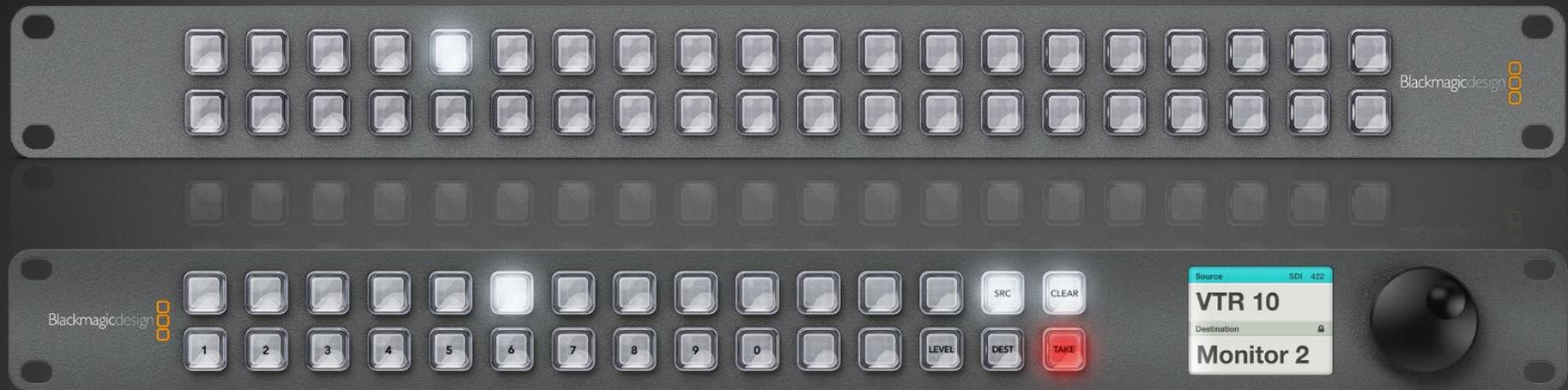


Installation and Operation Manual

Videohub Hardware Control



Mac OS X™

Windows™

September 2014



Welcome

Thank you for purchasing your Videohub control!

We hope you share our dream for the television industry to become truly creative by allowing anyone to have access to the highest quality video.

Videohub Master Control, Videohub Smart Control and our GPI and Tally Interface are simple to install. We've extracted the relevant pages from the Videohub manual so you don't need to read too much. All the information in this mini manual can also be found in the Videohub manual.

Previously, high end television and post production required investing in millions of dollars of hardware, and professional SDI routers have always been way too costly for most people to afford. HD-SDI is even more expensive and, until now, only the largest post production and television facilities could afford HD-SDI routing. Videohub changes all that, even enabling you to pipe 2K film around your studio just like video. Now, Videohub Control makes it even easier to route video using dedicated broadcast quality hardware control panels that are also affordable. We hope you get years of use from it and have lots of fun connecting everyone in your facility together!

This instruction manual contains all the information you'll need to install your Videohub Control and GPI and Tally Interface, although it's always a good idea to ask a technical assistant for help if you are not sure what IP addresses are, or if you don't know much about computer networks. Videohub Control is easy to install, however, there are a few slightly technical preferences you will need to set after you install it.

We think it should take you approximately 5 minutes to complete installation. Please check our website at www.blackmagicdesign.com and click the support page to download the latest updates to this manual and Videohub software including the Blackmagic Videohub Hardware Panel Setup. Lastly, please register your Videohub Control when downloading software updates so we can keep you updated when new software is released. We are constantly working on new features and improvements, so we would love to hear from you!

Grant Petty

Grant Petty
CEO Blackmagic Design

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Videohub Master Control



Videohub Smart Control



GPI and Tally Interface

Introducing Videohub Controllers

Videohub Master Control

Videohub Master Control is a rack-mountable control panel with 30 backlit pushbuttons, LCD, scroll wheel and Ethernet connectivity designed to perform Videohub crosspoint switching without using a computer. Videohub Master Control can control all sources and destinations for any size of Videohub router, as well as RS-422 deck control.

Videohub Master Control uses port labels to aid in fast selection of equipment using software. 15 buttons can be configured and labeled to provide fast selection of common equipment types, e.g., cameras, decks and monitors. It also includes a loop through Ethernet port for connecting to additional control panels, Videohub routers or other network devices.

Only 1 rack unit high and less than an inch thick, you can rack-mount Videohub Master Control at the front or at the rear of the rack to leave space for other equipment.

Videohub Smart Control

Videohub Smart Control is a rack-mountable control panel with 40 backlit pushbuttons and Ethernet connectivity, which works with all models of Videohub. It can be configured to work with one or many SDI destination devices. Once configured for your SDI equipment and Videohub router, Videohub Smart Control no longer requires a computer and can immediately change SDI routes as desired.

When configured for a single SDI destination, such as a monitor or deck, the pushbuttons can instantly switch between 40 different SDI sources on the same Videohub router. When configured for multiple SDI destinations, destination buttons become gold, source buttons become white and the lower right button can be configured as a take button and illuminates red. Macro buttons illuminate green when enabled and each one can be configured to perform up to 16 simultaneous crosspoint switches.

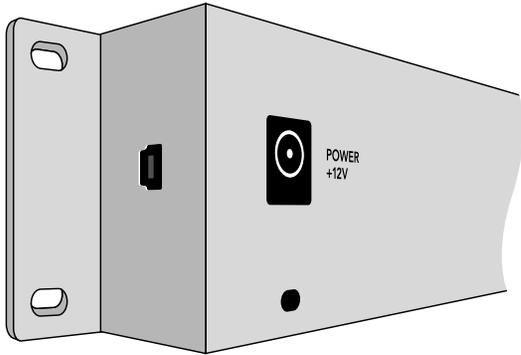
Only 1 rack unit high and less than an inch thick, you can rack-mount Videohub Smart Control at the front or at the rear of the rack to leave space for other equipment. If you don't have a rack, then you can leave it in a safe place on the floor!

GPI and Tally Interface

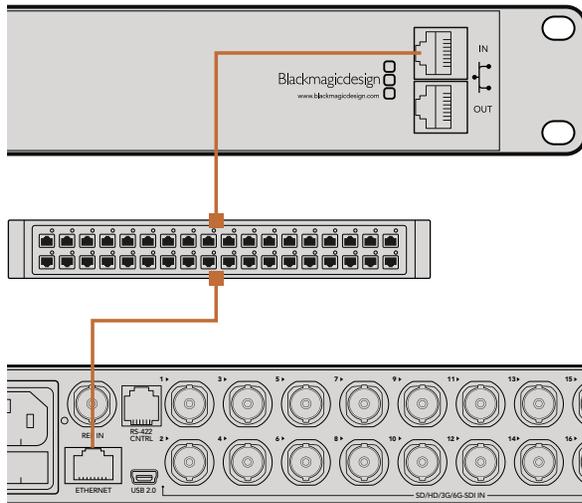
GPI and Tally Interface is a low cost alternative for multi-camera productions where a Camera Control Unit (CCU) operator needs to switch video from one of several cameras being controlled to a single monitor.

It features 8 configurable GPIs and 8 configurable GPOs. The GPIs send commands to your Videohub by ethernet to switch the selected camera to the operator's monitor under certain crosspoint conditions. The GPOs send a tally signal to your cameras or other devices under certain crosspoint conditions.

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Side view of Videohub Smart Control showing the mini-B type USB port



Videohub Smart Control connected to a Smart Videohub 20x20 via an Ethernet Network Switch.

Connecting USB to Setup the Control Panel

A USB 2.0 connection to a computer is used to configure the network settings of the Videohub Controller.

Be aware that the USB port of the Videohub Smart Control is inaccessible once it is installed in a rack. If you are likely to reconfigure Videohub Smart Control network settings periodically, then it may be convenient to permanently connect a USB cable to the unit before installing Videohub Smart Control in a rack.

Plugging into an Ethernet Network

In most facilities, Videohub is usually shared via an Ethernet network switch so it can be controlled by computers on the network as well as by Videohub control panels.

Videohub Master Control and Videohub Smart Control

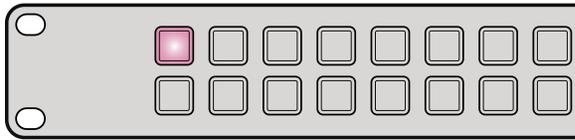
Videohub Master Control and Videohub Smart Control connect to any Videohub via standard Ethernet networking and can be powered over Ethernet or with an external power supply.

If your Ethernet switch does not provide power over Ethernet, use the included universal power supply.

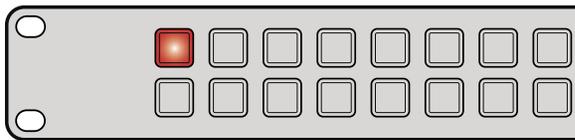
To connect a Videohub control panel to the local area IP based network:

- Step 1.** Connect the included power supply to your Videohub control panel. You can skip this step if your network switch provides power over Ethernet. No problem will be caused by connecting the power supply and power over Ethernet at the same time.
- Step 2.** Use the network In port on your Videohub control panel to connect to your network switch with a standard RJ45 Ethernet cable.
- Step 3.** You might also wish to connect another network device to the network Out port on your Videohub control panel, such as a Videohub router, another Videohub control panel or other network devices such as a computer or VoIP phone. The Out port does not provide power over Ethernet and any network device connected to this port will require its own power supply.

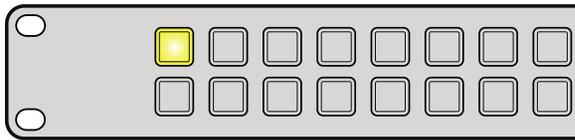
6 Getting Started



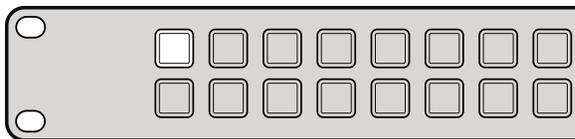
Videohub control panel is attempting to acquire an IP address.



IP address has been acquired and control panel is attempting to connect to the Videohub Server.



Videohub Server is running an incompatible software or firmware version.



Control panel has successfully connected to the Videohub Server.

Control Panel Button Diagnostics

When power is first connected to a Videohub control panel, all the buttons will display their test lights in the following sequence: red, green, blue and white.

The top left button of a Videohub control panel indicates its network status, using the following diagnostic display:

Pink flashing light - unit is attempting to acquire an IP address. The button should quickly become red if the unit is set to use a static IP address, or if the unit successfully acquires an IP address from the DHCP server.

Red flashing light - unit has acquired an IP address and is attempting to connect to the Videohub Server. Make sure the Videohub Server computer is powered on and connected via Ethernet.

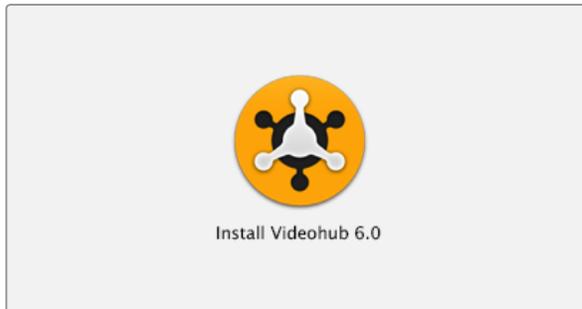
Yellow flashing light - unit has connected to a Videohub Server computer but the Videohub Server is running an incompatible software or firmware version. Update Videohub with the latest version of the Videohub software and firmware and then power cycle the Videohub control panel.

No flashing light - unit has successfully connected to the Videohub Server and is ready to control the Videohub if solid white, or solid white and gold, lights can be seen.

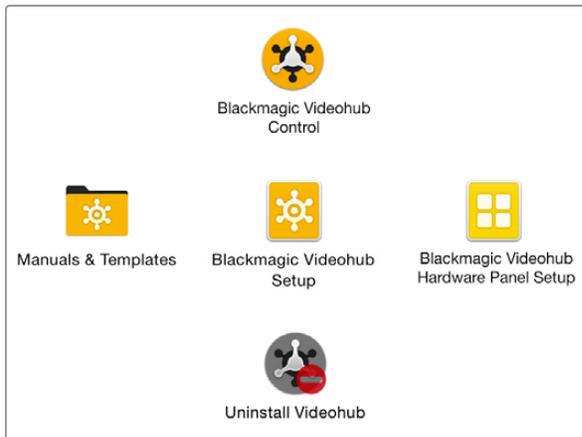
If the top left button took several minutes to turn red, the unit has failed to acquire an IP address and has eventually provided itself with a self-assigned AutoIP address in the 169.254.xxx.xxx format. Unless you wish to use an AutoIP address, disconnect and firmly reconnect the network cables to ensure they are properly connected, check for faulty network cables and make sure the DHCP server has spare IP addresses available. Unplug and reconnect all power sources from the Videohub control panel so it will request a new IP address from the DHCP server. The button should quickly become red.

The unit will only perform these diagnostics when it is not selected in the Videohub Hardware Panel Setup software.

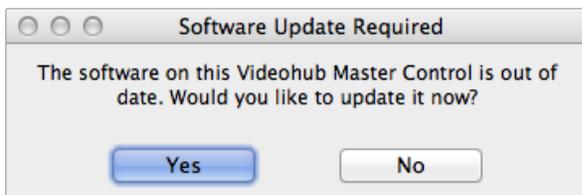
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Double click the installer and follow the prompts.



The Blackmagic Videohub folder contains the three Videohub applications.



This message will appear if a internal software update is required.

Installing the Videohub Software

Videohub software runs on the latest Mountain Lion and Mavericks versions of Mac OS X. On the Windows platform, the software runs on both 32 and 64-bit versions of Windows 7 and Windows 8.

Mac OS X installation

Step 1: Double click the installer file from the supplied media or from your downloads folder if you downloaded the software from the Blackmagic Design website.

Step 2: Follow the install prompts and Mac OS X will automatically install the software.

A folder called "Blackmagic Videohub" will be created within your Applications folder. The following three applications are contained within the folder: Videohub Control, Videohub Setup and Videohub Hardware Panel Setup.

Windows installation

Step 1. Double click the installer file from the supplied media or from your downloads folder if you downloaded the software from the Blackmagic Design website.

Step 2. Follow the install prompts and accept the terms in the License Agreement and Windows will automatically install the software.

Click the Windows Start button and then All Programs>Blackmagic Design>Videohub. The following three applications are contained within the folder: Videohub Control, Videohub Setup and Videohub Hardware Panel Setup.

Updating the Software in your Videohub Controller

Follow these steps to check if your Videohub control panel's internal software is up to date:

Step 1. Connect your Videohub control panel to the computer via USB 2.0.

Step 2. Launch Blackmagic Videohub Hardware Panel Setup.

Step 3. If a software update is required, the following message will appear: "Software Update Required. The software on this Videohub Control is out of date. Would you like to update it now?" Click Yes. The update will take about 2 minutes to complete.

Step 4. The message "Software Update Complete" should appear at completion of the update. Click OK to dismiss the message. Settings can be changed now if desired and this is a good opportunity to give each Videohub control panel a unique name.

Step 5. You can now unplug the USB cable from your Videohub control panel.

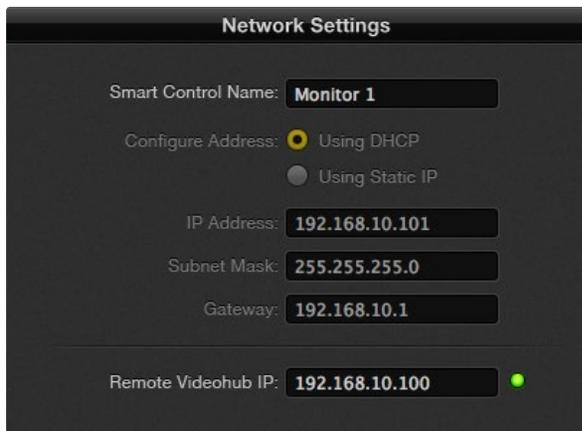
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The Blackmagic Videohub Hardware Panel Setup automatically searches your network for any Videohub control panels.



Any Ethernet or USB connected control units will be listed in the Videohub Control Panels pane with a corresponding icon.



Blackmagic Videohub Hardware Panel Setup network settings.

Setting up your Videohub Controller

Configuring Videohub Hardware Panel Setup

When you launch Blackmagic Videohub Hardware Panel Setup, any Videohub control panels discovered on the network will be listed in the Videohub Control Panels pane next to an Ethernet network icon. If several Videohub control panels are listed, but you don't know which one is which, select one of them and then press Identify. This will cause all the buttons of the selected Videohub control panel to flash white.

Select the desired Videohub control panel and you will be able to change its name and control settings. Network settings will remain grayed out and can only be changed via USB.

If the desired Videohub control panel is not found on the network, the unit might not have received an IP address via DHCP. To manually configure the unit with appropriate network settings:

- Step 1.** Connect the Videohub control panel to your computer via a USB 2.0 cable.
- Step 2.** Launch Blackmagic Videohub Hardware Panel Setup. If the utility prompts you to update the software, follow the prompts to complete the update.
- Step 3.** The USB-connected panel will be automatically selected in the Videohub Control Panels pane and will display a USB icon next to its name. You can change all name, network and control settings for the USB-connected unit. When you are finished, the USB cable can be removed.

If your Videohub control panel is selected in the control utility, the pushbuttons on the unit will light up to match what is displayed in the software interface.

Network Settings

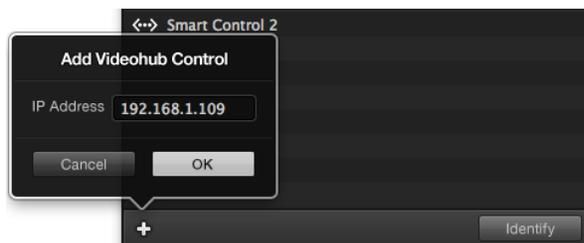
Each Videohub control panel requires an IP address to communicate with Videohub via your IP network.

When configuring a Videohub control panel via USB, you can choose DHCP or Static IP. DHCP automatically obtains all the network settings for your Videohub control panel and is the easier choice.

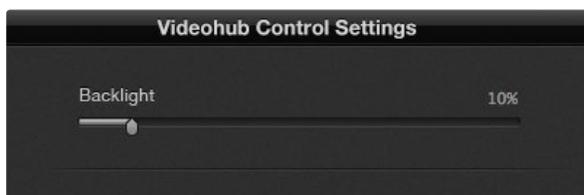
If you decide to use a static IP address, please ask your system administrator for a spare IP address to avoid creating a conflict on your network. You will then need to complete the IP address, subnet mask and gateway details for your Videohub control panel. You must use a static IP address if you are connecting directly to an Ethernet-equipped Videohub, such as Compact Videohub, without using a network switch.

You will also need to complete the IP details for the remote Videohub that you wish to control with your Videohub control panel. The remote Videohub is the Videohub Server. This could refer to a Videohub Server computer or an integrated Videohub Server onboard a Videohub model such as Universal Videohub 72.

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You can manually add a Videohub control panel, by IP address, to the list of Videohub Control Panels.



You can adjust the brightness of all backlit buttons in Videohub Master Control.

Add Videohub Control

If you already know the IP address of a Videohub control panel but it hasn't automatically appeared in the Videohub Control Panels pane, you can add the unit manually.

- Step 1.** Press the + (add device) button at the bottom of the Videohub Control Panels pane.
- Step 2.** Type in the IP address of the Videohub Control Panel and press OK.
- Step 3.** The Videohub Control Panel will appear in the list with any other devices that are connected to the Videohub.

If the Blackmagic Videohub Hardware Panel Setup does not find a Videohub control panel at the specified address, you can use the Utility to manually add a Videohub control panel when connected via Ethernet or USB.

Load/Save Settings

You can apply settings from an already configured Videohub control panel to other units. Once you have set up your Videohub Control Panel's settings, choose File>Save Settings. This is useful if you want to set up several units the same way, or keep a back up of your settings. After loading pre-configured settings on another control panel, you only need to update network settings, including the control panel name.

Configuring Videohub Master Control

Videohub Hardware Panel Setup software lets you customize the hardware features of each Videohub control panel.

Backlight

Adjust the backlight slider as desired to vary the brightness of all backlit buttons.

Creating Button Labels

15 of the buttons can be labeled within the control utility to provide fast selection of common equipment types such as cameras, VTRs and monitors. If you haven't done so already, you should standardize the port labels on your Videohub router before labeling any buttons on your Videohub control unit.

Please refer to the Videohub Manual for detailed information on customizing your labels.

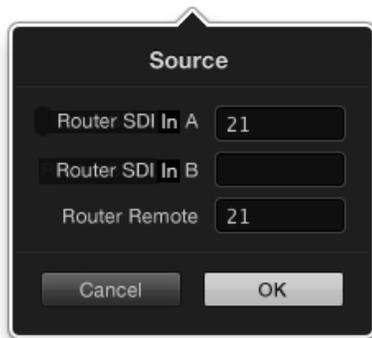
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Click on the desired button to edit its label.



Blackmagic Videohub Smart Control configured with multiple destinations.



Enter the number of the Videohub port to which the SDI device is connected.

You are now ready to label the Videohub Master Control buttons.

- Step 1.** Launch the Videohub Hardware Panel Setup and select your Videohub Master Control from the Panels pane.
- Step 2.** Click one of the 15 buttons in the picture of the panel. Enter a text label so it partially matches the labels of SDI and deck control ports that you previously entered for your router.
- Step 3.** Click OK and continue labeling the other buttons as desired.
- Step 4.** You can immediately test the buttons as you program them and verify the SDI routes are valid.

You can refer to page 13 for instructions on how to label the physical pushbuttons.

Configuring Videohub Smart Control

Videohub Hardware Panel Setup lets you customize the hardware features of each Videohub control panel.

Number of Destinations

Videohub Smart Control can be configured as a Cut-Bus controller or as an XY controller. When configured as a Cut-Bus controller, every button represents an SDI source and there is only one destination. Use this configuration when dedicating a Videohub Smart Control to a single destination device such as a monitor.

When configured as an XY controller, Videohub Smart Control can work with up to 20 destinations. The source buttons will illuminate white and the destination buttons will illuminate gold. Use this configuration if you don't intend to dedicate a Videohub Smart Control unit to each destination device.

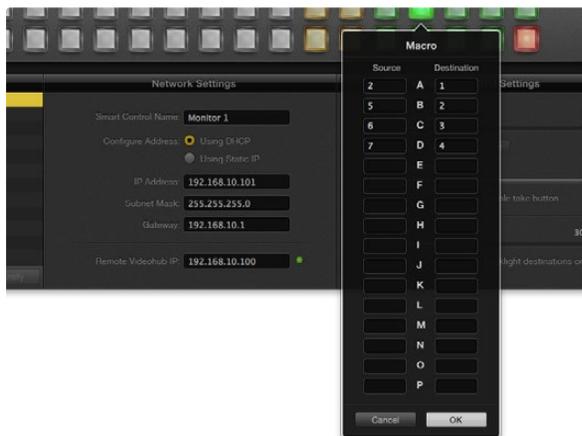
Cut-Bus Configuration

- Step 1.** Drag the Number of Destinations slider to 1.
- Step 2.** Click on the Destination button. In the Router SDI Out A field, enter the number of the Videohub output port to which the destination device is connected. If your destination device is receiving dual link HD-SDI or dual stream 3D, you will also need to enter an output port number into the Router SDI Out B field. There is a Router Remote field if your Videohub is also routing RS-422 deck control to the destination device.
- Step 3.** Click OK to confirm. All the buttons will become white, indicating that they are all sources.
- Step 4.** Click on each white button in the software interface to configure the source buttons.
- Step 5.** In the Router SDI In A field, enter the number of the Videohub input port to which the source device is connected. If your destination device is receiving dual link HD-SDI or dual stream 3D, you will also need to enter an input port number into the Router SDI In B field. There is a Router Remote field if your Videohub is also routing RS-422 deck control from the source device.
- Step 6.** Click OK to confirm.

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Click on the desired Destination button to configure it.



Up to 16 crosspoint routes can be changed by a single macro.



The Take button illuminates red in the lower right corner.

XY Controller Configuration

- Step 1.** Drag the Number of Destinations slider to the desired number.
- Step 2.** You can now configure the destination buttons by clicking on each gold button in the software interface. In the Router SDI Out A field, enter the number of the Videohub output port to which the destination device is connected. If your destination device is receiving dual link HD-SDI or dual stream 3D, you will also need to enter an output port number in to the Router SDI Out B field. There is also a Router Remote field if your Videohub is also routing RS-422 deck control to the destination device.
- Step 3.** Click OK to confirm. If you increase the number of destination buttons, there will be a matching decrease in the number of available source buttons.
- Step 4.** Click on each white button in the software interface to configure the source buttons.
- Step 5.** In the Router SDI In A field, enter the number of the Videohub input port to which the source device is connected. If your destination device is receiving dual link HD-SDI or dual stream 3D, you will also need to enter an input port number into the Router SDI In B field. There is also a Router Remote field if your Videohub is also routing RS-422 deck control from the source device.
- Step 6.** Click OK to confirm.

Number of Macros

Macros allow you to make up to 16 crosspoint routing changes simultaneously with a single button press.

- Step 1.** Drag the Number of Macros slider to enable up to 10 macro buttons. As you increase the number of macro buttons, there will be a matching decrease in the number of available source buttons.
- Step 2.** Click a green macro button to reveal the corresponding Macro window and enter up to 16 pairs of sources and destinations.
- Step 3.** When finished, click OK to save the routes and close the window.

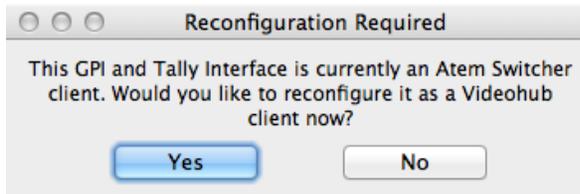
Take Button

When the Enable Take Button checkbox is active, the lower right button on the control interface turns red. Use this if you want a confirmation option to come up before your route change takes place. Press the red take button to confirm your route change. The take button can be used with both Cut-Bus and XY controller configurations and can also be used with macros.

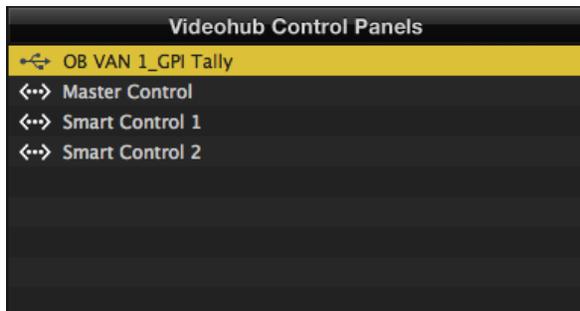
Backlight

Adjust the backlight slider to vary the brightness of the backlit buttons as desired. Enable Backlight Destinations Only if you wish to disable the backlighting of the white source buttons.

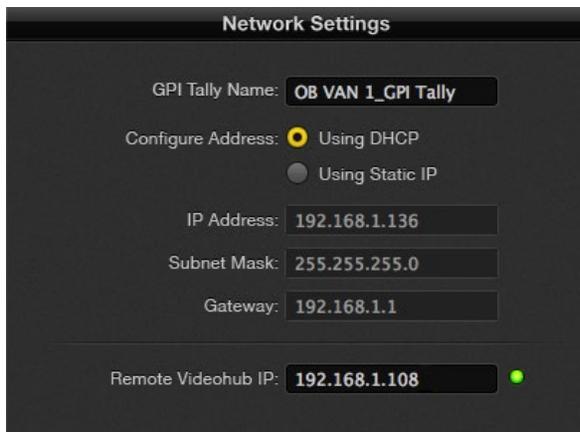
12 Getting Started



You will need to reconfigure your GPI and Tally Interface to work with Videohub.



GPI and Tally Interface connected via USB.



Enter a GPI and Tally Name and the IP address of the Videohub you want to connect to.

Setting up the GPI and Tally Interface

The GPI and Tally Interface is configured using Videohub Hardware Panel Setup software. Before you can use the GPI and Tally Interface, you may need to install the latest version of the software.

- Step 1.** Connect the power adapter to the GPI and Tally Interface.
- Step 2.** Connect the GPI and Tally Interface to your computer with a USB Type A to B cable.
- Step 3.** Open the software and it will detect whether your GPI and Tally Interface has been configured for a Videohub before. If it has the software will open without any need for changes. Otherwise a message will tell you your GPI and Tally Interface has been configured for use with an ATEM Switcher and will need to be reconfigured for use with Videohub. Click Yes. After a few moments the GPI and Tally Interface will be reconfigured as a Videohub client.

Configuring the GPI and Tally Interface

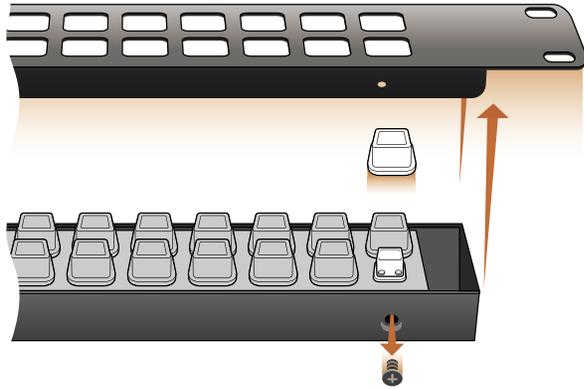
If your Videohub does not have an ethernet port, or if it is only accessible over a network:

- Step 1.** Connect a USB type A to B cable from your GPI and Tally Interface to your computer.
- Step 2.** Connect an ethernet cable from the ethernet IN port on your GPI and Tally Interface to your ethernet switcher.
- Step 3.** Open the Videohub Hardware Panel Setup.
- Step 4.** You should see your GPI and Tally Interface with a USB icon next to it in the Videohub Control Panels pane. Give your GPI and Tally Interface a unique name so it can be easily recognized. To do so, click inside the GPI and Tally Name field and type a name.
- Step 5.** Check the option to configure your IP address either Using DHCP or a Static IP. Depending on your setup, you may choose either so it's probably a good idea to check with your network administrator to see which is the better option.
- Step 6.** In the Remote Videohub IP field, enter the IP address of the Videohub you want to connect to. A red light next to the field will turn green and the LED on the GPI and Tally interface will illuminate when a connection has been established.

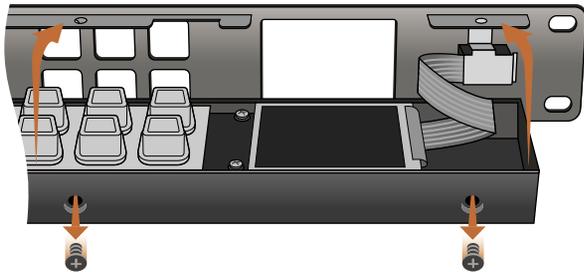
If you do not know the IP address of your Videohub:

- Step 1.** Connect the Videohub to your computer via USB.
- Step 2.** Launch the Videohub software and click on Videohub Server Preferences.
- Step 3.** Note down the IP address in the Remote Videohub IP address field.

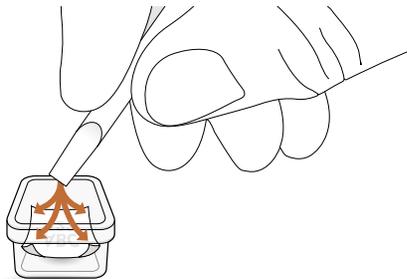
13 Getting Started



For Videohub Smart Control and Smart Videohub, remove the 8 screws, lift off the face plate and then the button caps.



For Videohub Master Control, remove the 8 screws, lift off the face plate and carefully allow the face plate to lie down next to the rest of the unit. Then remove the button caps.



Lightly press the four corners of the square label into the rounded corners of the clear cap.

Labeling Pushbuttons

Videohub Master Control and Videohub Smart Control have removable face plates, which provide access to the pushbuttons for labeling.

Included with the software installer is a Videohub Control Labels folder containing both PDF and Adobe Illustrator template files. You can print and use either of these files for labeling the buttons. The Illustrator file contains text boxes so you can add your text labels before printing them out. If you don't have Adobe Illustrator, you can just fill out and print the PDF file labels. Then cut out the square labels so they are ready to be inserted into the buttons.

To remove the face plate:

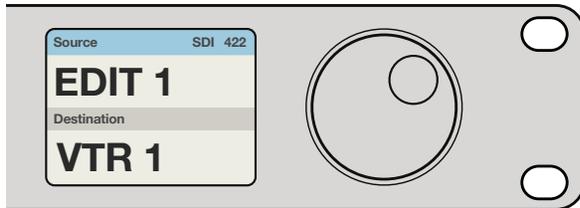
- Step 1.** Power off the unit, disconnect all cables and lay it flat with the buttons facing upwards.
- Step 2.** Using a No. 2 Phillips head screwdriver, remove the 8 screws found on the top and bottom sides of the faceplate.
- Step 3.** Gently lift the face plate off the unit. If you have a Videohub Master Control, take care not to pull on the data cable that connects the scroll wheel to the rest of the unit.
- Step 4.** The button caps can be easily lifted off with your fingers. Remove the clear cap from a button that you wish to label, while taking care to avoid lifting the silicon button membrane.
- Step 5.** Loosely place the printed label into the upturned clear cap.
- Step 6.** Use a pointy device, such as the tip of a screwdriver, to lightly press the four corners of the square paper label into the four rounded corners of the clear cap.
- Step 7.** Reinstall the clear cap containing the printed label. As the clear cap is pressed down onto its silicon button, the paper label will be pushed forward, and neatly held flat against the window of the clear cap. Repeat for as many buttons as you wish to label.
- Step 8.** Lower the face plate back into position, making sure the Blackmagic Design logo is the correct way up. If you have a Videohub Master Control, make sure the data cable tucks neatly into place.
- Step 9.** Reinstall the eight screws.

Congratulations! Your Videohub control unit is now ready to use!

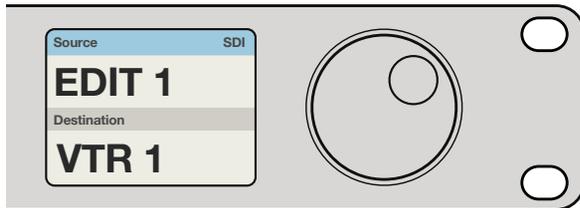
14 Using Videohub Master Control



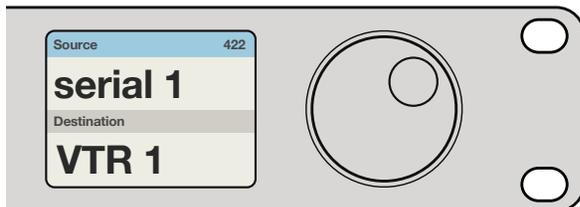
Front panel showing a new source has been selected.



Choose the SDI 422 routing level if you only want to see SDI video equipment with RS-422 deck control. In this example, the capture card (Edit 1) and the deck (VTR 1) are listed because they both have SDI and RS-422 ports.



Choose the SDI routing level if you want to see all SDI video equipment. In this example, the capture card (Edit 1) and the deck (VTR 1) are listed because they both have SDI ports.



Choose the 422 routing level if you want to see all equipment with RS-422 remote deck control, including equipment with mismatched labels and also remote controllers. In this example, the capture card (Edit 1) has a mismatched label for its remote port (serial 1) and is only listed when the routing level is set to 422.

About Routing Levels

If your Videohub does not feature RS-422 remote deck control, Videohub Master Control will always show "SDI" on its LCD and you don't need to read anything more about routing levels.

If your Videohub does include RS-422 remote deck control ports, you can use the LEVEL button on Videohub Master Control to reduce the list of sources and destinations by routing level.

Start by pressing the DEST button. Now press the LEVEL button to cycle through the routing levels:

SDI 422 - Choose this routing level to reduce the list of video equipment to devices with matching labels for their remote and SDI ports. This level is commonly used with SDI capture cards and VTR decks but cannot be used with cameras and monitors as they do not have RS-422 remote ports.

SDI - Lists all SDI sources and destinations. Choose this routing level if you want to see all SDI video equipment, i.e., cameras, monitors, capture cards and VTR decks, regardless of RS-422 connections.

422 - Choose this routing level if you want to reduce the list of video equipment to all devices with RS-422 deck control. This will list sources and destinations by the names of their RS-422 remote ports, regardless of whether there are any associated SDI ports and regardless of whether any associated SDI ports have matching labels or not. This level is commonly used with SDI capture cards and VTR decks but also lists remote control panels and servers used to control decks.

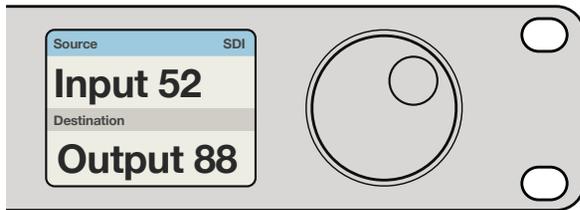
How to Select Sources and Destinations

Videohub Master Control provides several ways to select and switch your destinations and sources quickly, depending upon whether you have customized the port labels on your Videohub router or if you just want to enter port numbers directly.

Videohub Master Control works in the same conceptual way as any other router control. These are the basic steps you will take, regardless of your method for selecting devices.

- Step 1.** Press the DEST button to display a destination on the LCD. Use the pushbuttons and/or the scroll wheel to find the desired destination.
- Step 2.** Press SRC and use the buttons and/or the scroll wheel to change the source connected to the destination.
- Step 3.** Press TAKE to confirm the route change.

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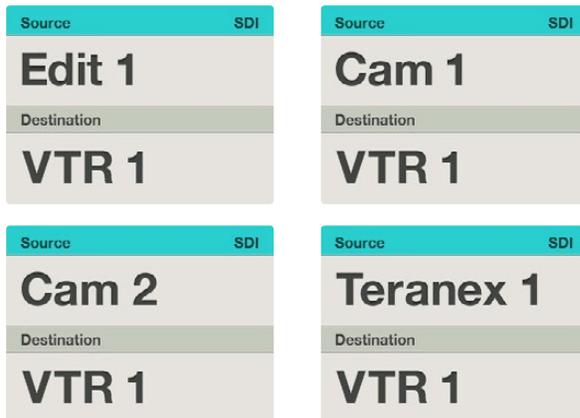


If you've chosen to keep the default labels for all Videohub SDI and remote ports, you can simply type the port numbers to make a routing change. In this example, press DEST and then type the port number 88. Then press SRC and type the port number 52. Press TAKE to confirm the route change.

How to select devices by typing the Videohub port numbers

If you've chosen to keep the default labels for all Videohub SDI and remote ports, you can simply type the port numbers to make a routing change. This method is fast but requires that you remember port numbers or have devised a system for knowing what equipment is connected to each Videohub port.

- Step 1.** Press the DEST button. The destination field will be highlighted blue on the LCD.
- Step 2.** If your Videohub router has RS-422 remote control, press the LEVEL button until you have set the appropriate routing level for your equipment. Otherwise you can skip this step.
- Step 3.** Type in the destination port number using the numeric pushbuttons. Each button will flash gold once as you press it. The destination will be displayed on the LCD. If you make a mistake, press the white CLEAR button and retype the port number.
- Step 4.** Press the SRC button. The source field will be highlighted blue on the LCD.
- Step 5.** Type in the source port number using the numeric pushbuttons. Each button will flash white once as you press it. The source will be displayed on the LCD. If you make a mistake, press the white CLEAR button and retype the port number.
- Step 6.** The TAKE button will flash red, awaiting your confirmation of the route change. Press TAKE and the route will change immediately. Otherwise, press CLEAR and no route change will take place. Videohub Master Control returns to its idle state with the latest route displayed on the LCD.



In this example, the scroll wheel is being used to list all sources that can be routed to the destination VTR 1, based upon the SDI routing level. When the scroll wheel is rotated, the names of source equipment are progressively displayed to make it very easy to find the desired video source.

How to select devices with the scroll wheel

Regardless of whether or not you've customized the Videohub port labels, you can always use the scroll wheel to browse through a list of sources and destinations. This is the slowest method but is useful if you want to see the list of all available equipment and ports.

- Step 1.** Press the DEST button. The destination field will be highlighted blue on the LCD.
- Step 2.** If your Videohub router has RS-422 remote control, press the LEVEL button until you have set the appropriate routing level for your equipment. Otherwise you can skip this step.
- Step 3.** Scroll the wheel forwards or backwards until the desired destination is found. The destination will be displayed on the LCD.
- Step 4.** Press the SRC button so it lights white. The source field will be highlighted blue on the LCD.
- Step 5.** Scroll the wheel until the desired source is found. The source will be displayed on the LCD.
- Step 6.** The TAKE button will flash red, awaiting your confirmation of the route change. Press TAKE and the route will change immediately. Or press CLEAR and no route change will take place. Videohub Master Control returns to its idle state with the latest route displayed on the LCD.

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In this example, a customized Cam button has been selected so only cameras will be listed as sources, on the LCD, when the scroll wheel is rotated. This provides a fast way to find a video source because you only have to scroll through a short list of equipment.

How to select devices using the customizable buttons and scroll wheel

If you have customized the Videohub port labels, you can use the customizable buttons and scroll wheel together to find a short list of sources and destinations. This method is fast and intuitive because you only have to scroll through a short list of equipment and you don't have to remember any port numbers. This method is very helpful if you label types of equipment together by name, e.g., VTR, Cam and Mon.

- Step 1.** Press the DEST button. The destination field will be highlighted blue on the LCD.
- Step 2.** If your Videohub router has RS-422 remote control, press the LEVEL button until you have set the appropriate routing level for your equipment. Otherwise you can skip this step.
- Step 3.** Press a button you have customized for a type of destination equipment, e.g., VTR. The button should light up gold.
- Step 4.** Scroll the wheel forwards or backwards until the desired destination is found. In this example, the destination VTR will be displayed on the LCD. If you make a mistake, press the white CLEAR button and scroll until the correct destination is displayed.
- Step 5.** Press the SRC button. The source field will be highlighted blue on the LCD.
- Step 6.** Press a button you have customized for a type of source equipment, e.g., a capture card. The button should light up white.
- Step 7.** Scroll the wheel forwards or backwards until the desired source is found. In this example, the source capture card will be displayed on the LCD. If you make a mistake, press the white CLEAR button and scroll until the correct destination is displayed.
- Step 8.** The TAKE button will flash red, awaiting your confirmation of the route change. Press TAKE and the route will change immediately. Otherwise, press CLEAR and no route change will take place. Videohub Master Control will then return to its idle state with the latest route displayed on the LCD.

If any button you have customized for either a source or destination flashes but does not stay lit, Videohub Master Control is preventing you from selecting the button because the equipment type has not been labeled as a source or destination device or does not match the current routing level. For example, cameras should not usually be set as destination devices, monitors should not be set as source devices and won't match the RS-422 routing level. Refer back to Creating Button Labels in Setting Up Videohub Master Control for steps on how to change this.

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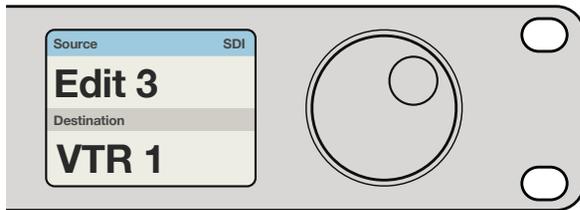
In this example, the numeric button "3" has been selected so only video sources with a "3" in their label will be listed, on the LCD, when the scroll wheel is rotated. This provides a fast way to find a video source because you only have to scroll through a short list of equipment based upon a group number, e.g. only list the equipment in Studio 3.

How to select devices using the numeric buttons and scroll wheel

If you have customized the Videohub port labels with numbers, you can use the numeric buttons and scroll wheel together to find a short list of sources and destinations. This method is fast and intuitive because you only have to scroll through a short list of equipment and you don't have to remember any port numbers. This method is very helpful if you label groups of equipment together by numbers, perhaps to represent locations. For example, all the equipment in Studio 3 could be labeled VTR3, Edit 3, Cam 3A, Cam 3B, Mon 3A and Mon 3B etc.

- Step 1.** Press the DEST button. The destination field will be highlighted blue on the LCD.
- Step 2.** If your Videohub router has RS-422 remote control, press the LEVEL button until you have set the appropriate routing level for your equipment. Otherwise you can skip this step.
- Step 3.** Using the numeric pushbuttons, type the destination number, e.g., 3 for Studio 3. Each numeric button will flash gold as you press it.
- Step 4.** Scroll the wheel forwards or backwards until the desired destination is found. In this example, any of VTR 3, Edit 3, Mon 3A or Mon 3B could be displayed on the LCD. If you make a mistake, press the white CLEAR button and scroll until the correct destination is displayed.
- Step 5.** Press the SRC button. The source field will be highlighted blue on the LCD.
- Step 6.** Using the numeric pushbuttons, type the source number, e.g., 3 for Studio 3. Each numeric button will flash white as you press it.
- Step 7.** Scroll the wheel forwards or backwards until the desired source is found. In this example, any of VTR 3, Edit 3, Cam 3A or Cam 3B could be displayed on the LCD. If you make a mistake, press the white CLEAR button and scroll until the correct destination is displayed.
- Step 8.** The TAKE button will flash red, awaiting your confirmation of the route change. Press TAKE and the route will change immediately. Otherwise, press CLEAR and no route change will take place. Videohub Master Control will then return to its idle state with the latest route displayed on the LCD.

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If you know that you want Edit 3 as the source, and VTR 1 as the destination, you can select the route directly without any scrolling being necessary. In this example, press DEST, press the customized VTR button and then press 1. VTR 1 will be shown in the destination field. Now press SRC, press the customized Edit button and then press 3. "Edit 3" will be shown in the source field. Finally, press TAKE to confirm the route change.

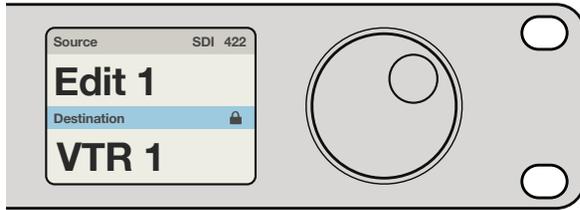
How to select devices using the customizable and numeric buttons together

If you have customized the Videohub port labels with names and numbers, you can use the customizable buttons and numeric buttons together to directly select sources and destinations. This method is very fast and intuitive because you don't have to scroll through a list of equipment and you only have to remember how many of each type of equipment you have, e.g., two VTRs and four monitors. This method is very helpful if you label types of equipment by name and number, e.g., VTR 01, VTR 02, Cam 01, Cam 02, Cam 03, Mon 01, Mon 02, Mon 03 and Mon 04.

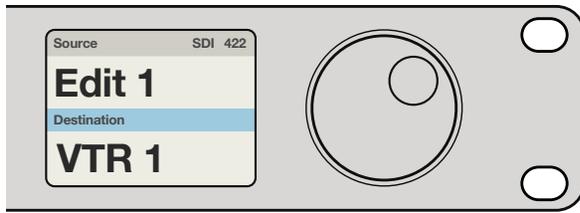
- Step 1.** Press the DEST button. The destination field will be highlighted blue on the LCD.
- Step 2.** If your Videohub router has RS-422 remote control, press the LEVEL button until you have set the appropriate routing level for your equipment. Otherwise you can skip this step.
- Step 3.** Press a button you have customized for a type of destination equipment, e.g., VTR. The button should light gold.
- Step 4.** Type in the destination equipment number using the numeric pushbuttons, e.g., 07 for VTR 07. Each numeric button will flash gold as you press it.
- Step 5.** Press the SRC button. The source field will be highlighted blue on the LCD.
- Step 6.** Press a button you have customized for a type of source equipment, e.g., a capture card. The button should light white.
- Step 7.** Type in the source equipment number using the numeric pushbuttons, e.g., 03 for the capture card Edit 03. Each numeric button will flash white as you press it.
- Step 8.** The TAKE button will flash red, awaiting your confirmation of the route change. Press TAKE and the route will change immediately. Otherwise, press CLEAR and no route change will take place. Videohub Master Control will then return to its idle state with the latest route displayed on the LCD.

If any button you have customized for either a source or destination flashes but does not stay lit, Videohub Master Control is preventing you from selecting the button because the equipment type has not been labeled as a source or destination device or does not match the current routing level. For example, cameras should not usually be set as destination devices, monitors should not be set as source devices and won't match the RS-422 routing level. Refer back to Creating Button Labels in Setting Up Videohub Master Control for steps on how to change this.

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The destination field shows a lock icon if the destination is locked.



The lock icon disappears from the destination field when the destination is unlocked.

Locking and Unlocking Routes

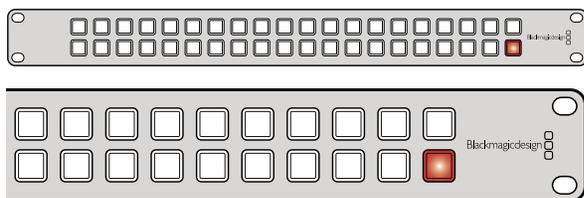
Videohub Master Control can lock and unlock any route on your Videohub. In contrast to Videohub Smart Control, Videohub Master Control can also unlock any destinations locked by other people using their computer, iPad or Videohub Smart Control.

To lock a destination using Videohub Master Control:

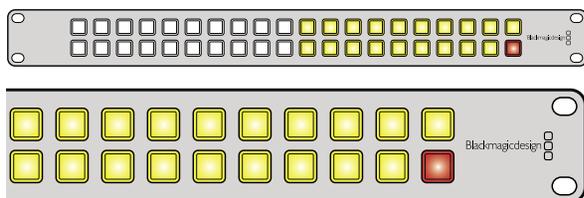
- Step 1.** Set the destination and source using whichever method you prefer. Once the route has been set, Videohub Master Control will return to its idle state.
- Step 2.** Press the DEST button. The destination field will be highlighted blue on the LCD.
- Step 3.** If the desired route is not already displayed on the LCD, use the pushbuttons and/or scroll wheel to find the destination to be locked.
- Step 4.** Press and hold the gold DEST button until a lock icon appears in the destination field of the LCD.
- Step 5.** Press DEST again to return Videohub Master Control to its idle state and the destination field will revert to gray.

To unlock a destination using Videohub Master Control:

- Step 1.** Press the DEST button. The destination field will be highlighted blue on the LCD.
- Step 2.** If the desired route is not already displayed on the LCD, use the pushbuttons and/or scroll wheel to find the destination to be unlocked. The destination field will show a lock icon for the locked destination.
- Step 3.** Press and hold the gold DEST button until the lock icon disappears from the destination field of the LCD.
- Step 4.** Press DEST again to return Videohub Master Control to its idle state and the destination field will revert to gray.



Videohub Smart Control configured as a Cut-Bus controller and with a Take button.



Videohub Smart Control configured as an XY controller and with a Take button.

Using Videohub Smart Control as a Cut-Bus Controller

If Videohub Smart Control has been configured as a Cut-Bus controller, the destination device has already been chosen and you only need to choose a video source.

- Step 1.** Select a white video source button. The button will light up to distinguish it from the other sources. The video source will immediately connect and be viewable on the destination device.
- Step 2.** If the Take button has been enabled, the new source button and the Take button will flash. The route change will only take place when you confirm by pressing the Take button.

Using Videohub Smart Control as an XY Controller

If Videohub Smart Control has been configured as an XY controller, destination buttons light up gold and source buttons light up white. When working with multiple destinations, always select a destination button before selecting a source button.

To change routes:

- Step 1.** Select a gold destination button and it will light up brightly to distinguish itself from the other destination buttons. If a video source has previously been connected to this destination, its button will light up white.
- Step 2.** To connect a new source to the destination, press the desired video source button. The video source will immediately be connected and viewable on the destination device. The new source button will be brightly lit and the previous source button will dim to normal. To change another route, select another destination button and then select a new source button.
- Step 3.** If the Take button has been enabled, the new source button and the Take button will flash. The route change will only take place when you confirm by pressing the Take button.

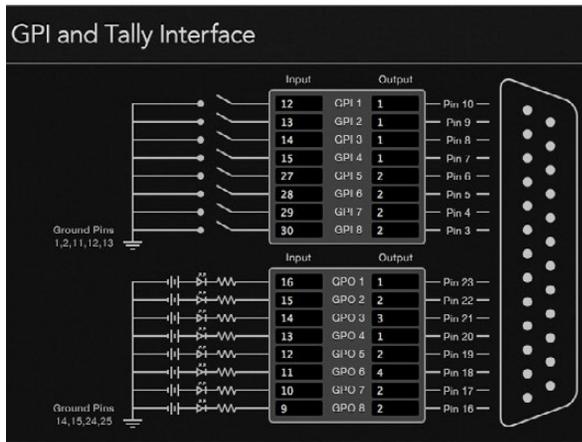
Locking and Unlocking Routes

To lock a destination, press and hold the desired destination button until it turns blue. The corresponding source button will illuminate. If you attempt to change sources for a locked destination, the destination button will flash blue. To unlock a destination, press and hold the button until it returns to the standard gold color.

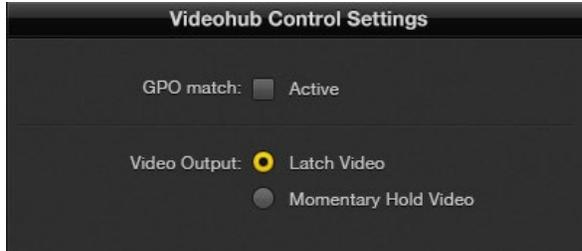
Using Macros

If you press a green macro button, it will simultaneously make the crosspoint changes you have previously configured in the Videohub Hardware Panel Setup software. Each button can be configured with up to 16 crosspoint routes. If you have the Take button enabled, the simultaneous change of routes will only take place when you confirm by pressing the Take button. If for any reason the macro cannot be performed, the button will flash.

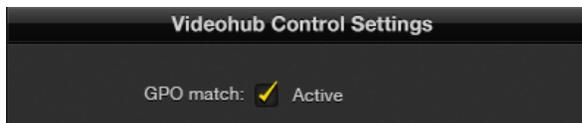
21 Using GPI and Tally Interface



Click inside the diagram to change inputs and outputs for GPI crosspoint switching and Tally.



Select Latch Video if you want your preview to hold until another crosspoint is selected. Choose Momentary Hold Video if you want your preview to revert back to the previous crosspoint when you release the control switch.



Enable the GPO match checkbox to replicate the crosspoint configuration of your GPIs.

Configuring GPIs

The GPI and Tally Interface has 8 GPIs that provide crosspoint switching. In the example on the left, if GPI 1 detects a contact closure it will switch Input 12 on your Videohub to Output 1. This means when you switch the joystick control on your CCU, video going to Input 12 of your Videohub will be previewed on your monitor.

The crosspoints can be configured in Videohub Hardware Panel Setup simply by clicking inside the Input and Output fields on the diagram and typing in the Input or Output number.

The Videohub Control Settings pane offers two ways to preview the output from your Videohub.

Latch Video

If you want the output to stay as selected, choose Latch Video. This means you can press the switch once on your CCU and the input from the selected crosspoint will stay on your monitor until another crosspoint is selected.

Momentary Hold Video

Select this option if you want the output to return to the previous input after you let go of the switch or joystick control on your CCU. For example, when you press and hold your switch, Input 13 might be previewed, but will return to displaying Input 12 on your monitor once you release the switch.

Configuring Tally

Tally is usually a lamp on the front of a camera to indicate that it is on air, but its a useful visual indicator and can be used on any equipment to indicate activity and doesn't have to be used specifically with cameras.

The GPI and Tally Interface has 8 configurable GPOs, which send a tally signal to your cameras or other devices under certain crosspoint conditions. In the example on the left, GPO 1 is configured so that when Input 16 on the Videohub is routed to Output 1, GPO 1 will be activated.

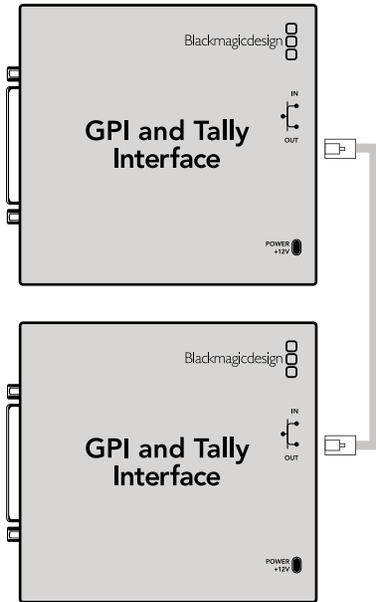
The crosspoints can be configured in Videohub Hardware Panel Setup simply by clicking inside the Input and Output fields on the diagram.

GPO Match

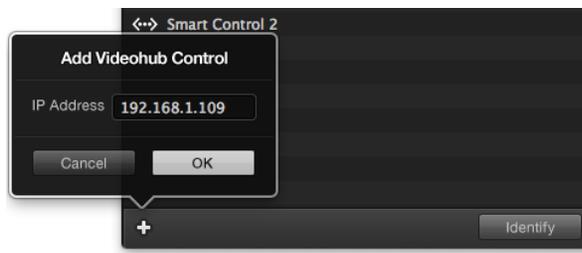
Enable the GPO match checkbox to replicate the configuration of your crosspoints from GPIs to GPOs. This can be useful if you want to see a tally light activate when changing routes for your GPIs.

When this checkbox is enabled, the GPO half of the diagram will be grayed out and cannot be edited until the GPO match checkbox is disabled.

22 Using GPI and Tally Interface



Daisy chain multiple GPI and Tally Interfaces using ethernet. Power must be supplied to each individual unit in the chain.



Press the + (add device) button and enter the IP address of a GPI and Tally Device you want to add. Press the Identify button to activate the LED on a selected GPI and Tally Interface.

Daisy Chaining Multiple GPI and Tally Interfaces

The GPI and Tally Interface supports 8 GPIs and 8 GPOs at a time, which should be enough for most live television situations. However, if you have more than 8 cameras then you may want to daisy chain a second or third GPI and Tally Interface.

The GPI and Tally Interface has two ethernet ports so that you can connect one port to a Videohub and use the other port to link other GPI and Tally Interfaces together.

- Step 1.** Connect power to the first GPI and Tally Interface.
- Step 2.** Connect a standard RJ45 ethernet cable from your Videohub or network to the ethernet IN port on the GPI and Tally Interface.
- Step 3.** Connect power to the second GPI and Tally Interface.
- Step 4.** Connect a standard RJ45 ethernet cable from the ethernet OUT of the first GPI and Tally Interface to the ethernet IN port on the second GPI and Tally Interface.

This can be repeated for as many GPI and Tally Interfaces as you need as long as power is supplied to all units in the chain.

Sometimes it can get confusing to know which GPI and Tally Interface you are working with when you have several connected. Select the GPI and Tally Interface in the Videohub Control Panels pane and click the Identify button. The LED next to the ethernet IN port on the selected device will light up.

Adding a GPI and Tally Interface Over a Network

You may want to configure a second GPI and Tally Interface but it may be in another location and only accessible over a network. You can add it to your list manually by entering its IP address into Videohub Hardware Panel Setup.

If you do not know the IP address of the GPI and Tally Interface you want to add, connect it to a computer with USB, open Videohub Hardware Panel Setup and note down the IP address in the Network Settings tab.

If you do not have access to the unit because it is in another location, you can find it on the network using the Bonjour browser. This application will show you all the devices on your network and will give you the IP address of the GPI and Tally Interface you wish to add.

- Step 1.** Press the + (add device) button at the bottom of the Videohub Control Panels pane.
- Step 2.** Type in the IP address of the GPI and Tally Interface and press OK.
- Step 3.** The second GPI and Tally Interface will appear in the list with any other devices that are connected to the Videohub.

Getting Help

The fastest way to obtain help is to go to the Blackmagic Design online support pages and check the latest support material available for your Blackmagic Design Videohub Control.

Blackmagic Design online support pages

The latest manual, software and support notes can be found at the Blackmagic Design support center at www.blackmagicdesign.com/support.

Contacting Blackmagic Design support

If you can't find the help you need in our support material, please use the "Send us an email" button to email a support request. Alternatively, click on the "Find your local support team" button and call your nearest Blackmagic Design support office.

Checking the version currently installed

To check which version of Videohub Control is installed on your computer, open the Blackmagic Videohub application. From the "Blackmagic Videohub" menu, select "About Videohub" and note the version number.

How to get the latest updates

After checking the version of your Videohub Control on your computer, please visit the Blackmagic Design support center at www.blackmagicdesign.com/support to check for the latest updates. While it is usually a good idea to run the latest updates, it is a wise practice to avoid updating any software if you are in the middle of an important project.

Limited Warranty

Blackmagic Design warrants that Videohub routers will be free from defects in materials and workmanship for a period of 36 months from the date of purchase excluding connectors, cables, cooling fans, fiber optic modules, fuses, keyboards and batteries which will be free from defects in materials and workmanship for a period of 12 months from the date of purchase. Blackmagic Design warrants that Videohub Master Control and Videohub Smart Control will be free from defects in materials and workmanship for a period of 12 months from the date of purchase. If a product proves to be defective during this warranty period, Blackmagic Design, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, you the Customer, must notify Blackmagic Design of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by Blackmagic Design, with shipping charges pre paid. Customer shall be responsible for paying all shipping charges, insurance, duties, taxes, and any other charges for products returned to us for any reason.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Blackmagic Design shall not be obligated to furnish service under this warranty: a) to repair damage resulting from attempts by personnel other than Blackmagic Design representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non Blackmagic Design parts or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product. THIS WARRANTY IS GIVEN BY BLACKMAGIC DESIGN IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. BLACKMAGIC DESIGN AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BLACKMAGIC DESIGN'S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE WHOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER BLACKMAGIC DESIGN OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. BLACKMAGIC DESIGN IS NOT LIABLE FOR ANY ILLEGAL USE OF EQUIPMENT BY CUSTOMER. BLACKMAGIC IS NOT LIABLE FOR ANY DAMAGES RESULTING FROM USE OF THIS PRODUCT. USER OPERATES THIS PRODUCT AT OWN RISK.

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