



Models:

SC42PHU-4 – 4 to 2 secure DP\HDMI to HDMI secure KVM combiner with DPP and analog audio

SC82PH-4 – 8 to 2 DP\HDMI to DP\HDMI secure KVM combiner

SC162PH-4 – 16 to 2 DP\HDMI to DP\HDMI secure KVM combiner

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INTRODUCTION

HSL Secured KVM Combiner

HSL's secure KVM Combiner enables you to view and interact with multiple computers presented on the same display at the same time, using a single set of keyboard, video, mouse, USB, and audio, peripherals.

HSL's KVM Combiner is the only product in the world combining a scaler, multi-viewer, KVM switch, and videowall controller. In one product.

The KVM Combiner switch offered by HSL, provides increased productivity in a challenging multi-computer environment, where users are required to view and interact with several computers at the same time, while maintaining the highest isolation between computers and peripherals.

This User Manual shows you how to install, configure, and operate a HSL KVM Combiner.



SC42PHU-4



SC82PH-4



SC162PH-4

INTRODUCTION

Secured KVM Combiner Main Features

- **Secured by design**
HSL KVM Combiners are designed to meet security requirements demanded by government agencies and military customers.
- **NIAP Compliance**
HSL KVM Combiners are compliant with the latest NIAP protection profile for PSD 4.0
- **Share peripherals across different security domains**
Share peripherals between computers that belong to different security levels, while keeping the highest possible data classification separation security.
- **Prevent information leaks**
Obstacle threats derived from sharing and switching of vulnerable, untrusted, or unauthorized peripheral devices. Block peripheral exploits, information leaks, eavesdropping, signal transmissions, computer malware; hardware and firmware tampering, by enforcing multi-layered security mechanisms.
- **View and control multiple computers simultaneously**
Present and work with up to 16 computers at the same time. Cascade Combiners to view and control up to 256 (16x16) computers on a single or dual display.
- **Universal connectors to support both DP and HDMI sources**
Using unique dual-footprint connectors, HSL's KVM Combiners can support both HDMI 1.4 and DP 1.2 sources, natively.
- **4K support**
For high quality viewing, HSL Combiners support 4K resolution at both the source and the output.
- **Upscale and downscale built in capabilities**
Scale any source to 4K or downscale any source from 4K to lower resolutions. Seamless support of different resolutions on the same display through the HSL smart scaler.
- **Seamless mouse switching**
Switch the mouse and keyboard between different sources easily, by dragging the mouse from channel to channel. The mouse can only be switched to channels that are on display, making it an ideal solution for a control room.
- **Touch screen support**
Natively support touch screen on all displays and sources through the mouse and keyboard ports.
- **Filter USB Peripherals (In 4-port only)**
Block unauthorized USB devices while allowing secure switching of smart card and biometric authentication devices between computers. Whitelist and blacklist specific USB devices based on VID/PID characteristics.

INTRODUCTION

Before Installation

Unpacking the Product

- Before opening the product's sealed packaging, inspect the seal's condition to assure that the product was not accessed or tampered with during delivery. If the packaging seal looks suspicious contact the HSL support team and do not use the product.
- After seal removal, inspect the packaging content to verify that the required components are included. See the packaging content list on page 5 above.
- After the KVM Combiner Switch is removed from its packaging materials, carefully inspect the tamper-evident label to assure that product is properly sealed. If the label is damaged or missing, contact HSL support and do not use the product.

Tamper-Evident Labels

- The KVM Combiner Switch uses a holographic tamper-evident label to provide visual indications in case of enclosure intrusion attempts. These labels indicate white dots or the text "VOID", once removed. When opening the product's packaging, inspect the tampering evident label.
- If for any reason, one or more tamper-evident labels are missing, appear disrupted, or look different than the example shown here, please call HSL Technical Support and avoid using that product.



HSL Holographic Tamper-Evident Label

INTRODUCTION

KVM Specifications

Part Number	SC42PHU-4	SC82PH-4	SC162PH-4
No. of Sources	4	8	16
Console Ports			
Displays	2 x HDMI	2 x DP / HDMI	2 x DP / HDMI
Max Output Resolution	Supporting UHD 4K resolutions up to 3840x2160	Supporting UHD 4K resolutions up to 3840x2160	Supporting UHD 4K resolutions up to 3840x2160
Mouse and Keyboard	USB Type A	USB Type A	USB Type A
Audio Jack	3.5 mm jack	-	-
fUSB Port	USB Type A	-	-
Computer Ports			
Display Type	DP / HDMI	DP / HDMI	DP / HDMI
Max Resolution	Supporting UHD 4K resolutions Up to 3840x2160	Supporting UHD 4K resolutions	Up to 3840x2160
Mouse and Keyboard	USB Type B	USB Type B	USB Type B
Audio Jack	3.5 mm jack	-	-
fUSB Port	USB Type B	-	-
Physical			
Dimensions	342 x 148 x 42 mm	442.5 x 299.7 x 43.6 mm	442.5 x 299.7 x 77 mm
Weight	4.61 Kg	3.73Kg	7.00Kg
Power			
Power Requirements	35W Max	35W Max	35W Max
AC Input	100 to 240V AC	100 to 240V AC	100 to 240V AC
Power Type	Internal	Internal	2 x Internal (Redundant)

INTRODUCTION

Dual Connector

To assure easy and intuitive interoperability with different sources the HSL KVM Combiner includes a special type of video input connector, DP/HDMI Combined Connector.

The connector supports both HDMI and Display Port Video interfaces and Allows connecting both types of cables at a time.

DP/HDMI Connector



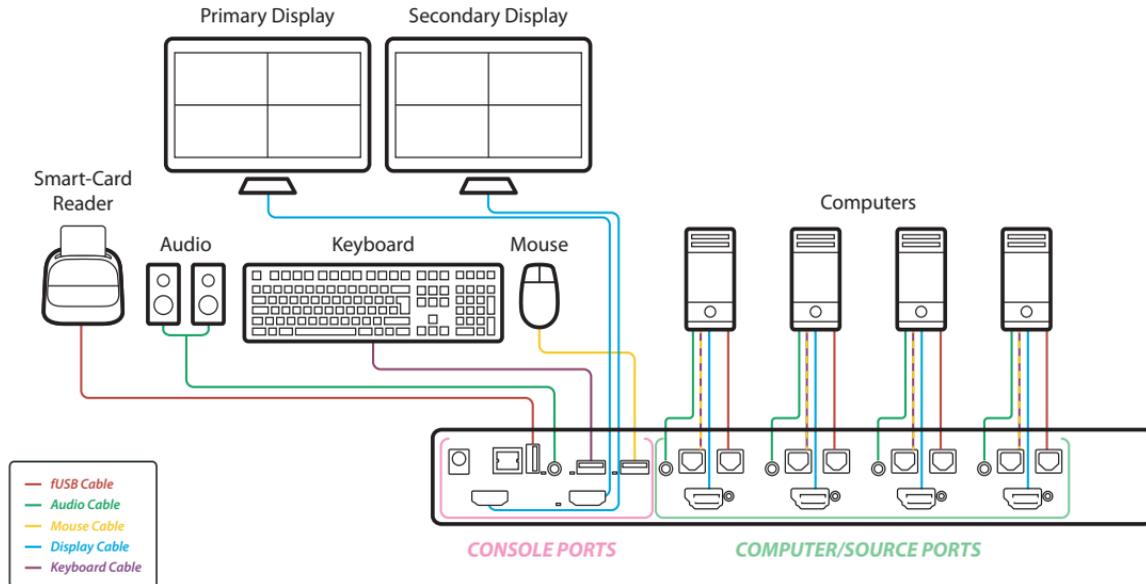
Configuration of HSL Combiner

The interface used to configure the HSL KVM Combiner is comprised of the keyboard hotkeys that can be entered by the user at any time. All the keyboard hotkeys mentioned in the manual below are based on a QWERTY keyboard. For example, to use the “**L Ctrl | L Ctrl | q**” key combination, the user needs to press the keys seen below, regardless of the keyboard used:



INSTALLATION

Cable Installation Overview



INSTALLATION

Cable Installation Overview - SC42PHU-4



Index:

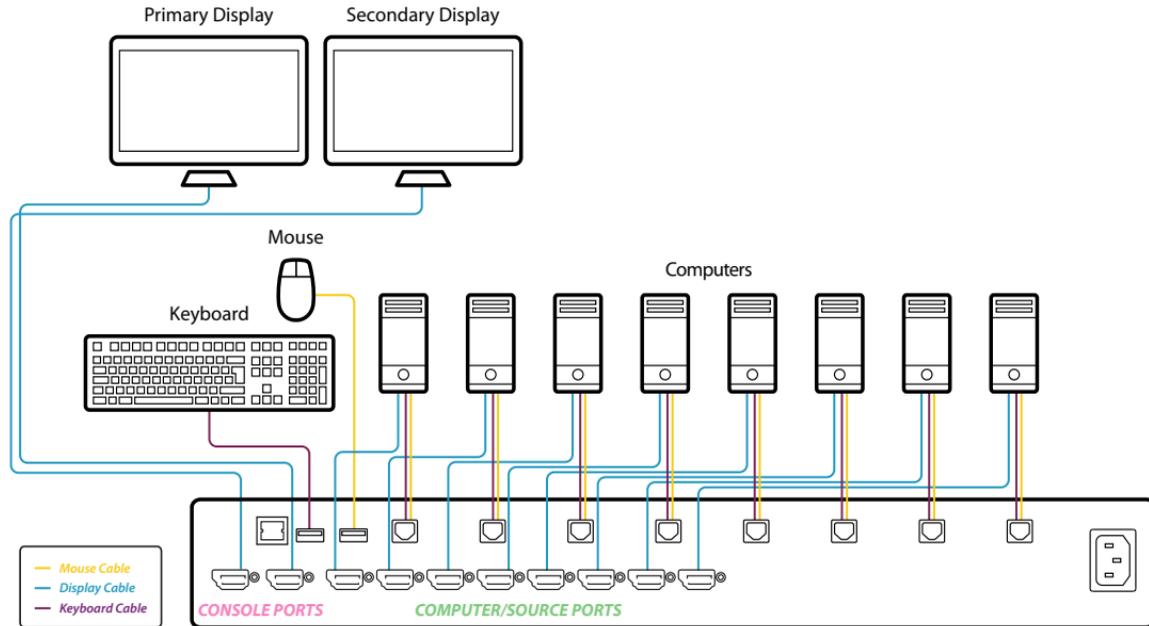
- | | | | | | |
|---|--------------------|---|----------------|----|-----------------------|
| 1 | Primary Power | 5 | DP/HDMI Inputs | 9 | fUSB Output |
| 2 | Keyboard/Mouse USB | 6 | Mouse USB | 10 | RDC Output |
| 3 | Keyboard/Mouse USB | 7 | Keyboard USB | 11 | Primary HDMI Output |
| 4 | Audio Input | 8 | Audio Output | 12 | Secondary HDMI Output |

Notes:

- Make sure all cables are connected and all computers are powered on before powering on the KVM Combiner.
- Boot time of the KVM Combiner is about 40-60 seconds.

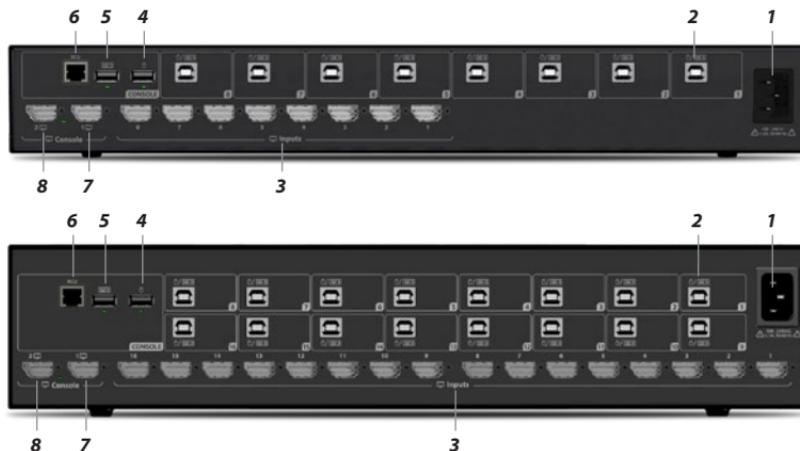
INSTALLATION

8/16-Port Combiner Cable Installation Overview



INSTALLATION

Cable Installation Overview - SC82PH-4/SC162PH-4

**Index:**

- | | | | | | |
|---|--------------------|---|----------------|---|-----------------------|
| 1 | Primary Power | 4 | Mouse USB | 7 | Primary HDMI Output |
| 2 | Keyboard/Mouse USB | 5 | Keyboard USB | 8 | Secondary HDMI Output |
| 3 | DP/HDMI Inputs | 6 | Remote Control | | |

Notes:

- Make sure all cables are connected and all computers are powered on before powering on the KVM Combiner.
- Boot time of the KVM Combiner is about 40-60 seconds.

INSTALLATION

Initial Setup

Once the HSL KVM Combiner has been initiated, it defaults to a single display at 4K 30HZ and presents all input channels in tile view.

Please note that if the display used is not supporting 4K user may get a message saying image cannot be displayed.

The first thing the user needs to configure is the output resolution. To change the output resolution, use the following key combination:

"L Ctrl | L Ctrl | F11 | d | 1-8"

Where the resolutions are:

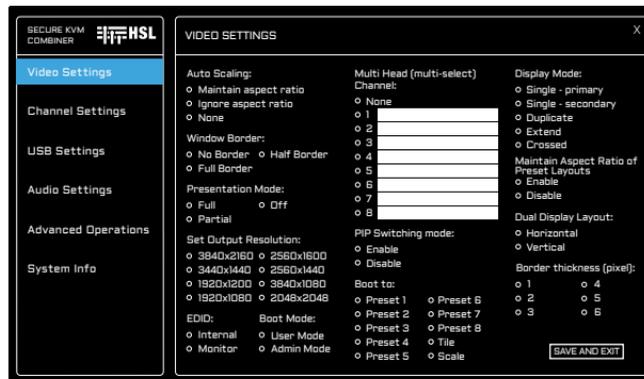
1 - 3840x2160	5 - 2560x1600
2 - 3440x1440	6 - 2560x1440
3 - 1920x1200	7 - 3840x1080
4 - 1920x1080	8 - 2048x2048

OSD

HSL's KVM Combiners are equipped with an OSD interface for easy installation and configuration.

To open OSD, use the: **"L Ctrl | R Ctrl | O"**.

OSD will be opened and will be shown on the bottom right corner of the display.



For further information please refer to the KVM Combiner OSD User Manual: <https://highseclabs.com/downloads/user-manual-kvm-combiner-on-screen-display/>

OPERATION

Basic use of the KVM Combiner

The HSL KVM Combiner enables you to view and interact with up to 16 computers simultaneously. In HSL's KVM Combiner, there is always an active channel which the keyboard and mouse are linked to. You can see the other channels but not interact with them.

User and Operator Mode

By default, the KVM boots to operator mode. This mode can be identified by the appearance of a large system cursor:



In operator mode, mouse movement controls the Combiner mouse, but keyboard strokes still go to the active channel.

To move to user mode, you can use the: "**L Ctrl | L Ctrl | u**" key combination.

To go back to operator mode the user can use the: "**L Ctrl | L Ctrl | o**" key combination.

As an alternative to the keyboard hotkeys, you can press the mouse wheel to switch between user and operator mode.

Operator mode enables you to select channels easily by using the left mouse button and switching to user mode.

Channel Select

To select a channel, use the:

"**L Ctrl | L Ctrl | 1-0 / F1-F6**" key combination.

For example, to select channel 3, use the:

"**L Ctrl | L Ctrl | 3**" key combination.

To select channel 13 (applicable in a 16-ports version only) use the:

"**L Ctrl | L Ctrl | F3**" key combination.

Once you select a channel, the keyboard is linked to that channel. This enables you to send regular keyboard commands and key strokes to the active computer.

OPERATION

Cursor Navigation (Virtual Display Technology - VDT)

With cursor navigation, you can move from one highly isolated computer system to another, by simply moving the cursor across display borders. There is no need to push any buttons. The keyboard follows the mouse as the cursor crosses display borders.

Safety Triger

In order to avoid uncontrolled switching and in compliance with the NIAP protection Profile, it is necessary to press and hold the left CTRL key when switching channel using VDT.

To enable cursor navigation, use the: "**L Ctrl | L Ctrl | F11 | C**" key combination. (to disable, use: "**L Ctrl | L Ctrl | F11 | B**").

Please note: When switching to and from cursor navigation, the mouse may become unusable for a few seconds, on initial switching.

Once using cursor navigation, you can switch easily and quickly between sources, with no need to push any buttons. The keyboard is always switched with the mouse.

OPERATION

Initial Setup Summary

Toggling Options

Once you have connected all the sources and completed the initial steps, you can start working with the Combiner. The next section explains how to switch between operation modes and operate the Combiner, using its versatile view and control options.

Important Notes:

- A complete list of toggling options is described later in this document.
- Always use the left control key (Ctrl) unless otherwise specified.
- Do not use the numeric keypad for toggling shortcuts, unless otherwise specified.
- ALL KEYBOARD SHORTCUTS REFER TO QWERTY KEYBOARDS. When using a non-qwerty keyboard, keep using the QWERTY layout. For example, on an AZERTY keyboard, where the letter A is equivalent to the location of the letter Q on a QWERTY keyboard, type { **Ctrl | Ctrl | a** } to switch to tile view.

Most useful toggling options:

#	Action Description	Keyboard	Mouse
1	Toggle between System / User modes	(system) - CTRL CTRL o (user) - CTRL CTRL u	Click the side-mouse button or mouse wheel to toggle between System / User modes.
2	Switch between Tile / Scale Views	(Tile) - CTRL CTRL q (Scale) - CTRL CTRL s	N/A
3	Enable / Disable Cursor Navigation VDT	(enable) - CTRL CTRL F11 c (disable) - CTRL CTRL F11 b	To enable cursor navigation, use the: " L Ctrl L Ctrl F11 c " key combination. (to disable, use: " L Ctrl L Ctrl F11 b ".
4	Enlarge a source to full screen	CTRL CTRL f	In System mode, full screen view: Double click any tile.
5	Go back to last layout before enlarging to full screen	CTRL CTRL z	N/A

OPERATION

Windows Resizing and View Mode

HSL's KVM Combiner gives you a lot of flexibility regarding windows positioning and different view modes. In general, any windows setup is possible! The section below explains how to increase or decrease window size, move it on the window, and choose scaling.

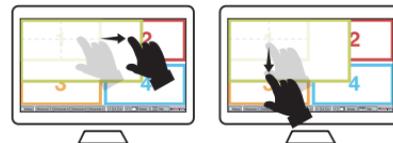


Resize a channel window:

#	Action Description	Keyboard	Mouse	Touch Screen
1	Enter System Mode	CTRL CTRL o	Click the side-mouse button to toggle between System / User modes.	In Scale view: Tap 4 times on the enlarged window. In Tile view: Touch and hold the uppermost right corner of the screen for 4 seconds.
2	Switch to Tile view	CTRL CTRL q	Click the side-mouse button to toggle between System / User modes. In System mode: Click "Tile" on the operation-taskbar.	<you should already be in Tile view>
3	Resize channel		Click to select a channel. Place the mouse cursor at the channel's lower right corner. Press and hold the right mouse button and drag the channel's screen to resize.	Tap and hold the lower right corner of a specific channel and drag to resize.
4	Fit content to newly resized channel area	CTRL CTRL w		
5	Fit content to newly resized channel area without keeping aspect ration	CTRL CTRL y		
6	Optional: Revert to Tile mode	CTRL CTRL q		

OPERATION

Resize channel window & content at the same time:



#	Action Description	Keyboard	Mouse	Touch Screen
1	Enter System Mode	CTRL CTRL o	Click the side-mouse button to toggle between System / User modes.	In Scale view: Tap 4 times on the enlarged window. In Tile view: Touch and hold the uppermost right corner of the screen for 4 seconds.
2	Switch to Tile view	CTRL CTRL q	Click the side-mouse button to toggle between System / User modes. In System mode: Click "Tile" on the operation-taskbar.	<you should already be in Tile view>
3	Resize channel & content	Select a channel CTRL CTRL Channel# (1-16) Reduce scaling CTRL CTRL "-" Increase scaling CTRL CTRL "+" Note: use the "-" and "+" keys instead of the numeric pad keys.	Click to select a channel. Press and hold the side mouse button & scroll the mouse wheel to reduce/increase scaling. For fast scaling hold the left CTRL	Tap and hold the midpoint of the vertical or horizontal channel border and drag to scale.

Note: see 'Save custom views as presets' section ahead, to save a custom screen layout.

OPERATION

Drag and Rearrange Channel Windows:



#	Action Description	Keyboard	Mouse	Touch Screen
1	Enter System Mode	CTRL CTRL o	Click the side-mouse button to toggle between System / User modes.	In Scale view: Tap 4 times on the enlarged window. In Tile view: Touch and hold the uppermost right corner of the screen for 4 seconds.
2	Switch to Tile view	CTRL CTRL q	Click the side-mouse button to toggle between System / User modes. In System mode: Click "Tile" on the operation-taskbar.	<you should already be in Tile view>
3	Drag channel window		Click to select a channel. Press and hold the left mouse button and drag the channel window.	Tap and hold the upper left corner of a channel and drag the window.

Note: to revert from the custom tile to the original tile mode, type **CTRL | CTRL | q** and then long press the "Tile" button to save.

OPERATION

Presets

It is possible to create and save user defined presets that enable you to switch quickly between different view modes. To create a preset, you can customize the display with the view you would like to see. Once ready, you can save the preset using the: "**L Ctrl | L Ctrl | F11 | Ins | Fx**" key combination. You can then continue normal work and when you want to switch back to the previous saved preset, you can use the "**Ctrl | Ctrl | Fx**" keyboard hot key.

OPERATION

Save custom views as presets:

#	Action Description	Keyboard	Mouse	Touch Screen
1	Enter System Mode	CTRL CTRL o	Click the side-mouse button to toggle between System / User modes.	In Scale view: Tap 4 times on the enlarged window. In Tile view: Touch and hold the uppermost right corner of the screen for 4 seconds.
2	Switch to Tile view	CTRL CTRL q	Click the side-mouse button to toggle between System / User modes. In System mode: Click "Tile on the operation-taskbar".	<You should already be in Tile view>
3	Rearrange channels as described in the previous steps			
4	Save a custom preset to 1/2/3 button	Ctrl Ctrl F11 ins F1-F8		
5	View custom presets	Ctrl Ctrl F1-F8	Click 1/2/3 buttons on the operation-taskbar.	

Note: To revert from the custom tile to the original tile mode, type **Ctrl | Ctrl | q** and then long press the "Tile" button to save.

OPERATION

View Mode Summary

- Once in Operator mode, you can select any channel using the mouse left button and move it anywhere on the screen.
- To change the size of a window, use the right mouse button on the bottom-right corner of a window.
- To fit the image to the newly resized window, use the: **"L Ctrl | L Ctrl | w/y"** key combination.
- To save a preset, use the: **"Ctrl | Ctrl | F11 | ins | F1-F8"** key combination.
- To load a saved preset, use the: **"Ctrl | Ctrl | F1-F8"** key combination.

S3 Command (for 16 Port only)

To close the primary screen and only show the secondary screen, use the S3 command. Enter the: **"L Ctrl | L Ctrl | F11 | S3"** key combination.

Direct Mode

It is possible to view the input channel with extra low latency – below 10ms – using the Direct Mode feature. To activate Direct Mode, use the following keyboard combinations:

For 8 Port:

- To save the channel in Direct Mode, where n = number of channels and 5...8 = channel number (5-8), enter: **"L Ctrl | L Ctrl | F11 | INS | F | n | 5...8"**
- To cancel Direct Mode in all channels, enter: **"L Ctrl | L Ctrl | F11 | INS | F | 0"**

For 16 Port:

- To save the channel in Direct Mode, where n = number of channels and F3...F6 = channel number (13-16), enter: **"L Ctrl | L Ctrl | F11 | INS | F | n | F3...F6"**
- To cancel Direct Mode in all channels, enter: **"L Ctrl | L Ctrl | F11 | INS | F | 0"**
use the keyboard shortcuts on the following pages.

OPERATION

Advanced Settings

Freeze Channel Layer

By default, the KVM Combiner displays the active channel on top of all the other channels. In some cases, you may want to change that and define a fixed layer for a specific channel or multiple channels.

The Freeze channel layer is saved by using the: "**Ctrl L | Ctrl L | F11 | F | #**" key shortcut, where # is the channel number you would like to freeze.

For example, if you want to create the configuration below (which includes picture in picture):

By default, when pressing or selecting the channel in the background (channel x), that channel moves to the front and covers channel y. Running the: "**Ctrl | Ctrl | F11 | F | Y**" command maintains channel y frozen as a top layer, regardless of which channel is selected.

To release all frozen channels run the: "**Ctrl | Ctrl | F11 | F | N**" command.



OPERATION

Custom Layout Remote Configuration

While the 8 and 16 KVM Combiners are not controllable by an RS232, it is possible to use an external RS232-to-keyboard translator that enables you to send remote commands to the Combiner. The main use for this functionality is to create a custom layout configuration.

In a custom layout configuration, you can position each channel window in a specific location, with a specific size and scaling factor.

The structure of the command is:

"L Ctrl | L Ctrl | F11 | END | "channel number" | "operation Type" | location (4 digits)"

The operation types are:

1. Window top-left X location
2. Window top-left Y location
3. X length as a percent of total X width
4. Y length as a percent of total X width
5. X offset (the location of the window compared to the full image size when larger).
6. Y offset (the location of the window compared to the full image size when larger).
7. X scaling in percent.
8. Y scaling in percent

For example: "L Ctrl | L Ctrl | F11 | END | 2 | 1 | 5000" – sends channel 2's top-left corner to the middle of the screen, vertically.

For example: "L Ctrl | L Ctrl | F11 | END | 2 | 4 | 4500" – makes channel 2 45% of the total screen size.

OPERATION

Keyboard Shortcut Options

Note: To enable all commands below, first use the: **L Ctrl | L Ctrl** key combination.

#	Action Description	Keyboard
1	Switch to channel 1..10 (Applicable for -N units only)	[1...0]
2	Switch to channel 11..16 (Applicable for -N units only)	[F1...F6] (16 Ports Only)
3	Load presets 1-8	[F1...F8]
4	Set relative mouse mode	F11 B
5	Set absolute mode	F11 C
6	Toggle dual-mouse-mode option	F11 M
7	REL mouse input passing in ABS mode - toggle option	F11 INS M
8	Toggle left/right control key (change system to use right control key)	F11 I
9	Toggle enable/disable-cursor-parking option	F11 H
10	Reset to factory defaults	F11 R
11	Autoscale with keeping aspect ratio	F11 W W
12	Autoscale without keeping aspect ratio	F11 W Y
13	Cancel autoscale	F11 W N
14	Toggle freeze-channel-layer option	F11 F <n>
15	Toggle Picture-in-Picture (PIP) switching mode (when the cursor is in ABS mode, it follows through the PIP window or behind it)	F11 INS P

#	Action Description	Keyboard				
16	Unfreeze all channel layers	F11 F R				
17	Enable/disable Dual Head on CH1-CH2/CH3-CH4/CH5-CH6/CH7-CH8. The two channels are defined as two sources coming from the same PC.	F11 INS V 1/2/3/4 (E,D)				
18	Save preset ## 1...8	F11 INS [F1..F8]				
19	Enable/disable saving last used preset (the unit boots to the last saved preset)	F11 INS S P (E,D)				
20	Set predefined layout <n> with windows <m1>, ...	F11 INS L n m1 ...				
		F11 INS L L n m1 ...				
		For example, n = 3, m1 = 1, m2 = 6, m3 = 8.				
		<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>8</td></tr><tr><td>6</td><td></td></tr></table> n = Number of channels m = Channel number	1	8	6	
1	8					
6						
21	Set LEFT screen predefined layout <n> with windows <m1>, ...	The LEFT screen looks as follows:				
		For example, n = 2, m1 = 1, m2 = 6.				
		<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>6</td></tr></table> n = Number of channels m = Channel number	1	6		
1	6					
		The LEFT screen looks as follows:				

OPERATION

Keyboard Shortcut Options

Note: To enable all commands below, first use the: **L Ctrl | L Ctrl** key combination.

#	Action Description	Keyboard
22	Set LEFT screen predefined layout - using F3 command in place of <n> - with windows <m1>, ...	F11 INS L L F3 m1 ... For example, m1 = 1, m2 = 6, m3 = 8.  n = Number of channels m = Channel number The LEFT screen looks as follows:
23	Set RIGHT screen predefined layout <n> with windows <m1>, ...	F11 INS L R n m1 ... For example, n = 3, m1 = 1, m2 = 6, m3 = 8.  n = Number of channels m = Channel number The RIGHT screen looks as follows:
24	Enable/disable autoscaling to predefined layout (applicable for F11 Q tile mode)	F11 INS L A {E,D}
25	Set no scaling on predefined layouts	F11 INS L A X
26	Set DE mode	F11 INS E [0..7]
27	Control ABS mouse interface enumeration	F11 INS A {<n>, D}
28	Set output size [1..8]	F11 D <n>
29	Set windows <m> size [1..4]	F11 U <m> <n>
30	Set channel window size: (3840/1280/1920)	F11 U <n> 1,2,3,4

#	Action Description	Keyboard
31	Tile mode with full windows (also refer to kb shortcut 23)	F11 q
32	Toggle extend display option	F11 S 0/1/2
33	Output source configuration (Note 2)	F11 {J,K}{J,K}
34	Maximize/quad toggle by switch in presentation mode	F11 P 1
35	Maximize-only action by switch in presentation mode	F11 P 2
36	Decrease window scaling by one	-
37	Increase window scaling by one	+
38	Don't scale - use exact input dimensions	X
39	Enter presentation mode (on every channel switch view will go to tile or full screen)	P
40	Exit presentation mode	N
41	Autoscale window exactly - not keeping aspect ratio	Y
42	Autoscale window according to its least dimension	W
43	Maximize window	F
44	Undo maximize - accepted only immediately after	Z
45	Quad tile windows	Q
46	Enter user mode	U
47	Enter system mode	O

OPERATION

Quick Control via Numeric Pad

For even quicker control, use the shortcuts below, via the numeric pad on your keyboard.

Note: To enable the use of the numeric pad shortcuts, you need to perform command 47 first.

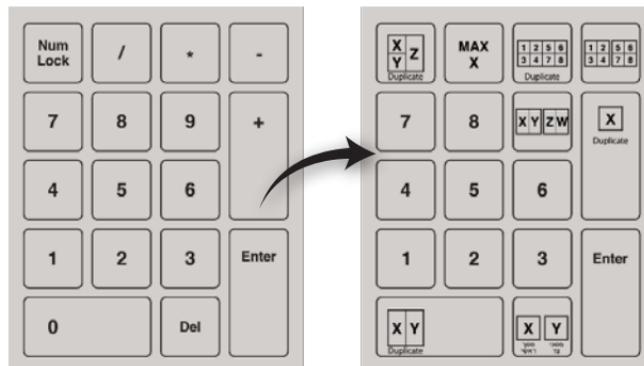
#	Action Description	Keyboard
48	Enable/Disable keypad shortcuts	F11 INS K E/D
49	Layout with N windows	ENTER N X1...Xn
50	Extended mode X1 on left X2 on right	DEL X1-X2 (Del 4 5)
51	Clone mode +X1	+ X1 (for EX. +5)
52	Extend mode + "tile"	-
53	Clone mode + "tile"	*
54	Maximize channel X1	/ X1
55	Clone mode + channel X1,X2	0 X1 X2
56	Extended mode 4 channel	9 X1 X2 X3 X4 (e.g 9 4321)
57	Clone mode + 3 channel	Numlock X1 X2 X3 (e.g numlock 246)

For example, to perform command #49, using six out of eight windows, use the keyboard combination:

ENTER N X1...Xn, as follows:

ENTER 6 1 5 4 3 8 2

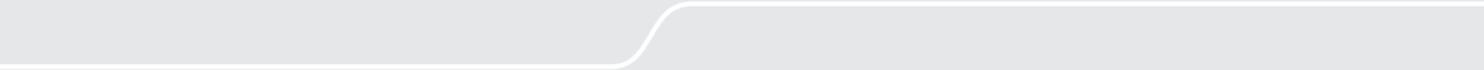
and the windows are displayed in the order entered.



OPERATION

Keyboard Shortcut Options

Action Description	Keyboard
Control exact channel location and appearance	
	L Ctrl L Ctrl F11 INS O "channel number" – Hide Channel
The different operation types are:	
1. Window top left X location	
2. Window top left Y location	
3. X length as percent of total X width	
4. Y length as percent of total X width	L Ctrl L Ctrl F11 END "channel number" "operation Type" location (4 digits)
5. X offset (the location of the window compared to the full image size when larger)	
6. Y offset (the location of the window compared to the full image size when larger)	
7. X scaling in percent.	
8. Y scaling in percent	
Remote-control example:	
First command to position the X location at half screen	L Ctrl L Ctrl F11 END 1 1 5000
Second command to position the Y location at middle of the display	L Ctrl L Ctrl F11 END 1 2 5000
Window X size 50% of the size of the display	L Ctrl L Ctrl F11 END 1 3 5000
Window Y size 50% of the size of the display	L Ctrl L Ctrl F11 END 1 4 5000
If you want to do the same thing as above, but in extend mode, the X size changes to:	
First command to position the X location at half screen	L Ctrl L Ctrl F11 END 1 1 2500
Second command to position the Y location at middle of the display	L Ctrl L Ctrl F11 END 1 2 5000
Window X size 50% of the size of the display	L Ctrl L Ctrl F11 END 1 3 2500
Window Y size 50% of the size of the display	L Ctrl L Ctrl F11 END 1 4 5000



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