Technical Reference

020-103535-01

Captiva DWU500S

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Content

Communicating with Captiva DWU500S

Understand the information and procedures for communicating with Captiva DWU500S from a remote location.

You can communicate with the projector through the RS232 IN port or the Ethernet port. When connecting the projector to a computer, use a direct connection. Docking ports can cause software upgrade failures.

Setting up the Ethernet

To use Ethernet, the LAN (Standby) setting of the projector must be enabled and the projector must be in Standby mode.

1. Download the Wake On LAN (WOL) software.

   Free Wake On LAN software packages are available for downloading from the internet. The steps below are for the Aquilia WOL software.

2. To open WakeOnLAN, select the downloaded file and click **New Host**.

3. Select the Wake Up page.

   a) Enter the MAC address, which is the same as the projector.

   b) Enter the broadcast IP address.

      The domain is the same as the computer.

      For example, the IP address of the computer is 10.0.21.105, the subnet mask is 255.255.0.0, and the broadcast IP address is set to 10.0.255.255.

4. Enter any IP address in the FQDN/IP.

   Leave all other fields at their default values.

5. Select the newly added host, right-click, and select **Wake Up**.

Connecting to the projector RS232 IN port

Communicate with the projector through the RS232 IN port.

1. Connect the one end of the RS232 cable to the projector COM port.

2. Connect the other end of the RS232 cable to the computer COM port.

RS232 communication parameters

The RS232 IN port has several communication parameters.

Parameter	Value
Default baud rate	19200
Parity	None
Data bits	8
Stop bits	1
Flow control	None

Correct command formatting

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

For example, (PWR1) can be entered as (PWR 1).

Understanding the message format

Commands sent to and from Captiva DWU500S are formatted as simple text messages consisting of a three letter function code, an optional four letter subcode, and optional data.

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	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 (). If a start character is received before an end character of the previous message, the partial (previous) message is discarded.

Message element	Description
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.
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.

Serial API commands

The Captiva DWU500S commands can be used to modify product settings.

ASH–Auto Shutdown

Powers off the projector after a set period of time.

Commands

Command	Description	Values
ASH <value>	Shuts down the projector after a set period of time.	0 = Turns off auto shutdown 5 = Activates auto shutdown after five minutes 10 = Activates auto shutdown after 10 minutes 15 = Activates auto shutdown after 15 minutes 20 = Activates auto shutdown after 20 minutes 25 = Activates auto shutdown after 25 minutes 30 = Activates auto shutdown after 30 minutes … 100 = Activates auto shutdown after 100 minutes 105 = Activates auto shutdown after 105 minutes 110 = Activates auto shutdown after 110 minutes 115 = Activates auto shutdown after 115 minutes 120 = Activates auto shutdown after 120 minutes

Examples

Turn off auto shutdown: `(ASH 0)`
Activate auto shutdown after ten minutes: `(ASH 10)`

ASP–Aspect Ratio

Sets the proportional relationship of an image between its width and its height.

Commands

Command	Description	Values
ASP?	Returns aspect ratio set for the projector. (Read-only)	—
ASP <value>	Sets the proportional relationship of an image between its width and its height.	1 = Auto (Default) 2 = 4:3 3 = 16:9 4 = 16:10/ultra wide

Examples

Set the aspect ratio to 4:3: `(ASP 2)`
Set the aspect ration to 16:10: `(ASP 4)`

AVM–AV Mute

Displays a blank (mute) or projected image on the screen.

Commands

Command	Description	Values
AVM <0 | 1>	Displays a blank (mute) or projected image on the screen.	0 = Displays the projected image on the screen 1 = Displays a blank image on the screen

Examples

Mute the audio on the projector: `(AVM 1)`

BRT–Brightness

Adjusts the image black level by applying an offset to the input image.

Commands

Command	Description	Values
BRT <value>	Sets the black level value.	0 to 100 50 (Default)

Examples

Set the black level value to 50:
(BRT 50)

CON–Contrast

Sets the image white level by adjusting the gain applied to the input signal.

Commands

Command	Description	Values
CON <value>	Sets the degree of difference between the lightest and darkest parts of the image and changes the amount of black and white in the image.	0 to 100 50 (Default)

Examples

Set the contrast value to 50:
(CON 50)

DZM–Digital Zoom

Magnifies the image or reduces its size on the projection screen.

Commands

Command	Description	Values
DZM <0 | 1>	Magnifies the image or reduces its size on the projection screen.	0 = Reduces the size of the image on the screen 1 = Magnifies the image on the screen

Examples

Magnify the image on the projection screen:
`(DZM 1)`

FRZ–Image Freeze

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

Commands

Command	Description	Values
FRZ <0 | 1>	Freezes the active video or test pattern.	0 = Disables freezing of current video (Default) 1 = Freezes the current video

Examples

Freeze the image:
`(FRZ 1)`

HAT–High Altitude

Increases the fan speeds to improve cooling when the projector is installed in a high altitude location.

Commands

Command	Description	Values
HAT <0 | 1>	Enables or disables high altitude functionality.	0 = Turns off high altitude functionality (Default) 1 = Turns on high altitude functionality

Examples

Turn on high altitude functionality:
`(HAT 1)`

KEY–Key Mode Emulator

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

Commands

Command	Description	Values
KEY <value>	Sends the command associated with the key to the product.	1 = Up 2 = Left 3 = Right 4 = Down 5 = Menu 6 = Source 7 = Keystone+ 8 = Keystone- 9 = Volume+ 10 = Volume-

Examples

Send menu key 9 to the projector:

```
(KEY 9)
```

KST–Keystone

Adjusts image distortion caused by tilting the projector.

Keystone effect occurs when you project an image onto the screen at an angle and the projector is not centered on the screen. The image appears distorted and resembles a trapezoid.

Commands

Command	Description	Values
KST <value>	Adjusts image distortion caused by tilting the projector.	-40 to 40

LOC–Localization Language

Sets the language for the on-screen display (OSD).

Commands

Command	Description	Values
LOC?	Returns the language used by the selected display. (Read-only)	—
LOC <language>	Sets the display language.	1 = English (Default) 2 = German 3 = Swedish 4 = French 5 = Arabic 6 = Dutch 7 = Norwegian 8 = Danish 9 = Simplified Chinese 10 = Polish 11 = Korean 12 = Russian 13 = Spanish 14 = Traditional Chinese 15 = Italian 16 = Portuguese 17 = Turkish 18 = Japanese

Examples

Get the language: `(LOC?)`
Set the language to French: `(LOC 4)`
Set the language to Russian: `(LOC 12)`

MIC–Microphone Volume

Sets the volume level of the microphone.

Commands

Command	Description	Values
MIC <value>	Sets the volume level of the microphone.	0 to 30 0 = Off 15 (Default)

Examples

Set the volume level of the microphone to 12:

`(MIC 12)`

MSP–Menu Location

Sets the default menu position on the screen.

Commands

Command	Description	Values
MSP?	Returns the current menu position preset. (Read-only)	—
MSP <value>	Views or sets the preset menu position.	1 = Top left 2 = Top right 3 = Center (Default) 4 = Bottom left 5 = Bottom right

Examples

Get current menu position preset:

`(MSP?)`

Set the main menu position to the top left corner of the screen:

`(MSP 1)`

MUT—Mute

Mutes the sound of the projector.

Commands

Command	Description	Values
MUT <0 | 1>	Mutes the sound on the projector.	0 = Enables sound on the projector 1 = Mutes the sound on the projector (Default)

Examples

Mute the sound on the projector:
```
(MUT 1)
```

PST—Color Mode

Changes the picture-related settings for the current source to a set of predefined values.

This command optimizes the projector display for certain conditions, such as whiteboard, blackboard, beige wall, and so on. Applying this setting affects the following commands:

- Gamma
- Sharpness
- White peaking
- Overscan
- Brightness
- Contrast
- Color
- Tint
- Gain—red, green, blue
- Offset—red, green, blue

Commands

Command	Description	Values
PST?	Returns the values for the picture-related settings. (Read-only)	—
PST <value>	Optimizes the projector.	1 = Bright 2 = PC 3 = Movie 4 = Game 5 = User

Examples

Optimize the projector for bright viewing content:
`(PST 1)`

PWR–Power

Changes the power state of the product.

Commands

Command	Description	Values
PWR?	Returns the power settings for the projector. (Read-only)	—
PWR <0 | 1>	Changes the projector power mode.	0 = Turns the projector off 1 = Turns the projector on

RSC–Resync

Automatically adjusts the horizontal, vertical, clock and phase of the projector in the PC signal.

Commands

Command	Description	Values
RSC <value>	Automatically adjusts the horizontal, vertical, clock and phase of the projector in the PC signal. (VGA only)	1

Examples

Execute the PC signal resync function:
`(RSC 1)`

RST–Reset

Restarts a display.

Commands

Command	Description	Values
RST 1	Restarts the display.	1

SHA–Sharpness

Sets the sharpness of the Captiva DWU500S projector.

Commands

Command	Description	Values
SHA <value>	Sets the sharpness of the Captiva DWU500S projector.	Video only

SIN–Select Input

Selects the active input.

Commands

Command	Description	Values
SIN?	Returns the active input set for the projector. (Read-only)	—
SIN <value>	Sets the active input for the projector.	1 = VGA 1 2 = VGA 2 3 = HDMI 1 4 = HDMI 2

Examples

Set the active input to HDMI 1: (SIN 3)

SOR–Screen Orientation

Selects the orientation of the displayed image.

Examples

Turn on rear projection: (SOR 2)
Turn on front ceiling projection: (SOR 3)

SST–Projector Status

Returns status information about the projector in read-only mode.

Commands

Command	Description	Values
SST?	Returns all status items. (Read-only)	—

VER–Version

Retrieves the firmware version.

Commands

Command	Description	Values
VER?	Returns the software version of the selected Captiva DWU500S projector. (Read-only)	—

VOL–Volume

Sets the volume level of the projector.

Commands

Command	Description	Values
VOL <value>	Sets the volume level of the projector.	0 to 30 0 = Off 15 (Default)

Examples

Set the volume level of the projector to 22:

```
(VOL 22)
```

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