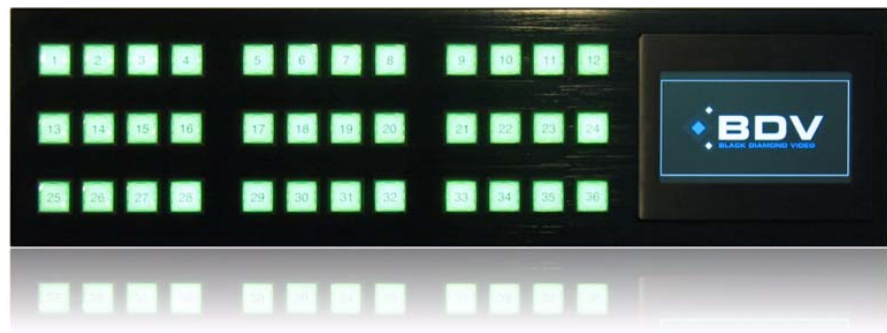


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# CXPS-XY-CP

## External Control Panel

### Operator's Guide



Edition 2.01  
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# Contents



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<b>Chapter 1</b>	<b>Product Information .....</b>	<b>1</b>
	Key Features .....	1
	Control Panel Detail .....	1
<b>Chapter 2</b>	<b>Setting Up .....</b>	<b>3</b>
	Before Setup .....	3
	Setup Tools .....	3
<b>Chapter 3</b>	<b>Matrix Switching.....</b>	<b>5</b>
	About Matrix Switching.....	5
	I/O Switching Modes.....	5
<b>Appendix A</b>	<b>RS-232 and 10/100T Protocol.....</b>	<b>7</b>
	CXPS Command Set .....	7
<b>Appendix B</b>	<b>Upgrading Firmware .....</b>	<b>9</b>



# PRODUCT INFORMATION

1

## KEY FEATURES

The CXPS-XY Control Panel is currently capable of controlling the following CXPS features:

### SWITCHING

- Seamless, non-blocking 36 x 36 DVI matrix switching.
- Supports dual-link DVI matrix switching at the maximum TMDS rate of 2 x 1.65 Gb/s.
- Supports single-link DVI matrix switching at the maximum TMDS rate of 1.65 Gb/s.
- Input and output rates from 640 x 480 up to 3840 x 2400, interlaced or progressive.

### ADDITIONAL FEATURES

- The Control Panel can be configured to control the CXPS' special effects and programmable macros. Please contact Black Diamond Video for additional details.

## CONTROL PANEL DETAIL

### CONNECTORS

The connectors on the CXPS-XY Control Panel include:

- 2 serial ports
- 2 power connectors
- 2 ethernet connector

### TOUCH SCREEN

The touchscreen may be used for Control Panel setup and controlling matrix switching and other CXPS features.



**PRODUCT INFORMATION**

*Control Panel Detail*

# SETTING UP

# 2

This chapter presents an overview of the steps needed for CXPS-XY Control Panel setup.

## BEFORE SETUP

Before setting up your CXPS-XY Control Panel, the following should be completed:

- 1 Turn off CXPS security settings by issuing the command: `SECURITY OFF`.**
- 2 Find the IP address associated with your CXPS; you will need it during setup.**

To find this address, issue the command `SHOWNET` to your CXPS. The IP address of your unit will be returned.
- 3 Connect the CXPS-XY Control Panel to a 5V power source.**

The Control Panel will power on automatically once connected to a power source.
- 4 Connect the Control Panel to the CXPS.**

If the Control Panel is connected directly to the CXPS, a crossover network cable should be used.

You should connect the CXPS to the serial port on top of the control panel. This port requires a null modem and M-M serial gender changer.

The serial port should be attached to the CXPS serial port and uses the default CXPS serial settings (9600 baud, no parity, 8 bits, 1 stop bit).
- 5 Turn on the Control Panel.**
- 6 If you are experiencing networking issues, press buttons “2” and “12” simultaneously during the boot to switch from Serial port 1 to Serial port 2. Communication will be maintained with the CXPS via Ethernet, allowing for troubleshooting of networking issues. The Control Panel is fully operational in this mode.**

## SETUP TOOLS

Using the Setup tools, the operator can set the brightness of the Control Panel LCD screen and buttons.

### Access the Setup Menu

When the CXPS-XY Control Panel is first powered on, it will show the Select Input screen. Press the button labeled “Setup” to proceed to Setup mode.



## SETTING UP

### *Setup Tools*

#### **Set LCD and Button Brightness**

Adjust LCD and Button Brightness by holding down and dragging the respective brightness bars. When finished, press “Done.”



# MATRIX SWITCHING

This chapter provides instruction for I/O matrix switching via the CXPS-XY Control Panel.

## ABOUT MATRIX SWITCHING

The CXPS provides up to 36 x 36 DVI matrix switching capability, which may be controlled via the CXPS-XY Control Panel. Any connected input's channel can be switched to any output channel.

## I/O SWITCHING MODES

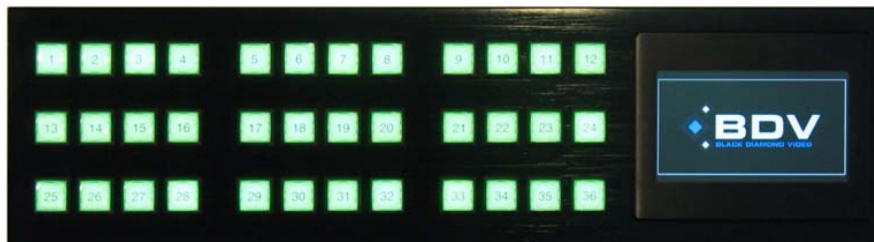
### Select Input Mode

In Select Input mode, the user can select an input to switch to an output.

*Note: The Select Input mode screen will appear once the CXPS-XY Control Panel is powered on.*

If the CXPS-XY Control Panel is connected to a CXPS, input buttons will illuminate on the Control Panel screen representing available input channels on the connected CXPS.

- Input buttons illuminated red have no detected input signal.
- Input buttons illuminated green have a valid input signal (*Figure 1*).



**FIGURE 1.** A CXPS-XY-CP36 with 36 active video input signals.



## MATRIX SWITCHING

### *I/O Switching Modes*

#### **TO SELECT AN INPUT TO SWITCH**

**Press a green input button to select the input. The mode will then change to Select Output mode.**

#### **Select Output Mode**

In Select Output Mode, the user can select an output to which the input they selected in Select Input Mode will be switched.

If the Control Panel is connected to a CXPS, output buttons will illuminate on the Control Panel screen, representing available output channels on the connected CXPS.

- Output buttons illuminated red have no detected connection to a display device.
- Output buttons illuminated green have a detected connection to a display device.

#### **TO SELECT AN OUTPUT**

**Press a green output button to route the chosen input to this output. When the output button is pressed, a switch command will be sent to the remote unit and the mode will revert to Select Input mode.**

- The touchscreen button labeled “Back to Input Select” will navigate the user back to the Input Select mode without performing a switch.

# RS-232 AND 10/100T PROTOCOL

## CXPS COMMAND SET

The CXPS is controlled by using RS-232 or Ethernet connection using telnet protocol. Commands commonly used in conjunction with the control panel are presented and defined in the following table.

### SYSTEM COMMANDS

Command	Syntax	Action
CONNECT	CONNECT	Connects the remote system to the Control Panel using the HOSTADDR and HOSTPORT settings.
HELP	H	Lists all user commands.
HOSTADDRESS	HOSTADDR	Sets the IP address for the remote system.
HOSTMODE SERIAL	HOSTMODE SERIAL	Sets the communication type between the Control Panel and CXPS to TCP/IP.
HOSTPASSWORD	HOSTPASSWORD	Sets the telnet password of the host CXPS. The default password is "blackdiamond".
HOSTPORT	HOSTPORT	Sets the internet port for the remote system. Default: 8998.
ID	ID	Returns system information.
IPADDRESS	IPADDR <ip address>	Sets the static IP address for network use.
LEDTEST	LT <GREEN   RED   OFF>	Tests the LED buttons. GREEN turns all the buttons green, RED turns all buttons red, and OFF turns off LED test mode.
NINSTATUSALL	NINSTATUSALL	Returns 0 or 1 for each input in the remote system, where: 0: represents an input with no detected video. 1: represents an input with detected video.
NIP	NIP	Returns the number of active inputs for the remote system.
NOUTSTATUSALL	NOUTSTATUSALL	Returns 0 or 1 for each output in the remote system, where: 0: represents an output with no detected display device. 1: represents an output with a detected display device.
NOP	NOP	Returns the number of active outputs for the remote system.

**SYSTEM COMMANDS**

<b>Command</b>	<b>Syntax</b>	<b>Action</b>
RESTOREDEFAULT	RFD	Restores the factory defaults for user parameters When using CXPS firmware version 4.85 or previous, issue this command after installing a new board or updating firmware, followed by the <code>rstoutputattr</code> command.
SECURITY	SECURITY <ON OFF>	Turns security settings on the remote system ON or OFF.
SHOWNETWORK	SHOWNET	Shows the network setup parameters.
SWITCH	SW <input #> <output #>	Sends a switch command to the remote system, switching <input #> to <output #>.
UPDATETS	UTS	Updates the touchscreen with new firmware.
VERSION	VER	Returns the firmware version of the remote system.

# UPGRADING FIRMWARE

# B

As a hardware device, the External Control Panel contains firmware. Firmware is embedded software that provides the necessary machine instructions for how the device operates. From time to time, Black Diamond Video publishes firmware updates. These updates may include separate CXPS-XY Control Panel firmware, touchscreen firmware, or both.

Firmware upgrades are performed via the CXPS, using a 10/100T Ethernet connection, and, optionally, RS-232 control.

## Download or Copy Firmware Upgrade to the Control Computer

The first step in performing a firmware upgrade for your Control Panel is to acquire the update file and store it to a location on the Ethernet control computer.

- 1 On the Ethernet control computer, create a folder to store the firmware upgrade.**

For this example, we'll create the folder on the Local Disk (C:) and name it `upgrade`.

**NOTE:** You may save the upgrade file to any drive you wish and use any folder name you like.

- 2 Download the firmware upgrade file into the folder created in Step 1.**

The file name for control panel firmware is `cpanel.bin.xxx`, where `.xxx` is the firmware version number. You are now ready to upgrade the firmware of the CXPS.

The file name for touchscreen firmware is `tscreen.bin.xxx`, where `.xxx` is the firmware version number.

**WARNING!** The touchscreen firmware and control panel firmware are dependant on eachother. Not all firmware versions are compatible.

## Upgrade the Firmware

The upgrade can be accomplished entirely through Ethernet control of the CXPS, or you can use RS-232 control to issue the final upgrade command.

- 1 Open the Command Prompt on the Ethernet control computer. For Windows, navigate to Start > Programs > Accessories > Command Prompt.**

The Command Prompt window opens.

- 2 Change the directory to the directory (folder) into which the firmware upgrade was downloaded from the task "Download or Copy Firmware Upgrade to the Control Computer." In our example this is done by entering the command: `cd\upgrade`.**

## UPGRADING FIRMWARE

The new command prompt is `C:\upgrade>`.

- 3 Open the 10/100T Network Connection between the control computer and the FTP Server within the CXPS by typing in the commands:**

```
ftp <ip address>
```

```
User: bdv
```

```
Password: blackdiamond
```

A prompt sign appears: `>`

**NOTE:** If the IP address is not known, establish RS-232 control of the CXPS and issue the `SHOWNET` command. This returns the IP address of the device.

- 4 Type the command: `bin`**

A command prompt appears again: `>`

- 5 Type the command: `put <filename>`, where the file name is the name of the file you downloaded in Step 2 of “Download or Copy Firmware Upgrade to the Control Computer.”**

In our example, the command is: `put bdvcxps.bin.xxx`

- 6 Close the connection to the CXPS ftp server by typing the command: `quit`**

The connection to the CXPS ftp server is closed.

- 7 Open a Telnet session with the CXPS by typing the command: `telnet <ipaddr> 8998`**

The Telnet session is initiated.

- 8 Enter the network password.**

The default password is “blackdiamond”.

- 9 Issue the upgrade firmware command in one of two ways:**

- a** From the serial port terminal, issue the RS-232 command: `ufw`

Progress information about the upgrade process appears on the terminal.

- b** From the Ethernet connection Command Prompt, type in the command: `ufw`

- 10 The upgrade process takes approximately 2 - 3 minutes. When the upgrade is done, you are instructed to power cycle the CXPS.**

- 11 Type the command : `rfd`**

Once you have issued this command, the firmware upgrade is complete, unless you are using firmware version 4.85 or previous.

- 12 If you are using firmware version 4.85 or previous, type the command: `rstoutputattr`**

Once you have issued this command, the firmware upgrade is complete.