h:m) format

Examples

Return the list of all lamps that have been installed in the projector:

`(HIS?)`

Result:

`(HIS!00000 "8/10/2012 5:22:28 PM" "ymoj2694" "CDXL-30SD" 00078 00001 00000 00000 00304)`

`(HIS!00001 "7/23/2012 7:58:10 PM" "ydpd3284" "CDXL-20" 00010 00000 00000 00000 00032)`

`(HIS!00002 "6/9/2012 7:00:50 PM" "yepa2626" "CDXL-30" 00009 00001 00000 00000 00107)`

HLP–Serial Help

Queries a list of all available serial commands, with brief descriptions and current enabled states.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Status

Commands

Command	Description	Values
HLP <value>	Requests entire command help listing or list for a single command.	—

Examples

Retrieve entire command help listing: `(HLP?)`
Retrieve all parameters and descriptions for BRT command: `(HLP? "BRT")`

HLT–Projector Health

Places any system health errors in the troubleshooting queue.

The queue, which contains the problems and solutions, is read-only. All problems in the queue are read using their index number, starting from 0.

Problems are assigned priorities:

- 1 = Critical—Results in failure to operate or shutdown.
- 2 = High—Results in significant loss of functionality but the projector may continue to run.
- 3 = Low—Results in minor loss of functionality which does not seriously affect projector.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
HLT+LSOL	Lists solutions.	—
HLT+LALL	Lists one or all problems and solutions.	—

Examples

Return all queued problems: `(HLT?)`
Return problem index 3 in the queue: `(HLT? 3)`
Return the solution hint for problem index 4 in the queue: `(HLT+LSOL? 4)`
Return all queued problems and their solutions: `(HLT+LALL?)`
Return problem index 3 and its solution: `(HLT+LALL? 3)`

HOR–Horizontal Position

Moves the horizontal position of the image left or right.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:**Operator

Commands

Command	Description	Values
HOR+MAIN <value>	Sets the horizontal position for the main image.	—

Examples

Return the horizontal position value on the main video: (HOR?)
Set the horizontal position to 500 on the main video: (HOR+MAIN 500)
Set the horizontal position to 500 on slot 3 input 2:   (HOR+IN32 500)
Set the horizontal position to 500 on the main video: (HOR 500)

ILS–Intelligent Lens System

Enables or disables the intelligent lens system (ILS).

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ILS <0 | 1>	Enables or disables the intelligent lens system.	0 = Disables the intelligent lens system. When ILS is disabled, the lens is controlled independently of channels or input signals.

Command	Description	Values
		1 = Enables the intelligent lens system. When enabled, the lens position (horizontal, vertical, focus, and zoom offsets) are stored per channel. When the user changes channels, the lens position changes as the new signal is displayed.

Examples

Enable the intelligent lens system:
`(ILS 1)`
Disable the intelligent lens system:
`(ILS 0)`

ILV–ILS Settings Valid

Determines whether the ILS settings (LHO, LVO, FCS, ZOM) can be used if ILS is enabled.

If set, the contents of the current channel include valid ILS lens position settings. If not set, the channel does not yet have valid ILS lens position settings; changing to this channel does not move the lens. Settings become valid as soon as any of the four lens motors are moved while using the current channel, as long as the ILS feature is enabled.

Parameters

- **Control group:** Configuration
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ILV <0 | 1>	Determines whether the ILS settings can be used if ILS is on. (Read-only)	0 = Settings are not used 1 = Settings are valid and are used

Examples

Determine if ILS settings are valid for the current input:
`(ILV?)`
Validate and use the LHO, LVO, FCS, ZOM settings:
`(ILV!1)`

INM–Channel In Menu

Determines if the channel is visible in the Channel list, which is available by pressing the Channel key on the keypad.

Parameters

- **Control group:** Channel
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
INM+C0xx <value>	Toggles the In menu for channel.	xx = Channel number from 01 to 99
INM+MAIN <value>	Toggles the In menu for the channel being used by the main video.	—
INM+PIIP <value>	Toggles the In menu for the channel being used by picture-in-picture video.	—
INM+SECD <value>	Toggles the In menu for the channel being used by secondary video.	—

Examples

Get the channel In menu state for channel used by the main video: (INM?)
Get the channel In menu state for channel used by the picture-in-picture video: (INM+PIIP?)
Get the channel In menu state for channel used by the main video: (INM+MAIN?)
Hide the In menu for channel 1: (INM+C001 0)
Show the In menu for the channel being used by the main video: (INM 1)
Show the In menu for the channel being used by the picture-in-picture video: (INM+PIIP 1)
Hide the In menu for the channel being used by the main video: (INM+MAIN 0)

ITG–Test Pattern Grey

Specifies the grey level to use for the Grey Flat Field internal test pattern.

This command is only available while the Grey test pattern is displayed.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ITG <value>	Sets the grey level for the Grey Flat Field test patttern.	0 to 1023 512 (Default on power up)

Examples

Set the Grey test pattern to mid point.
```
(ITG 512)
```

ITP–Test Pattern

Displays a test pattern.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ITP <pattern>	Displays a test pattern on the display.	0 = Off 1 = Grid 2 = Grayscale 16 3 = White 4 = Flat grey 5 = Black 6 = Checker 7 = 13 Point

Command	Description	Values
		8 = Color Bars
		11 = Aspect Ratio
		12 = Edge Blend
		14 = Boresight

Examples

Disable test patterns and revert to the previous input signal: `(ITP 0)`
Set the test pattern to the grid pattern: `(ITP 1)`

KEN–Keypad IR Sensor Disable

Enables or disables the IR or wired keypad sensors.

You cannot disable the keypad currently in use.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
KEN+FRNT <0 | 1>	Enables or disables the IR keypad sensor.	0 = Disables the front IR keypad sensor 1 = Enables the front IR keypad sensor (Default)
KEN+REAR <0 | 1>	Enables or disables the rear IR keypad sensor.	0 = Disables the rear IR keypad sensor 1 = Enables the rear IR keypad sensor (Default)
KEN+WIRE <0 | 1>	Enables or disables the wired keypad sensor.	0 = Disables the wired keypad jack 1 = Enables the wired keypad jack (Default)

Examples

Get the current wired jack enabled state: `(KEN+WIRE?)`
Disable the front IR sensor:

(KEN+FRNT 0)
Disable the rear IR sensor:
(KEN+REAR 1)

KEY–Key Mode Emulator

Uses key codes to emulate button presses on the infrared remotes or wired keypads.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
KEY <number>	Sends the command associated with the key to the product. (Read-only)	—

Examples

Send menu key 17 to the projector and displays the menu on the on-screen display:
(KEY 17)

LBL–Left Blanking

Sets the number of lines to turn to black at the left of the image.

Use this command to blank out any unwanted data near the left edge of the image.

A positive amount of blanking makes the image smaller.

A negative amount of blanking makes the image larger. Negative blanking is only applicable for analog signals, when the auto setup cannot set the image size correctly. Christie does not recommend using negative blanking, but to run auto setup again, ensuring that the content has active pixels on each edge of the image.

The maximum amount of left blanking allowed is half the image width minus 10. For negative blanking, the image size can only be increased to the limit of the sync.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
LBL+INxy <value>	Sets the left blanking for slot x, input y.	—
LBL+MAIN <value>	Sets the left blanking for the main image.	—
LBL+PIIP <value>	Sets the left blanking for the picture-in-picture image.	—
LBL+SECD <value>	Sets the left blanking for the secondary image.	—

Examples

Return the left blanking value on the main video: `(LBL?)`
Return the left blanking value on the picture-in-picture video: `(LBL+PIIP?)`
Return the left blanking value on slot 1 input 2:   `(LBL+IN12?)`
Set the left blanking to 40 on the main video: `(LBL 40)`
Set the left blanking to 40 on the main video: `(LBL+MAIN 40)`
Set the left blanking to 40 on the picture-in-picture video: `(LBL+PIIP 40)`
Set the left blanking to 40 on slot 3 input 2:   `(LBL+IN32 40)`

LCB–Lens System Calibration

Calibrates the lens mount system for each of the four lens axes (horizontal, vertical, zoom, and focus) to determine home positions, the motor travel ranges, and the motor backlash values.

You must perform a lens calibration for all new lenses for the intelligent lens system (ILS) feature to perform reliably. This command can also reset the lens to horizontal or vertical home positions, and configure whether a reset or calibration routine should be run automatically on power up or lens insertion.

Parameters

- **Control group:** Configuration/Preference/Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
LCB	Runs calibration on all four lens motors (no parameters required).	—
LCB+HORZ	Runs calibration on the horizontal motor.	—
LCB+VERT	Runs calibration on the vertical motor.	—
LCB+FOCS	Runs calibration on the focus motor.	—
LCB+ZOOM	Runs calibration on the zoom motor.	—
LCB+HOME	Returns the lens to the horizontal and vertical home position. Focus and zoom are unaffected.	—
LCB+APWR	Enables automatic lens reset on system power-up. Christie recommends this to ensure maximum positional accuracy for the ILS feature, particularly if the lens is subject to manual movement between power sessions. This reset only takes place if the ILS feature is enabled.	—
LCB+ANEW	Enables automatic lens calibration when a new lens is inserted. Christie recommends this as different lenses have different characteristics.	—
LCB+STAT	Gets the current status for lens motor calibration.	—
LCB+LNID	Gets the lens ID.	—
LCB+MNZF	Enables manual zoom and focus control. When set the zoom and focus motors are de-energized and are not be under the control of ILS. Zoom and focus are adjustable by hand. If not set, all lens motors are under ILS control and users should not attempt to adjust manually, as this damages the motors.	—
LCB+LOCK	Locks all lens motors, preventing the lens from moving. This overrides all other lens functions.	—

Examples

Get the current status for lens motor calibration: `(LCB+STAT?)`
Get the state of auto lens calibration: `(LCB+ANEW?)`
Calibrate all motors: `(LCB)`
Reset the horizontal and vertical motors to their optical home position: `(LCB+HOME)`
Enable auto lens reset on power up: `(LCB+APWR 1)`
Disable auto lens calibration on lens insertion:

`(LCB+ANEW 0)`
Lock all lens motors in their current positions: `(LCB+LOCK1)`
Set the manual zoom and focus mode: `(LCB+MNZF 1)` Result: You can now adjust the motors by hand.
Re-energize zoom and focus motors: `(LCB+MNZF 0)` Result: The motors automatically re-locate the center flag and stay at their center position.

LCD–LCD Backlight

Controls the backlight options for the LCD keypad: backlight time-out length, backlight intensity (brightness), and forcing backlight to stay off.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
LCD+KEEP <value>	Enables or disables the backlight and sets the timer. The backlight always stays on if an alarm is raised or if you are on the LCD test screen.	0 = Backlight always on 1 = Backlight always off 2 = Timer
LCD+LEVL <value>	Sets the backlight intensity level.	0 = Off 1 = Lowest backlight intensity level 25 = Maximum backlight intensity level
LCD+TIME <value>	Sets the time in seconds that the backlight remains on after a key is pressed.	5 to 600 seconds

Examples

5 seconds after a key is pressed on the keypad, the backlight goes off: `(LCD+TIME 5)`
10 minutes after a key is pressed on the keypad, the backlight goes off: `(LCD+TIME 600)`

Keep the backlight always on: `(LCD+KEEP 0)`	
Keep the backlight always off: `(LCD+KEEP 1)`	
Keep the backlight on for the number of seconds set in LCD+TIME: `(LCD+KEEP 2)`	
Set the maximum LCD backlight brightness: `(LCD+LEVL 25)`	
Set the low LCD backlight brightness: `(LCD+LEVL 10)`	

LDT–Level Detector

Changes the gamma table settings to make it easy for the user to adjust the input levels.

This command causes the data to be processed so all levels below a specified value are set to black (0) and all above the value and including it are set to white (1024). This command takes place before the scaler/deinterlacer.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
LDT <0 | 1>	Enables or disables the level detector.	0 = Disables the level detector 1 = Enables the level detector

Examples

Turn on the level detector: `(LDT 1)`
Turn off the level detector: `(LDT 0)`

LDV–Level Detector Value

Specifies the value to be used by the level detector. This command takes place before the scaler/deinterlacer.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
LDV <value>	Sets the level detector value.	1 to 1023

Examples

Set the level detector to 500, where all data greater than or equal to 500 is shown in the image:

```
(LDV 500)
```

LHO–Lens Horizontal Position Adjustment

Sets the lens horizontal location to an absolute position.

This command moves the image horizontally by moving the whole display area. This is different from the Position command which moves the image electronically within a fixed display area.

Parameters

- **Control group:** Configuration
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
LHO <position>	Adjusts the horizontal location of the lens to the specified position. The position is persistent across AC cycles.	position = Numerical value subject to the range returned in LHO?m-2050 to 2050
LHO?m	Returns the minimum and maximum range of the zoom axis based on the last lens calibration performed. The returned range is persistent across AC cycles. (Read-only)	—

Examples

Move the lens to position 500 on the horizontal axis:
```
(LHO 500)
```

LLC–Light Sensor Calibration

Calibrates the light sensor. Complete a calibration whenever the lamp is replaced.

As this command is disabled until the projector is ready to be calibrated, the following conditions must be met first:

- The projector must have dual lamps on.
- The lamps must have warmed up for at least five minutes.

The calibration takes approximately 1.5 minutes to complete. The shutter is closed for the duration of the calibration and opens again when the calibration is complete.

Constant Intensity mode cannot be used if the LiteLoc™ sensor has not been calibrated.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Service

Commands

Command	Description	Values
LLC	Calibrates the light sensor.	—

Examples

Initiate the calibration cycle:
```
(LLC)
```

LMV–Adjust Lens Position/Lens Move

Adjusts all four lens motors simultaneously, or moves any lens motor arbitrarily (such as move motor indefinitely, rather than to some absolute position).

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
LMV <h v z f>	Moves all lens motors.	h = Horizontal v = Vertical z = Zoom f = Focus
LMV+HSTP <value>	Moves the horizontal lens motor a relative number of steps.	—
LMV+VSTP <value>	Moves the vertical lens motor a relative number of steps.	—
LMV+FSTP <value>	Moves the focus lens motor a relative number of steps.	—
LMV+ZSTP <value>	Moves the zoom lens motor a relative number of steps.	—
LMV+HRUN <value>	Starts, stops, or reverses the horizontal lens motor.	—
LMV+VRUN <value>	Starts, stops, or reverses the vertical lens motor.	—
LMV+FRUN <value>	Starts, stops, or reverses the focus lens motor.	—
LMV+ZRUN <value>	Starts, stops, or reverses the focus lens motor.	—

Examples

Set the lens to H:1000, V:1500, Z:500, F:-500: `(LMV 1000 1500 500 -500)`
Start to move horizontal motor toward positive max position: `(LMV+HRUN1)`
Stop the vertical motor: `(LMV+VRUN0)`
Start to move horizontal motor toward negative max position: `(LMV+ZRUN-1)`
Move the horizontal motor 45 steps in the positive direction: `(LMV+HSTP45)`
Move the zoom motor 300 steps in the negative direction: `(LMV+ZSTP-300)`

LOC–Localization Language

Sets the localization options such as language and display options for temperature units.

Parameters

- **Control group:** Preference

- **Subclass:** Power Down
- **Access level:** Advanced

Commands

Command	Description	Values
LOC+LANG <value>	Sets the system language.	0 = English 1 = French 2 = German 3 = Spanish 4 = Italian 5 = Chinese 6 = Japanese 7 = Korean
LOC+TEMP <0 | 1>	Sets the temperature units.	0 = Celsius 1 = Fahrenheit

Examples

Get the language: `(LOC?)`
Set the language to French: `(LOC+LANG 1)`
Set the temperature to Fahrenheit: `(LOC+TEMP 1)`

LOS–Loop Out Source Selection

Configures the HDMI output options and selects the loop out source for the transmitters of the THIC card.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
LOS <value>	Sets the loop out source selection.	0 = Disable—Disables loop out on all THIC card

Command	Description	Values
		1 = Local—Loops out inputs to the output on the same card, Input1 is looped to Output1 and Input2 is looped to Output2
		2 = Main/PIP—Selects loop the main/picture-in-picture image out; main image is looped to Output1 and picture-in-picture is looped to Output2

Examples

Get the loop out source selection on slot 1:   `(LOS?)`
Shut off loop out: `(LOS 0)`
Set the loop out source to be local on slot 1:   `(LOS 1)`
Set the loop out source to be the main and picture-in-picture images: `(LOS 2)`

LPI–Lamp Intensity

Adjusts the lamp intensity (% of full intensity).

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
LPI <value>	Sets the lamp intensity as a percentage.	—

Examples

Set the lamp intensity to 80:   `(LPI 80)`

LPL–Lamp Life

Sets the expected lamp life in hours. If the lamp run time exceeds this value, a warning is displayed in the status system.

The lamp run time is equal to the lamp's original lamp hours plus the amount of time it has been on while installed in the projector.

The lamp life limit can be set by the user, but it does not guarantee any number of hours for lamp life. This command has no bearing on lamp warranty and is not tied to actual lamp life in any way.

Parameters

- **Control Group:** Saved
- **Subclass:** Power Down
- **Access Level:** Operator

Commands

Command	Description	Values
LPL <hours>	Sets the number of hours before a warning is displayed in the status system about the lamp needing to be replaced.	Any positive number 0 = Disables the lamp end-of-life check (Default)

Examples

Disable the lamp life monitoring: (LPL 0)
Display a warning message when the lamp has operated for 1500 hours: (LPL 1500)

LPM–Lamp Mode

Sets the lamp power and intensity modes.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
LPM \<value\>	Sets the lamp power control method. Both Intensity and Power modes allow you to extend lamp life.	0 = Maximum Brightness—Lamp burns as brightly as possible 1 = Constant Intensity—Maintains a specific brightness level over time—as the lamp ages, the projector increases power as needed to closely maintain the required output from the lamp 2 = Constant Power—Specifies the power level supplied to the lamp

Examples

Control the lamp(s) with constant power:

`(LPM 2)`

LPP–Lamp Power

Sets the amount of power going to the lamp.

The Power control represents the amount of power sent to the lamps. Power increases when operating in Intensity mode, until it reaches its maximum. The value remains stable when in Max Brightness or Power mode. If using Power mode, setting a lower power level reduces brightness and extends lamp life.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
LPP \<power\>	Sets the power going to the lamp, in watts.	power = Number of watts to run the lamp at This is dependent on the type of lamp being used.
LPP?m	Returns the minimum and maximum power allowed for the current lamp.	—

Examples

Set the lamp power to 360W:

`(LPP 360)`

LVO–Lens Vertical Position Adjustment

Sets the lens vertical location to an absolute position.

This command moves the image horizontally by moving the whole display area. This is different from the vertical position command which moves the image electronically within a fixed display area.

Parameters

- **Control group:** Configuration
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
LVO <position>	Adjusts the vertical location of the lens to the specified position.	-2050 to 2050

Examples

Move the lens to position 500 on the vertical axis:

```
(LVO 500)
```

MBE–Message Box Enable

Enables or disables the displaying of groups of message boxes on the on-screen display.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Down
- **Access Level:** Operator

Commands

Command	Description	Values
MBE+AUTO <0 | 1>	Enables or disables displaying automatic message boxes. Some user messages are not directly triggered by user actions, for example signal information, function limitation, or auto calibration message boxes.	0 = Disables automatically displaying message boxes 1 = Enables automatically displaying message boxes
MBE+USER <0 | 1>	Enables or disables displaying message boxes directly triggered by user actions, for	0 = Disables displaying message boxes directly triggered by user actions

Command	Description	Values
	example gamma or lens control message boxes.	1 = Enables displaying message boxes directly triggered by user actions
MBE+3DST <0 | 1>	Enables or disables displaying message boxes triggered by 3D setup errors.	0 = Disables displaying message boxes directly triggered by 3D setup errors 1 = Enables displaying message boxes directly triggered by 3D setup errors

Examples

Get the current state for auto message boxes:
`(MBE+AUTO?)`
Result:
`0 or 1`

Set auto message boxes to not be displayed: `(MBE+AUTO 0)`
Set auto message boxes to be displayed: `(MBE+AUTO 1)`

Get current user message boxes enable state:
`(MBE+USER 1)`
Result:
`0 or 1`

Set user message boxes to not be displayed: `(MBE+USER 0)`
Set user message boxes to be displayed: `(MBE+USER 1)`

MCS–Menu Cascading Enable

Enables or disables cascading menus.

When tiling is enabled, this command is not available. The menu is in a fixed position and is non-cascading.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
MCS <0 | 1>	Enables or disables menu cascading.	0 = Disables cascading menus and displays a single menu level at a time 1 = Enables cascading menus

Examples

Get the current state of this command: (MCS?)
Disable cascading menus: (MCS 0)
Enable cascading menus: (MCS 1)

MDE–Serial Mode

Sets the mode for a serial communications port.

Settings such as bits, parity, and stop bits are grouped together into one selection.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Advanced

Commands

Command	Description	Values
MDE+PRTA <value>	Sets the mode on port A (RS232 IN).	—
MDE+PRTB <value>	Sets the mode on port B (RS232 OUT).	—
MDE+PRTC <value>	Sets the mode on port C (RS422).	—

Examples

Get mode (MDE+PRTA!"8N1"): (MDE+PRTA?)
Set mode on port A to 8-bit, no parity, 1 stop bit: (MDE+PRTA "8N1")
Set mode on port A to 7-bit, even parity, 1 stop bit:

```
(MDE+PRTA "7E1")
```

Set mode on port A to 7-bit, odd parity, 1 stop bit:

```
(MDE+PRTA "7O1")
```

MFT–Menu Font

Sets the font size used by the on-screen display.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
MFT <0 | 1>	Views or sets a large or small font used by the on-screen display.	0 = Small font 1 = Large font

Examples

Get the current font option used by the on-screen display:

```
(MFT?)
```

Use large font for the on-screen display font:

```
(MFT 1)
```

MLK–Channel Memory Lock

Locks a channel from being edited.

Parameters

- **Control group:** Channel
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
MLK+C0xx <value>	Locks the channel.	xx = Channel number from 01 to 99

Command	Description	Values
MLK+MAIN <value>	Locks the channel being used by main.	0 = Unlocks the channel being used by main 1 = Locks the channel being used by main
MLK+PIIP <value>	Locks the channel being used by picture-in-picture.	0 = Unlocks the channel being used by picture-in-picture 1 = Locks the channel being used by picture-in-picture
MLK+SECD <value>	Locks the channel being used by secondary.	0 = Unlocks the channel being used by secondary 1 = Locks the channel being used by secondary

Examples

Get channel locked state for channel used by main:

`(MLK?)`

Get channel locked state for channel used by main:

`(MLK+MAIN?)`

Get channel locked state for channel used by picture-in-picture:

`(MLK+PIIP?)`

Lock the channel being used by main:

`(MLK 1)`

Lock the channel being used by picture-in-picture:

`(MLK+PIIP 1)`

Unlock the channel being used by main:

`(MLK+MAIN 0)`

Unlock channel 1:

`(MLK+C001 0)`

MNR–Mosquito Noise Reduction

Dynamically adapts to image content, effectively reducing mosquito artifacts around sharp edges in DCT based compression.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
MNR+INxy <value>	Sets the mosquito noise reduction for slot x, input y.	—
MNR+MAIN <value>	Sets the mosquito noise reduction for the main video.	—
MNR+PIIP <value>	Sets the mosquito noise reduction for the picture-in-picture video.	—
MNR+SECD <value>	Sets the mosquito noise reduction for the secondary video.	—

Examples

Set the mosquito noise reduction to mid point for the main video:

`(MNR+MAIN 32)`

MNU–Menu Settings and Configuration

Sets the menu type, views the on-screen display state, and reads the menu structure.

Parameters

- **Control group:** preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
MNU <value>	Views or changes the current state of the on-screen display.	0 = Presentation 1 = Main 2 = Submenu

Examples

Get the current state of the on-screen display:

`(MNU?)`

Result:

`(MNU!0)`

MSH–Menu Shift Horizontal

Changes the horizontal position of the main menu.

If the position is not from one of the preset positions, MSP is changed to custom.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
MSH <value>	Views or sets the horizontal position of the main menu.	—

Examples

Get current horizontal position of the main menu: `(MSH?)`
Set the main menu horizontal position to 50 pixels from the left edge: `(MSH 50)`

MSP—Menu Location

Sets the default menu position on the screen.

When tiling is enabled, this command is not available and the menu is in a fixed position (top-left) and is non-scaling.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
MSP <value>	Views or sets the preset menu position.	0 = 4:3 TopLeft 1 = 4:3 Inset 1 2 = 4:3 Inset 2 3 = 16:9 TopLeft 4 = 16:9 Inset 1 5 = 16:9 Inset 2

Examples

Get current menu position preset:

```
(MSP?)
```

Set the main menu position to the top left corner of the screen:
```
(MSP 0)
```

MSV–Menu Shift Vertical

Changes the vertical position of the main menu.

If the position is not from one of the preset positions, MSP is changed to custom.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
MSV <value>	Views or sets the vertical position of the main menu. (Read-only)	0 to 100 0 (Default)

Examples

Get current vertical position of the main menu:
```
(MSV?)
```
Result:
```
0
```
Set the main menu vertical position to 50 pixels from the top edge:
```
(MSV 50)
```

NAM–Pixel Phase

Provides optional text assigned to a channel and can appear in the Channel Setup menu, Channel Edit menu, the channel list, and the Status menu.

Parameters

- **Control group:** Channel
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
NAM+C0xx <value>	Sets the channel name for the channel.	01 to 99
NAM+MAIN <value>	Sets the channel name for the channel being used by the main video.	—
NAM+PIIP <value>	Sets the channel name for the channel being used by the picture-in-picture video.	—
NAM+SECD <value>	Sets the channel name for the channel being used by the secondary video.	—

Examples

Get the current active channel name for the main video: `(NAM?)`
Get the channel name being used by the main video: `(NAM+MAIN?)`
Get the channel name being used by the picture-in-picture video: `(NAM+PIIP?)`
Set the channel name being used by the main video to Test: `(NAM "Test")`
Set the channel name being used by the picture-in-picture video to Test: `(NAM+PIIP "Test")`
Set the channel name being used by the main video to Test: `(NAM+MAIN "Test")`
Set the channel name for channel 1 to Test: `(NAM+C001 "Test")`

NET–Network Setup

Modifies the network setup for this device.

Parameters

- **Control Group:** Configuration/Preference
- **Subclass:** Power Down
- **Access Level:** Admin

Commands

Command	Description	Values
NET+DOMA <value>	Sets the domain name	—
NET+ETH0 <value>	Sets the IP address for the first Ethernet controller.	—
NET+GATE <value>	Sets the network gateway.	—
NET+HOST <value>	Sets the host name.	—
NET+MAC0 <value>	Gets the MAC address of the first Ethernet controller.	—
NET+PORT <value>	Sets the PORT number.	—
NET+SUB0 <value>	Sets the network subnet mask for the first Ethernet controller.	—

Examples

Get the IP address from the first controller: (NET+ETH0?)
Get the IP address from the second controller: (NET+ETH1?)
Get the MAC address from the first controller: (NET+MAC0?)
Get the default gateway: (NET+GATE?)
Get the port number: (NET+PORT?)
Set the new IP address on the first Ethernet controller: (NET+ETH0 "192.168.1.35")
Set the gateway: (NET+GATE "192.168.0.1")
Set the subnet mask on the first Ethernet controller: (NET+SUB0 "255.255.255.0")
Set the host name: (NET+HOST "MyHostName")
Set the Ethernet address to 192.168.000.001: (NET+ETH 0 "192.168.000.001")
Set the domain name: (NET+DOMA "MyDomainName")
Set the port number: (NET+PORT 3002)

NRB–Block Artifact Reduction

Locates and reduces block edges produced by discrete cosine transform (DCT) based compression processing.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
NRB+INxy <value>	Sets the block artifact reduction (BAR) for slot x, input y.	—
NRB+MAIN <value>	Sets the BAR for the main video.	—
NRB+PIIP <value>	Sets the BAR for the picture-in-picture video.	—
NRB+SECD <value>	Sets the BAR for the secondary video.	—

Examples

Set the BAR to the mid point for main video:

```
(NRB 32)
```

NRD–General Noise Reduction

Selects a filter sensitivity to noise.

A higher value may improve noisy sources, although it softens the image.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
NRD+INxy <value>	Sets the noise reduction for slot x, input y.	—
NRD+MAIN <value>	Sets the noise reduction for the main video.	—
NRD+PIIP <value>	Sets the noise reduction for the picture-in-picture.	—

Command	Description	Values
NRD+SECD <value>	Sets the noise reduction for the secondary video.	—

Examples

Set the noise reduction to the mid point for main video: `(NRD 32)`

NTR–Network Routing

Sets the routing mode for Christie protocol messages between the RS232, RS422, and Ethernet ports.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
NTR <value>	Sets the routing mode for Christie protocol messages.	0 = Separate (Default) 1 = RS232 and RS422 joined 2 = RS232 and Ethernet joined 3 = All joined (includes USB)

Examples

List routing options: `(NTR?)`
Set routing so that each connection is routed separately: `(NTR 0)`
Set routing to full daisy-chaining: `(NTR 3)`

OPP–Odd Pixel Phase

Adds an offset to the pixel phase setting on the card.

This command compensates for differences between the A to D converter used to sample even pixels, and the one used for odd pixels. A value of 0 is the null position in which both A and D converters are set to exactly the same value.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
OPP+SLx0 <value>	Sets a pixel phase offset for the second A to D.	—

Examples

Set a pixel phase offset to -1 on slot 1:
```
(OPP+SL10 −1)
```

OSD–On Screen Display

Displays or removes overlay information in the on-screen display (OSD).

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
OSD <0 | 1>	Enables or disables the on-screen display.	0 = Hides the on-screen display 1 = Displays the on-screen display

Examples

Get the current state of the on-screen display:
```
(OSD?)
```

Turn off the on-screen display:
```
(OSD 0)
```

OST–OSD Transparency

Enables or disables on-screen display (OSD) transparency.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
OST <0 | 1>	Enables or disables on-screen display transparency.	0 = Disables on-screen display transparency 1 = Enables on-screen display transparency

Examples

Enable the OSD transparency:
```
(OST 1)
```

PBC–PIP Border Color

Chooses the color of the optional border around the picture-in-picture image.

To disable the border, set the border width PBW command to zero.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PBC <value>	Sets the border color for the picture-in-picture window.	0 = Black 1 = Dark Red 2 = Dark Green 3 = Dark Yellow 4 = Dark Blue 5 = Dark Magenta 6 = Dark Cyan 7 = Dark Grey

Command	Description	Values
		8 = Light Grey
		9 = Red
		10 = Green
		11 = Yellow
		12 = Blue
		13 = Magenta
		14 = Cyan
		15 = White

Examples

Set the picture-in-picture border to red:

`(PBC 9)`

PBW–PIP Border Width

Selects if a border should be placed around the picture-in-picture window.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PBW <0 | 1>	Selects the border width for the picture-in-picture window.	0 = Removes the border Any positive number = Sets the width of the border

Examples

Select picture-in-picture border width of 10:

`(PBW 10)`

PDT–Peak Detector

Enables or disables the peak detector test mode to aid in setup of input levels.

For each color, pixel values near black are displayed black, pixel values near peak level are displayed full on. All others are displayed in mid-level grey. Adjust input levels for each color so black pixels in

the image turn black, and full on pixels turn full on. When adjustment is completed, disable this command to display of all grey levels. This command takes place before the scaler/deinterlacer.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PDT <0	1>	Enables or disables peak detector.	0 = Enables the peak detector 1 = Disables the peak detector

Examples

Turn on the peak detector: `(PDT 1)`
Turn off the peak detector: `(PDT 0)`

PHP–PIP Horizontal Position

Sets the horizontal position of the picture-in-picture window.

Specifies where to place the center of the picture-in-picture window horizontally on the panel in pixels.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PHP <value>	Sets picture-in-picture horizontal position.	—

Examples

Returns the picture-in-picture horizontal position: `(PHP?)`

Set the picture-in-picture horizontal position to 100 pixels:

```
(PHP 100)
```

PHS–Picture-in-Picture Horizontal Size

Sets the size (width) of the picture-in-picture window in pixels.

The active portion of the input signal, as determined by blanking controls, is scaled to fit into the picture-in-picture window.

The height of the picture-in-picture window is set to maintain the aspect ratio of the image being captured, as determined by the vertical stretch control.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PHS <value>	Sets the picture-in-picture horizontal size.	—

Examples

Display the picture-in-picture size:
`(PHS?)`
Set the picture-in-picture size to 100 pixels:
`(PHS 100)`

PIP–Picture in Picture

Enables or disables picture-in-picture (PIP) mode.

When this command is enabled for the first time, the first valid video signal starting at slot 1 input 1 is routed to the picture-in-picture window. If no signals are present, the first available slot and input combination is selected.

Picture-in-picture and image transition effects (seamless switching) both require resources to configure a second image processing path. Therefore these two features cannot be active at the same time.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up

- **Access level:** Operator

Commands

Command	Description	Values
PIP <value>	Enables or disables the picture-in-picture window.	0 = Disables the picture-in-picture video (Default) 1 = Enables the picture-in-picture video 2 = Enables picture-by-picture video (PBP)

Examples

Return the state of the picture-in-picture command: `(PIP?)`
Disable picture-in-picture video: `(PIP 0)`
Enable picture-in-picture video: `(PIP 1)`
Enable picture-by-picture (PBP) video: `(PIP 2)`

PJH–Projector Hours

Reports the number of hours elapsed on the projector.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
PJH	Reads the projector hours. (Read-only)	—

Examples

Return the hours elapsed on the projector: `PJH?`

PLK–User Lockouts

Provides a way to lock various controls in the system, protecting them against accidental or unwanted user adjustment.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Admin

Commands

Command	Description	Values
PLK <value>	Sets or gets a sequence of codes and subcodes locked out from user adjustment.	—
PLK+ENBL <value>	Sets the master enabled switch. When unselected, user locks are ignored.	—

Examples

Return the list of user lockouts: `(PLK?)`
Lock all codes and subcodes in the system (except the PLK and PWR, which are unlockable): `(PLK L"*")`
Unlock all codes and subcodes in the system, regardless of which method was used to lock them: `(PLK U"*")`
Lock all subcodes within the SIN control: `(PLK L"SIN*")`
Unlock SIN+PIIP, leaving all other SIN subcodes locked: `(PLK U"SIN+PIIP")`
Lock all SIN subcodes, and locks the GAM code: `(PLK L"SIN*" L"GAM")`

PMT–Picture Mute

Turns the displayed image black without closing the mechanical shutter.

When the image is muted, all DMD mirrors are turned to the off position.

Parameters

- **Control group:** Unsaved

- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PMT <0 | 1>	Mutes or unmutes the image.	0 = Unmutes the image 1 = Mutes the image

Examples

Mute the picture: `(PMT 0)`
Unmute the picture: `(PMT 1)`

PNG–Ping

Returns basic projector information to the user, including the type of device and main software version.

Some devices have multiple CPUs each with its own software version. Only the software version of what is considered to be the master CPU, is returned.

Parameters

- **Control group:** Configuration
- **Subclass:** Power Down
- **Access level:** Status

Commands

Command	Description	Values
PNG	Returns basic projector information (Read-only): <type> <major> <minor> <build> where • <type> = 54 (fixed value) • <major>, <minor>, <build> = Software version Valid devices: 40 = ACT 41 = Cinema 42 = CinemaMini 43 = Media Block	—

Command	Description	Values
	44 = M Series	
	46 = J Series	

Examples

Send a ping:
(PNG?)
Result:
(PNG!41 001 000 234)
Indicates 'Cinema' type, software: 1 major, 0 minor, 234 beta.

PPA–Position Preset Aspect

Ensures that during auto setup for a source, its aspect ratio is maintained when the default size is calculated.

This is similar to a stretch being defined for a source in the lookup table. If disabled and no stretch is defined, the source is scaled to fit the screen.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
PPA <0 | 1>	Enables or disables maintaining the aspect ratio during auto setup.	0 = Disables the maintaining the aspect ratio during auto setup 1 = Enables the maintaining the aspect ratio during auto setup

Examples

Disable maintain aspect during auto setup:
(PPA 0)

Enable maintain aspect during auto setup:
(PPA 1)

PPP—Picture-in-Picture

Chooses a preset location for the picture-in-picture window.

Note the following:

- The Location settings adjust the position of the window.
- Blanking is not affected.
- While in split screen mode, several channel controls that resize image are disabled.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PPP <value>	Selects the picture-in-picture window location.	0 = Top right 1 = Top left 2 = Bottom left 3 = Bottom right

Examples

Set the picture-in-picture to the top left:
```
(PPP 1)
```

PPS—Picture-in-Picture Swap

Swaps the current main and picture-in-picture inputs, regardless if valid signals are on either of the inputs.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PPS	Swaps the main and picture-in-picture input.	—

PRT–Serial Port

Returns a list of serial ports available on the device.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Status

Commands

Command	Description	Values
PRT	Reads the serial ports	—

Examples

Get the current port:
(PRT?)
Get a list of ports:
(PRT ?1)

PTL–Serial Protocol

Sets the protocol for a serial communications port.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
PTL+PRTA <value>	Sets the protocol on port A (RS232 In) pass through.	—
PTL+PRTB <value>	Sets the protocol on port B (RS232 Out).	—
PTL+PRTC <value>	Sets the protocol on port C (RS422).	—

Examples

Get the current protocol:

(PTL+PRTA?)

Set protocol on port A to a pass through a raw data protocol:
(PTL+PRTA "RAW")

Set protocol on port A to a Christie serial protocol:
(PTL+PRTA "CHRISTIE")

PVP–PIP Vertical Position

Specifies where to place the center of the picture-in-picture window vertically on the panel in pixels.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
PVP <value>	Sets the vertical position of the picture-in-picture window.	—

Examples

Display the picture-in-picture vertical position:
(PVP?)
Set picture-in-picture vertical position to 100 pixels:
(PVP 100)

PWR–Power

Changes the power state of the product.

Parameters

- **Control Group:** Unsaved
- **Subclass:** Power Down
- **Access Level:** Operator

Commands

Command	Description	Values
PWR+RBFS <value>	Reboots the projector into Fail-safe mode. The projector must be in Standby mode before initiating this command.	0 = Power off (to Standby mode) 1 = Power on (to Lamps On mode) 10 = Cool down lamp—controlled by lamp (Read-only) 11 = Warm-up lamp—controlled by lamp (Read-only) 20 = Auto Shutdown mode 1 (Read-only) 21 = Auto Shutdown mode 2 (Read-only) 22 = Auto Shutdown mode 3 (Read-only) 23 = Emergency shutdown, ending in power off

Examples

Get the projector power status: `(PWR?)`
Turn the lamp and all electrical power on: `(PWR 1)`
Set the projector to Standby mode: `(PWR 0)`
Reboot into Fail-safe mode: `(PWR+RBFS 1)`

PXP–Pixel Phase

Adjusts the phase of the pixel sampling clock relative to the incoming signal.

You can fine tune the sampling point within one pixel. Adjust the Pixel Phase when the image (usually from an RGB source) shows shimmer. If the shimmer is concentrated in vertical bands with little or no shimmer between the bands, the pixel tracking might need adjustment. Pixel Tracking must be set correctly before adjusting Pixel Phase.

The Pixel Phase command can only be set on analog input cards.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
PXP+INxy <value>	Sets the pixel phase for slot x, input y.	0 to 31
PXP+MAIN <value>	Sets the pixel phase for the main video.	
PXP+PIIP <value>	Sets the pixel phase for picture-in-picture.	
PXP+SECD <value>	Sets the pixel phase for the secondary video.	

Examples

Display the pixel phase for the main video: `(PXP?)`
Display the pixel phase on the picture-in-picture video: `(PXP+PIIP?)`
Display the pixel phase for slot 1 input 2:   `(PXP+IN12?)`
Set the pixel phase to 16 on the main video: `(PXP 16)`
Set the pixel phase to 16 on the main video: `(PXP+MAIN 16)`
Set the pixel phase to 16 on the picture-in-picture video: `(PXP+PIIP 16)`
Set the pixel phase to 16 on slot 1 input 2:   `(PXP+IN12 16)`

PXT–Pixel Tracking

Adjusts the position of the pixel sampling clock to match the input signal.

Proper pixel tracking ensure the image quality is consistent across the screen. If adjusted incorrectly, flickering or vertical bars of noise appear across the image. Adjust Pixel Tracking so the noise either disappears or fills the image. If it fills the image, use Pixel Phase to eliminate the noise.

The Pixel Tracking command can only be set on analog input cards.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
PXT+INxy <value>	Sets the pixel tracking for slot x, input y.	600 to 3000
PXT+MAIN <value>	Sets the pixel tracking for the main video.	
PXT+PIIP <value>	Sets the pixel tracking for picture-in-picture.	
PXT+SECD <value>	Sets the pixel tracking for the secondary video.	

Examples

Display the pixel tracking for the main video: `(PXT?)`
Display the pixel tracking on the picture-in-picture video: `(PXT+PIIP?)`
Display the pixel tracking for slot 1 input 2: `(PXT+IN12?)`
Set the pixel tracking to 600 on the main video: `(PXT 600)`
Set the pixel tracking to 600 on the main video: `(PXT+MAIN 600)`
Set the pixel tracking to 600 on the picture-in-picture video: `(PXT+PIIP 600)`
Set the pixel tracking to 600 on slot 1 input 2: `(PXT+IN12 600)`

RAL–Remote Access Level

Sets the default remote serial protocol access level for any of the serial ports.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Admin

Commands

Command	Description	Values
RAL < value>	Sets the access level on all Ethernet ports.	0 = No Access—Disables the port
RAL+PRTA <value>	Sets the access level for the RS232-IN port.	

Command	Description	Values
RAL+PRTB <value>	Sets the access level for the RS232-OUT port.	1 = Login Required—Sets read-only access until a separate login is performed (Default)
RAL+PRTC <value>	Sets the access level for the RS422 port.	2 = Free Access—Executes commands at the operator level unless a separate login is performed

Examples

Get the access level for Ethernet ports (RAL!0):   `(RAL?)`
Get the access level (RAL+PRTA!2):   `(RAL+PRTA?)`
Disable the remote serial protocol access level for all Ethernet ports: `(RAL 0)`
Set the remote serial protocol access level on port A (RS232 In) to Free Access: `(RAL+PRTA 2)`

RBL–Right Blanking

Sets the number of lines to turn to black at the right of the image.

Use this command to blank out any unwanted data near the right edge of the image.

- A positive amount of blanking makes the image smaller.
- A negative amount of blanking makes the image larger. Negative blanking is only applicable for analog signals, when the auto setup cannot set the image size correctly. Christie does not recommend using negative blanking, but to run auto setup again, ensuring that the content has active pixels on each edge of the image.
- The maximum amount of right blanking allowed is half the image width minus 10. For negative blanking, the image size can only be increased to the limit of the sync.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
RBL+INxy <value>	Sets the red black level on slot x, input y.	—
RBL+MAIN <value>	Sets the red black level on the main video.	—
RBL+PIIP <value>	Sets the red black level on the picture-in-picture video.	—

Command	Description	Values
RBL+SECD <value>	Sets the red black level on the secondary video.	—

Examples

Display the right blanking value for the main video: `(RBL?)`
Display the right blanking value on picture-in-picture video: `(RBL+PIIP?)`
Display the right blanking value for slot 1 input 2: `(RBL+IN12?)`
Set the right blanking value to 40 on the main video: `(RBL 40)`
Set the right blanking value to 40 on the main video: `(RBL+MAIN 40)`
Set the right blanking value to 40 on picture-in-picture video: `(RBL+PIIP 40)`
Set the right blanking value to 40 on slot 1 input 2: `(RBL+IN12 40)`

RDB–Red Black Level

Compensates for relative variations in the black levels between red, green and blue.

Available on all cards expect the video decoder.

This command is available on all cards expect the video decoder. The correct setting achieves maximum contrast without crushing white or black. When the drive and black level controls are set correctly for a signal, the Comprehensive Color Adjustment (including color temperature) works as expected. Do not use the drive and black level controls.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
RDB+INxy <value>	Sets the red black level on slot x input y to the specified value.	-255 to 255
RDB+MAIN <value>	Sets the red black level on the main video.	

Command	Description	Values
RDB+PIIP <value>	Sets the red black level on the picture-in-picture video.	
RDB+SECD <value>	Sets the red black level on the secondary video.	

Examples

Display the current red black level for the main video: (RDB?)
Display the current red black level on picture-in-picture video: (RDB+PIIP?)
Display the current red black level for slot 1 input 2: (RDB+IN12?)
Set the red black level to 128 on the main video: (RDB 128)
Set the red black level to 128 on the main video: (RDB+MAIN 128)
Set the red black level to 100 on picture-in-picture video: (RDB+PIIP 100)
Set the red black level to 100 on slot 1 input 2: (RDB+IN12 100)

RDD–Red Drive

Compensates for different amounts of attenuation between the red, green, and blue in the signal.

Available on all cards expect the video decoder.

The correct setting achieves maximum contrast without crushing white or black. When the drive and black level controls are set correctly for a signal, the Comprehensive Color Adjustment, including color temperature, works as expected. The drive and black level controls should not be used to setup a specific color temperature as this requires separate color temperature adjustments to be made for each source.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
RDD+INxy <value>	Sets the red drive on slot x input y to the specified value.	-255 to 255

Command	Description	Values
RDD+MAIN <value>	Sets the red drive on the main video.	
RDD+PIIP <value>	Sets the red drive on the picture-in-picture video.	
RDD+SECD <value>	Sets the red drive on the secondary video.	

Examples

Display the current red drive value for the main video: `(RDD?)`
Display the current red drive value on the picture-in-picture video: `(RDD+PIIP?)`
Display the current red drive value for slot 1 input 2: `(RDD+IN12?)`
Set the red drive value to 128 on the main video: `(RDD 128)`
Set the red drive value to 128 on the main video: `(RDD+MAIN 128)`
Set the red drive value to 100 on the picture-in-picture video: `(RDD+PIIP 100)`
Set the red drive value to 100 on slot 1 input 2: `(RDD+IN12 100)`

ROG–Red Odd Pixel Gain

Adds an offset to input red gain settings on the analog input card.

It compensates for differences between the A to D converter used to sample even pixels, and the one used for odd pixels. A value of 0 is the null position in which both A to D converters are set to exactly the same value.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ROG+SLx0 <value>	Sets a red gain offset for the second A to D.	—

Examples

Set a red gain offset to -10 on slot 1:
```
(ROG+SL10 –10)
```

ROO–Red Odd Pixel Offset

Adds an offset to input red black level settings on the analog input card.

This command compensates for differences between the A to D converter used to sample even pixels, and the converter used for odd pixels. A value of 0 is the null position and both A to D converters are set to exactly the same value.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
ROO+SLx0 <value>	Sets a red black level offset for the second A to D.	—

Examples

Set a red gain offset to -10 on slot 1:
```
(ROO+SL10 –10)
```

RQR–RGB Quantization Range

Selects the RGB quantization range.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
RQR+INxy <value>	Sets the RGB quantization range on slot input y to the specified value.	0 = Full (0 to 255) 1 = Limited (16 to 235)

Command	Description	Values
RQR+MAIN <value>	Sets the RGB quantization range on the main video.	
RQR+PIIP <value>	Sets the RGB quantization range on the picture-in-picture video.	
RQR+SECD <value>	Sets the RGB quantization range on the secondary video.	

Examples

Set the RGB quantization range to limited, expanding numbers to the full range:

`(RQR 1)`

RTE–Real Time Events

Uses real time events to allow custom user actions to occur based on a system trigger.

Various system triggers include power up, input change, errors, or based on time. Time can be absolute, (for example, 12:00:00 on December 25, 2015) or relative (for example, 5 hours and 30 minutes from now).

Special function keys can also be used as a trigger, for example, pressing Func+1 on the remote. Events can also be connected to external hardware triggers using the General Purpose IO port (GPIO).

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
RTE T <date> <time> <frequency> "description" "(command)"	Runs a command once at the specified time.	<date>, <start date>, <end date> = Start or end date in the format YYYY/MM/DD <time> = HH:MM:SS
RTE T <start date> <time> <end date> <frequency> <repeat frequency> "description" "(command)"	Runs a command daily, or for a range of dates at the specified time.	<frequency> = S (single), D (daily), R (weekly), M (monthly) <repeat frequency> = Number of days or weeks between repeating the command. For monthly commands, the repeat frequency specified is the same date (number) each month.
RTE T <start date> <time> <end date> <frequency> <repeat frequency> <day of the week> "description" "(command)"	Runs a command monthly, or for a range of dates at the specified time.	<day of the week> = Weekday or weekdays that the command runs on • M = Monday • T = Tuesday

Command	Description	Values
		• W = Wednesday • Th = Thursday • F = Friday • S = Saturday • Su = Sunday Description = Description of the event (command) = Serial API command and associated parameters to run
RTE F <function number> "description" "(command)"	Runs a command when the function key is pressed.	<function number> = Specific function key (1-5, 7-9). Key 6 is reserved and cannot be used. Description = Description of the event (command) = Serial API command and associated parameters to run
RTE S <event> <power status> "description" "(command)"	Runs a command when the specified system event is triggered.	<event> = System event that triggers the command • 0 = Boot up • 1 = Power on/off • 2 = Any system error • 3 = Good signal • 4 = No signal • 5 = Input change <power status> = State of the product power • T = 0 (Either a power on or off event) • T = 1 (Power on only) • T = 2 (Power off only) Description = Description of the event (command) = Serial API command and associated parameters to run
RTE G "AAAAAAA" "description" "(command)"	Runs a command when the specified GPIO input is received.	AAAAAAA = GPIO input for each pin • X = ignore • H = when pin is high • L = when pin is low Description = Description of the event (command) = Serial API command and associated parameters to run
RTE X <event>	Deletes the specified event.	* = All events 0 - xx = specific event by number

Examples

Single occurrence events

Close the shutter at 11:48:00 on December 25, 2015:
`(RTE T 2015/12/25 11:48:00 S "description" "(LSH 1)")`

Daily occurring events

Power on the projector every day at 23:00:00, starting from January 1, 2016 until February 1, 2016:
`(RTE T 2016/01/01 23:00:00 2016/02/01 D 1 "description" "(PWR 1)")`
Power on the projector every other day at 23:00:00, starting from January 1, 2016 until February 1, 2016:
`(RTE T 2016/01/01 23:00:00 2016/02/01 D 2 "description" "(PWR 1)")`
Power on the projector every fifth day at 23:00:00, starting from January 1, 2016 until February 1, 2016:
`(RTE T 2016/01/01 23:00:00 2016/02/01 D 5 "description" "(PWR 1)")`

Weekly occurring events

Power off the projector every week, on Saturday and Sunday at 23:00:00, starting from January 1, 2016 until March 1, 2016 (inclusive):
`(RTE T 2016/01/01 23:00:00 2016/03/01 W 1 "SSu" "description" "(PWR 0)")`
Power on the projector every other week, on every weekday at 23:00:00, starting from January 1, 2016 until March 1, 2016 (inclusive):
`(RTE T 2016/01/01 23:00:00 2016/03/01 W 2 "MTWThF" "description" "(PWR 1)")`
Power on the projector every fifth week, on every weekday at 23:00:00, starting from January 1, 2016 until March 1, 2016 (inclusive):
`(RTE T 2016/01/01 23:00:00 2016/03/01 W 5 "MTWThF" "description" "(PWR 1)")`

Monthly occurring events

Power off the projector on the 1st day of every month at 23:00:00, starting January 1, 2016 until January 1, 2017 (inclusive):
`(RTE T 2016/01/1 23:00:00 2017/01/01 M 1 "description" "(PWR 0)")`
Power off the projector on the 12th day of every 12 months at 23:00:00, starting January 12, 2016 until January 1, 2017 (inclusive):
`(RTE T 2016/01/10 23:00:00 2017/01/01 M 12 "description" "(PWR 0)")`
Power off the projector every other month on day 31 starting January 31, 2016 until January 1, 2017 (inclusive):
`(RTE T 2016/01/31 23:00:00 2017/01/01 M 2 "description" "(PWR 0)")`

Function key events

Open the shutter if Func+1 is pressed on the remote:
`(RTE F 1 "description" "(LSH 0)")`
Close the shutter if Func+2 is pressed on the remote:
`(RTE F 2 "description" "(LSH 1)")`

System events

Change color to cyan when system powers up:

`(RTE S 1 1 "description" "(CLE 5)")`

GPIO events

Turn on the projector if any GPIO input is received:

`(RTE G "XXXXXXX" "description" "(PWR 1)")`

Turn on the projector if any GPIO input is received:

`(RTE G "" "description" "(PWR 1)")`

Turn on the projector if any GPIO input is received:

`(RTE G "XX" "description" "(PWR 1)")`

Turn off the projector if pin 6 is set to low and pin 7 is high:

`(RTE G "XXXXXLH" "description" "(PWR 0)")`

Freeze the image if pins 1 and 2 are set to high:

`(RTE G "HH" "description" "(FRZ 0)")`

Freeze the image if pins 3,4,7 are set to high:

`(RTE G "XXHHXXH" "description" "(FRZ 0)")`

Freeze the image if pins 1, 2 are set to Low and pin 3 is set to high:

`(RTE G "LLHXX" "description" "(FRZ 0)")`

Freeze the image if pins 1,2 are set to Low and pin 3 is set to high:

`(RTE G "LLH" "description" "(FRZ 0)")`

Deleting events

Delete all events:

`(RTE X *)`

Delete event number 7:

`(RTE X 7)`

SHU–Shutter

Opens or closes the mechanical shutter that blocks all light to the screen.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
SHU?	Gets the state of the shutter.	—
SHU <0 | 1>	Opens or closes the shutter.	0 = Opens the shutter 1 = Closes the shutter (Default)

Examples

Get the state of the shutter: (SHU?) Result: (SHU!0) Indicates the shutter is open.
Open the shutter: (SHU 0)
Close the shutter: (SHU 1)

SIN–Select Input

Selects the active input.

The video-in-control (VIC) can be main or picture-in-picture (PIP). To specify a new input routing, enter the number of the slot followed by the input. The projector switches to that input location and automatically select the channel best suited to the incoming signal. For example, 1 2 would indicate slot 1 input 2.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
SIN+MAIN <value>	Sets the active input for the main video.	—
SIN+PIP <value>	Sets the active input for the picture-in-picture video.	—
SIN+SECD <value>	Sets the active input for the secondary video.	—

Examples

Get the current main video input: `(SIN?)`
Get the current main video input: `(SIN+MAIN?)`
Get the current picture-in-picture video input: `(SIN+PIIP?)`
Set the main video to slot 1 input 2: `(SIN 12)`
Set the main video to slot 4 input 5: `(SIN+MAIN 45)`
Set the picture-in-picture video to slot 2 input 1: `(SIN+PIIP 21)`

SIZ–Size

Controls how much the projector electronically expands or shrinks the image.

This command expands or contracts the image in both the vertical and horizontal directions so that the aspect ratio does not change. The horizontal scaling of the image is always to exactly this value but the vertical scale is also controlled by the VST control which stretches the image vertically. When size is changed on picture-in-picture video, nothing visually happens but it is saved in the picture-in-picture channel and is applied the next time that channel is on the main video.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
SIZ <value>	Sets the size for the main image. Scale = value/1000	1000 is the neutral position where no resizing is done.

Examples

Display the size value for the main video: `(SIZ?)`
Set the size to 500 on the main video: `(SIZ 500)`

SMP–Sampling Mode

Sets the color sampling mode for a digital signal to either YCbCr 4:4:4 (RGB) or YCbCr 4:2:2.

Although the proper sampling mode is determined automatically by the projector, you can override the setting.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
SMP+INxy <0	1>	Sets the sampling mode on slot input y to the specified value.	0 = YCbCr 4:4:4 (or RGB) 1 = YCbCr 4:2:2
SMP+MAIN <0	1>	Sets the sampling mode on the main video.	
SMP+PIIP <0	1>	Sets the sampling mode on the picture-in-picture video.	
SMP+SECD <0	1>	Sets the sampling mode on the secondary video.	

Examples

Display the current sampling mode for the main video:
```
(SMP?)
```

Display the current sampling mode on the picture-in-picture video:
```
(SMP+PIIP?)
```

Display the current sampling mode for slot 1 input 2:
```
(SMP+IN12?)
```

Set the sampling mode to YCbCr 4:2:2 on the main video:
```
(SMP 1)
```

Set the sampling mode to YCbCr 4:4:4 on the main video:
```
(SMP+MAIN 0)
```

Set the sampling mode to YCbCr 4:2:2 on the picture-in-picture video:
```
(SMP+PIIP 1)
```

Set the sampling mode to YCbCr 4:2:2 on slot 3 input 2:
```
(SMP+IN32 1)
```

SOR–Screen Orientation

Selects the orientation of the displayed image.

The image can be displayed normally, inverted horizontally, inverted vertically, or inverted in both directions, as required by the projector installation.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
SOR <value>	Changes the orientation of the displayed image. This command is only available if video electronics are on. (Saved value)	0 = Front projection (Default) 1 = Rear projection 2 = Front projection inverted 3 = Rear projection inverted

Examples

Set image orientation to front projection:
```
(SOR 0)
```

SPS–Splash Screen

Uploads a user splash screen (logo) bitmap and configures splash screen display options.

Parameters

- **Control Group:** Preference
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
SPS <value>	Views or sets option indicating when a logo is displayed.	0 = Never displays a logo 1 = Displays a logo on startup only 2 = Displays a logo on startup and when there is no signal

Command	Description	Values
SPS+BACK <value>	Views or sets logo background color.	—
SPS+DLET <value>	Deletes user logo from storage flash.	—
SPS+SLCT <value>	Views or sets which logo to display.	0 = Sets the default splash screen 1 = Sets the user splash screen
SPS+XPOS <value>	Views or sets logo horizontal position.	—
SPS+YPOS <value>	Views or sets logo vertical position.	—

Examples

Get the display option: (SPS?)
Display the logo when there is no signal: (SPS 2)
Display the Christie logo: (SPS+SLCT 0)
Set the background color of the user logo screen to blue (value format 0xRRGGBB must be converted to decimal): (SPS+BACK 225)
Delete the user logo from flash: (SPS+DLET 1)
Set the option to show a logo image on the user logo screen: (SPS+SIMG 1)
Set the option to hide the logo image and only display the background color on the user logo screen: (SPS+SIMG 0)
Move the logo image on user logo screen to 50th pixel from left screen edge: (SPS+XPOS 50)
Move the logo image on user logo screen to 50th pixel from top screen edge: (SPS+YPOS 50)

SPT–Split Screen

Splits the screen.

A snapshot of the main image can be presented on the right side of the screen to allow evaluation of advanced image processing features. All resizing controls are honored on both images; however, image processing controls only happen on the left side image. Changing inputs, channels, or test

patterns disables this command. Picture-in-picture operation must be disabled prior to enabling this command.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
SPT <value>	Selects the split screen method.	0 = Off 1 = Side 2 = Top

Examples

Turn off split screen: `(SPT 0)`
Turn on split screen to the side: `(SPT 1)`

SST–Projector Status

Retrieves the various system status groups.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Status

Commands

Command	Description	Values
SST+ALRM	Returns a summary of any active alarms.	Where parameters are: P1 = Index number
SST+CONF	Returns configuration data—model, serial number, build date, and so on.	P2 = Error level
SST+COOL	Returns cooling data—cooling fans, air flow, and so on.	P3 = Value P4 = Description
SST+HLTH	Returns system health.	Error level is:

Command	Description	Values
SST+LAMP	Returns lamp operational data.	0 = No errors or warnings
SST+SIGN	Returns signal data—freq, and so on.	1 = Warning
SST+SYST	Returns system data—power, hours of use, shutter open, and so on.	2 = Error
SST+TEMP	Returns temperature data.	3 = Error and warning
SST+VERS	Returns version numbers.	

Examples

Return the projector status:

(SST+ALRM?)

Result:

SST+ALRM!000 002 "101" "Prism temperature"

STD–Video Standard

Displays or sets the current video standard decoding the input signal.

The projector automatically determines the standard or you can specify a specific standard from the selection list. Only standards with similar horizontal and vertical frequencies to the current input source are enabled.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
STD+INxy <value>	Sets the video standard on slot input y to the specified value in the range of known video standards.	0 = Auto—Automatically determined by decoder
STD+MAIN <value>	Sets the video standard on the main video to the specified value in the range of known video standards.	1 = PAL—Commonly used format in much of Europe, China, Australia, and some South American and African countries
STD+PIIP <value>	Sets the video standard on the picture-in-picture video to the specified value in the range of known video standards.	2 = NTSC—Commonly used format in North America and Japan 3 = SECAM—Format found primarily in France, Eastern Europe, and much of Africa
STD+SECD <value>	Sets the video standard on the secondary video to the specified value in the range of known video standards.	4 = NTSC44—Tape-only standard and is usually used with hybrid signals used to provide compatibility with video material of

Command	Description	Values
		another TV format without a complete translation
		5 = PAL-M—Format found primarily in Brazil
		6 = PAL-NC—Format found primarily in Argentina, Chile, and some other Latin American countries
		7 = PAL-60

Examples

Display the current video standard for the main video: (STD?)
Display the current video standard on the picture-in-picture video: (STD+PIIP?)
Display the current video standard for slot 1 input 2: (STD+IN32?)
Set the video standard to 0 (PAL) on the main video: (STD 0)
Set the video standard to 1 (NTSC_M) on the main video: (STD+MAIN 1)
Set the video standard to 0 (PAL) on the picture-in-picture video: (STD+PIIP 0)
Set the video standard to 3 (NTSC_4_43) on slot 1 input 2: (STD+IN32 3)

SZP–Size Presets

Sets the image to one of several preset size/position presets.

Parameters

- **Control Group:** Unsaved
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
SZP <value>	Sets the preset size type.	0 = Default 1 = None

Command	Description	Values
		2 = Full Screen
		3 = Full Width
		4 = Full Height
		5 = Anamorphic
		6 = Custom

Examples

Set the size preset to No Resizing:
```
(SZP 1)
```

TBL–Top Blanking

Sets the number of lines to turn to black at the top of the image to blank out any unwanted data near the top edge of the image.

This can be used to blank out any unwanted data near the top edge of the image.

A positive amount of blanking makes the image smaller. A negative amount of blanking makes the image larger. Negative blanking is only applicable for analog signals, when the auto setup cannot set the image size correctly.

Christie does not recommend using negative blanking, but to run auto setup again, ensuring that the content has active pixels on each edge of the image. For negative blanking, the image size can only be increased to the limit of the sync.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TBL+INxy <value>	Sets the top blanking for slot x, input y.	The maximum amount of top blanking allowed is half the image height minus 10.
TBL+MAIN <value>	Sets the top blanking for the main video.	
TBL+PIIP <value>	Sets the top blanking for the picture-in-picture video.	For negative blanking, the image size can only be increased to the limit of the sync.
TBL+SECD <value>	Sets the top blanking for the secondary video.	

Examples

Display the top blanking for the main video:

(TBL?)

Display the top blanking for picture-in-picture video: (TBL+PIIP?)
Display the top blanking on slot 1 input 2: (TBL+IN32?)
Set the top blanking for the main video to 40: (TBL 40)
Set the top blanking for the main video to 40: (TBL+MAIN 40)
Set the top blanking for picture-in-picture video to 40: (TBL+PIIP 40)
Set the top blanking value on slot 1 input 2: (TBL+IN32 40)

TDD–3D Emitter Delay

Adjusts the output 3D emitter delay to match the active glasses to the left and right frames of the projector.

Proper adjustment of this delay eliminates cross talk and odd colors caused by timing differences between the glasses and the projected image. The user-specified delay is added after sync locking.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TDD+INxy <value>	Sets the 3D Sync input for slot x, input y.	—
TDD+MAIN <value>	Sets the 3D Sync input for the main image.	—

Examples

Return the 3D emitter delay value on main video: (TDD?)
Set 3D emitter delay to 20.00 milliseconds on main video: (TDD 2000)
Set 3D emitter delay to Native 3D on main:

(TDD+MAIN 1)
Set 3D emitter delay to Frame Doubled on slot 1 input 2:   (TDD+IN12 2)
Return the 3D emitter delay value on slot 1 input 2:   (TDD+IN12?)

TDI–3D Sync Input

Specifies which of the two left and right eye input signals on the cable is active.

The 3D sync signal is generated by the 3D source to ensure left and right eye content is synchronized to the projector and to the user. The 3D stereo cable has two inputs for left eye—right eye signals.

You must ensure that the correct 3D sync input is selected (either Input A or Input B) with each 3D signal source. If there is no external sync, choose None and the sync is generated internally. This allows the content to be displayed, however, the content may be displayed with the left and right eyes swapped or inverted. This function is not used in Interleaved 3D mode as each eye gets a dedicated input and no 3D sync input is required.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TDI+MAIN <value>	Sets the 3D sync input for the main image.	—
TDI+INxy <value>	Sets the 3D sync input for slot x, input y.	—

Examples

Return the 3D sync input value on main video: (TDI?)
Set the 3D sync input to A on the main video: (TDI 0)
Set the 3D sync input to Native 3D on the main video: (TDI+MAIN 1)
Return the 3D sync input value on slot 1 input 2:   (TDI+IN12?)
Set the 3D sync input to Frame Doubled on slot 1 input 2:   (TDI+IN12 2)

TDM–3D Mode

Selects the 3D mode.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TDM+MAIN <value>	Sets the 3D mode for the main image.	0 = Off—Disables 3D operation
TDM+INxy <value>	Sets the 3D mode for slot x, input y.	1 = Native 3D—Shows all content at native frame rate from 96 to 120Hz input and output
		2 = Frame Doubled 3D—Displays 3D content from a single 48 to 60Hz signal (24 to 30Hz per eye) twice to provide 3D content viewed at 96 to 120Hz by the user
		3 = Dual Input 3D—Interleaves content from two independent 48 to 60Hz passive frame locked sources into a native 96 to 120Hz native frame rate; this requires an optional input module and both signals must be from the same signal type
		Auto 3D—Attempts to automatically determine which 3D mode to use
		Side-by-Side 3D—Transmits content with each eye above one another in a single frame at half resolution, and is extracted and scaled to show in an alternate-frame sequence
		Top/Bottom 3D—Transmits content with each eye above one another in a single frame at half resolution, and is extracted and scaled to show in an alternate-frame sequence
		Frame Packed 3D—Transmits content with each eye at full resolution in a double-sized frame, and extracted to show in an alternate-frame sequence; this mode is typically used for BlueRay-3D movies, and 3D video gaming

Examples

Return the 3D mode value on the main video: `(TDM?)`
Set the 3D mode to Off on the main video: `(TDM 0)`
Set the 3D mode to Native 3D on the main video: `(TDM+MAIN 1)`
Return the 3D mode value on slot 1 input 2: `(TDM+IN12?)`
Set the 3D mode to Frame Doubled on slot 1 input 2: `(TDM+IN12 2)`

TDN–Invert 3D Input

Adjusts the output 3D emitter delay to match the active glasses to the left and right frames of the projector.

Proper adjustment of this delay eliminates cross talk and odd colors caused by timing differences between the glasses and the projected image. The user specified delay is added after sync locking.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TDN+MAIN <value>	Sets the 3D input inversion for the main image.	—
TDN+INxy <value>	Sets the 3D input inversion for slot x, input y.	—

Examples

Return the 3D input inversion value on main video: `(TDN?)`
Return the 3D input inversion value on slot 1 input 2: `(TDN+IN12?)`
Set 3Dinput inversion to inverted on main video: `(TDN 1)`
Set 3D input inversion to not inverted on main:

```
(TDN+MAIN 0)
```

Set 3D input inversion to not inverted on slot 1 input 2:

```
(TDN+IN12 0)
```

TDO–3D Sync Out

Defines if the 3D Sync is output and controls how it is processed.

This command is only valid when a cable connects stereo 3D signals to the projector using the GPIO port. When there is no 3D signal, Sync Output should be Off. Typically only the last projector in the 3D Stereo cable chain is connected to the emitter and should specify To Emitter. All other projectors should select To Next Input if other projectors are used in the chain. When power is off, the output becomes locked to the input. When power is restored, the user specified state is restored.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TDO+MAIN <value>	Sets the 3D sync input for the main video.	—
TDO+INxy <value>	Sets the 3D sync input for slot x, input y.	—

Examples

Return the 3D Sync Out value on main video:
`(TDO?)`
Return the 3D Sync Out value on slot 1 input 2:
`(TDO+IN12?)`
Set 3D Sync Out to off on main video:
`(TDO 0)`
Set 3D Sync Out to To Emitter on main:
`(TDO+MAIN 1)`
Set 3D Sync Out to To Next on slot 1 input 2:
`(TDO+IN12 2)`

TDT–3D Test Pattern

Enables or disables a 3D test pattern.

The scrolling diagonal lines indicate how well left and right are synchronized. If ghosting occurs, the input may have to be switched or inverted. Adjustments to the emitter delay can also help correct the synchronization.

Parameters

- **Control group:** Unsaved
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TDT <0 | 1>	Enables or disables the 3D test pattern.	0 = Disables the 3D test pattern 1 = Enables the 3D test pattern

Examples

Disable 3D test pattern: `(TDT 0)`
Enable 3D test pattern: `(TDO 1)`

TED–Twin HDMI EDID Type Selection

Sets the preferred EDID Timings on the Twin HDMI input card.

Parameters

- **Control group:** Option
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TED+SLxy <value>	Sets the EDID timings on slot x to the specified type.	0 = Default 1 = 3D 2 = Custom

Examples

Return the current EDID type on slot 1 input 2:   `(TED+SL12?)`
Set EDID type to 1 (3D) on slot 3 input 1:   `(TED+SL31 1)`

TIL–Tiling Control

Sends one video input to all tiles and has it automatically stretched across the entire array.

For tiling to work correctly, all displays in the array must be mapped to their correct coordinates.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** Admin

Commands

Command	Description	Values
TIL+SLCT <0 | 1>	Enables or disables tiling.	0 = Disables tiling 1 = Enables tiling
TIL+RTOT <value>	Sets the total number of rows in the projector array.	—
TIL+CTOT <value>	Sets the total number of columns in the projector array.	—
TIL+RVAL <value>	Sets the row number of this projector.	—
TIL+CVAL <value>	Sets the column number of this projector.	—

Examples

Enable tiling: `(TIL+SLCT 1)`
Set the total number of rows of projectors to two: `(TIL+RTOT 2)`
Set the total number of columns of projectors to two: `(TIL+CTOT 2)`
Set the projector to be in the second row: `(TIL+RVAL 2)`
Set the projector to be in the first column: `(TIL+CVAL 1)`

TMD–Time and Date

Sets the date, time, or time zone.

Parameters

- **Control group:** Preference
- **Subclass:** Power Down
- **Access level:** Admin

Commands

Command	Description	Values
TMD+TIME <time>	Sets the time for the clock. Time must be set using the 24 hour clock (regardless of the LOC+TIME setting).	<time> = String in the following format: hh:mm:ss
TMD+DATE <date>	Sets the date for the clock.	<date> = String in the following format: YYYY/MM/DD

Examples

Get the local time:
`(TMD+TIME?)`
Result:
`Index IP Serial Time`
`@m 0 192.168.228.45 0x0024e999 17:50:45`

Set the time to 3pm: `(TMD+TIME "15:00:00")`
Set the date to January 17th, 2016: `(TMD+DATE "2016/01/17")`

TNT–Tint

Adjusts the balance of red-to-green in your image.

This command is only useful for video images processed by decoder cards.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TNT+INxy <value>	Sets the tint level on slot x, input y to the specified value.	45 degrees to 45 degrees
TNT+MAIN <value>	Sets the tint level on the main video to the specified value.	
TNT+PIIP <value>	Sets the tint level on the picture-in-picture to the specified value.	
TNT+SECD <value>	Sets the tint level on the secondary video to the specified value.	

Examples

Return the current tint level on the main video: `(TNT?)`
Return the current tint level on the picture-in-picture video: `(TNT PIP?)`
Return the current tint level on slot 1 input 2: `(TNT IN12?)`
Set the tint level to 40 on the main video: `(TNT MAIN 40)`
Set the tint level to 20 on the picture-in-picture video: `(TNT PIP 20)`
Set the tint level to 40 on slot 3 input 2: `(TNT IN32 40)`

TTM–THIC Transmitter Mode Configuration

Selects a working mode for one of the transmitters on the THIC card.

Parameters

- **Control group:** Option
- **Subclass:** Power Down
- **Access level:** Operator

Commands

Command	Description	Values
TTM+SLxy <value>	Sets the transmitter working mode for THIC card.	0 = Default (to select 12-bit per channel HDMI output) 1 = Compatible (to select 8-bit per channel HDMI output) 2 = DVI only (to select 8-bit per channel DVI output)

Examples

Get the transmitter working mode for THIS on slot 1, input 2: `(TTM+SL12)`
Use the 12 bit HDMI output for THIC on slot 1, input 1: `(TTM+SL11 0)`
Use the 8 bit HDMI output for THIC on slot 4, input 2: `(TTM+SL42 1)`
Use the 8 bit DVI output for THIC on slot 1, input 1: `(TTM+SL12)`
Set the texture enhancement to 50% for the main video: `(TXE 50)`

TXE–Texture Enhancement

Applies texture detail enhancement based on adaptive horizontal, vertical, and diagonal large edge and small edge enhancement processes.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
TXE+INxy <value>	Sets the texture enhancement for slot x, input y.	—
TXE+MAIN <value>	Sets the texture enhancement for the main video.	—
TXE+PIIP <value>	Sets the texture enhancement for picture-in-picture video.	—
TXE+SECD <value>	Sets the texture enhancement for secondary video.	—

Examples

Set the texture enhancement to 50% for the main video:
`(TXE 50)`

UID–User ID

Allows users to login to the serial interface.

Parameters

- **Control group:** Preference
- **Subclass:** Power Up
- **Access level:** None

Commands

Command	Description	Values
UID <username password>	Logs in with the username and password.	—
UID	Resets the log in to the default settings.	—

Examples

Display the current logged in user and their access level:
`(UID?)`
Login as service using the default password:
`(UID "service" "service")`
Log out the current user:
`(UID)`

VBL–Video Black Input

Optimizes the black level for analog video signals.

Most NTSC video standards include an offset to black which is useful for setting up CRT projectors. Set this control to 7.5 IRE if the video black level seems excessively elevated. Set to 0 IRE if video black levels are crushed. This command applies to analog cards with YUV color space only.

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
VBL+INxy <0 | 1>	Sets the video black level on slot x, input y to the specified value.	0 = 0 IRE 1 = 7.5 IRE
VBL+MAIN <0 | 1>	Sets the video black level on the main video to the specified value.	
VBL+PIIP <0 | 1>	Sets the video black level on the picture-in-picture to the specified value.	
VBL+SECD <0 | 1>	Sets the video black level on the secondary video to the specified value.	

Examples

Display the video black level on the main video: `(VBL?)`
Set the video black level for the main video to 7.5 IRE: `(VBL 1)`
Set the video black level for the main video to 7.5 IRE: `(VBL+MAIN 1)`
Set the video black level for the picture-in-picture video to 0 IRE: `(VBL+IN32 0)`

VRT–Vertical Position

Sets the vertical position of the image.

Parameters

- **Control Group:** Input
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
VRT <value>	Sets the vertical position for the main image.	—

Examples

Display the vertical position value on the main video: `(VRT?)`
Set the vertical position to 500 on the main video:

```
(VRT 500)
```

VST–Vertical Stretch

Adjusts the height of the image while keeping the width constant.

This controls how much the image is electronically stretched vertically. As it does not affect the horizontal width, it changes the aspect ratio of the image.
Vertical Scale = (VST-Value / 1000) * (SIZ-Value / 1000)

Parameters

- **Control group:** Input
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
VST <value>	Sets the vertical stretch for the main image.	1000 = Neutral position where no stretching is done

Examples

Display the vertical stretch value on the main video: `(VST?)`
Set the vertical stretch to 500 on the main video: `(VST 500)`

WRP–Geometry Correction

Controls the writing and reading of 2D keystone maps, warp maps, edge-blend map, uniformity maps and associated parameters. The commands are only applied on power up or if applying them from the on-screen display.

Parameters

- **Control group:** Configuration/Unsaved Preference
- **Subclass:** Power Up
- **Access level:** Operator

Commands

Command	Description	Values
WRP+SLCT <value>	Changes the warp map to use on the projector.	0 = Turns off warping 1 = Selects 2D keystone n= Selects a user-loaded Twist warp, where <n> is a number from 2 to 17
WRP+SLCT ?L	Lists the user-loaded warps.	—
WRP+KRST	Resets the keystone settings to zero.	—

Examples

Disable warping: (WRP+SLCT 0)
Use 2D keystone mode: (WRP+SLCT 1)
Use user-loaded warp #1: (WRP+SLCT 2)

ZOM–Lens Zoom Position Adjustment

Sets the lens zoom.

Parameters

- **Control Group:** Configuration
- **Subclass:** Power Up
- **Access Level:** Operator

Commands

Command	Description	Values
ZOM <position>	Adjusts the lens zoom to the specified position. The range may change after running the Lens Calibration function, which determines the full range allowed by the hardware.	-1200 to 1200

Examples

Move the lens to position 500 for the zoom motor: (ZOM 500)

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